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Type-III seesaw fermionic triplets at the International Linear Collider

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We investigated the signature of heavy fermionic triplets belonging to Type III seesaw model through their direct production at the International Linear Collider (ILC). In particular we looked into the decay distributions of charged (Σ^\pm) and neutral (Σ^0) triplets in the processes $e^+e^- \rightarrow \Sigma^+\Sigma^-$, $\Sigma^0\Sigma^0$, $\Sigma^0\nu$, $\Sigma^\pm\ell$ and studied how they can be used to reduce the SM background. These heavy triplets mix with SM leptons and thus opens up the possibility of studying various interesting channels.

The triplet state (Σ) having mass around 250 GeV, will be produced in large numbers at the ILC with CM energy of 1000 GeV and a moderate integrated luminosity of 300 fb^{-1} .

Further we have found that it is possible to distinguish scenarios involving different mixings.

Oral or Poster Presentation

Oral

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