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Dark Kinetic Heating of Neutron Stars

Thursday, 27 July 2017 13:45 (15 minutes)

I will discuss how future measurements of infrared emission from nearby neutron stars can be used as a largely model-independent probe of dark matter interactions with Standard Model particles. This relies on a recently discovered effect that even non-annihilating dark matter has on old neutron stars. The resulting sensitivity to dark matter interactions would exceed the reach of many terrestrial dark matter searches, extending well below the neutrino floor for both light and heavy dark matter, and would also uncover elusive "pure higgsino" dark matter.

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