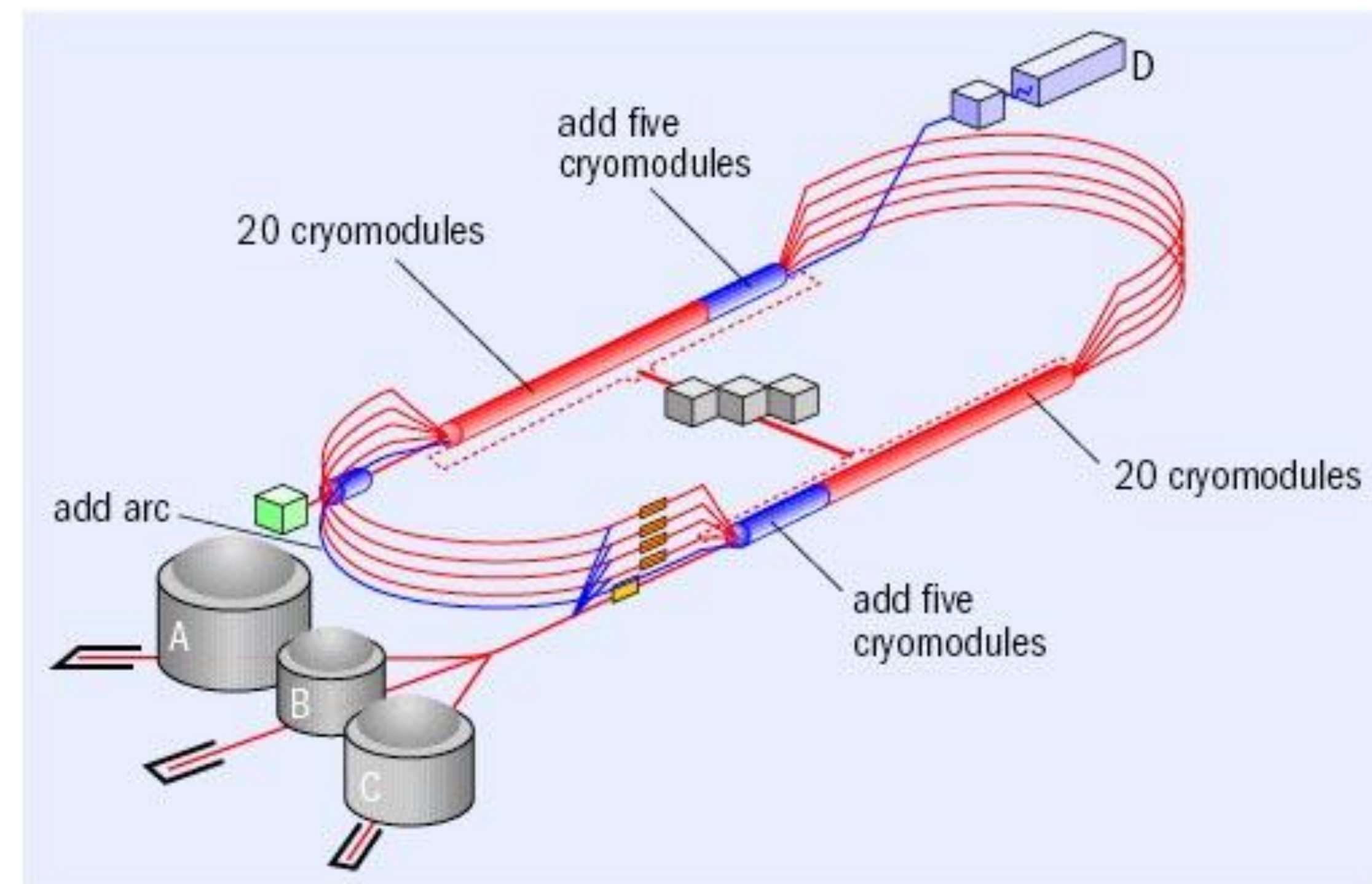
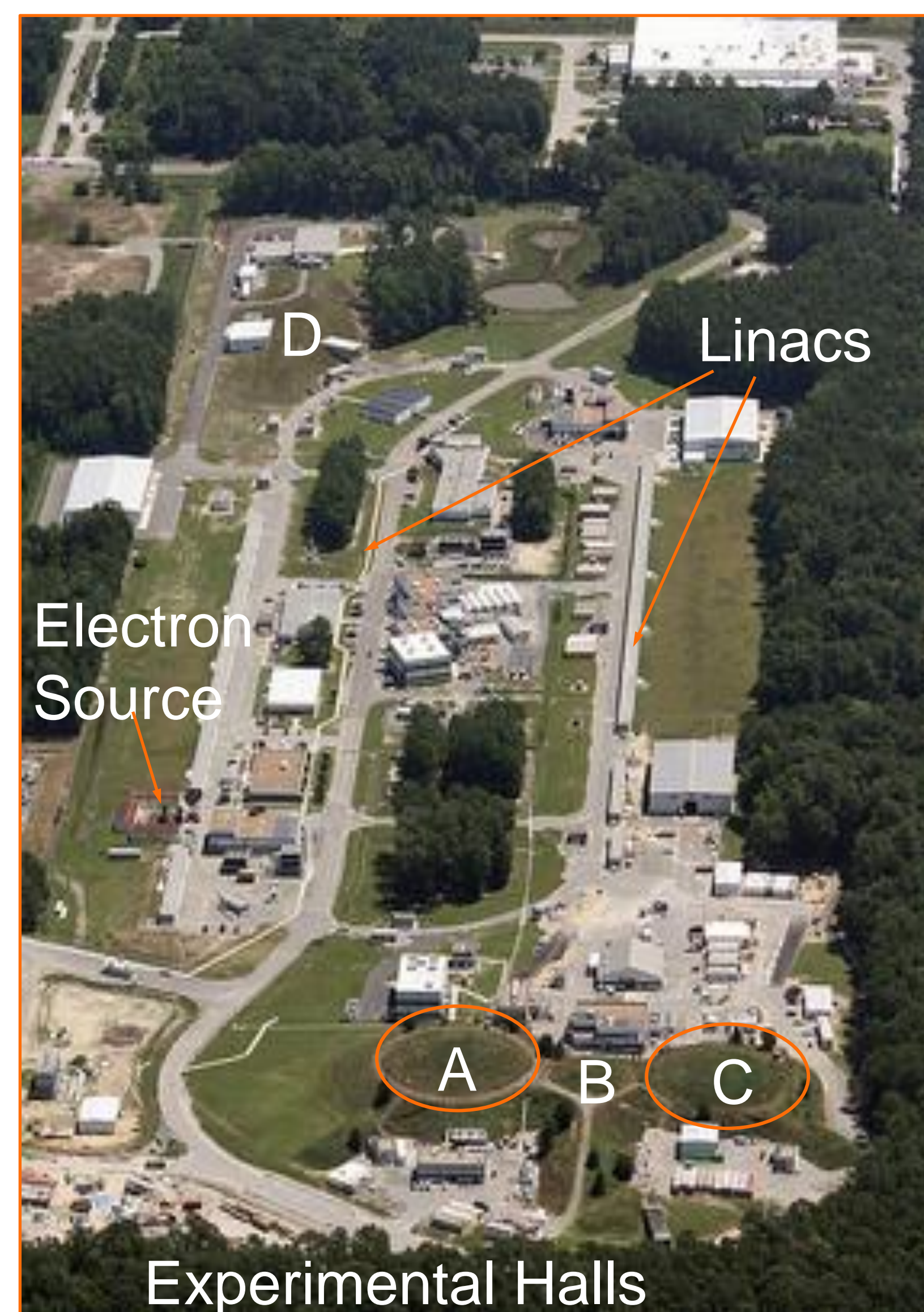


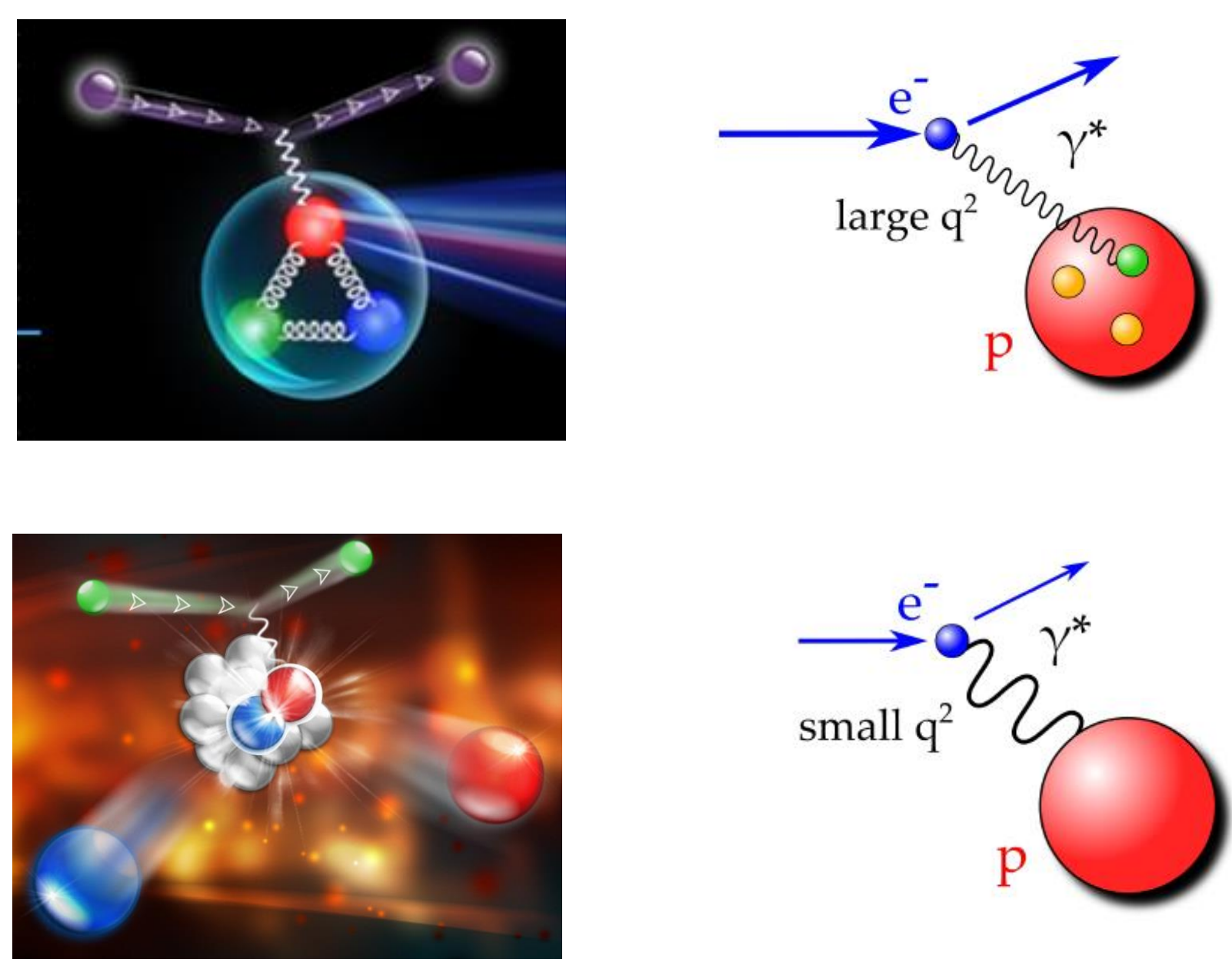
Overview of $x > 1$, superfast quarks and EMC effect experiment

Medium Energy Nuclear Physics

Our group conducts experiments at the Thomas Jefferson National Accelerator Facility (JLab) in Newport News, VA. This is a continuous electron beam facility serving four experimental halls simultaneously with energies upto 12 GeV.



By varying the wavelength of the virtual photon that the electron exchanges with our target, we can access difference distance scales, and probe quarks, nucleons as well as nuclei.

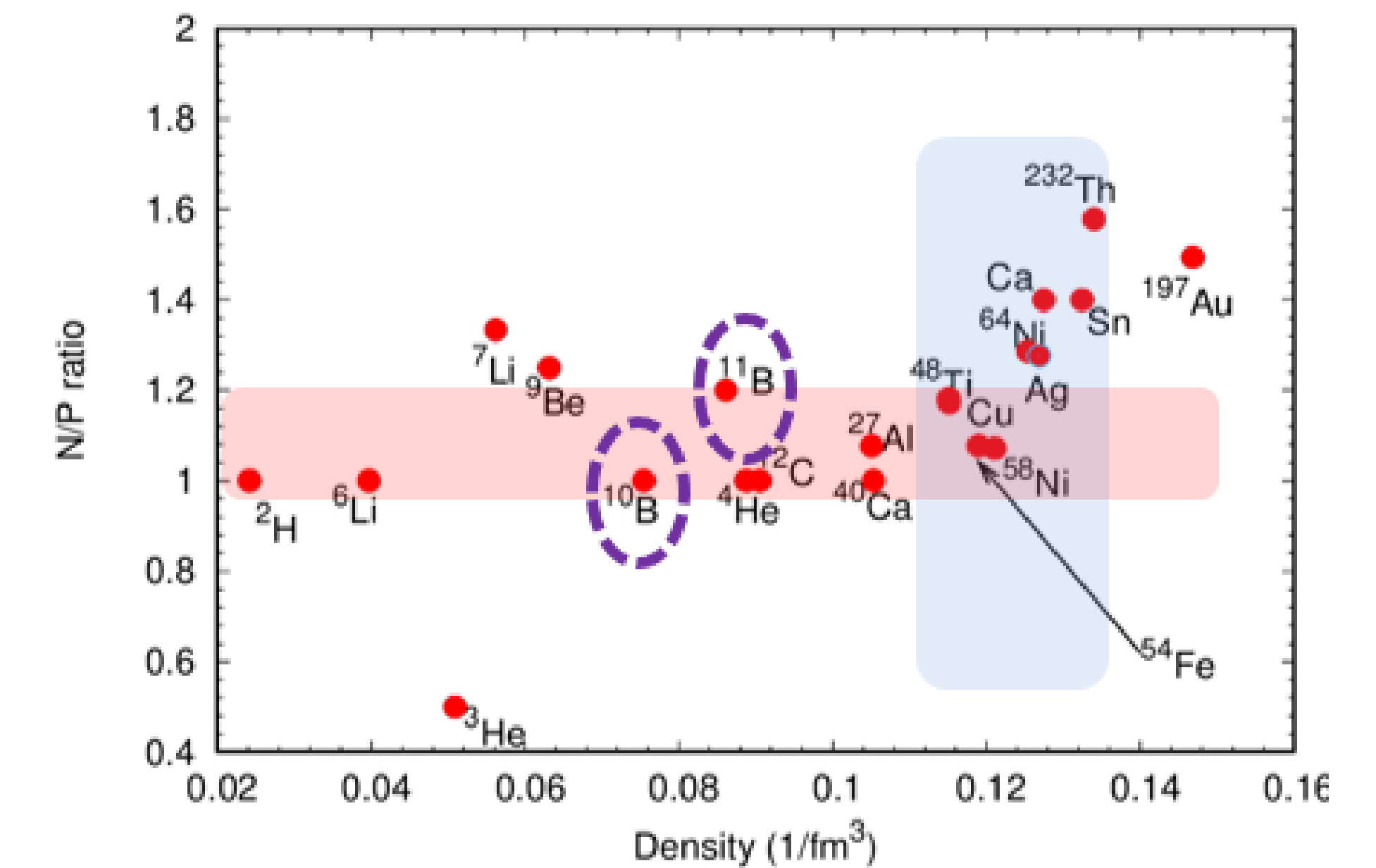
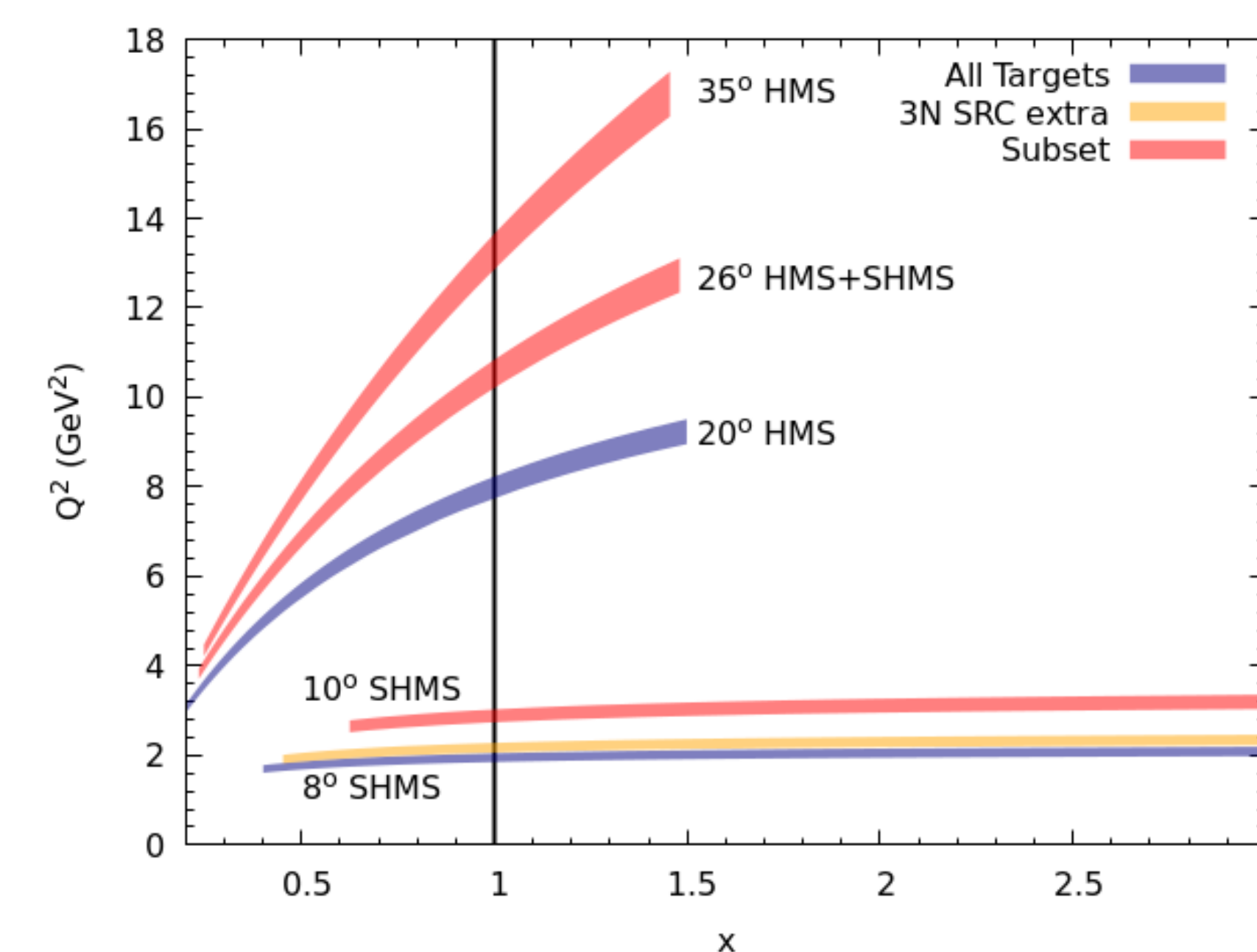


We primarily study

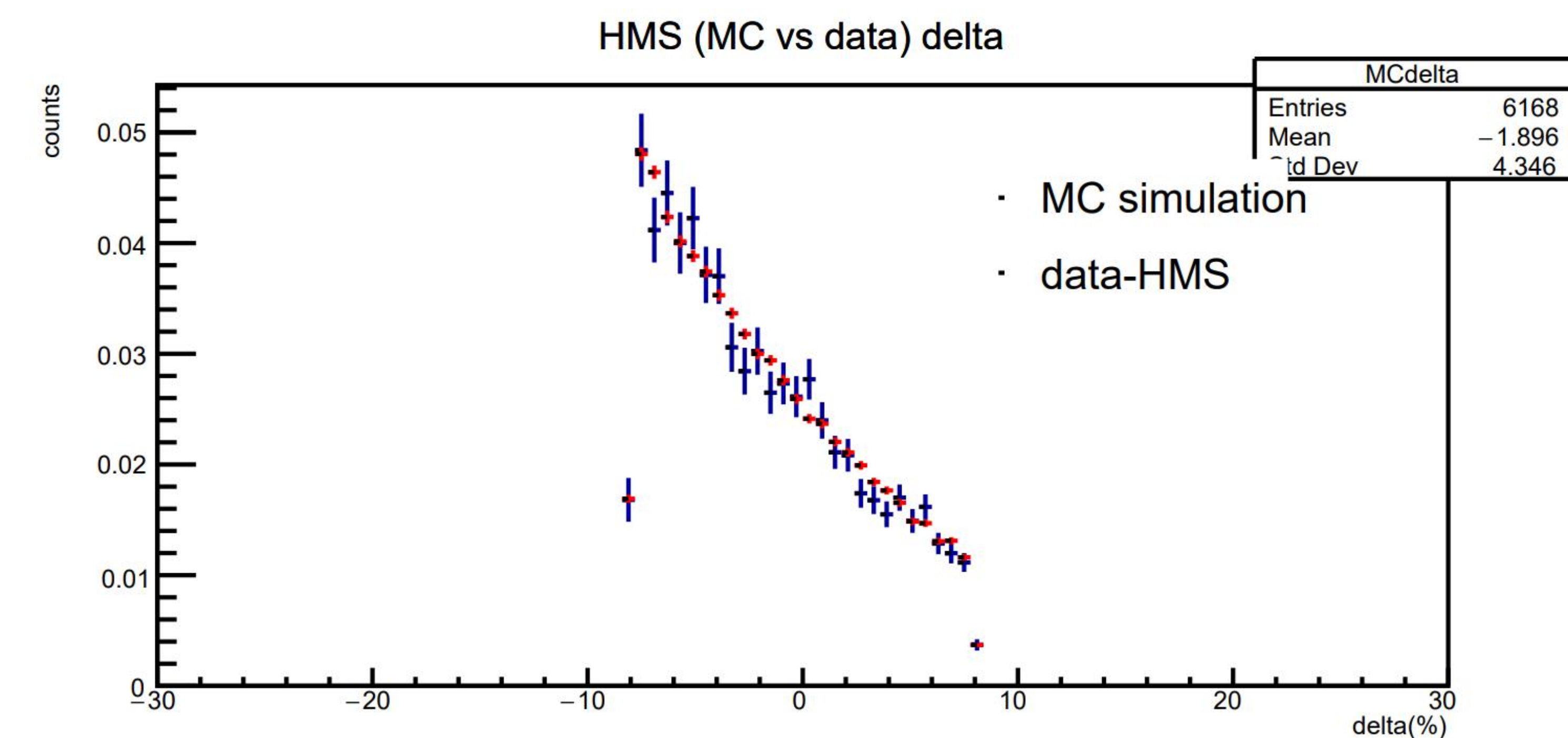
- (1) medium modification of quark distributions (why are they different in a nuclear medium than a free nucleon) and
- (2) short-distance nucleon-nucleon interactions (by measuring high-momentum nucleons from short-range correlations, SRCs)

XEM2: Current Running and Analysis

Our group, along with many collaborators have just completed a multi-month long data taking campaign in JLab's Hall C. We have collected inclusive data to study short-range nucleon-nucleon behavior (via studies of 2N and 3N SRCs), EMC effect, as well as super-fast quark distributions. Analysis is underway, with lots of work and results coming up!



Detector vs MonteCarlo Simulation



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