



Contribution ID: 673

Type: **not specified**

Probing Axion-like Particles from Massive Stars with X-rays and Gamma Rays

Wednesday 15 May 2024 14:30 (15 minutes)

Owing to its high temperature, a copious number of heavy axion-like particles (ALPs) coupled to the photon field are produced by the Primakoff process and photon coalescence process in the plasma of massive stars in the later stages of their evolution. These heavy axions produced inside stars spontaneously decay into two photons, yielding the possibly detectable photon signal by current and future X-ray and gamma-ray telescopes. We discuss the observability of this photon signal by using the stellar model constructed by the 1D stellar evolution code MESA.

Mini Symposia (Invited Talks Only)

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Session Classification: Axion

Track Classification: Axion