

Study of SUSY particles properties at the future International Linear Collider with the International Large Detector

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Recently, Letters of Intent (LoI) for experiments at the International Linear Collider (ILC) have been submitted. Among the three proposals is the International Large Detector (ILD) concept which is at the focus of these studies.

From various subjects addressed in the LoI, a wide spectrum of studies of SUSY particle properties is presented here. Most of them are benchmark reactions for the ILC and can be used both in physics studies and in work on detector design and optimization, respectively. All studies were performed with a full detector simulation using GEANT4, which is a great improvement compared to the previous results with much less detailed, so called "fast", simulation (SIMDET). The importance of this improved simulation is reflected in the results. The presented analyzes have been chosen to be the most challenging for the detector to study its performance and guide the detector development.

Additionally an important problem of unavoidable beam induced backgrounds at linear colliders is addressed and ways of reducing its impact on physics studies are shown for an example SUSY analysis.

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