



HEP 2013  
Stockholm  
18-24 July 2013



Contribution ID: 195

Type: **Poster Presentation**

## SUSY precision spectroscopy and parameter determination at the ILC

A systematic study of a SUSY model with a rich spectrum accessible at the ILC running below and up to the centre-of-mass energy of 500 GeV is presented. The model point – the delta M tilde-tau point of Baer & List (arXiv:1205.6929) – is such that all sleptons and most bosinos would be produced at the ILC, while the gluino and the first and second generation squarks are beyond the current LHC reach. The model is consistent with all current experimental limits and measurements. However, due to the many open channels and long cascade-decay chains, it would be a challenge to the ILC experiments to interpret.

This study aims at exploiting this model fully by suggesting a running scenario, where beam-time is allotted in an optimal way to threshold scans and measuring the continuum production at both intermediate and the highest possible centre-of-mass energies, with different beam polarisations. The obtainable experimental precisions are then used to make an MSSM parameter determination with 18 free parameters using the Fittino framework.

**Primary author:** BERGGREN, Mikael (Deutsches Elektronen-Synchrotron (DE))

**Presenter:** BERGGREN, Mikael (Deutsches Elektronen-Synchrotron (DE))

**Track Classification:** Higgs and New Physics