



5^a CONFERENZA A. RITTMANN

29 Settembre 1 Ottobre 2022

CATANIA



Programma



5^a CONFERENZA A. RITTMANN

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Comitato Organizzatore

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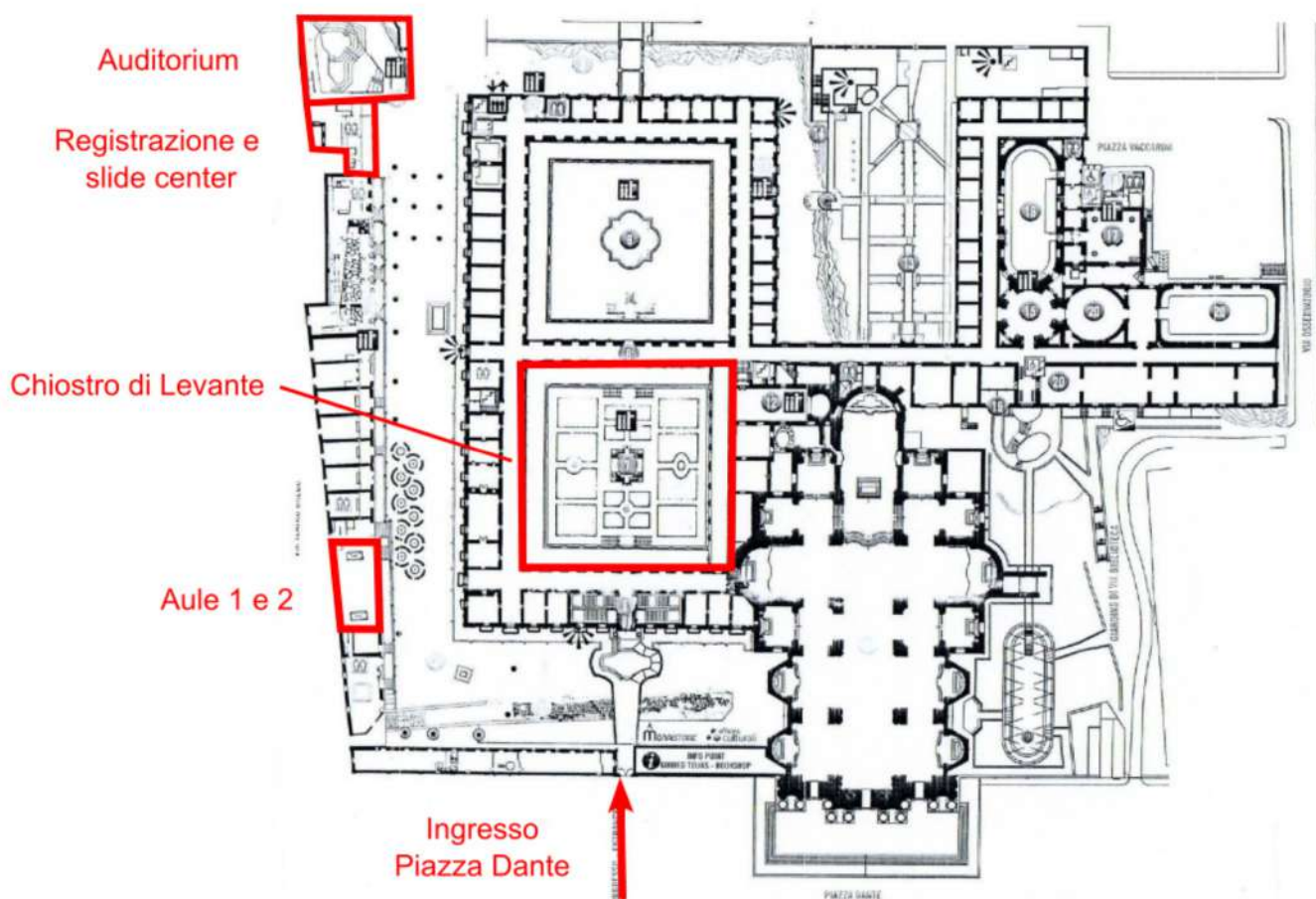
CATANIA

Timetable Conferenza

	29 SETTEMBRE 2022	30 SETTEMBRE 2022	1 OTTOBRE 2022	2 OTTOBRE 2022
08:30-08:45				
08:45-09:00	Registrazione dei partecipanti			
09:00-09:15			SESSIONE S05 (AUDITORIUM)	
09:15-09:30	Saluti Istituzionali (AUDITORIUM)	SESSIONE S01 (AULA 1)	SESSIONE S06 (AULA 1)	
09:30-09:45				
09:45-10:00	Plenary Lecture Prof. R. Sulpizio (AUDITORIUM)	SESSIONE S04 (AUDITORIUM)	Coffee Break (CHIOSTRO DI LEVANTE)	
10:00-10:15				
10:15-10:30				
10:30-10:45				
10:45-11:00	Coffee Break (CHIOSTRO DI LEVANTE)	Coffee Break (CHIOSTRO DI LEVANTE)		
11:00-11:15				
11:15-11:30	Ricordo Prof. G. Occhipinti e Prof. L. Villari (AUDITORIUM)	continua SESSIONE S04 (AUDITORIUM)	SESSIONE S09 (AULA 1)	
11:30-11:45		continua SESSIONE S01 (AULA 1)	SESSIONE S12 (AUDITORIUM)	
11:45-12:00		SESSIONE S03 (AULA 1)		
12:00-12:15		SESSIONE S02 (AULA 2)		
12:15-12:30				
12:30-12:45				
12:45-13:00				
13:00-13:15				
13:15-13:30				
13:30-13:45				
13:45-14:00				
14:00-14:15	Pranzo (CHIOSTRO DI LEVANTE)	Pranzo (CHIOSTRO DI LEVANTE)	Pranzo (CHIOSTRO DI LEVANTE)	
14:15-14:30				
14:30-14:45				
14:45-15:00				
15:00-15:15				
15:15-15:30	continua SESSIONE S11 (AUDITORIUM)	continua SESSIONE S04 (AUDITORIUM)	SESSIONE S14 (AULA 2)	
15:30-15:45				
15:45-16:00	SESSIONE S15 (AULA 1)	continua SESSIONE S10 (AULA 1)		
16:00-16:15				
16:15-16:30				
16:30-16:45				
16:45-17:00				
17:00-17:15				
17:15-17:30				
17:30-17:45				
17:45-18:00				
18:00-18:15				
18:15-18:30	SESSIONE POSTER e Coffee Break (CHIOSTRO DI LEVANTE)	Assemblea AIV e Conferimento Medaglie (AUDITORIUM)		
18:30-18:45				
18:45-19:00				
19:00-19:15				
19:15-19:30				
da 21:00		Party vulcanico - Palazzo Biscari		

Sede della Conferenza

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MONASTERO DEI BENEDETTINI DI SAN NICOLÒ L'ARENA - CATANIA

Giovedì 29 Settembre 2022 ore 10.00

AUDITORIUM

Prof. Roberto Sulpizio

One year of volcanic eruptions: what we learnt and what we still miss

Giovedì 29 Settembre 2022 ore 11.15

AUDITORIUM

Ricordo del Prof. Giovanni Occhipinti e del Prof. Letterio Carlo Villari

Venerdì 30 Settembre 2022 ore 17.30

AUDITORIUM

Assemblea dei soci dell'Associazione Italiana di Vulcanologia

Domenica 2 Ottobre 2022 ore 7.30 – 16.30

ESCURSIONE POST-CONFERENZA

*Etna versante nord, Field Leaders: Dr. Stefano Branca (INGV-OE)
Prof. Marco Viccaro (UNICT)*

PROGRAMMA DELLE SESSIONI SCIENTIFICHE

AUDITORIUM (12.00 - 13.30)

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

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

12.00 – 12.15

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

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

12.15 – 12.30

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

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

12.30 – 12.45

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

Laura Privitera, Salvatore Gambino

12.45 – 13.00

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

Luigi Carleo, Gilda Currenti, Alessandro Bonaccorso, Antonino Sicali

13.00 – 13.15

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

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

13.15 – 13.30

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

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

AULA1 (12.00 – 13.30)

S03. TEPHROCHRONOLOGY: A POWERFUL TOOL FOR UNRAVELLING THE PAST

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

12.00 – 12.15

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

Elisabetta Billotta, Roberto Sulpizio, Jacopo Selva, Antonio Costa

12.15–12.30

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

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

12.30–12.45

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

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

12.45–13.00

The tephra layers in the Crotona sequence: a microanalytical study

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

13.00–13.15

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

Sophie Vineberg, Roberto Isaia, Paul Albert, Victoria Smith

13.15–13.30

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

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

AULA 2 (12.00–13.30)

S02. MULTIDISCIPLINARY APPROACHES FOR VOLCANO-TECTONIC STUDIES

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

12.00–12.15

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

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

12.15–12.30

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

Giacomo Corti, Daniele Maestrelli, Federico Sani

12.30–12.45

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

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

12.45–13.00

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

13.00–13.15

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

13.15–13.30

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

AUDITORIUM (15.00–16.30)

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

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

15.00–15.15

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

15.15–15.30

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

15.30–15.45

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

15.45–16.00

Hazards from pyroclastic density currents at Etna - revisited
Boris Behncke

16.00–16.15

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

16.15–16.30

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

AULA 1 (15.00–17.00)

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

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

15.00–15.15

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

15.15–15.30

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

Franco Foresta Martin, Enrico Massaro

15.30–15.45

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

Dario Calderone, Giovanni De Giorgio

15.45–16.00

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

16.00–16.15

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

Paolo Sammuri

16.15–16.30

Legends and medieval sources in the volcanological studies of Lipari

Marco Manni

16.30–16.45

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

Stefano Branca, Luigi Ingaliso, Daniele Musumeci

16.45–17.00

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

Daniele Musumeci, Giovanni Leone, Stefano Branca, Luigi Ingaliso

AULA 2 (15.00–17.15)

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

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

15.00–15.15

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

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

15.15–15.30

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

Francesco Neglia, Fabio Dioguardi, Roberto Sulpizio

15.30–15.45

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

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

15.45–16.00

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

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

16.00–16.15

Slope stability assessment at Stromboli (Italy)

Federico Di Traglia

16.15–16.30

Pyroclastic avalanches hazard at Mt. Etna volcano

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

16.30–16.45

Fixing criteria for volcanic unrest warning

Horst Langer, Susanna Falsaperla, Salvatore Spampinato, Alfio Messina

16.45–17.00

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

Raffaele Azzaro, PANACEA Working Group

17.00–17.15

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

Vera Pessina, PANACEA Working Group

CHIOSTRO DI LEVANTE SESSIONI POSTER (17.15 – 19.30)

S01. VOLCANO GEOLOGY, STRATIGRAPHY, CHRONOLOGY AND PALEOMAGNETISM TO UNRAVEL THE ERUPTIVE BEHAVIOR AND RELATED HAZARDS

Pannello 1

Deposit-derived block-and-ash flows: the hazard posed by perched temporary tephra accumulations on volcanoes; 2018 Fuego disaster, Guatemala

Gilda Risica, Mauro Rosi, Marco Pistolesi, Fabio Speranza, Michael J. Branney

Pannello 2

Reconstruction of the subaerial Holocene volcanic activity through paleomagnetic and ^{14}C dating methods: El Hierro Island (Canary Islands)

Gilda Risica, Alessio Di Roberto, Fabio Speranza, Paola Del Carlo, Massimo Pompilio, Stavros Meletlidis, Alessandro Todrani

Pannello 3

Age of the Valle del Bove formation and chronology of the post-collapse flank eruptions, Etna volcano (Italy)

Arianna Beatrice Malaguti, Stefano Branca, Fabio Speranza, Mauro Coltelli, Paola Del Carlo, Alberto Renzulli

Pannello 4

The contribution of drone images to reconstructing volcanic history: application to the island of Lipari

Mauro Rosi, Marco Manni

Pannello 5

Growth, collapses, and evolution of the long-lived Ollagüe volcano, Central Andean Volcanic Zone

Jose Pablo Sepulveda, Raffaello Cioni, Gabriel Ureta, Felipe Aguilera, Stephane Scaillet, Alfredo Esquivel, Bruno Scaillet

Pannello 6

$^{40}\text{Ar}/^{39}\text{Ar}$ dating of the trachytic crystal mush of the Green Tuff ignimbrite, Pantelleria island

Alessandra Cinquegrani, Stéphane Scaillet, Pierangelo Romano, Silvio Giuseppe Rotolo

Pannello 7

Emplacement temperature estimation of the 2015 Calbuco pyroclastic density currents (PDCs) using charcoal reflectance (Ro%) method: preliminary results.

Lisa Ricci, Alessandra Pensa, Daniele Morgavi, Jorge Romero, Guido Giordano, Francesco Frondini

Pannello 8

Magnetic fabric and paleomagnetism of the Mount Calanna dyke swarm: a comprehensive study on swarm emplacement

Rasia Shajahan, Elena Zanella, Sara Mana, Andrew Harris, Benjamin van Wyk de Vries

S02. MULTIDISCIPLINARY APPROACHES FOR VOLCANO-TECTONIC STUDIES

Pannello 9

Resolution and characterization of seismic swarms and clusters at Mt. Etna volcano (Sicily, Italy)
Salvatore Alparone, Graziella Barberi, Simone Cesca, Vincenza Maiolino, Andrea Ursino

Pannello 10

Dynamics of the main active faults bounding the mobile flank of Mt. Etna volcano, through very-long period comparisons of survey data.
Alessandro Bonforte, Stefano Branca, Giuseppe Brandi, Salvatore Consoli, Elena Cubellis, Salvatore Gambino, Francesco Guglielmino, Francesco Obrizzo, Laura Privitera, Giuseppe Puglisi, Umberto Tammara

Pannello 11

Mt. Etna volcano (Sicily, Italy): is the 2021 deep seismicity recorded on the eastern flank it represents an anomaly?
Anna Figlioli, Salvatore Alparone, Antonino D'Alessandro, Raffaele Martorana, Attilio Sulli, Andrea Ursino

Pannello 12

Historical photogrammetry-derived models to investigate the architecture of the Fremrinamar rift, Northern Iceland
Martina Pedicini, Fabio Bonali, Alessandro Tibaldi, Noemi Corti

S03. TEPHROCHRONOLOGY: A POWERFUL TOOL FOR UNRAVELLING THE PAST

Pannello 13

Tephrochronology, modelling and dynamics of large-magnitude eruptions in the Campi Flegrei caldera
Giada Fernandez, Gianluca Sottili, Biagio Giaccio, Antonio Costa

Pannello 14

Cryptotephra layers in marine sequences of the Ross Sea, Antarctica: implications and potential applications
Paola Del Carlo, Giuseppe Re, Alessio Di Roberto, Karen Gariboldi, Leonardo Langone, Tommaso Tesi, CHIMERA and GRETA Projects Working Group

Pannello 15

Fast morphometrical data acquisition on volcanic ash particles for the eruptive style detection: a multivariate statistics approach
Pietro Gabellini, Raffaello Cioni

S04. BEHIND THE SCENES: ADVANCED METHODOLOGIES TO UNRAVEL THE ARCHITECTURE, DYNAMICS AND TIMESCALES OF VOLCANIC PLUMBING SYSTEMS

Pannello 16

Characterization of final eruptive stages on Filicudi island (Aeolian Islands): The "Montagnola" Dome
Pierfrancesco Calabria

Pannello 17

Exploring microstructure and physical properties of rocks from the Campi Flegrei caldera: a 3D/4D multiscale characterization
Gianmarco Buono, Stefano Caliro, Giovanni Chiodini, Flora Giudicepietro, Francesco Maccaferri, Giovanni Macedonio, Lucia Pappalardo, Giacomo Pozzi, Elena Spagnuolo, Anna Tramelli

Pannello 18

Overlook into the Stromboli plumbing system: defining the spatial and temporal conditions of magma storage and transfer as prelude of paroxysmal eruptions

Marta Minniti, Eugenio Nicotra, Marco Viccaro

Pannello 19

Olivine clinopyroxenite xenolith in the 2002-2003 lavas of Mount Etna

Silvia Minissale, Gabriele Lanzafame, Roberto De Gennaro

Pannello 20

Real crystal-chemical variations of spinel, plagioclase and pyroxene solidified at variable cooling rates in a tholeiitic basaltic system using EPMA maps

Emanuela Gennaro, Gianluca Iezzi, Manuela Nazzari, Piergiorgio Scarlato, Francesco Vetere

Pannello 21

A journey into the Monte Amiata mafic enclaves world: from fieldwork observations to chemistry

Lucrezia Valeriani, Simone Paternostro, A. Buian, José Luis Sepulveda Birke, Martina Casalini, Eleonora Braschi, Andrea Orlando, Raffaello Cioni, Lorella Francalanci, Sandro Conticelli

Pannello 22

Modes and kinetics of magma storage and ascent across the Eastern and Northern Volcanic Zones of Iceland: the role of regional tectonics on the volcanic system dynamics

Francesco Furia, Marisa Giuffrida, Marco Viccaro

Pannello 23

Determining the depths and timescales of pre-eruptive processes before historical Monte Nuovo eruption (Campi Flegrei caldera, Italy)

Lydia Whittaker, Michael Stock, Victoria Smith, Evan Mutch, Penny Wieser, Roberto Isaia

S05. EQUILIBRIUM/DISEQUILIBRIUM PROCESSES DURING MAGMA ASCENT: NEW INSIGHTS FROM LABORATORY AND MODELLING STUDIES AND OBSERVATIONS OF THE NATURAL SYSTEM

Pannello 24

Crystallization kinetics in hydrous trachytic and latitic melts from Campi Flegrei

Ernestina Appiah, Stepan P. Krasheninnikov, François Holtz, Paola Stabile, Fabio Arzilli, Michael R. Carroll

Pannello 25

Nanocrystallization in basalts: a chemical threshold between magmas from Mt. Etna and Stromboli

Alex Scarani, Alessio Zandonà, Fabrizio Di Fiore, Pedro Antonio Valdivia Munoz, Nobuyoshi Miyajima, Hansjorg Bornhoft, Alessandro Vona, Joachim Deubener, Claudia Romano, Danilo Di Genova

Pannello 26

Numerical modelling of sudden eruptive style transitions at basaltic volcanoes

Elisa Biagioli, Giuseppe La Spina, Margherita Polacci, Jorge Romero, Mike Burton, Mattia de' Michieli Vitturi

Pannello 27

Rheology of 2021 lava flows at Cumbre Vieja volcano (La Palma, Canary Islands, Spain)

Fabrizio Di Fiore, Alessandro Vona, Alex Scarani, Guido Giordano, Claudia Romano, Daniele Giordano, Luca Caricchi, Matthew Pankhurst, and the INVOLCAN Team

Pannello 28

Experimental constraints on fragmentation conditions of mafic magmas during large-scale, ignimbrite-forming eruptions

Alessandro Vona, Fabrizio Di Fiore, Pedro Valdivia, Guido Giordano, Brittany D. Brand

Pannello 29

Are volcanic melts less viscous than we thought?

Pedro Valdivia, Alessio Zandonà, Joachim Deubener, Danilo Di Genova

S06. LARGE ERUPTIONS MAGMA-CHAMBERS FORMATION AND EVOLUTION: IMPLICATIONS ON MAGMATIC PROCESSES, ERUPTION DYNAMICS AND ENVIRONMENTAL IMPACT

Pannello 30

The TIFEHO research theme in the framework of the INGV Pianeta Dinamico project: a window into the past of the Phlegraean Volcanic District

Sandro de Vita, Mauro Antonio Di Vito, Ilenia Arienzo, Claudia D'Oriano

Pannello 31

How does an eruption start? The AD79 Pompeii eruption of Mt. Somma-Vesuvius (Italy)

Alessia Falasconi, Raffaello Cioni

Pannello 32

Magma chamber dynamics during the Green Tuff (Pantelleria, Italy) eruption: insights into the evolution of a peralkaline mush zone

Pierangelo Romano, John C. White, Ray Macdonald, Bogusław Baginski, Silvio G. Rotolo, Beata Marciniak-Maliszewska

Pannello 33

Stratigraphic and geochemical investigations of pre-Campanian Ignimbrite (39.85 ± 0.14 ka) and pre-Monte Epomeo Green Tuff (56.0 ± 1.0 ka) volcanic sequences at Procida and Monte di Procida

Carlo Pelullo, Domenico Sparice, Richard Brown, Paola Petrosino, Claudia D'Oriano, Domenico Doronzo, Ilenia Arienzo, Mauro Antonio Di Vito, Sandro de Vita

Pannello 34

Geochemical and isotopic characterization of old (>39 ka) tephra from the Phlegraean Volcanic District outcropping at Capri island

Carlo Pelullo, Hélène Balcone-Boissard, Domenico Doronzo, Domenico Sparice, Sandro de Vita, Mauro Antonio Di Vito, Ilenia Arienzo

S07. TOWARDS A MULTIDISCIPLINARY APPROACH TO UNDERSTAND THE ORIGIN AND DYNAMICS OF PAROXYSMS AT BASALTIC VOLCANOES

Pannello 35

Paroxysmal explosive activity at Mt. Vesuvius during the 1906 and 1944 eruptions

Gianmarco Buono, Elena Cubellis, Lucia Pappalardo, Paola Petrosino

Pannello 36

Investigation of tiltmeters produced by different manufacturers

Ayumu Ishikawa, Lorenzo Innocenti, Maria Cristina Silengo, Giorgio Lacanna, Takeshi Nishimura, Maurizio Ripepe

Pannello 37

Investigating major and ordinary Strombolian eruptions via distributed acoustic sensing with fibre optics

Francesco Biagioli, Jean-Philippe Métaixian, Eléonore Stutzmann, Maurizio Ripepe, Pascal Bernard, Roberto Longo, Marie-Paule Bouin

S08. NEW PERSPECTIVES IN DECIPHERING MANTLE GEOCHEMICAL, MINERALOGICAL AND SEISMIC HETEROGENEITIES

Pannello 38

Nature of metasomatic agents in the mantle wedge beneath the Imbabura-Cubilche volcanic complexes, Northern Ecuador

Wilman Navarrete, Jean-Luc Le Pennec, Gorki Ruiz, Céline Liorzou, Stalin Solano

Pannello 39

The December 2018 eruption of Mt. Etna: a geochemical study of melt inclusions

Alessandra Correale, Rosa Anna Corsaro, Lucia Miraglia, Antonio Paonita, Silvio Giuseppe Rotolo, Federica Ippolito

Pannello 40

Geochemical and isotopic constraints for mantle heterogeneity feeding the recent magmatic activity of the Dilo-Dukana and Mega volcanic fields (Ririba rift, southern Ethiopian Rift)

Eleonora Braschi, Zara Franceschini, Raffaello Cioni, Giacomo Corti, Federico Sani, Ameha Muluneh

S09. VOLCANO-HYDROTHERMAL SYSTEMS AND RELATED HAZARDS: MULTI-DISCIPLINARY APPROACHES

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Modelling and filtering of Etna soil CO₂ flux time series by mean of wavelet method

Salvatore Scudero, Antonino D'Alessandro, Giovanni Giuffrida, Sergio Gurrieri, Marco Liuzzo

Pannello 42

Revealing spatio-temporal variations of soil CO₂ at Mt. Etna volcano

Salvatore Scudero, Antonino D'Alessandro, Giovanni Giuffrida, Sergio Gurrieri, Marco Liuzzo

Pannello 43

Multidisciplinary and multilayer study of the 2022 Hunga Tonga-Hunga Ha'apai main eruption

Serena D'Arcangelo, Alessandro Bonforte, Federico Brogi, Massimo Calcara, Saioa A. Campuzano, Gianfranco Cianchini, Mariagrazia De Caro, Alfredo Del Corpo, Angelo De Santis, the rest of CHOPIN – Pianeta Dinamico (Working Earth) Team

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Petrography and geochemistry of Secca del Capo seamount (Aeolian Islands): a preliminary study

Roberto La Fortuna, Rosanna De Rosa, Paola Donato, Eugenio Nicotra

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Understanding groundwater circulation in active volcanic areas for the assessment of possible involvement of fresh and thermal waters in triggering phreatic explosions at Ischia (Italy)

Silvia Fabbrocino, Eliana Bellucci Sessa, Sandro de Vita, Mauro Antonio Di Vito, Enrica Marotta, Rosario Avino

S10. PROXIMAL AND DISTAL VOLCANIC MONITORING USING REMOTE SENSING SYSTEMS: NOVEL PRACTICES, APPLICATIONS AND INTEGRATIONS

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Long Range Infrasound Monitoring of Yasur Volcano

Rebecca Sveva Morelli, Duccio Gheri, Paola Campus, Diego Coppola, Emanuele Marchetti

Pannello 47

Quantification of SO₂ emission rate by hyperspectral imaging

Alessandro La Spina, Pietro Bonfanti, Giuseppe Salerno, Fabio Gulino, Stefano Buccellato, Domenico Corrao

Pannello 48

Study of the cross-correlation between infrasonic and seismic signals generated during the 2-5 December 2015 Etna explosive activity

Giacomo Belli, Emanuele Marchetti, Duccio Gheri

Pannello 49

Monitoring of Indonesian volcanoes with I06AU infrasound array

Duccio Gheri, Giacomo Belli, Emanuele Marchetti

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Quantifying thermal anomalies on active volcanoes: a comparison between MIROVA and FIRMS algorithms

Adele Campus, Marco Laiolo, Francesco Massimetti, Diego Coppola

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The effects of paroxysmal eruptive activity of Mt. Etna in the ionosphere: the TEC-GNSS ionospheric monitoring

Federico Ferrara, Michela Ravanelli, Federica Fuso, Andrea Cannata, Alessandro Bonforte, Mattia Crespi

Pannello 52

Ash fallout during the Cumbre Vieja 2021 eruption: insight from disdrometer measurements and particle microphysical properties

Frank Donnadieu, Thierry Latchimy, Jade de Paoli, Clothilde Biensan

Pannello 53

The use of UAS for the aerophotogrammetric survey of lava fields and domes, and the assessment of erupted volumes of magma at Ischia (Italy)

Enrica Marotta, Sandro de Vita, Pasquale Belviso, Gala Avvisati, Orazio Colucci

Pannello 54

Combined UAS measurements for monitoring dangerous volcanic contexts: applications at the Pisciarelli fumarolic field (Campi Flegrei) and Vesuvius crater

Alessandro Fedele, Renato Somma, Fabio Matano, Claudia Troise, Giuseppe De Natale

Pannello 55

Morphometric survey of the tunnel lava of Monte Intraleo and of the Snow Cave with laser scanner and drone and application of Virtual and Augmented Reality

Massimo Cantarero, Emanuela De Beni, Cristina Proietti, Paolo Centanni, Renzo Chiostrì, Chiara Ponti, Nicola Di Blasi, Davide Pellegrino, Roberto Maugeri

Pannello 56

Preliminary results of a topographic study at Grotta del Gelo ice cave (Mt. Etna, Italy)

Danilo Messina, Gaetano Giudice, Danilo Pavone, Roberto Maugeri, Francesco Carnemolla, Giorgio De Guidi

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

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UV camera-based SO₂ flux observations during the Etna's 2021 paroxysmal sequences

Giovanni Lo Bue Trisciuzzi, Marcello Bitetto, Dario Delle Donne, Salvatore Alparone, Mauro Coltelli, Gaetana Ganci, Francesco La Monica, Emilio Pecora, Alessandro Aiuppa

Pannello 58

Volcanic tremor and infrasonic data relative to the December 2020 - April 2021 paroxysmal sequence at the South East Crater of Mount Etna

Chiara Torre, Adriana Iozzia, Andrea Cannata, Giuseppe Di Grazia, Mariangela Sciotto, Marco Viccaro

Pannello 59

Volcanic tremor investigation through seismic and infrasonic advanced monitoring

Vittorio Minio, Luciano Zuccarello, Silvio De Angelis, Salvatore Rapisarda, Luciano Scuderi, Mariangela Sciotto, Martin Möllhoff, Alessio Rubonello, Marco Sassano, Andrea Cannata

Pannello 60

Effects of topography on the partitioning of elastic energy in atmosphere and solid Earth: 2021 Mt. Etna case study

Adriana Iozzia, Leighton Watson, Massimo Cantarero, Emanuela De Beni, Giuseppe Di Grazia, Gaetana Gangi, Jeffrey Johnson, Eugenio Privitera, Cristina Proietti, Mariangela Sciotto

Pannello 61

Relationship between volcanic tremor and SO₂ emission at Mt. Etna between the 2008 and 2015

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

Pannello 62

Ballistic particles and main eruption conditions during the lava fountains of 21 February 2022 at Mt. Etna

Giorgio Costa, Simona Scollo, Marco Viccaro

Pannello 63

On the physical models and numerical algorithms for the simulation of lava flows and their interaction with topography and structures

Vito Zago, Stefano Branca, Ciro Del Negro, Luigi Fortuna

S12. THE 2021 UNREST OF VULCANO, AEOLIAN ISLANDS (SICILY): NEW INSIGHT FROM MONITORING DATA AND HAZARD ASSESSMENT

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Analysis of seismic signals accompanying the unrest of Vulcano in 2021

Mario Valerio Gangemi, Salvatore Claudio Alparone, Andrea Cannata, Giuseppe Di Grazia, Mariangela Sciotto

Pannello 65

Subsurface stratigraphy, mineralogy and petrophysics at the Vulcano island (Southern Italy): recovering data for ground deformation and hydrothermal modeling at the unresting volcanic system

Angela Mormone, Raffaella Silvia Iovine, Gianmarco Buono, Santina Stissi, Barbara Cantucci, Giordano Montegrossi, Gianfilippo De Astis, Lucia Pappalardo, Monica Piochi, Gilda Currenti

Pannello 66

Modelling erosion and floods on the Island of Vulcano (Italy)

Rosanna Bonasia, Agnese Turchi, Paolo Madonia, Alessandro Fornaciai, Massimiliano Favalli, Andrea Gioia, Federico Di Traglia

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

Pannello 67

Moment magnitude for weak earthquakes in the Mt. Etna volcano area

Angela Saraò, Luca Moratto, Elisabetta Giampiccolo, Ornella Cocina

Pannello 68

Tephra fallout hazard assessment at Fuego volcano (Guatemala)

Silvia Giansante, Alvaro Aravena, Federica Pardini, Mattia de' Michieli Vitturi, Raffaello Cioni

Pannello 69

Unrest episodes at central volcanoes in 1990-1999: analysis and interpretation

Sara Emili, Laura Sandri, Valerio Acocella

Pannello 70

Pyroclastic current probabilistic invasion maps at the Campi Flegrei (Italy): from field data to numerical modeling

Laura Calabrò, Tomaso Esposti Ongaro, Guido Giordano

Pannello 71

New perspectives on the hazard by lava flow invasion at Mount Etna volcano through the spatial and temporal elaboration using a GIS-based approach

Mirko Messina, Giovanni Floridia, Marco Viccaro

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

Pannello 72

A combined approach for understanding volcanic hazard: ancient landscape and fragments of daily life, revealed by the effects of the 79 AD Somma-Vesuvius eruption, inside the archeological sites of Stabiae, Boscoreale, Oplontis, Herculaneum (Campania, Italy)

Giuliana Alessio, Giuseppe Mastrolorenzo, Lucia Pappalardo, Massimo Ricciardi, Anna Cioffi

Pannello 73

Distribution and impact of historical lahars on densely-inhabited territory after sub-Plinian eruptions of Vesuvius

Mauro A. Di Vito, Marina Bisson, Antonio Costa, Mattia de' Michieli Vitturi, Sandro de Vita, Domenico M. Doronzo, Roberto Gianardi, Ilaria Rucco, Laura Sandri, Giovanni Zanchetta

Pannello 74

Risk assessment from volcanic emissions at Mt. Etna: preliminary results from project HEAVEN

Salvatore Giammanco, Daniele Andronico, Pietro Bonfanti, Walter D'Alessandro, Cinzia Federico, Nunzia Voltattorni, HEAVEN Project Team

Pannello 75

Volcanology and archaeology: joint investigations reveal the evolution of a territory far from active volcanoes, but largely affected by their phenomena

Mauro Antonio Di Vito, Vincenzo Amato, Paola Bianchi, Raffaella Bonaudo, Paolo Marco De Martini, Vincenza Distasi, Domenico Doronzo, Adolfo Panarello, Daniela Panza, Daniela Pierno, Alessandra Smedile, Nadia Sergio, Domenico Sparice, Luigina Tomay

Pannello 76

A historical – methodological review of the studies on the 1932 eruption of the Quizapu volcano, Southern Andes, Chile

Jose Pablo Sepulveda, Daniele Musumeci, Raffaello Cioni, Luigi Ingaliso, Stefano Branca

S16. VOLCANIC HAZARD AND RISK: COMMUNICATION, INFORMATION AND TRAINING DURING QUIESCENCE, UNREST AND ERUPTION TIMES

Pannello 77

Web mapping and visualization services for planetary analogues

Giacomo Nodjoumi, Riccardo Pozzobon, Angelo Pio Rossi, Nick Cox, Massimo Cantarero, Emanuela De Beni, Stefano Branca, and the EXPLORE H2020 Consortium

Pannello 78

Formulation of a prototype multi-choice online questionnaire as survey for volcanic crisis exercises

Silvia Massaro, Laura Sandri, Adelina Geyer, Chiara Cristiani, Rosella Nave, Sara Loughlin, Sara Barsotti

Pannello 79

Virtual Reality Game for Earth Science: "A journey inside the volcano"

Giuliana D'Addezio, Valerio Lombardo

Pannello 80

Vulcano 2022 exercise: A focus on risk and emergency communication activities for the population

Michele Ciervo, Elena Lombardo, Antonella Scalzo, Maurilio Silvestri, Marina Morando, Cosimo Versace

Pannello 81

Increasing geo-hazards awareness in students: the "Geodynamic Laboratory" project first experience

Massimo Cantarero, Alessandro Bonforte

Pannello 82

Lessons learned from the 2021 Cumbre Vieja eruption (La Palma, Canary Islands)

Luca D'Auria, Nemesio Perez, INVOLCAN's team

AUDITORIUM (09.00–10.45)

S04. BEHIND THE SCENES: ADVANCED METHODOLOGIES TO UNRAVEL THE ARCHITECTURE, DYNAMICS AND TIMESCALES OF VOLCANIC PLUMBING SYSTEMS

Conveners: *Simone Costa (UniPI), Maurizio Petrelli (UniPG), Marisa Giuffrida (UniCT), Gabriele Lanzafame (UniCT), Andrea Cannata (UniCT)*

09.00–09.15

Determining the state of activity of transcrustal magmatic systems and their volcanoes

Guido Giordano, Luca Caricchi

09.15–09.45

[KEYNOTE] Magma recharge and mush disruption control basaltic paroxysmal eruptions: the summer 2019 eruptions at Stromboli volcano (Italy)

Chiara Maria Petrone, Silvio Mollo, Ralf Gertisser, Yannick Buret, Piergiorgio Scarlato, Elisabetta Del Bello, Daniele Andronico, Ben Ellis, Alessio Pontesilli, Gianfilippo De Astis

09.45–10.00

Thermal and SO₂ measurements reveal shallow magmatic dynamics at Stromboli volcano.

Marco Laiola, Dario Delle Donne, Marcello Bitetto, Diego Coppola, Giorgio Lacanna, Marco Pistolesi, Alessandro Aiuppa, Maurizio Ripepe

10.00–10.15

Image-assisted analysis for unraveling textural and chemical features of volcanic rocks: A case study from the 2019 paroxysmal eruptions of Stromboli

Roberto Visalli, Marisa Giuffrida, Marco Viccaro

10.15–10.30

Kinetic crystallization of a high-K basalt melt undercooled in laboratory: Implications for the modeling of open-conduit dynamics at Stromboli (Aeolian Islands, Italy)

Fabio Colle, Simone Costa, Matteo Masotta, Silvio Mollo, Patrizia Landi, Alessio Pontesilli, Stefano Peres, Thomas Griffiths, Lucia Mancini

10.30–10.45

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

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

AULA1 (09.00–10.45)

S01. VOLCANO GEOLOGY, STRATIGRAPHY, CHRONOLOGY AND PALEOMAGNETISM TO UNRAVEL THE ERUPTIVE BEHAVIOR AND RELATED HAZARDS

Conveners: *Gilda Risica (UniFI), Arianna Beatrice Malaguti (UniURB), Gino González (UniBA), Federico Lucchi, (UniBO)*

09.00–09.15

The activity of Italian volcanoes represented in ancient maps and frescoes from Middle Age to Renaissance

Roberto Scandone, Lisetta Giacomelli

09.15–09.30

Timescale of emplacement and rheomorphism of the Green Tuff ignimbrite (Pantelleria, Italy): a multidisciplinary approach

Alex Scarani, Carmela Federica Faranda, Alessandro Vona, Guido Giordano, Claudia Romano, Fabio Speranza, Silvio Giuseppe Rotolo

09.30–09.45

The crucial role of the Cyclopean Islands (Acitrezza, Catania) to deepen the early stage of Mt. Etna volcanism

Rosa Anna Corsaro, Stefano Branca, Gianfranco Di Vincenzo, Lucia Miraglia

09.45–10.00

Paleomagnetic dating of prehistoric flank eruptions from the SE lower slopes of Etna volcano

Andrea Magli, Stefano Branca, Fabio Speranza, Guido Giordano, Mauro Coltelli, Arianna Beatrice Malaguti

10.00–10.15

The chronicle of a small crater collapse at Stromboli: volcanological relevance of the 19 May 2021 ash cloud deposit

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

10.15–10.30

Resumption of the sustained column during the post-Plinian phase of the 79 AD Vesuvius eruption

Giulia Chiominto, Claudio Scarpati, Annamaria Perrotta, Lorenzo Fedele, Ileana Santangelo

10.30–10.45

Stratigraphy, lithofacies variations and transport and emplacement mechanisms of the most destructive PDC of the 79 AD Vesuvius eruption

Ileana Santangelo, Claudio Scarpati, Annamaria Perrotta, Lorenzo Fedele, Giulia Chiominto

AULA 2 (09.00–10.45)

S16. VOLCANIC HAZARD AND RISK: COMMUNICATION, INFORMATION AND TRAINING DURING QUIESCENCE, UNREST AND ERUPTION TIMES

Conveners: *Rosella Nave (INGV-OV), Vincenza Maiolino (INGV-OE), Sara Barsotti (IMO), Marco Neri (INGV-OE), Chiara Cristiani (DPC)*

09.00–09.15

Emergent tools to promote understanding of natural hazards

Danilo Reitano, Susanna Falsaperla

09.15–09.30

Immersive Virtual Reality: a novel approach for geological exploration in volcanic areas

Elena Russo, Fabio Luca Bonali, Alessandro Tibaldi, Noemi Corti, Federico Pasquaré Mariotto, Ugo Becciani, Fabio Vitello

09.30–09.45

Promoting interest in geological sites among the public via a field guide and virtual reality of Aci Castello and Aci Trezza (Sicily)

Joshua Brown, Massimo Cantarero, Domenico Catalano, Rosa Anna Corsaro, Emanuela De Beni

09.45–10.00

Elica, takes children through reading into the world of science and conscious technology
Massimo Cantarero, Emanuela De Beni, Maria Pia Basso

10.00–10.15

Scientific communication and outreach in the schools: a strategy for the better comprehension of natural risks
Vincenza Maiolino, Gruppo di lavoro informazione e divulgazione

10.15–10.30

Experiential learning exercises in small communities: the example of the elementary school of Vulcano Island, Italy
Costanza Bonadonna

10.30–10.45

An on-line form to promote citizen science: INGV, Osservatorio Vesuviano web form experience
Rosa Nappi, Rosella Nave, Giovanni Scarpato

AUDITORIUM (11.15–13.30)

[Continua] **S04. BEHIND THE SCENES: ADVANCED METHODOLOGIES TO UNRAVEL THE ARCHITECTURE, DYNAMICS AND TIMESCALES OF VOLCANIC PLUMBING SYSTEMS**

Conveners: *Simone Costa (UniPI), Maurizio Petrelli (UniPG), Marisa Giuffrida (UniCT), Gabriele Lanzafame (UniCT), Andrea Cannata (UniCT)*

11.15–11.30

New insights into the recent magma dynamics under Campi Flegrei caldera (Italy) from petrological and geochemical evidence
Gianmarco Buono, Antonio Paonita, Lucia Pappalardo, Stefano Caliro, Anna Tramelli, Giovanni Chiodini

11.30–11.45

A data driven approach based on mineral chemistry unveils magma dynamics of long-lasting, low-intensity volcanic activity
Simone Costa, Luca Caricchi, Marco Pistolesi, Anna Gioncada, Matteo Masotta, Costanza Bonadonna, Mauro Rosi

11.45–12.00

Physical constraints and magma dynamics of Mt. Etna rift systems
Pier Paolo Giacomoni, Matteo Masotta, Simone Costa, Gabriele Lanzafame, Eleonora Braschi

12.00–12.15

Quantifying magma ascent velocity at basaltic volcanoes and its role on determining the explosivity of eruptions
Francesco Zuccarello, Federica Schiavi, Marco Viccaro

12.15–12.30

Relating eruptive dynamics to mineral chemistry variability during the February-March 2021 sequence of lava fountains (South-East Crater, Mt. Etna)
Alessandro Musu, Rosa Anna Corsaro, Oliver Higgins, Corin Jorgenson, Maurizio Petrelli, Luca Caricchi

12.30–12.45

Novel insights into dynamics and timescales of volcanic processes from magma storage at deep crustal levels to eruption: the contribution of synchrotron X-ray diffraction, radiography and computed microtomography

Barbara Bonechi, Margherita Polacci, Vincenzo Stagno, Fabio Arzilli, Giuseppe La Spina, Rostislav Hrubciak, Cristina Perinelli, Mario Gaeta, Mike Burton

12.45–13.00

Constraining models of magma ascent with ground deformation data: an application to Etna eruptions

Emanuele Caruso, Antonio Costa, Giovanni Macedonio, Alessandro Bonaccorso, Gilda Currenti

13.00–13.15

The Marsili plumbing system and its magmatic evolution

Emanuela Gennaro, Gianluca Iezzi, Luca Cocchi, Guido Ventura

13.15–13.30

Pre-eruptive magmatic processes leading to the 1650 CE explosive eruption at the Kolumbo submarine volcano, Greece

Filippo Mastroianni, Iacopo Fantozzi, Alessandro Bragagni, Chiara Maria Petrone, Georgios E. Vougioukalakis, Eleonora Braschi, Lorella Francalanci

AULA 1 (11.15–12.30)

[Continua] **S01. VOLCANO GEOLOGY, STRATIGRAPHY, CHRONOLOGY AND PALEOMAGNETISM TO UNRAVEL THE ERUPTIVE BEHAVIOR AND RELATED HAZARDS**

Conveners: *Gilda Risica (UniFI), Arianna Beatrice Malaguti (UniURB), Gino González (UniBA), Federico Lucchi, (UniBO)*

11.15–11.30

Deadly thermal impact of detached ash cloud surges in 79CE at Herculaneum: a new hazard scenario at Vesuvius Volcano.

Alessandra Pensa, Guido Giordano, Sveva Corrado, Pier Paolo Petrone

11.30–11.45

Stratigraphy and eruptive dynamics of the Neapolitan Yellow Tuff, Campi Flegrei, Italy

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

11.45–12.00

The Campanian Ignimbrite of southern Italy: a fissure eruption or caldera-forming event?

Giuseppe De Natale, Christopher R.J. Kilburn, Giuseppe Rolandi, Claudia Troise, Renato Somma, Alessandro Fedele, Gianfranco Di Vincenzo, Roberto Rolandi, Judith Woo

12.00–12.15

A new morphology-based classification scheme for intermediate to silicic lava flows: application to the Central Andean Volcanic Zone

Jose Pablo Sepulveda, Raffaello Cioni, Alvaro Aravena

12.15–12.30

New insights on the intimate structure of natural volcanic aggregates through X-ray micro-tomography

Pietro Gabellini, Raffaello Cioni, Eduardo Rossi, Costanza Bonadonna, Marco Pistolesi, Lukas Baumgartner, Benita Putlitz

AULA 1 (12.30–13.30)

S10. PROXIMAL AND DISTAL VOLCANIC MONITORING USING REMOTE SENSING SYSTEMS: NOVEL PRACTICES, APPLICATIONS AND INTEGRATIONS

Conveners: *Stefano Corradini (INGV-ONT), Gaetana Ganci (INGV-OE), Luca Merucci (INGV-ONT), Giuseppe Salerno (INGV-OE), Letizia Spampinato (INGV-OE)*

12.30–12.45

Remote sensing of volcanic clouds: the legacy of Prof. Frank Silvio Marzano

Simona Scollo, Costanza Bonadonna, Stefano Corradini, Luigi Mereu, Maurizio Ripepe

12.45–13.00

Spatio-temporal evolution of SO₂ fluxes detected from a network of two ultraviolet cameras, and insights on the magma degassing (Stromboli Volcano, Sicily)

Dario Delle Donne, Eleonora Lo Coco, Marcello Bitetto, Francesco Paolo La Monica, Giorgio Lacanna, Joao Lages, Maurizio Ripepe, Giancarlo Tamburello, Alessandro Aiuppa

13.00–13.15

Integrating Ground-based and Satellite Volcano Monitoring techniques applied to gas emissions from fumarole vents and from the ground at La fossa Caldera (Vulcano, Aeolian Islands, Italy)

Iole Serena Diliberto, Giuseppe Bilotta, Annalisa Cappello, Roberto D'Aleo, Vincenzo Francofonte, Andrea Mastroli, Giuseppe Passafiume, Gaetana Ganci

13.15–13.30

Integrating mineralogical and geomorphological analyses: a first application to the highly active hydrothermal discharge area of Pisciarelli in the Campi Flegrei volcanic field (Italy)

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

AULA 2 (11.15–12.00)

[Continua] **S16. VOLCANIC HAZARD AND RISK: COMMUNICATION, INFORMATION AND TRAINING DURING QUIESCENCE, UNREST AND ERUPTION TIMES**

Conveners: *Rosella Nave (INGV-OV), Vincenza Maiolino (INGV-OE), Sara Barsotti (IMO), Marco Neri (INGV-OE), Chiara Cristiani (DPC)*

11.15–11.30

Visualizing design thinking for volcanic risk communication

Jorge E. Romero, Francisca Vergara-Pinto

11.30–11.45

Communicating volcanic hazard during the 2021 Fagradalsfjall eruption in Iceland: from science to operations

Sara Barsotti, Michelle Maree Parks, Melissa Anne Pfeffer, Bergrún Arna Óladóttir, Gro B.M. Pedersen, Kristín Jónsdóttir, Björn Oddsson

11.45–12.00

General discussion

AULA 2 (12.00–13.30)

S07. TOWARDS A MULTIDISCIPLINARY APPROACH TO UNDERSTAND THE ORIGIN AND DYNAMICS OF PAROXYSMS AT BASALTIC VOLCANOES

Conveners: *Ida Di Carlo (ISTO), Massimo Pompilio (INGV-PI), Michel Pichavant (ISTO), Nolwenn Le Gall (UCL)*

12.00–12.15

Volcanic gas constraints on the trigger mechanisms and incubation timescales of basaltic paroxysms

Alessandro Aiuppa, Marcello Bitetto, Dario Delle Donne, Francesco La Monica, Giovanni Lo Bue Trisciuzzi, Giancarlo Tamburello

12.15–12.30

Pre-explosive ground deformations induced by normal Strombolian and paroxysmal activities at Stromboli volcano

Ayumu Ishikawa, Takeshi Nishimura, Giorgio Lacanna, Hiroshi Aoyama, Ryohei Kawaguchi, Eisuke Fujita, Taishi Yamada, Takahiro Miwa, Maurizio Ripepe

12.30–12.45

The 19 July 2020 eruption at Stromboli: insights into the magmatic system feeding high-energy activity at an open-conduit basaltic volcano

Marija Voloschina, Nicole Métrich, Antonella Bertagnini, Paola Marianelli, Alessandro Aiuppa, Maurizio Ripepe, Marco Pistolesi

12.45–13.00

The 2019 basaltic Vulcanian eruptions of Stromboli

Guido Giordano, Alessandro Vona, Alessandro Frontoni, Teresa Oreade Grillo, Riccardo Russo, Gerardo Carrasco Nunez, Gianfilippo De Astis

13.00–13.15

Precursors of paroxysmal activity at Stromboli volcano through machine learning applied to seismo-acoustic features

Flora Giudicepietro, Sonia Calvari, Luca D'Auria, Federico Di Traglia, Giovanni Macedonio, Teresa Caputo, Walter De Cesare, Gaetana Ganci, Marcello Martini, Massimo Orazi

13.15–13.30

General discussion

AUDITORIUM (15.00–16.00)

[Continua] **S04. BEHIND THE SCENES: ADVANCED METHODOLOGIES TO UNRAVEL THE ARCHITECTURE, DYNAMICS AND TIMESCALES OF VOLCANIC PLUMBING SYSTEMS**

Conveners: *Simone Costa (UniPI), Maurizio Petrelli (UniPG), Marisa Giuffrida (UniCT) Gabriele Lanzafame (UniCT), Andrea Cannata (UniCT)*

15.00–15.15

Magma mingling and crystal recycling inside a shallow magma chamber during the last phase of magmatic activity at Nisyros volcano (Greece)

Eleonora Braschi, Francesca Giannetti, Andrea Orlando, George Vougioukalakis, Lorella Francalanci

15.15 – 15.30

Spatio-temporal reconstruction of the magma plumbing system of Fogo volcano, Cape Verde archipelago
Francesco Maria Lo Forte, Alessandro Aiuppa, Silvio G. Rotolo, Vittorio Zanon

15.30 – 15.45

Modulation of a plumbing system by ice cover fluctuations - The Pleiades volcanic complex, Antarctica
Irene Rocchi, Alice Tomassini, Matteo Masotta, Maurizio Petrelli, Mónica Agreda Lopez, Sergio Rocchi

15.45 – 16.00

Mafic recharge dynamics in Middle Triassic feeding systems of Dolomites (Southern Alps): comparison with active volcanoes
Nicolò Nardini, Federico Casetta, Theodoros Ntaflos, Alberto Zanetti, Massimo Coltorti

AUDITORIUM (16.00 – 17.00)

S08. NEW PERSPECTIVES IN DECIPHERING MANTLE GEOCHEMICAL, MINERALOGICAL AND SEISMIC HETEROGENEITIES

Conveners: *Antonio Caracausi (INGV-PA), Jabrane Labidi (IPGP), Giulia Marras (UniRM1), Vincenzo Stagno (UniRM1)*

16.00 – 16.15

New Inferences on Magma Dynamics in Melilitite-Carbonatite Volcanoes: The Case Study of Mt. Vulture (Southern Italy)
Gabriele Carnevale, Antonio Caracausi, Silvio Rotolo, Michele Paternoster, Vittorio Zanon

16.15 – 16.30

The nature of the lithospheric mantle under La Palma (Canary Islands): New data on noble gases and CO₂ isotopes from the 2021 Cumbre Vieja eruption
Andres Libardo Sandoval Velasquez, Andrea Luca Rizzo, Federico Casetta, Theodoros Ntaflos, Alessandro Aiuppa, Mar Alonso, Eleazar Padrón, Matthew Pankhurst, Nemesio M. Pérez

16.30 – 16.45

Multi-stage oxidizing events recorded by peridotite mantle xenoliths from the Hyblean Plateau: evidence from combined measurements of Fe³⁺ in spinel, noble gases, and fluid inclusions composition
Giulia Marras, Vincenzo Stagno, Giovanni Battista Andreozzi, Antonio Caracausi, Valerio Cerantola, Maria Luce Frezzotti, Michele Zacchigna, Cristina Perinelli

16.45 – 17.00

Application of synchrotron micro-Mössbauer and micro-FTIR spectroscopy to analyze redox-driven processes recorded by mineral and melt inclusions
Giulia Marras, Gabriele Carnevale, Antonio Caracausi, Silvio Rotolo, Vincenzo Stagno

AULA1 (15.00 – 17.00)

[Continua] S10. PROXIMAL AND DISTAL VOLCANIC MONITORING USING REMOTE SENSING SYSTEMS: NOVEL PRACTICES, APPLICATIONS AND INTEGRATIONS

Conveners: *Stefano Corradini (INGV-ONT), Gaetana Ganci (INGV-OE), Luca Merucci (INGV-ONT), Giuseppe Salerno (INGV-OE), Letizia Spampinato (INGV-OE)*

15.00–15.15

Quantifying thermal emission from open vent multicraters system using a multisensory space-based approach: Stromboli and Etna case studies

Francesco Massimetti, Diego Coppola, Marco Laiolo, Adele Campus, Corrado Cigolini, Maurizio Ripepe

15.15–15.30

Integrated use of satellite instruments for real-time monitoring of Etna emissions

Stefano Corradini, Luca Merucci, Lorenzo Guerrieri, Dario Stelitano

15.30–15.45

Doppler Radar Monitoring of Mt. Etna Explosive Activity

Giuseppe Giammello, Marco Firetto Carlino, Mauro Coltelli

15.45–16.00

Detection and Parametrization of Volcanic Plumes from Visible-Wavelength Images with PlumeTraP: Application to Plumes Associated with the 2018 Sabancaya Eruption, Perú

Riccardo Simionato, Paul A. Jarvis, Eduardo Rossi, Costanza Bonadonna

16.00–16.15

A new radar-based statistical parametric model to quantify the mass eruption rate and uncertainty in various wind conditions

Luigi Mereu, Simona Scollo, Alexander Garcia, Laura Sandri, Costanza Bonadonna, Frank Silvio Marzano

16.15–16.30

Real-time estimation of Mass Eruption Rates of tephra plumes at Mt. Etna from fixed-pointing Doppler radar

Frank Donnadieu, Valentin Freret-Lorgeril, Michele Prestifilippo, Mauro Coltelli, Patrick Fréville, Claude Hervier, Simona Scollo, Yannick Guéhenneux, Philippe Cacault

16.30–16.45

Analysis of high-resolution DEMs from UAS to estimate the distribution of ash-fall out and ballistics from Etna's 2021 paroxysmal events

Cristina Proietti, Massimo Cantarero, Emanuela De Beni

16.45–17.00

General discussion

AULA 2 (15.00–17.00)

S14. VOLCANIC RISK MANAGEMENT IN INHABITED AREAS

Conveners: *Antonio Colombi (DPC), Chiara Cristiani (DPC), Eugenio Privitera (INGV-OE)*

15.00–15.15

[INVITED] Relative seismic and tsunami risk assessment: the Stromboli Island (UNESCO site, Italy) case study

Agnese Turchi

15.15 – 15.30

The 2021 eruption in La Palma Island (Canary Islands, Spain): Volcano monitoring, eruptive processes and crisis management
Meletlidis Stavros, IGN Volcano Monitoring Group, Directorate General of Security and Emergencies of Canary Government

15.30 – 15.45

Integrating hazard, exposure, vulnerability and resilience for risk and emergency management in a volcanic context: the ADVISE model
Costanza Bonadonna, Corine Frischknecht, Scira Menoni, Mauro Rosi, Sebastien Biass, Chris E. Gregg, Ali Asgary, Marco Pistolesi, Antonio Ricciardi, Chiara Cristiani

15.45 – 16.00

Emergency management and risk reduction measures during the Vulcano (Aeolian Islands) unrest 2021-2022
Antonio Ricciardi, Antonella Scalzo, Chiara Cristiani, Massimo Durantini, Domenico Fiorito

16.00 – 16.15

Continuous monitoring of soil CO₂ flux and air CO₂ concentration at Vulcano during 2021
Sergio Gurrieri, Roberto M.R. Di Martino, Marco Camarda, Vincenzo Francofonte

16.15 – 16.30

Response of the civil protection office of the town of Pozzuoli to the unrest of the Campi Flegrei caldera
Mauro Rosi, Annamaria Criscuolo

16.30 – 16.45

Buildings vulnerability under effect of bradyseism phenomena: Campi Flegrei case study
Daniela De Gregorio, Francesca Linda Perelli, Stefano Nardone, Giulio Zuccaro

16.45 – 17.00

Approaches at regional and National levels to prevent and mitigate the risk of gas hazards in the inhabited areas of Rome, Ciampino and Fiumicino municipalities (Lazio Region).
Antonio Colombi, Giacomo Catalano, †Antonio Gerardi

AUDITORIUM (09.00–10.45)

S05. EQUILIBRIUM/DISEQUILIBRIUM PROCESSES DURING MAGMA ASCENT: NEW INSIGHTS FROM LABORATORY AND MODELLING STUDIES AND OBSERVATIONS OF THE NATURAL SYSTEM

Conveners: *Giuseppe La Spina (INGV-OE), Paola Stabile (UniCAM), Michael R. Carroll (UniCAM), Margherita Polacci (UOM)*

09.00–09.15

The complex rheology of bubble-bearing magmas

Alessandro Frontoni, Alessandro Vona, Claudia Romano

09.15–09.30

Quantifying the influence of cooling rate and shear rate on the disequilibrium rheology of a basaltic melt from Mt. Etna (Italy)

Fabrizio Di Fiore, Alessandro Vona, Antonio Costa, Silvio Mollo, Claudia Romano

09.30–09.45

A comprehensive database of crystal-bearing magmas for the calibration of a rheological model

Alessandro Frontoni, Antonio Costa, Alessandro Vona, Claudia Romano

09.45–10.00

[INVITED] In situ 4D dendritic crystallization in hydrous basaltic magmas: implications for magma mobility within the Earth's crust

Fabio Arzilli, Margherita Polacci, Giuseppe La Spina, Nolwenn Le Gall, Edward W. Llewellyn, Richard A. Brooker, Danilo Di Genova, David A. Neave, Daniele Giordano, Mike R. Burton

10.00–10.15

Assessing the role of equilibrium thermodynamics in magma evolution by molecular dynamics and phase diagram calculations

Donato Belmonte, Giulio Ottonello, Francesca Menescardi

10.15–10.30

Shallow syn-eruptive carbonate assimilation and its effects on vesiculation and eruptive behaviour – insights from 3D reconstruction of experimental samples

Marco Knüver, Daniela Mele, Alessandro Pisello, Roberto Sulpizio, Diego Perugini, Antonio Costa, Francesco Vetere

10.30–10.45

Relationship between edifice collapse and eruptive activity on instant time scales: insights from the Pacaya 1 ka and Cumbre Vieja 2021 eruptions

Jorge E. Romero, Margherita Polacci, Fabio Arzilli, Shigeru Kitamura, Giuseppe La Spina, Francisco Cáceres, Mike Burton, Matthew Pankhurst

AULA 1 (09.00–10.45)

S06. LARGE ERUPTIONS MAGMA-CHAMBERS FORMATION AND EVOLUTION: IMPLICATIONS ON MAGMATIC PROCESSES, ERUPTION DYNAMICS AND ENVIRONMENTAL IMPACT

Conveners: *Sandro de Vita (INGV-OV), Claudia D'Oriano (INGV-PI), Ilenia Arienzo (INGV-OV), Domenico M. Doronzo (INGV-OV)*

09.00–09.15

Classification of ignimbrites and their eruptions

Guido Giordano, Ray Cas

09.15–09.30

Volcanological and petrological characterization of the Golja Ignimbrite (Main Ethiopian rift)

Federica Langone, Zara Franceschini, Francesca Forni, Bruno Scaillet, Gaëlle Prouteau, Stéphane Scaillet, Raffaello Cioni

09.30–09.45

From deposits to physical parameters of large-scale energetic pyroclastic density currents: the case of the 39.8 ka Campanian Ignimbrite, Italy

Aurora Silleni, Guido Giordano, Michael H. Ort, Roberto Isaia

09.45–10.00

Reconstructing pyroclastic currents' source and flow parameters from deposit characteristics and numerical modeling: The Pozzolane Rosse ignimbrite case study (Colli Albani, Italy)

Laura Calabrò, Tomaso Esposti Ongaro, Guido Giordano, Mattia de' Michieli Vitturi

10.00–10.15

The 79 CE eruption of Vesuvius - lesson from the past and future perspectives

Domenico Maria Doronzo, Mauro Antonio Di Vito, Ilenia Arienzo, Monica Bini, Benedetta Calusi, Matteo Cerminara, Stefano Corradini, Sandro de Vita, Biagio Giaccio, Lucia Gurioli, Giorgio Mannella, Giovanni Ricciardi, Ilenia Rucchi, Domenico Sparice, Micol Todesco, Elisa Trasatti, Giovanni Zanchetta

10.15–10.30

Reconstructing the pre Campanian Ignimbrite (39 ka) activity of Neapolitan volcanoes: first stratigraphical results of boreholes drilling in proximal and intermediate-distal areas of the Campi Flegrei caldera

Domenico Sparice, Mauro Antonio Di Vito, Sandro de Vita, Carlo Pelullo

10.30–10.45

Timescales of mingling preceding the Zaro eruption at Ischia

Chiara P. Montagna, Carlo Pelullo, Ilenia Arienzo, Federico Brogi, Simone Colucci, Claudia D'Orlando, Sumit Chakraborty, Massimo D'Antonio, Lucia Pappalardo, Paola Petrosino

AUDITORIUM (11.15–13.30)

S12. THE 2021 UNREST OF VULCANO, AEOLIAN ISLANDS (SICILY): NEW INSIGHT FROM MONITORING DATA AND HAZARD ASSESSMENT

Conveners: *Mauro Coltelli (INGV-OE), Stefano Branca (INGV-OE), Francesco Italiano (INGV-PA), Augusto Neri (INGV-PI)*

11.15–11.30

The 2021 ongoing volcanic unrest at Vulcano island (Italy): clues from the INGV multidisciplinary surveillance network

Antonio Paonita, INGV-PA Monitoring Team, INGV-OE Monitoring Team

11.30–11.45

Variation of CO₂ emissions diffused from the soil during the 2021-2022 crisis of the La Fossa volcano (Vulcano, Aeolian Islands)

Cosimo Rubino, Luca Tarchini, Maria Luisa Carapezza, Domenico Granieri, Antonio Patera, Lucia Pruiti, Massimo Ranaldi, Francesco Sortino

11.45–12.00

Soil CO₂ flux surveys at Vulcano during 2021

Marco Camarda, Roberto M.R. Di Martino, Sergio Gurrieri, Giorgio Capasso, Vincenzo Prano

12.00–12.15

The effects of volcanic degassing on the air composition revealed by stable isotope surveys

Roberto M.R. Di Martino, Sergio Gurrieri

12.15–12.30

Three dimensional magnetotelluric modeling of Vulcano Island (Aeolian archipelago, Italy) and its implications for recent volcanic unrest

Maria Giulia Di Giuseppe, Roberto Isaia, Antonio Troiano

12.30–12.45

A deep learning approach to monitor the thermal anomalies associated with the 2000-2022 exhalation activity in Vulcano Island (Italy) using ASTER

Claudia Corradino, Michael Sean Ramsey, Eleonora Amato, Federica Torrisi, Ciro Del Negro

12.45–13.00

Detection of thermal unrest at La Fossa crater (Vulcano Island, Italy) using VIIRS imaging bands

Diego Coppola, Marco Laiolo, Adele Campus, Francesco Massimetti

13.00–13.15

Satellite time series analysis: a statistical approach. The Vulcano Island 2021 crisis

Federico Rabuffi, Malvina Silvestri, Massimo Musacchio, Vito Romaniello, Maria Fabrizia Buongiorno

13.15–13.30

Volcanic-related flank instability at Vulcano island

Roberto Gianardi, Marina Bisson, Mauro Antonio Di Vito, Paolo Madonia, Claudia Spinetti, Marco Polcari, Cristiano Tolomei, Gianfilippo De Astis

AULA 1 (11.15–13.15)

S09. VOLCANO-HYDROTHERMAL SYSTEMS AND RELATED HAZARDS: MULTI-DISCIPLINARY APPROACHES

Conveners: *Franco Tassi (UniFI), Manfredi Longo (INGV-PA), Dmitri Rouwet (INGV-BO)*

11.15–11.30

Hydrogeochemistry of the Turrialba and Irazú "twin volcanoes", Costa Rica

Dmitri Rouwet

11.30–11.45

Mount Etna volcanic emissions signature on the chemical composition of bulk atmospheric deposition in Sicily, Italy

Filippo Brugnone, Walter D'Alessandro, Francesco Parello, Filippo Saiano, Marcello Liotta, Sergio Bellomo, Lorenzo Brusca, Lorenza Li Vigni, Anna Maria Abita, Sergio Calabrese

11.45 – 12.00

The key-role of submarine calderas in the development of hydrothermal systems: new findings from Palinuro and Brothers seamounts

Luca Cocchi, Fabio Caratori Tontini, Filippo Muccini, Cornel E. J. De Ronde

12.00 – 12.15

Geochemistry of REE and trace elements in shallow hydrothermal vents at Panarea island (Italy)

Fabio Sposito, Francesco Italiano, Manfredi Longo, Lorenzo Brusca

12.15 – 12.30

The shallow hydrothermal brine of Panarea: preliminary characterisation of the acoustic signature

Gianluca Lazzaro, Manfredi Longo, Cinzia Caruso, Sergio Scirè, Agostino Semprebello, Francesco Italiano

12.30 – 12.45

Numerical simulations for the characterization of phreatic events on Vulcano Island

Santina Chiara Stissi, Gilda Currenti, Micol Todesco

12.45 – 13.00

Influence of vent geometry and grain size distribution on the dynamics of phreatic eruptions

Silvia Giansante, Tomaso Esposti Ongaro, Mattia de' Michieli Vitturi, Marco Pistolesi, Raffaello Cioni

13.00 – 13.15

General discussion

**Domenica 2 Ottobre,
escursione sul versante nord dell'Etna
salita ai crateri sommitali e visita all'Osservatorio di Pizzi Deneri dell'INGV OE**

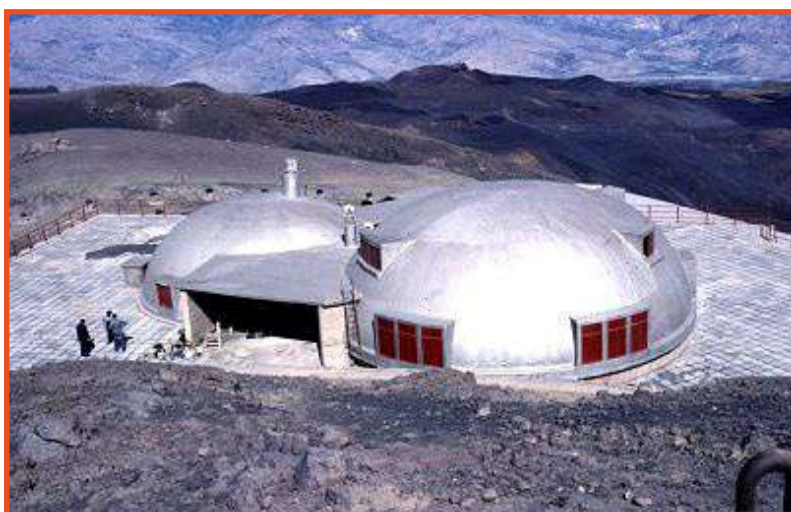
durata circa 8-9 ore, dalle 7.00 alle 16.00 circa

L'area sommitale dell'Etna

L'Etna è un vulcano straordinariamente complesso e dinamico, soggetto a frequenti cambiamenti della morfologia e delle fenomenologie eruttive. La sua attività è concentrata, per periodi più o meno lunghi, in area sommitale. Mentre fino ai primi anni del XX Secolo, in cima all'Etna era presente un solo cratere, il Cratere Centrale, oggi quest'area è caratterizzata dalla presenza di quattro crateri che si sono formati ed accresciuti nel corso degli ultimi cento anni circa. Nel 1911, sul fianco settentrionale del Cratere Centrale nasce il Cratere di Nord-Est.



Successivamente, all'interno del Cratere Centrale si formano la Voragine (1945) e in seguito la Bocca Nuova (1968). Nel 1971, sul fianco sud-orientale del Cratere Centrale si forma il Cratere di Sud-Est, che rimane attivo fino al 2007. A partire dal 2011 inizia ad accrescersi anche il Nuovo Cratere di Sud-Est, appoggiato sul fianco orientale del "vecchio" Cratere di Sud-Est e che in pochi anni ha raggiunto quasi le stesse dimensioni del "vecchio" cono. L'attività eruttiva, soprattutto di una bocca presente nella sella morfologica che fino al 2015 divideva il vecchio cono dal nuovo, ha progressivamente saldato i due coni principali, rendendoli un unico edificio vulcanico, allungato in senso NW-SE tanto che alla fine del 2020 si è tornati alla nomenclatura primigenia di Cratere di SE.



L'Osservatorio vulcanologico di Pizzi Deneri

L'idea di ricostruire un osservatorio vulcanologico ad alta quota sull'Etna dopo la distruzione, durante l'eruzione del 1971, dello storico Osservatorio Etneo dell'Università di Catania, che era localizzato a 2940 m s.l.m. nel versante sud, nacque da un progetto di Letterio Villari che si concretizzò nel 1977 quando divenne direttore dell'Istituto Internazionale di Vulcanologia (IIV) del CNR di Catania.

Il nuovo osservatorio fu costruito durante l'estate del 1977 ad una quota 2818 m s.l.m. nel versante nord in corrispondenza del rilievo morfologico di Pizzi Deneri, che corrisponde al bordo della caldera dell'Ellittico (Fig. 1), in una posizione sicura rispetto al rischio di invasione lavica. La struttura dell'edificio fu realizzata con due cupole, che ricordano la forma dell'igloo, per evitare i grossi accumuli di neve durante la stagione invernale e quindi favorirne l'accesso.

I locali dell'osservatorio erano adibiti sia per ospitare il personale dell'IIV e ricercatori italiani e stranieri che la strumentazione per il monitoraggio e i relativi laboratori. In particolare, furono realizzati, ad una profondità di circa 10 m, due tunnel ortogonali della lunghezza di 80 m destinati ad ospitare degli clinometri a base lunga per la misura delle deformazioni del suolo, che nel tempo si sono evoluti da un sistema ottico-micrometrico ad uno con lettore laser. Attualmente l'osservatorio ospita, oltre il sopracitato clinometro, le seguenti stazioni per il monitoraggio vulcanologico: gravimetrica, sismica, GPS, infrasonica, oltre ad un strain meter in pozzo e un interferometro laser. Dall'osservatorio, risalendo la cresta di Pizzi Deneri, è possibile osservare la vasta depressione della Valle del Bove che è stata generata da una serie di collassi di fianco a partire da circa 9200 anni dal presente. Lungo le pareti interne della Valle del Bove è esposta la successione vulcanica degli ultimi 100.000 anni e le relative strutture subvulcaniche, come i dicchi e i neck.

Alcuni consigli sull'equipaggiamento necessario

Nonostante la fine di settembre – inizio di ottobre in Sicilia si possano considerare a tutti gli effetti una coda dell'estate, l'area sommitale dell'Etna può presentare condizioni meteorologiche talvolta poco confortevoli (forte vento, temperature basse, nebbia, rapidi cambiamenti, etc.).

Oltre agli immancabili scarponi da trekking, per affrontare l'escursione sarà pertanto necessario possedere un equipaggiamento adeguato, ovvero: giacca a vento oppure shell/soft-shell, k-way, pile wind-stopper, pantaloni tech, cappello, guanti, occhiali da sole.

Orario di inizio dell'escursione: ore 7:00

Orario stimato per la conclusione dell'escursione: ore 16:00

Field Leaders: Dr. Stefano Branca (INGV-OE) Prof. Marco Viccaro (UNICT)

Costo escursione:

Il pagamento della quota di iscrizione avverrà al momento del check-in alla Conferenza, presso la Segreteria presente sul posto.