

# PROCEEDINGS OF SPIE

## ***Fourth International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2016)***

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

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- 5 Remote Sensing  
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- 6 Atmospheric  
**Albert Ansmann**, Leibniz Institute for Tropospheric Research  
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- 7 Remote Sensing  
**Luigi Barazzetti**, Politecnico di Milano (Italy)

- 8 Natural Hazards: Special Session  
**Vincent Ambrosia**, NASA (United States)  
**Ioannis Gitas**, Aristotle University (Greece)  
**Konstantina Makra**, Institute of Engineering Seismology and Earthquake Engineering (Greece)
- 9 Sensing the Past: Remote Monitoring for Archaeology and Cultural Heritage  
**Rosa Lasaponara**, CNR (Italy)  
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- 22 Copernicus Contribution to Cultural Heritage  
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## Introduction

The organizing committee, scientific committee and editors would like to thank the authors and participants who attended the Fourth International Conference on Remote Sensing and Geoinformation of Environment (RSCy2016) in Paphos, Cyprus, which took place 4–8 April 2016. The conference focused on emerging issues in remote sensing and geo-information 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 RSCy2016 Conference was organized by the Cyprus Remote Sensing Society and co-organized by the Cyprus University of Technology, ESA (European Space Agency), NASA (National Aeronautics and Space Administration), ETEK (Cyprus Scientific and Technical Chamber), the Department of Meteorology, the Department of Electronic Communications of the Ministry of Communications and Works, GEO (Group on Earth Observations), DLR (German Aerospace Center), the Agricultural Research Institute, Copernicus, Frederick University and Neapolis University. Supporters of the RSCy2016 include the CLIMA, PROTHEGO and ATHENA project consortium, who are included in the workshops "Sensing the Past: Remote Monitoring for Archaeology and Cultural Heritage" and "Copernicus contribution to Cultural Heritage".

The conference was opened by Marios Demetriades, Minister of Communication and Public Works. The conference included six keynote talks, over 150 presentations, 24 sessions and two workshops, presented by experts from over 35 countries. We thank the authors for sharing their knowledge and enthusiasm.

The RSCy2016 was a great opportunity to host the ATHENA-Remote Sensing Science Center for Cultural Heritage workshop. The ATHENA project has received funding from the European Union's Horizon 2020 research and innovation programme, grant agreement No 691936, under the "Spreading Excellence and Widening Participation", of the call H2020-TWINN-2015: Twinning (Coordination and Support Action). The ATHENA project aims to establish a Center of Excellence in the field of remote sensing for cultural heritage in the areas of archaeology and cultural heritage through the development of an enhanced knowledge base and innovative methods. This center will be established by combining the existing Remote Sensing and Geo-environment Research Laboratory at the Cyprus University of Technology (CUT) with internationally-leading counterparts from other member states of the EU, such as the Institute of Archaeological and Architectural Heritage of the National Research Council of Italy (IBAM- CNR) and the German Aerospace Centre (DLR). The CLIMA and PROTHEGO consortiums are funded in the framework of the Joint Programming Initiative on Cultural Heritage and Global Change (JPICH) – HERITAGE PLUS, under ERA-NET Plus, and the Seventh Framework Programme (FP7) of the European Commission. The CLIMA project explores how webGIS and remote sensing can be useful tools to monitor, protect and manage

Archaeological landscapes from environmental risks. The PROTHEGO project aims to make an innovative contribution towards the analysis of geohazards in areas of cultural heritage in Europe.

The following papers, 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 nine major themes: Agriculture, Atmospheric, Coastal Waters-Ocean-Large Water Regions, Remote Sensing for Cultural Heritage, GIS, Land Cover, Real Estate-Blue & Green Growth, Remote Sensing, Seismic-Flooding-Fires-Hazards, and Surveillance. The abstracts and subsequent papers make important contributions to the open scientific literature on remote sensing and geoinformation. As well, the conference was enhanced by the inclusion the special session on Natural Hazards as well as the workshops, "Sensing the Past: Remote Monitoring for Archaeology and Cultural Heritage," "Copernicus Contribution to Cultural Heritage," and "Defense and Security." We are honored that so many experts from all over the world specializing in so many diverse areas of remote sensing and geoinformation attended the conference. This conference was an excellent opportunity for colleagues to share their knowledge, network and collaborate together on future research.

We would like to thank the keynote speakers, conference review committee, organizing committee, and session chairs for providing assistance during the conference. We would also like to thank our sponsors for their support. Thank you as well to the staff at SPIE for following the proceedings through the publication process.

**Kyriacos Themistocleous**  
**Diofantos G. Hadjimitsis**  
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**Giorgos Papadavid**

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