

Abstract Submitted
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New $N'(1720)3/2^+$ resonance from combined studies of $\pi^+\pi^-p$ photo-/electroproduction VICTOR MOKEEV, Jefferson Lab, CLAS COLLABORATION — Observation of a new $N(1720)3/2^+$ baryon state from combined analysis of the CLAS $\pi^+\pi^-p$ photo- and electroproduction data in the resonance region will be presented. This new resonance was discovered, in addition to several “missing resonances already observed and included in the PDG, from a global multi-channel analysis of exclusive meson photoproduction channels with decisive impact from the CLAS K^+Y data. Contributions from both the $N(1720)3/2^+$ PDG state of mass 1.74 GeV and the new $N(1720)3/2^+$ state of mass 1.72 GeV, which have different decay widths to the $\pi\Delta$ and ρp final states, are needed in order to describe the $\pi^+\pi^-p$ photo- and electroproduction data with Q^2 -independent resonance masses, total and partial hadronic decay widths of the new $N(1720)3/2^+$ state, and all well-established resonances in the third resonance region. This provides strong evidence for the existence of the new $N(1720)3/2^+$ resonance. The results on the Q^2 evolution of the resonance electroexcitation amplitudes of the $N(1720)3/2^+$ have become available, offering insight into the structure of this new resonance for the first time.

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