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Differential η meson photoproduction cross sections off the proton at center of mass energies up to 4.75 GeV from the GlueX experiment[1]
MAHMOUD KAMEL, Florida International University, GLUEX COLLABORATION — The GlueX experiment studies the light meson spectrum and searches for hybrid and exotic mesons. As part of the GlueX program, photoproduction cross sections of η mesons have been measured in the $\gamma + p \rightarrow \eta + p$ reaction in a new, previously unexplored regime of higher beam energy and smaller production polar angles. This will provide new information about the underlying reaction mechanisms. η mesons have been identified through their $\gamma\gamma$ decay channel which has a branching ratio of 39.41%. Besides the high energy data, an additional set of low energy photoproduction data has been collected that are overlapping with previously published data. We will present differential cross sections with high statistics for η-p center of mass energies between 2.52 and 4.75 GeV, which is equivalent to photon beam energies between 2.9 and 11.6 GeV. The results at the lower beam energies will be compared to previously published data and all results will be compared with recent model calculations.

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