(HI,xnγ) 1997Sh37

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 619 (2005)	1-Nov-2005

1997Sh37: ^{176}Yb(^{13}C,p3nγ), E=65 MeV; NORDBALL detector and Si Ball; measured Eγ, Iγ, γγ-, (charged particle)γ-coin, DCO.

^{185}Re Levels

E(level)	Jπ†	$T_{1/2}$	Comments
0‡	5/2+		
125#	7/2+		
284‡	9/2+		
368@	9/2−		
476#	11/2+		
547&	11/2−		
698‡	13/2+		
758@	13/2−		
950#	15/2+		
995&	15/2−		
1206a	15/2	6 ns *2*	Possibly 3-quasiparticle configuration, or vibrational configuration 9/2−[514]⊗ 3− octupole vibration. $T_{1/2}$: From centroid shift analysis of the γγ time-difference spectrum between the transitions above and below the state.
1228‡	17/2+		
1262@	17/2−		
1410a	17/2		
1533#	19/2+		
1549&	19/2−		
1691a	19/2		
1863‡	21/2+		
1866@	21/2−		
1999a	21/2		
2009	(19/2)		
2124b	(21/2)	123 ns *23*	$T_{1/2}$: From γγ time-difference spectrum between the transitions above and below the state.
2191&	23/2−		
2205#	23/2+		
2378b	(25/2)		
2553	(23/2)		
2588‡	25/2+		
2818c	(27/2)		
2942#	27/2+		
3123c	(29/2)		
3321‡	29/2+		
3397?			
3476c	(31/2)		
3676d	(31/2)		
3859c	(33/2)		
3924?			
3990e	(33/2)		

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(HI,xnγ) 1997Sh37 (continued)

^{185}Re Levels (continued)

E(level)	Jπ[†]
4385[d]	(35/2)
4593?	
4799[e]	(37/2)

† From level scheme of 1997Sh37, assigned by authors from band structures.
‡ Band(A): 5/2+[402] rotational band. α=+1/2.
# Band(a): 5/2+[402] rotational band. α=−1/2.
@ Band(B): 9/2−[514] rotational band. α=+1/2.
& Band(b): 9/2−[514] rotational band. α=−1/2.
a Band(C): 15/2 band.
b Band(D): (21/2) band.
c Band(E): (27/2) band.
d Band(F): (31/2) band.
e Band(f): (31/2) band.

γ(^{185}Re)

Eγ	Ei(level)	J_i^π	Ef	J_f^π	Mult.[†]	δ	α[#]	Comments
115	2124	(21/2)	2009	(19/2)	E1(+M2)	0.10 *+5−8*	0.5 *4*	Mult.,δ: From α_{tot}=0.55 *27* from intensity balance at the 2009 level. α_{tot}=0.59 *23* if both the 317γ and 599γ have mult=M1, and 0.50 *22* if they are both mult=E1.
125	125	7/2+	0	5/2+				
159	284	9/2+	125	7/2+				
179	547	11/2−	368	9/2−				
192	476	11/2+	284	9/2+				
204	1410	17/2	1206	15/2	D			
211	758	13/2−	547	11/2−				
211	1206	15/2	995	15/2−				
222	698	13/2+	476	11/2+				
237	995	15/2−	758	13/2−				
243	368	9/2−	125	7/2+				
252	950	15/2+	698	13/2+				
254	2378	(25/2)	2124	(21/2)	Q			
265	2818	(27/2)	2553	(23/2)	Q			
267	1262	17/2−	995	15/2−				
278	1228	17/2+	950	15/2+				
281	1691	19/2	1410	17/2	D			
284	284	9/2+	0	5/2+				
287	1549	19/2−	1262	17/2−				
305	3123	(29/2)	2818	(27/2)	D			
308	1999	21/2	1691	19/2				
315	3990	(33/2)	3676	(31/2)				
317	1866	21/2−	1549	19/2−				
317	2009	(19/2)	1691	19/2	(M1)[‡]		0.211	α(K)=0.175; α(L)=0.0277; α(M)=0.00631; α(N+..)=0.00190
325	2191	23/2−	1866	21/2−				
350	476	11/2+	125	7/2+				
353	3476	(31/2)	3123	(29/2)				
383	3859	(33/2)	3476	(31/2)				

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(HI,xnγ) 1997Sh37 (continued)

$\gamma(^{185}Re)$ (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[#]	Comments
395	4385	(35/2)	3990	(33/2)			
413	4799	(37/2)	4385	(35/2)			
414	698	$13/2^+$	284	$9/2^+$			
429	2553	(23/2)	2124	(21/2)	D		
439	2818	(27/2)	2378	(25/2)	D		
449	1206	15/2	758	$13/2^-$	D		
474	950	$15/2^+$	476	$11/2^+$			
526	3924?		3397?				
531	1228	$17/2^+$	698	$13/2^+$			
553	3676	(31/2)	3123	(29/2)			
580	3397?		2818	(27/2)			
583	1533	$19/2^+$	950	$15/2^+$			
599	2009	(19/2)	1410	17/2	(M1)[‡]	0.0397	α(K)=0.0329; α(L)=0.00511
635	1863	$21/2^+$	1228	$17/2^+$			
669	4593?		3924?				
672	2205	$23/2^+$	1533	$19/2^+$			
725	2588	$25/2^+$	1863	$21/2^+$			
733	3321	$29/2^+$	2588	$25/2^+$			
737	2942	$27/2^+$	2205	$23/2^+$			
809	4799	(37/2)	3990	(33/2)			

[†] From DCO ratios except as noted. DCO ratios not given in 1997Sh37.

[‡] Iγ(599)/Iγ(317)≈4, agrees with the Weisskopf estimate with the assumption of M1 multipolarities for both transitions (1997Sh37).

[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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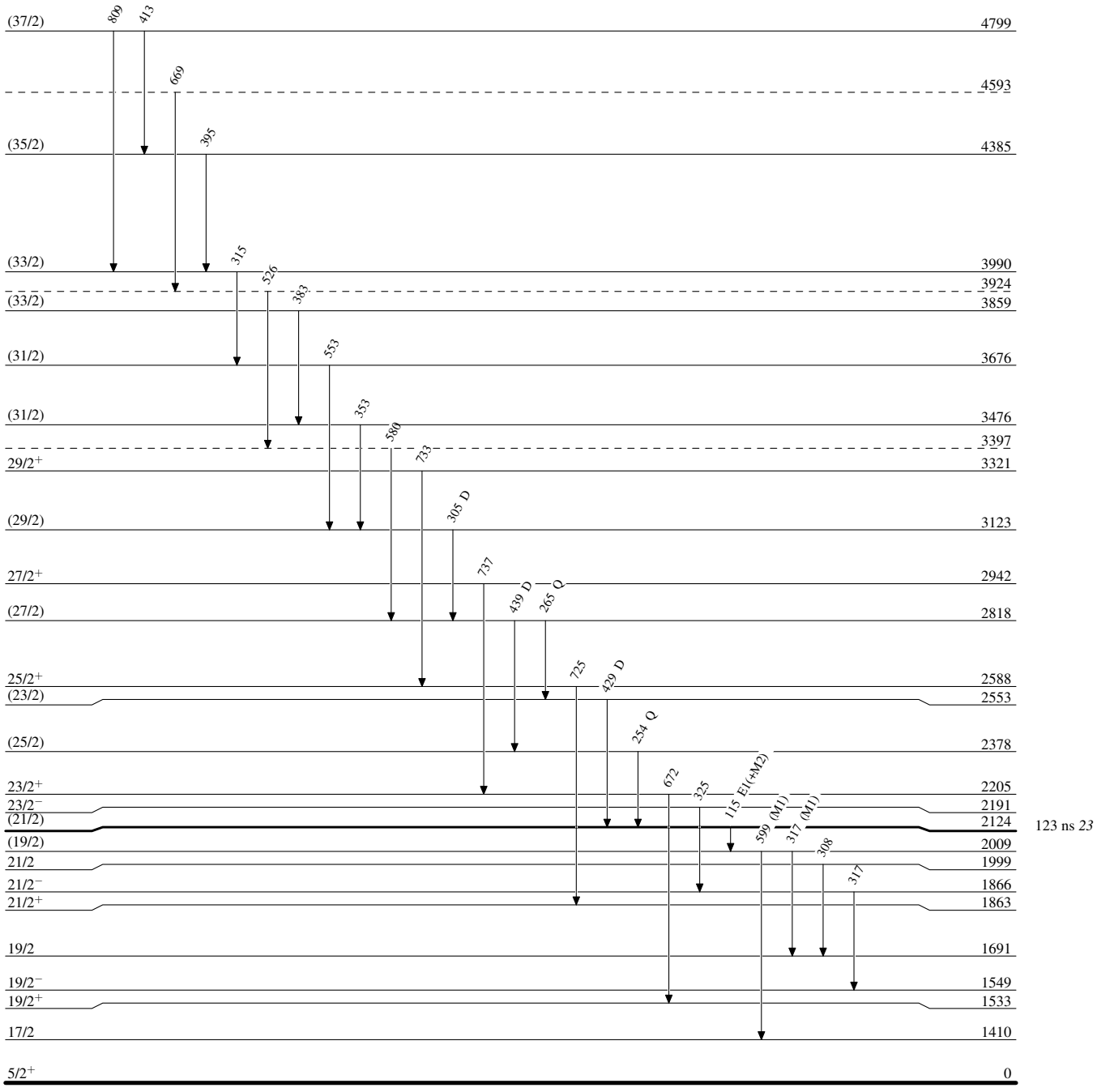
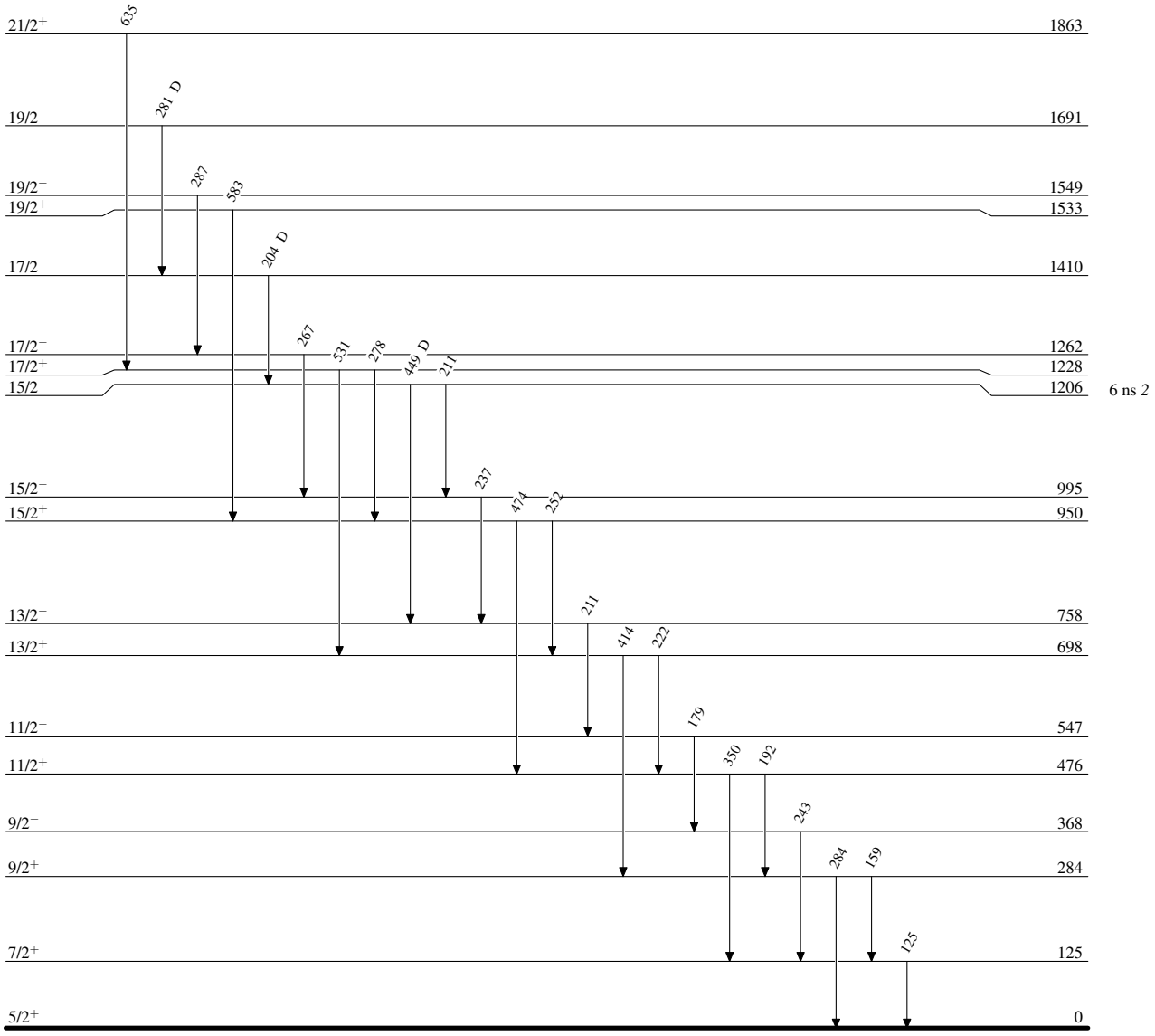
Level Scheme



$^{185}_{75}Re_{110}$

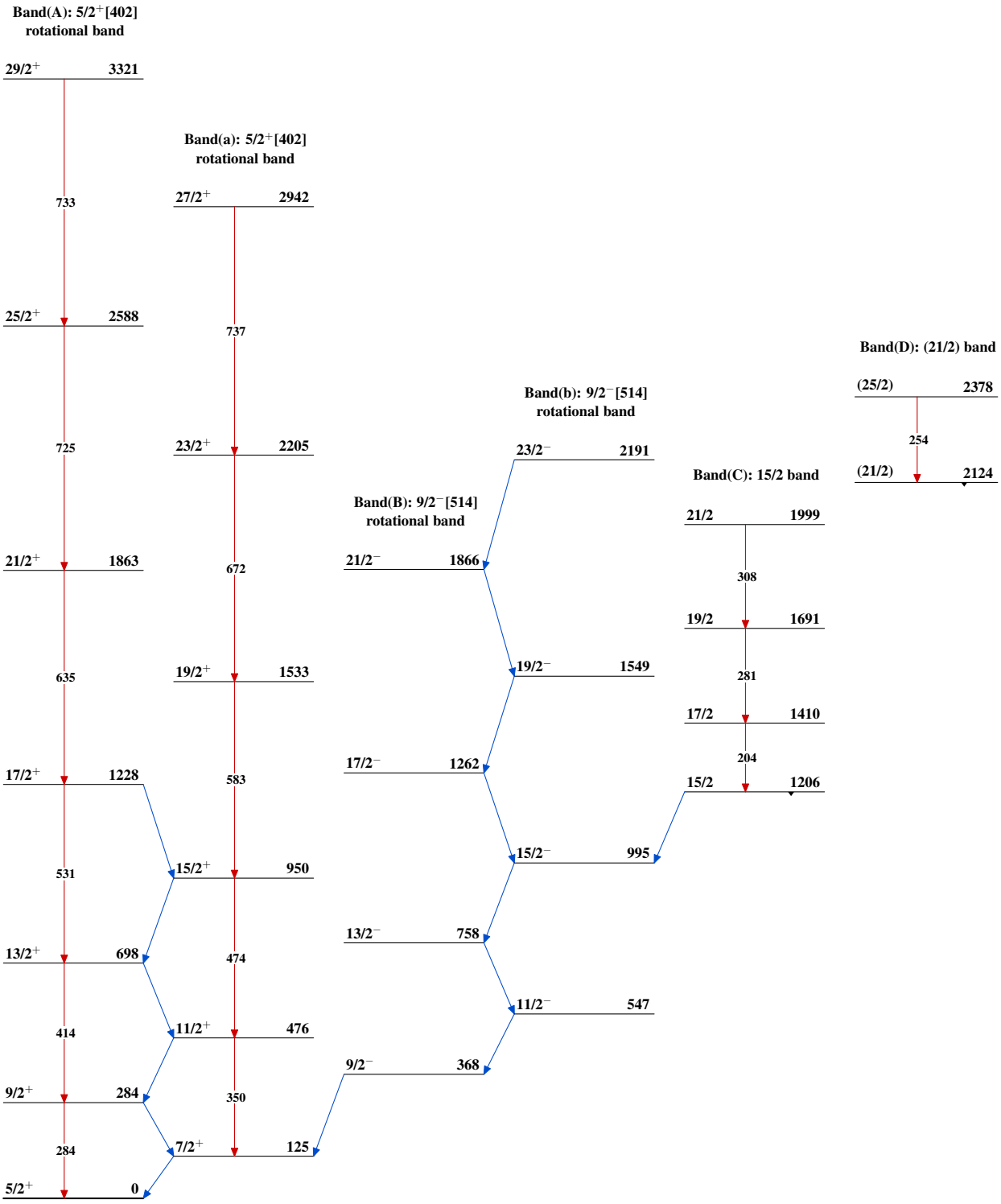
(HI,xnγ) 1997Sh37

Level Scheme (continued)



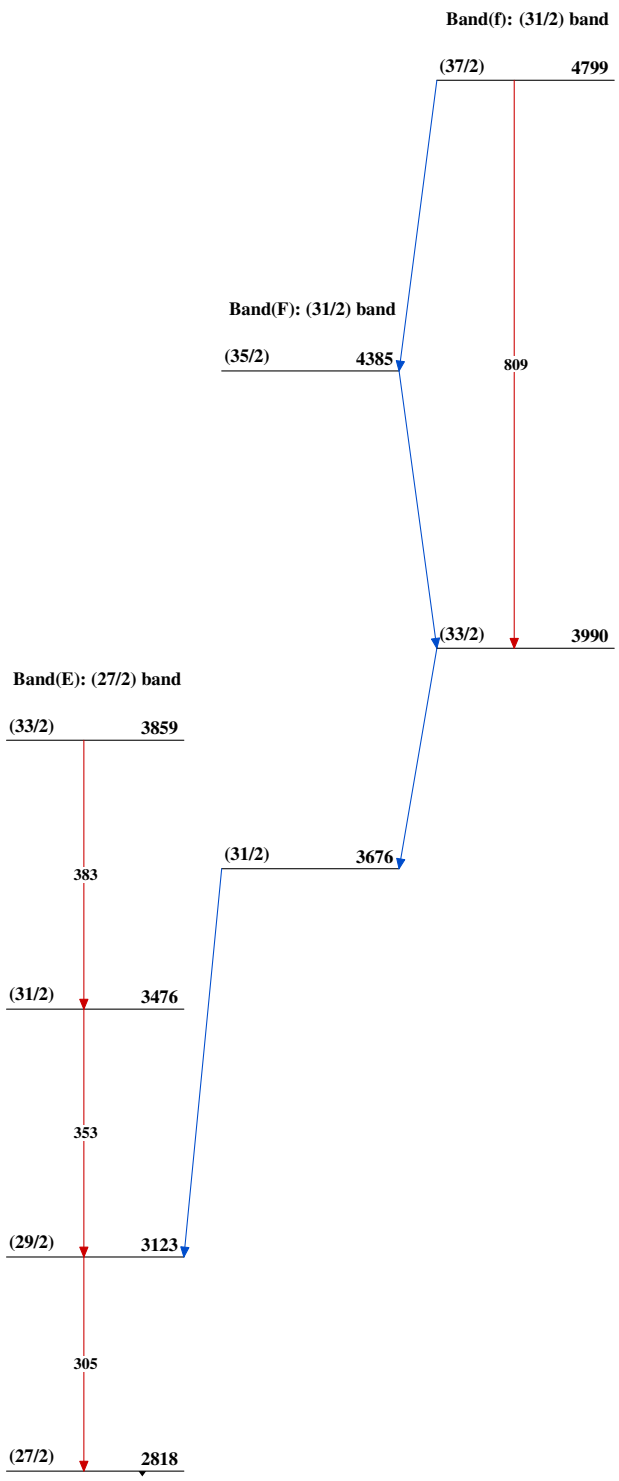
$^{185}_{75}Re_{110}$

(HI,xnγ) 1997Sh37



$^{185}_{75}Re_{110}$

(HI,xnγ) 1997Sh37 (continued)



$^{185}_{75}Re_{110}$