## Phenomenology 2012 Symposium



Contribution ID: 89

Type: parallel talk

## Dynamical Dark Matter: A New Framework for Dark-Matter Physics

Monday 7 May 2012 16:30 (15 minutes)

## Abstract:

Dynamical dark matter (DDM) is a new framework for dark-matter physics in which the requirement of stability is replaced by a delicate balancing between lifetimes and cosmological abundances across a vast ensemble of individual dark-matter components whose collective behavior transcends that normally associated with traditional dark-matter candidates. This absence of stability implies that quantities such as the total dark-matter relic abundance and the dark-matter equation-of-state parameter experience non-trivial time-dependences beyond those associated with the expansion of the universe. In this talk, I provide an overview of the DDM framework and provide examples of theoretical contexts in which DDM ensembles naturally arise. I also discuss the potential implications of DDM scenarios for collider phenomenology,dark-matter direct detection, and cosmology and discuss how such scenarios can be differentiated from traditional dark-matter models.

Author: Dr THOMAS, Brooks (University of Hawaii)
Co-author: Prof. DIENES, Keith (University of Arizona)
Presenter: Dr THOMAS, Brooks (University of Hawaii)
Session Classification: DM I