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GRACE Follow-On: mission status and first mass change observations

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Launched on May-22, 2018, the GRACE Follow-On mission is set to continue the data record of mass transport in the Earth system that was initiated by the GRACE mission in 2002, and which ended in mid-2017 after more than 15 years of successful operations and science discoveries. GRACE provided a unique data record of monthly to decadal observations of global mass transport in the Earth system from observations of temporal variations in the Earth's gravity field. These observations have become indispensable for climate-related studies and provide critical measurements of Earth's time varying mass distribution. Tracking mass changes through gravity measurements provides unique observations of the evolution of the global water cycle, including ocean dynamics, polar ice mass changes, and global ground water changes.

The GRACE Follow-On mission is the result of a partnership between NASA (US) and GFZ (Germany) to ensure continuity of this important climate record using a microwave ranging instrument, similar to the one used on GRACE. Additionally, GRACE Follow-On is demonstrating improved inter-satellite ranging from a Laser-Ranging Interferometer that promises to improve the spacecraft-to-spacecraft ranging measurements for the next-generation of mass change missions.

In this presentation, we will provide status update of the post-launch, in-orbit checkout and early operations phases, and instrument and science payload performance and we will conclude with an outlook on mission lifetime. With the transition into the science operational phase in early 2019, we will discuss current plans and schedules for the first science data release.