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New results in the studies of the high-lying nucleon resonances from the CLAS data on $\pi^+\pi^-p$ electroproduction VICTOR MOKEEV, VOLKER BURKERT, Jefferson Lab, RALF GOTHE, University of South Carolina — The exclusive double-pion electroproduction represents the primary source of information on the structure of excited proton states in the mass region $M_{N^*} > 1.6$ GeV. Preliminary results on electrocouplings and $\pi\Delta$ and ρp hadronic decays of prominent N^* states in this mass range will be presented. They were obtained from the analysis of CLAS data on $\pi^+\pi^-p$ electroproduction at photon virtualities $0.5 < Q^2 < 1.5$ GeV² [1] within the framework of the reaction model [2]. Our results confirmed the electrocouplings of N(1680)5/2⁺ resonance determined in the studies of $N\pi$ exclusive channels [3]. The electrocouplings of $\Delta(1620)1/2^-$, $\Delta(1700)3/2^-$, and N(1720)3/2⁺ resonances were determined for the first time from analysis of $\pi^+\pi^-p$ electroproduction with good accuracy. The results on electrocouplings of proton states in the mass range up to 1.8 GeV provide stringent constraints for the development of QCD-based approaches aimed at describing the complex structure of excited nucleon states.

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[3] L.Tiator et al., Eur. Phys. J. ST198, 141 (2011).

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