ANALYSIS OF EXPERIMENTAL DATA ^{158,160}Gd WITHIN THE FRAMEWORK PHENOMENOLOGICAL MODEL

Usmanov P.N.[1], Vdovin A.I.[2], Yusupov E.K.[1]
[1] *Namangan Engineering- Technology Institute, Namangan,Uzbekistan;* [2] *Joint Institute for Nuclear Research, Dubna, Russia*
E-mail: usmanov1956.56@mail.ru

A theoretical analysis of the states of positive parity of $^{158.160}$Gd isotopes has been carried out. The calculation was performed in the framework of the phenomenological model [1, 2], which takes into account the mixing of the states of low-lying rotational bands. The energy spectrum is described and the wave functions are determined. The quadrupole and monopole electric and dipole magnetic transitions between the states of rotational bands are calculated. The values of the multipole mixing coefficients are estimated δ. The nonadiabaticities exhibited in electromagnetic transitions and the behavior of transitions are $X_I = B(\mathrm{E0}; I_K^+ \to I_{gr}^+)/B(\mathrm{E2}; I_K^+ \to I_{gr}^+)$ between levels of nonzero spin discussed. The table shows the calculated values of the magnetic moments of the states of the ground rotational band for $^{158.160}$Gd, which are compared with experimental data.

Magnetic moments $\mu_{gr}(I)$ states of the ground rotational band.

I	^{158}Gd		^{160}Gd	
	exp.[3,5]	theor.	exp.[4,5]	theor.
2	0.84(20)	0.84	0.72(4)	0.72
4	1.55(13)	1.66	1.52(20)	1.44
6	2.28(30)	2.50	2.30(30)	2.16
8	-	3.33	-	2.88
10	-	4.16	3.40(50)	3.60
12	-	4.99	-	4.31

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