Phenomenology 2012 Symposium



Contribution ID: 122 Type: parallel talk

Iso-spin violating dark matter at the LHC

Tuesday 8 May 2012 15:15 (15 minutes)

Abstract:

We consider a simple model of dark matter where a SM gauge singlet Dirac fermion couples to quarks through contact interactions.

Motivated by the recent data from dark matter direct detection experiments, we focus on the case where the dark matter couples to right-handed up- and down-quarks through different coupling constants, violating the iso-spin. We discuss how this iso-spin violation can be observed through large missing ET channels at the LHC.

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Session Classification: DM II