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A measurement of jet substructure variables in prompt $\mathbf{J/\psi}$ events with the ATLAS detector at $\sqrt{s} = 8$ TeV DAVID BJERGAARD, AYANA ARCE, Duke Univ, ATLAS COLLABORATION — There are many open questions regarding charmonium production at hadron colliders. In order to describe the p_T spectrum of prompt J/ψ particles, the color octet mechanism from non-relativistic QCD (NRQCD) must be introduced. Color octet states have a net color charge which is expected to enhance hadronic activity around the J/ψ. Recently it has been suggested that jet substructure techniques may be able to discriminate between the the octet and singlet production mechanisms. Simulations of of N-subjettiness and the J/ψ-jet momentum fraction indicate the ability to separate the two production mechanisms. This work presents the first measurement of these variables (N-subjettiness, ΔR and jet-momentum fraction z) in pp collisions at $\sqrt{s} = 8\ TeV$ with the ATLAS detector.

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