



The climate in the Venetian and North Adriatic region: variability, trends and change

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TOPIC T5. Regional Climate Change

Future sea level in the Mediterranean Sea

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Short abstract:

It is important for policy making to downscale the knowledge derived from global models to smaller areas. However this is a non-trivial task for the Mediterranean Sea. The outputs of 12 Atmosphere-Ocean General Circulation Models (AOGCMs) in the Mediterranean Sea are used to examine temperature (T), salinity (S) and sea level changes for the 21st century under three different climate scenarios. Warming and salinification are predicted to occur in the basin. The effect of T increases is translated into an average thermosteric sea level rise between 3 and 61 cm over the basin. Thermosteric sea level rise is moreover accelerated with rates of increase at the end of the century twice as large as in the first decade. In the Mediterranean S has a large impact in sea level changes and the projections of steric sea level range between -22 and 31 cm. Of course there are places in the Mediterranean Sea which would experience higher/lower sea level rise as the signals are not uniformly distributed. However the spatial patterns derived from the models are not consistent with each other and therefore they do not permit conclusions to be reached in this respect. A multi-model approach of high resolution models with an even higher resolution version of the Gibraltar Strait is necessary for ensuring that the coupling of the basin with the Atlantic ocean and the crucial salinity budget are accounted for appropriately.