Partial wave analysis of the $\eta\pi^+\pi^-$ system for the reaction $\pi^- p \to \eta\pi^+\pi^- n$ at 18 GeV/c [1]

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A partial wave analysis in the mass region from 1.2 to 2.0 GeV was performed on data from the reaction $\pi^- p \to \eta\pi^+\pi^- n$ at 18 GeV/c. This data sample represents the largest analyzed to date for this reaction. The data is dominated by the $\rho\eta$ final state with quantum numbers consistent with the $\rho(1700)$. In addition, the sample has significant contributions from the $a_0\pi$ and $a_2\pi$ final states. The $a_0\pi$ topology is predominantly associated with the f_1 with additional $\eta(1295)$ and $\eta(1440)$ contributions. The $\eta(1440)$ is of particular interest because of its status as a glueball candidate. Analysis of the $a_2\pi$ final state, a favored decay channel for exotic hybrid mesons in the flux tube model, is presented.

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