Geophysical Research Abstracts,
Vol. 11, EGU2009-11125, 2009
EGU General Assembly 2009

Regional sea level change: projections and impacts in the Basque coast

A. Caballero (1), G. Chust (1), and M. Marcos (2)

(1) Marine Research Division, AZTI-Tecnalia, Pasaia, Spain (acaballero@pas.azti.es), (2) Grup d'Oceanografia Interdisciplinar, IMEDEA (UIB-CSIC), Mallorca, Spain

Global sea level rise is a consequence of the global warming, although the expected sea level change is not homogeneous in the entire global ocean. While in some regions the predicted increment is higher than the global mean; there are other regions where a sea level decrease can occur. Either an increment or decrease of the sea level will have a notable impact on coastal areas; therefore, in order to manage the impact over a certain region, it is necessary to predict the sea level change. The objective of this study is to assess the impact the sea level change will have over the Basque coast (northern Spain), along the 21th century. To do that, sea-level projections need to be analysed for the region of study. Temperature and salinity predictions for three climate scenarios (Committed, SRES A1B and SRES A2), provided by several Atmosphere-Ocean Coupled General Climate Models (AOGCM), have been extracted for the study area; then the steric sea level has been computed. The results show that at the end of the century, sea level will increase on average more than 20 cm, in the stated region. A high-resolution Digital Terrain Model (DTM), extracted from airborne laser altimetry data (LIDAR), was used to evaluate the potential impact of the calculated sea-level rise to the coast. This approach will give an insight of the future shoreline evolution and subsequently of the impacts to coastal habitats.