

Constraints on sneutrino dark matter from LHC Run 1

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A mostly right-handed sneutrino as the lightest supersymmetric particle (LSP) is an interesting dark matter candidate, leading to LHC signatures which can be quite distinct from those of the conventional neutralino LSP. Using SModelSv1.0.1 for testing the model against the limits published by ATLAS and CMS in the context of so-called Simplified Model Spectra (SMS), we investigate to what extent the supersymmetry searches at Run 1 of the LHC constrain the sneutrino-LSP scenario. Moreover, we discuss the most relevant topologies for which no SMS results are provided by the experimental collaborations but which would allow to put more stringent constraints on sneutrino LSPs. These include, for instance, the mono-lepton signature which should be particularly interesting to consider at Run 2 of the LHC. (This talk is based on arXiv:1503.02960)

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