

Abstract Submitted
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Results from Kinematically Complete Photodisintegration of ${}^3\text{He}$ ¹ FORREST FRIESEN, Duke University and TUNL, MOHAMMAD AHMED, North Carolina Central University and TUNL, ALEX CROWELL, Duke University and TUNL, ARNAS DELTUVA, Vilnius University, CALVIN HOWELL, COLLIN MALONE, RON MALONE, WERNER TORNOW, Duke University and TUNL, HENRYK WITAA, Jagiellonian University — Kinematically complete measurements of acceptance integrated photodisintegration cross sections were performed with a 15 MeV photon beam at the high intensity γ -ray source. The ${}^3\text{He}(\gamma, \text{pn})\text{p}$, ${}^3\text{He}(\gamma, \text{pp})\text{n}$, ${}^3\text{He}(\gamma, \text{p})\text{np}$ three-body photodisintegration reactions were measured concurrently. Neutrons were detected over the range of laboratory polar angles from about 30° to 150° . Events corresponding to the np final state interaction were selected using the angle between the neutron and proton in np coincidences. The target beam luminosity was measured in-situ using the ${}^3\text{He}(\gamma, \text{p})\text{d}$ two-body photodisintegration reaction. There was good agreement between GEANT4 simulations based on ab-initio three-nucleon calculations and measurements in the vicinity of the np collinear point (i.e., the proton at rest in the cm frame). The experiment techniques will be described and results for several exit-channel configurations in three-body photodisintegration will be presented.

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