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Il vulcano Etna in eruzione (foto di Thomas Reichart)

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Multidisciplinary monitoring of volcanic activity during the July–August 2011 lava fountain activities occurred on Etna Volcano

Luciano Zuccarello, Daniele Carbone, Mauro Coltelli, Danilo Contrafatto, Alfio A. Messina, Domenico Patanè, Michele Prestifilippo, Salvatore Rapisarda, Gilberto Saccorotti, Simona Scollo, Luciano Scuderi, Gaetano Spata

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Moment Tensor Inversion of Very Long Period (VLP) events recorded at Mt. Etna during the October 2005 – January 2006 time interval

Luciano Zuccarello, Ivan Lokmer, Christopher J. Bean, Gilberto Saccorotti, Domenico Patanè

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The effect of Etna volcanic ash plumes on the Maltese islands

Francelle Azzopardi¹, Raymond Ellul¹, Michele Prestifilippo², Simona Scollo², Mauro Coltelli²

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In this paper we studied in depth the effect of Etna volcanic ash plumes on the Maltese Islands. Research was carried out to gather information about Etna's eruptions which involved the Maltese Islands, starting with historical eruptions dating back to the 14th century to more recent ones. A statistical approach was utilized to provide tephra deposit load and ash concentration using PUFF – a model which simulates the transport, dispersion and sedimentation of volcanic ash. Three different eruptive scenarios that characterize Etna's recent activity were considered; the first scenario representing the 2001 eruption (S1), the second scenario representing the 1998 eruption (S2) whilst the third scenario represents the recent activity in 2011-2012 (S3). We found that the time taken for the volcanic ash plume to reach the Maltese Islands when the wind direction is towards the South West ranges from 4 to 8 hours and the probability that Etna volcanic plume reaches Malta during an eruption is about 15%. The calibrated model, daily producing deposit load and cumulative area of volcanic ash dispersal, will be thus allowing provision of adequate alerts to civil aviation authorities and Malta airport. This will be of direct use to local communities and air traffic.

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