

Upscattering of light dark matter by stellar neutrinos and cosmic rays

Tuesday, 13 June 2023 15:00 (20 minutes)

A novel mechanism of boosting dark matter by cosmic neutrinos is proposed. The new mechanism is so significant that the arriving flux of dark matter in the mass window from keV to GeV on Earth can be enhanced by two to four orders of magnitude compared to one only by cosmic electrons. Including both galactic and extragalactic origins of boosted dark matter upscattered by stellar neutrinos with a reasonable galaxy profiles for massive halos, we firstly derive conservative but still stringent bounds and future sensitivity limits for such cosmic-neutrino-boosted dark matter (ν BDM) from advanced underground experiments such as XENONnT and JUNO.

Secondary category for the parallel session (optional)

Dark Matter Physics

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