

**STUDY OF GeV DARK MATTER AND NEUTRINO FLOOR
WITH $(g - 2)_\mu$ ANOMALY IN $U(1)_{L_\mu - L_\tau}$**

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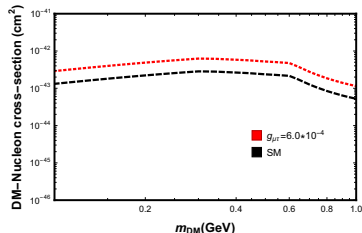
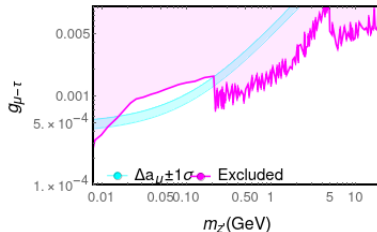
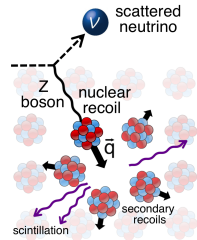
**Department of Physics and Astrophysics
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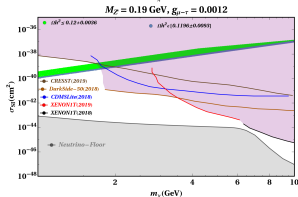
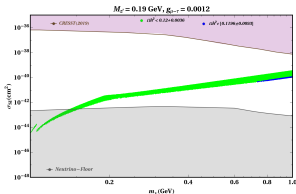
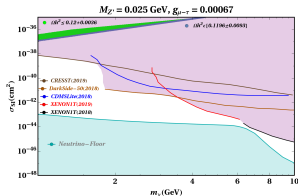
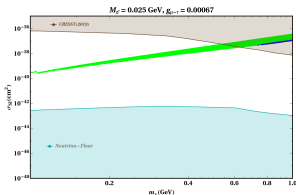
17th Patras Workshop on Axions WIMPs and WISPs, JGU, Mainz

Based on [arXiv:2203.17122](https://arxiv.org/abs/2203.17122) in a collaboration with Soumya Sadhukhan and Manvinder Pal Singh.

- ▶ We take the $U(1)_{L_{\mu}-L_{\tau}}$ and look at the viable parameter space once we take into the 4.2σ discrepancy of muon ($g-2$) into account.
- ▶ We then study the possible modifications of the neutrino floor in these regions of the parameter space compared to the Standard Neutrino floor.
- ▶ We find that even with the stringent muon ($g-2$) constraint, some parts of the allowed parameter space show a significant enhancement in the neutrino floor.



- ▶ We then look for prospects of a GeV scale DM in this model by considering some benchmark scenarios relevant for current and future direct-detection studies.



- ▶ For more details on the analysis and discussion, kindly visit poster number 29.

Thank You!