^{104}Zr β^- decay 1983ShZX,1986Pe04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

Parent: ^{104}Zr: E=0.0; $J^\pi=0^+$; $T_{1/2}$=1.2 s *3*; Q(β^-)=5880 *SY*; %β^- decay=100.0
Measured: γ, $\gamma\gamma$ semi; $T_{1/2}$ via growth-decay curve (γ in ^{104}Nb) (1980ScZZ,1983ShZX).
1980ScZZ: fast chem from ^{239}Pu(n,F), and on-line ms LOHENGRIN, from ^{235}U(n,F).
1983ShZX: on-line ms JOSEF.
The level scheme is from 1983ShZX with a complement from 1986Pe04.
1989WaZV have measured the absolute Iγ of 100γ using the known fission yields.

^{104}Nb Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	(1^+)	4.8 s *4*	$T_{1/2}$: from Adopted Levels.
8.7 *2*			
37.5 *2*			
109.6 *2*			
250.6 *2*	(1^+)		J^π: from 1986Pe04 from systematics of N=63 isotones showing $K^\pi=1^+$ band.
311.8 *2*	(1^+)		
320.1 *3*			
370.0 *4*			
514.3 *2*	(1^+)		

$\gamma(^{104}Nb)$

Iγ normalization: from 1989WaZV.
ΔE: Uncertainty of 0.2 keV assigned by evaluator from comparison of values of 1983ShZX and 1980ScZZ.

E_γ †	I_γ †&	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ †&	E_i(level)	J_i^π	E_f	J_f^π
8.7 *2*		8.7		0.0	(1^+)	210.5 *2*	36	320.1		109.6	
28.9 *2*		37.5		8.7		213.0‡ *2*	53	250.6	(1^+)	37.5	
37.4 *2*	28	37.5		0.0	(1^+)	241.9‡ *2*	27	250.6	(1^+)	8.7	
49.9 *2*	9	370.0		320.1		250.6 *2*	16	250.6	(1^+)	0.0	(1^+)
61.1 *2*	23	311.8	(1^+)	250.6	(1^+)	263.7‡ *2*	68	514.3	(1^+)	250.6	(1^+)
100.9‡ *2*	100	109.6		8.7		274.2 *2*	9	311.8	(1^+)	37.5	
140.9‡ *2*	24	250.6	(1^+)	109.6		x445.0# *1*	90				
202.4‡ *2*	29	514.3	(1^+)	311.8	(1^+)	x504.7# *1*	90				

† From 1983ShZX.
‡ Seen also by 1980ScZZ.
# Seen only by 1980ScZZ.
@ Uncertainty of 0.2 keV assigned by evaluator from comparison of values of 1983ShZX and 1980ScZZ.
& For absolute intensity per 100 decays, multiply by 0.061 *6*.
x γ ray not placed in level scheme.

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Decay Scheme

Intensities: I_γ per 100 parent decays