

The Effective Theory of Self-Interacting Dark Matter

Wednesday, 28 August 2013 16:50 (20 minutes)

We present new results for self-interacting dark matter focusing on applications to Sommerfeld enhancement. We provide the general parameterization of the self interactions in terms of non-relativistic operators and show how these can generate singular potentials. We show how to consistently renormalize such singular potentials and give bounds on the resulting enhancement. This procedure can be used to give a velocity dependent cross section and can be applied to small scale astrophysical anomalies such as the core vs. cusp problem.

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Session Classification: Indirect searches for dark matter