STRUCTURE OF 178-186 W FROM THE ARM

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178-186 W isotopes lie on shape phase transition from well deformed to spherical region and have challenging features. Kumar and Baranger /1/ had applied DPPQ model to explain the complex structure of these isotopes. Recently Sahu/2/ used pairing-plus-quadrupole-quadrupole-interaction (PPQQI) model to explain energy spectrum, B(E2) values and B(E2) ratios for 180-186W . These models /1,2/ are unable to explain the variation of $B(E2 ; 2_\gamma - 0_g/2_g)$ ratio with N (figure will be presented).

Asymmetric rotar model (ARM)/3/ is applied to explain energy spectrum, B(E2) values and B(E2) ratios for (γ-g) transitions. The valuesof asymmetry parameter(γ) are obtained using the values of energies of 2^+_γ and 2^+_g states. Our results are as follows:-

1. The values of γ are12.2,12.1,11.4,13.8& 15.9 for 178-186W isotopes respectively.
2. Calculated energy spectrum is satisfactory with standard deviation, σ = 70.5,31.9,13.6,31.1 & 59.3 KeV for 178-186W respectively.
3. Interband and intraband B(E2) values from ARM are close to the experimental data (see Table1)
4. B(E2) ratios for (γ-g) transitions from ARM lie between the VM and RM limit and quite close to the experimental data. Theoretical results are compared with the PPQQI /2/ and experimental data/4/.

References:- /1/ Nucl.Phys.A 110 (1968)429; A122(1968)273
/2/ Can.J.Phys.67(1989)479
/3/ Nucl.Phys.8 (1958)237
/4/ At.Data & Nucl.Data Table 36 (1987)1; 31 (1984)369; Table of Isotopes(1978); Nucl.Data sheets 14 (1975)559; 11(1977)1; 13 (1974)267; 13 (1974)549; 52 (1987)127.

Table: [illegible] B(E2) values & B(E2) ratios

Transition	178W		180W			182W			184W			186W		
	Expt.	ARM	Expt.	ARM	PPQQI	Expt.	ARM	PPQQI	Expt.	ARM	PPQQI	Expt	ARM	PPQQI
2'-0/2	2.9	.5	.52(4)	.45	2.8	.51	.48	1.76	.53(5)	.41	.48	.41	.33	.47
2'-2/4	0.3	10		10.1	14.0	210	10.1	12.3	11.3(32)	8.4	9.8	6.4	7.1	7.5
3'-2/4		1.12	1.95(76)	1.1	1.6	1.98	1.1	1.56	1.6 (2)	.8	1.1	0.79	.61	.72
3'-2/2'		.04		.04	.03							.0024	.06	.059
4'-2/4		.12	.21(9)	.12	.2	.26	.12	.19	.19	.07	.13	.11	.03	.05
4'-2/2'		.02		.02	.02		.02	.02	.02	.02	.02	.05	.01	.016
4'-2'/3'		.65		.45	.15		.45	.45	.7	.5	.5			
4'-2/2-0		1.44		1.44	1.45		1.44	1.46	1.38(3)	1.45	1.48	1.29(11)	1.46	1.52
4'-0/2-0		0.04		.04	.03		.04	.03	.04	.05	.04	.043(4)	.06	.06
2-0			0.84(5)	.84	1.06	.83(2)	.83	.98	.69(1)	.69	.7	.7	.7	.7
2'-0				.03	.03	.025(1)	.03	.03	.030(2)	.041	.041	.030(2)	.042	.041
2'-2						.047(3)	.06	.05	.069(4)	.124	.112	.069 (4)	.124	.112
2-3'				.08	.08		.07	.07		.104	.105		.1	.11
2-4				2.17	2.76	2.08(15)	2.2	2.6	1.6(1)	1.8	1.9	1.6(4)	1.8	1.9
3'-4				.05	.04		.04	.03		.12	.1		.124	.104
4-4'				.09	1.6		1.4	1.7		1.1	1.2		.14	.14