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Supersymmetric seesaw type-II: LHC and lepton flavour violating phenomenology

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We study the supersymmetric version of the type-II seesaw mechanism assuming minimal supergravity boundary conditions. We calculate branching ratios for lepton flavour violating (LFV) scalar tau decays, potentially observable at the LHC, as well as LFV decays at low energy, such as $l_i \rightarrow l_j + \gamma$ and compare their sensitivity to the unknown seesaw parameters. In the minimal case of only one triplet coupling to the standard model lepton doublets, ratios of LFV branching ratios can be related unambiguously to neutrino oscillation parameters. We also discuss how measurements of soft SUSY breaking parameters at the LHC can be used to indirectly extract information of the seesaw scale.

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