^{87}Rb(γ,γ') 2002Ka25

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson and W. D. Kulp(a)	NDS 129, 1 (2015)	27-Jul-2015

E_{max}=4.0 MeV from bremsstrahlung spectrum. Measured Eγ, Iγ, $\gamma\gamma(\theta)$, cross sections using three high-resolution HPGe detectors. Deduced widths and transition rates.

^{87}Rb Levels

E(level)[#]	J$^{\pi}$[†]	Γ	Integrated cross section in eVb	Comments
0	3/2$^-$			
403	5/2$^-$			
845	(1/2)$^-$[‡]	0.0048 eV *6*	12.9 *17*	B(M1)↑=0.34 *5* gΓ_0^2/Γ=0.00239 eV 32. Γ: For Γ_0/Γ=1.0.
1390	(3/2)$^-$	0.0024 eV *5*	3.1 *7*	B(M1)↑=0.062 *13* gΓ_0^2/Γ=0.00157 eV 33. Γ: For Γ_0/Γ=0.81 using branching from the Adopted Levels. No uncertainty is available for this branching, so the uncertainty quoted for Γ is a lower limit.
1463	(1/2)$^-$	0.0022 eV *8*	1.5 *6*	B(M1)↑=0.027 *10* gΓ_0^2/Γ=0.00084 eV 31. Γ: For Γ_0/Γ=0.87 using branching from the Adopted Levels. No uncertainty is available for this branching, so the uncertainty quoted for Γ is a lower limit.
1578	1/2$^-$,3/2$^-$		0.6 *4*	B(M1)↑=0.09 *6* gΓ_0^2/Γ=0.00042 eV 28.
1741	(3/2,5/2)$^-$		13.6 *10*	B(M1)↑=0.26 *2* gΓ_0^2/Γ=0.0107 eV 8.
2014	(1/2,3/2,5/2)$^-$[‡]		1.0 *3*	B(M1)↑=0.011 *4* gΓ_0^2/Γ=0.0011 eV 4.
2284	(1/2,3/2,5/2)$^-$[‡]		3.6 *4*	B(M1)↑=0.054 *5* gΓ_0^2/Γ=0.0049 eV 5.
2378	(1/2,3/2,5/2)[‡]		4.0 *4*	gΓ_0^2/Γ=0.0059 eV 6.
2398	1/2$^-$,3/2$^-$		29.0 *17*	B(M1)↑=0.32 *2* gΓ_0^2/Γ=0.0434 eV 26.
2555	3/2$^+$,5/2$^+$		12.1 *8*	B(E1)↑=12.1×10^{-6} *8* gΓ_0^2/Γ=0.0206 eV 14.
2811	3/2$^+$,5/2$^+$		1.14 *21*	B(E1)↑=1.3×10^{-6} *3* gΓ_0^2/Γ=0.0016 eV 4.
3005	(1/2,3/2,5/2)$^+$[‡]		4.6 *4*	B(E1)↑=3.8×10^{-6} *4* gΓ_0^2/Γ=0.0108 eV 10.
3043	(1/2,3/2,5/2)[‡]		0.37 *12*	gΓ_0^2/Γ=0.00089 eV 29.
3055	(3/2,5/2,7/2$^-$)		0.66 *13*	B(M1)↑=0.0062 *12* gΓ_0^2/Γ=0.0016 eV 3.
3060	1/2$^+$	0.0187 eV *17*	3.9 *4*	B(E1)↑=3.1×10^{-6} *3* gΓ_0^2/Γ=0.0094 eV 9. Γ: For Γ_0/Γ=1.0.
3309	3/2$^+$,5/2$^+$		9.5 *7*	B(E1)↑=7.8×10^{-6} *6* gΓ_0^2/Γ=0.0270 eV 21.
3338	1/2$^-$,3/2$^-$		0.94 *18*	B(M1)↑=0.019 *3* gΓ_0^2/Γ=0.0027 eV 5.

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^{87}Rb(γ,γ') 2002Ka25 (continued)

^{87}Rb Levels (continued)

E(level)[#]	J$^{\pi}$[†]	Γ	Integrated cross section in eVb	Comments
3702	(1/2$^-$,3/2$^-$,5/2$^-$)[‡]		31.5 *22*	B(M1)↑=0.21 *1* gΓ_0^2/Γ=0.113 eV 15.
3767	1/2$^-$,3/2$^-$		1.2 *4*	B(M1)↑=0.0074 *21* gΓ_0^2/Γ=0.0046 eV 13.
3837	1/2$^+$	0.117 eV *11*	15.4 *22*	B(E1)↑=10.0×10^{-6} *15* gΓ_0^2/Γ=0.059 eV 9. Γ: For Γ_0/Γ=1.0.

[†] From Adopted Levels for ^{87}Rb unless indicated otherwise.
[‡] From $\gamma\gamma(\theta)$.
[#] Uncertainties are reported as less then 1 keV. Therefore, because of the reported precision, 1 keV is assigned when the level is used in the Adopted Levels.

$\gamma(^{87}Rb)$

E$_i$(level)	J$_i^{\pi}$	E$_\gamma$	I$_\gamma$[†]	E$_f$	J$_f^{\pi}$	Comments
403	5/2$^-$	403	100	0	3/2$^-$	
845	(1/2)$^-$	845	100	0	3/2$^-$	
1390	(3/2)$^-$	987		403	5/2$^-$	
		1390		0	3/2$^-$	
1463	(1/2)$^-$	1060		403	5/2$^-$	
		1463		0	3/2$^-$	
1578	1/2$^-$,3/2$^-$	1578		0	3/2$^-$	Additional information 1.
1741	(3/2,5/2)$^-$	1741		0	3/2$^-$	Additional information 2.
2014	(1/2,3/2,5/2)$^-$	2014	100	0	3/2$^-$	
2284	(1/2,3/2,5/2)$^-$	1881	33 *6*	403	5/2$^-$	
		2284	67 *6*	0	3/2$^-$	
2378	(1/2,3/2,5/2)	1975	30 *6*	403	5/2$^-$	
		2378	70 *6*	0	3/2$^-$	
2398	1/2$^-$,3/2$^-$	1553	7 *2*	845	(1/2)$^-$	
		1995	8 *1*	403	5/2$^-$	
		2398	85 *2*	0	3/2$^-$	
2555	3/2$^+$,5/2$^+$	2555		0	3/2$^-$	
2811	3/2$^+$,5/2$^+$	2811		0	3/2$^-$	
3005	(1/2,3/2,5/2)$^+$	3005	100	0	3/2$^-$	E$_\gamma$: superimposed by a ^{27}Al peak.
3043	(1/2,3/2,5/2)	3043	100	0	3/2$^-$	
3055	(3/2,5/2,7/2$^-$)	3055		0	3/2$^-$	
3060	1/2$^+$	3060	100	0	3/2$^-$	
3309	3/2$^+$,5/2$^+$	3309		0	3/2$^-$	
3338	1/2$^-$,3/2$^-$	1760	66 *14*	1578	1/2$^-$,3/2$^-$	
		3338	34 *14*	0	3/2$^-$	
3702	(1/2$^-$,3/2$^-$,5/2$^-$)	2312	7 *3*	1390	(3/2)$^-$	
		3702	93 *3*	0	3/2$^-$	
3767	1/2$^-$,3/2$^-$	3767	100	0	3/2$^-$	
3837	1/2$^+$	3837	100	0	3/2$^-$	

[†] % branchings from each level as measured by 2002Ka25.

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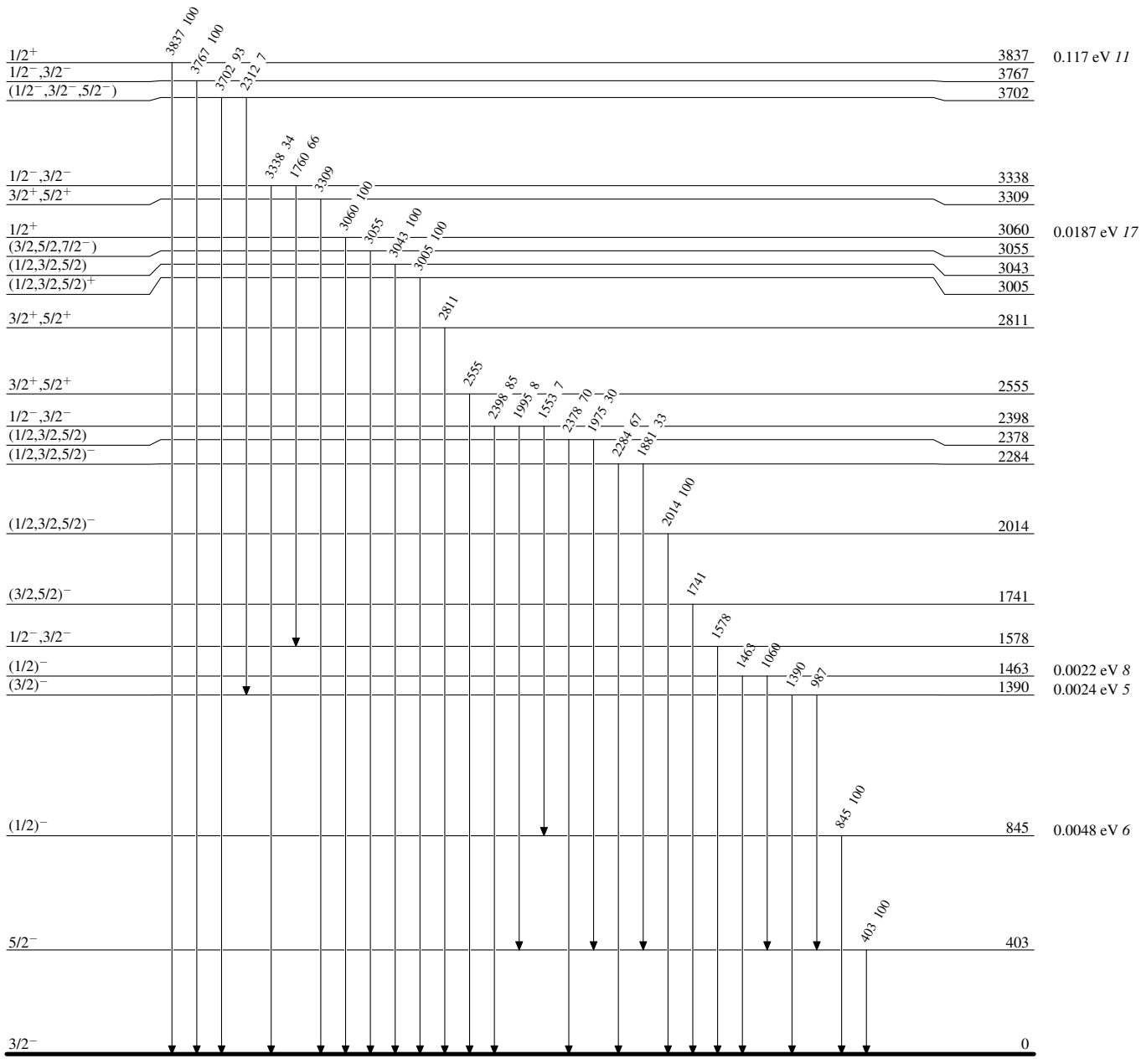
Level Scheme

Intensities: % photon branching from each level



$^{87}_{37}Rb_{50}$