



Contribution ID: 21

Type: **invited talk**

Antikaon-nucleon/nuclei interactions at low-energy by AMADEUS

Tuesday, 25 June 2019 17:45 (20 minutes)

The AMADEUS collaboration aims to provide information on the \bar{K} -nucleon/nuclei interaction in the low-energy regime. The investigation of the antikaon dynamics in nuclear medium is fundamental for the understanding of the non-perturbative QCD in the strangeness sector, with implications going from nuclear physics to astrophysics. Hyperon-nucleon/nuclei (YN) and hyperon-pion ($Y\pi$) correlated production in K^- nuclear absorption on H, ^4He , ^9Be and ^{12}C nuclei are analysed with the aim to explore the possible existence of kaonic bound states in nuclei and the properties of hyperon resonances in nuclear environment. AMADEUS takes advantage of the DAΦNE collider, which provides a unique source of monochromatic low-momentum kaons ($p_K \sim 127 \text{ MeV}/c$), and exploits the KLOE detector as active target, providing large acceptance and resolution for the data.

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Session Classification: Tuesday