

The ALP window to HNLs

Axion-Like Particles (ALPs) and Heavy Neutral Leptons (HNLs) represent compelling extensions to the Standard Model, each offering solutions to distinct shortcomings of this framework. Investigating the simultaneous presence of both ALPs and HNLs opens an intriguing window for new detection opportunities. We focus on a particularly promising process, the JALZ topology, which exploits the fermion-mass proportionality of ALP couplings. We study the possible production mechanisms that could play a relevant role at both the Large Hadron Collider (LHC) and future Muon Colliders, as well as various final states resulting from the inclusion of two HNLs. These different outcome configurations lead to distinct experimental signatures providing potential avenues for detecting these elusive particles.

Title of the Poster/Talk

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Session Classification: Poster Session