

Deuteron production from phase-space coalescence in the GSI/FAIR energy regime

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UrQMD phase-space coalescence calculations for the production of deuterons are compared with available data for various reactions in the GSI/FAIR energy regime. 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 beam energy starting from 1A GeV, are in good agreement with experimental data. In addition we explore the energy dependence of the d/p ratio up to beam energies of $E_{lab} = 160A$ GeV and \bar{d}/\bar{p} up to $\sqrt{s_{NN}} = 7000$ GeV. A good description of the data, comparable to thermal model estimates, is observed. Most importantly this good description is based only on a single set of coalescence parameters.

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