

$^{182}\text{Lu} \beta^-$ decay (2.0 min) 1982Ki04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 130, 21 (2015)	15-Jul-2015

Parent: ^{182}Lu : E=0.0; $T_{1/2}$ =2.0 min 2; $Q(\beta^-)$ =4170 SY; $\% \beta^-$ decay=100.0

^{182}Lu - $Q(\beta^-)$: 4170 200 (syst,2012Wa38).

1982Ki04: ^{182}Lu produced by bombardment of natural tungsten and tantalum targets with ^{136}Xe beam at 9 MeV/nucleon.

Additional information 1.

 ^{182}Hf Levels

E(level)	J^π [†]
0.0	0 ⁺
97.77 20	2 ⁺
321.8 6	(4 ⁺)
818.4 4	(1,2 ⁺)
905.9? 6	

[†] From Adopted Levels.

 β^- radiations

E(decay)	E(level)	$I\beta^-$ ^{†‡}	Log ft	Comments
(3264 [#] SY)	905.9?	<15	>6.8	av $E\beta$ =1310 90
(3351 [#] SY)	818.4	<60	>6.2	av $E\beta$ =1349 90
(3848 [#] SY)	321.8	<5	>7.5	av $E\beta$ =1572 91
(4072 [#] SY)	97.77	<20	>7.0	av $E\beta$ =1673 91

[†] Only the upper limits can be deduced since there is no knowledge of β feeding to g.s., and there is a large energy gap of ≈ 3.3 MeV between $Q(\beta^-)$ and the highest level at 906 keV.

[‡] Absolute intensity per 100 decays.

[#] Existence of this branch is questionable.

 $\gamma(^{182}\text{Hf})$

I γ normalization: $\Sigma(I(\gamma+\text{ce})$ of 97.8 γ and 818.2 γ)=100, assuming no β feedings to g.s.

E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	α^\ddagger	Comments
97.8 2	50 10	97.77	2 ⁺	0.0	0 ⁺	E2	3.85 7	$\alpha(\text{K})=0.995$ 15; $\alpha(\text{L})=2.17$ 4; $\alpha(\text{M})=0.542$ 10 $\alpha(\text{N})=0.1256$ 22; $\alpha(\text{O})=0.0159$ 3; $\alpha(\text{P})=6.26 \times 10^{-5}$ 10 Mult.: from Adopted Gammas.
224.0 5	15 7	321.8	(4 ⁺)	97.77	2 ⁺	(E2)	0.198 4	$\alpha(\text{K})=0.1221$ 19; $\alpha(\text{L})=0.0577$ 10; $\alpha(\text{M})=0.01409$ 24 $\alpha(\text{N})=0.00328$ 6; $\alpha(\text{O})=0.000435$ 8; $\alpha(\text{P})=8.22 \times 10^{-6}$ 13
720.8 5	100 10	818.4	(1,2 ⁺)	97.77	2 ⁺			
808.1 5	50 15	905.9?		97.77	2 ⁺			
818.2 5	100 25	818.4	(1,2 ⁺)	0.0	0 ⁺			

[†] For absolute intensity per 100 decays, multiply by ≈ 0.3 .

[‡] 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: Relative I_γ

Legend

