

2013 Second International Conference on Agro-Geoinformatics

(Agro-Geoinformatics 2013)

**Fairfax, Virginia, USA
12 – 16 August 2013**



IEEE Catalog Number: CFP1348T-POD
ISBN: 978-1-4799-0867-7

Table of Content

Crop growth condition monitoring and analyzing in county scale by time series MODIS medium-resolution data.....	<i>K. Yu, Z. Wang, L. Sun, J. Shan and L. Mao</i>	1
Land Suitability Evaluation Method Based on GIS Technology.....	<i>L. Qu, Y. Shao and L. Zhang</i>	7
In situ measurement of soil macropores by dye tracing and image analysis.....	<i>L. Qiu and X. Chen and J. Pan</i>	13
A Case of GIS Application in Agricultural Project Management.....	<i>Z. Ren, Y. Hou and X. Lu</i>	18
User-oriented Image Quality Assessment of ZY-3 Product in Agriculture Area.....	<i>L. Li, H. Luo, X. Tang, Z. Li and H. Zhu</i>	22
Relation of Leaf Image, Chlorophyll Fluorescence, Reflectance and SPAD in Rice and Barley.....	<i>H. Hu and S. Fang</i>	28
Real-time rain and snow rendering.....	<i>W. Ding, Z. Zhu, X. Chen, C. Zhang, Y. Liang, S. Li, H. Fan and H. Feng</i>	32
Potential Applications of Radar Altimetry on Water Resources Management in Nile River.....	<i>Carlos Pascual</i>	36
Integrations Remote Sensing Mapping with the Environmental Model to Quantify Emissions from Rice Paddies in Thailand.....	<i>T. Suepa, J. Qi and S. Lawawirojwong</i>	42
The Satellite Assessment of Impact of the 2012 Great Drought on Corn Growth in the U.S. Corn Belt.....	<i>J. Di</i>	48
Estimation of Rice Canopy Nitrogen Concentration by Hyperspectral Remote Sensing.....	<i>J. Wang, L. Sun, C. Shi and Q. Tian</i>	52
Supervised Self-Organizing Map with Classification Uncertainty.....	<i>S. Lawawirojwong, J. Qi and T. Suepa</i>	56
Unsupervised Classification of Vineyard Parcels Using SPOT5 Images by Utilizing Spectral and Textural Features.....	<i>S. Senturk, K. Tasdemir, S. Kaya and E. Sertel</i>	61
Vineyards Mapping Using Object Based Analysis.....	<i>S. Senturk, E. Sertel and S. Kaya</i>	66
Estimating Nitrogen Sufficiency Index Using A Natural Local Reference Approach.....	<i>Y. Bouroubi, N. Tremblay and V. Adamchuk</i>	71
Spatiotemporal Soil Moisture Estimation for Agricultural Drought Risk Management.....	<i>A. Kulaglic, B. Ustundag and S. Bagis</i>	76

A Spatiotemporal Synthetic NDVI Generation Model for Agricultural Fields	<i>S. Bagis and B. Ustundag</i>	82
Land Intensive Use Evaluation for Wuhan Metropolitan Agglomeration Based on Entire-Array-Polygon Evaluation Model.....	<i>L. Cheng and J. Dong</i>	87
A research on Agricultural Mapping Capabilities of the SPOT 6 Satellite Images.....	<i>U. Alganci, E. Sertel, S. Kaya and B. Ustundag</i>	93
Inconsistent NDVI trends from AVHRR, MODIS, and SPOT sensors in the Tibetan Plateau...	<i>Z. Yu, J. Wang, S. Liu, P. Sun and W. Liu</i>	97
Variability and Trends in Irrigated and Non-irrigated Croplands in the Central U.S.....	<i>J. Brown and S. Pervez</i>	102
Soil Erosion Estimation with a WebGIS-based Platform.....	<i>A. Song, J. Liu and S. McClure</i>	106
Land Surface Temperature - Based Spatial Interpolation Using a Modified Inverse Distance Weighting Method.....	<i>E. Ozekan, S. Bagis, M. Yucel, B. Ustundag, E. Ozekan and C. Ormeci</i>	110
Early Detection of Crop Injury from Glyphosate by Foliar Biochemical Parameter Inversion through Leaf Reflectance Measurement.....	<i>Y. Guo, F. Zhao, Y. Huang, M. Lee, K. Reddy, R. Fletcher, S. Thomson and J. Huang</i>	116
Metadata Standard Proposal for Eddy Covariance Flux Data.....	<i>A. Yan, B. Lv, Y. Bai and B. Xu</i>	121
Using Support Vector Machine (SVM) for Agriculture Land Use Mapping with SAR Data: preliminary results from Western Canada.....	<i>K. Zolfaghari, J. Shang, H. McNairn, J. Li, S. Homayouni</i>	126
Remote Sensing with Unmanned Aircraft Systems for Precision Agriculture Applications.....	<i>R. Hunt, C. Daughtry, D. Hively and S. Mirsky</i>	131
Yield estimation of semilate rice using remote sensing data in Honghu city, China.....	<i>W. Wang, Q. Wang, H. Wu, Y. Chen and X. Wang</i>	135
A New Generation of Data Sharing Platform for Eddy Covariance Flux Data.....	<i>B. Lv, A. Yan, Y. Bai and B. Xu</i>	139
Method of parameterization and discrimination of spectral profile shape	<i>Q. Wang, Y. Chen, H. Wu and T. He</i>	143
A Comprehensive Agricultural Drought Stress Monitoring Method Integrating MODIS and Weather Data (A case study of Iowa).....	<i>C. Peng, L. Di, M. Deng, W. Han and A. Yagci</i>	147
A Reconfigurable Open GeoSMS Mobile Client App Design for Android Smartphones.....		

.....	<i>G. Heo, G. Yu and L. Di</i>	153
The use of geospatial workflows to support automatic detection of Complex geospatial features from high resolution images.....	<i>Z. Sun, L. Di, A. Chen, P. Yue and J. Gong</i>	159
Calculating Ecosystem Services provided by agricultural land using GIS and Remote Sensing methods.....	<i>I. Kokkinidis and S. Hedges</i>	164
The 2012 Agricultural drought Assessment in Nebraska using MODIS Satellite Data.....	<i>D. Wu, J. Qu and X. Hao</i>	170
Utilizing High Spatiotemporal Resolution Soil Moisture for Dust Storm Modeling.....	<i>M. Yu, C. Yang, Q. Huang, Z. Gui and J. Xia</i>	176
Design and Implementation of scalable GetFeasibility Service to enhance Sensor Planning Service for Earth Observation Task.....	<i>X. Zhang and N. Chen</i>	182
Design and Implementation of Heterogeneous Sensor Registry Category Service.....	<i>X. Yang, N. Chen and X. Wang</i>	188
Study of the NDVI-precipitation correlation stratified by crop type and soil permeability.....	<i>L. Kang, L. Di, M. Deng, Y. Shao, E. Yu, B. Zhang and R. Shrestha</i>	194
Detection Of Flood And Its Impact On Crops Using NDVI - Corn Case.....	<i>R. Shrestha, L. Di, G. Yu, Y. Shao, L. Kang and B. Zhang</i>	200
Remote-Sensing-Based Flood Damage Estimation Using Crop Condition Profiles.....	<i>G. Yu, L. Di, B. Zhang, Y. Shao, R. Shrestha, L. Kang</i>	205
Land/Water Detection and Delineation with Landsat Data using Matlab/ENVI.....	<i>R. Shrestha and L. Di</i>	211
A Web Service Based Application Serving Vegetation Condition Indices for Flood Crop Loss Assessment.....	<i>B. Zhang, L. Di, G. Yu, Y. Shao, R. Shrestha and L. Kang</i>	215
Intercomparison of Evapotranspiration Models Using Remote Sensing Date and Ground Measurements during the MUSOEXE-12 Campaign	<i>Z. Jia, S. Liu, S. Liang and Z. Xu</i>	221
Adoption of surface pipe and underground pipe for water saving in North China - impacts and determinants	<i>Y. Jiang</i>	227
Mapping Land Surface Temperature Distribution over Jiashan County based on Multi-source & Multiresolution Remote Sensing and Meteorological Data Records.....	<i>A. Ibrahim, J. Gong, Y. Wang, Z. Shan and R. Zhang</i>	233

Research on the Correlation of Bird Changes with the net Primary Productivity in the Pearl River Estuary Wetlands a case of Mai Po Inner Deep Bay Ramsar Site..... <i>X. Chen, L. Zou, L. Xu</i>	239
Urban Agglomerations Land Use Structure Optimization Based on Regional Carbon Balance..... <i>K. Yun and J. Dong</i>	243
Vegetation dynamics, and land use/land cover change in Chongming Island of Shanghai, China..... <i>G. Shen, C. Ma, Y. Zhi and H. Ren</i>	249
Land Capability mapping with SPOT data and Geoinformation technology South Gondar, North-Western Highlands of Ethiopia..... <i>G. Ayehu</i>	255
Role of geoinformatics in ensuing global food security with special reference to dryland agroecosystems..... <i>C. Biradar, W. Payne, X. Xiao and P. Gowda</i>	260
Inversion of Winter Wheat Leaf Area Index Based on Canopy Reflectance Model and HJ CCD Image..... <i>Z. Jiang, Z. Chen, J. Ren and Q. Huang</i>	264
AAFC Annual Crop Inventory..... <i>T. Fisette, P. Rollin, Z. Aly, L. Campbell, B. Daneshfar, P. Flyer, A. Smith, A. Davidson, J. Shang and I. Jarvis</i>	270
Suitability Evaluation of Habitat for Ardeidae Waterfowls Based on Logistic Regression Model..... <i>X. Chen, L. Zou and Y. He</i>	275
Spatial Variability of Soil Properties and its Affecting Factors at Small Scale..... <i>H. Zhang, X. Tian, J. Zhang and L. Guo</i>	279
Estimating canopy nitrogen concentration across C3 and C4 grasslands using WorldView-2 multispectral data and the random forest algorithm..... <i>C. Adjorlolo, O. Mutanga and M. Cho</i>	286
Mapping winter and summer crops in Uruguay using MODIS time series..... <i>C. Vancutsem, J.-F. Pekel, F. Kayitakire, G. Duveiller, M. Meroni, W. Baethgen and P. Ceccato</i>	292
Influence of Angular Effects and Adjustment on Medium Resolution Sensors for Crop Monitoring..... <i>F. Gao, T. He, J. Masek, Y. Shuai, C. Schaaf and Z. Wang</i>	296
A Thirteen-year Analysis of Drought in the Horn of Africa with MODIS NDVI and NWDI Measurements..... <i>T. Choi, J. Qu and X. Xiong</i>	302
The Analysis on vegetation fraction Dynamic Change of Xilamulun River Basin and precipitation During the Recent 10 Years--a case study of the Balin right banner in north china..... <i>G. Chen, W. Zhang and S. Lv</i>	308
Assessment of Multi-temporal RADARSAT-2 Polarimetric SAR Data for Crop Classification in an Urban/Rural Fringe Area..... <i>Q. Ma, J. Wang, J. Shang and P. Wang</i>	314

Land surface temperature retrieval from HJ-1B IRS supported by MODIS.....	<i>L. Sun, H. Yu, X. Tian and X. Li</i>	320
A RESTful based SPS for dynamic earth observation data preparing... <i>C. Yang, Z. Xie and L. Di</i>		325
Healthy Food Accessibility and Obesity: Case Study of Pennsylvania, USA.....	<i>R. Shrestha, R. Mahabir and L. Di</i>	329
An integrated framework for geospatial data discovering and standardized processing.....	<i>Y. Shao, L. Di, L. Kang and Y. Bai</i>	334
Spatial distribution of soil organic matter in tillage layers in a southern China basin using classifications and spatial interpolation algorithms..... <i>X. Deng, X. Lv, M. Zhang and S. Li</i>		338
Approach to Disaster Management of Agricultural Environment..... <i>L. Sun and Z. Zhu</i>		344
Modeling and Monitoring Arable Land Use..... <i>L. Sun and Z. Zhu</i>		348
Landscape Pattern Analysis of Farmland under Different Slope..... <i>F. Xu, W. Zhang and H. Li</i>		352
Temporal and Spatial Variations of Grassland Desertification in Lingwu and Yanchi of Ningxia, China..... <i>J. Li, B. Xu, X. Yang, L. Zhao, Y. Jin, Z. Yang, W. Huang, T. Gao, H. Yu, H. Ma and Z. Qin</i>		356
A New Classification Method Based on The Support Vector Regression of NDVI Time Series For Agricultural Crop Mapping..... <i>S. Niazmardi, H. Khanahmadlou, J. Shang, H. McNairn and S. Homayouni</i>		361
Algae blooms in the Yellow Sea between 2010 and 2012 from MODIS observations..... <i>K. Yu, D. Lu, Z. Wang, J. Shan, L. Mao, X. Lu and G. Bao</i>		365
Study on spatial-temporal evolution and stimulation of agricultural marginal land..... <i>H. Li, F. Xu and X. Huang</i>		370
Changes of Geographical Distribution of Crop Yield in China... <i>M. Min, L. You, T. Hu and T. Xu</i>		374
Analysis on Coordination Development between Population Urbanization and Land Urbanization in Hubei Province..... <i>M. Min and T. Hu</i>		379
A comprehensive crop drought index based on multiple crop condition indicators..... <i>J. Fan, M. Zhang, J. Huang, Y. Xu, L. Tian, W. Xu, W. Zhang, C. Wu and J. Wu</i>		383
Using Google Fusion Tables for Cloud-based Sensor Observation Services..... <i>P. Yue, C. Guo and L. Jiang</i>		388

GeoJModelBuilder: A Java Implementation of Model-Driven Approach for Geoprocessing Workflows..... <i>M. Zhang and P. Yue</i>	393
Asia Rice crop monitoring in GEO GLAM..... <i>S. Takashima, K. Oyoshi, T. Fukuda, T. Okumura, N. Tomiyama and T. Nagano</i>	398
Agricultural ecosystem monitoring based on autonomous sensor systems..... <i>K. Smarsly</i>	402
Asynchronous Geoprocessing Services: An Interoperable Approach... <i>L. Hu, P. Yue and J. Gong</i>	408
A Sensor Capability Information Model under Geospatial Sensor Web Environment..... <i>N. Chen, J. Li and C. Hu</i>	413
Evaluating Different Integrated Precision Rice Management Strategies in Northeast China..... <i>H. Wang, Y. Miao, G. Zhao and Y. Yao</i>	419
Spatio-temporal Change of Vegetation NDVI and its Relations with Regional Climate in Northern Shaanxi Province since Implementation of Returning Farmland to Forests Project..... <i>J. Bai, J. Bai and W. Lei</i>	423
Can satellite information estimate rice yield variability in Korea?..... <i>K. Lee, S. Hong, J. Hur, J. Ahn, Y. Kim, S. Na and S. Jang</i>	429
Soil Organic Matter Spatial Distribution Change over the Past 20 Years and Its Causes in Northeast..... <i>Y. Yao, H. Tang, P. Tang, S. Yu, D. Wang and H. Si</i>	433
Studies on Soil Organic Matter Content Mapping Using EO-1 Hyperion Data..... <i>S. Yu, Y. Yao, D. Wang and H. Si</i>	439
Development of complicated rice crop calendar in Southeast Asia with time-series MODIS data..... <i>K. Oyoshi, S. Sobue and W. Takeuchi</i>	444
Discriminant models for crop identification of complex agricultural landscapes..... <i>J. You, Z. Pei and D. Wang</i>	448
Regional winter wheat yield estimation by assimilating MODIS ET and LAI products into SWAP model..... <i>J. Huang, H. Ma, J. Liu, D. Zhu and X. Zhang</i>	454
Environmental Sample Size Estimation Based on Variety Means Estimation and Means Comparison for Multi-environment Trial..... <i>Z. Liu, S. Li, X. Zhang, L. Li, Q. Ma, D. An and D. Zhu</i>	460
Building an operational system for crop monitoring and yield forecasting in Morocco..... <i>A. Wit, S. Hoek, R. Ballaghi, T. Hairech and Q. Dong</i>	466
Multiscale Salinity Mapping in Central and Southern Iraq by Remote Sensing.....	

.....	<i>W. Wu, W. Al-Shafie, A. Mhaimeed, B. Dardar, F. Ziadat and W. Payne</i>	470
Integration of Heterogeneous Agriculture Information System Based on Interoperation of Domain Ontology.....	<i>H. Xiao, T. Qiu and P. Zhou</i>	476
Food Safety Warning Research Based on Internet Public Opinion Monitoring and Tracing.....	<i>H. Li, H. Xiao, T. Qiu and P. Zhou</i>	481
Tuning the PID Parameters for Greenhouse Control Based on CFD Simulation.....	<i>H. Xiao, L. Feng and Y. Zhi</i>	485
Exploring Continuous Corn Cropping Patterns and Their Relationship with Geographic Factors.....	<i>W. Han, L. Di, A. Yagci and Z. Yang</i>	490
Regional drought monitoring using phenologicallytuned biomass production estimates from SPOTVEGETATION FAPAR.....	<i>M. Meroni, D. Fasbender, F. Kayitakire, G. Pini, F. Rembold, F. Urbano and M. Verstraete</i>	495
Detection of Oranges In Outdoor Conditions.....	<i>Y. Cakir, M. Kirci, E. Gunes and B. Ustundag</i>	500
Greenhouse CFD Simulation for Searching the Sensors Optimal Placements.....	<i>L. Feng, H. Li and Y. Zhi</i>	504
Impact of Irrigation Methods on LSM Spinup and Initialization of WRF Forecasts.....	<i>P. Lawston and J. Santanello</i>	508
Visualization of Alternative Future Scenarios for Forest Ecosystems Using Animated Statistical Surfaces	<i>H. Jenny, J. Liem, M. Lucash and R. Scheller</i>	512
Tracking Crop Phenological Development of Spring Wheat Using Synthetic Aperture Radar (SAR) in Northern Ontario, Canada	<i>J. Shang, X. Jiao, H. McNairn, J. Kovacs, D. Walters, B. Ma and X. Geng</i>	517
Framework and Case Studies of Intelligence Monitoring Platform in Facility Agriculture Ecosystem	<i>T. Qiu, H. Xiao and P. Zhou</i>	522
A Study of The Method for Dynamic Prediction of Chinese Cotton's Unit Yield	<i>F. Yang and J. Wang</i>	526
Delineating Regional and Local Uniform Management Zones of Agroecosystems Using Geospatial Data	<i>H. Liu, X. Zhang, X. Ding, T. Huffman and J. Liu</i>	532
Evaluating Different Active Crop Canopy Sensors for Estimating Rice Yield Potential	<i>Y. Yao, Y. Miao, R. Jiang, R. Khosla, M. Gnyp and G. Bareth</i>	538

Using SPOT Imagery to Assess the Effectiveness of Combating Desertification in Marrakech, Morocco	<i>W. Wu, C. Zucca, L. Dessen and M. Mulas</i>	543
En-masse removal identification on a regional scale through the use of time series of the MODIS-NDVI sensor	<i>O. Moncada and V. Botero</i>	547
Estimating Rice Nitrogen Status with Satellite Remote Sensing in Northeast China	<i>S. Huang, Y. Miao, G. Zhao, X. Ma, C. Tan, G. Bareth, U. Rascher and F. Yuan</i>	550
Remote sensing monitoring and analysis of expansion characteristics of Chongming Island in Shanghai, China	<i>G. Shen, A. Sarris and X. Huang</i>	556
Introducing the TEGON as the elementary physical land cover feature	<i>W. Devos and P. Milenov</i>	562
Crop growth monitoring by integration of time series remote sensing imagery and the WOFOST model	<i>H. Zhao and Z. Pei</i>	568
Developing Geoprocessing Service for Cropland Data Layer Thematic Map Creation.....	<i>W. Han, L. Di and Z. Yang</i>	572
Assessing the Crop Acreage in Mengcheng County on the North China Plain Using An Adapted Regression Estimator Method.....	<i>H. Kerdiles, S. Spyros, J. Gallego and Q. Dong</i>	577