^{188}W β^- decay (69.78 d) 1972Sh13,2002Po17

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Juutinen, D. J. Hartley	NDS 150, 1 (2018)	1-Feb-2018

Parent: ^{188}W: E=0; $J^\pi=0^+$; $T_{1/2}$=69.78 d *12*; Q(β^-)=349 *3*; %β^- decay=100.0

1972Sh13: Chemically purified source; Measured Eγ, Iγ.

2002Po17: Chemically purified source; Measured Eγ, Iγ.

Others: 1964Bu10, 1962Ro16.

^{188}Re Levels

E(level)[†]	J^π[‡]
0.0	1^-
63.6048 *13*	2^-
169.43 *8*	3^-
205.3636 *14*	2^-
207.8478 *10*	0^+
290.6796 *12*	1^-

[†] From least-squares fit to Eγ's.

[‡] From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(58 *3*)	290.6796	0.89 *5*	6.80 *8*	av Eβ=14.92 *79*
(141 *3*)	207.8478	0.0105 *12*	9.91 *6*	av Eβ=37.43 *85*
(144 *3*)	205.3636	≤0.004	≥9.8[1u]	av Eβ=43.52 *99*
(285 *3*)	63.6048	0.12 *8*	9.5[1u] *3*	av Eβ=89.91 *98* Eβ^-=285 *3* (1964Bu10).
(349 *3*)	0.0	98.98 *9*	7.180 *13*	av Eβ=99.73 *96* Eβ^-=349 *3* (1964Bu10).

[†] Absolute intensity per 100 decays.

γ(^{188}Re)

Iγ normalization: from %Iγ(290.7γ)=0.416 *14*, deduced from Iγ(290.7γ,^{188}Re)/Iγ(155.041γ,^{188}Os)=0.0269 *9* (1964Bu10) and %Iγ(155.041γ)=15.46 *14* from ^{188}Re β^- decay.

E$_\gamma$[†]	I$_\gamma$[‡@]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.[†]	δ[†]	α[#]	Comments
63.583 *3*	0.27 *4*	63.6048	2^-	0.0	1^-	M1+E2	0.061 *23*	3.42 *10*	%Iγ=0.112 *17* α(L)=2.64 *8*; α(M)=0.606 *18* α(N)=0.147 *5*; α(O)=0.0245 *7*; α(P)=0.001742 *25*
85.32 *3*	0.006 *2*	290.6796	1^-	205.3636	2^-	M1		8.15	%Iγ=0.0025 *8* α(K)=6.74 *10*; α(L)=1.091 *16*; α(M)=0.250 *4* α(N)=0.0605 *9*; α(O)=0.01017 *15*; α(P)=0.000742 *11*
105.8530[&] *3*	<0.003	169.43	3^-	63.6048	2^-	M1+E2	0.44 *19*	4.21 *15*	%Iγ<0.0013

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^{188}W β^- decay (69.78 d) 1972Sh13,2002Po17 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ[†]	I_γ[‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	α[#]	Comments
									α(K)=3.2 *4*; α(L)=0.80 *17*; α(M)=0.19 *5* α(N)=0.046 *10*; α(O)=0.0072 *14*; α(P)=0.00034 *4*
141.7588 *3*	0.016 *2*	205.3636	2$^-$	63.6048	2$^-$	M1+E2	0.38 *23*	1.80 *13*	%Iγ=0.0067 *9* α(K)=1.43 *18*; α(L)=0.29 *4*; α(M)=0.067 *11* α(N)=0.0161 *24*; α(O)=0.0026 *3*; α(P)=0.000155 *21*
207.8477 *10*	0.0238 *24*	207.8478	0$^+$	0.0	1$^-$	E1		0.0585	%Iγ=0.0099 *11* α(K)=0.0484 *7*; α(L)=0.00778 *11*; α(M)=0.001775 *25* α(N)=0.000425 *6*; α(O)=6.87×10^{-5} *10*; α(P)=4.10×10^{-6} *6* I_γ: weighted average of 0.020 *4* (1972Sh13) and 0.026 *3* (2002Po17).
227.0731 *8*	0.5659 *23*	290.6796	1$^-$	63.6048	2$^-$	M1(+E2)	0.2 *2*	0.50 *3*	%Iγ=0.235 *8* α(K)=0.41 *3*; α(L)=0.0673 *10*; α(M)=0.0154 *3* α(N)=0.00374 *6*; α(O)=0.000625 *10*; α(P)=4.5×10^{-5} *4* I_γ: weighted average of 0.55 *2* (1972Sh13) and 0.5661 *23* (2002Po17). Mult.: (227γ)(64γ)(θ): A_2=0.05 *5*, A_4=−0.04 *6*. δ: ≤ 0.4 from K/L12=6.2 *13* and α(K)=0.42 *4* (1968Su01).
290.6828 *12*	1.00 *3*	290.6796	1$^-$	0.0	1$^-$	M1+E2	0.42 *17*	0.235 *18*	%Iγ=0.416 *14* α(K)=0.193 *17*; α(L)=0.0328 *10*; α(M)=0.00756 *19* α(N)=0.00183 *5*; α(O)=0.000304 *11*; α(P)=2.07×10^{-5} *19*

[†] From adopted gammas.
[‡] From 1972Sh13, unless otherwise stated.
[#] Additional information 1.
[@] For absolute intensity per 100 decays, multiply by 0.416 *14*.
[&] Placement of transition in the level scheme is uncertain.

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Decay Scheme

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