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**Motivation and event selection for the top quark pair production differential cross-section with ATLAS**[1] CLARE BERNARD, Boston University, ATLAS COLLABORATION — This talk presents the Monte Carlo and event selections used in the measurement of the top quark pair production differential cross-section in the lepton (electron or muon) + jets channel with a discussion of the motivation. The analysis uses data collected using the ATLAS detector at $\sqrt{s}$ = 7 TeV in 2011. The differential cross-section is measured as a function of the top quark transverse momentum and as a function of the transverse momentum, mass, and rapidity of the $t\bar{t}$ system. Measured distributions are corrected for detector acceptance and resolution and the resulting spectra have good agreement with theoretical predictions.

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