



REVEALING THE SHORT RANGE STRUCTURE OF THE MIRROR NUCLEI ${}^3\text{H}$ AND ${}^3\text{He}$

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Nucleons being close together causes hard interactions due to the short (repulsive) and medium (tensor) range forces, creating energetic nucleon pairs. Understanding these high momentum nucleon pairs is important for both the realistic description of nuclear structures and for studying the transition between partonic to nucleonic degrees of freedom. In electron scattering experiments, the nucleon-nucleon short-range correlation (SRC) pairs are identified by their large initial momentums. Previous measurements at Jefferson Lab had observed a strong isospin-dependence of those pair configurations in light and heavy nuclei and found strong np dominance, i.e. almost entirely neutron-proton SRCs. I will present the results from a recent Jefferson Lab measurement on the mirror nuclei tritium and helium-3 which finds a much smaller np enhancement with high precision. This indicates the strong nucleon-nucleon interaction is sensitive to the nuclear environment. In this talk I will go through the tritium SRC experiment, present its unexpected results, and discuss their implications and some future experiments to study nucleon-nucleon interactions and in-medium modifications.

Tuesday, October 11th, 2022

4:00 pm

Lindley Hall room 321