



## **Gravity changes and crustal deformation due to hydrology loading**

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The loading effects induced by continental water storage changes are one of the major contributions to gravity changes and crustal deformation at seasonal timescales. They can be estimated using soil moisture and snow outputs from global water balance models. We compare the loading effects computed from LaD (Land Dynamics) by Milly and Shmakin (2002) and GLDAS (Global Land Data Assimilation System) by Rodell et al. (2004) models to gravity variations measured by worldwide superconducting gravimeters of the GGP network as well as to GRACE monthly solutions and to crustal deformation measurements by GPS and VLBI. We characterize the different sensitivity of each measurement to spatial wavelengths and show that the combination of all these geodetic observations is a useful tool to validate/invalidate hydrological models.