

4CF15-2015-000136

Abstract for an Invited Paper
for the 4CF15 Meeting of
the American Physical Society

Tests of fundamental physics in space¹

QUENTIN BAILEY, Embry-Riddle Aeronautical University

Precision measurements in the solar system and beyond offer a promising testing ground for fundamental physics. In this talk, I present a review of recent work on precision tests of spacetime symmetries using planetary ephemeris, pulsar timing, and high-energy cosmic rays. The measurements are analyzed using an effective field theory framework that offers a systematic description of generic violations of spacetime symmetries, in particular Lorentz and CPT symmetry.

¹NSF grant 1402890