

Call for Proposals

No. 47

19. Juli 2017

Priority Programme “Study of Earth System Dynamics with a Constellation of Potential Field Missions (DynamicEarth)” (SPP 1788)

In 2014 the Senate of the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) established the Priority Programme “Study of Earth System Dynamics with a Constellation of Potential Field Missions (DynamicEarth)” (SPP 1788). The programme is designed to run for six years. The present call invites proposals for the second three-year funding period starting in 2018.

System Earth changes continuously. Variations of Earth’s interior, the atmosphere, the oceans, and near-Earth space give rise to changes in global fields, particularly in Earth’s magnetic and gravity fields. The underlying processes can be identified and studied through monitoring and analysis of fundamental geomagnetic and gravity parameters. The main focus of this Priority Programme is to quantify terrestrial transport mechanisms and solar-terrestrial interactions. The research programme builds on data from satellites on low-Earth orbits, such as CHAMP, GRACE, GOCE, and Swarm, the latter being of particular importance due to its multi-satellite constellation aspect. Swarm was launched in November 2013, and its mission duration is expected at least until 2021. Within the Swarm mission, three identically constructed satellites are equipped with a complimentary set of instruments to survey global field variations and fundamental physical parameters. In order to improve the understanding of interconnections and coupling processes, proposers are encouraged to bring in further sources of information such as data from other satellite missions, ground-based observations, and empirical and physical models.

In the second phase, we particularly encourage multi-disciplinary approaches and projects that clearly link between two or more subtopics of the programme. Also, applications by university groups are encouraged. The Priority Programme’s subtopics are:

- the geomagnetic field: study of its dynamics and evolution; analysing its different sources, including the Earth’s core, mantle induction, lithosphere, magnetosphere, ionosphere and oceanic currents; data analyses, empirical modelling, and geodynamo simulations
- the gravity field: global variations of mass and mass balances, interaction and exchange mechanisms (hydrological cycle, ice melting in the polar regions, sea-level fluctuations, groundwater, relationship with anthropogenic influences, tides of oceans and atmosphere), length-of-day variation, and high-resolution models of the gravity field
- the ionosphere/magnetosphere system: E-region ionospheric current systems and field-aligned currents at higher latitudes, coupling of the ionosphere and magnetosphere, contributions of ionospheric and field-aligned currents to the energy budget of the atmosphere, near-Earth verification of magnetospheric currents

- the thermosphere/ionosphere system: quantification of solar contributions (EUV, solar wind) and influence of the lower and middle atmosphere (waves and tides) on the variability of the upper atmosphere, interaction between ionospheric plasma and neutral gas, E- and F-region ionospheric currents from high to low latitudes, understanding and predicting ionospheric and atmospheric irregularities from equatorial to polar latitudes including signal disturbances for communication and navigation systems

Proposals must be written in English and submitted to the DFG by **24 October 2017**. Please note that proposals can only be submitted via elan, the DFG's electronic proposal processing system. Applicants must be registered in elan prior to submitting a proposal to the DFG. You will normally receive confirmation of your registration by the next working day. Note that you will be asked to select the appropriate Priority Programme call during both the registration and the proposal process.

If you would like to submit a proposal for a new project within the existing Priority Programme, please go to Proposal Submission – New Project – Priority Programmes and select “SPP 1788” from the current list of calls. Previous applicants can submit a proposal for the renewal of an existing project under Proposal Submission – Proposal Overview/Renewal Proposal.

In preparing your proposal, please review the programme guidelines (form 50.05, section B) and follow the proposal preparation instructions (form 54.01). These forms can either be downloaded from our website or accessed through the elan portal. In addition to submitting your proposal via elan, please send an electronic copy to the programme coordinator.

All submitted proposals will be evaluated by a review panel in the course of a colloquium with project presentations, which is anticipated to take place in Potsdam in March 2018.

Further Information

More information on the Priority Programme is available under:
www.spp-dynamicearth.de/spp1788-dynamicearth

The elan system can be accessed at:
<https://elan.dfg.de/en>

DFG forms 50.05 and 54.01 can be downloaded at:
www.dfg.de/formulare/50_05
www.dfg.de/formulare/54_01

For scientific enquiries please contact the Priority Programme coordinator:
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