Jet modification with two particle correlations in Au+Au collisions at PHENIX

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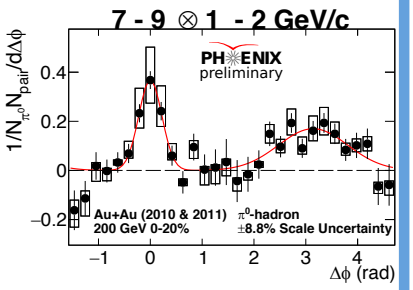
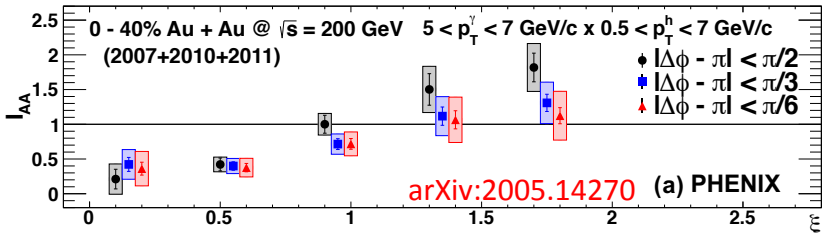
- Two particle correlations are used to study jets to probe energy loss in the QGP
- Trigger on a high-p_T π^0 or photon and correlate with all hadrons in the same event
- Mixed events used to correct for detector effects
- Flow is subtracted



$I_{AA} = Y_{AA}/Y_{pp}$ where Y is the per-trigger yield



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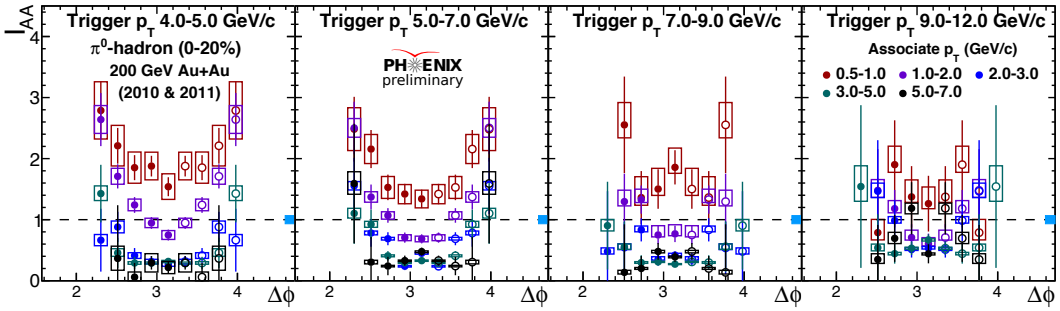
I_{AA} measured from Direct photon-hadron correlations show:

- suppression of high momentum hadrons
- enhancement of low momentum hadrons
- enhancement is most prominent when the away-side integration range includes wide angles.

π^0-hadron correlations allow a more differential measurement in Δφ



- High-p_T hadrons show suppression across all angles
- Intermediate-p_T hadrons show suppression along the jet axis but enhancement at wide angles
- Enhancement most prominent at wide angles for lowest p_T partners and triggers

Summary

- Two particle correlations reveals details of jet modification and can provide constraints for energy loss models
- Suppression of high-p_T and enhanced production of soft particles at large angles
- I_{AA} vs Δφ shows the p_T and angular dependence of the modification to the distribution of particles correlated with a jet