



Inter-satellite laser ranging instrument for GRACE follow-on

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The Gravity Recovery and Climate Experiment (GRACE) has demonstrated global scale precision monitoring of the spatial and time variations of the Earth's gravitational field. Seasonal changes and long term trends have been observed, for example due to mass transport within the hydrosphere. In order to continue monitoring changes in the Earth's gravitational field a follow-on mission, closely based on the original GRACE design using microwave ranging to reduce time to launch and minimise risk, is currently planned. Inter-satellite ranging sensitivity is one of the factors that determine the overall performance of GRACE. Precision laser interferometry has been proposed as a way to improve inter-satellite ranging performance for future GRACE-like geodesy missions. An overview and the current status of development of an interferometric laser ranging demonstrator designed to operate simultaneously with the microwave ranging system of a GRACE follow-on mission will be presented.