Preliminary 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

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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

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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

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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

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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 - 3:30pm

Oral Session 1.2: Fuel type and characteristics mapping and modelling
Location: **Auditorium**
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

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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

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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 - 4:30pm

Coffee Break
Location: **Coffee Hall**

4:30pm - 6:00pm

Oral Session 1.3: Multi-source data and algorithms
Location: **Auditorium**
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 Schmidtlein, Fabian Ewald Fassnacht

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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

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Non-climate Drivers Dominated Global Fire Activity Shifts in Recent Decades
Mark C. de Jong, Martin J. Wooster, Jonathan P.D. Mittaz

6:00pm - 11:00pm

Workshop dinner

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

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

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Generating High-quality Reference Data from Terrestrial and Airborne Laser Scanning Data for Large-scale Mapping of Canopy and Surface Fuel Loads in Fire-prone Forest Ecosystems
Nuria Sánchez López, Andrew T. Hudak, Jinyi Xia, Carlos Cabo, Diego Laiño, Benjamin C. Bright, Carlos A. Silva

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Intecomparison 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

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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 Ressl, William Matthew Jolly, Robert E. Burgan, Ernesto Alvarado, Sean A. Parks, Lisa M. Holsinger

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

Developing GOES 16 active fire assessment using polar satellites for Brazilian Wildfire Program
Paulo Victorino, Henrique Bernini, Fabiano Morelli, Paulo Cunha

1:00pm - 2:00pm

Lunch break (Buffet lunch)
Location: **Sala B**

Date: Friday, 20/Sept/2024

2:00pm - 3:30pm

Oral Session 2.3: Operational systems and services
Location: **Auditorium**
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 Bereczky, 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

The Use of RPAS Technologies as an Intelligence and Human Resource Tool During Active Wildfires
Gabriela Ifimov, George Leblanc, Margaret Kalacska, Oliver Lucanus, Juan Pablo Arroyo-Mora, Janine Gorman, Melanie Wheatley, Colin McFayden

3:30pm - 4:00pm

Coffee Break
Location: **Coffee Hall**

4:00pm - 5:00pm

Workshop closing: Panel discussion & closing (Panel: Emilio Chuvieco, Jesus San Miguel, Ioannis Gitas, Louis Giglio, Josè Pereira)
Location: **Auditorium**
Chair: **Daniela Stroppiana**

Poster Exhibition

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

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. Contribution Of High Resolution's Satellite Images (Sentinel 2) To The Modeling Of Bush Fire Regimes In An Area With Fragile Ecology: Case Of The Sudanian Savannahs Of Northen Cameroon
Bakaira, Markus; Sylvain, Aoudou Doua

4. Post-fire Dynamics of Habitat Heterogeneity in Mediterranean Landscapes Revealed by Time-series Analysis of Satellite Data
Lechtman, May; Bar-Massada, Avi

5. Comparison of Fire Radiative Energy Estimates from the MODIS and VIIRS Active Fire Products
Dodd, Jennifer; Boschetti, Luigi; Oles, Vladyslav

6. 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; Lópes Serrano, Pablito Marcelo; Corral Rivas, José Javier; Álvarez González, Juan Gabriel; Jolly, William Mathew; Silva, João M.

7. 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

8. 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

9. New Design Burned Area Blending Landsat 8 and 9 for Cerrado Biome the Case of MapIA30 Product
Cunha, Paulo; Bernini, Henrique; Morelli, Fabiano; Victorino, Paulo

10. 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

11. Complementarity Of Lidar And Sentinel-2 Time Series To Map Mediterranean Vegetation Fuel Types Using Features Selection And Deep Learning
Denux, Jean-Philippe; Vigouroux, Julie; Chéret, Véronique

12. Mediterranean Vegetation Water Status Monitoring Based On Sentinel-2 Time Series - results from the SentHyMED campaign
Denux, Jean-Philippe; Chéret, Véronique

13. Monitor Post-Fire Vegetation Dynamics In Forest Ecosystems At Monte Morrone (Abruzzo, Italy)
Filipponi, Federico; Sarti, Maurizio; Rezaie, Negar; Adducci, Francesca; D'Andrea, Ettore

14. 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

15. 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

16. 1985-2020 Trends In Wildfire Burn Severity In Aragon, Spain
Montorio, Raquel; Pérez-Cabello, Fernando; Hoffrén, Raúl; Iranzo, Cristian

17. 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

18. Mapping Wildfire Scares – NDVI vs. NBR vs. AFRI
Karnieli, Arnon; Salvoldi, Manuel

19. 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

20. 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

21. 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

22. Lidar-Based Modeling Of The Interaction Between Wildfires And Bark Beetle Outbreak: New Perspective For Italian Forests
Mauri, Luca; Lingua, Emanuele

23. A Spectral Assessment Framework for Burned Detectability over Peatlands: a Case Study over Marden Moor Fires
Mota, Bernardo; Reynolds, Nicole; Pustogvar, Anna

24. Burnt Area Monitoring In Near-Real Time – Combining High Spatial And Temporal Resolution
Nolde, Michael; Rösch, Moritz; Riedlinger, Torsten

25. 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; Pikl, Miroslav; Cienciala, Emil; Beranova, Jana; Trnka, Miroslav

26. Robust Dynamic Monitoring Tool For Systematic Surveillance Of Forest Fires By Synthetic Aperture Radar Imagery
Orban, Anne; Derauw, Dominique

27. 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

28. Change Detection Approaches with Synthetic Aperture Radar Images: Random Forests and Sentinel-1 Observations for Burned Areas Mapping
Mastro, Pietro; Pepe, Antonio

29. 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

30. The PM2.5 Pollution from Biomass Burning in Galicia 2022
Quishpe, Cesar; Oliva, Patricia

31. Assessing the Capability of Moderate Resolution Sensors to Detect Landscape Fires in Areas Under Shifting Cultivation in Laos
Roberts, Gareth; Unsworth, Alex

32. The Fire Regimes Of The Cerrado And Their Changes Through Time
Segura-Garcia, Carlota; C. Alencar, Ane A.; S. Arruda, Vera L.; Bauman, David; Silva, Wallace; Conciani, Dhemerson E.; Oliveras Menor, Imma

33. Extreme Climate Hazards Determining Fire Severity in Woodlands: A GeoAI Approach
Shirvani, Zeinab; Ban, Yifang

34. 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

35. Two Decades of Fire Activity over the PEEX domain using Satellite and Modelled Data
Sogacheva, Larisa; Virtanen, Timo H.; Sundström, Anu-Maija; Kolmonen, Pekka; Sofiev, Mikhail; Lappalainen, Hanna K.; Arola, Antti

36. Impact Of Deforestation On Fire Dynamics In The Dry Tropical Forests Of Southern Angola
Stellmes, Marion

37. 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

38. Examining Climate Drivers and Land Cover for Mediterranean Burned Area Prediction
Vissio, Gabriele; Baudena, Mara; Fiorucci, Paolo; Provenzale, Antonello; Turco, Marco

39. 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