PHYSICS AND ASTRONOMY
SEMINAR

Dr. Danielle Wills

Durham University

"Dark D-brane Cosmology"

Abstract

I will discuss a new coupled quintessence scenario in Type IIB string theory, where dark energy is driven by the motion of a hidden sector D-brane in a strongly warped region of the compact space, and dark matter arises from the world-volume fields on the hidden brane. Dark energy couples to dark matter via the pull-back metric on the brane, which yields a precise realisation of the so-called disformal coupling, a generalisation of the conformal coupling, which is a popular ingredient in phenomenological theories of modified gravity. This scenario leads to very viable cosmology that can ameliorate both the fine-tuning problem and the coincidence problem of dark energy.

Tuesday, January 21, 2014
11:30 a.m.
Elliott Building 162