

Meson Spectroscopy in Coherent Production off ^4He with CLAS

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Abstract

Meson spectroscopy requires disentanglement of states with different quantum numbers that decay to the same final states, as well as separation of meson-baryon and purely mesonic states. Coherent scattering off ^4He uniquely aids both by providing a spin and iso-spin zero target, simplifying partial wave analysis, and an unmodified recoil nucleus, eliminating background from baryon resonances. At Jefferson Lab, we conducted the first experiment for meson spectroscopy using coherent quasi-real photo-production on ^4He . This took place in Hall-B in 2009, using a 6 GeV electron beam and the CLAS detector. A new radial time projection chamber with high pressure gaseous target detects low-energy recoil ^4He nuclei. In this talk, status of the analysis and the first look on coherently produced mesonic final states will be presented