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## DFSZ axion ALP scenario with high scale inflation

Considering that next generation CMB experiment like LiteBird 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. 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.