T00148
C13: Temporal changes in sea-level
Oral Presentation / 01 August (Sat) 2015 / Room 431

C13-03

#Presenting author
*Corresponding author

Sea-level fluctuations and coastal evolution in the state of Rio de Janeiro, southeastern Brazil

#* J. W. Castro[1][2][3]; K. Suguio[2][1][3]

[1] Dept. of Geol, and Paleont, - Nat. Museum / UFRJ; [2] no afiliation here; [3] no affiliatin here

The present study aim to investigate the relative sea-level and the coastal evolution during the Holocene in the Rio de Janeiro coastline, based on geological and biological indicators. Using topographic survey, excavation and coring, and 14C dating of these coastal deposits and beachrocks outcrops, we have reconstructed a sea-level curve for the Holocene. For the first time on the Brazilian coast it was identified a negative record of relative sea-level during Late Pleistocene and Early Holocene transition. After the transition, a relatively rapid increase of sea-level began. At approximately at 8500 cal yr BP, the sea-level was 0.5 m below the current level, was overtaken for the first time in the Holocene, at approximately 7500 cal yr BP. The maximum level of +2.5 m was reached between 4770 and 4490 cal yr BP. At the point of maximum transgression, the sea-level began a general behavior of lowering until the present. The average rate of relative sea-level variation during the Holocene in the state of Rio de Janeiro coast, southeastern Brazil, was 7.0 m, with a negative variation of 4.5 m and a positive variation of 2.5 m. Between 11,910 and 7500 cal yr BP, the average rate was 1.2 mm/yr, with a variation of 1.20 m within 1000 yr. Between 7500 and 4690 cal yr BP, the average rate was 0.87 mm/yr, with a variation of 0.87 m within 1000 yr. From 4690 cal yr BP to the present, the lowering of the relative sea-level was 0.53 mm/yr, with a variation of 0.53 m within 1000 yr. Therefore, it is concluded that deceleration of the relative sea-level variation occurred during the Maximum Holocene in the analyzed coastal segment. This method may be used to build relative sea-level variation curves for mesotidal and microtidal regions.