



Eastern Mediterranean high resolution paleoclimate investigations using south Adriatic finely laminated sediment

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Sediments from the Gulf of Taranto area, southern Italy, offer the possibility to very high resolution paleo-reconstructions of the eastern Mediterranean climate variability (MOCCHA project). Riverine waters, with the Po river as its main contributor, are streaming south-eastward in the Adriatic along the eastern Italian coastline, before entering the bay of Taranto and discharging their suspended material as sediments on the shelves. Multicore GeoB 107-39-03 was taken in 2006, in the central part of the straits of Otranto, south Adriatic, on a potential monitoring site for input variability of continental waters to the Gulf of Taranto. The sediment exhibits on its total length sub-milimetric scale laminae potentially connected to high-frequency climate/hydrology variability. Conventional geochemical analyses were carried out on discrete samples (XRF, ICP-OES, organic C/N, $\delta^{13}\text{C}$), and a novel technique was used to investigate the sediment chemistry at the laminae scale: the sediment has been resin-impregnated to enable laser ablation coupled to ICP-MS analyses (LA-ICP-MS). This powerful method recently developed at the University of Utrecht (Jilbert et al., 2008) permits extremely high resolution geochemical profiling of the laminated sediment, to unravel the forcing mechanisms generating the laminae. Furthermore, in order to compare the data to modern days sediment geochemistry, a series of analyses were carried out on a batch of 46 surface samples, in collaboration with the MOCCHA project partners (see Posters/Talks in Euromarc session OS18).

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