EARSeL
Remote sensing of forest fire
Data, science and operational applications

3-5 October 2019
Rome, Italy

ORGANIZED BY
3 October 2019

8.45-9.00 Welcome M. Inguscio CNR President, F. Trincardi Director of DTA, E. Lapenna IMAA Director
9.00-9.15 Open Ceremony R. Lasaponara Research Director CNR-IMAA, A. Provenzale IGG Director and I. Z. Gitas EARSel FF SIG
9.15-9.30 Ioannis Z. Gitas: recent and future activities of the EARSel FF SIG group

9.30-10.00 Invited ANTONELLO PROVENZALE: “WILDFIRES IN THE MEDITERRANEAN: TRENDS AND FUTURE PROJECTIONS”

10.00-11.00 Session: Dynamic modelling of fire occurrence, fuel and fuel moisture models
Chair: Garick Gutman (NASA)

- Testing Operational use of Sentinel 2 for fire danger assessment and management in Italy.
  Authors: Paolo Fiorucci, Guido Blondi, Edoardo Cremone, Mirko D’Andrea, Elisabetta Fiort, Michel Isabelloni, Luca Pulvirenti, Giuseppe Squicciarino
- Support Wildfire management in Mediterranean Territories using multi-source satellite images.
  Authors: Giovanni Lanne, Valerio Pampanoni, Ramón Bueno Morles, Riyazuddin Shaik
- Use of GIS for the dynamic generation of forest fire risk maps based on a probabilistic model and Forest Fire Weather Index.
  Authors: Gacen Mohamed El Amine, Benhanifa Khatir, Mansour Djamel, Benshila Naima, Chabi Mohamed
- Exploring ECOSTRESS data for wildfires in Mediterranean ecosystems.
  Authors: Stefania Amicci, Kerry Cawse-Nicholson, Simon Hock, Vittorio Cannas

11.00-11.30 Coffee Break and Poster Session

11.30-13.30 Session: Dynamic modelling of fire occurrence, fuel and fuel moisture models
Chair: David Roy (Michigan State University)

- Current improvements at INPE’s Fire System for Brazil and Latin America.
  Authors: Alberto Setzer, Fabiano Morelli, William D.M. Rosa
- Projection of forest fire danger due to climate change in Greece.
  Authors: Vassiliki Varela, Diamando Vlachogiannis, Athanasios Stetos, Stelios Karosis, Rosa Lasaponara
- Attribution of the role of global warming in recent forest fires in Europe.
  Authors: Peter Van Velthoven, Folmer Krikken, Flavio Lehner, Karsten Haustein, Igor Drobyshev, Geert Jan van Oldenborgh
- Towards a comprehensive characterisation of flammability and fire danger in Australia.
  Authors: M. Yebra, A. Van dijk, A., Cary
  Authors: Israr Albar, Raffles B. Panjaitan, Bambang Hero Saharjo
- Sub-seasonal predictability of forest fire danger in Finland.
  Authors: Andreas Vajda, Cecilia Karlsson, Otto Hyvärinen
- H SAF project: satellite derived products for the monitoring of precipitation, soil moisture and snow cover.
  Authors: Silvia Puca, Marco Petracca
- A patch-based multisensor approach for fuel types mapping in a Mediterranean landscape.
  Authors: Jean-Philippe Denux, Véronique Chéret, Marie Parrens

13.30-15.00 Launch and Poster Session
Remote sensing of forest fire
Data, science and operational applications

15.00-15.30 Invited EMILIO CHUVIECO: “REMOTE SENSING OF BURNED AREAS: DATA, SCIENCE AND APPLICATIONS”

15.30-16.30 Session: Fire detection and monitoring on multiple scales
Chair: Luigi Boschetti (University of Idaho)

- NASA FIRMS: Near Real-Time Global Fire Monitoring using Data from MODIS and VIIRS.
  Authors: Diane Davies, Greg Ederer, Otmar Olsina, Minnie Wong, Matthew Cechini, Ryan Boller
- Airborne high resolution remote sensing for near real time forest fire detection and surveillance.
  Authors: Alexander Almer, Thomas Schnabel, Roland Perko, Armin Köfler
- The ESA Sentinel 3 Fire Detection Prototype Algorithm and Product.
  Authors: Olivier Arino, Fabrizio Raimo, Fabrizio Pera
- Development of a Harmonized Multi-Sensor Global Active Fire Data Set: Current Status and Multi-Product Validation Results.
  Authors: Joanne V. Hall, Wilfrid Schroeder, Chengquan Huang, Louis Giglio

16.30-17.00 Coffee Break and Poster Session

17.00-18.00 Session: Fire detection and monitoring on multiple scales
Chair: Olivier Arino (ESA)

  Authors: Yifang Ban, Puzhao Zhang, Andrea Nassetti
- On the estimation of fire susceptibility, fire expansion and post-fire damage based on the integration of satellite, meteorological data and forecasts: the experience of firesat project
  Authors: Rosa Lasaponara, Angelo Aromando, Gianfranco Cardettini, Ugo Albano, Guido Loperte, Liliana Santoro, Caivano Alberto
- Implementation of Airborne MidWave Infrared Imagery for Mapping Wildfires.
  Authors: Gabriela Ilifimov, Tomas Naprstek, George Leblanc, Madeline Lee, J. Pablo Arroyo-Mora, Joshua Johnston
  Authors: Joshua M. Johnston, Helena van Mierlo, Didier Davignon, Tom Schiks, Alan S. Cantin, Colin McFayden

Chair: Emilio Chuvieco (University of Alcala)
18.00:18.30 Round table and general discussion
19.00 Ice beaker and social dinner

4 October 2019

9.00-9.30 Invited JESUS S. MIGUEL: “WILDFIRE MONITORING: FROM LOCAL TO GLOBAL SCALES”

9.30-10.30 Session: Fire emissions estimation and air quality monitoring
Chairs: Jesus S. Miguel (IRC)

- Application of mobile ground-based remote sensing systems to study plume dynamics of large wildfires.
  Authors: Craig B. Clements, Taylor Aydell, Matthew Brewer, and Nicholas McCarthy
- A weather-based prediction method to forecast regional emissions from wildfires in African grasslands.
  Authors: Tero Partanen, Mikhail Sofiev
Remote sensing of forest fire
Data, science and operational applications

- Developing Earth observation based products on fire intensity and fire emissions to support operational fire management in savanna areas.
  Authors: Rücker G., Popovic D., Tiemann J., Leimbach D.
- Comparing burned area and combustion efficiency for estimating GHG and particulate emissions from Italian fires.
  Authors: Carla Scarpa, Valentina Bacciu, Davide Ascoli, Michele Salis, Costantino Sirca, Marco Marchetti, Donatella Spano

10.30-11.00 Coffee Break and Poster Session

11.00-12.30 Session: Remote Sensing of Burned Areas: Data, Science and Applications
Chair: Vincent Ambrosia (NASA)

- Fully automated burned area mapping using Sentinel-2 imagery and following the multiple spectral–spatial classification approach.
  Authors: Dimitris Stavrakoudis, Thomas Katagis, Chara Minakou, Ioannis Z. Gitas
- Rhetoricus® Wildfires: actionable geoinformation on burnt areas for post-fire assessment.
  Authors: Antonello Aiello, Giulio Ceriola, Vincenzo Barbieri
- A rule-based semi-automatic method to map burned areas using Landsat and Sentinel-2 images – revisited and improved.
  Authors: Nikos Koutsias, Magdalini Pleniu
- Extending time series of burned area estimations: from Terra-MODIS 250 m to Sentinel 3-OLCI 300 m.
  Authors: Joshua Lizundia-Loiola, Magí Franquesa, Grit Kirches, M. Lucrêcia Pettinari, Gonzalo Otón, Martin Boettcher, Emilio Chuvieco
- Temporal decorrelation analysis of C-band backscatter coefficient in burned areas.
  Authors: Miguel A. Belenguer-Plomer, Mitha A. Tanase, Emilio Chuvieco
- Evaluating the capability of LiDAR data measure post-fire effects using a radiative transfer modelling approach.
  Authors: Mariano García, Peter North, Jacqueline Rosette, Magí Franquesa, María Pilar Martín, Rosario Gonzalez-Cascon, Javier Becerra

Chair: Ioannis Z. Gitas (Aristotle University of Thessaloniki)
12.30-13.00 Round Table
13.00-14.30 Launch and Poster Session

14.30: 15.00 Invited VINCENT AMBROSIA: "THE NASA WILDFIRE RESEARCH AND APPLICATIONS EFFORTS AND CONTRIBUTIONS TO GEO-GLOBAL WILDFIRE INFORMATION SYSTEM (GEO-GWIS)"

15.00-16.00 Session: Fire Remote Sensing of Burned Areas and fire severity : Data, Science and Applications
Chair: Rosa Lasaponara (CNR-IMAA)

- Operational application of remote-sensing for assessing prescribed burn severity, bushfire fuel structure and fuel moisture content in the forests of the australian capital territory.
  Authors: Adam Leavesley, Marta Yebra, Albert Van Dijk, Petter Nyman, Brian Levine, Tony Scherl, Neil Cooper
- Correlating Sentinel-1 C-Band SAR and Sentinel-2 Multispectral Time Series for Burn Severity Estimation.
  Authors: Puzhao Zhang, Andrea Nascetti, Yifang Ban
- Uni-temporal approach for fire severity mapping using multispectral simulated databases and Random Forests.
  Authors: Raquel Montorio, Fernando Pérez-Cabello, Daniel Borini Alves, Alberto García-Martín
- Remote sensing of forest fires: operational applications in the matter of repression of the phenomenon
  Authors: Marco di Fonzo

16.00:16.30 Coffee Break
16:30-18.00_Session: Exploring fire-related forest dynamics
Chair: Antonello Provenzale (CNR - IGG)

- Exploring fire-related forest dynamics in the Aosta Valley (Italy) through multivariate analysis and linear trends of Landsat time series.
  Authors: Donato Morresi, Raffaella Marzano, Renzo Motta, Matteo Garbarino
- Evaluation of satellite time series spectral and temporal segmentation methods for fire disturbance detection and mapping.
  Authors: Stefanos Papaiovardanidis, Thomas Katagis, Ioannis Z. Gitas
- Results and Recommendations from the Wildfire Remote Sensing Workshop at the EO Summit 2017 in Montreal.
  Authors: Helena Van Mierlo, Joshua M. Johnston
  Authors: Helena Van Mierlo, Joshua M. Johnston, Didier Davignon, Linh Ngo Phong, Natasha Jackson, Catherine Casgrain
- Semi-automatic fuel break monitoring with Sentinel-2 imagery.
  Authors: João M. N. Silva, Valentine Aubard, Duarte Oom, Manuel L. F. Campagnolo, José M. C. Pereira, João E. P. Pires, Miguel E. S. Lourenço, Rita A. Ribeiro, José M. Fonseca, André D. Mora
- Assessment of fire-induced mortality of Russian forests based on multi-year time series of MODIS data.
  Authors: Bartalev Sergey, Strytenku Fedor, Egorov Vyacheslav, Loupian Evgeny

18.00-18.30 General discussion and closing ceremony
19.00 Light dinner and night excursion: Coliseum and “Fori Imperiali”

POSTER SESSION

- Forest fire susceptibility modelling using boosted regression tree data mining technique.
  Authors: Hamid Reza Pourghassemi, Rosa Lasaponara
- The use of Random Forest classifier for the mapping of burnt areas based on satellite sentinel 1 and sentinel 2 data.
  Authors: Carmen Fattore, Rosa Lasaponara
- New methods for burn severity extraction from satellite data: The Self-Organizing Map
  Authors: Maria Danese, Rosa Lasaponara, Carmen Fattore, Gianfranco Cardettini, Angelo Aromando
- On the Impacts that Fire on Soil and Hydrogeological Risk: the case study of Basilicata Region
  Authors: Maria Danese, Gianfranco Cardettini, Angelo Aromando and Rosa Lasaponara
- Satellite based burnt areas and burn severity mapping: preliminary results in the framework of SERV-FORFIRE project
  Authors: Rosa Lasaponara, Angelo Aromando, Gianfranco Cardettini, Carmen Fattore, Monica Proto
- Integrated services and approaches for assessing effects of climate change and extreme events for fire and post fire risk prevention.
  Authors: Rosa Lasaponara, Andrea Vajda, Cerdan Oliver, Vassiliki Varela, Peter Van Velthoven, Mirek Trnka, Massimiliano Pasqui, Carlo Calafiore, Mario Lo Porto, Brunella Rago, Emanuele Pallozzi, Nicola Afflitto, Angelo Aromando, Gianfranco Cardettini, Carmen Fatto, Monica Proto, Ari Venalainen, Cecilia Karlsson, Tero Partanen, Mikhail Sofiev, Rostislav Kouznetsov, Rosalie Vandrome, Baptiste Vigneron, Geert Jan van Oldenborgh, Folmer Kruijken
- Analysis, interpretation and discussion on mismatch of Fire severity mapping from UAV, Sentinel-2, and EFFIS: case studies in the Basilicata Region
  Authors: Nicodemo Abate, Rosa Lasaponara, Carmen Fattore
- Fire emission estimation using LandSat TM: the case study of Ionian coast (Southern Italy)
  Authors: Gianfranco Cardettini, Angelo Aromando, Rosa Lasaponara
- Monitoring and mitigation of fire risk for the protection and preservation of Cultural Heritage
  Authors: Massini Nicola, Rosa Lasaponara

5 October 2019
09.00 - 13.00, Piazza Navona and Trastevere Rione
Logistic details
CNR headquarter | Conference room | Sala Marconi

CNR headquarter
Location
Piazzale Aldo Moro, 7, Roma

The CNR premises are nearly 1.5 km far from the Roma Termini railway station.
You can reach CNR by bus (n. 492) or by walking in about 15 minutes.

More information at: https://www.cnr.it/en/reach-headquarters

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