Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

$J/\psi - 007$ Experiment: A Threshold J/ψ Photoproduction Measurement in Hall C at Jefferson Lab[1] BURCU DURAN[2], Temple University, J/PSI-007 COLLABORATION — We report on the Jefferson Lab experiment E12-16-007 ($J/\psi - 007$) where we made a measurement of the elastic doubly differential J/ψ photo-production cross section as a function of proton momentum transfer t and photon energy E_γ in the region corresponding to the discovered charm pentaquark states reported by the LHCb collaboration. The experiment was performed using a high-intensity real photon beam generated by a 10.6 GeV incident electron beam traversing a copper radiator upstream of a liquid hydrogen target in Hall C. The two high momentum spectrometers of Hall C, HMS, and SHMS were used to detect in coincidence the e^+e^- di-lepton J/ψ decay pair. Both the t-channel and s-channel resonant J/ψ production were explored using a high incident photon flux beam combined with spectrometers angular and momentum settings scanning a range from t_{min} to large t, for every accessible photon energy above threshold. The sensitivity of the measurements to the s-channel resonant pentaquarks signals, if they exist, is maximal at large $t - t_{min}$. We will present preliminary results of the doubly differential J/ψ cross-section measurement as well as the total photo-absorption cross-section.

[1]This work is supported in part by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, under Contract No DE-FG02-94ER4084.
[2]On behalf of the J/psi-007 Collaboration

Burcu Duran
Temple University

Date submitted: 26 Jun 2020 Electronic form version 1.4