^{133}Cs(n,n′γ) 1971Ki10,1978De41

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov and A. Rodionov, F. G. Kondev	NDS 112, 855 (2011)	31-Oct-2010

1978De41, 1977Av02: ^{133}Cs(n,n′γ) E=fast; measured Eγ, Iγ at θ = 90°; deduced levels, J^π, level populations. Reactor, B_4C and Cd filters.
1971Ki10, 1970Ki07: ^{133}Cs(n,n′γ) E=0.5-1.0 MeV; measured Eγ, Iγ(θ), (θ = 30° − 140°); deduced levels, σ(Eγ,θ), J^π. Van de Graaff, pulsed beam, time-of-flight system.
Others: 1970Da02, 1974Ba83, 1975Al21.

^{133}Cs Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†
0.0	7/2+	767.68 *10*	7/2+,9/2+	1219.34? *22*
81.0002 *19*	5/2+	788.78 *20*	(7/2+,9/2+)	1442.22? *15*
160.622 *3*	5/2+	819.07 *7*	5/2+,7/2+,9/2+	1509.6 *3*
383.880 *15*	3/2+	871.86 *10*	7/2+,9/2+	1674.67? *22*
437.00 *9*	1/2+	916.09 *7*	5/2+,7/2+,9/2+	1692.4? *11*
632.56 *10*	11/2+	941.6 *6*		1880.7? *3*
640.40 *7*	3/2+	1071.52 *13*		1919.5? *11*
705.57 *9*	7/2+,9/2+	1089.26 *9*		2001.4? *17*
729.16 *25*		1172.72 *20*		2035.6? *8*

† From a least-squares fit to Eγ's.
‡ Deduced from γ(θ) and excitation functions, mainly from 1971Ki10.

γ(^{133}Cs)

Eγ†	Iγ†	Ei(level)	J_i^π	Ef	J_f^π	Comments
79.622‡ *2*	144 *22*	160.622	5/2+	81.0002	5/2+	Iγ: from Iγ(79.6)/Iγ(160.6)=4.0 *4* (1975Al21).
81.000‡ *2*		81.0002	5/2+	0.0	7/2+	
160.625‡ *6*	36 *4*	160.622	5/2+	0.0	7/2+	
276.40 *10*	4.0 *5*	437.00	1/2+	160.622	5/2+	
x287.8 *2*	2.1 *3*					
302.882‡ *15*	94 *8*	383.880	3/2+	81.0002	5/2+	
x318.3 *2*	2.6 *5*					
347.5 *2*	3.9 *6*	1219.34?		871.86	7/2+,9/2+	
355.9 *2*	25 *3*	437.00	1/2+	81.0002	5/2+	
365.95 *10*	87 *8*	1071.52		705.57	7/2+,9/2+	
383.85 *10*	36 *4*	383.880	3/2+	0.0	7/2+	
x391.9 *2*	4.5 *5*					
480.03# *10*	26 *4*	640.40	3/2+	160.622	5/2+	
x532.78 *10*	18 *2*					
559.14 *10*	25 *3*	640.40	3/2+	81.0002	5/2+	
624.58# *10*	128 *10*	705.57	7/2+,9/2+	81.0002	5/2+	
632.56 *10*	170 *10*	632.56	11/2+	0.0	7/2+	
647.8 *4*	4.1 *5*	729.16		81.0002	5/2+	
658.61 *10*	14 *2*	819.07	5/2+,7/2+,9/2+	160.622	5/2+	
674.54 *10*	25 *4*	1442.22?		767.68	7/2+,9/2+	
705.56# *15*	128 *15*	705.57	7/2+,9/2+	0.0	7/2+	
705.56# *15*	128 *15*	1089.26		383.880	3/2+	
712.6 *5*		871.86	7/2+,9/2+	160.622	5/2+	

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^{133}Cs(n,n′γ) 1971Ki10,1978De41 (continued)

γ(^{133}Cs) (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π
x719.2 6	7.4 8				
728.2 5	14 3	729.16		0.0	7/2+
737.4 6	10 2	819.07	5/2+,7/2+,9/2+	81.0002	5/2+
x747.5 8	2.3 7				
755.58 10	26 4	916.09	5/2+,7/2+,9/2+	160.622	5/2+
767.68 10	100	767.68	7/2+,9/2+	0.0	7/2+
x780.4 2	4.2 3				
780.4 1	4.2 3	1509.6		729.16	
788.8# 2	6.8 5	788.78	(7/2+,9/2+)	0.0	7/2+
788.8# 2	6.8 5	1172.72		383.880	3/2+
x797.0 5	14 3				
818.92 10	23 4	819.07	5/2+,7/2+,9/2+	0.0	7/2+
834.9 3	8.6 10	916.09	5/2+,7/2+,9/2+	81.0002	5/2+
861.1 7	8.2 10	941.6		81.0002	5/2+
871.80 10		871.86	7/2+,9/2+	0.0	7/2+
x880.2@ 8	0.4 2				
x896.8 2	4.7 5				
x910.1 8	3.7 6				
916.00 10	22 4	916.09	5/2+,7/2+,9/2+	0.0	7/2+
928.54 10	14 2	1089.26		160.622	5/2+
x937.0 15	1.0 3				
940.8 9	3.1 8	941.6		0.0	7/2+
x959.8 2	4.1 5				
969.1 2	6.2 5	1674.67?		705.57	7/2+,9/2+
1009.6 14	5.3 12	1089.26		81.0002	5/2+
1033.5@ 15	0.9 5	1674.67?		640.40	3/2+
1046.4 15	7.5 15	1919.5?		871.86	7/2+,9/2+
x1066.4 14	4.6 15				
1090.8 13	3.9 9	1089.26		0.0	7/2+
x1127.1 15	2.2 10				
1132.2 16	2.2 10	1919.5?		788.78	(7/2+,9/2+)
x1140.6 16	2.3 10				
x1148.4 15	4.2 20				
x1165.7 16	2.1 10				
1174.1 12	1.4 7	1172.72		0.0	7/2+
1218.7 11	3.4 10	1219.34?		0.0	7/2+
x1233.8 15	2.2 10				
1272.2 16	2.4 11	2001.4?		729.16	
x1281.9 15	2.1 10				
1306.6 13	1.7 8	2035.6?		729.16	
x1324.8 16	2.1 10				
x1352.7 4	3.3 12				
x1365.5 5	3.0 10				
x1391.2@ 12	1.6 8				
x1404.6 14	1.7 8				
x1412.8@ 15	1.8 9				
x1432.3 14	2.2 10				
x1474.3 9	5.3 20				
1496.9 3	3.0 10	1880.7?		383.880	3/2+
x1510.6 4	2.3 8				
1510.6 4	2.3 8	1509.6		0.0	7/2+
x1526 2	1.5 7				
x1540.1 5	3.3 9				
x1598.3 17	1.5 7				
1610.3 16	1.7 8	1692.4?		81.0002	5/2+

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^{133}Cs(n,n′γ) 1971Ki10,1978De41 (continued)

γ(^{133}Cs) (continued)

E_γ †	I_γ †	E_i(level)	E_f	J_f^π	E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π
x1617.2 *15*	2.8 *13*				1879.7 *8*	1.7 *8*	1880.7?		0.0	7/2+
x1643.1@ *14*	2.1 *11*				1919.5@ *5*	2.1 *12*	1919.5?		0.0	7/2+
1652.2 *17*	2.8 *13*	2035.6?	383.880	3/2+	x1937.3@ *9*	1.1 *6*				
1674.2 *13*	3.1 *14*	1674.67?	0.0	7/2+	2002.3@ *11*	1.6 *8*	2001.4?		0.0	7/2+
1693.4 *15*	2.9 *12*	1692.4?	0.0	7/2+	2035.3 *12*	0.7 *3*	2035.6?		0.0	7/2+
x1730.3 *17*	1.8 *8*				x2124.5 *16*	0.9 *4*				
x1781.3@ *9*	1.4 *7*				x2156.9 *17*	1.2 *6*				
x1815.5 *11*	1.3 *6*									

† From 1978De41 with Iγ observed at 90° relative to the direction of the neutron beam, except as noted.
‡ Measured by bent crystal spectrometer in 1975Al21.
# Multiply placed.
@ Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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Level Scheme

Intensities: Relative I_γ

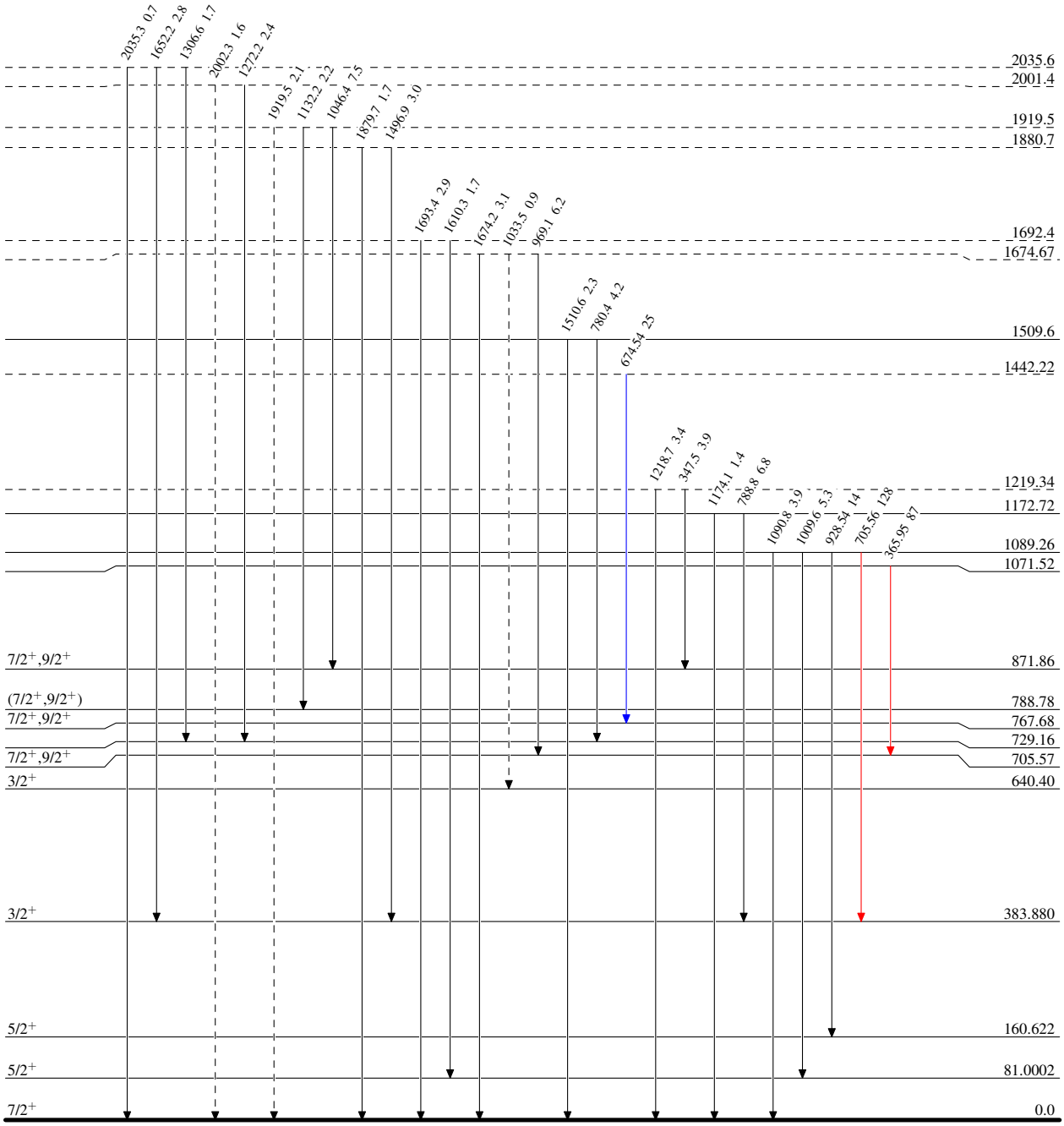
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

γ Decay (Uncertain)



$^{133}_{55}Cs_{78}$

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Level Scheme (continued)

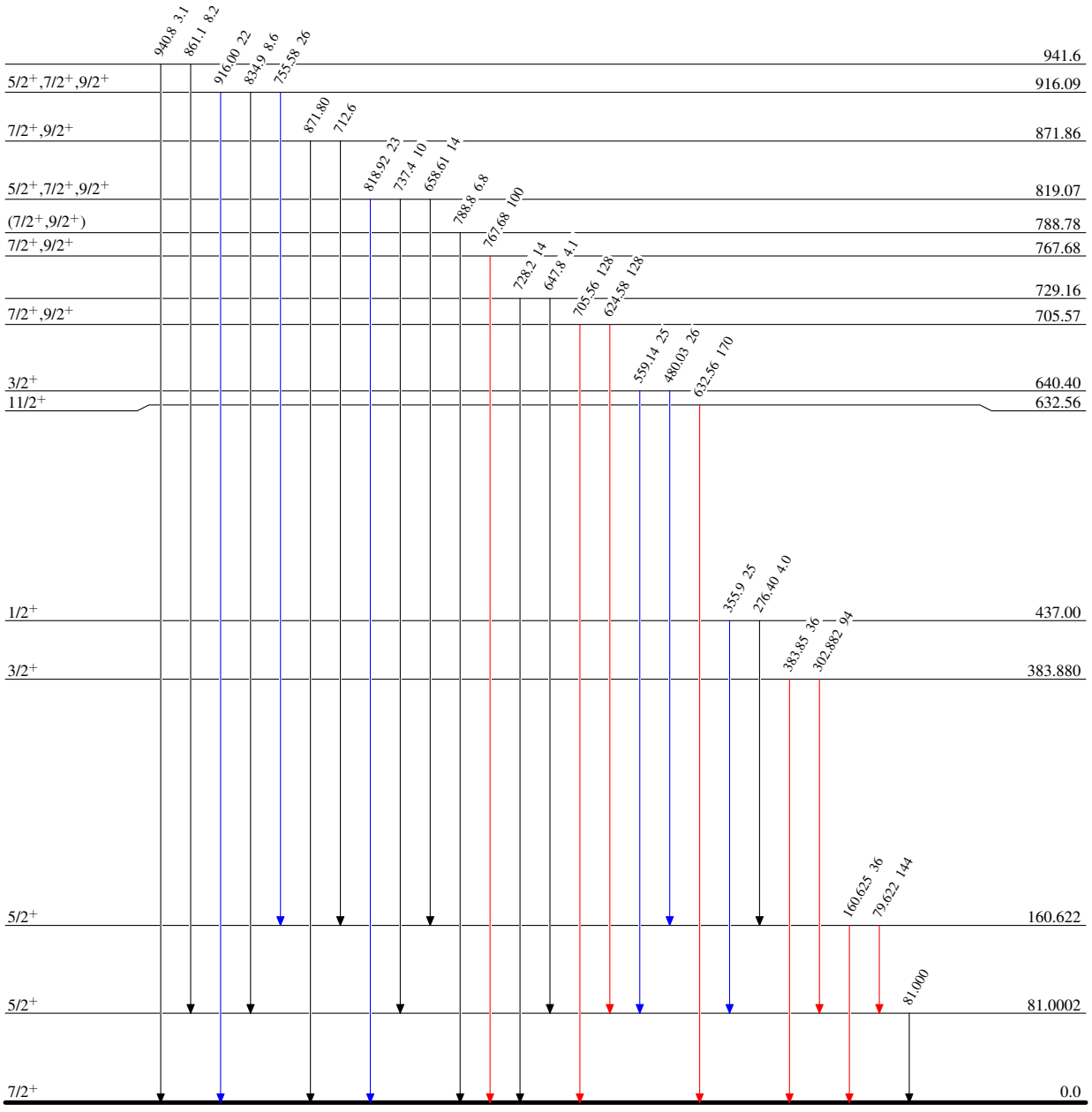
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{133}_{55}Cs_{78}$