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Development of a Quantum Gravity Gradiometer for Gravity Measurement from Space JAMES KELLOGG, NAN YU, JAMES KOHEL, ROB THOMPSON, DAVE AVELINE, ERIKA D'AMBROSIO, LUTE MALEKI, 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.

James Kellogg
Jet Propulsion Lab

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