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INSTITUT DES SCIENCES NUCLÉAIRES DE GRENOBLE

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THE EFFECTIVE MOMENT OF INERTIA OF 118 Xe AND 130 Ba

V. BARCI, H. EL-SAMMAN, A. GIZON, R. KOSSAKOWSKI, Th. LINDBLAD1

Research Institute of Physics, Stockholm, Sweden

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V. Barci, H. El-Samman, A. Gizon, J. Gizon, R. Kossakowski, Th. Lindblad⁺ Institut des Sciences Nucléaires, (IN2P3) Grenoble, France

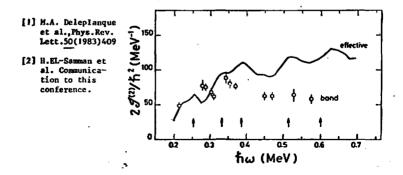
Experiments were performed with the Grenoble cyclotron accelerating 112 and 80 MeV $^{3/2}$ C ions on $^{11/2}$ Sn and $^{12/2}$ Sn enriched targets, respectively. The total Y energy was recorded in a sum-spectrometer made of 12 hexagonal cross-section (20 cm long, 15 cm outer diameter) NaI(T1) detectors arranged in a cylinder along the beam axis. The γ -ray spectra were obtained by means of another hexagonal crystal which was placed at 55° to the beam, strongly collimated and in coincidence with the sum-spectrometer. The raw γ -spectra were unfolded and normalized to the multiplicity extracted from the fold distribution in the 12 pieces sum-spectrometer. The subtraction of the statistical component E_3^3 exp(- E_/T) was made using a nuclear temperature of 0.50 MeV for both cases presented here. A correction for f. ding was applied following the method employed by Deleplanque et al. [1]. Th. final nuclei produced in the reactions were identified by a Ge detector in coincidence with the sum-crystal.

Results relative to the moment of inertia of ¹¹⁸Xe are 1 down in fig. 1. $\mathcal{J}^{(1)}_{(1)}$ increases rapidly with the frequency up to the first band crossing (h_{11/2} neutrons and/or protons) at $\hbar\omega = 0.39$ MeV and has approximately the same amplitude as $\mathcal{J}^{(2)}_{(2)}$. Two bumps show up at 0.53 and 0.62 MeV. They appear at the same frequencies as bridges in the γ - γ energy correlation matrix [2] and are very likely due to particle alignments. Then $\mathcal{J}^{(2)}_{(2)}$ continues to increase while $\mathcal{J}^{(2)}_{(2)}$, remains constant. This is not in favor of good collective behavior and suggests a triaxial shape with large γ values ($\gamma \sim 30^\circ$).

In the case of ¹⁹Ba, the data indicate that \mathcal{I}_{eff}^{eff} behaves \mathcal{I}_{eff}^{eff} and \mathcal{I}_{eff}^{eff} , it the correlation matrix [2]. Taking into account the variations of \mathcal{I}_{eff}^{eff} , and \mathcal{I}_{eff}^{eff} , it appears that the collectivity is larger in ¹³⁰Ba than in 112 Ke.

*Research Institute of Physics, Stockholm, Sweden

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