Old Dominion University
Department of Physics
Colloquium

Tuesday, March 26, 2024

"Exploring Nuclear Hadronization: Insights from the 2004 CLAS Experiment and Current Prospects with CLAS12"

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On behalf of the CLAS collaboration

Abstract:

Abstract: In 2004, an experiment was conducted on the CLAS detector using a 6 GeV electron beam, gathering data across a diverse range of nuclear targets, spanning from heavy elements like Lead to lighter ones such as Carbon or Deuterium. This extensive dataset served as a catalyst for an in-depth exploration of various nuclear phenomena, with a particular focus on nuclear hadronization. The examination of nuclear hadronization was uniquely enriched by the diverse sizes of nuclei, offering valuable insights into its correlation with the dimensions of the nuclear medium. The study encompassed a broad spectrum of final hadron types. Fast forward to the first quarter of 2024, the experiment is poised for replication on CLAS12 with upgraded CEBAF (CEBAF12) accelerator which is capable to provide electron beam with up to 12 GeV energy. This next iteration promises higher energy, an expanded kinematic range, and enhanced statistical precision across various hadron types. In the upcoming presentation, I will provide a comprehensive overview of the preceding experiment, delve into the intricacies of the 12 GeV experiment, and shed light on the perspectives and scientific significance underlying the envisioned 22 GeV experiment.

Presentation: OCNPS 200 @ 3:00 pm
Refreshments: OCNPS Atrium @ 2:30 pm

All interested persons are cordially invited to attend.