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Searches for Supersymmetric Higgs bosons at Tevatron

vendredi 22 juillet 2011 10:00 (15 minutes)

We present searches for Higgs bosons in final states with b-quarks and/or taus at a center-of-mass energy of $\sqrt{s}$ =1.96~TeV using up to 8.5~fb^{-1} of data collected with the D0 detector. In Supersymmetric models the Higgs boson production cross section can be significantly enhanced compared to the Standard Model, and in such models the Higgs boson has a significant branching fractions to τ leptons at all masses and the gluon fusion production process can be exploited directly. In addition, the cross-section for production of neutral Higgs bosons in association with bottom quarks is greatly enhanced compared to the Standard Model. Therefore we also search for an excess of events above the multijet background in events with 3 and 4 b-jets exploiting the dominant decay channel of the Higgs boson to b quarks, and also exploit the hybrid channel with b-quarks and tau leptons. We combine the result of these 3 searche channels in the context of different scenarios within the Minimal Supersymmetric Standard Model.

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