Recent results on the nonmesonic decay of hypernuclei within a OME model

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Abstract

We present un update[1] of the OME potential of Ref. [2] for the study of the decay of s- and p-shell hypernuclei, correcting for a mistake in the inclusion of the K and K^* exchange mechanisms, which substantially increases the neutron-to-proton ratio. With the most up-to-date model ingredients, we find that the OME approach is able to describe very satisfactorily the experimental values for both, the nonmesonic decay rate and the ratio n/p.

We also present our conclusions on how different prescriptions used to account for Final State Interactions between the outgoing pair of nucleons, affect the value of the observables.

An extension of this model has been also applied to the decay of ${}^{6}_{\Lambda\Lambda}$He[3], where in additon to the $\Lambda N \to NN$ transition channel there are two new ones: $\Lambda\Lambda \to \Lambda n$ and $\Lambda\Lambda \to \Sigma N$. Results for the corresponding decay observables will be presented.

References

[1] A. Parreño and A. Ramos, nucl-th/0104080 (submitted to Phys. Rev. C.)

[2] A. Parreño, A. Ramos, and C. Bennhold, Phys. Rev. C **56**, 339 (1997).

[3] A. Parreño, C. Bennhold and A. Ramos (to be submitted).