

Asian Association on Remote Sensing

# 27<sup>th</sup> Asian Conference on Remote Sensing

ACRS2006

October 9-13, 2006  
Ulaanbaatar, Mongolia

Volume 1 of 2

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

ISBN: 978-1-60423-138-0

Some format issues inherent in the e-media version may also appear in this print version.



## TABLE OF CONTENTS

### Volume 1

#### Room 1: Session A-1: Agriculture

<b>GIS Application to Spatial Distribution of Soil Salinity Potentials in Northeast Thailand</b> .....	1
<i>C. Mongkolsawat, S. Paiboonsak</i>	
<b>Assessment Differences in Growth and Yield of Rice Crop between Satellite Data Simulated from Near Ground Hyperspectral Data</b> .....	6
<i>Chwen-Ming Yang</i>	
<b>Biomass Estimation at Miyagi Prefecture in Northeast Japan using RS and GIS</b> .....	12
<i>Ryoko Iwasa</i>	
<b>Predicting Tillage Practices and Agricultural Soil Disturbance in North Central Montana with Landsat Imagery</b> .....	18
<i>N. Battogtokh</i>	
<b>Biological Soil Crusts Internal Classification Using Ground – Level Spectra Temporally-based Image Selection for Detection of Biological Soil Crusts in Southern Australia</b> .....	19
<i>Ardavan Ghorbani, David Bruce</i>	

#### Room 2: Session B-1: Geology

<b>Application of Multi-sensor Image to Monitoring Mining Activities and Related Environment Changes: A Case Study at Daye, Hubei</b> .....	20
<i>Yu Shiyong</i>	
<b>Planning and Implementation of National Geo-scientific, Geo-Economic and Environmental Information Management System - An Experience Report</b> .....	21
<i>Andress Barth</i>	
<b>Debris Flow Occurrence Factors with Rough Sets Theory</b> .....	27
<i>H. C. Pai</i>	
<b>Monitoring of Mining Areas of Mongolia Using Satellite Data</b> .....	N/A
<i>R. Tsolmon, Enkhbayar</i>	
<b>Rate of Sand Dune Movement and Aeolian Deposits Distribution with the Information Technology</b> .....	35
<i>Mushtaki T. Jabbar</i>	

#### Room 3: Session C-1: Urban

<b>Progressive Streaming and Rendering of 3D Terrain for Cyber City Visualization</b> .....	41
<i>Hau-Shiung Liu</i>	
<b>A Study on an Efficient Making Method of Detailed Time-series Urban Dataset by Spatial Integration of Yellow-page Data and Digital maps for Urban Analysis</b> .....	47
<i>Yuki Akiyama</i>	
<b>Integrating GPS, GPRS and Inmarsat for Improved Efficiency</b> .....	54
<i>Albert Cheung</i>	

<b>Evaluation of Urbanization Process in Ulaanbaatar City using Multitemporal RS Images</b> .....	55
<i>D. Amarsaikhan</i>	
<b>3D Structure Line-based Building Roof Reconstruction</b> .....	61
<i>Chieh-Chung Cheng</i>	
<b>Room 4: Session D-1: Oceanography/Meteorology</b>	
<b>Retrieving Water Depth, Inherent Optical Properties and Bottom Reflectance from Hyperspectral Data by Spectrum Matching</b> .....	67
<i>Narvada Dewkurun</i>	
<b>Taipei Hot Spring Web Geographic Information System</b> .....	68
<i>Chia-Hui Shih</i>	
<b>HY-1 Satellite and Applying its Data to Monitoring Red Tides</b> .....	N/A
<i>Lin Mingsen</i>	
<b>Determination of the Cloud Threshold for MODIS Imagery over Taiwan Region</b> .....	74
<i>D. Gerelmaa</i>	
<b>Simulation of Tsunami Wave Spectra on Sri-Lanka and Indonesia</b> .....	77
<i>Maged Marghany</i>	
<b>Room 1: Session A-2: Agriculture</b>	
<b>An Investigation on Spectral Properties and Soil EC to Map Salt-affected Soils in Thailand</b> .....	83
<i>Rajendra P. Shrestha</i>	
<b>Rice Yield Estimation using Aero Digital Imagery</b> .....	89
<i>Tzu-yi Liao</i>	
<b>Spatiotemporal Characterization of Mongolian Grassland Based on Vegetation Trend Analysis</b> .....	90
<i>Akira Hirano</i>	
<b>GIS Application for Mulberry Rust Disease at Pophra District, Tak Province</b> .....	N/A
<i>Vicharn Amarakul</i>	
<b>Using Uncertain Element in the Multi- Spectral Imager Assessment</b> .....	N/A
<i>Chih-Hao Ou-Yang</i>	
<b>Room 2: Session E-1: Disaster</b>	
<b>Assessment of Tsunami Damage to Mangrove in South Eastern Coast and South Andaman Islands of India using Remote Sensing and GIS</b> .....	N/A
<i>Yousef Ali Hussein</i>	
<b>Risk Assessment of Forest Fire Vulnerability</b> .....	96
<i>Anusorn Rungsripanij</i>	
<b>Field Validation of Rapid Post - Disaster Damage Maps of the 27 May Indonesia Earthquake Site</b> .....	102
<i>Norman Kerle</i>	
<b>The Use of MODIS Active Fire Products for Strategic Fire Management</b> .....	108
<i>Daniel Wyss, Martin Fimiarz</i>	
<b>Assessment of Flood Vulnerability and Mitigation Planning in Munshiganj District, Bangladesh using Remote Sensing and GIS</b> .....	114
<i>Kulapramote Prathumchai</i>	

### Room 3: Session C-2: Urban

<b>Building Modeling by the Integration of Multi-Source Data</b> .....	121
<i>Liang Chien Chen</i>	
<b>Urban Sprawl and Landuse Change in Suvanabhumi Airport (New Bangkok International Airport-NBIA) Area, Bangkok, Thailand</b> .....	127
<i>Varaiporn Sintop</i>	
<b>Investigation of Land Use in Residential Areas of Ulaanbaatar City Using Very High Resolution Satellite Images</b> .....	137
<i>D. Amarsaikhan</i>	
<b>Multi-scale Generalization of Three-dimensional Building Features in Urban Area</b> .....	143
<i>Cheng-Lien Fan</i>	

### Room 4: Session D-2: Oceanography/Meteorology

<b>The Dynamic Analysis of Coastal Land Use Patterns in Inner Lingdingyang, The Pearl River Estuary</b> .....	N/A
<i>Xia Zhen</i>	
<b>Spectral Reflectance of Clouds in Multiple- Resolution Satellite Remote Sensing Images</b> .....	149
<i>L. K. Kwok</i>	
<b>Detection and Analysis of Post – Typhoon Three – Dimensional Changes in Haeundae Beach Topography using GPS and GIS Technology</b> .....	154
<i>Chul Uong Choi</i>	
<b>Shoreline Detection and Changes of North Banggi Island, Sabah, Malaysia</b> .....	164
<i>Ejria Saleh</i>	

### Poster Session P-1

<b>Abstraction Information of Active and Concealed Faults by the Remote Sensing Technology</b> .....	165
<i>Aixia Dou</i>	
<b>Extracting Urban Building Density and Floor area ratio Based on QuickBird Image</b> .....	166
<i>Jin-ye Li</i>	
<b>Spatial and Temporal Variation of Summer Corn</b> .....	167
<i>Jing Li</i>	
<b>The Decision-making Support System of Sustainable Development of Agriculture and Pasturing Industry in the Ecology-pasturing Economic Zone of Yanmengyuan of Shanxi Province Based on “3S” Technology</b> .....	168
<i>Wang Yimin</i>	
<b>Study the Vanished Causation of Culture of Kuahu Bridge in North of Zhejiang Province with Remote Sensing Data</b> .....	175
<i>Wng Yongjiang</i>	
<b>The Influence of Atmospheric Correction on Remote Sensed Parameters in multi-temporal Evapotranspiration Monitoring</b> .....	N/A
<i>Wu Bing Fang</i>	
<b>A Study on the Method to Retrieve land Surface Refl ectance based on IRS P6 Data</b> .....	182
<i>Zhang Zhaoming</i>	

<b>Quantitative Remote Sensing by the Combination of LIDAR, Sun Photometer and Earth Observation Images</b> .....	186
<i>Wei Gong</i>	
<b>The SSMC Method for the Classification of High Spatial Resolution Remotely Sensed Images</b> .....	190
<i>Xin Huang</i>	
<b>An Analysis of Coastal Topography and Land Cover Changes at Haeundae Beach, South Korea, by Merging GIS and Remote Sensing Data</b> .....	192
<i>Chul Uong Choi</i>	
<b>Wildfire Fuel Mapping Using hyperspectral Remote Sensing Data</b> .....	213
<i>Yeosang Yoon</i>	
<b>Developing 3D Satellite Images Based Geographic Information System for Coast Disaster Area Management</b> .....	N/A
<i>Myung Hee Jo</i>	
<b>Introduction of The Forest Renovation Activity by Fishermen in Nortneast Japan, using RS and GIS</b> .....	219
<i>Daisuke Kunii</i>	
<b>Estimation of the Bamboo Aboveground Biomass Using Different Resolution Satellite Data</b> .....	N/A
<i>Fuping Zhang</i>	
<b>Synergetic use of MODIS and ASTER/ Landsat TM/ETM Data for Land Cover Classification in Arid and Semi-arid Area of the Northern China</b> .....	225
<i>Hasi Bagan</i>	
<b>A New Method for Individual Tree Detection Using Airborne LIDAR Pulse Data</b> .....	231
<i>Hitoshi Taguchi</i>	
<b>Self-Information Project: A Study on Context -aware and Relationship Based on Self-information</b> .....	238
<i>Jun Kumagai</i>	
<b>Extraction of Nazca Lines by Satellite Data</b> .....	244
<i>Katsuya Takaku</i>	
<b>3D Images of the Remains of the Ancient Mojos civilization from Digital Photographs</b> .....	250
<i>Kazuki Ishii</i>	
<b>Field Detection of Non-Use Paddy Fields at Miyagi Prefecture in Japan Using Satellite and GIS Data</b> .....	256
<i>Kazumasa Osawa</i>	
<b>Projecting Future Food Demand and Supply: Global Modelling for Land Use and Cover Change</b> .....	257
<i>Kenji Sugimoto</i>	
<b>Identification for Relic Excavation of the Amazon Civilization from JERS-1/ SAR and ASTER Images</b> .....	263
<i>Kohta Imai</i>	
<b>Land Use Management for the Prevention of Losses Outbreak in Ordos of Inner Mongolia</b> .....	264
<i>Takesi Yamamura</i>	
<b>Diastrophism Evaluation of Niigata Chuetsu Earthquake by Aerial Photographs</b> .....	270
<i>Nana Mayuzumi</i>	

<b>Storm Surge Disaster of Typhoon 9918 at New Moji District with a Distributed Runoff Model</b> .....	276
<i>Naoki Okada</i>	
<b>Automatic Registration of Ground-based LIDAR Data Sets by Using 3D</b> .....	283
<i>Tzu-Yi Chunag</i>	
<b>Bridge Monitoring System Using Close Range Digital Photogrammetry and Web GIS</b> .....	289
<i>Jong Hyeok Jeong</i>	
<b>Accurate Geomatic Transformation of Laser Scanner Data by Multi Surfaces Measurement</b> .....	N/A
<i>Kazu Kinoshita</i>	
<b>Establishing Image Database for Slope Disaster Information System with GPS Digital Camera and Web GIS</b> .....	294
<i>Yuta Yamamoto</i>	
<b>Changes of NDVI Associated with Typhoon Disturbance in Subtropical Forest Ecosystems in Central Taiwan</b> .....	300
<i>Meng-Fen Lee</i>	
<b>Sedimentary Environmental Monitoring Using Satellite Remote Sensing on Tidal Flat in the West Coast of Korea</b> .....	306
<i>Joo Hyung Ryu</i>	
<b>Underwater and Airborne Remote Sensing of Corals</b> .....	312
<i>Cho-Teng Liu, Yuan-Jie Chyou, Yong-Ching Fu, Chnag-Wei Lee</i>	
<b>Object Oriented Approach for Rubber and Oil Palm Classification</b> .....	313
<i>Sutat Suravanit</i>	
<b>An Error Correcetion Method for NOAA Image</b> .....	314
<i>An Ngoc Van</i>	
<b>Road Extraction from Very High Resolution Remote Sensing Imagery with Level Set Methods</b> .....	320
<i>Hongchao Ma</i>	
<b>Room 1: Session G-1: GIS</b>	
<b>Mobile Wireless GIS with Near Real-Time Access to Satellite Imagery</b> .....	321
<i>A. V. Huynh</i>	
<b>Elevation Surface Interpolation of Point Data using Different Techniques a GIS Approach</b> .....	327
<i>Kulapramote Pratumchai</i>	
<b>The Query System of Eco-environment Remote Sensing Monitoring Theme for the Three Gorges Project based on WebGIS</b> .....	N/A
<i>Xinhui Ma</i>	
<b>Platform of Visualization and Web-based Collaboration of Spatial Information</b> .....	335
<i>Satoshi Ueyama</i>	
<b>Use of GIS to Find the Risk Area of Leptospirosis Nakornratchasrima, Thailand</b> .....	341
<i>Sitthisak Moukomla, Siam Lawawirojwong, Pisut Naknuenwai, Anusorn Rungsripanij</i>	
<b>Room 2: Session E-2: Disaster</b>	
<b>Time Series Analysis for Drought Monitoring and Impact Assessment on Agricultural Area in Khon Kaen Province, Northeastern Thailand</b> .....	347
<i>Daroonwan Kamthonkiat</i>	

<b>Compositing of MODIS Images for Burnt Area Detection in Southeast Asia</b> .....	353
<i>Jukka Iimani Miettinen</i>	
<b>A Bayesian Network for Landslide Susceptibility Map using Aerial Photo and DEM</b> .....	359
<i>Chi-Chung Lau</i>	
<b>The Study of Flood Risk Assessment on the Mae Klong River by Integrated Hydraulic Model with Geographic Information System</b> .....	365
<i>Thudchai Sansena</i>	
<b>Combating Land Degradation and Desertification in Drylands of India using Remote Sensing Technology and GIS</b> .....	N/A
<i>T.S.Chouhan, India</i>	
<b>Room 3: Session A-3: Agriculture</b>	
<b>The Construction of Land-use Data Map for Efficient Management of Large-scale Irrigated Farmlands in Uzbekistan</b> .....	371
<i>Takeo Amano</i>	
<b>Mapping of Basic Capacity in Rice Production Saved from Chemical: A Case of Sustainable Agriculture Network in Phichit Province, Thailand</b> .....	377
<i>Achariya Nate-Chei</i>	
<b>Analysis of Spatial Distribution of Paddy Field in the Northeast China Obtained by Using a Mapping Method Adapted to MODIS Data</b> .....	383
<i>Satoshi Uchida</i>	
<b>Application of Boosting to Improve Image Classification Accuracy in Rice Parcel with Decision Tree</b> .....	389
<i>H. H. Chen</i>	
<b>A Suitable Schedule for Harvesting and Delivering of Sugar Cane (Application using Remote Sensing and GIS)</b> .....	395
<i>Sununtha Kingpaiboon</i>	
<b>Room 4: Session F-1: Forest</b>	
<b>Optical and Microwave Image Fusion to Detect and Monitor Illegal Logging and Tropical Rain Forest Encroachment in East Kalimantan, Indonesia</b> .....	N/A
<i>Yousef Ali Hussein</i>	
<b>Modelling Forest Canopy Using Airborne LIDAR Data</b> .....	401
<i>Jihn-Fa Jan</i>	
<b>The Linear Mixture Model Applied to Landsat Data for Saxaul Mapping</b> .....	407
<i>B. Suvdantsetseg</i>	
<b>Estimating Timber Volume in a Commercial Eucalytus Plantation from Landsat ETM+ Imagery: Results from Two Aspects</b> .....	413
<i>Pranab J. Baruah</i>	
<b>Net Primary Productivity Estimation of Broadleaf Forest by 3PG Model Comparing with Modis Image</b> .....	419
<i>Supanlika Potithep</i>	
<b>Room 1: Session I-1: Data Processing</b>	
<b>Automated Optimum Size Determination of Artificial Neural Network for an Efficient and Accurate Satellite Image Classification</b> .....	423
<i>Joel Bandibas</i>	



<b>Line Extraction in Remote Sensing Image using Hough Transform Based on Granular Computing .....</b>	<b>424</b>
<i>Lianh Jing, Chian</i>	
<b>Texture Analysis for Three Dimension Remote Sensing Data by 3D GLCM.....</b>	<b>430</b>
<i>Chun-Kai Chang</i>	
<b>The Investigation Land Surface Feature using Optical and SAR Images .....</b>	<b>436</b>
<i>M. Ganzorig</i>	
<b>Fractal Analysis for Hyper-spectrum in Remote Sensing.....</b>	<b>441</b>
<i>Yamato Yamaura</i>	
<b>Room 2: Session E-3: Disaster</b>	
<b>Application of Satellite Data and Geographic Information System for Drought Risk Analysis in Bandanlanhoi District, Sukhothai Province .....</b>	<b>446</b>
<i>Wipop Paengwungthong</i>	
<b>Evaluation of Landside Hazard Potentials in Shei-Pa National Park.....</b>	<b>450</b>
<i>Ying-Hsu Liu</i>	
<b>ALOS Palsar and Radarsat Application on Flood Detection in the Lower North of Thailand.....</b>	<b>457</b>
<i>Kannika Komwong</i>	
<b>Disaster Management in India – Some Issue Narpat.....</b>	<b>465</b>
<i>Sinh Rathore</i>	
<b>Research and Management of Coal Fire in China.....</b>	<b>471</b>
<i>Wu Chacha</i>	
<b>Room 3: Session G-2: GIS</b>	
<b>Using SSM/ I- derived Air-sea Parameters to Analyze the Formation Mechanisms of Equatorial Typhoon Vamei.....</b>	<b>478</b>
<i>Chia-Chi Liu</i>	
<b>GIS and Socio- Economic Study of Kaew Noy Dam .....</b>	<b>479</b>
<i>Makasri Chaowagul</i>	
<b>A Method of Data Transformation for Satellite Images Metadata for Remote Sensing Images.....</b>	<b>N/A</b>
<i>Z. Y. Zeng</i>	
<b>An Analysis for Tenants Change Using Digital Telephone Directory and Town Map in Tokyo Region .....</b>	<b>484</b>
<i>Takeshi Shibuki</i>	
<b>Application of Remote Sensing and Geographical Information System (GIS) for Coastal Zone Management off Cochin Coastal Region, India .....</b>	<b>490</b>
<i>Wimon Pathtong</i>	
<b>Room 4: Session F-2: Forest</b>	
<b>Shape-based Tree Crown Detection and Delineation in High Spatial Resolution Aerial Imagery.....</b>	<b>498</b>
<i>Min-Hsin Chen</i>	
<b>Long-term Monitoring for Vegetation at Mt. Sugihara.....</b>	<b>504</b>
<i>Hanae Sato</i>	
<b>Watershed Characterization Based on Changes in Land Use and Forest Cover .....</b>	<b>511</b>
<i>Abigail Joy Ramos-Dumaup</i>	

<b>Forestland Classification and Zoning with Liwoshe Working Circle by Using Ecological Method</b> .....	512
<i>Yeong-Kuan Chen</i>	

### **Room 1: Session I-2: Data Processing**

<b>A New Feature Selection Method for EO-1/ Hyperion Image Classification: A Case Study of Subei Region, China</b> .....	514
<i>Li Xianbin</i>	

<b>Development of Linux-based Archived Data Processing System in JAXA/ EOC</b> .....	521
<i>Miyano Yoshikazu</i>	

<b>A New Robust Data Compressor for LIDAR Data Compression</b> .....	527
<i>Biswajeet Pradhan</i>	

<b>Proposal of the Methods of Evaluating Similarities between Trajectories by Describing the Shapes of Them</b> .....	534
<i>Tomoyuki Suzuki</i>	

<b>Automatic Geometric Correction of Geostationary Weather Satellite Images</b> .....	540
<i>Hyunsuk Kim</i>	

### **Room 2: Special Session: Presentation Techniques to be Presented by White Elephants of ISPRS**

#### **Room 3: Session G-3: GIS**

<b>Geo-Informatics and Space Technology for Education and Research in Naresuan University</b> .....	N/A
<i>Wiboon Wattanatorn</i>	

<b>Design and Implementation of an Integrated GIS Application for Transportation Network Modeling</b> .....	541
<i>Yong-Jin Joo</i>	

<b>Experience of Russia and Kazakhstan on Remote Sensing for Decision Making Support</b> .....	N/A
<i>Vladimir Gershenson</i>	

<b>Adapting the LMF Temporal Splining Procedures from from Serial to MPI/ Linux Clusters</b> .....	543
<i>Yann Chemin</i>	

<b>Application of RS/ GIS for Monitoring Typhoon and Storm in Thailand</b> .....	549
<i>Ms.Siriluk Prukpitikul</i>	

#### **Room 4: Session F-3: Forest**

<b>Using SPOT Satellite Image to Monitor the Forest Dynamics at Landscape Level on Nanjen Mountain Ecological Reserve in Taiwan</b> .....	556
<i>Yuh-Lurng Chung</i>	

<b>Biomass Estimation of Japanese Forest Using ASTER Data</b> .....	562
<i>Takahiko Sigihra</i>	

<b>Habitat Suitability Evaluation for Asian Elephant (Elephants maximus in the Bardia National Park, Nepal)</b> .....	N/A
<i>Tej B. Thapa</i>	

<b>Application of Remote Sensing and GIS for Sustainable Forest Management Capacity Building in Mongolia</b> .....	568
<i>Daniel Wyss</i>	

## Poster Session P-2

<b>Monitoring Forest Landscape Using Photogrammetric Techniques and Landscape Models</b> .....	574
<i>Chih-Da Wu</i>	
<b>Monitoring a Volcanic Plume at Miyake Island with Satellite Data</b> .....	581
<i>Naoya Osawa</i>	
<b>GIS- based land Evaluation for Combining Economic Crops as a Model for Agricultural Landuse Planning</b> .....	588
<i>C. Mongkolsawat</i>	
<b>Runoff Change with Urbanization in Tama New Town Watershed and its Fractal Geometry</b> .....	596
<i>Shun Yamakawa</i>	
<b>Identification for the Undersea Remains at Yonaguni Island with Satellite Data</b> .....	603
<i>Tatsuma Jahana</i>	
<b>Fire Risk Assessment for Tiger Preybase in Chilla Range and Vicinity Rajaji National Park, India Using Remote Sensing and GIS</b> .....	N/A
<i>Yousif Ali Hussein</i>	
<b>OpenDragon Programmer’s Toolkit: A Framework for Learning Geoinformatics Software Development</b> .....	610
<i>S. Goldin</i>	
<b>High Resolution Data Fusion: Increasing Image Quality for detection and Identification of Different Objects</b> .....	616
<i>Mehdiyev Magsud</i>	
<b>Site Suitability Analysis for Industrial Area in Haridwar and Its Surroundings Using Remote Sensing and GIS</b> .....	N/A
<i>Patkorn Theopjorn</i>	
<b>An Application of Direction Finding Antennas for Lightning Locating System</b> .....	N/A
<i>Raungyudh Raungsakul</i>	
<b>Using Remote Sensing and GIS Technology for Mapping the Tsunami Affected Areas in Southern Thailand</b> .....	632
<i>Suthep Chutiratanaphan</i>	
<b>NOAA- AVHRR and Terra/Aqua MODIS Data Receiving Systems in Asian Institute of Technology</b> .....	633
<i>Vivarad Phonekeo</i>	
<b>Risk Management for Chemical Emergency System based on GIS and Decision Support System</b> .....	N/A
<i>W. Kanarkard</i>	
<b>Classification of Old-Growth Structure Characteristics Using Photogrammetry and Remote Sensing</b> .....	639
<i>Chi-Chuan Cheng</i>	
<b>Using a GIS Road Network to Improve GPS Positions.</b> .....	640
<i>Chun-Jung Hsu</i>	
<b>Forestry Monitoring with MODIS-derived Vegetation Indexes in Taiwan</b> .....	646
<i>D. Gerelmaa</i>	
<b>Morphological Processing of Video for 3D Building Model Visualization</b> .....	649
<i>Fuan Tsai</i>	

<b>Solving Photo Orientation by means of Control Entities</b> .....	655
<i>Nei-Hao Perng</i>	

## Volume 2

<b>Feature Extraction of LIDAR Point Cloud Sets and Accuracy Assessment</b> .....	656
<i>Shin-Hung Lin</i>	

<b>Landslides Detection using Aerial Ortho-Image and LIDAR Data</b> .....	662
<i>Jiann-Yeou Rau</i>	

<b>A Hierarchical Perspective towards the Management and Application of Metadata for Remote Sensing Images</b> .....	668
<i>Jung-Hong Hong</i>	

<b>Single-Epoch Ambiguity Resolution for Airborne GPS Carrier-Phase Observations</b> .....	670
<i>Kang-Wen Chu</i>	

<b>Effect of Atmospheric Correction for Land Cover Classification Using Hyperspectral Data</b> .....	676
<i>Sun Hwa Kim</i>	

<b>Extracting Bare Ground Points Airborne LIDAR Data in Mountainous Forested Area</b> .....	682
<i>Jong Suk Yoon</i>	

<b>Estimation of Land Surface Temperature Using NOAA-A VHRR Thermal Infrared and Weather Station Data in the Mongolian Grassland</b> .....	688
<i>S. Tuya</i>	

<b>Change Analysis of Waisanding Offshore Sandbar by LIDAR Dem</b> .....	693
<i>Wei-Chen Hsu</i>	

<b>Ground Based All Sky Imager to Study Large-scale Wave Feature</b> .....	697
<i>P. K. Rajesh, J.Y.Liu</i>	

<b>Mapping Peat Swamp Forest in Southeast Asia using MODIS Data</b> .....	698
<i>Wong Choong Min</i>	

<b>GIS for Coastal Zone Site Plan Scenario Development after Tsunami Disaster in Meulaboh West Aceh</b> .....	703
<i>W. Wardhana</i>	

<b>A Study on Distribution Tendencies of Commercial Clusters in Urban Area by Detailed Time-series Urban Dataset</b> .....	704
<i>Tatsuro Osada</i>	

<b>A Method of Human Extraction in Crowded Scenes by using Multipli Laser Range Scanners and CCD Camera</b> .....	710
<i>Hiroki Takahashi</i>	

<b>Crowds Flow Detection and Monitoring of Indoor Temperature Distribution for Advanced Air Conditioning Control</b> .....	717
<i>Kyoichiro Kataira</i>	

<b>A Study of Information Delivering Based on Context-awareness for Migration Walking</b> .....	723
<i>Masaki Saito</i>	

<b>Daily Activities Support System based on User's Self-Information Actionlog</b> .....	729
<i>Ta Duy Thang</i>	

## Room 1: Session H-1: Mapping

<b>Dense Digital Surface Model and TrueOrtho image allow Supporting Versatile and Innovative Application</b> .....	735
<i>Myriam Chikhi</i>	
<b>Extracting the Characteristic Information of Coast Environment Using High Resolution Satellite Images in West Sea Garolim Bay</b> .....	744
<i>Myung Hee Jo</i>	
<b>A Comparison of Neural Network and Maximum likelihood for Landuse/Landcover Mapping in Khon Kaen Province, Thailand</b> .....	750
<i>R. Suwanwerakamtorn</i>	
<b>Application of ALOS PALSAR Data for Efficient Land Cover Mapping</b> .....	756
<i>D. Amarsaikhan</i>	
<b>A study for Rapid Phase Ambiguity Resolution on Precise Kinematic GPS Positioning</b> .....	760
<i>Chi-Hsiu Hsieh</i>	

## Room 2: Student Session/Education (Invited Speech)

## Room 3: Session I-3: Data Processing

<b>The Research of Knowledge Expression on Image Classification by using Rough Sets Theory and PCA</b> .....	766
<i>I. L. Shih</i>	
<b>Variational Method of Speckle Reduction and Boundary Detection in SAR Imagery</b> .....	772
<i>Shen Chaomin</i>	
<b>Automatic Bridges Extraction from Multi-sources Satellite Imagery Using Fusional Level set Model</b> .....	773
<i>Yun Yang</i>	
<b>A Neural Network Selective Endmember for Pixel Unmixing</b> .....	774
<i>Wu Ke</i>	
<b>Orienting FORMOSAT -2 Imagery by Control Entities</b> .....	780
<i>Yi-Chien Lin</i>	

## Room 4: Session J-1: SAR

<b>Classification of Polarimetric SAR Data Using an Alpha-Entropy</b> .....	786
<i>David Bruce</i>	
<b>Assessment of Single Date ENVISAT AlternatingPolarization ASAR Data for Rice Mapping</b> .....	787
<i>Tan Bingxiang</i>	
<b>Initial-period Data Analysis of PALSAR</b> .....	788
<i>Tomonori Deguchi</i>	
<b>On Detecting Edges in Polarimetric Synthetic Aperture Radar Imagery</b> .....	793
<i>Ken Yoong Lee</i>	
<b>Polarization Signatures of Microwave Emission from Dry Snow</b> .....	799
<i>Alexandar A. Chukhlantsev</i>	

## Room 1: Session T-1: Environment/Ecosystem

<b>The Ecosystem Research of Yingtai in Jilin Oil Field Based on Remote Sensing Data</b> .....	800
<i>Shen Jinli</i>	
<b>Analysis of the Geographical Process of Land Degradations in Plateau Region with Time-series Satellite Images</b> .....	806
<i>Hiroyuki Miyazaki</i>	
<b>Dust and Sand Storm Monitoring of Mongolia</b> .....	812
<i>L. Ochirkhuyag</i>	
<b>The Heat Island Patterns over the Western Taiwan Plain with MODIS and Airborne IR Imager Data</b> .....	817
<i>T. H. Kuo</i>	
<b>Application of Remote Sensing Quantitative Retrievals in the High Performance GeoComputational Environment</b> .....	818
<i>Ying Luo</i>	

## Room 2: Session H-2: Mapping

<b>A Test on the Determination of GCP and ICP for 1-m High Resolution Satellite Image</b> .....	819
<i>Su-Young Park</i>	
<b>A Study of Cadastral Coordinate Transformation Using Artificial Neural Network</b> .....	823
<i>Lao-Sheng Lin</i>	
<b>Applying DEM to Analyze Topographic Attributes on the Spatial Distribution of Vegetation</b> .....	N/A
<i>Li-Hsin Hsieh</i>	
<b>Evaluation for the Velocity of Debris Flow through Image Processing Techniques</b> .....	829
<i>Hsiu-Yi Ko</i>	
<b>Fusion of Shape and Spectral Features for the Classification of High Spatial Resolution Remotely Sensed imagery</b> .....	835
<i>Xin Huang</i>	

## Room 3: Session J-2: SAR

<b>Coherent Target Analysis for Detecting Long-Term Subsidence in Shanghai</b> .....	837
<i>Deren Li</i>	
<b>Rainfed Rice Area Mapping and Backscatter Analysis Using Multi-temporal RADARSAT-1 Images in Pangasinan and Nueva Ecija Provinces of Philippines.</b> .....	843
<i>Mehdiyev Magsud</i>	
<b>Construction of A Mobile Platform for Microwave Remote Sensing Scatterometer System</b> .....	862
<i>Halim Aziz</i>	
<b>Monitoring of Bar Transformation in the Han River Estuary Using RADARSAT/SAR Images</b> .....	863
<i>Chan-Su Yang</i>	
<b>Analysis on Temporal Changes of Soil Moisture with SAR Images for Agricultural Drought Monitoring in North-eastern Part of Thailand</b> .....	868
<i>Junichi Susaki</i>	

## Room 4: Session O-1: Satellite System

<b>Report on RICESAT Project</b> .....	N/A
<i>Guo Huadong</i>	
<b>THEOS Data Processing and its Image Quality</b> .....	874
<i>Damrongrit Niammuad</i>	
<b>Development of National Geo- information Centre for Natural Resource Management in Mongolia.</b> .....	880
<i>D. Narantuya</i>	
<b>FY-3 Satellite and its Applications in Future</b> .....	N/A
<i>Liu Yujie</i>	
<b>How to Achieve Cost –effective Earth Observation Missions Approaches for Countries Emerging in Space Technology</b> .....	N/A
<i>Rainer Sandau</i>	

## Room 1: Session L-1: Land Use/Land Cover

<b>Classification Smoothing in Land Cover Mapping Using MODIS Data</b> .....	881
<i>Ngyuen Dinh Duong</i>	
<b>The Study of Using Multi-scale Spatial Data in Landslide Monitoring and Landuse Classification Interpretation</b> .....	N/A
<i>Yeh Mei Lin</i>	
<b>Local Specific Characteristics of Land Use in Regions of Sudan Gezira Irrigation Scheme</b> .....	888
<i>Kiyoshi Torii</i>	
<b>Platform for Visualization and Web-based Collaboration of Spatial Information</b> .....	894
<i>Shigeo Ogawa</i>	
<b>A Study on Cadastral Coordinate Transformation Using Artificial Neural Network</b> .....	900
<i>Liu Jin-King</i>	

## Room 2: Session M-1: Photogrammetry/Lidar

<b>Digital OrthoPhoto Camera System</b> .....	906
<i>Cheng Xiangning</i>	
<b>Objects Tracking and Positioning Using Multiple Active Video Cameras</b> .....	911
<i>Bing-Cyuan Lai</i>	
<b>Automatic Reconstruction of 3D Road Models by Using 2D Road Maps and Airborne LIDAR Data</b> .....	917
<i>Chao-Yuan Lo</i>	
<b>Using a Tree Dimensional Spatial Database to Orthorectify Automatically Remote Sensing Images</b> .....	923
<i>Myriam Chikhi</i>	
<b>Planar Feature Extraction from LIDAR Data Based on Tensor</b> .....	931
<i>Analysis Chung-Cheng Lin</i>	

## Room 3: Session T-2: Environment/Ecosystem

<b>The Construction of Spatial Integrated Data Map for Control the Crop Losses Damaged by Wild Beasts</b> .....	938
<i>Kiyoyuki Yaota</i>	

<b>Predicting Invasive Species Distributions at the Large-scale Using GIS and Remote Sensing</b> .....	943
<i>Hao Chen</i>	

<b>Current Status of GOSAT Ground System Design and the Role of NIES</b> .....	N/A
<i>Hiroshi Watanabe</i>	

<b>A Study of Developing GIS-based Water Quality Management System of Rural Area</b> .....	945
<i>Tao Song</i>	

<b>The Environmental Database Issue in Mongolia</b> .....	N/A
<i>M. Bayasgalan</i>	

**Room 4: Workshop W-1: “Thematic Processing Modeling and Analysis of Remotely Sensed Data”**

**Poster Session P-3**

<b>Application on Terrestrial Laser Scanner and Plotless Sampling Techniques on Estimating the Total Basal Area of Forest Stands</b> .....	951
<i>Knag-Sheng Yeh</i>	

<b>Terrain Change Detection Combined Photogrammetric DEM and Airborne LIDAR Data</b> .....	953
<i>Kuo-Hsin Hsiao</i>	

<b>Using Segmentation Techniques and Fractal Theory to Extract Cloud Coverage for Fromosat-2 Quick-Look Images</b> .....	959
<i>Li-Yu Chang</i>	

<b>Estimating Tree Height and Locations Using Airborne LIDAR in Old Tree Area</b> .....	966
<i>Ta-Ko Chen</i>	

<b>Applying SSM/I Data in Estimating the Typhoon Precipitation via a Rotational TRAP Method</b> .....	N/A
<i>Yen-Ju Chen</i>	

<b>Derivation and Analysis of Annual LAI from MODIS</b> .....	972
<i>Yin-Chen Chen</i>	

<b>Monitoring of Illegal Dumping Using Spatial Data Mining and Remote Sensing</b> .....	973
<i>Ching-Yueh Chang</i>	

<b>Multi-Temporal Satellite Image Classification Using Spectral Class Database</b> .....	979
<i>Chi-Farm Chen</i>	

<b>Forest Cover-type Classification Using SPOT4 and SPOT5 Images</b> .....	985
<i>Su-Fen Wang</i>	

<b>Semi-Automatic Extraction of 3D Building Roofs from Airborne LIDAR Data</b> .....	990
<i>Shih-Hong Chio</i>	

<b>A Split and Merge Tehcniques for Building Shaping</b> .....	997
<i>Tee-Ann Teo</i>	

<b>Establish A 3D Model Using Laser Scanner at A Fixed Station</b> .....	1003
<i>Wei-Kai Fang</i>	

<b>Ground Based LIDAR Systematic Error Analysis and Calibration</b> .....	1009
<i>Yi-Hsing Tseng</i>	



<b>The Research of Checking Paddy Field Thematic map by Using Dempster-Shafer Theory</b> .....	N/A
<i>Y. R. Wang</i>	
<b>Automatic Cloud Cover Information for Multi-Spectral Imager Assessment</b> .....	N/A
<i>Chih-Heng liu</i>	
<b>Urban Expansion Simulation Based on Cellular automat - A Case Study on Nantun Region</b> .....	1010
<i>Yao-Chih Hu</i>	
<b>Estimating Vehicular Pollution Effects in Coimbatore using GIS Environment</b> .....	N/A
<i>K. Shanthy Viswanathan</i>	
<b>Location Based Service in Geomatics</b> .....	N/A
<i>Tanvee Gupta</i>	
<b>Application of GIS and Remote Sensing in the Analysis of the Environment of the Bay of Bengal Using Some Oceanic Parameter</b> .....	1018
<i>Balkrishna Patidar</i>	
<b>Relationship of Temperature and Vegetation Changes in Urban Area with Multitemporal Satellite Data</b> .....	1019
<i>Ketut Wikantika</i>	
<b>The Use of Remote Sensing and GIS Data to Enhanced the Information on Decision Processes for Defining the Typology of Forest Management Unit in Tropical Forest Certification Decision Process</b> .....	1020
<i>W. Wardhana</i>	
<b>Interferometry for Coastal Spite Geomorphology Mapping 2. Canny and Velocity Bunching Algorithms for modelling Shoreline Changes Using Multisar Data</b> .....	1023
<i>Maged Marghany</i>	
<b>A Simple Spectral Index Using Reflectance of 735 nm in Mapping of Nitrogen Status of Rice Canopy,</b> .....	1034
<i>Yuh-Jyuan Lee</i>	
<b>Development of GT Simulator for Learning Spectra Measurement</b> .....	1040
<i>Atsushi Komaki, Kohei Cho, Kazuyuki Tomoshige, Haruhisa Shimoda</i>	
<b>The Point-Source Pollution Management based on GIS and DSS</b> .....	1044
<i>Prof. Wiroj Taweepworadej</i>	
<b>3D Road Shape Production Techniques by Fusion of Laser Data and CCD Image</b> .....	1045
<i>Sooahm Rhee</i>	
<b>Land-use/ Land-cover Classification Method Under Spatial Constraint</b> .....	N/A
<i>You Shu-cheng</i>	
<b>Monitoring Forest Biomass in Mongolia</b> .....	1049
<i>Zagdaa Narangerel</i>	
<b>Application of Remote Sensing Data in Determining Regional Landslide Hazard Analysis by using Logistic Regression Model and GIS</b> .....	1053
<i>Jasmi Ab Talib</i>	
<b>Using SPOT Satellite Image to Monitor River Water Quality Pollution Index</b> .....	1060
<i>Po Jen Lin, Min Luen Shih, Prof. Pao Shan Yu, Terng Jou Wan, Huei Ru Lin, Shih Peng lo</i>	
<b>IKONOS and SPOT-5 Application in Large Scale Mapping</b> .....	1066
<i>Piyawan Jaruphummik, Ramphing Simking</i>	

<b>The Study of Flood Risk Assessment on the Mae Klong River by Integrated Hydraulic Model with Geographic Information System .....</b>	<b>1071</b>
<i>Thudchai Sansena</i>	
<b>Metadata Implementation for Thailand Spatial Data Infrastructure .....</b>	<b>1077</b>
<i>Thitawadee Suvachananonda, Chaowalit Silapathong, Anusorn Kunarsa</i>	
<b>Comparison of NDVI from Multi-dates SPOT and LANDSAT for Forest Monitoring .....</b>	<b>1081</b>
<i>Amornchai Prakobya</i>	
<b>Mangrove Changes after Tsunami in Thailand .....</b>	<b>1087</b>
<i>Yootthapoom Potiracha</i>	
<b>Study of Urban Evolution and Settlement Patterns of Pak Kret Municipality, Changwat Nonthaburi by Using Satellite Data .....</b>	<b>1093</b>
<i>Chanika Sukawattanavijit</i>	
<b>Leaf Area Index Estimation by Using Remote Sensing Technique in Khao Phra Wihan National Park.....</b>	<b>1101</b>
<i>Apinan Kantirach</i>	
<b>Room 1: Session M-2: Photogrammetry/Lidar</b>	
<b>Development of Orientation and DEM/Orthoimage Generation Program for ALOS PRISM .....</b>	<b>1108</b>
<i>Izumi Kmamiya</i>	
<b>The Generation of True Orthoimages Using DEM, 3D Road Models and Multi-View Aerial Images .....</b>	<b>1114</b>
<i>Shin-Hui li</i>	
<b>Characteristics of Intensity Signal from Airborne LIDAR Data .....</b>	<b>1120</b>
<i>Jung Il Shin</i>	
<b>Automatic Building Height Extraction by Monoscopic Shadow Analysis .....</b>	<b>1126</b>
<i>Ts. Javzandulam</i>	
<b>A Wavelet Approach for Determining Surface Covered with Airborne LIDAR Points .....</b>	<b>1130</b>
<i>Jaan-Rong Tsay</i>	
<b>Room 2: Session N-1: Hydrology/Water</b>	
<b>Remote Sensing and GIS Application for Water Reservoirs Conservation .....</b>	<b>N/A</b>
<i>Liu Yi-Hsuan</i>	
<b>Ecosystem Evaluation Around Watarase Retarding Base - A Case Study of Subei Region, China .....</b>	<b>1136</b>
<i>Hiroyuki Kobayashi</i>	
<b>Soil Moisture Estimation Mongolia using ALOS PALSAR Data .....</b>	<b>N/A</b>
<i>Motoyuki Sato</i>	
<b>Matrix Overlay for Drought Assessment in the Nam Choen Watershed NE, Thailand.....</b>	<b>1142</b>
<i>Suwanwerakamtorn R.</i>	
<b>Room 3: Session O-2: Satellite System</b>	
<b>Digital Asia Data Sharing in Asian Region .....</b>	<b>1148</b>
<i>Pornthip Limiahapun</i>	
<b>Topo Map Generation by ASTER Data and its Accuracy Evaluation.....</b>	<b>N/A</b>
<i>Hiroshi Watanabe</i>	

<b>Retrieval and Utilization of Online Available Satellite Imagery</b> .....	N/A
<i>T. Bretschneider</i>	
<b>RAZAKSAT Images Receiving and Processing Station</b> .....	1154
<i>Shamasul Azman Samsuddhin</i>	
<b>Improve Performance of Aqua MODIS Band 6</b> .....	1160
<i>Preesan Rakwatin</i>	
<b>Room 4: Workshop W-2: “Improvements in Referencing Geospatial Data: Latest Status”</b>	
<b>Room 1: Plenary Session: Demonstration of Virtual Reality, New Satellite Imagery, 3D Modeling etc.</b>	
<b>Poster Session P-4</b>	
<b>An Application of Direction Finding Antennas for Lightning Locating System</b> .....	1164
<i>Raungyudh Raungsakul, Yuttapong Rangsanseri</i>	
<b>Application of Remote Sensing and GIS in Landslide Detection</b> .....	1165
<i>Yung-An Yang</i>	
<b>Wavelet Networks for Hyperspectral Images Classification</b> .....	1171
<i>Hsiu-Han Yang</i>	
<b>Building Extraction from LIDAR Data Using Wavelet Analysis</b> .....	1177
<i>Cheng-Kai Wang</i>	
<b>Comparison of Projection Pursuit and Matching Pursuit in Feature Extraction of Hyperspectral Images</b> .....	1183
<i>Pai-Hui Hsu</i>	
<b>Impact of Atmospheric Water Vapor Content on Land Surface Temperature Retrieving from NOAA/AVHRR Data</b> .....	1189
<i>Shin Akatsuka</i>	
<b>A Study on Estimation of Bio-physical Parameters of Individual Tree Stands Derived from LIDAR Data and Digital Matrix Camera Image</b> .....	1195
<i>Tatsuya Nawamura</i>	
<b>Analysis of Forest Edges and Interiors Using Landsat TM data</b> .....	1201
<i>Yusuke Kobayashi</i>	
<b>Damage Estimate of Waterworks Networks in the Earthquake</b> .....	1207
<i>Miyuki Umezawa</i>	
<b>Use of GIS and Database Technologies for Knowledge Based Prediction of Geological Phenomena by Stochastic Method</b> .....	N/A
<i>M. Sieste</i>	
<b>Prediction of the Summer Convection with MODIS and NOAA Satellite Data</b> .....	1214
<i>Gin-Rong Liu-Taipei</i>	
<b>Using SPOT Satellite Image to Monitor River Water Quality Pollution Index</b> .....	1220
<i>Po Jen Lin-Taipei</i>	
<b>Analyzing Spatial Pattern of Drought in the Northeast of Thailand using Multi-temporal of the Standardized Precipitation Index ( SPI )</b> .....	1221
<i>N. Wattanakij</i>	
<b>Development of MODIS Fire Information System for Forest Fire Monitoring in southeast Asia</b> .....	1227
<i>Vivarad Phonekeo</i>	

<b>Light Environmental Monitoring in Tropical Rainforest</b> .....	1233
<i>Mitsunori Yoshimura</i>	
<b>PAR Estimation Based on Sky Condition Modeling Using Whole Sky Imageries</b> .....	1239
<i>Megumi Yamashita</i>	
<b>Different Aggregation Methods for Sustainable Forest Management Assessment</b> .....	1245
<i>M. Ali Sharifi</i>	
<b>Spatial Multiple Criteria Decision Analysis Supporting Site Selection for Flood Water Spreading</b> .....	1251
<i>M. Ali Sharifi</i>	
<b>Polarimetric SAR Observation of Environment in Mongolia by ALOS/PALSAR</b> .....	1259
<i>Motoyuki Sato</i>	
<b>Analysis of the Spatial Continuity Vegetation-covered Areas on a Regional Scale</b> .....	1265
<i>Kiichiro Kumagai</i>	
<b>A Time Series Evaluation of ASTER Surface Emissivity Products</b> .....	1271
<i>Takashi Shinoda, Hideyuki Tonooka</i>	
<b>A Study on Impact of Band-to-band Misregistration on ASTER TIR Products</b> .....	1277
<i>Tomoharu Muneta</i>	
<b>A Comparative Study on Classification Techniques to Extract Urbanization Area Using Satellite Images</b> .....	1283
<i>Ayako Tanaka</i>	
<b>Application of Multi-temporal Satellite Data and GIS for the Environmental Change Detection</b> .....	1289
<i>Ch. Bolorchuluun</i>	
<b>Building Damage Detection of the 2003 Bam, Iran Earthquake Using QuickBird Images Based on Object-Based Classification</b> .....	1295
<i>Yoshihisa Yano</i>	
<b>Extraction of Damaged Buildings Using High-resolution Satellite Images in the 2006 Central Java Earthquake</b> .....	1301
<i>Kazuki Matsumoto</i>	
<b>Estimation of Overturning Ratio of Tombstones by Image Analysis of Aerial Photographs</b> .....	1307
<i>Tetsuhiro Nitto</i>	
<b>Author Index</b>	