

## Nicklas Ramberg (Mainz), "QCD Axion Kinetic Misalignment Observational Aspects"

*Friday 26 November 2021 17:30 (30 minutes)*

When the spontaneous breaking of the Peccei-Quinn (PQ) symmetry occurred, the resulting angular direction of the PQ field, i.e. the axion could have possessed an initial non-zero velocity arising from additional terms that explicitly break the PQ symmetry. I elaborate further on the outcome of the "kinetic misalignment" framework, assuming that axions form the entirety of the dark matter abundance. The scenario of interest in this talk regards QCD axions where the PQ-symmetry breaking occurs in the post-inflationary universe. I study how the kinetic misalignment framework alters the onset of coherent field oscillations and show how this scenario impacts the formation of axion miniclusters, and I discuss how this scenario alters the usage of axion miniclusters/stars in microlensing events along with tidal stripping.

**Presenter:** RAMBERG, Nicklas