Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Sukhjeet Singh	ENSDF	08-Mar-2022

Q(β^-)=696 *15*; S(n)=6016 *13*; S(p)=8272 *17*; Q(α)=4757 *20* 2021Wa16
S(2n)=10069 *10*, S(2p)=14620 *40* (2021Wa16).
1961Be28 (also 1961Po06): ^{224}Rn produced and identified in ^{232}Th(p,X),E=230 MeV, followed by chemical separation; but half-life of 4.9 h reported in this work is in disagreement with later measurements.
1964Bu02: ^{224}Rn produced and identified in ^{232}Th(p,X),E=660 MeV; measured half-life.
Mass measurements:
2012Ch19 (also 2008ChZI): precise mass measurement by Schottky Mass Spectrometry.
2009Ne03: measured mass using ISOLTRAP mass spectrometer.
Additional information 1.

Theoretical calculations: 22 references extracted from the NSR database are listed in document records.

^{224}Rn Levels

Cross Reference (XREF) Flags

A ^{120}Sn(^{224}Rn,^{224}Rn′γ)

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0#	0^+	107 min *3*	A	%β^-=100 $T_{1/2}$: from 1973AfZY. Other: 114 min *6* (1964Bu02). Weighted average of the two results is 108 min *3*. 2012Gu11 (also 2011GuZY) investigated temperature dependence on half-life, but no difference was detected; measured values are not listed in this paper.
135.6# *5*	(2^+)		A	
357.6# *6*	(4^+)		A	
641.4# *8*	(6^+)		A	
650.6@ *8*	(3^-)		A	
790.8@ *8*	(5^-)		A	
969.2# *9*	(8^+)		A	
1006.4@ *10*	(7^-)		A	
1277.2@ *10*	(9^-)		A	
1327.8# *10*	(10^+)		A	
1588.3@ *13*	(11^-)		A	
1706.8# *11*	(12^+)		A	
2098.7?# *13*	(14^+)		A	

† From ^{120}Sn(^{224}Rn,^{224}Rn′γ).
‡ As proposed by 2020Bu20 in ^{120}Sn(^{224}Rn,^{224}Rn′γ), based on population of levels in an even-even nucleus in Coulomb excitation process with expected E2 excitations, and band associations. Evaluators assign J^π values for excited states in parentheses as supporting arguments, in terms of transition multipolarities from angular distributions or correlations, linear polarizations, or conversion electron measurements are not yet available.
# Band(A): g.s. band.
@ Band(B): Octupole band based on (3^-).

Adopted Levels, Gammas (continued)

$\gamma(^{224}Rn)$

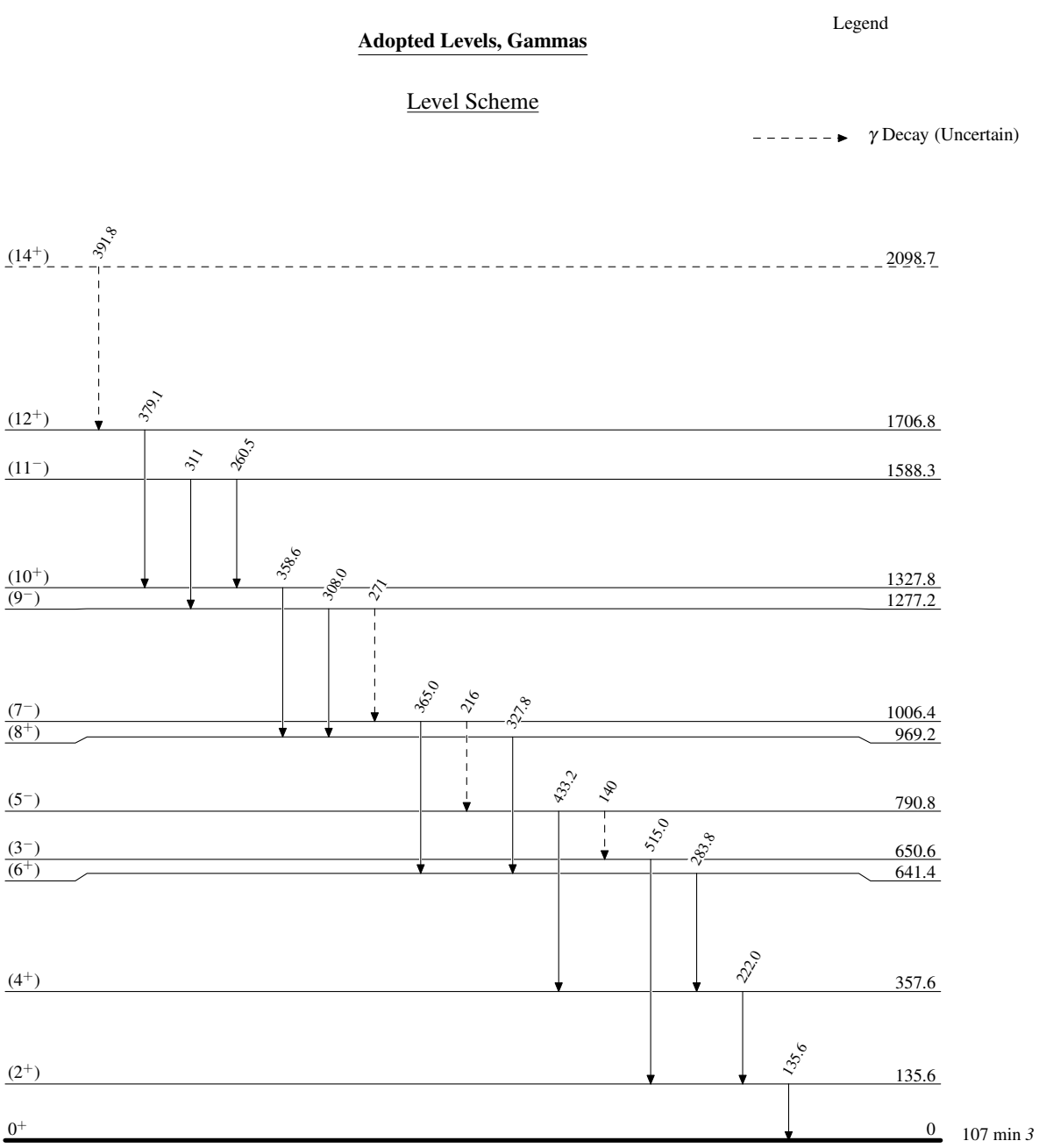
E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π	E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π
135.6	(2^+)	135.6 *5*	0	0^+	1006.4	(7^-)	365.0 *5*	641.4	(6^+)
357.6	(4^+)	222.0 *5*	135.6	(2^+)	1277.2	(9^-)	271[‡]	1006.4	(7^-)
641.4	(6^+)	283.8 *5*	357.6	(4^+)			308.0 *5*	969.2	(8^+)
650.6	(3^-)	515.0 *6*	135.6	(2^+)	1327.8	(10^+)	358.6 *5*	969.2	(8^+)
790.8	(5^-)	140[‡]	650.6	(3^-)	1588.3	(11^-)	260.5 *8*	1327.8	(10^+)
		433.2 *5*	357.6	(4^+)			311	1277.2	(9^-)
969.2	(8^+)	327.8 *5*	641.4	(6^+)	1706.8	(12^+)	379.1 *5*	1327.8	(10^+)
1006.4	(7^-)	216[‡]	790.8	(5^-)	2098.7?	(14^+)	391.8[‡] *6*	1706.8	(12^+)

[†] From $^{120}Sn(^{224}Rn,^{224}Rn'\gamma)$.

[‡] Placement of transition in the level scheme is uncertain.

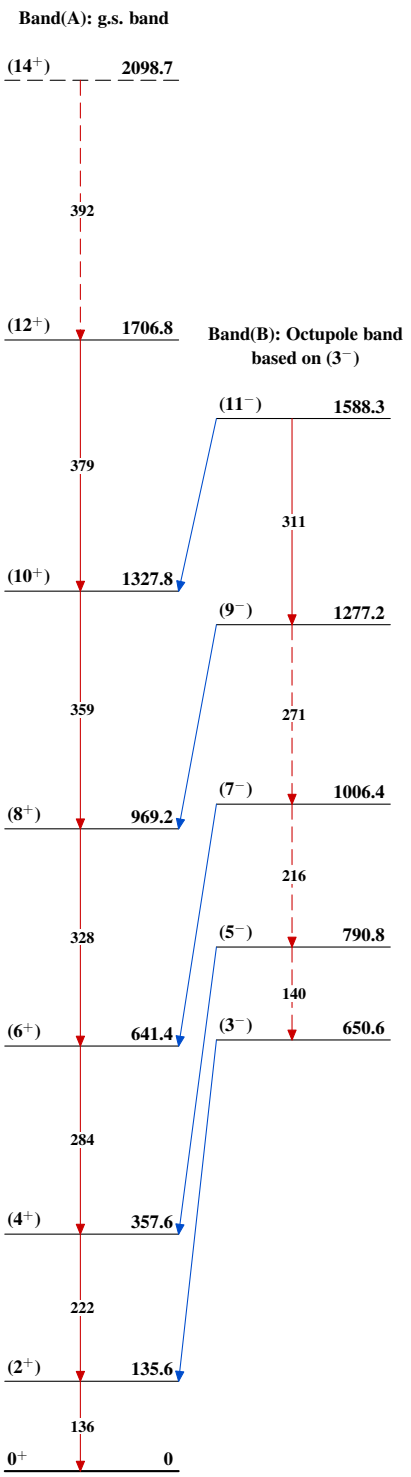
Adopted Levels, Gammas

Level Scheme



$^{224}_{86}Rn_{138}$

Adopted Levels, Gammas



$^{224}_{86}Rn_{138}$