Geophysical Research Abstracts
Vol. 18, EGU2016-8873, 2016
EGU General Assembly 2016

Evidence for latest Pleistocene to Holocene uplift at the southern margin of the Central Anatolian Plateau (CAP), southern Turkey

Domenico Cosentino (1), Nazik Öğretmen (1,2), Paola Cipollari (1), Elsa Gliozzi (1), Giuditta Radeff (1), Cengiz Yıldırım (2), Oruc M. Baykara (3), and Chuan-Chou Shen (3)

(1) Dipartimento di Scienze, Università degli Studi Roma Tre, Rome, Italy (domenico.cosentino@uniroma3.it), (2) Eurasia Institute of Earth Sciences, Istanbul Technical University, Istanbul, Turkey, (3) Department of Geosciences, National Taiwan University, Taipei, Taiwan (ROC)

Along the Mediterranean coastal area of southern Anatolia, markers of ancient sea-level have been reported west of Alanya and east of the Göksu delta. In both areas, bioconstructed fossil rims, consisting mainly of calcareous algae, are situated 0.5 m above the live counterpart. The fossil rim to the west of Alanya has been dated between 2690 to 1545 yrs BP, evidencing late Holocene rock uplift at the CAP southern margin. More recently, based on beachrocks along the coastal area from Incekum to the south of Adana, authors showed that the shoreline was raised around 0.5 m after 19 BC-200 AD.

Based on new field observations along the coast between Aydı ncı k and Ayaş (Mersin, southern Turkey), together with AMS ^{14}C dating and high-resolution U-Th chronology, a more complex uplift history can be suggested. Along the coast of Yeşilovacı k, we observed up to seven uplifted marine notches, from 0.5 m to 6.10 m above sea level. Some of them show relationships with a travertine crust that yielded U-Th ages of 2727 $\pm$ 1559 years and 5236 $\pm$ 2255 years. In the same area, a calcareous algae fossil trottoir related to a marine notch 5.40 m above sea level yielded an AMS ^{14}C 2σ age of 32700 to 31645 years cal BP. Considering that the global ocean was 60 m below the present sea level at 32 ka, the Yeşilovacı k coastal area has been uplifted at 2 mm/yr.

Moving to the east, in a small embayment at Eğribük, two distinct well cemented beach deposits containing *Murex brandaris*, *Cerithium vulgatum*, and *Columbella rustica* have been uplifted at 0.3 m and 0.7 m above the present sea level. Although it is difficult to reconstruct the paleodepth of those beach deposits, AMS ^{14}C 2σ ages of 5575 to 5445 years cal BP and 2130 to 1965 years cal BP show late Holocene uplift. In the Narlı kuyu area, up to seven different uplifted markers of sea level were observed between 0.8 and 7.2 m above the present sea level. In addition, near Ayaş new insights for late Holocene uplift are from the northern harbour of the ancient Roman town Elaiussa-Sebaste, which now is 4 m above sea level. More evidence for late Holocene uplift of the Elaiussa-Sebaste area come from a Roman pool located in the small peninsula to the east of the northern harbour. There, a fossil shell of *Patella* cf. *aspera*, collected 1 m above the highest living *Patella*, yielded an AMS ^{14}C 2σ age of 850 to 1164 years cal AD. Considering an age of 1000 yrs AD and the level of the Mediterranean sea that was 0.2 m below the present sea level, we can estimate a tectonic uplift rate of 1.2 mm/yr for the last 1000 years.

Although the CAP southern margin shows clear evidence of recent uplift, with uplift rates between 2 mm/yr to 1.2 mm/yr, to reconstruct a well-constrained uplift curve for the Holocene more AMS ^{14}C and U-Th dates need to be collected.