



Mass addition in the Mediterranean Sea 1993-2010

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Mediterranean Sea level from altimetry, steric sea level variation and mass estimates from GRACE are studied. Reasonably good agreement is obtained between GRACE estimates of water mass changes which cover August 2002- August 2010 and altimetry minus steric estimates of water mass change which cover the period January 1993- September 2010. Water mass changes in the Mediterranean Sea are dominated by interannual variability with the strongest signal in winter 2010. The North Atlantic Oscillation is, for the period studied, the driving force. Its effects is a contribution of atmospheric pressure changes at Gibraltar as well as shifts of water masses within the North Atlantic. This NAO contribution is in addition to the well established effect the NAO has on local atmospheric pressure over the Mediterranean Sea.