^{170}Yb(n,γ) E=resonance 1971Ri09,2006MuZX

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin, E. A. Mccutchan	NDS 151, 334 (2018)	30-Jun-2018

1971Ri09: E(n)=8.1, 40.1, 66.8, 73.0 eV; natural Yb and enriched ^{170}Yb (68.5%) targets; measured Eγ, Iγ (primary γ's) for each resonance (Ge(Li), FWHM≈8 keV at 6 MeV).
2006MuZX: evaluation of resonance energies and widths.
See also 1966Wa14, 1968Mu05, 1973Li03, 1984Be34 for properties of resonance states.

^{171}Yb Levels

All resonance data are taken from the evaluation by 2006MuZX.

E(level)[†]	J$^{\pi}$	L	E(lab) eV	Comments
0.0				
66				
906				
987				
1038				
1327				
1344				
1533				
1903				
S(n)+0.00808 *6*	1/2	0	8.13 *6*	gΓ_n=1.64 meV *15*.
S(n)+0.03970 *6*	1/2	0	39.93 *6*	gΓ_n=190 meV *9*.
S(n)+0.06618 *6*	1/2	0	66.57 *6*	gΓ_n=40 meV *7*.
S(n)+0.07248 *7*	1/2	0	72.91 *7*	gΓ_n=55 meV *9*.
S(n)+0.09475 *10*	1/2	0	95.31 *10*	gΓ_n=21 meV *3*.
S(n)+0.1667 *20*	1/2	0	167.7 *20*	gΓ_n=21 meV *4*.
S(n)+0.2116 *3*	1/2	0	212.8 *3*	gΓ_n=207 meV *30*.
S(n)+0.2384 *2*	1/2	0	270.0 *2*	gΓ_n=76 meV *15*.
S(n)+0.2847 *3*	1/2	0	286.4 *3*	gΓ_n=142 meV *19*.
S(n)+0.3559 *4*	1/2	0	358.0 *4*	gΓ_n=75 meV *20*.
S(n)+0.382 *6*	1/2	0	384 *6*	gΓ_n=65 meV *20*.
S(n)+0.392 *7*	1/2	0	394 *7*	gΓ_n=70 meV *20*.
S(n)+0.4453 *5*	1/2	0	447.9 *5*	gΓ_n=168 meV *25*.
S(n)+0.4492 *5*	1/2	0	451.8 *5*	gΓ_n=68 meV *14*.
S(n)+0.6085 *8*	1/2	0	612.1 *8*	gΓ_n=210 meV *60*.
S(n)+0.7573 *12*	1/2	0	761.8 *12*	gΓ_n=200 meV *50*.
S(n)+0.8041 *13*	1/2	0	808.8 *13*	gΓ_n=200 meV *40*.
S(n)+0.8638 *7*	1/2	0	868.9 *7*	gΓ_n=89 meV *20*.
S(n)+0.9470 *8*	1/2	0	952.6 *8*	gΓ_n=43 meV *15*.
S(n)+0.9727 *8*	1/2	0	978.4 *8*	gΓ_n=630 meV *130*.
S(n)+1.0310 *10*	1/2	0	1037.1 *10*	gΓ_n=220 meV *80*.
S(n)+1.2906 *12*	1/2	0	1298.2 *12*	gΓ_n=360 meV *100*.
S(n)+1.3202 *14*	1/2	0	1328.0 *14*	gΓ_n=190 meV *50*.

[†] S(n)+E(n)(c.m.), where S(n)(^{171}Yb)=6614.21 *1* (2017Wa10) and E(n)(c.m.)=E(n)(lab)(170/171) for E>2000. Rounded values from the Adopted Levels, otherwise.

^{170}Yb(n,γ) E=resonance 1971Ri09,2006MuZX (continued)

$\gamma(^{171}Yb)$

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f
S(n)+0.00808	1/2	4712	46 *12*	1903	S(n)+0.06618	1/2	5082	31 *18*	1533
		5082	46 *10*	1533			5271	28 *15*	1344
		5577	67 *8*	1038			5288	24 *18*	1327
		5628	100 *10*	987			5577	21 *13*	1038
		5709	19 *8*	906			6616	100 *21*	0.0
		6616	35 *6*	0.0	S(n)+0.07248	1/2	5271	56 *12*	1344
S(n)+0.03970	1/2	5082	8 *5*	1533			5288	78 *13*	1327
		5628	37 *6*	987			5577	100 *14*	1038
		5709	26 *6*	906			6549	61 *10*	66
		6549	12 *4*	66			6616	8 *6*	0.0
		6616	100 *6*	0.0					

† From 1971Ri09; $\Delta E\gamma$=3 keV for intense γ rays.

‡ Relative branching from 1971Ri09, normalized so $I\gamma$=100 for the strongest branch at each resonance; see 1971Ri09 for possible very weak branches for which the uncertainty exceeds the central value.

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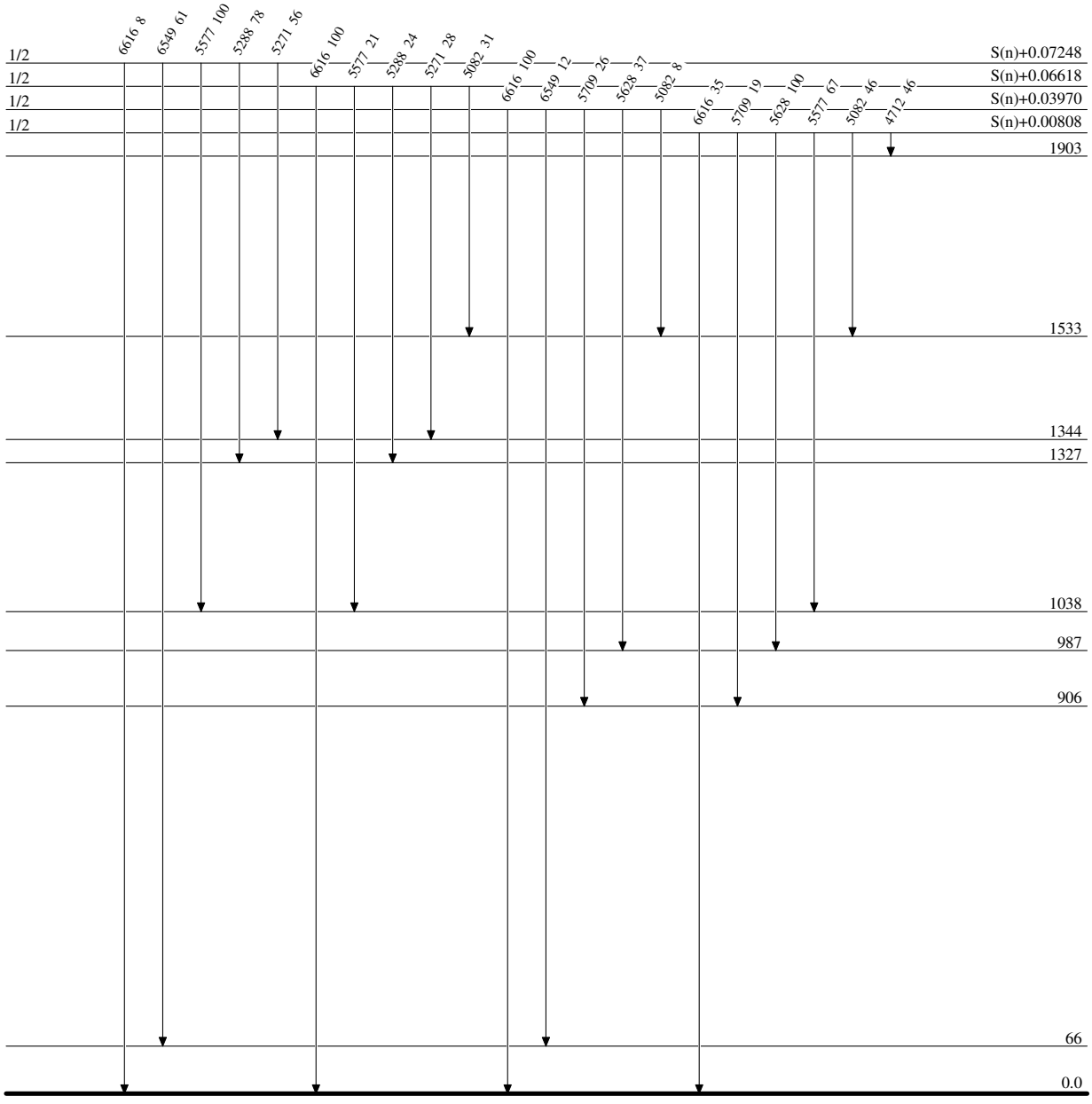
Level Scheme

Intensities: Relative photon branching from each level



$^{171}_{70}Yb_{101}$