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Using 5th Force Searches to Place Limits on New Scalars in the Dark Sector ARUNA WANNINAYAKE, GINTARAS DUDA, Creighton University — Several dark matter models have been introduced recently that involve new scalar particles. For example, if dark matter decays into a new light boson that is constrained to decay into leptons, the PAMELA positron excess can be explained. This work involves using both historic and modern searches for fifth forces to constrain new dark matter models that introduce new, light, scalar particles. Limits on such models from laboratory 5th force searches will be presented; additionally, astrophysical constraints will be explored.

Aruna Wanninayake
Creighton University

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