ICHEP 2022
BOLOGNA

ICHEP 2022   6
XLI   13 07 2022
International Conference
on High Energy Physics
Bologna (Italy)

Contribution ID: **977**   Type: **Poster**

Neutrino mixing angle and neutrino oscillation in ALPs matter.

Friday, 8 July 2022 20:10 (20 minutes)

Axions and axion-like particles (ALPs) are some of the most popular candidates for dark matter [1]. Axions are also considered [2] as new physics contributions to the muon g −2 . Following the existed interest to ALPs we consider interaction between neutrinos and hypothetical axion-like particles and derive for the first time the probability of neutrino oscillations accounting for their interactions mediated by ALPs. The corresponding effective mixing angle is derived for the cases of Dirac and Majorana neutrinos.

[1] Ciaran A. J. O'Hare, Giovanni Pierobon, Javier Redondo, Yvonne Y.Y. Wong, Simulations of axion-like particles in the post-inflationary scenario, arXiv:2112.05117.

[2] M.A. Buen-Abad, J. Fan, M. Reece, Ch.Sun, Challenges for an axion explanation of the muon g − 2 measurement, J. High Energ. Phys. 2021, 101 (2021).

In-person participation

No

Primary authors: STUDENIKIN, Alexander; LICHKUNOV, Alexey

Presenter: LICHKUNOV, Alexey

Session Classification: Poster Session

Track Classification: Beyond the Standard Model