

PROCEEDINGS OF SPIE

First International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2013)

**Diofantos G. Hadjimitsis
Kyriacos Themistocleous
Silas Michaelides
George Papadavid**
Editors

**8–10 April 2013
Paphos, Cyprus**

Organized by

Cyprus Remote Sensing Society • Cyprus University of Technology • European Space Agency
ETEK (Cyprus Scientific and Technical Chamber) • Cyprus Meteorological Service • Department of
Electronic Communications of the Ministry of Communications and Works (Cyprus) • Frederick University
(Cyprus)

Sponsored by

European Space Agency • Intergraph (SG&I) Italia LLC, part of Hexagon • Geosystems Hellas (Greece)
Frederick University (Cyprus) • Neapolis University (Cyprus)

Supported by

Cyprus Association of Rural and Surveying Engineers

Published by
SPIE

Volume 8795

Proceedings of SPIE 0277-786X, V. 8795

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

First International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2013), edited by
Diofantos G. Hadjimitsis, Kyriacos Themistocleous, Silas Michaelides, George Papadavid, Proc. of SPIE
Vol. 8795, 879501 · © 2013 SPIE · CCC code: 0277-786X/13/\$18 · doi: 10.1117/12.2041580

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *First International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2013)*, edited by Diofantos G. Hadjimitsis, Kyriacos Themistocleous, Silas Michaelides, George Papadavid, Proceedings of SPIE Vol. 8795 (SPIE, Bellingham, WA, 2013) Article CID Number.

ISSN: 0277-786X

ISBN: 9780819496386

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2013, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/13/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIE 
Digital Library

SPIDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID Number.

Contents

- xv *Conference Committee*
- xvii *Introduction*
- xix *Conference Sponsors*

KEYNOTE SESSION

- 8795 02 **Lidar profiling of aerosol optical and microphysical properties from space: overview, review, and outlook (Keynote Paper)** [8795-32]
A. Ansmann, Leibniz Institut für Troposphärenforschung (Germany); D. Müller, Leibniz Institut für Troposphärenforschung (Germany) and Science Systems and Applications, Inc. (United States); U. Wandinger, Leibniz Institut für Troposphärenforschung (Germany); R. E. Mamouri, Cyprus Univ. of Technology (Cyprus)

RESEARCH OPPORTUNITIES/REMOTE SENSING IN EDUCATION

- 8795 03 **Development of an educational e-material on remote sensing environmental applications: a case study for schools** [8795-33]
T. Nikitopoulou, Ministry of Education and Religious Affairs, Culture and Sports (Greece);
A. Retalis, National Observatory of Athens (Greece)
- 8795 04 **digital-earth.eu: a European network for Digital Earth education** [8795-11]
K. Donert, European Association of Geographers (Austria) and European Ctr. of Excellence (Australia)

REMOTE SENSING AND VEGETATION I

- 8795 05 **Modeling LAI based on land cover map and NDVI using SPOT and Landsat data in two Mediterranean sites: preliminary results** [8795-57]
C. Topaloglou, S. Monachou, S. Strati, T. Alexandridis, D. Stavridou, N. Silleos, N. Misopolinos, Aristotle Univ. of Thessaloniki (Greece); A. Nunes, A. Araújo, GMV (Portugal)
- 8795 06 **Potential of remote sensing techniques to improve the agriculture water footprint assessment and the virtual water trade accounting** [8795-18]
L. Toullos, National Agricultural Research Foundation (Greece); M. Romaguera, Univ. Twente (Netherlands); E. Calleja, Univ. of Malta (Malta); G. Stancalie, A. Nertan, National Meteorological Administration (Romania); P. Struzik, Institute of Meteorology and Water Management-National Research Institute (Poland); A. Dalla Marta, Univ. degli Studi di Firenze (Italy); A. M. Tarquis Alfonso, Univ. Politécnica de Madrid (Spain); Z. Dunkel, Hungarian Meteorological Service (Hungary); J. Rato Nunes, Instituto Politécnico do Portalegre (Portugal); F. Vuolo, Univ. für Bodenkultur Wien (Austria)

- 8795 07 **Use of satellite derived vegetation indices for the detection of water pipeline leakages in semiarid areas** [8795-40]
A. Agapiou, Cyprus Univ. of Technology (Cyprus); L. Toullos, National Agricultural Research Foundation (Greece); K. Themistocleous, Cyprus Univ. of Technology (Cyprus); S. Perdikou, Frederick Research Ctr. (Cyprus); D. D. Alexakis, Cyprus Univ. of Technology (Cyprus); A. Sarris, Foundation for Research and Technology-Hellas (Greece); G. Toullos, Cyprus Univ. of Technology (Cyprus); C. R. I. Clayton, Univ. of Southampton (United Kingdom); H. Phinikaridou, A. Manoli, Water Development Dept. (Cyprus); D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 08 **A spatial downscaling procedure of MODIS derived actual evapotranspiration using Landsat images at central Greece** [8795-16]
M. Spiliotopoulos, Univ. of Thessaly (Greece) and Institute for Research and Technology of Thessaly (Greece); N. Adaktylou, National and Kapodistrian Univ. of Athens (Greece); A. Loukas, Univ. of Thessaly (Greece) and Institute for Research and Technology of Thessaly (Greece); H. Michalopoulou, National and Kapodistrian Univ. of Athens (Greece); N. Mylopoulos, Univ. of Thessaly (Greece) and Institute for Research and Technology of Thessaly (Greece); L. Toullos, National Agricultural Research Foundation (Greece)

SPECTROSCOPY/URBAN REMOTE SENSING, MAPPING

- 8795 09 **3D mapping from high resolution satellite images** [8795-49]
D. Goulas, Hellenic Military Geographical Service (Greece); A. Georgopoulos, National Technical Univ. of Athens (Greece); A. Sarakenos, The Hellenic Institute of Holography (Greece); Ch. Paraschou, Hellenic Military Geographical Service (Greece)

REMOTE SENSING AND GIS I

- 8795 0A **Intergraph video and images exploitation capabilities** [8795-70]
S. Colla, Intergraph Corp. (Italy); C. Manesis, Geosystems Hellas Greece)
- 8795 0B **Development of an integrated application portal for environmental spatial information dissemination in the Nestos river basin** [8795-66]
G. Zalidis, N. Karapetsas, C. Skoulikaris, L. Misopolinos, Aristotle Univ. of Thessaloniki (Greece); C. Manesis, Geosystems Hellas (Greece)
- 8795 0C **Use of photogrammetry and GIS in the survey of natural areas of special protection: case study of aesthetic forest Kouri Almyrou Magnisias** [8795-69]
V. C. Drosos, S. Fidani, Demokritos Univ. of Thrace (Greece); C. Manesis, Geosystems Hellas (Greece)

ATMOSPHERIC I

- 8795 0D **Smoke plume characteristics over Greece using space-based multiangle imaging** [8795-81]
F. I. Sofiou, National Technical Univ. of Athens (Greece); V. Amiridis, National Observatory of Athens (Greece); N. Mihalopoulos, Univ. of Crete (Greece)

- 8795 OE **Evolution of ozone depletion on Antarctic and sub-Antarctic regions (1979–2012)** [8795-17]
S. B. Diaz, A. A. Paladini, G. A. Deferrari, J. Vrsalovic, Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina)

ARCHAEOLOGY/CULTURAL HERITAGE

- 8795 OF **Cultural heritage and VHR satellite data** [8795-31]
M. A. Lazaridou, Aristotle Univ. of Thessaloniki (Greece)
- 8795 OG **Geo-portals: more sustainable governance of territory within spatial data framework**
[8795-64]
B. Cuca, R. Brumana, D. Oreni, Politecnico di Milano (Italy)
- 8795 OH **Geophysical approaches applied in the ancient theatre of Demetriada, Volos** [8795-25]
A. Sarris, N. Papadopoulos, S. Déderix, M.-C. Salvi, Foundation for Research and Technology-Hellas (Greece)
- 8795 OI **GIS and archaeology: a spatial predictive model for neolithic sites of the Tavoliere (Apulia)**
[8795-29]
M. Danese, N. Masini, M. Biscione, Istituto per i Beni Archeologici e Monumentali, CNR (Italy); R. Lasaponara, Istituto di Metodologie per l'Analisi Ambientale, CNR (Italy)
- 8795 OJ **4D reconstruction of the past** [8795-77]
A. Doulamis, Technical Univ. of Crete (Greece); M. Ioannides, N. Doulamis, A. Hadjiprocopis, Cyprus Univ. of Technology (Cyprus); D. Fritsch, Univ. Stuttgart (Germany); O. Balet, M. Julien, DigiNext (France); E. Protopapadakis, K. Makantasis, Technical Univ. of Crete (Greece); G. Weinlinger, P. S. Johnsons, M. Klein, 7Reasons GmbH (Austria); D. Fellner, A. Stork, P. Santos, Fraunhofer-Institut für Graphische Datenverarbeitung (Germany)
- 8795 OK **Mapping air pollution using Earth observation techniques for cultural heritage sites**
[8795-39]
A. Agapiou, A. Nisantzi, Cyprus Univ. of Technology (Cyprus); V. Lysandrou, Kykkos Museum (Cyprus); R. Mamouri, D. D. Alexakis, K. Themistocleous, Cyprus Univ. of Technology (Cyprus); A. Sarris, Foundation for Research and Technology-Hellas (Greece); D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)

CLIMATE CHANGE/METEOROLOGY

- 8795 OL **Applying DINEOF algorithm on cloudy sea-surface temperature satellite data over the eastern Mediterranean Sea** [8795-83]
A. Nikolaidis, Cyprus Univ. of Technology (Cyprus) and Univ. of Cyprus (Cyprus); G. Georgiou, Univ. of Cyprus (Cyprus); D. Hadjimitsis, E. Akylas, Cyprus Univ. of Technology (Cyprus)
- 8795 OM **On the use of the CM-SAF cloud-data in the Czech Republic** [8795-26]
M. Zak, Czech Hydrometeorological Institute (Czech Republic) and Charles Univ. in Prague (Czech Republic); P. Sacha, P. Pisoft, Charles Univ. in Prague (Czech Republic)

- 8795 ON **Climate change impacts on sea surface temperature in the eastern Mediterranean, Levantine basin** [8795-48]
Y. Samuel-Rhoads, G. Zodiatis, A. Nikolaidis, D. Hayes, G. Georgiou, G. Konnaris, M. Nikolaidis, Univ. of Cyprus (Cyprus)

WATER SCIENCES I

- 8795 OO **Remote sensing of harmful algal events in optically complex waters using regionally specific neural network-based algorithms for MERIS data** [8795-20]
L. Gonzalez Vilas, M. Castro Fernandez, E. Spyarakos, J. Torres Palenzuela, Univ. de Vigo (Spain)
- 8795 OP **Monitoring water quality parameters in the marine area of Danube Delta using satellite remote sensing: preliminary results** [8795-10]
T. K. Alexandridis, Aristotle Univ. of Thessaloniki (Greece); B. G. Aleksandrov, Odessa Branch Institute of Biology of Southern Seas (Ukraine); S. Monachou, C. Kalogeropoulos, S. Strati, Aristotle Univ. of Thessaloniki (Greece); L. Vorobyova, Y. Bogatova, Odessa Branch Institute of Biology of Southern Seas (Ukraine); V. N. Grigoriadis, G. S. Vergos, C. Topaloglou, Aristotle Univ. of Thessaloniki (Greece)
- 8795 OQ **The spectral signature analysis of inland and coastal water bodies acquired from field spectroradiometric measurements** [8795-85]
C. Papoutsas, E. Akylas, D. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 OR **Monitoring of chlorophyll-a and turbidity in Evros River (Greece) using Landsat imagery** [8795-4]
V. Markogianni, E. Dimitriou, Hellenic Ctr. for Marine Research (Greece); M. Tzortziou, Univ. of Maryland, College Park (United States)

HUMAN, PHYSICAL, AND BUILT ENVIRONMENT

- 8795 OS **Classification of topography using DEM data and its correlation with the geology of Greece** [8795-72]
E. Zargli, Institute of Engineering Seismology and Earthquake Engineering (Greece); S. Liodakis, Univ. of the Aegean (Greece); P. Kyriakidis, Univ. of the Aegean (Greece) and Univ. of California, Santa Barbara (United States); A. Savvaidis, Institute of Engineering Seismology and Earthquake Engineering (Greece)
- 8795 OT **An integrated method for wind power estimation: application for coastal areas in Cyprus** [8795-86]
I. Kastanas, A. Georgiou, P. Zavros, Cyprus Univ. of Technology (Cyprus); S. Pashiardes, Cyprus Meteorological Service (Cyprus); E. Akylas, Cyprus Univ. of Technology (Cyprus)
- 8795 OU **SRTM-based geomorphometrics for detecting neotectonic deformation: A cost-effective alternative to InSAR in vegetated regions?** [8795-45]
N. Argyriou, R. Teeuw, Univ. of Portsmouth (United Kingdom)

REMOTE SENSING AND VEGETATION II

- 8795 0V **Multiscale analysis of satellite-derived vegetation parameters for biogenic VOC emission modeling** [8795-60]
C. Silveira, O. Tchepel, Univ. de Aveiro (Portugal)
- 8795 0W **Sensitivity of vegetation indices to different burn and vegetation ratios using LANDSAT-5 satellite data** [8795-55]
M. Pleniou, N. Koutsias, Univ. of Ioannina (Greece)
- 8795 0X **A centralised remote data collection system using automated traps for managing and controlling the population of the Mediterranean (*Ceratitis capitata*) and olive (*Dacus oleae*) fruit flies** [8795-42]
P. Philimis, E. Psimolophitis, S. Hadjiyiannis, A. Giusti, CNE Technology Ltd. (Cyprus); J. Perelló, A. Serrat, P. Avila, Ctr. de Recerca i Innovació de Catalunya S.A. (Spain)
- 8795 0Y **A simple method to estimate vegetation indices and crop canopy factors using field spectroscopy for *solanum tuberosum* during the whole phenological cycle** [8795-88]
S. Perdikou, Frederick Research Ctr. (Cyprus); G. Papadavid, Agricultural Research Institute (Cyprus); M. Hadjimitsis, M. Hadjimitsis Trading and Engineering Ltd. (Cyprus); D. Hadjimitsis, Cyprus Univ. of Technology (Cyprus); N. Neofytou, Frederick Research Ctr. (Cyprus)

NATURAL HAZARDS: FLOODS, SEISMIC

- 8795 0Z **Using ERS-2 and ALOS PALSAR images for soil moisture and inundation mapping in Cyprus** [8795-51]
D. D. Alexakis, A. Agapiou, K. Themistocleous, Cyprus Univ. of Technology (Cyprus); A. Retalis, National Observatory of Athens (Greece); D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 10 **Hydrometeorological network for flood monitoring and modeling** [8795-71]
A. Efstathiadis, National Technical Univ. of Athens (Greece); A. D. Koussis, S. Lykoudis, National Observatory of Athens (Greece); A. Koukouvinos, A. Christofides, G. Karavokiros, National Technical Univ. of Athens (Greece); N. Kappos, National Observatory of Athens (Greece); N. Mamassis, D. Koutsoyiannis, National Technical Univ. of Athens (Greece)
- 8795 11 **Assessment and surveillance of active seismic regions through time series satellite data** [8795-68]
M. A. Zoran, R. S. Savastru, D. M. Savastru, National Institute of Research and Development for Optoelectronics (Romania)
- 8795 12 **Effect on irradiance of the eruption of the Cordon Caulle (Chile) at different altitudes in the Nahuel Huapi National Park (Patagonia, Argentina)** [8795-15]
S. B. Diaz, A. A. Paladini, H. G. Braile, Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina); M. C. Dieguez, La Univ. Nacional de Córdoba (Argentina); G. A. Deferrari, Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina); M. Vernet, Univ. of California, San Diego (United States); J. Vrsalovic, Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina)

- 8795 13 **Geo-characterization according to recent advances of Eurocode (EC8)** [8795-67]
A. Savvaidis, B. Margaris, N. Theodoulidis, V. Lekidis, Ch. Karakostas, M.-D. Mangriotis, Institute of Engineering Seismology and Earthquake Engineering (Greece); I. Kalogeras, S. Koutrakis, National Observatory of Athens (Greece); A. Vafidis, M. Steiakakis, Z. Agioutantis, Technical Univ. of Crete (Greece); D. Rozos, C. Loupasakis, Th. Rondoyanni, P. Tsangaratos, National Technical Univ. of Athens (Greece); U. Dikmen, Ankara Univ. (Turkey); N. Papadopoulos, A. Sarris, Foundation for Research and Technology-Hellas (Greece); P. Soupios, E. Kokkinou, I. Papadopoulos, M. Kouli, F. Vallianatos, Technological Educational Institute of Crete (Greece)

TOPOGRAPHY/GPS/PHOTOGRAMMETRY

- 8795 14 **Accuracy assessment of minimum control points for UAV photography and georeferencing** [8795-76]
D. Skarlatos, Cyprus Univ. of Technology (Cyprus); E. Procopiou, Cyprus Dept. of Antiquities (Cyprus); G. Stavrou, Electricity Authority of Cyprus (Cyprus); M. Gregoriou, Cyprus Univ. of Technology (Cyprus)
- 8795 15 **Evaluating large scale orthophotos derived from high resolution satellite imagery** [8795-50]
M. T. Ioannou, A. Georgopoulos, National Technical Univ. of Athens (Greece)
- 8795 16 **Photogrammetric processing of a TerraSAR-X image: evaluation of products** [8795-82]
C. Ioannidis, F. Bourexis, G. Tsigenopoulos, National Technical Univ. of Athens (Greece)

LIDAR/ATMOSPHERIC

- 8795 17 **Complex vertical layering and mixing of aerosols over the eastern Mediterranean: active and passive remote sensing at the Cyprus University of Technology** [8795-63]
R.-E. Mamouri, A. Nisantzi, D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus); A. Ansmann, A. Schwarz, Leibniz Institut für Troposphärenforschung (Germany); S. Basart, Ctr. Nacional de Supercomputación (Spain); J. M. Baldasano, Ctr. Nacional de Supercomputación (Spain) and Univ. Politècnica de Catalunya (Spain)

REMOTE SENSING AND LAND USE

- 8795 18 **A simple method to detect land changes sourcing from overgrazing using remote sensing** [8795-92]
G. Papadavid, K. Themistocleous, M. Christoforou, B. Carmen, D. Tsaltas, D. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 19 **A satellite-based approach for land cover/use changes in Acheron River catchment (Greece)** [8795-79]
A. Kostara, Univ. of Patras (Greece); A. Retalis, National Observatory of Athens (Greece); E. Papastergiadou, Univ. of Patras (Greece)

- 8795 1A **Land movement monitoring at the Mavropigi lignite mine using spaceborne D-InSAR** [8795-6]
E. Papadaki, Space Geomatica Ltd. (Greece); A. Tripolitsiotis, Technical Univ. of Crete (Greece); C. Steiakakis, Geosysta Ltd. (Greece); Z. Agioutantis, S. Mertikas, P. Partsinevelos, Technical Univ. of Crete (Greece); P. Schilizzi, Public Power Corp. (Greece)
- 8795 1B **Geospatial tools for landscape character assessment in Cyprus** [8795-56]
N. P. Symons, Terra Cypria (Cyprus); I. N. Vogiatzakis, Open Univ. of Cyprus (Cyprus); G. H. Griffiths, S. Warnock, The Univ. of Reading (United Kingdom); V. Vassou, Terra Cypria (Cyprus); M. Zomeni, V. Trigkas, Open Univ. of Cyprus (Cyprus)
- 8795 1C **A GIS-based shape index for land parcels** [8795-2]
D. Demetriou, Univ. of Leeds (United Kingdom) and District Land Consolidation Office of Larnaca and Famagusta (Cyprus); J. Stillwell, Univ. of Leeds (United Kingdom); L. See, International Institute for Applied Systems Analysis (Austria) and Univ. College London (United Kingdom)

ATMOSPHERIC II

- 8795 1D **Particulate monitoring, modeling, and management: natural sources, long-range transport, and emission control options: a case study of Cyprus** [8795-36]
S. Kleanthous, C. Savvides, I. Christofides, Ministry of Labour and Social Insurance (Cyprus); D. G. Hadjimitsis, K. Themistocleous, C. Achilleos, E. Akylas, C. Demetriadou, P. Christodoulides, Cyprus Univ. of Technology (Cyprus); I. Douros, N. Moussiopoulos, Aristotle Univ. of Thessaloniki (Greece); C. Panayiotou, C. Gregoris, Atlantis Consulting Cyprus Ltd. (Cyprus); K. Fedra, M. Kubat, Environmental Software and Services GmbH (Austria); N. Mihalopoulos, Univ. of Crete (Greece)
- 8795 1E **Analyses of high resolution aerosol data from MODIS satellite: a MAIAC retrieval, southern New England, US** [8795-94]
A. Chudnovsky, Harvard School of Public Health (United States); A. Lyapustin, Y. Wang, Univ. of Maryland, Baltimore County (United States) and NASA Goddard Space Flight Ctr. (United States); J. Schwartz, P. Koutrakis, Harvard School of Public Health (United States)
- 8795 1F **Comparison of atmospheric humidity profiles obtained by COSMIC satellites and radiosonde over Cyprus** [8795-62]
C. Oikonomou, H. Haralambous, S. Perdikou, Frederick Univ. (Cyprus)

WATER SCIENCES II

- 8795 1G **Effects of land-cover change on rainfall-runoff relationships: a case study of the Yarkon-Ayalon watershed, Israel** [8795-9]
N. Ohana, A. Karnieli, Ben-Gurion Univ. of the Negev (Israel); R. Egozi, Soil Erosion Research Station, Ministry of Agriculture (Israel); A. Peeters, Ben-Gurion Univ. of the Negev (Israel)
- 8795 1H **The effect of riverine terrain spatial resolution on flood modeling and mapping** [8795-35]
G. Papaioannou, A. Loukas, Univ. of Thessaly (Greece); C. Georgiadis, Aristotle Univ. of Thessaloniki (Greece)

FORESTS/FIRES

- 8795 1I **Relationships between vegetation indices and different burn and vegetation ratios: a multi-scale approach applied in a fire affected area** [8795-54]
M. Pleniou, N. Koutsias, Univ. of Ioannina (Greece)
- 8795 1J **ArcFuel methodology for mapping forest fuels in Europe** [8795-34]
P. Toukiloglou, Aristotle Univ. of Thessaloniki (Greece); G. Eftychidis, Algosystems, S.A. (Greece); I. Gitas, M. Tompoulidou, Aristotle Univ. of Thessaloniki (Greece)
- 8795 1K **Forest fires: proactive and reactive surveillance employing in-situ, aerial, and space technology** [8795-21]
K. Katzis, A. Grondoudis, G. Boustras, European Univ. Cyprus (Cyprus); P. Papazoglou, Research Promotion Foundation (Cyprus)

REMOTE SENSING AND WATER BODIES

- 8795 1L **Nutrient dynamics management based on GIS modeling tools** [8795-74]
O. Tzoraki, N. P. Nikolaidis, E. Kassotaki, Technical Univ. of Crete (Greece); D. Cooper, Ctr. for Ecology and Hydrology (United Kingdom); V. Papadoulakis, Lakonia Prefecture (Greece)
- 8795 1M **Simulation of daily discharge using the distributed model SWAT as a catchment management tool: Limnatis River case study** [8795-95]
A. Papatheodoulou, Terra Cypria (Cyprus); O. Tzoraki, Technical Univ. of Crete (Greece); P. Panagos, Joint Research Ctr., Institute of Environment and Sustainability (Italy); H. Taylor, J. Ebdon, Univ. of Brighton (United Kingdom); G. Papageorgiou, N. Pissarides, K. Antoniou, G. Christofi, State General Lab. (Cyprus); G. Dorlfinger, Water Development Dept. (Cyprus); N. Symons, Terra Cypria (Cyprus)
- 8795 1N **Neural network approach to separate the non-algal absorption coefficient into dissolved and particulate** [8795-58]
I. Ioannou, R. Foster, A. Gilerson, S. Ahmed, The City College of New York (United States)
- 8795 1O **Attenuation capacity of a coastal aquifer under managed recharge by reclaimed wastewater** [8795-91]
G. Christodoulou, Water Development Dept. (Cyprus); Z. Dokou, O. Tzoraki, Technical Univ. of Crete (Greece); P. Gaganis, Univ. of the Aegean (Greece); G. Karatzas, Technical Univ. of Crete (Greece)

REMOTE SENSING AND GIS II

- 8795 1P **Mapping and predicting sinkholes by integration of remote sensing and spectroscopy methods** [8795-44]
N. Goldshleger, Soil Erosion Research Station, Ministry of Agriculture (Israel); U. Basson, Geosense (Israel); I. Azaria, SensinGIS Geospatial Services (Israel)

- 8795 1Q **Application of SEBAL methodology for estimating and disseminating through third generation mobile phones crop water requirements in Cyprus** [8795-27]
G. Papadavid, Agricultural Research Institute (Cyprus); M. Hadjimitsis, M. Hadjimitsis Trading and Engineering Ltd. (Cyprus); S. Perdikou, Frederick Research Ctr. (Cyprus); D. Hadjimitsis, C. Papadavid, Cyprus Univ. of Technology (Cyprus); N. Neophytou, Frederick Research Ctr. (Cyprus); G. Kountios, A. Michaelides, Aristotle Univ. of Thessaloniki (Greece)
- 8795 1R **Investigation of Cyprus thermal tenancy using nine year MODIS LST data and Fourier analysis** [8795-47]
D. Skarlatos, Cyprus Univ. of Technology (Cyprus); G. Miliarexis, Open Univ. of Cyprus (Cyprus); A. Georgiou, Cyprus Univ. of Technology (Cyprus)
- 8795 1S **Identification of the development mechanisms of an explosive cyclone in the central Mediterranean with the aid of the MSG satellite images** [8795-19]
J. Kouroutzoglou, National and Kapodistrian Univ. of Athens (Greece) and Hellenic National Meteorological Service (Greece); H. A. Flocas, M. Hatzaki, National and Kapodistrian Univ. of Athens (Greece); K. Keay, Bureau of Meteorology (Australia) and The Univ. of Melbourne (Australia); I. Simmonds, The Univ. of Melbourne (Australia); A. Mavroudis, Regional Meteorological Ctr. of Macedonia (Greece)

POSTER SESSION: ATMOSPHERIC

- 8795 1T **Combination of ground-based and satellite remote sensing measurements over Limassol** [8795-38]
A. Nisantzi, R. E. Mamouri, E. Akylas, D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)

POSTER SESSION: GIS

- 8795 1U **Use of GIS for the development of digital structural integrity maps of high risk areas in Cyprus due to corrosion of steel reinforcement** [8795-37]
A. Christofe, K. Neocleous, K. Themistocleous, A. Agapiou, D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 1V **Share Geonetwork: a web-service platform for environmental data sharing** [8795-22]
M. T. Melis, F. Dessì, Univ. degli Studi di Cagliari (Italy) and Ev-K2, CNR (Italy); F. Locci, Univ. degli Studi di Cagliari (Italy); P. Bonasoni, Istituto di Scienze dell'Atmosfera e del Clima, CNR (Italy); E. Vuillermoz, Ev-K2, CNR (Italy)

POSTER SESSION: HUMAN, PHYSICAL, AND BUILT ENVIRONMENT

- 8795 1W **LONGWOOD: integrating woodland history and ecology in a geodatabase through an interdisciplinary approach** [8795-24]
J. Müllerová, P. Szabó, M. Kopecký, M. Macek, Institute of Botany of the ASCR, v.v.i. (Czech Republic)

POSTER SESSION: NATURAL HAZARDS

- 8795 1X **Preliminary GIS based analysis of seismic risk in water pipeline lifeline system in urban infrastructure of Chania (Crete)** [8795-46]
M. Kouli, I. Papadopoulos, F. Vallianatos, Technological Educational Institute of Crete (Greece)

POSTER SESSION: REMOTE SENSING

- 8795 1Y **Assessing and monitoring of urban vegetation using multiple endmember spectral mixture analysis** [8795-13]
M. A. Zoran, R. S. Savastru, D. M. Savastru, National Institute of Research and Development for Optoelectronics (Romania)
- 8795 1Z **Vegetation cover quality assessment through MODIS time series satellite data in an urban region** [8795-73]
M. A. Zoran, R. S. Savastru, D. M. Savastru, G. M. Pavelescu, M. N. Tautan, S. I. Miclos, L. A. Baschir, National Institute of Research and Development for Optoelectronics (Romania)
- 8795 20 **A new methodology for the discrimination of plant species and their varieties using hyperspectral data: application on vetch and lentil** [8795-14]
D. Sykas, V. Karathanassi, National Technical Univ. of Athens (Greece); S. Fountas, Univ. of Thessali (Greece)
- 8795 21 **Detection and analysis of burnt areas from MODIS derived NDVI time series data** [8795-7]
M. A. García, Univ. de Alicante (Spain); J. A. Alloza, Fundación Ctr. de Estudios Ambientales Mediterráneo (Spain); S. Bautista, F. Rodríguez, Univ. de Alicante (Spain)
- 8795 22 **The use of satellite imagery for the identification and protection of important oak areas** [8795-75]
A. Papatheodoulou A., K. Michael, T. Greenwood, P. Klonis, L. Taylor, I. Kiriakou, M. R. Proteriotis, L. Sergides, M. Ioannou, M. Viktora, N. Symons, Terra Cypria (Cyprus)
- 8795 23 **Analysis of MODIS NDVI time series using quasi-periodic components** [8795-8]
M. A. García, F. Rodríguez, Univ. de Alicante (Spain)

POSTER SESSION: WATER RESOURCES

- 8795 25 **Evidence of nonextensive statistical physics behavior in the watershed distribution in active tectonic areas: examples from Greece** [8795-43]
F. Vallianatos, Univ. College London (United Kingdom) and Technological Educational Institute of Crete (Greece); M. Kouli, Technological Educational Institute of Crete (Greece)
- 8795 26 **Spectral fluorescence signature techniques and absorption measurements for continuous monitoring of biofuel-producing microalgae cultures** [8795-53]
M. C. Marín de la Cruz, L. Gonzalez Vilas, N. Yarovenko, E. Spyarakos, J. M. Torres Palenzuela, Univ. de Vigo (Spain)

- 8795 27 **Geo-radar scanning and GIS mapping of an old water utility network in Paphos district area in Cyprus under the project: 'Upgrade of the hydraulics laboratory for the modeling of water supply networks and design and operation optimization study'** [8795-90]
K. Themistocleous, A. Agapiou, A. Papachristodoulou, P. Evlogimenos, M. Theodorou, Cyprus Univ. of Technology (Cyprus); P. Sotiropoulos, S. Maroulakis, Terra Marine (Greece); C. Karaolides, M. G. Hadjimitsis, Municipality of Pafos (Cyprus); T. Onoufriou, D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 28 **Image based analysis for assessing coastal water quality temporal and spatial variations in Limassol Harbor area in Cyprus** [8795-87]
C. Papoutsas, Cyprus Univ. of Technology (Cyprus); A. Retalis, National Observatory of Athens (Greece); M. Scoullas, National and Kapodistrian Univ. of Athens (Greece); M. Loizidou, National Technical Univ. of Athens (Greece); M. Argyrou, Dept. of Fisheries and Marine Research (Cyprus); D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)
- 8795 29 **The use of remote sensing and spectroscopy to identify precipitation in volcanic sand targets: a case study of Limassol, Cyprus** [8795-84]
K. Themistocleous, D. G. Hadjimitsis, Cyprus Univ. of Technology (Cyprus)

Author Index

Conference Committee

Conference Chair

Diofantos G. Hadjimitsis, Cyprus University of Technology (Cyprus)

Organizing Committee

Kyriacos Themistocleous, Cyprus University of Technology (Cyprus)

Diofantos G. Hadjimitsis, Cyprus University of Technology (Cyprus)

Giorgos Papadavid, Agricultural Research Institute of Cyprus (Cyprus)

Silas Michaelides, Cyprus Meteorological Service (Cyprus)

Introduction

The organizing committee, scientific committee and editors would like to thank the authors and participants who attended the First International Conference on Remote Sensing and Geoinformation of Environment in Paphos, Cyprus, 8–10 April 2013. The conference focused on emerging issues in remote sensing and geoinformation of environment. The keynote speakers and thought-provoking technical program encouraged the exchange of ideas and provided the foundation for future collaboration and innovation. The conference was enhanced by the inclusion of two workshops on ERDAS and Ground Penetrating Radar applications. The RSCy2013 conference is organized by: Cyprus University of Technology, ESA (European Space Agency), ETEK (Cyprus Scientific and Technical Chamber), Cyprus Meteorological Service, Department of Electronic Communications of the Ministry of Communications and Works, Frederick University and the Cyprus Remote Sensing Society.

The following manuscripts, reviewed for presentation and accepted for publication by the scientific committee, represent continued advancements in the field of remote sensing and geo-information. The program, which included both oral and poster presentations, was organized around 12 major themes: Aerosols, Archaeology-Cultural Heritage, Geology-Environment, GIS-Mapping, GIS-Remote Sensing, LIDAR, Meteorology, Natural Hazards, Remote Sensing, Spectroscopy-Urban Remote Sensing, Topography-GPS-Photogrammetry and Water Resources. The abstracts and subsequent manuscripts make important contributions to the open scientific literature on remote sensing and geoinformation. We thank the authors for sharing their knowledge and enthusiasm.

Thank you to the conference chairs who provided invaluable assistance during the conference. Thank you as well to the SPIE staff for following the proceedings through the publication process. We also thank our sponsors, especially ESA and Intergraph/ERDAS, for their support.

Diofantos G. Hadjimitsis
Kyriacos Themistocleous
Silas Michaelides
George Papadavid

Conference Sponsors

Platinum Sponsor



Gold Sponsors



Sponsors



Organizers



Co-organizers



