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Supernova Constraints on Modified Theories of Gravity NATHAN PRINS, JAMES OVERDUIN, Towson University, JOOHAN LEE, University of Seoul, Korea — Most attempts to unify gravitation with the standard model of particle physics involve new fields and/or additional (usually compact) dimensions. The dynamics of these compact extra dimensions can, however, act back on the dynamics of macroscopic space and time. We investigate a particular class of models with n compact dimensions plus a scalar field with negative kinetic energy ("phantom"), and show that they are strongly disfavored by recent data on the magnitudes of Type Ia supernovae.

Nathan Prins
Towson University

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