



Search for Pair Production of the Scalar Top Quark in $\mu^+\tau$ Final States

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We present a search for the pair production of scalar top quarks (stop_1), the lightest supersymmetric partners of the top quarks, in $p\bar{p}$ collisions at a center-of-mass energy of 1.96 TeV, using data corresponding to an integrated luminosity of 7.3 fb^{-1} collected with the D0 experiment at the Fermilab Tevatron Collider. Each scalar top quark is assumed to decay into a b quark, a charged lepton, and a scalar neutrino (snu). We investigate final states arising from $\text{stop}_1 \bar{\text{stop}}_1 \rightarrow b \bar{b} \mu^+ \tau^- \text{snu} \text{snu}$ and $\text{stop}_1 \bar{\text{stop}}_1 \rightarrow b \bar{b} \tau^+ \tau^- \text{snu} \text{snu}$. With no significant excess of events observed above the background expected from the standard model, we set exclusion limits on this production process in the $(m_{\text{stop}_1}, m_{\text{snu}})$ plane.

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