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A New Torsion Balance for the Search of Long-range Interactions Coupling to Baryon and Lepton Numbers DAWSON HUTH, RAMANATH COWSIK, TSITSI MADZIWA-NUSSINOV, Washington University in St. Louis, McDonnell Center for the Space Sciences — We have developed a torsion balance with a sensitivity about ten times better than those of previously operating balances for the study of long range forces coupling to baryon and lepton numbers. This talk will present the details of the design and expected performance of this balance in an experiment searching for a violation of Einstein's equivalence principle. Operation of this balance for a year is also expected to result in improved bounds on long range interactions of dark matter violating the equivalence principle.

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