

B. Fluche, C. Stolle, F. Vervelidou, J.L. Chau, D. Kusche, J. Vogt, H. Lühr:

### **Objectives and Activities of the DFG Priority Programme 1788 „Dynamic Earth“**

System Earth changes continuously. Variations of the Earth's interior, the atmosphere, the oceans, and near Earth space give rise to changes in global potential fields, particularly the Earth's magnetic and gravity fields. In order to identify and to understand the underlying processes, in 2014 the German Research Foundation (DFG) launched the Priority Programme SPP 1788 „Dynamic Earth“. This programme consists of two research phases with a duration of three years, respectively. The first projects were initiated in 2015, the second phase of the programme started in 2018 with both new and continued research projects.

The main focus of the Priority Programme is to quantify global transport mechanisms and solar-terrestrial interactions. The research programme builds on data from stationary and mobile observatories as well as from satellites on low-Earth orbits, such as CHAMP, GRACE, and GOCE.

Of particular importance is the ESA's multi-satellite mission Swarm, launched in 2013. Three identically constructed satellites are equipped with a complimentary set of instruments to survey potential fields and fundamental physical parameters. Variations of the measured fields can be measured across a broad spectral range of spatial and temporal scales. To complement the understanding of the system Earth, these measurements need to be combined with results from ground-based observations and modelling results.

In this presentation, we describe the objectives and the existing results of the priority programme focusing on selected examples. Furthermore, we will present a multidisciplinary approach as a key to reach the scientific goals of the programme.