



Tephrochronology offshore Ischia Island, Tyrrhenian sea, Italy

Donatella Insinga (1), Roberto Sulpizio (2), Giovanni de Alteriis (1,3), Simona Morabito (4), Vincenzo Morra (5), Mario Sprovieri (1), Claudia Di Benedetto (5), Carmine Lubritto (6), and Giovanni Zanchetta (7)

(1) Istituto per l'Ambiente Marino Costiero (IAMC-CNR), Napoli, Italy (donatella.insinga@iamc.cnr.it), (2) CIRISIVU c/o Dipartimento Geomineralogico, Bari, Italy, (3) GeoLab Marine Surveys, Pozzuoli, Napoli, Italy, (4) S. Maria Capua Vetere, Caserta, Napoli, (5) Dipartimento di Scienze della Terra, Università degli Studi di Napoli Federico II, Napoli, Italy, (6) Dipartimento di Scienze Ambientali, Seconda Università di Napoli, Caserta, Italy, (7) Dipartimento di Scienze della Terra, Università di Pisa, Pisa, Italy

This work presents the analytical results of a tephrochronological study carried out on 12 gravity cores collected offshore southern Ischia island down to a maximum depth of 1238 m. The more distal site (core C1071) is located few kilometers to the west of the “Banco delle Sirene” seamount, not far from the Magnaghi and Dohrn canyons. The composite succession records at least the last ca. 40 kyrs of marine sedimentation as deduced by ¹⁴C AMS dating and tephrostratigraphy. This is consistent with the attribution, on the basis of the calcareous nannofossil assemblages, to the *Emiliania huxleyi* Acme Zone (Rio et al., 1990) in the latest Pleistocene-Holocene time interval. Eight primary tephra layers were recognised and analysed. They are generally represented by coarse to fine ash alternating with a number of volcanoclastic turbidites along the whole succession. The glass fraction was geochemically characterised through SEM-EDS analyses and shows clear affinities with products erupted during significant explosive events occurred in the Campania Plain, Ischia and Procida islands during the last 40 kyrs. Four ash layers were correlated with several eruptions occurred on Ischia island between the Middle Ages and Roman times and at ~ cal. 17 ka B.P. Deposits related to explosive activity occurred on Procida island were also found and dated at ~23 cal ka. Among the most ancient tephra layers, the best preserved horizon, 30 cm thick, is represented by the flegrean products of the Campanian Ignimbrite event (39 ka; De Vivo et al., 2001) the marine signature of which is known as C13 tephra in the Tyrrhenian (Thon-That et al., 2001). The peculiar composition and stratigraphic position of two other main marker tephtras recognised in the succession, allowed us to correlate them with the still poorly known Schiava (36 ka B.P.; Paterne and Guichard, 1993; Sulpizio et al., 2003) and Codola (~33. cal ka B.P.; this work) fall-out products which occur as 7-5 cm-thick pumice layers at the coring site. The definition of the source area of these two major events is still a matter of debate. However, the Somma-Vesuvius complex reasonably sourced the Schiava deposits while a Campi Flegrei provenance for the Codola deposits cannot be ruled out (Di Vito et al., 2008). These latter, known as C10 tephra in the Tyrrhenian and Adriatic sea (Paterne et al., 1988; Giaccio et al., 2008), in particular, represent reliable regional markers for the whole central Mediterranean area.

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