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Machine Learning Techniques to Probe HNLs at the FCC-ee

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In place of traditional cut and count methods, machine learning techniques offer powerful ways to optimise our searches for new physics. At the FCC-ee, we will probe the highest intensities and energies ever seen at a lepton collider, opening the possibly for discovery of massive right-handed neutrino states. In this work, existing searches for HNLs at the FCC-ee are optimised using a BDT and a DNN. We report an increase in the sensitivity of the considered parameter space by as much as two orders of magnitude in the couplings.

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