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Partial wave analysis of the $\eta\eta$ system for the reaction $\pi^- p \to \eta\eta n$ at 18 GeV/c[1] S.A. TAEGAR, *University of Notre Dame for the E852 Collaboration (Brookhaven, Indiana, IHEP Protvino, Massachusetts Dartmouth, Moscow State, Northwestern, Notre Dame, Rensselaer)* — A partial wave analysis has been performed on 3,000 events produced in the reaction $\pi^- p \to \eta\eta n$ at 18 GeV/c during the 1994 run of E852 at BNL. These events come from two topologies: the 4γ final state and the $\pi^+\pi^-4\gamma$ final state. The ability to study all-neutral as well as charged-plus-neutral final states for the same reaction provides increased understanding of systematic uncertainties. Of particular interest in the $\eta\eta$ analysis is the clarification of the $J^{PC} = 0^{++}$ $q\overline{q}$ ground state nonet. This nonet currently has too many isoscalar candidates, suggesting the possible existence of the lowest lying scalar glueball.

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