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Type: **Talk**

The QCD axion at finite temperature and density

Tuesday 6 September 2022 15:30 (20 minutes)

We show how the mass and self-coupling of the QCD axion change at finite temperature and baryon density within the framework of Nambu-Jona-Lasinio model. We mainly focus on the effect of the chiral symmetry restoration and two flavor color-superconductivity on the axion properties by taking into account the charge neutrality constraint. We find that both the axion mass and self-coupling become smaller in the thermal and dense medium. The possible influence of the axion on the cooling rates of the proto-neutron stars is discussed.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

Dr. Zhao Zhang, North China Electric Power University, Beijing, China.

Internet talk

Yes

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Session Classification: Cosmology, Astrophysics, Gravity, Mathematical Physics