

## On the near-threshold incoherent $\phi$ photoproduction on the deuteron: any trace of a resonance?

Tuesday, 26 July 2016 17:50 (30 minutes)

We study the near-threshold incoherent  $\phi$  photoproduction on the deuteron based on a model of  $\gamma N \rightarrow \phi N$ , consisting of Pomeron,  $(\pi, \eta)$  exchanges, and a  $J^P = 3/2^-$  resonance, which describes the low energy  $\gamma p \rightarrow \phi p$  LEPS data well, including the peak in the forward differential cross section. The calculation is done up to double  $N \rightarrow \phi N$  amplitudes retained throughout the calculation. The Fermi motion and final-state interactions (FSI) are all properly included in the nucleon interaction. The couplings of the resonance to  $\gamma n$  and  $\phi n$  channels are estimated with the help of a constituent quark scattering results and the data. The off-shell rescattering is found to be important as it cancels out a large portion of the on-shell contribution. The discrepancies at low momentum transfer region might be related to the binning size of the data. No peak is found in  $\gamma p \rightarrow \phi p$  data from CLAS.

**Presenter:** KISWANDHI, Alvin (Department of Physics, STKIP Surya)

**Session Classification:** Meson-Nucleon Interactions