SESSION 2 – GLOBAL/REGIONAL CLIMATE STATE IN 2030

ORAL PRESENTATIONS

22001 DEcadal Climate Prediction: Challenges and Opportunities
James Hurrell

22002 QuaNTIFYING UNCERTAINTY, INTERPRETING ENSEMBLES AND COMBINING MODELS WITH PROCESS UNDERSTANDING
David Stainforth, L. Smith

22003 INFLUENCE OF FUTURE AIR-POLLUTION MITIGATION STRATEGIES ON CLIMATE BY 2030
Silvia Kloster, F. Dentener, P. Raes, J. Feichter, U. Lobmann, E. Roeckner

22004 CLIMATE CHANGE OVER CHINA IN THE PAST, PRESENT AND YEAR 2030
Zong-Ci Zhao, Y. Luo, Y. Jiang, S. Tao

22005 PHYSICAL MECHANISM AND QUANTITATIVE ASSESSMENT OF THE PLANETARY BOUNDARY LAYER FEEDBACK IN THE CLIMATE SYSTEM
Igor Esau

22006 HIGH RESOLUTION REGIONAL CLIMATE CHANGE MODELLING IN CECILIA PROJECT – CLIMATE CHANGE SIGNAL IN CENTRAL AND EASTERN EUROPE
Tomas Halenka, J. Miksovsky, M. Belda, P. Huszar

22007 THE NORTH AMERICAN REGIONAL CLIMATE CHANGE ASSESSMENT PROGRAM (NARCCAP): OVERVIEW OF PHASE II RESULTS
Linda Mearns

22008 A MULTI-MEMBER, HIGH-RESOLUTION, TRANSIENT SIMULATION OF 20TH AND 21ST CENTURY CLIMATE IN THE UNITED STATES
Noah Diffenbaugh, M. Ashfaq
POSTER PRESENTATIONS

22012 El Nino-Southern Oscillation, Rainfall, Temperature and Normalized Difference Vegetation Index Fluctuations in the Mara-Serengeti Ecosystem ......................................................... 63
J Oguse, R Reid, H-P Pfigho, H Duhlan, Nita Bhola
22013 Yield Modelling of Mediterranean Crops: A Probabilistic Approach ......................................................... 64
Roberto Ferrise, M Moriondo, M Bindi
22014 Variability and Interdependence of Key Climate Parameters in Cold Regional Context ......................................................... 65
Monirul Islam
22015 Assessment of Statistical Downscaling Methods – Application and Comparison of Two Statistical Methods to a Single Site in Lisbon ......................................................... 66
Pedro Lopes
22016 India and Climate Change in the Post Kyoto Regime ......................................................................................... 67
Vikrant Pachnanda, U Kacker
22017 Meeting the Needs for Climate Observations: The Role of the Global Climate Observing System (GCOS) ........................................................................................................ 68
John Zillman
22018 NanoSensor Technology for Following Phosphate Partitioning in Plants ......................................................................................... 69
Helle Juel Martinsen, S Gjetting, A T Fuglsang, A Schulz
22019 Which is a Better Paradigm: Northern Annular Mode, North Atlantic Oscillation or Centers of Action? ........................................................................................................ 70
Muhammad Jawed Iqbal, S Hameed
22020 European Temperature Variability and Heatwaves in a Changing Climate: Where Do We Stand? ......................................................................................... 71
Christoph Schar, T Fischer

SESSION 3 – CHANGES IN OCEAN CIRCULATION RELATED TO REGIONAL CLIMATE

ORAL PRESENTATIONS

32001 Evolution of Atlantic Ocean Properties and Circulation from the Tropics to the Arctic ......................................................... 72
Ruth Curry
32002 Evolution of Southern Ocean Under Climate Change: Dynamics and Feedbacks ......................................................... 73
Sabrina Stevich, S R Rintoul, K Speer
32003 Global and Regional Warming: The Mediterranean Sea Case from Observation and Modeling ......................................................... 74
Vincenzo Artale, S Marullo, R Santoleri
32004 Global and Regional 50 Year Ocean Salinity Trends ......................................................................................... 75
Susan Wijffels, P Durack
32005 Changes in Global Upper-Ocean Heat Content over the Last Half Century and Comparison with Climate Models ......................................................................................... 76
John Church, C Domingues, N White, S Wijffels, P Barker, P Gleckler
32006 Recent Decadal Warming and Freshening of Antarctic-Derived Abyssal Waters ......................................................... 77
Gregory Johnson
32007 Changes in the Arctic Atmosphere-Ice-Ocean System ......................................................................................... 79
Igor Polyakov
32008 Why is the Response of European Climate to a Collapse of the Atlantic Meridional Overturning Circulation Relatively Small? ......................................................................................... 80
A Laurian, Wilec Hazeleger, S Dejiferin, B Van Den Hurk
32009 Review of Ocean Temperature, Salinity and Oxygen Changes in the Pacific and Subtropical Southern Hemisphere ......................................................................................... 81
Lynne D Talley
32010 The Oceans and Climate Change: Response to Southern Hemisphere Forcing ......................................................................................... 82
Matthew England
POSTER PRESENTATIONS

32011 MODELLING RECENT CHANGES IN CARBON UPTAKE IN THE NORTH ATLANTIC ................................................................. 83
Karen M. Assmann, C. Henze, M. Bensm, A. Olsen

32012 MONITORING THE INTERACTION BETWEEN THE NORTH ATLANTIC THC AND ITS KEY SOURCE: THE NORDIC SEAS ...................................................................................................................... 84
Bogi Hansen, H Håitun, S Østerhus, D Quadfasel, S Jonsson, H Valdimarsson, B Turrell, S Hughes, B Berx, T Sherwin

32013 A COLD 'MEDIEVAL WARM PERIOD' AND A WARM 'LITTLE ICE AGE' AND OTHER CLIMATE STORIES FROM ATLANTIC OCEAN SEDIMENTARY RECORDS OF THE PAST 500,000 YEARS ................................................................. 85
Anas van Kaipers, M S. Seidenkrantz, B A Malmgren, S R Teroastrha

32014 GREENLAND CLIMATE CHANGES RELATED TO THE STRENGTH OF THE ATLANTIC MERIDIONAL OVERTURNING CIRCULATION .................................................................................................................. 87
Peter L Langen

32015 MULTI DEcadAL VARIABILITY OF THE NORTH ATLANTIC AND MEDITERRANEAN SST .................................................. 88
Salvatore Marullo, V. Artale, R Santoleri

32016 COASTAL GEOMORPHOLOGIC STUDY WITH MULTI-TEMPORAL SATELLITE DATA IN AROUND KONKAN COAST, MAHARASHTRA, INDIA ...................................................................................................................... 89
Deepmala Niramwar

32017 STABILITY OF THE OVERFLOW ACROSS THE GREENLAND-SCOTLAND RIDGE SINCE 1948 .......................................................... 90
Steffen Malskcer Olsen, B Hansen, D Quadfasel, S Østerhus

32018 NORTH ATLANTIC DEEP WATER COLLAPSE TRIGGERED BY A SOUTHERN OCEAN MELTWATER PULSE IN A GLACIAL CLIMATE STATE ................................................................................................................. 91
Jessica Treveren, W P Sijp, M H Engl

32019 CONCLUSIONS FOLLOWING THE INTERNATIONAL SYMPOSIUM 'EFFECTS OF CLIMATE CHANGE ON THE WORLD'S OCEANS' ........................................................................................................... 92
Luis Vallades

32020 THE RAPID CLIMATE CHANGE PROGRAMME (RAPID) ............................................................................................................. 94
Craig Wallace, S Cunningham, M Srokosz

32021 THE NORWEGIAN SEA ONE HUNDRED YEARS AFTER ....................................................................................................... 95
Svein Østerhus

32022 WEATHER SHIP STATION M IN THE NORWEGIAN SEA "POLARFRONT": THE FLAGSHIP OF CLIMATE RESEARCH ................................................................................................................................. 96
Svein Østerhus, S Skjelvan, T Gammelsrud

32023 BIPOLAR ATLANTIC THERMOHALINE CIRCULATION - BIAC IPY CLUSTER # 23 ........................................................... 98
Svein Østerhus, T Gammelsrud

SESSION 4 – VULNERABILITY IN CARBON SINKS

ORAL PRESENTATIONS

42001 QUANTIFYING AND RANKING VULNERABILITIES IN THE CARBON-CLIMATE-HUMAN SYSTEM .............................................................. 100
Michael R. Raupach, N. Gruber, P. Ciais, P. J. Rayner

42002 VULNERABILITY OF TERRESTRIAL CARBON SINKS TO HIGH TEMPERATURE EXTREMES .......................................................... 102
Robert Scholes, R. Makhado

42003 NEW OBSERVATIONS SUGGEST VULNERABILITY OF THE CARBON SINK IN TROPICAL RAINFORESTS .................................................................................................................................................. 103
David W. Hilbert, J G Canadell, D Metcalfe, M Bradford

42004 DROUGHT SENSITIVITY OF THE AMAZON CARBON SINK ........................................................................................................ 105

42005 VULNERABILITY OF CARBON STOCKS IN TROPICAL FOREST ............................................................................................. 106
Ruth DeJonge

42006 THE ROLE OF CLIMATE VARIABILITY AND EXTREMES FOR GLOBAL TERRESTRIAL CARBON DYNAMICS: LESSONS LEARNT FROM MULTIPLE OBSERVATIONS AND EXPERIMENTS ........................................................................................................ 107
Markus Reichstein, P. Dais, C. Beer, C. Beier, A. Brom, J. Janssens, M. Jung, L. Misson, S. Seneviratne, P. Smith, C. Williams, C. Wirth

42007 THE VULNERABILITY OF THE COASTAL CARBON CYCLE .................................................................................................. 108
Nicholas Gruber, J. Luckharr, G-K. Plattner, C. Hauri

42008 LONG-TERM COMMITMENT OF CO2 EMISSIONS ON THE GLOBAL CARBON CYCLE AND CLIMATE ................................................................................................................................. 109
Gian-Kasper Plattner

42009 RECENT TREND IN THE GLOBAL OCEANIC SINK FOR CO2 ........................................................................................................ 110
Corinne Le Quere

42010 VULNERABILITY OF THE TERRESTRIAL C SINK ...................................................................................................................... 111
Christopher B Field
POSTER PRESENTATIONS

42011 CARBON DIOXIDE AND METHANE FLUXES LINKED TO OXYGEN AVAILABILITY IN A TEMPERATE NORTHERN PEATLAND ..............................................................112
Louise Askaer, B Elberling

42012 REDUCED CO2 UPTAKE IN A WARMER OCEAN DUE TO INCREASED REMINERALISATION RATES OF ORGANIC MATTER IN THE TWILIGHT ZONE .................................................................113
Jørgen Bendtsen, K M Hilligsoe, J L S Hansen, K Richardsen, J Segschneider

42013 THE NEWLY DISCOVERED AEROBIC METHANE RELEASE FROM TERRESTRIAL VEGETATION: CAUSES AND CONSEQUENCES .................................................................115
Michael Eby, K Zickfeld, A Montenegro, D Archer, K J Meissner, A J Weaver

42014 REGIONAL CO2 FLUXES ESTIMATED OVER NORTH AMERICA FOR 2004 USING A GEOSTATISTICAL INVERSE MODEL .................................................................119

42015 LIFETIME OF ANTHROPOGENIC CLIMATE CHANGE: TIME-SCALES OF CO2 AND TEMPERATURE PERTURBATIONS .................................................................118
Karen Mepham, J Bentdson, M Melike Lynggaard, L L Sørensen, J Nilsen

42016 MOUNTAIN FOREST SOILS IN THE ALPS RELEASE GREENHOUSE GASES .................................123
Robert Jandl, A Schindlbetcher, B Kübler, S Zechmeister-Böltenstern, H Van Miegroet

42017 THE CHANGING CARBON CYCLE .................................................................121
J L Sarmiento, Nicolas Gruber, M Gloor, A R Jacobson, S Mikaloff Fletcher, S Pacala, K Rodgers

42018 THE BIOLOGICAL PUMP: HOW LARGE AND HOW VULNERABLE A COMPONENT OF THE OCEAN'S CARBON UPTAKE? .................................................................122
Karen Mepham, J Bentdson, M Melike Lynggaard, L L Sørensen, J Nilsen

42019 THE SYMBIOSIS BETWEEN MYCORRHIZAL FUNGI AND PLANT ROOTS – EFFECTS ON FOREST VEGETATION: CAUSES AND CONSEQUENCES .................................128
Ahmet Raci, Memus

42020 PROJECTED FOREST CARBON SINKS HIGHLY VULNERABLE TO INCREASES IN NATURAL DISTURBANCES .................................................................124
Werner A Kurz, M D Flannigan, G Stinson, J Metsaranta, E T Neilson, C D Dymond

42021 ECOSYSTEM CARBON BALANCE UNDER FUTURE CLIMATE CONDITIONS; THE CLIMATE PROJECT CARBON SYNTHESIS .................................................................125
Leon Linden, C Röier, T N Mikkelsen, M Holmstrup, T K Schmid, P Ambus, K Pilegaard, K R Albert, L C Andersen, M B Selslød, R S Larsen, A Brotzen

42022 TERRESTRIAL CARBON-CYCLE FEEDBACK TO CLIMATE WARMING: EXPERIMENTAL EVIDENCE .................................................................126
Yugi Luo

42023 GLOBAL WARMING AND CARBON BALANCE .................................................................128

42024 THE SYMBIOSIS BETWEEN MYCORRHIZAL FUNGI AND PLANT ROOTS – EFFECTS ON FOREST SOIL C SEQUESTRATION .................................................................129
Lars Ola Nilsson, P Gunderson, L Vesterdal, H Wallander

42025 RECONCILING ANTHROPOGENIC CO2 ESTIMATES IN THE NORDIC SEAS .................................................................130
Ax Olsen, E Jeansson, T Johannesens, A Omar

42026 CLIMATE EFFECTS ON ATMOSPHERIC CARBON DIOXIDE OVER THE LAST CENTURY .................................................................131
Karen E Rafelski, S C Piper, R P Keeling

42027 THE CO2 AIRBORNE FRACTION IS INCREASING – WHY SO SLOWLY? IMPLICATIONS FOR VULNERABILITY IN THE CARBON-CLIMATE-HUMAN SYSTEM .................................................................132
Michael R Ranyachal

42028 PROGNOSTIC TERRESTRIAL CARBON CYCLING WITH UNCERTAINTIES: RESULTS FROM A CARBON CYCLE DATA ASSIMILATION SYSTEM (CCDAS) .................................................................133
Markus Schulze, P Rayner, W Knorr, T Kaminski, R Giering

42029 ECOSYSTEM RECOVERY AFTER DROUGHT EVENTS IN OUR FUTURE CLIMATE .................................................................134
Merce Bang Selslød, K Albert, P Ambus, A Michelsen, H Ro-Poulson, T Mikkelsen, A Brotzen

42030 CARBON DIOXIDE EXCHANGES BETWEEN THE LAND SURFACE AND THE ATMOSHERE FOR NATURAL AND MANAGED ECOSYSTEMS IN DENMARK .................................................................135
Henrik Søgaard, K Pilegaard, E Deliwik, M Herbst, T Friiborg

42031 ATMOSPHERIC CO2 STUDY OVER INDIA: MODELING AND OBSERVATIONS PERSPECTIVE .................................................................136
Yagesh Tiwari, R Langanfelds, R Reddy, P Steele, R Francey

42032 REGIONAL VARIABILITY OF ANTHROPOGENIC CARBON TRANSPORT IN THE OCEAN – VIEWS FROM THE SURFACE AND THE DEEP .................................................................138
Jerry Tjiputra, C Heinze, K Assmann, M Bentzen, J Brehm, C Sturm

42033 TOWARDS UNDERSTANDING OF CARBON STABILISATION MECHANISMS IN VOLCANIC ASH SOILS IN ANDEAN ECOSYSTEMS .................................................................139
Femke Tonneijck, B Jensen, L Nierop, K Verstraten, J Severink

42034 CARBOOCEAN – MARINE CARBON SOURCES AND SINKS ASSESSMENT .................................................................141
Andrea Volbers, C Heinze

42035 MODELLING OF CLIMATE AND DISTURANCE EFFECTS ON FOREST ABOVE GROUND BIOMASS AND NET BIOME PRODUCTIVITY IN OYSTER RIVER AND CHIBOGAMAU SITES .................................................................142
Zivu Wane, R Grant, A Arain, P Bernier, J Chen, A Govind, L Guindon, R Hempen, W Kurz, D Price, G Stinson, T Trofymow
SESSION 5 – DEVELOPING A SPECTRUM OF MODELS TO DESCRIBE THE EARTH SYSTEM

ORAL PRESENTATIONS

52001 ANALYSIS OF CLIMATE-BIOSPHERE INTERACTIONS USING A SPECTRUM OF MODELS OF VARIOUS COMPLEXITY
Victor Brovkin, M Claussen

52002 EC-EARTH: A SEAMLESS PREDICTION APPROACH TO EARTH SYSTEM MODELLING
Wilco Hazeleger, C Jones, R McGrath, J Hesselbjerg-Christensen

52003 A GCM STUDY ON CO2 EMISSION PATHWAYS TO CLIMATE STABILIZATION
E Boucknor, Marco Giorgetta, T Crueger, M Esch, J Pongratz

52004 THE MAXIMUM ENTROPY PRODUCTION PRINCIPLE IN A SPECTRUM OF CLIMATE MODELS
Klaus Fraedrich, E Kerkh, V Lucarini, F Lunkeit

52005 SETTING CUMULATIVE EMISSIONS TARGETS TO REDUCE THE RISK OF DANGEROUS CLIMATE CHANGE
Kirsten Zickfeld, M Eby, B D Matthews, A J Weaver

52006 ADDING HUMAN DIMENSIONS TO EARTH SYSTEM MODELS
Joseph Alcamo

52007 THE MET OFFICE HADLEY CENTRE NEXT GENERATION EARTH SYSTEM MODEL
William Collins, M Doutriaux-Boucher, C Jones, F O'Connor, I Toterdell

52008 PRIMAP – POTSDAM REAL-TIME INTEGRATED MODEL FOR THE PROBABILISTIC ASSESSMENT OF EMISSION PATHS
Malte Meinshausen, B Hare, K Frieler, J Nadel, K Markmann, M Schaeffer, J Rogelj

52009 A MULTISCALE MODELLING FRAMEWORK FOR ATMOSPHERIC FLOWS
Rupert Klein

52010 FROM COST-OPTIMAL EMISSIONS TO IMPACTS OF GREENHOUSE GASES: CLOSING THE LOOP IN EARTH SYSTEM MODELLING
Hermann Held

POSTER PRESENTATIONS

52011 HOW BIG IS LEAKAGE FROM FORESTRY CARBON CREDITS? ESTIMATES FROM A GLOBAL MODEL
Montserrat Acosta, B Sohngen

52012 NOVEL NATURAL AND ANTHROPOGENIC PHYSICAL MECHANISMS OF WEATHER AND CLIMATE CHANGES
Sergei Avakyan, N Vorotin

52013 IMPACT OF SOIL FREEZING AND THAWING DYNAMICS ON SOIL ORGANIC CARBON STOCKS IN PERMAFROST REGIONS
Christian Beer

52014 EVAPOTRANSPIRATION IN A WARMING CLIMATE: MODEL UNCERTAINTY AND ROLE FOR CLIMATE ADAPTATION
Audrey Ganopolski, R Calov, E Bauer, V Brovkin

52015 AN EARTH SYSTEM MODEL OF INTERMEDIATE COMPLEXITY FOR STUDIES OF QUATERNARY CLIMATE VARIABILITY
Kevin Gurnev, D Mendoza, C Miller, M Fischer, K Corbin, D Ojima, S Knox, S Deming, S De La Rue Du Can, S Geethakumar, S Byashchenko

52016 THE VULCAN PROJECT: METHODS, RESULTS, AND EVALUATION
William May

52017 GLOBAL ANTHROPOGENIC WARMING BELOW 2°C ABOVE PRE-INDUSTRIAL LEVEL: HOW MIGHT CLIMATE LOOK LIKE IN EUROPE?
Damela Jacob, H Götzel, P Lorenz, K Sieck, R Podzun

52018 CLIMATE RESPONSE TO CARBON EMISSIONS
Damon Matthews

52019 REGIONAL CLIMATE CHANGES ASSOCIATED WITH A GLOBAL "2 °C-STABILIZATION" SCENARIO
Wilhelm May

52020 ASPECTS OF RADIATIVE EFFICIENCY OF GEOENGINEERING BASED ON CLIMATE MODELS OF DIFFERENT COMPLEXITY
Igor I Mokhov, A V Chernokulsky, A V Eliseev, A A Karpenko

52021 CLIMATE CHANGES IN THE NORTHERN EURASIA SIMULATED BY TWO MODELS OF DIFFERENT COMPLEXITY
Igor I Mokhov, A V Eliseev, M M Arzhanov, P F Demchenko, S N Denisov
SESSION 6 – TIPPING ELEMENTS IN THE EARTH SYSTEM

ORAL PRESENTATIONS

62001 TIPPING POINTS IN THE TERRESTRIAL BIOSPHERE ................................................................................................................................. 175
   Peter Cox

62002 ABRUPT CLIMATE CHANGE: FINDINGS FROM THE US CLIMATE CHANGE SCIENCE PROGRAM SYNTHESIS AND ASSESSMENT PRODUCT 3.4 ............................................................................................................................................. 176
   Andrew Weaver, Peter Clark, E Brook, E Cook, T Delworth, J McGeehin, K Steffen

62003 ABRUPT CLIMATE CHANGE: ATMOSPHERIC TIPPING POINTS ................................................................................................................................. 177
   Kerry H Cook

62004 TOWARDS A THEORY FOR ICE AGE: THE ROLE OF NOISE AND TIPPING POINTS ................................................................................................................................. 178
   Peter D Ditlevsen

62005 IS THE SAHARA A TIPPING ELEMENT? ................................................................................................................................................. 179
   Martin Clausen, V Brovkin

62006 PROCESSES ASSOCIATED WITH THE FAST WARMING RATE OF THE SOUTHERN HEMISPHERE MIDLATITUDE OCEAN ................................................................................................................................................. 180
   Wenju Cai, T Cowan

62007 WHAT IS THE TIPPING POINT FOR THE GREENLAND ICE SHEET? ............................................................................................................................................. 181
   Jonathan Bamber, E Steig, D Dahl-Jensen

62008 MULTIPLE WEST ANTARCTIC ICE SHEET RETREATS COULD EXPLAIN SOUTHERN WARMTH IN RECENT INTERGLACIALS ................................................................................................................................................. 182
   Phil Holden, N Edwards, E Wolff

62009 IS THE STABILITY OF THE ATLANTIC MOC CHANGED BY GLOBAL WARMING? ............................................................................................................................................. 183
   Sybren Drift, E De Swaluw, S Weber

62010 THE DECREASING SUMMER ARCTIC SEA ICE COVER AND THE ICE ALBEDO FEEDBACK ............................................................................................................................................. 184
   Don Perovich

62011 DID THE WEST-SPITSBERGEN-CURRENT ENTAILED THE TWO DECADES LONG ARCTIC WARMING 90 YEARS AGO? ............................................................................................................................................. 185
   Arnd Bernaerts

62012 SLOWING DOWN AS AN EARLY WARNING SIGNAL FOR ABRUPT CLIMATE CHANGE ............................................................................................................................................. 190
   Marten Scheffer, F Dakos, E H Van Nes

62013 TOWARDS THE PROBABILITY OF CROSSING TIPPING POINTS ............................................................................................................................................. 191
   Peter Challenor, D McNeall

62014 RISKS FOR ECOSYSTEMS – KEY FINDINGS FROM THE FOURTH ASSESSMENT REPORT OF IPCC ............................................................................................................................................. 192
   Andreas Fischlin, G F Midgley

62015 AVOIDING AND RECOVERING FROM DANGEROUS CLIMATE IMPACTS ............................................................................................................................................. 193
   Jason Lowe, L Gohar, C Huntingford, F Good, J Ridley, D McNeall, C Jones, S Liddicoat, M Parry, S Raper

62016 THE ANATOMY OF ABRUPT WARMING AND COOLING CLIMATE TRANSITIONS FROM TWO GREENLAND ICE CORES ............................................................................................................................................. 195
   Trevor Jones Popp, J W C White

62017 COMMITTED ECOSYSTEM CHANGE DUE TO CLIMATE CHANGE ............................................................................................................................................. 196
   Chris Jones, J Lowe, S Liddicoat, R Betts

POSTER PRESENTATIONS

62018 THE GIBRALTAR STRAIT: A TIPPING ELEMENT OF THE MEDITERRANEAN OCEAN CIRCULATION ............................................................................................................................................. 197
   Vincenzo Arrate, A Carillo, G Summino

62019 THE IMPACT OF ANTHROPOGENIC AEROSOLS ON THE SOUTHERN HEMISPHERE OCEAN-ATMOSPHERE CIRCULATION ............................................................................................................................................. 198
   W Cas, Timothy Cowan

62020 THE POTENTIAL ROLE OF ATMOSPHERIC NUTRIENT SUPPLY IN ALTERING OCEAN PRODUCTIVITY ............................................................................................................................................. 199
   Timothy Jickells, A L Baker

62021 BIFURCATION ANALYSIS OF GEOPHYSICAL TIME SERIES ............................................................................................................................................. 200
   Valerie Livina, F Kwazinik, Y Sapronov, T Lenton
SESSION 7 – INFORMING THE FUTURE BY UNDERSTANDING THE PAST

ORAL PRESENTATIONS

72001 HIGH SUMMER RAINFALL DURING THE WARM EARLY PLEISTOCENE IN THE SOUTHERN HEMISPHERE: ANALOGUE FOR FUTURE GREENHOUSE CLIMATES? .......................................................... 202
J M Kale Sniderman, N Porch

72002 THE LAST INTERGLACIAL WARM PERIOD RECORD OF THE ARCTIC OCEAN: PROXY-DATA SUPPORT A MAJOR REDUCTION OF SEA ICE .......................................................... 203
Niels Nørgaard-Pedersen, N Mikkelsen, T Kristoffersen

72003 LESSONS OF THE MID-PLIOcene: PLANET EARTH’S LAST INTERVAL OF GREATER GLOBAL WARMTH .......................................................................................................................... 205
Alan Haywood, S Bonham, D Hill, D Lunt, U Saltmann

72004 WHAT CAN EARTH’S DEEP PAST TELL US ABOUT THE FUTURE? .......................................................... 207
Jeffrey Kiehl

72005 DANGEROUS OCEAN ACIDIFICATION ........................................................................................................ 208
Andrew Ridgwell, D Schmidt

72006 ECOSYSTEM RESPONSE TO ABRupt CLIMATE CHANGE DURING THE LAST GLACIAL PERIOD IN WESTERN EUROPE – THE LACUSTRINE SEQUENCE OF LES ECHETS .................................................................................................................. 209
Barbara Wohlfarth, L Ampel, D Yeas, M Blauw, F Preusser

72007 HAZARD AND RATES OF SEA LEVEL RISE: WHAT CAN WE LEARN FROM THE LAST INTERGLACIAL? .......................................................................................................................... 210
Robert E Kopp, F J Simons, A C Maloof, D Krom, S Jung, M Oppenheimer

72008 THE AGE OF SMALL PREY: DIET AND CLIMATE VARIABILITY AT THE PLEISTOCENE-HOLOCENE BOUNDARY AND BEYOND .......................................................... 211
Emily Lena Jones

72009 PALEOCLIMATIC INSIGHTS AND CHALLENGES INFERRED FROM ICE CORE STUDIES .......................................................................................................................... 212
Sune Olander Rasmussen

72010 RECENT MOVEMENTS OF THE ITCZ IN THE TROPICAL PACIFIC AND RAMIFICATIONS FOR THE MARSHALL ISLANDS .................................................................................................................. 213
J Sachs, Mark Stege, T Keji

72011 ARCHAEOLOGY AND CLIMATE CHANGE IN THE CARIBBEAN: LESSONS FROM THE PAST FOR PROBLEMS OF THE FUTURE .................................................................................................................. 214
Jago Cooper, M Peros

72012 THE IMPACT OF GLOBAL WARMING ON PRECIPITATION PATTERNS .......................................................................................................................... 216
Wallace S Broecker

POSTER PRESENTATIONS

72013 PROJECTING 21ST CENTURY GHG EMISSIONS THROUGH DYNAMIC SIMULATION MODELLING OF THE GLOBAL ENERGY-ENVIRONMENT-ECONOMY (E3) SYSTEM 1972–2006 .......................................................................................................................... 217
Terry Barker

72014 SEA-LEVEL RISE AND ASSOCIATED FEEDBACKS ON CLIMATE OPERATING ON INTERMEDIATE GEOLOGICAL TIME SCALE .......................................................................................................................... 218
Christian J Bjerrum

72015 QUANTIFYING HOLOCENE CLIMATE CHANGE IN DENMARK .......................................................................................................................... 219
Kendrick Brown, J Birks, A Bjune, H Seppa, P Rasmussen

72016 VULNERABILITY OF FRAGILE FOREST ECOSYSTEM OF NORTH EAST INDIA IN CONTEXT WITH THE GLOBAL CLIMATE CHANGE: AN ECOLOGICAL PROJECTION .......................................................................................................................... 220
Pranab Bajbarbarua, S Baruah

72017 DISTINGUISHING GLOBAL WARMING FROM NATURAL VARIABILITY IN IRISH SEA SURFACE TEMPERATURE RECORDS .......................................................................................................................... 224
Heather Cannaby, S Husrevooghu, G Nolan

72018 CAN PROXY DATA ACTUALLY TELL US ABOUT THE PAST CLIMATE? .......................................................................................................................... 226
B O Christiansen, T Schmith, P Thejll

72019 HOLOCENE COASTAL DUNEFIELD EVOLUTION, JUTLAND, DENMARK: A RECORD OF CLIMATE CHANGE OVER THE PAST 5000 YEARS .......................................................................................................................... 227
Lars Clemmensen, A Murray, J Heinemeier, R De Jong

72020 THE GLOBAL ANOXIC ‘SPICE’ EVENT ~500 MYRS AGO, TRACE METAL DEPLETION OBSERVED FROM MOLYBDENUM STABLE ISOTOPE COMPOSITIONS .......................................................................................................................... 228
Tais W Dahl, B Gill, E Hammarlund, T Lyons, A D Anbar, G Gordon, D E Canfield

72021 CHALLENGES IN EXPLORING THE CLIMATE CHANGE AND EXTREME WEATHER EVENTS IN INDIA .......................................................................................................................... 229
Sushil Kumar Dash
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE SWISS ALPINE FORELANDS</td>
<td>245</td>
</tr>
<tr>
<td>WESTERN PART OF PALAKKAD GAP, SOUTH INDIA</td>
<td>263</td>
</tr>
<tr>
<td>EFFECT OF CHANGES IN INSOLATION IN A COMPLEX CLIMATE MODEL</td>
<td>235</td>
</tr>
<tr>
<td>UNRAVELLING THE THEN AND THERE TO UNDERSTAND THE HERE AND NOW: RELEVANCE OF PALAEOCLIMATOLOGY TO CLIMATE CHANGE EDUCATION</td>
<td>262</td>
</tr>
<tr>
<td>CLIMATE CHANGE AND MODERN HUMAN EVOLUTION</td>
<td>237</td>
</tr>
<tr>
<td>HOLOCENE CLIMATE CHANGE AND ENVIRONMENTAL RECONSTRUCTION IN EAST GREENLAND</td>
<td>238</td>
</tr>
<tr>
<td>HEMISPHERIC VS. REGIONAL NORTH ATLANTIC CLIMATE CHANGE DURING THE PAST 1200 YEARS: RESPONSES TO NATURAL AND MAN MADE FORCINGS IN DATA AND MODELS</td>
<td>240</td>
</tr>
<tr>
<td>HUMAN BEHAVIOUR TOWARDS CLIMATIC CHANGE DURING THE 4TH MILLENNIUM BC IN THE SWISS ALPINE FORELANDS</td>
<td>245</td>
</tr>
<tr>
<td>LONG-RUN RELATIONSHIPS AMONG TEMPERATURE, CO2, METHANE, ICE AND DUST OVER THE LAST 420,000 YEARS: COINTEGRATION ANALYSIS OF THE VOSTOK ICE CORE DATA</td>
<td>247</td>
</tr>
<tr>
<td>RELATIONSHIP BETWEEN SOI AND GLOBAL TEMPERATURE ANOMALIES: NONLINEAR APPROACH</td>
<td>248</td>
</tr>
<tr>
<td>EXTREME CLIMATE CONDITIONS IN SWEDEN IN A 100,000 YEAR PERSPECTIVE AS SIMULATED BY GLOBAL AND REGIONAL CLIMATE MODELS</td>
<td>250</td>
</tr>
<tr>
<td>NORTH ATLANTIC CLIMATE AND DEEP WATER VARIABILITY SINCE 600 AD</td>
<td>251</td>
</tr>
<tr>
<td>CLIMATE CHANGE: LESSONS FROM THE PAST SET FUTURE MITIGATIONS STRATEGIES IN ARID AND SEMI-ARID KENYA</td>
<td>252</td>
</tr>
<tr>
<td>SEA LEVEL AND CO2. LESSONS FROM THE PAST</td>
<td>254</td>
</tr>
<tr>
<td>INFLUENCES OF THE SUMMER NORTH ATLANTIC OSCILLATION (SNAO) ON REGIONAL CLIMATE – FROM THE PAST TO THE FUTURE</td>
<td>255</td>
</tr>
<tr>
<td>THE ARCTIC CRYOSPHERE IN THE MID-PLIOCENE AND THE FUTURE</td>
<td>256</td>
</tr>
<tr>
<td>THE GREENLAND NORSE AND THE LITTLE ICE AGE: LARGE SCALE CLIMATE CHANGES TO A SMALL SCALE SOCIETY</td>
<td>257</td>
</tr>
<tr>
<td>A 1000 YEAR MID-INTERGLACIAL COLD PHASE AT ABOUT 400 KA BP IN THE PIÂNICO LAKE RECORD</td>
<td>258</td>
</tr>
<tr>
<td>AFROMONTANE ECOSYSTEM STABILITY OR CHANGE? COMBINING METHODOLOGIES TO UNDERSTAND PAST, PRESENT AND FUTURE ECOSYSTEM SHIFTS WITHIN THE EASTERN ARC BIODIVERSITY HOTSPOT OF TANZANIA AND KENYA</td>
<td>259</td>
</tr>
<tr>
<td>SIMULATING THE CLIMATE OF THE EARLY HOLOCENE</td>
<td>261</td>
</tr>
<tr>
<td>RECONSTRUCTING PAST CLIMATE CHANGE FROM GLACIER SHRINKAGE ON KILIMANJARO</td>
<td>262</td>
</tr>
<tr>
<td>HISTORICAL ANALYSIS OF THE FIRST RAIN EVENT AND THE NUMBER OF RAIN DAYS IN THE WESTERN PART OF PALAKKAD GAP, SOUTH INDIA</td>
<td>263</td>
</tr>
</tbody>
</table>

Raj Nikhil, P A Azeez
72047 RAPID CENTENNIAL SCALE REDUCTIONS IN NORTH ATLANTIC DEEP WATER DURING THE PEAK OF THE LAST INTERGLACIAL PERIOD RECORDED IN SEDIMENTS FROM THE EIRIK DRIFT .............................................................264

Ulysse Ninnemann, J Kleiven, E Gaaussen

72048 DID MID-HOLOCENE CLIMATE AND SEA-LEVEL CHANGE TRIGGER A SHIFT IN CULTURE IN DENMARK 6000 YEARS AGO? ..........................................................265

Nannan Noe-Nyggaard

72049 ENVIRONMENTS AND SOCIETIES OF SMALL CAUCASUS (ARMENIA) IN THE LIGHT OF THE QUATERNARY CLIMATIC CHANGES AND LANDSCAPE MUTATIONS .........................................................266

Vincent Olivier, S Nahapetyan, P Roiron, Y J Gabriel, J J Cornée, S Joannin, C Chatagnier, J Jühner, B Gasparian

72050 PERCEPTION & UNDERSTANDING OF GLOBAL CLIMATIC CHANGES – A CASE STUDY WITH THE VULNERABLE COMMUNITIES IN SRI LANKA ................................................................................268

Prabath De Silva Patabendi

72051 LATE GLACIAL AND EARLY HOLOCENE CLIMATIC OSCILLATIONS AND HUMAN WAVES OF IMMIGRATION INTO SCandinavia ........................................................................................................269

Erk Brauch Petersen

72052 VULNERABILITIES TO CLIMATE CHANGE FOR METROPOLITAN CITIES IN BANGLADESH AND FUTURE CHALLENGES FOR URBAN PLANNING AND DEVELOPMENT ...........................................................................270

Khan Bahjatul Rahman, M S Sowpan

72053 LAKE ECOSYSTEM RESPONSE TO CLIMATE CHANGE 8200 YEARS AGO. A MULTI-PROXY STUDY AT LAKE HOJBY SO, DENMARK ...................................................................................................271

Peter Rasmussen, M Ulfeldt Hedc, N Noe-Nyggaard, A L Clarke, R D Vinebrooke

72054 OBSERVED SUMMER EXTREME TEMPERATURES IN EUROPE DURING THE 21ST CENTURY: A SYNTHESIS ...............................................................................................................................272

Martine Behezne, A Davison, O Dupont, K Garnett, M Grouard, J P Kropp, H Mayer, A Menzel, M Reinhard, D Schindler, M Suveyses

72055 QUATERNARY TUFA IN THE SERRA DA BODOQUENA KARST, WEST-CENTRAL BRAZIL: EVIDENCE OF WET PERIOD .................................................................................................................273

William Sallur Filho, I Karmann, A Emannd Martino Sallur, K Suguito

72056 SEVERE STORMS DRIVE HOLOCENE ISLAND EVOLUTION AND CORAL REEF BIODIVERSITY OF THE HOUTMAN ABROLHOS ARCHIPELAGO, WA .....................................................................275

Sander Scheffers, A Sheffers, D Kellett

72057 THE PRESENT WARMING VS. THE EARLY 20TH CENTURY WARMING IN THE ARCTIC: A 400 YEAR PERSPECTIVE ..................................................................................................................276

Torben Schmith

72058 COMPARISON OF MODELED AND RECONSTRUCTED SEA SURFACE TEMPERATURE TRENDS DURING THE HOLOCENE .................................................................................................................277

Birgit Schneider, G Leduc, W Park

72059 PSEUDOMORPH AFTER IKAITE – CALLED GLENDONITE IS IT A GEOLOGICAL THERMOMETER IN COLD SEDIMENTS OR GEOLOGICAL ODDITY AS IT OCCURS CLOSE TO PETM IN THE FUR FORMATION ..........................................................................................................................278

B O Pagh Schultz

72060 THE NORTH GREENLAND EEMIAN ICE CORE DRILLING PROJECT (NEEM) .................................................................................................................................281

Jørgen Peder Steffensen

72061 GLOBAL MAPS OF RECONSTRUCTED D13C VALUES OF TERRESTRIAL BIOMASS FROM 30KA BP TO PRESENT .............................................................................................................................282

F Aayne Street-Perrrot, T J Daley, R Fraser

72062 IMPACTS OF MULTIDECADAL CLIMATIC OSCILLATIONS ON MARINE ECOSYSTEMS AND FISH STOCKS ..........................................................................................................................284

Svein Sundby

72063 COMPARING INTERGLACIAL CLIMATES: A CASE STUDY OF GREENLAND ICE CORE IMPURITIES .................................................................................................................................285

Anders Svensson, M Bigler, E Ketner, M Nielsen, D Dahl-Jensen

72064 THE THULE CULTURE IN RELATION TO CHANGES IN CLIMATE AND ENVIRONMENT IN NORTHEAST GREENLAND, 1400–1850 AD .............................................................................................................286

Mikkel Sørensen, J T Pedersen, A B Gotfredsen, B Grønnow, B H Jakobsen, H C Gulløv, A Kroon, J F Jensen, M Meldgaard

72065 HOW DO WE LEARN ABOUT CLIMATE SENSITIVITY IN THE FUTURE? ..............................................................................................................................288

Katsunori Tanaka, B O'Neill

72066 THE PHYTOPLANKTON RECORD OF THE END-CRETACEOUS WARMING IN THE BOREAL REALM AND THE PACIFIC OCEAN ...........................................................................................................289

Nicolas Thibault, N Schoofs, F Saur, L Stemmerik

72067 LAND USE AND CLIMATE CHANGE, HISTORICAL SIMULATIONS WITH EC-EARTH ...........................................................................................................................290

Michiel Van Der Molen, B Van Den Hurk, W Hazeleger

72068 STRATIGRAPHICAL DATING OF ICE CORES USING HIGH RESOLUTION PROFILES ..........................................................................................................................291

Mai Winsstrup, A Svensson
SESSION 8 – EARTH SYSTEM FEEDBACKS AND CARBON SEQUESTRATION

ORAL PRESENTATIONS

82001 GLOBAL CARBON SOURCES AND SINKS: 2007 UPDATE .........................................................292
Pep Canadell, C Lequere, M Ranaupch, P Ciais, T Conway, C Field, S Houghton, G Marland
82002 BIOGEOCHEMICAL FEEDBACKS IN THE EARTH SYSTEM ..................................................294
Iain Colin Prentice
82003 FUTURE CLIMATE CARBON CYCLE FEEDBACKS, REDUCING UNCERTAINTIES THROUGH PROCESS EVALUATION .................................................................295
Pierre Friedlingstein
82004 LAND-SURFACE-CLOUD COUPLING AND CLIMATE CHANGE ...........................................296
Ahm K. Beis
82005 CLIMATE CHANGE IN AN ARCTIC MOUNTAINOUS AREA IN THE PERIOD 1900–2100 AND THE EFFECT ON PERMAFROST AND THE ECO SYSTEM CARBON STOCKS .................................................................297
Birser Ulf Hansen, C Siggaard, M Tamstorf, B Elberling, T Friborg, K M Iversen, M Rasch
82006 GREENHOUSE GAS FLUXES AT A CONTINENTAL TUNDRA SITE IN NE SIBERIA AND RADIATIVE FORCING OF ADVANCING OF THE GROWING SEASON .................................................299
Michiel Van Der Molen, K Van Huusveden, F-J Parmentier, B De Jeu, T Holme, H Dobman
82007 CLIMATIC FEEDBACKS IN ECOSYSTEMS OF THE ARCTIC REGION ........................................300
Thomas Friibors, J Falk, L Groendahl, B U Hansen, M Herbst, T Johansson, I Kiepe, H Soegaard
82008 OCEAN IRON FERTILIZATION: AN EXAMINATION OF SEQUESTRATION POTENTIAL, ENVIRONMENTAL IMPACTS AND FEEDBACKS .........................................................301
Marsaret Leinen, D Whaley
82009 INCREASING CARBON STORAGE IN INTACT AFRICAN TROPICAL FORESTS: IMPLICATIONS FOR THE GLOBAL CARBON CYCLE ........................................................................................................294
82010 THE ROLE OF LAND USE AND LAND COVER IN STABILIZING ATMOSPHERIC CO2 .................................................................................................................................303
James Edmonds

POSTER PRESENTATIONS

82011 CLIMATE CHANGE AND ECOSYSTEMS – NEW CHALLENGES, TRENDS AND SOLUTIONS IN RESEARCH .......................................................................................................................304
Clous Baser, L Lindend, K Filegaard, I Schmidt
82012 HOTSPOTS OF GREENHOUSE GAS EMISSIONS – REDUCING THE CARBON SINK POTENTIAL OF FOREST SOILS ........................................................................................................306
Jesper Rits Christiansen, P Gundersen, L Vesterdal
82013 HOW MUCH CARBON IS SEQUESTERATED IN FOREST SOILS? IS IT ENHANCED BY NITROGEN DEPOSITION AND FOR HOW LONG? .................................................................307
Per Gundersen, N B Dise, J K Schmidt, K Hansen, L Vesterdal
82014 IS NITROGEN DEPOSITION THE MAIN DRIVER OF INCREASING CARBON SEQUESTRATION IN A DANISH BEECH FOREST? ..................................................................................308
Klaus Steenberg Larsen, A Jhrom, K Filegaard, P Ambus, M S Carter, C Reter
82015 WATER USE EFFICIENCY AS A MEASURE TO ASSESS FOREST CARBON UPTAKE FOR DIFFERENT MANAGEMENT STRATEGIES ......................................................................................309
Mai-Lena Lindersen, T N Mikkelsen, A Jhrom, A Lindroth, K Pilegaard
82016 EFFECTS OF CLIMATE CHANGE ON CARBON SEQUESTRATION IN A DANISH BEECH FOREST .................................................................................................................................311
Kim Pilegaard, E Dellov, A Jhrom
82017 CLIMATE CHANGE FACTORS INCREASE AMMONIUM, AMINO ACIDS, DON AND DOC IN SOIL SOLUTION IN A SUBARCTIC BIRCH FOREST IN NORTHERN SWEDEN .............................................312
Biarme W Strobel, M Olored, R Giesler
82018 SOIL CARBON SEQUESTRATION FOLLOWING AFFORESTATION IN DENMARK, SWEDEN AND THE NETHERLANDS ........................................................................................................313
Lars Vesterdal, M-B Johannson, C Van Der Salm, K Hansen
82019 THE LAND CO2 SINK AND SOIL CARBON ................................................................................315
Michiel Van Der Molen, H Dobman, A Freibauer

SESSION 9 – DETECTION AND ATTRIBUTION: STATE OF PLAY IN 2009

ORAL PRESENTATIONS

92001 HOW DOES ATTRIBUTABLE HUMAN INFLUENCE ON CLIMATE CONSTRAIN FORECASTS OF THE FUTURE? ..................................................................................................................316
Myles Allen, D Frame, C Huntingford, C Jones, J Lowe, M Meinshausen, N Meinshausen
92002 RECENT PROGRESS ON DETECTION AND ATTRIBUTION OF THE WATER CYCLE .................................................................................................................................317
Peter Stot
<table>
<thead>
<tr>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>92003 HUMAN-MODIFIED TEMPERATURES INDUCE SPECIES CHANGES: JOINT</td>
<td>318</td>
</tr>
<tr>
<td>ATtribution</td>
<td></td>
</tr>
<tr>
<td>Terry Root, D P Macinnneswski, M D Mantrantrea, S H Schneider</td>
<td></td>
</tr>
<tr>
<td>92004 CAN WE REGIONALISE ADAPTATION WHEN WE ARE CHALLENGED BY</td>
<td>319</td>
</tr>
<tr>
<td>REGIONALISING DETECTION?</td>
<td></td>
</tr>
<tr>
<td>Jean Palutikof</td>
<td></td>
</tr>
<tr>
<td>92005 POST IPCC AR4 BIOLOGICAL AND PHYSICAL IMPACT DATA ANALYSIS</td>
<td>320</td>
</tr>
<tr>
<td>Cynthia Rosenzewieg</td>
<td></td>
</tr>
<tr>
<td>92006 DISCERNABLE EFFECTS OF CLIMATE CHANGE ON CROP PRODUCTION</td>
<td>321</td>
</tr>
<tr>
<td>Peter Gregory</td>
<td></td>
</tr>
<tr>
<td>92007 CLIMATE CHANGE AND EXTREME WEATHER</td>
<td>322</td>
</tr>
<tr>
<td>Greg Holland</td>
<td></td>
</tr>
<tr>
<td>92008 DETECTION AND ATTRIBUTION: THE CASE OF ESCALATING DAMAGE FROM</td>
<td>324</td>
</tr>
<tr>
<td>EXTREME EVENTS</td>
<td></td>
</tr>
<tr>
<td>Roger Pielke</td>
<td></td>
</tr>
<tr>
<td>92009 FROZEN CARBON: A TIME BOMB IN THE FUTURE?</td>
<td>325</td>
</tr>
<tr>
<td>Philippe Coust, D Khvorostianov, S Zimov, G Kremner, P Friedlingstein, S Piao, C Koren</td>
<td></td>
</tr>
<tr>
<td>92010 THE ETHICAL AND PRACTICAL CONSEQUENCES OF GEOENGINEERING FROM</td>
<td>326</td>
</tr>
<tr>
<td>THE VIEWPOINT OF THE EARTH AS A SELF REGULATING SYSTEM WITH THE GOAL</td>
<td></td>
</tr>
<tr>
<td>OF SUSTAINING HABITABILITY</td>
<td></td>
</tr>
<tr>
<td>James Lovelock</td>
<td></td>
</tr>
<tr>
<td>92011 COUPLING CLIMATE MODELS WITH HUMAN DECISION MAKING</td>
<td>327</td>
</tr>
<tr>
<td>Kevin Noone, J Norberg, A Henderson-Sellers</td>
<td></td>
</tr>
<tr>
<td>92012 DETECTION AND ATTRIBUTION SINCE THE PRODUCTION OF THE IPCC</td>
<td>328</td>
</tr>
<tr>
<td>FOURTH ASSESSMENT REPORT</td>
<td></td>
</tr>
<tr>
<td>Lucka Kafiez Bogunjai</td>
<td></td>
</tr>
</tbody>
</table>

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>92013 DETECTION AND UNDERSTANDING OF CLIMATIC RESPONSE TO URBANIZATION OVER MAJOR CITIES OF INDIA</td>
<td>330</td>
</tr>
<tr>
<td>Amit Dhorde, A Wakhare</td>
<td></td>
</tr>
<tr>
<td>92014 CAUSES FOR THE RECENT CHANGES IN COLD AND HEAT RELATED MORTALITY IN UK AND WALES</td>
<td>332</td>
</tr>
<tr>
<td>J Pommereau, E Piggott, J A Seibert, P Karlsson, P Troch</td>
<td></td>
</tr>
<tr>
<td>92015 COMPARISON OF THE GLOBAL ESTIMATES OF CARBON DIOXIDE FROM SATELLITE AND IN SITU MEASUREMENTS</td>
<td>334</td>
</tr>
<tr>
<td>Carlos Garcia-Soto</td>
<td></td>
</tr>
<tr>
<td>92016 THE ROLE OF THE SUN IN CLIMATE CHANGE</td>
<td>336</td>
</tr>
<tr>
<td>Katya Georgieva</td>
<td></td>
</tr>
<tr>
<td>92017 THE ECONOMIC IMPACT OF CLIMATE CHANGE ON AGRICULTURE IN CAMEROON</td>
<td>339</td>
</tr>
<tr>
<td>Cornelius Lantin, T Forfang</td>
<td></td>
</tr>
<tr>
<td>92018 ESTIMATION OF PERMAFROST THAWING RATES IN THE SUB-ARCTIC USING RECESSION FLOW ANALYSIS</td>
<td>340</td>
</tr>
<tr>
<td>Steve Lyon, G Destourni, R Giesler, C Humborg, M Morkh, J Seibert, J Karlsson, P Troch</td>
<td></td>
</tr>
<tr>
<td>92019 IMPACT OF CLIMATE VARIATIONS ON THE NORTH-EAST ATLANTIC SHELF-BREAK SYSTEMS: LESSONS FROM A RECENT PAST</td>
<td>341</td>
</tr>
<tr>
<td>Ilaria Nardello, C Lam, C Caliskan, H Cannaby, G Nolan, H Hanau</td>
<td></td>
</tr>
<tr>
<td>92020 AN INTEGRATED COASTAL SIMULATOR FOR ASSESSING THE IMPACTS OF CLIMATE CHANGE</td>
<td>343</td>
</tr>
<tr>
<td>Robert Nicholls, M Moskoch, S Hanson</td>
<td></td>
</tr>
<tr>
<td>92021 CONVECTIVE ORIGIN OF STRATOSPHERIC WATER VAPOR?</td>
<td>344</td>
</tr>
<tr>
<td>Johannes K Nielsen, N Larsen, T Christensen, S Khaykin, J P Pommereau</td>
<td></td>
</tr>
<tr>
<td>92022 RE-READING THE IPCC REPORT: AEROSOL REGIONAL DIMMING, DROUGHTS AND ENSO EVENTS</td>
<td>345</td>
</tr>
<tr>
<td>Keith Potts</td>
<td></td>
</tr>
<tr>
<td>92023 WIND SPEED TRENDS OVER THE CONTIGUOUS USA</td>
<td>347</td>
</tr>
<tr>
<td>Sara C Pryor, R J Barrhmmie, G S Takle</td>
<td></td>
</tr>
<tr>
<td>92024 THE GPS RADIO OCCLUSION RECORD – A NOVEL DATASET FOR ATMOSPHERIC CHANGE DETECTION</td>
<td>349</td>
</tr>
<tr>
<td>Andrea K Steiner, G Kirchengast, B C Lackner, G C Heeger, B Pirshcher, M Borsic, U L Foelsche</td>
<td>5</td>
</tr>
<tr>
<td>92025 N2O EMISSION AND NH3 VOLATILIZATION FROM IRRIGATED COMMON BEANS IN ZERO TILLAGE IN BRAZILIAN CERRADO</td>
<td>350</td>
</tr>
<tr>
<td>92026 EARLY DETECTION OF THE GLOBAL WARMING IMPACT ON PERMAFROST IN EAST ASIA</td>
<td>353</td>
</tr>
<tr>
<td>Qinne Xu, Watanabe, Q Xiao, T Wu, J Liu, O Bathishig</td>
<td></td>
</tr>
<tr>
<td>92027 THE OBSERVED AND SIMULATED ANATOMY OF OCEAN TEMPERATURE TRENDS</td>
<td>355</td>
</tr>
<tr>
<td>Susan Wiffels, P Barker, T Cowan, A Sullivan, M Feng</td>
<td></td>
</tr>
</tbody>
</table>
92028 WILL NUTRIENT CYCLES IN A TROPICAL MONTANE FOREST IN ECUADOR BE AFFECTED BY A CHANGING ELEMENT COMPOSITION OF RAINFALL?

Hans Wallaert, G O Martinson, J Homeier, E Veldkamp, W Wilcke

SESSION 10 – EQUITY BETWEEN SECTORS AND INDIVIDUALS WITHIN COUNTRIES

ORAL PRESENTATIONS

102001 VARIATION IN HOUSEHOLD CO2 EMISSIONS AND THE CONSEQUENCES FOR BURDEN SHARING

Annemarie C Kerkhof, R M J Benders, H C Moll

102002 TROPICAL FOREST PRODUCT MARKETS AND ADDRESSING ADAPTATION PRIORITIES OF FOREST COMMUNITIES IN WEST AND CENTRAL AFRICA

Johnson Ikem, M Idinoba, K Fobissie, A Avona, O Somorin

102003 OPPORTUNITIES FOR MITIGATION: CONSIDERING THE GENDER GAP

Susan Buckingham, J E Da Veiga

102004 ‘GROUND-UP’ INTERPRETATION OF FAIR BURDEN-SHARING WITHIN COUNTRIES – AN ENTITLEMENT TO EQUITABLE HOUSEHOLD ENERGY SERVICES

Narasimha Rao

102005 POLICY IMPLICATIONS OF POST-2012 ALLOCATION BASED ON INDIVIDUAL EMISSIONS

Shrishal Chaturavarty, A Chikkatur, H De Coninck, S Pacala, R Socolow, M Tavoni

102006 INEQUALITY AND THE MISSING COMMON GOOD: CHALLENGES TO CLIMATE ADAPTATION IN THE NEW (NEOLIBERAL) WORLD ORDER

Glenn Fieldman

102007 EQUITY IN THE CLIMATE REGIME: THE FORGOTTEN 2.5 BILLION

Ambuj Sagar

102008 BIOFUELS, POVERTY, AND GROWTH: A COMPUTABLE GENERAL EQUILIBRIUM ANALYSIS OF MOZAMBIQUE

C Arndt, B Ribeiro, F Turri, J Thurlow, R Uate

102009 METHANE AND THE NATURAL DEBT: A COMBINED INDEX OF RESPONSIBILITY

Kirk R Smith, J V Rogers

102010 VULNERABILITY, ADAPTABILITY AND MITIGATION OF THE CONTEXT OF CHALLENGES OF CLIMATE CHANGE: THE BALANCE OF BENEFITS IN TRADITIONAL AND URBAN PARADIGMS IN GHANA

Jones Lewis Arthur

102011 DOES THE PHILOSOPHICAL LITERATURE SUPPORT AN EQUAL PER CAPITA ALLOCATION OF EMISSIONS RIGHTS WITHIN NATIONS?

Richard Starkey

102012 CLIMATE POLICY AND THE PROBLEM OF COMPETITIVENESS: BORDER TAX ADJUSTMENTS OR INTEGRATED EMISSION TRADING?

Victoria Alexeeva-Talebi, Andreas Löschel, Tim Mennel

POSTER PRESENTATIONS

102013 PROGRESSIVITY IN THE INCIDENCE OF A 'CAPACITY AND RESPONSIBILITY TAX' TO FUND CLIMATE MITIGATION AND ADAPTATION: EXTENDING THE GREENHOUSE DEVELOPMENT RIGHTS FRAMEWORK

Klaus Eisenack, O Edenhofer, M Kalkuhl

102014 EFFICIENCY AND DISTRIBUTION EFFECTS OF RESOURCE AND ENERGY TAXES FOR CLIMATE PROTECTION

Frédéric Gherzi, J-C Hourcade, E Combet

102015 CARBON TAX AND EQUITY: A SHEER MATTER OF POLICY DESIGN

Frédéric Gherzi, J-C Hourcade, E Combet

102016 TIME AND SPACE MATTER: HOW URBAN CLIMATE POLICIES CREATE INEQUALITY

F Gaussorf, Stéphane Hallegatte, A Lobell

102017 INTEGRATING FLOOD CONTROL AND WATER STORAGE DEVELOPMENT IN THE FACE OF ANTICIPATED CLIMATE FORCINGS

Pal Hegedus, R Shibatani

SESSION 11 – EQUITY BETWEEN NATIONS AND REGIONS

ORAL PRESENTATIONS

112001 COMMON BUT DIFFERENTIATED RESPONSIBILITIES’ DEFINED ON THE BASIS ON EQUITY FOR FUTURE CLIMATE CHANGE REGIME

Sanjay Vashist, M Alam, S Krishnaswamy, P Bahouth, V Bartra, T Athanasiou, S Singer, A Hill
112025 ESTIMATING THE GLOBAL MEAN TEMPERATURE RESPONSE TO GREENHOUSE GAS EMISSIONS REDUCTIONS WITH NON-UNIFORM INTERNATIONAL ACTION .................................................. 410

José Goldemberg, S Coelho

112026 HOW TO ENGAGE DEVELOPING COUNTRIES IN MITIGATION ACTIONS? ................................................................. 411

Sanja Klinsky, H Dowlatabadi

112027 INEQUITY IN CLIMATE CHANGE MITIGATION AND ADAPTATION CAPACITIES: THE CASE FOR NIGERIA AND SUB-SAHARAN AFRICA ............................................................. 412

Richard U. U. Inwve, J E Otu, J K Ukwayi

112028 CONCEPTUALIZATIONS OF JUSTICE IN CLIMATE POLICY ............................................................................................ 413

Jan Kunnas

112029 THE THEORY OF JUSTICE IN A WARMING CLIMATE ........................................................................................................... 414

S Soimakallio, Laura Saikku

112030 TARGETS, TIMETABLES AND TRADEOFFS: THE IMPLICATIONS OF NATIONAL CO2 EMISSIONS GOALS IN THE CONTEXT OF GLOBAL CLIMATE STABILIZATION .......................................................... 415

Bryan Misono

112031 ECONOMIC MODELS AND THE RIGHTS OF FUTURE GENERATIONS .......................................................................................... 416

Hiromi Nishimoto, N Kanie, T Hijoka, K Morita

112032 ECONOMICS, ETHICS AND CLIMATE CHANGE .................................................................................................................. 417

Dominic Roser

112033 IMPLICATIONS FOR NATIONAL EMISSION REDUCTION TARGETS OF HALVING GLOBAL GREENHOUSE GAS EMISSIONS BY 2050 .............................................................................. 418


112034 ADAPTING TO CLIMATE CHANGE IN THE UNEQUAL WORLD: PATTERNS OF VULNERABILITIES AND THE DISTRIBUTION OF ADAPTATION BURDEN IN THE NEPAL'S HIMALAYAS ........................................................................................................... 419

Jan Kunnas

112035 THE NEED TO MAINSTREAM CLIMATE CHANGE ADAPTATION FUNDING ........................................................................... 420

Margaret Peloso

112036 THE ROLE OF THE LAW IN THE PROTECTION OF THE CLIMATE ............................................................................................. 421

Terry Barker, S S Scrieciu, D Taylor

112037 EQUITY ASPECTS OF A BIOSPHERE CARBON STOCK MANAGEMENT RESPONSE TO THREATENED CLIMATIC CATASTROPHE ........................................................................................................... 422

Maria Silvia Muylauert De Araujo

112038 MITIGATING THE IMPACT OF UNCERTAINTIES IN BASE YEAR AND GDP FORECASTS ON INTERNATIONAL EFFORT SHARING CALCULATIONS ........................................................................... 423

Bryan Misono

112039 ESTIMATION OF CARBON EMISSION EMBODIED IN CHINESE INTERNATIONAL TRADE IN THE VIEW OF FINAL DEMANDS ........................................................................................................... 424

José Eli Da Veiga, Petterson Molina Vale

112040 DOES GEOGRAPHY MATTER FOR THE CLEAN DEVELOPMENT MECHANISM? ........................................................................... 425

Hiromi Nishimoto, Y Hijioka, K Morita

112041 CO2 ARITHMETICS AND GEOPOLETHICS ............................................................................................................................. 426

Yongfu Huang, T Barker

SESSION 12 – EQUITY IN TIME: PAST, PRESENT AND FUTURE EMITTERS AND VICTIMS

ORAL PRESENTATIONS

122001 CLIMATE CHANGE, SOCIAL JUSTICE AND DEVELOPMENT ........................................................................................................... 427

Terry Barker, S S Scrieciu, D Taylor

122002 ECONOMIC MODELS AND THE RIGHTS OF FUTURE GENERATIONS ........................................................................................................... 428

Dominic Roser

122003 ECONOMICS, ETHICS AND CLIMATE CHANGE ............................................................................................................................. 429

Simon Dietz, C Hepburn, N Stern

122004 COP-15 AND THE ETHICS OF CLIMATE CHANGE .................................................................................................................. 430

Jose Eli Da Veiga, Petterson Molina Vale

122005 METHODOLOGY OF SIMPLIFIED BRAZILIAN PROPOSAL AND THE LONG-TERM CONTRIBUTION TO TEMPERATURE RISE ........................................................................................................... 431

Hiromi Nishimoto, S. Matsumoto

122006 INDIVIDUAL PREFERENCES FOR AVERSION TO PUBLIC AND PRIVATE RISK, INEQUALITY, AND TIME – AN EMPIRICAL STUDY ........................................................................................................... 432

Jennifer Helgeson, H Seien, G Akintron, S Dietz, C Hepburn

122007 SUSTAINABILITY AS GENEROSITY ............................................................................................................................................ 433

Jan Kunnas
POSTER PRESENTATIONS

122008 INTERNATIONAL CO2 EMISSIONS DISTRIBUTION ANALYSIS FROM INTEGRATED ASSESSMENT MODELS .......................................................... 441
Nicola Cantore, M Canavari

122009 GLOBAL JUSTICE AND CLIMATE CHANGE ................................................................................................................. 442
Kristian Høyer Toft

122010 BRAZIL IN THE GLOBAL ARENA OF MITIGATING CLIMATE CHANGE: NATIONAL INTEREST, GLOBAL EQUITY AND AMBITAIONCE ............................................................................................................. 443
Eduardo Viola

SESSION 13 – EQUITY BETWEEN HUMANS AND THE REST OF NATURE

ORAL PRESENTATIONS

132001 EFFECTS OF EUROPEAN BIOENERGY POLICIES AND TARGETS ON LAND USE ALLOCATIONS AND NATURE CONSERVATION OPTIONS ............................................................................................................ 444
Christine Schleupner, U A Schneider

132002 WHY SHOULD WE CARE FOR FUTURE GENERATIONS? ........................................................................................................ 445
Furio Cerutti

132003 FRAMING NATURAL RESOURCE MANAGEMENT FOR CLIMATE RESILIENCE ........................................................................................................... 447
Marilyn Averill

132004 HUMAN HAPPINESS – FRIEND OR FOE? ........................................................................................................................................ 448
Mikko Yrjönsuuri

132005 EXTINCTION, SUFFERING, AND THE CRUCIFORMITY OF THE COSMOS .......................................................................................... 449
Kyle Van Houtan

132006 CLIMATE CHANGE AND BIODIVERSITY PRESERVATION: A NON-ANTHROPOCENTRIC PERSPECTIVE ........................................................................................................... 450
Anders Melin

132007 ENVIRONMENTAL JUSTICE, HUMAN RESPONSIBILITY AND EQUITY BETWEEN HUMANS AND NATURE ........................................................................................................... 451
Catherine Larrère

132008 CLIMATE CHANGE CHALLENGE: THE INEVITABLE IMPACT ON HUMAN RIGHTS; APPROACHES TO RESTRAIN ITS EFFECTS IN THE 21ST CENTURY AND BEYOND ........................................................................................................... 452
Maithri Srikant

SESSION 14 – DIFFERENTIAL EFFECTS OF CLIMATE CHANGE ON HUMAN HEALTH AND WELL-BEING

ORAL PRESENTATIONS

142001 A PROACTIVE PUBLIC HEALTH APPROACH TO CLIMATE CHANGE: TACKLING THE INFECTIOUS DISEASE CHALLENGE .................................................................................................................. 453
Jan Semenza, J Sok

142002 POTENTIAL IMPACT OF, AND ADAPTATION TO, CLIMATE CHANGE INFLUENCE ON SCHISTOSOMIASIS TRANSMISSION IN CHINA – A) EXPERIENCES FROM CHINA ........................................................................................................... 454
Xiao-Nong Zhou, K Yang, G-J Yang, X-H Wu, T K Kristensen, R Bergquist, J Utzinger

142003 POTENTIAL IMPACTS OF CLIMATE CHANGE ON SNAIL-BORNE DISEASE IN SUB-SAHARAN AFRICA – B) EXPERIENCES FROM SUB-SAHARAN AFRICA ........................................................................................................... 455
Anna-Sofia Stensgaard, T K Kristensen, C Rahbek, P Mohlenberg

142004 CLIMATE CHANGE IMPLICATIONS FOR CONTAMINANT EXPOSURES IN THE ARCTIC ........................................................................................................... 456
Philippe Grandjean, P Bjerregaard, P Weihe

142005 CLIMATE CHANGE, FOOD YIELDS, FOOD SECURITY, AND HEALTH ........................................................................................................... 457
Colin D Butler

142006 PHYSIOLOGICAL HEAT STRESS DUE TO CLIMATE CHANGE: RISK DIFFERENTIALS EXACERBATES HEALTH INEQUITIES ........................................................................................................... 458
Tord Kjellström, B Lenke

142007 QUANTIFYING REGIONAL HEAT STRESS INCREASES IN WARMER AND MORE HUMID CLIMATES ........................................................................................................... 460
K Willett, Steven Sherwood

142008 ESTIMATING THE HEALTH BURDEN OF CURRENT AND FUTURE EXTREME EVENTS ........................................................................................................... 461
Sari Kovats

142009 HEALTH RISK OF CURRENT AND FUTURE HEAT STRESS IN EAST ASIA ........................................................................................................... 462
Yasushi Honda

142010 PROJECTED IMPACTS ON HEAT-RELATED MORTALITY FROM CHANGES IN THE MEAN AND VARIABILITY OF TEMPERATURE WITH CLIMATE CHANGE ........................................................................................................... 463
Simon N Gosling, J A Lowe, G R McGregor

142011 ADAPTATION TO CLIMATE CHANGE HEALTH IMPACTS IN PORTUGAL ........................................................................................................... 465
Elsa Castimiro
### POSTER PRESENTATIONS

<table>
<thead>
<tr>
<th>Poster ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>142012</td>
<td>HEALTH AND CLIMATE CO-BENEFITS: A SURVEY OF THE MITIGATION LANDSCAPE</td>
<td>Kirk R Smith</td>
</tr>
<tr>
<td>142013</td>
<td>DEATHS IN A SUNBURNT COUNTRY: DIFFERENTIAL MORTALITY RESPONSES TO TEMPERATURES IN A 'HOT' COUNTRY</td>
<td>Hilary Bambrick, K Dear, I Hanigan</td>
</tr>
<tr>
<td>142014</td>
<td>CLIMATE CHANGE AND POPULATION HEALTH IN CHINA: WHAT DO WE KNOW AND WHAT COULD WE DO?</td>
<td>Peng Bi</td>
</tr>
<tr>
<td>142015</td>
<td>A SURVEY OF ELDERLY PERCEPTION TO HEAT WAVES IN ADELAIDE, SOUTH AUSTRALIA: A QUALITATIVE STUDY</td>
<td>Peng Bi, R Van Iersel</td>
</tr>
<tr>
<td>142016</td>
<td>METHODOLOGICAL ISSUES IN THE STUDY OF CLIMATE AND GASTROENTERITIS</td>
<td>Ainslie Butler, G Hall</td>
</tr>
<tr>
<td>142017</td>
<td>IMPACT OF CLIMATE CHANGE ON POOR AND MARGINALIZED PEOPLE IN HIGH MOUNTAIN REGION, NEPAL</td>
<td>Shambhu Charmakar, D Mijar</td>
</tr>
<tr>
<td>142018</td>
<td>WELLBEING AND CLIMATE CHANGE: THE PSYCHOLOGICAL CONSEQUENCES OF FLOODING</td>
<td>Andrew Crabtree</td>
</tr>
<tr>
<td>142019</td>
<td>HEALTH ADAPTATION CHOICES AT LOCAL AND REGIONAL SCALES</td>
<td>Kristie Ebi</td>
</tr>
<tr>
<td>142020</td>
<td>GLOBAL HEALTH EQUITY AND CLIMATE STABILISATION – NEED FOR A COMMON AGENDA</td>
<td>Sharon Fried, Michael Marmot, Tony McMichael, Tord Kjellstrom, Denny Yagero</td>
</tr>
<tr>
<td>142021</td>
<td>FRAMEWORK FOR COPD FORECASTING IN THE UK USING WEATHER AND CLIMATE CHANGE PREDICTIONS</td>
<td>Deborah Hemming, A Colman, P James, N Kaye, P Marno, D McNeill, R McCarthy, T Laing-Morton, E Palin, P Sachon, C Sarran, I Taylor</td>
</tr>
<tr>
<td>142022</td>
<td>HEALTH IMPACTS OF CLIMATE CHANGE MITIGATION</td>
<td>Virpi Kollanius, M Jantunen, M V Pohjola, P Altoniemi, J T Tuomisto</td>
</tr>
<tr>
<td>142023</td>
<td>A NOVEL METHODOLOGY TO IDENTIFY VULNERABLE POPULATIONS DURING HEAT WAVES</td>
<td>George Lubers, D Johnson, M McGeachin</td>
</tr>
<tr>
<td>142024</td>
<td>CLIMATE CHANGE, POVERTY AND DEVELOPMENT IN THE COAST REGION OF TANZANIA</td>
<td>Adolfo Mascarenhas</td>
</tr>
<tr>
<td>142025</td>
<td>CLIMATE CHANGE AND PUBLIC HEALTH ADAPTATION MEASURES IN THE UNITED STATES</td>
<td>Paul Mehta, G Luber</td>
</tr>
<tr>
<td>142026</td>
<td>GENDER DIMENSIONS OF DIFFERENTIAL HEALTH EFFECTS OF CLIMATE CHANGE INDUCED WATER-LOGGING: A CASE STUDY FROM COASTAL BANGLADESH</td>
<td>Sharmind Neelormi, N Adri, A U Ahmed</td>
</tr>
<tr>
<td>142027</td>
<td>CLIMATE CHANGE ADAPTATION ACTIONS IN NORTHERN AUSTRALIAN COMMUNITIES USING SCENARIO MODELLING</td>
<td>Javier Puig, C Huchery, N Collier, S Garnett</td>
</tr>
<tr>
<td>142028</td>
<td>CLIMATE CHANGE: DIRECT AND INDIRECT IMPACT ON THE UPSURGE OF TICK-BORNE ENCEPHALITIS (TBE) IN ITALY</td>
<td>Annapaola Rizzoli</td>
</tr>
<tr>
<td>142029</td>
<td>GLOBAL HEALTH AND ECONOMIC IMPACTS OF FUTURE OZONE AND PARTICULATE POLLUTION</td>
<td>Noelle Selin, J Reilly, S Paltsev, R Prinn</td>
</tr>
<tr>
<td>142030</td>
<td>COMBINED ANALYSIS OF AIR POLLUTION AND AEROALLERGENS IN A CLIMATIC PERSPECTIVE</td>
<td>Carsten Ambelas Skjøth, T Sigsgaard, J Sommer, O Hertel, P Wahlin, H Petersen</td>
</tr>
<tr>
<td>142031</td>
<td>COPENHAGEN: A HARINGER FOR RAGWEED (AMBROSIA) IN NORTHERN EUROPE UNDER CLIMATE CHANGE?</td>
<td>Carsten Ambelas Skjøth, H Petersen, J Sommer, M Smith</td>
</tr>
<tr>
<td>142032</td>
<td>LOCAL GOVERNMENTS' PERCEPTION ON EFFECTS OF CLIMATE CHANGE ON HUMAN HEALTH AND WELL-BEING</td>
<td>Jeny Staykova</td>
</tr>
<tr>
<td>142033</td>
<td>CLIMATE CHANGE AND THE HUMAN IMMUNE SYSTEM: ULTRAVIOLET RADIATION &amp; IMMUNITY STUDY, ASSESSING THE IMPACT OF ULTRAVIOLET RADIATION ON THE IMMUNE RESPONSE TO PRIMARY VACCINATION IN AUSTRALIAN ADULTS</td>
<td>Ashwin Swaminathan, R Lucas, M Cook, K Dear, A J McMichael</td>
</tr>
<tr>
<td>142034</td>
<td>VULNERABILITY TO HEAT-RELATED MORBIDITY IN COPENHAGEN, DENMARK</td>
<td>Janine Wichmann, Z Jovanovic Andersen, M Ketzel, S Loft</td>
</tr>
<tr>
<td>142035</td>
<td>FUTURE TEMPERATURE-RELATED MORBIDITY BURDENS OF SALMONELLOSIS AND ROSS RIVER VIRUS INFECTION IN SOUTH AUSTRALIA, A SCENARIO-BASED PROJECTION</td>
<td>Ying Zhang, P Bi, J Hiller</td>
</tr>
</tbody>
</table>
142036 PROJECTED TEMPERATURE-RELATED DISABILITY BURDENS OF BACILLARY DYSENTERY IN TEMPERATE AND SUBTROPICAL CITIES OF CHINA

Ying Zhang, P Bi, Y Sun, J Hiller

SESSION 15 – AVOIDING LAND-COVER CHANGE TO REDUCE CARBON EMISSIONS

ORAL PRESENTATIONS

152001 ENSURING ‘PERMANENCE’ IN FOREST CARBON SINKS: INSIGHTS FROM CONTRACT THEORY

Charles Palmer, M Ohndorf, I Mackenzie

152002 PROVIDING FINANCIAL SUPPORT WHERE ACTION TAKES PLACE: "COMPENSATED SUCCESSFUL EFFORTS" FOR REDD

Romain Pirard, P Combes-Motel, J-L Combis

152003 REDUCING DEFORESTATION IS ESSENTIAL FOR CONSTRAINING GLOBAL TEMPERATURES TO 2°C ABOVE PRE-INDUSTRIAL LEVELS

Rachel Warren, J Price, B Strassburg, J Lowe, S De La Nava Santos, S Raper, N Vaughan

152004 CLIMATE POLICY DESIGN AND FOREST CARBON SEQUESTRATION

Steven Rose, B Sohngen

POSTER PRESENTATIONS

152005 EXPLORING THE RELATIONSHIP BETWEEN AVOIDED CARBON EMISSIONS POTENTIAL AND BIODIVERSITY VALUE – IS THERE A ROLE FOR BIODIVERSITY IN REDD?

Matthew Foster, T Brooks, R Jimenez, O M L Kouamé, A Rasolohery, O Coroza

152006 EFFECT OF DISSOLVE ORGANIC CARBON, SOIL AND AIR TEMPERATURE, AND SOIL MOISTURE ON SOIL CO2 FLUX IN DIFFERENT LAND USES

Javed Iqbal, H Ronggui

152007 LINKING REMOTE SENSING AND FIELD DATA TO MODEL CARBON STOCKS IN THE CONGO BASIN: A TOOL FOR REDD

E J Lindquist, Kewin Bach Friis Kamelarczyk

152008 TEMPORARY CARBON SEQUESTRATION CANNOT PREVENT CLIMATE CHANGE

Miko Uwe, Franz Kirschbaum

152009 CLIMATE POLICY: SPATIAL EXPLICIT HETEROGENEITY MATTERS – THE CASE OF TROPICAL DEFORESTATION AT NORTHWESTERN ECUADOR

Daniel Ortega-Pacheco, S Jiang, A Keeler, B Sohngen, D Southgate

152010 COULD CHINA’S AGRICULTURE BE DEVELOPED TO SERVE THE CLIMATE CHANGE MITIGATION? PROPOSAL ON THE KEY FACTORS RESEARCH AND DEMONSTRATION PROJECT FOR THE IMPLEMENTATION OF CARBON LABELING IN CHINA

Genxing Pan

152011 ESTIMATION OF TURNOVER TIME OF SOIL ORGANIC CARBON FROM TEMPERATE STEPPE OF NORTHERN CHINA AND IMPLICATIONS FOR CARBON SEQUESTRATION AFTER GRAZING EXCLUSION

Liping Zhou, H Tang, Y Li

SESSION 16 – INTEGRATING ECONOMIC MODELS AND THE DYNAMICS OF THE CARBON SINKS

ORAL PRESENTATIONS

162001 HOTSPOTS FOR CARBON OFFSETS IN AGRICULTURAL LANDSCAPES: IDENTIFYING THREATS, OPPORTUNITIES AND POLICY RESPONSES TO WIDESPREAD REFORESTATION

Neville Crossman, P Butler, D Summers, B Bryan, J Ward

162002 DEVELOPMENT PATHWAYS AND THEIR FEEDBACK TO ATMOSPHERIC CARBON BUDGET

S Enrique Puliafito, H Cremades

162003 CARBON CYCLE UNCERTAINTY AND CO2 MITIGATION COST

Atsushi Kurosawa

162004 GHG MITIGATION THROUGH BIOENERGY PRODUCTION VERSUS CARBON SINKS ENHANCEMENT: A QUANTITATIVE ANALYSIS

Petr Havlik, U A Schneider, E Schmid, H Bottcher, G Kindermann, S Leduc, M Obersteiner

162005 PRECAUTIONARY FEEDBACK POLICY RULES IN MUICE – AN INTEGRATED CLIMATE-ECONOMY DIFFERENTIAL GAME WITH CLIMATE MODEL UNCERTAINTY

Masnus Hennlock

162006 IMPLICATIONS OF CARBON PRICE DYNAMICS AND ELIGIBILITY OF MITIGATION OPTIONS FOR U.S. FORESTRY AND AGRICULTURE CARBON SINKS

Adam Daisneault, R Beach, B McCrln, D Adams, R Alig, G Latta
162007 INTEGRATED ASSESSMENT MODELING OF LAND-USE CHANGE AND CLIMATE CHANGE IMPACTS ON TERRESTRIAL CARBON STOCKS
Alison Thomson, M Wise, K Calvin, E Clarke, R Sands, B Bond-Lamberty, S Smith, A Janetos, J Edmonds

POSTER PRESENTATIONS

162008 MANAGING FOREST ECOSYSTEMS TO COPE WITH CLIMATE CHANGE: ADAPTATION AND MITIGATION STRATEGIES
Felipe Bravo, V Lemay, R Jandl, K Von Gadow

162009 URBAN AGGLOMERATION ECONOMIES IN CLIMATE POLICY: A CGE MODELING APPROACH
Fabio Grazzi, H Waisman

162010 HOW INNOVATIVE SPACE OBSERVATION TECHNOLOGIES CAN CONTRIBUTE TO THE DEVELOPMENT OF A DYNAMIC AND RELIABLE MARKET FOR FORESTRY BASED CARBON CREDITS
Christophe Nussli

162011 OCEAN IRON FERTILIZATION: RECENT RESULTS, ESTIMATES OF POTENTIAL, AND ECONOMIC CONSIDERATIONS
Daniel Whaley, M Leinen, K Whilden

SESSION 17 – CARBON CAPTURE AND STORAGE: TECHNOLOGY, ECONOMY, SOCIAL ATTITUDES

ORAL PRESENTATIONS

172001 WHAT HAVE WE LEARNT FROM CCS DEMONSTRATION PROJECTS?
John Gale, B Beck, T Dixon

172002 EXPERIENCE WITH CO2 CAPTURE FROM COAL FLUE GAS IN PILOT-SCALE
Jacob Nygaard Knudsen, J N Jensen, P J Vihelmsen, O Biede

172003 OUTLOOK FOR CO2 CAPTURE TECHNOLOGIES
Olav Bolland

172004 UNITED STATES CARBON SEQUESTRATION REGIONAL PARTNERSHIPS
Sean Playnisky, S Klara

172005 GEOLOGICAL STORAGE OF CARBON DIOXIDE: CURRENT STATUS
S M Benson, Peter J Cook

172006 ESTIMATES OF CO2 STORAGE CAPACITY IN EUROPE
Karen Lynng Anthonsen, T Vangkilde-Pedersen, L H Vangkilde-Pedersen

172007 UNDERSTANDING THE IMPACT OF THE LEVEL OF CHARACTERIZATION ON LONG-TERM PERFORMANCE PREDICTIONS AT GEOLGOCO2 SEQUESTRATION SITES
Grant Bromhal, B Harbert, B McPherson, M Deo, P Stauffer, W Carey, B Straatissaer, B Kuichel, H Vixvanathan, D Wildman, R Pawar, G Guthrie

172008 CO2 FIXATION BY MINERAL MATTER; THE POTENTIAL OF DIFFERENT MINERALIZATION ROUTES
Ron Zevenhoven, J Fagerlund

172009 DEVELOPMENT OF A LARGE SCALE CO2 INFRASTRUCTURE, THE CASE OF THE NETHERLANDS
Andrea Ramirez Ramirez, M Van Den Broel, H Groenenberg, F Neele, P Lako

172010 SCALING-UP CARBON DIOXIDE CAPTURE AND STORAGE (CCS) – FROM MEGATONNES TO GIGATONNES
Howard Herzog

172011 RECENT DEVELOPMENTS IN PUBLIC ATTITUDES AND ACCEPTANCE OF CCS: AN OVERVIEW OF RESEARCH ACTIVITIES AND RESULTS IN RECENT YEARS
Peta Ashworth, S Wade, D Reiner, D Daamen, K Itaoka

172012 SHORT-TERM AND LONG-TERM POLICIES TO PROMOTE CCS TECHNOLOGIES
David Reiner

POSTER PRESENTATIONS

172013 THE IEA GREENHOUSE GAS R&D PROGRAMME
John Gale

172014 FULL-SCALE CCS DEMO PLANT AT NORJYLLANDSVÆRKET, DENMARK
Niels Peter Christensen, F Dalhoff, O Biede, M Noer

172015 CSIRO AUSTRALIA POST COMBUSTION CO2 CAPTURE RESEARCH PROGRAM AND RESEARCH HIGHLIGHTS FROM SOLVENT DEVELOPMENT
Moazet Atalla, G Puxty

172016 CARBON DIOXIDE CAPTURE R&D FOR FOSSIL ENERGY POWER PLANTS
Jared Ciferno, T Fout

172017 AQUEOUS AMMONIA PROCESS FOR CO2 CAPTURE
Victor Darted, K Thomsen, W J M Van Well, E H Stenby
### SESSION 18 – POTENTIALS AND LIMITATIONS OF BIOFUELS

#### ORAL PRESENTATIONS

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>182001 BIOMASS FOR BIOFUELS – THE CHALLENGE AND A POSSIBLE WAY FORWARD</td>
<td>Claus Felby, J R Porter, S K Rasmussen, J R Schjørring, T Hamborg Nielsen, Y Sakuragi, W G T Williams</td>
</tr>
</tbody>
</table>
182003 SUSTAINABILITY STANDARDS FOR BIOENERGY – A MEANS TO REDUCE CLIMATE CHANGE RISKS .................................................................................................................................595
Renate Schubert, J Blasch

182004 WORLD BIOFUELS PRODUCTION STUDY: UNDERSTANDING THE CHALLENGES IN MEETING THE NEW U.S. RENEWABLE FUEL STANDARD .................................................................................................................................597
Audrey Lee, B Saxtri, C Difiiglio, T Kaarsber, T S Alsfad

182005 CAN BIOFUELS JUSTIFY CURRENT TRANSPORT POLICIES? .........................................................................................................................598
Jérôme Mercier, A Gathorne-Hardy, Z Mutoch

182006 BIOTECHNOLOGY ENABLING COMMERCIAL BIOFUEL PRODUCTION ........................................................................................................599
Nina Eriksen, S Teter, P Harris, K C McFarl, E Vlaenovo

182007 THE DEVELOPMENT OF PLANTS AS ENVIRONMENTALLY BENIGN GREEN FACTORIES Merging into Synthetic Biology .........................................................................................................................600
Birger Lindberg Møller, P E Jensen, P Ulvskov

182008 DEVELOPMENT OF LOCAL FUEL SYSTEM FOR SUSTAINABLE REGIONAL BIOMASS UTILIZATION .................................................................................................................................................................................................601
Yasuo Igarashi, K Mochizuki, M Takayama, A Sakoda

POSTER PRESENTATIONS

182009 THE INDUSTRIAL DYNAMICS OF TRANSITIONS TO BIO-BASED FEEDSTOCKS: THE CASE OF THE UK .................................................................................................................................................................................................................................602
Simon Bennet, P Pearson, A Bauen

182010 AQUATIC BIOMASS FOR BIOFUELS .................................................................................................................................................................................................................................604
M B Ramsusen, P D Jensen, Annette Bruhn, I L Mouritsen, B Olesen, S Markager, A B Thomsen, B Sander

182011 ESTIMATING THE POTENTIAL OF JATROPHA CURCAS AS A BIOFUEL CROP IN SOUTH INDIA USING SIMULATION RESULTS FROM TWO CROP MODELS .................................................................................................................................................................................................................................605
Sibhunan Das, D Lapola, J Priess

182012 BIOFUELS AND BIODIVERSITY: AN ASSESSMENT OF THE IMPACTS OF BIOFUELS ON BIODIVERSITY AND THE APPROPRIATE POLICY RESPONSES .................................................................................................................................................................................................................................606
A Campbell, Barney Dickson, V Kapos, I Miles, J Scharlemann

182013 GHGS REDUCTION AND CLEAN DEVELOPMENT MECHANISM (CDM) APPLICATION FOR SUSTAINABLE DEVELOPMENT: A CASE STUDY AT A STARCH-PROCESSING FACTORY, THAILAND .................................................................................................................................................................................................................................607
Sathirat Kittipongives

182014 MODELLING THE POTENTIAL IMPACT OF BIO-FUEL CROP PRODUCTION ON NATURAL LAND IN INDIA .................................................................................................................................................................................................................................608
Christina Kölhing, D Lapola, J Koch, R Schellcho, S Mwangi, J Alicano

182015 CHALLENGES OF PROMOTING SUSTAINABLE FOREST ENERGY TECHNOLOGY AND KNOW-HOW .................................................................................................................................................................................................................................609
Leena A Leskinen, L Sikanen, P Leskinen, D Röser, H Viiri, T Peltola

182016 TRANSPORTATION SECTOR STRANDED IN THE CURRENT BIOFUELS – VAGUE SOLUTION – SKEPTICAL APPROACH .................................................................................................................................................................................................................................611
Michal Munti

182017 HISTORICAL CARBON BUDGET OF THE BRAZILIAN ETHANOL PROGRAM .................................................................................................................................612
Sergio Pauca, J R Moreira

182018 LIFE-CYCLE ANALYSIS AND RENEWABLE FUEL GOALS: A REGULATOR’S SCYLLA AND CHARYBDIS .................................................................................................................................................................................................................................613
Adam Reed

182019 AGROBIOFUELS: THE ENVIRONMENTAL IMPACTS OF LAND USE CHANGE .................................................................................................................................................................................................................................614
Jean-Marc Salmo

182020 LIFECYCLE ANALYSIS AND INTERNATIONAL STANDARDS FOR SUSTAINABLE BIOFUELS .................................................................................................................................................................................................................................615
Jürgen Schefran

182021 FIRST AND SECOND GENERATION BIOFUELS UP TO 2030 – POSSIBLE SCENARIOS AND THEIR ENVIRONMENTAL IMPACTS .................................................................................................................................................................................................................................617
Elke Stehfest, G Wolter, A G Prins, B Eickhout, M Banse

SESSION 19 – RENEWABLE ENERGIES: HOW FAR CAN THEY TAKE US?

ORAL PRESENTATIONS

192001 WIND – THE CHALLENGE (FROM A EUROPEAN PERSPECTIVE) .................................................................................................................................................................................................................................619
Erik Lundtang Petersen

192002 PRODUCING RENEWABLE ENERGY IN URBAN SPACES .................................................................................................................................................................................................................................620
Dieter D Genske, L Porsche, A Ruff

192003 BEYOND FEASIBILITY: LINKING THE MEDITERRANEAN REGION’S RENEWABLE ENERGY RESOURCES TO EUROPE – A ROADMAP FOR ADDRESSING THE POLICY CHALLENGES .................................................................................................................................................................................................................................622
Anthony Patt, A Battagli, N Komendantova, M Milford, J Lilliatam

192004 POLYMER SOLAR CELLS FOR SOLAR ENERGY CONVERSION .................................................................................................................................................................................................................................624
Frederik Christian Krebs
SESSION 20 – ENHANCING ENERGY CONSERVATION AND EFFICIENCY

ORAL PRESENTATIONS

202001 THE FACTORS OF URBAN MORPHOLOGY IN GREENHOUSE GAS EMISSIONS: A RESEARCH OVERVIEW ................................................................. 664
  Michael Mehaffy
202002 GLOBAL POLICY FOR DRAMATIC REDUCTION OF ENERGY CONSUMPTION IN BUILDINGS – FACTOR 3 IS BOTH POSSIBLE AND ECONOMIC RATIONAL .................................................. 665
  Jens Laustsen
202003 ENERGY EFFICIENCY IN BUILDINGS: THE ROAD TO A REAL MARKET TRANSFORMATION .................................................. 667
  Christian Kornverl, C Van Aerschot, B Stessen
202004 ENERGY EFFICIENCY POLICIES: A WORLD-WIDE PANORAMA BY THE WORLD ENERGY COUNCIL ................................................................. 668
  Didier Bosseboeuf
202005 REDUCING GREENHOUSE GAS EMISSIONS FROM THE BUILDING SECTOR UNDER THE KYOTO PROTOCOL: CHALLENGES AND OPPORTUNITIES ...................................................................................... 670
  Stephanie Poujaffy, C C Cheng, N Stenningsten
202006 THE MACROECONOMIC REBOUND EFFECT FROM THE IMPLEMENTATION OF ENERGY EFFICIENCY POLICIES AT DIFFERENT END-USE SECTORS AT GLOBAL LEVEL ................................................................. 672
  Athanasios Dagoumas, T Barker
202007 ENERGY EFFICIENCY THE GORDIAN KNOT OF EU AND GLOBAL CLIMATE POLICY: A SCENARIO-BASED POLICY ANALYSIS FOR THE EU ................................................................. 673
  Stefan Lechtenböhmer, S Thomas, R Schüle
202008 ENERGY EFFICIENCY AND DEVELOPMENT FINANCE: LESSONS LEARNED FOR FUTURE APPROACHES ................................................................. 675
  Jochem Harnisch
202009 ENERGY EFFICIENCY IN TRANSPORT SECTOR FOR MITIGATING CLIMATE CHANGE ...................................................................................... 677
  Suzana Ribeiro, A Abreu
202010 SUCCESS AND FAILURES OF ENERGY EFFICIENCY FUNDS AND OBLIGATIONS. WHAT FIVE EUROPEAN SYSTEMS HAVE ACHIEVED, AND WHAT CAN BE LEARNT FROM THEM – A CRITERIA-BASED POLICY ANALYSIS ...................................................................................... 678
  Stefan Thomas
202011 METHODOLOGICAL CHALLENGES FOR ENERGY EFFICIENCY IMPROVEMENT UNDER THE CLEAN DEVELOPMENT MECHANISM ...................................................................................... 679
  Axel Michaelowa, D Hayashi
202012 ENERGY EFFICIENCY TO MEET GLOBAL GOAL – NEED FOR RE PACKAGING TO INDUCE NATIONAL AND TRANSNATIONAL ACTIONS ...................................................................................... 680
  Joyashree Roy
202013 THE POTENTIAL CONTRIBUTION FROM URBAN PLANNING TO REDUCE CARBON-EMISSIONS FROM TRANSPORTATION ...................................................................................... 681
  Thomas Sick Nielsen, P Naess, H H Johannsen

POSTER PRESENTATIONS

202014 SCOUTING THE PATH TO BUILDINGS 2.0 ................................................................................................. 682
  J Polastre, Philippe Bonnet
202015 THE ROLE OF STEEL IN REDUCING ENERGY USE AND LIFE CYCLE GREEN HOUSE GAS EMISSIONS ................................................................................................................................. 683
  Nick Coleman, C Broadbent, G Coates
202016 SAVING ENERGY IN RESIDENTIAL BUILDINGS: A COMPARISON OF POLICY INSTRUMENTS USING A HYBRID GENERAL EQUILIBRIUM MODEL ................................................................................................. 684
  Céline Gutierrez, L-G Giraudet, P Quirion
202017 PROMOTING ENERGY-EFFICIENCY INVESTMENTS IN DEVELOPING COUNTRIES WITH A NEW RISK MANAGEMENT FRAMEWORK ................................................................................................. 685
  Jerry Jackson
202018 ECONOMIC COMPETITIVENESS OF COMBINED HEAT AND POWER DISTRICT HEATING (CHP-DH) FOR CLIMATE CHANGE MITIGATION: A COMPARATIVE ANALYSIS OF SCHEMES IN THE UK ................................................................................................. 686
  Scott Kelly, M Pollitt
202019 GRAVITY GOODS ROPEWAY AN ALTERNATIVE SUSTAINABLE SOLUTION FOR RURAL TRANSPORTATION WITH OUT HAMPERING TO THE NATURAL ENVIRONMENT AND CLIMATE: A CASE STUDY FROM JANAGAUN VILLAGE ................................................................................................. 687
  K C Laxman
202020 RESIDENTIAL ENERGY DEMAND, CLIMATE CHANGE AND URBAN PLANNING ................................................................................................. 689
  Xiaochen Liu, J Sweeney
SESSION 21 – INTEGRATED ENERGY MIXES FROM A SOCIO-ECONOMIC AND ENVIRONMENTAL PERSPECTIVE

ORAL PRESENTATIONS

212001 ENHANCE THE ECONOMIC PERFORMANCE OF RENEWABLE ENERGIES FROM THE PERSPECTIVE OF INCENTIVE DEVELOPMENT ................................................................. 696
Weifeng Li, D Prasad

212002 LOW-COST CARBON-NEUTRAL DUE TO CO2 EXTRACTION APPLICATION ............................................. 697
Steve Clemens

212003 THE IMPACT OF CHINA AND INDIA’S ECONOMIC GROWTH ON ENERGY USE AND CO2 EMISSIONS – INTEGRATED MODELLING OF ECONOMIC-ENERGY-ENVIRONMENT SCENARIOS .............................................. 698
Fabien Bouques, O Saxi, J-C Hourcade, C Guivarch, H Wassman, R Crassous

212004 THE TRAJECTORIES OF NEW ENERGY TECHNOLOGIES IN CARBON CONSTRAINT CASES WITH THE POLES WORLD ENERGY MODEL ........................................................................................................ 699
Patrick Criqui, P Menanteau, S Mima

212005 A POLICY APPRAISAL OF THE EU POLICY MIX: ABATEMENT AND INNOVATION .............................................................. 701
Gunnar Eskeland, K Linnerud

212006 INTEGRATION AND COMPATIBILITY OF ECONOMIC INSTRUMENTS IN ENERGY AND CLIMATE POLICIES ...................................................................................................................... 702
Eirik S Amundsen, Peter Fristrup, Jørgen Birk Mørtensen

212007 GHG EMISSIONS AND DEVELOPMENT: WHAT IF DEVELOPING COUNTRIES BASELINES WERE NOT SO OPTIMAL? ........................................................................................................ 703
C Guivarch, Sandrine Mathy

212008 ECONOMIC OPTIMIZATION OF THE DANISH ENERGY SYSTEMS THROUGH MINIMIZATION OF DIRECT COSTS AS WELL AS INDIRECT COSTS RELATED TO AIR BORN POLLUTION ........................................................................ 704
Egil Kaa, A Baklanov, H Brandt, H Brønnum-Hansen, J H Christensen, A Gross, K Karlsson, M-L Siggaard-Andersen, T Sørensen, J Sørensen

212009 LOW CARBON CITY DEVELOPMENT OF CHINA .................................................................................. 705
Dongmei Chen

212010 A NUMERICAL SIMULATION STUDY ON NATIONAL/REGIONAL PER CAPITA HISTORICAL CONTRIBUTION TO CLIMATE CHANGE .......................................................................................................... 706
Guoquan Hu

212011 POLICY OPTIONS FOR REDUCING GHG EMISSIONS .................................................................................. 707
Maolin Liao

212012 TWO LOGICS OF CLIMATE CHANGE GAMES: ENVIRONMENTAL GOVERNANCE AND KNOW-HOW COMPETITION ........................................................................................................ 708
Hongyuan Yu

212013 SOCIO-ECONOMIC DEVELOPMENT AND CARBON EMISSIONS ............................................................... 709
Yan Zheng

212014 CHINA CDM FUND: A PRACTICE TO UPGRADE CDM CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT FROM PROJECT LEVEL TO COUNTRY LEVEL ........................................................................ 710
Gang Wen

SESSION 22 – TRANSFORMING INSTITUTIONS TO MANAGING A CARBON CONSTRAINED WORLD

ORAL PRESENTATIONS

222001 TRANSFORMING INSTITUTIONS THAT DO NOT EXIST – THE (IM-)POSSIBLE TASK FOR GLOBAL ENERGY GOVERNANCE? .......................................................... 711
Sylvia I Karlsson

222002 THE EFFICIENCY OF SIMPLICITY – A COMPREHENSIVE EVOLUTIONARY PERCEPTION OF THE EARTH CAN HELP TO IMPROVE THE MANAGEMENT OF SUBSYSTEMS ............................................................................... 712
Andreas Klauers, C Ott

222003 INCENTIVES FOR THE ADOPTION OF CARBON FREE TECHNOLOGIES ............................................................................................. 714
Carlo Carraro, V Bosetti, R Duval, A Sgobbi, M Tavoni
222004 TECHNOLOGY AND MARKET FACTORS IMPACTING VALUE CREATION AND CAPTURE IN THE COMMERCIALISATION OF SUSTAINABLE ENERGY TECHNOLOGIES BY NEW VENTURES ................................................................. 715
Nicola Dee

222005 THE ROLE OF INSTITUTIONAL CAPACITY DEVELOPMENT IN MAKING THE CDM OPERATIONAL IN DEVELOPING COUNTRIES .................................................................................. 716
Karen Holm Olsen, M Hinostraaza

222006 THE KYOTO PROTOCOL AND THE CARBON AGENDA IN UGANDA: IMPLEMENTING MECHANISMS AND STAKEHOLDER PERCEPTIONS IN KAMPALA CITY .................................................................................. 717
Paul Isola Muhwaya, H Songendor, C Basalirwa, T Oiti

222007 INTERNAL TRADING AS A STRATEGY FOR CARBON MITIGATION ................................................................................................................................. 718
Harsh Dhund, S Doll, N Sethi, K Chaugal

222008 FROM BURDEN- TO EFFORT-SHARING: NEGOTIATING EMISSION REDUCTION TARGETS IN THE EUROPEAN UNION ............................................................................................................ 719
Constance Haug

222009 PARTICIPATORY POLICY FORMATION TO ADDRESS CLIMATE CHANGE ................................................................................................................................. 720

222010 COPENHAGEN PLUS: COMPLEMENTING OUTPUT ORIENTED CLIMATE POLICY BY INPUT ORIENTED APPROACHES ................................................................................................................................. 721
H-J Lahnmann, Stefan Lechtenbohmer

222011 LAW IN THE LIGHT OF GLOBAL THREATS ................................................................................................................................. 722
Henrik Palmer Olsen

222012 IMPROVING STAKEHOLDER COOPERATION IN POST KYOTO CLIMATE POLICY ................................................................................................................................. 724
Michael Heekhoven, A J M Schout Uiterkamp

222013 THE POLITICAL ECONOMY OF THE CLEAN DEVELOPMENT MECHANISM (CDM) GOVERNANCE SYSTEM ................................................................................................................................. 726
Peter Nedergaard

SESSION 23 – INTEGRATING NATIONAL AND INTERNATIONAL APPROACHES TO CARBON PRICING: DEVELOPING A GLOBAL FRAMEWORK

ORAL PRESENTATIONS

232001 A MORE COMPREHENSIVE APPROACH TO AN INTERNATIONAL TREATY ON GREENHOUSE GAS EMISSIONS: BIOFUELS, LAND-USE AND DEVELOPING COUNTRY PARTICIPATION ................................................................................................................................. 727
James Randall Kahn, A A F Rivas

232002 ENVIRONMENTAL BENEFITS FROM INTERNATIONAL TRADE ................................................................................................................................. 728
Christian Flachsland, R Marschinski, O Edenhofer

232003 EVALUATING OPTIONS FOR AN INTERNATIONAL SECTOR AGREEMENT POST-KYOTO ................................................................................................................................. 729
Katherine Casey Delhotal

232004 CONSIDERING PRICE CAPS FOR CLIMATE POLICY ................................................................................................................................. 730
Cedric Philibert

232005 GLOBAL TRADING VERSUS LINKING: ARCHITECTURES FOR INTERNATIONAL EMISSIONS TRADING ................................................................................................................................. 731
Michiel Hekkenberg, A J M Schoot Uiterkamp

232006 THE COST-EFFECTIVENESS OF CLIMATE POLICY: BEYOND EMISSIONS TRADING ................................................................................................................................. 732
Barbara Buchner, R Baron

232007 IS THERE A ROLE FOR ENERGY PRODUCTION CUT BACKS IN GLOBAL WARMING CLIMATE POLICY? ................................................................................................................................. 734
Lars Gärn Hansen, N Nannerup

232008 MEASURING EMISSIONS AGAINST AN ALternative FUTURE: A Fundamental Flaw in the Structure of the CDM ................................................................................................................................. 735
Barbara Haya

232009 USES AND MISUSES OF THE NOTION OF A UNIQUE WORLD CARBON PRICE ................................................................................................................................. 737
Renaud Crassous-Doerfler, J-C Hourcade, P R Shakla, O Sassi

232010 EXPECTING THE UNEXPECTED: MACROECONOMIC VOLATILITY AND CLIMATE POLICY ................................................................................................................................. 738
W McKibbin, A Morris, Peter Wilcoxen

232011 ENLARGING THE SCOPE OF THE EUROPEAN EMISSIONS TRADING SCHEME: IMPLICATIONS FOR THE INTERNATIONAL CARBON MARKET ................................................................................................................................. 739
Cate Hushe, M Hervé-Mignucci, B Leguèt

POSTER PRESENTATIONS

232012 EU POLICIES ON CLIMATE CHANGE AND ENERGY: A CRITICAL VIEW ................................................................................................................................. 741
Erik S Ammundsen, Peter P B Sørensen

232013 INCLUSION OF AVOIDED DEFORESTATION IN CARBON TRADING SCHEMES: THE SCIENTIFIC BASIS ................................................................................................................................. 743
Jemma Gornall, R Betts, J Hughes, N Kaye, D McNeall, A Wiltshire
232014 CLIMATE CHANGE MITIGATION AND CARBON PRICING INSTRUMENTS: A REVIEW OF THE HYBRID APPROACH

232015 ATTEMPTS TO INSULATE CARBON-REGULATED ECONOMIES FROM UNDER-REGULATED IMPORTS, AND THE INADVERTENT INTEGRATION OF THE WORLD'S CARBON MARKETS

220016 INDUCED VERSUS AUTONOMOUS TECHNICAL CHANGE IN RELATION WITH THE MARGINAL ABATEMENT COST CURVES

220017 TECHNO-ECONOMIC MODELLING OF GLOBAL CLIMATE POLICIES

220018 NEUTRALITY OR SUSTAINABILITY FOR THE SWISS POST-2012 CLIMATE POLICY

220019 THE JUST PRICE OF PERMITS DENOMINATED IN COP Dinar

SESSION 24 – THE ROLE OF AGRICULTURE IN MITIGATING CLIMATE CHANGE

ORAL PRESENTATIONS

242001 GLOBAL GREENHOUSE GAS MITIGATION POTENTIAL IN AGRICULTURE

242002 MARGINAL ABATEMENT COST CURVES FOR UK AGRICULTURE, FORESTRY, LAND-USE AND LAND-USE CHANGE SECTOR OUT TO 2022

242003 MODELING MARGINAL BIOPHYSICAL RESPONSES TO ASSESS CROPLAND GREENHOUSE GAS ABATEMENT POTENTIAL

242004 MODELING ALTERNATIVE POLICIES FOR FORESTRY AND AGRICULTURAL GHG MITIGATION: ALLOWANCES VS. OFFSETS

242005 MEASURES TO PROMOTE BOTH MITIGATION AND ADAPTATION TO CLIMATE CHANGE IN AGRICULTURE

242006 A PRACTICAL CARBON ESTIMATION APPLICATION TOOL FOR THE (USA) AGRICULTURAL END USER

242007 THE NET-BENEFIT OF BIOENERGY FOR CLIMATE CHANGE MITIGATION

242008 INCREASING EFFICIENCY OF LAND USE AND PHYTOMASS CONVERSION TO MITIGATE CLIMATE CHANGE UNTIL 2050

POSTER PRESENTATIONS

242009 CLIMATE CHANGE ADAPTATION AND MITIGATION POLICIES IN THE AGRICULTURE OF ARAGON (SPAIN)

242010 CARBON SEQUESTRATION WITH BIOCHAR – STABILITY AND EFFECT ON DECOMPOSITION OF SOIL ORGANIC MATTER

242011 IS ORGANIC FARMING A MITIGATION OPTION? – A STUDY ON N2O EMISSION FROM WINTER WHEAT

242012 NITROUS OXIDE EMISSIONS FROM CONTRASTING ORGANIC CROPPING SYSTEMS

242013 EQUITY AND ABATEMENT OF LULUCF EMISSIONS IN BRAZIL
<table>
<thead>
<tr>
<th>ISBN</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>242014</td>
<td>BIOFUEL PLANTATIONS ON FORESTED LANDS: DOUBLE JEOPARDY FOR BIODIVERSITY AND CLIMATE</td>
<td>Clyde Fraisse, P Maeder, A Diop, L WM Luttikholt, N Scialabba, U Niggli, Paul Heyerly, T Lasalle</td>
</tr>
<tr>
<td>242015</td>
<td>CLIMATE VARIABILITY AND CLIMATE CHANGE: CHALLENGES AND OPPORTUNITIES TO EXTENSION SERVICES</td>
<td>Saisel Hansen, K Thuy, H Wenzel, Anders Peter Jensen, P Nielsen</td>
</tr>
<tr>
<td>242016</td>
<td>VARIATION IN C BALANCE IN SOIL THROUGH INPUT AND OUTPUT OF C IN A TROPICAL DRYLAND AGROECOSYSTEM: INFLUENCE OF ADDITION OF VARIOUS RESOURCE QUALITY INPUTS</td>
<td>Genxing Pan, Fenja Klevenhusen, S M Bernasconi, M Kreutzer, C R Soliva</td>
</tr>
<tr>
<td>242017</td>
<td>EFFECT OF SOIL COMPACTON ON N2O EMISSION FROM A SOIL FERTILIZED WITH MINERAL FERTILIZER OR CATTLE SLURRY</td>
<td>Tomoko Hasegawa, S Fujimori, Y Matsusaka</td>
</tr>
<tr>
<td>242018</td>
<td>A STUDY ON EMISSION ACCOUNTING SYSTEM OF GLOBAL AGRICULTURAL ACTIVITIES</td>
<td>Rikke Markfoged, N P Revsbech, L D M Ottosen, L P Nielsen, T Nyord</td>
</tr>
<tr>
<td>242019</td>
<td>TAXATION AS AN INSTRUMENT TO REACH THE EU 2020 TARGET WITHIN AGRICULTURE?</td>
<td>Brian H Jacobson, A Dubgaard, C J Nissen</td>
</tr>
<tr>
<td>242020</td>
<td>BIOGAS FROM MANURE REPRESENTS A HUGE POTENTIAL FOR REDUCTION IN GLOBAL GREENHOUSE GAS EMISSIONS</td>
<td>K Thuy, H Wenzel, Anders Peter Jensen, P Nielsen</td>
</tr>
<tr>
<td>242021</td>
<td>CLIMATE MITIGATION THROUGH SUSTAINABLE AGRICULTURAL PRACTICES AMONG POOR FARMERS IN CAMBODIA</td>
<td>Steffen Johnsen, Jan Kunnas</td>
</tr>
<tr>
<td>242022</td>
<td>MONITORING MITIGATION THROUGH SUSTAINABLE AGRICULTURAL PRACTICES AMONG POOR FARMERS IN CAMBODIA</td>
<td>Steffen Johnsen, Jan Kunnas</td>
</tr>
<tr>
<td>242023</td>
<td>METHANOGENIC POTENTIAL OF, AND C-ISOTOPE FRACTIONATION BY, DIETS BASED ON C3 AND C4 PLANTS IN DAIRY CATTLE AND THEIR SLURRY</td>
<td>Rikke Markfoged, N P Revsbech, L D M Ottosen, L P Nielsen, T Nyord</td>
</tr>
<tr>
<td>242024</td>
<td>BURNING CULTIVATION OF PEATLANDS</td>
<td>Jan Kunnas</td>
</tr>
<tr>
<td>242025</td>
<td>MITIGATION AND ADAPTATION STRATEGIES – ORGANIC AGRICULTURE</td>
<td>A Flessbach, P Maeder, A Diop, L WM Luttikholt, N Scialabba, U Niggli, Paul Heyerly, T Lasalle</td>
</tr>
<tr>
<td>242026</td>
<td>MICROBIAL PROCESSES AND GREENHOUSE GAS EMISSIONS FROM INJECTED LIQUID MANURE</td>
<td>Saisel Hansen, K Thuy, H Wenzel, Anders Peter Jensen, P Nielsen</td>
</tr>
<tr>
<td>242027</td>
<td>MITIGATION OF GREEN HOUSE GASES IN EUROPEAN FARMING SYSTEMS</td>
<td>Tinne Midtgaard, J R Porter, P Smith, J E Olesen, J P Lesschen, P J Kulkman</td>
</tr>
<tr>
<td>242028</td>
<td>SYSTEM OF RICE INTENSIFICATION (SRI): A QUEST FOR INTERACTIVE SCIENCE TO MITIGATE THE CLIMATE CHANGE VULNERABILITY</td>
<td>Abha Mishra</td>
</tr>
<tr>
<td>242030</td>
<td>DEEP SOIL CARBON SEQUESTRATION UNDER NO-TILLAGE CROPPING SYSTEMS IN TROPICAL AND TEMPERATE CLIMATES</td>
<td>Rodgriz S Nicoletso, C W Rice, T J C Amado, J E Fiorin</td>
</tr>
<tr>
<td>242031</td>
<td>THE ROLE OF COMPLEX AGROECOSYSTEMS IN SEQUESTERING CARBON AND MITIGATING GLOBAL WARMING</td>
<td>Tomoko Hasegawa, S Fujimori, Y Matsusaka</td>
</tr>
<tr>
<td>242032</td>
<td>STOCK, DYNAMICS OF SOIL ORGANIC CARBON OF CHINA'S CROPLANDS AND THE ROLE IN CLIMATE CHANGE MITIGATION</td>
<td>Genxing Pan</td>
</tr>
<tr>
<td>242034</td>
<td>MITIGATION OF GREENHOUSE GAS FLUXES FROM CULTIVATED ORGANIC SOILS BY RAISING WATER TABLE</td>
<td>Kristina Regina, M Myllys</td>
</tr>
<tr>
<td>242035</td>
<td>HOW CRITICAL IS THE BASELINE TO ASSESS CARBON SEQUESTRATION IN AGRICULTURAL SOILS?</td>
<td>Charles W Rice, T J C Amado, R S Nicoletso</td>
</tr>
<tr>
<td>242036</td>
<td>INFLUENCE OF SOIL TILLAGE SYSTEMS ON SOIL ORGANIC MATTER DYNAMICS IN SOME SOILS OF TRANSYLVANIA (ROMANIA)</td>
<td>Tomoko Hasegawa, S Fujimori, Y Matsusaka, P Moraru, A Pop, H Cacovanu, J P pap</td>
</tr>
<tr>
<td>242037</td>
<td>NIRS-LS-SVM TO ESTIMATE CARBON CONTENT OF AGRICULTURAL LAND IN BRAZILIAN CERRADO SOILS</td>
<td>Sandra Oliveira Sa, D Althmann, K L Figueiredo, M Bernasconi, R J Papp, C C Cerri</td>
</tr>
</tbody>
</table>
SESSION 25 – THE ROLE OF FORESTS IN MITIGATION CLIMATE CHANGE

ORAL PRESENTATIONS

252001 REDD ARCHITECTURE: FACING CRITICAL CHOICES .......................................................... 837
  Alain Karsenty

252002 LESSONS LEARNED FROM PAST INFLUENCES ON DEFORESTATION: EFFECTIVENESS,
  EFFICIENCY, EQUITY AND REDD RELEVANCE .................................................................. 838
  Alexander Pfaff, G Amacher, L Carran, K Lawlor, E Sills, C Streck

252003 OVERCOMING THE LIVELIHOOD RISKS ASSOCIATED WITH REDD: OPTIONS FOR
  POLICYMAKERS .................................................................................................................. 840
  E Weinthal, Kathleen Lavlor

252004 CARROTS VERSUS STICKS: SCOPING ALTERNATIVE AVOIDED DEFORESTATION
  STRATEGIES IN THE BRAZILIAN AMAZON .................................................................. 842
  Sven Wunder, J Boerner

252005 REDUCING DEFORESTATION AND TRADING EMISSIONS: ECONOMIC IMPLICATIONS FOR
  THE POST-KYOTO CARBON MARKET ........................................................................ 843
  Niels Anger, J Sathaye

252006 CHALLENGES AND OPPORTUNITIES IN IMPLEMENTING REDD AT THE NATIONAL LEVEL:
  THE CASE OF GHANA ........................................................................................................ 845
  C P Hansen, Thorsten Treue, J F Lund

252007 HOW TO REDUCE THE HEADACHE OF REDD REFERENCE LINES ....................... 847
  Arild Angelsen

252008 CARBON STOCK IN SMALLHOLDER CHOCOLATE FOREST IN SOUTHERN CAMEROON
  AND POTENTIAL ROLE IN CLIMATE CHANGE MITIGATION ........................................ 848
  Denis J Sonwa, S F Weise, B A Nkongmeneck, M Tchatat, M J J Janssens

252009 OPPORTUNITIES FOR MITIGATION FROM COMMUNITY BASED FOREST MANAGEMENT IN
  THE HINDU KUSH HIMALAYA REGION ...................................................................... 850
  Kamal Bansikota, B S Karky

POSTER PRESENTATIONS

252010 PARAMETER UNCERTAINTY ANALYSIS OF FOREST CARBON SEQUESTRATION .............. 851
  Yoon Hyung Kim, B Sohngen
252011 SPATIAL RESOLUTION MATTERS STRONGLY FOR ESTIMATING CARBON RELATIONS OF MOUNTAIN FORESTS ................................................................. 852
Annett Wolf, H Bugmann

252012 CO2 FERTILIZATION EFFECTS ARE OFFSET BY REDUCED LONGEVITY OF FOREST TREES ................................................................. 853
Harald Bugmann

252013 FOREST AND CARBON SEQUESTRATION IN ATLANTIC, MEDITERRANEAN AND SUBTROPICAL AREAS IN SPAIN ................................................. 854
Felipe Bravo, C Ordóñez, A Bravo-Oviedo

252014 REWARDING THE PROVIDERS OF ECOSYSTEMS SERVICES: VOICES FROM THE LESS HEARD ................................................................. 856
Nathan Hultman, A Bozmoski

252015 LOCAL AND INSTITUTIONAL PERCEPTIONS OF CARBON RISK & BENEFIT: THE CASE OF CARBON FORESTRY IN TANZANIA ................................................................. 857
Arturo Esclamado Pasa

252016 THE CLIMATE CHANGE MITIGATION BY THE FOREST Options IN BANGLADESH: THE ROLE OF CDM ................................................................. 858
Sahana Saini, S Man Yong

252017 ROLE OF INDIAN SUNBERDAN MANGROVES IN MITIGATING CLIMATE IMPACTS: AN APPRAISAL ................................................................. 859
Valentin Bellussi, R Crussou, L Dietzsch, S Schwartzman

252018 REHABILITATING FORESTS TO MITIGATE CLIMATE CHANGE ................................................................................................................................. 861
Nicholas Ngece, B Kanyua

252019 COLLABORATIVE MODELING INITIATIVE ON REDD Economics ................................................................................................................................. 862
Jonah Busch, B Straussburg, A Cattaneo, R Lubowski, F Bolte, R Ashion, A Brunner, A Creed, M Obersteiner, R Rice

252020 REDUCING EMISSIONS FROM DEFORESTATION AND DEGRADATION: WHAT CONTRIBUTION FROM CARBON MARKETS? ................................................................. 864
Ning Zeng, P Read

252021 FORESTRY IN THE EMISSIONS TRADING SYSTEM: A SOLUTION FOR IMPLEMENTING ARTICLE 3.4? ................................................................. 865
Veronika Stoeckli, K Moser

Alexander Pfaff, J Robalino, A Sanchez, F Alpizar, C Leon, C M Rodriguez

252023 LOCATION AFFECTS PROTECTION & THE GENERATION OF REDD: OBSERVABLE CHARACTERISTICS DRIVE PARK IMPACTS IN COSTA RICA ................................................................................................................................. 868
Alexander Pfaff, J Robalino, A Sanchez, K Andam, P Ferraro

252024 REDD-ALERT: EVALUATING GLOBAL-LEVEL CLIMATE POLICY OPTIONS AND THEIR LOCAL LEVEL IMPLEMENTATION ................................................................................................................................. 869
Jonah Busch, B Straussburg, A Cattaneo, R Lubowski, A Brunner, A Creed, M Obersteiner, R Rice

252025 THE ROLE OF PROTECTED AREAS IN STORING CARBON AND REDUCING EMISSIONS ................................................................................................................................. 870
A Campbell, Barney Dickson, H Gibbs, M Hansen, V Kapos, I Lysenko, L Miles, J Scharlemann

252026 CAN FORESTRY PLAY A MAJOR ROLE IN CLIMATE MITIGATION? ................................................................................................................................. 872
Nicholas Ngece, B Kanyua

252027 REDD DEMONSTRATION PROJECTS’ DOUBLE EDGED SWORD: LOCK-IN EFFECT OR LEARNING-BY-DOING? ................................................................................................................................. 873
Valentin Bellussi, R Crussou, L Dietzsch, S Schwartzman

252028 DIFFERENT ACCOUNTING APPROACHES TO HARVESTED WOOD PRODUCTS: THEIR INCENTIVES TO ACHIEVEMENT OF MAJOR POLICY GOALS ................................................................................................................................. 874
Sachiko Harashima

252029 THE EFFECTIVENESS OF CARBON PLANTATIONS IN MITIGATING CLIMATE CHANGE: POTENTIALS AND COSTS ................................................................................................................................. 875
Jelle G Van Minnen, B J Strengers, B Eckhout, D Van Vuuren

252030 DESIGNING REDD THAT WORKS FOR THE POOR: A CASE STUDY OF A PILOT PROJECT TO REDUCE EMISSIONS FROM DEFORESTATION AND DEGRADATION (REDD) IN ACEH, INDONESIA ................................................................................................................................. 876
Andrea Bahon

252031 LINKING BIODIVERSITY CONSERVATION AND CLIMATE CHANGE: EMBEDDING BIODIVERSITY-SENSITIVE FOREST PRESERVATION INCENTIVES IN THE POST-KYOTO CLIMATE REGIME ................................................................................................................................. 877
Andrew Long

SESSION 26 – BEYOND TECHNOLOGY: CHANGING THE WAY WE LIVE?

ORAL PRESENTATIONS

262001 THE ‘5-D STAGED-APPROACH’ TO CLIMATE-ORIENTED COGNITIVE AND BEHAVIORAL CHANGE ................................................................................................................................. 878
Bob Doppelt

262002 CRITICAL ISSUES IN THE PSYCHOLOGY OF BEHAVIOUR CHANGE FOR CLIMATE CHANGE ................................................................................................................................. 879
David Uzzell
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>262003</td>
<td>SUFFICIENCY – DOES ENERGY CONSUMPTION BECOME A MORAL ISSUE?</td>
<td>Adrian Muller</td>
</tr>
<tr>
<td>262004</td>
<td>GENERATING BEHAVIOUR CHANGE THROUGH COMMUNITY ENGAGEMENT: ECOTEAMS</td>
<td>Scott Davidson</td>
</tr>
<tr>
<td>262005</td>
<td>ENERGYMARK: CHANGING AUSTRALIANS' BEHAVIOURS THROUGH KITCHEN TABLE</td>
<td>P Ashworth, Anne Maree Dowd</td>
</tr>
<tr>
<td>262006</td>
<td>LIFESTYLE APPROACH TO CLIMATE MITIGATION: CROSS COUNTRY EMPIRICAL EVIDENCE</td>
<td>Joyashree Roy, S Pal</td>
</tr>
<tr>
<td>262007</td>
<td>FOR BETTER UNDERSTANDING PEOPLE'S UNDERSTANDINGS OF CLIMATE CHANGE ISSUES AND MOTIVATION FOR TAKING ACTIONS: JAPANESE CASE</td>
<td>Midori Aoyagi-Utsui, Y Sampei</td>
</tr>
<tr>
<td>262008</td>
<td>CLIMATE RISK PERCEPTIONS AND LOCAL EXPERIENCES OF THE 2007 SUMMER FLOODING: OPPORTUNITIES OR OBSTACLES TO CHANGE?</td>
<td>C Butler, Nick Pidgeon</td>
</tr>
<tr>
<td>262009</td>
<td>CLIMATE BENEFITS OF CHANGING DIET</td>
<td>Elke Stehfest, L Bouwman, D Van Vuuren, M Don Elzen, B Eickhout, P Kabat</td>
</tr>
</tbody>
</table>

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>262010</td>
<td>RELATIONSHIPS BETWEEN RESIDENTIAL LOCATION, TRANSPORTATION RATIONALES AND ENVIRONMENTAL CONSEQUENCES</td>
<td>P Næss, Victor De Silva, O Jensen</td>
</tr>
<tr>
<td>262011</td>
<td>WHAT DO WE REALLY KNOW ABOUT CO2 REDUCTIONS THROUGH BEHAVIORAL CHANGE?</td>
<td>Bob Doppelt</td>
</tr>
<tr>
<td>262012</td>
<td>THE GILDED PROJECT – GOVERNANCE, INFRASTRUCTURE, LIFESTYLE DYNAMICS AND ENERGY DEMAND</td>
<td>Nick Gotti, L-A Sutherland, E Cudilinová, I Kováč, F Reusswig, L Steg</td>
</tr>
<tr>
<td>262013</td>
<td>CAN A CHANGE OF CLIMATE BRING ABOUT A CHANGE IN BEHAVIOUR? CLIMATE CHANGE, SOCIAL MARKETING &amp; CONSUMER SEGMENTATION</td>
<td>Cerys Ponting, N Shah</td>
</tr>
<tr>
<td>262014</td>
<td>WILL CARBON ECO-LABELLING ENGENDER A NEW GENERATION OF ECO-WARRIORS?</td>
<td>Cerys Ponting</td>
</tr>
<tr>
<td>262015</td>
<td>ZERO CARBON HOMES – MYTH OR REALITY?</td>
<td>Jo Williams</td>
</tr>
<tr>
<td>262016</td>
<td>SUFFICIENCY ECONOMY PHILOSOPHY FOR SUSTAINABLE FUTURE: LESSONS OF THAILAND FOR OTHER DEVELOPING COUNTRIES</td>
<td>Angkarn Wongdeethai</td>
</tr>
</tbody>
</table>

**SESSION 27 – LOW CARBON SCIENCE, TECHNOLOGY POLICIES**

**ORAL PRESENTATIONS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>272001</td>
<td>CORPORATE CLIMATE TECHNOLOGY STRATEGIES IN RESPONSE TO INTERNATIONAL MARKET-BASED CLIMATE POLICIES – THE CASE OF THE POWER SECTOR</td>
<td>Athanasios Dogouras, T Barker, S Scricciu, S Stretton</td>
</tr>
<tr>
<td>272003</td>
<td>TOP-DOWN TECHNOLOGICAL MODELLING OF STABILISATION PATHWAYS: UKERSC SCENARIOS FOR THE UK TO 2050 USING E3MG-UK</td>
<td>Athanasios Dogouras, T Barker, S Scricciu, S Stretton</td>
</tr>
<tr>
<td>272004</td>
<td>ENERGY AND CARBON EMISSIONS SCENARIOS OF CHINA TOWARDS 2100</td>
<td>Tsoi Wong, J Watson</td>
</tr>
<tr>
<td>272005</td>
<td>A FINANCE ARCHITECTURE FOR TECHNOLOGY DEVELOPMENT AND TRANSFER</td>
<td>Heleen De Coninck, A Higham, E Haites</td>
</tr>
</tbody>
</table>

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>272007</td>
<td>PROPOSAL ON THE KEY FACTORS RESEARCH AND DEMONSTRATION PROJECT FOR THE IMPLEMENTATION OF CARBON LABELING IN CHINA</td>
<td>Changshan Chu</td>
</tr>
<tr>
<td>272008</td>
<td>BACKCASTING POLICIES FOR CARBON REDUCTION IN THE UK ENERGY SYSTEM</td>
<td>Paul Ekins, G Anandarajah</td>
</tr>
</tbody>
</table>
SESSION 28 – CLIMATE CHANGE AND AIR POLLUTION: THE ROLE OF NON-CO2 ATMOSPHERIC POLLUTANTS

ORAL PRESENTATIONS

282001 GLOBAL CLIMATE POLICY SCENARIOS: THE BENEFITS AND TRADE-OFFS FOR AIR POLLUTION .......................................................................................................................... 919
  John Van Aardenne, F Dentener, R Van Dingenen, E Marmer, E Vignati, P Russ, L Scabio

282002 GROUND LEVEL OZONE IN THE 21ST CENTURY: TRENDS, INTERACTIONS WITH CLIMATE AND ENVIRONMENTAL IMPACTS ......................................................... 921
  R Gardin, D Aros, D Stevenson, P Cox, M Ashmore, P Grennfelt, M Amann, R Anderson, M Depledge, D Derwent, N Hewson, O Hor, M Jenkins, F Kelly, P Liss, M Pilling, J Pyle, J Slingo

282003 NATURAL VARIATIONS OF METHANE AND NITROUS OXIDE FROM ICE CORES ................................................................................................................................. 924

282004 LONG-TERM TRENDS IN ATMOSPHERIC ELEMENTAL CARBON (~1800 TO 2005): MEASUREMENTS AND COMPARISON WITH MODELS .................................................. 925
  Liaguat Husain

282005 IMPACT OF AIR POLLUTION ON OUR FUTURE CLIMATE ..................................................................................... 926
  Hiram Lew II, D Shindell, L Hewson, M D Schwarzkopf, A Gilliland

282006 ACHIEVING AGREEMENT AND CLIMATE PROTECTION BY MITIGATION OF SHORT- AND LONG-LIVED GREENHOUSE GASES. ............................................................. 927
  Michael Maccrucken, F Moore

POSTER PRESENTATIONS

282007 ROLE OF LANDFILLS IN INCREASING GREENHOUSE GASES EMISSION: CASE STUDY: TEHRAN LANDFILLS METHAN EMISSION RATE, MEASURE BY LANDGEM MODEL .......................................................................................................................... 928
  Leila Ahmadi, S Boudaghpour, A Ahmadi

282008 EFFECTS OF CLIMATE CONTROL ON AIR POLLUTION: COUPLING AN ENERGY-ENVIRONMENT-ECONOMY GLOBAL MODEL (E3MG) AND ATMOSPHERIC CHEMISTRY MODEL (P-TOMCAT) IN DECARBONISING INTERNATIONAL TRANSPORT .......................................................................................................................... 929
  O Dessens, T Barker, H Rogers, Annela Anser, J Jones, J Pyle

282009 MEGACITIES: EMISSIONS, URBAN, REGIONAL AND GLOBAL ATMOSPHERIC POLLUTION AND CLIMATE EFFECTS, AND INTEGRATED TOOLS FOR ASSESSMENT AND MITIGATION (EC 7FP PROJECT MEGAPOLI) .................................................................................................................. 930
  Alexander Baklanov, M Lawrence, S Pandis

282010 POTENTIAL REDUCTION IN MITIGATION COSTS FROM MULTI-GAS ABATEMENT: A META-ANALYSIS BASED ON EMF21 AND OTHER LITERATURE ON GDP COSTS ......................................................... 931
  Terry Barker, S Tashchilova

282011 THE STUDY OF ANTHROPOGENIC CLIMATE CHANGE .......................................................................................................................... 933
  Tatjana Dovbysheva, A Yasko

282012 PILOT TESTS OF GAS MIXTURE ENHANCED COALBED METHANE RECOVERY TECHNOLOGY .......................................................................................................................... 934
  Zhiming Fang, X Li, H Li, Y Wang, H Chen, G Pu

282013 CONDENSATION TRAILS IN THE REGIONAL CLIMATE MODEL CCLM .......................................................................................................................... 936
  Andrew Ferrone, P Marbaix, B Matthews, J P Van Ypersele, R Lescroart

282014 THE INFLUENCE OF EL NINO/SOUTHERN OSCILLATION AND VOLCANIC AEROSOLS ON TROPICAL TERRESTRIAL CARBON FLUX: A WINDOW INTO THE FUTURE? .......................................................................................................................... 939
  Kevin Gurney, Kendra Castillo

282015 IMPACTS OF CLIMATE CHANGE ON AIR POLLUTION LEVELS IN THE NORTHERN HEMISPHERE .......................................................................................................................... 940
  Geite Brandt Hedeasda, J Brandt, J H Christensen, L M Frohn, C Geels, K M Hansen
SESSION 29 – CLIMATE CHANGE AND WATER SYSTEMS

ORAL PRESENTATIONS

292001 ADAPTIVE MEASURES FOR COPING WITH INCREASED FLOODS AND DROUGHTS IN BANGLADESH
Karsten Havna, A Malmgren Hansen

292002 IMPACTS OF CLIMATE VARIABILITY AND CHANGE ON DEVELOPMENT AND WATER SECURITY IN SUB-SAHARAN AFRICA

292003 EVALUATING THE BENEFITS OF ADAPTING TO CHANGING FLOOD HAZARD IN EUROPE
Luc Feyen, R Bankers, K Blödis

292004 SECURING WATER FOR FOOD, LIVELIHOODS AND ECOSYSTEMS TO FACE CLIMATE CHANGE: RESEARCH NEEDS
Vladimir Smakhtin, C De Fraiture, D Bossio, D Molden, C Hoanh, A Noble, M Giordano

292005 COOPERATION AND ADAPTATION TO CLIMATE CHANGE IN TRANSBOUNDARY RIVER BASINS IN AFRICA: EVIDENCE FROM THE NILE BASIN
Marisa Goulden, Declan Conway

292006 ADAPTATION ACTIONS TO REDUCE WATER SYSTEM VULNERABILITY TO CLIMATE CHANGE IN TENSIFT RIVER BASIN (MOROCCO)
Stacy C. Jackson

292007 QUANTIFYING THE EFFECTS OF FUTURE CLIMATE CHANGE ON GROUNDWATER AND STREAM DISCHARGE IN DENMARK
Lise Van Roosmalen, T Ø Steenstrup

292008 PLANNING WATER RESOURCES DEVELOPMENT IN THE WESTERN CAPE OF SOUTH AFRICA: HOW DO COPING WITH DEVELOPMENT PRESSURE, CLIMATE VARIABILITY, AND CLIMATE CHANGE INFLUENCE EACH OTHER?
Daniël B Louw, M Tadros, R Schulze, M Hellmuth, A Greene, J Callaway
292009 IMPACT OF BUSINESS-AS-USUAL WATER MANAGEMENT UNDER CLIMATE CHANGE FOR THE GARONNE CATCHMENT (FRANCE) .......................................................................................................................... 976
            Eric Sanquet, A Dupuyvat, C Perron, C Agusti, F Hendrickx, J-P Vidal

292010 THE USE AND APPLICATION OF KNOWLEDGE NETWORKS FOR WATER SYSTEMS’ MANAGEMENT OF CLIMATE CHANGE .............................................................................................................................. 978
            David Feldman, H Ingram

292011 CLIMATE CHANGE AND WATER RESOURCES IN LEBANON ........................................................................... 979
            Jalal Halwani

292012 FUTURE EUROPEAN DROUGHT REGIMES UNDER MITIGATED AND UN-MITIGATED CLIMATE CHANGE ................................................................................................................................. 980
            Rachel Warren, R Yu, T Osborn, S De La Nova Santos

292013 COMPARISON OF THE PROCESSES FOR DEVELOPING CLIMATE CHANGE ADAPTATION STRATEGIES FOR DEALING WITH FLOODS AND DROUGHTS IN THE NETHERLANDS, SOUTH AFRICA, CHINA AND AUSTRALIA .......................................................................................................................... 983
            Patrick Hunsley, C Pahl-Wostl, X Jan, J Camkin, N Kranz

292014 WATER BARGAINING & CLIMATE ADAPTATION: ASYMMETRIC ACCESS TO INFORMATION AFFECTS EQUITY ................................................................................................................................. 985
            Alexander Pfaff, M A Velez, K Broad, J Hercio, R Taddel

292015 TECHNICAL KNOWLEDGE AND DEMOCRATIC DECISION-MAKING: BUILDING ADAPTIVE CAPACITY OF FRESH WATER SYSTEMS IN BRAZIL........................................................................................................... 986
            Marla Carmen Lemus, A Bell, N Engle, R Formiga-Johnsson, D Nelson

292016 CLIMATE CHANGE AND THE CHANGING FREQUENCY OF FLOODS AND DROUGHTS: SCENARIOS OF RISK AND ADAPTATION IN EUROPE ................................................................................................. 988
            Joseph Alcamo

292017 ASSESSING THE IMPACTS OF CLIMATE CHANGE ON THE WATER RESOURCES IN THE NILE BASIN USING A REGIONAL CLIMATE MODEL ENSEMBLE .................................................................................. 989
            Carlo Buontempo, J K Lorup, M A Antar, M Sanderson, M B Butts, E Palin, R McCarthy, R Jones, R Betts

292018 CLIMATE CHANGE SCENARIOS OF LOW-FLOW CONDITIONS AND HYDRO POWER PRODUCTION IN THE UPPER DANUBE RIVER BASIN ......................................................................................... 991
            W Mauser, Markus Muhrith, S Steuber

292019 APPROACHES TO IDENTIFYING CLIMATE CHANGE ADAPTATION STRATEGIES: A COMPARISON OF CASE STUDIES IN THE UK AND CALIFORNIA ............................................................................. 992
            Saraje Dessai, D Groves, R Lempert

POSTER PRESENTATIONS

292020 IMPLICATIONS OF CLIMATE CHANGE IN RELATION TO WATER RELATED DISASTERS IN SOUTH ASIAN COUNTRIES ................................................................................................................................. 993
            Ahsan Uddin Ahmed

292021 WATERBIRDS AS BIO-INDICATORS OF SEASONAL – CLIMATIC CHANGES IN RIVER BASIN PROPERTIES: EIGHT YEARS MONTHLY MONITORING IN LOWER SANAGA, CAMEROON .................................................................................. 994
            Gordon Byonga, J Amougou, J Axissi, P Ayissi, E Staube, M Dongmo

292022 CLIMATE CHANGE IMPACTS ON FISHERIES PRODUCTION IN LAND-WATER INTERFACE ............................................................................................................................... 996
            Yemi Akegbeju-Samsons

292023 CLIMATE CHANGE AND PRECIPITATION – CONSEQUENCES OF MORE EXTREME PRECIPITATION REGIMES FOR TERRESTRIAL ECOSYSTEMS.............................................................................................................. 997
            Claus Beier, A Knapp, D Briske

292024 SUN ACTIVITIES CAUSE CLIMATE CHANGE ........................................................................................................ 999
            Horst Borchert

292025 SPATIAL PATTERNS OF DECLINE IN PAN-ARCTIC HYDROLOGICAL OBSERVATION NETWORKS: ADAPTATION TO CLIMATE CHANGE IMPACTS ...................................................................................... 1001
            Arvid Brits, G Destouani

292026 TEMPORAL LANDSAT TM SERIES ANALYSIS TO EVALUATE DESERTIFICATION PROCESS AND ITS CAUSES AND EFFECTS, PIAUI STATE, NORTHEAST OF BRAZIL ................................................................................................. 1002
            Carolina Carvalho, R Almeida-Filho

292027 RESEARCH OF CLIMATE CHANGE IN THE CROATIAN LOWLAND IN THE FRAME OF THE COST ACTION 734 ......................................................................................................................................................... 1003
            V Vucetic, Ksenija Cesarec

292028 THE EFFECTS OF CLIMATIC CHANGE ON GROUNDWATER AND ECOSYSTEM SERVICES IN A BIOSPHERE RESERVE FROM SOUTHERN MOROCCO .............................................................................................. 1007
            Mohammed Yacoubi Khebiza

292029 IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES OF NEPAL: THE PHYSICAL AND SOCIO-ECONOMIC DIMENSIONS ................................................................................................................. 1008
            Narayna Prasad Chaudagai

292030 SOCIAL LEARNING FOR CLIMATE CHANGE ADAPTATION – KNOWLEDGE AND ACTION ACROSS SCALES AND LEVELS ....................................................................................................................... 1009
            Maria Falaleeva, C Albert

292031 ADAPTATION OF WATER MANAGEMENT INSTITUTIONS TO CLIMATE CHANGE ............................................................................................................................... 1010
            Sanford Gaines
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIMATE CHANGE AND IRRIGATION WATER REQUIREMENT AT JAGUARIBE RIVER BASIN, SEMI-ARID NORTHEAST OF BRAZIL</td>
<td>1012</td>
</tr>
<tr>
<td>SPATIAL AND TEMPORAL TELE-CONNECTIONS OF THE MULTIVARIATE ENSO INDEX (MEI) TO RAINFALL, MAXIMUM AND MINIMUM TEMPERATURE ANOMALIES IN MEXICO</td>
<td>1014</td>
</tr>
<tr>
<td>CLIMATE CHANGE: IMPACT, ADAPTATION AND INTEGRATED GROUNDWATER MANAGEMENT IN THE NORTH SEA AND BALTIC SEA REGIONS</td>
<td>1017</td>
</tr>
<tr>
<td>SUSTAINABILITY OF FLOODING DEFENCE IN RURAL AREAS IN THE CONTEXT OF CLIMATE CHANGE IN CHINA</td>
<td>1018</td>
</tr>
<tr>
<td>INSTITUTIONAL ADAPTATIONS FOR LONG-TERM ADAPTATIONS TO CLIMATE AND WATER STRESS</td>
<td>1019</td>
</tr>
<tr>
<td>CHANGES IN HADLEY CIRCULATION, AZORES HIGH AND WINTER PRECIPITATION OVER EAST AFRICA</td>
<td>1020</td>
</tr>
<tr>
<td>MODELING TO EVALUATE RESPONSE OF THE GREAT LAKE’S WATER RESOURCES SYSTEM AGAINST CLIMATE CHANGE SCENARIOS</td>
<td>1021</td>
</tr>
<tr>
<td>SUSTAINABILITY OF WESTERN NORTH AMERICAN HYDROSYSTEMS: USE-INSPIRED RESEARCH TO UNDERSTAND NONSTATIONARY CLIMATE, FLOW REGULATION, AND ECOLOGICAL FLOWS NEEDS</td>
<td>1023</td>
</tr>
<tr>
<td>HYDROLOGICAL EFFECTS OF PROJECTED CLIMATE CHANGES 2010-2039 IN THE EXTENSIVELY IRRIGATED ARAL SEA DRAINAGE BASIN</td>
<td>1024</td>
</tr>
<tr>
<td>IMPACTS ON CLIMATE CHANGE ADAPTATION FROM SMALL AND MEDIUM SCALE HYDROPOWER PLANTS, VIETNAM</td>
<td>1026</td>
</tr>
<tr>
<td>EFFECTS OF PROXIMITY TO WATER ON THE ATTRACTIVENESS OF RESIDENTIAL LOCATIONS IN TRONDHEIM, NORWAY</td>
<td>1028</td>
</tr>
<tr>
<td>CLIMATE CHANGE AND WATER SYSTEMS – AN OVERVIEW</td>
<td>1029</td>
</tr>
<tr>
<td>EFFECTS OF ELEVATED CO2 ON SOIL PHYSICOCHEMICAL CHARACTERISTICS UNDER FREE AIR CO2 ENRICHMENT (FACE) TECHNOLOGY</td>
<td>1031</td>
</tr>
<tr>
<td>REDUCTION OF WATER LEVELS ON LAKE VICTORIA DUE TO CLIMATE CHANGE</td>
<td>1032</td>
</tr>
<tr>
<td>PROXIMITY TO WATER ON THE ATTRACTIVENESS OF RESIDENTIAL LOCATIONS IN TRONDHEIM, NORWAY</td>
<td>1028</td>
</tr>
<tr>
<td>CLIMATE CHANGE IN THE WATER FRAMEWORK DIRECTIVE PROCESS – AN ANALYSIS OF THE PERSPECTIVE OF THE PUBLIC</td>
<td>1033</td>
</tr>
<tr>
<td>CLIMATE CHANGE AND DISASTER MANAGEMENT IN INDIA: SPECIAL REFERENCE TO WATER RESOURCES</td>
<td>1034</td>
</tr>
<tr>
<td>EXAMINING THE NEXUS BETWEEN DEPLETION OF FORESTS, WETLANDS, GREEN COVER AND THE DEEPPENING WATER CRISIS IN UGANDA</td>
<td>1035</td>
</tr>
<tr>
<td>CLIMATE CHANGE: SOCIETAL IMPACTS AND CURRENT POLICIES AND ADAPTATION STRATEGIES IN INDIA</td>
<td>1036</td>
</tr>
<tr>
<td>POTENTIAL IMPACTS OF CLIMATE CHANGES ON THE AVAILABILITY OF WATER RESOURCES IN THE BASIN OF OKPARA IN BENIN (WEST AFRICA)</td>
<td>1037</td>
</tr>
<tr>
<td>IMPACTS OF CLIMATE CHANGE ON THE HYDROLOGICAL CYCLE: APPLICATION TO FRANCE’S RIVER BASINS</td>
<td>1038</td>
</tr>
<tr>
<td>CHALLENGES &amp; ISSUES IN CLIMATE CHANGE – HOW VULNERABLE IS SRI LANKA AS A SMALL ISLAND COUNTRY?</td>
<td>1040</td>
</tr>
<tr>
<td>EVIDENCE OF CLIMATE AND ENVIRONMENTAL CHANGE ON WATER RESOURCES AND MALARIA IN COLOMBIA</td>
<td>1041</td>
</tr>
<tr>
<td>CLIMATE CHANGE AND WATER RESOURCE MANAGEMENT IN THE SENEGAL RIVER BASIN</td>
<td>1044</td>
</tr>
</tbody>
</table>
SESSION 30 – IMPACT OF CLIMATE CHANGE ON ECOSYSTEM SERVICES

ORAL PRESENTATIONS

302001 BIODIVERSITY AND ECOSYSTEM SERVICES: CLIMATE CHANGE IMPACTS ON SPECIES EXTINCTIONS ................................................................. 1055
Georgina Mace, W Foden

302002 HOW BIODIVERSITY RESPONSE TO CHANGING CLIMATE FEEDS ON TO ECOSYSTEM PROCESSES UNDERLYING ECOSYSTEM SERVICES .................................................. 1056
Sandra Lavorel, J-P Sarthou, W Thuiller

302003 DIRECT AND INDIRECT IMPACTS OF CLIMATIC CHANGE ON SPECIES DIVERSITY AND GENETIC DIVERSITY ........................................ 1057
Tetsukazu Yahara, M Donoghue, A Hendry

302004 CORAL REEFS AND RAPID CLIMATE CHANGE: IMPACTS, RISKS AND IMPLICATIONS FOR TROPICAL SOCIETIES ........................................ 1058
Andy Wiltshire, R Bettis, P Falloon, D Smith

302005 RISKS AND ADAPTATION OPTIONS FOR RIVERS AND STREAMS ................. 1060
Margaret Palmer

302006 THE CLIMATE REGULATING SERVICES PROVIDED BY ECOSYSTEMS ........................................ 1061
Robert Scholes, K Mennell

302007 THE IMPACTS OF CLIMATE CHANGE ON ECOSYSTEM SERVICES: THE CASE OF DISRUPTED DISEASE REGULATION IN SOUTH-WESTERN AMAZONIA ........................................ 1062
Manuel Cesario, R Rangel Cesario, M Andrade-Morraye

302008 CLIMATE, ECOSYSTEM SERVICES AND SOCIAL SYSTEMS ................................. 1063
Thomas Elmqvist, C Perrings

POSTER PRESENTATIONS

302009 THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF) – PROVIDING THE NECESSARY INFRASTRUCTURE, STANDARDS, ACCESS TO DATA AND TOOLS TO MONITOR AND MODEL IMPACTS OF CLIMATE CHANGE ON ECOSYSTEM SERVICES .......................... 1064
Sandy Andelman, N King, S Gaju

302010 NITROGEN UPTAKE IN TEMPERATE HEATH VEGETATION AND SOIL MICROBES IS INFLUENCED BY ELEVATED TEMPERATURE, CO2 AND DROUGHT ................................................................. 1065
Louise C Andresen, A Michelsen, S Jonasson, C Beier, P Ambus

302011 MODELLING CHANGES IN ECOSYSTEM SERVICE SUPPLY BASED ON VEGETATION PROJECTIONS .......................................................... 1066
Bálint Czúcz, F Horváth, Z Botta-Dukát, Z Molnár
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>302012 Ecosystems at the trailing edge of climate change – the decline of Scots pine forests at their southern distribution limits</td>
<td>1068</td>
</tr>
<tr>
<td>302013 Ozone: an increasing risk for crop yields in a future climate?</td>
<td>1070</td>
</tr>
<tr>
<td>302014 Climatic change and other anthropogenic activities are affecting environmental services on the Argentinean northwest (ANW)</td>
<td>1071</td>
</tr>
<tr>
<td>302015 Ecological consequences of climate change and how to measure them</td>
<td>1073</td>
</tr>
<tr>
<td>302016 Effects of climate change on hypoxia in the North Sea – Baltic Sea transition zone</td>
<td>1074</td>
</tr>
<tr>
<td>302017 A conceptual framework to analyse the effects of environmental change on ecosystem services</td>
<td>1075</td>
</tr>
<tr>
<td>302018 Climatic control of the North-East Atlantic ecosystem</td>
<td>1077</td>
</tr>
<tr>
<td>302019 Changes in species composition determine the impacts of global changes on ecosystem services</td>
<td>1078</td>
</tr>
<tr>
<td>302020 Simulation of forest vulnerability to land use land cover and climate change in Ghana</td>
<td>1080</td>
</tr>
<tr>
<td>302021 Living on the edge: relating climate change impacts to the poverty in small-scale coastal fisheries of Bangladesh</td>
<td>1081</td>
</tr>
<tr>
<td>302022 Climate change, invasive species and toxic plant substances in soil and water</td>
<td>1082</td>
</tr>
<tr>
<td>302023 Ices role in the world of changing climate</td>
<td>1083</td>
</tr>
<tr>
<td>302024 Approaches to ecosystem services assessment and drivers of change in forest ecosystems</td>
<td>1084</td>
</tr>
<tr>
<td>302025 Factors determining soil respiration in tropical savanna-wetland mosaic in the Okavango delta, Botswana</td>
<td>1086</td>
</tr>
<tr>
<td>302026 Ecosystem accounting: climate change and governance of ecosystem services in Mediterranean coastal wetlands</td>
<td>1087</td>
</tr>
<tr>
<td>302027 Effect of climate parameters on mud crab (Scylla serrata) production in Australia</td>
<td>1089</td>
</tr>
<tr>
<td>302028 Nordic nature indicators of climate change (NICC) – a Nordic cooperation</td>
<td>1090</td>
</tr>
<tr>
<td>302029 Vulnerability of intertidal macrophytes diversity in Bangladesh to climate change and sea level rise</td>
<td>1091</td>
</tr>
<tr>
<td>302030 Destroyed forests, destroyed livelihoods, destroyed climate</td>
<td>1092</td>
</tr>
<tr>
<td>302031 Livestock diversity and climate change</td>
<td>1093</td>
</tr>
<tr>
<td>302032 Climate change experiments in vulnerable ecosystems across Europe</td>
<td>1095</td>
</tr>
<tr>
<td>302033 A risk analysis for world ecosystems under future climate change</td>
<td>1097</td>
</tr>
<tr>
<td>302034 Climate change and Indian sub-continent: role and contribution of Himalaya</td>
<td>1098</td>
</tr>
<tr>
<td>302035 Livelihoods and forestry programme is good for Nepal</td>
<td>1099</td>
</tr>
<tr>
<td>302036 Assessing global contributions of lesser-known soil invertebrates to ecosystem services under climate change scenarios</td>
<td>1100</td>
</tr>
<tr>
<td>302037 Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise</td>
<td>1101</td>
</tr>
</tbody>
</table>
SESSION 31 – BIODIVERSITY, ENHANCEMENT OF RESILIENCE OR FACILITATING TRANSFORMATION?

ORAL PRESENTATIONS

312001 FROM PRINCIPLES TO PRACTICE: NATIONAL APPROACHES TO MANAGING BIODIVERSITY UNDER CLIMATE CHANGE IN AUSTRALIA ................................................................. 1108

Will Steffen, A Burbridge, L Cherry, B Edgar, I Hughes, R Kitching, D Lindenmayer, J Mummery, W Musgrave, M Stafford Smith, P Werner

312002 CLIMATE CHANGE ADAPTATION AND MITIGATION: SYNERGISM, ANTAGONISMS AND TRADE-OFFS FOR BIODIVERSITY ................................................................. 1109

F Attorre, M Vitale, F Tomasetto, A La Posta, F Fracesconi, Roberto Valenti, F Bruno

312003 REDEFINING IN SITU AND EX SITU CONSERVATION OF USEFUL PLANT DIVERSITY IN AN ERA OF CLIMATE CHANGE ................................................................. 1111

Toby Hodgkin, L Snook, M Bellon, E Frison

312004 ENHANCING THE ADAPTIVE CAPACITY OF BIODIVERSITY THROUGH IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY ................................................................. 1112

A Djoghlaf, Jaime Alexandra Webbe

312005 ENSURING BIODIVERSITY SECURITY IN THE FACE OF CLIMATE CHANGE ................................................................. 1113

Sandy Andelman, G Midgley, S Polasky, M Bode, J Busch, L Hannah, P Marquet, D Pantiaz, J Reyer, R Shaw, R Wise

312006 TOWARDS AN ADAPTIVE MANAGEMENT FRAMEWORK FOR CLIMATE CHANGE ACROSS SPECIES, SITES AND LAND/SEASCAPES ................................................................. 1114

David Hole, W Turner, T Brooks, S Willis, B Huntley, L Hannah, S Butchart, P Donald

312007 DEVELOPING A SYSTEMATIC REGIONAL APPROACH FOR BIODIVERSITY CONSERVATION IN SOUTH EAST ASIA: A SOCIAL-ECOLOGICAL PERSPECTIVE ................................................................. 1115

Crais Miller, R Lasco, D Hilbert, J Tandug, M Dunlop, T Jovanovic

312008 GLOBAL WARMING IS ERODING THE RESILIENCE OF KELP BEDS ................................................................. 1116

Peter Stachr, T Wernberg, M Thomsen, F Tuya, G Kendrick, B Toohey

POSTER PRESENTATIONS

312009 PHOTOSYNTHETIC CHARACTERISTICS OF LANDRACES OF RICE FROM KUMAUN HIMALAYAN REGION: LEARNING LESSONS FOR THE FUTURE IN RESPONSE TO CLIMATE CHANGE ................................................................. 1117

Rajneesh Kumar Agnihotri, L S Palni, S K Nandi, S Chandra

312010 THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF): INFRASTRUCTURE, STANDARDS, ACCESS TO DATA AND TOOLS TO FORECAST CLIMATE CHANGE IMPACTS ON BIODIVERSITY ................................................................. 1118

S Andelman, Nat Kins, S Gaiji

312011 ABOVE AND BELOWGROUND PHENOLOGY IN A HEATHLAND DURING FUTURE CLIMATE CHANGE ................................................................. 1119

Jane Kongstad Pedersen, M F Arndal, I K Schmidt

312012 EFFECT OF CLIMATE CHANGE ON TREE SPECIES DISTRIBUTION TO SUPPORT THE ELABORATION OF ADAPTIVE MANAGEMENT STRATEGIES IN NATURAL PROTECTED AREAS ................................................................. 1121

F Attorre, M Vitale, F Tomasetto, A La Posta, F Fracesconi, Roberto Valenti, F Bruno

312013 NOAH’S ARC OR WORLD WILD WEB? PERSPECTIVES ON BIODIVERSITY CONSERVATION IN GLOBAL SCENARIOS ................................................................. 1123

Carin Beumer

312014 DEVELOPMENT OF MANAGEMENT STRATEGIES AND POLICY ON THE INDIAN HIMALAYAN BIODIVERSITY EMERGING THROUGH IMPACT OF CLIMATE CHANGE ................................................................. 1124

Sas Biswas

312015 THE ENDEMICS AQUATIC INVERTEBRATE FAUNA OF THE CAPE FLORISTIC REALM: WHAT DOES THE FUTURE HOLD? ................................................................. 1125

Jenny Day, B Day

312016 CONSERVING BIODIVERSITY IN THE FACE OF UNCERTAIN ECOLOGICAL RESPONSES TO CLIMATE CHANGE ................................................................. 1126

Michael Dunlop, P Brown
312017 ASSESSING POTENTIAL SHIFTS IN BIOLOGICAL COMPOSITION OF WHOLE ECOSYSTEMS UNDER CLIMATE CHANGE – A NEW MACROECOLOGICAL MODELLING APPROACH ........................................ 1127
Simon Ferriere

312018 ECOSYSTEM EFFECTS OF CLIMATE CHANGE ON THE SEYCHELLES ISLANDS: CURRENT IMPACTS AND THE POTENTIAL FOR RESOLUTION .......................................................... 1128
Justin Gerlach

312019 MUNICIPAL PROTECTED AREAS AS POLICY INSTRUMENTS TO ENHANCE ECOSYSTEM RESILIENCE. LESSONS FROM LATIN AMERICAN EXPERIENCES ........................................................................... 1129
Dick Hoffmann

312020 POTENTIAL EFFECTS OF CLIMATE CHANGE ON VEGETATION ZONATION AND C AND N DYNAMICS IN ISLANDS OF THE OKAVANGO DELTA, BOTSWANA .......................................................... 1130
Keleboisle Mfundi

312021 CLIMATE-DRIVEN CHANGES IN COASTAL MARINE BIODIVERSITY: TRENDS, FORECASTS & MANAGEMENT IMPLICATIONS .............................................................. 1131
Nova Mieczkowska, S Hawkins, M Barrowes

312022 HURRICANES IN THE UNITED STATES APPLICATION TO HURRICANES IN THE UNITED STATES ....................................................... 1132
Per Molgaard

312023 IS A RECENT INCREASE OF THE GREENLAND FISH FAUNA CAUSED BY CLIMATE CHANGE? .............................................................. 1135
Per Bisk Moller

312024 CHALLENGES FOR TRANSLATING CLIMATE CHANGE IMPACTS TO ADAPTATION CHOICES IN THE MARINE ENVIRONMENT ................................................................. 1136
Michel Den Elzen, A Hof, D Van Vuuren

312025 BIODIVERSITY SCIENCE INTO CLIMATE CHANGE POLICY – A PERSPECTIVE FROM THE UK ................................................................. 1137
Janet Bump, H Kayondo Kitone

312026 CONSERVATION IN A CHANGING CLIMATE: THE ROLE OF CONNECTIVITY IN TERRESTRIAL, FRESHWATER, AND MARINE ECOSYSTEMS ................................................................. 1138
Miguel Esteban, C Webersick, T Shibayama

312027 PREDICTION AND MITIGATION OF UNDESIRABLE CHANGE IN SEMI-NATURAL GRASSLAND DUE TO EXTREME DROUGHTS AND HAY MANAGEMENT .......................................................... 1139
Michaele Poloczanska, A Hobday, A Richardson

312028 EXPANDING THE EVALUATION OF SPECIES DISTRIBUTION MODELS TO GUIDE THEIR ASSESSMENT OF CLIMATE IMPACTS ................................................................. 1140
Andreas Stampfli, M Zeiter

312029 WETLANDS UNDER A CHANGING CLIMATE: LIVE OR LET DIE? .......................................................................................................................... 1143
Rudy Van Diggelen, A Grootsmans, W Koetseki

312030 CHALLENGES IN GLOBAL BIODIVERSITY CONSERVATION IN THE ERA OF CLIMATE CHANGE .......................................................................................................................................................... 1144
Josef Amadu Woldeamanuel

312031 SALIENT TOPICS ON THE ASSESSMENT AND MONITORING OF FOREST BIODIVERSITY UNDER THE PRESSURE OF CLIMATE CHANGE ................................................................. 1146
Yoseph Assefa Woldeamanuel

312032 THE IMPACT OF LAND USE CHANGE ON BIODIVERSITY LOSS IN UGANDA .......................................................................................................................... 1147
Andreas Stampfli, M Zeiter

312033 COMBINED EFFECTS OF TEMPERATURE DUE TO E.G. CLIMATE CHANGE AND ENDOCRINE DISRUPTORS ON SEX STEROID TITRES IN THE AFRICAN FROG, XENOPUS LAEVIS .......................................................................................................................................................... 1148
Miguel Esteban, C Webersick, T Shibayama

SESSION 32 – ECONOMIC COSTS OF ADAPTING AND NOT ADAPTING TO CLIMATE CHANGE

POSTER PRESENTATIONS

322001 A ROADMAP TO ASSESS THE ECONOMIC COST OF CLIMATE CHANGE WITH AN APPLICATION TO HURRICANES IN THE UNITED STATES ........................................................................................................................................................................................................ 1149
Stephanie Hallegatte

322002 EFFECTS OF CLIMATE CHANGE IN EUROPE: RESULTS FROM THE PESETA STUDY ........................................................................................................................................................................................................ 1150
Juan Carlos Cunic, A Soria, A Iglesias, L Garrote, S Pye, L Harrocks, P Watkis, R Nicholls, R Roson, P Bosello, L Feyen, R Dankers, A Moreno, M Amelung, J M Lubaegu, X Lubandeira, O B Christensen, C Goodess, D Van Regemorter

322003 ESTIMATION OF THE ECONOMIC COSTS OF NON ADAPTING JAPANESE PORT INFRASTRUCTURE TO A POTENTIAL INCREASE IN TROPICAL CYCLONE INTENSITY ........................................................................................................................................................................................................ 1151
Miguel Esteban, C Weber, T Shibayama

322004 CLIMATIC VARIABILITY AND ITS IMPACTS ON AGRICULTURAL INCOME AND HOUSEHOLDS' WELFARE IN SOUTHERN AND NORTHERN NIGERIA ........................................................................................................................................................................................................ 1152
Abayomi Oyekale

322005 REGIONAL TOTAL CLIMATE CHANGE COSTS FOR DIFFERENT BURDEN SHARING REGIMES AND CONCENTRATION TARGETS ........................................................................................................................................................................................................ 1153
Michel Den Elzen, A Hof, D Van Vuuren
322006 TO ADAPT OR NOT TO ADAPT? TOWARDS LOCAL COSTING OF CLIMATE CHANGE IMPACTS FOR DECISION MAKING IN ADAPTATION .......................... 1155
Alistair Hunt, T Taylor

322007 PRIVATE ADAPTATION OF CRITICAL INFRASTRUCTURES IS INEFFICIENT ......................................................... 1157
Klaus Eisenack

322008 ECONOMIC CONSEQUENCES OF EUROPE’S CHANGING CLIMATE – 2008 INDICATOR-BASED ASSESSMENT ................................................................. 1158
Stephane Isoard

322009 CLIMATE CHANGE AND ETHIOPIA ......................................................................................................................... 1160
C Arndt, H Ahmed, Sherman Robinson, D Willenbockel

322010 HOW TO GO ABOUT COSTING AND FUNDING ADAPTATION IN DEVELOPING COUNTRIES? ...................... 1162
Stephen Howes, F Jotzo

POSTER PRESENTATIONS

322011 ADAPTING TO CLIMATE CHANGE: POLICY IMPLICATIONS FOR GHANA .............................................................. 1163
Kwabena Asomanin Anaman, C Osei-Amponsah

322012 THE VALUE OF CLIMATE AMENITIES: EVIDENCE FROM MIGRATION DECISIONS ........................................ 1164
Paramita Sinha, M Cropper

322013 LOSSES DUE TO SEVERE WIND STORMS OVER EUROPE IN A FUTURE CLIMATE .................................................. 1165
Simon Wild, T Kruschke, M Donat, D Renggli, G C Leckebusch, U Ulbrich

322014 POSSIBLE ECONOMICAL AND SOVEREIGNTY ISSUES OF THE DISAPPEARANCE OF ISLAND NATIONS .................. 1166
Lilian Yamamoto, M Esteban

SESSION 33 – ADAPTING URBAN AREAS TO CLIMATE CHANGE

ORAL PRESENTATIONS

332001 BUILDING URBAN RESILIENCE IN THE LEAST DEVELOPED COUNTRIES ............................................................... 1167
David Dodman

332002 ENHANCING ADAPTATION OF POOR URBAN DWELLERS TO THE EFFECTS OF CLIMATE VARIABILITY AND CHANGE ................................................................................................. 1168
Shusil Louisa, M Temwa, G J Mzalidwa Mwanjalolo, H Sengendo, G Prain

332003 ADAPTATION IN THE URBAN ENVIRONMENT: A STORY OF PROCESS AND OUTCOME ............................................ 1170
Darryn McEvoy, K Lonsdale, J Rawlins, S Lindley, J Hinckel, M Falaleeva

332004 THE IMPACTS OF CLIMATE CHANGE ON NEW YORK CITY’S ENERGY SECTOR: VULNERABILITIES AND POTENTIAL ADAPTATION STRATEGIES ........................................... 1171
Stephen Hammer, L Parshall

332005 LINKING GLOBAL AND LOCAL ADAPTATION RESPONSES IN CITIES TO CLIMATE CHANGE: AN ASSESSMENT OF CURRENT PRACTICE IN LATIN AMERICA ................................................. 1172
Dirk Heinrichs, R Jordan Fuchs, J Vogel

332006 JOINT-ACTION FOR URBAN RESILIENCE: LINKING NATIONAL AND LOCAL CLIMATE CHANGE STRATEGIES ......................................................................................................................... 1173
Cecilia Njenga, R Tuts

332007 ADAPTATION IN THE TRANSPORT SECTOR: THE CONSTRAINING EFFECT OF ACTOR-INTERDEPENDENCIES ........................................................................................................... 1174
Esther Hoffmann, D Reckien, K Eisenack

332008 CITY-SCALE INTEGRATED ASSESSMENT OF CLIMATE IMPACTS, ADAPTATION AND MITIGATION .......................................................................................................................... 1175
Richard Dawson, J Hall, S Barr, M Batty, A Bristow, S Carney, A Dagouman, S Evans, A Ford, J Kohler, M Tight, C Walsh, H Watters, A Zannii

332009 THE FRAMING OF AN ECO-CITY: TOWARDS CROSS-SECTIONAL URBAN POLICIES OF CLIMATE AND URBAN DEVELOPMENT .................................................................................. 1177
Anne Jensen, A B Pedersen, S Soulgaard

332010 RAPIDLY GROWING CITIES AND THEIR RESILIENCE TO CLIMATE CHANGE: A META-ANALYSIS OF GLOBAL TRENDS IN URBAN LAND-USE CHANGE AND INDICATORS OF RESILIENCE AND VULNERABILITY ............................................................................................................................... 1179
Karen C Seto, Fragkias, B Guneralp, M Reilly

332011 REGIONAL ADAPTATION TO CLIMATE CHANGE IN THE UNITED STATES: ARE METROPOLITAN PLANNING ORGANIZATIONS RESPONDING? ......................................................... 1180
Eric Lindquist
<table>
<thead>
<tr>
<th>Poster ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>332012</td>
<td>Detecting Land Use Dynamics, Their Impacts on Natural Hazards and</td>
<td>Ellen Banzhof, A Ebert, R Hofer</td>
</tr>
<tr>
<td></td>
<td>Vulnerability in the Fast Growing City of Santiago de Chile with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Resolution Remote Sensing Data and GIS</td>
<td></td>
</tr>
<tr>
<td>332013</td>
<td>Modeling Temperature and Humidity Variations of Urban Green Areas</td>
<td>Fabian Bochaca, E Puliafito</td>
</tr>
<tr>
<td>332014</td>
<td>The Importance of Adapting to Climate Change in French Urban Areas:</td>
<td>Alexis Leveau, M Mansuetu-Balatier, M Hervé-Mignucci, J Cochran</td>
</tr>
<tr>
<td></td>
<td>Examples from Energy and Transportation Infrastructures</td>
<td></td>
</tr>
<tr>
<td>332015</td>
<td>Urban Vulnerability at Low Basins of the Mamo, Tacagua and La Zorra</td>
<td>Jesus Delgado</td>
</tr>
<tr>
<td></td>
<td>Rivers, in Vargas State, Venezuela</td>
<td></td>
</tr>
<tr>
<td>332016</td>
<td>Sustainable Parks: Preparing Urban Public Green Spaces for a Changing</td>
<td>Stephanie Drilık, A Mahur, L Licka</td>
</tr>
<tr>
<td></td>
<td>Climatic Situation</td>
<td></td>
</tr>
<tr>
<td>332017</td>
<td>Knowledge Networking for Climate Resilient Urban Regions</td>
<td>Thomas Elmqvist, C Alfred</td>
</tr>
<tr>
<td>332018</td>
<td>Urban Institutional Innovation and Dynamics as a Response to Global</td>
<td>Michail Fragkias</td>
</tr>
<tr>
<td></td>
<td>Environmental Change</td>
<td></td>
</tr>
<tr>
<td>332019</td>
<td>Approaching Inter-Disciplinary Planning of Urban Drainage Retrofits</td>
<td>Marina Bergen Jensen, A Braun, O Fryd, S T Ingwersen, J Jeppesen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>332020</td>
<td>Challenges to Adapting for Risk-Prone Marine-Related Livelihoods in</td>
<td>Andreas Lampê</td>
</tr>
<tr>
<td></td>
<td>Tumaco, Pacific Coast (Colombia)</td>
<td></td>
</tr>
<tr>
<td>332021</td>
<td>Assessing Climate Change Impacts, Sea Level Rise and Storm Surge Risk</td>
<td>Stephane Hallegatte, N Patmore, O Mestre, P Dumas, J Corfee-Morlot,</td>
</tr>
<tr>
<td></td>
<td>in Port Cities: A Case Study on Copenhagen</td>
<td>C Herweijer, R Muir-Wood</td>
</tr>
<tr>
<td>332022</td>
<td>Built-in Resilience: Learning from Urban Grassroots Coping Strategies</td>
<td>Cassidy Johnson, A Allen, H Jaben</td>
</tr>
<tr>
<td></td>
<td>to Climate Variability</td>
<td></td>
</tr>
<tr>
<td>332023</td>
<td>Changing Groundwater Levels Jeopardizing the Supply, Quality of</td>
<td>Charlotte Sparrenbom, M Gustafsson, K Hemström, T Rihm</td>
</tr>
<tr>
<td></td>
<td>Groundwater and Ground Stability</td>
<td></td>
</tr>
<tr>
<td>332024</td>
<td>Challenges to Adaptation for Risk-Prone Marine-Related Livelihoods</td>
<td>Andrea Lampê</td>
</tr>
<tr>
<td></td>
<td>in Dakar Outskirts, Does Climate Variability Reveal Inconsistent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban Management?</td>
<td>Cheikh Mbou, A Diop, A T Diaw</td>
</tr>
<tr>
<td>332026</td>
<td>A Strategy for Climate Change in Varadero. Advising Decision Makers</td>
<td>Barbara Moya, A Cabrera, L Castillo, J Rojo</td>
</tr>
<tr>
<td></td>
<td>and Stakeholders</td>
<td></td>
</tr>
<tr>
<td>332027</td>
<td>Strategies for Sustainable Rural-Urban Land Use Relationships under</td>
<td>Kjell Nilsen, S Pauleit, T S Nielsen</td>
</tr>
<tr>
<td></td>
<td>Changing Climate Conditions</td>
<td></td>
</tr>
<tr>
<td>332028</td>
<td>Integrated Planning Strategies for Climate Change Mitigation and</td>
<td>Hilda Blanco, S Pauleit, G Jorgensen, T A Carstensen, J Handley</td>
</tr>
<tr>
<td></td>
<td>Adaptation in Europe’s Urbanising Regions – Towards a Research Agenda</td>
<td></td>
</tr>
<tr>
<td>332029</td>
<td>Vulnerability of Maldives Islands to Extreme Weather Events: A Study</td>
<td>E Heineke, Schluenzen, P Ament, B Bechtle, J Böhnir, A Eschenbach,</td>
</tr>
<tr>
<td></td>
<td>of Citizens’ Perceptions and Adaptations in Regional Urban Centers</td>
<td>B Fock, P Hoffmann, P Kirschner, B Leitl, Johenbrügge, G</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>332030</td>
<td>Urban Gradient Development for Evaluating Impact Gradients of Ecosystem</td>
<td>L A S Ranjith Perera, M Mohamed</td>
</tr>
<tr>
<td></td>
<td>Services in Megacities: A Case Study of Karachi, Pakistan</td>
<td></td>
</tr>
<tr>
<td>332031</td>
<td>Vulnerability to Sea Level Rise and Riverine Flooding: A Case Study</td>
<td>Salman Qureshi</td>
</tr>
<tr>
<td></td>
<td>of Verdal, Mid-Norway</td>
<td></td>
</tr>
<tr>
<td>332032</td>
<td>Effects of Cities on the Local Climate and the Relationship with</td>
<td>Rita Rosvoldaune</td>
</tr>
<tr>
<td></td>
<td>Climate Change Mitigation and Adaptation</td>
<td></td>
</tr>
<tr>
<td>332033</td>
<td>Assessment of Social and Community Impacts of Climate Adaptation for</td>
<td>Rauno Sairinen</td>
</tr>
<tr>
<td></td>
<td>Urban Areas</td>
<td></td>
</tr>
<tr>
<td>332034</td>
<td>Development of Mitigation Measures for the Metropolitan Region of</td>
<td>K Heineke, Schluenzen, P Ament, B Bechtle, J Böhnir, A Eschenbach,</td>
</tr>
<tr>
<td></td>
<td>Hamburg (Germany)</td>
<td>Rosenhagen, M Schutzmman</td>
</tr>
<tr>
<td>Session</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>332035</td>
<td>RESILIENCE TO CLIMATE CHANGE IN URBAN COMMUNITIES OF COASTAL CITY: PURI (INDIA)</td>
<td>Xingang Dai, Y Xu, G Jia, C Fu</td>
</tr>
<tr>
<td>332036</td>
<td>URBAN RESPONSES TO CLIMATE CHANGE: ROLE OF LOCAL COMMUNITY INSTITUTIONS IN MUMBAI, INDIA</td>
<td>Akhilesh Surjan, R Shaw</td>
</tr>
<tr>
<td>332037</td>
<td>CLIMATIC CHANGE AND ITS HUMAN DIMENSIONS IN PEARL RIVER DELTA, SOUTHERN CHINA</td>
<td>Haoyuns Dou, X Zhao</td>
</tr>
</tbody>
</table>

**SESSION 34 – ADAPTING HUMAN LAND USE TO CLIMATE CHANGE**

**ORAL PRESENTATIONS**

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>342001</td>
<td>LAND USE AND SOCIO-ECONOMICS, IDENTIFYING SOCIETAL FACTORS THAT LEAD TO AGRICULTURAL LANDSCAPES VULNERABLE TO CLIMATE CHANGE IN MALAWI</td>
<td>Evan Fraser, E Simleton, M Termansen, A Challinor, D Mkambisi</td>
<td>1216</td>
</tr>
<tr>
<td>342002</td>
<td>SCENARIOS OF AGRICULTURAL LAND-USE CHANGE IN AFRICA UNDER CHANGING CLIMATE CONDITIONS</td>
<td>Rüdiger Schalch, J Alcamo, J Koch, D Lapola</td>
<td>1218</td>
</tr>
<tr>
<td>342003</td>
<td>FOOD PRODUCTION RISKS ASSOCIATED WITH LAND USE CHANGE AND CLIMATE CHANGE IN E. T. AFRICA</td>
<td>Nathan Moore, G Alagarswamy, B Pijanowski, P Thornton, J Olton, B Lofgren, J Andresen, D Campbell</td>
<td>1219</td>
</tr>
<tr>
<td>342004</td>
<td>CLIMATE CHANGE, LAND USE POLICIES, AND ADAPTATION IN ALXA REGION, INNER MONGOLIA, CHINA</td>
<td>Henry Neufeldt</td>
<td>1221</td>
</tr>
<tr>
<td>342005</td>
<td>EL NIÑO AND LAND-USE CHANGE – AN ATTEMPT TO SIMULATE FARMERS’ REACTIONS ON CLIMATE VARIABILITY AND CLIMATE CHANGE IN INDONESIA</td>
<td>R K Kaufmann, Karen C Seto, A Schneider, Z Liu, L Zhou, W Wang</td>
<td>1223</td>
</tr>
<tr>
<td>342006</td>
<td>URBAN LAND-USE CHANGE AND AFFECTS ON REGIONAL CLIMATE; REDUCED PRECIPITATION FROM RAPIDLY GROWING CITIES IN CHINA</td>
<td>Prakash Chandra Chawari</td>
<td>1225</td>
</tr>
<tr>
<td>342007</td>
<td>SUSTAINABLE LAND USE FOR ADAPTATION TO LONG TERM IMPACTS OF CLIMATE CHANGE IN HIMALAYA</td>
<td>Richard Aspinall, E Milne</td>
<td>1226</td>
</tr>
<tr>
<td>342008</td>
<td>EXPOSURE OF SWISS MUNICIPALITIES TO CLIMATE CHANGE INDUCED CHANGES IN AGRICULTURE</td>
<td>Ariane Walz, C Elkin, D Schmatz</td>
<td>1227</td>
</tr>
<tr>
<td>342009</td>
<td>MAPPING AND MODELLING ECOSYSTEM SERVICES IN LAND SYSTEMS</td>
<td>Richard Aspinall, E Milne</td>
<td>1228</td>
</tr>
<tr>
<td>342010</td>
<td>THE INFLUENCE OF LAND USE CHANGE, CO2 FERTILIZATION AND CLIMATE CHANGE ON THE EUROPEAN CARBON BUDGET</td>
<td>Jenna Gornall, J Hughes, A Wilshire</td>
<td>1229</td>
</tr>
<tr>
<td>342011</td>
<td>INTEGRATION OF SPATIALLY EXPLICIT CLIMATE-ADAPTATION MEASURES WITH A LAND USE MODEL</td>
<td>Eric Koomen</td>
<td>1231</td>
</tr>
<tr>
<td>342012</td>
<td>ADAPTATION TO LAND USE AND GLOBAL CHANGE THRESHOLDS</td>
<td>Dennis Ofima, R Corell</td>
<td>1232</td>
</tr>
</tbody>
</table>

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>342013</td>
<td>REVIEWING CONCERNS FOR ILLEGAL LAND USE AND ADAPTATION TO CLIMATE CHANGE IN POPULAR URBAN AREAS OF THE LAC REGION</td>
<td>Jose Azeb</td>
<td>1233</td>
</tr>
<tr>
<td>342014</td>
<td>SUSTAINABLE PLANT PRODUCTION IN A CHANGING WORLD – FORMATION OF A CROSS-FACULTY NETWORK</td>
<td>Lisa Bjørnlund, J Schjørring, S Christensen, O Nybroe, J Pedersen, J Eilenberg, L Munk, R Ronn, O Ciofu, S Braum, J E Ørum</td>
<td>1234</td>
</tr>
<tr>
<td>342015</td>
<td>LAND CAPABILITY: A STRATEGIC PLANNING TOOL FOR INTEGRATED CLIMATE CHANGE RESPONSES</td>
<td>Iain Brown, W Towers, M Rixtling, H Black</td>
<td>1236</td>
</tr>
<tr>
<td>342016</td>
<td>SUBSISTENCE FARMERS’ RESPONSES TO CLIMATE VARIABILITY AND CHANGE IN KYELA, TANZANIA</td>
<td>Magreth Busheke, J Lee-Thorp, P Hopkinshon</td>
<td>1239</td>
</tr>
<tr>
<td>342018</td>
<td>CLIMATE CHANGE IMPACT AND ADAPTATION IN INNER MONGOLIA</td>
<td>Xingang Dai, Y Xu, G Jia, C Fu</td>
<td>1241</td>
</tr>
</tbody>
</table>
342019 ADAPTING LAND USE TO CLIMATE CHANGE ON THE COAST OF ONDO STATE, SOUTHWEST NIGERIA .................................................................................................................................................. 1242

Mayowa Johnson Fasona, A Omojola, A Suneye

342020 ADAPTING MANAGED FORESTS TO CLIMATE CHANGE IN SOUTHERN SWEDEN: CONSTRAINTS AND OPPORTUNITIES FOR ALTERING TREE SPECIES COMPOSITION ........................................................................................................... 1243

Adam Felton, K Blennow, E Andersson, L Ellington, L Driössler

342021 SCENARIOS OF URBAN LAND USE CHANGE AND IMPACT ASSESSMENT OF CLIMATE CHANGE .......................................................................................................................... 1244

Corentin M Fontaine, M Mohrtech, M D A Rounsevell, B J Nichollet, L Acosta-Michlik, S A Nicholson-Cole

342022 CLIMATE CHANGE IN THE SAHEL: CONNECTING PAST AND FUTURE ......................................................................................................................................................... 1246

Alessandra Giannini

342023 SPATIAL PLANNING AS AN ADAPTATION STRATEGY TO CLIMATE CHANGE. A REVIEW OF PRACTICE IN GERMANY ................................................................................................................................................. 1247

Dirk Heinrichs, S Beck, C Kahlicke

342024 EFFECT OF POTENTIAL FUTURE CLIMATE CHANGE ON THE COST-EFFECTIVE NONPOINT SOURCE POLLUTION REDUCTION STRATEGIES IN THE UPPER MISSISSIPPI RIVER BASIN ................................................................................................. 1249

M Jha, S Babarayange, Catherine Kling, P Gusman, E Table

342025 LUCC IN THE PHILIPPINES OVER THE 20TH CENTURY: LINKS TO POPULATION GROWTH, FOOD DEMAND AND TRADE .............................................................................................................................. 1251

Thomas Kastner, S Nonhebel

342026 PRODUCTION OF BIOMEDICINE UNDER DIFFERENT CLIMATIC CONDITIONS – ARTEMISININ AS STUDY CASE ............................................................................................................................................... 1252

Ariena Knudmark Jessing, B W Strobel

342027 MODELING THE LAND REQUIREMENTS AND POTENTIAL PRODUCTIVITY OF BIOFUEL CROPS IN BRAZIL AND INDIA ............................................................................................................................................. 1254

David M Lapola, J Priess

342028 CHANGING FARMING SYSTEMS IN MONTANE MAINLAND SOUTHEAST ASIA, RESILIENCY AND CLIMATE CHANGE ........................................................................................................................................ 1255

Stephan Leitz

342029 EXPLORING THE ROLE OF GREEN INFRASTRUCTURE IN THE MITIGATION OF CLIMATE CHANGE IN THE URBAN REALM ........................................................................................................................................ 1256

Ian Mell, M Roe, C Davies

342030 LINKING CLIMATE FACTORS, AGRICULTURAL DEVELOPMENT AND ADAPTATION STRATEGIES IN THE SAHEL-SUDAN ZONE OF WEST AFRICA ........................................................................................................ 1258

Ole Mertz, C Mbow, J Ø Nielsen, A Ka, D Diallo, P Cissé, B Barbier, D E Da, I Bouzou, W M Maio, D Dabi, V Ihemeghulem

342031 ADAPTING PEST CONTROL MANAGEMENT TO CLIMATE CHANGE .................................................................................................................................................................................................................. 1259

Ricardoa Moser, I Pertot, R Raffaelli

342032 LINKING CLIMATE CHANGE AND URBANIZATION IN KANO METROPOLIS AND ENVIRONS IN THE SUDANO-SAHELIAN BELT OF NIGERIA ........................................................................................................................................................................ 1260

D Sanni, Appollonia Okhiamnhe

342033 RURAL COMMUNITY ENGAGEMENT AND CLIMATE CHANGE IN SCOTLAND: PERCEPTIONS AND POTENTIAL RESPONSES .................................................................................................................. 1261

Guillaume Pajot, B Sée, T Craig

342034 CLIMATE CHANGE, LAND USE AND LANDSCAPE DYNAMICS. ASSESSING ENVIRONMENTAL TREES IN RELATION TO CLIMATE CHANGE IN THE TROPICAL ANDES ............................................................................................................................................. 1263

Hildebrando Palacios

342035 GLOBAL CLIMATE CHANGE AND SUSTAINABLE MANAGEMENT OF AGRICULTURE IN A HIGHLY DEVELOPED MOUNTAIN ENVIRONMENT .................................................................................................................................................. 1264

Ilaria Pertot, Y Elad, C Gessler, R Raffaelli, C Furlanello

342036 CARBON DYNAMICS CHANGE WITH LAND-USE/COVER: AN ANALYSIS FROM A WATERSHED OF NORTH-EAST INDIA ............................................................................................................................................... 1266

Suresh Chand Rao, P Sharma

342037 GETTING THE CLIMATE IMPACT RIGHT – THE COMPLEX DYNAMICS OF THE AGRICULTURAL FRONTLINE IN THE SAHEL ............................................................................................................................................... 1267

Anette Reenberg

342038 ON THE LAND – GREENLAND AND NUNAVUT: A SMALL FOOTPRINT MODEL ......................................................................................................................................................................................................... 1268

Wilfred Emery Richard

342039 CLIMATE CHANGE AND THE SÁMI REINDEER INDUSTRY IN NORWAY. PROBABLE NEEDS OF ADAPTATION .......................................................................................................................................................... 1269

Mayowa Johnson Fasona, A Omojola, H Hammarvåg

342040 UNDERSTANDING VULNERABILITY AND BUILDING RESILIENCE TO CLIMATE CHANGE IN A HIGH BIODIVERSITY MOUNTAIN LANDSCAPE IN CHIAPAS, MEXICO ...................................................................................................................................................... 1271

Goetz Schroth, J Haggard, H Hernandez, T Castilllos

342041 EFFECTS OF LAND USE AND PRECIPITATION CHANGES ON CARBON STOCK IN A BASIN OF THE ORINOCO LOWLANDS: 1938-1997 ................................................................................................................................................................................................................................. 1272

J San José, R Montes, D Thielen

342042 ADAPTATION, LANDSCAPE HETEROGENEITY & CLIMATE VARIABILITY ...................................................................................................................................................................................................................... 1274

Saskia Werners
SESSION 35 – ADAPTING COASTAL ZONE AND MARINE RESOURCES TO CLIMATE CHANGE

ORAL PRESENTATIONS

352001 ADAPTING COASTAL ZONE AND MARINE RESOURCES TO CLIMATE CHANGE AND INTEGRATING HUMAN DIMENSIONS DURING NATURAL DISASTERS ......................................................... 1280
Narendra Kumar Chaudhary, L P Chaudhary, A G Bhole

352002 INFORMING ADAPTATION: A NEW SET OF MARINE CLIMATE CHANGE SCENARIOS ......................................................... 1281
J Lovac, Jonathan Tinker, T Howard, D De Gusmão, J Wolf, K Hobsburg, J Holt, T Reed

352003 POLICY OPTIONS FOR ADAPTING MARINE ECOSYSTEMS TO CLIMATE CHANGE ......................................................... 1283
Ian Perry, M Barange

352004 EXPLORING HIGH-END CLIMATE CHANGE SCENARIOS FOR FLOOD PROTECTION OF THE NETHERLANDS......................................................... 1284
C Katman, Wilco Hazeleger, A Sterl, J Beeroma

352005 VULNERABILITY ASSESSMENT FOR DEVELOPMENT OF STRATEGIC PLANNING POLICIES FOR EASTERN MEDITERRANEAN COAST OF MOROCCO ......................................................... 1285
Allali Abdelkader

352006 ECOSYSTEM-BASED ADAPTATION TO CLIMATE CHANGE IN COASTAL AND MARINE AREAS ......................................................... 1286
Lynne Hare, P Van Eijk, M Hatziiolis, N Davidson, R Chacko, C Toropova

352007 TESTING EMPIRICAL RELATIONSHIPS BETWEEN GLOBAL SEA-LEVEL AND GLOBAL TEMPERATURE IN LONG CLIMATE MODEL SIMULATIONS ......................................................... 1287
Henk Van Storch, Eduardo Zorita

352008 ENVIRONMENTAL DESIGN FOR SUSTAINABLE COASTS? AN EXAMINATION OF ENVIRONMENTAL CHANGE IN THE URBAN MARINE NEARSHORE OF SEATTLE OVER THE PAST 50 YEARS ......................................................... 1288
Meriwether Wilson

352009 IMPACT OF CLIMATE CHANGE IN COASTAL AREA: A VULNERABILITY ASSESSMENT OF COASTAL INUNDATION DUE TO SEA LEVEL RISE IN CENTRAL JAVA INDONESIA ......................................................... 1289
Muh Aris Marfai

352010 DECISION SUPPORT MODEL TO RISK MANAGEMENT AND ADAPTATION STRATEGIES TO CLIMATE CHANGE IN BUENOS AIRES COAST, ARGENTINA ......................................................... 1290
Leandro Fernandez, J Karol, N Castillo

352011 A SURVEY OF STAKEHOLDERS’ RESPONSE TO HEAT WAVES IN ADELAIDE, SOUTH AUSTRALIA: A QUALITATIVE STUDY ......................................................... 1291
Pens Bl, R Van Iersel

352012 ADAPTATION TO CLIMATE CHANGE IN COASTAL ZONES: AN ANALYSIS OF THE INTERVENTIONS TO SAFEGUARD VENICE AND ITS LAGOON ......................................................... 1292
Stefania Munaretto

POSTER PRESENTATIONS

352013 CLIMATE CHANGE RISK-PRONE MARINE-RELATED LIVELIHOODS IN TUMACO, PACIFIC COAST (COLOMBIA) ......................................................... 1293
Lampis Andrea

352014 LIKELY IMPACTS OF CLIMATE CHANGES ON THE ALBANIAN COAST ......................................................... 1294
Eglantina Bruci, E Fida, L Mucaj

352015 DOMINANT THREATS AND COLLABORATIVE SOLUTIONS IN THE WORLD’S LARGEST OCEAN: THE PACIFIC ......................................................... 1295
Margaret R Caldwell, S R Palumbi, T Hoffmann, J Teisch, O Hoegh-Guldberg, J Lubchenco

352016 ADAPTATION OF FISHING COMMUNITIES IN THE PHILIPPINES TO CLIMATE CHANGE ......................................................... 1297
Maria Rebecca Campos

352017 COASTAL RESILIENCE TO CLIMATE CHANGE: DEVELOPING A GENERALIZABLE METHOD FOR ASSESSING VULNERABILITY AND ADAPTATION OF MANGROVES AND ASSOC. ECOSYSTEMS ......................................................... 1299
M Case, M Tchamba, M Fiu, J Rubens, Jeff Price
352018 SEA LEVEL RISE VULNERABILITY ASSESSMENT IN COASTAL AREAS IN RIO DE JANEIRO STATE, BRAZIL .......................................................................................................................... 1300
Carolina Carvalho

352019 CLIMATE AND POPULATION CHANGE EFFECTS ON LAND-TO-SEA DISCHARGES OF FRESHWATER AND NUTRIENTS .................................................................................. 1301
Amélie Darrauq, G Destouni

352020 NIGERIA COASTAL CITIES ALREADY LIVING WITH CLIMATE CHANGE ................................................................................................................................. 1302
Adesina Fatata

352021 IMPACTS OF CLIMATE VARIABILITY AND CHANGE ON MARINE PLANKTON COMMUNITIES IN TROPICAL COASTAL ECOSYSTEMS, SOUTH INDIA .......................................................................................................... 1303
Nallamuthu Godhantaraman

352022 CLIMATE FACTORS THAT LEAD TO FISH KILLS IN AUSTRALIAN COASTAL ACID SULFATE SOIL CATCHMENTS ................................................................................................................................. 1304
Lance Heath

352023 A CALL FOR WAVE CLIMATE PROJECTIONS TO BE INCLUDED IN IPCC ASSESSMENTS ......................................................................................................................... 1305
Hemere, K McLones, B Ranasinghe

352024 THE ROLE OF COASTAL MANAGEMENT IN MODIFYING COASTAL CARBON AND NITROGEN CYCLES ................................................................................................................................. 1306
Timothy Jickells, J Andrews

352025 VULNERABILITY OF COASTAL ECOSYSTEMS IN NORTHEAST OF MOROCCO TO SHORELINE EROSION AND SEA LEVEL RISE ......................................................................................................................... 1307
Abdelatif Khattabti, F M Bellaghmouch

352026 THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF): INFRASTRUCTURE, STANDARDS, ACCESS TO DATA AND TOOLS TO FORECAST CLIMATE CHANGE IMPACTS ON MARINE RESOURCES ......................................................................................................................... 1308
S Andelman, Nick Kins, S Gaiji

352027 CLIMATE CHANGE IMPACTS TO THE COASTAL ZONE AND ADAPTATION STRATEGY IN KOREA ................................................................................................................................. 1309
Suk Hai Lee, D K Kang, I K Bang, K J Choi

352028 FUTURE STORM SURGE RISK IN DENMARK ................................................................................................................................. 1310
Kristine S Madsen, I Kliem

352029 ANALYSIS OF DISASTER VULNERABILITY FOR SUSTAINABLE COASTAL ZONE MANAGEMENT: A CASE OF CYCLONE SIDR 2007 IN BANGLADESH ......................................................................................................................... 1311
Bishawjit Mallick, J Vogt

352030 THE CONSCIENCE PROJECT: BRIDGING THE KNOWLEDGE GAP FOR SUSTAINABLE COASTLINE MANAGEMENT ................................................................................................................................. 1313
Marcel Marchand, T Bucx, J Mulder

352031 ASSESSING THE IMPACT OF RISING SEA LEVELS IN SOUTHEAST AUSTRALIA ................................................................................................................................. 1314
Kathleen McInnes, B Preston, I Macadam, G Hubbert, J O'Grady

352032 CLIMATE CHANGE ADAPTATION: BANGLADESH PERSPECTIVE ................................................................................................................................. 1315
Chowdhury Mohammed Farouque

352033 CONSIDERING FACTORS TO DECREASE COASTAL SEDIMENTATION ................................................................................................................................. 1316
Seyed Majid Mousadid, B Dahanzade

352034 CLIMATE CHANGES – IMPACTS ON COASTAL MUDBANK FORMATION AND ADAPTATIONS OF COASTAL FISHERIES ................................................................................................................................. 1317
Joseph Pampillini

352035 NATIONAL LAW & CLIMATE CHANGE ADAPTATION: A COMPARATIVE ANALYSIS WITH IMPLICATIONS FOR RESPONSE TO SEA LEVEL RISE ................................................................................................................................. 1318
Markaret Peloso, M Caldwell, M Orbach

352036 WEST AFRICAN WEATHER SYSTEMS IN THE DEVELOPMENT OF TROPICAL CYCLONES ................................................................................................................................. 1319
Taara Salami

352037 CLIMATE CHANGE ADAPTATION IN COASTAL ZONES: IMPROVING DECISION-MAKING TO SUPPORT MANAGEMENT STRATEGIES ................................................................................................................................. 1320
S Torresan, A Critto, Francesco Santoro, A Marcomini

352038 VULNERABILITY OF EASTERN QUEBECK COASTAL COMMUNITIES TO CLIMATE CHANGE ................................................................................................................................. 1321
Jean-Pierre Savard, F Morneau

352039 TURNING HAZARDS INTO RESOURCES?: CLIMATE CHANGE, FLOODS AND COASTAL WETLANDS IN THE COSTA BRAVA (NORTH-EAST IBERIAN PENINSULA) ................................................................................................................................. 1322
Anna Serra Llobet, D Sauri

352040 DEPLETION OF NATURAL RESOURCES AT GOA, INDIA – A CASE STUDY ................................................................................................................................. 1323
Shalini Sharma

352041 COMMUNITY ADAPTATION TO CLIMATE CHANGE AND OTHER ENVIRONMENTAL CHANGES IN THE NIGER DELTA REGION OF SOUTHERN NIGERIA ................................................................................................................................. 1324
Etiosa Uyigue, M Agbo

352042 CLIMATE CHANGE: THREAT OR OPPORTUNITY FOR BELGIAN SEA FISHERIES? ................................................................................................................................. 1325
E L S Vanderperren, R De Sutter, H Polet
### VOLUME 3

#### SESSION 36 – APPROACHES TO MEASURING AND ENHANCING ADAPTIVE CAPACITIES

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>362001</td>
<td>DEVELOPING NEW ADAPTATION STRATEGIES TO CLIMATE CHANGE IN GHANA: THE POTENTIAL OF UNDERUTILIZED BAMBOO RESOURCES</td>
</tr>
<tr>
<td>362002</td>
<td>INSTITUTIONAL FACTORS FOR ADAPTATION TO CLIMATE CHANGE IN THE CONGO BASIN FOREST OF CAMEROON</td>
</tr>
<tr>
<td>362003</td>
<td>SOCIAL NETWORKS AND RURAL ADAPTATION TO CLIMATE CHANGE: A BANGLADESH CASE STUDY</td>
</tr>
<tr>
<td>362004</td>
<td>DROUGHT AND FLOOD IN KORHOGO (CÔTE D’IVOIRE): FROM THEIR MANIFESTATION TO POPULATION PERCEPTION AND COPING STRATEGIES</td>
</tr>
<tr>
<td>362005</td>
<td>A PARTICIPATORY APPROACH FOR DEFINING RESPONSE STRATEGIES TO REDUCE RISK AND VULNERABILITY FROM FLOODING IN A CHANGING CLIMATE</td>
</tr>
<tr>
<td>362006</td>
<td>LINKING KNOWLEDGE SYSTEMS FOR RURAL LIVELIHOODS ADAPTATION UNDER UNCERTAINTY: DRYING AND WARMING IN ANDEAN ECOSYSTEMS</td>
</tr>
<tr>
<td>362007</td>
<td>A RESILIENCE CHECK – ENHANCING ADAPTIVE CAPACITIES IN SUB-SAHARA AFRICAN AGRICULTURE</td>
</tr>
<tr>
<td>362008</td>
<td>VULNERABILITY AND ADAPTATION TO WATER SCARCITY IN THE EUROPEAN ALPS</td>
</tr>
<tr>
<td>362009</td>
<td>EMBEDDING CLIMATE CHANGE INTO EVALUATION FRAMEWORKS</td>
</tr>
<tr>
<td>362010</td>
<td>REVIEWING PLANNING HORIZONS AS AN INTEGRAL MEASURE TO ASSESS A COMPANY’S ADAPTIVE CAPACITY TOWARDS CLIMATE CHANGE</td>
</tr>
<tr>
<td>362011</td>
<td>GOAL CONFLICTS IN ADAPTATION TO CLIMATE CHANGE: A SWEDISH REPORT</td>
</tr>
<tr>
<td>362012</td>
<td>MEASURING ADAPTATION THROUGH BUILDING SCIENTIFIC CAPACITY: A SURVEY OF INVESTIGATORS FROM THE AIACC PROJECT</td>
</tr>
<tr>
<td>362013</td>
<td>MEASURING ADAPTATION AS A SOCIO-INSTITUTIONAL PROCESS IN TARGETING CLIMATE ADAPTATION</td>
</tr>
<tr>
<td>362014</td>
<td>MEASURING ADAPTATION: COMPARING POSSIBLE OUTCOMES OR DESCRIBING SOCIAL LEARNING?</td>
</tr>
<tr>
<td>362015</td>
<td>TOWARDS INDICATORS FOR ADAPTATION: POLICY NEEDS, POSSIBLE APPROACHES AND PRACTICAL SOLUTIONS</td>
</tr>
<tr>
<td>362016</td>
<td>AN ASSESSMENT OF CHANNELS TO SUPPORT CLIMATE ADAPTATION BY THE POOREST</td>
</tr>
<tr>
<td>362017</td>
<td>ADAPTIVE CAPACITY OF THE POOR</td>
</tr>
<tr>
<td>362018</td>
<td>DECISION MAKERS, SCIENTISTS AND MODELLERS: COLLABORATIVE APPROACHES TO ENHANCING ADAPTIVE CAPACITY</td>
</tr>
<tr>
<td>362019</td>
<td>A STATE OF THE ART OF GOVERNANCE LITERATURE ON ADAPTATION TO CLIMATE CHANGE: TOWARDS A RESEARCH AGENDA</td>
</tr>
</tbody>
</table>

**ORAL PRESENTATIONS**

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>372001</td>
<td>ADAPTING FUTURE AGRICULTURAL PRODUCTION TO CLIMATE CHANGE: A SURVEY OF THE CHALLENGE TO INCREASE FOOD SECURITY AND REDUCE RISK OF HUNGER</td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>IMPORTANCE OF LOCAL INSTITUTIONS AND DOWNWARDS ACCOUNTABILITY OF LOCAL GOVERNMENT FOR MITIGATING ADVERSE EFFECTS OF GLOBAL CLIMATE CHANGE FOR POOR FARMERS IN SOUTH-EASTERN AFRICA</td>
<td>1355</td>
</tr>
<tr>
<td>MODELLING FARMERS’ ADAPTATION TO CLIMATE CHANGE – INTEGRATING A BIOPHYSICAL AND AN ECONOMIC MODEL</td>
<td>1357</td>
</tr>
<tr>
<td>FUTURE CEREAL PRODUCTION IN CHINA: THE INTERACTION OF CLIMATE CHANGE, WATER AVAILABILITY AND SOCIO-ECONOMIC SCENARIOS</td>
<td>1359</td>
</tr>
<tr>
<td>WHAT CAN WE LEARN FROM HISTORIC ADAPTATIONS TO EXTREME EVENTS IN AGRICULTURE?</td>
<td>1360</td>
</tr>
<tr>
<td>MANAGING FUTURE AGRICULTURAL PRODUCTION IN A VARIABLE AND CHANGING CLIMATE</td>
<td>1362</td>
</tr>
<tr>
<td>ANTICIPATING AND RESPONDING TO BIOLOGICAL COMPLEXITY IN THE EFFECTS OF CLIMATE CHANGE ON AGRICULTURE</td>
<td>1363</td>
</tr>
<tr>
<td>EFFECTS OF DROUGHT AND SALT STRESS DURING EARLY REPRODUCTIVE GROWTH STAGES IN FABA BEAN AND QUINOA</td>
<td>1365</td>
</tr>
<tr>
<td>ADAPTING CROP GENETIC RESOURCES FOR ADAPTATION USING ENSEMBLE CLIMATE AND CROP YIELD FORECASTING</td>
<td>1369</td>
</tr>
<tr>
<td>ADAPTATION TO CLIMATIC VARIABILITY AND CHANGE: EVIDENCE FROM THE NEW ZEALAND DAIRY INDUSTRY</td>
<td>1372</td>
</tr>
<tr>
<td>CLIMATIC CHANGES AND AGRICULTURE IN GREENLAND: PLANT DISEASES IN POTATOES AND GRASS FIELDS</td>
<td>1373</td>
</tr>
<tr>
<td>EFFECT OF CLIMATE CHANGE ON PHYLLOSPHERE MICROFLORA: PLANT-MICROORGANISM INTERACTIONS</td>
<td>1374</td>
</tr>
<tr>
<td>CHALLENGES OF CLIMATIC CHANGE TO PASTORAL SYSTEM IN RAINFOREST ZONE OF SOUTHWEST NIGERIA</td>
<td>1376</td>
</tr>
<tr>
<td>THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF): INFRASTRUCTURE, STANDARDS AND ACCESS TO DATA AND TOOLS TO FORECAST CLIMATE CHANGE IMPACTS ON AGRICULTURAL PRODUCTION</td>
<td>1378</td>
</tr>
<tr>
<td>EFFECT OF CLIMATE CHANGE ON MYCOTOXINS CONTAMINATION IN GRAPE MUST</td>
<td>1379</td>
</tr>
<tr>
<td>SCA METHOD IN CLIMATE CHANGE RESEARCH</td>
<td>1380</td>
</tr>
<tr>
<td>CAN ADAPTATION STOP CLIMATE CHANGE MAKING FOOD-RICH COUNTRIES LIKE AUSTRALIA FOOD-POOR?</td>
<td>1382</td>
</tr>
<tr>
<td>SUSTAINABLE WATER USE SECURING FOOD PRODUCTION IN DRY AREAS OF THE MEDITERRANEAN REGION – AN INTRODUCTION TO A NEW EU FP7 PROJECT</td>
<td>1383</td>
</tr>
<tr>
<td>METRICS OF CLIMATE CHANGE IMPACT AND ADAPTATION OF PHYSIOLOGICALLY-DIVERSE CROPS</td>
<td>1385</td>
</tr>
<tr>
<td>THE SHIFTING GEOGRAPHIES OF CROP SUITABILITY AND THE IMPLICATIONS FOR FOOD AND NUTRITIONAL SECURITY</td>
<td>1387</td>
</tr>
</tbody>
</table>
372023 IDENTIFICATION OF PHOTOPERIOD NEUTRAL LINES OF BAMBARA GROUNDNUT (VIGNA SUBTERRANEAE) FROM TANZANIA ......................................................... 1388
Soren Thordal-Christensen, Muhubutu, C Harmonic, C Ndiri, S P James, H L Simonson, W H Nandu, P Stadler, M R Balasingam, J L Christiansen

372024 BARLEY AND OILSEED RAPE PRODUCTION WILL DECLARE IN THE FUTURE CLIMATE ......................................................... 1393
Rikke B Jørgensen, S K Clausen, G French, L G Linden, T N Mikkelsen, C Lunde, H Brix

372025 SIMULATED EFFECTS OF CLIMATE CHANGE AND RISING CO₂ ON CROP PRODUCTION AND MANAGEMENT IN DIFFERENT REGIONS OF GERMANY ......................................................... 1395
Kurt Christian Kortebaum, K. Nendel, W. Manderbach, R. Manderscheid, H.-J. Weigel, K.-O. Wenkel

372026 ECOLOGICAL IMPLICATIONS OF CLIMATE CHANGE ON THE GENETIC DIVERSITY AND DISTRIBUTION OF AFRICAN LOCUST BEAN PARKIA BIGLOBOSA IN CENTRAL NIGERIA ......................................................... 1396
Emmanuel Hila Kwo-Ndung, C D Chap, N A Binhal, A Ismaila

372027 IDENTIFYING SOCIO ECONOMIC LEVERS FOR A SUSTAINABLE PROVISION OF ECOSYSTEM SERVICES IN AMAZONIA LANDSCAPES ......................................................... 1397
Patrick Levelle, J Viegas, R Ramirez, A A. Arnaud De Sartre, V Gond, T Decuens, B Hubert, S Dolesde, J F Tourrand, M Grimaldi

372028 THE ROLE OF SIMPLE AGROECOLOGICAL MANAGEMENT TO REDUCE THE RISKS OF TEMPERATURE AND PRECIPITATION VARIABILITY ......................................................... 1398
Brenda Lin

372029 TARGETS FOR IMPROVING CROP TOLERANCE UNDER NUTRIENT DEFICIENCY TO FUTURE CHALLENGES ......................................................... 1399
Christina Lunde, A Zygalio, H T Simonson, A Blennow, A Halldrup

372030 CLIMATE CHANGE EFFECTS ON PLANT HEALTH ......................................................... 1400
Sören Thordal-Christensen, Muhubutu, C Harmonic, C Ndiri, S P James, H L Simonson, W H Nandu, P Stadler, M R Balasingam, J L Christiansen

372031 APPLICATION OF A FRAMEWORK FOR HIGH RESOLUTION CLIMATE CHANGE IMPACT ASSESSMENT ON GRAPEVINE (VITIS VINIFERA L.) AT REGIONAL SCALE: PHENOLOGY, YIELD AND BIOTIC STRESS RESPONSES ......................................................... 1401
Marco Moriondo, M Bindi, G Trombetti

372032 BENEFITS OF ORGANIC AGRICULTURE AS A CLIMATE CHANGE ADAPTATION AND MITIGATION STRATEGY IN DEVELOPING COUNTRIES ......................................................... 1402
Adrian Muller

372033 INVESTIGATION OF OPTIMUM PLANTING DATE BY ANALYSIS OF RAINFALL DATA OVER DODOMA REGION IN THE UNITED REPUBLIC OF TANZANIA ......................................................... 1404
Wilbert Timiza Muruke

372034 INCREASING BIODIVERSITY IN AGROECOSYSTEMS DECREASES CLIMATE CHANGE PROBLEMS ......................................................... 1405
H Nonato De Souza, E M G Duarte, M I Aguilar, Raphael A A Fernandes, E De Sil Mendonca, I M Cardoso

372035 CLIMATE CHANGE AND PERSPECTIVES FOR INDIAN AGRICULTURE ......................................................... 1407

372036 ADAPTING MICROBIAL BIOCONTROL OF PLANT DISEASE FOR A CHANGING CLIMATE: EFFECT OF INCREASED TEMPERATURE ......................................................... 1411
Ilaria Pertot, D Angeli, E Mamoci, V Simeone, Y Eldad

372037 SOIL CARBON MONITORING IN FORESTRY AND AGRICULTURAL ECOSYSTEMS OF NORTH-WESTERN ITALY, ACCORDING TO A NEW ORIENTATION OF AGRO-FORESTRY PRODUCTION ......................................................... 1412
Fabio Petrella, M Piazzu

372038 A SIMULATION APPROACH TO INVESTIGATE OPTIONS FOR MITIGATION AND CROP ADAPTATION TO CHANGE IN MEDITERRANEAN AREA ......................................................... 1413
Michele Rinaldi

372039 THE NEED FOR BETTER SCIENCE-STAKEHOLDER RELATIONS IN POLICY AND PRACTICE: AGRO-METEOROLOGICAL METRICS AS TOOLS FOR COMMUNICATION AND STRATEGIC PLANNING ......................................................... 1414
Mike Rinvinton, K Matthews, R Buchan, D Miller

372040 A MODELING FRAMEWORK FOR ASSESSING ADAPTATION OPTIONS OF FINNISH AGRICULTURE TO CLIMATE VARIABILITY AND CHANGE ......................................................... 1416
Kurt Christian Kortebaum, C Nendel, W Manderbach, R Manderscheid, H J Weigel, K O Wenkel

372041 BIOCONTROL BACTERIA ISOLATED FROM POTATO FIELDS IN GREENLAND ......................................................... 1418
C Jensen, L Munk, E De Neergaard, K Høegh, Peter Stougaard

372042 IMPACTS OF CLIMATE CHANGE AND CLIMATE VARIABILITY ON AGRICULTURE IN THE MIDWEST US ......................................................... 1419
Eugene Tolke

372043 SURFACE OZONE IMPACT ON GLOBAL FOOD SUPPLY: POTENTIAL DAMAGE AND ADAPTATION FOR SOYBEAN CROPS ......................................................... 1420
Edmar Teixeira, G Fischer, H Van Velthuizen, F Ewot, R Van Dingenen, F Dentener, G Mills

372044 IMPACT OF CLIMATE CHANGE ON RICE PRODUCTION IN SOUTHEAST ASIA: TOWARDS BETTER FARMER PRODUCTION FUNCTIONS ......................................................... 1423
Robert Townsend, J Pelkonen, F Tschakalya

372045 POTENTIAL IMPACTS OF CLIMATE CHANGE ON SOYBEAN YIELDS IN THE ARGENTINE PAMPAS AND ADAPTATION MEASURES FOR FUTURE SUSTAINABLE PRODUCTION ......................................................... 1424
Maria Isabel Travasso, G O Magrin, G R Rodriguez, G M López
SESSION 38 – ADAPTING FORESTS TO CLIMATE CHANGE

ORAL PRESENTATIONS

382001 INTRODUCTION: ADAPTING FORESTS TO CLIMATE CHANGE ......................................................... 1434
Niels Elers Koch

382002 A NEW CLIMATE FOR FORESTS: A GLOBAL ASSESSMENT BY THE EXPERT PANEL ON ADAPTATION OF FORESTS TO CLIMATE CHANGE .......................................................... 1435
Risto Seppälä

382003 ADAPTING EUROPEAN FORESTS TO CLIMATE CHANGE: RESOURCE MODELLING UNDER CLIMATE CHANGE AT HIGH RESOLUTION BASED ON INVENTORY DATA ............................................ 1436
Gert-Jan Nabuurs, I Van Den Wyngaert, G Hengeveld, M J Schelhaas

382004 THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF): INFRASTRUCTURE, STANDARDS, AND ACCESS TO DATA AND TOOLS TO FORECAST CLIMATE CHANGE IMPACTS ON FOREST ECOSYSTEMS........................................... 1437
Sandy Andelman, N King, S Gaiji

382005 PROJECTING FOREST FIRES IN MOUNTAIN FORESTS UNDER CLIMATE CHANGE .................. 1438
Patrick Weibel, B Reineking, H Bugmann

382006 WILL THE DANISH FORESTS STAY ADAPTED? ..................................................................... 1439
Erk Dahl Kjaer, J K Hansen, U B Nielsen, L N Hansen, D C Olvrik

382007 A REVIEW OF MEASURES TO ADAPT TO CLIMATE CHANGE IN FORESTS OF EU COUNTRIES. 1440
Marcus Lindner, M Kolström

382008 A REVIEW OF MEASURES TO ADAPT TO CLIMATE CHANGE IN FORESTS IN SOUTHEAST ASIA .............................................................................................................................. 1441
Hera Santoso

382009 LOCATING CLIMATICALLY STABLE FOREST IN WEST AND CENTRAL AFRICA, PROTECTING THE NODS IN THE WEB OF LIFE .............................................................................. 1442
Miguel Leal

382010 ADAPTATION OF TROPICAL PINE PLANTATION FORESTRY TO CLIMATE CHANGE ................ 1444
Christoph Leibing, M Van Zoonenved, A Jarvis

382011 ADAPTATION, NON-TIMBER FOREST PRODUCTS AND RURAL LIVELIHOOD: AN EMPIRICAL STUDY IN WEST BENGAL, INDIA ................................................................. 1445
Jyothish Prakash Basu

382012 ADAPTIVE FOREST MANAGEMENT IN GERMANY – STRATEGIES, OPTIONS AND RISKS ................................................................................................................................. 1446
Andreas Bolte, P Spatzell, C Ammer

382013 ADAPTATION OF FORESTS TO CLIMATE CHANGE/ SOCIO-ECONOMIC CONSIDERATIONS ......................................................................................................................... 1447
Balgis Osman-Elaasha

382014 POLICY OPTIONS FOR THE ADAPTATION OF FORESTS TO CLIMATE CHANGE .................. 1448
Peter Glück, J Rayner

382015 CLIMATE CHANGE AND FOREST ECOSYSTEMS IN BELARUS: INTEGRATION OF EXPOSURE AND INSTITUTIONAL ADAPTABILITY ...................................................................... 1450
Viktor Kireyev, A Shkaruba

382016 CHANGING POLICIES TO ADAPT FORESTS TO CLIMATE CHANGE ...................................... 1453
Rashid Sheikh
382017 ADAPTING RESEARCH DIRECTION ON WOOD MOBILIZATION TO MEET THE CHALLENGES OF CLIMATE CHANGE
Piotr Paschals-Jakubowicz

POSTER PRESENTATIONS

382018 URBAN HEAT ISLAND EFFECT ADVANCES SPRING GROWTH
Kathryn Arano, R Gazal, I Dhani, T Warner

382019 CAN OUR FORESTS ADAPT TO CLIMATE CHANGE?
Dominique Bauchet

382020 SUSTAINABLE WOOD USE, DECARBONISATION OF ENERGETIC METABOLISM AND FOREST DEVELOPMENT
Rolf Czeskleba-Dupont

382021 CLIMATE CHANGE IMPACTS ON MOUNTAIN FORESTS – INTERACTIONS WITH SMALL-SCALE DISTURBANCE FROM UNGULATE BROWSING
Markus Didion, A D Kupferschmid, H Bugmann

382022 CLIMATE DRIVEN SHIFTS IN MOUNTAIN FOREST HETEROGENEITY: THE IMPACT OF LARGE SCALE SHIFTS ON SMALLER SCALE FOREST STRUCTURE
Chen Etkin, B Reineking, H Bugmann

382023 MOTIVE – MODELS FOR ADAPTIVE FOREST MANAGEMENT
Marc Hanewinkel, K Von Teuffel

382024 RESPONSES IN GROWTH AND SURVIVAL FOR EUROPEAN SESSILE OAK PROVENANCES TO CHANGES IN CLIMATE AS STUDIED IN AN INTERNATIONAL FIELD TRIAL SERIES
Jon Kohlet Hansen, A Ducousoo, J Hubert, A König, E P Cundall, J D Deans, V Schneck, L B Pedersen

382025 PROTECTING THE PROTECTORS: LESSONS FOR ADAPTATION STRATEGIES OF MANGROVE FORESTS FROM BANGLADESH
Safiful Islam Khan

382026 FROM CARBON SINKS TO CARBON SOURCES – A CONCEPT FOR STUDYING CLIMATE CHANGE-INDUCED INSECT OUTBREAKS AND FOREST ECOSYSTEM FEEDBACKS
Anne Le Mellic, Katrin Möller, Holger Vogt-Altzen, Ralf Kätzel, Annett Reinhardt, Stefan Erasmi, Ignacy Korczynski, Jerzy Karg, Jolanta Slowik, Gerhard Gerold, Carsten Thies

382027 IMPACT OF CLIMATE CHANGE ON FOREST ECOSYSTEM AND FOREST FIRE IN INDIA
Durgadas Mukhopadhyay

382028 TROPICAL FOREST MANAGEMENT AND CLIMATE CHANGE ADAPTATION BY INDIGENOUS PEOPLE
Durgadas Mukhopadhyay

382029 OPTIMAL MANAGEMENT OF FORESTS TAKING INTO ACCOUNT THE CLIMATE CHANGE
F Cordoba, R Goetz, C Gracia, Ruben Mur, A Xabadia

382030 CLIMATE CHANGE – IMPROVED CONDITIONS FOR NATIVE AND INTRODUCED INSECT PESTS ON TREES
Hans Peter Ravn

382031 FOREST MANAGEMENT FOR INCREASED CARBON STORAGE
Jens Peter Skovgaard, L Vesterdal

382032 FUTURE CLIMATE ADAPTED FOREST TREE SPECIES IN HILLS OF BANGLADESH
M Al-Amin

382033 CLIMATE CHANGE AND LEAF PHENOLOGY: A LONG-TERM STUDY IN WEST VIRGINIA
Rico Gazal, T Ensign, T J Cartwright, G Bardwell

382034 MODELLING INTERANNUAL VARIABILITY OF SURFACE ENERGY AND CO2 EXCHANGES WITH STAND DEVELOPMENT OF A SUB-BOREAL DECIDUOUS FOREST
Motomu Toda, M Yamada, T Nakai, Y Kodama, A Sumida, T Hara

SESSION 39 – CLIMATE TOOLS AND INFORMATION TO SUPPORT ADAPTATION

ORAL PRESENTATIONS

392001 THE ROLE OF SHARED MENTAL MODELS FOR ADAPTATION POLICIES TO CLIMATE CHANGE
Ilona Banaszak, P Matczak, A Chorynski

392002 FRAME-BASED GUIDE TO SITUATED DECISION-MAKING ON CLIMATE CHANGE
Joost De Boer

392003 THE CLIMATE LEARNING LADDER. A DIALOGIC TOOL TO SUPPORT INTEGRATED CLIMATE GOVERNANCE
J David Tabara, A Serra

392004 KNOWLEDGE FOR ADAPTATION: THE ADAM DIGITAL ADAPTATION COMPENDIUM
Jochen Hinke, M E Hofmann, K Lonsdale, P Matczak, D McEvay, M Wrobel

392005 PARTICIPATORY SCENARIO DEVELOPMENT FOR INTEGRATED SUSTAINABILITY ASSESSMENT
Lisa Bohunovsky, I Omann
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aiding Multi-Level Decision-Making Processes for Climate Change</td>
<td>1487</td>
</tr>
<tr>
<td>Mitigation and Adaptation</td>
<td></td>
</tr>
<tr>
<td>An Integrated Approach to Support Climate Policy Formulation and</td>
<td>1489</td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
</tr>
<tr>
<td>Integrated Assessment Models as Learning Tools</td>
<td>1491</td>
</tr>
<tr>
<td>Providing Scientific Basis for Climate Change Adaptation Strategies in the Andes Region</td>
<td>1492</td>
</tr>
<tr>
<td>&quot;One Size Fits All?&quot; Can the IPCC Serve as Blueprint for Scientific Advice on Adaptation to Climate Change?</td>
<td>1493</td>
</tr>
<tr>
<td>From Knowledge to Action? Either via Science as Usual or 'Just Do It'?</td>
<td>1494</td>
</tr>
</tbody>
</table>

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives of Public Economic Policy and the Adaptation to Climate Change</td>
<td>1495</td>
</tr>
<tr>
<td>Adapting to Climate Change, the New Met Office Hadley Centre Seasonal-to-Decadal System</td>
<td>1496</td>
</tr>
<tr>
<td>Learning from Stakeholders: Some Lessons from Participatory Research and Climate Change Adaptation in Practice</td>
<td>1497</td>
</tr>
<tr>
<td>E-Learning, Climate Change and Carbon Footprints</td>
<td>1498</td>
</tr>
<tr>
<td>Adaptation to Climate Change Related to Sustainability at Lake-Tisza in Hungary</td>
<td>1499</td>
</tr>
<tr>
<td>The Impact of Seasonal Forecast on Farmer's Strategic Choices in the Lake Guiers Area in Northern Senegal</td>
<td>1500</td>
</tr>
<tr>
<td>U.S. County Strategies Supporting Abatement and Adaptation to Anthropogenic Climate Change – Examples from Sonoma County</td>
<td>1504</td>
</tr>
<tr>
<td>There is a Role for the Territorial Authorities in Developing Interventions and Innovations to Take Account of Climate Change?</td>
<td>1505</td>
</tr>
<tr>
<td>Catastrophe Risk Models as a New Tool to Investigate the Financial Risks Associated with Climate Change Impacts and Cost-Benefits of Adaptation</td>
<td>1507</td>
</tr>
<tr>
<td>An Integrated Cross-Sector and Cross-Institution Approach to Reduce Climate Change Induced Disaster Effects in a South American Context</td>
<td>1508</td>
</tr>
<tr>
<td>Incorporating Hydroclimatic Variations and Change into Water Allocation Policy Making and Adaptation</td>
<td>1509</td>
</tr>
<tr>
<td>Cohering Community-Wide Adaptation: The UK Climate Impacts Programme</td>
<td>1510</td>
</tr>
<tr>
<td>Estimating Heat Stress Indices from Routine Weather Station Data: An Important Tool to Support Adaptation Planning</td>
<td>1512</td>
</tr>
<tr>
<td>Adaptation to Climate Change in the European Union: Efficiency vs. Equity Considerations</td>
<td>1514</td>
</tr>
<tr>
<td>2.5 Dimensions (2.5 DCC) of Climate Change: Innovation at Regional Land Territory Management</td>
<td>1515</td>
</tr>
<tr>
<td>Lessons Learned While Developing Guidance for Use of UKCIP08</td>
<td>1517</td>
</tr>
<tr>
<td>Climate-Proofing Europe: A Comparative Analysis of National Adaptation Strategies</td>
<td>1518</td>
</tr>
</tbody>
</table>
SESSION 40 – LEARNING FROM ONGOING ADAPTATION: A COMPARATIVE STUDY

ORAL PRESENTATIONS

402001 LOOKING FORWARD: BUILDING A FRESHWATER CLIMATE ADAPTATION PROGRAM ..............................................................1524
John Matthews

402002 FLOODPLAIN RESTORATION ALONG THE LOWER DANUBE: A CLIMATE CHANGE ADAPTATION CASE STUDY ..................................................................................................................1525
Orieta Hulea, S Ebert, D Strobel

402003 WATER FOR LIFE: THE RIO CONCHOS (MEXICO) LESSONS FOR CLIMATE CHANGE ADAPTATION FROM BETTER MANAGEMENT OF RIVERS FOR PEOPLE/NATURE .........................................................1526
Eugenio Barrios, A Rodriguez, M De La Maza, V Trueba

402004 LESSONS FOR CLIMATE CHANGE ADAPTATION FROM RIVER MANAGEMENT REFORMS ..................................................1527
Jamie Pittock

402005 FRESHWATER CONSERVATION AND CLIMATE CHANGE ADAPTATION – A CASE STUDY OF THE GREAT RUABA RIVER CATCHMENT IN TANZANIA .................................................................1528
K Rajabu, Japhet Kashatusi, P Masolwa

402006 ADAPTATION TO CLIMATE CHANGE IN THE CENTRAL YANGTZE RIVER BASIN, CHINA ..................................................................................................................1530
Linlin Wang, X Yu, G Lei, L Jiang

402007 RECOVERY WITH SOCIAL PARTICIPATION – THE EXPERIENCE OF LAGOS SÃO JOÃO CONSORTIUM, RJ, BRAZIL .....................................................................................................................1532
Luiz Firmino Pereira, S Barreto

402008 VARIABILITY OF DAILY DISCHARGES OF GODAVARI RIVER DUE TO CLIMATE CHANGE IN COMING DECADES AND ITS IMPLICATIONS TO INFRASTRUCTURE AND PEOPLE ..................................................................................................................1534
Jon Padgham, H Virji

402009 PERSPECTIVES ON VULNERABILITY AND ADAPTATION FROM THE DEVELOPING WORLD: LESSONS LEARNED FROM THE AIACC PROJECT ..................................................................................................................1535
Marcus Moench, A Dixit

402010 FROM RISK TO RESILIENCE: EXPLORING THE LINKS BETWEEN ADAPTATION CONCEPTS AND PRACTICE IN INDIA, NEPAL AND PAKISTAN ..................................................................................................................1536

POSTER PRESENTATIONS

402011 ENHANCING ADAPTATION OF THE PASTORALISTS TO CLIMATE CHANGE THROUGH DROUGHT CONTINGENCY MEASURES IN ARID NORTHERN KENYA ..................................................................................................................1537
Harun M Warui

402012 TARGETING AND CAPTURING RETURNS FROM SUSTAINABILITY-ORIENTED RESEARCH ..................................................................................................................1538
Matthew Shapiro

SESSION 41 – ADAPTATION TO CLIMATE CHANGE IN LEAST DEVELOPED COUNTRIES – CHALLENGES, EXPERIENCES AND WAYS FORWARD

ORAL PRESENTATIONS

412001 FINANCING CLIMATE CHANGE ADAPTATION IN SMALL ISLAND DEVELOPING STATES ..................................................................................................................1539
Kanako Morita

412002 VIEWS ON RURAL VULNERABILITY FOLLOWING HURRICANE MITCH IN NICARAGUA ..................................................................................................................1541
Kristian Thor-Jakobsen

412003 UNDERSTANDING ADAPTATION-DEVELOPMENT LINKS FROM PRACTICE ..................................................................................................................1543
Mayeeg Chamhwa

412004 ADAPTATION TO CLIMATE CHANGE: A CASE STUDY ON BANGLADESH ..................................................................................................................1545
Saila Parveen, I Faisal

412005 LINKING CLIMATE TRENDS TO COPING STRATEGIES IN NORTHERN TANZANIA ..................................................................................................................1547
Sara Traerup, O Mertz

412006 MAINSTREAMING CLIMATE CHANGE IN THE IMPLEMENTATION OF POVERTY REDUCTION STRATEGIES ..................................................................................................................1548
Gonzalo Griebenow
POSTER PRESENTATIONS

412011 LOCAL ACTORS' PERCEPTION OF THE CLIMATE CHANGE ISSUE IN LAGOS, NIGERIA ................................................................. 1554
Abimbola Adeyado

412012 ADAPTATION STRATEGIES IN COPING WITH THE IMPACTS OF GLOBAL CLIMATE CHANGE ON THE COASTAL ENVIRONMENT AND RESOURCES OF BANGLADESH ........................................................................................................ 1555
Kawsar Ahmed, M Islam

412013 CLIMATE CHANGE AND AQUACULTURE DEVELOPMENT IN NIGERIA: EXPERIENCES AND ADAPTATION STRATEGIES .................................................................................................................... 1556
Emmanuel Kolawole Ajani

412014 PROMOTING LOCAL AND INDIGENOUS KNOWLEDGE IN ENHANCING ADAPTIVE CAPACITIES UNDER EXTREME EVENTS IN NIGERIA ........................................................................................................ 1557
Yemi Akeshejo-Samsons

412015 FUNDING CLIMATE CHANGE ADAPTATION AND MITIGATION IN URBAN AREAS OF NIGERIA: THE CASE OF ONDO STATE IN SOUTH WESTERN NIGERIA .................................................................................. 1559
Afolabi Setilabola

412016 THE INCENTIVES AND OBSTACLES TO IMPLEMENT ADAPTATION STRATEGIES IN PACIFIC ISLAND COUNTRIES: LESSONS LEARNED FROM PAST DONORS' ASSISTANCE ................................................................. 1560
Yumiko Asayama

412017 ENVIRONMENTAL IMPACT AND POSSIBLE ADAPTATION INITIATIVES IN SOUTHWESTERN COASTAL BANGLADESH IN RESPONSE TO CLIMATE CHANGE .............................................................................................. 1561
Mehdi, Acam, A A Noor, B K Ghose

412018 HOW DOES THE EU INTEGRATE CLIMATE CHANGE ISSUES IN ITS DEVELOPMENT AID POLICIES? SHORT TERM REACTION VERSUS 'CAPACITY APPROACHES' ........................................................................................................ 1562
Marie Anne Baudoin

412019 ADAPTATION VERSUS MITIGATION BROADENS NEED FOR SOCIETAL CAPACITY BUILDING COPING WITH CLIMATE CHANGE .................................................................................................................. 1564
Mogens Buch-Hansen

412020 ADAPTATION TO CLIMATE CHANGE: A CALL FOR A BROADER GLOBAL APPROACH ................................................................. 1566
Alexandra Couto

412021 THE BRIGHT SIDE OF ADAPTATION ........................................................................................................................................ 1568
Benjamin Garnaud

412022 ADAPTATION IN AGRICULTURAL SYSTEMS TO CLIMATE CHANGE IN HIGHLANDS OF THE ANDES .................................................................................................................................................. 1569
Carlos Gomez, M Fernandez, M Garcia

412023 STRATEGIES TO ADAPT TO AN UNCERTAIN CLIMATE CHANGE ............................................................................................... 1570
Stephane Hallegatte

412024 ENHANCING ADAPTATION OF THE PASTORALISTS TO CLIMATE CHANGE THROUGH DROUGHT CONTINGENCY MEASURES IN ARID NORTHERN KENYA .................................................................................. 1571
M Warui Harun

412025 CLIMATE CHANGE: CHALLENGES FOR SOCIAL PROTECTION IN AFRICA .......................................................................................... 1572
Rasmus Helthberg, S L Jorgensen, P B Siegel

412026 CLIMATE VOLATILITY AND THE POOR IN TANZANIA ................................................................................................................ 1573
Channing Arndt, N Differnbaugh, T Hertel, N Ramankutty, J Thurlow, S A Ahmed

412027 OPPORTUNITIES AND CONSTRAINTS FOR ACTION OF CLIMATE CHANGE ADAPTATION IN AFRICA: EXPERIENCES FROM UGANDA ........................................................................................................ 1574
Emmanuel Kasimba

412028 WILL THE NATIVE FRUIT TREE PARKIA BIGLOBOSA REMAIN ADAPTED IN THE WEST AFRICAN PARKLANDS? PREPARING FOR THE FUTURE CLIMATE .......................................................................................... 1575
M Ouadraogo, D Mrazimavu, G Manase, P Faru, M Feilberg, J R Jensen, N Ornhjerg, A M Sorensen, P F Madsen

412029 A CASE STUDY OF GLOBAL WARMING IN PENANG ISLAND, MALAYSIA ......................................................................................... 1576
Hwee-San Lim, M Z Mat Jafri, K Abdullah, J Rajah

412030 ATMOSPHERIC INFRARED SOUNDER (AIRS) OBSERVATION OF THE CARBON MONOXIDE DISTRIBUTION OVER MALAYSIA .................................................................................................................. 1577
J M Rajah Hussain, Hwee-San Lim, M Z Mat Jafri, K Abdullah
SESSION 42 – ADAPTATION AND CLIMATE RISK INSURANCE

ORAL PRESENTATIONS

422001 INSURANCE INSTRUMENTS FOR ADAPTING TO CLIMATE RISKS POLICY ALTERNATIVES AND CONSIDERATIONS FOR A POST-2012 ADAPTATION REGIME ................................................................. 1597
Koko Warner
422002 ADAPTING TO CLIMATE CHANGE TO MAINTAIN THE INSURABILITY OF PEOPLE AND PROPERTY AGAINST EXTREME WEATHER AND SEA LEVEL RISE ................................................................. 1598
Nicola Patmore, C Herweijer, R Ward, R Muir-Wood
422003 CLIMATE CHANGE AND CLIMATE INSURANCE, THE CASE OF MALAWI ................................................................. 1599
Stefan Hochrainer, R Mechner, G Pfugh
422004 INDEX INSURANCE: CAPTURING KNOWLEDGE FOR IMPROVED CLIMATE RISK MANAGEMENT AND POVERTY REDUCTION ................................................................. 1600
Moloy Hellman, H Bhuiyan, D Osgood, J Hansen, A Moorhead
422005 THE INSURABILITY OF THE IMPACTS OF CLIMATE CHANGE ................................................................. 1601
Nick Silver, A Dlugolecki
422006 RISK PREVENTION AND FLOOD INSURANCE IN THE UK: ENSURING AVAILABILITY IN THE FACE OF RISING CLIMATE RISKS ................................................................. 1602
Svenja Sarinski
422007 CLIMATE INSURANCE AS PART OF A POST-KYOTO ADAPTATION STRATEGY ................................................................. 1603
Joanne Linneweber-Bayer, C Bals, R Mechner
POSTER PRESENTATIONS

422008 THE IMPACT OF HEAT WAVES ON THE ELDERLY LIVING IN AUSTRALIA: HOW SHOULD A HEAT HEALTH WARNING SYSTEM BE DEVELOPED TO PROTECT THEM? ................................................................. 1604
Peng Bi, B Van Iersel

422009 PITFALLS OF INSTITUTIONAL CHANGE: RAIN-INDEX INSURANCE MAY IMPAIR RANGELAND'S RESILIENCE ................................................................. 1605
Birgit Müller, M Quaas, K Frank, S Baunegirrer

422010 A CONTRIBUTION OF AN INSURANCE FOUNDATION TO THE STUDY OF URBAN HEAT WAVES AND THEIR SOCIETAL IMPACT ................................................................. 1606
Bénédicte Doussot, H Lasid, H Olibhoro, K Zeghoun, E Giraudet, F Gourmelon, P Breten, S Vandentorren

422011 CLIMATE CHANGE EFFECTS ON AGRICULTURAL RISK MANAGEMENT ................................................................. 1607
Giuseppe Cucuzzu

422012 GREENHOUSE GAS INSURANCE AND THE STRATEGIC ASPECTS OF FUNDING ADAPTATION ................................................................. 1608
Seraina Buob, G Stephan

422013 RAINING VARIABILITY OF THE BEGINNING OF THE AGRICULTURAL SEASON AND ADAPTATION MEASUREMENTS IN DEPARTMENT OF THE ILLS (BENIN, WEST AFRICA) ................................................................. 1609
Ibouraïma Yabi, M Boko, F Afouda

SESSION 43 – INTEGRATING CLIMATE CHANGE INTO GLOBAL SUSTAINABILITY

KEYNOTE LECTURE

431001 TOWARDS GLOBAL SUSTAINABILITY STRUCTURING OF ACTIONS THROUGH NETWORKS OF NETWORKS AND KNOWLEDGE ................................................................. 1611
Hiroshi Komiyama

ORAL PRESENTATIONS

432001 STRATEGIES FOR REDUCING CARBON EMISSIONS FROM DISTURBED TROPICAL PEAT ................................................................. 1613
Mitsuru Osaki, T Iwakuma, H Takahashi, T Hirano, T Kohyama, N Tanaka, T Honnma, H Sekine, A Braimoh, S Limin, B Setiadi

432002 THE CLIMATE OF DISCIPLINARY TUNNEL VISION ................................................................. 1614
Petter Naess

432003 CONSUMER BEHAVIOUR AND CLIMATE CHANGE: CONSUMERS' STRATEGIES TO MITIGATING CLIMATE CHANGE IMPACTS IN MAURITIUS ................................................................. 1615
Lutchmeeduth Bullywon, A Sookun

432004 AGGLOMERATION ECONOMIES AND SPATIAL SUSTAINABILITY ................................................................. 1616
F Grazzi, Henri Waisman, J C J M Van Den Bergh

432005 PROTECTING THE ARCTIC MARINE ENVIRONMENT IN A CHANGING CLIMATE – OPTIONS FOR TRANSATLANTIC AND INTERNATIONAL GOVERNANCE ................................................................. 1618
Katharina Umphenbach, S Cavalieri

432006 KNOWLEDGE STRUCTURING AND AN EXPLORATION SYSTEM FOR GLOBAL SUSTAINABILITY AND ITS APPLICATION TO THE BIOFUEL ISSUE ................................................................. 1620
O Saito, K Kozaki, T Hirota, Riichiro Mizoguchi

432007 MILLENNIUM ECOSYSTEM ASSESSMENT: BALANCING TRADE OFFS IN A HOLISTIC MANNER ................................................................. 1623
Hamed Zakri

432008 TRADITIONAL KNOWLEDGE FOR DEVELOPING HOLISTIC ADAPTATION AND MITIGATION MEASURES ................................................................. 1624
Sam Johnston, Y Tauli-Corpuz

432009 DEVELOPMENT OF LONG-TERM VISION OF GLOBAL SUSTAINABLE SOCIETY FROM VIEWPOINTS OF LOW-CARBON, MATERIAL CYCLE AND ECOSYSTEM ................................................................. 1625
Toshihiko Matsui, T Iwate, K Takeuchi, K Hanuki, S Arai, G Hibino, S Matsu, M Yoshikawa, Y Motoki

432010 ECONOMIC IMPACTS OF RISING DEMAND OF VEGETABLE OIL FOR BIO-DIESEL AND FOOD ON SUSTAINABILITY OF DEVELOPING COUNTRIES ................................................................. 1626
Matsuda, N Suzuki

432011 ANALYSIS OF PRICE ASYMMETRY IN THE INTERNATIONAL AND DOMESTIC VEGETABLE OIL MARKETS FOR ACHIEVING SUSTAINABLE AGRICULTURE IN DEVELOPING COUNTRIES ................................................................. 1627
T Nakajima, H Matsuda

432012 SOCIAL-ECOLOGICAL RESILIENCE AND TRANSFORMATION IN THE FACE OF GLOBAL CHANGE ................................................................. 1628
Carl Folke

POSTER PRESENTATIONS

432013 CLIMATE CHANGE POLICIES IN THE POLAR REGIONS: TRADE OFFS FROM AN INTERNATIONAL POLICY LABORATORY ................................................................. 1629
Sam Johnston
SESSION 44 – FILLING IN THE GAPS BETWEEN IA, GCM, ECONOMIC AND ES MODELS

ORAL PRESENTATIONS

442001 THE ESSP STRATEGY TO DEVELOP INTEGRATED EARTH SYSTEM MODELS TO COMPREHENSIVELY ASSESS GLOBAL CHANGE PROBLEMS WITH INPUT FROM SOCIAL AND NATURAL SCIENCE DISC PIPELINES ......................................................... 1633
Rik Leemans, M Rice

442002 SOCIO-CLIMATIC ANALYSIS, MODELING, AND PREDICTION ................................................................. 1634
Noah Diffenbaugh

442003 LINKING CLIMATE, ECONOMY AND ECOSYSTEM MODELS ........................................................................... 1635
Markku Rummukainen, C Jones, T Persson, B Smith, R Klein

442004 INCORPORATING THE HUMAN DIMENSIONS OF WATER RESOURCES IN EARTH SYSTEM MODELS .................. 1636
Joseph Alcamo

442005 MODELING IMPACTS OF GLOBAL CHANGE ON TERRESTRIAL BIODIVERSITY, THE GLOBIO3 FRAMEWORK .... 1637
Rob Alkemade, M Bukkens, M Van Oorschot

442006 REGIONAL SCALE HABITAT-BASED VULNERABILITY ASSESSMENT OF THE NATURAL ECOSYSTEMS ........................................................................................................................................................................ 1638

442007 A CONCEPTUAL MODEL FOR ASSESSING THE GEOGRAPHY OF SOCIAL VULNERABILITY, ENVIRONMENTAL HAZARDS AND CLIMATE CHANGE .............................................................. 1640
Haakon Lein, J Borhling, C Brun, J K Rod, G Vitve

442008 RUNNING POLICY-RELEVANT INTEGRATED ASSESSMENT MODELS SCENARIOS IN EARTH SYSTEM MODELS ................................................................................................................................. 1642
Detlef P Van Vuuren, J Feddeama, S Frolicking, K Hibbard, G Hurti, J-F Lamarque, L Parsons Chini, K Riahi, S Rose, S Smith, E Stehfest

SESSION 45 – FROM GEO-PERTUBATION TO GEO-MANAGEMENT

ORAL PRESENTATIONS

452001 CLIMATE ENGINEERING: SOLUTION, CURSE, OR CHIMERA? ................................................................. 1644
Ken Caldeira

452002 CLIMATE ENGINEERING AS RISK MANAGEMENT ....................................................................................... 1645
David Keith

452003 IMPACT INTERVENTION: REGIONAL GEO-ENGINEERING AS A COMPLEMENTARY STEP TO AGGRESSIVE MITIGATION ...................................................................................................... 1646
Michael MacCracken

452004 EARTH SYSTEM ENGINEERING: THE ART OF DEALING WISELY WITH THE PLANET EARTH .................... 1648
Axel Kleidon, P Wilderer, R Weiler

452005 IS GEO-MANAGEMENT A DEFENSIBLE RESPONSE TO CLIMATE CHANGE? AN NGO PERSPECTIVE ................................................................................................................................. 1649
David Santillo

452006 GEOENGINEERING: TOO GOOD TO BE TRUE? ............................................................................................... 1650
Thomas C Schelling

452007 PROGRESS ON ENGINEERING HARDWARE DESIGN FOR SPRAY VESSELS FOR IMPLEMENTING LATHAM’S PROPOSALS FOR CLOUD ALBEDO CONTROL TO REVERSE GLOBAL WARMING .......................................................................................................... 1651
Stephen Salter

452008 EVALUATING EFFECTS OF CLIMATE STRATOSPHERIC GEOENGINEERING ON THE HYDROLOGICAL CYCLE, OCEAN HEAT CONTENT, SEA LEVEL, AND SEA ICE EXTENT ...................................................................................... 1652
Georgiy Stenchikov, V Ramaswamy, T Delworth, R Stouffer

452009 CAN GEOENGINEERING SAVE THE GREENLAND ICE SHEET? ................................................................. 1653
Daniel Lunt, J Singarayer, A Ridgwell

452010 TACKLING FUTURE CLIMATE CHANGE BY LEAF ALBEDO BIO-GEOENGINEERING .................................................. 1654
Andrew Ridgwell, J Singarayer, A L Hetherington, P Valdes

452011 SENSITIVITY OF OCEAN ACIDIFICATION TO GEOENGINEERED CLIMATE STABILIZATION .......................... 1655
Damon Matthews, K Caldeira, L Cao
452012 WAVE-POWERED DESTRATIFICATION FOR HURRICANE SUPPRESSION, ACIDITY REDUCTION, CARBON STORAGE AND ENHANCED PHYTOPLANKTON, DIMETHYL SULPHIDE AND FISH PRODUCTION .......................................................... 1656
Stephen Salter

452013 CARBON STORAGE IN THE OCEAN; AN ECO REVIEW .......................................................... 1657
Ian S F Jones

452014 BURYING WOOD AS A CLIMATE MANAGEMENT STRATEGY .................................................. 1658
Ning Zeng

452015 CLIMATE ENGINEERING RESPONSES TO CLIMATE EMERGENCIES ............................................. 1659
D Battisti, Jason J Blackstock, K Caldeira, D E Eardley, J1 Katz, D W Keith, S E Koonin, A A N Patrinos, D P Schrag, R H Socolow

POSTER PRESENTATIONS

452016 TOWARDS THE CARBON EQUIVALENT NEUTRAL LANDSCAPE: DIRECTIONS FOR FURTHER RESEARCH AND THE EXAMPLE OF APPALACHI IN THE EASTERN U.S. .............................................................. 1661
David Benjamin, J Todd

452017 GEO-ENGINEERING SIDE EFFECTS: HEATING THE TROPICAL TROPOPAUSE BY SEDIMENTING SULPHUR AEROSOL? .......................................................... 1662
Patricia Kenzelmann, D Weissenstein, T Peter, B Luo, S Fueglistaler, E Rozanov, L Thomason

SESSION 46 – CONSEQUENCES OF ACIDIFICATION OF LAND AND OCEAN

ORAL PRESENTATIONS

462001 OCEAN ACIDIFICATION IMPACTS ON SOUTHERN OCEAN CALCIFIERS .................................................. 1663
William Howard, D Roberts, A Moy, J Roberts, T Trull, S Bray, R Hopcroft

462002 SOUTHERN OCEAN ACIDIFICATION: A TIPPING POINT AT 450PPM ATMOSPHERIC CO2 .......................................................... 1664
Ben McNeil, R Matear

462003 DETECTING EARLY SIGNS OF GLOBAL-SCALE EFFECTS OF OCEAN ACIDIFICATION ON MARINE CALCIFICATION .......................................................... 1665
Tatjana Ilyina, R Zehee, E Maier-Reimer, C Heinze

462004 OCEAN ACIDIFICATION: HUMANITY AND THE ENVIRONMENT IN GEOLOGIC TIME ................................. 1666
Ken Caldeira

462005 NORTH ATLANTIC OCEAN ACIDIFICATION FROM TIME SERIES MEASUREMENTS ................................. 1667
Jon Olafsson, S R Olafsdottir, A Benoit-Cattin, M Danielsen, T Takahashi

462006 IMPACT OF CO2-DRIVEN OCEAN ACIDIFICATION ON EARLY LIFE-HISTORY — WHAT WE KNOW AND WHAT WE NEED TO KNOW ................................................................................. 1668
Sam Dupont, J Havenhand, M Thorndyke

462007 CHANGES IN UNDERWATER SOUND PROPAGATION CAUSED BY OCEAN ACIDIFICATION ................................. 1669
Tatjana Ilyina, R Zehee, P Brewer

462008 THE LOW CO2 GLACIAL OCEAN AS A REVERSE PALEO-ANALOG FOR THE FUTURE HIGH CO2 OCEAN .......................................................................................................................... 1670
Christoph Heinze

462009 AMPLIFIED ACIDIFICATION OF THE ARCTIC OCEAN .................................................................................. 1671

462010 ACIDIFICATION IN SOUTH AMERICA AS A RESULT OF BIOMASS BURNING EMISSIONS .................................................. 1672
Paulo Artaxo

462011 A GLOBAL PERSPECTIVE ON SOIL ACIDIFICATION IN TERRESTRIAL ECOSYSTEMS .................................................. 1673
Kevin Hicks, J Kaylenstiera

462012 ACIDIFICATION AND EUTROPHICATION OF TEMPERATE NORTH AMERICAN AND EUROPEAN ECOSYSTEMS FROM ATMOSPHERIC DEPOSITION ................................................................................. 1674
Jill S Baron, W D Bowman, H Sverdrup, C T Driscoll, J Stoddard, M D Hartman

462013 ACID DEPOSITION IN ASIA: CURRENT SITUATION AND PROSPECTS FOR THE FUTURE .................................................. 1675
Henning Rodhe

POSTER PRESENTATION

462014 ASSESSING CLIMATE CHANGE IMPACTS ON PRIMARY PRODUCTION AND CALCIFICATION ON A CORAL REEF — A PILOT STUDY OF OCEAN ACIDIFICATION PROCESSES ON THE GREAT BARRIER REEF .......................................................................................................................... 1676
Lida Teneva, R B Dunbar, D A Muccarione, M Long, C McDonald, J Koseff
SESSION 47 – MANAGING FOOD IN A CLIMATE CONSTRAINED WORLD PART 1

ORAL PRESENTATIONS

472001 HYDROLOGIC LIMITATION OF GLOBAL FOOD PRODUCTION AND THE POTENTIAL OF GREEN WATER MANAGEMENT .............................................................................................................................................................................. 1677
   Dieter Gerten, S Rost

472002 THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF): INFRASTRUCTURE, STANDARDS, AND ACCESS TO FORECAST AGRICULTURAL PRODUCTION IN THE FACE OF CLIMATE CHANGE ........................................................................................................................................................................ 1678
   Sammy Gaju, N King, S Andelman

472003 A PRIMARY ASSESSMENT OF CLIMATE CHANGE IMPACT ON RICE PRODUCTION IN CHINA ........................................................................................................................................................................ 1679
   Yao Huang, W Zhang, Y Yu, B Sun, W Sun, J Chen

472004 CROSS-SCALE AND CROSS-LEVEL INTERACTIONS IN FOOD SYSTEMS – CONSIDERATIONS FOR ADAPTATION TO GLOBAL ENVIRONMENTAL CHANGE ........................................................................................................................................................................ 1681
   Polly Ericksen, J Ingram

472005 IRRIGATION STRATEGIES FOR SUSTAINABLE ENVIRONMENTAL AND HUMAN HEALTH UNDER CLIMATE CHANGE ........................................................................................................................................................................ 1682
   Fulai Liu

472006 FORECASTING RICE YIELD UNDER CLIMATE CHANGE SCENARIOS AND EVALUATION OF AGRO-ADAPTATION MEASURES FOR MEKONG BASIN REGION: A SIMULATION STUDY ........................................................................................................................................................................ 1683
   Anshul Agarwal, M S Babel

472007 IMPROVING EARLY WARNING SYSTEMS FOR FOOD SECURITY IN AFRICA WITH GEOSTATIONARY EARTH OBSERVATION DATA ........................................................................................................................................................................ 1684
   Silvia Huber, R Fensholt, K Rasmussen, S R Proud, A Anyamba

POSTER PRESENTATIONS

472008 WOMEN AND WATER FOR DEVELOPMENT: A PRACTICAL JOURNEY TO FOOD SECURITY AND POVERTY REDUCTION IN AFRICA ........................................................................................................................................................................ 1686
   David Anokye Asamoah

472009 A MODEL FOR THE ASSESSMENT OF THE EFFECT OF CLIMATE CHANGE ON PLANT-PATHOGEN-MICROORGANISM INTERACTIONS ........................................................................................................................................................................ 1688
   Yieal Elad

472010 EFFECT OF SOME ANTI-OXIDANTS ON CANOLA PLANTS GROWN UNDER SOIL SALT STRESS CONDITION ........................................................................................................................................................................ 1690
   E L Sayed Khatab, M Saker

472011 SUSTAINABLE CROP PRODUCTION UNDER LIMITED WATER SUPPLY ........................................................................................................................................................................ 1691
   Christian Jensen, F Liu, S E Jacobsen, M Andersen, F Plauborg

472012 UNDERSTANDING CLIMATE CHANGE AT MICRO LEVEL: A CASE STUDY OF THREE VILLAGES IN SOUTH INDIA ........................................................................................................................................................................ 1692
   Kamepalli Lenin Babu, M S Umesh Babu, B S Harish Kumar, N Latha

472013 AN AGRICULTURAL PERSPECTIVE TO INSURE SUSTAINABILITY OF THE FUTURE WORLD CROP PRODUCTION FOR FOOD SECURITY IN A CHANGING CLIMATE ........................................................................................................................................................................ 1693
   Tinne Midtgaard

472014 RECENT CLIMATE CHANGE TREND ANALYSIS AND FUTURE PREDICTION AT SATKHIRA DISTRICT, BANGLADESH ........................................................................................................................................................................ 1695
   Raksana Haque Rimu, S H Rahman, M Z Abedin

472015 AGRO-ECONOMIC IMPLICATIONS OF WEATHER VARIATION ON OIL PALM YIELD AND YIELD COMPONENTS IN THE HUMID FOREST ZONE OF CAMEROON ........................................................................................................................................................................ 1696
   Fritz Oben Tasbi, E Muki

472016 CLIMATE CHANGE AND AGRICULTURAL PRODUCTION – ANALYSIS OF INTERRELATIONSHIP AND EVALUATION OF FOOD SECURITY IN COASTAL AREA OF BENIN ........................................................................................................................................................................ 1697
   Oscar Teka, B Mallick, J Vogt

SESSION 48 – EARTH SYSTEM CONFERENCE

ORAL PRESENTATIONS

482001 EARTH SYSTEM GOVERNANCE. OUTLINE OF A RESEARCH PROGRAMME ........................................................................................................................................................................ 1698
   Frank Biermann

482002 KYOTO2 – AN EFFECTIVE, EFFICIENT AND EQUITABLE FRAMEWORK FOR A NEW CLIMATE AGREEMENT ........................................................................................................................................................................ 1699
   Oliver Tickell

482003 POST-2012 OPTIONS BEYOND CLIMATE CHANGE: USING INTER-LINKAGES WITH TRADE ISSUES TO BREAK DEADLOCKS ........................................................................................................................................................................ 1701
   Fariborz Zelli, H Van Asselt
482004 THE URGENCY OF THE CLIMATE CHANGE CHALLENGE: IS GOVERNANCE "GETTING IN THE WAY" OF PROGRESS? ................................................................. 1702
Lisa Pilling

482005 THE LONDON CONVENTION/LONDON PROTOCOL: AN OCEAN INSTITUTION ADDRESSES SUB-SEAFLOOR CO2 INJECTION AND OCEAN IRON FERTILIZATION ................................................................. 1703
R Lamotte, Marsaret Leinen, D Whaley

482006 FIRM DECISIONS TO INVEST IN LOW-CARBON PROJECTS IN DEVELOPING COUNTRIES: THE INFLUENCE OF CLIMATE POLICY AND EVOLVING CARBON MARKETS ................................................................. 1704
Nathan Hudman, S Pulver

482007 THE IMPORTANCE OF BEING PARTNERS: EXPLORING HORIZONTAL AND VERTICAL INTERPLAY IN URBAN CLIMATE GOVERNANCE ................................................................. 1706
Heike Schroeder, H Bulkeley

482008 STRENGTHENING ARCTIC GOVERNANCE IN A POST-KYOTO WORLD ................................................................. 1707
Jacqueline McGlade

POSTER PRESENTATION

482009 VOLUNTARY CLIMATE PROGRAMS AND THEIR PROTECTION AND TRANSFORMATION IMPACTS ................................................................. 1708
Urs Bitterling

492001 UPDATING INFORMATION ACROSS THE RISK MATRIX. THE ROLE AND IMPLICATIONS OF UPDATED IAMs FOR POLICY. RESULTS FROM THE CLIMATE COST PROJECT ................................................................. 1715
Paul Watkiss

492002 DISCOUNTING AND UNCERTAINTY IN INTEGRATED ASSESSMENT: THE STERN REVIEW AND ITS CRITICS ................................................................. 1717
Simon Dietz

492003 CLIMATE POLICY ANALYSIS IN THE CONTEXT OF GLOBALIZATION ................................................................. 1718
Marian Leimbach, L Baumstark, O Edenhofer

492004 VARIATION IN THE CLIMATIC RESPONSE TO SRES EMISSIONS SCENARIOS IN INTEGRATED ASSESSMENT MODELS ................................................................. 1719
Rachel Warren, M Mastrandrea, C Hope, A Hof

492005 HOW WELL DO IAMs MODEL CLIMATE CHANGE? ................................................................. 1721
Detlef van Vuuren, J Lowe, E Stehfest, L Gohar, A Hof, C Hope, R Warren, M Meinshausen, G-K Plattner

492006 USING INSURANCE CATASTROPHE MODELS AS A NEW FORM OF INTEGRATED ASSESSMENT MODELLING TO INVESTIGATE THE ECONOMICS OF CLIMATE CHANGE IMPACTS AND ADAPTATION ................................................................. 1723
Nicola Patmore, R Muir-Wood, C Herweijer

492007 MODELING THE HUMAN DIMENSIONS OF CLIMATE CHANGE: THE CIM-EARTH PROJECT ................................................................. 1724
Elisabeth Moyer, I Foster, K Judd, T Muirson

POSTER PRESENTATIONS

492008 IMPROVING THE REPRESENTATION OF CLIMATE-ECONOMY FEEDBACKS IN INTEGRATED ASSESSMENTS ................................................................. 1725
Neil Robert Edwards

492009 PLACING CLIMATE CHANGE MITIGATION AND ADAPTATION POLICY DECISIONS WITHIN A THEORETICAL FRAMEWORK ................................................................. 1726
Tyler Fegenhauer
ORAL PRESENTATIONS

502010 WHERE NEXT WITH GLOBAL ENVIRONMENTAL SCENARIOS? ................................................................. 1727
Simone Pulver, B O'Neill, S Vandevuer, J Garb

502011 IMPROVING THE USE OF INTEGRATED ASSESSMENT MODELS: RECONCILING MODEL RESULTS WITH USER NEEDS ........................................................................................................... 1728
Serge I P Stalpers

502012 TEMPERATURE INCREASE OF 21ST CENTURY MITIGATION SCENARIOS ................................................. 1729

502013 THE COMMUNITY INTEGRATED ASSESSMENT SYSTEM CIAS, A NEW APPROACH TO DISTRIBUTED INTEGRATED MODELLING .................................................................................................. 1731

SESSION 50 – ENABLING LONG TERM CLIMATE POLICY

ORAL PRESENTATIONS

502001 MITIGATION IMPLICATIONS OF MID-CENTURY TARGETS THAT PRESERVE LONG-TERM CLIMATE POLICY OPTIONS .............................................................................................................................. 1733
Brian O'Neill, A Rulti, J Keppo

502002 PLAYING IT FORWARD: PATH DEPENDENCY, PROGRESSIVE INCREMENTALISM, AND THE "SUPER WICKED" PROBLEM OF GLOBAL CLIMATE CHANGE ........................................................................ 1735
K Levin, B Cashore, Steven Bernstein, G Auld

502003 IMPLEMENTING LONG-TERM CLIMATE POLICY: THREE COMMITMENT PROBLEMS ........................................ 1737
J Hovi, Detlef Srvin, A Underdal

502004 ADAPTIVE APPROACHES FOR LONG-TERM CLIMATE POLICY .................................................................. 1738
Jürgen Scheffran

502005 LONG-TERM IMPLICATIONS OF NEAR-TERM CLIMATE POLICY CHOICES: A ROBUST DECISION MAKING APPROACH ........................................................................................................... 1740
Robert Lempert

502006 RISK OF RUIN: A FRAMEWORK FOR REVIEWING GREENHOUSE GAS STABILIZATION TARGETS ................................................................................................................................. 1741
Oliver Bettis, N Silver

502007 TRADE & CLIMATE CHANGE: LIMITS FOR CONSUMPTION BASED TRADE MEASURES? ....................... 1742
Terry Barker, S Santos, A Scrieciu, T Tashchilova, R Warren

502008 THE CLIMATE ACTION INITIATIVE: DEPLOYING POLICY EXERCISES AND THE PANGAEA SIMULATION TO FACILITATE AND SUPPORT LONG-TERM CLIMATE POLICY DEVELOPMENT ........................................................................................................ 1743
Andrew Jones, A Barkman, R W Corell, T Cummings, T Fiddaman, J McGlade, F Van Peter, E R Savin, I S Siege, J Sterman

502009 THE CHALLENGE IS UNPRECEDEented .................................................. 1745
Thomas C Schellins

POSTER PRESENTATIONS

502010 POTENTIAL MACROECONOMIC BENEFITS OF STRINGENT GREENHOUSE-GAS STABILISATION TARGETS: MODELLING THE 2°C TARGET IN CIAS WITH E3MIG 2000-2100 ......................................................... 1746
Terry Barker, S Santos, A Scrieciu, T Tashchilova, R Warren

502011 LONG-TERM CLIMATE POLICY IN CROATIA – FAR FAR AWAY? ....................................................... 1748
Ana-Maria Boromisa, S Timica, P Gracin

502012 ANALYSIS OF NORTH AMERICAN ACTION PLANS AND POLICIES ON CLIMATE CHANGE .................. 1749
E Godbout-Beaulieu, R Daigle, Yves Gagnon

502013 ACCELERATING FINANCING OF CDM AND VOLUNTARY EMISSION REDUCTION PROJECTS ............... 1751
Jai Kumar Guaran

502014 DOES THE CLEAN DEVELOPMENT MECHANISM CONTRIBUTE TO SUSTAINABLE DEVELOPMENT? ......................................................................................................................... 1752
Yongfu Huang, T Barker

502015 LESSONS FROM THE GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF): GLOBAL INFRASTRUCTURE, DATA AND TOOLS TO INFORM CLIMATE AND BIODIVERSITY POLICY ................................................................................................................................. 1753
Nick Kins, S Gaiji, S Andelman

502016 SUSTAINABLE URBAN INFRASTRUCTURE FOR LONG-TERM CARBON EMISSIONS MITIGATION IN CHINA ....................................................................................................................... 1754
Jun Li, M Colombier

502017 NORTH AMERICAN CLIMATE CHANGE GOVERNANCE: PAST, PRESENT AND FUTURE .................... 1757
Henrik Selin, Stacy Vandevuer

502018 POLITICAL AND ECONOMIC DETERMINANTS OF LONG-TERM CARBON TRANSITIONS .................. 1759
D F Sprinz, D Fuchs, Michael Akin

502019 POLICY IMPLICATIONS FROM THE JAPAN-UK LOW-CARBON SOCIETY (LCS) MODELLING PROJECT ................................................................................................................................. 1760
N Strachan, Tim J Foston, J Fujino
SESSION 52 – ECONOMIC COSTS OF NOT MITIGATING CLIMATE CHANGE

ORAL PRESENTATIONS

520001 CLIMATE CHANGE & CARBON BUDGETS: IMPLICATIONS FOR INTERNATIONAL TRANSPORT AND EMISSIONS TRADING ........................................................................................................................................... 1778
Alice Bows, K Anderson

520002 THE ECONOMIC IMPACT OF FUTURE INCREASE IN TROPICAL CYCLONES IN JAPAN ........................................................................................................ 1779
Christian Webersik, M Esteban, T Shibayama

520003 LOSS OF WORKER PRODUCTIVITY DUE TO PROJECTED CLIMATE CHANGE ........................................................................................................ 1780
Tord Kjellstrom, B Lomha

520004 CLIMATE CHANGE ADAPTATION SCENARIO FOR THE EUROPEAN ELECTRICITY SECTOR ........................................................................ 1782
Ulrich Retier, H Turton

520005 QUANTIFYING THE COSTS OF NO-ACTION: HIGH-RESOLUTION IMPACTS ANALYSIS FOR THE UNITED STATES .......................................................... 1784
Noah Diffenbaugh

520006 AN ADAPTABILITY LIMIT FOR LARGE WARMINGS–ARE WE ACCOUNTING FOR IT? ........................................................................................................ 1785
Steven Sherwood, M Huber

520007 REPRESENTING THE IMPACTS OF CLIMATE CHANGE IN A US ECONOMIC MODEL ........................................................................................................ 1786
Martin Ross, B De Angelo, B Beach, M Gallaher, S Pattanayak, C Poules, S Waldhoff

520008 THE ECONOMIC COST OF CLIMATE CHANGE – LOSS OF VALUE OF EUROPEAN FORESTLAND AS A CONSEQUENCE OF NOT MITIGATING CLIMATE CHANGE .................................................................................. 1788
Marc Hanewinkel, N E Zimmermann, D A Cullmann
POSTER PRESENTATIONS

522009 THE IMPACT OF CLIMATE CHANGE ON THE BALANCED-GROWTH-EQUIVALENT: AN APPLICATION OF FUND .......................................................... 1789
David Anthoff, R Tol

522010 THE FUTURE ECONOMIC COSTS OF CLIMATE CHANGE: A PRELIMINARY PERSPECTIVE FROM THE INSURANCE INDUSTRY .......................................................... 1790
Andrew Dlugolecki

522011 COMMUNICATING CLIMATE CHANGE: CHALLENGES AHEAD AND ACTION NEEDED .......................................................... 1791
Walter Leaf Pilho

522012 ESTIMATING THE FUTURE INCREASE IN DAMAGE COSTS DUE TO CLIMATE CHANGE-INDUCED FLOODS IN SWITZERLAND .......................................................... 1792
Frank Vöhrinser, B Schädler

SESSION 53 – ROLE OF MEDIA IN CONTRIBUTING IN COMBATING CLIMATE CHANGE

ORAL PRESENTATIONS

532001 COMPETITION AND GETTING PAST THE BOSS .......................................................................................................................... 1794
Paul Ray Beck Brown

532002 THE CULTURAL POLITICS OF CLIMATE CHANGE: FOCUSING ON MASS MEDIA .......................................................................................................................... 1795
Maxwell Boykoff

532003 COMMUNICATING ABOUT GLOBAL CLIMATE CHANGE . . . PERSUASIVELY .......................................................................................................................... 1796
Sharon Dunwoody

532004 WEB 2.0: FRIEND OR FOE? .......................................................................................................................... 1797
Olive Heffernan

532005 THE EVOLVING ROLE OF SOUTHEAST ASIAN MEDIA IN CLIMATE CHANGE .......................................................... 1798
Imelda Abano

532006 CHALLENGES IN CLIMATE CHANGE REPORTING, EXPERIENCE FROM MAINLAND SOUTHEAST ASIAN MEDIA .......................................................................................................................... 1799
Piyaporn Wongruang

532007 TRANSFORMING THE ROLE OF THE MEDIA IN COMBATING CLIMATE CHANGE IN AFRICA .......................................................................................................................... 1800
Patrick Luganda

532008 MEDIA COVERAGE OF CLIMATE CHANGE IN THE US AND BRAZIL: UNDERSTANDING CONVERGENCES AND DIVERGENCES IN LIGHT OF SOCIO-POLITICAL ContextS AND IDENTIFYING POLICY IMPLICATIONS .......................................................................................................................... 1801
Myanna Lahsen

532009 THE PROBLEM WITH SUPPLY-SIDE SCIENCE .......................................................................................................................... 1802
Naomi Oreskes

532010 WHY CLIMATE-CHANGE SKEPTICISM IS SO PREVALENT IN THE USA: THE SUCCESS OF CONSERVATIVE THINK TANKS IN PROMOTING SKEPTICISM VIA THE MEDIA .......................................................................................................................... 1803
Riley Dunlap

532011 THE EFFECTS OF JOURNALISTIC IMBALANCE ON SCIENTIFIC IMBALANCE: SPECIAL INTERESTS, SCIENTIFIC CONSENSUS AND GLOBAL CLIMATE DISRUPTION .......................................................................................................................... 1804
William Frenken

532012 EUROPEAN MEDIA DISCOURSES AND THE GOVERNANCE OF CLIMATE CHANGE .......................................................................................................................... 1805
Anabela Carvalho

532013 THE HOT SEAT: LESSONS FROM A QUARTER CENTURY WRITING ABOUT THE HUMAN INFLUENCE ON CLIMATE .......................................................................................................................... 1806
James Kanter

532014 EXPLORING THE MEDIA FRAMING OF CARBON CAPTURE AND STORAGE AND ITS INFLUENCE ON PUBLIC PERCEPTIONS .......................................................................................................................... 1807
Sarah Mandel, R Wood, C Gough

POSTER PRESENTATIONS

532015 VERMONT EXPERIENCE .......................................................................................................................... 1809
Alan K Betts

532016 THE ARCTIC CLIMATE DISCOURSES GREENLAND AND THE DOUBLE CLIMATE STRATEGIES .......................................................................................................................... 1810
Lill Rastad Biørst

532017 THE GLOBALISED PUBLIC SPHERE AS A RISK FORUM: CLIMATE CHANGES AND INTERNATIONAL NEWS MEDIA .......................................................................................................................... 1811
Mikkel Fogt Eskjær

532018 ADDRESSING INTERDISCIPLINARY ASPECTS OF CLIMATE CHANGE ON A GLOBAL LEVEL – THE WORLDWIDE SCIENTIFIC ONLINE CLIMATE CONFERENCE "CLIMATE2008/KLIMA2008" .......................................................................................................................... 1812
Franziska Mannke
### Session 55 – The Role of Non Nation State Actors in Combating Climate Change

**ORAL PRESENTATIONS**

<table>
<thead>
<tr>
<th>Presentation Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation of Community-Based Stakeholders in the CDM Project Cycle in China</td>
<td>1819</td>
</tr>
<tr>
<td>Volunteers as the Entry Point to Climate Change Adaptation at Community Level</td>
<td>1820</td>
</tr>
<tr>
<td>The Limits of Participatory Democracy for the Fight Against Climate Change</td>
<td>1822</td>
</tr>
<tr>
<td>Paying the Way for a New Development Path: An Analysis of Transnational Corporations and Carbon Lock-In</td>
<td>1823</td>
</tr>
<tr>
<td>Collaborative Emission Reduction in Regional Australia: Maine’s Power</td>
<td>1824</td>
</tr>
<tr>
<td>Transnational Climate Governance: Assessing the Performance of Non-State Driven Mitigation Schemes</td>
<td>1825</td>
</tr>
</tbody>
</table>

**POSTER PRESENTATIONS**

<table>
<thead>
<tr>
<th>Presentation Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Policy Developments for Australian Small and Medium-Sized Enterprise: Initial Survey Findings from Greater Perth and Melbourne Regions</td>
<td>1826</td>
</tr>
<tr>
<td>An Evaluation of Part-Time, Home-Based Telework Using Role Sets: A Model for ICT-enabled Savings in Emissions</td>
<td>1827</td>
</tr>
<tr>
<td>Project Rain Gauge: A Partnership to Adapt to Climate Change</td>
<td>1828</td>
</tr>
<tr>
<td>Open Assessment on Impacts of Emission Trade on City-Level</td>
<td>1830</td>
</tr>
<tr>
<td>Enhancing Local Government Climate Change Adaptation Decision-Making: Development and Understanding of the Economic Costs and Benefits of Adaptation</td>
<td>1832</td>
</tr>
</tbody>
</table>

**Session 55 – Resources in a Changing Climate: Building Collaboration and Avoiding Conflict**

**ORAL PRESENTATIONS**

<table>
<thead>
<tr>
<th>Presentation Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Game Theoretic Approach to Climate Negotiation</td>
<td>1833</td>
</tr>
<tr>
<td>Stringency of Climate Targets</td>
<td>1834</td>
</tr>
<tr>
<td>Integrated Development and Climate Network: Climate and Development</td>
<td>1835</td>
</tr>
<tr>
<td>Civic Exchange: Menu or Recipe</td>
<td>1836</td>
</tr>
</tbody>
</table>
SESSION 56 – HUMAN MIGRATION – GEOPOLITICAL CONFLICTS

ORAL PRESENTATIONS

562001 EMERGING MILITARY RESPONSES TO CLIMATE CHANGE – THE NEW TECHNOPOLITICS OF EXCLUSION
Steve Wright

562002 CLIMATE CHANGE AND TERRORISM AS SECURITY ISSUES: CONSTRUCTIONS AND COMPARISONS
John Vogler

562003 CLIMATE CHANGE, MIGRATION AND CONFLICT IN BANGLADESH: A VIEW FROM THE GROUND
A B M Ziaur Rahman

562004 CLIMATE CHANGE IMPACTS ON MIGRATION: CONFLICT AND COOPERATION IN THE MEDITERRANEAN
Hans Günter Bräuchle

562005 SOCIAL VULNERABILITY AND GEOPOLITICAL CONFLICTS DUE TO SOCIO-ENVIRONMENTAL MIGRATION IN MEXICO
Ursula Oswald Spring

562006 MIGRATION: CLIMATE ADAPTATION OR FAILURE TO ADAPT? FINDINGS FROM A GLOBAL COMPARATIVE FIELD STUDY
Koko Warner

562007 IPCC AND THE CLIMATE-CONFLICT NEXUS
Nils Petter Gleditsch, R Nordás

562008 CLIMATE CHANGE, URBAN VULNERABILITY AND DISASTERS: A PRELIMINARY ANALYSIS OF SELECTED NIGERIAN CITIES
Felix Olorunfemi, A Gbadegesin, U Raheem

562009 THE MEANING AND FUNCTION OF EUROPEAN DISCOURSES ON CLIMATE SECURITY
Julia Trombetta

562010 CLIMATE-INDUCED INSTABILITIES AND CONFLICTS
Jürgen Scheffran

POSTER PRESENTATIONS

562011 THE CAUSES OF THE ROMANIAN DESERT AND MEANS OF AVOIDING A POSSIBLE HUMAN MIGRATION
Anca Dusca, S Badea

562012 CLIMATE CHANGE, HUMAN RIGHTS AND LAND DISPLACEMENT: THREE SIDES OF THE SAME COIN
Amin George Forjii

562013 DOES RESOURCE SCARCITY INCREASE THE SEVERITY OF CONFLICTS IN SUB-SAHARAN AFRICA
Mette Kildegaard Graversen

562014 TOWARDS A CONVENTION FOR PERSONS DISPLACED BY CLIMATE CHANGE: KEY ISSUES AND PRELIMINARY RESPONSES
David Hodgkinson, T Burton, A Coram, S Dawkins, L Young

562015 CLIMATE CHANGE AND FORCED MIGRATION BANGLADESH
Haakon Lein

562016 CLIMATE SECURITY AND HUMAN SECURITY: CONVERGENCE ON POLICY REQUIREMENTS
Hesbell Olta

562017 CONSEQUENCES OF TURKEY’S IMMATURE CLIMATE CHANGE POLICIES: IS IT POSSIBLE TO CATCH THE TRAIN, ONCE IT IS GONE?
Funda Utsek

562018 HEAT TOLERANCE AND OUTDOOR TEMPERATURE IN EARLY LIFE, AMONG ITALIAN MIGRANTS IN TURIN–ITALY
Maria Angela Vigotti, M Serinelli, V M R Muggen, E Cadum
SESSION 57 – CULTURES, VALUES & WORLD PERSPECTIVES AS FACTORS IN RESPONDING TO CLIMATE CHANGE

ORAL PRESENTATIONS

572001 ATTITUDES AND RESPONSES TO CLIMATE CHANGE: THE INTERSECTION OF WORLDVIEWS AND IMMEDIATE CONCERNS
Elizabeth L Malone

572002 EMOTIONAL REACTION OF CHILDREN AGED 9-14 YEARS TO CLIMATE CHANGE AND HOW EMOTIONS ARE LINKED TO ACTION
Christian Andreas Klöckner, A Beisenkamp, S Hallmann

572003 ENCOURAGING CLIMATE CHANGE ENGAGEMENT THROUGH AFFECTIVE CONNECTIONS
Saffron O’Neill, L Whitmarsh

572004 BAD WEATHER OR STRICTER STANDARDS – SOURCES OF KNOWLEDGE IN CLIMATE ADAPTATION?
Sunna Tousse

572005 CAN THE RELIGIONS CONTRIBUTE TO FIGHT CLIMATE CHANGE?
Jakob Wolf

572006 CULTURAL VALUES, INDIGENOUS KNOWLEDGE FOR CLIMATE CHANGE ADAPTATIONS IN DEVELOPING COUNTRIES
Durgadas Mukhopadhyay

572007 INDIGENOUS PEOPLES OF THE SIERRA NEVADA DE SANTA MARTA-COLOMBIA: LOCAL WAYS OF THINKING CLIMATE CHANGE
Astrid Ulloa

572008 THE SENTINEL KEY ROLE OF INDIGENOUS PEOPLES IN THE ASSESSMENT OF CLIMATE CHANGE EFFECTS ON TROPICAL FORESTS
Edmund Dounias

572009 GONE THE BULL OF WINTER: GRAPPLING WITH THE CULTURAL IMPLICATIONS OF AND ANTHROPOLOGY’S ROLE(S) IN GLOBAL CLIMATE CHANGE
Susan Crute

572010 UNDERSTANDING THE ROLE OF CULTURE IN DETERMINING RISK FROM NATURAL HAZARDS
Lisa Schipper, J Dekens

572011 IGNORANCE AND VULNERABILITY: BELIEFS ABOUT STABILITY AND THE OCCURRENCE OF 'RADICAL SURPRISE'
Christian Kahilcke

572012 HARNESSING UNIVERSAL MOTIVATORS TO ENABLE A HUMANITARIAN RESPONSE TO CLIMATE CHANGE
Judith Ford

572013 SHEDDING A NEW KIND OF LIGHT: DEALING WITH CLIMATE CHANGE BY SHIFTING OUR MOST FUNDAMENTAL PERSPECTIVE
Carien A C De Jonge, H J C Brezet

572014 PROCRASTINATION IN CLIMATE POLICY: METAPHYSICS VS. DECISIONS IN THE WILD
Bertrand G Guillaume

572015 WARMING UP THE CLIMATE CHANGE DEBATE: A CHALLENGE TO POLICY BASED ON ADAPTATION
Andrea Nightingale

572016 HUMAN AGENCY AND THE ANATOMY OF CLIMATE CHANGE ADAPTATION STRATEGIES IN THE ARCTIC
Frank Sejersen

572017 CLIMATE CHANGE AND THE RE-INVIGORATION OF THE PUBLIC SPHERE: ISSUES, METHODOLOGIES AND THE WAY(S) FORWARD
Kersty Hobson

POSTER PRESENTATIONS

572018 PROLOGEMENA TO THE DEVELOPMENT OF CULTURAL CONCEPTS FOR CLIMATE CHANGE MITIGATION AND ADAPTATION: CROSS CULTURAL AND DIACHRONIC PERSPECTIVES
David Benjamin, G Albrecht

572019 RELIGION IN DANGEROUS ENVIRONMENTAL CHANGE
Sigurður Bergmann

572020 THE NOOSPHERE IN EARTH SYSTEM ANALYSIS
Dieter Gerten

572021 COUNTING CONFUSING CLIMATE CHANGE COMMUNICATION
Ann Henderson-Sellers

572022 JUSTICE AS GLOBAL ETHICAL FRAMEWORK – BASIS FOR AN INTEGRATED STRATEGY OF CLIMATE PROTECTION AND POVERTY REDUCTION
Michael Reder
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HURRICANE ZONE</td>
<td>1914</td>
</tr>
<tr>
<td>ADAPTATION AMONG MONGOLIAN PASTORALIST NOMADS</td>
<td>1914</td>
</tr>
<tr>
<td>CLIMATE CHANGE – A GLOBAL PUBLIC GOOD – EXPERIMENTS</td>
<td>1919</td>
</tr>
<tr>
<td>572023 SOCIO-CULTURAL REFLECTIONS ON COMFORT AND HEAT IN AUSTRALIA WITH IMPLICATIONS FOR CLIMATE CHANGE ADAPTATION</td>
<td>1897</td>
</tr>
<tr>
<td>572024 MOTIVATION TO ADAPT TO CLIMATE CHANGE</td>
<td>1899</td>
</tr>
<tr>
<td>572025 CLIMATE CHANGE WITH CHINESE CHARACTERISTICS: A STUDY OF DISCOURSE</td>
<td>2000</td>
</tr>
<tr>
<td>572026 MANAGING OUR CHANGING WORLD HERITAGE: THE PHILIPPINES RICE TERRACES EXPERIENCE</td>
<td>2001</td>
</tr>
<tr>
<td>572027 TOPOGRAPHICAL MEMENTOS: SOCIAL RESPONSES TO A CHANGING CLIMATE IN THE ARCTIC</td>
<td>2002</td>
</tr>
<tr>
<td>572028 A SOCIAL VULNERABILITY INDEX FOR NORWAY: A VIABLE APPROACH IN ANALYSES OF SOCIAL CONSEQUENCES OF CLIMATE CHANGE?</td>
<td>2003</td>
</tr>
<tr>
<td>572029 ANGRY SPIRITS OF THE LAND: CULTURAL AND ETHICAL ELEMENTS OF CLIMATE CHANGE ADAPTATION AMONG MONGOLIAN PASTORALIST NOMADS</td>
<td>2004</td>
</tr>
<tr>
<td>572030 ADAPTATION OF COASTAL COMMUNITIES IN THE CROSS-PRESSURE OF TOURISM AND ENVIRONMENTAL CHANGE IN ZANZIBAR, TANZANIA</td>
<td>2006</td>
</tr>
<tr>
<td>572031 INDIGENOUS PEOPLES OF IFUGAO: RESPONDING TO CLIMATE CHANGE</td>
<td>1908</td>
</tr>
<tr>
<td>572032 INTER-ETHNIC RELATIONS AND ADAPTATION TO CLIMATE CHANGE IN A SMALL WEST AFRICAN VILLAGE</td>
<td>1909</td>
</tr>
<tr>
<td>572033 CULTURES AND VALUES AS FACTORS RESPONDING TO CLIMATE CHANGE – INDIAN PERSPECTIVE</td>
<td>1910</td>
</tr>
<tr>
<td>572034 SCENARIO MODELLING AS A TOOL TO EXPLORE CLIMATE CHANGE ADAPTATION FOR REMOTE INDIGENOUS COMMUNITIES</td>
<td>1912</td>
</tr>
<tr>
<td>572035 ATTITUDES AND PERCEPTIONS UNDERPINNING INACTION AND NON-PREPAREDNESS IN A HURRICANE ZONE</td>
<td>1914</td>
</tr>
<tr>
<td>572036 EXPLAINING PUBLIC PERCEPTION OF CLIMATE CHANGE AND MITIGATION BEHAVIOUR IN SWITZERLAND WITHIN A STRUCTURAL EQUATION MODELLING APPROACH</td>
<td>1916</td>
</tr>
<tr>
<td>572037 THE NATURE VIEW HELD BY ENVIRONMENTALISTS. ATTITUDES IN THE NORWEGIAN ENVIRONMENTAL ESTABLISHMENT</td>
<td>1918</td>
</tr>
<tr>
<td>572038 AUROVILLE: THE CITY THE EARTH NEEDS – 'A SUCCESSFUL CASE OF CHANGING THE CLIMATE FOR HOLISTIC SUSTAINABLE DEVELOPMENT'</td>
<td>1919</td>
</tr>
<tr>
<td>572039 THE RESPONSE TO CLIMATE CHANGE FROM THE BAHAI COMMUNITY</td>
<td>1921</td>
</tr>
<tr>
<td>572040 CLIMATE CHANGE BEYOND DIPLOMACY: THINKING OUTSIDE THE BOX RESPONSE OF THE WORLD FAITH COMMUNITY</td>
<td>1922</td>
</tr>
<tr>
<td>572041 WHAT TYPE OF VALUES DOES AN ADEQUATE CLIMATE CHANGE POLICY REQUIRE?</td>
<td>1924</td>
</tr>
<tr>
<td>572042 THE 'TRUTH' ABOUT CONVENIENCE AND CLIMATE CHANGE</td>
<td>1926</td>
</tr>
<tr>
<td>572043 THE CULTURAL IMAGINATION OF CLIMATE CHANGE: DISASTER IMAGES OF THE HUMAN</td>
<td>1928</td>
</tr>
<tr>
<td>572044 POPS IN HUMAN PLASMA OF RESIDENTS FROM TRADITIONAL ARCTIC SOCIETIES – IMPACTS OF OIL AND GAS ACTIVITY FROM A HUMAN-BASED SECURITY PERSPECTIVE</td>
<td>1930</td>
</tr>
<tr>
<td>572045 MAKING SENSE OF FUTURE CLIMATE: BRIDGING THE GAP BETWEEN CLIMATE SCIENCE AND LOCAL PERCEPTIONS OF CHANGE</td>
<td>1932</td>
</tr>
<tr>
<td>572046 INSTITUTIONAL ADAPTATION TO CLIMATE CHANGE IN CHILE AND CANADA</td>
<td>1933</td>
</tr>
<tr>
<td>572047 HEIDEGGER, TECHNOLOGY, AND CLIMATE CHANGE</td>
<td>1934</td>
</tr>
<tr>
<td>572048 HUMANS ARE NOT ECONOMIC-RATIONAL-FOOLS: MULTI-COUNTRY EVIDENCE FROM CLIMATE CHANGE – A GLOBAL PUBLIC GOOD – EXPERIMENTS</td>
<td>1935</td>
</tr>
</tbody>
</table>

Authors: Shashi Kant, N Strange, G Zhou, S Kumar, K Ing
SESSION 58 – NATIONAL AND REGIONAL DEVELOPMENT OF MITIGATION POLICIES

ORAL PRESENTATIONS

582001 KEEPING GOVERNMENT ON TRACK: THE UK CLIMATE CHANGE ACT AND THE COMMITTEE ON CLIMATE CHANGE .......................................................... 1946
Jim Skea, Stephen Smith, J Lowe, L Golhar, N Golborne, J Davey

582002 A PROPOSAL THAT ADDS UP TO A GLOBAL SOLUTION: AUSTRALIA’S GARNAUT CLIMATE CHANGE REVIEW ............................................................. 1952
R Garmaut, S Howes, Frank Jotzo

582003 THE ECONOMICS OF THE NEW EU CLIMATE AND ENERGY PACKAGE .......................................................... 1953
Tom Van Ierl, K Ger

582004 MITIGATION POTENTIAL AND PERSPECTIVES FOR RUSSIAN PARTICIPATION IN A POST-KYOTO AGREEMENT ................................................................. 1950
Alexander Golub, O Lugovoy

582005 RECONCILING ENERGY INSECURITY AND CLIMATE RISKS IN CHINA ........................................................................................................... 1948
Guodong Sun

582006 COMPARING MITIGATION POTENTIALS AND COSTS IN ANNEX 1 COUNTRIES IN 2020 .......................................................... 1955
Markus Amann

POSTER PRESENTATIONS

582007 A MANAGEMENT SYSTEM FRAMEWORK FOR CITY BENCHMARKING AND CONTINUOUS IMPROVEMENT .......................................................... 1956
Anne Arquit Niederberger

582008 CLIMATE CHANGE MITIGATION IN DRYLAND RURAL COMMUNITIES IN NIGERIA, OLD PROBLEM: NEW CHALLENGES AND NEW OPPORTUNITIES ................................. 1957
Andrew I Ayeni

582009 ETHICAL OBLIGATIONS OF NATIONAL, REGIONAL, AND LOCAL GOVERNMENTS TO REDUCE THE THREAT OF CLIMATE CHANGE .......................................................... 1958
Donald Brown

582010 GREENHOUSE GAS EMISSIONS FROM AGRICULTURE: ESTIMATES OF MARGINAL ABATEMENT COSTS IN THE EU-24 AT THE FARM, REGIONAL, AND COUNTRY LEVELS ........................................................................................................... 1959
Stephane De Cara, P-A Jayet

582011 INTEGRATING SUSTAINABLE CONSUMPTION IN ASIAN CLIMATE CHANGE POLICIES ........................................................................................................... 1961
Uchita De Zoysa

582012 BEST PRACTISES FOR THE DEVELOPMENT OF A SUITABLE CIMATE CHANGE MITIGATION POLICIES IN THE GONGO BASIN ........................................................................................................... 1963
Laurence Jumbo Elaile

582013 MITIGATION OF CLIMATE CHANGE AND THE POTENTIAL REDUCTION IN GLOBAL HEALTH IMPACT OF PARTICULATE AIR POLLUTION FROM COAL FIRED POWER STATION ........................................................................................................... 1964
Simon Hales, J Gohlke, A Prens-Ustun, D Campbell-Lendrum, A Woodward

582014 CLIMATE CHANGE ADAPTATION AT THE URBAN LOCAL GOVERNMENT LEVEL: THE CASE OF PAKISTAN ........................................................................................................... 1966
Muhammad Saleem Janjua