



Contribution ID: 140

Type: not specified

Search for sub-MeV axion-like particles from horizontal branch stars

Tuesday, 9 May 2023 14:00 (15 minutes)

Axion-like particles (ALPs) coupled to photons are produced inside stars via the Primakoff process and photon coalescence. They spontaneously decay into two gamma-ray photons that escape from the stellar interior only if decays occur outside the photosphere. Owing to their hot and dense plasma and small radius of the photosphere, horizontal branch stars are promising astrophysical objects to detect the gamma-ray flux from ALP decays. We estimate the detectability of the ALP-induced gamma-ray flux at future MeV gamma-ray telescopes such as AMEGO-X and APT.

Primary author: OKAWA, Takuya

Co-authors: DEV, Bhupal (Washington University in St. Louis); FERRER, Francesc (Washington University in St Louis)

Presenter: OKAWA, Takuya

Session Classification: Axion II

Track Classification: Axion and ALP