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Abstract

The spatial distribution of the sea level seasonal cycle within the Gulf of Cadiz (GoC) has been analyzed using monthly maps of sea level anomalies from gridded multi-mission altimeter data, along with monthly means of sea level heights from three tide gauge stations. Moreover, the contribution to the sea level seasonal cycle of atmospheric pressure and wind and the steric effect were evaluated using maps of sea level residuals from the VANI2-ERA hindcast, and a combination of satellite Sea Surface Temperature maps with a very high resolution Temperature and Salinity climatology for the region. The atmospheric contribution accounted for 55-58% of the sea level variance offshore, with this percentage diminishing towards the coast, where the effect of wind stress might be underestimated, especially over regions of complex