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settings and neo-tectonics of the Aegean Sea as seen from space

The Aegean Sea is one of the key regions for the understanding of fundamental tectonic processes, including continental rifting. In addition, the continuous seismicity is attributed to its tectonic settings, which indicates the activities of these tectonics. Thus, tectonics and geodynamics of this region have always been the attention of many interested in earth sciences. Radar altimetry data has been used to derive gravity and its variations over the world's oceans, and an excellent tool for mapping sea floor structures, including tectonics, sea mounts and rifts. On the other hand, the Gravity Recovery and Climate Experiment (GRACE) satellite mission has widely demonstrated its sensitivity to ongoing mass redistribution within the various sub-systems of the Earth. Finally, Gravity field and steady-state Ocean Circulation Explorer (GOCE) satellite is the first satellite mission that observes gradient of the Earth's gravity field from space. Integrated satellite gravity data have been used to delineate the tectonic settings and the neo-tectonics of the Aegean Sea.

Results show important zones of mass discontinuity in this region correlated with the seismological activities and temporal gravity variation. This study indicates the importance of considering spatial and temporal gravity to the deformation and tectonic studies for completeness of the geodynamic studies

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