

Petrogenesis and geodynamics of Plio-Quaternary volcanism in Southern Italy

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The Southern Italy region is one of the most complex geodynamic settings on Earth and a large variety of magmatic products occur in this area during the Plio-Quaternary time. Tholeiitic rocks occur in western Sicily on Etna and Iblei, in Sicily Channel and on the Tyrrhenian Sea floor. Calc-alkaline and shoshonitic rocks characterized the products of the Aeolian Arc and associated seamounts but also occur in the Naples area. Na-alkaline rocks occur at Etna, Iblei, in the Sicily channel (Pantelleria and Linosa islands) and in the western Tyrrhenian basin (Ustica island and some seamounts). Potassic and ultrapotassic rocks characterized the Campanian volcanics, but potassic rocks also occur in the recent products of the Aeolian volcanoes. Undersaturated alkaline rocks that are rich in both K_2O and Na_2O are peculiar of M.te Vulture volcano (east of Vesuvio). Variations of incompatible element ratios and isotopic values for both “orogenic” and “anorogenic” magmas requires a complex origin and numerous hypothesis have been proposed to explain the relationships between magma genesis and the geodynamics evolution of the Tyrrhenian Sea and adjoining regions.

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