

PROGRAMMA DELLE SESSIONI SCIENTIFICHE

AUDITORIUM (12.00 - 13.30)

S11. THE PAROXYSMAL ERUPTIVE SEQUENCES OF MT. ETNA BETWEEN 2020 AND 2021

Conveners: *Giuseppe Salerno (INGV-OE), Ornella Cocina (INGV-OE), Salvatore Gambino (INGV-OE), Antonio Paonita (INGV-PA)*

12.00 – 12.15

The 2020-22 fire fountain episodes of the SE Crater of Etna: insight from monitoring data and hazard assessment

Stefano Branca, INGV-OE Monitoring Team, INGV-PA Monitoring Team

12.15 – 12.30

The most intense deflation of the last two decades at Etna volcano (Italy) analyzed by GNSS and tilt data: the 2019-2021 evolution of ground deformation and modelled pressure sources

Valentina Bruno, Marco Aloisi, Salvatore Gambino, Mario Mattia, Carmelo Ferlito, Massimo Rossi

12.30 – 12.45

Ground tilt changes associated to Mt. Etna lava fountain episodes (2008-2022)

Laura Privitera, Salvatore Gambino

12.45 – 13.00

Characterization of strain changes during the 2020-2021 Etna lava fountains

Luigi Carleo, Gilda Currenti, Alessandro Bonaccorso, Antonino Sicali

13.00 – 13.15

Etna 2011-22: what we have learned from a decade of paroxysmal eruptions at the volcano

Marisa Giuffrida, Rosario Calcagno, Massimiliano Cardone, Chiara Torre, Francesco Zuccarello, Marco Viccaro

13.15 – 13.30

Gas constraints on the source mechanisms of Mt. Etna 2021 paroxysmal lava fountains sequence

Giuseppe Salerno, Alessandro La Spina, Patrick Allard, Stefano Corradini, Luca Merucci, Lorenzo Guerrieri, Pietro Bonfanti, Dario Stelitano

AULA1 (12.00 – 13.30)

S03. TEPHROCHRONOLOGY: A POWERFUL TOOL FOR UNRAVELLING THE PAST

Conveners: *Lorenzo Monaco (UniPI), Alessio di Roberto (INGV-PI), Ivan Sunyé Puchol (UniRM1), Giuseppe Re (INGV-PI), Federica Totaro (UniNA)*

12.00 – 12.15

A tool for the evaluation of the completeness of the volcanic records in the Mediterranean area

Elisabetta Billotta, Roberto Sulpizio, Jacopo Selva, Antonio Costa

12.15–12.30

Tephrochronological study of the lacustrine succession of the Castiglione maar (Central Italy) and evaluation of the possible impact on the climate of the explosive eruptions of the peri-Tyrrhenic volcanoes

Bianca Scateni, Alessio Di Roberto, Giuseppe Re, Patrizia Macrì, Chiara Caricchi, Liliana Minelli, Gaia Siravo, Alessandra Smedile, Giovanni Zanchetta, Biagio Giaccio

12.30–12.45

Tephrochronology of marine sequences in a cold seep area of the SE Tyrrhenian Sea (Paola Basin) as a tool to reconstruct main episodes of methane release

Sara Meschiarì, Marzia Rovere, Donatella Insinga, Lucilla Capotondi, Paul G. Albert, Victoria C. Smith

12.45–13.00

The tephra layers in the Crotona sequence: a microanalytical study

Paola Donato, Chiara Benedetta Cannata, Antonio Giulio Cosentino, Mariano Davoli, Rosanna De Rosa

13.00–13.15

Insights into the explosive eruption history of Campi Flegrei prior to the Campanian Ignimbrite eruption

Sophie Vineberg, Roberto Isaia, Paul Albert, Victoria Smith

13.15–13.30

There she blows! Unravelling the eruptive history at Aso caldera (Japan) using distal ash deposits

Danielle McLean, Paul Albert, Gwydion Jones, Sophie Vineberg, Richard Staff, Hannah Buckland, Takehiko Suzuki, Jun-Ichi Kimura, Takeshi Nakagawa, Victoria Smith

AULA 2 (12.00–13.30)

S02. MULTIDISCIPLINARY APPROACHES FOR VOLCANO-TECTONIC STUDIES

Conveners: *Stefano Vitale (UniNA), Paolo Madonia (INGV-OE), Mariarosaria Falanga (UniSA), Roberto Isaia (INGV-OV), Jacopo Natale (UniNA)*

12.00–12.15

Earthquake cycles in Central America and the impact in the volcanic activity

Gino Gonzalez, Eisuke Fujita, Alexander Garcia, Bunichiro Shibasaki, Dmitri Rouwet, Takumi Hayashida, Federico Lucchi, Roberto Sulpizio, Antonio Costa, Marco Viccaro

12.15–12.30

Influence of tectonic inheritance on the distribution and characteristics of rift-related volcanism: examples from the Main Ethiopian Rift, East Africa

Giacomo Corti, Daniele Maestrelli, Federico Sani

12.30–12.45

Analysis of the aseismic deformation referred to the Ripe della Naca fault system (Mt. Etna): a volcano tectonic approach through geological and geophysical data

Salvatore Giuffrida, Silvia Portale, Fabio Brighenti, Francesco Carnemolla, Francesca Fichera, Enrico Indovina, Chiara Torre, Giorgio De Guidi, Salvatore D'Amico

12.45–13.00

Evidence of seismic-related liquefaction processes within the volcanic record of the Campi Flegrei caldera (Italy)
Stefano Vitale, Jacopo Natale, Roberto Isaia, Francesco D'Assisi Tramparulo, Sabatino Ciarcia

13.00–13.15

Volcano-tectonic, electrical and electromagnetic investigations at different resolutions highlight the structure of the most active sector of Campi Flegrei
Roberto Isaia, Maria Giulia Di Giuseppe, Jacopo Natale, Antonio Troiano, Stefano Vitale

13.15–13.30

Fault systems in the offshore sector of the Campi Flegrei caldera (southern Italy): implications for nested caldera structure, resurgent dome, and volcano-tectonic evolution
Jacopo Natale, Stefano Vitale, Roberto Isaia, Luigi Ferranti, Lena Steinmann, Volkhard Spiess, Marco Sacchi

AUDITORIUM (15.00–16.30)

[Continua] **S11. THE PAROXYSMAL ERUPTIVE SEQUENCES OF MT ETNA BETWEEN 2020 AND 2021**

Conveners: *Giuseppe Salerno (INGV-OE), Ornella Cocina (INGV-OE), Salvatore Gambino (INGV-OE), Antonio Paonita (INGV-PA)*

15.00–15.15

Investigating gas emissions from Mount Etna: a 50-yr retrospective
Patrick Allard

15.15–15.30

Timely mapping and quantification of the 2020-2021 Etna lava flows through the exploitation of multi-sensors remote-sensing data
Cristina Proietti, Massimo Cantarero, Emanuela De Beni, Gaetana Ganci, Tullio Ricci

15.30–15.45

Tracking lava flows during the 2021 Mt. Etna eruptions using Random Forest Machine Learning algorithm
Eleonora Amato, Claudia Corradino, Federica Torrisi, Ciro Del Negro

15.45–16.00

Hazards from pyroclastic density currents at Etna - revisited
Boris Behncke

16.00–16.15

Quantification of tephra mass deposited on road network during lava fountain activity in 2021-22 at Mt. Etna
Luigi Mereu, Manuel Stocchi, Alexander Garcia, Michele Prestifilippo, Laura Sandri, Costanza Bonadonna, Simona Scollo

16.15–16.30

Tracking volcanic clouds using machine learning techniques: the 2020-2022 Mt. Etna paroxysms
Federica Torrisi, Eleonora Amato, Claudia Corradino, Simona Cariello, Maide Bucolo, Luigi Fortuna, Ciro Del Negro

AULA 1 (15.00–17.00)

S15. THE MANIFOLD INTERACTION BETWEEN HUMANS AND VOLCANOES: INTERDISCIPLINARY STUDIES AROUND VOLCANOLOGY

Conveners: *Stefano Branca (INGV-OE), Mauro Antonio Di Vito (INGV-OV), Franco Foresta Martin (INGV-PA), Daniele Musumeci (UniCT), Orazio Palio (UniCT)*

15.00–15.15

$^{87}\text{Sr}/^{86}\text{Sr}$ isotopic ratios of archaeological obsidians from Ustica Island (Italy) confirm prehistoric imports from Lipari and Pantelleria
Franco Foresta Martin, Mariangela La Monica, Ilenia Arienzo, Monica Piochi, Silvio Rotolo, Sandro De Vita, Mauro Di Vito

15.15–15.30

Discriminating elements and data processing procedures to determine the provenance of central mediterranean obsidians: new insights and trials

Franco Foresta Martin, Enrico Massaro

15.30–15.45

Archaeology in relation with the geomorphology of the territory at the eastern foot of Etna. Connection between human and environment: new interpretations about prehistoric and historic settlement logic in the territories of Riposto, Fiumefreddo and Mascali (CT)

Dario Calderone, Giovanni De Giorgio

15.45–16.00

Clustered volcano-tectonic evolution in the central sector of the Main Ethiopian Rift and implications for early hominins evolution
Zara Franceschini, Raffaello Cioni, Giacomo Corti, Florian Duval, Diletta Frascerra, Gaëlle Prouteau, Federico Sani, Bruno Scaillet, Stéphane Scaillet, Abate Assan Melaku

16.00–16.15

"On volcanoes, or ignivomous mountains" of Giovanni Targioni Tozzetti (1779)

Paolo Sammuri

16.15–16.30

Legends and medieval sources in the volcanological studies of Lipari

Marco Manni

16.30–16.45

The role of cartography by Wolfgang Sartorius von Waltershausen (1809-1876) in the frame of the geological investigations of Etna volcano

Stefano Branca, Luigi Ingaliso, Daniele Musumeci

16.45–17.00

The evolution of Chilean volcanology in the 20th century and the work of Lorenzo Casertano

Daniele Musumeci, Giovanni Leone, Stefano Branca, Luigi Ingaliso

AULA 2 (15.00–17.15)

S13. FROM MULTI-HAZARD ASSESSMENT TO INTEGRATED RISK IN VOLCANIC AREAS: DATA-ENABLED SCIENCE AND APPLICATIONS WITH NUMERICAL TOOLS AND STATISTICAL METHODS

Conveners: *Raffaele Azzaro (INGV-OE), Andrea Bevilacqua (INGV-PI), Francesco Neglia (UniBA), Silvia Massaro (UniBA), Jacopo Selva (INGV-BO)*

15.00–15.15

VIGIL: a Python tool for forecasting and probabilistic gas dispersion modelling

Fabio Dioguardi, Silvia Massaro, Giovanni Chiadini, Antonio Costa, Arnau Folch, Giovanni Macedonio, Laura Sandri, Jacopo Selva

15.15–15.30

Computational fluid dynamics tools to replicate mono- and poly-disperse granular flows: powerful instruments to better understand physics of multiphase flow

Francesco Neglia, Fabio Dioguardi, Roberto Sulpizio

15.30–15.45

The total probabilistic long-term hazard of tephra fallout from Neapolitan volcanoes, and disaggregation analysis

Manuel Stocchi, Silvia Massaro, Beatriz Martínez Montesinos, Laura Sandri, Jacopo Selva, Antonio Costa, Roberto Sulpizio, Biagio Giaccio, Massimiliano Moscatelli, Edoardo Peronace, Marco Nocentini, Roberto Isaia, Manuel Titos Luzón

15.45–16.00

Geophysical and geological constraints for modelling the source of the 2017 Casamicciola volcano-tectonic earthquake as contribution to the assessment of the Ischia seismic hazard

Rosa Nappi, Rosella Nave, Giuliana Alessio, Valeria Siniscalchi, Giuseppe De Natale, Claudia Troise, Valeria Paoletti, Donato D'Antonio, Alessandro Fedele, Renato Somma, Enrico Vertechi, Sabrina Porfido, Luigina Vezzoli, Alessandro Maria Michetti

16.00–16.15

Slope stability assessment at Stromboli (Italy)

Federico Di Traglia

16.15–16.30

Pyroclastic avalanches hazard at Mt. Etna volcano

Francesco Zuccarello, Tomaso Esposti Ongaro, Mattia de' Michieli Vitturi, Gaetana Ganci

16.30–16.45

Fixing criteria for volcanic unrest warning

Horst Langer, Susanna Falsaperla, Salvatore Spampinato, Alfio Messina

16.45–17.00

Volcano-related hazards at Mt Etna: the new frontiers of the PANACEA project

Raffaele Azzaro, PANACEA Working Group

17.00–17.15

A multi-risk strategy for Mount Etna: new approaches from the PANACEA project

Vera Pessina, PANACEA Working Group