

Higher Harmonics and Flow at FAIR Energies

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Abstract

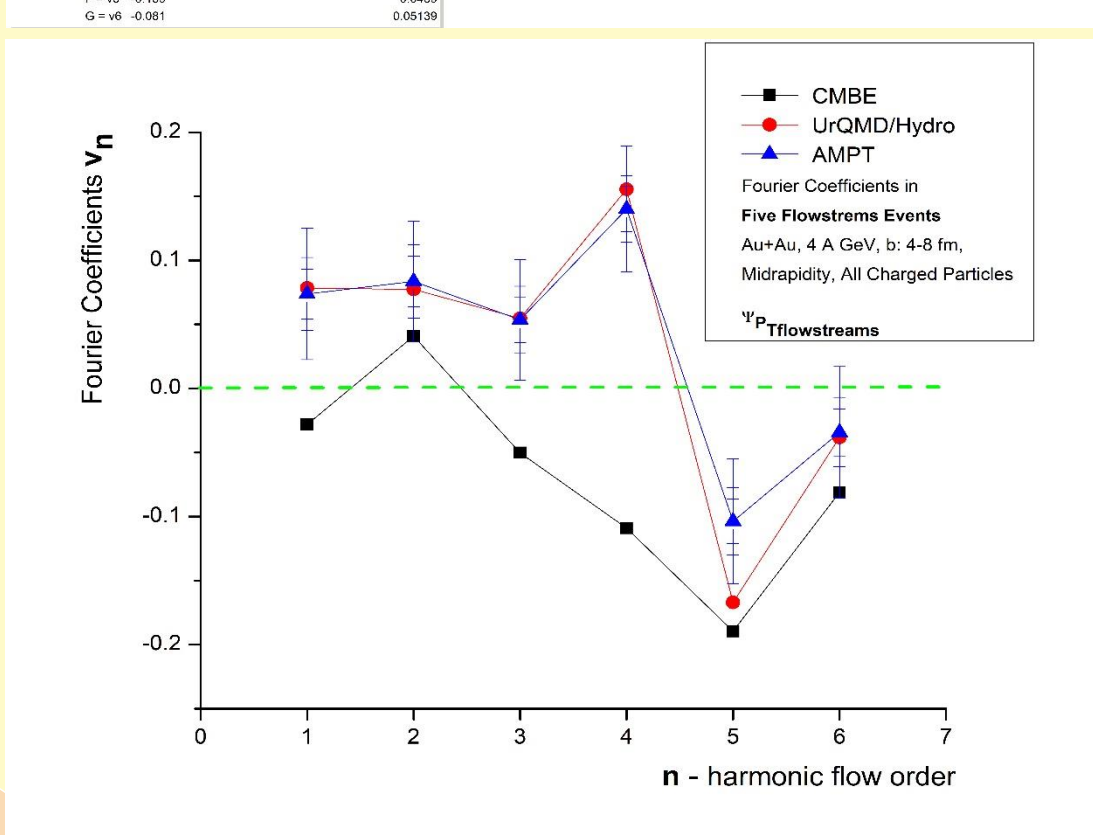
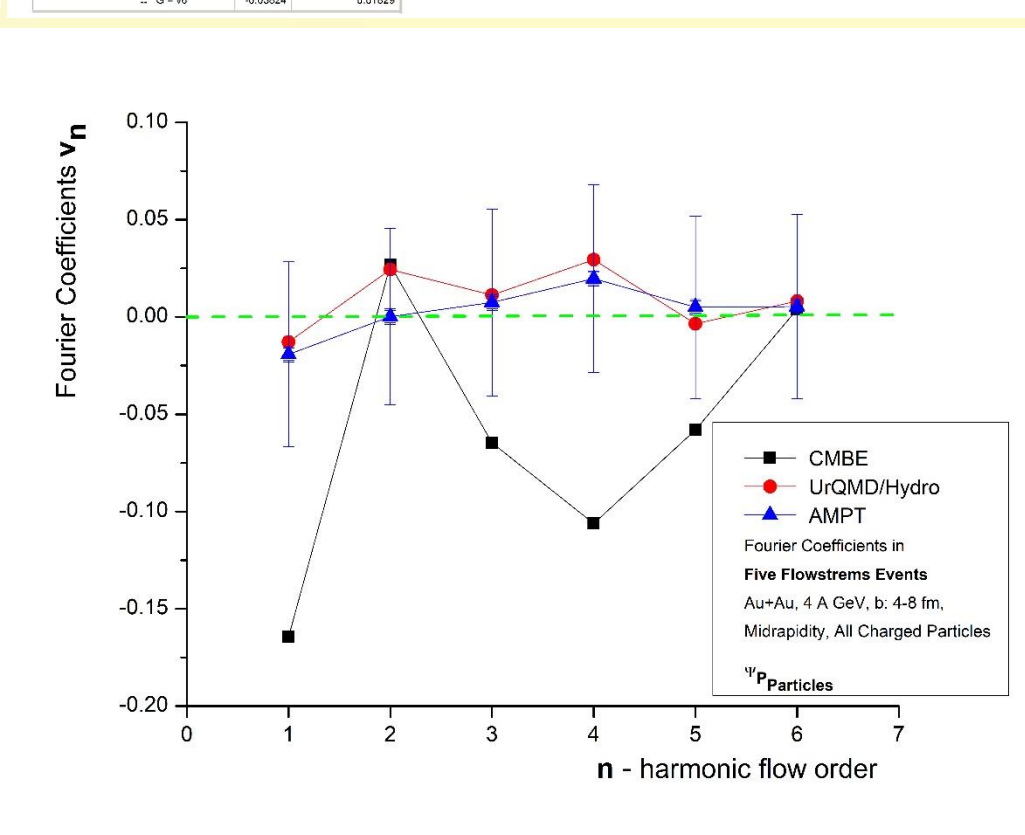
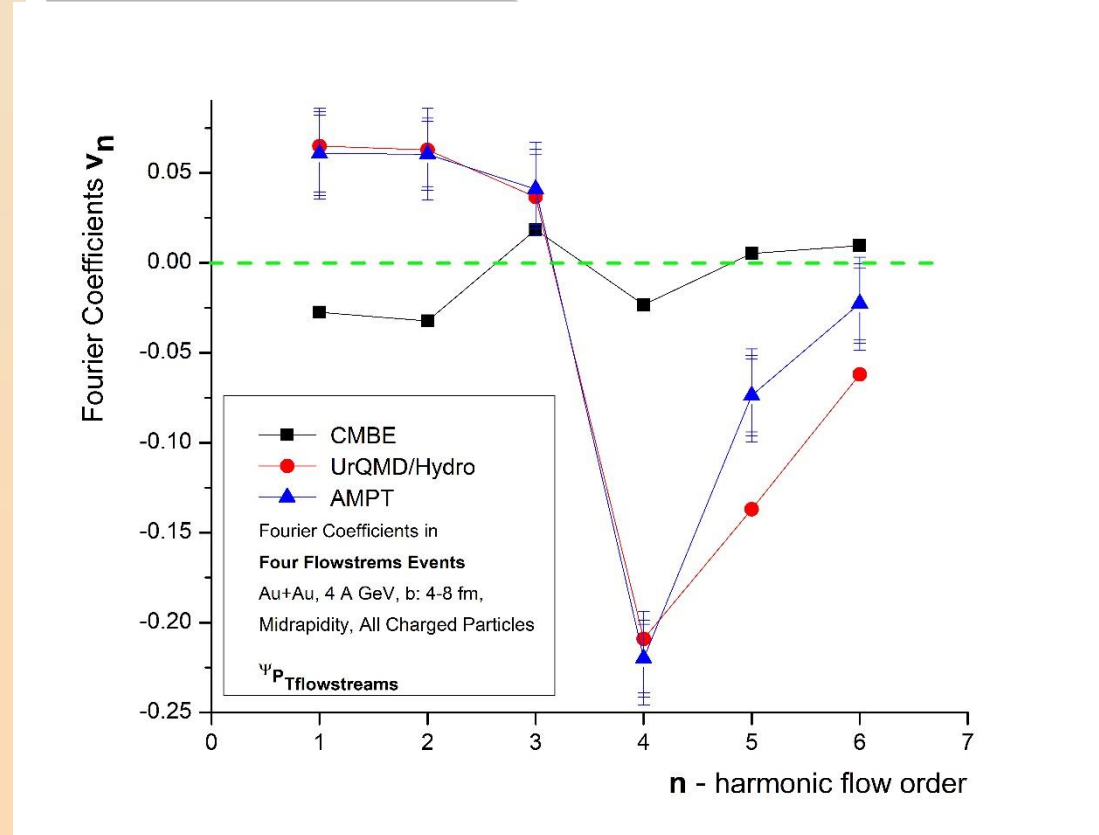
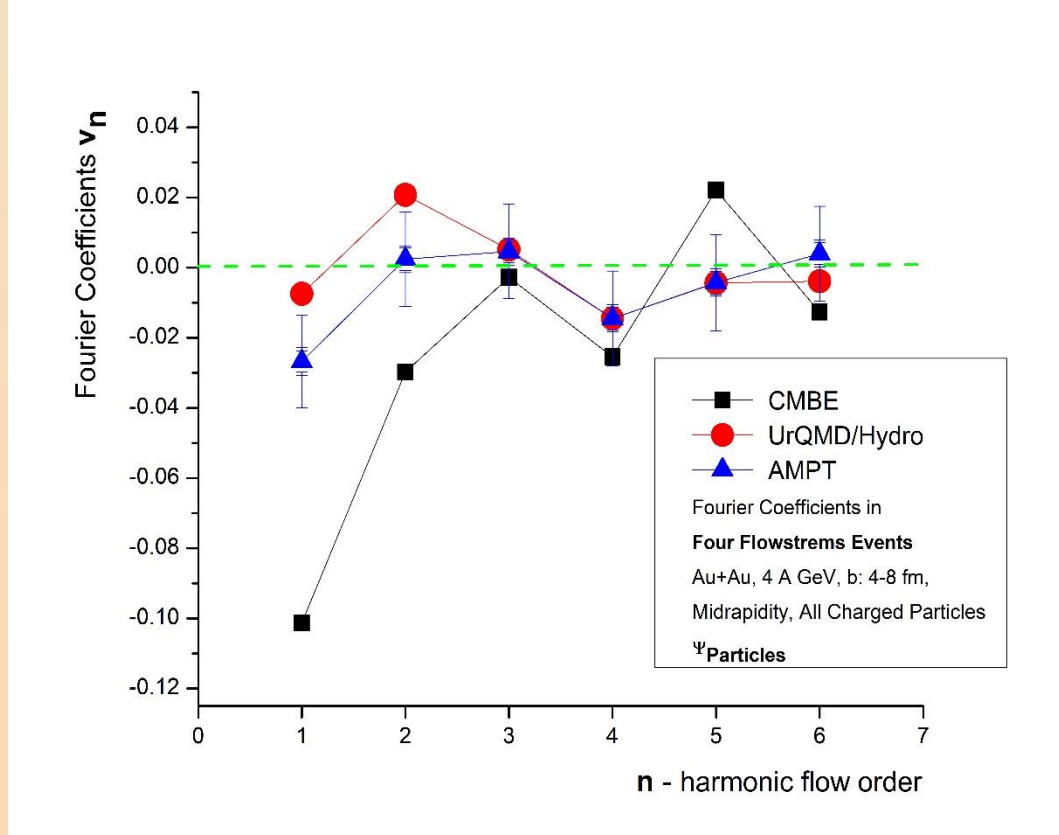
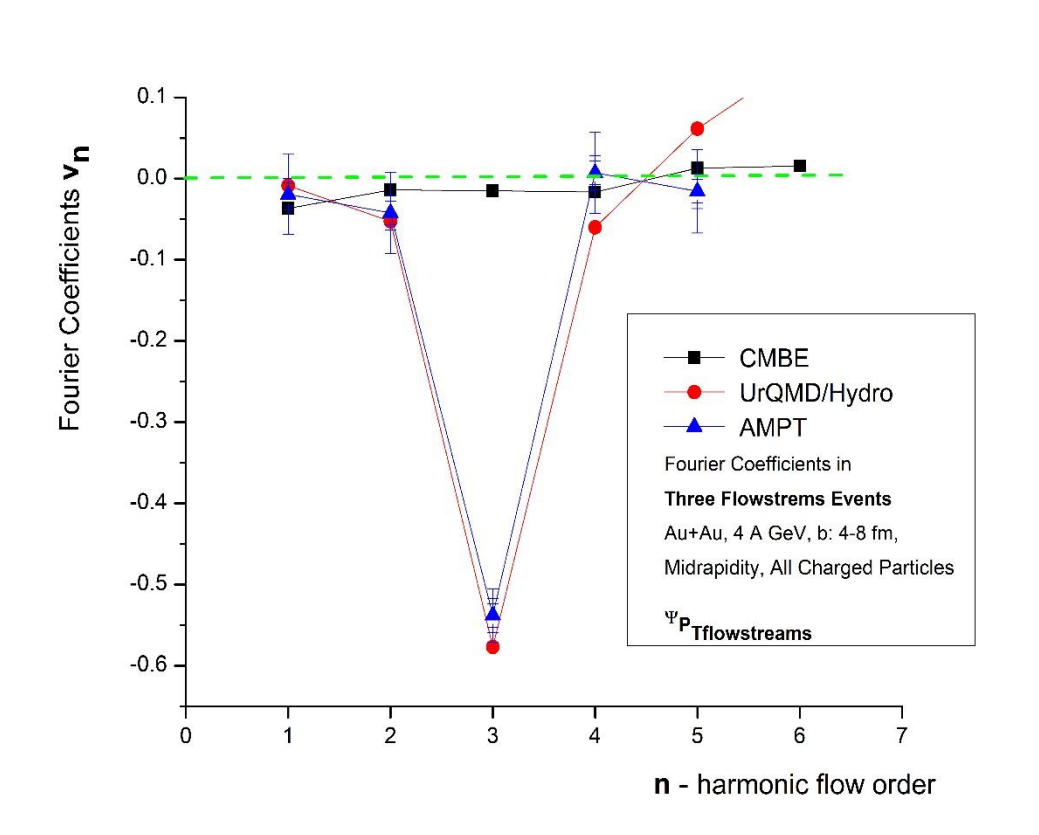
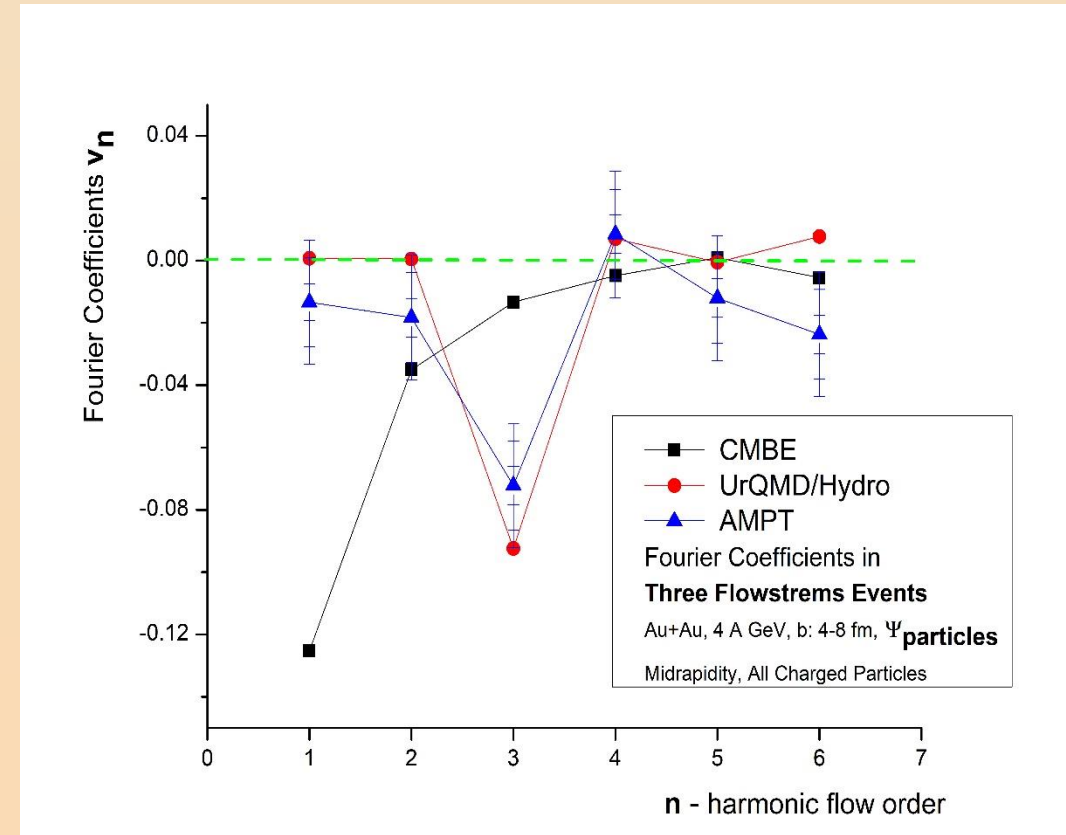
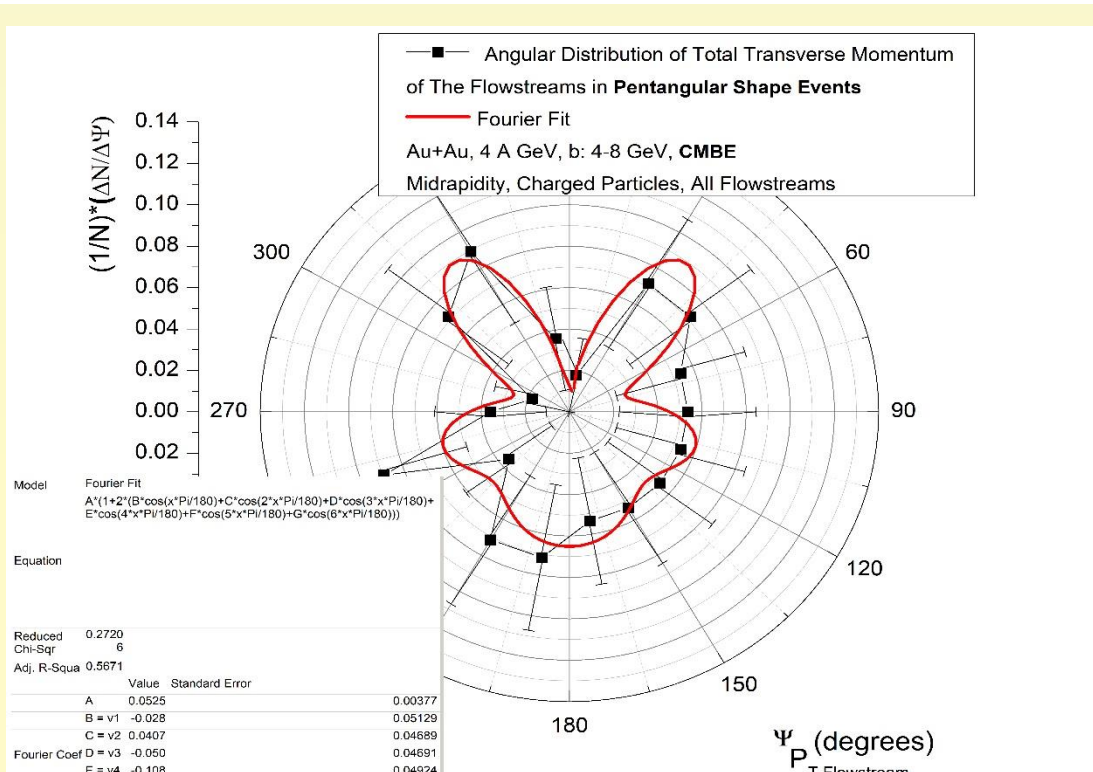
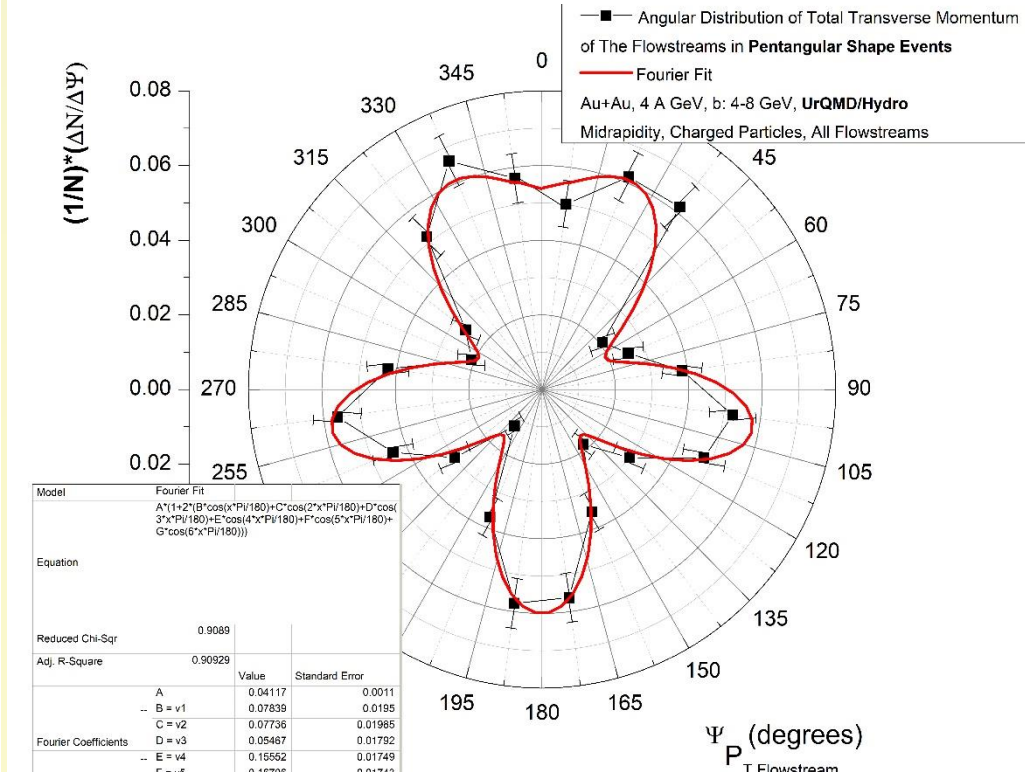
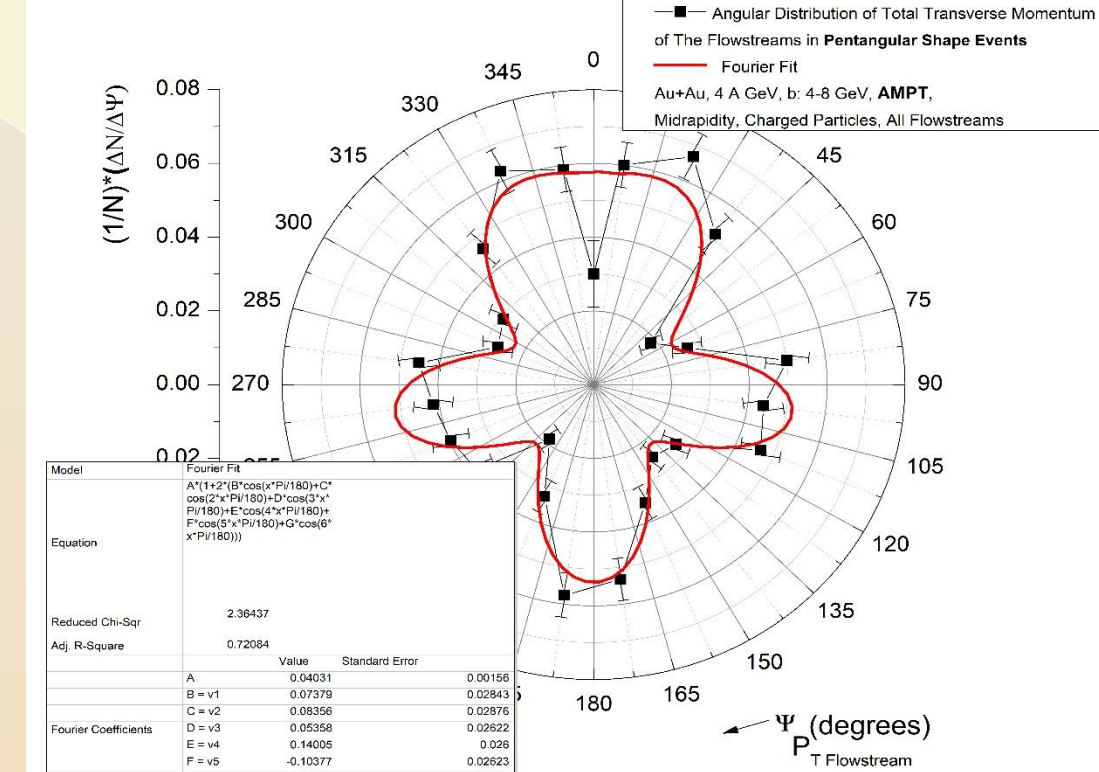
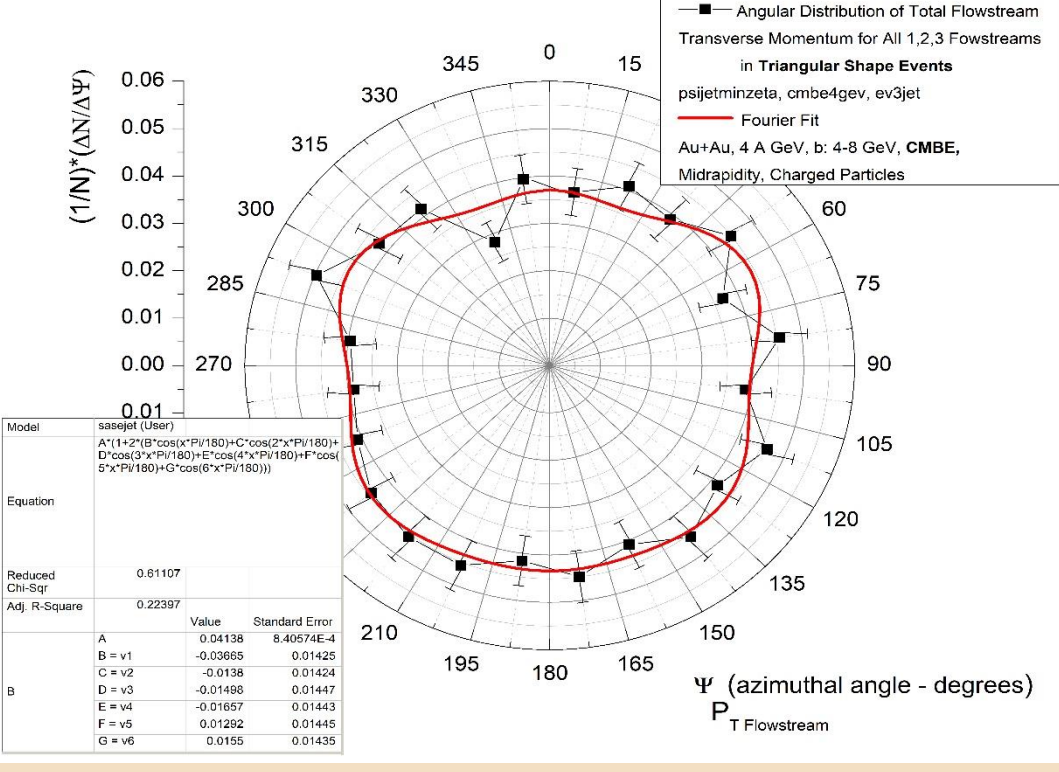
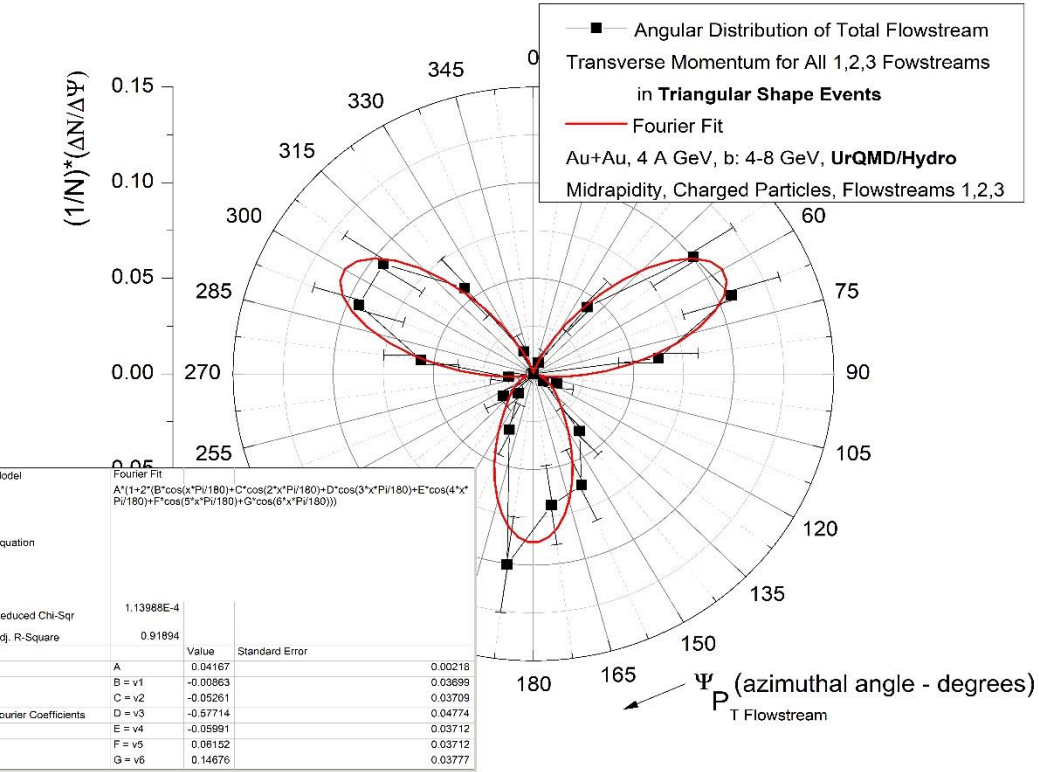
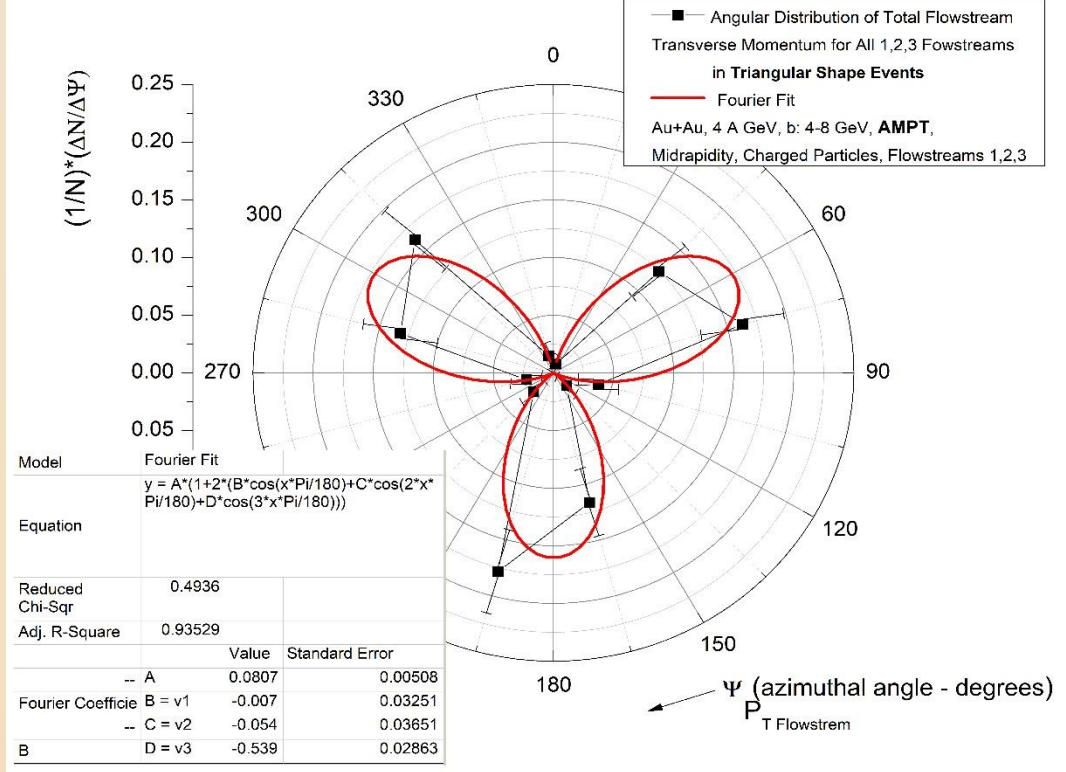
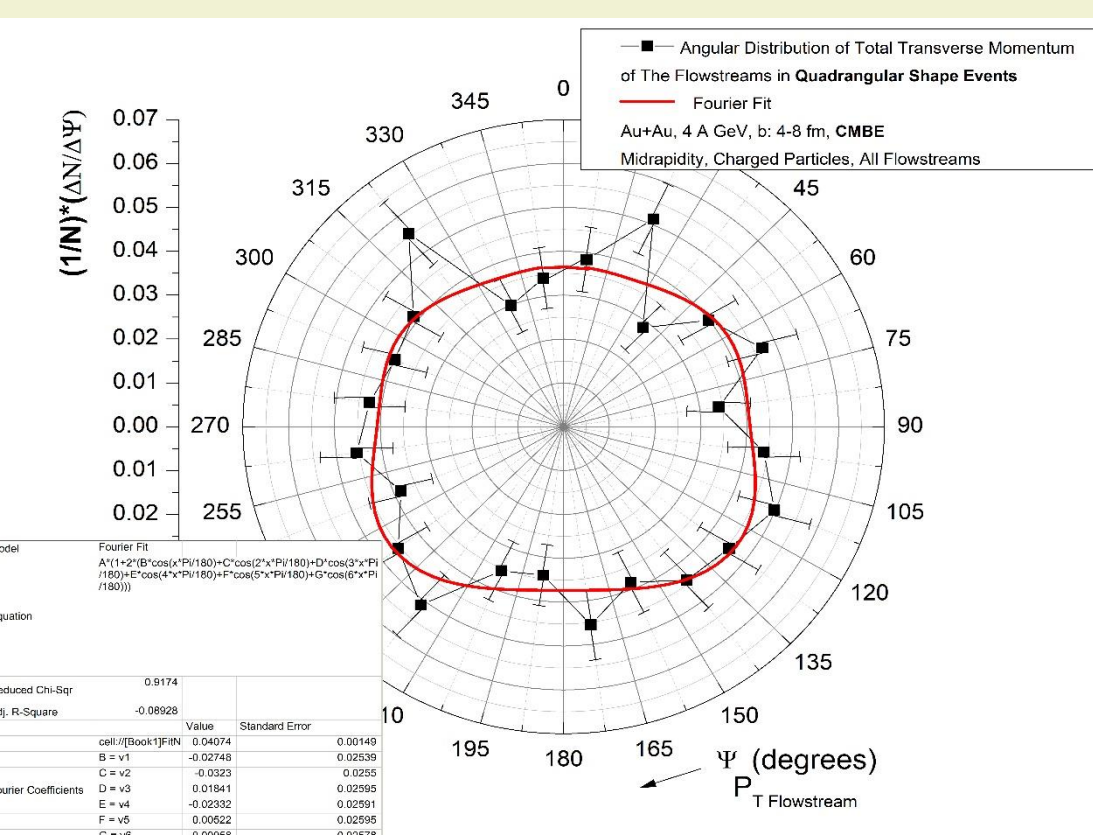
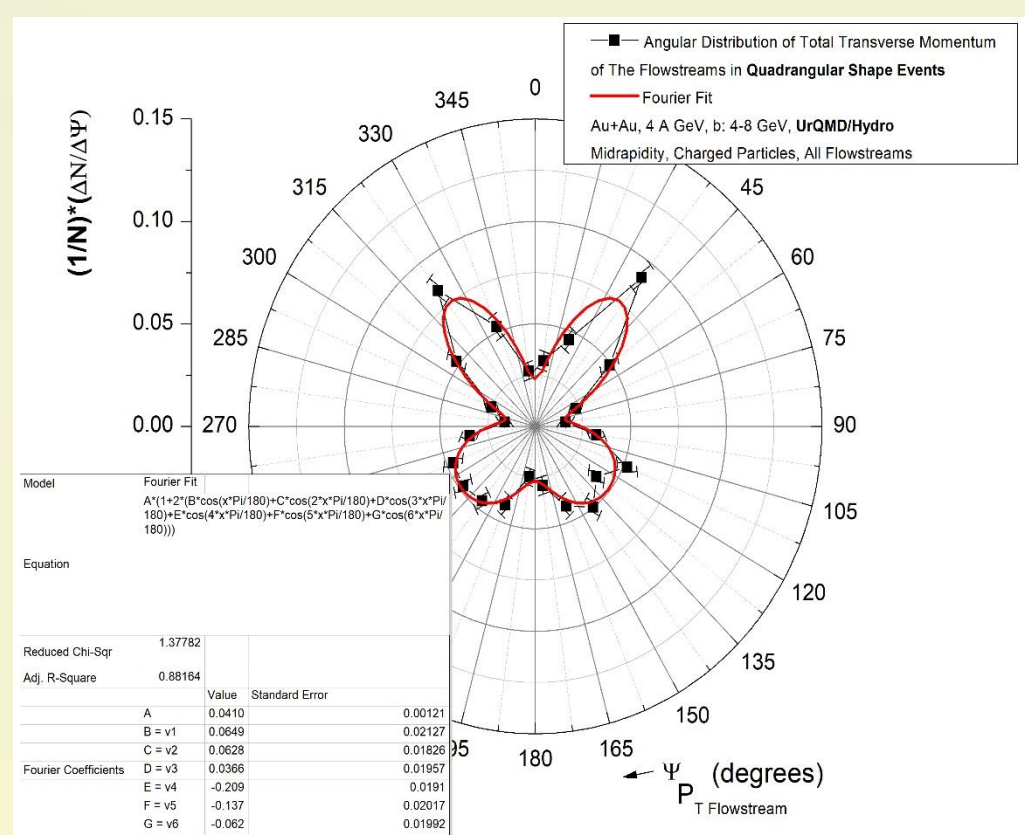
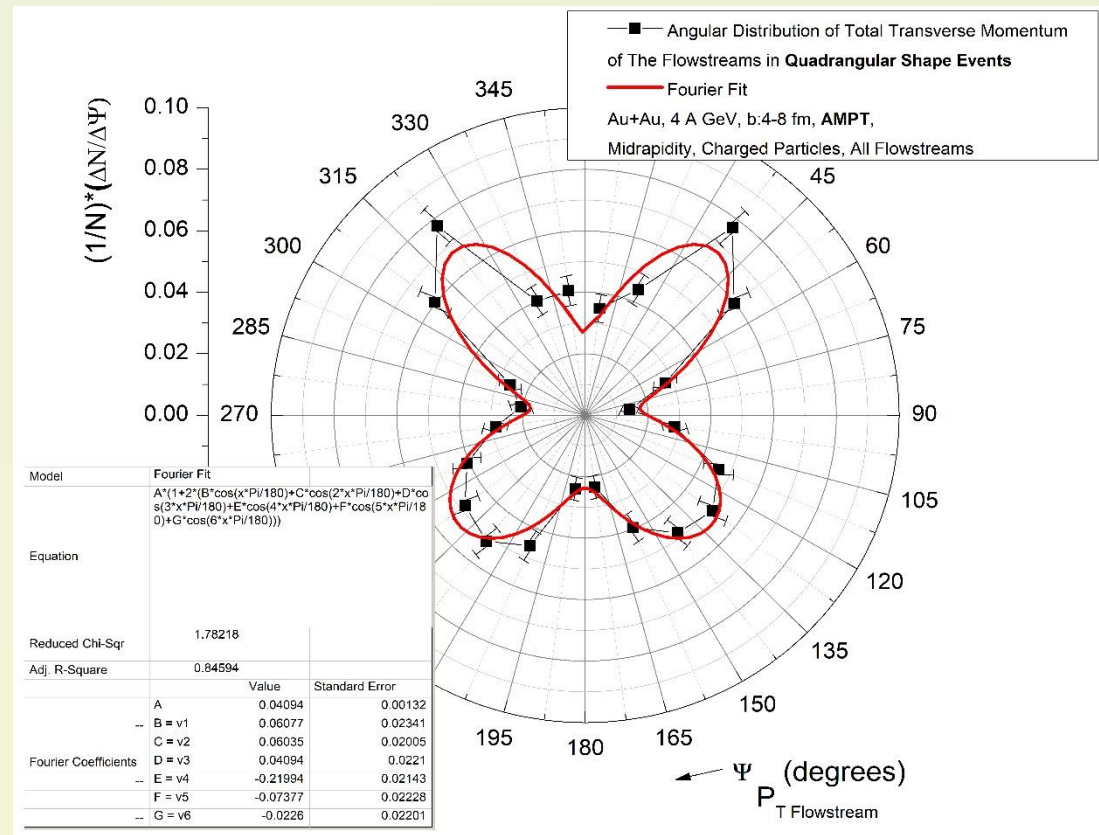
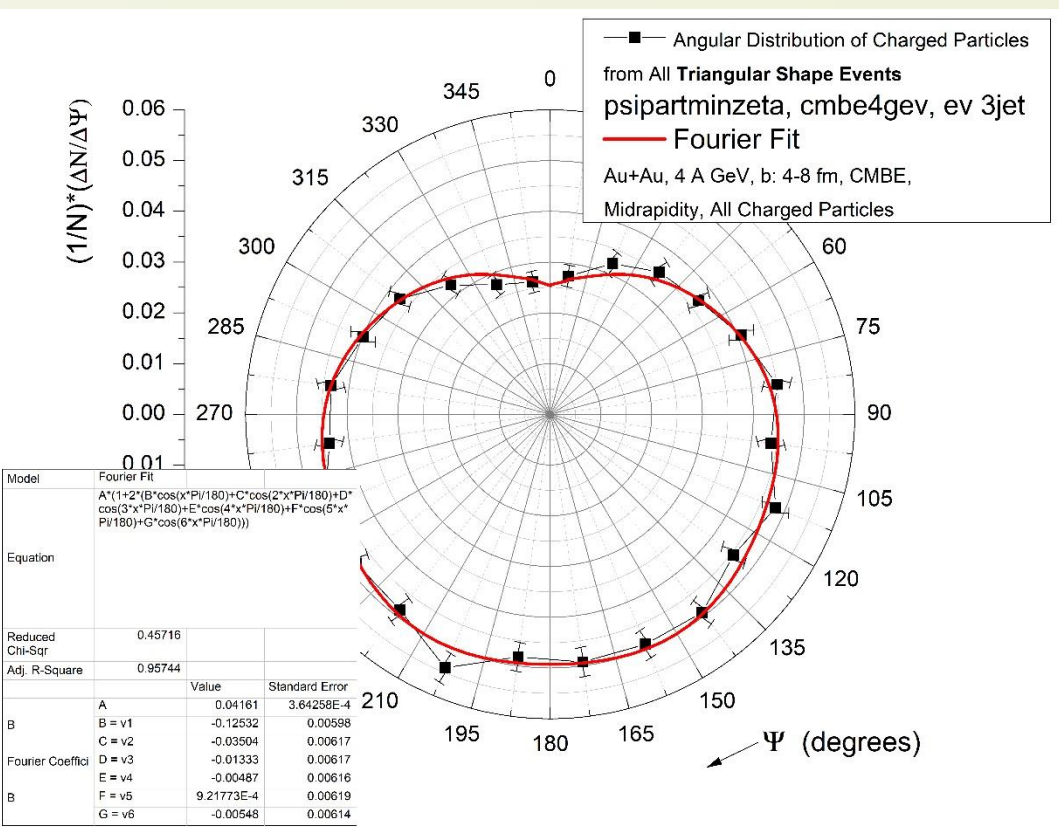
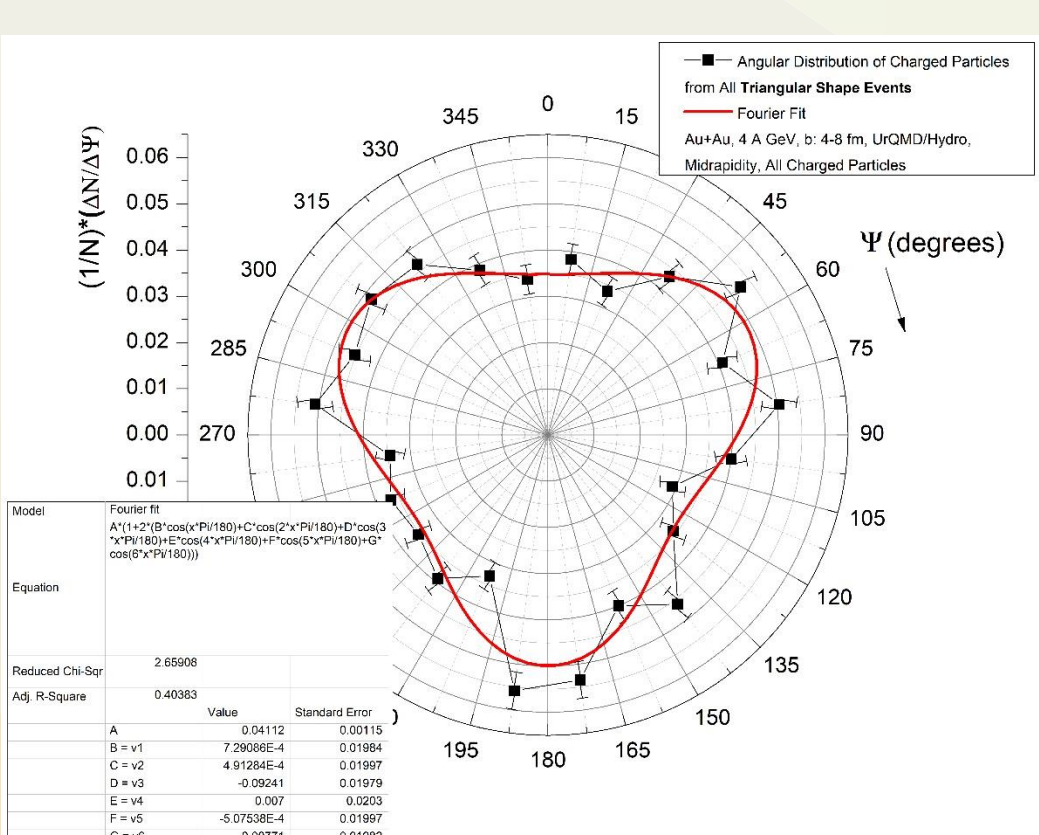
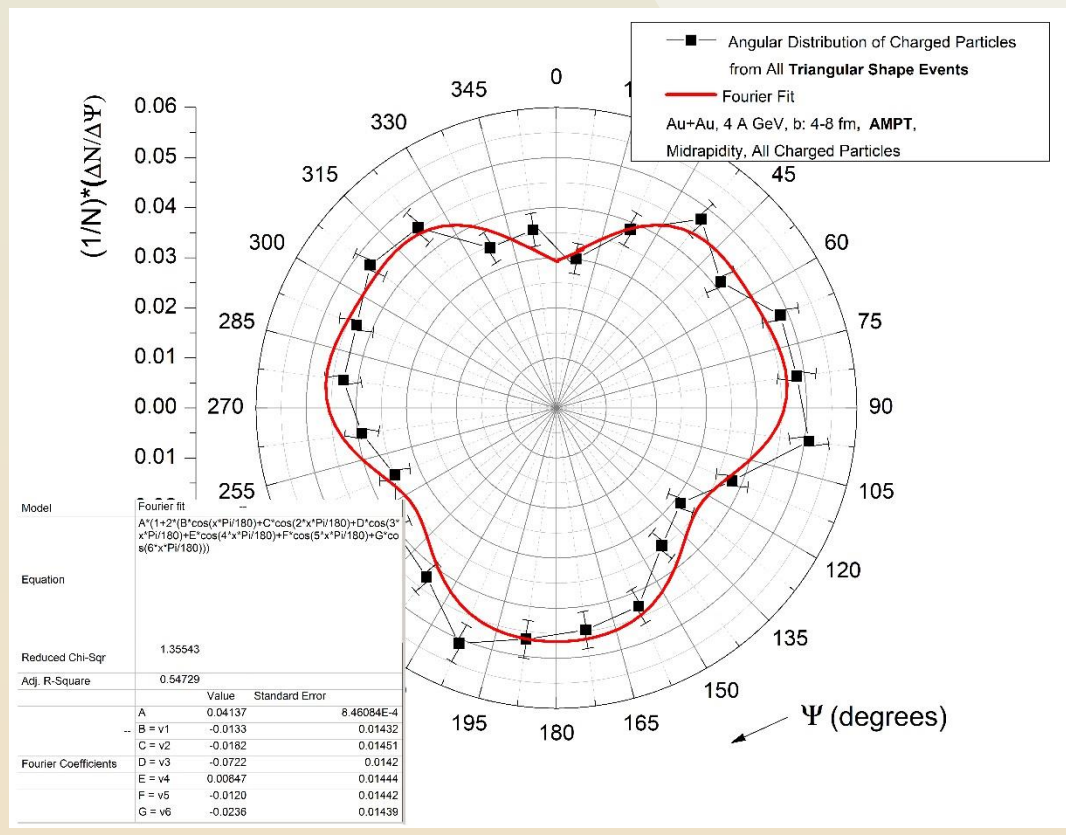
In this presentation we make comparisons between hydrodynamic behavior in UrQMD/HYDRO, AMPT and Chaos Many-Body Engine (CMBE)[2] Au+Au simulated events at CBM-FAIR energies. We analyze the properties of different flow streams classes [1] and of the Fourier coefficients in the mentioned interaction models when calculated with azimuthal angle of particles and when we use the azimuthal angle of the total transverse momentum of the flowstream.

Method

The Anti-KT jet finder algorithm was used to identify flowstreams classes as events with three flowstreams, 4-flowstreams, 5- flowstreams, etc. Then we fited the angular distributions of the events in the different flow classes. The Fourier coefficients are presented in the next graphs.

Conclusions

Using a jet-finder algorithm (the Anti-kT one) on UrQMD/Hydro, AMPT and CMBE simulated (Au+Au collisions), we can identify different flow shape structures (single-flow stream events, two-flow streams events, three-flow streams events, etc.) and order the bulk of events in equivalence flow-shape classes. Considering these flow streams as the main directions of anisotropic transverse flow, we show that the Fourier coefficients v_n of anisotropic flow are better emphasized when we analyze the different event flow-shape classes than when the events [1]. The Fourier coefficients are enhanced when we use the azimuthal angle of the total transverse momentum of the flowstreams instead of the azimuthal angle of individual particles.



References

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- [2] I.V. Grossu, C.Besliu, D.Felea, A.I.Jipa, High precision framework for Chaos Many-Body Engine, March 2013 Computer Physics Communications 185(4)

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