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Leptophilic vector dark matter and XENON1T electronic recoil excess

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Abstract
In light of the recently observed electronic recoil in the XENON1T experiment, we revisit the phenomenology of vector dark matter in leptophilic extension of the standard model while, new scalar, vector and spinor fields play the role of mediators. The viable parameter spaces are considered to discuss the possibility of light vector dark matter with mass 2.3 keV and sufficient dark matter relic density. We also study the constraints of the anomalous magnetic moment of the muon, baryon nucleon synthesis and indirect detection experiments on the parameter space of the models.

Keywords: dark matter, XENON1T experiment, vector dark matter

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