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New Observables for Measuring Rapidity Correlation Structure in Nuclear Collisions PATRICK CARZON, Lawrence Technological University, SEAN GAVIN, Wayne State University, GEORGE MOSCHELLI, Lawrence Technological University, CHRIS ZIN, Wayne State University — The rapidity dependence of two-particle momentum correlations can be used to probe the viscosity of the liquid produced in heavy nuclei collisions at RHIC. In addition, more refined rapidity structure of these correlations can be used to measure the isotropization time scale τ_π of this liquid [1]. While earlier theory and measurements have focused on correlations of the transverse momentum p_t, the interpretation of these measurements is ambiguous because p_t is not a conserved quantity. Correlations of the Cartesian components of transverse momenta, p_x and p_y are easier to understand because they are conserved [1.2]. We use the heavy ion simulation code AMPT to explore the correlations of these quantities. [1] Sean Gavin, George Moschelli, Christopher Zin, (2016), arXiv:1606.02692 [nucl-th]. [2] Scott Pratt, Soeren Schlichting, Sean Gavin, Phys. Rev. C84, 024909 (2011).

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