

Strange Meson Production in Pion-Nucleus Reactions at 1.7 GeV/c

Friday, 8 June 2018 18:20 (0:20)

Collaboration

HADES Collaboration

Abstract content

The production of strange mesons in pion-nucleus reactions allows for a quantitative investigation of in-medium effects such as re-scattering or absorption processes at well-defined nuclear density. Overall, 10×10^7 and 13×10^7 events have been collected with the HADES detector at the GSI pion beam facility in $\pi^- + C$ and $\pi^- + W$ collisions at $p_{\pi^-} = 1.7$ GeV/c. We present our results on the open and hidden strange meson (K^\pm and ϕ) production in cold nuclear matter. Special emphasis will be put on the study of K^- absorption driven by strangeness exchange processes on one ($K^- N \rightarrow Y\pi$) or more nucleons ($K^- NN \rightarrow YN$). The data supports K^- absorption in the heavier system (W) by comparing the K^-/K^+ ratios measured in collisions with heavy targets (W) and lighter ones (C). In addition, the ϕ absorption in nuclear medium will be addressed by comparing the production in both nuclear environments as well as the ϕ feed-down to the K^- production.

Work supported by the DFG cluster of excellence "Origin and Structure of the Universe" and SFB 1258.

Primary author(s) : WIRTH, Joana (TU München)

Co-author(s) : FABIETTI, Laura (TU München)

Presenter(s) : WIRTH, Joana (TU München)

Session Classification : Parallel Session B4