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Light Exotic Nuclei Studied via Resonance Scattering

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Remarkable advances have been made toward achieving the long-sought-after dream of describing properties of nuclei starting from realistic nucleon-nucleon interactions in the last two decades. The ab initio models were very successful in pushing the limits of their applicability toward nuclear systems with ever more nucleons and exotic neutron to proton ratios. Predictions of these models often are very close to the experimental data, but sometimes deviate from experiment substantially. For example, the exotic isotope of helium, ${}^9\text{He}$, represents a curious case of stark disagreement between the predictions of modern theories and what is believed to be the experimental knowledge of this nucleus. In this talk I will present recent experimental results that shed light on structure of ${}^9\text{He}$ and some other light exotic nuclei that were studied using resonance scattering approach and will discuss these findings in view of predictions of the ab initio models.

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