^{184}W(^{19}F,5nγ) 2000Zw02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

E=107 MeV. Measured Eγ, $\gamma\gamma(\theta)$(DCO), B(M1)/B(E2) ratios, and branching ratios using 8π spectrometer comprised of 20 hyper-pure Ge detectors and a 71-element BGO calorimeter. The B(M1)/B(E2) values were measured by extracting intensities at the positions of the expected E2 transitions. Lower limit estimates of the B(E2) branching ratios are also given.

^{198}Bi Levels

E(level)	J^{π}‡	Comments
0+x†@	J1#	
203.3+x@ *3*	J1+1	
429.3+x@ *4*	J1+2	
718.8+x@ *4*	J1+3	B(M1)/B(E2)>17.
1082.1+x@ *5*	J1+4	B(M1)/B(E2)>9.
1508.7+x@ *5*	J1+5	B(M1)/B(E2)>20.
1978.0+x@ *5*	J1+6	B(M1)/B(E2)>15.
2473.9+x@ *5*	J1+7	B(M1)/B(E2)>15.
2989.1+x@ *6*	J1+8	
0+y†&	J2#	
372.20+y& *24*	J2+1	
614.30+y& *24*	J2+2	B(M1)/B(E2)>8.
827.3+y& *3*	J2+3	B(M1)/B(E2)>8.
1145.1+y& *3*	J2+4	B(M1)/B(E2)>5.
1441.8+y& *4*	J2+5	B(M1)/B(E2)=5.7 *3*.
1735.5+y& *4*	J2+6	B(M1)/B(E2)=6.5 *3*.
2023.0+y& *5*	J2+7	
0+z†*a*	J3#	
345.4+z*a* *3*	J3+1	
846.2+z*a* *5*	J3+2	
1329.6+z*a* *6*	J3+3	
1631.5+z*a* *6*	J3+4	
2208.5+z*a* *7*	J3+5	
2528.8+z*a* *8*	J3+6	
2789.8+z*a* *8*	J3+7	

† Band head energy undetermined.
‡ From band structure.
# Spin of band head undetermined.
@ Band(A): magnetic dipole band 1.
& Band(B): magnetic dipole band 2.
a Band(C): magnetic dipole band 3.

^{184}W(^{19}F,5nγ) 2000Zw02 (continued)

$\gamma(^{198}Bi)$

R1(DCO)=[Iγ_1(at 37°),gated with Iγ(at 79°)]/ [Iγ_1(at 79°),gated with Iγ(at 37°)].
R2(DCO)=[Iγ_1(at 37°),gated with Iγ(at 37°)]/ [Iγ_1(at 79°),gated with Iγ(at 37°)].
A 469.3γ placed from a 1978.0+x level correspond to the in-band transition is not confirmed by 2014Pa53. A 468.2γ correspond to the lower-lying transition seen from γ spectra in Fig.5 in 2014Pa53. Also orderings of the γ rays in bands 1, 2 and 3 are quite different from those in ^{187}Re(^{16}O,5nγ) by 2014Pa53.

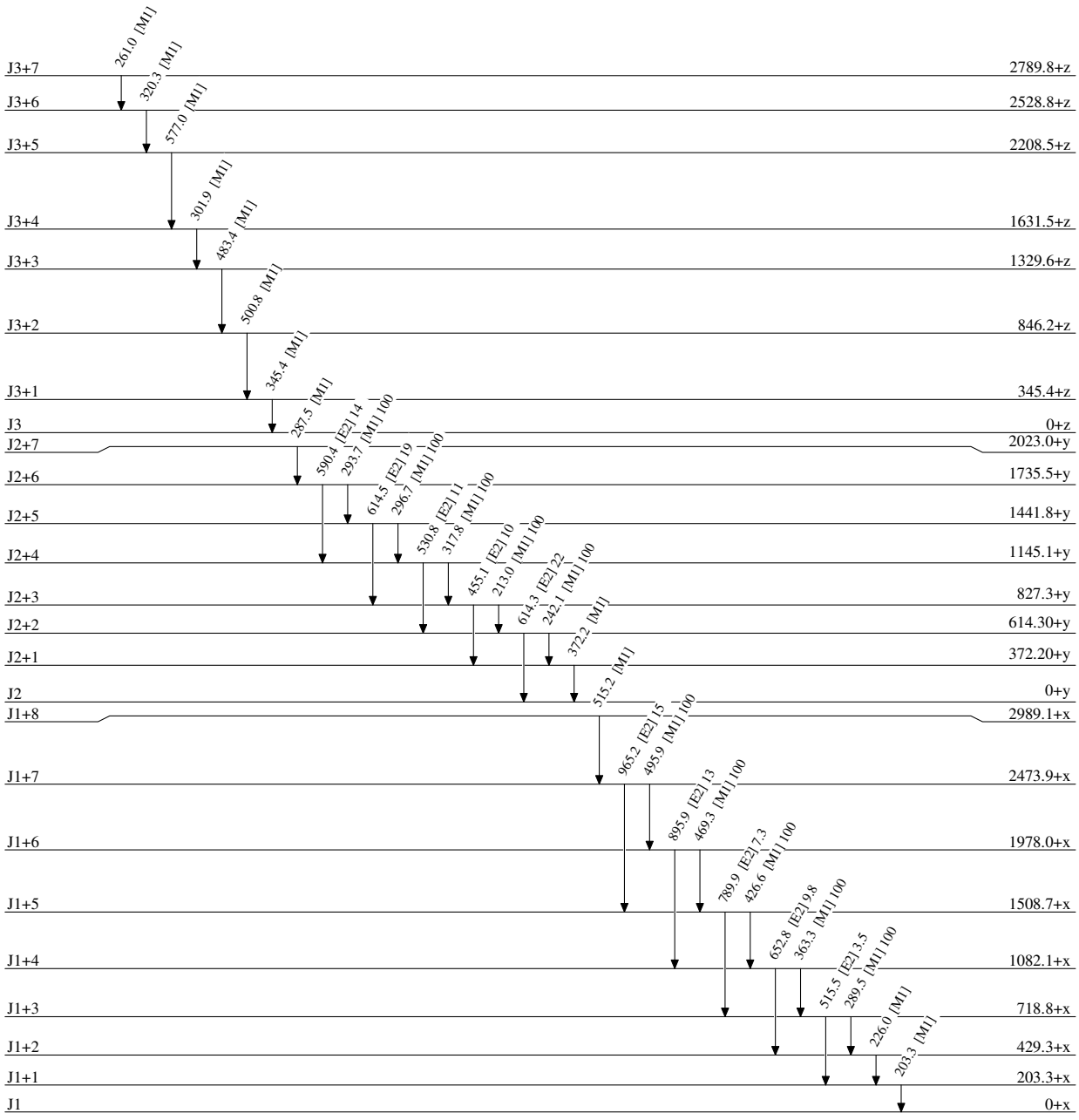
E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡]	α[#]	Comments
203.3+x	J1+1	203.3		0+x	J1	[M1]	1.362	R1=1.19 *10*, R2=0.79 *15*.
429.3+x	J1+2	226.0		203.3+x	J1+1	[M1]	1.014	R1=1.13 *8*.
718.8+x	J1+3	289.5	100	429.3+x	J1+2	[M1]	0.512	R1=1.04 *7*, R2=0.78 *15*.
		515.5[†]	3.5[†] *4*	203.3+x	J1+1	[E2]	0.0285	
1082.1+x	J1+4	363.3	100	718.8+x	J1+3	[M1]	0.276	R2=1.02 *17*.
		652.8[†]	9.8[†] *8*	429.3+x	J1+2	[E2]	0.01673	
1508.7+x	J1+5	426.6	100	1082.1+x	J1+4	[M1]	0.179	R1=1.02 *8*, R2=0.69 *12*.
		789.9[†]	7.3[†] *10*	718.8+x	J1+3	[E2]	0.01120	
1978.0+x	J1+6	469.3	100	1508.7+x	J1+5	[M1]	0.1387	R1=1.08 *10*, R2=1.20 *35*.
		895.9[†]	13[†] *2*	1082.1+x	J1+4	[E2]	0.00868	
2473.9+x	J1+7	495.9	100	1978.0+x	J1+6	[M1]	0.1198	R1=1.22 *13*, R2=0.93 *30*.
		965.2[†]	15[†] *2*	1508.7+x	J1+5	[E2]	0.0075	
2989.1+x	J1+8	515.2		2473.9+x	J1+7	[M1]	0.1083	R1=0.94 *13*, R2=0.69 *20*.
372.20+y	J2+1	372.2		0+y	J2	[M1]	0.258	R1=0.92 *5*, R2=0.72 *4*.
614.30+y	J2+2	242.1	100	372.20+y	J2+1	[M1]	0.837	
		614.3[†]	22[†] *1*	0+y	J2	[E2]	0.0191	
827.3+y	J2+3	213.0	100	614.30+y	J2+2	[M1]	1.196	R1=1.06 *9*, R2=0.78 *6*.
		455.1[†]	10[†] *1*	372.20+y	J2+1	[E2]	0.0386	
1145.1+y	J2+4	317.8	100	827.3+y	J2+3	[M1]	0.396	R1=0.99 *8*, R2=0.81 *10*.
		530.8[†]	11[†] *1*	614.30+y	J2+2	[E2]	0.0266	
1441.8+y	J2+5	296.7	100	1145.1+y	J2+4	[M1]	0.478	R1=1.00 *9*, R2=0.74 *7*.
		614.5[†]	19[†] *1*	827.3+y	J2+3	[E2]	0.0191	
1735.5+y	J2+6	293.7	100	1441.8+y	J2+5	[M1]	0.492	R1=0.92 *10*, R2=0.66 *5*.
		590.4[†]	14[†] *1*	1145.1+y	J2+4	[E2]	0.0209	
2023.0+y	J2+7	287.5		1735.5+y	J2+6	[M1]	0.521	R1=1.00 *10*, R2=0.89 *5*.
345.4+z	J3+1	345.4		0+z	J3	[M1]	0.316	R2=0.59 *4*.
846.2+z	J3+2	500.8		345.4+z	J3+1	[M1]	0.1167	R1=1.05 *8*, R2=0.65 *8*.
1329.6+z	J3+3	483.4		846.2+z	J3+2	[M1]	0.1282	R1=0.98 *8*, R2=0.60 *16*.
1631.5+z	J3+4	301.9		1329.6+z	J3+3	[M1]	0.456	R1=1.12 *10*.
2208.5+z	J3+5	577.0		1631.5+z	J3+4	[M1]	0.0803	R1=1.01 *9*, R2=0.61 *7*.
2528.8+z	J3+6	320.3		2208.5+z	J3+5	[M1]	0.388	R1=1.03 *13*, R2=0.50 *14*.
2789.8+z	J3+7	261.0		2528.8+z	J3+6	[M1]	0.680	R1=1.09 *13*,R2=0.69 *23*.

[†] γ-ray not observed but expected, upper limit of intensity is estimated by authors.
[‡] From magnetic dipole band measurements. The relative γ-ray intensities within the rotational band are approximately constant suggest that γ-ray transition is M1 not E1.
[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^{184}W(^{19}F,5nγ) 2000Zw02

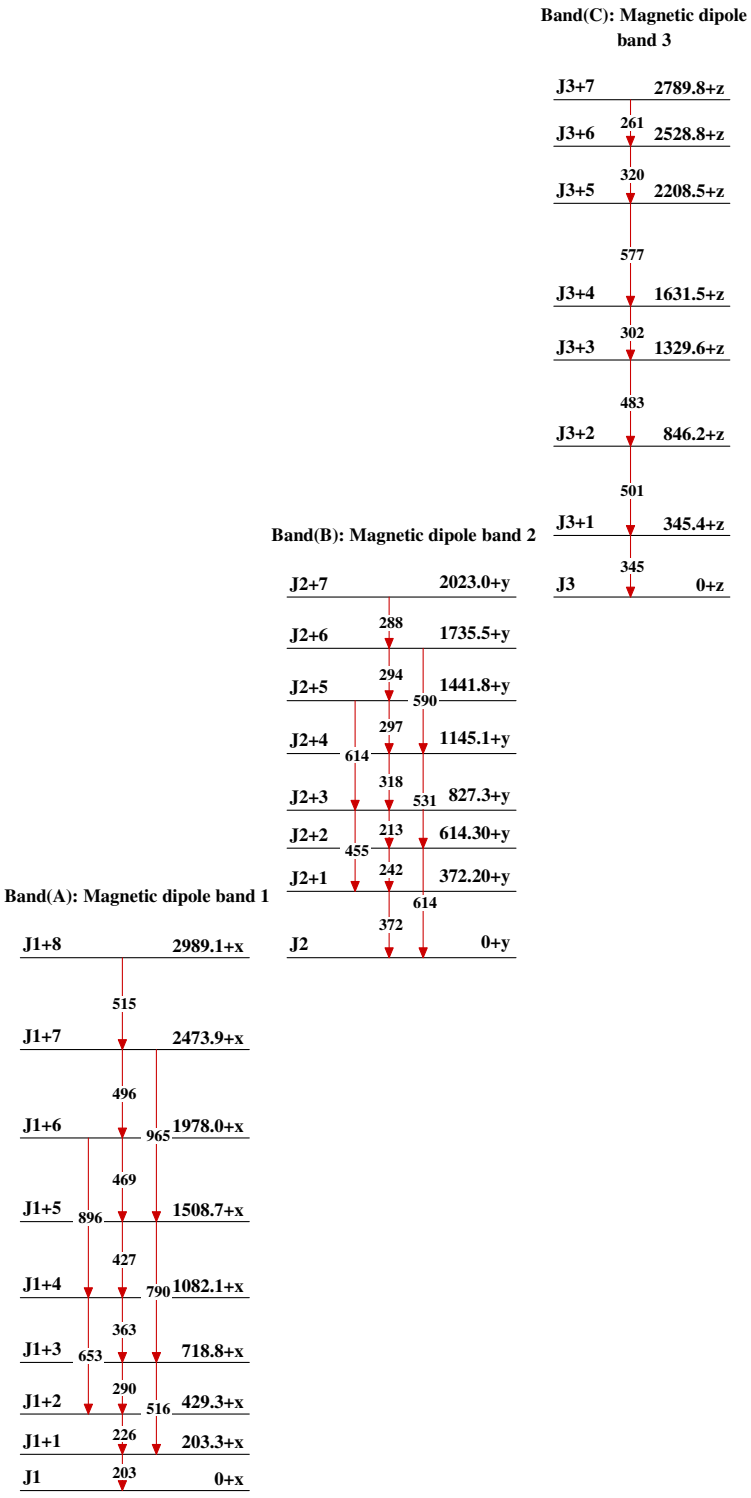
Level Scheme

Intensities: Relative photon branching from each level



$^{198}_{83}Bi_{115}$

$^{184}W(^{19}F,5n\gamma)$ 2000Zw02



$^{198}_{83}Bi_{115}$