¹⁹⁰Bi ε decay (6.3 s+6.2 s) **1991Va04**

History						
Type	Author	Citation	Literature Cutoff Date			
Full Evaluation	Balraj Singh, ¹ and Jun Chen ²	NDS 169, 1 (2020)	15-Oct-2020			

Parent: ¹⁹⁰Bi: E=0; J^{π} =(3⁺); $T_{1/2}$ =6.3 s *I*; $Q(\varepsilon)$ =9817 26; $\%\varepsilon+\%\beta^+$ decay<40.0

Parent: ¹⁹⁰Bi: E=191 65; $J^{\pi}=(10^{-})$; $T_{1/2}=6.2 \text{ s } 1$; $Q(\varepsilon)=9817 26$; $\%\varepsilon+\%\beta^{+}$ decay=30 9

 $^{190}\mathrm{Bi}(0)$ -J $^{\pi}$,T $_{1/2}$: From $^{190}\mathrm{Bi}$ Adopted Levels.

¹⁹⁰Bi(0)-Q(ε): From 2017Wa10.

¹⁹⁰Bi(0)-% ε +% β ⁺ decay: % ε +% β ⁺=10 +30-10 implied by % α =90 +10-30 (1991Va04).

 190 Bi(191)-E,J $^{\pi}$,T_{1/2}: From 190 Bi Adopted Levels.

¹⁹⁰Bi(191)-Q(ε): From 2017Wa10.

¹⁹⁰Bi(191)-%ε+%β⁺ decay: %ε+%β⁺=30 9 implied by %α=70 9 (1991Va04).

1991Va04: ¹⁹⁰Bi source was produced from heavy-ion fusion evaporation reactions of ^{nat}Re+¹⁶O, ¹⁸¹Ta+²⁰Ne, and ¹⁸²W+²⁰Ne with ¹⁶O and ²⁰Ne beams from the CYCLONE cyclotron in Louvain-la-Neuve and with reaction products separated by the LISOL separator. Measured Eγ, Iγ. On the basis of the systematics of ¹⁹²Bi and ¹⁹⁴Bi, 1991Va04 assumed that the 20% *10* contribution is from the low-spin isomer of ¹⁹⁰Bi and 80% *10* from the high-spin isomer.

No level scheme is suggested by 1991Va04. A tentative level scheme shown here is suggested by the evaluators, based on the level scheme in 166 Er(28 Si,4n γ) dataset.

The β^+, ε feedings are not known, thus, the decay scheme is not normalized. The assignment of γ rays to this decay is based on a half-life measurement ($T_{1/2}$ =5.3 s 10) (1991Va04).

¹⁹⁰ Pb	Levels
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E(level) [†]	$J^{\pi \ddagger}$
0.0	0+
773.8 5	2+
1228.8 7	$(4)^{+}$
1735.0 9	$(6)^{+}$
2274.4 10	$(8)^{+}$

[†] From Ey data, assuming Δ Ey=0.5 keV.

γ(¹⁹⁰ Pb)

$\mathrm{E}_{\gamma}^{\dagger}$	I_{γ}^{\dagger}	$E_i(level)$	\mathbf{J}_i^{π}	\mathbf{E}_f \mathbf{J}_f^{π}	Mult.	α^{\ddagger}	Comments
^x 145.2	70 13						
455.0 [#]	94 15	1228.8	$(4)^{+}$	773.8 2 ⁺	[E2]	0.0370	
506.2 [#]	92 15	1735.0	$(6)^{+}$	1228.8 (4)+	[E2]	0.0285	
539.4 [#]	66 12	2274.4	$(8)^{+}$	1735.0 (6) ⁺	[E2]	0.0245	
^x 700.6	61 <i>14</i>						
773.8 [#]	100	773.8	2+	$0.0 0^{+}$	[E2]	0.01113	
^x 846.4	70 <i>14</i>						Additional information 1.

[†] From 1991 Va04.

[‡] From the Adopted Levels.

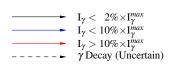
[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[#] Placement of transition in the level scheme is uncertain.

 $^{^{}x}$ γ ray not placed in level scheme.

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Legend



Decay Scheme

Intensities: Relative I_{γ}

