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Neutron Detection Efficiency in the Crystal Ball and TAPS at MAMI ZOE MARINIDES, The George Washington University, A2 AT MAMI COLLABORATION — The aim of the research project is to determine the neutron detection efficiency of the Crystal Ball and Two Armed Photon Spectrometer (TAPS) detector system used in the A2 collaboration at MAMI, at the University of Johannes Guttenberg in Mainz, Germany. A photon beam of energies up to 1.5 GeV is used to investigate photodisintegration and photo-production processes from a deuterium target. By looking at both the breakup of the deuteron into the proton and neutron, as well as coherent π^0production, the efficiency of neutron detection can be determined at a range of energies. The results of the efficiency measurements are essential in determining cross sections for future experiments as well as in testing the accuracy of simulations for channels such as double π^0 and $\pi^0\eta$ production on the neutron.

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