

Phenomenology of the meV QCD axion

Monday, 22 June 2020 15:00 (1 hour)

Zoom meeting: <https://cern.zoom.us/j/7930190483> (password: see email)

Format: 40 minutes talk + 20 min discussion

Virtual Axion Institute: The discussion on this talk can be continued in David's virtual guest office. <https://mattermost.web.cern.ch/axions/channels/david-j-e-marsh>

Abstract: If the Peccei-Quinn symmetry is broken after inflation, then the preferred axion mass required for the DM relic density is of order 1 meV. In this scenario, "axion miniclusters" form in the early Universe, and have potentially observable effects in microlensing. I will describe a new method to compute the mass function and radial distribution function of miniclusters based on the excursion set. The meV axion is particularly challenging for direct detection. I will outline progress on the "TOORAD" proposal to detect meV axions with topological insulators.

Presenter: MARSH, David J. E. (University of Goettingen)

Session Classification: Dark matter