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Kinematic Cusps to determine the slepton and LSP masses at the ILC

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Abstract:

Recently the cusps and endpoints in some kinematic distributions of the antler decay at the LHC can probe the masses of the parity-odd missing energy particles as well as the intermediate particles. We extend this study into the high energy e^+e^- linear collider, which will provide unambiguous c.m. frame and energy. We found new and more powerful cusp structures of new kinematic observables, possible only at the ILC. As a benchmark scenario, we study $e^+e^- \rightarrow$

$smu_{R,L}^+$
 $smu_{R,L}^-\mu^+\mu^-$
 $neuo$

$neuo$ with SPS 1a parameter set in the framework of the minimal supersymmetric standard model.

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