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Status of the GRACE Follow-On Laser Ranging Interferometer

Benjamin Sheard (1,2) and the LRI Team

(1) Albert-Einstein-Institut Hannover, Max-Planck-Institut für Gravitationspyhsik, Hannover, Germany (benjamin.sheard@aei.mpg.de), (2) Institut für Gravitationsphysik, Leibniz Universität Hannover, Hannover, Germany

The Laser Ranging Interferometer (LRI) is an experimental instrument currently being developed for GRACE Follow-on by a US/German collaboration, with contributions from Australia. The LRI will be implemented such that it can operate in parallel with the microwave instrument which will provide the primary measurement of the inter-satellite range variations. In addition to providing additional ranging data with higher precision compared to the microwave instrument the LRI can also produce pointing information for the angles perpendicular to the line-of-sight between the two satellites. The laser interferometry technology that will be demonstrated by the LRI is of particular interest to future gravity field missions based on inter-satellite ranging. The LRI instrument is based on technology developed for GRACE 2 and the Laser Interferometer Space Antenna (LISA), a proposed space based gravitational wave detector. This presentation will give an overview of the design and current status of the development of the instrument.