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Upgrading a gravity field recovery software to satellite laser ranging and radiometric tracking data

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Since about a decade, the Institute of Geodesy and Geoinformation at Bonn takes an active part in the computation of global gravity field models from satellite-to-satellite tracking data. Based on extensive software developments, internationally accepted models such as ITG-CHAMP01, ITG-GRACE03 and ITG-GRACE2010 have been published. The Bonn software is now being upgraded for dealing with terrestrial observations from satellite laser ranging and radiometric tracking techniques. To cope with this data types a change in the observational model is needed, but also a change in the core algorithm switching from a short arc approach to a more classical procedure which improves orbit and force parameters in an iterative way. The presentation will give an overview of the updated software architecture and show first results from laser ranging to the LAGEOS satellites and laser and radio tracking to the Lunar Reconnaissance Orbiter.