Contribution ID: **60** Type: **dark matter**

Burst Signals from Axion String Travelling Wave Collisions

Wednesday, 15 May 2024 16:38 (5 minutes)

Axion strings are a type of topological defect that arise in particle physics models with a spontaneously broken global U(1) symmetry. They are predicted to radiate massless dark matter axions, massive particles and gravitational waves. If we are to detect axion dark matter, either directly or indirectly via gravitational waves, understanding the magnitude and spectrum of this radiation is crucial. In this talk, I will summarise my most recent work (arXiv:2312.07701) which models axion string radiation using adaptive mesh refinement simulations. We investigate colliding travelling wave configurations with a Gaussian profile and the dependence of the radiation on parameters such as the amplitude of the Gaussian and the radius of curvature of the string relative to the string width.

Would you be interested in presenting a poster? (this will not impact the decision on your talk)

no

Primary author: DREW, Amelia

Co-authors: Prof. SHELLARD, Paul; Mr KINOWSKI, Tomasz

Presenter: DREW, Amelia

Session Classification: Dark Matter