Search for Hidden-Charm Pentaquark with CLAS12

V. Kubarovsky[1]

[1] *Thomas Jefferson National Accelerator Facility, Newport News, Virginia 23606, USA*

LHCb recently announced the discovery of two exotic structures in the $J/\psi + p$ decay channel, which have been referred to as charmonium-pentaquark states. Resolving differences between models for these states, clarifying the nature of the discovered hidden-charm pentaquark peaks, and discovery of any similar states with other quantum numbers, will require further experimental studies. The states reported in the LHCb work were observed in the decay mode $J/\psi + p$. Thus, it is natural to expect that such pentaquark states should be produced in the photoproduction process $\gamma + p \to P_c \to J/\psi + p$ where these states will appear as s-channel resonances at photon energy around 10 GeV. The energy and luminosity of the CLAS12 photon beam will permit detailed studies of the production and decay properties of pentaquark resonances. Motivated by these features, this presentation will discuss the experiment for a pentaquark search with CLAS 12 that is currently undergoing at Jefferson Lab.