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Measurement of initial-state fluctuations using principal-components of elliptic and triangular flow in $\sqrt{s_{NN}} = 3.0$ GeV Au+Au collisions at the STAR detector YANG WU, University of California, Riverside, THE STAR COLLABORATION — Initial-state fluctuations could contribute to the factorization breaking in two-particle azimuthal correlations $V_{n\Delta}(p^a, p^b)$ at high transverse momentum p_T . Principal-component analysis (PCA) provides a set of novel experimental observables ($V_n^1(p_T), V_n^2(p_T), \dots$) which directly quantifies the magnitude of the factorization breaking caused by the initial-state fluctuations to high accuracy, by expanding the complex flow coefficient using the orthogonal principal components built from a symmetric and semidefinite covariance data matrices. Measuring of initial-state fluctuations from STAR BES-II collision energies with relatively high baryon chemical potential could provide further constraints for theoretical models on Quark-Gluon Plasma (QGP) properties. In this analysis, we present the measurement of the first two leading components for $n=2,3$ extracted from $\sqrt{s_{NN}} = 3.0$ GeV Au+Au collisions at STAR.

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