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Title: **Lifetimes and transition probabilities of low-lying positive parity states in ^{120}Xe and ^{118}Te**

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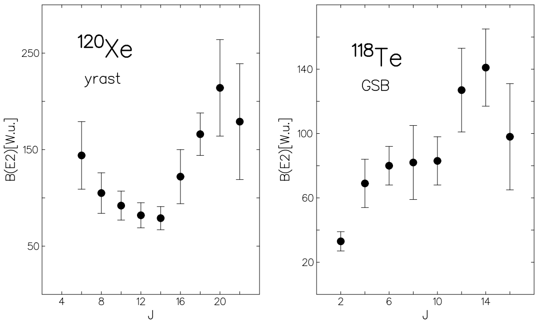

Lifetimes of 22 positive parity states in ^{120}Xe have been measured by the Doppler Shift Attenuation Method(DSAM) using the ^{111}Cd(^{12}C,3n) reaction at a beam energy of 56 MeV. The experiment was performed at the JAERI Tandem Accelerator (Japan). The γ-γ coincidences were collected by the GEMINI array. Lifetimes of the 8 ground state band levels of ^{118}Te up to I=16^{+} and 2 other levels have been measured by DSA and Recoil Distance (RD) methods using the ^{109}Ag(^{13}C,p3n) reaction at a beam energy of 54 MeV. The experiment was performed at TAL NBI (Danmark). The γ-γ coincidences were colected by the NORDBAL array.
New methodical approache of lifetime determination based on the lineshape analysis of coincidence spectra has been applied for both nuclei in the case of the DSA and RD methods. In the case of RDM, lifetime was determined by analysis of the shape of full line (unshifted and shifted components together) - Recoil Distance Doppler Shift Attenuation method [1]. The B(E2) values which have been measured in ^{118}Te give us the unique possibility to analyse E2 transition probabilities in the ground state collective band above the band crossing (see right panel of figure). In case of ^{120}Xe the B(E2) values along the yrast band are presented in the left panel of figure. The energies of the levels and E2 transition probabilities are interpreted in the framework of a new version of IBFM(IBM + 2q.p.) [2]. In this approache it was assumed, that the boson number increases with angular momentum. A satisfactory description of the level structure and B(E2) behaviour along the ground state, γ and 2-qp bands is achieved for ^{120}Xe and ^{118}Te isotones.

References

[1] J. Srebrny et. al, Nuclear Physics A (2001), in print.

[2] A.D.Efimov et. al, contribution to this conference.

Preferred presentation of the contribution: in the poster session.