

Beyond the SM searches with top (D0)

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The top quark is the heaviest elementary particle known today. It is therefore an excellent candidate to search for new physics. We present searches for physics beyond the Standard Model involving top quarks. The analysed data corresponds to up to 4 fb^{-1} of integrated luminosity, collected by the D0 detector at the Fermilab Tevatron collider. We present various searches for new physics in the production of single top quarks such as searches for W' bosons and charged Higgs bosons. We also discuss searches in the production of top quark pairs such as searches for new resonances, Higgs bosons produced in association with top-antitop quark pairs and present a measurement of a forward backward asymmetry. Furthermore, we present a simultaneous measurement of the ratio of branching fractions, $R = \frac{B(t \rightarrow Wb)}{B(t \rightarrow Wq)}$, with q being a d , s , or b quark, and search for new particles in top quark decays, such as charged Higgs bosons. We set limits in various supersymmetric models.

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