Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne and A. Negret	NDS 109, 943 (2008)	1-May-2007

Q(β^-)=3546 *6*; S(n)=6583 *6*; S(p)=7718 *6*; Q(α)=−4216 *11* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=3541 *6*; S(n)=6587 *7*; S(p)=7723 *7*; Q(α)=−4221 *12* 2003Au03

^{106}Rh Levels

Cross Reference (XREF) Flags

A ^{106}Ru β^- decay (371.8 d)
B (HI,xnγ)

E(level)‡	J$^\pi$†	$T_{1/2}$	XREF	Comments
0.0	1^+	30.07 s *35*	AB	%β^-=100 μ=2.575 *7* $T_{1/2}$: From critical review of (2004Wo02). Others: 29.80 s (1969KoZW), 30.36 s *15* (1966Mi10), 30 s (1950Gl05); see also 1946Se30, 1970RuZQ. J$^\pi$: log *ft*=4.31 from 0^+ via 371.6-d ^{106}Ru decay. μ: From NMR on oriented nuclei (1990Oh01). Others: from temperature dependence of nuclear orientation: 2.52 *5* (1990Oh01), 3.07 *9* (1977Ru08).
137 *13*	$(6)^+$	131 min *2*	B	%β^-=100 For Eγ=140, α(M5)≈800, one gets B(M5)(W.u.)≈1.50×10^9×branching(IT). Branching(IT)≤7×10^{-7} if B(M5)(W.u.)≤10. E(level): deduced from Q(β^-)(130-min ^{106}Rh isomer)=3677 *10* (1966De11) minus Q(β^-)(29.8-s ^{106}Rh g.s.)=3541 *6* (2003Au03) mass adjustment. $T_{1/2}$: weighted average of 130 min *2* (1958Ma39) scin γ-decay curves, chem separated sources and 133 min *4* (1960Se07). Others: 1955Ba20, 1955Ne03. J$^\pi$: from log *ft*=5.21 to 5^+ and feeding of 6^+ but not 4^+ states in ^{106}Pd.
247.70# *20*	(6^-)		B	
352.4@ *3*	(7^-)		B	
400.5# *5*	(8^-)		B	
564.5@ *9*	(9^-)		B	
897.5# *9*	(10^-)		B	
1189.9& *9*	(10^-)		B	
1207.5@ *10*	(11^-)		B	
1547.3a *10*	(11^-)		B	
1624.6# *10*	(12^-)		B	
1923.6& *10*	(12^-)		B	
2041.5@ *11*	(13^-)		B	
2394.3a *11*	(13^-)		B	
2495.5# *11*	(14^-)		B	
2865.8& *11*	(14^-)		B	
2996.2@ *13*	(15^-)		B	
3349.9a *12*	(15^-)		B	
3459.5# *13*	(16^-)		B	
3843.2& *13*	(16^-)		B	
4000.8@ *14*	(17^-)		B	
4457.7# *15*	(18^-)		B	

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Adopted Levels, Gammas (continued)

^{106}Rh Levels (continued)

E(level)[‡]	J$^{\pi}$[†]	XREF
4999.5[@] *15*	(19$^-$)	B
5500.4[#] *16*	(20$^-$)	B
6086.1[@] *17*	(21$^-$)	B
6671.0[#] *18*	(22$^-$)	B

[†] From γ lin pol, DCO and observed band structure in (HI,xnγ).
[‡] From least-squares fit to Eγ's by the evaluators;
[#] Band(A): $\pi g_{9/2}^{-1}\otimes\nu h_{11/2}$, α=+1/2.
[@] Band(a): $\pi g_{9/2}^{-1}\otimes\nu h_{11/2}$, α=−1/2.
[&] Band(B): Chiral partner of $\pi g_{9/2}^{-1}\otimes\nu h_{11/2}$, α=+1/2.
[a] Band(b): Chiral partner of $\pi g_{9/2}^{-1}\otimes\nu h_{11/2}$, α=+1/2.

γ(^{106}Rh)

ΔE: ΔEγ=0.3 keV assumed by evaluators for each transition used from 2004Jo10.

E$_i$(level)	J$_i^{\pi}$	E$_\gamma$[†]	I$_\gamma$	E$_f$	J$_f^{\pi}$	Mult.[@]	Comments
247.70	(6$^-$)	110.80[#] *12*	100	137	(6)$^+$		I$_\gamma$: a value of Iγ=142 *18* given by 2002Po11 in ^{176}Yb(^{28}Si,Xγ).
352.4	(7$^-$)	105.13[#] *17*	100	247.70	(6$^-$)		I$_\gamma$: a value of Iγ=111 *14* given by 2002Po11 in ^{176}Yb(^{28}Si,Xγ).
400.5	(8$^-$)	48.1[#] *3*	100	352.4	(7$^-$)		I$_\gamma$: a value of Iγ=32 *8* given by 2002Po11 in ^{176}Yb(^{28}Si,Xγ).
564.5	(9$^-$)	164.48[#] *19*	100 *9*	400.5	(8$^-$)	M1	
897.5	(10$^-$)	333.14[#] *13*	100 *4*	564.5	(9$^-$)	M1	
		497.4[#] *4*	6.4 *17*	400.5	(8$^-$)	(E2)	
1189.9	(10$^-$)	625.6	100 *58*	564.5	(9$^-$)	M1+E2	δ: no δ value given, possibly positive (2004Jo10).
		789.0	2.8 *20*	400.5	(8$^-$)		
1207.5	(11$^-$)	309.68[#] *13*	100 *4*	897.5	(10$^-$)	M1	
		642.9[#] *2*	42.0 *16*	564.5	(9$^-$)	E2	
1547.3	(11$^-$)	357.5	100 *81*	1189.9	(10$^-$)	(M1)	
		650.0	93 *56*	897.5	(10$^-$)	M1+E2	δ: no δ value given, possibly positive (2004Jo10).
1624.6	(12$^-$)	416.70[#] *25*	100 *5*	1207.5	(11$^-$)	M1	
		727.15[#] *22*	24.0 *25*	897.5	(10$^-$)	E2	
1923.6	(12$^-$)	376.7	100 *28*	1547.3	(11$^-$)	(M1)	
		715.4	9 *15*	1207.5	(11$^-$)	(M1+E2)	δ: no δ value given.
		733.6	5 *5*	1189.9	(10$^-$)	E2	
2041.5	(13$^-$)	416.70[#] *25*	100 *5*	1624.6	(12$^-$)	M1	
		834.25[#] *25*	84 *5*	1207.5	(11$^-$)	E2	
2394.3	(13$^-$)	470.5	100 *29*	1923.6	(12$^-$)	M1	DCO=0.90 *12* DCO for 471.5+470.5. Pol=−1.0 *4* for doublet.
		770.2	19 *7*	1624.6	(12$^-$)	M1+E2	δ: no δ value given.
		847.0	7.6 *15*	1547.3	(11$^-$)	(E2)	
2495.5	(14$^-$)	453.37[#] *17*	100 *5*	2041.5	(13$^-$)	M1	

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Adopted Levels, Gammas (continued)

$\gamma(^{106}Rh)$ (continued)

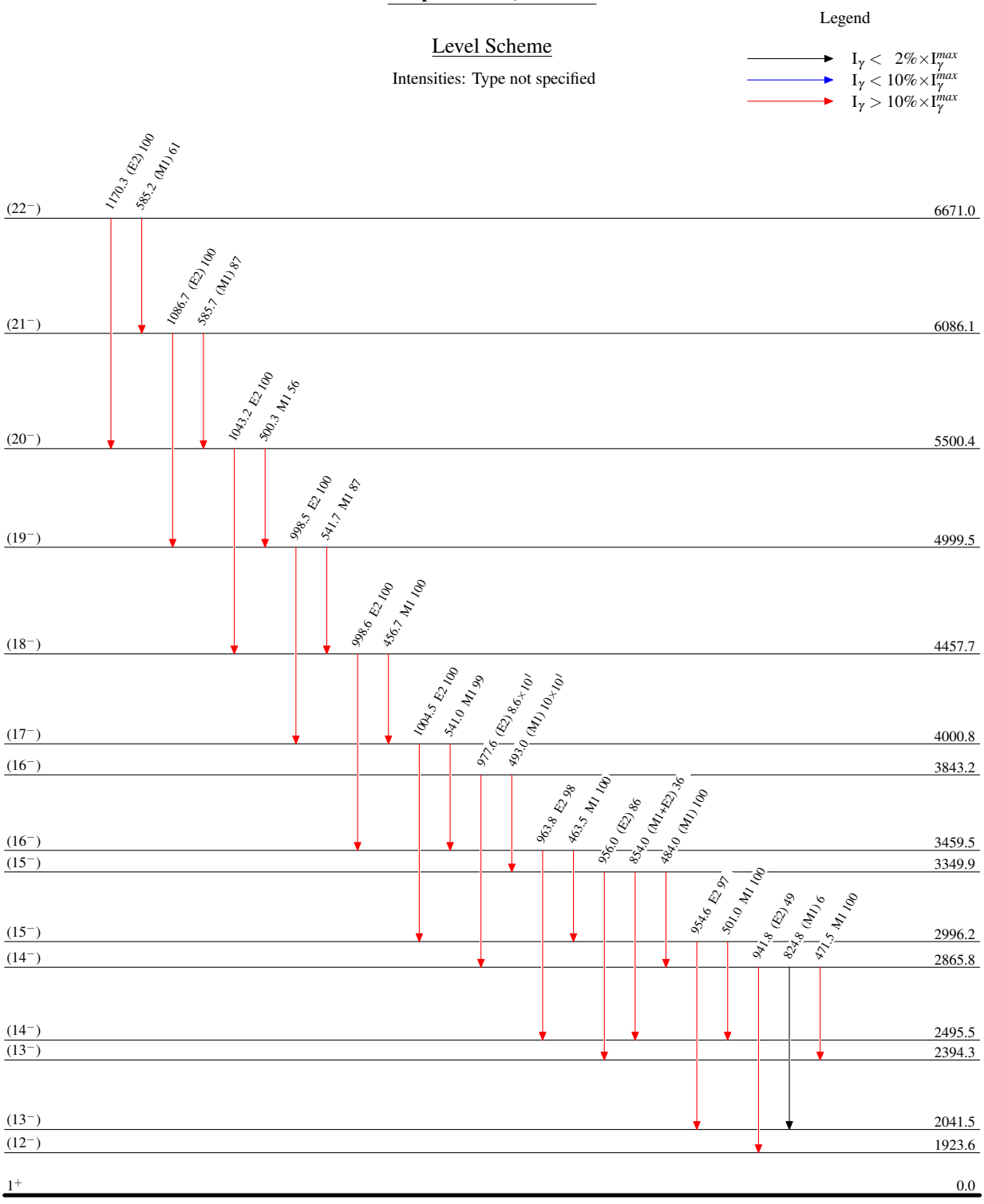
E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[@]	Comments
2495.5	(14$^-$)	871.0[#] *3*	54 *4*	1624.6	(12$^-$)	E2	
2865.8	(14$^-$)	471.5	100 *29*	2394.3	(13$^-$)	M1	DCO=0.90 *12*
		824.8	6 *15*	2041.5	(13$^-$)	(M1)	
		941.8	49 *26*	1923.6	(12$^-$)	(E2)	
2996.2	(15$^-$)	501.0[#] *3*	100 *8*	2495.5	(14$^-$)	M1	
		954.6[#] *3*	97 *6*	2041.5	(13$^-$)	E2	
3349.9	(15$^-$)	484.0	100 *36*	2865.8	(14$^-$)	(M1)	
		854.0	36 *36*	2495.5	(14$^-$)	(M1+E2)	δ: no δ value given.
		956.0	86 *32*	2394.3	(13$^-$)	(E2)	
3459.5	(16$^-$)	463.5	100 *8*	2996.2	(15$^-$)	M1	
		963.8	98 *7*	2495.5	(14$^-$)	E2	
3843.2	(16$^-$)	493.0	10×10^1 *12*	3349.9	(15$^-$)	(M1)	
		977.6	8.6×10^1 *10*	2865.8	(14$^-$)	(E2)	
4000.8	(17$^-$)	541.0	99 *18*	3459.5	(16$^-$)	M1	DCO=1.07 *9* DCO for 541.0+541.7. Pol=−0.7 *3* for 541.0+541.7.
		1004.5	100 *9*	2996.2	(15$^-$)	E2	
4457.7	(18$^-$)	456.7	100 *10*	4000.8	(17$^-$)	M1	
		998.6	100 *23*	3459.5	(16$^-$)	E2	DCO=1.99 *19* DCO for 998.6+998.5. Pol=+0.50 *25* for 998.6+998.5.
4999.5	(19$^-$)	541.7	87 *31*	4457.7	(18$^-$)	M1	DCO for 541.0+541.7. Pol=−0.7 *3* for 541.0+541.7.
		998.5	100 *25*	4000.8	(17$^-$)	E2	DCO=1.99 *19* DCO for 998.6+998.5. Pol=+0.50 *25* for 998.6+998.5.
5500.4	(20$^-$)	500.3	56 *14*	4999.5	(19$^-$)	M1	Pol=−0.9 *3* for 500.3+501.0.
		1043.2	100 *10*	4457.7	(18$^-$)	E2	
6086.1	(21$^-$)	585.7	87 *39*	5500.4	(20$^-$)	(M1)	
		1086.7	100 *22*	4999.5	(19$^-$)	(E2)	
6671.0	(22$^-$)	585.2	61 *32*	6086.1	(21$^-$)	(M1)	
		1170.3	100 *18*	5500.4	(20$^-$)	(E2)	

[†] From 2004Jo10, unless noted otherwise.
[‡] $\Delta E\gamma$=0.3 keV assumed by evaluators for each transition used from 2004Jo10.
[#] From least-squares fit of data from 2004Jo10, 2002Po11 and 2003Fo09.
[@] From DCO and lin pol data In (HI,xnγ).

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

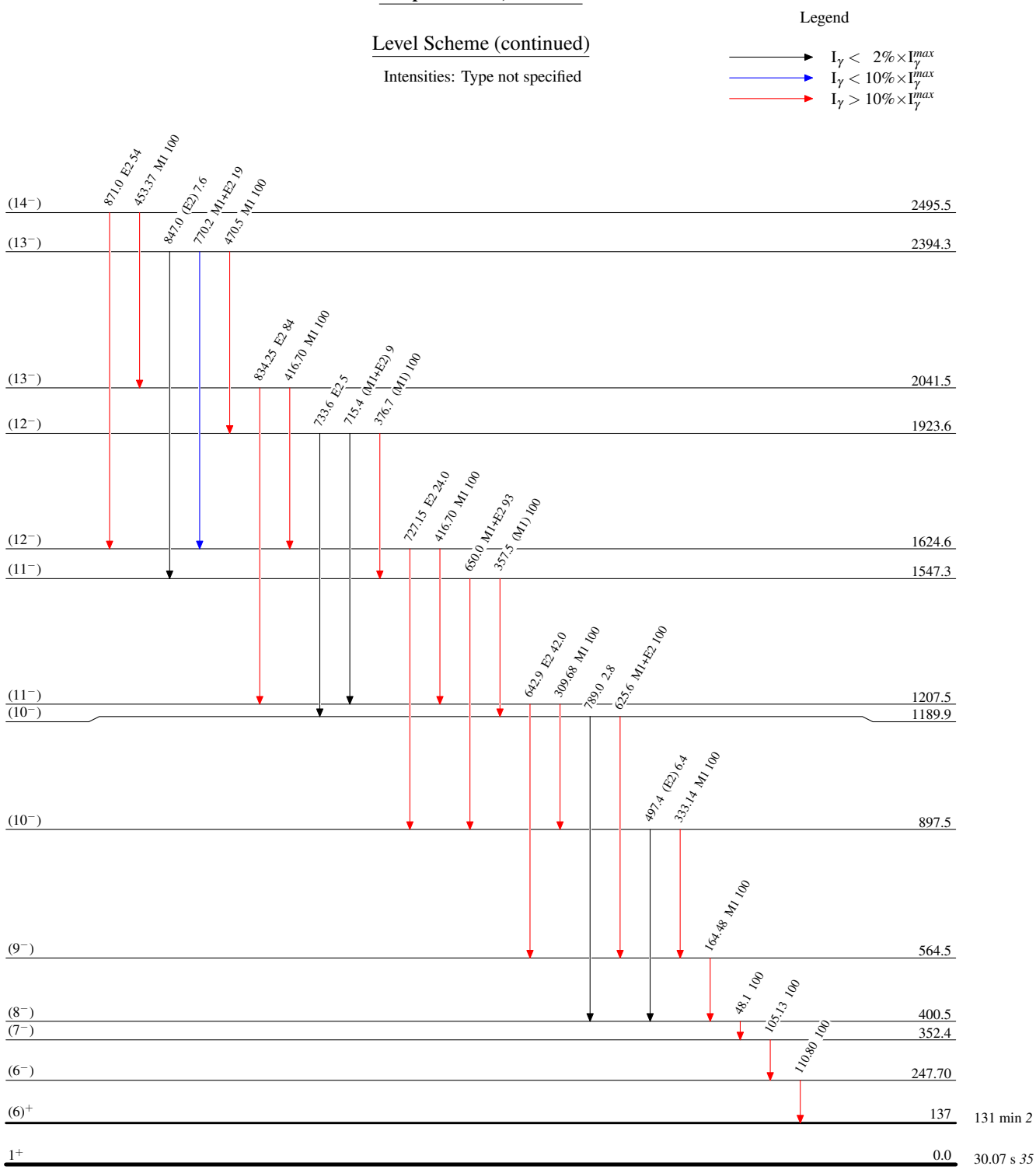


$^{106}_{45}Rh_{61}$

Adopted Levels, Gammas

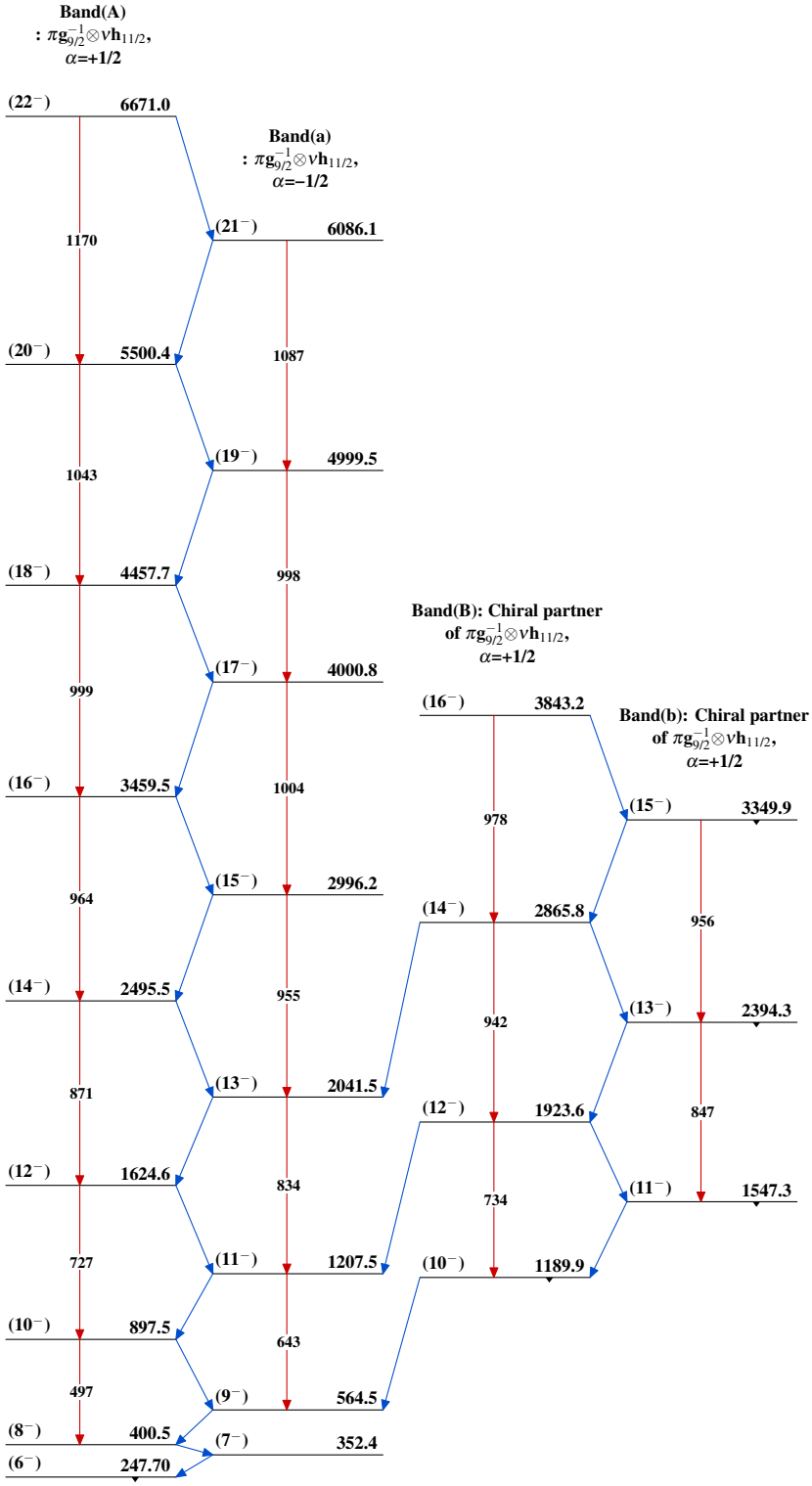
Level Scheme (continued)

Intensities: Type not specified



$^{106}_{45}Rh_{61}$

Adopted Levels, Gammas



$^{106}_{45}Rh_{61}$