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Vector Boson dark matter at the LHC

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Abstract:

A simple extension of Standard Model based on $SU(3)_C \times SU(2)_L \times U(1)_Y \times SU(2)_N$ has recently been proposed, where the $SU(2)_N$ vector gauge bosons are neutral and can be dark-matter candidate. We explore on its dark-matter 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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