Contribution ID: 256

Type: Parallel talk

## Probing Heavy Neutrino Magnetic Moments at the LHC Using Non-Pointing Photons

Wednesday 16 October 2024 14:30 (15 minutes)

In this talk, I will discuss how long-lived particle (LLP) searches using non-pointing photons can be used to probe transition magnetic moments of heavy sterile neutrinos. Active-to-sterile and sterile-to-sterile transition magnetic dipole moments are examined in the Standard Model effective field theory extended with right-handed neutrinos (NRSMEFT) and in a simplified UV-complete scenario. We find that LLP searches at the LHC can probe sterile-to-sterile transition magnetic moments two orders of magnitude below the current best constraints from LEP. In the UV complete model, we find synergy between searches for charged lepton flavour violating (cLFV) processes and LLP searches, which could provide valuable insights into the lepton flavour structure of the new physics couplings.

## Track type

Neutrino Physics

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