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Azimuthal Transverse Single-Spin Asymmetries of Charged Pions Within Jets from Polarized *pp* Collisions at $\sqrt{s} = 200$ GeV TING LIN, Texas AM University, STAR COLLABORATION — The Collins effect involves the convolution of the quark transversity in the proton with the spin-dependent Collins fragmentation function, leading to azimuthal modulations of identified charged hadron yields about the jet axis. STAR has reported the first measurements of Collins asymmetries for charged pions in jets in polarized *pp* collisions at $\sqrt{s} = 500$ GeV and 200 GeV, based on data taken during 2011 and 2012. The results probe transversity for quark momentum fractions $0.1 \leq x \leq 0.4$ at Q^2 scales that are one to two orders of magnitude larger than similar measurements in semi-inclusive deep-inelastic scatterings. These hadron-in-jet measurements also provide a direct probe of the Collins fragmentation function and enable testing its evolution, universality and factorization breaking in the transverse momentum dependent formalism. New preliminary results for the Collins asymmetries of charged pions in jets from 2015 *pp* collisions at $\sqrt{s} = 200$ GeV with a much larger sample size and improved analysis procedures that lead to smaller systematic uncertainties will be presented.

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