

The significance of the 1971 flank eruption of Etna from volcanological and historic viewpoints	64
Stefano Branca, Daniele Musumeci, Luigi Ingaliso	
POSTER SESSION	
Field GPS data inversion to model Fiandaca tectonic lineament that caused seismic event on 26th December 2018 (Mt. Etna Volcano, Sicily)	65
Giorgio De Guidi, Flavio Cannavò, Anna Figlioli, Salvo Giuffrida, Damiano Russo, Francesco Carnemolla, Fabio Brighenti	
The 2011-2020 long-term sustained inflation at Long Valley Caldera: investigation of the magmatic system dynamics and evolution	66
Erica De Paolo, Elisa Trasatti, Cristiano Tolomei, Emily K. Montgomery-Brown	
Petrogenesis and geochemical characteristics of the Lar alkaline igneous complex, south-east of Iran	67
Matthias Ghiotto, Claudio Natali, Sandro Conticelli	
SESSION 4 - MONITORING AND VOLCANIC RISKS	69
Conveners: Andrea Bevilacqua and Silvia Massaro	
ORAL SESSION	
Tephra fallout hazard assessment with uncertainty quantification: a case study from Cotopaxi and Guagua Pichincha volcanoes, Ecuador - INVITED KEYNOTE	71
Alessandro Tadini, Olivier Roche, Pablo Samaniego, Nourddine Azzaoui, Andrea Bevilacqua, Benjamin Bernard, Silvana Hidalgo, Mattia de' Michieli Vitturi	
Effective mitigation measures of lava flow hazards using optimized barriers configuration driven by numerical simulation	72
Veronica Centorrino, Giuseppe Bilotta, Annalisa Cappello, Gaetana Ganci, Claudia Corradino, Ciro Del Negro	
Mapping of lava flows from the Mount Etna 2020-2021 paroxysmal events combining machine learning and satellite remote sensing techniques	73
Eleonora Amato, Claudia Corradino, Federica Torrisi, Ciro Del Negro	
Radiative heat power derived from Sentinel-3 SLSTR, MODIS and VIIRS during December 2020 – March 2021 lava fountains at Etna volcano	74
Federica Torrisi, Eleonora Amato, Claudia Corradino, Ciro Del Negro	
Applying pattern recognition techniques to infrasound signals at Mount Etna	75
Felix Eckel, Horst Langer, Mariangela Sciotto	
Groundwater Level Variations in relation to Volcanic and Seismic Events. New Insights on Mt. Etna, Southern Italy	76
Simone Salvatore Aveni, Matthew Blackett	
Continuous monitoring of diffuse volcanic degassing by means of a microGC measurements at the summit of Teide volcano, Tenerife, Canary Islands	77
Cosimo Rubino, Nemesio M. Pérez, Francesco Sortino, Gladys V. Melián, María Asensio-Ramos,	

Field GPS data inversion to model Fiandaca tectonic lineament that caused seismic event on 26th December 2018 (Mt. Etna Volcano, Sicily)

Giorgio De Guidi^{1,2}, Flavio Cannavò³, Anna Figlioli^{1*}, Salvo Giuffrida¹, Damiano Russo¹, Francesco Carnemolla^{1,2}, Fabio Brighenti^{1,2}

¹Università di Catania, Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Catania, Italy

²CRUST, Centro interUniversitario per l'analisi SismoTettonica tridimensionale con applicazioni territoriali, Università di Catania, Catania, Italy

³Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania - Osservatorio Etneo, Catania, Italy

We present the analysis of geodetic monitoring of the tectonic lineaments along the eastern flank of MT Etna, affected by 2018 volcanic unrest. The intrusion of the hydrofracture responsible of the 24th and 25th December 2018 eruptive event, reactivated the Fiandaca fault causing 26th December 2018 seismic crisis. This uprising feeder dyke generated an E-W oriented remote stress field given rise a deformation along both east and west flank of Etna volcano. In particular the stress trajectory determines stress concentration along the main shear discontinuity given rise at an earthquake of Mw=4.9 and ML=4.8. The seismic event was followed by the reactivation of another tectonic structures on the eastern flank of the volcano such as the northern segment of the Pernicana Fault. The inversion of geodetic data, relating to the ground deformation of Fiandaca and Nizzeti fault segments, has been carried out through GAME tools to determine the fault segments source model of the 26th December 2018 seismic event. A source model, congruent with the geological, geometric and seismic characteristics of the analysed tectonic structures, has been defined through the implementation of Okada sources and the use of different GPS data inversion algorithms, in agreement with previous studies.