

Phenomenology of hyperon non-leptonic decays

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Recent results published in Nature Physics (2019) by the BESIII collaboration revealed a substantial discrepancy of the Lambda baryon decay parameter with respect to the world average at the time.

We took this development as the starting point for a feasibility study of CP violation tests in strange baryon decays at next generation J/ψ factories. The proposed formalism allows for a direct comparison of particle and antiparticle properties, analyzing the weight of spin-correlation and polarization terms on such tests.

The same weak non-leptonic decays can be studied using chiral perturbation theory (χ PT), where S- and P-wave amplitudes are computed up to one-loop corrections. We investigate the behavior of such spherical waves in the light of the recent experimental updates and in a fully relativistic framework.

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Classifica Sessioni: Hadron decays, production and interaction

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