Contribution ID: **135**   Type: **oral presentation**

Kinetic Decoupling of Effective WIMPS

Thursday, 15 August 2013 13:30 (24 minutes)

I will present a calculation of the thermal decoupling temperature and implied dark matter halo mass distribution cutoff within the framework of effective theories of dark matter. For the first time, this calculation has been considered for all interactions which respect parity, whether the dark matter couples dominantly to leptons, quarks, or both, and including the relevant couplings to pions after the QCD phase transition and loop-induced couplings to leptons where they are not strongly suppressed. I will explore the implications of contact operator constraints for early universe cosmology, and find that, within effective theories of this type, there is no way to address the missing substructure problem by holding the dark matter in kinetic equilibrium sufficiently late in the universe.

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