



Workshop

Advances in Remote Sensing for Cultural Heritage: from site detection, to documentation and risk monitoring

Programme

12 November 2015, 8:30-13:00

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| 08:30 – 09:00 | Registration |
| 09:00 – 10:00 | Opening Ceremony: ESA, EARSeL, CNR, ASI |
| 10:00 – 12:00 | Plenary Session Invited Keynotes |
| 10:00 – 10:20 | <u>Application of InSAR for Cultural Heritage Risk Monitoring</u> <i>D. Evans and T. Farr</i> |
| 10:20 – 10:40 | <u>Remote Sensing For Cultural Heritage Documentation and Risk Monitoring</u> <i>E. Brugnoli</i> |
| 10:40 – 11:00 | Coffee Break |
| 11:00 – 11:20 | <u>A Report from ICOMOS: The Emerging Role of Satellite and Aerial Remote Sensing in Managing Archaeological World Heritage Sites</u> <i>D. Comer</i> |
| 11:20 – 11.40 | Cultural innovation <i>R. Pozzo</i> |
| 11.40 – 12.00 | Discussion |
| 12:00 – 13:00 | Session Mapping, Documentation and Monitoring of Cultural Heritage along Silk Road <i>Chair: D. Evans</i> |
| 12:00 – 12:15 | <u>Mission of HIST and its International Projects Along the Silk Road</u> <i>T. Hong</i> |
| 12:15 – 12:30 | <u>Silk Road : remote sensing for a smart management of cultural heritage from site detection to monitoring and documentation</u> <i>N. Masini; F. Chen, R. Lasaponara</i> |
| 12:30 – 12:45 | <u>On the use of historical archive of aerial photographs for the discovery and interpretation of ancient hidden linear cultural relics in the alluvial plain of eastern Henan, China</u> <i>P. Lu; R. Yang; P. Chen; Y. Guo; F. Chen; N. Masini; R. Lasaponara</i> |
| 12:45 – 13:00 | Satellite X-, C- and L-band radar data to image the cultural heritage and landscape of the Yumen Frontier Pass and Niya ruins in the Western Regions of the Silk Road Corridor <i>F. Chen; N. Masini; J. Liu; J. You; R. Lasaponara</i> |
| 13:00 – 14:00 | Discussion and Lunch Break |



12 November 2015, 14:00-18:00

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| 14:00 – 17:00 | Session Historical Landscapes and Environmental Analysis <i>Chair: Rosa Lasaponara (CNR/IMAA, Italy)</i> |
| 14:00 – 14:15 | <u>Submerged Palaeolandscape Monitoring with Sentinel-1</u> <i>C. Stewart</i> |
| 14:15 – 14:30 | <u>Multi-temporal archaeological and environmental prospection in Nasca (Peru) with ERS-1/2, ENVISAT and Sentinel-1A C-band SAR data</u> <i>F. Cigna; D. Tapete; R. Lasaponara; N. Masini</i> |
| 14:30 – 14:45 | A multi-disciplinary approach for monitoring cultural heritage: the satellite-based SAR technique integrated with structural models and geo-hazard maps. <i>M. Marsella, P. J. V. D'Aranno, S. Scifoni, M. Scutti, A. Sonnessa</i> |
| 14:45 – 15:00 | Discussion |
| 15:00 – 15:30 | <i>Coffee Break</i> |
| 15:30 – 15:45 | <u>Remote Sensing for Archaeological Research in the Province of Santa Cruz, Argentina</u> <i>D. Marchionni; R. Goñi; G. Cassiodoro; F. Guichón; A. R. J. Dellepiane; J. F. Coni; S. G. Guraieb</i> |
| 15:45 – 16:00 | <u>Combined Use of High-Resolution Satellite Imagery and Ground Data for Research on the Original Inhabitants of Patagonia, Argentina</u> <i>G. S. de Salmuni; D. Marchionni; R. Lasaponara</i> |
| 16:00 – 16:15 | <u>A Cross-Comparative Study for the use of CORONA Satellite Imagery in Diverse Archaeological Landscapes</u> <i>T. Kalayci</i> |
| 16:15 – 16:30 | <u>The Territory of Ancient Caere</u> <i>P. Tartara</i> |
| 16:30 – 17:00 | Discussion |
| 17:00 – 18:00 | Poster Session and Ice Breaker |



13 November 2015, 9:00-12:30

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| 09:00 – 10:30 | <p style="text-align: center;">Session</p> <p style="text-align: center;">Techniques for Archaeological Propection</p> <p style="text-align: center;"><i>Chair: Chris Stewart (RSAC c/o ESA)</i></p> |
| 09:00 – 09:15 | <p>Invited Keynote</p> <p>On the integration of aerial, satellite and geophysical prospection data for the detection and documentation of archaeological heritage: case studies in Peru and Bolivia <i>N. Masini; M. Sileo; A. Pecci; R. Lasaponara</i></p> |
| 09:15 – 09:30 | <p><u>Analysis of SAR Sensitivity to Archaeological Proxy Indicators</u> <i>C. Stewart</i></p> |
| 09:30 – 09:45 | <p><u>The potential of airborne LiDAR for detection of new archaeological sites in Romania</u> <i>I. Pavel; P. Anca; L. Zavate; B. S. Stefan</i></p> |
| 09:45 – 10:00 | <p><u>Overview of Remote Sensing applications for Cultural Heritage in Cyprus in the “Pre-ESA” era.</u> <i>A. Agapiou; V. Lysandrou; B. Cuca; D. Hadjimitsis</i></p> |
| 10:00 – 10:15 | <p><u>Remote sensing for archaeological studies and territory management: case study of the roman city of Lucus Asturum (Asturias, Spain)</u> <i>O. R. Pagés; J. F. Calleja</i></p> |
| 10:15 – 10:30 | Discussion |
| 10:30 – 11:00 | <i>Coffee Break</i> |
| 11:00 – 12:30 | <p style="text-align: center;">Session</p> <p style="text-align: center;">Applications of SAR for Cultural Heritage Risk Monitoring</p> <p style="text-align: center;"><i>Chair: Francesco Sarti (ESA)</i></p> |
| 11:00 – 11:15 | <p><u>Surveying and monitoring of cultural heritage: the role of the COSMO-SkyMed mission</u> <i>P. Sacco; M. L. Battagliere; M. G. Daraio; A. Coletta</i></p> |
| 11:15 – 11:30 | <p><u>Supporting hazard assessment of the Italian cultural heritage using the satellite active A-DInSAR/PSInSAR remote sensing techniques</u> <i>G. Avanzi; M. Morigi; N. Straccia</i></p> |
| 11:30 – 11:45 | <p><u>Radar remote sensing for the Angkor World Heritage site</u> <i>F. Chen</i></p> |
| 11:45 – 12:00 | <p><u>A novel VHR SAR solution to monitor archaeological looting from space</u> <i>D. Tapete; F. Cigna</i></p> |
| 12:00 – 12:15 | <p><u>TerraSAR-X and Sentinel-1A change detection in historic urban settings: an example in the Middle East</u> <i>D. Tapete; F. Cigna</i></p> |
| 12:15 – 12:30 | Discussion |
| 12:30 – 13:30 | <i>Lunch Break</i> |



13 November 2015, 13:30-18:00

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| 13:30 – 15:15 | <p style="text-align: center;">Session</p> <p style="text-align: center;">Integrated monitoring systems for the preservation of cultural heritage</p> <p style="text-align: center;"><i>Chair: Nicola Masini (CNR/IBAM, Italy)</i></p> |
| 13:30 – 13:45 | <p><u>Remote Sensing Analysis for the Study of Cultural Heritage in the Mesoamerican Corridor</u> <i>J. G. Rejas; M.C. Pineda; J. Bonatti</i></p> |
| 13:45 – 14:00 | <p><u>Cultural Landscape risk Identification, Management and Assessment (CLIMA)</u> <i>A. Di Iorio; S. De Angeli; J. Patruno</i></p> |
| 14:00 – 14:15 | <p><u>An Integrated, Open-Source Set of Tools for Urban Risk Monitoring Using Earth Observation Data in a Context of Cultural Heritage Preservation</u> <i>D. De Vecchi; M. Harb; D. A. Galeazzo; F. Dell'Acqua</i></p> |
| 14:15 – 14:30 | <p><u>Innovative Technologies and Applications for Coastal Archaeological sites</u> <u>FP7 - ITACA</u> <i>A. Di Iorio, S. Bollanos, L. B. Hansen, M. Bagni</i></p> |
| 14:30 – 14:45 | <p><u>Impact map of natural hazards</u> <i>M. B. Dan; C. O. Gociman</i></p> |
| 14:45 – 15:00 | <p><u>VIDEOR: Cultural Heritage risk assessment and monitoring on the Web</u> <i>A. Monteleone</i></p> |
| 15:00 – 15:30 | Discussion |
| 15:30 – 16:00 | <i>Coffee Break</i> |
| 16:00 – 17:30 | <p style="text-align: center;">Session</p> <p style="text-align: center;">Remote Sensing Data Integration for Cultural Heritage Management</p> <p style="text-align: center;"><i>Chair: Douglas C. Comer (CRSM, USA)</i></p> |
| 16:00 – 16:15 | <p><u>3D settlement model generation and landscape change: contributions to image-based digital retrospection of the demolished village of Breginj, Slovenia</u> <i>T. Veljanovski; Ž. Kokalj</i></p> |
| 16:15 – 16:30 | <p><u>Open data integration: from satellite to UAV for protection of built environments. The San Clemente archaeological site inside the Centa River bed in Albenga</u> <i>L. Barazzetti; R. Brumana; B. Cuca; M. Previtali; R. Valente</i></p> |
| 16:30 – 16:45 | <p><u>Inaccessible and Remote Archaeological Landscapes. Earth Observation to explore late Holocene human-environment interactions in the central Sahara</u> <i>F. C. Conesa; S. Biagetti and S. Merlo</i></p> |
| 16:45 – 17:00 | <p><u>World Heritage observation and education by using Remote Sensing and digital Geomedia</u> <i>S. Naumann; N. Wolf; A. Siegmund</i></p> |
| 17:00 – 17:15 | <p><u>Applications of Synthetic Aperture Radar for Archaeological Documentation in North Sinai</u> <i>C. Stewart</i></p> |
| 17:15 – 17:30 | <p><u>Application of remote sensing techniques combined to identify and delineate the archaeological heritage of the valley of the White River in Écija, Sevilla</u> <i>D.V. Torres</i></p> |
| 17:30 – 18:00 | Closing Discussion and Ceremony |

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Poster Session 12 November

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| <u>Natural heritage sites from space: Monitoring the National Park of Iguazú, Argentina-Brazil</u> <i>M. Presutti; G. S. De Salmuni</i> |
| <u>Spatial analysis for the study of environmental settlement patterns: the archaeological sites of the Santa Cruz County</u> <i>M. Danese; N. Masini; R. Goñi; G. Cassiodoro; F. Guichón; R. Lasaponara</i> |
| <u>Multi-temporal data fusion techniques for archaeological prospection in Poland (Sławsko case study)</u> <i>D. Ruciński; S. Królewicz; Ł. Banaszek; W. Rączkowski</i> |
| <u>Early Medieval Stronghold in Sławsko from a remote sensing perspective: Adding New Fragments to an Old Puzzle</u> <i>Ł. Banaszek; W. Rączkowski; D. Ruciński</i> |
| <u>Challenging mountainous landscapes: the stratified cultural heritage of Crete from the Air</u> <i>G. Cantoro</i> |
| <u>UAV proximal remote sensing for the 3D documentation of complex ancient quarries.</u> <i>S. Cara; C. Matzuzzi</i> |
| <u>Numidian Burial Landscapes: Analysing the Archaeological Record and its Changing Conditions with Remote Sensing Techniques.</u> <i>I. Cruz-Folch; D. Montanero; J. Campillo; J. Sanmartí</i> |
| <u>Detecting traces of Roman Centuriation in large-scale, old aerial photos: a case study of Pavia, Italy</u> <i>F. Dell'Acqua; M. E. Gorrini; G. Lisini; G. C. Iannelli; C. Mussi; N. Ricardi; M. T.A. Robino</i> |
| <u>Airborne Monitoring: case study of Abruzzo</u> <i>P. Tartara</i> |
| <u>Satellite archaeological surveys through "Bing Maps" satellite images: a new perspective</u> <i>D. Mastroianni</i> |
| <u>Remote sensing and ground truth comparison for the analysis of crop-marks in Capitanata - Italy.</u> <i>C. A. Sabia</i> |
| <u>Sensing patterns: unveiling archaeological landscapes through Pattern Recognition in Remote Sensing.</u> <i>A. Traviglia; A. Torsello</i> |
| <u>Extracting ancient irrigation canals from Chinese GF-1 VHR panchromatic imagery: a case study of the Milan archaeological site on the Silk Road</u> <i>L. Luo; X. Wang; J. Liu; H. Guo; R. Lasaponara</i> |
| <u>Space Archaeology: disciplinary attributes, research objects, methods and tasks</u> <i>X. Wang; H. Guo; L. Luo; L. Zhu</i> |
| <u>Deciphering palimpsests. Satellite images and non-invasive archaeology in favor of tracing changes in the rural landscapes in Poland.</u> <i>M. Kostyrko; D. Ruciński; A. Wilgocka</i> |
| <u>Structural health monitoring of the natural bridge, Puente del Inca, Mendoza, Argentina</u> <i>E. Lannutti; M. G. Lenzano; J. Barón; L. Lenzano</i> |
| <u>Trace of the ancient Via Salaria in the Lower Tiber Valley as seen by Landsat</u> <i>MA Panu Hyppönen</i> |
| <u>Cultural Landscape risk Identification, Management and Assessment (CLIMA)</u> <i>A. Di Iorio; S. De Angeli; J. Patruno; M.C. Salvi</i> |
| <u>Remote Sensing and UNESCO European Heritage sites affected by geo-hazard : PROTHEGO project proposal.</u> <i>Claudio Margottini, Daniele Spizzichino, Francesca Cigna, Giovanni B. Crosta, Paolo Frattini, Kyriacos Themistocleous and José Antonio Fernandez Merodo.</i> |
| <u>Mapping of pre-Columbian Settlement Topography through UAS Photogrammetry</u> <i>T. Sonnemann</i> |

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