



From RHIC to LHC: A Relativistic Diffusion Approach

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We investigate stopping and particle production in heavy-ion collisions in a Relativistic Diffusion Model (RDM). Using three sources for particle production, the energy- and centrality dependence of rapidity distributions of net protons, and pseudorapidity distributions of charged hadrons in heavy systems at RHIC energies are precisely reproduced in the analytical model. The transport coefficients are then extrapolated from Au + Au

at RHIC energies ($\sqrt{s_{NN}}=19.6 - 200$ GeV) to Pb + Pb at LHC energies of $\sqrt{s_{NN}}= 5.52$ TeV. Rapidity distributions for net protons, and pseudorapidity spectra for produced charged particles are obtained and discussed in a three-sources model at LHC energies.

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