

INFLUENCE OF DENSITY-DEPENDENT COUPLING CONSTANTS, ON SYMMETRY ENERGY OF NUCLEAR MATTER

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ABSTRACT

In the mean field approximation of nonlinear relativistic $\sigma-\omega-\rho$ model, we study the influence of the density-dependent coupling constants, between nucleons and mesons on the symmetry energy $S(\rho_B)$ of infinite nuclear matter, in four different density-dependent formalism. We find greater Γ_ρ leads to greater K_{sym} and L when $\Gamma_{\sigma,\omega}$, c and d are fixed and indicate larger $S(\rho_B)$ in high density region. In addition, the density dependence of $\Gamma_{\sigma,\omega,\rho}$ make $S(\rho_B)$ smaller in high density region, and they make K_{sym} and L more sensitive to the changing of parameters at different density.

KEYWORDS: Nuclear Matter, Density-Dependent Coupling Constants, Symmetry Energy

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