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Looking for new physics at the Tevatron collider

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The standard model describes the experimental data on particle interactions very well. However in order to avoid theoretical problems with the model, it is expected that some new physics has to appear at energy scales of a few TeV. The Tevatron collider at Fermilab currently probes elementary particle physics at the highest energies and it is therefore the most powerful instrument to search for this new physics. The Tevatron experiments now have recorded data samples that are measured in inverse femtobarns. I will review their results of searches for a range of possible signals such as heavy gauge bosons, non-standard Higgs bosons, supersymmetric particles, leptoquarks, and effects of extra dimensions.