



Satellite measurements: a window to the Earth's core

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Over the last decade high-resolution, high-accuracy gravity and magnetic satellite data have been obtained from GRACE and Ørsted and CHAMP satellite missions, respectively. On one hand the gravity field, and on the other hand the core magnetic field, its secular variation and acceleration are now better than ever described. Dedicated gravity models have been built, able to better explain the large variations due to surface processes. Adequate geomagnetic models allow us to get large improvements on the flow models at the top of the core. Considering all these improvements in geopotential field description, a question has arisen: is it possible to distinguished recently observed rapid changes in the core flow in the gravity variations? To answer this question we analyze spatial and temporal correlations between the part of the geomagnetic field that originates in the core, which is time dependent, with time dependent variations in Earth's gravity field. Results of our work to detect signals from the core in gravity field models, covering the period over which gravity and magnetic data are available are presented.