

Abstract Submitted
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Search for ZH in the $\ell b\bar{b}$ Final State using a Neural Network Discriminant at CDF SHALHOUT SHALHOUT, Wayne State University, CDF COLLABORATION — We report on a search for a Higgs boson produced in association with a Z boson using 2.7 fb^{-1} of CDF II data collected from $p\bar{p}$ collisions at $\sqrt{s} = 1.96 \text{ TeV}$ based on the $\ell b\bar{b}$ final state. To maximize signal acceptance we impose loose lepton and b -quark jet identification requirements. We correct the measured energies of the jets using an artificial neural network which assigns any observed missing transverse energy between the two jets. In order to maintain signal efficiency and improve signal discrimination, we employ an additional neural network trained to discriminate events based on differences in the event kinematics for ZH events and those for the main Z plus jets and $t\bar{t}$ backgrounds. We set 95% Confidence Level upper limits on the production cross section times branching ratio for potential Higgs boson masses between 100 and 150 GeV/c^2 .

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