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Searches for physics beyond the standard model at the Tevatron

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Results from searches for physics beyond the Standard Model from the CDF and D0 experiments at the Fermilab Tevatron proton anti-proton collider are reviewed. Each experiment has now collected about 10 inv fb of integrated luminosity over the 11-year period of “RunII” at a center-of-mass energy of 2 TeV. Presented results will focus on areas which complement the LHC searches with 1 - 5 inv fb at 7 TeV in proton-proton collisions. One of the most intriguing results which will be highlighted is the observation and further analysis by the D0 experiment of a significant like-sign di-muon asymmetry. Related measurements with flavor-specific asymmetries and channels such as $B_s \rightarrow J/\psi \phi$ which may be sensitive to new physics in B mixing will also be discussed. Searches for new phenomena will be reviewed including amongst others results of model-independent searches, stable charged heavy particle searches and searches with tri-leptons and same-sign di-leptons. Results of searches for Higgs-like particles beyond the Standard Model Higgs will also be reviewed with an emphasis on areas that are complementary and competitive with the LHC.