

Abstract Submitted
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Test of $F=ma$ for small accelerations STEPHAN SCHLAMMINGER, CHRIS SPITZER, KI-YOUNG CHOI, JENS GUNDLACH, University of Washington, BRIAN WOODAHL, Indiana University, JENNIFER COY, Saint Joseph's College, EPHRAIM FISCHBACH, Purdue University — We have used a torsion balance to test Newton's second law in the limit of small forces and accelerations. We were able to verify the proportionality between force and acceleration down to accelerations of 5×10^{-14} m/s². This is approximately three orders of magnitude lower than a previous measurement and provides a stringent constraint on theories involving a modification of Newtonian dynamics to explain the flatness of galactic rotation curves.

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