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**Testing fundamental symmetries with trapped atoms and ions**

GERALD GWINNER, University of Manitoba

Atom and ion trapping and cooling techniques, in conjunction with rapidly advancing laser and microwave technology, not only revolutionized atomic physics, but also have a profound impact on searches for physics beyond the Standard Model at very low energies. I will review experiments at the intersection of atomic, nuclear and particle physics that use these methods to search for permanent electric dipole moments implying time-reversal violation, Lorentz/CPT violation, and scalar/tensor interactions in beta decay, as well as current efforts towards improved measurements of atomic parity violation.