

The potential of multi-strange physics with PANDA at FAIR

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The production of antihyperon-hyperon pairs in antiproton-proton collisions is an excellent probe for studying the strong interaction in the non-perturbative regime. Here, the relevant degrees of freedom are unclear. The self-analysing decay of hyperons provides us with a way to investigate reaction dynamics by reconstructing spin observables. Furthermore, hyperon spectroscopy enables us to study how quarks form baryons, which forces are involved, and what the relevant degrees of freedom are.

The upcoming PANDA experiment at FAIR will be a veritable strangeness factory. The amounts of data it will produce in the multistrange sector, in particular, will be unprecedented, with some reaction channels becoming accessible for the first time.

Simulations have been carried out to explore the potential of PANDA to contribute to the various aspects of physics with multi-strange hyperons. This presentation will give an overview of these recent feasibility studies.

Author: PAPENBROCK, Michael

Presenter: PAPENBROCK, Michael

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