

CLAS12 Run Group G:
The EMC Effect in Spin Structure Functions

A. Accardi, C. Weiss

This run group proposes to measure inclusive DIS on a polarized ^7Li target in order to investigate the origin of the EMC effect. New theoretical work and new QCD global analyses of nuclear Parton Distribution Functions published after the re-approval of this proposal in PAC 48 have only increased the interest and importance of this experiment.

Measurements with a polarized target are expected to distinguish between the theoretical pictures where the modifications are caused mainly by mean-field-type interactions of nucleons at average momenta and where they are caused by short-range tensor interactions of nucleons at momenta $\sim$ few 100 MeV (short-range correlations). Models based on one or the other picture make very different predictions for the polarized EMC effect, allowing for experimental tests of the underlying assumptions. In this way, the results of this run group proposal can be expected to provide important clues into an effect that has puzzled the nuclear physics community for nearly 40 years, and that are not available only considering unpolarized targets.