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$a_0(980)$ **photoproduction in the coupled channel model**

Collaboration

Abstract content

We contructed the $\gamma p \rightarrow p\pi\eta$ S-wave photoproduction amplitudes which, for the first time in the literature, take into account effects of the $K\overline{K}$-$\pi\eta$ interchannel coupling in effective mass region corresponding to the $a_0(980)$ resonance [1]. The principal merit of our approach is that apart from the coupling constants already successfully applied in other analyses [2] and resonance parameters like masses, widhts and branching ratios used in the final state interaction parametrisation [3] we do not engage any new model parameters.

We also calculated the Born amplitudes and cross sections for partial waves P and D. These can give an estimation of the photoproduction cross section of spin 1 and spin 2 $\pi\eta$ resonances like $\pi_1(1400)$ and $a_2(1320)$.

It is important to stress that reliable model of the photoproduction in the $\pi\eta$ channel is essential for proper description of data to be collected by new JLab experiments CLAS12 and GlueX.
Literature:

[1] Ł. Bibrzycki, R. Kamiński, http://arxiv.org/abs/1509.06135
[2] Ł. Bibrzycki and R. Kamiński, Phys. Rev. D87, 114010 (2013)
[3] A. Furman, L. Leśniak, Phys.Lett. B538, 266 (2002)

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