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Implementing the universal framework for analysis of anisotropic flow for MPD and BM@N

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The momentum anisotropy of particles produced in heavy-ion collisions serves as a sensitive probe of the matter formed in the collision overlap region. While detector effects can significantly distort the measured values of this observable, techniques exist to correct for acceptance non-uniformities and non-flow correlations. Developing an experiment-independent framework for anisotropic flow measurements can greatly simplify the process of obtaining robust physical estimates. We present QnTools, a universal software package designed for analyzing flow and polarization of particles produced in collisions. We demonstrate its application in extracting directed flow in the BM@N experiment and evaluating the performance of the MPD experiment for anisotropic flow measurements.

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