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Heavy neutrino-antineutrino oscillations at the HL-LHC

The Standard Model lacks an explanation for the observed light neutrino oscillations. This can be alleviated by adding at least two right-handed Majorana fermions in order to generate neutrino masses via the seesaw mechanism. These right-handed Majorana fermions can be light enough to be collider accessible as long as they are nearly mass degenerate. These pseudo-Dirac heavy neutral leptons exhibit a unique phenomenology. The most striking feature is the appearance of neutrino antineutrino oscillations. We demonstrate that it is in principle possible to measure the heavy neutrino oscillation length at the HL-LHC.

Participation

I plan to attend in person

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