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Isospin-symmetry dependent properties of nuclear matter[1] ALAN SALCEDO, JORGE LOPEZ, ENRIQUE RAMIREZ-HOMS, University of Texas at El Paso — In this study, infinite nuclear matter is simulated employing Classical Molecular Dynamics for settings of 2000 nucleons. These simulations were done for configurations of isospin content X=Z/A= 0.3, 0.4, 0.5 (where Z is the number of protons and A the number of nucleons) at temperatures of 10, 12, and 14 MeV with densities from 0.02 fm^{-3} to 0.18 fm^{-3}. Results of previous investigations performed at temperatures of 1 to 5 MeV indicated that symmetric and asymmetric matter showed transitions of phase for subsaturation densities for all temperatures. Moreover, asymmetric matter showed reduced compressibility softened for increasing temperatures and a reduction of equilibrium densities. Now we performed 81 simulations of nuclear matter at higher temperatures at the High Performance Computing Center of the University of Texas at El Paso and numerical data was stored for immediate analysis. Our aim is to study the isospin dependence of bulk properties of nuclear matter such as the energy per nucleon, pressure, saturation density, and symmetry energy.

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