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Σ beam asymmetry of the $a_0^0(980)$ photoproduction at GlueX

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The light scalar meson sector, encompassing mesons with mass around 1 GeV and positive parity, is not fully understood. This lack of understanding is due to the overlap of the widths of neighboring resonances and the numerous underlying background processes. This work seeks to shed some light onto one member of this sector, namely the neutral $a_0^0(980)$ meson, by way of polarized photoproduction. Using the Hall D polarized photon beam at Jefferson Lab and the GlueX Detector, preliminary results of the beam asymmetry of the photoproduction of this meson, measured as a function of the invariant momentum transfer t , are presented, illustrating a qualitative agreement with theory predictions. This work was supported in part by the U. S. Department of Energy, Office of Science, Office of Nuclear Physics, under award No. DE-SC0016583.

Collaboration

GlueX

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