

CHARGED PARTICLE  
PSEUDORAPIDITY DISTRIBUTIONS  
FOR Pb–Pb AND Au–Au COLLISIONS  
USING NEURAL NETWORK MODEL

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S u m m a r y

The artificial neural network (ANN) approach is used to model the Pb–Pb and Au–Au collisions on the basis of the Levenberg–Marquardt learning algorithm. We simulate the rapidity distribution for  $\pi^-$  and  $\kappa^\pm$  produced in Pb–Pb collisions at different energies and the pseudorapidity distribution of charged particles in Au–Au collisions. Our functions obtained within the ANN model show a very good agreement with the experimental data for both types of collisions, which indicates that the trained network takes on the optimal generalization performance. Thus, the ANN model can be widely applied to the modeling of heavy-ion collisions.