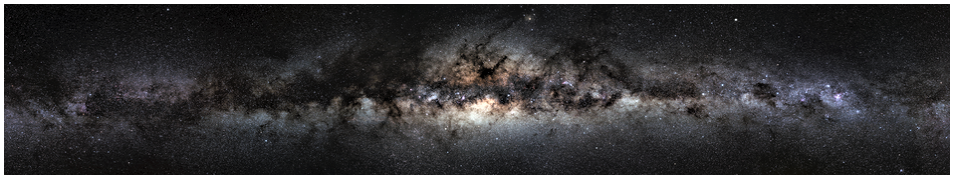

Contribution ID: **118** Type: **Poster**

Asymmetric Dark Matter from Scattering

Tuesday, December 7, 2021 8:20 AM (30 minutes)

We study possible particle-antiparticle asymmetry in the dark sector in two distinct scenarios. In both the scenarios dark matter (DM) scatterings play defining role in deciding the asymmetry as well as the density. In the first case, we demonstrate a general semi-annihilation of DM particles, leading to maximal asymmetry in DM sector (Ref :JHEP 08 (2020), 149). In the second case, We find an interesting interplay of the DM self-scatterings and annihilations in generating the present DM density, and possible particle-antiparticle asymmetry in the DM sector. The role of DM self-scatterings in determining its present density and composition is a novel phenomenon. The simultaneous presence of the self-scatterings and annihilations is required to obtain a non-zero asymmetry, which otherwise vanishes due to unitarity sum rules (arXiv : 2103.14009)

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Session Classification: Break and Poster Session