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Fuzzy Fields for Cosmic Conundrums

Friday 3 March 2023 15:00 (1h 20m)

High-energy particle theory motivates that a very light ($m \ll 10^{-12}$ eV) field may exist, in addition to the usual standard model spectrum. If so, such a field could contribute to the dark matter and dark energy of the universe at a broad range of epochs. In this talk, I will explore the impact of such a field as a dark matter component (though its impact on CMB anisotropies), as a contributor to late-time acceleration or early dark energy components, and as a field driving evolution in the fundamental constants of nature. I will connect theory to observations, and perhaps preview the promise of future CMB and other cosmological experiments.

Presenter: GRIN, Daniel (Haverford college)