

Non-Thermal Production of Dark Matter as Dark Radiation

Thursday, 15 August 2013 14:42 (24 minutes)

The Planck and WMAP9 satellites, as well as the ATACAMA and South Pole telescopes, have recently presented results on the angular power spectrum of the cosmic microwave background. Data tentatively point to the existence of an extra radiation component in the early universe. Here, we show that this extra component can be mimicked by dark matter particles whose majority is cold, but with a small fraction being non-thermally produced in a relativistic state. We present a supersymmetric example where this scenario is explicitly realized, and explore the relevant parameter space consistent with BBN, CMB and Structure Formation bounds.

APS member ID

00000000

Primary author: Dr QUEIROZ, Farinaldo (University of California Santa Cruz)

Presenter: Dr QUEIROZ, Farinaldo (University of California Santa Cruz)

Session Classification: Cosmic Frontier

Track Classification: Cosmic Frontier