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Search for the Higgs boson in the $ZH \rightarrow \nu\nu b\bar{b}$ channel at D0

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A search for the standard model Higgs boson has been performed in 2.1 fb^{-1} of $p\bar{p}$ collisions at 1.96 TeV, collected with the D0 detector at the Fermilab TeVatron. The final state considered is a pair of acoplanar b jets, as expected from the reaction $p\bar{p} \rightarrow HZ \rightarrow b\bar{b}\nu\nu$. The search is also sensitive to the $HW \rightarrow b\bar{b}\nu\nu$, when the charged lepton is not identified.

Boosted decision trees were used to discriminate the signal from the backgrounds.

Since no deviation was observed, limits were set at 95% C.L. on the cross section times branching ratio of $p\bar{p} \rightarrow H(Z/W) \times (H \rightarrow b\bar{b})$.

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