



The Late Quaternary uplift of the Ionian coast, southern Italy, based on the coastal geomorphology analysis.

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Throughout Middle-Late Quaternary, the Ionian coast line between northern Calabria and Puglia was roughly perpendicular to the most external thrusts of the Apennines, its Bradanic foredeep and the western sector of the Apulian foreland. Therefore, all the coastlines associated with past highstand sealevels represent very important regional-scale natural marker to document the uplift history of this 70 km long sector of southern Italy. Several papers on this topic exist in the literature, but all of them have a local character having investigated only limited coastal sectors or single fossiliferous sites. The results and conclusions of the different researches, especially in terms of uplift-rate, are quite variable. In order to unravel this problem, we carried out a systematic remote sensing analysis, based on air-photos, together with a systematic field-work devoted to check all detected morphological features. Accordingly, for the first time a map of the marine terraces and their associated inner-edges has been produced, whose major advantage is the uniformity of the applied approach and the efforts spent to verify the lateral continuity of the different terraces. More than 10 terraces have been recognised, though their areal extent progressively diminishes upwards. The projection of the palaeocoast lines along a profile parallel to the present-day coast, shows a fan-shape geometry converging NE-wards documenting the cumulative effects of a lithospheric-scale tilting. In the southwestern sector (south of the Cavone river), the terrace convergence is much more marked and a slope of up to 2% can be estimated for the tilted terraces. This latter pattern is likely due to the activity of out-of-sequence blind crustal thrusts whose superficial evidence is given by the creation and growth of a ramp-anticline. As concern the chronology of the flight of terraces, we critically

analysed all absolute ages available from the literature, which have been obtained with different methods. Notwithstanding the uncertainties associated with i) the different dating techniques, ii) the correlation of sites and terraces with specific highstand sealevel periods and iii) the choice of the sealevel curve, our results suggest that the whole sequence of marine terraces is younger than 300-350 ka. For the five younger coastlines, likely formed during Late Pleistocene, we also estimated a long-term uplift-rate that varies from less than 2 mm/a to ca. 0.2 mm/a, in the southern and northern sectors respectively.