Contribution ID: **26** Type: **not specified**

Axion/ ALP scenario with high scale inflation

Wednesday 12 November 2025 14:00 (20 minutes)

Considering that next generation CMB experiments like LiteBIRD and CMBS4 will probe the gravitational wave from high scale inflation via the observation of B-mode. We study the DFSZ-like GUT scenario where QCD axion and ALP exist in the evolution of the universe. In the conventional DFSZ scenario, since the domain wall number is larger than one, axion DM with PQ scale lower than inflation scale is not allowed, while PQ scale larger than inflation scale suffers from isocurvature problem. In other words, high scale inflation is not in good terms with this scenario. In this study, we consider the case where the existence of ALP can decay the domain wall of axion. Therefore, there is no domain wall problem and DFSZ axion DM with high scale inflation can be allowed, which can be a target of the next generation measurements like CMB or further investigation like PTA.

Presenter: KONDO, Dan

Session Classification: Parallel session - CMB