



2010 M8.8 Chilean Maule Earthquake Coseismic Deformation Using Spaceborne Gravimetry

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GRACE spaceborne gravimetry have been demonstrated to be capable to detect coseismic deformations in terms of permanent, large-scale (at several hundred km) gravity changes for mega earthquakes, including the December 2004 Mw=9.2 Sumatra-Andaman and the February 2010 Mw=8.8 Chilean Maule undersea events. Here we study the feasibility of using observed spaceborne coseismic gravity changes to constrain slip distribution, and therefore the earthquake magnitude, by comparing the observed gravity changes against predictions derived from slip models obtained assimilating seismic data and/or geodetic observations including GPS and InSAR. We will present results on the sensitivity of coseismic gravity change observations from spaceborne gravimetry/gradiometry to various faulting parameters in particular for the 2010 Chilean Maule earthquake coseismic deformation.