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Deuteron production in heavy ion collisions

Tuesday 7 May 2019 12:00 (30 minutes)

In this talk, we discuss UrQMD phase-space coalescence calculations for the production of deuterons. We compare with available data for various reactions from the GSI/FAIR energy regime up to LHC. It is found that the production process of deuterons, as reflected in their rapidity and transverse momentum distributions in p+p, p+A and A+A collisions at a beam energies starting from the GSI energy regime around 1 AGeV and up to the LHC, are in good agreement with experimental data. We further explore the energy and centrality dependence of the d/p ratios. Finally, we discuss anti-deuteron production for selected systems. Overall, a good description of the experimental data is observed. The results are also compatible with thermal model estimates. We also discuss the production of hypermatter within the same approach and find sizable production rates at FAIR.

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