# TABLE OF CONTENTS

## ARCHAEOLOGY

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTI-METHOD ARCHEOGEOPHYSICAL PROSPECTION IN NOER, GERMANY</td>
<td>Lucie Costard</td>
</tr>
<tr>
<td>HIGH-RESOLUTION SEISMIC SURVEYS FOR UNDERSTANDING ARCHAEOLOGICAL AND HYDROLOGICAL CONDITIONS AT HIREKONPOLIS TEMPLE SITE, EDFU, EGYPT</td>
<td>Recep Cakir</td>
</tr>
<tr>
<td>ANDREW JACKSON’S THE HERMITAGE–SAGEEP2018 EXHIBITOR SURVEYS</td>
<td>Janet Simms</td>
</tr>
</tbody>
</table>

## CASE STUDIES IN USE OF GEOPHYSICS TO EVALUATE GEOHAZARDS AND INFRASTRUCTURE

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE AND POST CONSTRUCTION CHARACTERIZATION OF EARTHEN DAMS IN CENTRAL TEXAS USING VARIOUS GEOPHYSICAL METHODS</td>
<td>Doug Laymon</td>
</tr>
<tr>
<td>PRIORITIZING BRIDGE SCOUR MONITORING WITH ELECTRICAL RESISTIVITY TOMOGRAPHY</td>
<td>Stacey E. Kulesza</td>
</tr>
<tr>
<td>INVESTIGATION OF A SLOPE FAILURE USING SEISMIC FULL WAVEFORM INVERSION</td>
<td>Dan Jackson</td>
</tr>
</tbody>
</table>

## CONTAMINATED LAND

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLICATION OF THREE DIMENSIONAL (3D) ELECTRICAL RESISTIVITY (ERI) TECHNIQUE IN A STUDY CONDUCTED ON OIL CONTAMINATED EXPERIMENTAL SITE IN BIUST, PALAPYE, BOTSWANA</td>
<td>Elisha Shemang</td>
</tr>
<tr>
<td>ULTRAFINE MAGNETIC PARTICLES CHARACTERIZATION AS A PROXY OF BIOGEOCHEMICAL PROCESSES AT A BROWNFIELD</td>
<td>Andrea Ustra</td>
</tr>
<tr>
<td>BENCH SCALE MEASUREMENT OF SOIL USING EMI, IP, TDR, AND GPR</td>
<td>Dan Glaser</td>
</tr>
<tr>
<td>A MULTI-METHOD APPROACH TO LANDFILL DELINEATION</td>
<td>Michael Mcneill</td>
</tr>
<tr>
<td>USING ELECTRICAL RESISTIVITY IMAGING TO ASSESS SOIL AND GROUNDWATER CONTAMINATION FROM ACCIDENTAL SPILL OF CHROME PROCESS WATER THROUGH REINFORCED CONCRETE FLOOR</td>
<td>Tanapon Phenrat</td>
</tr>
</tbody>
</table>

## CRESTONE CRATER

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRONE ENABLED MAGNETIC SURVEY OVER THE CRESTONE CRATER</td>
<td>Ronald Bell</td>
</tr>
<tr>
<td>FINDING DEPTH TO BASEMENT USING TIME DOMAIN ELECTROMAGNETICS OVER THE ENIGMATIC CRESTONE CRATER</td>
<td>Samuel Chambers</td>
</tr>
<tr>
<td>GREAT SAND DUNES AEOLIAN SYSTEM – SETTING AND HISTORY FOR DISCUSSION ABOUT THE CRESTONE CRATER</td>
<td>Andrew Valdez</td>
</tr>
<tr>
<td>SUMMARIZED FINDINGS FROM THE 2011 GEOPHYSICAL SURVEY OF THE CRESTONE CRATER</td>
<td>Nick Wagner</td>
</tr>
</tbody>
</table>
AIRBORNE AND GROUND GEOPHYSICAL STUDIES IN THE GREAT SAND DUNES
NATIONAL PARK – SAN LUIS VALLEY, CO ................................................................. 36
Ronald Bell

IMAGING THE CRESTONE CRATER USING DIRECT CURRENT RESISTIVITY .................. 37
Zachary Zyla

ELECTROMAGNETICS – LAND, AIRBORNE AND MARINE I

MAPPING SALINE GROUNDWATER DISCHARGE TO SURFACE WATER WITH
MULTIFREQUENCY ELECTROMAGNETIC INDUCTION ......................................................... 38
Neil Terry

ON THE INTERPRETATION OF TRANSIENT ELECTROMAGNETIC MEASUREMENTS
USING A FLOATING SET-UP ON THE VOLCANIC LAKE LAGOU DAS FURNAS IN THE
AZORES .......................................................................................................................... 39
Bülent Tezkan

TTM, A TOWED ELECTROMAGNETIC INDUCTION SYSTEM – AN EXAMPLE FROM THE
MISSISSIPPI ALLUVIAL PLANE .................................................................................. 43
Carole Johnson

INVESTIGATING EMI RESPONSES FOR WIRES TO ENHANCE TUNNELS DETECTION ........... 47
Fridon Shubitidze

FURTHER CHARACTERIZATION OF THE SPIRITWOOD VALLEY AQUIFER IN NORTH
DAKOTA USING HELICOPTER TIME DOMAIN ELECTROMAGNETICS ............................. 48
Jean Legault

EXTRACTION OF DEPTH TO BEDROCK FROM AIRBORNE ELECTROMAGNETIC DATA
USING ARTIFICIAL NEURAL NETWORKS ................................................................. 49
Craig William Christensen

MODELLING AND SURVEY RESULTS OF IN-MINE ELECTROMAGNETICS FOR BRINE
LAYER DETECTION ........................................................................................................... 50
Todd Leblanc

ELECTRICAL METHODS I

MULTIPLE CURRENT TRANSMISSION USING FREQUENCY DIVISION FOR RESISTIVITY
AND IP PROFILING ......................................................................................................... 51
Aleksei Tarasov

PVC MEMBRANE DETECTION USING ERT - MODELING AND LABORATORY
EXPERIMENTS .................................................................................................................. 55
Marios Karaoulis

PREFERENTIAL GROUNDWATER SEEPAGE IN KARST TERRANE INFERRED FROM
GEOELECTRIC MEASUREMENTS ................................................................................ 57
Scott Ikard

WATERBORNE ELECTRICAL RESISTIVITY IMAGING (ERI) FOR ASSESSING LAKE
SEDIMENT THICKNESS .................................................................................................. 58
Dimitrios Ntarlagiannis

FIELD TESTS OF ELECTRICALLY ACTIVE PROPPANTS USING SHALLOW HYDRAULIC
FRACURES .......................................................................................................................... 59
Douglas Labrecque

ELECTRICAL METHODS II

COMPLEX RESISTIVITY (CR) MONITORING OF TRACER TESTS FOR ASSESSING MASS
TRANSFER AND SORPTION IN LOW PERMEABILITY MEDIA ...................................... 60
Lee Slater

SIGNIFICANT ADVANCES IN ELECTRICAL RESISTIVITY INSTRUMENTATION FOR HUGE
FEATURES 3D IMAGING ................................................................................................. 61
Catherine Truffert
SEISMIC GEOHAZARDS: LIQUEFACTION, SITE CHARACTERIZATION, & SEISMIC SLOPE STABILITY

COMPARISON OF PROBABLISTIC SEISMIC HAZARD STUDIES WITHIN THE OECD COUNTRIES ..................................................................................................................................... 66
Olli Okko

COMPARISON OF SURFACE WAVE AND DOWNHOLE METHODS AT A BLAST-INDUCED LIQUEFACTION TEST SITE ................................................................................................................................ 67
Armin Stuedlein

COMPARISON OF DISPERSION-BASED AND FULL WAVEFORM INVERSION OF SURFACE WAVES TO EVALUATE THE SPATIAL VARIABILITY OF LIQUEFACTION TRIGGERING .................................................................. 68
Joseph Coe

FULL WAVEFORM INVERSION IN SEISMIC SITE CHARACTERIZATION: EVALUATION OF NATURAL SPATIAL VARIABILITY OF SUBSURFACE SOIL STIFFNESS .............................................................................. 69
Joseph Coe

SPATIAL DISTRIBUTION OF YIELD ACCELERATIONS AND PERMANENT DISPLACEMENTS: A DIAGNOSTIC TOOL FOR ASSESSING SEISMIC SLOPE STABILITY ...................................................................... 70
Nicolas Mathews

LIQUEFACTION CASE HISTORIES AT STRONG MOTION RECORDING STATIONS .............................................................................................................................. 71
Michael Greenfield

GEOTECHNICAL

SEISMIC TOMOGRAPHY TO DELINEATE KARST STRUCTURES BELOW A HIGHWAY BRIDGE FOUNDATION .......................................................................................................................... 72
Thomas Fechner

ULTRA-LOW FREQUENCY STRAIN MEASUREMENTS WITH DISTRIBUTED ACOUSTIC SENSING (DAS) .......................................................................................................................... 76
Matthew Becker

GEOPHYSICAL INVESTIGATIONS AT JIM WOODRUFF LOCK AND DAM, SNEADS, FLORIDA .............................................................................................................................. 77
Bethany Burton

BOREHOLE GEOPHYSICS AND HYDRAULIC TESTING AIDS IN DETERMINING GEOTECHNICAL PARAMETERS FOR A NEARSHORE CABLE TUNNEL IN A FRACTURED SEDIMENTARY DEPOSIT .................................................................................................................. 78
Marcus Donaldson

MODERN TECHNIQUES IN CROSSHOLE SEISMIC TESTING (CST) FULFILMENT: CASE STUDY .......................................................................................................................... 85
Aleksei Tarasov

INSAR FOR INFRA… (INTERFEROMETRIC SYNTHETIC APERTURE RADAR FOR MONITORING URBAN INFRASTRUCTURE) ................................................................................................. 89
Malcolm Allan

REMEMBERING F PETER HAENI SESSION

HOW TO ASK THE RIGHT QUESTIONS, CHOOSE THE RIGHT METHOD, AND SMILE AS YOU GET THINGS DONE: A MEMORIAL TO F. PETER HAENI .......................................................................................................................... 91
Kamini Singha

INTEGRATION OF DRONES INTO HYDROGEOPHYSICAL STUDIES: USGS CASE STUDIES FROM ACROSS THE UNITED STATES ........................................................................................................ 96
Cian Dawson

OPTIMIZING GEOPHYSICAL BOREHOLE LOGGING FOR DESIGNING MONITORING WELLS & MULTI-LEVEL SYSTEMS; BRIDGING A GAP WITH HYDROGEOLOGISTS AND ENGINEERS .......................................................................................................................... 97
Peeter Pehme

APPLICATION OF A TOWED TIME-DOMAIN ELECTROMAGNETIC (TTEM) - IMAGING SYSTEM IN JAMESTOWN, NORTH DAKOTA ................................................................................................. 98
Carole Johnson
REMEMBERING F. PETER HAENI (1941-2017) THROUGH A TECHNICAL SESSION - “WHAT DID WE LEARN FROM THIS?”

Carole Johnson

HUMANITARIAN AND GPR

WATER CHEMISTRY CONSIDERATIONS IN THE CONTEXT OF GEOPHYSICAL WATER EXPLORATION IN HUMANITARIAN EMERGENCIES

Paul Bauman

APPLICATION OF ELECTRICAL RESISTIVITY TOMOGRAPHY TO SITING RURAL BOREHOLES IN SOUTHERN MALAWI

Riley Balkian

LOW-COST DC RESISTIVITY INSTRUMENT DESIGN FOR HUMANITARIAN GEOPHYSICS

Dana Sirota

REFLECTION TOMOGRAPHY OF TIME-LAPSE GPR DATA FOR STUDYING DYNAMIC UNSATURATED FLOW PHENOMENA

Stephen Moysey

HYDROGEOLOGICAL CHARACTERIZATION I

COLORADO SOUTH PLATTE RIVER ALLUVIAL AQUIFER CHARACTERIZATION WITH AN AIRBORNE ELECTROMAGNETIC SURVEY

Jared Abraham

ERT INVESTIGATION OF AN ANTECEDENT FLOODPLAIN CHANNEL-BELT

J. Michael Martin

UAS NOISE IN STANDOFF EMI MEASUREMENTS

Dan Glaser

VADOSE ZONE FLOW CHARACTERIZATION IN NON-MACROPOROUS AND MACROPOROUS MEDIA USING ELECTRICAL RESISTIVITY AND 4D PRECLINICAL COMPUTED TOMOGRAPHY IMAGING

Stephen Moysey

HYDROGEOLOGICAL CHARACTERIZATION II

DELINEATION OF A CONDUCTIVE AQUIFER USING MISE-A-LA-MASSE WITH A MODIFIED ACQUISITION GEOMETRY

Robert Perrin

FLEXIBLE LIGHTWEIGHT SURFACE NMR INSTRUMENTATION FOR MULTIPURPOSE GROUNDWATER INVESTIGATIONS

Elliot Grunewald

ENHANCING SOURCE-WATER MANAGEMENT THROUGH AIRBORNE ELECTROMAGNETIC IMAGING OF COMPLEX AQUIFER-AQUITARD SEQUENCES

Colby Steelman

A HYDROSTRATIGRAPHIC UNDERSTANDING OF BURIED BEDROCK VALLEYS: COMPARING AN AIRBORNE ELECTROMAGNETIC SURVEY WITH MULTIPLE SURFACE GEOPHYSICAL TECHNIQUES

Colby Steelman

SIMULATION OF INFILTRATION SCENARIOS FOR MINI-ANAHEIM ARTIFICIAL RECHARGE BASIN, ORANGE COUNTY, CA

Michael Hodges

INFRASTRUCTURE AND MINES

GEOPHYSICAL ASSESSMENT OF A PROPOSED LANDFILL SITE IN FREDERICKTOWN, MISSOURI

Carole Johnson

INTEGRATED GEOPHYSICAL INVESTIGATION OF BROOKLYN MINE UPPER ADIT, SAN JUAN COUNTY, COLORADO
PRELIMINARY GEOPHYSICAL INVESTIGATIONS FOR THE RESTORATION OF ABANDONED MINE SITES PROGRAM: BROOKLYN MINE, SAN JUAN COUNTY, COLORADO

Bethany Burton

143

INVERSION DATA MODELING AND DATA PROCESSING

WHERE DO WE LACK INFORMATION? MPS REALIZATIONS CAN TELL YOU WHERE TO DRILL!

Mats Lundh Gulbrandsen

144

SIMULTANEOUS SOURCE SEPARATION BY USING MEDIAN FILTERING AND SINGULAR SPECTRUM ANALYSIS IN HYPERBOLIC WINDOWS

Aleksei Tarasov

145

3D MODELING OF AN EMBANKMENT FAILURE SITE BASED ON DETAILED NEAR SURFACE GEOPHYSICAL SURVEYS

Tomio Inazaki

150

PYR2: AN OPEN-SOURCE STANDALONE GRAPHICAL USER INTERFACE FOR INVERSION OF ELECTRICAL RESISTIVITY AND INDUCED POLARIZATION MEASUREMENTS

Sina Saneiyan

151

ADDRESSING THE ISSUE OF MODEL ERROR IN STOCHASTIC GEOPHYSICAL INVERSION

James Irving

152

COMET – A PYTHON TOOLBOX FOR 1D/2D/3D MODELLING AND INVERSION OF MAGNETIC RESONANCE AND RESISTIVITY DATA

Mike Müller-Petke

153

KARST & SINKHOLES I

KARST AWAY - GEOPHYSICAL SURVEYS FOR RESOURCE DEVELOPMENT OF A LIMESTONE QUARRY

Alastair Mcclymont

154

PROBABILISTIC SPATIOTEMPORAL-MAGNITUDE SINKHOLE HAZARD MAP FOR EAST CENTRAL FLORIDA

Boo Hyun Nam

156

MAPPING A SINKHOLE SITE USING ELECTRICAL RESISTIVITY AND SEISMIC BASED METHODS

Dan Jackson

157

KARST & SINKHOLES II

SINKHOLES AS TRANSPORTATION AND INFRASTRUCTURE GEOHAZARDS IN SOUTHEASTERN NEW MEXICO

Lewis Land

158

NUMERICAL ANALAYSIS ON SINKHOLE STABILITY INDUCED BY RAINFALL

Hee Jung Youn

164

FIELD TEST OF SINKHOLE INDUCED BY MAN-MADE UNDERGROUND PIPE

Hee Jung Youn

165

MULTICHANNEL ANALYSIS OF SURFACE WAVES (MASW) AND PASSIVE SEISMIC I

EMPHASIZING THE RECENT TECTONIC ACTIVITY OF BLIND THRUSTS USING NATURAL SEISMIC NOISE: THE CASE OF THE FERRARA ARC, ITALY

Samuel Bignardi

166

MAPPING AND INVESTIGATING DIRECTIONAL EFFECTS THROUGH ANALYSYS OF MICROTREMORS: THE CASE OF PALAEO-PINIADA VALLEY, CENTRAL GREECE

Samuel Bignardi

171

CAN PASSIVE SEISMIC (HVSR) BE DONE NEAR AN ACTIVE VIBROSEIS SEISMIC SURVEY?

William Sauck

176
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVALUATION OF THE EFFECTS OF IMPACT ANGLE AND SOURCE TYPE ON THE</td>
<td>180</td>
</tr>
<tr>
<td>GENERATION OF SURFACE WAVES</td>
<td></td>
</tr>
<tr>
<td>Joseph Coe</td>
<td></td>
</tr>
<tr>
<td>MULTICHANNEL ANALYSIS OF SURFACE WAVES (MASW) AND PASSIVE SEISMIC II</td>
<td></td>
</tr>
<tr>
<td>MONITORING SOIL PROFILE VARIATIONS DURING RAINFALL EVENTS USING THE</td>
<td>181</td>
</tr>
<tr>
<td>HF-MASW METHOD</td>
<td></td>
</tr>
<tr>
<td>Zhiqu Lu</td>
<td></td>
</tr>
<tr>
<td>SEGMENT SELECTION IN CULTURAL NOISE RECORDINGS FOR IMAGING NEAR-SURF</td>
<td>187</td>
</tr>
<tr>
<td>FACE SURFACE WAVES</td>
<td></td>
</tr>
<tr>
<td>Jianghui Xia</td>
<td></td>
</tr>
<tr>
<td>APPLICATION OF 2D AMBIENT NOISE TOMOGRAPHY TO A MAJOR FAULT</td>
<td>189</td>
</tr>
<tr>
<td>INVESTIGATION IN WESTERN WASHINGTON</td>
<td></td>
</tr>
<tr>
<td>Koichi Hayashi</td>
<td></td>
</tr>
<tr>
<td>NUMERICAL SIMULATION OF AMBIENT NOISE TOMOGRAPHY AT 2D AND 3D</td>
<td>193</td>
</tr>
<tr>
<td>STRUCTURES USING 3D FINITE-DIFFERENCE METHOD</td>
<td></td>
</tr>
<tr>
<td>Koichi Hayashi</td>
<td></td>
</tr>
<tr>
<td>MASW SURVEY WITH UNEVENLY SPACED RECEIVER ARRAY (USRA)</td>
<td>197</td>
</tr>
<tr>
<td>Choon Park</td>
<td></td>
</tr>
<tr>
<td>BEST OF NEAR SURFACE GEOSCIENCE 2018</td>
<td></td>
</tr>
<tr>
<td>1D MODELLING AND INVERSION OF FREQUENCY-DOMAIN ELECTROMAGNETIC</td>
<td>206</td>
</tr>
<tr>
<td>(FDEM) DATA AT A FORMER COAL TAR REFINERY</td>
<td></td>
</tr>
<tr>
<td>Luis Cavalcante Fraga</td>
<td></td>
</tr>
<tr>
<td>POTENTIAL FIELDS</td>
<td></td>
</tr>
<tr>
<td>USING NON-DERIVATIVE FILTERS FOR THE TECTONIC IMPLICATIONS: A CASE</td>
<td>207</td>
</tr>
<tr>
<td>STUDY IN SIMAV GRABEN IN WESTERN TURKEY</td>
<td></td>
</tr>
<tr>
<td>Recep Cakir</td>
<td></td>
</tr>
<tr>
<td>LOCATING ABANDONED WELLS USING GROUND AND UAV MAGNETOMETRY:</td>
<td>211</td>
</tr>
<tr>
<td>EXAMPLES FROM STONEY CREEK OIL AND GAS FIELD, NEW BRUNSWICK, CANADA</td>
<td></td>
</tr>
<tr>
<td>Karl Butler</td>
<td></td>
</tr>
<tr>
<td>MAGNETIC SUSCEPTIBILITY STUDIES OF HEAVY METAL POLLUTION IN SOILS</td>
<td>212</td>
</tr>
<tr>
<td>AROUND METAL</td>
<td></td>
</tr>
<tr>
<td>Pauline Ale</td>
<td></td>
</tr>
<tr>
<td>SEISMIC METHODS</td>
<td></td>
</tr>
<tr>
<td>SEISMIC IMAGING OF GLACIAL OVERDEEPENED VALLEYS USING P- AND S-WAVES</td>
<td>219</td>
</tr>
<tr>
<td>Hermann Buness</td>
<td></td>
</tr>
<tr>
<td>HOW MASW BANISHED SHEAR-WAVE REFRACTION AND “SHOULD WE CARE?”</td>
<td>223</td>
</tr>
<tr>
<td>Jacob Sheehan</td>
<td></td>
</tr>
<tr>
<td>SHALLOW MARINE SESSION 1</td>
<td></td>
</tr>
<tr>
<td>COMBINING MARINE ELECTROMAGNETIC AND HIGH RESOLUTION SEISMIC IMAGING:</td>
<td>224</td>
</tr>
<tr>
<td>APPLICATION TO SHALLOW GASSY ENVIRONMENT</td>
<td></td>
</tr>
<tr>
<td>Judith Flamme</td>
<td></td>
</tr>
<tr>
<td>CHALLENGES AND MODERN TECHNIQUES OF MULTICHANNEL SHALLOW MARINE</td>
<td>228</td>
</tr>
<tr>
<td>SEISMIC PROCESSING</td>
<td></td>
</tr>
<tr>
<td>Sergey Buryak</td>
<td></td>
</tr>
<tr>
<td>ZERO-OFFSET DEMULTIPLE – EFFICIENT DEMULTIPLE OF NEAR-OFFSET MARINE</td>
<td></td>
</tr>
<tr>
<td>SEISMIC DATA USING ADAPTIVE SUBTRACTION</td>
<td>233</td>
</tr>
<tr>
<td>Sergey Buryak</td>
<td></td>
</tr>
</tbody>
</table>
INCORPORATING, TESTING, AND IMPLEMENTING OF ADVANCED GRADIOMETRIC ALGORITHMS DESIGNED FOR AUTONOMOUS UNDERWATER VEHICLES WITHIN GEOSOFT’S OASIS MONTAJ .............................................................. 234
Brian Brunette

SHALLOW MARINE SESSION 2

PRELIMINARY STUDY OF INTEGRATED GEOPHYSICAL INVESTIGATION AT WATER-COVERED AREAS .................................................................................................................. 235
Takaho Kita

NEW INSIGHTS ON SCALE-DEPENDENT SURFACE AND GROUNDWATER EXCHANGE FROM A FLOATING SELF-POTENTIAL DIPOLE ........................................................................................................... 241
Scott Ikard

IMAGING DAM RESERVOIR SILTATION WITH DECIMETRE PRECISION BY ACOUSTIC AND GPR PROFILING ............................................................................................................................. 242
Karl Butler

INTEGRATING HIGH-RESOLUTION SIDE-SCAN SONAR IMAGERY INTO FISHERIES RESEARCH IN RIVERINE, ESTUARINE AND SHALLOW MARINE ENVIRONMENTS ........................................... 243
John Madsen

SHALLOW MARINE SESSION 3

UNCONVENTIONAL APPLICATION OF GEOPHYSICAL METHODS TO CHARACTERIZE EXISTING BEDROCK CONDITIONS ............................................................................................... 244
Adam Belkadi

SHALLOW MARINE SESSION 4

SHALLOW SEISMIC 2D SURVEY IN THE TRANSITION ZONE (BRIDGE CROSSING SITE) - CASE STUDY ........................................................................................................................................... 245
Aleksei Tarasov

MASW IN THE SURF ZONE ON A BELGIAN BEACH .................................................................................................................................................................................. 246
Marios Karaoulis

ADVANCED MAGNETOMETER COMPATIBLE WITH ELECTROMAGNETIC INDUCTION (EMI) SYSTEMS ................................................................. 250
Rahul Mhaskar

SITE CHARACTERIZATION I

MONITORING ACTIVITY AT AN SUBSURFACE COAL MINE FIRE USING PASSIVE AND ACTIVE SOURCE SEISMIC METHODS ................................................................................................................. 251
Lincoln Steele

DISCRIMINATING PLEISTOCENE ALLUVIAL TERRACES ON THE COLORADO RIVER IN CENTRAL TEXAS USING LIDAR AND NEAR-SURFACE GEOPHYSICS ................................................................................................................. 252
Jeffrey Paine

WASHINGTON STATE SCHOOL SEISMIC SAFETY PROJECT: A SURVEY OF SEISMIC RESILIENCE AT 220 K–12 SCHOOL BUILDINGS ................................................................................................................. 253
Travis Nielson

AMBIENT NOISE TOMOGRAPHY FOR CHARACTERIZE THE SUBSOIL STRUCTURE UNDER A DAMAGED BUILDING IN MEXICO CITY ............................................................................................................ 258
Martin Cardenas Soto

POTENTIALLY BENEFICIAL SOIL MAPPING INFORMATION FROM ROUTINE QC/QA OF 3D SEISMIC SURVEY DATA ..................................................................................................................... 262
Geoff Pettifer
SITE CHARACTERIZATION II

GEOLOGIC HAZARD ASSESSMENT OF THE ATLANTIC SUNRISE PIPELINE .................................................. 266
Timothy King

INVESTIGATION OF POSSIBLE SLUMP SLIDE FORMATIONS USING SRT AND ERT ALONG
THE MISSISSIPPI LEVEE ......................................................................................................................... 281
Leti Wodajo

INTEGRATING PHOTOGRAMMETRY, LIDAR, AND MAGNETIC DATA ACQUIRED USING A
SUAS TO CHARACTERIZE AND MONITOR A CLOSED LANDFILL ..................................................... 282
Ronald Bell

SITE CHARACTERIZATION OF HILLSLOPES IN RIBEIRÃO CONTAGEN FLUVIAL VALLEY
(BRASILIA, BRAZIL) USING GEOPHYSICAL METHODS ...................................................................... 283
Yawar Hussain

SLOPE STABILITY & LANDSLIDES

OVERCOMING CHALLENGES IN TIME-LAPSE SEISMIC REFRACTION DATA TO
MONITOR A MOISTURE-INDUCED LANDSLIDE .............................................................................. 289
Jim Whiteley

LONG-TERM GEOPHYSICAL MONITORING OF MOISTURE-INDUCED LANDSLIDES ..................... 290
Jim Whiteley

MOUNT ST. HELENS ERUPTION: A GEOPHYSICAL INVESTIGATION OF THE SPIRIT LAKE
BLOCKAGE ........................................................................................................................................... 292
Kristen Marberry

IDENTIFICATION OF SOFT SEAMS IN SLOPES USING FULL WAVEFORM INVERSION OF
SURFACE WAVES ................................................................................................................................. 293
Joseph Coe

UXO

DEVELOPMENT OF AN UNDERWATER INSTRUMENT FOR ADVANCED GEOPHYSICAL
CLASSIFICATION OF UXO .................................................................................................................. 294
Nick Odlum

IMPROVED PROCESSING TECHNIQUES FOR MUNITIONS RESPONSE GEOPHYSICAL
DATA ...................................................................................................................................................... 295
Darrell Hall

AUTOMATED BURIED TARGET CHARACTERISATION USING MACHINE LEARNING AND
DECIMETRE-RESOLUTION 3D SEISMIC IMAGING ........................................................................... 301
Mark Vardy

DEVELOPMENT AND EVALUATION OF AN UNDERWATER ADVANCED TIME-DOMAIN
ELECTROMAGNETIC SYSTEM FOR MUNITIONS RESPONSE CLASSIFICATION ......................... 303
Steve Saville

ADVANCED GEOPHYSICAL CLASSIFICATION (AGC) SENSOR UPDATE ........................................ 304
Jeffrey Leberfinger

MILITARY MUNITIONS RESPONSE STATISTICS, OR, WHY THERE’S NO LONGER ANY
ROOM FOR ANALOG GEOPHYSICAL METHODS AT THE GROWN-UPS TABLE ......................... 305
Andrew Schwartz

Author Index