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Hypernuclei Production through Antiprotonic Atoms

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The decay of antiprotonic atoms may lead to the formation of hypernuclei that can be produced via strangeness exchange reactions following the antiproton-nucleon annihilation. To estimate the hypernuclei yields that can be expected by these kind of reactions, simulations were performed within the GiBUU transport framework. Using ^{16}O, ^{40}Ar, ^{84}Kr and ^{132}Xe as target nuclei, it was shown that the formation of antiprotonic atoms provides access to currently undiscovered hyperisotopes with typical production rates of 10^{-5} to 10^{-4} per annihilation per hypernucleus. In this contribution, the results of recent calculations will be detailed [1]. The experimental requirements to investigate hypernuclei at ELENA produced in this way will be discussed.

[1] Schmidt, A., Gaitanos, T., Obertelli, A. *et al.* Production of hypernuclei from antiproton capture within a relativistic transport model. *Eur. Phys. J. A* **60**, 55 (2024)

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