

Experimental Study of Nuclear Equation of State using Heavy Ion Collisions at RIKEN-RIBF

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Investigation of nuclear Equation of State (EoS) is an attractive subject not only for nuclear physics but also astrophysics. The SAMURAI Pion-Reconstruction and Ion-Tracker-Time-Projection Chamber (S π RIT-TPC) project were carried out to investigate isospin symmetry dependence of nuclear EoS at supra-saturation density using heavy ion collisions at RIKEN-RIBF. For systematic studies, neutron rich and deficient Sn beams, $^{132,108}\text{Sn}$, impinging on stable $^{112,124}\text{Sn}$ isotopes with 300 MeV/u were employed. Produced light particles and fragments such as π^- , π^+ , n, p, t, ^3He , and ^4He were well separated owing to calibrations and a track reconstruction. The recent results of production cross-sections and a corrective flow, which are sensitive to the symmetry energy, will be discussed.