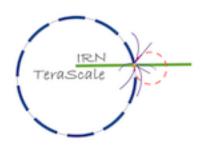ID de Contribution: **34**   Type: **Non spécifié**

Precision predictions for exotic lepton production at the Large Hadron Collider

mardi 25 avril 2023 14:00 (20 minutes)

We calculate total and differential cross sections for the pair production, at the Large Hadron Collider, of exotic leptons that could emerge from models with vector-like leptons and in Type-III seesaw scenarios. Our predictions include next-to-leading-order QCD corrections, and we subsequently match them with either parton showers, or threshold resummation at the next-to-next-to-leading logarithmic accuracy. Our results show an important increase of the cross sections relative to the leading-order predictions, exhibit a distortion of the shapes for various differential distributions, and feature a significant reduction of the scale uncertainties. Our predictions have been obtained from new FeynRules model implementations and associated UFO model libraries. This completes the set of next-to-leading-order implementations of new physics models featuring extra leptons that are publicly available on the FeynRules model database.

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