

ICHEP2012



Contribution ID: 457

Type: **Parallel Sessions**

## **Search for Neutral Supersymmetric Higgs Bosons in $bbb(b)$ Final States in $p\bar{p}$ Collisions at $\sqrt{s}=1.96$ TeV**

*Friday, July 6, 2012 3:15 PM (15 minutes)*

We present a search for Higgs bosons in the  $bh(h \rightarrow b\bar{b})$  and  $bbh(h \rightarrow b\bar{b})$  channels at a center-of-mass energy of  $\sqrt{s}=1.96$  TeV with the D0 detector at the Fermilab Tevatron collider. 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 mode is into a pair of bottom quarks. The search is performed in events with 3 and 4 identified b jets and uses the full D0 Run 2 dataset. Currently this search is only performed at the Tevatron and thus provides unique complementary information to searches for Supersymmetric Higgs bosons decaying into tau pairs at the LHC. The sophisticated techniques to model the dominant multijet background, as well as the multivariate techniques used to both efficiently select the signal and suppress the background, will be discussed in detail.

**Primary author:** Dr KHARCHILAVA, Avto (State University of New York (US))

**Presenter:** Dr KHARCHILAVA, Avto (State University of New York (US))

**Session Classification:** Plenary3 - The Standard Model -TR1

**Track Classification:** Track 1 - The Standard Model and EW Symmetry Breaking - Higgs Searches