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Ab initio chiral three-body force in resonance and continuum

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Three-nucleon force and continuum play important roles in reproducing the properties of atomic nuclei around driplines. In this work, we have developed the chiral three-nucleon force within the continuum Berggren representation. Bound, resonant and continuum states are treated on equal footing in the complex-momentum Berggren space. We choose neutron-rich oxygen isotopes as the test ground. The oxygen isotopes have been well studied experimentally, with the neutron dripline determined. Recent experiments have gone beyond the neutron dripline of the oxygen chain. The calculations were performed with the Gamow shell model, well reproducing the properties of oxygen isotopes around the neutron dripline. The chiral three-nucleon force was dissected by analyzing the contributions of the 2π exchange,1π exchange and contact terms.

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Primary authors: Prof. 许, 甫荣 (School of Physics, and State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing 100871, China); Mr 马, 远卓 (School of Physics, and State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing 100871, China)

Co-authors: Prof. CORAGGIO, Luigi (Istituto Nazionale di Fisica Nucleare, Complesso Universitario di Monte S. Angelo, Via Cintia, I-80126 Napoli, Italy); Mr 李, 健国 (School of Physics, and State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing 100871, China); Dr 胡, 柏山 (School of Physics, and State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing 100871, China)

Presenter: Mr 马, 远卓 (School of Physics, and State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing 100871, China)

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