

Could the Dark Matter be the QCD Axion?

Prof. Guy Moore

Institut für Kernphysik, TU Darmstadt

First I will review the evidence that the Universe is full of dark matter, which outweighs ordinary neutron-proton-electron matter by a factor of 5. Then I will present a seemingly unrelated issue: the strong interactions respect time-reversal invariance, even though they could easily violate this symmetry a billion times more strongly. A hypothetical particle, the Axion, could explain both puzzles. I discuss the physics of the Axion in the early Universe, leading to a prediction for this particle's mass if it makes up the Dark Matter.