



Contribution ID: 1199

Type: Parallel Talk

Relativistic Relics from the Primordial Bath: QCD Axion

Thursday, 7 July 2022 12:15 (15 minutes)

We study the production of relativistic relics, also known as dark radiation, in the early Universe and precisely compute their current contribution to the extra number of effective neutrinos. One of the dark radiation candidates is the QCD axion produced from the primordial bath in the early universe. We consider KSVZ and DFSZ axion models and investigate the axion production at different scales. The dark radiation from QCD axion leaves an imprint on the observed cosmic microwave background that can be measured by the CMB-S4 experiment.

In-person participation

Yes

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Session Classification: Astroparticle Physics and Cosmology

Track Classification: Astroparticle Physics and Cosmology