Contribution ID: **213** Type: **not specified**

Search for a Two-Higgs-Boson Doublet Using a Simplified Model at CDF

We present a search for new particles in an extension to the standard model that includes a heavy Higgs boson (H0), a lighter charged Higgs boson (H±), and an even lighter Higgs boson h0, with decays leading to a W-boson pair and a bottom-antibottom quark pair in the final state. We use events with exactly one lepton, missing transverse momentum, and at least four jets in data corresponding to an integrated luminosity of 8.7/fb collected by the CDF II detector in proton-antiproton collisions at √s=1.96 TeV. We find the data to be consistent with standard model predictions and report the results in terms of a simplified Higgs-cascade-decay model, setting 95% confidence level upper limits on the product cross section and branching fraction from 1.3 pb to 15 fb as a function of H0 and H± masses for m(h0)=126 GeV/cˆ2.

Authors: Prof. TOBACK, David (Texas A & M University (US)); Dr WOLFE, Homer (Ohio State University (US)); WILSON, Jonathan (University of Michigan)

Presenters: Prof. TOBACK, David (Texas A & M University (US)); Dr WOLFE, Homer (Ohio State University (US)); WILSON, Jonathan (University of Michigan)