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## Studying the medium behavior of the dilute system in d+Au collisions via two particle Correlations in PHENIX

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The collective flow in the quark gluon plasma has been studied in detail and provides important insights into this QCD medium. However, there is little known about the flow in dilute systems, such as d+Au collisions at RHIC. In high multiplicity 7 TeV p+p collisions and 5.02TeV p+Pb collisions at the LHC, a  $v_2$  like structure and long range correlations have been observed. To study the possible flow behavior in d+Au collisions at lower energy, various two particle correlations are measured in PHENIX.

When both trigger and partner particles are measured at mid-rapidity,  $|\eta| < 0.35$ , after removing the jet contribution,  $v_2$  is extracted from the excess in most central d+Au collision. The result is compared with theoretical calculations. When a trigger particle is correlated with an associated particle at forward/backward rapidity ( $3.1 < |\eta| < 3.9$ ), a “ridge” like structure has been found in the near-side in the Au-going direction, but is absent in the d-going side. These studies may improve our understanding of the behavior of the medium in small systems.

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