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Low energy interaction studies of negative kaons in light nuclear targets by AMADEUS

Tuesday, 12 September 2017 11:00 (30 minutes)

The AMADEUS experiment investigates the low energy interaction of negative kaons with nucleons and light nuclei, aiming to solve longstanding open problems in the non-perturbative strangeness QCD sector. We take advantage of the low momentum (p_K $\sim$127 MeV/c) almost monochromatic charged kaons produced by the DAΦNE collider, in order to study the K^- hadronic capture in the materials of the KLOE detector. The experimental data corresponds to the 1.64 fb$^-$1 luminosity of the 2004-2005 KLOE data taking campaign, which contains high statistics samples of K^- nuclear captures (both at-rest and in-flight) in H, ^{4}He, {}^9$Beand^1$2C. We will present the results obtained from the analysis of hyperon-pion correlated production, to explore the behaviour of Y^* resonances in nuclear environment. The investigation of K^--multi nucleon capture and bound states formation through the decay in hyperon-proton, deuteron, and triton will be shown as well.

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