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One-loop effects on MSSM parameter determination via chargino production at the LC

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Very precise measurements of masses and cross sections are expected to be achievable with a future linear collider. With such an accuracy one is even sensitive to quantum correction, which therefore must be incorporated in order to make meaningful predictions for the underlying new physics parameters. For the chargino–neutralino sector, this involves fitting one-loop predictions to expected measurements of the cross section and forward-backward asymmetry for chargino pair production and of the accessible chargino and neutralino masses. We consider three scenarios, each with characteristic features, chosen taking recent LHC SUSY and Higgs searches into account. Our analysis allows the accurate determination of the desired parameters and, additionally, access to the mass of the lighter stop that enters via loop corrections.

Authors: Dr BHARUCHA, Aoife (University of Hamburg (DE)); WEIGLEIN, Georg (DESY); MOORTGAT-PICK, Gudrid (Hamburg University/DESY); KALINOWSKI, Jan (University of Warsaw); ROLBIECKI, Krzysztof (DESY)

Presenter: Dr BHARUCHA, Aoife (University of Hamburg (DE))

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