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Measurements of single top quark production cross section and search for anomalous Wtb Couplings at D0 JYOTI JOSHI, University of California, Riverside, D0 COLLABORATION — We present new measurements of the single top quark production cross section in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV using data corresponding to 5.4 fb^{-1} of integrated luminosity collected by the D0 detector at the Fermilab Tevatron Collider. The large mass of the top quark, close to the electroweak symmetry-breaking scale, makes it a good candidate for probing physics beyond the Standard Model, e.g. anomalous couplings. We examine the data to study the Lorentz structure of the Wtb coupling. We find that the data prefer the left-handed vector coupling and set upper limits on the anomalous couplings.

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