



GRACE: A highly successful satellite mission supporting the goals of the WEGENER project

Frank Flechtner (1), Jens Wickert (1), Srinivas Bettadpur (2), Byron Tapley (2), and Mike Watkins (3)

(1) Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences, Geodesy and Remote Sensing, Wessling, Germany (flechtne@gfz-potsdam.de, ++49 8153 28-1735), (2) The University of Texas at Austin, Center for Space Research, Austin, United States, (3) Caltech/Jet Propulsion Laboratory, Pasadena, United States

The NASA/DLR twin satellite mission GRACE (Gravity Recovery and Climate Experiment) has completed by the time of this presentation nine years of successful on-orbit operation. During this time, GRACE has provided unprecedented time series of time-variable gravity models as well as improved long-term mean fields as primary mission products. Both data sets have revolutionized our understanding of global mass transport and distribution and the underlying climate processes. The secondary mission objective, atmospheric sounding using radio occultation (RO) technique, enables the global monitoring of atmospheric and ionospheric processes with various applications in weather forecast, atmospheric science, climate research and space weather.

The presentation will shortly summarize the GRACE mission status and focus on gravity and RO mission results, which are relevant for the WEGENER project. This includes the continental hydrological cycle in Europe and Northern Africa, mass transport and sea level budget in the Mediterranean Sea, observation of Global Isostatic Adjustment in Fennoscandia and also the application of vertical temperature and humidity profiles derived from the RO measurements.