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Testable SUSY spectrum from GUTs at the FCC-hh

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Grand Unified Theories (GUTs) are attractive candidates for more fundamental elementary particle theories. They can not only unify the Standard Model (SM) interactions but also different types of SM fermions, in particular quarks and leptons, in joint representations of the GUT gauge group. We discuss how comparing predictive supersymmetric GUT models with the experimental results for quark and charged lepton masses leads to constraints on the SUSY spectrum. We show an example from a recent analysis where the resulting superpartner masses were found just beyond the reach of LHC run 1, but fully within the reach of a 100 TeV pp collider like the FCC-hh.

Author: Prof. ANTUSCH, Stefan (University of Basel)

Presenter: Prof. ANTUSCH, Stefan (University of Basel)

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