^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, J. Timar and Z. Elekes	NDS 161, 1 (2019)	1-Apr-2019

2019Ti02: Facility: IReS Vivitron accelerator lab; Beam: ^{13}C; Target: two self-supporting≈0.6 mg/cm^2 thick targets enriched to 86% in ^{96}Zr; Detectors: EUROBALL IV, comprising 24 Clover and 15 Cluster HPGe and DIAMANT charged-particle detector, comprising 88 CsI crystals; Measured: γ-γ-γ coinc., γ-$\gamma(\theta)$, γ -ray linear polarization, Eγ; Deduced: γ-ray Mult., δ, J^π, ^{105}Pd level scheme.

1977Ri05: Facility: Purdue Univ. Van de Graaf accelerator; Beam: E(^{12}C)=45 MeV; Target: 2 mg/cm^2 thick enriched to 85% in ^{96}Zr; Detectors: three Ge(Li) detectors; Measured: exc. function, γ, γ-γ coinc., γ-$\gamma(\theta)$, Eγ, Iγ; Deduced: γ-ray Mult., J^π, ^{105}Pd level scheme, band structure.

Others: 2014RaZR, 1977GrZU, 1974RiYS, 1974SmZV, 1973Ri10.

^{105}Pd Levels

E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡
0.0	5/2$^+$ @	2197.22 *19*	(15/2)$^+$ @	3527.87 *17*	(25/2)$^+$ *b*
306.28 *5*	7/2$^+$ &	2280.81 *22*	(17/2)$^-$	3694.62 *19*	(25/2$^-$) *d*
319.28 *10*	5/2$^+$	2344.78 *15*	(19/2)$^-$	3800.71 *15*	(27/2$^-$) *a*
442.40 *4*	7/2$^+$ @	2491.1 *3*	(19/2$^-$)	3859.6 *5*	(25/2$^-$) #*c*
489.20 *7*	11/2$^-$ *a*	2552.24 *14*	(17/2)$^+$ @	3873.31 *19*	(27/2)$^+$ &
781.95 *4*	9/2$^+$ @	2565.11 *12*	(17/2)$^+$	4254.7 *3*	(29/2)$^+$ *b*
902.02 *12*	(5/2,7/2,9/2)$^+$	2700.46 *10*	(23/2)$^-$ *a*	4668.5 *4*	(31/2$^+$) &
970.20 *8*	(15/2)$^-$ *a*	2704.14 *18*	(19/2$^-$)	4783.6 *7*	(29/2$^-$) *d*
1011.78 *7*	(11/2)$^+$ &	2756.19 *14*	(19/2)$^+$ &	4953.35 *25*	(31/2$^-$) *a*
1271.43 *8*	(11/2)$^+$ @	2775.81 *13*	(21/2$^-$) *d*	4956.1 *8*	(29/2$^-$) #*c*
1357.3 *6*	(13/2$^-$) #*d*	2806.80 *13*	(19/2)$^+$ @	5255.6 *4*	(33/2$^+$) *b*
1671.21 *10*	(13/2)$^+$ @	2900.97 *13*	(21/2$^-$) *c*	5847.7 *12*	(33/2$^-$) *d*
1742.03 *9*	(19/2)$^-$ *a*	3073.06 *15*	(21/2)$^+$ *b*	6072.4 *11*	(35/2$^-$) #*a*
1749.68 *19*	(13/2)$^+$	3119.46 *16*	(21/2)$^+$ @	6995.7 *16*	(37/2$^-$) #*d*
1763.35 *14*	(15/2)$^-$	3153.51 *18*	(23/2)$^-$	7191.4 *15*	(39/2$^-$) #*a*
1902.17 *14*	(15/2)$^+$ &	3295.03 *19*	(23/2)$^+$ &	8297.7 *19*	(41/2$^-$) #*d*
1961.58 *10*	(17/2)$^-$ *d*	3468.84 *22*	(23/2)$^+$ @	8406.4 *18*	(43/2$^-$) #*a*

† From a least-squares fit to Eγ.

‡ From ^{96}Zr(^{12}C,3nγ) (1977Ri05), based on γ-ray multipolarity, except where noted.

From ^{96}Zr(^{13}C,4nγ) (2019Ti02), based on γ-ray Mult.

@ Member of ΔJ=2 band built on J^π=5/2$^+$; configuration=$\nu 2d_{5/2}$.

& Member of ΔJ=2 band built on J^π=7/2$^+$; configuration=$\nu 1g_{7/2}$.

a Member of ΔJ=2 band built on J^π=11/2$^-$; configuration=$\nu 1h_{11/2}$; upband configuration=$\nu 1h^3_{11/2}$.

b Member of ΔJ=2 band built on J^π=(21/2)$^+$; configuration=$\nu 1h^{-2}_{11/2} d_{5/2}$.

c Member of ΔJ=2 wobbling band, based on (13/2$^-$).

d Memebr of ΔJ=2 wobbling band signature partner, based on (21/2$^-$).

^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05 (continued)

$\gamma(^{105}Pd)$

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
182.91 *5*	52.1 *11*	489.20	11/2$^-$	306.28	7/2$^+$	[M2]		Mult.: A_{22}=0.03 *4*, A_{44}=0.00 *4* (1977Ri05).
229.82 *20*	0.6 *1*	1011.78	(11/2)$^+$	781.95	9/2$^+$	M1+E2	−0.05 *9*	Mult.: A_{22}=−0.33 *15*, A_{44}=0.21 *19* (1977Ri05).
232.8 *3*	0.4 *1*	3527.87	(25/2)$^+$	3295.03	(23/2)$^+$	M1+E2	−0.27 *7*	Mult.: A_{22}=−0.69 *10*, A_{44}=0.14 *13* (1977Ri05).
241.6 *2*	0.3 *1*	2806.80	(19/2)$^+$	2565.11	(17/2)$^+$			
254.53 *10*	4.6 *1*	2806.80	(19/2)$^+$	2552.24	(17/2)$^+$	M1+E2	+0.09 *1*	Mult.: A_{22}=−0.11 *3*, A_{44}=0.04 *4* (1977Ri05); R_{DCO}=1.64 *18* (1977Ri05). δ: Also: 0.13 *4* from DCO measurements in 1977Ri05.
306.29 *5*	100	306.28	7/2$^+$	0.0	5/2$^+$	M1(+E2)	+0.02 *4*	Mult.: A_{22}=−0.048 *10*, A_{44}=0.015 *10* (1977Ri05); R_{DCO}=2.19 *6* (1977Ri05). δ: Also: 0.01 *1* from DCO measurements in 1977Ri05.
312.67 *10*	3.4 *2*	3119.46	(21/2)$^+$	2806.80	(19/2)$^+$	M1+E2	+0.12 *3*	Mult.: A_{22}=−0.05 *3*, A_{44}=−0.01 *4* (1977Ri05); R_{DCO}=1.60 *17* (1977Ri05). δ: Also: 0.11 *4* from DCO measurements in 1977Ri05.
319.28 *10*	2.9 *2*	319.28	5/2$^+$	0.0	5/2$^+$	M1+E2	−0.07 *10*	Mult.: A_{22}=0.21 *4*, A_{44}=0.01 *5* (1977Ri05); R_{DCO}=1.08 *19* (1977Ri05). δ: other: 1.9 *7* (1977Ri05); Also: −0.05 *17* from DCO measurements in 1977Ri05.
339.55 *5*	5.4 *2*	781.95	9/2$^+$	442.40	7/2$^+$	M1(+E2)	−0.04 *4*	Mult.: A_{22}=−0.29 *5*, A_4=0.03 *8* (1977Ri05); R_{DCO}=2.5 *5* (1977Ri05). δ: Also: −0.08 *8* from DCO measurements in 1977Ri05.
349.38 *15*	2.3 *2*	3468.84	(23/2)$^+$	3119.46	(21/2)$^+$	M1+E2	+0.14 *2*	Mult.: A_{22}=−0.02 *3*, A_{44}=0.01 *5* (1977Ri05); R_{DCO}=1.6 *3* (1977Ri05). δ: Also: 0.11 *6* from DCO measurements in 1977Ri05.
367.9 *2*	0.5 *1*	2565.11	(17/2)$^+$	2197.22	(15/2)$^+$			
372.6 *2*	0.4 *1*	3073.06	(21/2)$^+$	2700.46	(23/2)$^-$	E1+M2	−0.20 *13*	Mult.: A_{22}=0.13 *20*, A_{44}=−0.0 *3* (1977Ri05).
387[#]		1357.3	(13/2$^-$)	970.20	(15/2)$^-$			
399.76 *10*	3.3 *2*	1671.21	(13/2)$^+$	1271.43	(11/2)$^+$	M1+E2	−0.08 *4*	Mult.: A_{22}=−0.38 *4*, A_{44}=−0.05 *5* (1977Ri05); R_{DCO}=3.9 *11* (1977Ri05). δ: Also: −0.19 *11* from DCO measurements in 1977Ri05.
442.39 *5*	10.2 *3*	442.40	7/2$^+$	0.0	5/2$^+$	M1+E2	−0.33 *13*	Mult.: A_{22}=−0.610 *21*, A_{44}=0.031 *24* (1977Ri05); R_{DCO}=4.1 *7* (1977Ri05). δ: Also, −0.20 *7* from DCO in 1977Ri05 and −0.37 *8* from DCO in 2019Ti02.
452.98 *20*	1.9 *2*	3153.51	(23/2)$^-$	2700.46	(23/2)$^-$	M1(+E2)	0.0 *6*	Mult.: A_{22}=0.42 *5*, A_{44}=−0.13 *8* (1977Ri05); R_{DCO}=0.8 *3* (1977Ri05). δ: Also: 0.0 *7* from DCO measurements in 1977Ri05.
454.82 *10*	7.6 *3*	3527.87	(25/2)$^+$	3073.06	(21/2)$^+$	E2		Mult.: A_{22}=0.36 *3*, A_{44}=−0.07 *4* (1977Ri05); R_{DCO}=1.19 *12* (1977Ri05).

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^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05 (continued)

γ(^{105}Pd) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
459.6 *3*	1.2 *2*	902.02	(5/2,7/2,9/2)$^+$	442.40	7/2$^+$	M1+E2	+0.24 *9*	Mult.: A_{22}=0.10 *11*, A_{44}=−0.07 *4* (1977Ri05).
481.00 *5*	66.4 *14*	970.20	(15/2)$^-$	489.20	11/2$^-$	E2		Mult.: A_{22}=0.334 *9*, A_{44}=−0.084 *9* (1977Ri05); R_{DCO}=0.99 *2* (1977Ri05).
489.49 *10*	2.8 *2*	1271.43	(11/2)$^+$	781.95	9/2$^+$	M1+E2	−0.13 *6*	Mult.: A_{22}=−0.46 *5*, A_{44}=0.04 *6* (1977Ri05); R_{DCO}=3.1 *10* (1977Ri05). δ: Also: −0.05 *8* from DCO measurements in 1977Ri05.
508.0 *3*	5.0 *4*	3073.06	(21/2)$^+$	2565.11	(17/2)$^+$	E2		Mult.: A_{22}=0.263 *23*, A_{44}=−0.10 *3* (1977Ri05); R_{DCO}=0.91 *9* (1977Ri05).
538.83 *15*	7.7 *3*	3295.03	(23/2)$^+$	2756.19	(19/2)$^+$	E2		Mult.: A_{22}=0.358 *19*, A_{44} −0.08 *3* (1977Ri05); R_{DCO}=1.02 *5* (1977Ri05).
578.27 *5*	5.6 *2*	3873.31	(27/2)$^+$	3295.03	(23/2)$^+$	E2		Mult.: A_{22}=0.44 *3*, A_{44}=−0.11 *4* (1977Ri05); R_{DCO}=1.04 *6* (1977Ri05).
581.45 *25*	1.5 *3*	2344.78	(19/2)$^-$	1763.35	(15/2)$^-$	E2		Mult.: A_{22}=0.46 *5*, A_{44}=−0.11 *7* (1977Ri05); R_{DCO}=0.9 *5* (1977Ri05).
582.74 *25*	1.9 *2*	902.02	(5/2,7/2,9/2)$^+$	319.28	5/2$^+$	E2		Mult.: A_{22}=0.46 *5*, A_{44}=−0.11 *7* (1977Ri05); R_{DCO}=0.92 *16* (1977Ri05).
595.73 *15*	2.9 *2*	902.02	(5/2,7/2,9/2)$^+$	306.28	7/2$^+$	M1+E2	+0.16 *3*	Mult.: A_{22}=−0.01 *3*, A_{44}=0.02 *4* (1977Ri05); R_{DCO}=2.4 *5* (1977Ri05). δ: Also: −0.04 *8* from DCO measurements in 1977Ri05.
602.78 *15*	3.8 *3*	2344.78	(19/2)$^-$	1742.03	(19/2)$^-$	M1+E2	−0.01 *60*	Mult.: A_{22}=0.42 *3*, A_{44}=−0.04 *5* (1977Ri05); R_{DCO}=0.86 *13* (1977Ri05). δ: Also: 0.0 *5* from DCO measurements in 1977Ri05.
604[#]		1961.58	(17/2)$^-$	1357.3	(13/2$^-$)			
649.9 *3*	1.1 *3*	2552.24	(17/2)$^+$	1902.17	(15/2)$^+$			
705.50 *5*	14.8 *4*	1011.78	(11/2)$^+$	306.28	7/2$^+$	E2		Mult.: A_{22}=0.346 *17*, A_{44}=−0.102 *24* (1977Ri05); R_{DCO}=0.99 *4* (1977Ri05).
726.8 *2*	4.2 *3*	4254.7	(29/2)$^+$	3527.87	(25/2)$^+$	E2		Mult.: A_{22}=0.26 *3*, A_{44}=−0.02 *4* (1977Ri05); R_{DCO}=0.91 *16* (1977Ri05).
749.1 *4*	1.9 *3*	2491.1	(19/2$^-$)	1742.03	(19/2)$^-$			
771.83 *5*	47.9 *11*	1742.03	(19/2)$^-$	970.20	(15/2)$^-$	E2		Mult.: A_{22}=0.353 *10*, A_{44}=−0.104 *11* (1977Ri05); R_{DCO}=0.96 *2* (1977Ri05).
781.94 *5*	6.9 *2*	781.95	9/2$^+$	0.0	5/2$^+$	E2		Mult.: A_{22}=0.33 *3*, A_{44}=−0.05 *4* (1977Ri05); R_{DCO}=1.01 *18* (1977Ri05).
793.17 *25*	3.7 *4*	1763.35	(15/2)$^-$	970.20	(15/2)$^-$	M1+E2	+1.0 *5*	Mult.: A_{22}=0.28 *4*, A_{44}, −0.08 *6* (1977Ri05); R_{DCO}=1.2 *3* (1977Ri05). δ: Also: 1.0 *5* from DCO measurements in 1977Ri05.
794[#]		3694.62	(25/2$^-$)	2900.97	(21/2$^-$)			

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^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05 (continued)

γ(^{105}Pd) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
795.23 *25*	2.3 *2*	4668.5	(31/2$^+$)	3873.31	(27/2)$^+$	(E2)		Mult.: A_{22}=0.28 *4*, A_{44}=−0.08 *6* (1977Ri05); R_{DCO}=1.21 *18* (1977Ri05).
808.8 *2*	3.3 *4*	3153.51	(23/2)$^-$	2344.78	(19/2)$^-$	E2		Mult.: A_{22}=0.28 *5*, A_{44}=−0.07 *8* (1977Ri05); R_{DCO}=1.0 *3* (1977Ri05).
814.22 *20*	1.5 *3*	2775.81	(21/2$^-$)	1961.58	(17/2)$^-$	(E2)		Mult.: A_{22}=0.27 *8*, A_{44}=−0.01 *11* (1977Ri05); R_{DCO}=0.7 *3* (1977Ri05).
815.4 *2*	1.6 *2*	2565.11	(17/2)$^+$	1749.68	(13/2)$^+$	E2		Mult.: A_{22}=0.27 *8*, A_{44}=−0.01 *11* (1977Ri05); R_{DCO}=1.07 *23* (1977Ri05).
829.02 *10*	4.0 *2*	1271.43	(11/2)$^+$	442.40	7/2$^+$	E2		Mult.: A_{22}=0.20 *5*, A_{44}=−0.09 *7* (1977Ri05); R_{DCO}=1.2 *4* (1977Ri05).
847.6 *3*	2.9 *3*	1749.68	(13/2)$^+$	902.02	(5/2,7/2,9/2)$^+$	E2		Mult.: R_{DCO}=1.12 *21* (1977Ri05).
854.02 *5*	10.2 *3*	2756.19	(19/2)$^+$	1902.17	(15/2)$^+$	E2		Mult.: A_{22}=0.326 *25*, A_{44}=−0.08 *4* (1977Ri05); R_{DCO}=1.02 *5* (1977Ri05).
868[#]		1357.3	(13/2$^-$)	489.20	11/2$^-$			
881.00 *20*	4.3 *5*	2552.24	(17/2)$^+$	1671.21	(13/2)$^+$	E2		Mult.: A_{22}=0.376 *24*, A_{44}=−0.18 *3* (1977Ri05); R_{DCO}=1.0 *3* (1977Ri05).
889.24 *25*	9.4 *7*	1671.21	(13/2)$^+$	781.95	9/2$^+$	E2		Mult.: A_{22}=0.329 *16*, A_{44}=−0.06 *21* (1977Ri05); R_{DCO}=1.15 *20* (1977Ri05).
890.55 *25*	13.7 *7*	1902.17	(15/2)$^+$	1011.78	(11/2)$^+$	E2		Mult.: A_{22}=0.329 *16*, A_{44}=−0.096 *21* (1977Ri05); R_{DCO}=0.96 *4* (1977Ri05).
893.88 *10*	4.0 *2*	2565.11	(17/2)$^+$	1671.21	(13/2)$^+$	(E2)		Mult.: A_{22}=0.37 *5*, A_{44}=−0.11 *7* (1977Ri05); R_{DCO}=0.81 *14*.
904.7 *1*	1.2 *2*	2806.80	(19/2)$^+$	1902.17	(15/2)$^+$	E2		Mult.: A_{22}=0.37 *19*, A_{44}=−0.3 *3* (1977Ri05); R_{DCO}=1.0 *4* (1977Ri05).
918.8 *3*	1.8 *3*	3694.62	(25/2$^-$)	2775.81	(21/2$^-$)	E2		Mult.: R_{DCO}=1.0 *4* (1977Ri05).
924[#]		4783.6	(29/2$^-$)	3859.6	(25/2$^-$)			
925.8 *3*	1.8 *5*	2197.22	(15/2)$^+$	1271.43	(11/2)$^+$	E2		Mult.: R_{DCO}=0.7 *3* (1977Ri05).
939.4 *3*	1.1 *3*	2900.97	(21/2$^-$)	1961.58	(17/2)$^-$			
958.42 *5*	20.2 *5*	2700.46	(23/2)$^-$	1742.03	(19/2)$^-$	E2		Mult.: A_{22}=0.283 *19*, A_{44}=−0.075 *24* (1977Ri05); R_{DCO}=1.12 *4* (1977Ri05).
959[#]		3859.6	(25/2$^-$)	2900.97	(21/2$^-$)			
962.10 *15*	3.0 *3*	2704.14	(19/2$^-$)	1742.03	(19/2)$^-$	M1+E2	+0.2 *4*	Mult.: A_{22}=0.42 *4*, A_{44}=−0.08 *5* (1977Ri05); R_{DCO}=0.93 *24* (1977Ri05). δ: Also: 0.2 *6* from DCO measurements in 1977Ri05.
983[#]		4783.6	(29/2$^-$)	3800.71	(27/2$^-$)			
991.38 *5*	7.7 *4*	1961.58	(17/2)$^-$	970.20	(15/2)$^-$	M1+E2	1.8 *5*	Mult.: A_{22}=0.436 *25*, A_{44}=0.01 *3* (1977Ri05); R_{DCO}=0.58 *8* (1977Ri05). δ: from DCO and linear pol. in 2019Ti02; Also: +0.46 *10* or 1.3 *7* from DCO measurements in 1977Ri05.
994.12 *20*	1.6 *3*	3694.62	(25/2$^-$)	2700.46	(23/2)$^-$	M1+E2	2.7 *6*	Mult.: A_{22}=0.8 *3*, A_{44}=−0.2 *4* (1977Ri05). δ: from DCO and linear pol. in 2019Ti02; Also: +1.5 *10* in 1977Ri05.

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^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05 (continued)

γ(^{105}Pd) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
1000.9 *3*	0.9 *2*	5255.6	$(33/2^+)$	4254.7	$(29/2)^+$	E2		Mult.: A_{22}=0.02 *9*, A_{44}=0.04 *14* (1977Ri05); R_{DCO}=0.9 *3* (1977Ri05).
1014.3 *3*	1.9 *3*	2756.19	$(19/2)^+$	1742.03	$(19/2)^-$	E1+M2	−0.25 *25*	Mult.: A_{22}=0.28 *8*, A_{44}=−0.05 *11* (1977Ri05); R_{DCO}1.0 3 (1977Ri05). δ: Also: 0.08 *8* from DCO measurements in 1977Ri05.
1033.77 *10*	3.0 *2*	2775.81	$(21/2^-)$	1742.03	$(19/2)^-$	M1+E2	2.3 *3*	Mult.: A_{22}=0.57 *6*, A_{44}=0.14 *8* (1977Ri05); R_{DCO}=0.62 *14* (1977Ri05). δ: from DCO and linear pol. in 2019Ti02; Also: +0.62 *18* or 0.8 *3* from DCO measurements in 1977Ri05.
1064[#]		5847.7	$(33/2^-)$	4783.6	$(29/2^-)$	(E2)		Mult.: from DCO and γ polarization measurements in 2019Ti02.
1084[#]		3859.6	$(25/2^-)$	2775.81	$(21/2^-)$			
1089[#]		4783.6	$(29/2^-)$	3694.62	$(25/2^-)$	(E2)		Mult.: from DCO and γ polarization measurements in 2019Ti02.
1097[#]		4956.1	$(29/2^-)$	3859.6	$(25/2^-)$			
1100.24 *10*	5.1 *2*	3800.71	$(27/2^-)$	2700.46	$(23/2)^-$	(E2)		Mult.: A_{22}=0.14 *4*, A_{44}=−0.08 *5* (1977Ri05); R_{DCO}=1.54 *16* (1977Ri05).
1119[#]		6072.4	$(35/2^-)$	4953.35	$(31/2^-)$			
1119[#]		7191.4	$(39/2^-)$	6072.4	$(35/2^-)$			
1148[#]		6995.7	$(37/2^-)$	5847.7	$(33/2^-)$			
1152.64 *20*	1.6 *3*	4953.35	$(31/2^-)$	3800.71	$(27/2^-)$	(E2)		Mult.: A_{22}=0.19 *8*, A_{44}=−0.11 *2* (1977Ri05); R_{DCO}=0.43 *23* (1977Ri05).
1158.94 *10*	2.4 *2*	2900.97	$(21/2^-)$	1742.03	$(19/2)^-$	M1+E2	+1.3 *9*	Mult.: A_{22}=0.65 *8*, A_{44}=−0.03 *12* (1977Ri05); R_{DCO}=0.58 *16* (1977Ri05). δ: Also: 1.6 *11* from DCO measurements in 1977Ri05.
1159[#]		3859.6	$(25/2^-)$	2700.46	$(23/2)^-$			
1215[#]		8406.4	$(43/2^-)$	7191.4	$(39/2^-)$			
1261[#]		4956.1	$(29/2^-)$	3694.62	$(25/2^-)$			
1274.15 *15*	1.5 *2*	1763.35	$(15/2)^-$	489.20	$11/2^-$			Mult.: A_{22}=0.27 *12*, A_{44}=0.02 *18* (1977Ri05).
1302[#]		8297.7	$(41/2^-)$	6995.7	$(37/2^-)$			
1310.6 *2*	1.0 *3*	2280.81	$(17/2)^-$	970.20	$(15/2)^-$	M1+E2	+1.3 *7*	Mult.: A_{22}=1.4 *7*, A_{44}=−0.4 *8* (1977Ri05); R_{DCO}=0.8 *3*. δ: Also: 4 *4* from DCO measurements in 1977Ri05.
1331.0 *2*	2.4 *3*	3073.06	$(21/2)^+$	1742.03	$(19/2)^-$	E1+M2	+0.8 *8*	δ: R_{DCO}=1.8 *5* (1977Ri05).
1377.3 *3*	1.3 *3*	3119.46	$(21/2)^+$	1742.03	$(19/2)^-$			
1520.9 *3*	2.6 *5*	2491.1	$(19/2^-)$	970.20	$(15/2)^-$	(E2)		Mult.: R_{DCO}=0.75 *21* (1977Ri05).
1582.0 *3*	1.0 *3*	2552.24	$(17/2)^+$	970.20	$(15/2)^-$			

[†] From 1977Ri05, unless otherwise noted.
[‡] Unless otherwise noted, from 1977Ri05 based on $\gamma(\theta)$ and DCO measurements.
[#] From 2019Ti02.

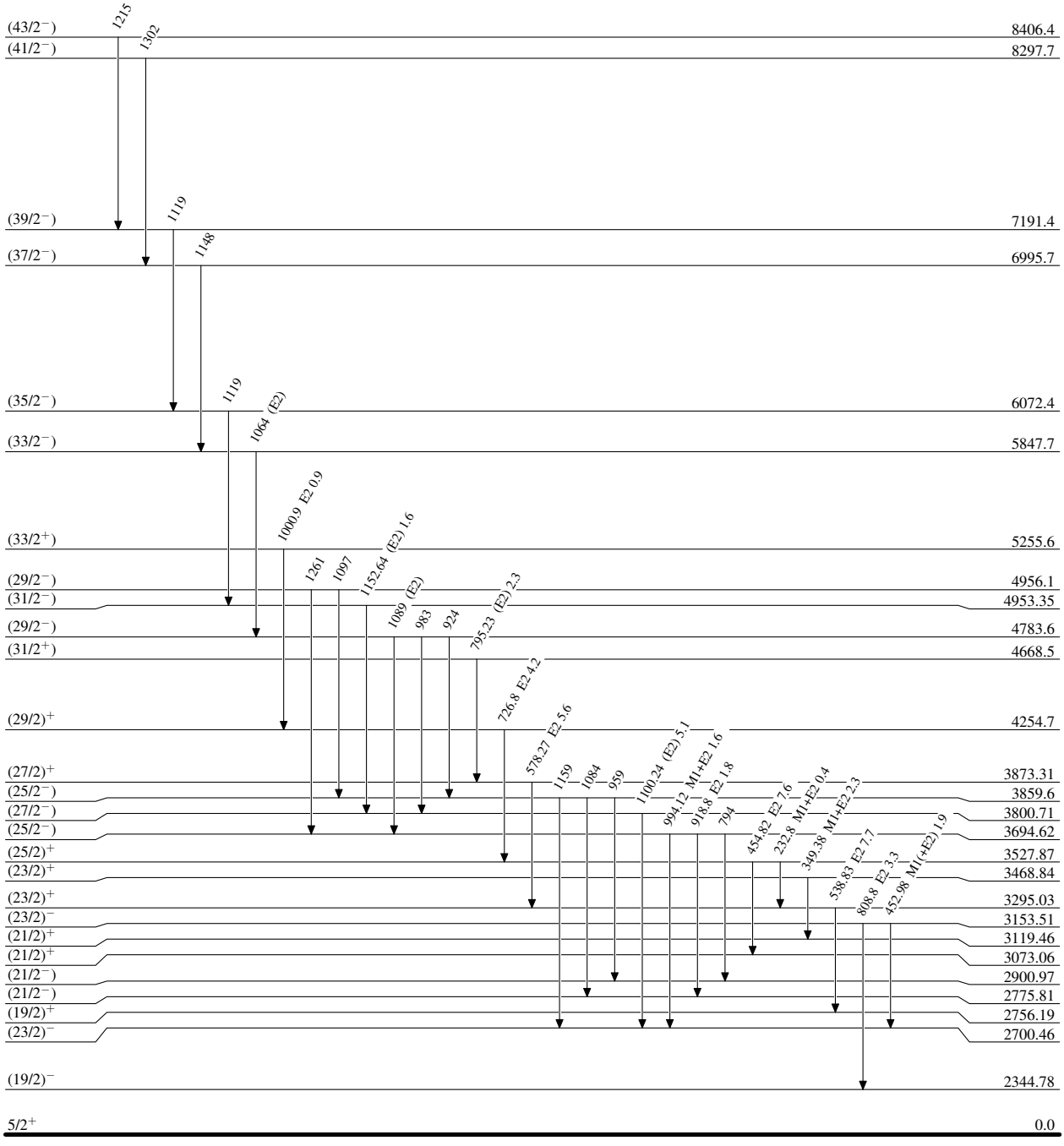
^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

Level Scheme

Intensities: Type not specified



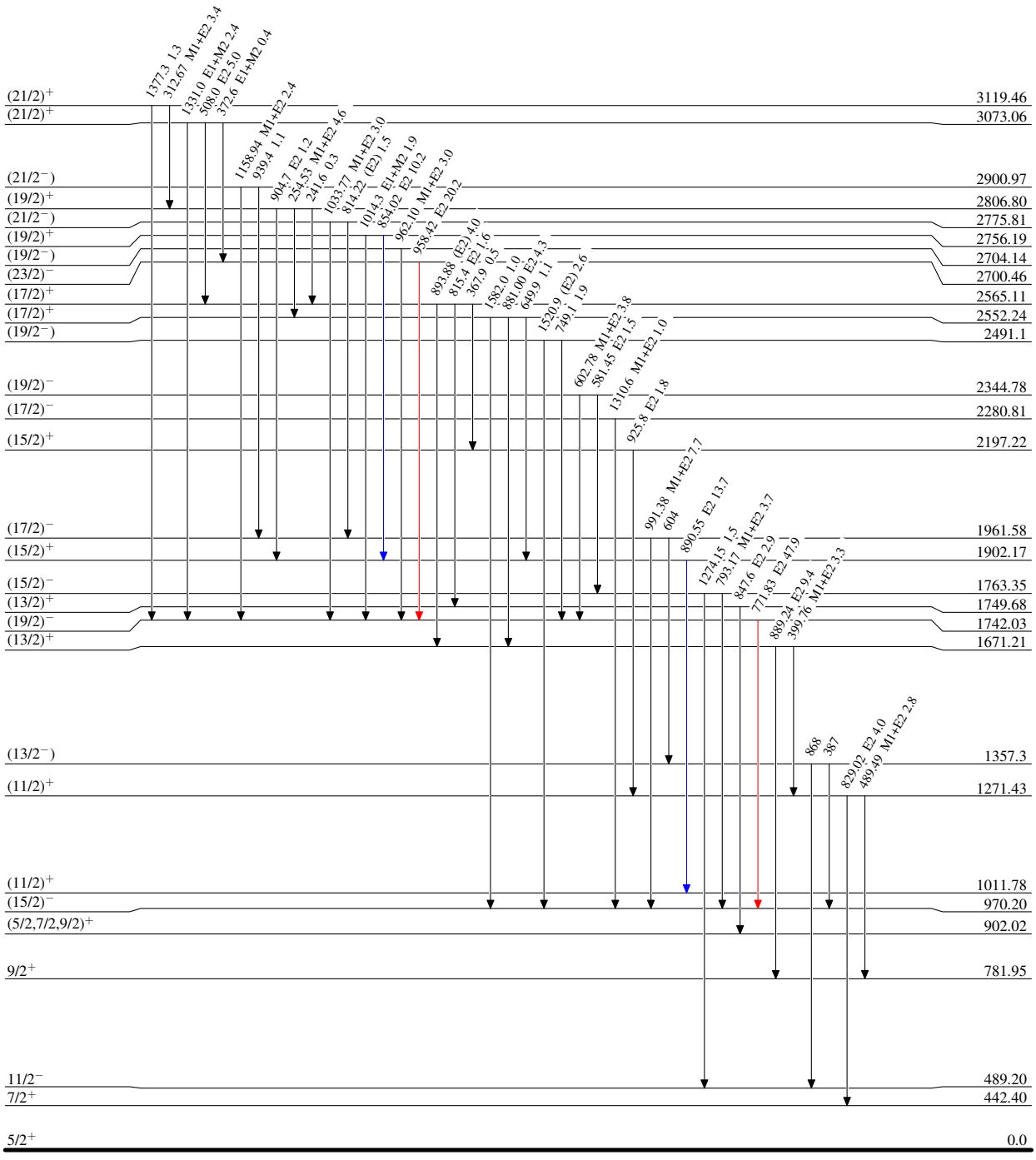
$^{105}_{46}Pd_{59}$

^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05

Level Scheme (continued)

Intensities: Type not specified

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

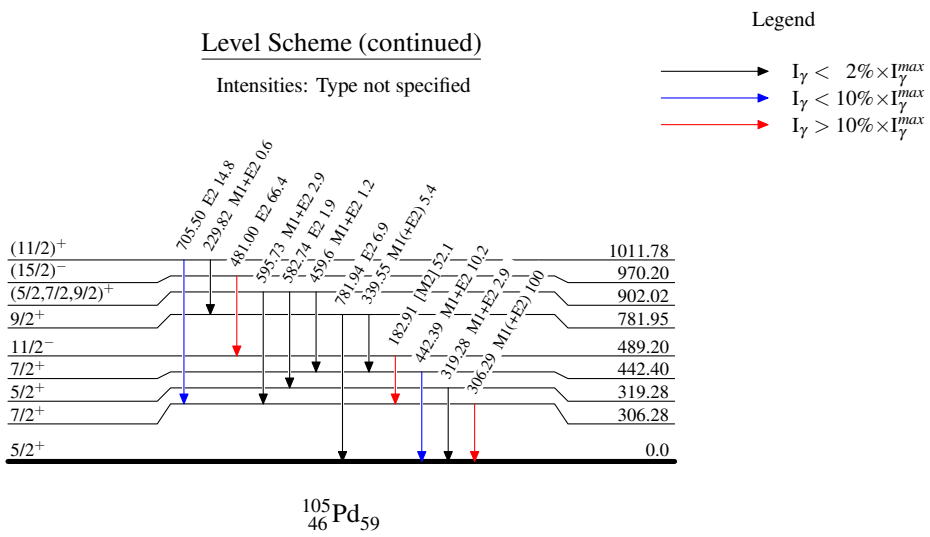


$^{105}_{46}Pd_{59}$

^{96}Zr(^{13}C,4nγ),^{96}Zr(^{12}C,3nγ) 2019Ti02,1977Ri05

Level Scheme (continued)

Intensities: Type not specified



$^{105}_{46}Pd_{59}$