^{35}Ca ε decay (25.7 ms) 1999Tr04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, John Cameron and Balraj Singh	NDS 112,2715 (2011)	20-Oct-2011

Parent: ^{35}Ca: E=0; $J^\pi=(1/2^+)$; $T_{1/2}$=25.7 ms *2*; Q(ε)=15961 *SY*; %ε+%β^+ decay=100.0

^{35}Ca-J^π,$T_{1/2}$: From ^{35}Ca Adopted Levels.

^{35}Ca-Q(ε): 15961 196 (syst,2011AuZZ). Other: 15770 *200* (syst,2003Au03).

Populated levels decay by delayed-p or delayed-2p emission.

1999Tr04, 1998Le45: ^{35}Ca (98% purity, 0.3 ions/s) beam produced by fragmentation of a 95 MeV/nucleon $^{40}Ca^{20+}$ beam of 400 enA on a rotating 500 μm natural Ni target at GANIL, and implanted into a 500 μm silicon detector for detecting βp and β2p decays. Two silicon counters for detecting β-rays and three Ge detectors and two NaI detectors for detecting γ-rays. Measured $\beta p\gamma$-coin, Ep, Ip, $T_{1/2}$. Deduced levels.

Other: 1985Ay01.

^{35}K Levels

E(level)[†]	J^π[#]	$T_{1/2}$	Comments
0	$(3/2)^+$	178 ms *8*	$T_{1/2}$: from 1998Sc19, extracted from decay curve.
1553 *5*			Additional information 1.
3783 *26*			Additional information 2.
4020 *37*			Additional information 3.
4523[‡]			
4790 *49*			Additional information 4.
4983 *13*			Additional information 5.
5251 *73*			Additional information 6.
5495[‡]			
5536 *49*			Additional information 7.
5713 *49*			Additional information 8.
5718[‡]			
5867 *38*			Additional information 9.
6092 *62*			Additional information 10.
6301[‡]			
6336 *73*			Additional information 11.
7816[‡]			
9169 *23*			Additional information 12.

[†] From $E_{c.m.}$+S(p) where S(p)=84.49 *61* from 2011AuZZ and $E_{c.m.}$ deduced from E_p(lab) for transitions to the ground state of ^{35}Ar (p0 mode), similar for p1, p2 and p3 modes.

[‡] Pseudo level deduced by the evaluator from the energy range in the table of additional unresolved feeding.

[#] From Adopted Levels. For excited states J^π's are not given but from allowed log *ft* values these will be restricted to $1/2^+$,$3/2^+$ if parent $J^\pi=1/2^+$ for ^{35}Ca.

ε,β^+ radiations

TI$	Range	Feeding(%)	Decay mode
	4141-4901	5.4 *9*	p0
	5210-5779	2.2 *3*	p1
	5338-6097	1.0 *4*	p2
	5921-6681	2.0 *7*	p3
	6245-6931	1.09 *17*	p0
	7427-8205	1.1 *2*	p0

Continued on next page (footnotes at end of table)

^{35}Ca ε decay (25.7 ms) 1999Tr04 (continued)

ε,β$^+$ radiations (continued)

E(decay)	E(level)	Log *ft*	I(ε+β$^+$)‡	E(decay)	E(level)	Log *ft*	I(ε+β$^+$)‡
(6792 *SY*)	9169	3.2	8.4 *4*	(10466 *SY*)	5495		2.2† *3*
(8145 *SY*)	7816		1.1† *2*	(10710 *SY*)	5251	4.6	3.9 *3*
(9625 *SY*)	6336	4.5	2.9 *3*	(10978 *SY*)	4983	4.2	10.2 *7*
(9660 *SY*)	6301		2.0† *7*	(11171 *SY*)	4790	4.8	2.9 *3*
(9869 *SY*)	6092	4.8	1.40 *19*	(11438 *SY*)	4523		5.4† *9*
(10094 *SY*)	5867	4.9	1.43 *17*	(11941 *SY*)	4020	4.9	3.8 *3*
(10243 *SY*)	5718		1.0† *4*	(12178 *SY*)	3783	5.0	3.0 *3*
(10248 *SY*)	5713	5.3	0.61 *15*	(14408 *SY*)	1553	4.2	48.5 *13*
(10425 *SY*)	5536	5.3	0.72 *18*				

† Additional unresolved feeding was observed to the following energy regions. No log *ft* values are deduced for these feedings and pseudo levels.

‡ Absolute intensity per 100 decays.