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Parton energy loss: From AA to pp

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Small collision systems exhibit collective effects like those seen in AA collisions, which sets the foundation to postulate the formation of a QGP even in small systems.

While indeed most if not all observations between pPb and PbPb at the LHC look alike, clear final state effects as charged particle or jet suppression induced by parton energy loss as known from hot nuclear matter have not been seen.

However, calculations employing parton energy loss formalism, which are successfully used in AA, predict a clear suppression effect that should be present in high multiplicity pPb collisions.

In the talk I will discuss generator-level studies based on PYTHIA to show that parton energy loss -if indeed present- may be shadowed by other effects such as those arising from MPI and hence are not directly observable in particle spectra for small collision systems.

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