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MSSM4G scenario and Vectorlike lepton searches at the LHC

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Vectorlike fermions are widely considered as an extension of the Standard Model (SM). They are approximately protected by a Z_2 symmetry and decay to an SM boson and a quark/lepton. Vectorlike quarks have been searched for at the LHC, while vectorlike lepton searches suffer from smaller production cross section.

I will talk about “MSSM4G scenario,” which is an extension of MSSM by vectorlike leptons. It realizes Bino dark matter compatible with the observed relic density, providing many implications for BSM searches: both in γ -ray observations and/or LHC experiments.

We discuss prospects of the MSSM4G scenario and also of (generic) vectorlike lepton searches at the HL-LHC.

Content of the contribution

Theory

Author: Dr IWAMOTO, Sho (U. Padova)

Co-authors: ABDULLAH, Mohammad (Texas A&M University); FENG, Jonathan Lee (University of California Irvine (US)); LILLARD, Benjamin (University of California, Irvine)

Presenter: Dr IWAMOTO, Sho (U. Padova)

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