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Search for Extra Scalars Produced in Association with Muon Pairs at the ILC

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We study the search for an extra scalar S boson produced in association with the Z boson at the International Linear Collider (ILC). The study is performed at center-of-mass energies of 250 GeV and 500 GeV based on the full simulation of the International Large Detector (ILD). In order to be as model-independent as possible, the analysis uses the recoil technique, in particular with the Z boson decaying into a pair of muons. As a result, exclusion cross-section limits are given in terms of a scale factor k with respect to the Standard Model Higgs-strahlung process cross section. These predicted results, covering all possible searching regions of the extra scalars at the 250 GeV ILC and the 500 GeV ILC, can be interpreted independently of the decay modes of the S boson.

Time Zone

Asia/Pacific

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