

## **Examination of Flow and Non-Flow Factorization** Methods in Small Collision Systems

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Many experimental indicators of collectivity in small collision systems (RHIC focus here)

Numerous checks done to understand the separate flow





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AMPT p+p 200 GeV

<sup>air</sup>/d∆þ

## and non-flow contributions.



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preliminary STAR result pushes Recent this discussion forward; however, large systematics on the non-flow subtraction method not included. Reasonable agreement with PHENIX d+Au and  $p+Au p_T < 1.5$  GeV, but quite different in p+Au for  $p_{T} > 1.5$  GeV.

HIJING p+p 200 GeV

Long-range  $1 < |\Delta \eta| < 1.8$ Short-range 0<l∆nl<0.5

¢∇p/ .1

Many non-flow subtraction methods on the market, but they have a similar framework.

1) Assume low multiplicity (LM) events have larger non-flow contribution than high multiplicity (HM) events. 2) Assume that shape of non-flow contributions does not change between LM and HM. 3) Different scaling / fitting assumptions then applied.

We have followed up on previous "closure" tests, where the methods are applied to various By definition these tests are model dependent. Monte Carlo generators.



If one has a significant non-flow contribution around  $\Delta \phi = 0$ , then there is no single scaling that works (#3). Different methods very sensitive to the LM selection.

