

Scalar sector of Type2 Seesaw model explorations with multi-lepton final states

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Originally motivated for the generation of (Majorana) neutrino masses, the Type-II Seesaw Model has also a rich extended Higgs sector with, if accessible at the LHC, a distinctive phenomenology of neutral, charged and doubly-charged states. The goal of the work is to present an exhaustive phenomenological study of the most promising production and decay channels of pair or associated scalars, decaying to gauge bosons or in cascades. These decays can be studied within LHC energies reach, by comparing cutflow results of different multi-lepton final states. The work is a collaboration between ATLAS experimentalists and theoreticians in continuation of an endeavor that lead to previous published ATLAS analyses for the search of (doubly)charged Higgs bosons (Eur. Phys. J. C 79 (2019) 58 [arXiv :1808.01899v2 [hep-ex]] et JHEP 06 (2021) 146 [arXiv :2101.11961v2 [hep-ex]]), aiming at proposals for future experimental searches.

Alternate track

1. Higgs Physics

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Yes

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