Self-introduction: Sibo WANG (王锶博)

Education and Affiliation

sbwang@cqu.edu.cn

2021.07– **Postdoc in Theoretical Physics**.
Co-Advisor: Prof. Si-xue Qin
Department of Physics, Chongqing University, Chongqing, China

2016.09–2021.06 **Ph.D. in Theoretical Nuclear Physics**.
Supervisors: Prof. Jie Meng
School of Physics, Peking University, Beijing, China

2012.09–2016.06 **B.D. in Physics**.
School of Physics, Nankai University, Tianjin, China

Research Interests

Topics and Tools:
- ***Ab initio* calculation** for nuclear matter and finite nuclei with the ***relativistic Brueckner-Hartree-Fock theory in the full Dirac space***

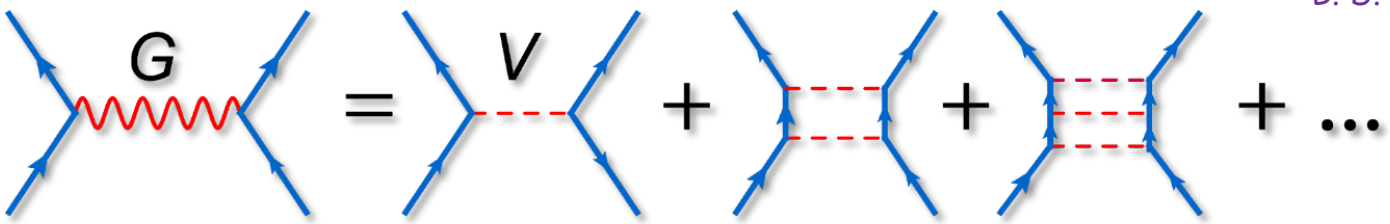
Publications:
- Strength of tensor forces from neutron drops in ab initio relativistic Brueckner-Hartree-Fock theory, Phys. Rev. C **100**, 064319 (2019)
- Nuclear matter in relativistic Brueckner-Hartree-Fock theory with Bonn potential in the full Dirac space, Phys. Rev. C **103**, 054319 (2021)

Brief history of the RBHF theory in the full Dirac space

- 1954: the advent of the Brueckner theory

K.A. Brueckner, *et al.*, PR **95**, 217 (1954)

B. D. Day, RMP. 39, 719 (1967)



- 1980: satisfactory description of nuclear matter saturation with the **relativistic Brueckner-Hartree-Fock (RBHF)** theory

M.R. Anastasio, *et al.*, PRL. 45, 2096 (1980)

RBHF calculations are primarily performed with positive-energy states only.

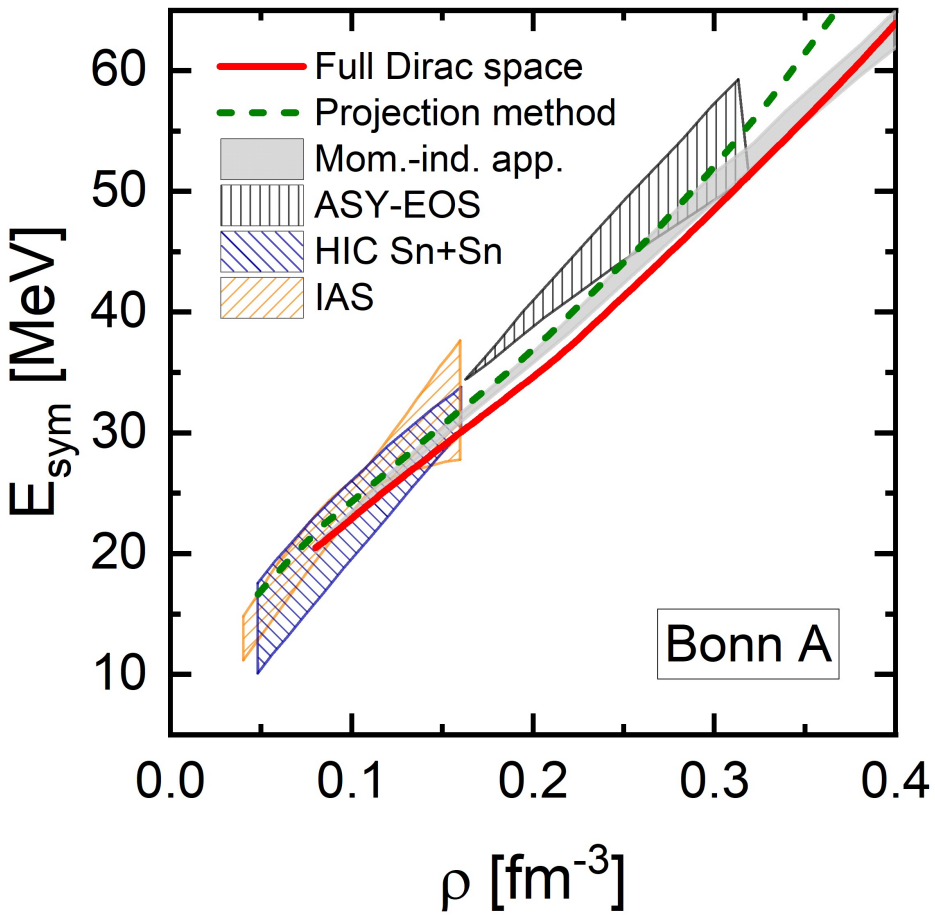
- Recently, the self-consistent RBHF calculation **in the full Dirac space** for symmetric nuclear matter has been achieved.

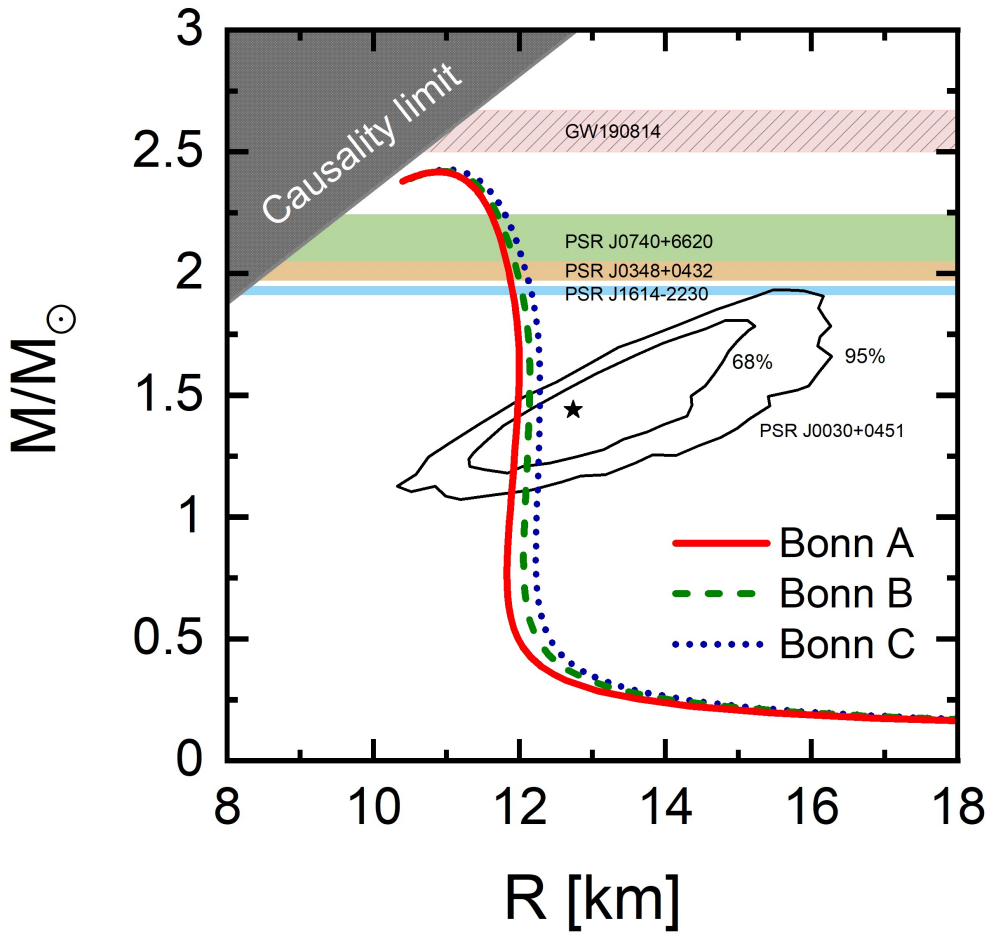
WSB *et al.*, PRC **103**, 054319 (2021)

RBHF theory in the full Dirac space is developed to study asymmetric nuclear matter.

Symmetry energy and neutron-star properties

- Symmetry energy as function of the density and mass-radius relations





WSB, Hui Tong, Qiang Zhao, Chencan Wang, Peter Ring, and Jie Meng, in preparation