^{40}Ca(^{28}Si,4pγ) E=120 MeV 1997Fu08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 178, 41 (2021).	12-Nov-2021

1997Fu08: E=120 MeV. Measured Eγ, Iγ, $\gamma\gamma$ using an array of ten Compton-suppressed Ge detectors and a Si-ball for charged particles.

^{64}Zn Levels

E(level)[†]	J$^\pi$[#]	Comments
0.0[@]	0$^+$	
991.3[@] *8*	2$^+$	
1798.8[&] *8*	2$^+$	
2305.9[@] *10*	4$^+$	
2735.0[&] *10*	4$^+$	
2996.0[a] *11*	3$^-$	
3075.7 *11*		
3300.9[‡] *11*		
3920.8[a] *11*	5$^-$	
3992.3[@] *12*	6$^+$	
4073.4 *11*		
4155.3 *11*		
4235.0[&] *12*	6$^+$	
4633.3[b] *13*	7$^-$	
4666.2 *12*		
4976.9[a] *12*	7$^-$	
5621.2 *15*		
5934.4 *14*		
5948.7[b] *13*	(9$^-$)	
6027.6[&] *13*	(8$^+$)	J$^\pi$: from the Adopted Levels.
6121.2 *12*		
6122.2[a] *13*	(9$^-$)	
6995.3[b] *14*	(11$^-$)	
7114.5 *12*		
8423.7 *14*		
8576.7[b] *14*	(12)	
9665.2[b] *15*		
11090.2[‡b] *18*		
12523.2[‡b] *21*		

[†] From a least-squares fit to Eγ data, assuming 1 keV uncertainty for each γ ray.
[‡] This level is not included in the Adopted Levels since it is not confirmed in other in-beam γ-ray studies, namely (^{28}Si,4pγ) work of 2004Ka18.
[#] As proposed by 1997Fu08 based possibly on $\gamma\gamma(\theta)$ data, all assignments are consistent with the levels included in the Adopted Levels.
[@] Band(A): g.s. band.
[&] Band(B): ΔJ=2 band based on 2$^+$.
[a] Band(C): ΔJ=2, 3$^-$ band.
[b] Seq.(D): γ sequence based on 7$^-$.

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γ(^{64}Zn)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
150	8576.7	(12)	8423.7		1144	6121.2		4976.9	7^-
398	4633.3	7^-	4235.0	6^+	1145	6122.2	(9^-)	4976.9	7^-
430	2735.0	4^+	2305.9	4^+	1166	7114.5		5948.7	(9^-)
511	4666.2		4155.3		1180	7114.5		5934.4	
593	4666.2		4073.4		1243	9665.2		8423.7	
618	3920.8	5^-	3300.9		1308	8423.7		7114.5	
642	4633.3	7^-	3992.3	6^+	1315	2305.9	4^+	991.3	2^+
745	4666.2		3920.8	5^-	1316	5948.7	(9^-)	4633.3	7^-
770	4073.4		3300.9		1340	4073.4		2735.0	4^+
808	1798.8	2^+	991.3	2^+	1425†	11090.2		9665.2	
821	4976.9	7^-	4155.3		1428	8423.7		6995.3	(11^-)
856	4155.3		3300.9		1433†	12523.2		11090.2	
873	6995.3	(11^-)	6122.2	(9^-)	1463	8576.7	(12)	7114.5	
923	3920.8	5^-	2996.0	3^-	1500	4235.0	6^+	2735.0	4^+
937	2735.0	4^+	1798.8	2^+	1582	8576.7	(12)	6995.3	(11^-)
955	5621.2		4666.2		1618	3920.8	5^-	2305.9	4^+
x962‡#					1687	3992.3	6^+	2305.9	4^+
991	991.3	2^+	0.0	0^+	1793	6027.6	(8^+)	4235.0	6^+
992†	3300.9		2305.9	4^+	1799	1798.8	2^+	0.0	0^+
992	7114.5		6122.2	(9^-)	1848	4155.3		2305.9	4^+
993	7114.5		6121.2		1886	6121.2		4235.0	6^+
999	4073.4		3075.7		1942	5934.4		3992.3	6^+
1047	6995.3	(11^-)	5948.7	(9^-)	2003	2996.0	3^-	991.3	2^+
1056	4976.9	7^-	3920.8	5^-	2035	6027.6	(8^+)	3992.3	6^+
1079	4155.3		3075.7		2085	3075.7		991.3	2^+
1087	7114.5		6027.6	(8^+)	2129	6121.2		3992.3	6^+
1087	9665.2		8576.7	(12)					

† This γ is not included in the Adopted Gammas since it is not confirmed in other in-beam γ-ray studies, namely (^{28}Si,4pγ) work of 2004Ka18.
‡ This γ ray does not fit between the 5949 and 4977 levels as shown by 1997Fu08, the level-energy difference is 978.
# Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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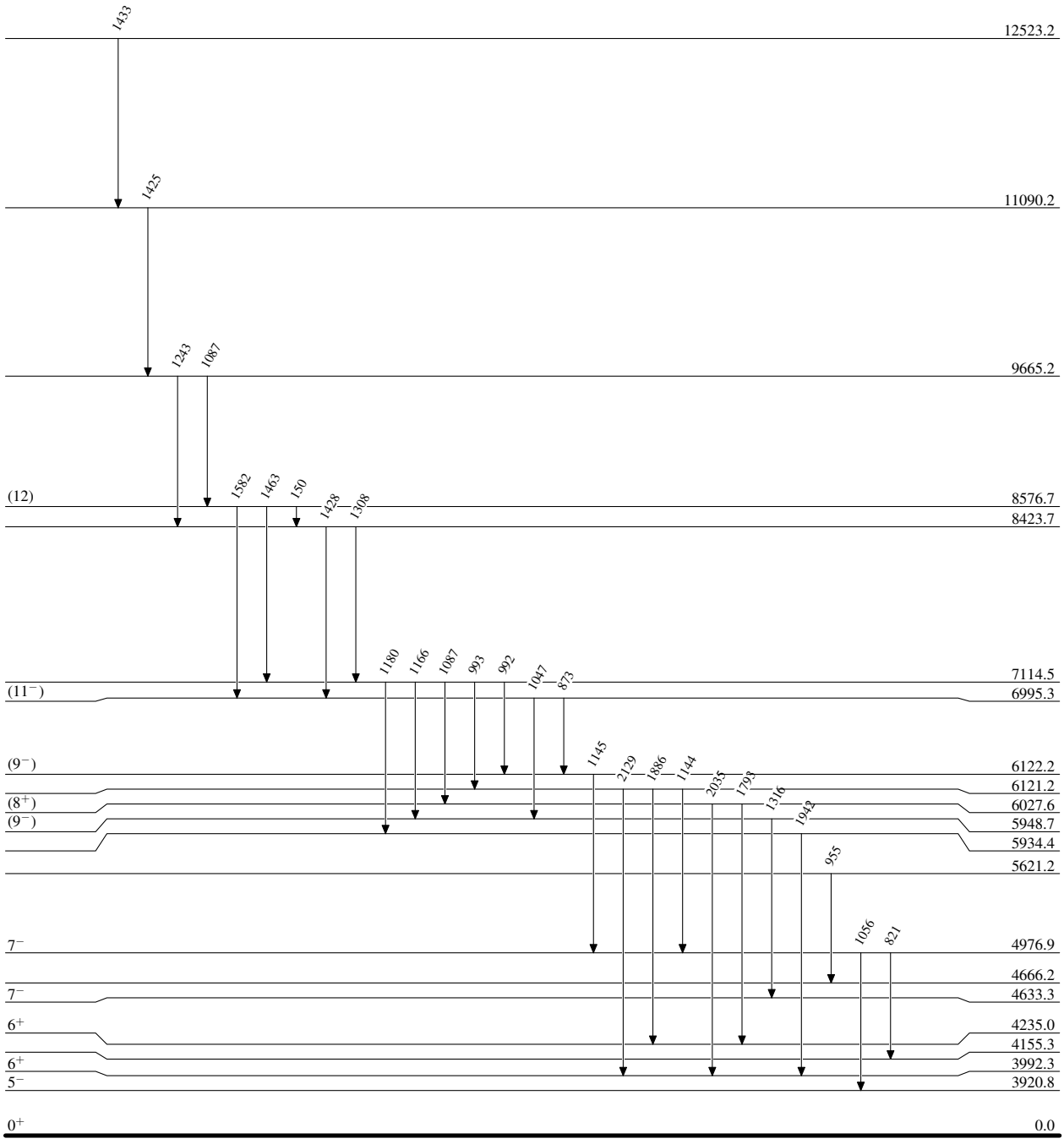
Level Scheme



$^{64}_{30}Zn_{34}$

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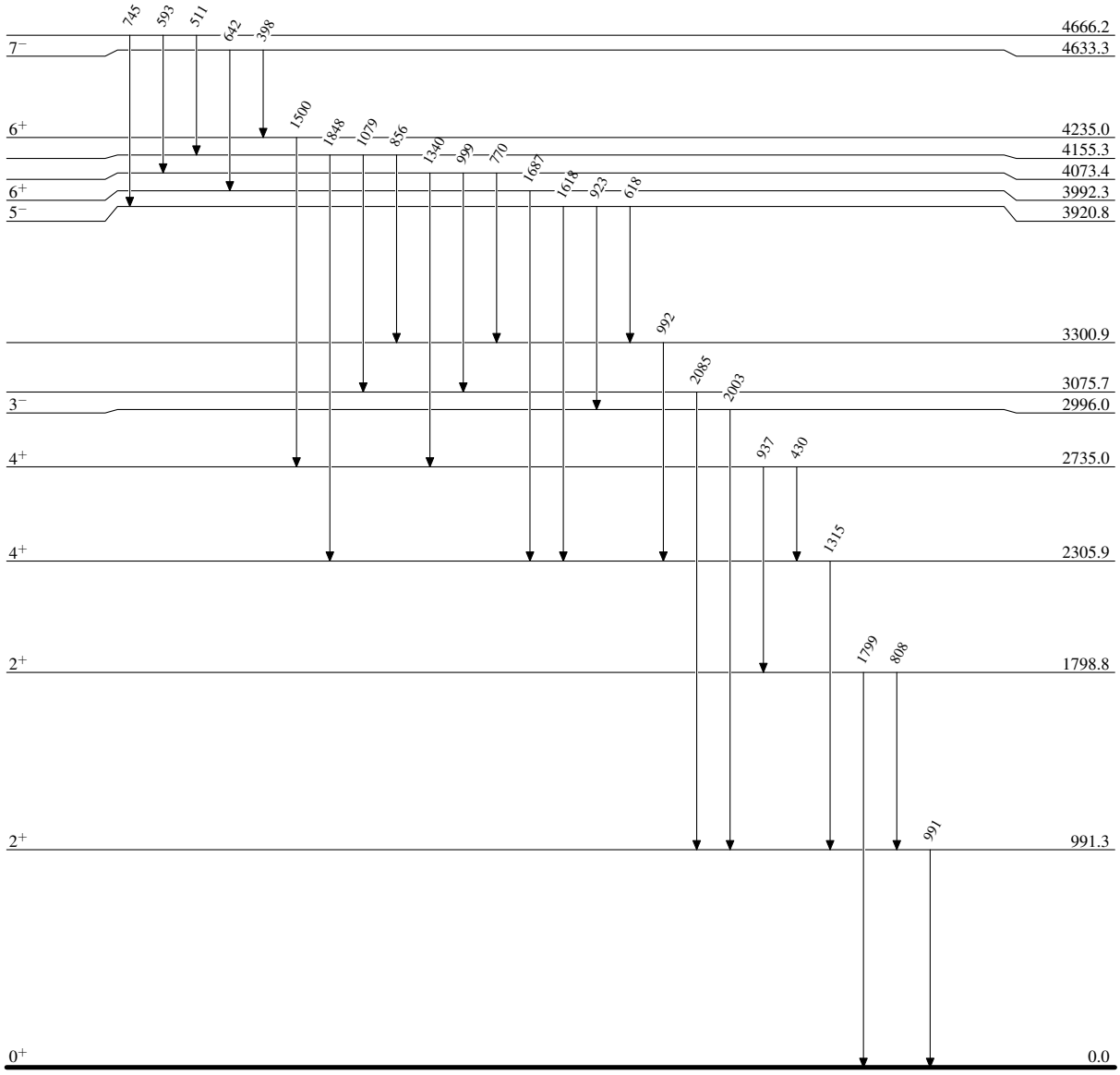
Level Scheme (continued)



$^{64}_{30}Zn_{34}$

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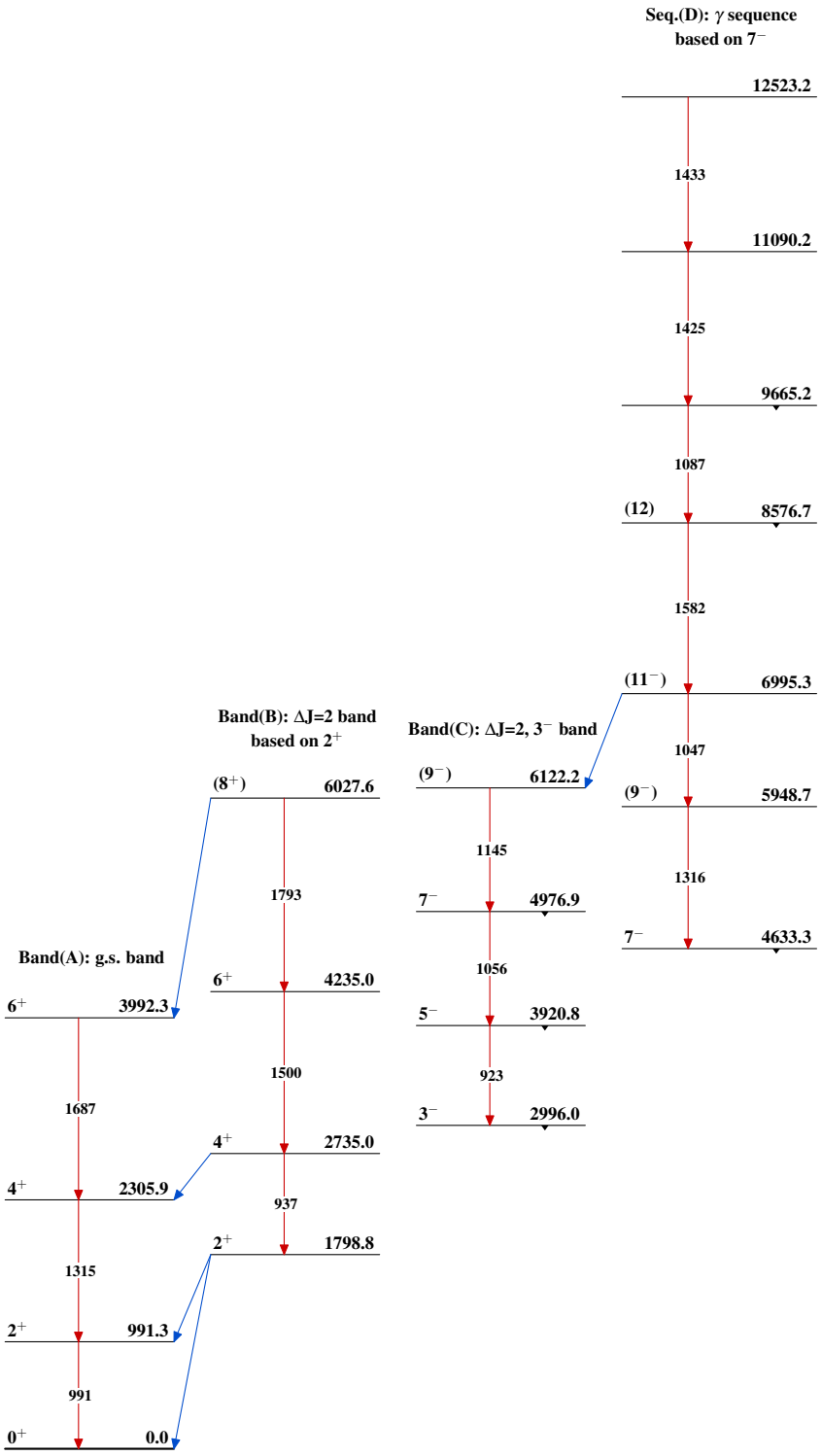

$^{64}_{30}Zn_{34}$