^{79}Br(n,n′γ) 1971Ba78

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 135, 193 (2016)	31-May-2016

Includes (n,n) and (n,n′).
E=400-1900 keV.
Pulsed neutron source and time of flight method. Natural target.
Decay scheme from energy sums and threshold behavior.
Additional information 1.
(n,n), (n,n′): 1992Sa23 (E=14 MeV), 1983Gl07 (E=th), 1983Bu10 (E=th), 1983Av08 (E=fast), 1982Pi09 (E=fast), 1981Ko19 (E=0.00051 eV, 1.26 eV, 5.19 eV), 1976Ab12 (E<1.4 MeV).

^{79}Br Levels

E(level)†	Jπ‡	$T_{1/2}$	Comments
0.0	3/2−		
208.0 *10*	9/2+	4.85 s *4*	%IT=100 $T_{1/2}$: from Adopted Levels.
217.3 *4*	5/2−		
260.8 *5*	3/2−		
306.6 *5*	1/2−,3/2−		
397.8 *6*	1/2−,3/2−		
523.6 *6*	5/2−		
606.3 *5*	3/2−		
761.9 *8*	7/2−		
793.7 *6*			
832.4 *6*	1/2−,3/2−		
954.4 *8*	(7/2−)		
1113.4 *6*	1/2−,3/2−		
1124.5 *7*			
1132.3 *7*	1/2,3/2		
1175.8? *8*	(5/2+)		
1190.5 *8*			
1332.6 *6*	3/2−		
1333.0#	(9/2−)		
1512.7 *7*			
1575.2 *8*	(5/2)+		
1613.3 *6*			
1655.4? *8*			
1692.1 *7*	1/2−,3/2−		
1778.8 *6*			

† From Eγ data assuming 1.0 keV uncertainty on each γ-ray.
‡ From Adopted Levels.
# Level suggested (evaluator) on the basis of division of intensity of 809γ.

γ(^{79}Br)

E_i(level)	J_i^π	E_γ†	I_γ‡	E_f	J_f^π	Mult.	Comments
208.0	9/2+	208.0	100	0.0	3/2−	E3	Mult.: from Adopted Gammas.
217.3	5/2−	217.5	100	0.0	3/2−		
260.8	3/2−	260.7	100	0.0	3/2−		
306.6	1/2−,3/2−	306.8	100	0.0	3/2−		

Continued on next page (footnotes at end of table)

^{79}Br(n,n′γ) 1971Ba78 (continued)

γ(^{79}Br) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
397.8	1/2⁻,3/2⁻	136.5&	3 *1*	260.8	3/2⁻
		397.6	97 *10*	0.0	3/2⁻
523.6	5/2⁻	306.8&		217.3	5/2⁻
		523.3		0.0	3/2⁻
606.3	3/2⁻	208.7	7 *1*	397.8	1/2⁻,3/2⁻
		299.8	11 *1*	306.6	1/2⁻,3/2⁻
		344.9	4 *1*	260.8	3/2⁻
		389.3	9 *1*	217.3	5/2⁻
		606.4	69 *7*	0.0	3/2⁻
761.9	7/2⁻	544.6	66 *7*	217.3	5/2⁻
		761.9	34 *4*	0.0	3/2⁻
793.7		532.1	16 *2*	260.8	3/2⁻
		576.5	34 *4*	217.3	5/2⁻
		793.9	50 *5*	0.0	3/2⁻
832.4	1/2⁻,3/2⁻	525.0&		306.6	1/2⁻,3/2⁻
		615.0	5 *1*	217.3	5/2⁻
		832.3	95 *10*	0.0	3/2⁻
954.4	(7/2⁻)	736.9	75 *8*	217.3	5/2⁻
		954.6	25 *3*	0.0	3/2⁻
1113.4	1/2⁻,3/2⁻	507.0	24 *6*	606.3	3/2⁻
		852.9	50 *12*	260.8	3/2⁻
		896.8	15 *4*	217.3	5/2⁻
		1112.5	11 *3*	0.0	3/2⁻
1124.5		863.1	15 *4*	260.8	3/2⁻
		907.8	29 *7*	217.3	5/2⁻
		1124.3	56 *14*	0.0	3/2⁻
1132.3	1/2,3/2	734.5	22 *6*	397.8	1/2⁻,3/2⁻
		915.2	22 *6*	217.3	5/2⁻
1132.3	1/2,3/2	1132.0	56 *14*	0.0	3/2⁻
1175.8?	(5/2⁺)	915.2&		260.8	3/2⁻
		1175.6&		0.0	3/2⁻
1190.5		972.8	57 *14*	217.3	5/2⁻
		1190.8	43 *11*	0.0	3/2⁻
1332.6	3/2⁻	809.0@	29@# *8*	523.6	5/2⁻
		1025.0&		306.6	1/2⁻,3/2⁻
		1115.3	30 *8*	217.3	5/2⁻
		1333.4	41 *10*	0.0	3/2⁻
1333.0	(9/2⁻)	809.0@	29@ *8*	523.6	5/2⁻
1512.7		1252.5	24 *6*	260.8	3/2⁻
		1294.3	35 *9*	217.3	5/2⁻
		1513.0	41 *10*	0.0	3/2⁻
1575.2	(5/2)⁺	1357.8	81 *20*	217.3	5/2⁻
		1575.2	19 *5*	0.0	3/2⁻
1613.3		1090.0	43 *11*	523.6	5/2⁻
		1214.8	38 *10*	397.8	1/2⁻,3/2⁻
		1307.0	2 *1*	306.6	1/2⁻,3/2⁻
		1613.5	17 *4*	0.0	3/2⁻
1655.4?		1349.3&	75 *19*	306.6	1/2⁻,3/2⁻
		1654.9&	25 *6*	0.0	3/2⁻
1692.1	1/2⁻,3/2⁻	1432.3	19 *5*	260.8	3/2⁻
		1474.0	22 *6*	217.3	5/2⁻
		1691.7	59 *15*	0.0	3/2⁻
1778.8		945.6&		832.4	1/2⁻,3/2⁻
		984.6&		793.7	
		1473.0	32 *8*	306.6	1/2⁻,3/2⁻
		1779.3	68 *17*	0.0	3/2⁻

† Uncertainties not given by 1971Ba78.
‡ Photon branching ratios from each level.
# About 30% of the intensity belongs with this location. The other component most likely belongs with 1333.0 level (see Adopted Gammas).
@ Multiply placed with undivided intensity.
& Placement of transition in the level scheme is uncertain.

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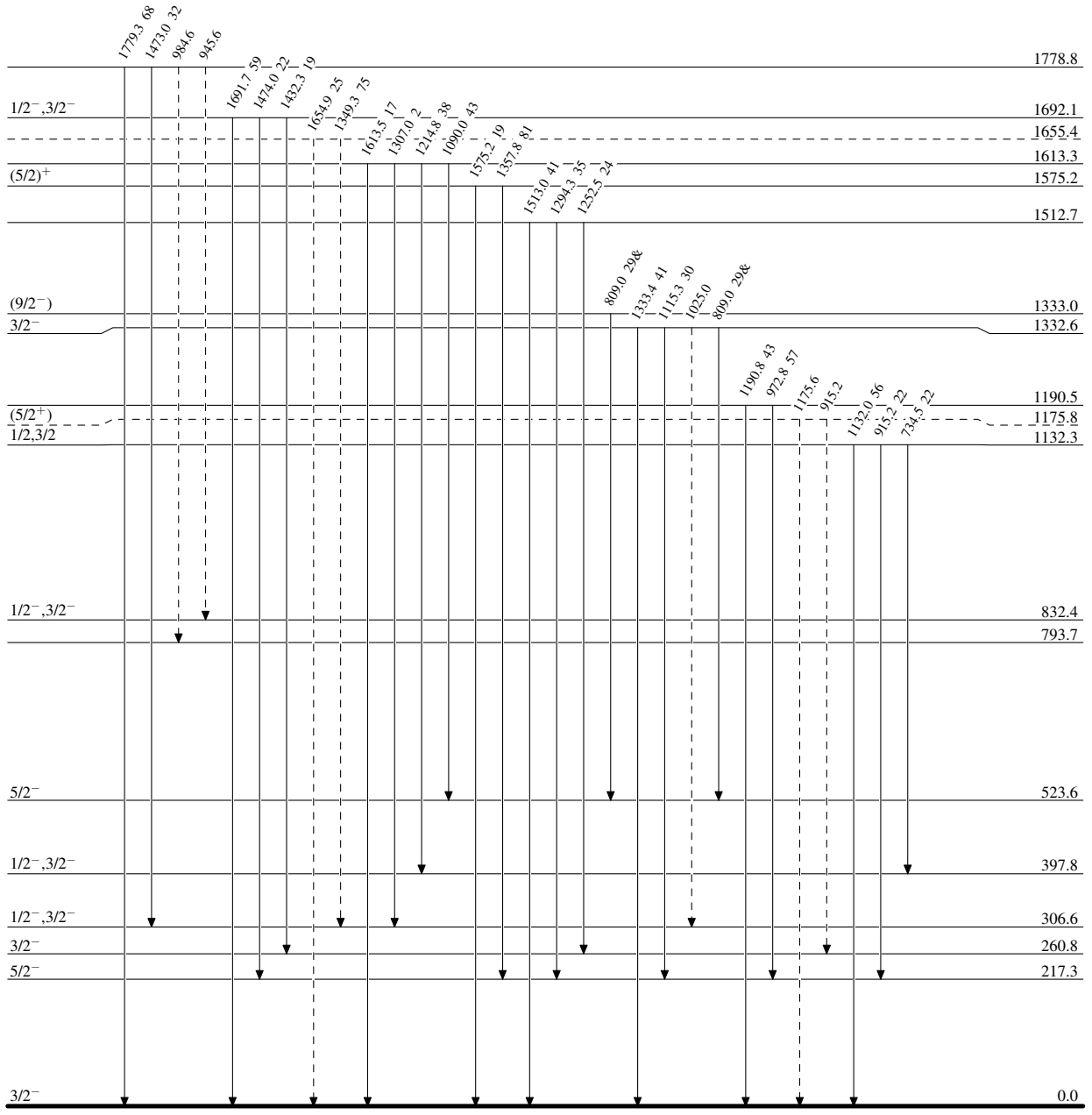
Legend

Level Scheme

Intensities: % photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)



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

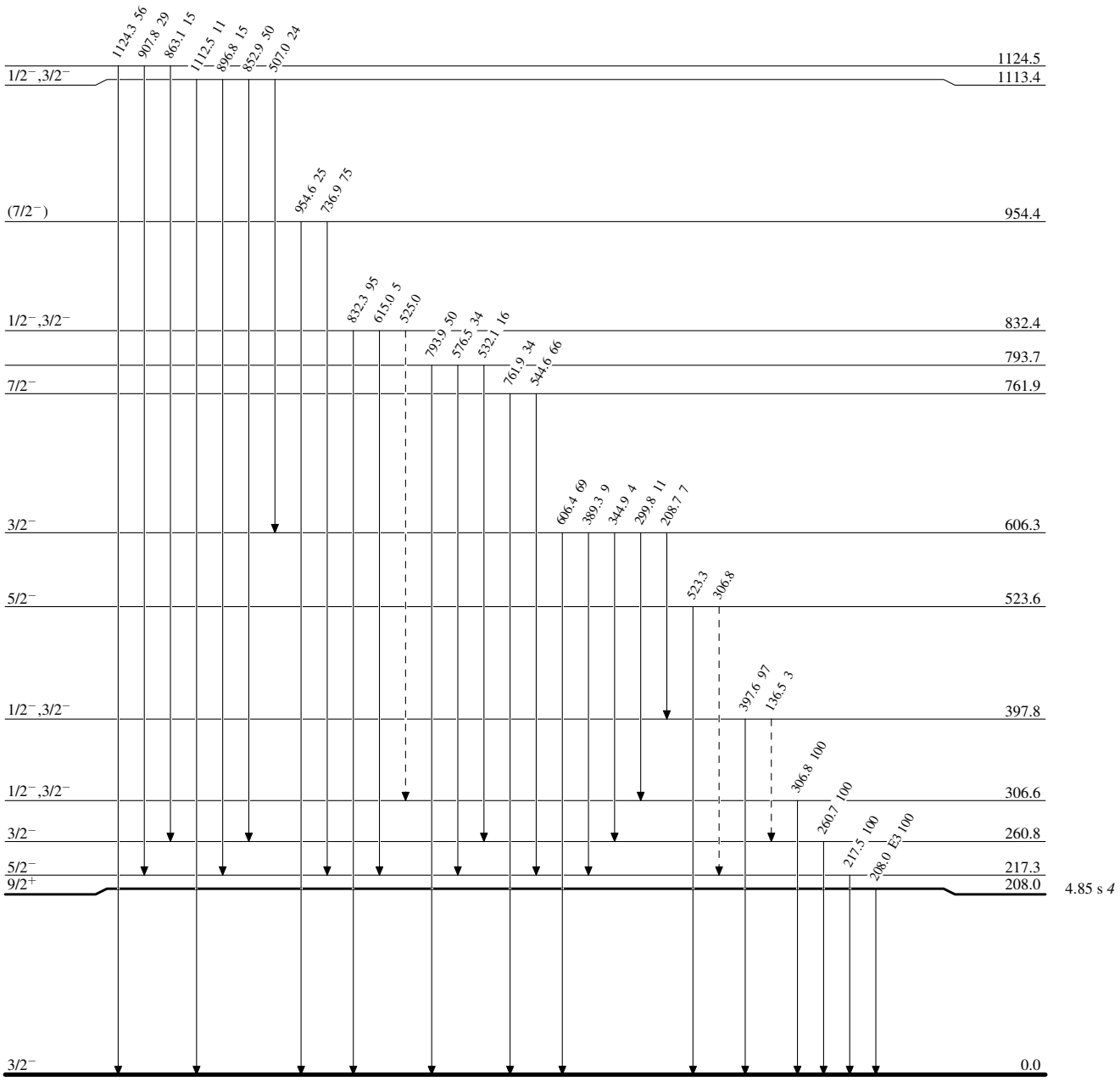
^{79}Br(n,n′γ) 1971Ba78

Legend

Level Scheme (continued)

Intensities: % photon branching from each level
& Multiply placed: undivided intensity given

- - - - - - ► γ Decay (Uncertain)



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