

Long-lived Particle searches

Sunday, 19 April 2026 17:20 (25 minutes)

In this work we study the prospect of detecting light scalars at the FASER. We develop the general formalism for the scalar production and decay from mesons at LHC, given modified couplings of the scalars to the SM particles, as well as summarizing the relevant GeV-scale experiment constraints. We then analyze the reaches of light scalars in the large $\tan\beta$ region of the Type-I 2HDM, in which a light scalar with relatively long life time could be accommodated. We also have studies in the framework of NMSSM.

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Session Classification: BSM Highlight (Room 567, Chair Cheng-Cheng Han)