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Two-Body Photodisintegration of ^{4}He into p+t RAKHSHA NASSERIPOUR, BARRY BERMAN, George Washington University, CLAS COLLABORATION — The two-body photodisintegration of ^{4}He into a proton and a triton has been studied using the CEBAF Large Acceptance Spectrometer (CLAS) at Jefferson Laboratory. Real photons produced with the Hall-B bremsstrahlung tagging system in the energy range from 0.35 to 1.55 GeV were incident on a liquid ^{4}He target. This is the first measurement of the photodisintegration of ^{4}He above 0.4 GeV. The differential cross sections for the γ^4He$\rightarrow$ pt reaction have been measured as a function of photon-beam energy and proton-scattering angle, and are compared with the latest model calculations by Laget [1]. At 0.6-0.8 GeV, our data are in good agreement only with the calculations that include three-body mechanisms, thus confirming their importance. At the same time, the strength of the one-body mechanisms is overestimated at higher energies and at small proton-scattering angles. These results reinforce the conclusion of our previous study of the three-body breakup of ^{3}He that demonstrated the great importance of three-body mechanisms in the energy region 0.5-0.8 GeV [2].
[1] J.-M. Laget, private communication (2008)
[2] S. Niccolai *et al.*, Phys. Rev. C **70**, 064003 (2004)

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