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Modeling of the behavior of particles in hot nuclear matter

Abstract

The study of the properties of matter under extreme conditions is an actual problem of modern physics and is included in the thematic plans of existing and future experiments on the collision of heavy ions (NICA, JINR Dubna). Modern theoretical calculations involve the simulation of possible processes occurring during the transition of matter from one phase state to another. Such an analysis requires the creation of serious computer software at the level of creating new algorithms, calculation methods and software packages. This project is aimed at modeling the behavior of particles at a finite temperature in hot nuclear matter. It includes: choosing an effective model, numerical analysis of a system of nonlinear integral equations, writing a program for numerical calculations, graphical representation of the numerical results.