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Abstract for an Invited Paper for the DNP17 Meeting of the American Physical Society

## The physical origin of multi-particle correlations in small collision systems<sup>1</sup>

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Correlation measurements in collisions of relatively small systems like proton+proton and proton+heavy ion collisions, performed at the Large Hadron Collider (LHC) and the Relativistiv Heavy Ion Collider (RHIC), show strikingly similar features to those observed in heavy ion collisions. Both strong final state interactions, which do explain the data in heavy ion collisions quantitatively, and initial state correlations are found to generate signals that reproduce the experimental data at least qualitatively. I review the status of our understanding of correlation measurements in small collision systems, discussing both hydrodynamic and transport approaches to final state effects, as well as initial state calculations, predominantly performed in the color glass condensate framework. I will also mention recent progress in combining the two sources of correlations into one coherent framework.

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