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Classical-physics applications for Finsler b space[1] JOSH FOSTER, Indiana University Bloomington, RALF LEHNERT, Indiana University Center for Spacetime Symmetries — The Standard-Model Extension (SME) is a general effective field theory for Lorentz and CPT violation incorporating both the Standard Model and General Relativity. The SME provides a framework for experimental searches for Lorentz-violating effects and for the investigation of new physics. The classical propagation of certain Lorentz-violating fermions is known to be governed by geodesics of a four-dimensional pseudo-Finsler b space parametrized by a prescribed background covector field. This talk discusses some aspects of the relation between Finsler geometries and the SME, emphasizing the identification of systems in classical physics that are governed by the three-dimensional version of Finsler b space and the construction of geodesics for some sample background covectors.

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