Consistent Constraints on Symmetry Energy from different experiments → HIC is a viable probe

Tsang et al. C 86, 015803 (2012)

HIC: heavy ion collisions; PRL 102, 122701 (2009)

p elastic scattering PRC 82, 044611 (2010)

Pygmy Dipole Resonances PRC 81, 041304 (2010)


Isobaric Analogue States NPA 818, 36 (2009)

Neutron-star radius PRL 108, 01102 (2012)

\[ E_{\text{sym}} = S_o + \frac{L}{3} \left( \frac{\rho_B - \rho_0}{\rho_0} \right) + \frac{K_{\text{sym}}}{18} \left( \frac{\rho_B - \rho_0}{\rho_0} \right)^2 + \ldots \]

Tsang et al. C 86, 015803 (2012)
Importance of 3-body neutron-neutron force in the Equation of State of pure neutron matter

Summary of $^{208}\text{Pb}$ n-skin thickness constraints

Model calculations with and without 3nn forces:

**BHF:** PRC80,045806 (2009)  
Brueckner-Hartree-Fock

**DBHF:** arXiv:1111.0695  
Dirac Brueckner-Hartree-Fock

**CEFT:** PRL105,161102(2010)  
Chiral Effective Field Theory

**QMC:** PRC85,032801R(2012)  
Quantum Monte Carlo

Tsang et al. C 86, 015803 (2012)