



Late Holocene diffused interaction between a transform fault and nearby continental margin, extracted by comparing biological sea-level indicators and hydro-isostatic numerical predictions along the eastern Mediterranean coasts

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The Dendropoma petraeum are fixed vermitides that construct the abrasion platform rims. These endemic mollusks are considered good Relative Sea Level (RSL) indicators in the eastern and the southern Mediterranean, due to their narrow habitat at the sea surface (+/- 10cm). The observed RSL values recorded (submerged, uplifted or at present MSL) reflect a superposition of eustatic, isostatic, tectonic and possibly local sedimentary instabilities. The present study examines fossil Dendropoma samples gathered along the Levant coast, from northern Israel to eastern Turkey. Conventional radiocarbon dates (from Turkey, Syria and partly in Lebanon) and C14 AMS (from Lebanon and Israel) yields Dendropoma ages ranging through Late Holocene. A numerical model is used for calculating the change in sea level through the Holocene as a function of glacio-hydrology and isostasy of the eastern Mediterranean. Space-time dependent subtractions of the model values are used to eliminate the eustatic component of the RSL, in order to obtain the tectonic factor. Results show a general northward increase in tectonic uplift of the Levant coast. This differential uplift corresponds well to the major tectonic segments comprising the Levant continental margin since the Pleistocene, from the Carmel fault to the East Anatolian fault.