



Preliminary stratigraphy of the hole PRAD1-2 (EC-PROMESS 1 project, Central Adriatic) on the basis of micropaleontological and geophysical data

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We present preliminary stratigraphic results from borehole PRAD1-2 (EC-PROMESS 1 project) drilled in 180m water depth in the Central Adriatic. The site is located on the western flank of the Central Adriatic basin and recovered ca. 71m of sediment. Based on semi-quantitative analysis of the planktic and benthic foraminifera assemblages (in the >0.063mm fraction), we recognize a succession of glacial and interglacial intervals referred to MIS 1 to MIS 10. The proposed (eco)bio-stratigraphy is supported, from MIS 1 to MIS5a, by the data available from a core (RF93-77) collected very close to the hole and studied with a multidisciplinary approach and from other cores collected mainly in Southern Adriatic as part of the EC-EUROSTRATAFORM project. Before MIS 5a and down to MIS10 the stratigraphy is obtained by comparison to literature data from the Southern Adriatic and Eastern Mediterranean basins.

In borehole PRAD1-2 the interglacial periods are characterised by abundant planktic foraminifera while benthic foraminifera are typical of outer shelf/upper slope environment. Glacial intervals show very scarce or absent planktic foraminifera assemblages, and a generally very rich benthic foraminifera assemblage indicative of a mid-inner shelf environment. The lowermost paleo-bathymetry (inner shelf) seems to be reached during the MIS 10, represented, in the seismic profile, by a thick progradational sedimentary body underlying the Erosional Surface ES4.

Several intervals are dominated by (deep-)infaunal benthic foraminifera assemblages indicating low-oxygen bottom waters, such as *Fursenkoina*, *Globobulimina* and *Bolivina/Brizalina*, while in some intervals the sediment is even devoid of benthic fauna.

The planktic assemblage is largely dominated by Neogloboquadrinids and/or *Globigerinoides ruber* (pink) with thin and inflated test. These intervals are considered as the Central Adriatic equivalent of the Eastern Mediterranean sapropels S4, S5, S6, S7, S8, S9 and S10 (useful for refining the chronology of the hole). In the case of S5 and S7, in particular, the sediment is also characterised, in spite of the relatively shallow paleo-water depth, by mm-scale laminations and dark colour (indicating high organic matter content). In hole PRAD1-2 intervals equivalent to sapropel S1 and S3 do not indicate low-oxygen bottom-water environment, in marked contrast with the record of cores SA03-1, SA03-3 (EUROSTRATAFORM). This contrast may imply that deep-water formation in the Northern Adriatic, ventilating the Central Adriatic, somehow occurred during the intervals when sapropel S1 and S3 deposited in the South Adriatic. During the S4-S10 intervals, instead, deep-water formation was likely shut down in the entire Adriatic. Moreover, an interval equivalent to the deposition of sapropel S2 has been detected in the Central as well as in the Southern Adriatic, where S2 is dominated by Neogloboquadrinids and benthic foraminifera indicating low-oxygen condition. Finally, the new record confirms that the deposition of sapropels S2, S6 and S8 occurred during cold climatic conditions.

The comparison of the proposed stratigraphy with the available seismic profiles, indicates that the erosional surfaces ES4, ES3, ES2, forming at the top of each regressive sequence, roughly correspond to the base of MIS 9, MIS 7 and MIS 5, respectively. This evidence confirms that each regressive sequence in the area records a ca. 100-ka cyclicity and is interrupted by intervals of rapid sea-level rise during the main isotopic terminations.

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