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The Search for a $\pi_1(1400)$ Exotic Meson in the $\gamma p \rightarrow \Delta^{++}\eta\pi^-$ System with CLAS DIANE SCHOTT, Florida International University, CLAS COLLABORATION — Over twenty years ago QCD-inspired models of hadronic states suggested the existence of mesons beyond the Naive Quark Model (NQM), which motivated a rigorous search for exotic mesons. The lightest of these states is the $\pi_1(1400)$ decaying to $\eta\pi^-$, this was observed in E852 at Brookhaven and confirmed in data previously taken for VES at IHEP. Photoproduction is predicted to favor production of the $J^{PC} = 1^{-+}$ state resulting in the increase of the ratio of π_1 to a_2 mesons. A Partial Wave Analysis was conducted on the reaction $\gamma p \rightarrow \Delta^{++} X \rightarrow p\pi^+\pi^-(\eta)$, using the Δ^{++} to select the π exchange. The analysis has shown the final spectra of the resonance decaying to $\eta\pi^-$ to be dominated by the quantum state of $J^{PC} = 2^{++}$ corresponding to the presence of the $a_2(1320)$. The $J^{PC} = 1^{-+}$ state, shows no structure in the intensity distribution. However, the phase difference between the $J^{PC} = 1^{-+}$ and $J^{PC} = 2^{++}$ amplitudes show the interference between the two states. The PWA mass independent fits, along with the mass dependent fits of the partial wave results, will be shown.

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