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Measurement of σ(e+e− → HZ) × Br(H → ZZ*) at the 250 GeV ILC

Tuesday 16 March 2021 07:00 (20 minutes)

We report on studies of the e+e− → HZ process with the subsequent decay of the Higgs boson H → ZZ, *where the ZZ* combination is reconstructed in the final states with two jets and two leptons. The analysis is performed using Monte Carlo data samples obtained assuming the ILD detector model, the integrated luminosity 2 ab−1 and the center-of-mass energy √s = 250 GeV. Signals are measured for four processes, which correspond to two combinations for the H → ZZ* final states and two decays of the directly produced Z boson, Z → νν̄ and Z → qq̄. To obtain the Higgs boson mass distributions, we used the variables M(jjll) and ∆M = M(jjll) − M(jj) + M(Znom), where M(Znom) = 91.2 GeV. Potential backgrounds are also estimated. The e+e− → HZ process measurement allows to obtain the width of the Higgs boson in a model-independent way.

Time Zone

Europe/Africa/Middle East

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