

SEMINÁŘ OTF ÚJF, ŘEŽ

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## Non-mesonic weak decay of hypernuclei in effective field theory

### Abstrakt

The  $\Lambda N \rightarrow NN$  interaction, the main reaction responsible for the decay of heavy hypernuclei, is described within the effective field theory (EFT) framework. The EFT is developed up to  $O(q^2)$ , where  $q$  is the transferred momentum between the interacting baryons. All two-pion exchange diagrams entering at the next-to-leading order in the EFT have been calculated. The leading order (LO) of the EFT is then applied to the decay of light hypernuclei. Numerical values for the leading order low-energy constants are obtained by two means. First, from a fit to the hypernuclear decay observables, and second, by comparing the EFT to the one-meson-exchange model describing the same interaction. The decay of the hypertriton, for which there is no experimental data yet, is studied by applying the EFT formalism in both, the strong and weak pieces. Thus, the hypertriton decay rate is explored as a function of the two LO LECs.

**Seminář se koná v pátek 21. 3. 2014 v 10:30 hod.  
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