



The Vesuvius 79 AD tephra in the Naples and Salerno bays (Eastern Tyrrhenian Sea)

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Sedimentological and petrochemical studies carried out on a number of gravity cores along with the interpretation of high resolution single-channel seismic profiles off the Naples and Salerno bays (Eastern Tyrrhenian Sea) document the sedimentary facies and seismic stratigraphic signature of a thick pyroclastic deposit interbedded within the uppermost Holocene marine strata that has been correlated to the Vesuvius plinian eruption of 79 A.D. Thickness and areal distribution of the distal facies of this tephra layer (off the northern Salerno Bay) show a close fit with isopleths maps reported in the literature, while substantial mismatch characterises the distribution of the 79 A.D. deposits off the Naples Bay when compared to the extrapolated thickness of fallout deposits only. Facies analysis of this tephra revealed, moreover, significantly different characters with respect to the subaerial succession documented from the type sections of the archeological sites of Oplontis and Pompeii. This was likely to be expected as, in proximal subaqueous settings, both primary deposition and reworking of tephra are known to be influenced by the hydrodynamics of the water itself (induced by the pyroclastic currents entering the sea) as an active factor within the sedimentary process as well as by the early instability of pyroclastic bedforms due to the exceptionally high sediment yield during volcanic eruption. The data set discussed in this study allowed for accurate mapping of this widespread isochronous level in the two basins thus providing new constraints on the stratigraphic evolution of the campanian margin during the Late-Holocene.