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Vector Boson dark matter at the LHC

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Abstract:

A simple extension of Standard Model based on SU(3)C ×SU(2)L×U(1)Y ×SU(2)N has recently been proposed, where the SU(2)N vector gauge bosons are neutral and can be dark-matter candidate. We explore on its darkmatter phenomenology, namely relic abundance and direct detection bounds which shows the mass range of this candidate can be less than 1 TeV. We also find that the model has interesting collider signatures and has a discovery potential at 14 TeV LHC with moderate integrated luminosity.

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