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Palaeobathymetric reconstruction of the late Calabrian-late Chibanian Tol-1 Section (Mersin, Turkey), through marine ostracod assemblages: a new evaluation of the Middle Pleistocene uplift rate of the Central Anatolian Plateau Southern Margin

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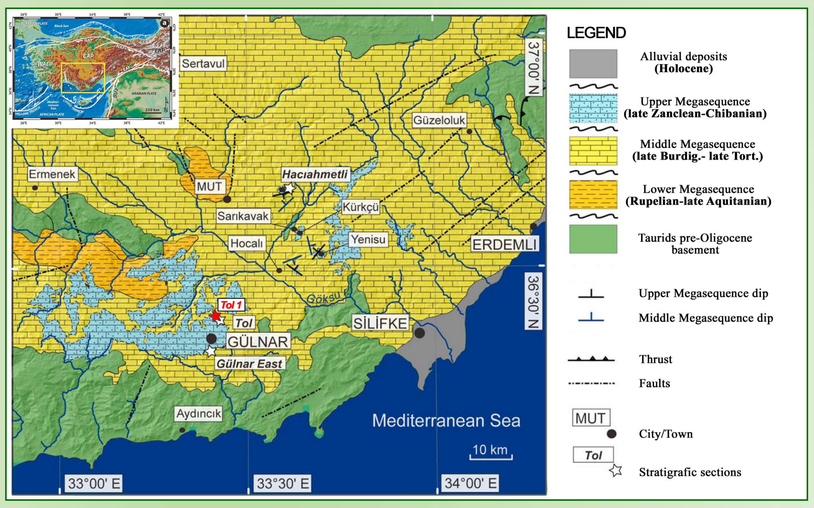
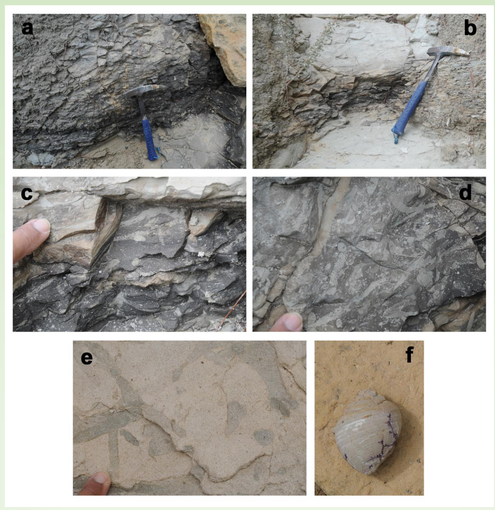
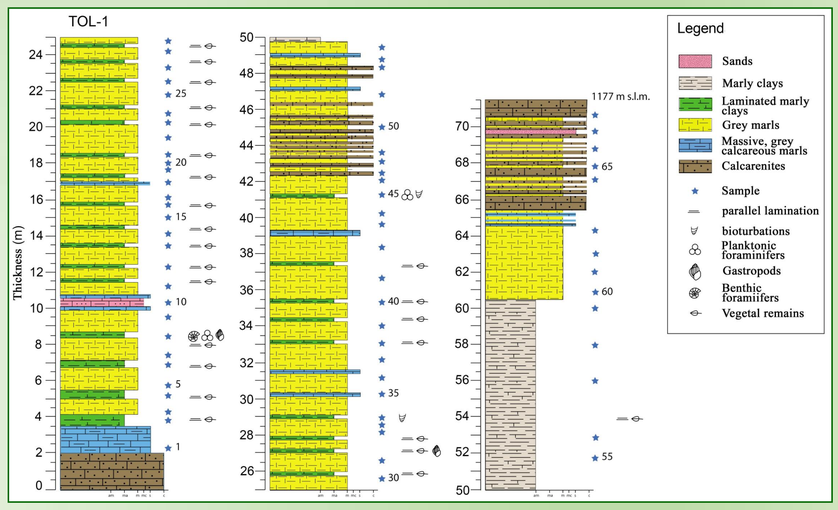
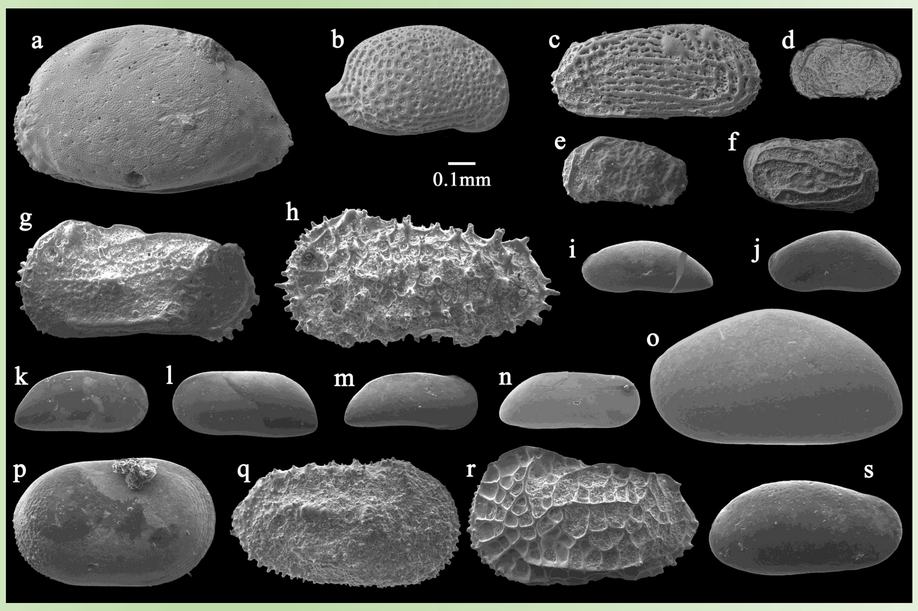
The southern margin of the Central Anatolian Plateau (CAP) is a tectonically active region of the Eastern Mediterranean area, which records high Neogene-Quaternary uplift rates. According to COSENTINO *et al*., (2012), OĞRETMEN *et al*. (2018), and LIBERATORE *et al*. (2022) it was affected by uplift rates around 0.24–0.25 mm/yr (late Tortonian), 3.21–3.42 mm/yr (Middle Pleistocene), and 0.9-1.5 mm/yr (late Holocene), respectively. Here we re-evaluate the Middle Pleistocene uplift rate through palaeobathymetric reconstructions using marine ostracod assemblages of a new section (Tol-1), located in the Mersin region (Turkey).





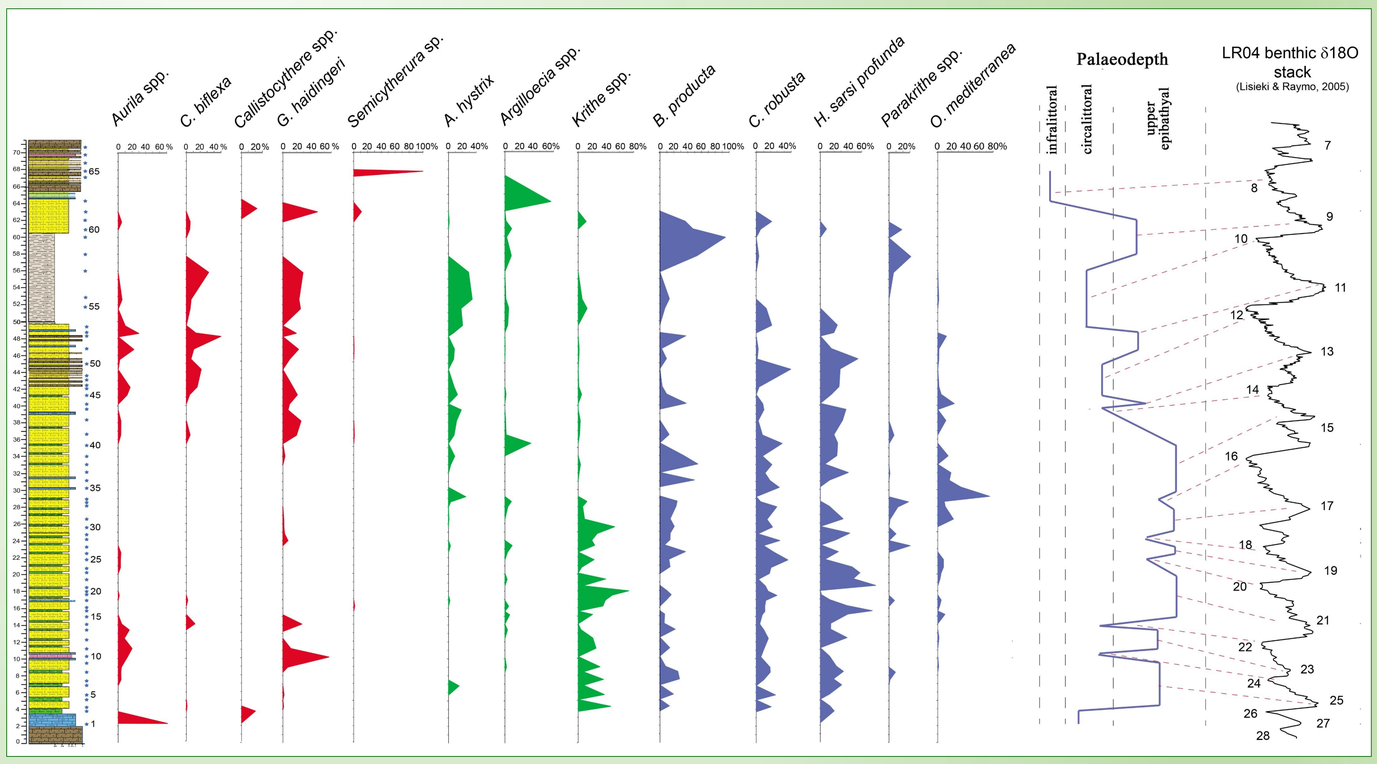


Tol-1 section (72 m thick) crops out at 1177 m a.s.l. The section was sampled around every metres. a.: Laminated grey clayey marls; b.: grey clayey marls intercalated with grey marls; c.: detail of (b) with bioturbations; d.: bioturbations; e.: *Thalassinoides*; f.; gastropod collected in sample Tol-1 32.

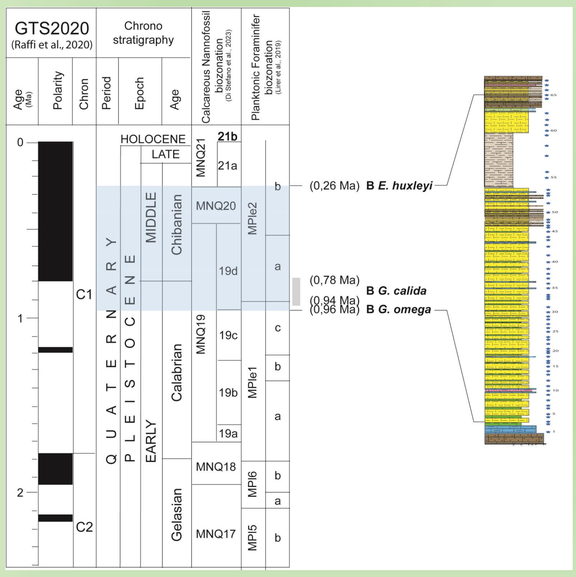


The taphonomic analysis of the ostracod assemblages shows the presence of "mixed fossil assemblages" with allochthonous reworked Neogene taxa, allochthonous displaced Pleistocene taxa, and 62 autochthonous taxa.

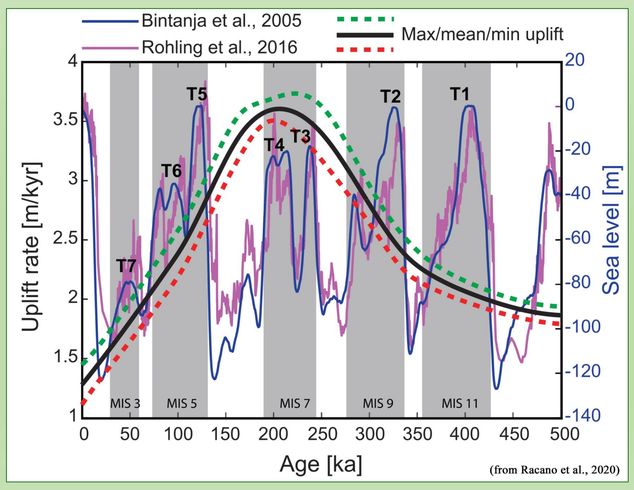
The autochthonous contingent is made of littoral taxa [among which, *Aurila nevianii* (a), *Aurila convexa* (b), *Carinocythereis carinata*, *Celtia biflexa* (c), *Callistocythere* cf. *rastrifera* (d), *Callistocythere* sp. (e), *Semicytherura* sp. (f), *Grinioneis haidingeri* (g)], eurybathic taxa [*Acanthocythereis hystrix* (h), *Argilloecia acuminata* (i), *Argilloecia fatua* (j), *Krithe compressa* (k), *Krithe iniqua* (l), *Krithe perpulchra* (m), *Parakrithe dimorpha* (n)], and epibathyal/bathyal taxa [*Bythocypris producta* (o), *Cytherella robusta* (p), *Henryhowella sarsi profunda* (q), *Oblitacythereis mediterranea* (r), *Parakrithe rotundata* (s)].



Using the Cluster Analysis (Bray-Curtis similarity index, UPGMA) in Q-mode and the autoecological characteristics of the most represented taxa, we reconstruct the palaeobathymetry of the Tol-1 section with oscillations between littoral and upper epibathyal environments (not deeper that 400 m for the presence of *Oblitacythereis mediterranea*).



The age of Tol-1 has been estimated using calcareous nannofossils. The bottom occurrences of *Gephyrocapsa omega* and of *Emiliania huxleyi* constrain its age between 0.96 Ma and, at least, 0.26 Ma (according to the new Mediterranean calcareous nannofossil zonation proposed by DI STEFANO *et al*., 2023), thus spanning from late Calabrian to late Chibanian.



The late Chibanian age for the top of Tol-1 section is in agreement with Racano et al. (2020), which show the maximum uplift rates of the CAP southern margin between 350 and 150 ka. Considering the present elevation of the section, the depositional sea depth of the top of the section of around -50 m and the eustatic sea level that, at 0.26 Ma was at around -90 m (DUTTON *et al*., 2009), the new uplift rate of the CAP southern margin has been estimated around 5 mm/yr.

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