Abstract Submitted
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Azimuthal quadrupole correlation from gluon interference in 200 GeV p+p collisions[1] ROBERT RAY, The University of Texas at Austin — The BFKL multi-Pomeron model of Levin and Rezaeian [1], with extension to the gluon saturation region, is applied to long-range pseudorapidity correlations on relative azimuth for intermediate momentum (few GeV/c) final-state hadrons produced in $\sqrt{s} = 200$ GeV p+p collisions [2]. The multi-Pomeron exchange probabilities in the model were estimated by fitting the minimum-bias p+p multiplicity frequency distribution. The multi-Pomeron model prediction for the amplitude of the minimum-bias average quadrupole correlation, proportional to $\cos 2(\phi_1 - \phi_2)$, is consistent with preliminary measurements from STAR [3]. The gluon saturation momentum scale required by the model to describe the measured multiplicity dependence of the quadrupole correlation is also consistent with theoretical expectations for the saturation scale. The results presented here support a multiple parton-shower, gluon interference mechanism for generating the long-range pseudorapidity, azimuthal quadrupole correlation observed in high-energy p+p collisions.

[1] E. Levin and A. Rezaeian, Phys. Rev. D **84**, 034031 (2011);
[2] Ray, arXiv:1406.2736;
[3] D. Prindle, T. Trainor (STAR Collaboration), arXiv:1310.0408v1.

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