

# **Time variable vertical displacements compared from GRACE gravity models, GPS, DORIS and hydrological models.**

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The problem of vertical crustal deformations occurring at seasonal timescales in response to soil moisture loading is investigated.

Measurements of periodical elastic compensation of solid Earth on tide and surface load, determined from GRACE data are used to this purpose. We propose to use a spectral method to convert the 10-day GRACE gravity field CNES-solutions (interpreted as surface load) in terms of vertical displacements comparable to GPS and DORIS measurements. We apply this strategy to regions with high amplitudes of seasonal variations of continental water storage (tropical basins of Africa and South America, in the South East Asia during monsoon events and several basins of the Northern hemisphere) as observed by the GRACE space mission.