Weak Hyperon Decays in Heavy Baryon Chiral Perturbation Theory: Renormalization and Applications ◇

B. Borasoy and G. Müller [a]

[a] Universität Wien, Institut für Theoretische Physik, Boltzmanngasse 5, 1090 Wien, Austria

The complete renormalization of the weak Lagrangian to chiral order q^2 in heavy baryon chiral perturbation theory is performed using heat kernel techniques. The results are compared with divergences appearing in the calculation of Feynman graphs for the nonleptonic hyperon decay $\lambda \to p\pi^-$ and an estimate for the size of the counterterm contributions to the s-wave amplitudes in nonleptonic hyperon decays is given.

published in Phys. Rev. D 62 (2000) 054020

◇ *Supported in part by BMBF project 06 TM 980*