

Studying Short-Range Correlations with the $^{12}\text{C}(e, e'pn)$ Reaction

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We investigated electron-induced two-nucleon emission from carbon with the goal of being sensitive to and studying short-range correlations using the $^{12}\text{C}(e, e'pn)$ reaction in a triple-coincidence measurement. Two existing high-resolution spectrometers in Hall A at Jefferson Laboratory were used to detect coincident scattered electrons and the struck nucleons. A large neutron detector designed and constructed specially for this experiment was used to detect the recoiling neutrons. We performed analysis of the $^{12}\text{C}(e, e'pn)$ reaction, and made direct observations of short-range correlated n-p pairs. From our analysis we conclude that there are 18 ± 4 times more n-p short-range correlated pairs than p-p short-range correlated pairs.