



Old Dominion University Department of Physics

Colloquium

Tuesday, April 5, 2016

" J/ψ production at JLAB"

Stepan Stepanyan
JLab/ODU

Since its discovery in 1974, ground state charmonium, J/ψ -meson, has been subject of detail studies in fixed target and collider experiments. The mass and the width have been measured with high precision. Many decay modes have been examined and branching ratios measured. However, there are still unanswered questions that are waiting resolution from experiments. Upgraded facilities at Jefferson lab will provide beams of electrons and photons with enough energy and luminosity to allow for firm answers to some these questions. Particular interest for these experiments is the study of J/ψ production near threshold region, the exact mechanism of which is yet unknown. Since there are no charm quarks in the nucleon, the photoproduction of J/ψ probes gluonic field of the target, important quantity that is difficult to access in any other way.

In this talk, after a brief summary of discovery and experimental studies of J/ψ , planned experiments at Jefferson lab will be discussed. Experiment E12-12-001 with CLAS12 in experimental Hall-B will measure J/ψ in e^+e^- decay mode and will study production mechanism from the threshold, 8.2 GeV, to 11 GeV. This experiment is also in a good position to search for and study hidden charm pentaquarks recently discovered by LHCb at CERN.

Presentation: **OCNPS 200 @ 3:00 pm**
Refreshments: **OCNPS Atrium @ 2:30 pm**

All interested persons are cordially invited to attend.