Studying Nuclear Structure at Short Range with Real Photon Beams

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**Draft:**

Short-Range Correlated (SRC) nucleon pairs have traditionally been studied by quasi-elastic electron scattering in kinematics dominated by the hard break up of a pair. While these experiments have revealed important insights about short-range nuclear structure, their interpretation requires a common set of assumptions about reaction effects and final state interactions. The Hall D Short-Range Correlations / Color Transparency Experiment, which will be conducted in Fall 2021 at Jefferson Lab will test these assumptions. Guided by the powerful tool of Generalized Contact Formalism (GCF), the experiment will test the factorization of the initial nuclear state and reaction effects by measuring a wide variety of meson photo-production channels in kinematics dominated by SRC and mean-field (MF) nucleons. This talk will present advantages and disadvantages of using real photon beams to study SRC pairing and cover how GCF can connect our upcoming measurement to those using electron scattering.