

SANE of Jefferson Lab: Spin Asymmetries on the Nucleon Experiment

The Spin Asymmetry on the Nucleon Experiment (SANE) at Jefferson Lab measures spin observables A_{1p} , A_{2p} and structure functions g_{1p} and g_{2p} over a broad range of Bjorken scaling variable x from 0.3 to 0.8, for four-momentum transfers from 2.5 GeV^2 to 6.5 GeV^2 . Inclusive double spin asymmetries were measured by scattering 4.7 and 5.9-GeV longitudinally polarized electron beam off a dynamically polarized ammonia target, in both parallel and transverse configuration. Scattered electrons were detected using the Big Electron Telescope Array (BETA), a novel non-magnetic detector array with a 194-msr acceptance. The experiment ran January through March 2009. This paper presents the physics motivation for the experiment, the expected results, kinematics coverage, detector performance and calibrations, quality of the collected data, and the latest status of the ongoing data analysis.

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