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Strangeness Nuclear Physics at PANDA

PANDA at FAIR will address the physics of strangeness in nuclei by several novel measurements. These studies are only made possible by the one-of-a-kind combination of the stored antiproton beam at FAIR and the modular PANDA detector which will be complemented

by a germanium detector array for high-resolution gamma-spectroscopy and a secondary target, in which low-momentum hyperons can be stopped. This setup offers the unique possibility to search for X-rays from very heavy hyperatoms. It will also extend the studies on double hypernuclei by performing high resolution gamma-spectroscopy of these nuclei for the first time. Furthermore, the exclusive production of hyperonantihyperon pairs close to their production threshold in antiproton-nucleus collisions offers a yet unexplored opportunity to elucidate the behaviour of antihyperons in cold nuclei.

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