

Abstract Submitted
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Measurement of spin correlation in top quark pair production at the D0 experiment TIM HEAD, University of Manchester — A measurement of the correlation between the spin of the top and the spin of the anti-top quark produced in proton anti-proton scattering at a center of mass energy of 1.96 TeV is presented. This measurement uses up to 4.2/fb of data collected by the D0 detector at the Tevatron collider. The SM predicts that the top quark decays before it hadronizes, in contrast with the lighter quarks, which are depolarized by QCD interactions long before they decay. The spin of the top quark is therefore reflected by its decay products. We analyze a double differential angular distribution of the charged leptons from top and anti-top decays in final states with two charged leptons, missing transverse energy and at least two jets. The measured strength of the spin correlation is in agreement with the SM prediction.

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