

Center For Neutrino Physics Seminar

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Emory & Henry

Modified Dark Matter: Does Dark Matter Know about the Cosmological Constant?

Wednesday, March 1st, 2017

4:00 PM - 5:00 PM

304 Robeson Hall

Modified Dark Matter (MDM) is a phenomenological model of dark matter that behaves like CDM at large scales, but naturally accounts for the universal acceleration constant observed in galactic rotation curve data. We provide a theoretical justification for the proposed MDM mass profile based on arguments of gravitational thermodynamics and show how Milgrom's scaling, usually associated with Modified Newtonian Dynamics (MOND), appears as a phenomenological manifestation of MDM. We demonstrate that MDM passes observational tests on galactic and cluster scales. Our results suggest that dark matter mass profiles contain information about the cosmological constant in a non-trivial way.