TABLE OF MAGNETIC DIPOLE ROTATIONAL BANDS

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The table presents experimental data (extracted from recent publications) for 132 magnetic dipole rotational bands spread over 61 nuclides, most of which are at or near semi-magic nucleon numbers, e.g. 44 bands are currently known for Pb nuclides. The table contains gamma-ray energies, associated level energies with spins and parities, level lifetimes, B(M1) and B(E2) values when available, and probable configurations. The literature is covered up to May 31, 2001, and complete bibliography of about 100 papers (mostly 1990 onwards) is supplied with the table. Individual references are listed in terms of NSR (Nuclear Science Reference database at NNDC, Brookhaven) keynumbers. An earlier version of this table, covering data up to mid 1999 was published in Atomic Data and Nuclear Data Tables **74,** 283-331 (2000). Comments and suggestions from the users are welcome and may be communicated by e-mail to BALRAJ@MCMASTER.CA.

POLICIES

Level Energies	The listed level energies are taken from the first reference given for a band. In cases where values given by original authors are relative to the energy of an isomer, we have added the energy of the isomer (taken from the Evaluated Nuclear Structure Data File (ENSDF) database at Brookhaven) to each of the energy levels.
Band Intensity	The quoted value represents the approximate intensity (in percent) of the population of a band in a reaction channel leading to that nucleus. The value is taken from the cited reference if quoted explicitly by the authors. Otherwise an approximate value is deduced by us from the authors' relative gamma-ray intensity data (either numeric or graphic).

EXPLANATION OF TABLE

TABLE. Magnetic Dipole Rotational Bands

$^{A}_{Z}X_{N}$	Denotes the specific nuclide with X Chemical symbol A Mass number Z Atomic number N Neutron number A single blank row marks the end of entries for each band. The number in the first column denotes band number.
E_{level}	Level energy in units of keV. The energies in parentheses denote tentative levels. Labels X, Y, Z, etc. indicate that excitation energies are unknown due to lack of knowledge about linking transitions to the lower levels.
I^{π}	I denotes the level spin for each band member. π denotes the parity (+ or -). I^{π} given in parentheses denote uncertain spin parity assignments
$E_{\gamma}(M1)$	Gamma ray energies in units of keV for the M1(ΔI=1) transition I$\rightarrow$I-1.
$E_{\gamma}(E2)$	Gamma ray energies in units of keV for the E2(ΔI=2) transition I$\rightarrow$I-2.
B(M1)/B(E2)	The ratio of reduced transition probabilities in units of $(\mu_N/eb)^2$ given with the uncertainties in the last digits in parentheses [Eq.(6), δ=0]. In some bands where E2 transitions are not observed, the lower limits for B(M1)/B(E2) are given.

References	The references follow key numbers as assigned in Nuclear Science References (NSR) database at Brookhaven National Laboratory, USA. The data for a band has been taken from the first reference cited (printed as bold). Information taken from other references is given under the column "configurations and comments".
Configurations and Comments	The quasiparticle configuration for a band is given wherever assigned by the original authors. 'π' here is for protons and 'ν' is for neutrons. s, p, d, f, g and h are the orbitals. A positive integer in the superscript of the orbital denotes number of particles while a negative integer denotes number of holes in that orbital. The abbreviations in this item are explained below: DSM Deformed Shell Model TAC Tilted Axis Cranking CSM Cranked Shell Model TRS Total Routhian Surface PSM Projected Shell Model IBFM Interacting Boson Fermion Model FAL Fermi Aligned HF Hartree-Fock BCS Pairing theory of Bardeen, Cooper and Schrieffer. CWS Cranked Woods Saxon
(β_2, γ)	Deformation parameters.
Backbending	In a rotational band, the transition energies increase with increase in spin reflecting the I(I+1) behavior, but in some cases, e.g. in ^{108}Cd, band 1, the moment of inertia increases drastically after the spin 16^- and the transition energy decreases and again starts rising after 18^- . This phenomenon is known as backbending and is usually attributed to the crossing of two rotational bands due to the alignment of a pair of either kind of quasiparticles.
Regular band	A band where the excitation energy varies more or less smoothly with spin, though not necessarily as I(I+1).
Irregular band	A band where energy variation with spin is quite abrupt.

Table of Magnetic Dipole Rotational Bands

$^{77}_{35}Br_{42}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	2931.6	$17/2^-$				**1993Do14**
	3219.6	$(19/2^-)$	288.0			1993Sy03
	3609.9	$(21/2^-)$	390.3			1995Ta21
	4149.8	$(23/2^-)$	539.9			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}) \otimes \nu\{g_{9/2} \otimes (p_{1/2}p_{3/2}f_{5/2})^1\}$ from the alignment and DSM calculations.
2. Regular band.
3. Nuclear reactions: ^{75}As $(\alpha,2n\gamma)$, $E(\alpha)$= 27 MeV, ^{73}Ge (^{7}Li, $3n\gamma$) and ^{74}Ge (^{7}Li, $4n\gamma$), E(^{7}Li)= 35 MeV.

$^{79}_{35}Br_{44}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1.	2479.0	$(13/2^-)$				**1999Ra02**
	2580.4	$15/2^-$	101.4			1988Sc13
	2773.9	$17/2^-$	193.5			1995Ta21
	3088.3	$19/2^-$	314.4			
	3535.6	$21/2^-$	447.5			
	4153.8	$23/2^-$	618.2			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}) \otimes \nu[g_{9/2}(p_{3/2}f_{5/2})^1]$ by comparison with the other odd-A Br isotopes.
2. Regular band.
3. The mean lifetimes of 3535.4 and 4153.8 KeV levels are 1.0(3) and $\leq$0.5 ps respectively.
4. The B(M1) values for the transitions 447.5 and 618.2 KeV are 0.44(13) and $\geq$0.41 μ_N^2 respectively.
5. Nuclear reaction: ^{76}Ge (^{7}Li, 4n), E(^{7}Li)= 32 MeV, Band intensity ~ 6%.

$^{81}_{35}Br_{46}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	2549.4	$(13/2^-)$				**1986Fu04**
	2668.5	$(15/2^-)$	119.1			1995Ta21
	2942.1	$(17/2^-)$	273.6			
	3333.5	$(19/2^-)$	391.4			
	3798.7	$(21/2^-)$	465.2			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}^2p_{3/2})$, but this may only be just one component.
2. Regular band.
3. Nuclear reaction: ^{80}Se $(\alpha, p2n\gamma)$, $E(\alpha)$= 35-48 MeV.

$^{79}_{36}Kr_{43}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	2857.0	$(17/2^-)$				**1990Sc07**
	3214.3	$19/2^-$	357			1994Jo08
	3585.5	$21/2^-$	371.2			1995Ta21
	4133.0	$23/2^-$	547.5			

Configurations and Comments:

1. Tentatively assigned as $\pi[g_{9/2} \otimes (p_{3/2}f_{5/2})^1] \otimes \nu(g_{9/2})$.
2. Regular band.
3. Nuclear reactions: $^{77}Se(\alpha, 2n\gamma)$, $^{78}Se(\alpha, 3n\gamma)$, and $^{68}Cu(^{18}O, 3pn\gamma)$.

$^{79}_{37}Rb_{42}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	3309.4	$(19/2^-)$				**1993Ho15**
	3687.5	$(21/2^-)$	378.1			1995Ta21
	4152.2	$(23/2^-)$	464.7	842.8		1996Sm07
	4686.4	$(25/2^-)$	534.2			
	5287.4	$(27/2^-)$	601			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}) \otimes \nu[(g_{9/2}) \otimes (pf)^1]$ by comparison with the isotone ^{77}Br.
2. Regular band.
3. 601 KeV M1 transition is from 1996Sm07.
4. Nuclear reactions: $^{63}Cu(^{19}F, 2pn\gamma)$ and $^{65}Cu(^{18}O, 4n\gamma)$, $E(^{19}F)$ and $E(^{18}O) = 65$ MeV, Band intensity < 2%.

$^{81}_{37}Rb_{44}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	2636.0	$(15/2^-)$				**1994Do18**
	2697.2	$17/2^-$	61.0			1995Ta21
	2997.7	$19/2^-$	300.5			
	3427.5	$21/2^-$	429.8			
	3993.1	$23/2^-$	565.6	(996)		
	4529	$(25/2^-)$	599			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}) \otimes \nu[(g_{9/2}) \otimes (pf)^1]$
2. Regular band.
3. Nuclear reactions: $^{79}Br(\alpha, 2n\gamma)$, $E(\alpha)= 27$ MeV and $^{68}Zn(^{19}F, \alpha 2n\gamma)$, $E(^{19}F) = 72$ MeV.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{82}_{37}Rb_{45}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	Reference
1	2616	$11^{(-)}$				**1999Sc14**
	3027	$12^{(-)}$	411			1999Do02
	3499	$13^{(-)}$	473	883		2000Sc17
	4046	(14^{-})	548	1018		
	4714	(15^{-})	668	1215		
	5483	(16^{-})	769	1437		

Configurations and Comments:

1. Tentatively assigned as $\pi[(g_{9/2})^2 \otimes (p_{3/2}f_{5/2})^1] \otimes \nu(g_{9/2})$.
2. $(\beta_2, \gamma) = (0.16, 20°)$ from TAC calculations.
3. Regular band.
4. B(M1)/B(E2) values range from 10-25 $(\mu_N/eb)^2$.
5. Nuclear reaction: ^{76}Ge (^{11}B, 5nγ), $E(^{11}B)$= 50 MeV, band intensity ~ 20%.

$^{83}_{37}Rb_{46}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	References
1	2067	$11/2^{-}$				**2000Sc17**
	2313	$13/2^{-}$	246			1980Ga17
	2414	$15/2^{-}$	101			1995Ta21
	2596	$17/2^{-}$	182			
	2958	$19/2^{-}$	362			
	3363	$21/2^{-}$	405			

Configurations and Comments:

1. Tentatively assigned as a three qp band by 1980Ga17.
2. Regular band.
3. Nuclear reactions: ^{76}Ge(^{11}B, 4nγ), $E(^{11}B)$= 50 MeV.

$^{84}_{37}Rb_{47}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	References
1	3393	$11^{(-)}$				**1999Sc14**
	3720	$12^{(-)}$	327			2000Sc17
	4166	$13^{(-)}$	445	772		
	4714	$14^{(-)}$	548	996		
	5372	$15^{(-)}$	657	1206		
	6094	$16^{(-)}$	722	1381		
	6861	$17^{(-)}$	766	1489		

Configurations and Comments:

1. Tentatively assigned as $\pi[(g_{9/2})^2 \otimes (p_{3/2}f_{5/2})^1] \otimes \nu(g_{9/2})$.
2. $(\beta_2, \gamma) = (0.14, -15°)$ from TAC calculations.
3. Regular band.
4. B(M1)/B(E2) values range from 5-20 $(\mu_N/eb)^2$.
5. Nuclear reaction: ^{76}Ge (^{11}B, 3nγ), $E(^{11}B)$= 50 MeV, band intensity ~ 20%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{85}_{37}Rb_{48}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	3198.2	$17/2^{(-)}$				**1995Sc04**
	3813.1	$19/2^{(-)}$	614.9			1995Ta21
	4356.1	$21/2^{(-)}$	543.5			
	4940.0	$(23/2^{-})$	583.9			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}^{-1}) \otimes \nu(g_{9/2}^{-1}f_{5/2}^{-1})$.
2. Irregular band.
3. Nuclear reaction: ^{82}Se(^{7}Li, 4nγ), E(^{7}Li)= 32 MeV.

$^{102}_{48}Cd_{54}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1.	3908.5	10^{+}				**1997Pe25**
	4277.0	$11^{(+)}$	368.5			2001Li24
	4518.2	$12^{(+)}$	241.1			2000JeAA
	5308.7	$13^{(+)}$	790.5			
	5926.1	$14^{(+)}$	617.4			
	6773.1	$15^{(+)}$	847.1			
	7331.9	$16^{(+)}$	558.81	1405.4		
	8367.3	$17^{(+)}$	1035.4			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}^{-2}) \otimes\nu(g_{7/2}^{1}\, d_{5/2}^{3})$ from the shell model calculations.
2. The assignment of 368.5 KeV transition to the band in from 2000JeAA.
3. The B(M1) values for the transitions from 367 keV to 617 keV as given in 2001Li24 are 0.18(3), 0.87(8), 0.16(4) and >0.06 W.u., respectively.
4. The lifetimes of levels form 4277 to 5926 keV as given in 2001Li24 are 1.5(2), 2.5(2), 0.4(1) and 2.2(2) ps, respectively.
5. Irregular band.
6. Nuclear reaction: ^{50}Cr (^{58}Ni, 4p2nγ), E(^{58}Ni) = 261 MeV, Band intensity ~ 45 %.

$^{104}_{48}Cd_{56}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1.	4102.1	10^{+}				2000JeAA
	4737.5	11^{+}	635.4			
	5078.7	12^{+}	341.2	974.5		
	5795.6	13^{+}	716.9	1056.6		
	6243.6	14^{+}	448.0			
	7151.3	(15^{+})	907.7			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}^{-2}) \otimes\nu(g_{7/2}d_{5/2})^{6}$ by comparison with ^{102}Cd and from the shell model calculations.
2. Irregular band lying at the edge of magnetic rotation and collective rotation.
3. Nuclear reaction: ^{54}Fe (^{58}Ni, α4pγ), E(^{58}Ni)= 243 MeV, Band intensity ~ 28%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{108}_{48}Cd_{60}$

	E_{level} KeV	I^π	$E_\gamma(M1)$ KeV	$E_\gamma(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1.	(5591.4)	(11^-)				**2000Ke01**
	5642.4	12^-	(51)			1993Th05
	5763.4	13^-	121.0			1994Th01
	6079.4	14^-	316.0		>25	
	6601.1	15^-	521.7		>118	
	7277.8	16^-	676.7		>164	
	7743.3	17^-	465.5		>218	
	8105.0	18^-	361.7		>91	
	8587.3	19^-	482.3	845.0	21(+49-8)	
	9176.8	20^-	589.5	1073.9	18(+27-5)	
	9882.4	21^-	705.6	1293.6	20(+16-5)	
	10680.3	(22^-)	797.9	1502.2		
2.	7216.1	(15^-)				**2000Ke01**
	7530.1	16^-	(314.0)			
	7863.1	17^-	333.0			
	8318.5	18^-	455.4			
	8641.9	19^-	323.4			
	9000.7	(20^-)	358.8	682.0		
	9421.5	(21^-)	420.8	780.4		
	9898.1	(22^-)	476.6	897.8		
	10413.7	(23^-)	515.6	993.6		
	10977.3	(24^-)	563.6	1079.0		

Configurations and Comments:

Band 1:

1. $\pi(g_{9/2}^{-3}g_{7/2}) \otimes \nu[h_{11/2}(g_{7/2}\,d_{5/2})^1]$ before and $\pi(g_{9/2}^{-3}g_{7/2}) \otimes \nu(h_{11/2}^3(g_{7/2}d_{5/2})^1]$ after the band crossing from TAC calculations.
2. Small prolate deformation $(\beta_2,\gamma) \sim (0.14, -125°)$. from TAC calculations.
3. Lower limits on B(M1)/B(E2) are from 1993Th05 from the unobserved $\Delta I= 2$ (E2) transitions.
4. Regular band with backbending at 17^-.
5. Mean lifetimes of the levels from spins 16-21 are 0.27(+6-9), 0.40(5), 0.75(+5-6), 0.29(2), 0.20(+3-4) and 0.30(1) ps, respectively.
6. B(M1) values for the transitions from 676.7 to 705.6 KeV are 0.7(+3-1), 0.8(1), 1.6(1), 1.5(1), 1.1(2) and 0.40(+6-4) (μ_N^2) respectively.
7. Lifetime of each of the 14^- and 15^- levels is <3 ps from 1994Th01.
8. Nuclear reaction: $^{96}Zr(^{16}O, 4n\gamma)$, $E(^{16}O)$= 72 MeV, Band intensity ~ 3% and from 1994Th01: $^{100}Mo(^{12}C, 4n\gamma)$, $E(^{12}C)$= 54 MeV.

Band 2:

1. Tentatively assigned as $\pi(g_{9/2}^{-3}g_{7/2}) \otimes \nu[h_{11/2}(g_{7/2}\,d_{5/2})^3]$.
2. Regular band with backbending at 19^-.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{109}_{48}Cd_{61}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1.	3353.8	$21/2^-$				**1994Ju05**
	3548.8	$23/2^-$	195.0			2000Ch04
	4030.5	$25/2^-$	481.7			
	4630.5	$27/2^-$	600.0			
	5279.5	$29/2^-$	649.0	1249.0		
	5441.1	$31/2^-$	161.6			
	5731.0	$33/2^-$	289.9			
	6164.3	$35/2^-$	433.3			
	6795.8	$37/2^-$	631.5			
	7554.8	$(39/2^-)$	759			
2.	5811	$29/2^+$				**2000Ch04**
	6002	$31/2^+$	191			1994Ju05
	6303	$33/2^+$	300.9			
	6681	$35/2^+$	378.7			
	7144	$37/2^+$	462.6			
	7684	$39/2^+$	540.1			
	8261	$41/2^+$	577.3			
	8868	$43/2^+$	606			
	9500	$(45/2^+)$	632			
	10163	$(47/2^+)$	663			
	10895	$(49/2^+)$	732			

Configurations and Comments:

Band 1:

1. $\pi(g_{9/2})^{-2} \otimes \nu(h_{11/2})$ and $\pi(g_{9/2})^{-2} \otimes \nu[h_{11/2}(g_{7/2}d_{5/2})^2]$ before and after the backbending respectively from the TAC calculations (2000Ch04).
2. $(\beta_2, \gamma) \sim (0.106, 0°)$ before and $(0.085, 12°)$ after the backbending from 2000Ch04.
3. B(M1)/B(E2) values range from ~ 40 $(\mu_N/eb)^2$ to ~ 150 $(\mu_N/eb)^2$.
4. B(M1) values for the transitions from 290 to 759 KeV as given in 2000Ch04 are 1.80(15), 2.56(11), 0.83(7) and 0.39(3) μ_N^2 respectively.
5. Lifetimes of levels from 5731 to 7555 KeV as given in 2000Ch04 are 1.40(4), 0.272(5), 0.241(9) and 0.329(14) ps, respectively.
6. Regular band with a backbending at 31/2.
7. Nuclear reactions: $^{96}Zr(^{18}O, 5n\gamma)$, E= 73 MeV, band intensity ~ 4%.

Band 2:

1. $\pi(g_{9/2})^{-2} \otimes \nu[h_{11/2}^2 (d_{5/2}\, g_{7/2})^1]$ from TAC calculations.
2. $(\beta_2, \gamma) \sim (0.116, 10°)$.
3. B(M1)/B(E2) values ≥ 20 $(\mu_N/eb)^2$ for the two levels at 33/2 and 35/2 as given in 1994Ju05.
4. B(M1) values for the transitions from 301 to 577 KeV are 4.45(29), 4.19(14), 2.76(4), 3.15(+32-24) and 3.69(31) μ_N^2 respectively.
5. Lifetimes of levels from 6303 to 8261 KeV are 0.367(15), 0.253(5), 0.210(5), 0.115(4) and 0.084(4) ps, respectively.
7. Nuclear reactions: $^{96}Zr(^{18}O, 5n\gamma)$, E= 70 MeV, Band intensity ~ 2%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{110}_{48}Cd_{62}$

	E_{level} keV	I^π	E_γ(M1) keV	E_γ(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References	Configurations and Comments:
1	5759.7	13^-				**1994Ju04**	1. Tentatively assigned as $\pi(g_{9/2}^{-2}) \otimes \nu(h_{11/2}g_{7/2})$ or $\pi(g_{9/2}^{-2}) \otimes \nu(h_{11/2}d_{5/2})$ by comparison with a similar band in ^{108}Cd and from the alignments.
	5985.3	14^-	225.6				2. Prolate deformation.
	6355.3	15^-	370.0				3. Lower limits on B(M1)/B(E2) values are from the unobserved ΔI= 2 (E2) transitions.
	6963.8	16^-	608.5		>58		4. Regular band.
	7576.2	17^-	612.4		>317		5. Nuclear reactions: ^{96}Zr (^{18}O, 4nγ), E(^{18}O) = 73 MeV and ^{100}Mo (^{13}C, 3nγ), E(^{13}C) = 44 MeV, Band intensity ~ 5%.
2	6584.2	14				**1994Ju04**	1. Tentatively assigned as $\pi(g_{9/2}^{-2}) \otimes \nu(h_{11/2}^{2})$ or $\pi(g_{9/2}^{-1}p_{1/2}) \otimes \nu(h_{11/2}^{2})$ depending on whether the band has positive or negative parity.
	6879.2	15	295.0				2. Prolate deformation.
	7280.6	16	401.4				3. Regular band.
	7758.5	17	477.9				4. Band intensity ~ 1%.
3	8015.8	17				**1994Ju04**	1. Configuration may involve in addition to that of band 2, an aligned pair of neutrons in the $g_{7/2}$ orbital.
	8277.0	18	261.2			1999Cl03	2. Prolate deformation.
	8594.6	19	317.6				3. Lower limits on B(M1)/B(E2) values are from the unobserved ΔI= 2 (E2) transitions.
	8966.9	20	372.3				4. Regular band.
	9429.4	21	462.5		>48		5. Mean lifetimes of levels with spins from 20 to 23, as given in 1999Cl are 0.184(+18-22), 0.101(+15-18), 0.094(+14-18) and 0.092(+17 -23) ps, respectively.
	9990.4	22	561		>63		6. B(M1) values for transitions from 372.3 to 673.8 keV, as given in 1999Cl are 5.40(+65-53) 5.13(+90-75), 3.06(+57-45) and 1.83(+46-34) μ_N^2 respectively.
	10664.2	23	673.8		>60		7. Band intensity ~ 2.5%.
	11450.2	24	786				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{111}_{49}In_{62}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference	Configurations and Comments:
1	3461.0	$19/2^+$				**1998Va03**	1. $\pi(g_{9/2}^{-1}) \otimes \nu(h_{11/2}^2)$ by comparison with a similar band in ^{110}Cd .
	3588.4	$21/2^+$	127.4				2. Small prolate deformation.
	3707.2	$23/2^+$	118.8				3. B(M1)/B(E2) > 50-100 $(\mu_N/eb)^2$ from unobserved ΔI= 2 (E2) transitions.
	3911.3	$25/2^+$	204.1				4. Regular band with small backbending at 23/2.
	4282.6	$27/2^+$	371.3				5. Nuclear reaction : ^{96}Zr(^{19}F, 4nγ), E(^{19}F)= 72 MeV, Band intensity ~ 33%.
	4795.8	$29/2^+$	513.2	884.3	70(11)		
	5330.7	$31/2^+$	534.9	1048.4	34(3)		
	5877.1	$(33/2^+)$	546.4	1081.3	20(2)		
2	4932.0	$27/2^+$				**1998Va03**	1. $\pi(g_{9/2}^{-1}) \otimes \nu(h_{11/2}^2 g_{7/2}^2)$ by comparison with a similar band in ^{110}Cd .
	5166.8	$29/2^+$	234.8				2. Small prolate deformation.
	5398.8	$31/2^+$	232.0				3. B(M1)/B(E2) > 50-100 $(\mu_N/eb)^2$ from unobserved ΔI= 2 (E2) transitions.
	5678.1	$33/2^+$	279.3				4. Regular band with small backbending at 31/2.
	6051.0	$35/2^+$	372.9				5. Band intensity ~ 15%.
	6538.1	$(37/2^+)$	487.1				
	7175.2	$(39/2^+)$	637.1				
	7917.1	$(41/2^+)$	741.9				
	8681.1	$(43/2^+)$	764.0				
3	X	$(31/2^-)$				**1998Va03**	1. Tentatively assigned as $\pi(g_{9/2}^{-1}) \otimes \nu(h_{11/2} g_{7/2} d_{5/2})$ (configuration of a band in ^{110}Cd) coupled to an aligned $g_{7/2}$ or $h_{11/2}$ neutron pair.
	390.5+X	$(33/2^-)$	390.5				2. I^{π} and level energies are lower limits as estimated from intensity and feeding considerations.
	794.7+X	$(35/2^-)$	404.2				3. X~ 5500 keV.
	1244.3+X	$(37/2^-)$	449.6				4. B(M1)/B(E2) > 50-100 $(\mu_N/eb)^2$ from unobserved ΔI= 2 (E2) transitions.
	1774.1+X	$(39/2^-)$	529.8				5. Regular band.
	2354.6+X	$(41/2^-)$	580.5				6. Band intensity ~ 9%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{113}_{49}In_{64}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	2233.2	$(15/2^-)$				**1997Ch01**
	2396.4	$(17/2^-)$	163.2			
	2663.9	$(19/2^-)$	267.5			
	2853.6	$(21/2^-)$	189.7			
	3023.1	$(23/2^-)$	169.5			
	3280.0	$(25/2^-)$	256.9			
	3972.6	$(27/2^-)$	692.6			
	4715.0	$(29/2^-)$	742.4	1434.9	8(2)	
	5392.7	$(31/2^-)$	677.7	1418.6	17(6)	
2	3122.1	$(21/2^+)$				**1997Ch01**
	3213.9	$(23/2^+)$	91.8			
	3397.2	$(25/2^+)$	183.3			
	3788.1	$(27/2^+)$	390.9			
	4377.5	$(29/2^+)$	589.4	980.2	24(6)	
	5062.1	$(31/2^+)$	684.6	1274.2	71(14)	
	5790.3	$(33/2^+)$	728.2			

Configurations and Comments:

Band 1:

1. Tentatively assigned as $\pi(g_{9/2}^{-1})\otimes\nu(g_{7/2}^{-1}h_{11/2})$.
2. Small prolate deformation (β_2=0.09).
3. Parity assignment is based on comparison with neighboring nuclei.
4. Irregular band.
5. Fully aligned configuration gives rise to I^{π}= $27/2^-$; I^{π} beyond this value is attributed to some collectivity.
6. Nuclear reaction : ^{110}Pd(^{7}Li, 4nγ), E(^{7}Li) = 40 MeV, Band intensity ~ 31%.

Band 2:

1. Tentative Configuration $\pi(g_{9/2}^{-1})\otimes\nu(h_{11/2}^{2})$.
2. Small prolate deformation (β_2=0.09)
3. Parity assignment is based on comparison with neighboring nuclei.
4. Regular band.
5. Band intensity ~ 15%.

$^{105}_{50}Sn_{55}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	7043	$29/2^+$				**1997Ga01**
	7343	$31/2^+$	300			
	7730	$33/2^{(+)}$	388			
	8196	$35/2^{(+)}$	466			
	8682	$37/2^{(+)}$	486			
	9137	$39/2^{(+)}$	456			
	9692	$41/2^{(+)}$	555			
	10287	$43/2^{(+)}$	596			

Configurations and Comments:

1. Tentatively assigned as $\pi(g_{9/2}^{-1}g_{7/2})\otimes\nu(h_{11/2}^{2}(d_{5/2}g_{7/2})^{1})$ from TRS calculations.
2. Prolate deformation (β_2=0.137)
3. B(M1)/B(E2)>100$(\mu_N/eb)^2$ from the unobserved ΔI= 2 (E2) transitions.
4. Regular band with a backbending at 37/2.
5. Nuclear reaction : ^{50}Cr(^{58}Ni, 2pnγ), E(^{58}Ni)= 210 MeV, Band intensity ~ 20%.

$^{106}_{50}Sn_{56}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References	Configurations and Comments:
1	8011	15^-				**1999Je07**	1. $\pi(g_{7/2}\, g_{9/2}^{-1}) \otimes \nu((g_{7/2}d_{5/2})^3\, h_{11/2})$ from TAC calculations.
	8558	16^-	547			1999JeAA	2. $(\beta_2, \gamma) = (0.11, -13°)$.
	9101	17^-	543			1998Je03	3. Level energies, spins and parities are from 1999JeAA.
	9551	18^-	450		>160		4. Mean lifetimes of the five uppermost levels are 0.30(3), 0.43(5), 0.51(15), 0.22(2) and 0.22(+1-3) ps, respectively.
	10039	19^-	488		>250		5. B(M1) values for the transitions from 450 to 599 keV are 2.06(+22-26), 1.12(+15-13), 0.54(+20-13), 0.54(+5-7) and 1.17(17) μ_N^2, respectively.
	10631	20^-	592		>200		6. Regular band with backbending at the top of the band.
	11412	21^-	781		>35		7. Nuclear reaction: $^{54}Fe(^{58}Ni, \alpha 2p\gamma)$, $E(^{58}Ni)$ = 243 MeV.
	12046	22^-	634				
2	9236.1	17^-				**1998Je03**	1. $\pi(g_{7/2}\, g_{9/2}^{-1}) \otimes \nu((g_{7/2}d_{5/2})^3\, h_{11/2})$ from TAC calculations.
	9637.8	18^-	401.7				2. $(\beta_2, \gamma) = (0.11, -13°)$.
	10117.0	19^-	479.2		>155		3. Regular band.
	10672.4	20^-	555.4		>290		
	11292.7	21^-	620.3		>220		
	11971.5	22^-	678.8				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{108}_{50}Sn_{58}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	6665	12^-				**1998Je03**
	6885.0	13^-	220.0			1999Je07
	7182.7	14^-	297.7			
	7606.4	15^-	423.7	720	30.0(25)	
	8116.3	16^-	509.9	934	23.5(40)	
	8634.5	17^-	518.2	1028	26.0(35)	
	9169.6	18^-	535.1	1053	19.5(40)	
	9719.8	19^-	550.2	1085	23(4)	
	10355.3	20^-	635.5	1184	24(4)	
2	8103	16^-				**1998Je03**
	8351.2	17^-	248.2			
	8695.8	18^-	344.6	(592)		
	9105.8	19^-	410.0	753	15.4(40)	
	9579.4	20^-	473.6	885	14.1(40)	
	10062.8	21^-	483.4	956	20.2(50)	
	10572.2	22^-	509.4	992	22.7(70)	

Configurations and Comments:

Band 1:

1. $\pi(g_{7/2}\, g_{9/2}^{-1}) \otimes \nu((g_{7/2}d_{5/2})^1\, h_{11/2})$ from TAC calculations.
2. Prolate shape $(\beta_2, \gamma) = (0.08, 0°)$ from 1999Je.
3. The mean lifetimes of levels with spins from 15 to 19 as given in 1999Je are 0.66(2), 0.23(1), 0.29(1), 0.44(+5-2) and 0.56(2) ps, respectively.
4. B(M1) values for the transitions from 424 to 550 keV are 1.05(3), 1.63(8), 1.16(5), 0.64(+4 -8) and 0.48(3) μ_N^2, respectively.
5. Regular band.
6. Nuclear reaction: $^{54}Fe(^{58}Ni, 4p\gamma)$, $E(^{58}Ni) = 243$ MeV.

Band 2:

1. $\pi(g_{7/2}\, g_{9/2}^{-1}) \otimes \nu(g_{7/2}^2\, (g_{7/2}d_{5/2})^1\, h_{11/2})$ from TAC calculations.
2. Prolate shape $(\beta_2, \gamma) = (0.11, 0°)$ from 1999Je.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{108}_{51}Sb_{57}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	2154.6	7^-				**1998Je09**
	2246.0	8^-	91.4			
	2438.3	9^-	192.3	283		
	2719.9	10^-	281.6	474		
	3032.4	11^-	312.5	595		
	3376.8	12^-	344.4	657		
	3764.7	13^-	387.9	732		
	4173.6	14^-	408.9	797		
	4613.3	15^-	439.7	849		
	5101.9	16^-	488.6	929		
	5611.5	17^-	509.6	999		
	6150.0	18^-	538.5	1049		
	6719.6	19^-	569.6	1109		
2	2753.4	10^-				**1998Je09**
	3057.4	11^-	304.0			
	3376.4	12^-	319.0	623		
	3722.5	13^-	346.1	665		
	4177.9	14^-	455.4	801		
	4597.3	15^-	419.4	874		
	5064.4	16^-	467.1	886		
	5561.8	17^-	497.4	964		
	6092.3	18^-	530.5	1028		
	6645.2	19^-	552.9	1084		
	7216.3	20^-	571.1	1124		

Configurations and Comments:

Band 1:

1. $\pi[(g_{7/2},d_{5/2})^2\, g_{9/2}^{-1}] \otimes \nu(h_{11/2})$ from TAC calculations.
2. (β_2, γ) = (0.116, 30°) from TAC calculations.
3. B(M1)/B(E2) values range from ~ 5 $(\mu_N/eb)^2$ to ~ 20 $(\mu_N/eb)^2$.
4. Regular band.
5. Nuclear reaction: ^{54}Fe (^{58}Ni, 3pnγ), E(^{58}Ni)= 243 MeV, Band intensity ~ 47%.

Band 2:

1. $\pi(h_{11/2}\, g_{7/2}\, g_{9/2}^{-1}) \otimes \nu(g_{7/2},d_{5/2})^1$ from TAC calculations.
2. (β_2, γ) = (0.116, 10°) from TAC calculations.
3. B(M1)/B(E2) values range from ~ 5 $(\mu_N/eb)^2$ to ~ 25 $(\mu_N/eb)^2$.
4. Regular band with backbending at 15.
5. Band intensity ~ 19%.

$^{110}_{51}Sb_{59}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1.	1921	8^-				1997La13
	2122	9^-	201			
	2435	10^-	313	514		
	2784	11^-	349	663		
	3158	12^-	374	724		
	3556	13^-	398	772		
	3989	14^-	433	830		
	4464	15^-	475	909		
	(5016)		(552)	(1027)		

Configurations and Comments:

1. Tentatively assigned as spherical $\pi(h_{11/2}) \otimes \nu(d_{5/2})$ or $\pi(h_{11/2}) \otimes \nu(g_{7/2})$ by comparison with neighboring odd-odd Sb isotopes.
2. Regular band.
3. The assignment of this band as MR band is based on the comparison with a band in ^{108}Sb by 1998Je09.
4. Nuclear reaction: ^{54}Fe (^{59}Co, 2pnγ), E(^{59}Co) = 230 MeV, Band intensity ~ 50 %.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{112}_{51}Sb_{61}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	1675.1	7^-				**1998La14**
	1747.5	8^-	72.4			
	1949.7	9^-	202.2			
	2275.2	10^-	325.5	527.7	24(2)	
	2629.1	11^-	353.9	679.1	16.0(8)	
	3009.7	12^-	380.6	734.6	14.2(7)	
	3402.1	13^-	392.4	773.5	13.3(7)	
	3809.0	14^-	406.9	799.7	6.8(4)	
	4295.3	15^-	486.3	893.2	10.6(8)	
	4798.3	16^-	503.0	989.8	9.9(9)	
	5326.2	17^-	527.9	1030.8		
2	X	(10^+)				**1998La14**
	378.2+X	(11^+)	378.2			
	750.8+X	(12^+)	372.6	750.6	7.5(5)	
	1077.6+X	(13^+)	326.8	699.7	15.3(12)	
	1372.5+X	(14^+)	294.9	621.7	56(7)	
	1690.3+X	(15^+)	317.8	613.0	200(180)	
	2046.1+X	(16^+)	355.8	673.9	30(3)	
	2437.7+X	(17^+)	391.6	747.6	26(3)	
	2851.9+X	(18^+)	414.2			
	3284.4+X	(19^+)	432.5			

Configurations and Comments:

Band 1:

1. $\pi(g_{9/2}^{-1}) \otimes \nu(h_{11/2})$ from TRS calculations.
2. Regular band.
3. Nuclear reaction: ^{103}Rh (^{12}C, 3nγ), E(^{12}C)= 60 MeV and ^{90}Zr (^{31}P, 2αnγ), E= 150 MeV, Band intensity ~ 30%.

Band 2:

1. $\pi(g_{9/2}^{-1}) \otimes \nu((d_{5/2}g_{7/2})^1\, h_{11/2}^2)$ from TRS calculations and by comparison with similar bands in neighboring isotopes.
2. Regular band with backbending at 12.
3. Band intensity ~ 6%.

$^{124}_{54}Xe_{70}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	5051	(12)				**1999Sc20**
	5292	(13)	241			1997Lo12
	5554	(14)	262	502		
	5830	(15)	276	537		
	6156	(16)	326	602		
	6556	(17)	400	726		
	6987	(18)	431	831		
	7436	(19)	449	880		
	7932	(20)	496	944		
	8368	(21)	436	932		
	8914	(22)	546	982		
	9486	(23)	572	1118		
	9929	(24)	443	1016		

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{11/2} \otimes (d_{5/2}g_{7/2})^1) \otimes \nu(h_{11/2}\, g_{7/2})$.
2. The observed B(M1)/B(E2) values start from 23.3 (3.3) $(\mu_N/eb)^2$ and decrease with increasing spin before the backbend.
3. Irregular band with backbending at 8368 keV level and at the top of the band.
4. Nuclear reaction: ^{110}Pd (^{18}O, 4nγ), E(^{18}O)= 86 MeV, Band intensity ~ 13%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{128}_{56}Ba_{72}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	References
1.	4652	12^+				**1998Wi20**
	4956	13^+	305			1997Vo12
	5233	14^+	277	582	6.29(+29-16)	2000Di16
	5530	15^+	296	574	6.63(+18-13)	2000Pe20
	5853	16^+	324	619	6.00(+56-28)	1998Pe17
	6215	17^+	362	685	5.43(+23-15)	
	6609	18^+	394	755	5.81(+25-19)	
	7036	19^+	428	821	5.04(+31-22)	
	7494	20^+	457	886		
	7981	21^+	487	945		
	8497	22^+	517	1003		
	9032	23^+	535	1052		
	9601	24^+	568	1104		
	10168	25^+	566	1136		
	10785	26^+		1184		

Configurations and Comments:

1. $\pi[h_{11/2}(d_{5/2}g_{7/2})] \otimes \nu[h_{11/2}(d_{5/2}g_{7/2})]$ from TAC calculations by 2000Di16.
2. Prolate deformation $(\beta_2, \gamma) \sim (0.20, 0^{\circ})$
3. B(M1) values for the transitions from 362 to 428 keV as given in 1998Pe17 are 1.14(+21-15), 1.22(+25-18) and 1.41(+30-21) μ_N^2, respectively, for Transitions from 305 to 324 keV as given in 2000Pe20 are 0.32(4), 0.44(+10-7), 1.06(+18-13) and 1.08(+55-27) μ_N^2, respectively.
4. The first three B(M1)/B(E2) ratios have been calculated from the values of B(M1) and B(E2) in 2000Pe20 and the last three ratios have been calculated in a similar manner using the data given in 1998Pe17.
5. Lifetimes of 6215 to 7981 keV states as given in 1998Pe17 are 2.48(7), 1.91(7), 1.54(5), 1.36(11) and 1.16(6) ps, respectively, for levels from 4956 to 5853 keV As given in 2000Pe20 are 1.44(13), 2.25(40), 1.53(22) and 0.98(33) ps, respectively.
6. Regular band.
7. Nuclear reaction: ^{96}Mo (^{36}S, 4nγ), E(^{36}S) = 150 MeV, Band intensity is less than 10 %.

$^{132}_{56}Ba_{76}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ KeV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	Reference
1	4108.5	(10^+)				**1989Pa17**
	4312.3	(11^+)	203.8			
	4548.0	(12^+)	235.7			
	4883.0	(13^+)	335.0			
	5307.5	(14^+)	424.5			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{11/2}g_{7/2}) \otimes \nu(h_{11/2}d_{3/2})$ by considering the available orbits nearest to the Fermi surface.
2. Oblate shape ($\gamma \sim -60°$).
3. Parities are from multipolarities of interband transitions.
4. Regular band.
5. Nuclear reaction: ^{122}Sn (^{13}C, 3nγ), E(^{13}C) = 57 MeV, Band intensity ~ 1%.

2	4863.9	(11^-)				**1989Pa17**	1. $\pi(h_{11/2}g_{7/2}) \otimes \nu(h_{11/2}^2)$ by considering the available orbits nearest to the Fermi surface. 2. Oblate shape (γ~ -60°). 3. Parities are from multipolarities of interband transitions. 4. Mean lifetime of Bandhead = 12.5(3) ns. 5. Regular band. 6. Band intensity ~ 3%.
	5033.6	(12^-)	169.7				
	5249.2	(13^-)	215.6				
	5557.1	(14^-)	307.9				
	5964.1	(15^-)	407				

$^{131}_{57}La_{74}$

	E_{level} keV	I^π	E_γ(M1) keV	E_γ(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference	**Configurations and Comments:**
1	2476.7	($19/2^-$)				**1989Hi02**	1. Tentatively assigned as $\pi(h_{11/2}) \otimes \nu(h_{11/2}^2)$ from CSM calculations. 2. Collective oblate structure (γ = -60°). 3. B(M1)/B(E2) ratio is in the range of 10-50 $(\mu_N/eb)^2$ and rises with increasing spin. 4. Regular band. 5. Nuclear reaction: ^{116}Cd(^{19}F, 4nγ), E(^{19}F) = 76 to 90 MeV, Band intensity ~ 7%.
	2544.0	($21/2^-$)	67.3				
	2698.3	($23/2^-$)	154.3				
	2934.4	($25/2^-$)	236.1	389.9			
	3242.6	($27/2^-$)	308.2	544.1			
	3609.2	($29/2^-$)	366.6	675.6			
	4023.1	($31/2^-$)	413.9	780.7			
	4478.5	($33/2^-$)	455.4	869.8			
	4967.1	($35/2^-$)	488.6	943.9			
	5489.3	($37/2^-$)	522.2	1010			
	6037.1	($39/2^-$)	547.8	1069			
	(6605.6)	($41/2^-$)	(568.5)	(1115)			
	(7184.6)	($43/2^-$)	(579)				
2	2120.5	$21/2^-$				**1989Hi02**	1. Tentatively assigned as $\pi(g_{7/2}) \otimes \nu(g_{7/2}h_{11/2})$ by comparison with the neighboring ^{128}Ba and ^{130}Ce isotopes. 2. Oblate shape suggested because of strong connection to band 1. 3. Bandhead is isomeric with a half life of 38(2) ns. 4. Regular band.
	2548.0	($23/2^-$)	427.5				
	3017.3	($25/2^-$)	469.3	896			
	3526.3	($27/2^-$)	509	978			

Table of Magnetic Dipole Rotational Bands (contd.)

$^{135}_{58}Ce_{77}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	3229.8	$23/2^+$				**1990Ma26**
	3431.9	$25/2^+$	202.1			
	3699.9	$27/2^+$	268.0			
	4128.2	$29/2^+$	428.3	696	>8	
	4486.4	$31/2^+$	358.2	786.8	23(7)	
	4979.3	$33/2^+$	492.9	851	>9	
	5428.5	$35/2^+$	449.2	942	>14	
	5942.5	$(37/2^+)$	514	963		
	6444.5	$(39/2^+)$	502	(1016)		
2	4183.8	$27/2^-$				**1990Ma26**
	4460.9	$29/2^-$	277.1			
	4830.9	$31/2^-$	370.0			
	5206.5	$33/2^-$	375.6	746	>6	
	5651.6	$35/2^-$	445.1	821	>19	
	6086.5	$37/2^-$	434.9	880	>24	
	6526.5	$39/2^-$	440.0	(875)	>13	
	6994.5	$41/2^-$	468.0	(908)	>6	
	7494.5	$(43/2^-)$	500	968		
3	4498.8	$27/2^-$				**1990Ma26**
	4637.9	$29/2^-$	139.1			
	4816.4	$31/2^-$	178.5		>4	
	5065.4	$33/2^-$	249.0		>6	
	5362.9	$35/2^-$	297.5		>13	
	5755.1	$37/2^-$	392.2		>18	
	6259.7	$39/2^-$	504.6		>19	
	6843.3	$(41/2^-)$	583.6		>21	
	7473.3	$(43/2^-)$	630		>22	

Configurations and Comments:

Band 1:

1. Tentatively assigned as $\pi(h_{11/2}g_{7/2}) \otimes \nu(h_{11/2})$ by comparison with the N=75 isotones.
2. Near prolate shape ($\gamma \sim 0°$).
3. Irregular band with backbending at I^{π} =31/2 and 35/2.
4. Small signature splitting.
5. Lower limits of B(M1)/B(E2) are from the unobserved ΔI =2 (E2) transitions.
6. Nuclear reaction : $^{122}Sn(^{18}O, 5n\gamma)$, $E(^{18}O)$ = 85 and 89 MeV, Band intensity ~ 17%.

Band 2:

1. Tentatively assigned as $\pi(h_{11/2}^2) \otimes \nu(h_{11/2})$ by comparison with the N=75 isotones.
2. Near prolate shape ($\gamma \sim 0°$).
3. Irregular band with backbending at 37/2.
4. Small signature splitting.
5. Lower limits of B(M1)/B(E2) are from the unobserved ΔI =2 (E2) transitions.
6. Band intensity ~ 10%.

Band 3:

1. Tentatively assigned as $\pi(h_{11/2}g_{7/2}) \otimes \nu(h_{11/2}^2 s_{1/2})$.
2. Collectively rotating oblate structure ($\gamma \sim -60°$).
3. Limits on B(M1)/B(E2) values are from the assumption that the unobserved ΔI =2 (E2) transitions are less than 1% intense as compared to the strongest transition in the level scheme.
4. Regular band.
5. Relative intensity ~ 6%.

$^{136}_{58}Ce_{78}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	5645.3	(14^-)				**1990Pa05**
	5809.3	15^-	164			
	5995.3	16^-	186.0			
	6283.4	17^-	288.1			
	6663.3	18^-	379.9			
	7099.8	19^-	436.5			
	7586.3	(20^-)	486.5			
	(8101.3)	(21^-)	(515)			
	(8626.3)	(22^-)	(525)			

Configurations and Comments:

1. $\pi(g_{7/2}h_{11/2}) \otimes \nu(h_{11/2}^2)$ by comparison with the nearby odd Z and doubly odd nuclei.
2. E2/M1 mixing ratios ($\delta_{E2/M1}$) are negative for two gamma transitions, implying an oblate shape for the band (γ = -60°).
3. B(M1)/B(E2) > $10(\mu_N/eb)^2$.
4. Regular band.
5. Nuclear reaction: $^{122}Sn(^{18}O, 4n\gamma)$, $E(^{18}O)$ = 85 and 89 MeV, Band intensity ~ 25%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{133}_{59}Pr_{74}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	2141.5	$(23/2^-)$				**1988Hi04**
	2290.7		149.2			
	2536.6		245.9			
	2863.6		327.0			
	3258.3		394.7			
	3706.1		447.8			
	(4202.5)		(496.4)			
2	3309.7					**1988Hi04**
	3475.1		165.4			
	3726.3		251.2			
	4063.1		336.8			
	4472.4		409.3			
	4944.1		471.7			
3	X					**1988Hi04**
	196.1+X		196.1			
	440.1+X		244.0			
	736.7+X		296.6			
	1087.6+X		350.9			
	1491.3+X		403.7			
	1945.7+X		454.4			
	(2444.1+X)		(498.4)			

Configurations and Comments:

Band 1:
1. $\pi(h_{11/2}) \otimes \nu(h_{11/2}{}^2)$ by comparison with the similar band in ^{131}La.
2. Collective oblate band (γ = -60°).
3. B(M1)/B(E2) ≥ 5 $(\mu_N/eb)^2$, from estimates of upper limits for the ΔI = 2 (E2) transitions.
4. Regular band.
5. Nuclear reaction: ^{118}Sn (^{19}F, 4nγ), seven different E(^{19}F) ranging over 72-104 MeV and ^{117}Sn (^{19}F, 3nγ), E(^{19}F) = 86.5 MeV, Band intensity ~ 10%.

Band 2:
1. The properties of the band suggest mixed proton and neutron configurations with $h_{11/2}$ neutrons.
2. B(M1) values are expected to be large since no ΔI = 2 (E2) transitions are reported.
3. Regular band.
4. Band intensity ~ 5%.

Band 3:
1. The properties of the band suggest mixed and neutron configurations with $h_{11/2}$ neutrons. Proton
2. B(M1) values are expected to be large since no ΔI = 2 (E2) transitions are reported.
3. Regular band.
4. Band intensity ~ 3%.

$^{137}_{59}Pr_{78}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	3439.3	$25/2^-$				**1989Xu01**
	3550.8	$27/2^-$	111.5			
	3871.5	$29/2^-$	320.7			
	4212.8	$31/2^-$	341.3			
	4696.1	$33/2^-$	483.3			
	5174.3	$35/2^-$	478.2			
	5515.0	$37/2^-$	340.7			
	5923.2	$39/2^-$	408.2			
	6388.3	$(41/2^-)$	465.1			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{11/2}) \otimes \nu(h_{11/2}{}^2)$ by comparison with a similar band in ^{131}La.
2. Collective oblate shape (γ ~ -60°) determined by large negative A_2/A_0 coefficients.
3. B(M1)/B(E2) values > 1$(\mu_N/eb)^2$.
4. Signature splitting with backbending at 35/2.
5. Nuclear reaction: ^{122}Sn (^{19}F, 4nγ), E(^{19}F)= 81 MeV, Band intensity ~ 28%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{134}_{60}Nd_{74}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	2294.2	8^-				**1997Pe07**
	2721.1	9^-	426.9			
	3183.4	10^-	462.3	888.9		
	3654.7	11^-	471.3	933.2		
	4131.2	12^-	476.5	947.9		
	4593.5	(13^-)	462	938.8		
2	4514.5	$12^{(-)}$				**1997Pe07**
	4714.0	$13^{(-)}$	199.5			
	5000.7	$14^{(-)}$	286.7			
	5363.1	$15^{(-)}$	362.4	648.6		
	5790.4	$16^{(-)}$	427.3	790		
	6271.3	$17^{(-)}$	480.9	908.7		
	6787.5	$18^{(-)}$	516.2	997.1		
	7293.2	$19^{(-)}$	505.7	1022		
3	4985.5	14^-				**1997Pe07**
	5201.4	$15^{(-)}$	215.9			
	5457.1	$16^{(-)}$	255.7			
	5770.4	$17^{(-)}$	313.3	569.3		
	6138.4	$18^{(-)}$	368.0	681.6		
	6544.7	$19^{(-)}$	406.3	774.4		
	6936.5	$20^{(-)}$	391.9	798		
	7350.2	$21^{(-)}$	413.6	806		
	7814.1	(22^-)	463.9	878.0		
	8331.2	(23^-)	517.1	981.6		
	8896.9	(24^-)	565.7	1082.6		
	9510.9	(25^-)	614	1180.0		
	10167.9	(26^-)	657	1270.9		
	10861.9	(27^-)	694	1351.3		

Configurations and Comments:

Band 1:

1. A strong admixture of $\nu(h_{11/2}[9/2])$ with $\nu(g_{7/2}[7/2] \otimes h_{11/2}[7/2])$ is suggested from the PSM calculations.
2. Prolate shape (β_2 =0.17).
3. B(M1)/B(E2) values > 3 $(\mu_N/eb)^2$.
4. Regular band with backbending at the top of the band.
5. Nuclear reaction: ^{110}Pd (^{28}Si, 4nγ), E(^{28}Si) = 130 MeV, Band intensity ~ 6%.

Band 2:

1. $\pi(h_{11/2}^2) \otimes \nu(g_{7/2}[7/2] \otimes h_{11/2}[7/2])$ from the PSM calculations.
2. Prolate shape (β_2 =0.17).
3. B(M1)/B(E2) values are >10 $(\mu_N/eb)^2$.
4. Regular band with backbending at the top of the band.
5. Band intensity ~ 6%.

Band 3:

1. $\pi(h_{11/2}[11/2] \otimes g_{7/2}[5/2])_{K^{\pi}=8^-}$ coupled to a neutron pair in one of the following configurations: $\nu(h_{11/2}^2)$[3/2,5/2, $K^{\pi}= 1^+$], $\nu(h_{11/2}^2)$ [1/2,5/2, $K^{\pi}= 2^+$] and $\nu(h_{11/2}^2)$ [1/2,5/2, $K^{\pi}= 3^+$]. The lowest lying of these mixed 4-qp configurations is assigned to this band.
2. Oblate shape (β_2 = -0.17).
3. B(M1)/B(E2) values >10 $(\mu_N/eb)^2$.
4. Regular band with backbending at spin 20.
5. Band intensity ~ 6%.

Table of Magnetic Dipole Rotational Bands (contd.)

${}^{136}_{60}Nd_{76}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	3782	$9^{(-)}$				**1996Pe06**
	4002	$10^{(-)}$	220			
	4256	$11^{(-)}$	254			
	4550	$12^{(-)}$	294			
	4895	$13^{(-)}$	345			
	5306	$14^{(-)}$	411			
	5760	$15^{(-)}$	454			
	6261	$16^{(-)}$	501			
2	6232	$15^{(+)}$				**1996Pe06**
	6349	$16^{(+)}$	117			
	6580	$17^{(+)}$	231			
	6885	$18^{(+)}$	305			
	7294	$19^{(+)}$	409			
	7670	$20^{(+)}$	376			
	8051	$21^{(+)}$	381			
	8467	$22^{(+)}$	416			
	8948	$23^{(+)}$	481			
	9492	$24^{(+)}$	544			
	10092	$25^{(+)}$	600			
	10763	$26^{(+)}$	671			
3	6010	16^{+}				**1996Pe06**
	6241	17^{+}	231			
	6525	18^{+}	284			
	6870	19^{+}	345	629		
	7258	20^{+}	388	733		
	7688	21^{+}	430	818		
	8151	22^{+}	463	893		
	8655	23^{+}	504	967		
	9181	24^{+}	526	1030		
	9748	25^{+}	567	1093		
	10346	26^{+}	598	1165		
	10971	27^{+}	625	1223		
	11650	28^{+}		1304		
	12338	29^{+}		1367		
4	3875	11^{-}				**1996Pe06**
	4105	12^{-}	230			
	4414	13^{-}	309	539		
	4771	14^{-}	357	666		
	5173	15^{-}	402	759		
	5610	16^{-}	437	839		
	6037	17^{-}	427	864		
	6482	18^{-}	445	872		
	6970	19^{-}	488	933		
	7481	20^{-}	511	999		
	8030	21^{-}	549	1060		
	8654	22^{-}	624	1173		

Configurations and Comments:

1. $\pi(h_{11/2}^2) \otimes \nu(h_{11/2}\, d_{3/2})$ from PSM calculations.
2. The plotted B(M1)/B(E2) values lie around 10 $(\mu_N/eb)^2$ and decrease as the spin values increase.
3. Regular band.
4. Nuclear reaction: ${}^{110}Pd\,({}^{30}Si, 4n\gamma)$, $E({}^{30}Si)$ = 125 and 130 MeV.

1. $\pi(h_{11/2}^2) \otimes (\nu h_{11/2} - \nu f_{7/2})$ associated with prolate shape, from PSM calculations.
2. Regular band with backbending at 20.
3. Mean lifetimes of levels with spins 23 and 24 are 0.09(4) and 0.06(3) ps, respectively, indicating enhanced B(M1) rates.
4. The B(M1)/B(E2) values range from about 6-20 $(\mu_N/eb)^2$.

1. $\pi(h_{11/2}^2) \otimes (\nu h_{11/2} + \nu f_{7/2})$ associated with prolate shape, from PSM calculations.
2. Regular band .
3. The B(M1)/B(E2) values range from about 6-20 $(\mu_N/eb)^2$ and exhibit a rising trend as the spin increases.

1. $\pi(h_{11/2}^2) \otimes \nu(h_{11/2}\, g_{7/2})$ or $\pi(h_{11/2}^2) \otimes (\nu h_{11/2} + \nu d_{3/2})$ associated with oblate shape, from PSM calculations.
2. Regular band with backbending at spin 17.
3. The B(M1)/B(E2) values range from about 3-25 $(\mu_N/eb)^2$.

Table of Magnetic Dipole Rotational Bands (contd.)

5	8381	$22^{(+)}$				**1996Pe06**	1. No definite configuration could be assigned to this band but from energy considerations , $\pi(h_{11/2}^2\, g_{7/2}^2)$ may be favored. 2. Regular band.
	8756	$23^{(+)}$	375				
	9166	$24^{(+)}$	410	785			
	9619	$25^{(+)}$	453	863			
	10110	$26^{(+)}$	491				
	10639	$27^{(+)}$	529	1020			

$^{137}_{60}Nd_{77}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference	Configurations and Comments:
1	3896.2	$27/2^-$				**1997Pe06**	1. $\nu(h_{11/2})^3$ from the IBFM calculations. 2. Regular band with backbending at 37/2. 3. Nuclear reaction: ^{110}Pd (^{30}Si, 3nγ), E(^{30}Si) = 125 MeV and ^{123}Sb (^{19}F, 5nγ), E(^{19}F) = 97 MeV, Band intensity ~ 10%.
	4160.2	$29/2^-$	264				
	4514.1	$31/2^-$	353.9	617.9			
	4909.9	$33/2^-$	395.8	749.7			
	5372.7	$35/2^-$	462.8	858.6			
	5813.1	$37/2^-$	440.4	903.2			
	6194.5	$39/2^-$	381.4	821.8			
	6669.6	$41/2^-$	475.1	856.5			
	7100.9	$43/2^-$	431.3	906.4			
	7652.3	$45/2^-$	551.4	982.7			
	8349.3	$47/2^-$	697	1248.4			
2	4822.5	$31/2^-$				**1997Pe06**	1. $\pi(h_{11/2}^2) \otimes \nu(h_{11/2})$ from the IBFM calculations. 2. Regular band with backbending at 43/2. 3. Band intensity ~ 5%.
	5108.3	$33/2^-$	285.8				
	5416.5	$35/2^-$	308.2				
	5788.6	$37/2^-$	372.1				
	6263.9	$39/2^-$	475.3				
	6795.4	$41/2^-$	531.5				
	7314.7	$43/2^-$	519.3				
	7702.8	$45/2^-$	388.1				
	8197.6	$47/2^-$	494.8				
	8745.7	$(49/2^-)$	548.1				
	9337.9	$(51/2^-)$	592.2				
3	5596.8	$33/2^+$				**1997Pe06**	1. Tentatively assigned as $\pi(h_{11/2}^2) \otimes \nu(h_{11/2}^2) \otimes \nu\, s_{1/2}(d_{3/2})$. 2. Regular band. 3. B(M1) values are of the order of 1 W.u. 4. Band intensity ~ 1%.
	5853.8	$35/2^+$	257				
	6161.1	$37/2^+$	307.3				
	6515.8	$39/2^+$	354.7				
	6916.2	$41/2^+$	400.4				
	7339.4	$43/2^+$	423.2				
	7797.0	$45/2^+$	457.6				
	8325.2	$(47/2^+)$	528.2				
	8922.1	$(49/2^+)$	596.9				
	9568.6	$(51/2^+)$	646.5				
	10272.2	$(53/2^+)$	703.6				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{138}_{60}Nd_{78}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	5577.6	14				**1994De11**
	5771.4	15	193.8			
	6002.2	16^+	230.8			
	6288.5	(17)	286.3			
	6669.0	(18)	380.5			
	7048.1	(19)	379.1			
	7564.8	(20)	516.7			
	8489.5	(21)	924.7			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{11/2}{}^2) \otimes \nu(h_{11/2}{}^2)$.
2. Small Prolate deformation ($\beta_2 \approx 0.12$).
3. Regular band with a small backbending at 19.
4. Nuclear reaction: ^{121}Sb(^{19}F, 4nγ), E(^{19}F) = 75 MeV, Band intensity ~ 4%.

$^{139}_{62}Sm_{77}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	3327.2	$25/2^-$				**1996Ro04**
	3445.8	$27/2^-$	118.6			1996Br33
	3710.8	$29/2^-$	265.0	384.2		
	4048.1	$31/2^-$	337.3	601.9	4.6(21)	
	4457.5	$33/2^-$	409.4	746.6	5.6(25)	
	4930.1	$35/2^-$	472.6	882.3	4.8(22)	
	5443.6	$37/2^-$	513.5	986.2		
	5934.9	(39/2)	491.3	1005.0		
	6494.9	(41/2)	560.0	1051.4		

Configurations and Comments:

1. Tentatively assigned in 1996Br33 as $\pi(h_{11/2}{}^2) \otimes \nu(h_{11/2})$ from CSM calculations.
2. Nearly axially symmetric prolate shape ($\beta_2 = 0.116$), from 1996Br33.
3. B(M1)/B(E2) are from 1996Br33.
4. Regular band with backbending at 39/2.
5. Mean lifetimes of levels with spin values $31/2^-$, $33/2^-$ and $35/2^-$ are 0.60(21), 0.40(14) and 0.25(8) ps, respectively from 1996Br33.
6. Nuclear reactions: ^{110}Pd (^{34}S, 5nγ), E(^{34}S) = 150 and 165 MeV, Band intensity~ 11% and (1996Br33): ^{62}Ni (^{81}Br, p3nγ), E(^{81}Br) = 350 MeV.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{142}_{64}Gd_{78}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	4767	12				**1997Su11**
	4989	13	222			
	5182	14	193			
	5374	15	192			
	5608	16	234			
	5893	17	285			
	6267	18	374			
	6562	19	295	670	11.6(9)	
	7090	20	528			
	7556	21	466	993	9.7(12)	
2	5416	16^+				**1997Su11**
	5716	17^+	300			
	6076	18^+	360			
	6457	19^+	381			
	6883	20^+	426			
	7016	21^+	133			

Configurations and Comments:

Band 1:
1. The band probably has $\pi(h_{11/2}^2) \otimes \nu(h_{11/2}^{-2})$ component in the configuration.
2. Irregular band.
3. Nuclear reaction: ^{111}Cd(^{35}Cl, 1p3nγ), E(^{35}Cl) = 170 MeV.

Band 2:
1. The band probably has $\pi(h_{11/2}^2) \otimes \nu(h_{11/2}^{-2})$ component in the configuration.
2. Regular band with backbending at 21.

$^{144}_{64}Gd_{80}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	5370.7	14^+				**1994Rz01**
	5723.6	15^+	352.9			
	6214.2	16^+	490.6			
	6619.0	17^+	404.8			
	7014.6	18^+	395.6			
	7419.1	19^+	404.5			
	7923.5	20^+	504.4			
	8221.7	(21^+)	298.2			
	8540.4	(22^+)	318.7			
	8993.8	(23^+)	453.4			

Configurations and Comments:

1. $\pi(h_{11/2}^2)_{K=10}^+ \otimes \nu(h_{11/2}^{-2})$ from the FAL coupling scheme.
2. Negative E2/M1 mixing ratios ($\delta_{E2/M1}$) imply an oblate shape (β_2 ~ -0.12).
3. Irregular band.
4. Nuclear reaction: ^{108}Pd (^{40}Ar, 4nγ), E(^{40}Ar) = 182 MeV, Band intensity ~ 15%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{190}_{80}Hg_{110}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1.	4954	17^-				2001Wi11
	5104	18^-	150			
	5376	19^-	272	422		
	5673	20^-	297	569		
	6050	21^-	377	674		
	6486	22^-	436	813		
	6833	23^-	347	783		
	6972	24^-	139	486		
	7202	25^-	230			
	7498	26^-	296			
	7812	27^-	314			
	8126	28^-	314			
	8441	29^-	315			
	8737	30^-	296	611		
	9148	31^-	411	707		
	9585	32^-	437	848		
	10032	33^-	447	884		
2.	5640	(17^+)				2001Wi11
	5790	(18^+)	150			
	6006	(19^+)	216			
	6262	(20^+)	256			
	6566	(21^+)	304			
	6895	(22^+)	329			
	7257	(23^+)	362			
	7640	(24^+)	383			
	8052	(25^+)	412			
	8481	(26^+)	429			
	8876	(27^+)	395			
3.	X					2001Wi11
	202+X		202			
	366+X		164			
	653+X		287			
	945+X		292			
	1248+X		303			
	1556+X		308			
	1864+X		308			
	2185+X		321			
	2507+X		322			
	2821+X		314			
	3157+X		336			
	3511+X		354			
	3892+X		381			
	4303+X		411			
	4741+X		438			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{9/2}^{2}) \otimes \nu(i_{13/2}^{4})$ by comparison with neighboring ^{192}Hg isotopes.
2. Irregular band.
3. B(M1)/B(E2) values are close to 1 $(\mu_N/eb)^2$ for the transitions from 272 to 436 keV in the low spin region and lie between 1-6 $(\mu_N/eb)^2$ for the transitions from 296 to 447 keV in the high spin region of the band.
4. Nuclear reaction: ^{160}Gd (^{34}S, 4nγ), E(^{34}S) = 153 MeV, Band intensity ~ 2%.

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1. Tentatively assigned as $\pi(h_{9/2}h_{11/2}^{-1})$ with a few holes in $\nu(i_{13/2})$ orbitals and a few particles in $\nu(p_{3/2}, f_{5/2}, p_{1/2})$ and the remaining holes in $\nu(h_{9/2}, f_{7/2})$ levels from the CNS calculations.
2. $(\beta_2, \gamma) \sim (0.189, -90^{\circ})$.
3. Regular band.
4. B(M1)/B(E2) values lie close to 40 $(\mu_N/eb)^2$.
5. Band intensity ~ 1%.

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1. Tentatively assigned as $\pi(h_{9/2}h_{11/2}^{-1})$ with a few holes in $\nu(i_{13/2})$ orbitals and a few particles in $\nu(p_{3/2}, f_{5/2}, p_{1/2})$ and the remaining holes in $\nu(h_{9/2}, f_{7/2})$ levels from the CNS calculations.
2. $(\beta_2, \gamma) \sim (0.189, -90^{\circ})$.
3. Bandhead spin ~ 20±2 $\hbar$.
4. E_{exc} ~ 5640 keV.
5. Regular band.
6. B(M1)/B(E2) values lie close to 40 $(\mu_N/eb)^2$.
7. Band intensity ~ 0.5%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{192}_{80}Hg_{112}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	6879	$23^{(-)}$				**1994Le08**
	7036	$24^{(-)}$	157			
	7273	$25^{(-)}$	237	394		
	7517	$26^{(-)}$	244	480		
	7788	$27^{(-)}$	272	515		
	7927	$28^{(-)}$	139	(410)		
	8265	$29^{(-)}$	337	476		
	8545	$30^{(-)}$	280	617		
	8992	$31^{(-)}$	447	727		
	9446	$32^{(-)}$	454	900		
	9936	$33^{(-)}$	490	942		
	10467	$34^{(-)}$	(532)	1021		
2	6304	(22^+)				**1996Wi09**
	6433.8	(23^+)	129.8			1994Le08
	6710.1	(24^+)	276.3	405.9	1.7(+10-9)	
	7043.7	(25^+)	333.6	611	0.6(+∞-6)	
	7435.6	(26^+)	391.9	725.3	1.7(+42-10)	
	7960.0	(27^+)	524.4	915.6	6.7(+39-56)	
	8303.4	(28^+)	343.4	867.6	10.0(+∞-106)	
	8712.5	(29^+)	409.1	753.7	3.8(+∞-39)	
	8960.6	(30^+)	248.1	659.2	6.4(+110-43)	
	9195.4	(31^+)	234.8	483.2	8.7(+25-17)	
	9375.2	(32^+)	179.8	414.6	7.4(+24-18)	
	9665.2	(33^+)	290	470		
	10037.2	(34^+)	372			

Configurations and Comments:

Band 1:

1. $\pi(i_{13/2}h_{9/2}) \otimes \nu(i_{13/2}^{4})$ or $\pi(i_{13/2}h_{9/2}h_{11/2}^{2}) \otimes \nu(i_{13/2}^{2})$ based on 23^- or 25^- states from HF+BCS. calculations. For the upper part of the band a mixing with the $\pi(i_{13/2}h_{9/2}) \otimes \nu(i_{13/2}^{6})$ configuration is suggested.
2. Irregular band.
3. B(M1)/B(E2) ratios lie around $5.5(\mu_N/eb)^2$.
4. Nuclear reaction: ^{160}Gd (^{36}S, 4nγ), E(^{36}S) = 159 MeV, Band intensity ~ 10%.

Band 2:

1. $\pi(h_{9/2}^{2}) \otimes \nu(i_{13/2}^{4})$, I=$22^+$ or $\pi(h_{11/2}^{2}h_{9/2}^{2}) \otimes \nu(i_{13/2}^{2})$, I=$23^+$ from the HF+BCS calculations (1994Le08).
2. Small oblate deformation (1994Le08).
3. Mean lifetimes of the states with spins between (23^+) and (32^+) are 14.9(+50-39), 20.4(+40-52), 1.0(+10-16), 3.6(+19-10), 1.7(+14-15), 0.7(7), 0.2(+7-2), 1.3(6), 3.5(+6-5) and 2.2(5) ps, respectively.
4. Irregular band.
5. B(M1) ~ 0.01 μ_N^2 in the lower spin region and jumps to 1.1 μ_N^2 in the high spin region of the band.
6. Band intensity ~ 12%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{193}_{80}Hg_{113}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	6418.7	$(53/2^-)$				**1995Fo13**
	6921.1	$(55/2^-)$	502.4			
	7275.8	$(57/2^-)$	354.7	857.1		
	7698.7	$(59/2^-)$	422.9	777.6		
	7837.5	$(61/2^-)$	138.8	561.8		
	8134.2	$(63/2^-)$	296.7	437.5		
	8392.0	$(65/2^-)$	257.8	556.5		
	8748.1	$(67/2^-)$	356.1	614.0		
	9218.7	$(69/2^-)$	470.6	826.6		
	9673.1	$(71/2^-)$	454.4	924.9		
	10287.6	$(73/2^-)$	614.5	1068.9		
	10850.6	$(75/2^-)$	(563)	1177.7		
2	5338.4	$(47/2^-)$				**1995Fo13**
	5714.2	$(49/2^-)$	(375.8)			
	6016.4	$(51/2^-)$	(302.2)	678.0		
	6400.3	$(53/2^-)$				
	6725.7	$(55/2^-)$	325.4			
	6978.0	$(57/2^-)$	252.3	577.6		
	7245.0	$(59/2^-)$	267.0			
	7559.7	$(61/2^-)$	314.7	581.9		
	7919.3	$(63/2^-)$	359.6	674.1		
	8330.3	$(65/2^-)$	411.0	770.7		
	8757.2	$(67/2^-)$	426.9	837.8		
3	5546.9	$47/2^{(+)}$				**1995Fo13**
	5831.4	$49/2^{(+)}$	284.5			1993De42
	6067.0	$51/2^{(+)}$	235.6	520.1		1993Ro03
	6464.0	$53/2^{(+)}$	397.0	632.6		
	6839.4	$55/2^{(+)}$	375.4	772.2		
	7037.0	$57/2^{(+)}$	197.6			
	7197.4	$59/2^{(+)}$	160.4			
	7554.7	$61/2^{(+)}$	357.3	517.6		
	7924.4	$63/2^{(+)}$	369.7	726.9		
	8388.4	$65/2^{(+)}$	464.0	833.6		
	8886.3	$67/2^{(+)}$	497.9	962.0		
	9408.5	$69/2^{(+)}$	522.2	1020.3		
	9922.6	$71/2^{(+)}$	514.1	1036.3		

Configurations and Comments:

Band 1:
1. Tentatively assigned as $\pi(h_{9/2}^2 h_{11/2}^{-2}) \otimes \nu(i_{13/2}^{-3})$ in addition to $p_{3/2}$ neutrons because of its negative parity.
2. Small oblate deformation ($\beta_2 \sim 0.15$).
3. B(M1)/B(E2) values lie in the interval 2 – 4 $(\mu_N/eb)^2$.
4. Irregular band.
5. Nuclear reaction: ^{150}Nd (^{48}Ca, 5nγ), E(^{48}Ca) = 213 MeV, Band intensity ~ 20%.

Band 2:
1. Tentatively assigned as $\pi(h_{9/2}^2 h_{11/2}^{-2}) \otimes \nu(i_{13/2}^{-3})$ in addition to $p_{3/2}$ neutrons because of its negative parity.
2. Small oblate deformation ($\beta_2 \sim 0.15$).
3. B(M1)/B(E2) values lie in the interval 2 – 4 $(\mu_N/eb)^2$.
4. Regular band with backbending at 57/2.
5. Band intensity ~ 6%.

Band 3:
1. Tentatively assigned as $\pi(h_{9/2}^2 h_{11/2}^{-2}) \otimes \nu(i_{13/2}^{3})$ from the CSM calculations.
2. Small oblate deformation ($\beta_2 \sim 0.15$).
3. B(M1)/B(E2) values lie in the interval 2 – 4 $(\mu_N/eb)^2$.
4. Irregular band.
5. Band intensity ~ 20%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{195}_{80}Hg_{115}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	7412.2	$57/2^-$				**1998Ne01**
	7744.9	$59/2^-$	332.7			
	8067.5	$61/2^-$	322.6	654.5		
	8456.7	$63/2^-$	389.2	712.2		
	8892.1	$65/2^-$	435.4	825.1		
	9331.2	$67/2^-$	439.1	875.7		
	9785.2	$69/2^-$	454.0	893.4		
	10220.6	$71/2^-$		889.4		
2	5174.7	$43/2^+$				**1998Ne01**
	5308.1	$45/2^+$	133.4			
	5411.3	$47/2^+$	103.2			
	5687.7	$49/2^+$	276.4			
	5893.6	$51/2^+$	205.9	481.3		
	6300.1	$53/2^+$	406.5	611.5		
	6652.1	$55/2^+$	352.0	758.3		
	7129.0	$57/2^+$	476.9	828.3		
	7538.2	$59/2^+$	409.2	886.1		
	8010.3	$61/2^+$	472.1	882.0		
	8383.3	$63/2^+$		845.1		
3	X					**1998Ne01**
	171.8+X		171.8			
	443.3+X		271.5			
	749.0+X		305.7	576.9		

Configurations and Comments:

Band 1:
1. $\pi(h_{11/2}^{2}) \otimes \nu(i_{13/2}^{-4}f_{5/2}^{-1})$ from CSM calculations.
2. Small oblate deformation.
3. B(M1)/B(E2) ratios ~ 2 $(\mu_N/eb)^2$.
4. Irregular band with backbending at 61/2.
5. Nuclear reaction: ^{192}Os (^{9}Be, 6nγ), E(^{9}Be) = 80 MeV, Band intensity ~ 5%.

Band 2:
1. $\pi(h_{11/2}^{2}) \otimes \nu(i_{13/2}^{-3})$ from CSM calculations.
2. Small oblate deformation.
3. B(M1)/B(E2) ratios lie around 2 $(\mu_N/eb)^2$.
4. Irregular band.
5. Band intensity ~ 15%.

Band 3:
1. This band has tentatively been assigned to the nucleus.
2. Irregular band.
3. Band intensity ~ 3%.

$^{196}_{80}Hg_{116}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	6400+X	(22^+)				**1993Ce04**
	6557+X	(23^+)	157			
	6659+X	(24^+)	102	259		
	6916+X	(25^+)	257	359		
	7094+X	(26^+)	178	435		
	7462+X	(27^+)	368	547		
	7750+X	(28^+)	288	656		
	8211+X	(29^+)	461	749		
	8609+X	(30^+)	398	859		

Configurations and Comments:

1. $\pi(h_{9/2}^{2}h_{11/2}^{-2}) \otimes \nu(i_{13/2}^{-2})$ from TRS calculations.
2. Small oblate shape $(\beta_2, \gamma) = (0.139, -72°)$.
3. X ≥ 0 keV.
4. B(M1)/B(E2) values range from 0.5 - 3 $(\mu_N/eb)^2$
5. Irregular band.
6. Nuclear reaction: ^{192}Os (^{9}Be, 5nγ), E(^{9}Be) = 65 MeV, Band intensity ~ 19%.

$^{191}_{82}Pb_{109}$

	E_{level} keV	I^π	$E_\gamma(M1)$ keV	$E_\gamma(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	2577.5+X	$(29/2^-)$				**1998Fo02**
	2811.5+X	$(31/2^-)$	234.0			
	3195.1+X	$(33/2^-)$	383.6			
	3604.4+X	$(35/2^-)$	409.3	792.9	23(5)	
	4030.5+X	$(37/2^-)$	426.1	835.5	20(5)	
	4377.2+X	$(39/2^-)$	346.7			
	4691.3+X	$(41/2^-)$	314.1			
	4929.9+X	$(43/2^-)$	238.6			
	5207.1+X	$(45/2^-)$	277.2			
2	2428.7	$27/2^+$				**1998Fo02**
	2765.9	$(29/2^+)$	337.2			
	3141.4	$(31/2^+)$	375.5			
	3551.3	$(33/2^+)$	409.9			

Configurations and Comments:

Band 1:

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2}s_{1/2}^{-2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-1})$ below, and $\pi(h_{9/2}i_{13/2}s_{1/2}^{-2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-3})_{K=33/2}^{+}$ above the bandcrossing.
2. X ~ 72 keV.
3. All E_{level} given here are approximate since E_{level} of $13/2^+$ state is ~ 138 keV.
4. Regular band with backbending at 39/2.
5. Nuclear reaction: ^{173}Yb (^{24}Mg, 6nγ), E(^{24}Mg) = 134.5 MeV, Band intensity ~ 10%.

Band 2:

1. Tentatively assigned as $\pi(h_{9/2}^{2}s_{1/2}^{-2})_{K=8}^{+} \otimes \nu(i_{13/2}^{-1})$ or $\pi(i_{13/2}s_{1/2}^{-1})_{K=7}^{+} \otimes \nu(i_{13/2}^{-1})$.
2. All E_{level} given here are approximate since E_{level} of $13/2^+$ state is ~ 138 keV.
3. Regular band.
4. Band intensity ~ 7.5%.

$^{192}_{82}Pb_{110}$

	E_{level} keV	I^π	$E_\gamma(M1)$ keV	$E_\gamma(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	4241.2	15^-				**1993Pl02**
	4370.1	16^-	128.9			
	4519.2	17^-	149.1		>2.38	
	4702.3	18^-	183.1		>7.69	
	4989.6	19^-	287.3		>6.67	
	5276.9	20^-	287.3		>16.67	
	5559.5	21^-	282.6		>11.11	
	5708.6	(22^-)	149.1	431.7	<20	
2	4963.0	18^-				**1993Pl02**
	5087.1	19^-	124.1		>50	
	5286.3	20^-	199.2		>4	
	5531.7	21^-	245.4		>11.11	
	5871.0	22^-	339.3		>12.5	
	6232.1	23^-	361.1		>5.88	
	6666.0	(24^-)	433.9		>4	
	7155.5	(25^-)	489.5		>5.88	

Configurations and Comments:

Band 1:

1. Tentatively assigned as $\pi(9/2[505] \otimes 13/2[606]) \otimes \nu(i_{13/2}^{2})$ based on CSM-TRS calculations and by comparison with ^{191}Tl.
2. Small oblate deformation.
3. The limits on B(M1)/B(E2) are by assuming that the unobserved E2 transitions are at the most half intense than the 489.5 keV γ ray in band 2.
4. Regular band with backbending at spin 21.
5. Nuclear reaction: ^{173}Yb (^{24}Mg, 5nγ), E(^{24}Mg) = 132 MeV.

Band 2:

1. Tentatively assigned as $\pi(7/2[514] \otimes 13/2[606]) \otimes \nu(i_{13/2}^{2})$ from the CSM-TRS calculations and by comparison with ^{191}Tl.
2. Small oblate deformation.
3. The limits on B(M1)/B(E2) are by assuming that the unobserved E2 transitions are at the most half-intense than the 489.5 keV γ ray.
4. Regular band.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{193}_{82}Pb_{111}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References	Configurations and Comments:
1	2584.8+X	$29/2^-$				**1996Du18**	1. $\pi(9/2[505] \otimes 13/2[606])_{K=11}^{-} \otimes \nu(i_{13/2})$ by comparison with similar bands in neighboring Pb nuclei.
	2686.9+X	$31/2^-$	102.1			1996Ba54	2. Oblate deformation.
	2939.2+X	$33/2^-$	252.3			1997Ch33	3. X ~ 100 keV from systematics.
	3320.7+X	$35/2^-$	381.5	633.8	28(5)		4. For bandhead $T_{1/2}$ = 9.4(7) ns and g factor = 0.68(3) (1997Ch33).
	3722.3+X	$37/2^-$	401.6	783.1	22(4)		5. Regular band with backbending at 41/2.
	4136.1+X	$39/2^-$	413.8	815.4	16(6)		6. Nuclear reaction: ^{168}Er (^{30}Si, 5nγ), E(^{30}Si) = 159 MeV, Band intensity ~ 17%.
	4470.6+X	$41/2^-$	334.5	748.3			
	4828.3+X	$43/2^-$	357.7	692.3			
	5218.6+X	$45/2^-$	390.3				
2	4297.7+X	$(39/2^+)$				**1996Du18**	1. Tentatively assigned as $\pi(9/2[505] \otimes 13/2[606])_{K=11}^{-} \otimes \nu(i_{13/2}^{2}\, p_{3/2})$ by comparison with similar bands in neighboring Pb nuclei.
	4387.7+X	$(41/2^+)$	90.0			1998Cl06	2. Oblate deformation.
	4536.6+X	$(43/2^+)$	148.9				3. X ~ 100 keV from systematics.
	4768.6+X	$(45/2^+)$	232.0				4. The B(M1) values as given in 1998Cl06 for the transitions from 291 to 416 keV are 5.27(64), 4.32(+56-75), 4.01(+95-76) and 2.83(34) (μ_N^2), respectively.
	5060.2+X	$(47/2^+)$	291.6				5. The mean lifetimes of levels having spin values from 45/2 to 51/2 as given in 1998Cl06 are 0.33(4), 0.23(+4-3), 0.21(+4-5) and 0.25(3) ps, respectively.
	5425.4+X	$(49/2^+)$	365.2	656.8	15(3)		6. Regular band with backbending at spin 59/2.
	5815.0+X	$(51/2^+)$	389.6	754.7	12(3)		7. Band intensity ~ 7%.
	6231.1+X	$(53/2^+)$	416.1	805.6			
	6657.2+X	$(55/2^+)$	426.1	842.2	15(3)		
	7089.9+X	$(57/2^+)$	432.7	858.8			
	(7516.0+X)	$(59/2^+)$	(426.1)				
	(7932.1+X)	$(61/2^+)$	(416.1)				
3	4944.8+X	$(43/2^+)$				**1996Du18**	1. $\pi(9/2[505] \otimes 13/2[606])_{K=11}^{-} \otimes \nu(i_{13/2}^{2}\, f_{5/2})$ by comparison with similar bands in neighboring Pb nuclei.
	5169.1+X	$(45/2^+)$	224.3				2. Oblate deformation.
	5436.6+X	$(47/2^+)$	267.5				3. X ~ 100 keV from systematics.
	5762.8+X	$(49/2^+)$	326.2				4. Regular band.
	6145.2+X	$(51/2^+)$	382.4				5. Band intensity ~ 3%.
4	5092.7+X	$(45/2^-)$				**1996Du18**	1. Tentatively assigned as $\pi(9/2[505] \otimes 13/2[606])_{K=11}^{-} \otimes \nu(i_{13/2})^3$ by comparison with similar bands in neighboring Pb nuclei.
	5331.8+X	$(47/2^-)$	239.1			1996Ba54	2. Oblate deformation.
	5597.4+X	$(49/2^-)$	265.6				3. X ~ 100 keV from systematics.
	5926.9+X	$(51/2^-)$	329.5				4. Regular band.
	6302.5+X	$(53/2^-)$	375.6				5. Band intensity ~ 0.6%.
	6715.4+X	$(55/2^-)$	412.9				
	7154.6+X	$(57/2^-)$	439.2				
5	5825.3+X	$(49/2^-)$				**1996Du18**	1. Tentatively assigned as $\pi(9/2[505] \otimes 13/2[606])_{K=11}^{-} \otimes \nu(i_{13/2})^3$ or $\pi(9/2[505] \otimes 13/2[606])_{K=11}^{-} \otimes \nu(i_{13/2}h_{9/2}^{2})$ from HF+BCS calculations.
	6001.6+X	$(51/2^-)$	176.3				2. X ~ 100 keV from systematics.
	6285.3+X	$(53/2^-)$	283.7				3. Parity assignment is based on three M1 transitions to band 1.
	6597.2+X	$(55/2^-)$	311.9				4. Regular band.
	6927.6+X	$(57/2^-)$	330.4				5. Band intensity ~ 0.6%.
	7312.1+X	$(59/2^-)$	384.5				
	7713.6+X	$(61/2^-)$	401.5				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{194}_{82}Pb_{112}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	4963.5	16^-				**1993Me12**
	5083.1	17^-	119.6			1994Po08
	5228.3	18^-	145.2			1995Ka19
	5424.4	19^-	197.1			1998Cl06
	5685.8	20^-	260.4			1998Ka59
	6022.2	21^-	336.4			
	6398.3	22^-	376.1			
	6814.9	23^-	416.6			
	7239.0	(24)	424.1			
	7681	(25)	442			
	8109	(26)	428			

Configurations and Comments:

1. Tentatively assigned as $\pi(9/2[505]\otimes13/2[606])_{K=11}{}^{-} \otimes \nu(i_{13/2}{}^{2})$ in 1994Po08 from the excitation energy, spin, mom. of inertia, alignments and from a comparison with the isotone ^{192}Hg.
2. The two topmost transitions are from 1995Ka19
3. Regular band with backbending at the top of the band.
4. The B(M1) values as given in 1998Cl06 for the transitions from 260 to 417 keV are 9.79(+255 -170), 5.86(+56-56), 5.13(+114-143) and 3.90 (87) $(\mu_N{}^2)$, respectively.
5. The mean lifetimes of levels having spin values from 20 to 23 as given in 1998Cl06 are 0.23(+4-6), 0.21(2), 0.18(+5-4) and 0.18(4) ps, respectively.
6. Nuclear reaction: ^{158}Gd (^{40}Ar, 4nγ), E(^{40}Ar) = 178 MeV, Band intensity ~ 25%.

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
2	4376	13^+				**1998Ka59**
	4506.4	14^+	130.4			**1993Me12**
	4643.4	15^+	137.0			1994Po08
	4806.7	16^+	163.3			1995Ka19
	5109.7	17^+	303.0			
	5506.9	18^+	397.2			
	5883.5	19^+	376.6	773.4	21(4)	
	6247.3	20^+	363.8	740.0	13(3)	
	6508.3	21^+	261			
	6720.9	22^+	212.6			
	6948.6	23^+	227.7			
	7216.0	(24)	267.4			
	7523.2	(25)	307.2			
	7884.8	(26)	361.6	(668)		
	8278.4	(27)	393.6	(754)		
	8699	(28)	421			
	9141	(29)	442			
	9603	(30)	462			
	10088	(31)	485			

1. Tentatively assigned as $\pi(9/2[505]\otimes13/2[606])_{K=11}{}^{-} \otimes \nu(f_{5/2}i_{13/2})$ before and $\pi(9/2[505] \otimes 13/2\,[606])_{K=11}{}^{-} \otimes \nu(f_{5/2}i_{13/2}{}^{3})$ after the bandcrossing from the spin, parity and from a comparison with the isotone ^{192}Hg.
2. The ordering of levels up to 23^+ is from 1998Ka59 with the exception that 212.6 is assumed between the 227.7 and 261 keV transitions. The ordering above this is taken from 1993Me12, 1994Po08 and 1995Ka19.
3. Regular band with backbending at 19^+.
4. Nuclear reaction: ^{182}W(^{16}O, 4nγ), E(^{16}O)= 95 MeV.

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
3	4135.6	16^+				**1993Me12**
	(4298.2)	17^+	(162.6)			
	4531.3	18^+	233.1			
	4819.3	19^+	288.0			
	5167.1	20^+	347.8			
	5541.4	21^+	374.3			
	5938.4	(22)	397.0			

1. No definite configuration has been suggested for this band. From the decay pattern it appears that this is based on four-neutron excitation.
2. Regular band.
3. Band intensity ~ 4%.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{195}_{82}Pb_{113}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	2968.3	$27/2^-$				**1996Ka15**
	3098.0	$29/2^-$	129.7			1995Fa19
	3362.0	$31/2^-$	264.0			
	3734.7	$33/2^-$	372.7	637.0	16(4)	
	4119.9	$35/2^-$	385.2	757.7	18(3)	
	4566.2	$(37/2^-)$	446.3	832.0	13(3)	
	4966.8	$(39/2^-)$	400.6			
2	5123.6	$(39/2^-)$				**1996Ka15**
	5270.4	$(41/2^-)$	146.8			1995Fa19
	5467.7	$(43/2^-)$	197.3			1998Cl06
	5702.5	$(45/2^-)$	234.8			
	5978.4	$(47/2^-)$	275.9			
	6308.1	$(49/2^-)$	329.7			
	6674.2	$(51/2^-)$	366.1			
	7090.8	$(53/2^-)$	416.6			
	7536.8	$(55/2^-)$	(446.0)			
3	4465.6	$(33/2^-)$				**1996Ka15**
	4560.4	$(35/2^-)$	94.8			1995Fa19
	4693.9	$(37/2^-)$	133.5			
	4866.5	$(39/2^-)$	172.6			
	5108.1	$(41/2^-)$	241.6			
	5412.9	$(43/2^-)$	304.8			
	5770.9	$(45/2^-)$	358.0	663.0	17(4)	
	6144.7	$(47/2^-)$	373.8	732.0	23(5)	
	6529.5	$(49/2^-)$	384.8	759.0	13(3)	
	6907.2	$(51/2^-)$	377.7	763.0	10(3)	
	7281.2	$(53/2^-)$	374.0			

Configurations and Comments:

Band 1:

1. $\pi(9/2[505] \otimes 13/2[606])_{k^{\pi}=11^-} \otimes \nu(i_{13/2})$ by comparison with the neighboring ^{194}Pb and ^{195}Tl.
2. Oblate shape
3. Parities are from 1995Fa19.
4. Irregular band with backbending at the top of the band.
5. Nuclear reaction: $^{184}W(^{16}O, 5n\gamma)$, $E(^{16}O) = 113$ MeV, Band intensity ~ 5%.

Band 2:

1. $\pi(9/2[505] \otimes 13/2[606])_{k^{\pi}=11^-} \otimes \nu(i_{13/2}{}^3)$ by comparison with the neighboring ^{194}Pb and ^{195}Tl.
2. Oblate shape
3. Parities are from 1995Fa19.
4. Regular band.
5. The B(M1) values as given in 1998Cl06 for the transitions from 276 to 366 keV are 7.01(+200 -125), 6.14(88) and 4.48 (+41-61) $(\mu_N{}^2)$, respectively.
6. The mean lifetimes of levels having spin values from 47/2 to 51/2 as given in 1998Cl06 are 0.28(+5-8), 0.21(3) and 0.22(+3-2) ps, respectively.

Band 3:

1. $\pi(9/2[505] \otimes 13/2[606])_{K=11} \otimes \nu(i_{13/2}{}^2(f_{5/2}/p_{3/2})^1)$ at low spin and $\pi(9/2[505] \otimes 13/2[606])_{K=11} \otimes \nu(i_{13/2}{}^4(f_{5/2}/p_{3/2})^1)$ at high spin, by comparison with a similar band of ^{194}Pb.
2. Oblate shape (β_2 ~ -0.15).
3. Regular band with backbending at the top of the band.
4. Parities are from 1995Fa19.
5. Band intensity ~ 15%.

Table of Magnetic Dipole Rotational Bands (contd.)

${}^{196}_{82}Pb_{114}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ KeV	B(M1) μ_N^2	References
1	X					**1996Ba53**
	164.4+X		164.4			1993Hu01
	372.9+X		208.5			1995Mo01
	622.8+X		250.3			
	931.9+X		309.1			
	1307.7+X		375.1			
	1712.2+X		404.4			

Configurations and Comments:

1. Configuration assignment could not be made as the spins and excitation energies could not be measured experimentally.
2. Regular band.
3. X ~ 5874 keV from systematics.
4. Nuclear reaction (1993Hu01) : ${}^{170}Er$ (${}^{30}Si$, 4nγ), E(${}^{30}Si$) = 142, 146 and 151 MeV and ${}^{176}Yb$ (${}^{26}Mg$, 6nγ), E(${}^{26}Mg$) = 138 MeV,Band intensity ~ 9%.

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ KeV	B(M1) μ_N^2	References
2	5155.0	$16^{(-)}$				**1995Mo01**
	5262.6	$17^{(-)}$	107.6			1993Hu01
	5400.2	$18^{(-)}$	137.6			1996Ba53
	5604.3	$19^{(-)}$	204.1			
	5872.7	$21^{(-)}$	268.4			
	6205.1	$21^{(-)}$	332.4			
	6572.3	$22^{(-)}$	367.2	698.7	≥ 2.3	
	6964.4	$23^{(-)}$	392.1	759.3	3.7(+49-16)	
	7362.3	$24^{(-)}$	397.9	790.3	4.4(+39-18)	
	7770.7	$25^{(-)}$	408.4	806.1	1.8(+7-4)	
	8104.5	(26)	333.8			
	8476.4	(27)	371.9			
	8813.1	(28)	336.7			
	9171.7	(29)	358.6			
	9614.2	(30)	442.5			

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2}) \otimes \nu(i_{13/2}^{-2})$ from the CSM calculations.
2. Oblate deformation.
3. Regular band with backbending at spin 26.
4. The mean lifetimes of levels having spin values from $23^{(-)}$ to $28^{(-)}$ are ≤0.4, 0.21(+15-12), 0.17(+12 -8), 0.39(11), 0.47(+10-14) and 0.23(9) ps, respectively.
5. Top five transitions are from 1996Ba53. Above $25^{(-)}$ there is a forking with another path having 395.4, 422.1, 404.1 and 428.5 keV transitions.
6. Band intensity ~ 15% from 1993Hu01.

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ KeV	B(M1) μ_N^2	References
3	Y					**1996Ba53**
	192.9+Y		192.9			1993Hu01
	507.5+Y		314.6	507.6		1995Mo01
	882.0+Y		374.5	689.2		1998Cl06
	1237.4+Y		355.4	730.0		
	1578.9+Y		341.5	696.8		
	1822.6+Y		243.7	585.2		
	2032.5+Y		209.9			
	2272.0+Y	25	239.5			
	2558.2+Y	26	286.2		3.9(+10-6)	
	2897.4+Y	27	339.2		3.2(+13-12)	
	3295.1+Y	28	397.7		3.0(+10-6)	
	3743.7+Y	29	448.6		2.0(+4-3)	
	4234.2+Y		490.5		1.9(+5-3)	
	4760.9+Y		526.7			

1. The band is likely to be based on the $\pi(h_{9/2}s_{1/2})$ quasiproton configuration (1995Mo01).
2. Oblate deformation.
3. Spins are from 1998Cl06.
4. Regular band with backbending at 1237.4+X level.
5. The B(M1) values are from 1995Mo01.
6. The B(M1) values as given in 1998Cl06 for the transitions from 286 to 490 keV are 9.57(+201 -151), 7.05(+166-124), 5.28 (106), 4.52 (+70-104) and 2.59(58) (μ_N^2), respectively.
7. The mean lifetimes as given in 1995Mo01, of five uppermost levels are 0.35(+20-10), 0.41(8), 0.25(6), 0.27(4) and 0.23(5) ps respectively.
8. The mean lifetimes of levels having spin values from 25 to 29 as given in 1998Cl06 are 0.19(+3-4), 0.17(+3-4), 0.15(3), 0.13(+3-2) and 0.18(4) ps, respectively.
9. Band intensity ~ 30% from 1993Hu01.

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ KeV	B(M1) μ_N^2	References
4	Z					**1995Mo01**
	295.7+Z		295.7			1996Ba53
	638.5+Z		342.8			
	1018.4+Z		379.9			
	1431.1+Z		412.7			
	1863.5+Z		432.4			

1. Configuration assignment could not be made as the spins and excitation energies could not be measured experimentally.
2. Regular band.
3. Nuclear reaction (1995Mo01) : ${}^{170}Er$ (${}^{30}Si$, 4nγ) E(${}^{30}Si$) = 142 MeV, Band intensity ~ 6%

Table of Magnetic Dipole Rotational Bands (contd.)

$^{197}_{82}Pb_{115}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	References
1.	3283.4	$27/2^-$				**2001Go06**
	3436.0	$29/2^-$	152.6			1999Po13
	3706.5	$31/2^-$	270.5			1995Ba35
	4065.6	$33/2^-$	359.1	629.8	30(11)	1992Ku06
	4435.4	$35/2^-$	369.8	729.0	26(8)	1994Cl01
	4820.4	$37/2^-$	385.0	754.9	21(6)	1998Cl06
	5185.6	$39/2^-$	365.2	750.2	21(6)	
	5479.4	$41/2^-$	293.8	659.2	54(21)	
	5707.0	$43/2^-$	227.6	521.7	35(11)	
	5952.4	$45/2^-$	245.4	473.2	57(29)	
	6237.6	$47/2^-$	285.2	531.0	33(15)	
	6564.8	$49/2^-$	327.2	612.4	25(10)	
	6903.7	$51/2^-$	338.9	666.1	84(43)	
	7257.0	$53/2^-$	353.3	692.1	68(34)	
	7659.8	$55/2^-$	402.8	756.0	46(23)	
	8120.1	$57/2^-$	460.3	862.8	41(20)	
	8635.2	$59/2^-$	515.1	975.1	16(6)	
	9197.8	$61/2^-$	562.6	1077.4	18(8)	
	9793.8	$63/2^-$	596.0	1158.1	57(29)	
	10405.5	$65/2^-$	611.7	1207.4	47(25)	

Configurations and Comments:

1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-1})$ below, $\pi(h_{9/2}i_{13/2})_{K=11} \otimes \nu(i_{13/2}^{-3})$ above the first band crossing and $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-3}(f_{5/2}p_{3/2})^{-2})$, by comparison with the similar band in neighboring Pb isotopes and from the TAC model calculations.
2. Small oblate deformation.
3. Regular band showing a backbend at 41/2.
4. The mean lifetimes for the transitions from 152.6 to 293.8 keV as given in 1994Cl01 are 3.1(7), 2.8(4), 1.3(3), 1.3(3), 1.1(3) 1.3(3) and 1.3(3) ps, respectively and that for transitions from 285 to 353 as given in 1998Cl06 are 0.40(2), 0.29(+3-2), 0.17(+2-1) and 0.17(+2-1) ps, respectively.
5. The B(M1) values as given in 1994Cl01 for the transitions from 152 to 294 keV are 1.34(+38 -24), 0.55(+10-9), 0.67(+19-14), 0.60(+19-12), 0.61 (+24-14), 0.60(+19-14) and 1.04(+30-21) (μ_N^2), respectively and that for transitions from 285 to 353 keV as given in 1998Cl06 are 4.59(23), 4.53(+31-47), 7.05(+41-83) and 6.35 (+37-75) (μ_N^2), respectively.
6. Nuclear reaction: $^{186}W(^{18}O, 7n\gamma)$ $E(^{18}O)$ = 104, 110 and 115 MeV, Band intensity ~ 18 %.

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	$B(M1)/B(E2)$ $(\mu_N/eb)^2$	References
2.	4794.0	$37/2^+$				**2001Go06**
	4906.4	$39/2^+$	112.4			1999Po13
	5057.7	$41/2^+$	151.3			1995Ba35
	5258.3	$43/2^+$	200.6			1992Ku06
	5525.0	$45/2^+$	266.7			1993Hu08
	5861.7	$47/2^+$	336.7			1994Cl01
	6265.6	$49/2^+$	403.9	740.7	85(47)	1998Cl06
	6711.7	$51/2^+$	446.1	849.9	28(11)	
	7178.8	$53/2^+$	467.1	913.3	38(17)	
	7612.5	$55/2^+$	433.7	900.6	65(35)	
	7983.9	$57/2^+$	371.4			
	8371.5	$59/2^+$	387.6			
	8794.1	$61/2^+$	422.6			
	9245.8	$63/2^+$	451.7			
	9722.9	$65/2^+$	477.1			

1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-2}f_{5/2}^{-1})$ below and $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-4}f_{5/2}^{-1})$ above the bandcrossing from the TAC model calculations.
2. Small oblate deformation.
3. The mean lifetimes for the transitions from 151.3 to 266.7 keV as given in 1994Cl01 are 1.8(8), 0.9(4) and 1.2(3) ps, and from 337 to 467 as given in 1998Cl06 are 0.17(3), 0.13(+3 -2), 0.16(2) and 0.28(+5-6) ps, respectively.
4. The B(M1) values as given in 1994Cl01 for the transitions from 151 to 267 keV are 2.32(+232 -77), 3.66(+220-100) and 1.78(+118-51) (μ_N^2), respectively, and that for transitions from 337 to 467 keV, as given in 1998Cl06 are 7.18(127), 5.88(+90-136), 3.72 (47) and 1.90(+41-34) (μ_N^2), respectively.
5. Regular band showing a backbending at 55/2.
6. Band intensity ~ 7%.

Table of Magnetic Dipole Rotational Bands (contd.)

3.	5232.6	$39/2^{(+)}$				**2001Go06**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-2}p_{3/2}^{-1})$ below and $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-4}f_{5/2}^{-1})$ above the bandcrossing by comparison with the configuration of band 2.
	5395.3	$41/2^{(+)}$	162.7			1995Ba35	2. Small oblate deformation.
	5614.1	$43/2^{(+)}$	218.8			1999Po13	3. Irregular band.
	5878.8	$45/2^{(+)}$	264.7				4. Band intensity ~ 2%.
	6195.4	$47/2^{(+)}$	316.6				
	6558.7	$49/2^{(+)}$	363.3				
	6912.5	$51/2^{(+)}$	353.8				
	7286.4	$53/2^{(+)}$	373.9				
	7677.5	$55/2^{(+)}$	391.1				
	8067.7	$57/2^{(+)}$	390.2				
	8438.7	$59/2^{(+)}$	371.0				
	8830.5	$61/2^{(+)}$	391.8				
4.	6014.1	$43/2^{-}$				**2001Go06**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-3} f_{5/2}^{-2})$, by comparison with band 1 and TAC calcualations.
	6202.1	$45/2^{-}$	188.0				2. Small oblate deformation.
	6407.9	$47/2^{-}$	205.8				3. Regular band.
	6659.3	$49/2^{-}$	251.4				4. Band intensity ~ 2%.
	6993.4	$51/2^{-}$	334.1				
	7406.6	$53/2^{-}$	413.2				
	7859.5	$55/2^{-}$	452.9	866.1	27(10)		
	8352.7	$57/2^{-}$	493.2	946.1	23(9)		
	8878.1	$59/2^{-}$	525.4				
	9441.0	$61/2^{-}$	562.9				
	10022.9	$63/2^{-}$	581.9				
5.	6262.6	$45/2^{(+)}$				**2001Go06**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-2} (f_{5/2}p_{3/2})^{-3}$, by comparison with band 1, 4 and TAC calcualations.
	6517.9	$47/2^{(+)}$	255.3				2. Small oblate deformation.
	6806.5	$49/2^{(+)}$	288.6				3. Regular band.
	7147.2	$51/2^{(+)}$	340.7				4. Band intensity ~ 1.5%.
	7550.8	$53/2^{(+)}$	403.6				
	8015.4	$55/2^{(+)}$	464.6	868.2	54(23)		
	8516.6	$57/2^{(+)}$	504.2	968.8	17(8)		
	9041.4	$59/2^{(+)}$	521.8				
	9581.3	$61/2^{(+)}$	539.9				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{198}_{82}Pb_{116}$

	E_{level} keV	I^{π}	E_{γ}(M1) keV	E_{γ}(E2) KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	4882.7	(14^+)				**2001Go06**
	4975.7	(15^+)	93.0			1993Cl05
	5092.2	(16^+)	116.5			1992Wa20
	5248.9	(17^+)	156.7			1994Cl01
	5476.5	(18^+)	227.6			1997Cl03
	5812.5	(19^+)	336.0			
	6241.0	(20^+)	428.5			
	6659.4	(21^+)	418.4			
	6866.8	(22^+)	206.5			
	7073.3	(23^+)	206.5			
	7311.0	(24^+)	237.7			
	7590.5	(25^+)	279.5			
	7916.1	(26^+)	325.6			
	8290.5	(27^+)	374.4	700.2	76(41)	
	8712.2	(28^+)	421.7	796.1	>91	
	9175.8	(29^+)	463.6	885.3	>79	
	9681.1	(30^+)	505.3	968.9	68(34)	
	10230.5	(31^+)	549.4	1054.6	40(24)	
	10820.8	(32^+)	590.3	1139.7	>35	
	11438.5	(33^+)	617.7	1208.0	9(5)	
	12059.5	(34^+)	621.0	1238.7	>16	
	12699.0	(35^+)	639.5			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{3/2}^{-1}f_{5/2}^{-1})$ before, $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-3}f_{5/2}^{1})$ above first band crossing and $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{3/2}^{-3}(f_{5/2}p_{3/2})^{-3})$ above the second band crossing from TAC calculations and by comparison with similar bands in neighboring Pb isotopes.
2. Nearly oblate shape.
3. The mean lifetimes for the transitions from 207 to 506 keV as given in 1994Cl01 are 2.1(4), 0.85(30), 1.1(6), 0.58(15), 0.36(10), 0.20(4), 0.099(25) and 0.052(11) ps, respectively.
4. B(M1) values for the transitions from 207 to 506 keV as given in 1994Cl01 are 1.32(+32-21), 2.64(+140-70), 1.41(+176-53), 1.94(+88-53), 2.11(+88-53), 2.82 (+88-53), 4.58(+158-88) and 6.51(+194-158) (μ_N^2), respectively.
5. Regular band.
6. Nuclear reaction: ^{186}W (^{18}O, 6nγ) E(^{18}O) = 104, 110 and 115 MeV, Band intensity ~ 10%.

	E_{level} keV	I^{π}	E_{γ}(M1) keV	E_{γ}(E2) KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
2	6518.9	(20^-)				**2001Go06**
	6734.2	(21^-)	215.3			1993Cl05
	7016.7	(22^-)	282.5			
	7360.4	(23^-)	343.7			
	7778.9	(24^-)	418.5			
	8255.5	(25^-)	476.6			
	8739.4	(26^-)	483.9			
	9154.4	(27^-)	415.0			

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{3/2}^{-2}(f_{5/2}p_{3/2})^{-2})$ before and $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{3/2}^{-4}(f_{5/2}p_{3/2})^{-2})$ after the band crossing from TAC calculations and by comparison with band 3.
2. Small oblate deformation.
3. Regular band.
4. Band intensity ~ 3%.

	E_{level} keV	I^{π}	E_{γ}(M1) keV	E_{γ}(E2) KeV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
3	5379.1	16^-				**2001Go06**
	5492.7	17^-	113.6			1993Cl05
	5648.4	18^-	155.7			1992Wa20
	5863.4	19^-	215.0			1994Cl01
	6141.8	20^-	278.4			1997Cl03
	6484.0	21^-	342.2	621.0	40(17)	1998Kr20
	6872.8	22^-	388.8	731.0	39(17)	
	7295.2	23^-	422.4	811.2	38(17)	
	7739.3	24^-	444.1	866.5	24(7)	
	8210.8	25^-	471.5	915.6	21(6)	
	8686.0	26^-	475.2	946.7	26(10)	
	9112.3	27^-	426.3	901.5	34(14)	
	9512.3	28^-	400.0	826.3	50(16)	
	9930.5	29^-	418.2	818.2	>40	
	10380.3	30^-	449.8			
	10869.3	31^-	489.0			
	11398.7	32^-	529.4			
	11970.8	33^-	572.1			
	12579.8	34^-	609.0			

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{3/2}^{-2})$ before and $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{3/2}^{-4})$ after the band crossing from TAC calculations.
2. Small oblate deformation.
3. The mean lifetimes for the transitions from 156 to 476 keV as given in 1994Cl01 are 2.7(9), 1.8(5), 2.1(5), 1.14(23), 0.72(10), 0.46(10), 0.24(4), 0.22(6), and 0.27(7) ps, respectively and B(M1) values for these transitions are 1.18(+60-30), 1.46(+56-32), 0.79 (+21-16), 0.84(+19-14), 0.97(+19-14), 1.21(+46 -21), 1.88(+67-30), 1.74(+86-33) and 1.30(+60 -25) μ_N^2, respectively.
4. The mean lifetimes for the transitions from 156 to 342.8 keV as given in 1998Kr20 are 0.63(10), 0.70(+10-20), 0.34(+15-10) and 0.20(+20-10) ps and the B(M1) values for these transitions are 6.2(+11-9), 3.8(+15-5), 4.9(+20-15) and 4.9(+48-28) μ_N^2 respectively.

5. Band intensity ~ 10%.

Table of Magnetic Dipole Rotational Bands (contd.)

4	(6392.6)	(18^-)				**2001Go06**
	(6515.3)	(19^-)	122.7			1993Cl05
	(6674.4)	(20^-)	159.1			
	(6878.3)	(21^-)	203.9			
	(7142.9)	(22^-)	264.6			
	(7480.1)	(23^-)	337.2			
	(7835.0)	(24^-)	354.9			
	(8243.5)	(25^-)	408.5			
	(8695.0)	(26^-)	451.5			
	(9146.5)	(27^-)	451.5	903.0		

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-2}(f_{5/2}p_{3/2})^{-2})$ before and $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-4}(f_{5/2}p_{3/2})^{-2})$ after the bandcrossing from TAC calculations.
2. Small oblate deformation.
3. Regular band.
4. Band intensity ~ 5%.

5.	7333.4	(23^+)				**2001Go06**
	7554.4	(24^+)	221.0			1993Cl05
	7794.8	(25^+)	240.4			
	8076.1	(26^+)	281.3			
	8408.2	(27^+)	332.1			
	8799.7	(28^+)	391.5			
	9254.9	(29^+)	455.2			
	9770.1	(30^+)	515.2	969.8		
	10329.1	(31^+)	559.0			
	10921.3	(32^+)	592.2			

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-1}P_{3/2}^{-1})$ before and $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-3}P_{3/2}^{-1})$ after the bandcrossing from TAC calculations and by comparison with the neighboring Pb isotopes.
2. Small oblate deformed structure.
3. Regular band.
4. Band intensity ~ 7%.

$^{199}_{82}Pb_{117}$

	E_{level} keV	I^π	E_γ(M1) keV	E_γ(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	References
1	3604.2	$(25/2^-)$				**1995Ne09**
	3694.1	$(27/2^-)$	89.9			1999Po13
	3868.0	$(29/2^-)$	173.9			1994Ba43
	4143.4	$(31/2^-)$	275.4			1997Cl03
	4502.8	$(33/2^-)$	359.4	634.8		
	4904.1	$(35/2^-)$	401.3	760.8		
	5324.8	$(37/2^-)$	420.7	822.1		
	5746.3	$(39/2^-)$	421.5	842.4		
	6074.9	$(41/2^-)$	328.6	750.1		
	6309.5	$(43/2^-)$	234.6			
	6549.6	$(45/2^-)$	240.1			
	6823.4	$(47/2^-)$	273.8			
	7139.7	$(49/2^-)$	316.3	590.1	35(+22-20)	
	7502.8	$(51/2^-)$	363.1	679.5	27(+18-14)	
	7914.1	$(53/2^-)$	411.3	774.6	27(+15-18)	
	8373.4	$(55/2^-)$	459.3	870.9	38(20)	
	8881.7	$(57/2^-)$	508.3	967.7		
	9436.5	$(59/2^-)$	554.8	(1063)		

Configurations and Comments:

1. $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-1})$ below and $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-3})$ above the bandcrossing from the TAC model calculations.
2. Small oblate deformation $(\beta_2,\gamma) \sim (0.1, -70°)$
3. Mean lifetimes of states with spins from 43/2 to 49/2 are 0.37(+51-29), 0.31(+31-24), 0.17(+6-4) and 0.13(+4-3), and for the states with spins 51/2 to 57/2 as given in 1997Cl03 are 0.20(5), 0.16(+5-4), 0.15(+5-4) and 0.21(+6-5) ps, respectively.
4. B(M1) values for the transitions 234.6, 240.1 and 273.8 keV are 6.6(+25-38), 7.4(+24-38) and 10.6(+34-29) μ_N^2 and for the transitions from 363.1 to 508.3 keV as given in 1997Cl03 are 4.8(13), 4.4(+12-15), 3.0(+7-9) and 1.7(+4-5) μ_N^2, respectively.
5. Regular band with backbending at 41/2.
6. Nuclear reaction: $^{186}W(^{18}O, 5n\gamma)$ $E(^{18}O)$ = 92 and 94 MeV.

Table of Magnetic Dipole Rotational Bands (contd.)

2	X	$(35/2^+)$				**1999Po13**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-2}f_{5/2}^{-1})$ below and $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-4}f_{5/2}^{-1})$ above the bandcrossing from the TAC model calculations.
	98.2+X	$(37/2^+)$	98.2			1995Ne09	2. Small oblate deformation $(\beta_2,\gamma) \sim (0.1, -70°)$ suggested in 1995Ne09.
	223.2+X	$(39/2^+)$	125.0			1992Ba13	3. Mean lifetimes of states with spins from 47/2 to 55/2 are 0.19(+15-8), 0.14(+6-4), 0.10(+3-2), 0.06(2) and 0.11(2) ps, respectively and that for spin 57/2 as given in 1997Cl03 is 0.14(+3-2)
	388.8+X	$(41/2^+)$	165.6			1994Ba43	4. B(M1) value for the transition 323.1 keV is 6.6(+47-29) μ_N^2 from 1995Ne09.
	603.4+X	$(43/2^+)$	214.6			1997Cl03	5. B(M1)/B(E2) values are from 1992Ba13.
	871.2+X	$(45/2^+)$	267.8				6. Regular band with backbending at spin 61/2.
	1194.3+X	$(47/2^+)$	323.1				7. Nuclear reactions: ^{192}Os (^{12}C, 5nγ), E(^{12}C) = 82 MeV, and ^{186}W (^{18}O, 5nγ), E(^{18}O) = 94 MeV, Band intensity ~ 12%.
	1571.4+X	$(49/2^+)$	377.1	700.1	28(9)		
	2001.7+X	$(51/2^+)$	430.3	807.1	49(28)		
	2483.6+X	$(53/2^+)$	481.9	912.4	52(20)		
	3015.6+X	$(55/2^+)$	532.0	1014.2	30(9)		
	3589.2+X	$(57/2^+)$	573.6	1105.7	34(10)		
	4207.4+X	$(59/2^+)$	618.5	1192.1	45(11)		
	4546.6+X	$(61/2^+)$	339.2				
	4932.5+X	$(63/2^+)$	385.9				
	5353.5+X	$(65/2^+)$	421.0				
	5806.9+X	$(67/2^+)$	453.4				
	6303.4+X	$(69/2^+)$	496.5				
	6845.9+X	$(71/2^+)$	542.5				
	7433.6+X	$(73/2^+)$	587.7				
3	Y	$(39/2^+)$				**1994Ba43**	1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^- \otimes \nu(i_{13/2}^{-2} f_{5/2}^{-1})$ from the TAC model calculation.
	137.7+Y	$(41/2^+)$	137.7			1999Po13	2. Small oblate deformation $(\beta_2,\gamma) \sim (0.1, -70°)$
	302.3+Y	$(43/2^+)$	164.6			1995Ne09	3. The topmost transition is from 1999Po13.
	510.6+Y	$(45/2^+)$	208.3				4. Regular band.
	781.6+Y	$(47/2^+)$	271.0				
	1123.6+Y	$(49/2^+)$	342.0				
	1540.6+Y	$(51/2^+)$	417.0				
	2023.3+Y	$(53/2^+)$	482.7	900.0			
	2560.1+Y	$(55/2^+)$	536.8	1019.6			
	3145.3+Y	$(57/2^+)$	585.2	1122.0			
4	Z					**1994Ba43**	1. Tentatively assigned as $\pi(h_{9/2}^{2})_{K=8}^{+} \otimes \nu(i_{13/2}^{-3})$.
	97.7+Z		97.7			1999Po13	2. The estimated bandhead spin is 37/2 since it populates states with spin around 33/2.
	232.9+Z		135.2				3. The two topmost transitions are from 1999Po13
	426.1+Z		193.2				4. Regular band with signature splitting and backbending at the top of the band.
	673.5+Z		247.4				
	967.6+Z		294.1	541.4			
	1349.7+Z		382.1	676.2			
	1743.9+Z		394.2	776.4			
	2227.4+Z		483.5	877.6			
	2737.9+Z		510.5	994.2			
	3256.7+Z		518.8	1029.4			
	3594.9+Z		338.2				
5	U					**1994Ba43**	1. Tentatively assigned as $\pi(h_{9/2}^{2})_{K=8}^{+} \otimes \nu(i_{13/2}^{-4} p_{3/2}^{-1})$.
	242.9+U		242.9				2. The estimated bandhead spin is 45/2 since it populates states with spin around 41/2.
	550.2+U		307.3				3. Regular band with signature splitting.
	863.2+U		313.0	620.5			
	1247.8+U		384.6	697.6			
	1661.8+U		414.0	798.7			
	2148.8+U		487.0	901.4			

Table of Magnetic Dipole Rotational Bands (contd.)

$^{200}_{82}Pb_{118}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference	Configurations and Comments:
1	X					**1994Ba43**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-2})$ from the TAC model calculation.
	100.6+X		100.6				2. Small oblate deformation.
	223.9+X		123.3				3. Tentative bandhead spin is around 17.
	384.2+X		160.3				4. Regular band.
	592.8+X		208.6				5. Nuclear reaction (1992Ba13): $^{192}Os\ (^{13}C, 5n\gamma)$ $E(^{13}C) = 81$ MeV, Band intensity ~ 12%.
	855.3+X		262.5				
	1174.8+X		319.5				
	1549.5+X		374.7				
	1978.9+X		429.4				
	2459.5+X		480.6				
	2992.5+X		533.0	(1014)			
	3574.6+X		582.1				
	4207.0+X		632.4	1214.3			
2	Y					**1994Ba43**	1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-3}\ p_{3/2}^{-1})$ from the TAC model calculation.
	212.5+Y		212.5				2. Tentative bandhead spin is around 23.
	452.8+Y		240.3				3. Regular band.
	736.1+Y		283.3				4. Band intensity ~ 7%.
	1065.7+Y		329.6				
	1445.8+Y		380.1				
	1884.6+Y		438.8				
3	Z					**1994Ba43**	1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-3}\ f_{5/2}^{-1})$ from the TAC model calculation.
	237.5+Z		237.5				2. Tentative bandhead spin is around 23.
	518.8+Z		281.3				3. Regular band.
	853.4+Z		334.6				
	1234.8+Z		381.4				
	1658.3+Z		423.5				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{201}_{82}Pb_{119}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference	Configurations and Comments:
1	X					**1995Ba70**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-1})$ by comparison with a similar band in ^{199}Pb.
	109.2+X		109.2				2. Regular band.
	290.8+X		181.6				3. Nuclear reaction: ^{192}Os (^{14}C, 5nγ), E(^{14}C) = 76 MeV, Band intensity ~ 11(4)%.
	554.6+X		263.8				
	895.4+X		340.8				
	1299.4+X		404.0	744.6			
	1758.4+X		459.0	862.8			
	2264.1+X		505.7	964.7			
	2822.6+X		558.5				
2	6146.0+Y	35/2				**1995Ba70**	1. $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-2}p_{3/2}^{-1})$ by comparison with ^{199}Pb and TAC model calculations.
	6247.7+Y	37/2	101.7				2. Small oblate deformation.
	6377.4+Y	39/2	129.7				3. From 47/2 and above, there is a forking of the band with very close lying transitions having energies 333.1, 394.8 and 492.5 keV.
	6549.0+Y	41/2	171.6				4. Regular band.
	6769.5+Y	43/2	220.5				5. Band intensity ~ 11(3)%.
	7045.4+Y	45/2	275.9				
	7380.0+Y	47/2	334.6				
	7773.3+Y	49/2	393.3				
	8227.2+Y	51/2	453.9				
3	Z					**1995Ba70**	1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-} \otimes \nu(i_{13/2}^{-2} f_{5/2}^{-1})$, because of the similarity in the moment of inertia of the bands 2 and 3.
	139.6+Z		139.6				2. Regular band.
	315.4+Z		175.8				3. Band intensity ~ 8(3)%.
	537.7+Z		222.3				
	814.1+Z		276.4				
	1146.4+Z		332.3				
	1534.5+Z		388.1				
	1975.8+Z		441.3	829.4			
	2467.5+Z		491.7	933.1			
	3007.3+Z		539.8	1031.4			
4	U					**1995Ba70**	1. Regular band.
	176.5+U		176.5				2. Band intensity ~ 7(4)%.
	402.2+U		225.7				
	680.4+U		278.2				
	1007.1+U		326.7				
	1387.5+U		380.4				
	1817.2+U		429.7				
	2300.3+U		483.1				
	2830.5+U		530.2				
5	V					**1995Ba70**	1. Regular band.
	152.9+V		152.9				2. Band intensity ~ 8(4)%.
	351.5+V		198.6				
	601.5+V		250.0				
	913.5+V		312.0				
	1287.9+V		374.4				
	1723.9+V		436.0				
	2217.3+V		493.4				

Table of Magnetic Dipole Rotational Bands (contd.)

$^{202}_{82}Pb_{120}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1.	X					**2000Go47**
	161.3+X		161.3			1995Ba70
	404.6+X		243.3			
	737.5+X		332.9			
	1145.1+X		407.6			
	1611.6+X		466.5			
	2129.3+X		517.7			
2.	Y					**2000Go47**
	130.0+Y		130.0			
	321.7+Y		191.7			
	591.5+Y		269.8			
	940.9+Y		349.4			
	1357.3+Y		416.4			
	1835.2+Y		477.9			
	2358.6+Y		523.4			

Configurations and Comments:

Band 1:
1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-}\otimes\nu(i_{13/2}^{-2})$ by comparison with the lighter mass Pb isotopes.
2. Small oblate deformation.
3. X > 5.3 MeV and the bandhead spin > 17.
4. Regular band.
5. Nuclear reaction: ^{198}Pt (^{9}Be, 5nγ), E(^{9}Be) = 60 MeV, Band intensity ~ 6%.

Band 2:
1. Tentatively assigned as $\pi(h_{9/2}i_{13/2})_{K=11}^{-}\otimes\nu(i_{13/2}^{-1}p_{3/2}^{-1})$ by comparison with the lighter mass Pb isotopes.
2. Small oblate deformation.
3. Y > 5.059 MeV.
4. Regular band.
5. Band intensity ~ 14%.

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

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ KeV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1.	X					**2000Zw02**
	203.3+X		203.3			
	429.3+X		226.0			
	718.8+X		289.5		>17	
	1082.1+X		363.3		>9	
	1508.7+X		426.6		>20	
	1978.0+X		469.3		>15	
	2473.9+X		495.9		>15	
	2989.1+X		515.2			
2.	Y					**2000Zw02**
	372.2+Y		372.2			
	614.3+Y		242.1		>8	
	827.3+Y		213.0		>8	
	1145.1+Y		317.8		>5	
	1441.8+Y		296.7	614.5	5.7(3)	
	1735.5+Y		293.7	590.4	6.5(3)	
	2023.0+Y		287.5			

Configurations and Comments:

Band 1:
1. $\pi(h_{9/2}i_{13/2}s_{1/2}^{-1})\otimes\nu(i_{13/2}^{-4}p_{3/2}^{-1})$ by comparison of the $\Im^{(2)}$ with that of band 2 of ^{196}Pb.
2. Oblate deformation.
3. The limits on B(M1)/B(E2) are from the intensities of the unobserved expected E2 transitions.
4. Regular band.
5. Nuclear reaction: ^{184}W (^{19}F, 5nγ), E(^{19}F) = 107 MeV, intensity of 202.3 keV transition ~ 22(2)% relative to the lowest lying 345.4 keV transition.

Band 2:
1. Tentative proton configuration $\pi(h_{9/2}^{2})_{K=8}^{+}$ by comparison with magnetic dipole bands in $^{196,197}Pb$.
2. Oblate deformation.
3. The limits on B(M1)/B(E2) are from the intensities of the unobserved expected E2 transitions.
4. Irregular band.
5. Intensity of 372.2 keV transition ~ 60(2)% relative to the lowest lying 345.4 keV transition.

	E_{level} keV	I^{π}	E_{γ}(M1) keV	E_{γ}(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
3.	Z					**2000Zw02**
	345.4+Z		345.4			
	846.2+Z		500.8			
	1329.6+Z		483.4			
	1631.5+Z		301.9			
	2208.5+Z		577.0			
	2528.8+Z		320.3			
	2789.8+Z		261.0			

1. Tentative proton configuration $\pi(h_{9/2}s_{1/2})_{K=5}^{-}$ by comparison with magnetic dipole bands in ^{196,197}Pb.
2. Oblate deformation.
3. Irregular band.
4. Intensity of 372.2 keV transition ~ 60(2)% relative to the lowest lying 345.4 keV transition.

	E_{level} keV	I^{π}	E_{γ}(M1) keV	E_{γ}(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
4.	U					**1994Da17**
	165+U		165			
	416+U		251			
	731+U		315			
	1108+U		377			
	1517+U		409			

1. Tentatively assigned as $\pi(h_{9/2}\, i_{13/2}\, s_{1/2}^{-1})$ coupled to one or three $i_{13/2}$ neutron holes by comparison with a similar band in neighboring Pb isotopes.
2. B(M1)/B(E2) ratios are large due to the nonobservation of crossover E2 transitions.
3. Regular band.
4. Nuclear reaction: ^{186}W (^{19}F, 7nγ), E(^{19}F) = 115 and 105 MeV, Band intensity ~ 25% relative to the low lying 630 keV transition.

$^{199}_{83}$Bi$_{116}$

	E_{level} keV	I^{π}	E_{γ}(M1) keV	E_{γ}(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	X					**1994Da17**
	184.4+X		184.4			
	400.2+X		215.8			
	642.0+X		241.8			
	923.2+X		281.2			
	1236.7+X		313.5			
	1590.3+X		353.6			
	1950.8+X		360.5			
	2316.7+X		365.9			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{9/2}\, i_{13/2}\, s_{1/2}^{-1})$ coupled to two $i_{13/2}$ neutron holes by comparison with a similar band in neighboring Pb isotopes.
2. The band depopulates around 37/2.
3. B(M1)/B(E2) ratios are large due to the nonobservation of crossover E2 transitions.
4. Regular band.
5. Nuclear reaction: ^{186}W (^{19}F, 6nγ), E(^{19}F) = 115 and 105 MeV, Band intensity ~ 20% relative to 495 keV $31/2^{-} \rightarrow 29/2^{-}$ transition.

Table of Magnetic Dipole Rotational Bands (contd.)

$^{200}_{83}Bi_{117}$

	E_{level} KeV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	X					**1994Da17**
	193+X		193			
	431+X		238			
	720+X		289			
	1056+X		336			
	1432+X		376			
	1855+X		423			
2	Y					**1994Da17**
	199.0+Y		199.0			
	446.2+Y		247.2			
	740.7+Y		294.5			
	1083.8+Y		343.1			
	1475.2+Y		391.4			
	1918.8+Y		443.6			
	2417.8+Y		499.0			
	2970.7+Y		552.9			
	3577.7+Y		607.0			

Configurations and Comments:

Band 1:
1. Tentatively assigned as $\pi(h_{9/2}\, i_{13/2}\, s_{1/2}^{-1})$ coupled to one or three $i_{13/2}$ neutron holes by comparison with a similar band in neighboring Pb isotopes.
2. B(M1)/B(E2) ratios are large due to the nonobservation of crossover E2 transitions.
3. Regular band.
4. Nuclear reaction: $^{186}W\,(^{19}F, 5n\gamma)$, $E(^{19}F) = 115$ and 105 MeV, Band intensity ~ 20% relative to the low lying 326 keV transition.

Band 2:
1. Tentatively assigned as $\pi(h_{9/2}\, i_{13/2}\, s_{1/2}^{-1})$ coupled to one or three $i_{13/2}$ neutron holes by comparison with a similar band in neighboring Pb isotopes.
2. B(M1)/B(E2) ≥ 10 $(\mu_N/eb)^2$.
3. Regular band.
4. Band intensity ~ 30% relative to the low lying 326 keV transition.

$^{202}_{83}Bi_{119}$

	E_{level} keV	I^{π}	$E_{\gamma}(M1)$ keV	$E_{\gamma}(E2)$ keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	X					**1993Cl02**
	164+X		164			
	423+X		259			
	775+X		352			
	1199+X		424			
	1680+X		481			
	2210+X		530			
	2780+X		570			
2	Y					**1993Cl02**
	180+Y		180			
	394+Y		214			
	659+Y		265			
	984+Y		325			
	1374+Y		390			

Configurations and Comments:

Band 1:
1. Tentatively assigned as $\pi(h_{9/2}\, i_{13/2}\, s_{1/2}^{-1})$ coupled to one or two $i_{13/2}$ neutron holes by comparison with a similar band in neighboring Pb isotopes.
2. The estimated bandhead spin is about 10-16.
3. B(M1)/B(E2) ≥ 12 $(\mu_N/eb)^2$.
4. Regular band.
5. Nuclear reaction: $^{196}Pt\,(^{11}B, 5n\gamma)$, $E(^{11}B) = 75$ MeV, Band intensity ~ 15%.

Band 2:
1. Tentatively assigned as $\pi(h_{9/2}\, i_{13/2}\, s_{1/2}^{-1})$ or $\pi(h_{9/2}^{2} s_{1/2}^{-1})$ coupled to one or two $i_{13/2}$ neutron holes by comparison with the similar band in neighboring Pb isotopes.
2. The estimated bandhead spin is about 10-16.
3. B(M1)/B(E2) ≥ 6 $(\mu_N/eb)^2$.
4. Regular band.
5. Band intensity ~ 4%.

3	Z					**1993Cl02**
	250+Z		250			
	550+Z		300			
	907+Z		357			
	1320+Z		413			
	1785+Z		465			
	2302+Z		517			

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2}s_{1/2}^{-1})$ coupled to one or two $i_{13/2}$ neutron holes by comparison with the similar band in neighboring Pb isotopes. The estimated bandhead spin is about 11-19.
2. B(M1)/B(E2) ≥ 5 $(\mu_N/eb)^2$.
3. Regular band.
4. Band intensity ~ 3%.

$^{203}_{83}$Bi$_{120}$

	E_{level} keV	I^π	E_γ(M1) keV	E_γ(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	X					**1994Da17**
	175+X		175			
	421+X		246			
	759+X		338			
	1201+X		442			
	1718+X		517			
	2295+X		577			

Configurations and Comments:

1. Tentatively assigned as $\pi(h_{9/2}i_{13/2}s_{1/2}^{-1})$ coupled to two $i_{13/2}$ neutron holes by comparison with a similar band in neighboring Pb isotopes.
2. B(M1)/B(E2) ratios are large due to the nonobservation of crossover E2 transitions.
3. Regular band.
4. Nuclear reaction: ^{198}Pt (^{11}B, 6nγ), E(^{11}B) = 74 MeV, Band intensity ~ 15% relative to the 689 keV transition.

$^{205}_{86}$Rn$_{119}$

	E_{level} keV	I^π	E_γ(M1) keV	E_γ(E2) keV	B(M1)/B(E2) $(\mu_N/eb)^2$	Reference
1	1680+X	$(21/2^+)$				**1999No03**
	1796.7+X	$(23/2^+)$	116.7			
	1966.9+X	$(25/2^+)$	170.2			
	2124.8+X	$(27/2^+)$	157.9		2.0(2)	
	2246.0+X	$(29/2^+)$	121.2		>4	
	2494.0+X	$(31/2^+)$	248.0		>7	
	2861.7+X	$(33/2^+)$	367.7		>10	
	3164.1+X	$(35/2^+)$	302.4		>33	
	3452.3+X	$(37/2^+)$	288.2		>18	
	3653.6+X	$(39/2^+)$	201.3			
	4059.4+X	$(41/2^+)$	405.8			

Configurations and Comments:

1. The most likely configuration is the negative parity $\pi(h_{9/2}i_{13/2}) \otimes \nu(i_{13/2})$ from the TAC calculations. Since the observed parities are positive, the configuration $\pi(i_{13/2}^2) \otimes \nu(i_{13/2})$ is tentatively assigned.
2. Small oblate deformation , β_2 ~ -0.1.
3. X ~ 600 keV from systematics.
4. Irregular band.
5. Nuclear reaction: ^{170}Er (^{40}Ar, 5nγ), E(^{40}Ar) = 183 MeV, band intensity ~ 25%.

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