

Abstract Submitted
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Test of Lorentz Invariance at the Amundsen – Scott South Pole Station¹ MARC SMICIKLAS, Princeton University, ANDREW VERNAZA, Antarctic Support Contract, Lockheed Martin, MICHAEL ROMALIS, Princeton University — Tests of Lorentz and CPT symmetry provide one of the few ways to experimentally access Planck-scale physics. Currently the most sensitive Lorentz symmetry tests for fermions are performed with atomic spin co-magnetometers. Earth rotation represents a large background for such experiments due to gyroscopic spin interaction. To improve the limits on vector and tensor Lorentz-violating interactions we have installed a ^{21}Ne -Rb co-magnetometer at the Amundsen – Scott South Pole Station. The experiment is mounted on a precision air-bearing rotating platform aligned to the local vertical to eliminate most Earth-bound sources of systematic errors. We plan to collect data over the austral winter. We will describe the experience of operating the experiment at the South Pole and present the latest results.

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