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Multi-parton interactions, color reconnection and collective dynamics

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Multi-parton interactions (MPI) is a key ingredient in the successful phenomenological description of hadron-hadron collisions. In the hadronization of MPI, final partons originating from different partonic sub-collisions can interact with each other through color strings: the so-called color reconnection (CR) mechanism. In this work we show that CR produces a radial flow-like effect giving rise to mass ordering. The study is done within the framework of Pythia 8. We present results for different observables with identified hadrons in minimum bias pp collisions at $\sqrt{s}=7$ TeV. We show that the flow-like effect increases in events with large MPI activity and therefore with increasing multiplicity. We discuss how CR generates radial and possibly elliptic flow and what the role of this mechanism could be in other systems like p-Pb.

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