

Abstract Submitted
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First Observation of the $f_1(1285) / \eta(1295)$ Meson in Photoproduction RYAN DICKSON, Carnegie Mellon University, JEFFERSON LAB - CLAS COLLABORATION — A meson of mass $m_x = 1281$ MeV and a FWHM of $\Gamma_x = 18$ MeV is seen in photoproduction off the proton using real photons in the energy range between 1.8 GeV and 4.0 GeV. The decay modes seen in the Jefferson Lab CLAS spectrometer are $x \rightarrow \eta\pi^+\pi^-$ and $x \rightarrow K^+\bar{K}\pi^-$, with a large fraction going through $a_0(980)\pi$. The state is not seen in the $x \rightarrow \rho^0\gamma$ decay channel, with an upper limit on the branching fraction ($B.R.$) $< 0.62\%$ (95%*c.l.*). This non-observation is inconsistent with the known nearby state $f_1(1285)1^+$ which has a PDG-given $B.R.$ of $5.5 \pm 1.3\%$ to $\rho^0\gamma$. This could mark the first direct observance of the $\eta(1295)0^-$, albeit with a width that is much narrower than obtained through partial wave analysis of earlier hadronic production experiments. This presentation will emphasize the experimental production of this meson and the search for its $\rho^0\gamma$ decay mode.

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