

## Axionlike particle searches by means of the GAMMA-400 gamma-ray telescope

*Monday, 22 October 2018 15:40 (150)*

The existence of axionlike particles (ALPs) is predicted by many extensions of the Standard Model. ALPs represent very probable and well motivated candidate for the role of dark matter. ALPs may manifest themselves through interaction with photons – particularly, through photon-ALP conversion in magnetic fields. This hypothetical process is able to solve a big astrophysical problem of an anomalous transparency of the Universe for GeV-TeV photons. Besides that, the potential conversion have been naturally employed for ALP search and constraining their properties. In our work we study the potential of the planned GAMMA-400 telescope to detect the ALP signal or at least constrain further the ALP properties by analyzing the spectra of typical targets. These include gamma-ray pulsars – particularly, PSR J2021+3651, which has tentative ALP signatures in its spectrum; NGC 1275 (central galaxy of the Perseus cluster) and others. We also evaluate the potential of the joint analysis of data from GAMMA-400 and other telescopes – Fermi-LAT, CTA, etc.

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**Session Classification :** Poster session and coffee-buffet

**Track Classification :** Particle physics: astroparticle physics