

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh		NDS 124, 1 (2015)	30-Nov-2014

$Q(\beta^-)=9200$  SY;  $S(n)=4710$  SY;  $S(p)=16990$  SY;  $Q(\alpha)=-9580$  SY [2012Wa38](#)

$\Delta Q(\beta^-)=\Delta S(n)=300$ ,  $\Delta S(p)=\Delta Q(\alpha)=420$  (syst,[2012Wa38](#)).

$S(2n)=7760$  300,  $S(2p)=31930$  670,  $Q(\beta^-n)=5360$  300 (syst,[2012Wa38](#)).

[1994Be24](#):  $^{86}\text{Ge}$  produced and identified in  $\text{Pb}(^{238}\text{U},\text{F})$  reaction at  $E=750$  MeV/nucleon at the SIS synchrotron, GSI. Identification using the  $\text{B}\rho$ - $\Delta E$ -TOF method and FRS separator.

[2013Ma22](#): proton beam was provided by the Oak Ridge Isochronous Cyclotron (ORIC) at the HRIBF-ORNL facility.

Target= $^{238}\text{UC}_x$ . Fission fragments were ionized to charge state +1 then purified using  $\text{H}_2\text{S}$  gas, a mass pre-separator and electromagnetic separation. The purified beams were then sent to the Low-energy Radioactive Ion Beam Spectroscopy Station (LeRIBSS) and implanted in a moving tape collector (MTC). Measured  $E_\gamma$ ,  $I_\gamma$ ,  $E_\beta$ ,  $\beta\gamma$ -coin, half-life of  $^{86}\text{Ge}$  g.s. using two plastic scintillation counters and four HPGe detectors. Comparison with the gross theory of  $\beta$  decay, the finite-range droplet model and the continuum quasiparticle random-phase approximation.

Mass measurement: [2006Ha62](#).

 $^{86}\text{Ge}$  LevelsCross Reference (XREF) Flags

**A**  $^{86}\text{Ga}$   $\beta^-$  decay (43 ms)

E(level)	$J^\pi$	$T_{1/2}$	XREF	Comments
0	$0^+$	226 ms 21	<b>A</b>	$\% \beta^- = 100$ ; $\% \beta^- n = 45$ 15 ( <a href="#">2013Mi19</a> ) $T_{1/2}$ : measured by <a href="#">2013Ma22</a> from $\beta$ -gated time distribution of $\gamma$ rays in $^{86}\text{As}$ and $^{85}\text{As}$ . Weighted average of 217 ms 28, 242 ms 56 and 235 ms 39 for 102.0 $\gamma$ , 111.7 $\gamma$ and the unresolved 116.3 $\gamma$ and 118.9 $\gamma$ , respectively. Theoretical $T_{1/2}=195$ ms ( <a href="#">1997Mo25</a> ), 95, 184, 2168 ms ( <a href="#">2002Pf04</a> ). $\% \beta^- n$ : estimated from measurements in <a href="#">2013Mi19</a> . Theoretical $\% \beta^- n = 7$ ( <a href="#">1997Mo25</a> ), 6.6, 65.6 ( <a href="#">2002Pf04</a> ). Systematic (KHF) $\% \beta^- n = 6.0$ ( <a href="#">2002Pf04</a> ). <a href="#">Additional information 1</a> .
527	$(2^+)$		<b>A</b>	$J^\pi$ : systematics of even-even Ge nuclei.

 $\gamma(^{86}\text{Ge})$ 

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma$	$I_\gamma$	$E_f$	$J_f^\pi$
527	$(2^+)$	527	100	0	$0^+$

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**Adopted Levels, Gammas****Level Scheme**

Intensities: Relative photon branching from each level

