Contribution ID: 128

Type: not specified

One-loop Corrections to Dark Radiation Production in LARGE Volume Models

Thursday 23 May 2013 16:50 (15 minutes)

Dark radiation is produced in LARGE volume models in which reheating is driven by the volume modulus decaying to the visible sector. Decays of this modulus to its axion partner provide the dark radiation. I will discuss the effects of one-loop radiative corrections to the only competitive MSSM decay channel: the decay into Higgs pairs via the Giudice-Masiero term. This alone will more precisely determine the relative fraction of dark radiation produced, since by contrast all loop corrections to the volume axion decay channel are Planck-suppressed. Assuming the Giudice-Masiero coupling is fixed at the string scale by a shift symmetry in the Higgs sector, we get a prediction for the effective number of neutrino species, N_{eff}. The result is too large to be consistent with recent WMAP and Planck data, so the minimal model is ruled out.

Presenter: ANGUS, Stephen

Session Classification: Parallel Session on Formal BSM