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Prospects in neutron transverse spin study with polarized 3He at 12 GeV Jefferson Laboratory

HAIYAN GAO, Duke University

Due to the unique ground state spin structure of the ^{3}He nucleus, polarized ^{3}He nuclear targets have been used widely in experiments ranging from measurements of the neutron electric and magnetic form factors to the study of the neutron spin structure. In this talk, I will discuss the recently completed neutron transversity experiment in Hall A at Jefferson Laboratory using a vertically polarized ^{3}He target. This is the first time that a polarized ^{3}He target has been used in probing the neutron transverse spin structure. I will focus in my talk the future prospects of neutron transverse spin study at 12-GeV Jefferson Laboratory after the energy upgrade. The work is supported by a U.S. Department of Energy grant DE-FG02-03ER41231.