^{89}Sr β^- decay (50.563 d) 1998Sc29,1990Sc08,1982Me04

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 114, 1 (2013)	20-Oct-2012

Parent: ^{89}Sr: E=0.0; $J^\pi=5/2^+$; $T_{1/2}$=50.563 d *25*; Q(β^-)=1500.9 *25*; %β^- decay=100.0

^{89}Sr-Q(β^-): From 2011AuZZ. Other: 1492.6 *26* (2003Au03).

1998Sc29, 1990Sc08, 1982Me04: $4\pi\beta\gamma$ counting, measured Iγ/total.

Others:

$T_{1/2}$(^{89}Sr): 2005Am01, 2002Al02, 1972La14, 1971Ba28, 1965Fl02, 1959Os37, 1955He81. Others: 1965An07, 1956Kj07, 1954He78, 1949Go20, 1948Ha25, 1946Gr06, 1939St01, 1939Li10, 1937St01; Novey, nnes 9, 678 (1950).

Additional information 1.

β spectrum shape: 2005Gr41, 1995Gr04, 1993Va11, 1976BeWY, 1970Wo05, 1949La06, 1949Sl10, 1947Ra01.

Internal bremsstrahlung spectrum: 1994Dh01, 1987Sa50, 1987Ba20.

K-shell ionization: 1974Ha12.

Cherenkov radiation effects: 1993Gr18.

γ rays: 1998Sc29, 1990Sc08, 1982Me04, 1962Sa14, 1955Ly46, 1939St01.

Energy balance: total decay energy of 1500.9 keV *16* deduced (using RADLIST code) from proposed decay scheme is in agreement with the expected value of 1500.9 keV *25*, indicating that the decay scheme is complete.

^{89}Y Levels

E(level)	J^π[†]	$T_{1/2}$
0	$1/2^-$	stable
908.960 *25*	$9/2^+$	

[†] From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(592 *3*)	908.960	0.00964 *5*	11.083 *7*	av Eβ=191.26 *95*
(1500.9 *25*)	0	99.99036 *5*	9.432[1u] *5*	av Eβ=587.1 *11* E(decay): 1488 *4* from 1970Wo05, magnetic spectrometer, spectrum shape analysis. Other: 1949La06.

[†] Absolute intensity per 100 decays.

γ(^{89}Y)

Iγ normalization: from weighted average of Iγ/total activity=9.56×10^{-5} *6* (1998Sc29), 9.61×10^{-5} *13* (1990Sc08), 9.54×10^{-5} *8* (1982Me04, uncertainty from 0.13×10^{-5} at 95% confidence level). Others: 9.65×10^{-5} *29* (quoted by 1998Sc29 from D. Hoppes (1980)), 9.5×10^{-6} (1962Sa14),≈0.0002 (1955Ly46).

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α[‡]	Comments
908.960 *25*	100	908.960	$9/2^+$	0	$1/2^-$	M4+E5	0.00041 *4*	0.00851	α(K)=0.00743 *11*; α(L)=0.000906 *13*; α(M)=0.0001561 *22*; α(N+..)=2.22×10^{-5} *4* α(N)=2.09×10^{-5} *3*; α(O)=1.395×10^{-6} *20* E_γ,Mult.,δ: from Adopted Gammas.

Continued on next page (footnotes at end of table)

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$\gamma(^{89}Y)$ (continued)

† For absolute intensity per 100 decays, multiply by 9.56×10^{-5} *5*.

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