

Long-Term Trends of Sea Level and Sea Surface Temperature in the Mediterranean Sea

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Abstract : In the present study, 24 years of gridded sea level anomalies (SLA) from satellite altimetry and sea surface temperature (SST) from advanced very-high-resolution radiometer (AVHRR) daily data (1993-2016) are used. These data have been used to investigate the sea level rising and warming rates of SST, and their spatial distribution in the Mediterranean Sea. The results revealed that there is a significant sea level rise in the Mediterranean Sea of 2.86 ± 0.45 mm/year together with a significant warming of 0.037 ± 0.007 °C/year. The high spatial correlation between sea level and SST variations suggests that at least part of the sea level change reported during the period of study was due to heating of surface layers. This indicated that the steric effect had a significant influence on sea level change in the Mediterranean Sea.

Keywords : altimetry, AVHRR, Mediterranean Sea, sea level and SST changes, trend analysis

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