

Axion phenomenology from string theory to the lab

Thursday 10 April 2025 10:50 (1 hour)

Axions are a hypothetical class of particle predicted in a variety of settings and of utility in solving many mysteries of theoretical physics, most notably as dark matter candidates and solving the strong CP problem. I will describe recent dramatic progress in understanding what string theory predicts about the properties of axions, and the door this opens to test quantum gravity. I will thus describe the cosmology of axions, how they differ from other dark matter candidates, and how we might discover evidence for them in astrophysics. I will then describe why, and by what technology, so many axion experiments are being built around the world. I will end by discussing the recent measurement, for the first time, of axion quasiparticles in magnetic topological insulators the laboratory.

Presenter: MARSH, David (King's College London)

Session Classification: Plenary talks

Track Classification: Fundamental physics