Strange meson radiative capture on the proton in Low energy QCD Lagrangian

Ma Wei-xing and Zhou Li-juan

Department of Information and Computing Sciences, Guangxi university of Technology, Liu Zhou, 545006, P. R. China

Based on our low energy QCD Lagrangian description of strange meson photoproduction off the proton and the crossing symmetry , the strange meson radiative capture on the proton, , is investigated in the quark model of baryon structure with the same input parameter, the only strong coupling constant , as that in the strange meson photoproduction off the proton , a crossing channel of the radiative capture reaction. A good agreement on the! branching ratio between the predictions and data is obtained successfully. This excellent fit indicates that our low energy QCD Lagrangian theory with only one free paramenter is an advanced and unified description of strange meson photoproduction and its associated radiative capture. The low energy Lagrangian theory is also applied to vector meson photo-and electro-production processes.The preliminary results will be presented.

References

[1] Zhou Li-juan, Ma Wei-xing and peng Guang Xiong, Strange meson photoproduction off the proton in low energy QCD Lagrangian, Science in China, A31 (2001) 1017-1025
[2] Goldberger M. L., High Energy Nuclear Physics, edited by Dallar J. , 1956, Singapore,scientific; Gunson J., J. Math. Phys. 1965, Vol. 6, pp827-845; Olive D. ,Phys. Rev. D135 (1964) 745-750,
[3] Zhou Li-juan and Ma Wei-xing, Strange meson radiative capture on the proton in low energy QCD Lagrangian, Communication in Theoretical Physics, 2002, i! n press.