



Abstract Details

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Title: (IWG3D) Absolute gravity measurements with FG5 in Taiwan: temporal gravity changes from different models

Abstract:

Absolute gravity measurements were collected in northern, central and southern Taiwan using a FG5 absolute gravimeter (S/N 225) in a continuous three-day session. Two of the measuring sites are at the permanent GPS tracking stations, where tectonic activities are continuously monitored. The measurements were collected at a 30-minute interval and each measuring set contains 100 drops. The time series of gravity fluctuate with varying weather conditions. The solid tide effects were computed using the JPL DE200 planetary ephemerides. The atmosphere and ocean loading effects were evaluated using the Greens function approach, with the kernel function computed from a mixed Farrell-Wahr model. The NAO tide model and a local hydrodynamic tide model were used to compute the ocean loading effects. The solid earth tide effects and the ocean loading effects from our computations are very close to the Berger/ETGTAB model outputs. The amplitudes of the loading effects from the NAO model and from the local tide model match to few micro gals, but phase shifts exist. The atmospheric loading effects from the Greens function approach differs from those computed with a simple layer model. The standard errors of the mean gravity values at the three sites are at 1-2 micro gals level.

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