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Searches for non-SM higgs at the Tevatron

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We present searches for beyond standard Model Higgs production using the latest amount of data collected by the CDF and D0 detectors at the Fermilab Tevatron. Supersymmetric extensions of the standard model can yield enhanced Higgs production of a neutral MSSM Higgs boson, A, depending on the parameter tan(Beta). Separate searches are carried out for an A decaying to tau leptons or b-quarks, and set exclusion regions in tan(Beta) versus m_A space for each analysis. A search for the lightest neutral CP-even Higgs boson (h) in the next-to-minimal supersymmetric standard model is also carried out, where the h decays to a pair of lighter (<10 GeV) neutral pseudoscalar Higgs bosons (a) and the a bosons decay both to two muons or one to two muons and the other to two taus. This new search at the Tevatron is performed by looking for events with two pairs of collinear muons or a pair of collinear muons and missing transverse energy due to the tau decays. We present as well searches for MSSM charged Higgs bosons originating from top quark decay, and searches for higgs in technicolor models using events with a W boson, 2 jets and one or more b-tags.

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