Development of a Quantum Gravity Gradiometer for Gravity Measurement from Space

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Jet Propulsion Lab — Recent progress in cold atom interferometry has provided a new technique for sensitive inertial sensing. We are developing a mobile quantum gravity gradiometer for gravity field mapping using cold atom interferometers and employing component technologies suitable for a future flight instrument. We report on recent progress in the development of this gravity gradiometer, as well as results from related studies of coherence effects in atom-wave interferometers.