The XXVIII International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 2021)



Contribution ID: 299

Type: not specified

Terazooming in on light (composite) axion like particles

Thursday, 26 August 2021 16:40 (20 minutes)

The Tera-Z phase of future e^+e^- colliders, FCC-ee and CepC, is a goldmine for exploring Z portal physics. We focus on axion-like particles (ALPs) that can be produced via Z decays with a monochromatic photon. As a template model, we consider composite Higgs models with a light pseudo-scalar that couples through the Wess-Zumino-Witten term to the electroweak gauge bosons. For both photophilic and photophobic cases, we show that the Tera-Z can probe composite scales up to 100s of TeV, well beyond the capability of the LHC and current precision physics.

Our results also apply to generic ALPs and, in particular, severely constrain models that explain the muon g-2 anomaly.

Primary author: IYER, Abhishek (IIT Delhi)

Co-authors: CACCIAPAGLIA, Giacomo; DEANDREA, Aldo (I); SRIDHAR, Krishnamoorthy (TIFR)

Presenter: IYER, Abhishek (IIT Delhi)

Session Classification: Theories of New Strong Dynamics

Track Classification: Theories of New Strong Dynamics