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$t\bar{t}$ Cross Section Measurement in Muon + Jets Channel at ATLAS Using Kinematic Information DILIP JANA, University of Oklahoma, ATLAS COLLABORATION — We present a Monte Carlo study of prospects for measuring the $t\bar{t}$ production cross-section with the ATLAS detector at a center-of-mass energy of 10 TeV using events with one muon, missing transverse energy, and at least four jets in the final state. We employ a multivariate technique which uses the kinematic and topological information of the event to separate $t\bar{t}$ signal from background processes. The suggested method is aimed at early measurement of the $t\bar{t}$ cross section using 50 pb^{-1} of data. Assuming this amount of data, the $t\bar{t}$ cross section can be measured with accuracy of $\Delta\sigma/\sigma = \pm 25\%$ (syst) $\pm 6\%$ (fit+stat).

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