

# Search for heavy dark matter decay with IceCube

*Monday, 8 May 2017 15:24 (18 minutes)*

Search for heavy dark matter decay with IceCube

Many heavy ( $m > 100 \text{ TeV}$ ) dark matter models predict the dark matter particle to decay into standard model particles, including neutrinos.

These neutrinos would produce a unique signal, both in terms of their energy and angular distributions, in the IceCube detector. This talk describes the search for such a signal using two years of high energy cascade data.

A combination of a dark matter decay signal and known backgrounds would be fitted to the data and compared to simulations. If no signal is observed, this analysis is expected to set a new lower limit on the lifetime of heavy dark matter particles. In the talk I will present the sensitivities and the first results.

**Primary author:** DUJMOVIC, Hrvoje (o=sungkyunkwan,ou=Institutions,dc=icecube,dc=wisc,dc=edu)

**Presenter:** DUJMOVIC, Hrvoje (o=sungkyunkwan,ou=Institutions,dc=icecube,dc=wisc,dc=edu)

**Session Classification:** Dark Matter

**Track Classification:** Dark Matter - Convenor: Carsten Rott, SKKU