^{55}Cr β^- decay 1970Hi04,1970Zo02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 109, 787 (2008)	30-Apr-2007

Parent: ^{55}Cr: E=0.0; $J^\pi=3/2^-$; $T_{1/2}=3.497$ min *3*; Q(β^-)=2603.1 *4*; %β^- decay=100.0

1970Hi04: source from ^{54}Cr(n,γ); natural target; Ge(Li) (30 cm^3), resolution: 3.5 keV at 1332 keV; measured Eγ, Iγ, $\gamma\gamma$-coin.

1970Zo02: used three different techniques to measure I(β^-) (absolute intensities); Ge(Li) for γ (FWHM: 2.6 keV for 1332 keV); a low background gas-flow 2π proportional counter for β^-, with anticoincidence guard counter.

See also 1967Pr05 and 1969HiZZ.

Adopted Eγ, Iγ, and decay scheme are from 1970Hi04.

^{55}Mn Levels

E(level)	J^π[†]
0.0	$5/2^-$
126.2 *4*	$7/2^-$
1528.1 *2*	$3/2^-$
2252.5 *4*	$3/2^-$
2268.2 *6*	$(5/2)^-$
2368.0 *5*	$(5/2^-)$

[†] From Adopted Levels.

β^- radiations

For β^- endpoint energy measurements, see 1952Fl21, 1963Me06, and 1965Ko09.

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(235.1 *7*)	2368.0	0.00059 *13*	6.34 *9*	av Eβ= 68.73 *25*
(334.9 *7*)	2268.2	0.00011 *4*	7.59 *16*	av Eβ= 102.8 *3*
(350.6 *6*)	2252.5	0.0031 *5*	6.20 *6*	av Eβ= 108.29 *24*
(1075.0 *5*)	1528.1	0.038 *3*	6.88 *4*	av Eβ= 398.90 *25* I(β^-)(1528 level)=0.00038 *3* per decay (1970Zo02), which agrees with the value from 1970Hi04 but not from 1967Pr05.
2494 *25*	0.0	99.958 *4*	5.025 *1*	av Eβ= 1101.3 *3* E(decay): from 1965Ko09.

[†] Absolute intensity per 100 decays.

$\gamma(^{55}Mn)$

Iγ normalization: based on intensity balance and I(β^-)(1528 level)=0.038% 3 from 1970Zo02.

Eγ	Iγ[†]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Comments
126.0 *5*	4.7 *6*	126.2	$7/2^-$	0.0	$5/2^-$	Eγ: transition observed only in coincidence spectra. Iγ: based on Iγ for 1402γ and 2241γ and adopted decay scheme.
1402.0 *4*	3.6 *5*	1528.1	$3/2^-$	126.2	$7/2^-$	
1528.0 *2*	100	1528.1	$3/2^-$	0.0	$5/2^-$	
2240.9 *8*	1.1 *3*	2368.0	$(5/2^-)$	126.2	$7/2^-$	
2252.5 *4*	8.5 *10*	2252.5	$3/2^-$	0.0	$5/2^-$	

Continued on next page (footnotes at end of table)

^{55}Cr β^- decay 1970Hi04,1970Zo02 (continued)

$\gamma(^{55}Mn)$ (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
2268.1 *6*	0.3 *1*	2268.2	$(5/2)^-$	0.0	$5/2^-$
2368.5 *6*	0.49 *10*	2368.0	$(5/2^-)$	0.0	$5/2^-$

[†] For absolute intensity per 100 decays, multiply by 0.00037 *3*.

^{55}Cr β^- decay 1970Hi04,1970Zo02

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays