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Poster
During the boreal winter months of 2009/2010 and 2010/2011, Mediterranean mean sea level rose about 10 cm above the average monthly climatological values. The non-seasonal anomalies were observed in sea surface height (from altimetry), as well as ocean mass (from gravimetry), indicating they were mostly of barotropic nature. These relatively rapid basin-wide fluctuations occurred over time-scales of 1-5 months. Here, we use observations and re-analysis data to attribute the non-seasonal sea level and ocean mass fluctuations in the Mediterranean Sea to concurrent wind stress anomalies over the adjacent subtropical Northeast Atlantic Ocean, just west of the Strait of Gibraltar, and extending into the strait itself. The observed Mediterranean sea level fluctuations are strongly anti-correlated with the monthly North-Atlantic-Oscillation (NAO) index.
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