



Workshop Program

13th EARSeL Workshop on Forest Fires 2024

Date: Thursday, 19/Sept/2024

8:00am - 5:00pm	Registration Location: Registration Desk
8:30am - 10:00am	Welcome Coffee Location: Coffee Hall
10:00am - 10:30am	Opening Ceremony (EARSeL representative, CNR IREA representative, Daniela Stroppiana local organizer) Location: Auditorium Chair: Daniela Stroppiana
10:30am - 11:00am	Keynote 1 Toward Long-Term Global Fire Data Sets: Early Satellite-Based Fire Remote Sensing in the Age of the Beatles Louis Giglio (University of Maryland, USA) Location: Auditorium Chair: Kevin Tansey
11:00am - 12:30pm	Oral Session 1.1: Active fire and burned area products Location: Auditorium Chair: Kevin Tansey
	Global and Regional Burned Area Products of the ESA FireCCI Project: Current Products and Perspectives M. Lucrecia Pettinari , Amin Khairoun, Erika Solano, Thomas Storm, Martin Boettcher, Emilio Chuvieco
	Burned Area Mapping With Sentinel-2 Based on Reflectance Modelling and Deep Learning – Global Calibration and Preliminary Validation Marc Padilla , Ruben Ramo, Sergio Sierra, Bernardo Mota, Roselyne Lacaze, Kevin Tansey
	Complementary Earth Observation Approaches to Advance Fire Emission Estimation Matthias Forkel , Daniel Kinalczyk, Christine Wessollek, Niels Andela, Jos de Laat, Vincent Huijnen, Christopher Marrs, Dave van Wees, Stephen Plummer
	A Deep Learning Approach for Active Fire Detection Using Multi-Temporal Geostationary Satellite Data Jayendra Praveen Kumar Chorapalli , Max Bereczky, Dmitry Rashkovetsky, Paul Walther, Martin Werner
	Multi-resolution Monitoring of the 2023 Maui Wildfires, Implications and Recommendations for a Dedicated Fire Monitoring Satellite Constellation David Roy , Hugo De Lemos, Haiyan Huang, Louis Giglio, Rasmus Houborg, Tomoaki Miura
12:30pm - 1:00pm	Poster: Opening of the Poster Session Location: Auditorium
12:30pm - 6:30pm	Poster exhibition Location: Sala Expo
1:00pm - 2:00pm	Lunch break (Buffet lunch) Location: Sala B

Date: Thursday, 19/Sept/2024

2:00pm Oral Session 1.2: Fuel type and characteristics mapping and modelling

- Location: **Auditorium**

3:30pm Session chair: Rosa Lasaponara

Regional Wildland Fuel Type Mapping Using Sentinel-2 Timeseries And Spectral-Spatial Support Vector Machines

Michail Sismanis, Dimitris Stavrakoudis, Nikos Georgopoulos, Konstantinos Antoniadis, [Ioannis Gitas](#)

Analyzing Fuel Continuity By Using Terrestrial Laser Scanner Data To Simulate Fire Behaviour

Roberto Ferrara, [Stefano Arrizza](#), Angelo Arca, Bachisio Arca, Pierpaolo Masia, Michele Salis, Grazia Pellizzaro

Assessing The Capabilities Of GEDI To Predict Forest Canopy Bulk Density

[Elena Aragoneses](#), Mariano García, Hao Tang, Emilio Chuvieco

Towards Data-Driven Fire Management: From Comprehensive Fuel Characterization Data To Satellite Sensors Design

[Marta Yebra](#), Nicolas Younes, Gianluca Scortecini

Integrating Phenology in Operational Early Warning for Forest Fires Using Sentinel-2 Data

[Nicolò Perello](#), Andrea Trucchia, Mirko D'Andrea, Olga Parshina, Giuseppe Squicciarino, Luca Pulvirenti, Paolo Fiorucci

3:30pm

- **Coffee Break**

4:30pm Location: **Coffee Hall**

4:30pm Oral Session 1.3: Multi-source data and algorithms

- Location: **Auditorium**

6:00pm Chair: [Elena Aragoneses](#)

Predicting Fire Severity In The French Mediterranean Area From Pre-Fire Time Series Of Remote Sensing And Meteorological Data

[Victor Penot](#), Thomas Opitz, François Pimont, Olivier Merlin

Mapping Burnt Areas and Fire Effects in Mediterranean Forests using Machine Learning with Optical and SAR Satellite Imagery

[Giandomenico De Luca](#), João M.N. Silva, Giuseppe Modica

Characterizing Fuel Types, Loadings And Fire Behaviour In Central European Forests Using A Combination Of Proximate And Remote Sensing Techniques

Pia Labenski, Michael Ewald, Sebastian Schmidlein, [Fabian Ewald Fassnacht](#)

EUMETSAT Efforts to Establish the European (NRT) Satellite Constellation: Observations of Wildfire Events with FCI's New Imaging Capabilities, Validation of EUMETSAT's FIR Active Fires Monitoring Product and Current Status of the Sentinel-3 NRT FRP Product

[Andrea Meraner](#), Julien Chimot, Johan Strandgren, Hans-Joachim Lutz, Alessandro Burini, Sauli Joro, Bojan Bojkov

6:00pm

- **Workshop dinner (Bus departure from CNR, Monza city tour)**

11:00pm

Date: Friday, 20/Sept/2024

8:00am - 10:00am **Registration**
Location: **Registration Desk**

9:00am - 9:30am **Keynote 2**
The new Fire Atlas of Portugal
Josè Pereira (University of Lisbon, Portugal)
Location: **Auditorium**
Chair: **Duarte Pedro Oom**

9:00am - 5:00pm **Poster exhibition**
Location: **Sala Expo**

9:30am - 11:00am **Oral Session 2.1: Validation**
Location: **Auditorium**
Chair: **Duarte Pedro Oom**

A proposed evaluation Framework on Quality Assurance for EO-based fire products
Bernardo Mota, Louis Giglio

Validation Of A New Long-term Burned Area Product Compared With High-Resolution Burned Area Data Sets
Jaime González-Delgado, Consuelo Gonzalo-Martín, Ángel García-Pedrero, Meryeme Boumahdi, Mario Lillo Saavedra

Validation Of Regional And Global FireCCI Burned Area Products
Daniela Stroppiana, Erika Solano Romero, Amin Khairoun, Bhogendra Mishra, M. Lucrecia Pettinari, Emilio Chuvieco

Intercomparison and Validation of the MODIS and VIIRS Global Burned Area Products
Luigi Boschetti, David Roy, Louis Giglio, Vladyslav Oles

11:00am - 11:30am **Coffee Break**
Location: **Coffee Hall**

11:30am - 1:00pm **Oral Session 2.2: Regional applications**
Location: **Auditorium**
Chair: **Marta Yebra**

Large Scale Assessment of Fire Impacts On Siberian Peatlands Carbon Through High-resolution Datasets
Amin Khairoun, Philippe Ciais, Thu-Hang Nguyen, Chunjing Qiu, Filipe Aires, Sander Veraverbeke, Clement J. F. Delcourt, Emilio Chuvieco

Rapid UK Wildfire Mapping with Planet data
Akram Abdulla, **Kevin Tansey**

The Forest Fire Danger Prediction System of Mexico
Daniel Jose Vega-Nieva, Jaime Briseño Reyes, Carlos Briones Herrera, Adrián Silva Cardoza, José Javier Corral Rivas, Pablito Marcelo López Serrano, Eduardo Cruz Castañeda, César Alberto Robles Gutiérrez, Yair Ricardez, Juan Miguel Campos Muñoz, Fabiola Esquerra, Alicia Verónica Salas, Ursula Berenice García Herrera, María Isabel Cruz López, Martín Cuahutle Cuahutle, Rainer Ressler, William Matthew Jolly, Robert E. Burgan, Ernesto Alvarado, Sean A. Parks, Lisa M. Holsinger

Data-Driven Wildfire Spread Modelling Of European Wildfires
Moritz Rösch, Michael Nolde, Torsten Riedlinger

1:00pm - 2:00pm **Lunch break (Buffet lunch)**
Location: **Sala B**

Date: Friday, 20/Sept/2024

2:00pm Oral Session 2.3: Operational systems and services

- Location: **Auditorium**

3:30pm Chair: **Luigi Boschetti**

Monitoring Wildfires from Copernicus Sentinels and Integration in the CAMS Service

Dominika Leskow-Czyżewska, Julien Chimot, Andrea Meraner, Mark Parrington, Federico Fierli

Fire monitoring in Europe: the role of the European Forest Fire Information System (EFFIS)

Duarte Oom, Jesús San Miguel Ayanz, Alfredo Branco, Pieralberto Maianti, Roberto Boca, Daniele de Rigo, Davide Ferrari, Tracy Durrant, Elena Roglia, Nicola Scionti, Maria Suarez-Moreno, Marco Broglia

Project SERAFIM – A Constellation of Nanosatellites for Rapid Active Fire Detection and Burnt Area Mapping

Max Berezky, Dmitry Rashkovetsky, Michael Nolde, Torsten Riedlinger, Michael Schmitt

A Glimpse into the Potential Impact of Meteosat Third Generation's Flexible Combined Imager on Wildfire Detection from Satellites

Valerio Pampanoni, Giovanni Laneve

3:30pm

- **Coffee Break**

4:00pm Location: **Coffee Hall**

4:00pm **Workshop closing: Panel discussion & closing (Panel: Emilio Chuvieco, Jesus San Miguel, Ioannis Gitas, Louis Giglio, José Pereira)**

- Location: **Auditorium**

5:00pm Chair: **Daniela Stroppiana**



Poster Exhibition

Date: from Thursday, 19/Sept/2024 12.30 pm to Friday, 20/Sept/2024 05.00 pm

Location: Sala Expo

- 1. Deep Learning Approach for Spectral Unmixing of PRISMA Data in Wildfire Scenario**
Carbone, Andrea; Amici, Stefania; Spiller, Dario; Laneve, Giovanni
- 2. Fire Occurrence Drivers and Their Evolution Through Two Decades in Spain: Machine Learning and SHAP Spatial Variables Analyses**
Arrogante-Funes, Fátima; G. Bruzón, Adrián; Arrogante-Funes, Patricia; Pettinari, M. Lucrecia; Aguado, Inmaculada
- 3. Post-fire Dynamics of Habitat Heterogeneity in Mediterranean Landscapes Revealed by Time-series Analysis of Satellite Data**
Lechtman, May; Bar-Massada, Avi
- 4. Comparison of Fire Radiative Energy Estimates from the MODIS and VIIRS Active Fire Products**
Dodd, Jennifer; Boschetti, Luigi; Oles, Vladyslav
- 5. Comparative analysis of burned area mapping techniques using Sentinel-2 images of Google Earth Engine for Mexico**
Briones Herrera, Carlos Ivan; Vega-Nieva, Daniel Jose; Silva Cardoza, Adrián Israel; Briseño Reyes, Jaime; López Serrano, Pablito Marcelo; Corral Rivas, José Javier; Álvarez González, Juan Gabriel; Jolly, William Mathew; Silva, João M.
- 6. Automation of geomatic processes for the Forest Fire Danger Prediction System of Mexico**
Briseño Reyes, Jaime; Vega Nieva, Daniel; Briones Herrera, Carlos; Silva cardoza, Adrián
- 7. Assessing the Impact of Wildfires on Lake Water Quality Worldwide from Satellite Data**
Caroni, Rossana; Pinardi, Monica; Free, Gary; Stroppiana, Daniela; Parigi, Lorenzo; Greife, Anna Joelle; Bresciani, Mariano; Lupo, Luigi; Albergel, Clement; Giardino, Claudia
- 8. Assessing the Performance of Copernicus Sentinel2 Fire Perimeter Datasets in 2021 and 2022 Fire Seasons: a Case Study from Sardinia**
Del Giudice, Liliana; Scarpa, Carla; Salis, Michele; Pellizzaro, Grazia; Bacciu, Valentina; Arca, Bachisio; Duce, Pierpaolo
- 9. Monitor Post-Fire Vegetation Dynamics In Forest Ecosystems At Monte Morrone (Abruzzo, Italy)**
Filipponi, Federico; Sarti, Maurizio; Rezaie, Negar; Adducci, Francesca; D'Andrea, Ettore
- 10. The Use Of Sentinel-1 Synthetic Aperture Radar Data For Mapping Burned Areas**
Gatti, Alessandro; Manzoni, Marco; Monti-Guarnieri, Andrea; Sona, Giovanna; Venuti, Giovanna; Stroppiana, Daniela
- 11. Analysis Of Post-fire Vegetation Succession Processes Using Class Membership Probabilities (RF), Multitemporal Vectors, And Trend Analysis Applied To Landsat Imagery**
Iranzo, Cristian; Pérez-Cabello, Fernando; Larraz Juan, Sergio
- 12. 1985-2020 Trends In Wildfire Burn Severity In Aragon, Spain**
Montorio, Raquel; Pérez-Cabello, Fernando; Hoffrén, Raúl; Iranzo, Cristian
- 13. The Comparison Of 1D And 3D-CNN Classification Of Satellite Observations For Wildfire Susceptibility**
Ivanda, Antonia; Šerić, Ljiljana; Stipaničev, Darko; Krstinić, Damir; Bugarić, Marin; Braović, Maja
- 14. Mapping Wildfire Scares – NDVI vs. NBR vs. AFRI**
Karnieli, Arnon; Salvoldi, Manuel
- 15. On the Potentiality Of The Sentinel-1 For Fire Severity Assessment: The Experience Of Firesat Project**
Lasaponara, Rosa; Abate, Nicodemo; Aromando, Angelo; Loperte, Guido; Di Bello, Giovanni
- 16. Exploring the Time-lag Effect of Meteorological and Vegetation Features on European Summer Wildfires with Explainable Artificial Intelligence (XAI)**
Li, Hanyu; Vulova, Stenka; Rocha, Alby Duarte; Kleinschmit, Birgit
- 17. Burned Area Detector: a QGIS Plugin for Mapping Burned Areas from Sentinel-2 Images**
Martinoli, Thomas; Bordogna, Gloria; Brivio, Pietro Alessandro; Fraternali, Piero; Sali, Matteo; Sona, Giovanna; Venuti, Giovanna; Stroppiana, Daniela
- 18. Lidar-Based Modeling Of The Interaction Between Wildfires And Bark Beetle Outbreak: New Perspective For Italian Forests**
Mauri, Luca; Lingua, Emanuele
- 19. A Spectral Assessment Framework for Burned Detectability over Peatlands: a Case Study over Marden Moor Fires**
Mota, Bernardo; Reynolds, Nicole; Pustogvar, Anna
- 20. Burnt Area Monitoring In Near-Real Time – Combining High Spatial And Temporal Resolution**
Nolde, Michael; Rösch, Moritz; Riedlinger, Torsten
- 21. The Struggle To Combine Various Remote Sensing Data Into Input Layers For A Fire Modelling System – Example From The Czech Republic**
Novotny, Jan; Podebradska, Marketa; Kudlackova, Lucie; Píkl, Miroslav; Cienciala, Emil; Beranova, Jana; Trnka, Miroslav
- 22. A Remote Sensing-based Scalable Decision Support System for Assessing Forest Wildfire Vulnerability: Mont Avic Natural Park Case in Aosta Valley (Italy)**
Orusa, Tommaso; De Petris, Samuele; Sarvia, Filippo; Farbo, Alessandro; Cammareri, Duke; Freppaz, Davide; Borgogno-Mondino, Enrico

- 23. Change Detection Approaches with Synthetic Aperture Radar Images: Random Forests and Sentinel-1 Observations for Burned Areas Mapping**
Mastro, Pietro; Pepe, Antonio
- 24. Statistical Evaluation of the Impact of Wildfires on Forest Habitats Using Earth Observation Data and Machine Learning**
Agrillo, Emiliano; Filipponi, Federico; Inghilesi, Roberto; Mercatini, Alessandro; Pezzarossa, Alice; Tartaglione, Nazario
- 25. The PM2.5 Pollution from Biomass Burning in Galicia 2022**
Quishpe, Cesar; Oliva, Patricia
- 26. Extreme Climate Hazards Determining Fire Severity in Woodlands: A GeoAI Approach**
Shirvani, Zeinab; Ban, Yifang
- 27. Mapping Fire Severity based on Sentinel 2 Earth Engine Compositing Imagery for the Northern Region of México**
Silva-Cardoza, Adrián Israel; Vega-Nieva, Daniel José; Briseño-Reyes, Jaime; Silván-Cárdenas, José Luis
- 28. The Importance of a Buffer Window in the Evaluation of GEO Satellite Fire Detection Algorithms**
Vanunu, Asaf; Fonseca, Rodney; Galun, Meirav; Nadler, Boaz; Karnieli, Arnon
- 29. Examining Climate Drivers and Land Cover for Mediterranean Burned Area Prediction**
Vissio, Gabriele; Baudena, Mara; Fiorucci, Paolo; Provenzale, Antonello; Turco, Marco
- 30. Classification Of Fuel Types For Sardinia Region (Italy) From Time Series Of Sentinel-2 Data In The Framework Of The FirEURisk Project**
Voltolina, Debora; Stroppiana, Daniela; Salis, Michele; Arca, Bachisio; Sterlacchini, Simone; García, Mariano; Chuvieco, Emilio

