



Contribution ID: 68

Type: **not specified**

Axion-like particle emission from type Ia supernovae

Monday, 3 July 2023 18:41 (3 minutes)

Axion-like particles (ALPs) are a class of hypothetical bosons beyond the standard model of particle physics, which are very weakly-interacting and long-lived. Since many ALPs may be produced in hot plasma in supernovae (SNe), a nearby SNe Ia can be used as a probe of ALPs. It is desirable to predict the ALP emission from SNe Ia to discuss a possible constraint that can be obtained from the event. ALPs may convert into photons and back in the magnetic field in the intergalactic space and galaxies. It is hence possible to constrain the ALP parameters by γ -ray observations of a nearby astronomical object which emits a lot of ALPs. Here, we calculate the ALP emission from type Ia SNe and take into account the light range of ALPs mass. Using the SN Ia model, we consider the issue of detection a photon flash from SNe Ia.

Primary author: DAVYDOV, Daniil (Institute for Nuclear Research (INR) of the Russian Academy of Sciences)

Presenter: DAVYDOV, Daniil (Institute for Nuclear Research (INR) of the Russian Academy of Sciences)

Session Classification: Poster Session