

## Phenomenology 2019 Symposium



Contribution ID: 731

Type: **parallel talk**

# Constraining Invisibly-Decaying Dark-Matter Ensembles with Supernova Data

*Monday 6 May 2019 14:45 (15 minutes)*

Within the Dynamical Dark Matter (DDM) framework, an ensemble of unstable particle species whose decay widths are balanced against their cosmological abundances collectively constitutes the dark matter in our universe. The constraints on DDM ensembles whose constituent particles decay to visible-sector particles with a non-negligible branching fraction are well established and quite stringent. However, the constraints on ensembles whose constituent particles decay exclusively to other, lighter dark-sector states are less well established. In this talk, I examine the extent to which information about the expansion rate of the universe at low redshifts gleaned from observations of Type-Ia supernovae can serve to constrain the parameter space of invisibly-decaying DDM ensembles.

## Summary

**Author:** Ms DESAI, Aditi (Lafayette College)

**Co-authors:** Prof. THOMAS, Brooks (Lafayette College); Prof. DIENES, Keith (University of Arizona)

**Presenter:** Ms DESAI, Aditi (Lafayette College)

**Session Classification:** DM I