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Search for Neutral Supersymmetric Higgs Bosons in $bbb(b)$ Final States in $p\bar{p}$ Collisions at $\sqrt{s}=1.96$ TeV PROLAY MAL, University of Washington, D0 COLLABORATION — We present a search for Higgs bosons in the $bh(\rightarrow b\bar{b})$ and $bbh(\rightarrow b\bar{b})$ channels at a center-of-mass energy of $\sqrt{s}=1.96$ TeV using up to 4 fb^{-1} of data collected with the D0 detector. In many supersymmetric models the cross section for production of neutral Higgs bosons in association with bottom quarks is greatly enhanced compared to the Standard Model, and over much of the parameter space the dominant decay process is $\rightarrow b\bar{b}$. We search for an excess of events above the multijet background in events with 3 and 4 b -jets. Understanding the multijet background in this channel is particularly challenging.

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