

# **JUNSEOK LEE "Nanohertz Gravitational Waves from Axion Domain Walls Coupled to QCD"**

*Thursday, 9 November 2023 11:30 (25 minutes)*

The recently reported data from NANOGrav, EPTA, PPTA, and CPTA suggest the presence of stochastic gravitational waves in the nHz range. Here, we demonstrate that these can be explained by axion domain walls coupled to QCD. In this scenario, temperature-dependent biases, induced by non-perturbative effects of QCD, act on axion domain walls, causing them to collapse and emit gravitational waves. This study conducts lattice simulations of domain walls, considering the temperature dependence of the bias, to estimate the gravitational waves produced. Additionally, we discuss future prospects, such as accelerator searches for axions, predicted by this scenario.

**Session Classification:** Short talks