

**ISPRS**  
WASHINGTON, D.C.  
**1992**

International Society for Photogrammetry and Remote Sensing

Société Internationale de Photogrammétrie et de Télédétection

Internationale Gesellschaft für Photogrammetrie und Fernerkundung

**XVIIth Congress**

**XVII<sup>e</sup> Congrès**

**XVII. Kongress**

ISSN 0256-1840

**INTERNATIONAL ARCHIVES OF PHOTOGRAMMETRY  
AND REMOTE SENSING**

**ARCHIVES INTERNATIONALES DE PHOTOGRAMMETRIE  
ET DE TELEDETECTION**

**INTERNATIONALES ARCHIV FÜR PHOTOGRAMMETRIE  
UND FERNERKUNDUNG**

VOLUME  
VOLUME  
BAND **XXIX**

PART  
TOME  
TEIL **B7**

COMMISSION  
COMMISSION  
KOMMISSION **VII**



Edited by: **Lawrence W. Fritz, Congress Director**  
**James R. Lucas, Technical Program Chairman**

---

Published by the Committee of the XVII International Congress for Photogrammetry and Remote Sensing  
Publié par le Comité du XVII<sup>e</sup> Congrès Internationale de Photogrammétrie et de Télédétection  
Herausgegeben vom Komitee für den XVII. Internationalen Kongress für Photogrammetrie und Fernerkundung

## 1988-1992 ISPRS COUNCIL

President	Kennert Torlegard (Sweden)
Secretary General	Shunji Murai (Japan)
Congress Director	Lawrence W. Fritz (USA)
Treasurer	Keith Atkinson (UK)
First Vice President	Gottfried Konecny (Germany)
Second Vice President	Ivan S. Katzarsky (Bulgaria)

## 1988-1992 TECHNICAL COMMISSION PRESIDENTS

- Commission I - **Primary Data Acquisition**  
Marcio N. Barbosa (Brazil)
- Commission II - **Systems for Data Processing and Analysis**  
Klaus Szangolies (Germany)
- Commission III - **Mathematical Analysis of Data**  
Li Deren (P.R. China)
- Commission IV - **Cartographic and Data Base Applications of  
Photogrammetry and Remote Sensing**  
Takeshi Hirai (Japan)
- Commission V - **Close Range Photogrammetry and Machine Vision**  
Armin Gruen (Switzerland)
- Commission VI - **Economic, Professional and Educational Aspects of  
Photogrammetry and Remote Sensing**  
John Badekas (Greece)
- Commission VII - **Interpretation of Photographic and Remote  
Sensing Data**  
Frank Hegyi (Canada)

## VOLUME XXIX PART B

Produced by the American Society for Photogrammetry and Remote Sensing  
through the efforts of:

L.W. Fritz, Congress Director  
J.R. Lucas, Technical Program Chairman  
L.H. Perry, Technical Program Data Base  
D.F. Hemenway, Jr., Publication

Copies of individual volumes and complete sets of the ISPRS *Volume XXIX, International Archives of Photogrammetry and Remote Sensing* may be obtained from

American Society for Photogrammetry and Remote Sensing  
5410 Grosvenor Lane, Suite 210  
Bethesda, MD 20814-2160  
USA  
Phone: +1-301-493-0290  
FAX: +1-301-493-0208

TABLE OF CONTENTS

VOLUME XXIX, PART B7

THE INTERNATIONAL ARCHIVES OF PHOTOGRAMMETRY AND REMOTE SENSING

ISPRS COMMISSION VII - INTERPRETATION OF PHOTOGRAPHIC AND  
REMOTE SENSING DATA

Information and Technological Flow in Territorial Management <i>Ion Grigore Sion (ROMANIA)</i>	-	1
Application of the Aerial Remote Sensing in the Study on Land Roughness and Diffusion Model in Shanghai <i>Wang Zhi Sheng (CHINA)</i>	-	8
A Study on the Application to Regional Planning in Remote Sensing and GIS Technology <i>Bian Fuling (CHINA), et al.</i>	-	13
Subjects Relative to an Integrated Study of Athos Peninsula (Greece) <i>Evangelos Patmios (GREECE), et al.</i>	-	16
The Study of Relationship Between the Ground Targets Spectral Data and ATM Data <i>Zhang Z. Gui (CHINA)</i>	-	18
The Advanced Radiometric Ray Tracer: ARARAT for Plant Canopy Reflectance Simulation <i>Philip Lewis (UNITED KINGDOM), et al.</i>	-	26
Landsat TM Image Analysis for the Thrust System of Henanshan Mountains, the Northwest of China <i>Tan Yongjie (CHINA), et al.</i>	-	35
The Production Estimation by Remote Sensing and the Productivity Spatial Patterns of Grassland in Xilingol League of Inner Mongolia <i>Li Bo (CHINA), et al.</i>	-	40
Remote Sensing Research for Arid Ecology-Geography Environment of Mountain Area in North-West of China <i>Liang Fengxian (CHINA), et al.</i>	-	43
Remote Sensing in Archaeology. A New Approach to the Knowledge of the Interaction Human/Territory <i>Paolo Baggio (ITALY), et al.</i>	-	48
Land Degradation Assessment in the Afram Plains of Ghana - A Case Study <i>Charles Asare (GHANA)</i>	-	53
Textural Analysis for Remotely Sensed Imagery <i>Sun Xinghe (CHINA), et al.</i>	-	58
Study on Au Biogeochemical Effects using Remote Sensing Technique in Western Guangdong and Hainan Province, China <i>Xu Ruisong (CHINA), et al.</i>	-	62
Remote Sensing in Chinese Fisheries <i>Han Shixing (CHINA)</i>	-	66
Town Network Analysis Using Orbital Remote Sensing Data <i>Maria de L. N. de Oliveira Kurkdjian (BRAZIL), et al.</i>	-	69
A Comparison of Conventional Classification Methods & New Indicator Kriging Based Method Using High-Spectral Resolution Images (AVIRIS) <i>Freek D. van der Meer (NETHERLANDS)</i>	-	72
Post-Classification of Misclassified Pixels by Evidential Reasoning: A GIS Approach for Improving Classification Accuracy of RS Data <i>Ye qiao Wang (USA), et al.</i>	-	80
Monitoring of Recent Glacier Variations in the Southern Patagonia Icefield, Utilizing Remote Sensing Data <i>Masamu Aniya (JAPAN), et al.</i>	-	87
Application of Orbital Remote Sensing Techniques in Studying the Water Quality in Lagoa da Conceição, Santa Catarina Island, Brazil <i>Rosana M. Rodrigues (BRAZIL), et al.</i>	-	95
Detecting Soil Moisture Under Canopy by Means of NOAA AVHRR <i>Jilong Li (CHINA)</i>	-	101

<b>Sediment-Yield Model for Large Watershed by Using the AVHRR-NOAA Satellite Data</b>	
<i>Osama M. Moussa (EGYPT)</i>	- 10
<b>GIS Supported Analysis on City Gathering in China</b>	
<i>Ren Fuhu (JAPAN)</i>	- 10
<b>Remote Sensing Interpretation of Eastern Mecsek Mountains (SW Hungary) Focusing on Tectonic Elements</b>	
<i>Mohamed Tolba (HUNGARY)</i>	- 11
<b>Analytical Results of the Computer-Process Calculating the Snowpack with Remote-Sensed Information in Xinjiang</b>	
<i>Wang Shijie (CHINA), et al.</i>	- 12
<b>High Resolution Digital Imagery Applied to Vegetation Studies</b>	
<i>Cody A. Benkelman (USA), et al.</i>	- 12
<b>Effect of Water Ponding Paddy Fields on the Local Thermal Environment</b>	
<i>Kunihiko Yoshino (JAPAN)</i>	- 13
<b>Study on Soil Erosion Using Remote Sensing Technique in the Loess Plateau of the North Shaanxi Province</b>	
<i>Chen Chuqun (CHINA)</i>	- 13
<b>Atmospheric Correction Model for Ground Surface Temperature Using a Single IR Channel Data of Satellite</b>	
<i>Takashi Machimura (JAPAN)</i>	- 14
<b>Detection of Environmental Changes Caused by a Hydroelectric Station Construction on the Danube River Using Landsat Data</b>	
<i>George Büttner (HUNGARY)</i>	- 14
<b>Assessment of Grassland Production Using Information from Satellite Remote Sensing</b>	
<i>Katarzyna Dabrowska-Zielinska (POLAND), et al.</i>	- 15
<b>Model Study of Basin Soil Loss (BSL) of Loess Plateau in China</b>	
<i>Wang Zhi-hua (CHINA)</i>	- 15
<b>Monitoring Environmental Impacts of Land and Water Development in Sri Lanka with Aerial Survey Remote Sensing</b>	
<i>Chakrin D. Gangodawila (SRI LANKA)</i>	- 15
<b>SPOT Survey of Agricultural Land Uses in the Brazilian Amazon</b>	
<i>James B. Campbell (USA), et al.</i>	- 15
<b>Global Change Monitoring Based on the Eco-Climate Map</b>	
<i>Yoshiaki Honda (JAPAN), et al.</i>	- 16
<b>Soil Erosion Susceptibility Evaluation Based on GIS Technology</b>	
<i>Sérgio D. A. F. Pinto (BRAZIL), et al.</i>	- 17
<b>Structural Characterization of Satellite Data Using Geostatistical Methods in Order to Evaluate Renewable Natural Resources</b>	
<i>Michel F. Massart (BELGIUM), et al.</i>	- 17
<b>A Digital Composite of DMSP Nighttime Image and NOAA/AVHRR Data with Its Geographical Consideration</b>	
<i>Yasunori Nakayama (JAPAN), et al.</i>	- 17
<b>Analysis and Correction Technique of Topographic Effect in Digital Remote Sensing Image</b>	
<i>Liangcai Chu (CHINA), et al.</i>	- 18
<b>A Conceptual Framework for Estimating Crop Growth Using Optical Remote Sensing Data</b>	
<i>Jan G.P.W. Clevers (NETHERLANDS), et al.</i>	- 18
<b>GIS and Mathematical Models for Regionalization of Land Use Planning in China</b>	
<i>Liu Chuang (CHINA), et al.</i>	- 19
<b>Landsat-TM Data for Municipal Environmental Planning? Studies of Vegetation Indices in the Urban Area</b>	
<i>Matthias Achen (GERMANY)</i>	- 20
<b>Cloud Free Mosaic Images</b>	
<i>Tsukasa Hosomura (THAILAND), et al.</i>	- 20
<b>Integrating Topographic, Spectral and Structural Data for Vegetation Mapping in Country Parks of Hong Kong</b>	
<i>Tung Fung (HONG KONG), et al.</i>	- 21
<b>Spectral Indicators of Vegetation Vigour of Beans (<i>Phaseolus Vulgaris</i> L.)</b>	
<i>Antonio R. Formaggio (BRAZIL), et al.</i>	- 22

<b>Regional Land Use Planning Based on Remote Sensing Data</b> <i>Maria L.N.O. Kurkdjian (BRAZIL), et al.</i>	- 228
<b>Coastal Water Chlorophyll Estimation Using Landsat TM</b> <i>Maycira P. de F. Costa (BRAZIL)</i>	- 230
<b>Recurrence Periods of Flooding Associated to TM Data within the Pantanal, Brazil</b> <i>Joao S. V. da Silva (BRAZIL), et al.</i>	- 235
<b>Potential Area Localization for Groundwater Exploration and Recharge in Paraiba do Sul Valley Using TM-Landsat - Sao Paulo State, Brazil</b> <i>Célio E. dos Anjos (BRAZIL), et al.</i>	- 241
<b>Indians of the South of Brazil - Environment Diagnosis of the Indian Reserves of the Paraná State - Brazil</b> <i>Francisco L. Lange Jr. (BRAZIL), et al.</i>	- 246
<b>Grassland Type and Over Grazed Area Estimation Using Remote Sensing and Ground Data in Mongolia</b> <i>Mendbayaryn Badarch (MONGOLIA), et al.</i>	- 254
<b>Aerial Photography, Photogrammetry and Microwave Remote Sensing Instruments in the Verification Activities of the Open Skies Treaty</b> <i>P. Winkler (HUNGARY), et al.</i>	- 257
<b>Itamaracá Island Land Use Monitoring With Landsat-TM Multidate Scenes</b> <i>Héber R. Compasso (BRAZIL), et al.</i>	- 260
<b>Natural Resources Classification and Mapping in Large Area Using Image Analysis of Landsat Thematic Mapper (TM) Data</b> <i>M Ghiassi Khalhogle (IRAN), et al.</i>	- 265
<b>An Assessment of Merged SPOT Panchromatic and Multispectral Imagery for Detection of Disturbed Hill Forest Sites in Peninsular Malaysia</b> <i>Kamaruzaman Jusoff (UNITED KINGDOM)</i>	- 271
<b>Blue Grama (<i>Boutelouga gracilis</i>) Rangeland Biomass Assessment at the Peak of the Rains in North-Central Mexico Using NOAA-AVHRR-LAC</b> <i>R. Rene Garcia-Daguer (UNITED KINGDOM)</i>	- 277
<b>Pollution Monitoring of Elbe River by Aerial Thermography</b> <i>Miloslav Krízek (CZECHOSLOVAKIA)</i>	- 281
<b>Data Volume Reduction of Airborne Thematic Mapper Data Set for Crop Area Estimations</b> <i>Flavio Deppe (UNITED KINGDOM)</i>	- 284
<b>Essai d'Estimation de Cultures Annuelles à Partir d'une Nomenclature Établie sur une Image Satellitaire</b> <i>Sylvain N'Kanza (FRANCE)</i>	- 292
<b>Etude de Zones de Paturage du Moyen-Ouest Malgache a Partir de Donnees de Teledetection Avec le Systeme de K. Pearson</b> <i>Konstantinos Perakis (FRANCE), et al.</i>	- 295
<b>Sao Paulo State Natural Vegetation Monitoring</b> <i>M. Covre (BRAZIL), et al.</i>	- 302
<b>Use Remote Sensing Data to Inventory Ecologic Environment in Hulun Lake</b> <i>Liu Huimin (CHINA), et al.</i>	- 307
<b>NOAA/AVHRR Data and Vegetation Zonality of the Loess Plateau</b> <i>Zhou Yingchun (CHINA), et al.</i>	- 315
<b>Estimating Surface Albedo in Alpine Tundra Using the Landsat Thematic Mapper and Digital Terrain Data</b> <i>Douglas G. Goodin (USA), et al.</i>	- 317
<b>TM/Landsat Images for Pedological Survey under Brazilian Northeast Semi-Arid Conditions</b> <i>Sonia B. Perdigao de Oliveira (BRAZIL), et al.</i>	- 320
<b>Situation of the Mineral Activities in the Paraiba Valley (Sao Paulo State, Brazil) Showed on the TM-Landsat</b> <i>Tomoyuki Ohara (BRAZIL), et al.</i>	- 325
<b>Fourier Analysis of Multitemporal Vegetation Index Data</b> <i>Yunqing Li (JAPAN), et al.</i>	- 329
<b>A Synthetic Method for Information Extraction of Salinity of Soil</b> <i>Wanglu Peng (CHINA), et al.</i>	- 334
<b>Analytical Approximation of Atmospheric Correction in Rugged Terrain</b> <i>Harriet H. Kagiwada (JAPAN), et al.</i>	- 340

<b>A Fast Contextual Classifier for Information Extraction from Remotely Sensed Imagery</b> <i>Peng Gong (CANADA)</i>	- 346
<b>Multistage Data Evaluation for Geomorphological Mapping in Part of Doon Valley (UP) - India</b> <i>Rajiv Chopra (INDIA)</i>	- 352
<b>Monitoring of Tropical Forest Fire by Satellite Remote Sensing</b> <i>Shoji Takeuchi (JAPAN), et al.</i>	- 357
<b>Utilization of Vector Radiothermal Fields for Solving Remote Sensing and Image Interpretation Problems</b> <i>Yu K. Shestopalov (RUSSIA), et al.</i>	- 363
<b>Monitoring Water Quality in a Small Mexican Coastal Lagoon with "Simultaneous" Landsat Imagery: Multi-Temporal Approach</b> <i>Pilar Ruiz-Azuara (MEXICO)</i>	- 367
<b>On the Feasibility of Dynamic Monitoring of Temperature of Vegetative Canopy by NOAA-AVHRR Data</b> <i>Xu Xiru (CHINA), et al.</i>	- 376
<b>Application of the Image Interpretation from Airphotos Taken in the Different Periods for the Debris Flow Research</b> <i>Zhang Renlin (CHINA)</i>	- 381
<b>Tectonic Study Around Indore (Central India) with Emphasis on Seismology Using Visual &amp; Digital Image Processing Techniques</b> <i>Siddharth K. Soni (INDIA)</i>	- 389
<b>Studies on Stability Evaluation with Remote Sensing and Geophysical Data in Hainan Island China</b> <i>Wang Pin Qing (CHINA), et al.</i>	- 395
<b>Large-Scale Rock-Mass Movement at Longshou Mountain, Gansu Province China</b> <i>Wang Yuming (CHINA)</i>	- 401
<b>Applications of Landsat TM Data for Mapping of Red Tide Distribution in Bouhai Bay</b> <i>Jilong Li (CHINA), et al.</i>	- 405
<b>Systematic Technology for Remote Sensing and Information practising in the Methodic Research on Planning Business of Modern Urban, Rural</b> <i>Liu Bin-yi (CHINA), et al.</i>	- 409
<b>Rainfall Determination by Using the AVHRR-NOAA Satellite Cloud Coverage</b> <i>Osama M. Moussa (EGYPT)</i>	- 415
<b>Use of Remotely Sensed and Terrestrial Images in Search and Classification of Agricultural Soil</b> <i>Massoud S. Wheda (LIBYA), et al.</i>	- 418
<b>Using GIS to Estimate Agricultural Evapotranspiration in Idaho</b> <i>Anthony Morse (USA)</i>	- 422
<b>Application of Space Remote Sensing Images for the Study of the Vicissitudes of the Disaster Environment on the Silk Road</b> <i>Liu Hongxue (CHINA)</i>	- 426
<b>IRS-1A and Landsat Data in Mapping Deccan Trap Flows Around Pune, India: Implications on Hydrogeological Modelling</b> <i>Vivek S. Kale (INDIA), et al.</i>	- 429
<b>Laser Remote Sensing of Forest and Crops in Genetic-Rich Tropical Areas</b> <i>Egardo Gerck (USA), et al.</i>	- 436
<b>A Study on the Relationships Between Human Activities and Biosphere Using Satellite Data</b> <i>Shintaro Goto (JAPAN), et al.</i>	- 439
<b>Enhanced Radiometric Functions for Homogeneous Materials</b> <i>Khalil I. Jassamm (USA)</i>	- 446
<b>Discrimination of Peatlands and Mineral Soil Lands Using Multisource Remote Sensing Data</b> <i>Kari Lahti (FINLAND), et al.</i>	- 452
<b>Developing Tasseled Cap Transformation for SPOT HRV Reflectance Data</b> <i>Chang Yuan Ji (UNITED KINGDOM)</i>	- 457
<b>Application of Remote Sensing in Studies of Water Quality in the Amazon Region: A General View</b> <i>Anastacio A. Juras (BRAZIL)</i>	- 461

<b>The Integration of Remote Sensing and GIS Technologies for Land Development and Irrigation Potential in the State of Ceara, Brazil</b> <i>Harendra S. Teotia (BRAZIL), et al.</i>	- 466
<b>Ancillary Data Extraction Using Numeric and Symbolic Information: A Neural Network Approach</b> <i>El-hadi Zahzah (FRANCE), et al.</i>	- 473
<b>Landslide Monitoring for Presumption of Underground Slide Surface</b> <i>Norikazu Yoshizawa (JAPAN)</i>	- 478
<b>Analysis of the Relationship Between Global Vegetation Index and Climate Factors</b> <i>Xuemei Bai (JAPAN)</i>	- 486
<b>Monitoring and Analysis of Urban Trends of Greater Cairo Using Multitemporal Satellite-Imagery</b> <i>Marion Czeranka (GERMANY)</i>	- 494
<b>Monitoring and Predicting Strong Earthquakes Using NOAA Data</b> <i>Guangsi Huang (CHINA), et al.</i>	- 499
<b>Vegetation Conservation Using A 3-D GIS at Yangmingshan National Park</b> <i>Ching-Nan Liu (CHINA-TAIPEI), et al.</i>	- 504
<b>Land Use Evaluation: Case Study in Brazil</b> <i>Madalena N. Pereira (BRAZIL), et al.</i>	- 507
<b>Spectral Analysis Applications in Digital Image Processing</b> <i>J. A. Rod Blais (CANADA), et al.</i>	- 511
<b>Using Remote Sensing to Evaluate Spatial Dependence in a Wheat Breeding Trial</b> <i>Shane T. Ball (USA), et al.</i>	- 516
<b>Real Time Monitoring of Turbid Water by Using Video Camera, Personal Computer and Image Processing</b> <i>Nobuyuki Mizutani (JAPAN), et al.</i>	- 520
<b>New Methods Provided in Remote Sensing for Investigating the Earth</b> <i>Vladimir E. Nekos (UKRAINE)</i>	- 525
<b>Technologies for Geological and Environment Protection Projects Using Remote Sensing Data and Field Spectrometric Measurements</b> <i>Alexei V. Pertsov (RUSSIA), et al.</i>	- 527
<b>Knowledge Based Approach for Enhancement of Remotely Sensed Data</b> <i>Kiron K. Rao (INDIA), et al.</i>	- 533
<b>The Role of Satellite Remote Sensing in Precipitation Forecasting, Rainfall Estimation and Water Management</b> <i>Frances C. Parmenter-Holt (USA)</i>	- 538
<b>Development and Enhancement of Urban and Suburban Environments Using Space Borne Data</b> <i>Harendra S. Mehta (INDIA), et al.</i>	- 542
<b>Evolution Spatiotemporelle de la Baie de Loango (Congo)</b> <i>Jean Tchicaya (CONGO)</i>	- 548
<b>Stereophotogrammetric Aerial Surveys of Waves</b> <i>Frithjof Voss (GERMANY)</i>	- 556
<b>Remote Measurement of Sea Water Temperature, Salinity and Thickness of Oil Film Using Water Raman Scattering</b> <i>Svetlana V. Patsayeva (RUSSIA)</i>	- 561
<b>Dual Filter of Digital Image Processing</b> <i>Jiang Yu (UNITED KINGDOM)</i>	- 566
<b>The Application of Neural Networks to the Floristic Classification of Remote Sensing and GIS Data in Complex Terrain</b> <i>Richard W. Fitzgerald (AUSTRALIA), et al.</i>	- 570
<b>SPOT Imagery for Classification of Urban Land Use: A Comparison with Landsat TM Imagery - A Study of Belo Horizonte Area</b> <i>Sandra M. Fonseca da Costa (BRAZIL), et al.</i>	- 575
<b>Exploration of Aggregate Materials with Geomorphologic and Geotechnical Techniques</b> <i>Demetre P. Argialas (GREECE), et al.</i>	- 583
<b>Image Classification from Category Proportions Among Mixels</b> <i>Masao Matsumoto (JAPAN), et al.</i>	- 588
<b>Extraction of Linear Geologic Structures from Remote Sensing Orbital Images</b> <i>Arnaldo de Albuquerque Araújo (BRAZIL), et al.</i>	- 592

Retrieval Bare-Soil Moisture Using L-Band SAR <i>Jiancheng Shi (USA), et al.</i>	- 595
Improving Urban Planning by Integrated Utilization of Remote Sensing and GIS's <i>Jun Chen (CANADA)</i>	- 598
Non-Parametric Texture Analysis Using Neural Network <i>Sunpyo Hong (JAPAN), et al.</i>	- 601
Control Strategies for an Expert System to Interpret Landforms <i>Abdullah Al-Garni (USA), et al.</i>	- 605
The Use of SPOT Data for Establishing a Correlation of Satellite Imagery and Income Levels in Mexico City <i>Elizabeth A. Dudley-Murphy (USA), et al.</i>	- 613
Monitoring Urban and Land Use Trends in the Greater Cairo Metropolitan Area Using Landsat Data <i>Adel F. Abdel-Kader (EGYPT), et al.</i>	- 619
Monitoring, Positioning and Quantification of the Human Settlement in the Fishermen's Community in the Coast of Goiana-PE - Brazil <i>José J. de Seixas (BRAZIL), et al.</i>	- 620
The Impact Caused by the Construction of Itaipu Hydroelectric Reservoir in the Nearby Urban Structures <i>Celso G. Dias Jr. (BRAZIL), et al.</i>	- 626
Laser Fluorescent Diagnostics of Dissolved Organic Matter in Natural Water <i>Elena M. Filippova (RUSSIA)</i>	- 631
Angle-Gauge Sampling of Tree Crown Diameters for Forest Inventory Using Aerial Photographs <i>Lawrence R. Gering (USA)</i>	- 635
Integration of Information on Vegetation Derived from landsat Thematic Mapper Data into a National Forest GIS <i>David L. Evans (USA), et al.</i>	- 643
Developing Spatial Reclassification Techniques for Improved Land-Use Monitoring Using High Spatial Resolution Images <i>Michael J. Barnsley (UNITED KINGDOM), et al.</i>	- 646
Influence of Forest Stand Parameters on Vegetation Indices Used for Coniferous Forest Damage Assessment <i>Jonas Ardö (SWEDEN)</i>	- 655
Effect of Polarization on Radar Backscatter in Relation to Slash Pine Stand Biomass Using Aircraft and SIR-B Data <i>Yousif A. Hussin (NETHERLANDS), et al.</i>	- 661
Aerial Space Information Processing in the Integrated Geoinformational System of Forest Monitoring <i>Mark D. Breido (RUSSIA)</i>	- 668
Multi-Source National Forest Inventory of Finland <i>Erkki O. Tomppo (FINLAND), et al.</i>	- 671
Mapping Rural Land Use in Selected Subsistence Farming Areas of South Africa, Using Remote Sensing Products <i>Edward M. Makhanya (SOUTH AFRICA), et al.</i>	- 675
Four Decades of Progress in Photographic Interpretation Since the Founding of Commission VII(IP) <i>Robert N. Colwell (USA)</i>	- 683
Estimating APAR by Means of Vegetation Indices: A Sensitivity Analysis <i>Jan G.P.W. Clevers (NETHERLANDS), et al.</i>	- 691
Intercomparison of Multisensor Satellite Images(IP) <i>Gérard Guyot (FRANCE), et al.</i>	- 699
Estimating Foliar Chemical Concentrations with the Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) <i>Paul J. Curran (UNITED KINGDOM)</i>	- 705
Soil Optical Properties and Environmental Applications of Remote Sensing <i>Richard Escadafal (FRANCE), et al.</i>	- 709
Analyse et Correction des Effets de la FTM sur les Images de SPOT-HRV <i>Xing-Fa Gu (FRANCE)</i>	- 716



<b>Geometric Optics Modelling of the Polarized Back-Scattering from a Vegetation Layer with Rough Ground Surface Boundary</b> <i>Sune R. J. Axelsson (SWEDEN)</i>	- 722
<b>A Comparative Evaluation of Ratio Transformed and Enhanced Thematic Mapper Images in Landcover Classification of Sahel Region of Africa</b> <i>Joel I. Igbokwe (GERMANY)</i>	- 730
<b>Dynamic Monitoring of Earth Surface Environment</b> <i>Mendbayaryn Badarch (MONGOLIA), et al.</i>	- 738
<b>Application of Remote Sensing and GIS for Renewable Resources Damaged by Typhoon 'Gay' : Chumphon Province(IP)</b> <i>Manu Omakupt (THAILAND)</i>	- 744
<b>Detection of Sub-Surface Coal Fires Using Landsat Thematic Mapper Data</b> <i>Arthur P. Cracknell (UNITED KINGDOM), et al.</i>	- 750
<b>Generation of Land Disaster Risk Map from LANDSAT TM and DTM Data</b> <i>Masataka Takagi (JAPAN), et al.</i>	- 754
<b>"A Good, A Better or the Best Remote Sensing Application System" for Tropical Rain Forest Survey in the Amazon Region</b> <i>G. Sicco Smit (NETHERLANDS)</i>	- 760
<b>Deforestation Estimates in AVHRR/NOAA and TM/Landsat Images for a Region in Central Brazil</b> <i>Silvana Amaral (BRAZIL)</i>	- 764
<b>Canada's Tropical Forestry Initiative in Latin America - An Airborne SAR Program</b> <i>Frederick Campbell (CANADA), et al.</i>	- 768
<b>Collection and Interpretation of Color Infrared and Thermal Infrared Imagery of Landfill Covers</b> <i>Christopher Stohr (USA), et al.</i>	- 771
<b>Principles for Model Independent Design of Environment Monitoring Systems</b> <i>Peter Orbay (HUNGARY)</i>	- 779
<b>Soil Salinity Mapping in the Nile Delta, Egypt Using Remote Sensing Techniques</b> <i>M. A. Abdel-Hamid (NETHERLANDS), et al.</i>	- 783
<b>Remote Sensing Data and Geographic Information Systems for the Characterization of Areas of Soil Erosion</b> <i>Mario Valério-Filho (BRAZIL), et al.</i>	- 788
<b>Hierarchization of Landscape in the Island of Santa Catarina, Southern Brazil, by Using TM Landsat-5 and Multispectral SPOT Images</b> <i>Rosana M. Rodrigues (BRAZIL), et al.</i>	- 792
<b>The Use of the Remote Sensing Technique in the Geographical Problems of Peru</b> <i>Mario Gonzales (PERU), et al.</i>	- 799
<b>Remote Sensing and GIS Contribution for an Environmental Planning Proposal</b> <i>Fabrizio Jemma (ITALY)</i>	- 803
<b>A Hybrid Formalism for Representation and Interpretation of Image Knowledge</b> <i>Francisco A. T. F. da Silva (BRAZIL)</i>	- 810
<b>Frame Representation of Ecological Models in Forestry Planning</b> <i>Tao Chen (JAPAN), et al.</i>	- 816
<b>Supervised Classification to Land Cover Mapping in Semi-Arid Environment of NE Brazil Using Landsat-TM and SPOT Data</b> <i>Klaus A. Ulbricht (BRAZIL), et al.</i>	- 821
<b>Dynamic Geoecology: Aerospace Monitoring, Mapping, and Forecasting(IP)</b> <i>Boris V. Vinogradov (RUSSIA)</i>	- 828
<b>Background Effects on Reflectance and Derivatives in an Open Canopy Forest Using Airborne Imaging Spectrometer Data</b> <i>Yoshio Awaya (JAPAN), et al.</i>	- 836
<b>Monitoring Renewable Natural Resources - A Joint Proposal of the Eastern-Central European Countries(IP)</b> <i>Gabor Remetey-Fülöpp (HUNGARY), et al.</i>	- 844
<b>Remote Sensing for Crop Inventory of Egypt's Old Agricultural Lands</b> <i>Mona El Kady (USA), et al.</i>	- 848

<b>Remote Sensing for Forest Management - The Swedish ISY Contribution Projects</b>	-	856
<i>Henrik Österlund (SWEDEN), et al.</i>		
<b>Quantative Soil Erosion Mapping and Classification in China Using GIS &amp; Remote Sensing Techniques From the Xichang Area in SW China</b>	-	859
<i>Yu Jiang (UNITED KINGDOM), et al.</i>		
<b>Soil Erosion Assessment and Simulation by Means of SGEOS and Ancillary Digital Data</b>	-	865
<i>Carsten Jurgens (GERMANY)</i>		
<b>Landsat and SPOT Investigations in Sinai Peninsula, Egypt</b>	-	873
<i>Adel F. Abdel-Kader (EGYPT), et al.</i>		
<b>Quaternary Mapping in Glaciated and Vegetated Areas Using SAR and Multispectral Images</b>	-	874
<i>Vernon Singhroy (CANADA), et al.</i>		
<b>Laser Remote Sensing of Phytoplankton and Organic Matter in the Sea Water</b>	-	878
<i>A. M. Chekalyuk (RUSSIA), et al.</i>		
<b>Coastal Zone Resource Analysis Surrounding the Tanimbar Island, Indonesia Using the Digitally Processed LANDSAT TM Imagery</b>	-	886
<i>Indroyono Soesilo (INDONESIA)</i>		
<b>Atmospheric Correction of Landsat/TM Data Over Mountainous Terrain</b>	-	891
<i>Gilbert Kattenborn (GERMANY)</i>		
<b>Laser Remote Sensing of Phytoplankton Photosynthetic Activity In-Situ</b>	-	897
<i>Alexander M. Chekalyuk (RUSSIA), et al.</i>		
<b>Multisensor and Multitemporal Satellite Data for Runoff Forecast in High Alpine Environment(IP)</b>	-	901
<i>A. N. Swamy (ITALY), et al.</i>		
<b>Cloud Classification on the Basis of NOAA-APT Data Using a Fuzzy Logic Approach</b>	-	908
<i>Uta Heinzmann (SWITZERLAND)</i>		
<b>Estimating Evapotranspiration Within the Colorado Alpine Tundra with Landsat Thematic Mapper</b>	-	914
<i>Claude R. Duguay (CANADA)</i>		
<b>Atmospheric Correction of Angular Measurements Above an Inhomogeneous and Non-Labertian Surface</b>	-	919
<i>Andrey A. Ioltukhovski (RUSSIA)</i>		
<b>Experimental Approach for Urban Structure Identification Using Remotely Sensed Imagery</b>	-	926
<i>Mitsunori Yoshimura (JAPAN), et al.</i>		
<b>Urban Spatial Attributes from Satellite Remote Sensing Using End Member Analysis and Variability Measures(IP)</b>	-	930
<i>Bruce C. Forster (AUSTRALIA), et al.</i>		
<b>A GIS Approach to Population Estimation in a Complex Urban Environment Using SPOT Multispectral Images</b>	-	935
<i>Chor P. Lo (USA)</i>		
<b>Exploring the Discriminating Power of Texture in Urban Image Analysis</b>	-	942
<i>Christopher J. Webster (UNITED KINGDOM), et al.</i>		
<b>Analysis of Vegetation Indices in Urban Areas from TM-Landsat and HRV-SPOT Orbital Data</b>	-	949
<i>Ana L. R. Carrara (CANADA), et al.</i>		
<b>Integration of Primary Data Acquisition and Interpretation of Remote Sensing Data in Town-Planning and City-District-Renewal</b>	-	957
<i>Peter Gerlach (GERMANY)</i>		
<b>Fuzzy Classification of Satellite Imagery by Neural Networks</b>	-	964
<i>Eihan Shimizu (JAPAN)</i>		
<b>Object Based Reclassification of High Resolution Digital Imagery for Urban Land-Use Monitoring</b>	-	969
<i>Stuart L. Barr (UNITED KINGDOM)</i>		
<b>GERES: A Prototype Expert System for the Geometric Rectification of Remotely-Sensed Images</b>	-	977
<i>M. I. Heard (UNITED KINGDOM), et al.</i>		
<b>A Methodology to Design an Expert System for Remote Sensing Technology Management</b>	-	982
<i>Andrew Finegan (AUSTRALIA)</i>		

<b>A Comparative Study on the Methods for Estimation of Mixing Ratio Within a Pixel</b>	
<i>Yasunori Terayama (JAPAN), et al.</i>	- 986
<b>An Expert System Interface for the GRASS Geographic Information System</b>	
<i>Katarina Johnsson (CANADA), et al.</i>	- 990
<b>Multistage Pattern Recognition for Digital Landscape Modelling</b>	
<i>Alfred Mehlbreuer (NETHERLANDS), et al.</i>	- 996
<b>Backpercolation Training of Neural Networks for Agricultural Land Use Classification with Landsat-TM Data</b>	
<i>Anton K. Kaifel (GERMANY), et al.</i>	- 1002
<b>Comparison of Texture Analysis Techniques in Both Frequency and Spatial Domains for Cloud Feature Extraction</b>	
<i>Nahid Khazenie (USA), et al.</i>	- 1009
<b>Classification of Spatial Data Using a Hybrid Neural Network-Expert System</b>	
<i>Andrew K. Skidmore (AUSTRALIA)</i>	- 1015
<b>Ecological and Economical Evaluation of Condition of Environment</b>	
<i>Tibor Dobos (HUNGARY)</i>	- 1019
<b>AUTHORS and COAUTHORS INDEX - ISPRS COMMISSION VII</b>	- 1025
<b>KEYWORDS INDEX - Volume XXIX, Part B7 - ISPRS COMMISSION VII</b>	- 1029