

Abstract ID=ABS485

Heavy quark mesons and baryons (incl. lattice calculations)

Hadron spectroscopy and exotics (experiment and theory)

Experiment: FOCUS

Contact Person: Sandra Malvezzi

Institute: I.N.F.N Milan

Email: sandra.malvezzi@mi.infn.it

Dalitz Plot Analyses in the FOCUS experiment

Sandra Malvezzi (on behalf of FOCUS Collaboration)

Abstract

Results of Dalitz analyses of D-meson decays to three-pseudoscalars in the charm photoproductions experiment E831 are presented. Amplitude analysis in the non-leptonic sector emerges as a unique tool to gauge the role of final-state-interactions (FSI); phase-shifts between interfering resonant channels can be in fact studied in different decay modes. Results are available for D^+, D_s to three pions, DCSD $D^+ \rightarrow K^+\pi^-\pi^-$, $D_s \rightarrow K^+\pi^-\pi^-$, $D^+ \rightarrow K^-\pi^+\pi^+$, $D^+, D_s \rightarrow K^-K^+\pi^+$. The excellent statistics collected by the experiment are now at the level to be sensitive to parametrization problems of the resonances. The Dalitz plot analysis turned out to be a good laboratory to investigate the light meson spectroscopy and can shed some light onto the nature of wide resonances such as σ (or $f_0(400)$) and κ whose existence is theoretically controversial.

Version 1

Date 2002-04-30 : 14:09:38'