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Thermal Relic Targets with Exponentially Small Couplings

If dark matter was produced in the early Universe by the decoupling of its annihilations into known particles, there is a sharp experimental target for the size of its coupling. I will introduce a new type of dark matter that was produced by inelastic scattering against a lighter particle from the thermal bath, and its coupling can be exponentially smaller than the coupling required for its production from annihilations. As an application, I will demonstrate that dark matter produced by inelastic scattering against electrons provides new thermal relic targets for direct detection and fixed target experiments.

Wednesday, Oct. 23, 2019
2:00pm
401 Physical Sciences Building