

Towards Hyperon Physics with PANDA at FAIR

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The upcoming PANDA (anti-Proton ANnihilation at DArmstadt) experiment at the future FAIR (Facility for Anti-proton and Ion Research) offers unique possibilities for performing hyperon physics experiments. The almost full 4π coverage of the detector will offer the possibility of reconstructing both hyperon and antihyperon which will be created together in proton-antiproton collisions. Due to their relatively long-lived nature, the displaced decay vertices of hyperons impose a particular challenge on the track reconstruction.

This talk will address the hyperon channels of special interest for PANDA, what makes them special and why these are interesting to study. The interesting hyperons are the single strange Λ , the doubly strange Ξ^- and the triple strange Ω^- with the production channels $p\bar{p} \rightarrow \Lambda\bar{\Lambda}$, $p\bar{p} \rightarrow \Xi^-\bar{\Xi}^+$ and $p\bar{p} \rightarrow \Omega^-\bar{\Omega}^+$. The challenges regarding the tracking and reconstruction of hyperons at PANDA will also be discussed.

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