

# Relativistic Brueckner-Hartree-Fock theory with in-medium baryon-baryon interaction

The in-medium baryon-baryon(BB) interaction plays an important role in nuclear physics and nuclear astrophysics. Recently, the relativistic Brueckner-Hartree-Fock (RBHF) framework with the leading order covariant chiral nucleon-nucleon interaction successfully reproduces the saturation of the symmetric nuclear matter. RBHF theory with the leading order covariant chiral BB interaction is expected to provide a new relativistic perspective for resolving the “hyperon puzzle” in neutron stars. In this talk, we develop relativistic chiral BB interaction adapted for the RBHF theory, and further investigate in-medium properties of these interaction within RBHF theory. This study provides a more microscopic and systematic understanding of a fundamental aspect of nuclear physics.

## Field of Research

Hadrons

## Experiment/Theory

Theory

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