

Center for Neutrino Physics Seminar

Special Date, Time and Place

Professor Jim Halverson

Northeastern University

String Theory and the Dark Glueball Problem

Friday, October 7, 2016

10:00 am—11:00 am

216 Randolph Hall

String compactifications, and perhaps more general UV complete theories, give rise to four-dimensional effective theories with many degrees of freedom.

These may be produced in the early universe, leading to cosmologically interesting or fatal features depending on the case. In this talk I'll discuss the case of populating pure Yang-Mills sectors by inflation or modulus decay, which give rise to dark glueballs as the universe cools.

These are terrible dark matter candidates, frequently overproducing dark matter or spoiling nucleosynthesis. We will argue that the problem is severe in string theory, where many such sectors are common, and motivate models of asymmetric reheating as a potential solution.