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New bounds on sneutrino masses through collider searches

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Though collider searches are constraining supersymmetric parameter space, generic model independent bounds on sneutrinos remain very low. We calculate new model independent lower bounds on general supersymmetric scenarios with sneutrino LSP and NLSPs. By recasting ATLAS LHC exotic searches in mono boson channels, we place an upper bound on the cross section on $pp \rightarrow \tilde{\nu}\tilde{\nu} + V$ processes in mono-photon, mono-Z and mono-Higgs channels. We also evaluate the LHC discovery potential of sneutrinos in the HL-LHC 3 ab^{-1} run.

Summary

Primary author: GILMER, Humberto (Ohio State University)

Co-author: CARPENTER, Linda (Ohio State University)

Presenter: GILMER, Humberto (Ohio State University)

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