Study of GeV Dark Matter and Neutrino Floor with $(g-2)_\mu$ Anomaly in $U(1)_{L_\mu - L_\tau}$

Kuldeep Deka

Department of Physics and Astrophysics
University of Delhi, India

- 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.
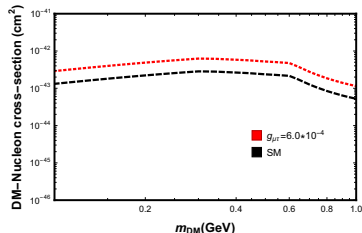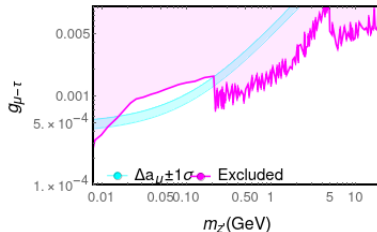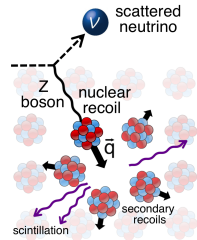
- We then look for prospects of a GeV scale DM in this model by considering some benchmark scenarios relevant for current and future direct-detection studies.
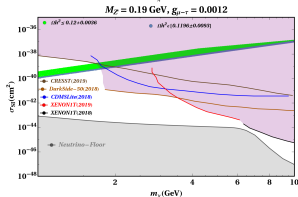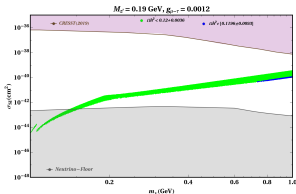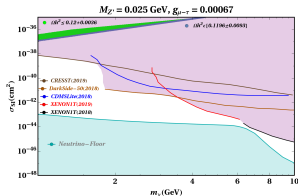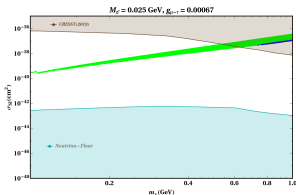
- For more details on the analysis and discussion, kindly visit poster number 29.

Thank You!