

Abstract Submitted
for the APR10 Meeting of
The American Physical Society

New Tests of Lorentz Violation in Electromagnetism MATTHEW MEWES, Swarthmore College, ALAN KOSTELECKY, Indiana University — Tests of Lorentz invariance involving photons have provided some of the best constraints on possible violations of this fundamental symmetry. To date, most studies have focused primarily on Lorentz-violating operators of renormalizable dimension. However, other operators exist and may lead to interesting effects in photons. In this talk, we consider Lorentz-violating operators of arbitrary dimension within electromagnetism. Several features emerge that are not present in the renormalizable case. We discuss the experimental consequences, including those in astrophysical searches for dispersion and birefringence and laboratory-based experiments. A classification based on the physical effects is given.

Matthew Mewes
Swarthmore College

Date submitted: 22 Oct 2009

Electronic form version 1.4