



An Investigation into Ship-Borne Gravity Data and Recent Altimeteric Gravity Anomaly over Persian Gulf and Oman Sea

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The ship-borne gravity anomalies on the Persian Gulf and Oman Sea have been observed since 1977. They are used for various purposes such as geoid modeling, plate tectonics and petroleum exploration, without any investigation in the data qualification. Hence a routine procedure was used here in to assess the accuracy of the ship-borne data. As a sea-surface data, recently some altimetrically determined gravity anomalies such as DNSC08 and Sandwell's on the v.16.1 grid have been released across the world. Also a new gravity anomaly model called PGGM05 (Persian Gulf Gravity Model, 2005) has been released by the authors.

On the region of Persian Gulf and Oman sea, the satellite altimetric and BGI ship borne gravity anomalies were compared. Some significant biases, on around 300 points, were detected in the ship-borne data. They were flagged as outliers. The comparisons also demonstrated that the PGGM05 data is more reliable in according to its statistical properties shown in the region of data. Furthermore, the ship-borne gravity anomaly data except for the flagged outliers is in a state of high accuracy.