^{88}Sr(^{7}Li,2npγ) 1976Br24

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

E(^{7}Li)=34 MeV, 82.6% ^{88}Sr target, Ge(Li) and intrinsic germanium detectors.

^{92}Zr Levels

E(level)	Jπ	$T_{1/2}$†	E(level)	Jπ	$T_{1/2}$†	E(level)	Jπ	$T_{1/2}$†
0.0	0^+		2957.8‡ *6*	(6^+)‡	≤3.5 ns	3999.0? *13*	(9^-)#	≤3.5 ns
934.51 *20*	2^+	≤3.5 ns	3309.1‡ *6*	(8^+)‡	≤2.4 ns	4297.0‡ *7*	(10^+)‡	≤3.5 ns
1495.5 *3*	4^+	≤3.5 ns	3380.0? *11*	(7^-)#	≤3.5 ns	4947.6‡ *9*	(12^+)‡	≤3.5 ns
2486.0 *4*	(5^-)@	≤3.5 ns	3819.6? *12*	(8^-)#	≤3.5 ns			

† From measurements of delayed γ rays with pulsed-beam timing, $T_{1/2}$≤3.5 ns for all γ rays observed by 1976Br24.
‡ The 651γ, 988γ, 351γ, 1462γ are coincident with each other; their relative Iγ and γ(θ) establish their order and indicate that these four γ rays, together with the 561γ and 934γ, form a sequence of stretched quadrupole transitions (1976Br24).
# Deduced by authors (1976Br24) from sign of A_2, assuming yrast decay. π based on typical partial width ratios, Γ(E1)/Γ(E2), in the α=90 mass region.
@ J=3 or 5 based on 990γ(θ); 1976Br24 favor 5 based on yrast arguments.

γ(^{92}Zr)

Measured: γγ coincidences, γ angular distributions, pulsed-beam γ-timing measurements (FWHM=8 ns; repetition period, 0.5, 1 μs).

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.†	Comments
179.4# *5*	4.0 *4*	3999.0?	(9^-)	3819.6?	(8^-)	D	A_2=−0.22 *12*, A_4=+0.15 *14*.
351.3 *2*	34 *3*	3309.1	(8^+)	2957.8	(6^+)	Q	A_2=+0.29 *2*, A_4=−0.08 *2*.
439.6# *5*	7.0 *7*	3819.6?	(8^-)	3380.0?	(7^-)	D	A_2=−0.24 *5*, A_4=−0.04 *6*.
561.0 *2*	83 *8*	1495.5	4^+	934.51	2^+	Q	A_2=+0.29 *1*, A_4=−0.07 *2*.
619# *2*	≈7‡	3999.0?	(9^-)	3380.0?	(7^-)		
650.6 *5*	9.0 *9*	4947.6	(12^+)	4297.0	(10^+)	(Q)	A_2=+0.42 *9*, A_4=−0.12 *10*.
894# *1*	≈18	3380.0?	(7^-)	2486.0	(5^-)		A_2=+0.18 *5*, A_4=−0.03 *7*.
934.5 *2*	100 *10*	934.51	2^+	0.0	0^+	Q	A_2=+0.27 *2*, A_4=−0.07 *2*.
987.9 *2*	19 *2*	4297.0	(10^+)	3309.1	(8^+)	(Q)	A_2=+0.21 *8*, A_4=−0.07 *9*.
990.5 *2*	25.0 *25*	2486.0	(5^-)	1495.5	4^+	D	A_2=−0.22 *6*, A_4=+0.01 *8*.
1462.3 *5*	38 *4*	2957.8	(6^+)	1495.5	4^+	(Q)	A_2=+0.20 *3*, A_4=−0.06 *4*.

† From γ(θ). If 1462γ were M2 or E3, $T_{1/2}$ would imply a strength larger than typical in this mass region; similarly, authors assume all observed transitions with lower Eγ are E2, E1, M1.
‡ From γγ coin.
# Placement of transition in the level scheme is uncertain.

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Level Scheme

Intensities: Relative I_γ

Legend

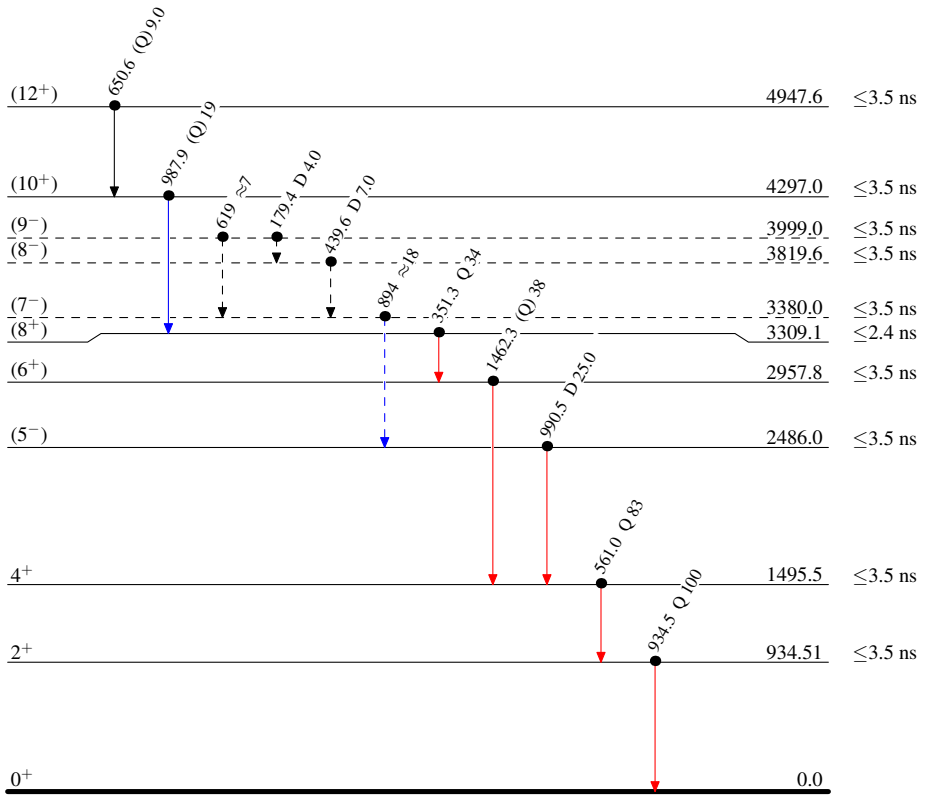
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

γ Decay (Uncertain)

Coincidence



$^{92}_{40}Zr_{52}$