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Investigation of the low-energy kaons hadronic interactions in light nuclei by AMADEUS

Friday, 27 November 2015 15:30 (30 minutes)

The AMADEUS experiment deals with the investigation of the low-energy kaon-nuclei hadronic interaction at the DAΦNE collider at LNF-INFN, trying to answer pending questions in the non-perturbative strangeness QCD sector. AMADEUS step 0 consisted in the reanalysis of 2004/2005 KLOE data, exploiting K^- absorptions in H, ^{4}He, ^{9}Be and ^{12}C, leading to the first invariant mass spectroscopy study with very low momentum (100MeV) in-flight K^- captures.
The results obtained in the analyses of the hyperon-pion correlated events, searching for the resonant shapes of Y* states, and the analyses of hyperon-deuteron, and triton correlations, leading to the first measurement of the K- 4NA cross section (for p_k=100MeV/c) will be presented. The preliminary measurement of the $K^-p \rightarrow \Sigma^0\pi^0$ cross section (for p_k=100MeV/c) will be also shown.

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