(Re)interpreting the results of new physics searches at the LHC

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Prompt and long-lived re-interpretations in Left-Right theory

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In Left-Right symmetric theories, the origin of neutrino mass is due to spontaneous breaking of an extended gauge symmetry, which restores parity at high scales. The searches for the heavy Majorana neutrinos from single production via W_R and pair production through the Higgs portal feature striking lepton number violating signatures. However, the final states vary drastically from same-sign lepton and jets to displaced neutrino jets and missing energy. We will discuss the signal features of heavy neutrinos and the tools that were developed to simulate neutrino jet displacement and how these overlap with the recast of prompt searches.

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