

**Giovedì 19 Settembre 2024
AUDITORIUM (08.30 - 10.30)**

**S14 - HYDROTHERMAL ALTERATION IN ACTIVE AND EXTINGUISHED VOLCANIC SYSTEMS:
INTEGRATED APPROACH, OUTCOMES AND PERSPECTIVES**

Conveners: Monica Piochi (INGV, OV), Angela Mormone (INGV, OV), Teresa Caputo (INGV, OV),
Patrizia Contursi (UniNA; NBFC, PA)*

08.30 - 08.45

**Landscape changes and hydrothermal alteration along the acid sulfate slopes at the northern side
of the Ischia Island, Italy**

Teresa Caputo, Angela Mormone, Ermanno Marino, Monica Piochi

08.45 - 09.00

**X-Ray field-handheld Fluorescence and onsite diffraction techniques supporting convectional
mineral and geochemical analyses in mapping hydrothermal alteration: a first application at
Montagnone - Monte Cito on Ischia (Southern Italy)**

Angela Mormone, Teresa Caputo, Ermanno Marino, Giuseppina Balassone, Giuliana Alessio, Monica Piochi

09.00 - 09.15

**Discovery of novel glycosyl hydrolases from extreme environments: the case from magma
degassing at the Vulcano island**

*Emanuela Maresca, Martina Aulitto, Arianna De Risi, Gianfilippo De Astis, Angela Mormone, Monica
Piochi, Roberta Iacono, Andrea Strazzulli, Marco Moracci, Patrizia Contursi*

09.15 - 09.30

**Thermo-baric evolution of hydrothermal alteration along the SH2 deep-borehole, Sabatini
Volcanic District (Italy)**

Matteo Furlan, Francesca Godono, Federico Rossetti, Ahmad Rabiee, Guido Giordano

09.30 - 09.45

**Hydrothermal processes and variations in elemental sulfur viscosity. Implications for volcanic
hazard assessment**

Teresa Scolamacchia

09.45 - 10.00

**Hydrothermal alteration of the highly weakened lava dome of La Soufrière volcano, Guadeloupe
(Lesser Antilles)**

Roberto Moretti

10.00 - 10.15

**The Fourier transform infrared spectroscopy (FTIR) analysis for the clay mineralogy studies to
characterize different hydrothermal systems**

Germano Solomita, Francesca Corrado

10.15 - 10.30

Mineralogical data on the hydrothermal alteration zones and mineralizations of the Allumiere-Tolfa district (Central Italy)

Francesca Corrado, Germano Solomita

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AULA 1 (08.30 - 10.30)

S08 - MULTI-HAZARD AND RISK ASSESSMENT IN VOLCANIC AREAS: MODELS, APPLICATIONS AND CHALLENGES

Conveners: Agnese Turchi (PLINIUS-LUPT, NA), Annalisa Cappello (INGV, OE), Silvia Massaro (UniBA), Beatriz Martinez-Montesinos (INGV, OV), Andrea Bevilacqua (INGV, PI), Vera Pessina (INGV, MI)*

08.30 - 08.45

Reconstructing the Campanian Ignimbrite super-eruption combining plume dynamics and tephra dispersion models

Beatriz Martinez Montesinos, Yujiro J Suzuki, Leonardo Mingari, Antonio Costa

08.45 - 09.00

The 10 February 2022 pyroclastic density current at Etna: unraveling the trigger mechanism and propagation dynamics

Francesco Zuccarello, Daniele Andronico, Boris Behncke, Annalisa Cappello, Francesco Ciancitto, Paola Del Carlo, Mattia de' Michieli Vitturi, Alessio Di Roberto, Tomaso Esposti Ongaro, Gaetana Ganci

09.00 - 09.15

VolcFire: a novel numerical tool for mapping volcanic-induced fire hazards

Roberto Guardo, Giuseppe Bilotta, Gaetana Ganci, Francesco Zuccarello, Daniele Andronico, Annalisa Cappello

09.15 - 09.30

Modeling the priming mechanism of phreatic eruptions

Manuel Stocchi, Guillaume Houzeaux, Antonio Costa, Arnau Folch, Silvia Massaro, Roberto Sulpizio

09.30 - 09.45

Increase of volatiles output in the atmosphere at Vulcano Island inferred by SO₂ plume monitoring in the 2021-2023 period

Fabio Vita, Benedetto Schiavo, Claudio Inguaggiato, Salvatore Inguaggiato

09.45 - 10.00

Assessing ballistic hazard at Stromboli (Italy)

Andrea Bevilacqua, Augusto Neri, Patrizia Landi, Paola Del Carlo, Antonella Bertagnini, Massimo Pompilio, Alessio Di Roberto, Alessandro Tadini

10.00 - 10.15

Dynamic lava flow forecasting with real-time data integration

Louise Cordrie, Antonio Costa, Giovanni Macedonio, Francesco Zuccarello, Gaetana Ganci, Annalisa Cappello

10.15 – 10.30

A target-based approach for multi-hazard assessment: application to volcanic hazards

Alexander Garcia, Laura Sandri, Vera Pessina, Fabrizio Meroni, Elisa Varini, Annalisa Cappello

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AULA 2 (08.30 - 10.30)

S02 - INTEGRATED APPROACHES IN VOLCANIC STUDIES: FROM FIELD INVESTIGATIONS TO GEOCHRONOLOGY, STRATIGRAPHY, VOLCANO-TECTONICS AND GEOMORPHOLOGY

Conveners: Jacopo Natale(UniBA), Matteo Roverato (UniBO), Arianna Beatrice Malaguti (INGV, OE), Paola Donato (UniCAL), Gilda Risica (UniFI), Claudia Romagnoli (UniBO)*

08.30 - 08.45

⁴⁰Ar/³⁹Ar ages of the ignimbritic units of Pantelleria Island (Italy): revision of the stratigraphic sequence of major explosive eruptions

Alessandra Cinquegrani, Stéphane Scaillet, Silvio Giuseppe Rotolo

08.45 - 09.00

Advanced AI-based techniques for dating lava flows using high spatial-resolution satellite imagery: a case study of Mount Etna

Giovanni Di Bella, Claudia Corradino, Simona Cariello, Federica Torrisi, Ciro Del Negro

09.00 - 09.15

Stratigraphy, chronology and landscape evolution on the Vulcano Island (Italy) during the last 1100 years of activity

Federico Di Traglia, Marco Pistolesi, Costanza Bonadonna, Mauro Rosi

09.15 - 09.30

The \approx 14.5 ka tephra record from the NDT09 core in the Marsili basin and its implications for the timing and tempo of volcanic eruptions

Alessio Di Roberto, Bianca Scateni, Giuseppe Re, Donatella Domenica Insinga, Patrizia Macrì, Laura Bronzo, Antonio Cascella

09.30 - 09.45

Lava flow field development and lava tube formation during the 1858 eruption of Mount Vesuvius

Thomas Lemaire, Daniele Morgavi, Paola Petrosino, Sonia Calvari, Leopoldo Repola, Lorenzo Esposito, Diego Di Martire, Vincenzo Morra, Francesco Frondini

09.45 - 10.00

Unveiling the ancient history of the southwestern sector of Campi Flegrei through the stratigraphy, compositional variability and physical volcanology of the pre-caldera Vitafumo and Miliscola tuff cones

Ileana Santangelo, Claudio Scarpati, Annamaria Perrotta, Lorenzo Fedele, Paul Cole, Raffaello Cioni, Claudia D'Oriano, Mattia De' Michieli Vitturi, Federica Pardini, Fabio Speranza

10.00 - 10.15

Constraining the poorly known pre-CI volcanic activity of Campi Flegrei caldera through tephrostratigraphy and tephrochronology

Giada Fernandez and the Tephra Team

10.15 - 10.30

A high-resolution tephra record from Castiglione maar reveal the timing and unveils cryptic eruptions over the most recent volcanic activity at Colli Albani, Central Italy

Bianca Scateni, Gianfranco Di Vincenzo, Giuseppe Re, Gaia Siravo, Biagio Giaccio, Alessandra Smedile, Patrizia Macrì, Alessio Di Roberto

Giovedì 19 Settembre 2024
AUDITORIUM (15.00 - 17.30)

S04 - APPLICATIONS OF REMOTE SENSING TECHNOLOGY IN VOLCANO HAZARD MONITORING

Conveners: Emanuela De Beni (INGV, OE), Gaetana Ganci (INGV, OE), Cristina Proietti (INGV, OE), Christian Bignami (INGV, RM2), Stefano Corradini (INGV, RM), Alessandro Pignatelli (INGV, RM2)*

15.00 - 15.15

A new algorithm for the global-scale quantification of volcanic SO₂ exploiting Sentinel-5P TROPOMI and Google Earth Engine platform

Maddalena Dozzo, Alessandro Aiuppa, Giuseppe Bilotta, Annalisa Cappello, Gaetana Ganci

15.15 - 15.30

Dispersion modelling of the 2021 eruptive plumes at Mt. Etna by coupling WRF-Chem model with ground-based and satellite remote sensing observations

Agostino Semprebello, Giuseppe G. Salerno, Alessandro Gattuso, Pasquale Sellitto, Stefano Corradini, Lorenzo Guerrieri, Maria Teresa Caccamo, Manfredi Longo, Salvatore Magazù

15.30 - 15.45

Machine Learning-Based approach for volcanic cloud detection during the 2020-2022 Etna activity using MSG-SEVIRI data

Camilo Naranjo, Lorenzo Guerrieri, Stefano Corradini, Luca Merucci, Dario Stelitano, Matteo Picchiani

15.45 - 16.00

Applying Artificial Intelligence to satellite data for predicting volcanic eruptions: a case study of Etna Volcano

Carlotta Petrucci, Veronica Vignoli, Alessandro Pignatelli, Gaetana Ganci, Giulia Romoli, Francesco Spina

16.00 - 16.15

A hidden eruption: the 21 May 2023 paroxysm of Etna volcano (Italy)

Emanuela De Beni, Cristina Proietti, Simona Scollo, Massimo Cantarero, Luigi Mereu, Francesco Romeo, Laura Pioli, Mariangela Sciotto, Salvatore Alparone

16.15 - 16.30

10 Years of Sentinel-1 data to monitor the Italian volcanoes through DInSAR techniques

Fernando Monterroso and IREA CNR Team

16.30 - 16.45

A Deep Learning model for classifying ground deformations from Multi-Temporal SAR Interferometry

Giulia Romoli, Christian Bignami, Alessandro Pignatelli, Carlo Doglioni

16.45 – 17.00

Monitoring low-temperature volcanic features from space with TIRVolcH: applications to crater lakes

Simone Aveni, Andrew Harris, Dmitri Rouwet, Adele Campus, Marco Laiolo, Francesco Massimetti, Sophie Pailot-Bonn  tat, Diego Coppola

17.00 – 17.15

Long-term analysis of satellite-retrieved effusion rate: insights into 24 years of activity at Piton de la Fournaise

Adele Campus, Nicolas Villeneuve, Orya  lle Chevrel, Aline Peltier, Di Muro Andrea, Diego Coppola

17.15 – 17.30

Seamounts of the Mediterranean in comparison to worldwide occurrences and detectability through future gravity missions

Carla Braitenberg, Angelo De Min, Daniel Cozzolino

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AULA 1 (15.00 – 17.30)

S12 - REVEALING THE DYNAMICS OF OPEN-VENT VOLCANIC EXPLOSIVE ACTIVITY: A COMPREHENSIVE JOURNEY FROM MAGMA ASCENT TO ASH GENERATION

Conveners: Flora Giudicepietro (INGV, OV), Sonia Calvari (INGV, OE), Lucia Pappalardo (INGV, OV), Elena Cubellis (INGV, OV)*

15.00 – 15.15

Relationship between low-frequency volcano seismicity and gas flow at Mt. Etna (Italy) in the period January 2004-December 2015

Matteo Pagano, Giuseppe Salerno, Giuseppe Di Grazia, Carmelo Ferlito

15.15 – 15.30

The effects of pyroclastic flows on plume dispersal during mafic eruptions

Simona Scollo, Francesco Amadio, Luigi Mereu, Samuele Pili, Veronica Pili, Francesco Romeo, Laura Pioli

15.30 – 15.45

Ground deformation modelling of Conduit Flow Dynamics: Etna lava fountains case study

Giovanni Macedonio, Antonio Costa, Alessandro Bonaccorso, Luigi Carleo, Gilda Currenti, Flora Giudicepietro

15.45 – 16.00

Cone collapse triggered by paroxysmal eruptions at Etna: impacts and dynamics of the associated flows

Laura Pioli, Veronica Pili, Samuele Pili, Simona Scollo, Francesco Amadio, Emanuela De Beni, Massimo Cantarero

16.00 – 16.15

Long-term thermal emissions at open-vent volcanoes: insights on activity transition from the MIROVA database

Diego Coppola, Marco Laiolo, Francesco Massimetti, Adele Campus, Simone Aveni

16.15 – 16.30

Analysis of seismic signals preceding the overflows at Stromboli volcano

Pierfrancesco Calabria, Team Stromboli

16.30 – 16.45

Volcanological, geochemical and textural analysis of Mount Vesuvius 1906 eruption

Francesco Torrese, Ilenia Arienzo, Gianmarco Buono, Elena Cubellis, Mauro Antonio Di Vito, Lucia Pappalardo, Paola Petrosino, Domenico Sparice, Sandro De Vita

16.45 – 17.00

Vesuvius, 1631-1944: Beginning and end of a cycle of persistent activity

Roberto Scandone, Lisetta Giacomelli

17.00 – 17.15

Vesuvius in the 16th century

Flora Giudicepietro, Elena Cubellis, Pierluigi Leone de Castris, Federico Di Traglia, Lisetta Giacomelli, Chiara Martini, Lucia Pappalardo, Pierfrancesco Calabria, Roberto Scandone

17.15 – 17.30

Unsupervised clustering of seismic events recorded at Campi Flegrei caldera during the current unrest

Antonietta M. Esposito, Walter De Cesare, Giovanni Macedonio, Pierfrancesco Calabria, Flora Giudicepietro

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AULA 2 (15.00 - 16.30)

[Continua] S02 - INTEGRATED APPROACHES IN VOLCANIC STUDIES: FROM FIELD INVESTIGATIONS TO GEOCHRONOLOGY, STRATIGRAPHY, VOLCANO-TECTONICS AND GEOMORPHOLOGY

Conveners: Jacopo Natale (UniBA), Matteo Roverato (UniBO), Arianna Beatrice Malaguti (INGV, OE), Paola Donato (UniCAL), Gilda Risica (UniFI), Claudia Romagnoli (UniBO)*

15.00 - 15.15

The contribution of paleomagnetism and $^{40}\text{Ar}/^{39}\text{Ar}$ dating to unravel the dynamics and PDCs emplacement of the latest caldera-forming eruptions of Latera (Vulsini Volcanic District, Central Italy)

Arianna Beatrice Malaguti, Marco Pistolesi, Stéphane Scaillet, Fabio Speranza, Mauro Rosi, Alberto Renzulli

15.15 - 15.30

Stratigraphy of the prehistoric-historical hydrothermal crater field of Nisyros volcano (Dodecanese archipelago, Greece): insights for hazard evaluation in a touristic geosite

Jacopo Natale, Federico Lucchi, Silvia Massaro, Matteo Roverato, Roberto Sulpizio, Claudio Antonio Tranne, Georgios Vougioukalakis

15.30 - 15.45

Uneven Holocene eruptive frequency of the Cumbre Vieja (La Palma, Canary Islands) volcano: evidence from paleomagnetic dating

Andrea Magli, Fabio Speranza, Massimo Pompilio, Stavros Meletlidis, Alessio Di Roberto, Paola Del Carlo, Guido Giordano

15.45 - 16.00

Eruptive dynamics of a long-lasting, hybrid eruption: the 2021 Tajogaite eruption (La Palma, Spain)

Marija Voloschina, Serena Da Mommio, Marco Pistolesi, Costanza Bonadonna, Sebastien Biass, Beverley Coldwell, Fatima Rodríguez, Alba Martín-Lorenzo, Nemesio M. Pérez

16.00 - 16.15

Characteristics, morphometry, facies, and emplacement dynamics of the debris avalanche deposits from the Ollagüe Volcano, Central Volcanic Zone of the Andes

Jose Pablo Sepulveda, Emanuele Alni, Raffaello Cioni, Stephane Scaillet, Gabriel Ureta, Felipe Aguilera, Bruno Scaillet

16.15 - 16.30

3D fault geometry of a giant landslide on a volcanic island (Kilauea, Hawaii)

Stefano Mannini, Marc-Henri Derron, Joel Ruch, Nicolas Oestreicher