

Mercoledì 18 Settembre 2024
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

Carminé 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.

Mercoledì 18 Settembre 2024

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 Cannavo¹, 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

Mercoledì 18 settembre 2024
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

Mercoledì 18 settembre 2024
AUDITORIUM (14.30 - 15.15)

**[Continua] S07 - FROM THE VOLCANO TO THE LABORATORY (AND BACK):
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THROUGH EXPERIMENTS, MODELING AND FIELD OBSERVATIONS**

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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

Mercoledì 18 settembre 2024

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

Mercoledì 18 settembre 2024
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 ²²²Rn 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

Mercoledì 18 settembre 2024

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, OV), 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

Mercoledì 18 settembre 2024

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