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Towards realization of a GRACE Gap Filler Mission

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During 8 years of very successful operation in orbit, the US-German GRACE mission has demonstrated in a very impressive way its outstanding capability to monitor mass motions in the Earth system with unprecedented accuracy and temporal resolution. These results have stimulated many novel research activities in hydrology, oceanography, glaciology, geophysics and geodesy, which also indicate that long term monitoring of such mass motions, possibly with improved spatial and temporal resolution is a must for further understanding of various phenomena.

GRACE had been designed for 5 years lifetime, but due to the onboard hardware situation, GRACE can likely not be operated further than 2013/14, thus only about 3-4 years. Unfortunately, no follow-on mission is planned by NASA, ESA or other space agencies before 2020 and a dramatic data gap would happen.

Considering this, US and German GRACE project partners incl. science and industry teams have performed several short studies investigating the feasibility and boundaries of a gap filler mission with launch around 2014 taking into account system, cost, programmatic and schedule aspects.

The presentation will focus on the main targets and results of these studies.