



Tephrochronology of a 72 ka-long marine record: implications for the southern Tyrrhenian explosive volcanism

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Several discrete tephra layers occur in a Marion Dufresne 13.9 m-long deep-sea core (MD01-2474G) from the southern Tyrrhenian Sea. Major, minor and trace element data (EMPA-WDS and LA-ICP-MS analyses) from fresh micro-pumices and glass shards allow to correlate them with the volcanic activity from Aeolian Islands (Lipari, Vulcano, Salina), Campanian Plain (Ischia), Pantelleria and Mt. Etna. The chronology of the succession is provided by a high-resolution age-model based on isotope stratigraphy and AMS radiocarbon dating, which places the succession in a time interval spanning the last 72 kyrs BP. According to a detailed proximal-distal and distal-distal correlation, a precise chronological framework is established and some main markers tephras of the central Mediterranean area (Y-1, Y-6, Y-7 and Y-8) are recognised. In additions, the succession is a precious archive to record multiple volcanic events occurred at Ischia volcano and the Aeolian Arc (Lipari and Vulcano). This latter, in particular, erupted several products which exhibits strong compositional variations otherwise non detectable from terrestrial counterparts. The results of the present study, hence, provide new data for a detailed analytical reference database of the Tyrrhenian Sea tephrochronology and may contribute to a better chronostratigraphic reconstruction of the Aeolian arc explosive events.