^{61}Ge ε decay (44 ms) 2007Bl09,1987Ho01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Kazimierz Zuber, Balraj Singh	NDS 125, 1 (2015)	25-Jan-2015

Parent: ^{61}Ge: E=0.0; J^{π}=(3/2$^-$); $T_{1/2}$=44 ms *6*; Q(ε)=13410 *SY*; %ε+%$β^+$ decay=100.0

^{61}Ge-Q(ε): 13410 *300* (syst,2012Wa38).

^{61}Ge-J^{π},$T_{1/2}$: From ^{61}Ge Adopted Levels.

Source produced by ^{40}Ca(^{24}Mg,3n) (1987Ho01,1978ViZT,1979ViZY).

1987Ho01 (also 1979ViZY,1978ViZT thesis): E=77-120 MeV ^{40}Ca pulsed beam on ^{24}Mg target. ΔE-E silicon detector telescope shielded system. Observed ε-delayed proton group with E=3110 *30* and $T_{1/2}$=40 ms *15*. The proton decay mainly feeds ^{60}Zn g.s. (<10% to first excited state). A and Z identification is not certain, but it is supported by Coulomb displacement energy systematics. Measured mass excess=−47.73 MeV *3*.

2007Bl09: ^{61}Ge nuclei produced in a fragmentation of $^{70}Ge^{+28}$ beam at an energy of 71.6 MeV using LISE3 facility at GANIL. A nickel target was used. Measured delayed proton events by implanting nuclei in a double-sided silicon strip detector (DSSSD) and isotopic $T_{1/2}$.

From RADLIST code, deduced total decay energy is 5500 keV *400* compared to 13360 keV *300* from Q(ε) value. The decay scheme is poorly known.

^{61}Ga Levels

E(level)	J^{π} †	$T_{1/2}$	Comments
0.0	3/2$^-$	167 ms *3*	$T_{1/2}$: from Adopted Levels. %p=100 E(level): from E(p)(c.m.)=3170 *30* (2007Bl09) (weighted average of E(p)(c.m.)=3162 *30* (from (E(p)lab)=3110 *30* (1987Ho01))) and E(p)(c.m.)=3220 *60* (2007Bl09)) and S(p)(^{61}Ga)=250 *40* (2012Wa38). Additional information 1.
3420 *50*	(3/2$^-$)		

† From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ$^+$ †	Iε†	Log *ft*	I(ε+$β^+$)†	Comments
(9990 *SY*)	3420	55 *6*	0.061 *9*	3.52 *11*	55 *6*	av Eβ=4.27×10^3 *16*; εK=0.00098 *11*; εL=0.000108 *12*; εM+=1.96×10^{-5} *22* I(ε+$β^+$): measured by 2007Bl09. Other: ≈80 (1987Ho01) from assumed log *ft*=3.3.

† Absolute intensity per 100 decays.