



Contribution ID: 32

Type: **not specified**

Imprints of string theory in low energy observables

Friday 7 July 2023 11:00 (30 minutes)

In this talk, I will discuss string theory may have characteristic predictions in certain low energy observables such as axion couplings and electric dipole moments (EDMs) of nucleons and atoms. It will be shown that axions identified as the zero modes of stringy n -form gauge fields are predicted to have their couplings to the SM fermions (e.g. electrons) comparable to the SM gauge fields (e.g. photons) in contrast to axions identified as the phases of complex scalar fields (as assumed in the KSVZ and DFSZ models). On the other hand, string theory predicts a nearly flat logarithmic distribution of the QCD axion vacuum expectation value over the landscape. Therefore it may give rise to EDMs of nucleons and atoms by a sizable QCD theta angle. I will show that such QCD theta-dominated CP violating scenario can be discriminated experimentally from other BSM scenarios by measurements of the EDMs of diamagnetic atoms.

Primary author: IM, Sang Hui

Presenter: IM, Sang Hui

Session Classification: Plenary

Track Classification: Plenary Session: Plenary