



6^a CONFERENZA A. RITTMANN

Catania 18 | 20 Settembre 2024



Programma



Con il patrocinio di



Comitati della Conferenza

Comitato Organizzatore

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 Carlo DOGLIONI - Presidente INGV
 Francesco PRIOLO - Rettore UniCT
 Rosolino CIRRINCIONE - Direttore DSBGA UNICT
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 Rosa Anna CORSARO – INGV Osservatorio Etneo
 Claudio Antonio TRANNE - Tesoriere AIV
 Alessandro VONA - Segretario AIV

Comitato Scientifico

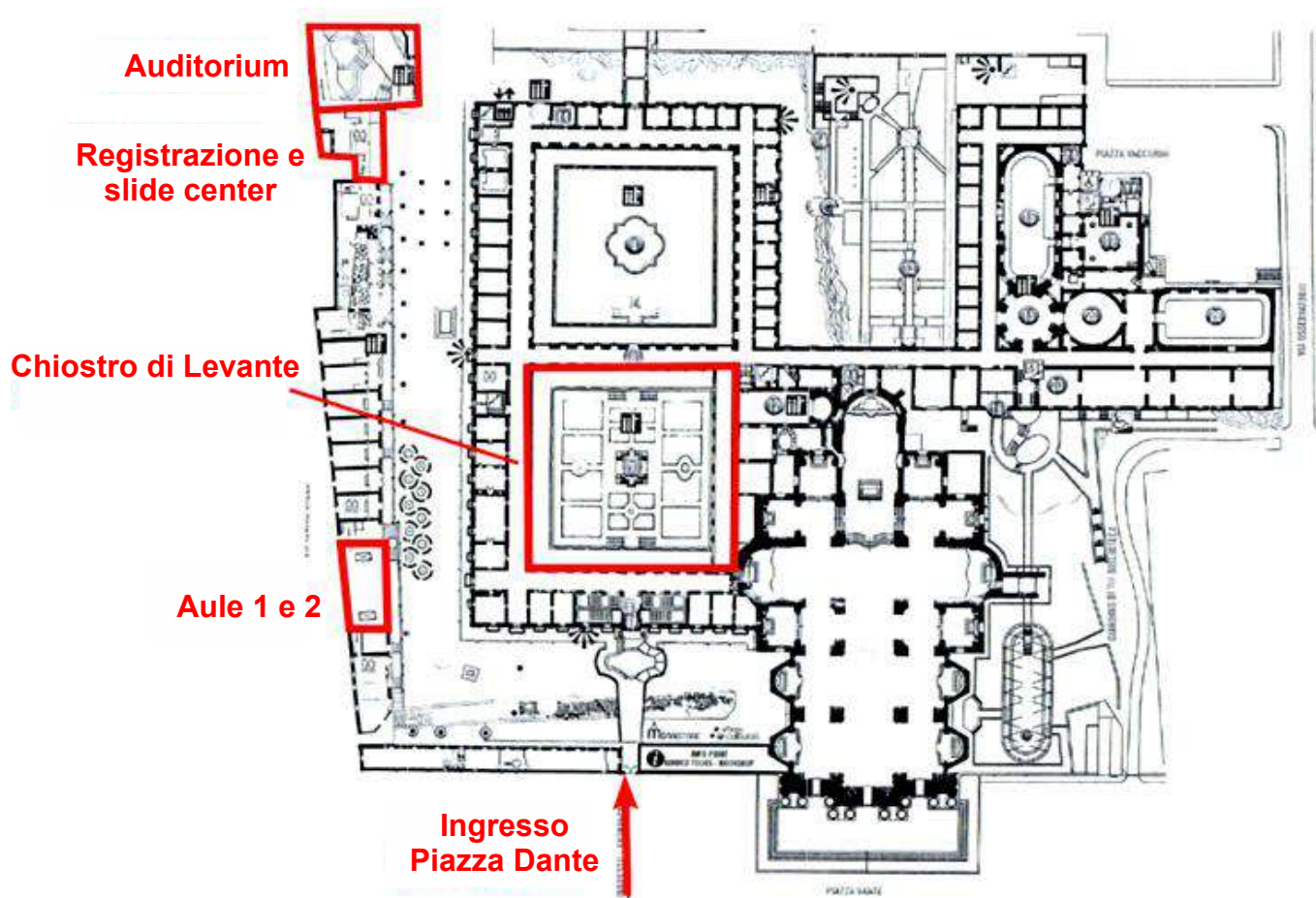
Sergio CALABRESE (UniPA)
 Andrea CANNATA (UniCT)
 Annalisa CAPPELLO (INGV-OE)
 Raffaello CIONI (UniFI)
 Paola DEL CARLO (INGV-PI)
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 Fabio SPERANZA (INGV-RM2)
 Laura SPINA (INGV-RM1)
 Micol TODESCO (INGV-BO)
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 Giorgio COSTA (UniCT)
 Marisa GIUFFRIDA (UniCT)
 Maria GUARNERA (INGV-OE)
 Web Group INGV

HELPERS a cura di UniCT

Sede della Conferenza



MONASTERO DEI BENEDETTINI DI SAN NICOLÒ L'ARENA - CATANIA

18 SETTEMBRE 2024			19 SETTEMBRE 2024			20 SETTEMBRE 2024				
Registrazione dei partecipanti			S14 (AUDITORIUM)		S8 (AULA 1)	S2 (AULA 2)		S13 (AUDITORIUM)	S5 (AULA 1)	S6 (AULA 2)
Saluti Istituzionali (AUDITORIUM)										
Opening plenary lecture - Costanza Bonadonna (Presidente IAVCEI) (AUDITORIUM)										
Coffee Break (CHIOSTRO DI LEVANTE)					Coffee Break (CHIOSTRO DI LEVANTE)		Coffee Break (CHIOSTRO DI LEVANTE)			
S7 (AUDITORIUM)			S15 (AULA 1)		FOCUS Campi Flegrei (AUDITORIUM)		S13 continua (AUDITORIUM)		S5 continua (AULA 1)	
					Plenary lectures by Mauro Di Vito (INGV-OV); Mauro Rosi (CGR-SRV); Titti Postiglione (DPC) Modera Marco Viccaro (Presidente AIV)				S6 continua (AULA 2)	
Pranzo (CHIOSTRO DI LEVANTE)					Pranzo (CHIOSTRO DI LEVANTE)		Pranzo (CHIOSTRO DI LEVANTE)			
S7 continua (AUDITORIUM)			S15 continua (AULA 1)				S1 (AUDITORIUM)		Workshop EPOS (AULA 2)	
S11 (AUDITORIUM)			S3 (AULA 1)		S4 (AUDITORIUM)		S2 continua (AULA 2)			
S16 continua (AULA 2)			S16 continua (AULA 2)							
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Conferenze Plenarie

CONFERENZA PLENARIA DI APERTURA

Mercoledì 18 Settembre 2024 ore 9.45 – 10.30
AUDITORIUM

Prof.ssa Costanza Bonadonna (Presidente IAVCEI)

The role of communities in advancing scientific knowledge: the IAVCEI example

FOCUS CAMPI FLEGREI

Giovedì 19 Settembre 2024 ore 11.00 – 13.30
AUDITORIUM

Dott. Mauro Di Vito (INGV – Osservatorio Vesuviano)

Campi Flegrei: monitoraggio e stato attuale

Prof. Mauro Rosi (Commissione Grandi Rischi – Settore Rischio Vulcanico)

Il ruolo degli scienziati nella gestione della crisi dei Campi Flegrei

Dott.ssa Titti Postiglione (Dipartimento della Protezione Civile)

Campi Flegrei: prevenzione del rischio e gestione della crisi

Discussione moderata dal Prof. Marco Viccaro (Presidente AIV)

ASSEMBLEA DEI SOCI DELL'ASSOCIAZIONE ITALIANA DI VULCANOLOGIA

Giovedì 19 Settembre 2024 ore 18.00 – 19.30
AUDITORIUM

CERIMONIA DI CHIUSURA DELLA 6A CONFERENZA A. RITTMANN

Venerdì 20 Settembre 2024 ore 16.30 – 17.30
AUDITORIUM



PROGRAMMA DELLE SESSIONI SCIENTIFICHE

AULA AUDITORIUM (11.00 - 13.00)

S07 - FROM THE VOLCANO TO THE LABORATORY (AND BACK): INSIGHTS INTO MAGMATIC PROCESSES AND ERUPTION DYNAMICS THROUGH EXPERIMENTS, MODELING AND FIELD OBSERVATIONS

Conveners: Barbara Bonechi (UniMan, Uk), Alessio Pontesilli (INGV, Rm1), Fabrizio Di Fiore (INGV, RM1), Alex Scarani (UniRM3), Fabio Arzilli (UniCAM), Giuseppe La Spina (INGV, OE)*

11.00 – 11.15

Fine particles and roughness effects on the granular flows mobility: insights from large-scale experiments

Francesco Neglia, Damiano Sarocchi, Fabio Dioguardi, Luis Angel Rodriguez-Sedano, Oscar Segura-Cisneros, Anibal Montenegro-Rios, Alexis Bougouin, Roberto Sulpizio

11.15 – 11.30

Characterisation of eruptive products from sub-glacial eruptions in the Mount Melbourne volcanic field (northern Victoria Land, Antarctica)

Irene Rocchi, Alessio Di Roberto, Pier Paolo Giacomoni, Sergio Rocchi

11.30 – 11.45

Eruptive dynamics of silicic peralkaline magmas from Pantelleria island

Carmine Magri, Alessandro Vona, Danilo Di Genova, Gabriele Giuliani, Claudia Romano

11.45 – 12.00

Viscous-flow-to-fracture transition: implications for magma fracturing and infrasound emission

Claudia Sánchez Álvarez, Mie Ichihara

12.00 – 12.15

An AI-based Lagrangian CFD emulator to model volcanic phenomena

Eleonora Amato, Vito Zago, Ciro Del Negro

12.15 – 12.30

New insights into the dynamics of vulcanian activity through a comparative analysis of three different ballistic bomb fields

Pietro Gabellini, Raffaello Cioni, Marco Pistolesi, Paola Donato, Rosanna De Rosa, Alessia Falasconi

12.30 – 12.45

Numerical modelling integrated with field observations and analytical data of the 2021 Cumbre Vieja eruption improves understanding of eruption dynamics in mafic systems

Elisa Biagioli, Giuseppe La Spina, Margherita Polacci, Barbara Bonechi, Jorge Moyano, Mike Burton

12.45 – 13.00

Outgassing behaviour during highly explosive basaltic eruptions

Emily C. Bamber, Giuseppe La Spina, Fabio Arzilli, Margherita Polacci, Lucia Mancini, Mattia de' Michieli Vitturi, Daniele Andronico, Rosa Anna Corsaro, Mike Burton.

AULA 1 (11.00 - 13.00)

S15 - A MULTIDISCIPLINARY VISION OF THE OBSERVATIONS AND EXPERIMENTATION FOR VOLCANOES MONITORING

Conveners: Umberto Tammaro (UniCT), Vincenzo Convertito (INGV, OV), Claudio Martino (INGV, OV)*

11.00 – 11.15

The GNSS - TEC analysis of Mt. Etna lava fountains

Federico Ferrara, Michela Ravanelli, Alessandro Bonforte, Vincenzo Carbone, Vincenzo Capparelli

11.15 – 11.30

The 2011-2023 lava fountains at Etna unveiled by high-precision strain changes

Luigi Carleo, Gilda Currenti, Alessandro Bonaccorso

11.30 – 11.45

Small-scale intrusive episodes (micro-dykes) at Mt. Etna: The November 15, 2022 case

Laura Privitera, Marco Aloisi, Flavio Cannavo', Giuseppe Di Grazia, Salvatore Gambino, Giuseppe Puglisi, Antonio Scaltrito

11.45 – 12.00

Framework for Evaluation of Early Detection Systems (FEEDS)

Vittorio Minio, Flavio Cannavò, Eugenio Privitera, Bellina Di Lieto, Pierdomenico Romano, Giorgio Lacanna, Maurizio Ripepe

12.00 – 12.15

Automatic detection and characterization of Very Long Period seismic events: an application on the Stromboli volcano seismicity

Sergio Gammaldi, Dario Delle Donne, Pasquale Cantiello, Antonella Bobbio, Walter De Cesare, Antonietta M. Esposito, Rosario Peluso, Massimo Orazi

12.15 – 12.30

Neolo: a modular and scalable system for real time multiparametric monitoring of Stromboli volcano

Pasquale Cantiello, Antonella Bobbio, Dario Delle Donne, Walter De Cesare, Alessandro Di Filippo, Antonietta M. Esposito, Sergio Gammaldi, Francesco Liguoro, Massimo Orazi, Rosario Peluso

12.30 – 12.45

Enhancing single-station seismic event detection using multiscale entropy and self-organizing maps

Alberico Grimaldi, Silvia Scarpetta, Ortensia Amoroso, Ferdinando Napolitano, Giovanni Messuti, Vincenzo Convertito, Danilo Galluzzo, Guido Gaudiosi, Lucia Nardone, Paolo Capuano

12.45 – 13.00

Continuous gravity observations at Campi Flegrei caldera: Analysis of tidal and non-tidal signals as a contribution to volcano monitoring

Umberto Ricciardi, Tommaso Pivetta, Alessandro Fedele, Giuseppe Ricciardi, Stefano Carlino

AULA 2 (11.00 – 13.00)

S16 - MULTIDISCIPLINARY APPROACH FOR UNDERSTANDING OF MAGMATIC SYSTEMS, VOLCANO-TECTONIC STRUCTURES AND THEIR INTERPLAY IN VOLCANO DYNAMIC EVOLUTION

Conveners: Roberto Isaia (INGV, OV), Maria Giulia Di Giuseppe (INGV, OV), Tommaso Pivetta (INGV, OV), Stefano Carlino (INGV, OV)*

11.00 – 11.15

3D interpretation and subsurface modelling of Meso-Cenozoic volcanic deposits in the Hyblean foreland (Sicily) by using wells and seismic reflection data

Francesca Godono, Lorenzo Lipparini, Damiano Chiacchieri, Martina Forzese, Sveva Corrado, Danilo Cavallaro, Marco Firetto Carlino, Guido Giordano

11.15 – 11.30

Exploring the crustal structure of Etna volcano (Italy) through Anisotropic P-Wave Tomography

Rosalia Lo Bue, Francesco Rappisi, Marco Firetto Carlino, Elisabetta Giampiccolo, Ornella Cocina, Brandon Paul Vanderbeek, Manuele Faccenda

11.30 – 11.45

Seismic response to volcanic processes at Mount Etna: coupling thermomechanical simulations with seismic wave-equation modelling

Michelle Bensing, Sergio Vinciguerra, Luca De Siena, Giuseppe Puglisi

11.45 – 12.00

The 2020-22 lava fountaining at Mt. Etna: one eruptive sequence, two magmatic stories

Massimiliano Cardone, Andrea Cannata, Marisa Giuffrida, Adriana Iozzia, Vittorio Minio, Marco Viccaro, Salvatore Gambino

12.00 – 12.15

3D electrical resistivity imaging of transcrustal magma system beneath the Campi Flegrei caldera

Roberto Isaia, Maria Giulia Di Giuseppe, Antonio Troiano, Claudio De Paola, Fabio Pagliara, Jo Gottsmann, Michael Stock, Victoria Smith

12.15 – 12.30

Magnetotelluric imaging of Pantelleria Caldera: implications for its active structures

Monica Sposato, Maria Giulia Di Giuseppe, Roberto Isaia, Antonio Troiano, Claudio De Paola, Rosa Di Maio

12.30 – 12.45

Fault reactivation and growth at rift-related calderas

Daniele Maestrelli, Giacomo Corti, Marco Bonini, Derek Keir, Pietro Facincani, Paola Vannucci, Chiara Del Ventisette, Domenico Montanari, Federico Sani

12.45 – 13.00

Reconstructing the plumbing system feeding the Auckland Volcanic Field by magma pathways retrogression

Eleonora Rivalta, Lorenzo Mantiloni, Geoff Kilgour, Ian Hamling, Sigrun Hreinsdottir, Michael Rowe, Jennifer Eccles

AUDITORIUM (14.30 – 15.15)

[Continua] **S07 - FROM THE VOLCANO TO THE LABORATORY (AND BACK): INSIGHTS INTO MAGMATIC PROCESSES AND ERUPTION DYNAMICS THROUGH EXPERIMENTS, MODELING AND FIELD OBSERVATIONS**

Conveners: Barbara Bonechi* (UniMan, Uk), Alessio Pontesilli (INGV, Rm1), Fabrizio Di Fiore (INGV, Rm1), Alex Scarani (UniRM3), Fabio Arzilli (UniCam), Giuseppe La Spina (INGV, OE)

14.30 – 14.45

Novel insights into dynamics and timescales of vesiculation in basaltic magmas by in situ HP-HT X-ray synchrotron radiography experiments

Barbara Bonechi, Margherita Polacci, Fabio Arzilli, Giuseppe La Spina, Jean-Louis Hazemann, Richard Brooker, Robert Atwood, Sebastian Marussi, Peter Lee, Mike Burton

14.45 – 15.00

Shallow magma rejuvenation sustained by the infiltration of CO₂-rich fluids: a case for Campi Flegrei unrest

Roberto Moretti

15.00 – 15.15

Discussione

AULA 1 (14.30 – 15.15)

[Continua] **S15 - A MULTIDISCIPLINARY VISION OF THE OBSERVATIONS AND EXPERIMENTATION FOR VOLCANOES MONITORING**

Conveners: Umberto Tammaro* (UniCT), Vincenzo Convertito (INGV, OV), Claudio Martino (INGV, OV)

14.30 – 14.45

Experiences of long-term seafloor displacement measurements in the Gulf of Pozzuoli, Campi Flegrei volcanic area

Sergio Guardato, Rosario Riccio, Sveva Rebecca Morelli, Marco Dupuis, Stefano Caliro, Prospero De Martino, Francesco Chierici, Giovanni Macedonio, Giovanni Iannaccone

14.45 – 15.00

From the detection of monitoring anomalies to the probabilistic forecast of the evolution of volcanic unrest: an entropy-based approach

Warner Marzocchi, Laura Sandri, Salvatore Ferrara, Jacopo Selva

15.00 – 15.15

Mefite lake monitoring by high-frequency TIR images

Cristiano Fidani, Alessandro Piscini, Massimo Calcara, Gianfranco Cianchini, Martina Orlando, Loredana Perrone, Dario Sabbagh, Maurizio Soldani

AULA 2 (14.30 – 15.30)

[Continua] **S16 - MULTIDISCIPLINARY APPROACH FOR UNDERSTANDING OF MAGMATIC SYSTEMS, VOLCANO-TECTONIC STRUCTURES AND THEIR INTERPLAY IN VOLCANO DYNAMIC EVOLUTION**

Conveners: Roberto Isaia* (INGV, OV), Maria Giulia Di Giuseppe (INGV, OV), Tommaso Pivetta (INGV, OV), Stefano Carlino (INGV, OV)

14.30 – 14.45

Volcanic activity on Vulcano Island (Aeolian Islands, Sicily, Italy) and its connection with deformation patterns in northern Sicily (Italy): GNSS and seismic evidence

Danilo Messina, Graziella Barberi, Valentina Bruno, Mario Mattia, Domenico Patanè, Fabrizio Pepe, Massimo Rossi, Luciano Scarfi

14.45 – 15.00

Characterization of the Vulcano's active geothermal system: an integrated approach based on geophysical models and numerical simulations

Carla Califano, Rosanna Salone, Antonio Troiano, Maria Giulia Di Giuseppe, Roberto Isaia, Rosa Di Maio

15.00 – 15.15

Characterizing the shallow hydrothermal system of Vulcano Island (Aeolian Islands, Italy) using geoelectrical survey: implications for the eruptive scenario

Anna Mocerino, Maria Giulia Di Giuseppe, Roberto Isaia, Claudio De Paola, Fabio Pagliara, Antonio Troiano, Rosa Di Maio

15.15 – 15.30

Integration of geophysical images and thermo-fluid dynamic modelling to understand the current dynamics of the Pisciarelli fumarole field (Campi Flegrei Caldera, Italy)

Rosanna Salone, Antonio Troiano, Maria Giulia Di Giuseppe, Roberto Isaia, Rosa Di Maio

AUDITORIUM (15.30 – 17.30)

S11 - PROBING ARCHITECTURES AND TIMESCALES OF VOLCANIC PLUMBING SYSTEMS BY MULTIDISCIPLINARY APPROACHES AND ADVANCED METHODOLOGIES

Conveners: Carlo Pelullo* (INGV, OV), Maurizio Petrelli (UniPG), Chiara P. Montagna (INGV, PI), Gianmarco Buono (INGV, OV), Claudia D'Oriano (INGV, PI)

15.30 – 15.45

Linking timescales of mafic recharge and radiative power during the February-March 2021 lava fountains events of Mt. Etna South-East crater

Chiara Maria Petrone, Rosa Anna Corsaro, Yannick Buret, Diego Coppola, Simone Aveni, Marco Laiolo

15.45 – 16.00

Timescales of terminal magma transfer during Mt. Etna May-June 2022 lateral effusive eruption inferred from ^{222}Rn in erupted lavas

Luca Terray, Giuseppe Gabriele Rapisarda, Salvo Giammanco, Pierre-Jean Gauthier, Vincent Breton, Stefano Romano

16.00 – 16.15

A digital twin for dyke intrusion – induced unrest at Mount Etna volcano

Rebecca Bruni, Deepak Garg, Martina Allegra, Flavio Cannavò, Gilda Currenti, Erica De Paolo, Chiara Paola Montagna, Paolo Papale

16.15 – 16.30

Mt. Etna feeding system and eastern flank: a 3D image from 18 years earthquake distribution and Marching Cube algorithms

Roberto Guardo

16.30 – 16.45

New insights on the evolution of the primordial plumbing system of Etna

Marisa Giuffrida, Eugenio Nicotra, Marco Viccaro

16.45 – 17.00

Timescales and dynamics of magmatic processes: inferences from compositional zoning in clinopyroxene crystals of the A.D. 79 eruption of Mt. Vesuvius

Pierangelo Romano, Carlo Pelullo, Ilenia Arienzo, Sumit Chakraborty, Domenico Doronzo, Domenico Sparice, Andrea Luca Rizzo, Mauro Antonio Di Vito

17.00 – 17.15

Optimization of Lithium diffusion modelling in plagioclase: implications for timescales assessment in open-conduit volcanoes

Simone Costa, Matteo Masotta, Fabio Colle, Pier Paolo Giacomoni, Claudia D'Oriano, Patrizia Landi

17.15 – 17.30

Reconstructing the plumbing system structure of a K-alkaline caldera: the case of the Bracciano caldera and the eruption of the Tufo Rosso a Scorie Nere

Alessandro Frontoni, Guilherme Gualda, Sandro Conticelli, Guido Giordano

AULA 1 (15.30 - 17.30)

S03 - OBSERVATION AND MODELLING OF THE ATMOSPHERIC DISPERSION AND FALLOUT OF VOLCANIC PRODUCTS

Conveners: Fabio Dioguardi (UniBA), Federica Pardini (INGV, PI), Simona Scollo (INGV, OE), Matteo Cerminara (INGV, PI)*

15.30 – 15.45

Combining visible- and infrared-wavelength observations with numerical modelling to describe vulcanian eruption plumes at Sabancaya, Peru

Riccardo Simionato, Paul Jarvis, Eduardo Rossi, Allan Fries, Marco Pistolesi, Rigoberto Aguilar, Costanza Bonadonna

15.45 – 16.00

Fine tuning eruption source parameters to improve ash dispersion simulations: an example of Eyjafjallajökull 2010

Fabio Dioguardi, Stefano Corradini, Tobias C. Dürig, Lorenzo Guerrieri, Luca Merucci, Dario Stelitano

16.00 – 16.15

In-situ volcanic ash sampling and aerosol-gas analysis based on UAS-embedded technologies: insights into airborne ash aggregation

Simon Thivet, Przemyslaw Kornatowski, Valentin Fréret-Lorgeril, Gholamhossein Bagher, Alexandros P. Poulidis, Taishi Yamada, Masato Iguchi, Costanza Bonadonna, and the Physical Volcanology & Geological Risk Group

16.15 – 16.30

Measuring the electrical charge and the settling velocity of volcanic ash particles

Allan Fries, Eduardo Rossi, Jonathan P. Merrison, Jens Jacob Iversen, Costanza Bonadonna

16.30 – 16.45

Volcanic cloud monitoring by thermal-infrared and micro-millimetre waves radiometry

Francesco Romeo, Luigi Mereu, Simona Scollo

16.45 – 17.00

Evaluating the performance of volcanic ash dispersion models using remote sensing and in-situ instruments from Mount Etna eruptions

Giuseppe Giammello, Alessandro Bracci, Franco Colombo, Ferdinando Pasqualini, Francesca Barnaba, Elisa Adirosi, Luca Di Liberto, Mauro Coltelli

17.00 – 17.15

The inland reconstruction to explain the complex dispersion of the Neapolitan Yellow Tuff eruption, Campi Flegrei, Italy

Gino González, Roberto Sulpizio, Antonio Costa, Federico Lucchi, Roberto Isaia, Lorenzo Monaco, Jacopo Natale, Daniela Mele, Biagio Giaccio

17.15 – 17.30

Probabilistic volcanic hazard assessment for tephra fallout from Etna summit eruptions

Laura Sandri, Luigi Mereu, Alexander Garcia, Michele Prestifilippo, Simona Scollo

AULA 2 (15.30 - 17.30)

S10 - VOLCANIC RISK MANAGEMENT: LESSONS LEARNT AND OPEN QUESTIONS FROM RECENT VOLCANIC CRISES

Conveners: Rosella Nave (INGV, OV), Antonio Colombi (DPC, RM), Mauro Rosi (UniPi; INGV, OV), Costanza Bonadonna (UniGENEVA, SW), Chiara Cristiani (DPC, RM), Eugenio Privitera (INGV, OE)*

15.30 – 15.45

UK Health Security Agency public health risk assessment for volcanic eruptions

Emily Cheek, Christina Mitsakou, Beth Taylor, Sam Thompson, Sarah Dack, Alec Dobney, Andrew Kibble

15.45 – 16.00

From hazard to risk assessment during the recent volcanic unrest of the Svartsengi volcanic system, Reykjanes peninsula, southwest Iceland

Matthew J Roberts, Sara Barsotti, Bergrún A. Óladóttir, Björn Oddsson, Viðir Reynisson

16.00 – 16.15

Volcanic risk assessment: insights from the advisory mission of the European Union Civil Protection Team in Iceland

Antonio Colombi, Joao Almeida Da Silva, Claus Böttcher, David Pfrang, Antonio Ricciardi, Estlander Ville

16.15 – 16.30

Assessing the effectiveness of evacuation: the case of Vulcano Island, Italy

Costanza Bonadonna, Sebastien Biass, Angie Stephania Ramírez Huerta, Ali Asgary, Corine Frischknecht, Marco Pistolesi, Mauro Rosi, Team DPC-Vulcano

16.30 – 16.45

Lessons from the 2019 Stromboli eruption (Aeolian Islands, Italy): understanding multi-risk perception in volcanic tourist hotspots

Agnese Turchi, Federico Di Traglia

16.45 – 17.00

Territorial-scale bradyseismic vulnerability analysis of private Phlegraean buildings using the PLINIVS survey form

Giulio Zuccaro, Daniela De Gregorio, Stefano Nardone, Francesca Linda Perelli, Agnese Turchi, Elena Speranza

17.00 – 17.30

[INVITED] Challenges posed to the management of the ongoing crisis of the Campi Flegrei caldera

Mauro Rosi

SESSIONI POSTER (17.30 - 19.30) - CHIOSTRO DI LEVANTE

S01 - GEOFLUIDS FROM MANTLE TO VOLCANIC AND GEOTHERMAL SYSTEMS: SAMPLING, ANALYTICAL TECHNIQUES, AND INTERPRETATION OF DEEP AND SHALLOW MAGMATIC PROCESSES

Pannello 1

Active OP-FTIR measurements reveals water vapor and methane chloride emissions from Salinelle mud volcanoes, Paternò (Sicily, Italy)

Pietro Bonfanti, Alessandro La Spina

Pannello 2

In-soil radon data collected throughout the 2015-2023 period at Mt. Etna: correlation with magma dynamics and potential use in volcano monitoring

Luca Frasca, Salvatore Giammanco, Filippo Murè, Marco Neri, Paolo Principato, Marco Viccaro

Pannello 3

Spatio-temporal compositional evolution of the La Fossa fumarolic field (Vulcano, Italy)

Simone Lentini, Marcello Bitetto, Luciano Curcio, Giancarlo Tamburello, Angelo Vitale, Alessandro Aiuppa, Pierfrancesco Dellino, Roberto Sulpizio

Pannello 4

Gaseous Elemental Mercury (GEM) in interstitial soil and free gases in a peripheral area of Mt. Etna, a preliminary study

Francesco Tripodi, Filippo Brugnone, Walter D'Alessandro, Francesco Parello, Giovannella Pecoraino, Salvatore Giammanco, Vincenzo Stagno, Sergio Calabrese

Pannello 5

Fluid inclusions trapped in ultramafic rocks and lavas reveal the existence of crustal fluids infiltrating the Polinesia upper mantle

Clarissa Quaranta, Andres Sandoval Velasquez, Pierangelo Romano, Alessandro Aiuppa, Andrea Luca Rizzo, Matthew G. Jackson

Pannello 6

Classical geochemical methods vs. Unmanned Aircraft Systems: mapping of the gas manifestations at Pantelleria island (Italy)

Walter D'Alessandro, Sergio Bellomo, Antonino Pisciotta, Angelo Battaglia, Francesco Parello

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

Pannello 7

150 years of Etna summit craters through a photogrammetry-based time machine

Cristina Proietti, Emanuela De Beni, Massimo Cantarero, Fabio Luca Bonali, Mimmo Palano, Riccardo Civico, Mario Paratore

Pannello 8

Development of a global database of deposit-derived pyroclastic density current occurrences

Federico Di Traglia, Emanuele Intrieri, Alessandro Vona, Andrea Bevilacqua, Gianmarco Buono, Alessia Falasconi, Massimiliano Favalli, Alessandro Fornaciai, Giovanni Gigli, Carlo Alberto Garzonio, Luca Nannipieri, Rosella Nave, Augusto Neri, Teresa Oreade Grillo, Lucia Pappalardo, Massimo Pompilio, Claudia Romano, Alba P. Santo

Pannello 9

Preliminary $^{40}\text{Ar}/^{39}\text{Ar}$ ages for Cala delle Giache centre (Pantelleria Island, Italy)

Alessandra Cinquegrani, Stéphane Scaillet, Antonino Libasci, Silvio Giuseppe Rotolo

Pannello 10

New insights on the submarine morphology and evolution of Pantelleria volcanic complex from marine geology studies

Claudia Romagnoli, Daniele Casalbore, Marilena Calarco, Alessandro Bosman, Eleonora Martorelli, Aida Maria Conte, Giorgio Gasparotto, Francesco Latino Chiocci and the PANTHER Teams

Pannello 11

Crystallization and eruption age estimations using U-Th disequilibrium dating: Torfajökull volcano, South Iceland

Zoe Moser, Razvan-Gabriel Popa, Sæmundur Ari Halldórsson, Kristján Jónasson, Chetan Nathwani, Olivier Bachmann

Pannello 12

Anatomy of a volcanic vent: new insights into the intra-crateric pyroclastic deposits of the Astroni volcano (Campi Flegrei)

Ileana Santangelo, Claudio Scarpati, Annamaria Perrotta, Lorenzo Fedele, Federica Güll, Raffaello Cioni, Claudia D'Oriano, Federica Pardini, Fabio Speranza

Pannello 13

Application of paleomagnetic methods on two variably welded peralkaline fallout deposits from Pantelleria Island (Sicily Strait): inferences on emplacement temperature and welding

Laura Insinga, Gaia Siravo, Fabio Speranza, Alessandra Cinquegrani, Silvio Giuseppe Rotolo

Pannello 14

Tree-ring anomalies in temperate forests of central and southern Mexico associated with large historical volcanic eruptions worldwide: preliminary results

Nahir Guadarrama, Osvaldo Franco-Ramos, Julián Cerano-Paredes, Lucia Capra

Pannello 15

An updated stratigraphy of the Sabatini Volcanic District

Alessandro Frontoni, Fabrizio Di Fiore, Daniele Morgavi, Guido Giordano

Pannello 16

Precursory phreatic activity of the 1888-90 eruption of La Fossa of Vulcano (Eolian Islands, Italy)

Raffaello Cioni and PRIN HEATED Project Team

Pannello 17

DTMs using drone-based LiDAR for morpho-structural analysis of active calderas: the case of Ischia Island, Italy

Argelia Silva-Fragoso, Gianluca Norini, Rosa Nappi, Gianluca Groppelli, Alessandro Maria Michetti

Pannello 18

An updated catalogue of the past 10 ka eruptions at Ischia (Italy), based on stratigraphical, archaeological and geochronological data

Sandro de Vita, Fabio Sansivero, Monica Piochi, Enrica Marotta, Fabio Speranza, Gilda Risica, Mauro Antonio Di Vito

Pannello 19

Hydromagmatism at Stromboli volcano revealed by ash morphology in the Scari Formation (PaleoStromboli III, 41-34 kyrs)

Marta Minniti, Federico Lucchi, Daniela Mele, Eugenio Nicotra, Roberto Sulpizio, Claudio Antonio Tranne

Pannello 20

A Messinian tephra layer in the marine deposits of the Squillace area (CZ, eastern Calabria): a preliminary study

Benedetta Rondinelli, Rosanna De Rosa, Andrea Di Capua, Rocco Dominici, Paola Donato

Pannello 21

Paleomagnetic correlation and dating of Montaña Goteras and La Cucaracha volcanic units from Cumbre Vieja (La Palma, Canary Islands) volcano

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

Pannello 22

The Solfatara eruption of Campi Flegrei (Italy): phreatic to phreatomagmatic dynamics at active calderas through deposits and products characterization

Andrea Todde, Bianca Scateni, Marija Voloschina, Roberto Isaia, Paola Marianelli, Antonella Bertagnini, Marco Pistolesi

Pannello 23

Spatial distribution and morphometric analysis of the monogenetic edifices of Etna volcano

Maria Catania, Chiara Cappadonia, Carmelo Ferlito, Gabriele Lanzafame, Chiara Martinello, Mario Mattia

S03 - OBSERVATION AND MODELLING OF THE ATMOSPHERIC DISPERSION AND FALLOUT OF VOLCANIC PRODUCTS

Pannello 24

Characterization of volcanic ash from the Campanian Ignimbrite super-eruption: new insights into dispersion mechanisms and health hazard

Flaminia Gianchiglia, Biagio Giaccio, Alessandro Pacella, Paolo Ballirano, Danilo M. Palladino, Sebastien Nomade, Daniel Veres, Andreas Koutsodendris, Jörg Pross, Gianluca Sottili

Pannello 25

Understanding the impact of atmospheric conditions and turbulence on settling-driven gravitational instabilities (SDGIs) forming ash fingers

Riccardo Simionato, Jonathan Lemus, Carolina Diaz Vecino, Allan Fries, Simon Thivet, Jonas Latt, Costanza Bonadonna

Pannello 26

Characterisation of the eruption magnitude distribution during the last three Epochs of activity (~14 ky) of Campi Flegrei caldera (Italy)

Daniela Matias, Laura Sandri, Roberto Sulpizio, Silvia Massaro, Antonio Costa

Pannello 27

Model calibration and validation of carbon dioxide dispersion in the Atmospheric Surface Layer using data from La Solfatara crater (Campi Flegrei, Italy)

Silvia Massaro and SOLFATARA Team

Pannello 28

Proximal deposition from Etna paroxysmal eruptions: implications for TGSD assessment

Francesco Amadio, Laura Pioli, Simona Scollo

S04 - APPLICATIONS OF REMOTE SENSING TECHNOLOGY IN VOLCANO HAZARD MONITORING

Pannello 29

Volcanic activity classification through Semi-Supervised Learning applied to satellite radiance time series

Francesco Spina, Giuseppe Bilotta, Annalisa Cappello, Marco Spina, Francesco Zuccarello, Gaetana Ganci

Pannello 30

The permanent Thermal Infrared Surveillance ground Network of INGV-Osservatorio Vesuviano at Campi Flegrei caldera (Italy): two decades of observations

Fabio Sansivero, Giuseppe Vilardo

Pannello 31

Using remote sensing data to detect and map fires induced by volcanic activity: the case study of Stromboli during the 2019 summer

Francesca Iacono, Marina Bisson, Claudia Spinetti, Tom Kwasnitschka

Pannello 32

High resolution topographies from satellite data to reproduce secondary volcanic hazards at Stromboli: the case of gravity induced flows related to the 3rd July 2019 paroxysm

Roberto Gianardi, Marina Bisson, Claudia Spinetti, Mattia De' Michieli Vitturi

Pannello 33

High-Rate Real Time GNSS monitoring of active Italian volcanoes

Francesco Pandolfo, Valentina Bruno, Massimo Rossi, Mario Mattia, Prospero De Martino

Pannello 34

Recent updates of the lava flows of Mt Etna, Italy: the 1999 – June 2019 and July 2019 – December 2023 maps

Emanuela De Beni, Cristina Proietti, Massimo Cantarero

Pannello 35

A new TIR ground based system for volcanic cloud monitoring

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

S05 - VOLCANOLOGY AND ARCHAEOLOGY: BRINGING THE WORLD OF PHYSICAL SCIENCES CLOSER TO THE HUMANITIES

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Catalogue of the Etna eruptive activity from the 6th century BC to present

Paola Del Carlo, Boris Behncke, Pietro Bonfanti, Stefano Branca

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The prehistoric obsidian of Lipari, Gabbellotto and the so-called Pomiciazzo lava flow (Lipari, Aeolian Islands)

Marco Manni, Maria Clara Martinelli

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Toponyms dataset of Stromboli volcano

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

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A multidisciplinary study for the recognition of fault-induced instability conditions on urban structures: the case of the 16th century AD St. Barbara's Church in Paternò (Sicily, Italy)

Gloria Maria Ristuccia, Pietro Bonfanti, Orazio Caruso, Salvatore Giammanco

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The Mazzola archaeological site of Ischia (Southern Italy): evidence of close relationships between humans and volcanism, on the border between hazard and resource

Francesco Nitti, Teresa Cinquantaquattro, Maria Luisa Tardugno, Sandro de Vita, Mauro Antonio Di Vito, Angela Mormone, Ilenia Arienzo, Carlo Pelullo, Monica Piochi, Germano Solomita

S06 - STROMBOLI VOLCANO AND ITS VARIABILITY IN ERUPTIVE INTENSITY: ADVANCES IN UNDERSTANDING ORIGINS AND IMPLICATIONS

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Airborne Single-Pass SAR Interferometry for Stromboli volcano monitoring

Carmen Esposito, Paolo Berardino, Alessandro Di Vincenzo, Antonio Natale, Riccardo Lanari, Jorge Andres Rosero Legarda, Stefano Perna

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Advancing volcano surveillance through soil gas monitoring: insights from Stromboli Island, Italy

Mirko Messina, Roberto Di Martino, Antonio Paonita

Pannello 43

Multitemporal UAV remote sensing surveys of volcano unstable flanks: the case of Stromboli

Teresa Gracchi, Teresa Nolesini, Guglielmo Rossi, Carlo Tacconi Stefanelli, Federico Di Traglia, Nicola Casagli

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Tsunamigenic landslides at Stromboli volcano over the millennia: a record from marine volcanoclastic turbidite sequences

Serena Da Mommio, Marija Voloschina, Omar Qatoni, Alessio Di Roberto, Mauro Rosi, Antonella Bertagnini, Armin Freundt, Steffen Kutterolf, Rosanna De Rosa, Marco Pistolesi

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The increased volatiles degassing at Stromboli Volcano inferred by the continuous soil CO₂ fluxes monitoring network

Fabio Vita, Claudio Inguaggiato, Agnes Mazot, Marco Corrao, Marianna Cangemi, Salvatore Inguaggiato

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Petrological monitoring of persistently active basaltic volcanoes: the case study of Stromboli (Aeolian Islands, Southern Italy)

Beatrice Schiavon, Chiara Maria Petrone, Francesca Forni, Alessio Pontesilli, Elisabetta Del Bello, Manuela Nazzari, Piergiorgio Scarlato, Massimo Tiepolo, Silvio Mollo, Hayiang Hu

S07 - FROM THE VOLCANO TO THE LABORATORY (AND BACK): INSIGHTS INTO MAGMATIC PROCESSES AND ERUPTION DYNAMICS THROUGH EXPERIMENTS, MODELING AND FIELD OBSERVATIONS

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X-ray microtomography and in-situ experiments as tools to investigate hydrothermal unrest conditions of phreatic events at Vulcano Island (Italy)

Alessia Falasconi, Gianmarco Buono, Lucia Pappalardo, Gianfilippo De Astis

Pannello 48

Deep vs shallow magmatic systems controlling pure Plinian vs caldera-forming eruptions: experimental evidence

Cristina Perinelli, Mario Gaeta, Alessandro Fabbriozio, Lorenzo Monaco, Raffaella Pavese, Danilo M. Palladino

Pannello 49

Continental crust experimental refining: exploring the deep storage zone of Campi Flegrei and Vesuvius magmas

Mario Gaeta, Flavia Palummo, Barbara Bonechi, Alessandro Fabbriozio, Valeria Misiti, Piergiorgio Scarlato, Cristina Perinelli

Pannello 50

Influence of acoustic wave dynamics in granular media: implications for volcanic infrasound analysis

Claudia Sánchez, Francesco Biagioli, Maurizio Ripepe

Pannello 51

The dynamics of explosive basaltic volcanism: insights from laboratory experiments, numerical modelling and field observations

Giuseppe La Spina, Jacopo Taddeucci, Laura Spina, Francesco Pennacchia, Piergiorgio Scarlato

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Magmatic degassing dynamics at Halema'uma'u Crater, Kilauea, Hawaii

Alessandro La Spina, Mike Burton, Bruce Houghton, Jeff Sutton

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Magma titanium and iron contents dictate crystallization timescales and rheological behaviour in basaltic volcanic systems

Fabrizio Di Fiore, Alessandro Vona, Danilo Di Genova, Alessio Pontesilli, Laura Calabrò, Silvio Mollo, Jacopo Taddeucci, Claudia Romano, Piergiorgio Scarlato

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A review of plagioclase growth rate and compositional evolution in mafic alkaline magmas: guidelines for thermometry, hygrometry, and timescales of magma dynamics at Stromboli and Mt. Etna

Piergiorgio Moschini, Silvio Mollo, Alessio Pontesilli, Manuela Nazzari, Chiara Maria Petrone, Sara Fanara, Alessandro Vona, Mario Gaeta, Claudia Romano, Piergiorgio Scarlato

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Understanding post-eruptive processes in lava-like ignimbrites of southwestern Sardinia

Martin Wolf, Ben Ellis

Pannello 56

A new viscosity model for Colli Albani: study and implications of nanolites formation in the melt

Emanuele Fanesi, Pedro Valdivia, Dmitry Bondar, Alexander Kurnosov, Serena Dominijanni, Alessandro Vona, Claudia Romano, Danilo Di Genova, Fabio Arzilli

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Rheological analysis of lahar interstitial fluids: the importance of the measurement protocol

Carla Tranquilino, Fabio Dioguardi, Luigi Gentile, Lizeth Caballero, Damiano Sarocchi, Pierfrancesco Dellino

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Crystallization of primary analcime in K-phonolites: experimental evidence

Raffaella Pavese, Lorenzo Monaco, Cristina Perinelli

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Magma differentiation in dynamic mush domains from the perspective of multivariate statistics: open- vs closed-system evolution

Alessio Pontesilli, Fabrizio Di Fiore, Piergiorgio Scarlato, Ben Ellis, Elisabetta Del Bello, Daniele Andronico, Jacopo Taddeucci, Marco Brenna, Olivier Bachmann, Silvio Mollo

Pannello 60

A new viscosity model for hydrous andesitic magmas: insights from Sakurajima volcano

Pedro Valdivia, Dmitry Bondar, Alexander Kurnosov, Tiziana Boffa Ballaran, Joachim Deubener, Jessica Löschmann

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Large-scale experimental investigations on debris flows in the Sarno area: exploring the influence of soil properties and moisture content on triggering processes

Letizia Pace, Domenico Capolongo, Giovanna Capparelli, Gabriele Clausi, Fabio Dioguardi, Roberto Sulpizio

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The Kencherra Ignimbrite (central main Ethiopian Rift): a case study for assessing emplacement mechanisms of high-grade, welded ignimbrites

Zara Franceschini, Raffaello Cioni, Alessandro Vona, Alex Scarani, Stéphane Scaillet, Federico Sani, Giacomo Corti, Bruno Scaillet, Gaëlle Prouteau, Abate Assan Melaku

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High-temperature Raman spectroscopy investigation of volcanic glasses

Dmitry Bondar, Aurelien Canizares, Pedro Valdivia, Alessio Zandonà, Mathieu Allix, Danilo Di Genova

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Impact of carbonate assimilation and deformation on Vesuvius phonotephrite rheology

Gabriele Giuliani, Fabrizio Di Fiore, Pedro Valdivia, Silvio Mollo, Chiara Maria Petrone, Claudia Romano, Manuela Nazzari, Alessandro Vona

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New viscosity data of volcanic melts

Serena Dominijanni, Gabriele Giuliani, Pedro Valdivia, Dmitry Bondar, Fabrizio Di Fiore, Alessio Pontesilli, Alberto Caracciolo, Alessandro Vona, Claudia Romano, Danilo Di Genova

Pannello 66

Quantifying dissolution kinetics of clinopyroxene in hydrous basaltic magmas through 4D in situ experiments

Fabio Arzilli, Margherita Polacci, Giuseppe La Spina, Nolwenn Le Gall, Edward W. Llewellyn, Richard A. Brooker, Danilo Di Genova, Margaret E. Hartley, Rafael Torres-Orozco, Mike R. Burton

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The porosity and pore connectivity evolution of Vesuvius pyroclasts – a database

Knuever Marco, Daniela Mele, Roberto Sulpizio, Pierfrancesco Dellino

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Ensemble model-based reconstruction of the 3-5 December 2015 Etna eruption

Beatriz Martinez Montesinos, Leonardo Mingari, Matthieu Poret, Nicola Mari, Emanuele Caruso, Daniele Taje, Arnau Folch, Antonio Costa

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How does substrate affect the dynamics of volcanic granular flows: Towards small-to-large scale experiments and numerical simulations

Alexis Bougouin, Francesco Neglia, Damiano Sarocchi, Giovanna Capparelli, Eugenio Nicotra, Roberto Sulpizio, Fabio Dioguardi

Pannello 70

A probabilistic volcanic risk evaluation for the eastern flank of Mt. Etna

Fabrizio Meroni, Vera Pessina, Elisa Varini, Marina Longoni, Alexander Garcia, Laura Sandri

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2.5D Shallow water model for lava flows

Elisa Biagioli, Mattia de' Michieli Vitturi, Fabio Di Benedetto, Margherita Polacci

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Exploring the geochemistry of tholeiitic basalts and hyaloclastites formed in submarine volcanoes for comparison with Venus lavas

Nicola Mari, Piero D'Incecco, Justin Filiberto, Stefano Branca, Carmelo Monaco, David Trang, Ivan López, James Garvin, Noam Izenberg

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Trace elements zoning in olivine crystals unveils short-term volcanic processes controlling the 2020-22 lava fountaining at Mt. Etna

Massimiliano Cardone, Maurizio Petrelli, Marco Viccaro

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The 2021 eruption of Pacaya volcano (Guatemala): timescales of storage and transport as revealed by olivine zoning

Giorgio Costa, Massimiliano Cardone, Marisa Giuffrida, Marco Viccaro

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Magma storage and transfer before the 2021 eruption at Pacaya volcano (Guatemala) as revealed by plagioclase textural and compositional variations

Antonino Chindemi, Massimiliano Cardone, Giorgio Costa, Marisa Giuffrida, Roberto Visalli, Marco Viccaro

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Understanding a volcano from inception to death: case study of Aegina volcano, Greece

Michelle Müller, Olivier Bachmann, Razvan-Gabriel Popa

Pannello 77

Matching crystal chemistry with geochemical and geophysical monitoring signals to track the 2022-23 magma dynamics at Etna

Alessandro Miggiano, Andrea Cannata, Giuseppe Di Grazia, Marisa Giuffrida, Giuseppe Salerno, Marco Viccaro

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Quantitative X-ray image analysis for unraveling chemical and textural features of plagioclase crystals from volcanic rocks of the Marsili seamount

Roberto Visalli, Marisa Giuffrida, Michael Marani, Eugenio Nicotra, Gaetano Ortolano, Teresa Trua, Marco Viccaro

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The volcanic activity at Yali Island, Greece: plumbing system architecture and implication for hazard assessment

Eleonora Braschi, Georges E. Vougioukalakis, Lorella Francalanci

Pannello 80

How do mafic feeding dikes interact with carbonate host-rock? – insights from the Taverna San Felice dike intrusion (Roccamonfina, Italy)

Marco Knuever, Jacopo Natale, Federico Lucci, Guido Giordano, Stefano Vitale, Daniela Mele, Roberto Sulpizio

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Decoding magma dynamics: crystal zoning insights for volcanic hazard assessment.

Emanuele Caruso, Roberto Sulpizio, Antonio Costa, Silvia Massaro, Maurizio Petrelli, Giulia Fisauli.

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Geochemistry and petrology of the Bellecombe lava sequence at Enclos Fouqué caldera, Piton de la Fournaise volcano (Réunion, France)

Alexander Bolam, Gabriele Lanzafame, Andrea Di Muro, Silvia Portale, Sandro Donato, Pascale Besson, Carmelo Ferlito

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Experimental constraints on the pre-eruptive conditions of the Caxias do Sul dacite: implications for high temperature silicic volcanism of the Paraná Magmatic Province, Brazil

Emily C. Bamber

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Petrogenesis of the peralkaline Golja Ignimbrite (Main Ethiopian Rift)

Federica Langone, Riccardo Avanzinelli, Eleonora Braschi, Zara Franceschini, Francesca Forni, Raffaello Cioni

Pannello 85

Timing of magma-carbonate interaction before the 3950 yr BP Avellino eruption (Somma-Vesuvius, Southern Italy)

Jörn-Frederik Wotzlaw, Francesca Forni, Marcel Guillong, Roberto Sulpizio, Olivier Bachmann

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Timing and evolution of rhyolitic magmatism on Lipari

Dawid Szymanowski, Gabriel Rojas, Francesca Forni, Federico Lucchi, Claudio A. Tranne, Olivier Bachmann

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Risk reduction measures related to bradyseism in the densely populated area of Campi Flegrei

Antonio Ricciardi, DPC Campi Flegrei Team

Pannello 88

Volcanic risk policies at global, European and national scale: state of the art, gaps and challenges

Chiara Cardaci, Daniela Di Bucci, Domenico Mangione, Antonio Ricciardi

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Long-term precursors to large explosive eruptions of Vesuvius: evidence from the opening phase of the Avellino Plinian eruption

Alessia Falasconi, Chiara Maria Petrone, Roberto Sulpizio, Raffaello Cioni

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Deciphering time scales of pre-eruptive mixing at Stromboli volcano: insights from plagioclase dissolution-reaction experiments

Matteo Masotta, Fabio Colle, Simone Costa, Patrizia Landi

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LA-ICP-MS analyses of trace elements in groundmass glasses as a tool for petrological monitoring of magmatic processes: the time series of Dec 2020-Feb 2022 lava fountains at Etna

Simone Costa, Claudia D'Oriano, Rosa Anna Corsaro, Maurizio Petrelli, Lucia Miraglia

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Exploring the magmatic plumbing system of the Arcuentu volcanic complex through the study of Monte Nureci intrusion (Sardinia, Italy)

Bruna Cariddi, Vincenzo Guarino, Luca Giacomo Costamagna, Massimo D'Antonio, Luigi Franciosi, Fred Jourdan, Roberto Lonis, Vincenzo Morra

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Exploring microstructure and petrophysical properties of porous volcanic rocks through 3D multiscale and super-resolution imaging

Gianmarco Buono, Stefano Caliro, Giovanni Macedonio, Vincenzo Allocca, Federico Gamba, Lucia Pappalardo

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Pre-eruptive crystallization conditions preserved in zoning pattern of clinopyroxenes from the vesuvian 1631 CE sub-Plinian eruption

Rebecca Cavallera and the Volcanology Team of University of Camerino, Carlo Pelullo and the INGV, OV Team, H     Balcone-Boissard, Sumit Chakraborty, Paola Petrosino, Nicolas Rividi, Vittorio Zanon

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Understanding eruptive dynamics of Ischia's trachytic magmas, from shallow reservoir conditions to explosive and effusive eruptions

*Loïc Maingault, Carlo Pelullo, H  l  ne Balcone-Boissard, Sumit Chakraborty,
Sandro de Vita, Fabio Sansivero, Ilenia Arienzo, Fabio Arzilli*

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Machine Learning in petrological and volcanological investigations: state of the art and perspectives

Maurizio Petrelli

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The shear strain rate effects on crystallization dynamics and residual glass composition: implications for the chemical evolution in natural volcanic systems

Alessandro Musu, Luca Caricchi, Francesco Vetere, Thomas Griffiths, Maurizio Petrelli,
Rosa Anna Corsaro, Stefano Peres, Diego Perugini

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Deciphering the Holocene magmatic plumbing system dynamics beneath El Hierro (Canary Islands)

Claudia Prieto-Torrell, Meritxell Aulinas, Helena Albert, Alejandro Rodriguez-Gonzalez, Ilenia Arienzo, Guillem Gisbert, Eloi González-Esvertit, Valentin R. Troll, Jose-Luis Fernandez-Turiel, Francisco-Jose Perez-Torrado

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Pannello 99

Generation of deposit-derived pyroclastic density currents by the failure of the crater rim on Stromboli volcano

Federico Di Traglia, Paolo Berardino, Lorenzo Borselli, Pierfrancesco Calabria, Sonia Calvari, Daniele Casalbore, Nicola Casagli, Francesco Casu, Francesco Latino Chiocci, Riccardo Civico, Walter De Cesare, Claudio De Luca, Matteo Del Soldato, Antonietta Esposito, Carmen Esposito, Massimiliano Favalli, Alessandro Fornaciai, Flora Giudicepietro, Teresa Gracchi, Riccardo Lanari, Giovanni Macedonio, Fernando Monterroso, Antonio Natale, Teresa Nolesini, Stefano Perna, Tullio Ricci, Claudia Romagnoli, Guglielmo Rossi, Carlo Tacconi Stefanelli

Pannello 100

Characterization of pyroclast in-flight fragmentation at mafic volcanoes

Clothilde Biensan, Jacopo Taddeucci, Piergiorgio Scarlato, Daniele Andronico, Elisabetta Del Bello, Tullio Ricci, Luca D'Auria, Maria Asensio-Ramos, Danilo Palladino

Pannello 101

Pyroclastic density currents at Mount Etna: investigating triggering mechanisms and emplacement dynamics

Giorgio Costa, Boris Behncke, Marco Viccaro

Pannello 102

Understanding the dynamics of explosive volcanoes by investigating volcanic thermal emissions using MODIS Land Surface Temperature data

Arianna Beatrice Malaguti, Claudia Corradino, Micheal S. Ramsey, Ciro Del Negro

Pannello 103

Quantifying volcanic SO₂ emissions with Sentinel-5 TROPOMI, Artificial Intelligence and GEE

Alessandro La Spina, Claudia Corradino, Paul Jouve, Ciro Del Negro

S13 - LINKING SURFACE OBSERVABLES TO SUB-VOLCANIC PLUMBING SYSTEMS AT ACTIVE CALDERAS

Pannello 104

Detection of a ground deformation anomaly at Campi Flegrei during the 2021-2024 unrest phase, revealed by DInSAR and GNSS measurements

Flora Giudicepietro, Team INGV-CNR

Pannello 105

Exploring Degassing and Crystallization processes in magmatic ascent: the case study of the western sector of the Campi Flegrei Caldera

Carolina Baccari, Gianmarco Buono, Mauro Antonio Di Vito, Lucia Pappalardo, Paola Petrosino

Pannello 106

New Insights into the Recent Magma Dynamics Under Campi Flegrei Caldera (Italy) from petrological and geochemical evidence

Gianmarco Buono, Stefano Caliro, Antonio Paonita, Lucia Pappalardo, Anna Tramelli, Giovanni Chiodini

Pannello 107

Effusive eruptions at Campi Flegrei: petrological characterizations and emplacement mechanisms of Mt. Olibano and Accademia lava domes/flows

Pooria Ebrahimi, Daniele Morgavi, Fabio Arzilli, Fabrizio Di Fiore, Paola Petrosino

Pannello 108

Radionuclides behavior in hydrothermal volcanic systems: Preliminary investigations at high and low gas flux emission sites

Giordano Bufi, Silvia Massaro, Francesco Giordano, Pierfrancesco Dellino, Silvia Rainò, Fabio Dioguardi, Francesco Rufino, Stefano Caliro, Alessandro Aiuppa, Simone Lentini, Angelo Vitale, Antonio Costa, Roberto Sulpizio

Pannello 109

Intrusive bodies controlling the unrest in Campi Flegrei

Anna Tramelli, Marco Calò

Pannello 110

Statistical analyses on groundwater compositional data from Campi Flegrei caldera wells

Zaccaria Petrillo, Sergio Scippacercola, Simona Tripaldi, Annarita Mangiacapra, Stefano Caliro

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

Pannello 111

Copper sulfates of fumarolic environment from Vesuvius volcano (Southern Italy)

Giuseppina Balassone, Vesuvius Sulfates Research Group, Annamaria Pellino, Angela Altomare, Fabio Bellatreccia, Piergiulio Cappelletti, Aurelia Falcicchio, Richard Herrington, Nicola Mondillo, Carmela Petti, Concetta Rispoli, Mike Rumsey

Pannello 112

Study of hydrothermal alteration paragenesis of lithic clasts of the Solfatara eruption deposits (Campi Flegrei, Italy)

Marco Masi, Paolo Fulignati, Paola Marianelli, Marco Pistolesi, Antonella Bertagnini, Roberto Isaia

Pannello 113

The hydrothermal system prior to the 1873 phreatic eruption at La Fossa di Vulcano (Vulcano Island, Italy): first insights from a petrographic and geochemical approach

Silvia Giansante, Anna Gioncada, Paolo Fulignati, Raffaello Cioni, Marco Pistolesi, Tomaso Esposti Ongaro

Pannello 114

Combining Rn and Sr isotopes measurement to track fluid-rock interaction at the active Campi Flegrei volcano: a framework study

Raffaella Silvia Iovine, Bruna Cariddi, Ilenia Arienzo, Monica Piochi

Pannello 115

Inferences from plants studies and environmental radioactivity at the Maccalube natural reserve (Ag)

Zahra Alizadeh, Emanuele Rosa, Paola Cusano, Nunziatina De Tommasi, Alessandra Braca, Marinella De Leo, Simona Mancini, Paolo Madonia, Mariarosaria Falanga

S15 - A MULTIDISCIPLINARY VISION OF THE OBSERVATIONS AND EXPERIMENTATION FOR VOLCANOES MONITORING

Pannello 116

Advanced SHM Techniques for aerospace structures: potential applications in volcanology

Michele Meo

Pannello 117

A temporary seismic network to study the seismicity of Pantelleria Island

Lucia Nardone, Simona Carannante, Ezio D'Alema, Alessandro Di Filippo, Roberta Esposito, Danilo Galluzzo, Guido Gaudiosi, Francesco Liguoro, Roberto Manzo

Pannello 118

Multiparametric exploration of active magma degassing at Mt. Etna in 2023

Clothilde Biensan, Jacopo Taddeucci, Tullio Ricci, Elisabetta Del Bello, Piergiorgio Scarlato, Danilo Palladino

Pannello 119

The central-southern Aeolian islands: volcanism and tearing in the Tyrrhenian subduction system (CAVEAT)

Andrea Ursino, Antonio Scaltrito and the CAVEAT Team

Pannello 120

The Pernicana Fault System (Mt. Etna; Sicily): 4 decades of ground deformations studies and inferences to flank and magma dynamics

Alessandro Bonforte, Stefano Branca, Giuseppe Brandi, Elena Cubellis, Salvatore Gambino, Francesco Guglielmino, Francesco Obrizzo, Giuseppe Puglisi, Laura Privitera, Umberto Tammaro

Pannello 121

Present-day ground deformation of Colli Albani volcanic district from the analysis of remotely sensed data

Lisa Beccaro, Claudia Spinetti, Cristiano Tolomei, Roberto Gianardi, Marina Bisson, Alessandro Galvani, Laura Colini, Vincenzo Sepe

Pannello 122

Vertical movements and seismic activity at Campi Flegrei Caldera (South Italy)

Elia Bellucci Sessa, Girolamo Milano

Pannello 123

Use of signal distortion as indicator of volcanic activity: a practical implementation exploring the gravity data acquired at Etna volcano

Lorenzo Ferri, Filippo Greco, Giuseppe Nunnari, Daniele Carbone

Pannello 124

2021 Etna's paroxysmal activity: inference on the dynamics of the magmatic feeding system from joint DInSAR and GNSS ground deformation analysis

Alejandra Vásquez Castillo, Francesco Guglielmino, Alessandro Bonforte, Giuseppe Puglisi

Pannello 125

The 2021 unusual deep seismicity recorded on the eastern flank of Mt. Etna volcano (Italy): regional tectonic or intrusive processes?

Salvatore Alparone, Graziella Barberi, Flavio Cannavò, Vittorio Minio, Marco Neri, Andrea Ursino

Pannello 126

25 years recording of the long-base fluid tiltmeter installed at 2.850 m a.s.l. observatory of Pizzi Deneri on Etna volcano

Alessandro Bonaccorso, Giuseppe Falzone, Angelo Ferro, Salvatore Gambino, Giuseppe Laudani, Laura Privitera

Pannello 127

Vulcano Island and its activity reconstructed through the analysis of ground deformations recorded in the last 50 years, to better understand the 2021-2022 volcanic unrest

Laura Privitera, Alessandro Bonforte, Salvatore Gambino, Francesco Guglielmino

S16 - MULTIDISCIPLINARY APPROACH FOR UNDERSTANDING OF MAGMATIC SYSTEMS, VOLCANO-TECTONIC STRUCTURES AND THEIR INTERPLAY IN VOLCANO DYNAMIC EVOLUTION

Pannello 128

Control of gravitational potential energy on the distribution of off-axis volcanic activity in the Turkana Depression, East African Rift

Giacomo Corti, Ameha Muluneh, Derek Keir, Ilaria Isola, Francesco Mazzarini

Pannello 129

Gravity survey of Pantelleria Island (Southern Italy) for geothermal exploration

Lorenzo Ricciardi, Giovanni Florio, Stefano Carlino, Tommaso Pivetta, Umberto Ricciardi, Giuseppe Ferrara, Luigi Zampa

Pannello 130

Multiparametric clustering of synchronous seismic, acoustic, and thermal events at Mt. Etna in 2023

Joe Carthy, Improve Team, Sergio Díaz-Mesa, Elisabetta Del Bello, Piergiorgio Scarlato, Danilo M. Palladino

Pannello 131

Analysis of the seismo-volcanic signals during the 2021-2022 volcanic unrest at Vulcano island

Adriana Iozzia, Salvatore Alparone, Andrea Cannata, Simone Cesca, Martina Criscillo, Giuseppe Di Grazia, Mariangela Sciotto

PROGRAMMA DELLE SESSIONI SCIENTIFICHE

AUDITORIUM (08.30 – 10.30)

S14 - HYDROTHERMAL ALTERATION IN ACTIVE AND EXTINCT 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

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

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 Pistoletti, Costanza Bonadonna, Mauro Rosi

09.15 – 09.30

The ~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 Scarpato, 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

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 Semperebello, 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-Bonnétat, 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, Oryaëlle 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

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

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

PROGRAMMA DELLE SESSIONI SCIENTIFICHE

AUDITORIUM (09.00 – 10.30)

S13 - LINKING SURFACE OBSERVABLES TO SUB-VOLCANIC PLUMBING SYSTEMS AT ACTIVE CALDERAS

Conveners: Lucia Pappalardo* (INGV, OV), Stefano Caliro (INGV, OV), Anna Tramelli (INGV, OV), Elisa Trasatti (INGV, RM)

09.00 – 09.15

The dynamics of bradiseism: the recent unrest of Campi Flegrei, 1950-2024

Roberto Scandone, Lisetta Giacomelli

09.15 – 09.30

Investigating the ongoing unrest dynamics of Campi Flegrei caldera (Italy) by mathematical analysis of geophysical monitoring data

Andrea Bevilacqua, Augusto Neri, Prospero De Martino, Flora Giudicepietro, Giovanni Macedonio, Patrizia Ricciolino

09.30 – 09.45

Seismic sequences with very short earthquake intervals at Campi Flegrei during the ongoing unrest

Flora Giudicepietro and the INGV-CNR Team

09.45 – 10.00

Tracking transient changes in the plumbing system at Campi Flegrei Caldera

Genny Giacomuzzi, Claudio Chiarabba, Francesca Bianco, Pasquale De Gori, Nicola Piana Agostinetti

10.00 – 10.15

Exploring architecture and dynamics of caldera systems during volcanic unrest: The example of the Campi Flegrei caldera (Italy)

Gianmarco Buono, Francesco Maccaferri, Lucia Pappalardo, Anna Tramelli, Stefano Caliro, Virginie Pinel, Eleonora Rivalta, Elena Spagnuolo, Elisa Trasatti, Mauro Antonio Di Vito

10.15 – 10.30

[INVITED] Current status of the Campi Flegrei caldera: Can monitoring fluid migrations using shear wave splitting parameters and seismic interferometry help in adding constraints? Some results and perspectives

Francesca Bianco, Lucia Zaccarelli

AULA 1 (09.00 – 10.30)

S05 - VOLCANOLOGY AND ARCHAEOLOGY: BRINGING THE WORLD OF PHYSICAL SCIENCES CLOSER TO THE HUMANITIES

Conveners: Stefano Branca (INGV, OE), Sandro de Vita* (INGV, OV), Franco Foresta Martin (INGV, PA), Daniele Musumeci (UniCT)

09.00 – 09.15

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

Paolo Sammuri

09.15 – 09.30

Science and iconography in Der Aetna by Sartorius von Waltershausen

Stefano Branca, Luigi Ingaliso

09.30 – 09.45

Pompeii before the “Pompeii” eruption: insights into the pre-79 CE volcanic chrono-stratigraphy for geo-archaeological studies in one of the world's most famous archaeological sites

Domenico Sparice, Mauro Antonio Di Vito, Vincenzo Amato, Valeria Amoretti, Gabriel Zuchtriegel

09.45 – 10.00

The impact of the eruptive phases during the 79 AD Vesuvian eruption on Pompeii: insights from the recent excavations in Regio IX, insula 10

Claudio Scarpati, Annamaria Perrotta

10.00 – 10.15

An updated multidisciplinary review of the manner of death in Pompeii during the 79 CE eruption of Vesuvius

Valeria Amoretti, Domenico Sparice, Fabrizio Galadini, Mauro Antonio Di Vito, Gabriel Zuchtriegel

10.15 – 10.30

The casts of the victims of Pompeii

Lisetta Giacomelli, Roberto Scandone

AULA 2 (09.00 – 10.30)

S06 - STROMBOLI VOLCANO AND ITS VARIABILITY IN ERUPTIVE INTENSITY: ADVANCES IN UNDERSTANDING ORIGINS AND IMPLICATIONS

Conveners: Federico Di Traglia (INGV, OV), Marco Pistolesi (UniPI), Giuseppe Salerno (INGV, OE), Alessandro Aiuppa (UniPA)*

09.00 – 09.15

Sudden changes in pre-eruptive dynamics controlled the highly explosive ancient eruptive cycle of Petrazza (77-75 ka, Paleostromboli I) at Stromboli

Marta Minniti, Federico Lucchi, Eugenio Nicotra, Filippo Ridolfi, Roberto Sulpizio, Claudio Antonio Tranne

09.15 – 09.30

Evolution of the eruptive activity at Stromboli (Aeolian Islands - Italy) during the last 4 millennia. A tephrostratigraphic investigation on the early-phase of Recent Stromboli Eruptive Epoch

Giuseppe Re, Alessio Di Roberto, Paola Del Carlo, Massimo Pompilio

09.30 – 09.45

Morphological evolution of the subaerial and submarine Sciara del Fuoco slope in response to eruptive and reworking processes

Claudia Romagnoli, Daniele Casalbore, Federico Di Traglia, Sonia Calvari, Nicola Casagli, Francesco Latino Chiocci, Riccardo Civico, Flora Giudicepietro, Massimiliano Favalli, Alessandro Fornaciai, Teresa Gracchi, Giovanni Macedonio, Teresa Nolesini, Tullio Ricci

09.45 – 10.00

Can Vulcanian eruptions occur at open conduit Basaltic Volcanoes?

Teresa Oreade Grillo, Guido Giordano, Alessandro Frontoni, Riccardo Russo, Gerardo Carrasco-Núñez, Gianfilippo De Astis, Marco Viccaro, Luca Caricchi, Alessandro Vona

10.00 – 10.15

Constraints on magma source, pre-eruptive dynamics and timescales of the 2009 major explosions at Stromboli volcano (Italy)

Laura Insinga, Marija Voloschina, Paola Marianelli, Erika Bartolomeo, Antonella Bertagnini, Nicole Métrich, Silvio Giuseppe Rotolo, Alessandro Aiuppa, Marco Pistolesi

10.15 – 10.30

The monitoring of the submarine portion of Sciara del Fuoco (Stromboli) by using a USV (Unmanned Surface Vehicle)

Danilo Cavallaro, Mauro Coltelli

AUDITORIUM (11.00 – 13.00)

[Continua] **S13 - LINKING SURFACE OBSERVABLES TO SUB-VOLCANIC PLUMBING SYSTEMS AT ACTIVE CALDERAS**

Conveners: Lucia Pappalardo (INGV, OV), Stefano Caliro (INGV, OV), Anna Tramelli (INGV, OV), Elisa Trasatti (INGV, RM)*

11.00 – 11.15

[INVITED] Geochemical monitoring at Solfatara, Campi Flegrei, during 2000-2024

Giovanni Chiodini, Team Solfatara

11.15 – 11.30

Defining deformation scenarios anticipating a future eruption at Campi Flegrei caldera, Italy

Eleonora Rivalta, Agnese Spina

11.30 – 11.45

Evolution of the plumbing system at Campi Flegrei caldera (Italy) during 2007-2023 from geodetic data inversions and petrological simulations

Ana Astort, Elisa Trasatti, Luca Caricchi, Marco Polcari, Prospero De Martino, Valerio Acocella, Mauro Antonio Di Vito

11.45 – 12.00

Time-lapse gravity observations during the current unrest at Campi Flegrei caldera

Tommaso Pivetta, Elisa Trasatti, Stefano Carlino, Prospero De Martino, Mauro Antonio Di Vito

12.00 – 12.15

b value enlightens different rheological behaviour in Campi Flegrei caldera

Anna Tramelli, Vincenzo Convertito, Cataldo Godano

12.15 – 12.30

Machine Learning Based Earthquake Catalog in Campi Flegrei

Xing Tan, Greg Beroza, Anna Tramelli, Sergio Gammaldi, Francesca Bianco, Warner Marzocchi

12.30 – 12.45

Real-time seismo-acoustic observations of the hydrothermal outgassing at the Pisciarelli active field in the Campi Flegrei caldera (Italy)

Rebecca Sveva Morelli, Dario Delle Donne, Stefano Caliro, Aldo Benincasa, Ciro Buonocunto, Antonella Bobbio, Antonio Caputo, Sergio Gammaldi, Lucia Nardone, Massimo Orazi

12.45 – 13.00

Fifteen years evolution in the experts' opinion on the current unrest of Campi Flegrei: where are we now?

Salvatore Ferrara, Jacopo Selva, Laura Sandri, Warner Marzocchi

AULA 1 (11.00 – 13.00)

[Continua] **S05 - VOLCANOLOGY AND ARCHAEOLOGY: BRINGING THE WORLD OF PHYSICAL SCIENCES CLOSER TO THE HUMANITIES**

Conveners: Stefano Branca (INGV, OE), Sandro de Vita (INGV, OV), Franco Foresta Martin (INGV, PA), Daniele Musumeci (UniCT)*

11.00 – 11.15

New geophysical and archaeological investigations at the “Nunziatella” site in Mascali, Mount Etna (Italy)

Stefano Branca, Maria Rosaria Grasso, Valerio Materni, Angela Merendino, Vincenzo Sapia, Leonardo Vaccaro

11.15 – 11.30

New age determinations of the prehistoric human presence on Mount Etna

Stefano Branca, Orazio Palio, Francesco Privitera, Maria Turco

11.30 – 11.45

A multidisciplinary study in the Archaeological Park of Valle dell'Aci: exploring ancient settlements, hot springs, and fluid emissions to reconstruct its geological-structural framework

Alessandro Luppino, Carla Bottari, Francesca Forni, Salvatore Giammanco, Gianluca Groppelli

11.45 – 12.00

The advancements in the studies on Serracozzo Cave I (1971 Etna eruption)

Daniele Musumeci, Giuseppe Puglisi, Stefano Branca, Luigi Ingaliso

12.00 – 12.15

Geochemical and petrochemical characterization of the Breccia Museo obsidian fragments for archaeometrics purposes

Franco Foresta Martin, Sandro De Vita, Ilenia Arienzo, Bruna Cariddi, Lisetta Giacomelli, Anna Russolillo

12.15 – 12.30

The obsidian prehistoric tools of the anthropic occupation in Tulul al Baqarat (Iraq - IV Millennium): a machine learning approach on microanalytical non-invasive geochemical data

Gloria Vaggelli, Roberto Cossio, Alessandro Borghi, Stefano Ghignone, Carlo Lippolis

12.30 – 12.45

Puteoli and the ripa Puteolana: archaeological and geological insights on a Roman submerged waterfront

Maria Luisa Tardugno, Michele Stefanile, Michele Silani, Marco Anzidei, Mauro Antonio Di Vito, Sandro De Vita

12.45 – 13.00

Chronicles of announcements eruptions in Poás volcano, Costa Rica

Gino González, Willy Salazar-Chacón, Adolfo García, Roberto Isaia, Sveva Morelli, Dmitri Rouwet, Katherine Araya, Nadia Morera, Daniela Mele, Roberto Sulpizio

AULA 2 (11.00 – 13.00)

[Continua] **S06 - STROMBOLI VOLCANO AND ITS VARIABILITY IN ERUPTIVE INTENSITY: ADVANCES IN UNDERSTANDING ORIGINS AND IMPLICATIONS**

Conveners: Federico Di Traglia (INGV, OV), Marco Pistolesi (UniPI), Giuseppe Salerno (INGV, OE), Alessandro Aiuppa (UniPA)*

11.00 – 11.15

Joint exploitation of multi-frequency and multi-platform DInSAR data to monitor ground displacements in volcanic areas: the Stromboli case study

Claudio De Luca, Yenni Lorena Belen Roa, Manuela Bonano, Nicola Casagli, Federico Di Traglia, Marianna Franzese, Teresa Gracchi, Michele Manunta, Fernando Monterroso, Teresa Nolesini, Giovanni Onorato, Pasquale Striano, Muhammad Yasir, Riccardo Lanari and Francesco Casu

11.15 – 11.30

Monitoring and modelling of repeated crater-rim failures of the Stromboli volcano (Italy)

Teresa Nolesini, Tommaso Carlà, Teresa Gracchi, Guglielmo Rossi, Carlo Tacconi Stefanelli, Federico Di Traglia, Nicola Casagli

11.30 – 11.45

The transport behaviour of the Stromboli's volcanic plume inferred from combined scanning-DOAS and UV Camera observations

Giovanni Lo Bue Trisciuzzi, The Stromboli SO₂ Project Team

11.45 – 12.00

Joint Analysis of Distributed Acoustic Sensing (DAS), Seismic, and Infrasonic Observations of Volcanic Tremor, Explosions, and Pyroclastic Density Currents at Stromboli Volcano (Italy)

Francesco Biagioli, Jean-Philippe Métaxian, Maurizio Ripepe, Eléonore Stutzmann, Pascal Bernard, Giorgio Lacanna, Alister Trabattoni, Anne Mangeney, Gilda Risica, DAS working group

12.00 – 12.15

Thermal emissions of active craters at Stromboli volcano: spatio-temporal insights from ten years of satellite observations

Francesco Massimetti and MIROVA Team UniTO, Team LGS UniFI, Team UniPA, Team UniPI, Team INGV Osservatorio Etneo, Team INGV Osservatorio Vesuviano

12.15 – 12.30

Effusive events at Stromboli volcano and their correlations with major explosions and paroxysms with uncertainty quantification

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

12.30 – 12.45

Toward a real-time analysis of Stromboli explosive activity using Artificial intelligence methods on thermal images from monitoring camera

Jose Francisco Guerrero Tello, Mauro Coltelli, Danilo Cavallaro, Marco Firetto Carlino

12.45 – 13.00

Anomalies detection in Stromboli's pre-paroxysm activity during November 2018 - September 2019

Fabrizio Ambrosino and Team Paroxysm_Precursors

AUDITORIUM (14.30 – 16.15)

S01 - GEOFLUIDS FROM MANTLE TO VOLCANIC AND GEOTHERMAL SYSTEMS: SAMPLING, ANALYTICAL TECHNIQUES, AND INTERPRETATION OF DEEP AND SHALLOW MAGMATIC PROCESSES

Conveners: Franco Tassi (UniFI), Francesco Maria Lo Forte (UniPA), Orlando Vaselli (UniFI), Andres Libardo Sandoval-Velasquez (UniPA), Sergio Calabrese (UniPA; INGV, PA), Giulia Marras (UniRMSap)*

14.30 – 14.45

Mount Etna volcanic emissions signature on chemical and isotopic composition of rainwater

Filippo Brugnone and the Atmospheric Deposition Team

14.45 – 15.00

Satellite and in-situ measurements of the 2022 degassing unrest at Levante bay (Vulcano island, Italy)

Giancarlo Tamburello, Giovannella Pecoraino, Dmitri Rouwet, Sergio Calabrese, Giulio Bini

15.00 – 15.15

The geochemical monitoring of volatiles outgassing, soil CO₂ and plume SO₂, from Vulcano Island: 18 years of observations

Salvatore Inguaggiato, Fabio Vita, Claudio Inguaggiato, Marianna Cangemi

15.15 – 15.30

Magma degassing processes tracked from daily OP-FTIR gas survey throughout the 2021 explosive-effusive Tajogaite eruption (La Palma, Canary Islands)

Maria Asensio-Ramos, Ana Pardo Cofrades, Mike Burton, Alessandro La Spina, Patrick Allard, and the TAJOGAITE GAS TEAM

15.30 – 15.45

Evaluation of gas data variability from low-temperature fumaroles in the Azores archipelago, 2015 – 2023

Daniela Matias, Mathis Antlauf, Fátima Viveiros, Lucía Moreno, Catarina Silva, Sérgio Oliveira

15.45 – 16.00

The plumbing system of Fogo volcano (Cape Verde archipelago) inferred from Carbon and Helium isotopes

Francesco Maria Lo Forte, Guillaume Boudoire, Maria Luce Frezzotti, Silvio Giuseppe Rotolo, Andres Sandoval-Velasquez, Fátima Viveiros, Vittorio Zanon, Alessandro Aiuppa, Andrea Luca Rizzo

16.00 – 16.15

The relationship between the geochemistry of light hydrocarbons and the redox conditions of hydrothermal systems: new clues from fumarolic gases of Vulcano Island, Southern Italy

Andrea Ricci, Jens Fiebig, Franco Tassi, Sven Hofmann, Francesco Capecchiacci, Orlando Vaselli

AULA 1 (14.30 – 16.15)

S09 - PLUMBING SYSTEM AND VOLCANO DYNAMICS: PETROLOGIC TOOLS FOR TRACKING MAGMAS FROM STORAGE TO ERUPTION

Conveners: Gabriele Lanzafame (UniCT), Federico Casetta (UniWIEN), Marisa Giuffrida (UniCT), Nicolás Nardini (UniFE)*

14.30 – 14.45

The magma storage capacity of Etna plumbing system: constraints from 3 decades of lava compositional change and magma degassing budget since the early 1970s

Patrick Allard, Rosa Anna Corsaro, Nicole Mètrich

14.45 – 15.00

Geochemistry and volatile contents of olivine hosted melt inclusions from Mt. Etna tholeiitic and alkaline magmatism

Pier Paolo Giacomoni, Matteo Masotta, Guillaume Delpech, Gabriele Lanzafame, Carmelo Ferlito, Johan Villeneuve, Massimo Coltorti

15.00 – 15.15

Cryptic amphibole at Mt. Etna (Sicily, Italy): insights from the 2001 lava and an amphibole-rich cumulitic xenolith

Pier Paolo Giacomoni, Simone Costa, Fabio Colle, Matteo Masotta, Gabriele Lanzafame

15.15 – 15.30

Amp-TB2 protocol: how to use amphibole for tracking the storage and movement of magma into the crust and upper mantle

Filippo Ridolfi, Renat R. Almeev, Alexey Yu Ozerov, Francois Holtz

15.30 – 15.45

Evidence of magma mixing within the clinopyroxene populations in volcanic and plutonic rocks from the Dolomites (Southern Alps; Italy): how to enhance plumbing system investigations untangling the volcano-plutonic link

Nicolò Nardini, Federico Casetta, Chiara Maria Petrone, Theodoros Ntaflos, Massimo Coltorti

15.45 – 16.00

Petrological evolution of the trans-crustal plumbing system of Marsili volcano (Tyrrhenian Sea, Italy): insights into crystal mush heterogeneity from glomerocrysts variability.

Fabio Colle, Matteo Masotta, Simone Costa, Pier Paolo Giacomoni, Michael Marani, Teresa Trua

16.00 – 16.15

Thermobarometric and microthermometric insights into the Monte Amiata magmatic reservoir

Simone Paternostro, Lucrezia Valeriani, Jose Pablo Sepúlveda-Birke, Eleonora Braschi, Andrea Orlando, Daniele Borrini, Rosario Esposito, Martina Casalini, Simone Tommasini, Lorella Francalanci, Raffaello Cioni, Sandro Conticelli

AULA 2 (14.30 – 16.30) - WORKSHOP EPOS

