

$^{75}\text{Ge} \beta^-$ decay (47.7 s) 1976Bh04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh		NDS 114, 841 (2013)	30-Jun-2013

Parent: ^{75}Ge : E=139.68 3; $J^\pi=7/2^+$; $T_{1/2}=47.7$ s 5; $Q(\beta^-)=1177.2$ 9; $\% \beta^-$ decay=0.030 6

^{75}Ge -E, J^π , $T_{1/2}$: From ^{75}Ge Adopted Levels.

^{75}Ge - $Q(\beta^-)$: From 2012Wa38.

$\%IT$ decay=99.97%; $\% \beta^-$ decay=0.03.

1976Bh04: measured G.

Other: 1982BaZP propose a new level at 971.7 fed by a β^- branch and a level at 304.

1970Me20: measured G.

 ^{75}As Levels

The level proposed (1982BaZP) at 971.7 is omitted here due to lack of confirmation in any other study of ^{75}As levels.

E(level)	J^π †
0.0	$3/2^-$
198.5 8	$1/2^-$
264.44 18	$3/2^-$
279.34 16	$5/2^-$
303.8? 8	$9/2^+$
400.45 17	$5/2^+$

† From Adopted Levels.

 β^- radiations

E(decay)	E(level)	$I\beta^-$ †	Log ft	Comments
(916.4 9)	400.45	0.030 6	6.21 13	av $E\beta=324.38$ 39

† Absolute intensity per 100 decays.

 $\gamma(^{75}\text{As})$

I_γ normalization: deduced from γ intensities assuming β^- feeding to the 400 level only (1976Bh04) with $\% \beta^- = 0.030$ 6.

E_γ	I_γ ‡&	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	δ @	α^a	Comments
24.4#		303.8?	$9/2^+$	279.34	$5/2^-$	M2(+E3)	0.013 13	205 5	$\alpha(K)=165.6$ 24; $\alpha(L)=33.3$ 22; $\alpha(M)=5.2$ 4; $\alpha(N)=0.364$ 17
66.10†		264.44	$3/2^-$	198.5	$1/2^-$	M1+E2	+0.066 19	0.298 11	$\alpha(K)=0.264$ 9; $\alpha(L)=0.0296$ 14; $\alpha(M)=0.00452$ 22; $\alpha(N)=0.000336$ 14
121.15 10	0.013 6	400.45	$5/2^+$	279.34	$5/2^-$	E1		0.0417	$\alpha(K)=0.0372$ 6; $\alpha(L)=0.00388$ 6; $\alpha(M)=0.000588$ 9; $\alpha(N)=4.37 \times 10^{-5}$ 7
136.01 8	0.052 11	400.45	$5/2^+$	264.44	$3/2^-$	E1		0.0295	$\alpha(K)=0.0263$ 4; $\alpha(L)=0.00274$ 4; $\alpha(M)=0.000415$ 6; $\alpha(N)=3.10 \times 10^{-5}$ 5

Continued on next page (footnotes at end of table)

^{75}Ge β^- decay (47.7 s) 1976Bh04 (continued) $\gamma(^{75}\text{As})$ (continued)

E_γ	I_γ ‡&	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	δ @	α^a	Comments
198.60 †		198.5	1/2 ⁻	0.0	3/2 ⁻	M1+E2	0.389 17	0.0208 6	$\alpha(\text{K})=0.0184$ 5; $\alpha(\text{L})=0.00202$ 6; $\alpha(\text{M})=0.000307$ 9; $\alpha(\text{N})=2.28 \times 10^{-5}$ 7
264.60 †		264.44	3/2 ⁻	0.0	3/2 ⁻	M1+E2	-0.07 2	0.00718 11	$\alpha=0.00718$ 11; $\alpha(\text{K})=0.00639$ 10; $\alpha(\text{L})=0.000675$ 11; $\alpha(\text{M})=0.0001030$ 16; $\alpha(\text{N})=7.83 \times 10^{-6}$
279.48 20	0.011 5	279.34	5/2 ⁻	0.0	3/2 ⁻	M1+E2	-0.49 3	0.0084 3	$\alpha=0.0084$ 3; $\alpha(\text{K})=0.00751$ 23; $\alpha(\text{L})=0.000807$ 25; $\alpha(\text{M})=0.000123$ 4; $\alpha(\text{N})=9.2 \times 10^{-6}$ 3
303.9 #		303.8?	9/2 ⁺	0.0	3/2 ⁻	E3		0.0538	$\alpha(\text{K})=0.0469$ 7; $\alpha(\text{L})=0.00592$ 9; $\alpha(\text{M})=0.000899$ 13; $\alpha(\text{N})=6.30 \times 10^{-5}$ 9
400.20 25	0.010 5	400.45	5/2 ⁺	0.0	3/2 ⁻	E1		0.001346 19	$\alpha=0.001346$ 19; $\alpha(\text{K})=0.001202$ 17; $\alpha(\text{L})=0.0001241$ 18; $\alpha(\text{M})=1.89 \times 10^{-5}$ 3; $\alpha(\text{N})=1.432 \times 10^{-6}$

† From decay of ^{75}Ge (82.78 min). I_γ is not given.

‡ Relative to $I_\gamma(140\gamma)=100$ in IT decay.

Rounded value from Adopted Gammas.

@ From Adopted Gammas.

& For absolute intensity per 100 decays, multiply by 0.39 8.

^a Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

Legend

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

