## **DREB2022** - Direct Reactions with Exotic Beams



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## Investigating Short-Range Correlations in exotic nuclei at R3B using inverse kinematics

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Short-Range Correlations (SRC) are two-body components of the nuclear wave function with high relative momentum and low center-of-mass momentum relative to the Fermi momentum,  $k_F$ . These high-momentum nucleons, which are absent in a simple Fermi gas model, are formed as temporary closed-proximity nucleon pairs with high density, several times the nuclear saturation density. Studying the characteristics of SRC-pairs gives an unique opportunity to explore the interaction of cold dense nuclear matter as in neutron stars. The first kinematically complete measurement of SRC in exotic nuclei will be performed at the R<sup>3</sup>B setup as part of the FAIR Phase-0 experimental program in Spring 2022 by scattering a <sup>16</sup>C beam off a liquid hydrogen target in inverse kinematics at energy of 1.25 GeV/nucleon.

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## Topic

Experiment

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