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**Lorentz-Violating Particle Motions and Finsler Geometry** BENJAMIN EDWARDS, V. ALAN KOSTELECKY, Indiana University — Deviations from the Lorentz symmetry of relativity arising in unified theories of quantum physics and gravity may lead to observable signals at low energies. The motion of point particles in the presence of Lorentz violation can be derived using lagrangian methods in classical mechanics. It has been conjectured that these particles follow geodesics of Finsler geometry instead of Riemann geometry. This talk summarizes various aspects of the current understanding in this active field.

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