

NEW PERSPECTIVES IN CONFORMAL FIELD THEORY AND GRAVITY

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X-rays constraints on sub-GeV Dark Matter

Thursday 28 September 2023 14:30 (20 minutes)

We present updated constraints on ‘light’ Dark Matter (DM) particles with masses between 1 MeV and 5 GeV. In this range, we can expect DM-produced $e^\pm$ pairs to upscatter low-energy ambient photons in the Milky Way via the Inverse Compton process, and produce a flux of X-rays that can be probed by a range of space observatories. Using diffuse X-ray data from XMM-Newton, INTEGRAL, NuSTAR and Suzaku, we compute the strongest constraints to date on annihilating DM for $200 \text{ MeV} < m_{\text{DM}} < 5 \text{ GeV}$ and decaying DM for $100 \text{ MeV} < m_{\text{DM}} < 5 \text{ GeV}$.

Based on the recent work 2303.08854 and the previous work 2007.11493.

Summary

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Session Classification: Parallel Session Thursday: Dark Matter Session

Track Classification: Cosmology & Astroparticle Physics