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Higher Harmonic Jet Tomography as a Probe of Fluctuating Initial Condition Geometries in A+A[1] BARBARA BETZ, Columbia University, GIORGIO TORRIERI, Frankfurt Institute for Advanced Studies (FIAS), MIKLOS GYULASSY, Columbia University — While 2nd Fourier harmonics of jet quenching has been thoroughly explored in the literature and shown to be sensitive to (1) the underlying jet path length dependence of energy loss and (2) the differences between the mean eccentricity predicted by Glauber and CGC models of initial conditions, the sensitivity of higher harmonics, $v_n(p_T, b)$, to differences between the fluctuation spectrum of geometries has remained relatively unexplored. We demonstrate that higher azimuthal jet harmonics ($n \geq 3$) of $R_A A(p_T, \phi)$ and $I_A A(p_T, \phi)$ are remarkably insensitive to the differences of geometrical density fluctuations comparing between Glauber and KLN/CGC models of the initial conditions. Therefore, the differential elliptic $v_2(p_T)$ vs. $v_2^{I_{AA}}(p_T)$ moment correlation between the 2nd moment of monojet R_{AA} and dijet I_{AA} nuclear modifications factors remains the most sensitive probe to differentiate between CGC and Glauber initial state sQGP geometries.

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