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Current status of a coupled-channel partial wave analysis using data from CLAS at Jefferson Lab MATTHEW BELLIS, Carnegie Mellon University, MICHAEL MCCRACKEN, CURTIS MEYER, MICHAEL WILLIAMS, CLAS COLLABORATION — The non-strange baryon spectrum has been mapped out predominantly by studying $N\pi$ elastic scattering with phase-shift analysis as the tool of choice. While there has been much success with these experimental techniques, the results have fueled debates in the community, most notably regarding the missing baryons problem. Theoretical solutions to this discrepancy appeal to a diquark-system within the baryons or a coupling to states other than $N\pi$. The CLAS detector at Jefferson Lab has turned out high-statistics, photoproduction datasets which are optimal for resolving these issues. However, new analytical techniques may be required to deal with this rich physics sector. The baryon resonances are photoproduced off liquid hydrogen and the CLAS detector allows us to measure a variety of final states. We will have access to $n\pi^+, p\pi^0, p\pi^+\pi^-, p\omega, p\eta, p\eta', \Lambda K^+$ and ΣK^+ final states. A robust software package has been developed that allows for the fitting of these states individually and in a coupled-channel mode. New techniques have been applied to background subtraction which brings an added level of consistency to the analysis. Polarization information from other experiments is incorporated at fit time to help distinguish potentially ambiguous physics processes by using information outside of the CLAS datasets. An overview of these tools will be presented as well as the current state of the analysis.

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