



## **Laser interferometer development for a fast GRACE (Gravity Recovery and Climate Experiment) follow-on mission**

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GRACE is a satellite mission which measures the Earth's gravitational field based on distance measurements between two satellites which are separated by approximately 220 km. For a fast GRACE follow-on mission a laser ranging instrument could be included in addition to the microwave ranging system to enable increased ranging resolution. Since the direct path between the centers of mass of the two satellites is blocked by the microwave ranging system an off-axis interferometer must be used. A key component of the proposed design is a so called triple mirror (virtual corner cube) whose optical path length is constant under rotation. The development of a laboratory prototype to test this configuration will be presented.