Improved search for $ZH \to \ell^+\ell^- b\bar{b}$ using 9.7 fb^{-1} of data collected by the D0 detector JIAMING YU, University of Michigan, D0 COLLABORATION — We present an improved search for the standard model Higgs boson produced in association with a Z boson, using 9.7 fb^{-1} of $p\bar{p}$ collision data collected by D0 detector at $\sqrt{s} = 1.96$ TeV. Events are selected with two electrons or two muons that are consistent with the decay of a Z boson, and at least two reconstructed jets (including at least one b-tagged jet). Four dedicated random forests of decision trees (RFs) are trained in order to distinguish the signal with $t\bar{t}$, Z+Heavy Flavor jets, Z+Light Flavor jets and diboson background events respectively. The final discriminant is trained separately in five regions according to the output of the RFs. Upper limits on the ZH production cross-section times branching ratio to two b-jets are set at 95% C.L. We also use the minimum walking technicolor model ($\rho_{TC} \to Z\pi_{TC} \to \ell^+\ell^- b\bar{b}$) to interpret the results we obtained.

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