^{85}Zr IT decay (10.9 s) 1976Ia01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 116, 1 (2014)	31-Dec-2013

Parent: ^{85}Zr: E=292.2 *3*; J^π=(1/2$^-$); $T_{1/2}$=10.9 s *3*; %IT decay<100.0

^{85}Zr-J^π,$T_{1/2}$: From ^{85}Zr Adopted Levels.

^{85}Zr-%IT decay: ε decay mode has been observed but branching ratio is unknown. From relative photon intensities of 416.5γ in ^{85}Y from ε decay and 292.2γ in ^{85}Zr from IT decay, it seems IT decay mode is dominant, but nothing more can be inferred from the available data.

1976Ia01: Isotope produced by ^{89}Y(p,5n) reaction at 60 MeV. Yields at different bombarding energies and Sr targets were used to discriminate against other isotopes. Measured γ.

2005Ka39: Measured Eγ, Iγ, E(ce), I(ce). Deduced isomeric transitions $T_{1/2}$.

All data from 1976Ia01 unless otherwise noted.

^{85}Zr Levels

E(level)	J^π[†]	$T_{1/2}$[†]	Comments
0.0	(7/2$^+$)	7.86 min *4*	
292.2 *3*	(1/2$^-$)	10.9 s *3*	$T_{1/2}$: 12 s *2* from 2005Ka39.

[†] From Adopted Levels.

γ(^{85}Zr)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[†]	Comments
292.2 *3*	100	292.2	(1/2$^-$)	0.0	(7/2$^+$)	[E3]	0.0956	α(K)= 0.0801 *12*; α(L)=0.01289 *19*; α(M)=0.00227 *4*; α(N)=0.000303 *5*; α(O)=1.424×10^{-5} *21* E_γ: because of the observation of 292γ and 417γ with $T_{1/2}$=10.9 s *3* where the 417γ belongs to ^{85}Y (see ^{85}Y Adopted Gammas), this γ has been assigned to ^{85}Zr.

[†] 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.

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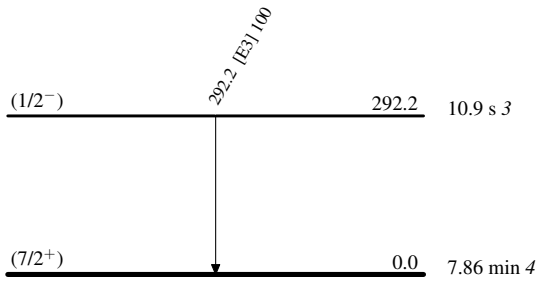
Decay Scheme

Intensities: Relative I_γ
%IT<100.0



$^{85}_{40}Zr_{45}$