



Sea level trends and land movements in the Mediterranean Sea with uncertainty estimates

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All the available tide gauge records in the Mediterranean Sea coasts have been used to estimate linear trends of sea level change and to assess the contribution of oceanic and atmospheric forcing and land movements to the observed changes. Our focus is the related uncertainty of each of the forcing factors, including the estimate of the eustatic part affecting the Mediterranean sea, subtracting glacial isostatic adjustment (GIA) and tectonic effects at the tide gauge stations. Oceanic mass addition, changes in the water mass characteristics and changes in the baroclinic oceanic circulation would count as oceanic forcing, atmospheric pressure and wind changes and their resulting changes in the barotropic part of oceanic circulation would count as atmospheric forcing and finally land movements due to crustal deformation and redistribution of loadings locally or globally would account for land forcing.