## Phenomenology 2012 Symposium



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## An Explicit Model of Dynamical Dark Matter from Extra Dimensions

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## Abstract:

In this talk, I provide an explicit realization of the DDM framework in which the constituent fields of the darkmatter ensemble are the mixed KK excitations of an axion propagating in the bulk of large extra spacetime dimensions. Mixing between these KK excitations, induced by a brane mass term, leads to a suppression of the interactions between the light mass eigenstates in the KK tower and the Standard-Model fields on the brane. Largely as a result of this suppression, the DDM ensemble in this model satisfies all collider, astrophysical, and cosmological constraints while at the same time providing the observed dark-matter relic abundance. This model therefore serves as an existence proof that the DDM framework is a viable alternative to traditional models of dark matter.

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