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Stau Searches at the ILC

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The direct pair-production of the tau-lepton superpartner, stau, is one of the most interesting channels to search for SUSY. First of all the stau is with high probability the lightest of the scalar leptons. Secondly the signature of stau pair production signal events is one of the most difficult ones, yielding to the 'worst' and so most global scenario for the searches. The current model-independent stau limits comes from analysis performed at LEP but they suffer from the low energy of this facility. Limits at LHC are extended to higher energies but they are only valid under strong constraints. ILC, a future electron-positron collider with energy up to 500 GeV and upgrade capability, is a promising scenario for SUSY searches. The capability of the ILC for determining exclusion/discovery limits for the stau in a model-independent way is shown in this contribution, together with an overview of the current state-of-the-art. Results of the last studies of stau pair-production at the ILC are presented, showing the improvements with respect to previous results.

Time Zone

Europe/Africa/Middle East

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