Third International Conference on Agro-Geoinformatics

(Agro-Geoinformatics 2014)

Beijing, China
11-14 August 2014
<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimating Leaf Chlorophyll Concentration in Soybean Using Random Forests and Field Imaging Spectroscopy</td>
<td>J. Lv, and Z. Yan</td>
<td>1</td>
</tr>
<tr>
<td>Estimation of Pb Concentration in the Mining Tailing Areas Base on Field Spectrometry and Support Vector Machine</td>
<td>J. Lv, and Z. Yan</td>
<td>5</td>
</tr>
<tr>
<td>Forecasting of Powdery Mildew disease with multi-sources of remote sensing information</td>
<td>J. Zhang, L. Yuan, C. Nie, L. Wei, and G. Yang</td>
<td>10</td>
</tr>
<tr>
<td>Assessing the impact of urbanization on vegetation change and arable land resources change in Shandong Province</td>
<td>Z. Chao, and P. Zhang</td>
<td>15</td>
</tr>
<tr>
<td>Modeling crop spatial patterns and their phenological calendars using geographical factors - a case study in Northwest China</td>
<td>Z. Pan, J. Huang, F. Mao, X. Wang, and Z. Zhao</td>
<td>20</td>
</tr>
<tr>
<td>Crop identification by means of seasonal statistics of RapidEye time series</td>
<td>E. Zillmann, and H. Weichelt</td>
<td>26</td>
</tr>
<tr>
<td>Assessment of Agricultural Drought Indicators Impact on Soybean Crop Yield: A Case Study in Iowa, USA</td>
<td>Y. Huang, X. Liu, Y. Shen, and J. Jin</td>
<td>32</td>
</tr>
<tr>
<td>Optimal design on samples layout of spatial sampling schemes for estimating winter wheat planting acreage</td>
<td>D. Wang, Z. Chen, Q. Zhou, and Y. An</td>
<td>38</td>
</tr>
<tr>
<td>Particle Swarm Optimization based Spatial Location Allocation of Urban Parks - A Case Study in Baoshan District, Shanghai, China</td>
<td>J. Yu, Y. Chen, J. Wu, R. Liu, H. Xu, D. Yao, and J. Fu</td>
<td>44</td>
</tr>
<tr>
<td>Provincial Spatial Sampling Method for Crop Sown Acreage Estimation</td>
<td>Z. Dong, D. Wang, Y. An, and Q. Zhou</td>
<td>50</td>
</tr>
<tr>
<td>Evaluation on Extrapolation Efficiency of Multiple Estimators for Winter Wheat Planting Acreage Estimation</td>
<td>Z. Dong, D. Wang, Y. An, and Z. Chen</td>
<td>56</td>
</tr>
<tr>
<td>Evaluation of farmland quality with the integration of GIS and RS technology at village scale</td>
<td>X. Gu, Y. Wang, X. Yang, and Y. Chen</td>
<td>62</td>
</tr>
<tr>
<td>Prediction of SPAD value and Distribution of Rape Leaf Based on Hyperspectral Imaging Technology</td>
<td>Y. Li, L. Li, J. Wang, M. Liu, X. Lu, Z. Guo, and J. Zhang</td>
<td>66</td>
</tr>
<tr>
<td>Integration of remotely sensed inundation extent and high-precision topographic data for mapping inundation depth</td>
<td>C. Huang, Y. Chen, J. Wu, Z. Chen, L. Li, R. Liu, and J. Yu</td>
<td>71</td>
</tr>
<tr>
<td>Study on Spatial Distribution of Total Suspended Matter of Poyang lake and Its Effect on the Water Quality</td>
<td>L. Zhang, X. Chen, and Y. Zhang</td>
<td>75</td>
</tr>
</tbody>
</table>
The Observation Capability Reason of Optical Satellite Sensor for soil moisture monitoring .............................. X. Wang, N. Chen, X. Yang, and Z. Chen 79

Simulation and Prediction of Soil Organic Carbon Spatial Change in Arable Lands Based on DNDC Model .............................. D. Wang, Y. Yao, H. Si, W. Zhang, and H. Tang 85


Extending WSDL for Describing Complex Geodata in GIS Service ................................. S. Gao, L. You, Z. Gui, and H. Wu 97

Ecological suitability evaluation for torreya Crop in Hangzhou city based on a GIS-based fuzzy model ................................................................. W. Huang, and J. Huang 103

High-Fidelity 3D Plants Model Reconstructed based on Color Structured Light .................. K. Si, J. Zhang, Z. Li, Z. Guo, X. Lu, and J. Xie 109


Spatial dynamics modelling of crops pattern with remote sensing classification data ............ T. Xia, W. Wu, Q. Zhou, P. Yang, and Y. Liu 123

Study On the Ecological Flow in the Middle Reaches of Irtysh Rivers ...... G. Ye, and Y. Bai 128

GIScript: Towards an Interoperable Geospatial Scripting Language for GIS Programming ... ................................................................. M. Zhang, P. Yue, and X. Guo 132

Satellite Remote Sensing Experiment on Rotational Effect of Bean in Rotation of Rice and Bean ................................................................. L. Sun, and Z. Zhu 137

A Fast Multi-scale Polygon Features Update Approach Based on Features Matching ........ Q. Meng, and Y. Lu 141


The Correction Ground Spectral Model for Estimating Above-Ground Net Primary Productivity at the Peak of Growing Season on Meadow Steppe, Hulunbeier, Inner Mongolia, China .................................. Z. Diao, S. Lv, D. Su, Z. Feng, L. Sun, and X. Tian 150

Discovering Spread Mode of Public Opinions in Incidents and Mapping it with GIS: a Case on Big Geospatial Data Analytics ......................... C. Zhang, P. Yue, and X. Zhai 154
Impact of climate warming on drought characteristics of summer maize in North China Plain for 1961-2010 ................................. Y. Hu, Y. Liu, and Z. Li 158

A review of data assimilation of crop growth simulation based on remote sensing information ............................................... Z. Jiang, Z. Chen, and J. Liu, L. Sun 163


GCDViewer: an Online Data Query, Visualization and Analysis System for Global Climatic Data ........................................................ H. Xu, and Y. Bai 174


Impacts of Crop Rotation on Vegetation Condition Index for Species-level Drought Monitoring ............................................. Y. Shen, X. Liu, and Y. Hu 184

Analysis of the effects of salt content on soil spectral characteristics .......................... C. Ma, G. Shen, Y. Zhi, Z. Wang, and Z. Wang 189

Leaf recognition and segmentation by using depth image ........................................ X. Shao, Y. Shi, W. Wu, P. Yang, Z. Chen, and R. Shibasaki 195

Development of a web temporal-spatial information application for main crops based on integration of remote sensing and crop model .............................................................. X. Yang, F. Yang, X. Xu, X. Gu, H. Yang, and H. Yu 199

Deriving Time-dependent Area Model of Eichhornia Crassipes Growth Using Alos and GPS Data .......................................................... L. Sun, and Z. Zhu 203

Vegetation Measurement Using Image Processing Methods ........................................ M. Kırcı, E. Güneş, Y. Çakır, and S. Şentürk 207

Yield prediction of wheat in south-east region of Turkey by using artificial neural networks ................................................................. Y. Çakır, M. Kırcı, and E. Güneş 212


Sensitivity Analysis of the Row Model's Input Parameters ........................................ P. Zhang, F. Zhao, Y. Guo, Y. Zhao, L. Dong, and H. Zhao 220

Discussion on possibility of the identification of karst vegetation communities based on OLI data ......................................................... R. Zhang, H. Luo, Y. Zou, and G. Liu 225

A design of spatial decision support system to enhance decision progress in agricultural actions ................................................. M. Li, T. Chang, C. Sun, and M. Lien 232
Capability of multi-temporal Radarsat-2 data in monitoring canola crop and its plant height

Comparison and Analysis NDVI and RVI Changes Before and After Typhoon in Hainan Based on HJ-1CCD Satellite Images

Cotton Area Estimation Using Muti-sensor RS Data and Big Plot Survey in Xinjiang

Potential of using April-June multi-temporal images to classify crops before harvest: Case study of Kashgar

An application for the efficient use of potable water

Spatiotemporal variation of drought frequency of winter wheat in Hebei Province

Trend analysis for blue and green water resources in Weihe River Basin of Northwest China during the past thirty years and in the near future

Upscaling In-Situ Leaf Area Index Measurements to Obtain the Representative Ground-Truth of the Heterogeneous Land Surface

Ecological Security Evaluation in Farming-pastoral Ecotone Using TM Data

Application of MODIS time series data to estimate effects of rice planthopper in Yangtze River Delta region

Simulation of the methane emission in rice fields in China during the past 40 years by DNDC model and GIS technical

Using hyperspectral measurements to estimate ratio of leaf carbon to nitrogen in winter wheat

Design, Development and Application of a Satellite-based Field Monitoring System to Support Precision Farming

Soybean Yield Estimation Using HJ-1 CCD Data in Northeast China

Grassland aboveground biomass retrieval from remote sensing data by using artificial neural network in temperate grassland, northern China

GPU Based Parallel Image Processing for Plant Growth Analysis
Application of Remote Sensing Techniques in Locating Dry and Irrigated Farmland Parcels
.......................................................................................................................... S. Şentürk, S. Bagis, and B. Üstündağ 321

Extracting multiple cropping index based on NDVI time series: A method integrating temporal and spatial information ........................................ S. Liang, C. Yang, D. Yu, and W. Ma 325

Estimation of Soil Moisture Profile Using Wavelet Neural Networks .......................................................... A. Kulaglic, and B. Üstündağ 330

A New Approach for Measuring 3D Digitalized Rape Leaf Parameters based on Images .............................................................. Y. Fang, C. Lin, R. Zhai, Y. Tang, and X. Wang 336

Automatic Recognition of Rape Seeding emergence Stage based on Computer Vision Technology ............................................................. Y. Fang, T. Chang, R. Zhai, and X. Wang 341

Object-Oriented Classification of Rubber Plantations from Landsat Satellite Imagery ......

Multi-parameter Spatial Interpolation of Solar Radiation in Heterogeneous Structured Agricultural Areas ............................................................. M. Yazar, E. Ozelkan, and B. Üstündağ 350

Single Late Rice Information Extraction based on Change Detection method using Neighborhood Correlation Images .......................................................... M. Li, X. Zhu, A. Zhao, X. Liu, S. Chen, T. Zhou, and Y. Pan 356

Automated Keys of Soil Diagnostic Horizons Based on Case-Based Reasoning ........
........................................................................................................................................ L. Qiu, and A. Li 360

Agromapas, Geospatial Platform for rural affairs in Colombia ....................... D. Pajarito 364

Multiple Kernels Learning for Classification of Agricultural Time Series Data ........
.................................................. S. Niazmardi, S. Homayouni, H. McNairn, J. Shang, and A. Safari 369

Study on integrated discovery system of sensors for agriculture observation application ............................................................. C. Hu, X. Zhong, and J. Xu 373

Public Preferences and values for cultivated land in mining area in China ........
........................................................................................................................................ Y. Shi, L. Han, J. Yuan, and M. Min 378

Remote-Sensing Based Winter Wheat Growth Dynamic Changes and the Spatial-Temporal Relationship with Meteorological Factor .......... Q. Huang, W. Wu, Q. Zhou, and D. Li 384

Land Use Change on Sloping Areas in Phuket Province, Thailand ........ W. Pantanahiran 390

Real Time Integrated Agricultural Information Services in Turkey ................
.......................................................................................................................... H. Erden, G. Kusek, G. Öztürk, and C. Özcanlı 396
Research on sensor data visualization method based on real-time dynamic symbol .............. D. Jiao, L. Miao, and J. Jiang 400

Urban Green Vegetation Stress Conditions Diagnosis Based on Hyperspectral Database-A Case Study of Xuzhou ................. X. Qian, Q. Shen, L. Liang, L. Zhang, L. Wang, and S. Wang 404

DEM Based Analysis of Biomass Carbon Stock in Xilingol Grassland ....................... Hasituya, Z. Chen, and Y. Bao 408

BigGIS: How Big Data Can Shape Next-Generation GIS ............... P. Yue, and L. Jiang 413


Effects of Drought on Grain Yield of Spring Maize in Northern China ....................... C. Dong, X. Yang, Z. Liu, K. Li, and S. Sun 425

Analysis of Impacts of Drought on GPP in Yunnan province Based on MODIS Products ......................................................... X. Guan, H. Shen, W. Gan, and L. Zhang 430

WebGIS Based Agricultural Products Trade Platform Using the Bilateral Matching Model .......................................................... W. Niu, and J. Zheng 434

Spatial Heterogeneity of Surface Soil Nutrients in Small Scale in the Black Soil Region of Northeast China ........................................... A. Zhang, L. Jiang, Q. Qi, X. Li, and L. Pi 440

Landslide Susceptibility Assessment Based on Weighted Information Value Model Case Study of Wenchuan Earthquake 10 Degree Region ................................................. L. Jiang, D. Liu, Y. Jiang, and H. Fang 444


US Geospatial Crop Frequency Data Layers ............... C. Boryan, Z. Yang, and P. Willis 454


GB-Tree: An Efficient LBS Location Data Indexing Method ............................................. Q. Liu, X. Tan, F. Huang, C. Peng, Y. Yao, and M. Gao 465

Cause Analysis and Accuracy Improvement of Confusing Land Cover Types in China Geography Census ......................................................... Z. Gao, and X. Zhou 470

Support Vector Machine and Object-oriented Classification for Urban Impervious Surface Extraction from Satellite Imagery ......................................................... Z. Gao, and X. Liu 475
Database Management of Forest Resource Information Based on 3S Technology ......................................................... J. Wu, K. Zhang, and J. Lei 480

Changing Grain Production in China: Perspective on Changing Grain Acreage ................................................................. T. Jin, and Z. Fang 484

Phenology Detection of Winter Wheat in the Yellow River Delta Using MODIS NDVI Timeseries data ................................ L. Chu, G. Liu, C. Huang, and Q. Liu 489

Research on Image Mosaic Method of UAV Image of Earthquake Emergency ................................................................. J. Bi, W. Mao, and Y. Gong 494

The application of FY-3A/MERSI in drought and vegetation monitoring in Gansu ......................................................... L. Han, Q. Zhang, X. Wan, and N. Guo 500

The change of winter wheat planting structure under the background of climate change in Gansu Province ...................... L. Han, X. Wan, Q. Zhang, and J. Jia 504

Retrieval Of canopy Chlorophyll Content For Spring Corn Using Multispectral Remote Sensing Data ........................................... J. Xu, and J. Meng 508

Grain Consumption Forecasting in China for 2030 and 2050: Volume and Varieties ......................................................... M. Gao, Q. Luo, Y. Liu, and J. Mi 513


Object oriented extraction of reserve resources area for cultivated land using RapidEye image data ........................................... Y. Yao, H. Si, and D. Wang 525


Vegetation supply water index based on MODIS data Analysis of the in Yunnan in spring of 2012 ....................................................... J. Wang, J. Bai, L. Li, and Y. Yu 533


Mapping Rice Crop fields using C Band Polarimetric SAR Data ................................................................. J. Chen, Y. Han, and J. Zhang 547


Long-term Trend and Variability of China's Arid Climate and Drought Area based on the Standardized Precipitation Index ................. Y. Liu, W. Jiang, B. Xiao, M. Gao, and B. Lei 555
Detection of the Onset of Crop Stress Induced by Glyphosate Using Chlorophyll Fluorescence Measurements … Y. Guo, F. Zhao, Y. Huang, K. Reddy, Y. Zhao, and L. Dong 560

Assessing the crop acreage at county level on the North China Plain using an adapted regression estimator method … J. Liu, Q. Dong, Z. Chen, L. Wang, X. Wang, and J. Gallego 565

Estimation of regional evapotranspiration over the Southern Great Plains based on Penman-Monteith theory and the soil moisture estimates ...................... L. Sun, Z. Chen, and Z. Jiang 570