



Record of past volcanic eruptions of the Campanian area in shallow-water Mediterranean cores

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The experimental results described in this talk were obtained in two decades of research activity developed in the Department of General Physics, University of Torino in collaboration with the Istituto di Cosmogeofisica, CNR. We have reconstructed volcanic activity profiles in shallow-water cores drilled from the Gallipoli Terrace in the Ionian Sea, using the indices of “number density” of volcanic pyroxene grains, witnesses of the eruptions [1]. The markers of the historical [2] volcanic eruptions (Pompei, Pollena, Ischia etc.) which occurred in the last two millennia have been identified along the cores (see fig. 1 of ref. [3] for the complete series). The tefroanalysis together with the radiometric method (limited to the last two centuries) allowed the absolute dating of the cores and demonstrated that the sedimentation rate of the Gallipoli Terrace is constant in the last two millennia (1 cm=15.5 years). The accurate dating of these cores is the basis for the study of climatic time series measured in the same cores. Within the E2-C2 project, our goals are: i) extending volcanic measurements before the Pompei eruption; ii) studying possible effects of volcanic activity on climate, by means of the comparison among different climatic indices measured in the same cores.

[1] Cini Castagnoli G., Bonino G., Caprioglio F., Provenzale A., Serio M., Zhu Guang-Mei, *Geophys. Res. Lett.*, 17, 1937, 1990.

[2] Arno' V., Principe C., Rosi M., Santacroce R., Sbrana A., Sheridan M.F., Quaderni de La Ricerca Scientifica, CNR 114 edited by Santacroce R. (1987), pp.53-103.

[3] Cini Castagnoli G., Bonino G., Taricco C., *Adv. Space Res.*, 29, 1537, 2002.