



Contribution ID: 38

Type: **not specified**

White dwarf cooling through dark sector physics

Monday, 11 September 2023 18:15 (15 minutes)

Hot white dwarfs lose energy mainly in the form of neutrinos through plasmon decay from the inner part of the star. Dark sectors, which are being studied to explain a broad collection of anomalies and unknown physics, do have an impact in the energy lost by this mechanism. I will focus on a Three Portal model that connects dark sectors to the Standard Model through a dark scalar (Higgs), a dark photon and dark neutrino states. The aim is to study the impact of the dark photon in the cooling mechanism of a white dwarf.

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Session Classification: IDM: Indirect DM searches

Track Classification: Neutrinos