^{164}W ε decay (6.3 s) 1994TeZZ

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen[#]	NDS 147, 1 (2018)	30-Nov-2017

Parent: ^{164}W: E=0.0; $J^\pi=0^+$; $T_{1/2}$=6.3 s *2*; Q(ε)=5047 *30*; %ε+%$β^+$ decay=96.2 *12*

^{164}W-$T_{1/2}$: From ^{164}W Adopted Levels.

^{164}W-Q(ε): From 2017Wa10.

^{164}W-%ε+%$β^+$ decay: %α=3.8 *12*.

Additional information 1.

The level scheme is considered (by evaluators) as tentative.

1994TeZZ: Measured Eγ, Iγ, γγ, γ(K x ray) coin, Eα, $T_{1/2}$. Source from ^{110}Pd(^{58}Ni,4n) E=340 MeV followed by mass-separation.

1997Dr09: ^{144}Sm(^{24}Mg,xn) E=109-141 MeV. From excitation functions, two γ rays of 187.0 *1* and 268.7 assigned to the decay of ^{164}W. $T_{1/2}$=7.0 s *2* from time decay of 187γ. But none of these γ rays is reported by 1994TeZZ. A 186.8γ is assigned by 1994TeZZ to ^{165}W decay with $T_{1/2}$=5.9 s *3*.

$T_{1/2}$=6.44 s *17* (1994TeZZ).

^{164}Ta Levels

1994TeZZ propose $J^\pi=(1^+)$ for all the levels above 11.4, based on log *ft* values. But in the evaluators′ opinion, the level scheme does not seem well established to calculate correct ε+β+ feedings.

E(level)[†]	J^π	Comments
0.0	(3^+)	J^π: (2^-) proposed by 1994TeZZ.
11.4?		
111.3		
443.4?		
483.6?		
513.1?		

[†] From Eγ data.

ε,$β^+$ radiations

1994TeZZ give %ε+%β+ feedings of 84 *14*, 2.5 *15*, 4.7 *23* and 8.6 *18* for levels 111, 443, 483 and 513, respectively, based on the present level scheme.

E(decay)	E(level)
$(4.94\times10^{3}$[†] *3*)	111.3

[†] Existence of this branch is questionable.

γ(^{164}Ta)

E_γ	I_γ	E_i(level)	E_f	J^π_f	Comments
99.9[‡]	21.5 *18*	111.3	11.4?		Coin with 372γ and 402γ and not with 111γ. Mult.: E1 from α(exp)=0.39 *44*, estimated from γ and γ(K x ray) coin spectra.
111.3	100 *2*	111.3	0.0	(3^+)	Mult.: E1 from α(exp)=0.51 *27*, estimated from γ and γ(K x ray) coin spectra.

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^{164}W ε decay (6.3 s) 1994TeZZ (continued)

γ(^{164}Ta) (continued)

E_γ	I_γ	E_i(level)	E_f
[x]187.0† *1*			
[x]268.7† *2*			
332.1	3.8 *22*	443.4?	111.3
372.3	7.1 *34*	483.6?	111.3
401.8	13.1 *23*	513.1?	111.3

† From 1997Dr09 only. Iγ(187)/Iγ(269)=5.7 *19* (1997Dr09). This γ ray is not reported by 1994TeZZ.
‡ Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

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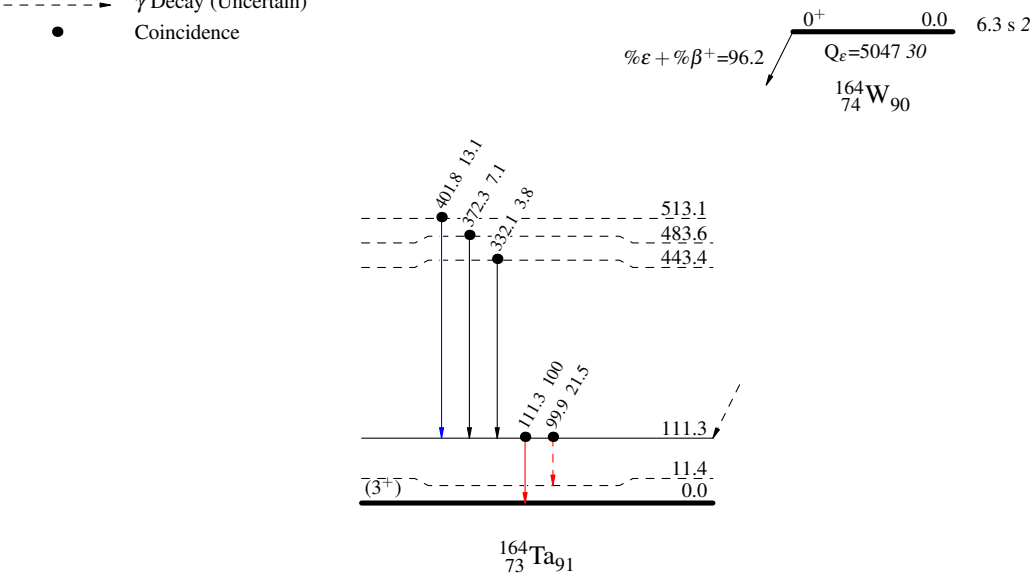
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)
Coincidence

Decay Scheme

Intensities: Relative I_γ



$^{164}_{73}Ta_{91}$