

Abstract Submitted
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Torsion Balance Test of Einstein's Equivalence Principle

MICHAEL ABERCROMBIE, ADAM ARCHIBALD, TSITSI NUSSINOV, Washington University in St. Louis, KASEY WAGONER, Philadelphia University, RAMANATH COWSIK, Washington University in St. Louis — We have developed a torsion balance experiment to test the equivalence principle (EP) which follows the solar attractor approach pioneered by Dicke in the early 1960s. By monitoring the response of a balance arranged as a composition dipole with an azimuthally symmetric mass distribution to the gravitational field produced by the Sun, we search for a diurnal modulation of the balance which would indicate a violation of the EP. Since reporting on the status of this experiment last year, the instrument has begun collecting data at a remote underground site. This talk will cover the design and fundamental sensitivity of the balance, and present the results of preliminary analysis of over 1200 hours of data.

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