

Deuteron Photodisintegration

**Proposal to CEBAF
(Update to PR-89-020)**

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Abstract

We propose to measure the differential cross section for photodisintegration of the deuteron at CEBAF over a wide range of angles for energies from 0.5 to 1.5 GeV. The experiment combines a well known probe, the photon, with exact nuclear wave functions to test models of the nucleus. The experiments will provide basic data for testing detailed theories of nucleon structure and the nucleon interaction without involving the complexities associated with heavier nuclei. By examining the reaction for the range of energies and angles available with a tagged beam at CEBAF, the experiment will explore new phenomena for nuclear physics. The experiment will run concurrently with PR-89-045, "Studies of Kaon Photoproduction on Deuterium".