

Lifetime measurements using DSAM with the MINIBALL set-up

Wednesday 19 December 2012 11:50 (20 minutes)

The transition strengths of excited low-lying states serve as a sensitive test case for theoretical models, such as the nuclear shell model. In the region around the doubly magic nucleus ^{132}Sn experimental data on transition strengths and, thereby, lifetimes of the excited states are scarce. To improve the experimental situation, we determined the lifetimes of the first 2^+ states in ^{140}Ba [1] and ^{126}Cd [2] using the Doppler-shift attenuation method (DSAM) for the first time with the MINIBALL set-up at REX-ISOLDE. Within this contribution a summary of both experiments and the analysis performed with the newly implemented DSAM code APCAD [3] will be presented. In the future, HIE-ISOLDE will give new opportunities for experiments using DSAM techniques due to higher recoil velocities.

Supported by BMBF (No. 06 DA 9036I, 06 DA 9041I, 06 DA 7040, 06 DA 7047I and 06 MT 238) and EU through ENSAR (No. 262010).

[1] C. Bauer et al. Phys. Rev. C 86, 034310 (2012).

[2] M. Thürauf, Master's thesis.

[3] C. Stahl, Master's thesis.

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Session Classification: New techniques