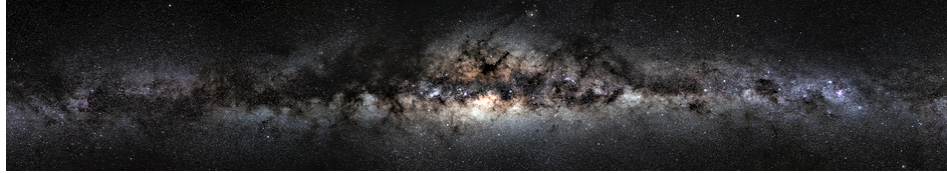


Dark Sectors of Astroparticle Physics (AstroDark-2021): Axions, Neutrinos, Black Holes and Gravitational Waves



Contribution ID: 96

Type: **Poster**

Dark Matter Decay to Neutrinos

Tuesday 7 December 2021 08:20 (30 minutes)

Dark matter (DM) particles are predicted to decay into Standard Model particles which would produce signals of neutrinos, gamma-rays, and other secondary particles. Neutrinos provide an avenue to probe astrophysical sources of DM particles. We review the decay of dark matter into neutrinos over a range of dark matter masses from MeV/c^2 to ZeV/c^2 . We examine the expected contributions to the neutrino flux at current and upcoming neutrino and gamma-ray experiments, such as Hyper-Kamiokande, DUNE, CTA, TAMBO, and IceCube Gen-2. We consider galactic and extragalactic signals of decay processes into neutrino pairs, yielding constraints on the dark matter decay lifetime that ranges from $\tau \sim 1.2 \times 10^{21}$ s at $10 \text{ MeV}/c^2$ to 1.5×10^{29} s at $1 \text{ PeV}/c^2$.

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Session Classification: Break and Poster Session