^{59}Co(p,γ) 1975Er05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 114, 1849 (2013)	31-Dec-2012

E(p)=1.365-2.150 MeV. Measured excit, Eγ, Iγ. Ge(Li) and NaI detectors (1975Er05).
E(p)=1.6-3.1 MeV. Measured excit, Eγ. NaI detectors (1976Ah08).
E(p)=1.5-2.5 MeV. Measured excit, Eγ. Ge(Li) and NaI detectors (1971De25).
Others: 1957Bu64, 1967Ar01, 1978Yo01, 2010Vo01.
See 1971Di04 for study of GDR splitting.
See 1971De25 for decay of E(p)=2150, 2206, 2448 resonances.
See 1978Tu02 for measurements with polarized protons, E(p)=5.8-16.5 MeV.
All data are from 1975Er05, except as noted.

^{60}Ni Levels

E(level)[‡]	Jπ[†]	Comments
0.0	0+	
1332.498 *20*	2+	
2158.57 *4*	2+	
2505.72 *3*	4+	
2625.94 *8*	3+	
3119.78 *9*	4+	
3185.95 *8*	3+	
3269.74 *10*	2+	
3392.58 *9*	2+	
3619.38 *13*		
3670.69 *8*	4+	
3730.66 *6*		
3924.71 *10*	2+,3+	
4039.66 *15*	3−	
4078.1 *4*	1+,2+	
4165.34 *10*	5+	
4294.4 *3*		
4407.39 *14*		
4761.1 *6*	(1,2)	
4800.3 *4*		
4847.2 *6*		
4985.61 *10*		
5445.0 *11*		
5532.0 *11*		
5780.4 *5*		
10988.2 *4*		E(level): E(p)=1479.
11048.5 *3*		E(level): E(p)=1540.
11138.6 *3*		E(level): E(p)=1632.
11149.4 *3*		E(level): E(p)=1643.
11158.5 *4*		E(level): E(p)=1652, IAS(^{60}Co, 5+ g.s.)?
11207.5 *3*		E(level): E(p)=1702.
11226.3 *3*		E(level): E(p)=1721, IAS(^{60}Co 58, 2+ level)?
11429.6 *3*		E(level): E(p)=1928, IAS(^{60}Co 277, 4+ level)?
11446.5 *4*		E(level): E(p)=1945, IAS(^{60}Co 288, 3+ level)?
11599.6 *3*		E(level): E(p)=2101, IAS(^{60}Co 435, 5+ level)?
11647[#]		E(level): E(p)=2150.
11702[#]		E(level): E(p)=2206, IAS(^{60}Co 542 level)?
11732[@]		E(level): E(p)=2236, IAS(^{60}Co 542 level)?
11770[@]		E(level): E(p)=2275, IAS(^{60}Co 614 level)?

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^{59}Co(p,γ) 1975Er05 (continued)

^{60}Ni Levels (continued)

E(level)‡	Comments
11875@	E(level): E(p)=2381, IAS(^{60}Co 738 level)?
11932@	E(level): E(p)=2439, IAS(^{60}Co 785 level)?
11940#	E(level): E(p)=2448, IAS(^{60}Co 1006 level)?
12130@	E(level): E(p)=2641, IAS(^{60}Co 1006 level)?
12355?@	E(level): E(p)=2870.
12465@	E(level): E(p)=2981.
12489@	E(level): E(p)=3006.
12513@	E(level): E(p)=3030.

† From Adopted Levels data set.
‡ For proton capture states, E=E(p)(c.m.)+S(p).
# From 1971De25.
@ From 1976Ah08.

γ(^{60}Ni)

Eγ†	Iγ‡	E$_i$(level)	J^π_i	E$_f$	J^π_f
467.60 *20*	61 *2*	2625.94	3$^+$	2158.57	2$^+$
493.90 *20*	8 *2*	3119.78	4$^+$	2625.94	3$^+$
^{x}611.40 *20*					
^{x}676.55 *20*					
680.30 *15*	31 *5*	3185.95	3$^+$	2505.72	4$^+$
^{x}720.81 *15*					
736.4 *4*	65 *10*	4407.39		3670.69	4$^+$
^{x}740.3 *4*					
826.06 *3*	85 *2*	2158.57	2$^+$	1332.498	2$^+$
993.46 *10*	100	3619.38		2625.94	3$^+$
1027.33 *8*	36 *5*	3185.95	3$^+$	2158.57	2$^+$
^{x}1104.6 *4*					
1164.92 *8*	100	3670.69	4$^+$	2505.72	4$^+$
1173.22 *2*	100	2505.72	4$^+$	1332.498	2$^+$
1225.06 *8*	40 *5*	3730.66		2505.72	4$^+$
1293.38 *10*	39 *2*	2625.94	3$^+$	1332.498	2$^+$
1314.8 *4*	15 *7*	4985.61		3670.69	4$^+$
1332.48 *2*	100	1332.498	2$^+$	0.0	0$^+$
1418.95 *10*	60 *10*	3924.71	2$^+$,3$^+$	2505.72	4$^+$
1538.9 *4*	20 *5*	4165.34	5$^+$	2625.94	3$^+$
^{x}1560.31 *10*					
1659.64 *10*	80 *5*	4165.34	5$^+$	2505.72	4$^+$
^{x}1759.11 *10*					
1766.19 *20*	40 *10*	3924.71	2$^+$,3$^+$	2158.57	2$^+$
1787.20 *10*	92 *2*	3119.78	4$^+$	1332.498	2$^+$
1788.9 *4*	40 *10*	4294.4		2505.72	4$^+$
1853.8 *3*	33 *5*	3185.95	3$^+$	1332.498	2$^+$
1881.8 *5*	30 *10*	4039.66	3$^-$	2158.57	2$^+$
1901.70 *15*	35 *10*	4407.39		2505.72	4$^+$
1919.	45 *10*	4078.1	1$^+$,2$^+$	2158.57	2$^+$
^{x}1922.2 *5*					
1937.20 *10*	100	3269.74	2$^+$	1332.498	2$^+$
^{x}1953.2 *4*					

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^{59}Co(p,γ) 1975Er05 (continued)

γ(^{60}Ni) (continued)

E_γ †	I_γ ‡	E_i(level)	J^π_i	E_f	J^π_f
2060.04 *8*	100	3392.58	2^+	1332.498	2^+
^{x}2102.0 *4*					
^{x}2132.8 *4*					
2158.57 *10*	15 *2*	2158.57	2^+	0.0	0^+
2397.94 *8*	60 *5*	3730.66		1332.498	2^+
2479.84 *10*	85 *7*	4985.61		2505.72	4^+
2641.3 *5*	100	4800.3		2158.57	2^+
2707.02 *15*	70 *10*	4039.66	3^-	1332.498	2^+
2745.2 *5*	55 *10*	4078.1	$1^+,2^+$	1332.498	2^+
2961.8 *4*	60 *10*	4294.4		1332.498	2^+
^{x}3017.4 *5*					
3153.6 *7*	45 *7*	5780.4		2625.94	3^+
3275.4 *7*	55 *7*	5780.4		2505.72	4^+
3428.6 *10*	100	4761.1	(1,2)	1332.498	2^+
3515.0 *10*	100	4847.2		1332.498	2^+
5358	2.1	11138.6		5780.4	
5369	2.5	11149.4		5780.4	
5694	1.2	11226.3		5532.0	
5781	1.7	11226.3		5445.0	
6163	3.6	11149.4		4985.61	
6287	2.5	11048.5		4761.1	(1,2)
6338	1.2	11138.6		4800.3	
6347	3.0	11149.4		4800.3	
6360	1.5	11207.5		4847.2	
6379	1.5	11226.3		4847.2	
6407	1.5	11207.5		4800.3	
6446	1.5	11207.5		4761.1	(1,2)
6465	2.9	11226.3		4761.1	(1,2)
6742	2.2	11149.4		4407.39	
6844	0.9	11138.6		4294.4	
6855	0.6	11149.4		4294.4	
6883	4.3	11048.5		4165.34	5^+
6973	2.5	11138.6		4165.34	5^+
6984	1.7	11149.4		4165.34	5^+
7022	2.1	11429.6		4407.39	
7063	4.8	10988.2		3924.71	$2^+,3^+$
7098	0.8	11138.6		4039.66	3^-
7128	1.4	11207.5		4078.1	$1^+,2^+$
7147	2.0	11226.3		4078.1	$1^+,2^+$
7192	3.4	11599.6		4407.39	
7224	0.9	11149.4		3924.71	$2^+,3^+$
7264	1.4	11429.6		4165.34	5^+
7301	1.0	11226.3		3924.71	$2^+,3^+$
7305	1.9	11599.6		4294.4	
7317	4.4	10988.2		3670.69	4^+
7317	4.1	11048.5		3730.66	
7369	3.5	10988.2		3619.38	
7377	2.9	11048.5		3670.69	4^+
7418	1.3	11149.4		3730.66	
7429	1.7	11048.5		3619.38	
7467	4.1	11138.6		3670.69	4^+
7478	4.8	11149.4		3670.69	4^+
7487	2.0	11158.5		3670.69	4^+
7492	2.2	11226.3		3730.66	
7504	1.6	11429.6		3924.71	$2^+,3^+$
7536	0.7	11207.5		3670.69	4^+

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^{59}Co(p,γ) 1975Er05 (continued)

γ(^{60}Ni) (continued)

E_γ†	I_γ‡	E_i(level)	E_f	J^π_f
7539	2.9	11158.5	3619.38	
7555	1.0	11226.3	3670.69	4^+
7588	1.9	11207.5	3619.38	
7607	2.9	11226.3	3619.38	
7674	1.6	11599.6	3924.71	$2^+,3^+$
7698	2.2	11429.6	3730.66	
7715	1.5	11446.5	3730.66	
7758	3.3	11429.6	3670.69	4^+
7765	1.9	11158.5	3392.58	2^+
7775	4.3	11446.5	3670.69	4^+
7778	6.9	11048.5	3269.74	2^+
7802	5.3	10988.2	3185.95	3^+
7810	2.0	11429.6	3619.38	
7833	0.6	11226.3	3392.58	2^+
7862	6.2	11048.5	3185.95	3^+
7865	4.6	10988.2	3119.78	4^+
7868	3.4	11599.6	3730.66	
7928	2.3	11048.5	3119.78	4^+
7928	2.9	11599.6	3670.69	4^+
7937	0.7	11207.5	3269.74	2^+
7952	1.3	11138.6	3185.95	3^+
7956	1.1	11226.3	3269.74	2^+
7963	1.7	11149.4	3185.95	3^+
7972	4.4	11158.5	3185.95	3^+
8018	4.2	11138.6	3119.78	4^+
8021	4.3	11207.5	3185.95	3^+
8029	2.3	11149.4	3119.78	4^+
8038	4.8	11158.5	3119.78	4^+
8040	1.7	11226.3	3185.95	3^+
8087	4.5	11207.5	3119.78	4^+
8106	3.0	11226.3	3119.78	4^+
8159	0.7	11429.6	3269.74	2^+
8243	2.5	11429.6	3185.95	3^+
8260	1.5	11446.5	3185.95	3^+
8309	2.1	11429.6	3119.78	4^+
8326	5.5	11446.5	3119.78	4^+
8329	0.3	11599.6	3269.74	2^+
8362	16.7	10988.2	2625.94	3^+
8413	0.7	11599.6	3185.95	3^+
8422	13.6	11048.5	2625.94	3^+
8479	2.9	11599.6	3119.78	4^+

E_γ†	I_γ‡	E_i(level)	J^π_i	E_f	J^π_f
8482	19.4	10988.2		2505.72	4^+
8512	1.1	11138.6		2625.94	3^+
8523	1.7	11149.4		2625.94	3^+
8532	4.9	11158.5		2625.94	3^+
8542	3.7	11048.5		2505.72	4^+
8581	2.0	11207.5		2625.94	3^+
8600	5.3	11226.3		2625.94	3^+
8632	5.6	11138.6		2505.72	4^+
8643	8.0	11149.4		2505.72	4^+
8652	6.6	11158.5		2505.72	4^+
8701	5.0	11207.5		2505.72	4^+
8720	4.5	11226.3		2505.72	4^+
8803	6.6	11429.6		2625.94	3^+
8820	2.0	11446.5		2625.94	3^+
8829	2.7	10988.2		2158.57	2^+
8889	2.9	11048.5		2158.57	2^+
8923	3.5	11429.6		2505.72	4^+
8940	7.7	11446.5		2505.72	4^+
8973	4.2	11599.6		2625.94	3^+
8979	1.5	11138.6		2158.57	2^+
8990	0.9	11149.4		2158.57	2^+
8999	3.1	11158.5		2158.57	2^+
9048	2.6	11207.5		2158.57	2^+
9067	3.5	11226.3		2158.57	2^+
9093	8.6	11599.6		2505.72	4^+
9270	3.2	11429.6		2158.57	2^+
9287	3.1	11446.5		2158.57	2^+
9440	0.9	11599.6		2158.57	2^+
9656	4.2	10988.2		1332.498	2^+
9716	0.4	11048.5		1332.498	2^+
9806	3.3	11138.6		1332.498	2^+
9817	4.7	11149.4		1332.498	2^+
9826	0.7	11158.5		1332.498	2^+
9875	5.7	11207.5		1332.498	2^+
9894	5.0	11226.3		1332.498	2^+
10097	1.2	11429.6		1332.498	2^+
10114	1.6	11446.5		1332.498	2^+
10267	0.9	11599.6		1332.498	2^+
11207	0.9	11207.5		0.0	0^+
11226	0.3	11226.3		0.0	0^+

† Eγ> 5 MeV (that is, for those from the proton capture states) are deduced from level separation.
‡ Photon branching intensities of primary transitions are normalized to I(1332γ)=100 for each resonance. For secondary transitions, % photon branchings from each level are given.
^{x} γ ray not placed in level scheme.

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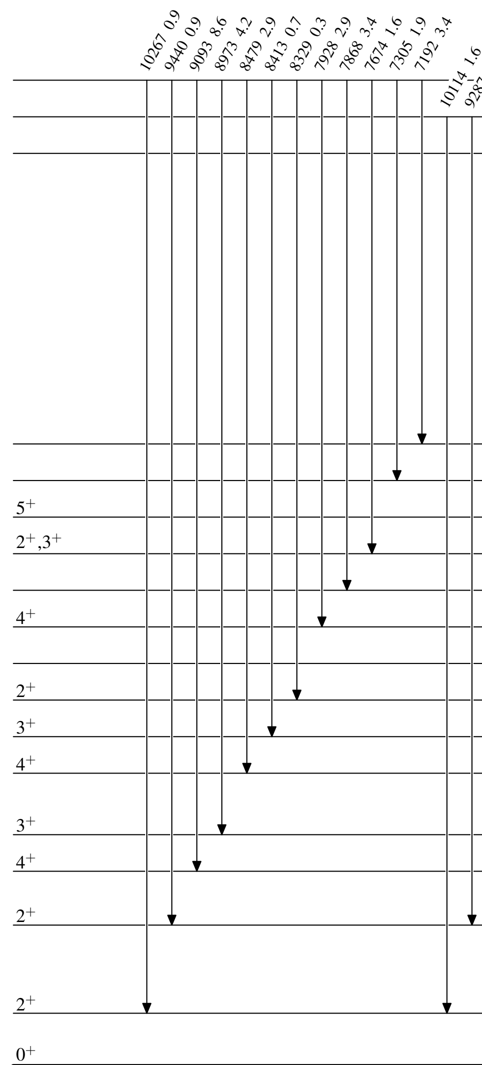
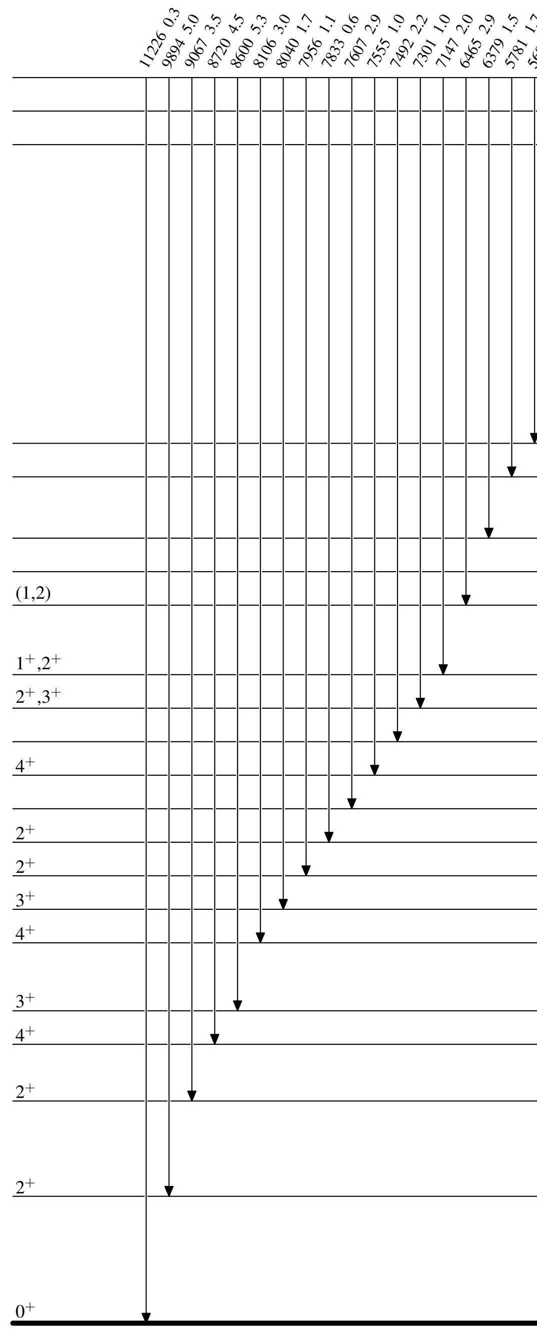
Intensities: Photon branching intensities of primary transitions are normalized to I(1332γ)=100 for each resonance. For secondary transitions, % photon branchings from each



Lev

Intensities: Photon branching intensities of primary transitions are normalized to I(1332γ)=100 for each resonance. For secondary transitions, % photon branchings from each



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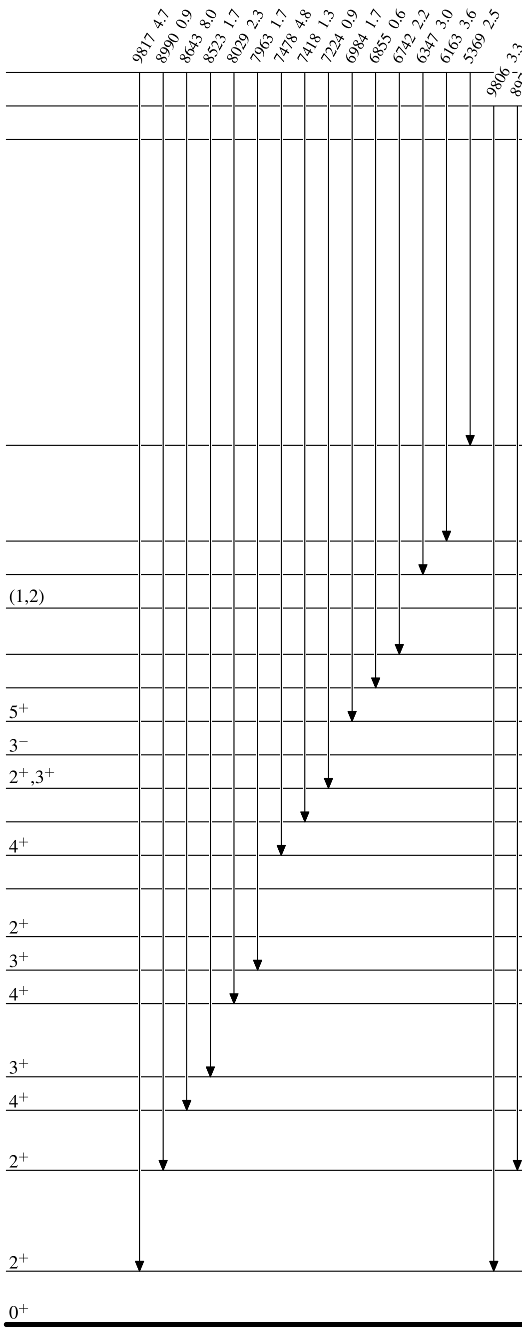
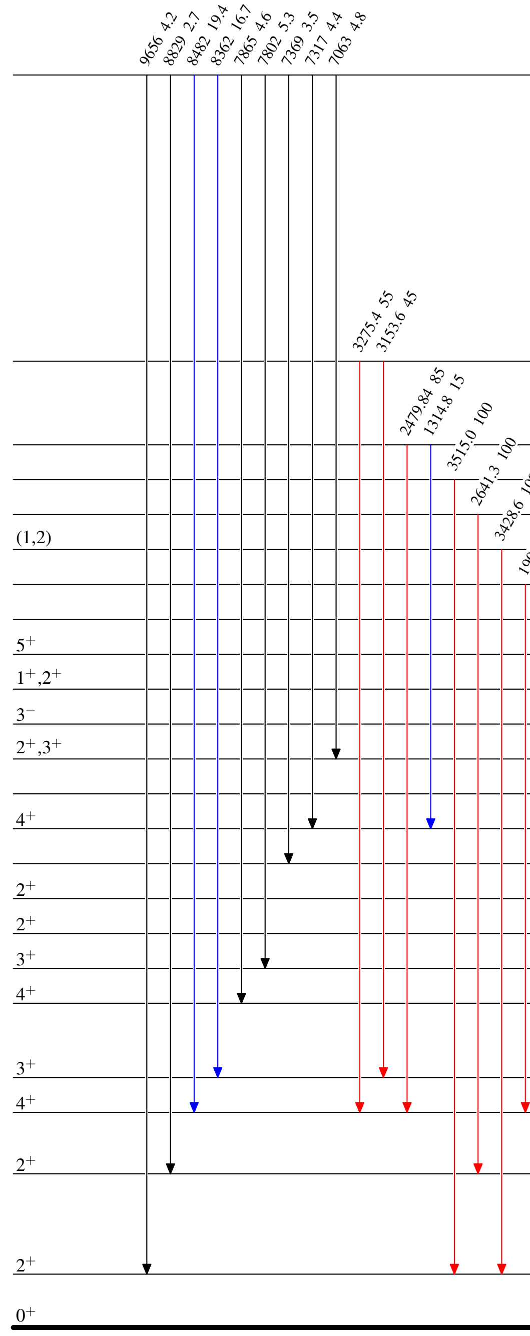
Lev

Intensities: Photon branching intensities of primary transitions are normalized to I(1332γ)=100 for each resonance. For secondary transitions, % photon branchings from each



Lev

Intensities: Photon branching intensities of primary transitions are normalized to I(1332γ)=100 for each resonance. For secondary transitions, % photon branchings from each



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Lev

Intensities: Photon branching intensities of primary transitions are normalized to I(1332γ)=100 for each resonance. For secondary transitions, % photon branchings from each