

DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 206

Type: **Parallel talk**

Recent results from near-threshold J/Ψ photoproduction measurement from Hall-C J/Ψ -007 experiment

Thursday, 30 March 2023 10:50 (20 minutes)

Measurement of near threshold quarkonia photoproduction cross section provides a unique tool to probe gluonic structure inside the nucleon, hence allowing extraction of gluonic form factors and mass radii. J/Ψ -007 experiment (E12-16-007) was conducted at Hall-C of the Thomas Jefferson National Accelerator Facility to measure near threshold 2-D differential J/Ψ photoproduction cross section as a function of photon energy E_γ and Mandelstam variable t (momentum transfer from initial photon to the produced J/Ψ). The experiment utilized a high intensity real photon beam produced by incidence of a 10.6 GeV incident electron beam on a copper radiator situated upstream of a hydrogen target. The produced e^-e^+ ($\mu^-\mu^+$) pair from decay of J/Ψ was detected using two arm spectrometers in Hall C: the HMS and the SHMS. The scanned photon energy range E_γ and momentum transfer $|t|$, are between 9.1 GeV and 10.6 GeV and up to 4.5 GeV^2 , respectively. Recent results from analysis of the measured 2-D J/Ψ photoproduction cross section (e^-e^+ channel) will be presented. In addition, preliminary results from analysis of muon channel will be also be shown.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

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Session Classification: WG2

Track Classification: WG2: Small-x, Diffraction and Vector Mesons