
STUDY OF QUADRUPOLE CORRELATIONS IN N=Z=50 REGION VIA LIFETIMES MEASUREMENTS

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The robustness of the proton shell closure $Z=50$ when $N=50$ is approached has been under discussion since decades. Experimental results such as the excitation energy of the first 2^+ states and the reduced transition probabilities should provide a clear evidence of the shell evolution in this mass region. However, while the excitation energy of the first 2^+ state is rather constant along the whole S_n isotopic chain [1], the information on $B(E2; 2^+ \rightarrow 0^+)$ for the neutron-deficient S_n isotopes suffers from large experimental uncertainties [2,3] which makes the interpretation of the shell evolution controversial.

Recently the region in the vicinity of $Z=N=50$ has been investigated at GANIL, France, in order to perform high precision measurement of the $B(E2)$ values. The lifetime of the low-lying states were measured with the Recoil Distance Doppler-Shift method [4], employing the differential Cologne plunger device. γ rays were detected with 8 AGATA Triple Clusters [5], placed at backward angles. The complete A and Z identification of the projectile-like fragments was done by the VAMOS++ spectrometer [6-8]. The unique capabilities of AGATA-VAMOS++ setup allow for a clear selection of the channel of interest and a proper event-by-event Doppler correction, which permit to obtain a γ -ray energy resolution better than previous studies in this region.

In this contribution the status of the data analysis and the first results on lifetimes in the south-east of $Z=N=50$ will be presented.

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