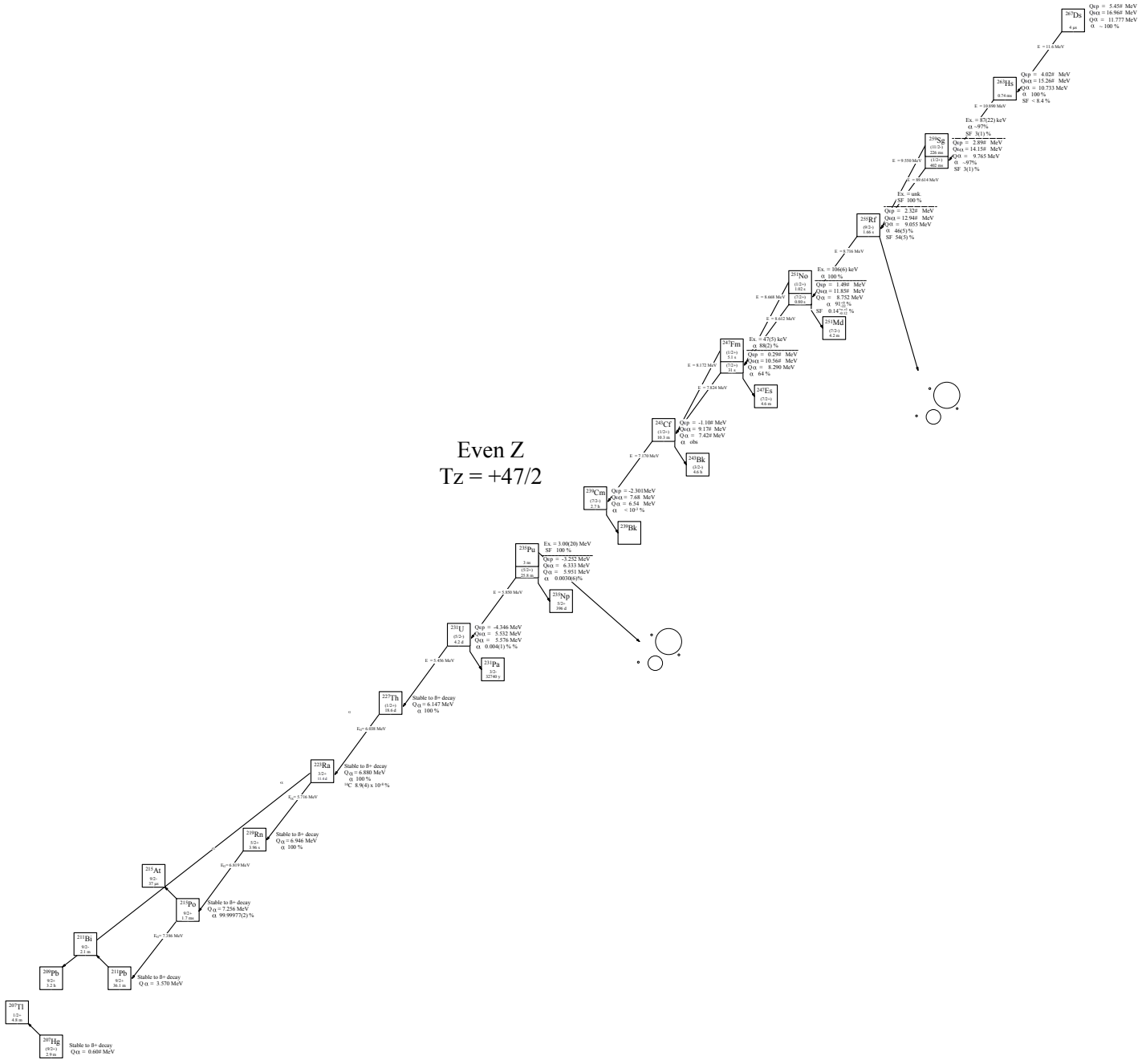

Fig. 1: Known experimental values for heavy particle emission of the even-Z T_z= +47/2 nuclei.

Last update 7/17/2024

Table 1
Observed and predicted β-delayed particle emission from the even-Z, T_z = +47/2 nuclei. Unless otherwise stated, all Q-values are taken from [2021Wa16] or deduced from values therein.

Nuclide	Ex.	J^π	$T_{1/2}$	Q_ε	Q_{β^-}	$Q_{\beta^- \alpha}$	Experimental
^{207}Hg*		$(9/2^+)$	2.9(2) m	-5.85(30)#	4.550(30)	4.411(30)	[**1981JoZW**]
^{211}Pb(AcB)*		$9/2^+$	36.164(13) m	-4.420(40)	1.366(5)	8.296(6)	[**2016Ai01**]
^{215}Po(AcA)		$9/2^+$	1.780(4) ms**	-2.171(6)	0.715(7)	9.072(5)	[**2023Ta02, 1961Vo06**]
^{219}Rn(An)		$5/2^+$	3.96(1) s	-1.567(3)	0.212(7)	7.841(7)	[**1966Hu20, 1999Li05**]
^{223}Ra(AcX)		$3/2^+$	11.4354(17) d	-1.149(1)	-0.592(7)	6.371(7)	[**2015Co02**]
^{227}Th(RdAc)		$(1/2^+)$	18.681(9) d	-0.045(1)	-1.026(7)	5.735(7)	[**2019Ko06**]
					$Q_{\varepsilon p}$	$Q_{\varepsilon \alpha}$	
^{231}U		$(5/2^-)$	4.2(1) d	0.382(2)	-4.346(2)	5.532(3)	[**1949Os01**]
^{235}Pu		$(5/2^+)$	25.8(1) m***	1.139(20)	-3.252(20)	6.333(21)	[**1973Jo03, 1971Ke22**]
^{235m}Pu	3.00(20)		3.0(5) ns	4.14(20)	-6.25(20)	0.33(20)	[**1970Bu02, 1971Br39**]
^{239}Cm		$(7/2^-)$	2.7(8) h	1.76(15)	-2.301(15)	7.68(15)	[**2008Qi03**]
^{243}Cf		$(1/2^+)$	10.3(5) m	2.30(18)#	-1.10(18)#	9.17(18)#	[**1967Si08**]
^{247}Fm		$(7/2^+)$	31(1) s	3.09(18)#	0.29(18)#	10.56(18)#	[**2006He27**]
^{247m}Fm	0.047(5)	$(1/2^+)$	5.1(2) s	3.14(18)#	0.35(18)#	10.61(18)#	[**2006He27**]
^{251}No		$(7/2^+)$	0.80(1) s	3.88(18)#	1.49(18)#	11.85(18)#	[**2006He27**]
^{251m}No	0.106(6)	$(1/2^+)$	1.02(3) s	3.99(18)#	1.60(18)#	11.96(18)#	[**2006He27**]
^{255}Rf		$(9/2^-)$	1.66(7) s@	4.38(18)#	2.32(18)#	12.94(18)#	[**2006He27, 2001He35**]
^{259}Sg		$(1/2^+)$	402(56) ms	4.53(19)#	2.89(18)#	14.15(18)#	[**2015An05**]
^{259m}Sg	0.087(22)	$(11/2^-)$	226(27) ms	4.64(19)#	2.98(18)#	14.24(18)#	[**2015An05**]
^{263}Hs			$0.74^{+0.48}_{-0.21}$ ms	5.18(36)#	4.02(20)#	15.26(21)#	[**2009Dr02**]
^{267}Ds			4 μs	6.09(54)#	5.45(21)#	16.96(37)#	[**1995Gh05**]

* 100% β^- emitter.
** Weighted average of 1.781(5) ms [2023Ta02] and 1.778(5) ms [1961Vo06].
*** Weighted average of 25.6(1) m [1973Jo03] and 25.9(1) m [1971Ke22].
@ Weighted average of 1.68(9) s [2006He27] and 1.64(11) s [2001He35].

Table 2
Particle separation, Q-values, and measured values for direct particle emission of the even-Z, T_z = +47/2 nuclei. Unless otherwise stated, all S and Q-values are taken from [2021Wa16] or deduced from values therein.

Nuclide	S_p	Q_α	BR_α	BR_{SF}	$BR_{cluster}$	type	Experimental
^{207}Hg	9.59(30)#	0.60(20)#					
^{211}Pb(AcB)	8.535(12)	3.570(30)					
^{215}Po(AcA)	6.630(11)	7.526(1)	99.99977(2)%				[**1998Li53, 1971Gr17, 1950Av61**, 2023Ta02, 2019Ma02, 1996Wi27, 1979Be58, 1976Bl13, 1971Er02, 1971Gr17, 1967Da20, 1965Va10, 1962Wa18, 1961Ry02, 1961Vo06, 1960Ry02, 1950Av61, 1942Wa04]
^{219}Rn(An)	6.560(12)	6.9462(3)	100%				[**1999Li05**, 2019Ma02, 2015Co07, 2015Pi10, 1989It01, 1979Be58, 1974Bo11, 1972NgZZ, 1970Da09, 1970Kr01, 1970Kr01, 1970Kr08, 1967Le05, 1962Wa18, 1961Ro14, 1961Ry02, 1960Ry02, 1960Wa16]
^{223}Ra(AcX)	6.434(8)	5.9790(2)	100%		$8.9(4)\times10^{-8}$%	^{14}C	[**1998Sh02, 1995Ho11, 1992Ar02, 1962Wa18, 1971Gr17**, 2021Si11, 2019Ma02, 2016Jo02, 2015Be13, 2015Co02, 2015Co07, 2015Ko06, 2015Pi10, 1991Ho15, 1990Hu02, 1990Hu07,1990We01, 1989Br34, 1987Mi10, 1985Al28, 1985Ku24, 1985Pr01, 1984Al34, 1984Ga38, 1984Ro30, 1976Bl13, 1974Ri05, 1971Gr17, 1970Da08, 1970Kr01, 1969Be67, 1968Br37, 1968Be37, 1967JoZX, 1965Ki05, 1962Gi04, 1961Ry02, 1960Ry02, 1959Ro51, 1957Pi31, 1954Ha60]
^{227}Th(RdAc)	5.793(3)	6.1466(1)	100%				[**19s64Ba33, 2019Ma02, 1998Jo08, 1972He18**, 2019Ko06, 2019Co04, 2015Co11, 1990Br23, 1990BrZZ, 1987Mi10, 1977Ma32, 1972HeYM, 1968Wa07, 1967JoZX, 1965Br23, 1954Ha60, 1949Pe08]
^{231}U	5.657(4)	5.576(2)	$4(1)\times10^{-3}$%				[**1997Mu08, 1994Li12**, 1949Os01]
^{235}Pu	5.061(22)	5.951(20)	$3.0(6)\times10^{-3}$%				[**1957Th10**, 1952Or03]
^{235m}Pu	2.06(20)	7.95(20)		100%			[**1970Bu02, 1971Br39**, 1972Ga42, 1969Me11]
^{239}Cm	4.56(16)	6.54(15)	$< 1\times10^{-3}$%				[**2008Qi03**]
^{243}Cf	4.05(23)#	7.42(10)#	obs				[**1967Fi04, 1967Si08**]
^{247}Fm	3.44(20)#	8.258(10)	64%				[**2006He27**, 2004HeZY, 2004He28]
^{247m}Fm	3.39(20)#	8.305(11)	88(2)%				[**2006He27**, 2004HeZY, 2004He28]
^{251}No	2.84(20)#	8.752(4)	91^{+9}_{-22}%	$0.14^{+0.31}_{-10.12}$%			[**2006He27, 2001He35**, 2022Te01, 2009Dr02, 2005KuZZ, 2005SuZX, 2004He28, 2004HeZY, 1999He07, 1997He29, 1967Gh01]
^{251m}No	2.74(20)#	8.858(7)	100%				[**2006He27**, 2022Te01, 2005KuZZ, 2005SuZX, 2004He28, 2004HeZY]
^{255}Rf	2.61(20)#	9.055(4)	46(5)%	54(5)%*			[**2006He27, 2015An05, 2001He35**,2020Mo11, 2008Dr05, 1997He29, 1986He06, 1984De07, 1984Og02, 1984Og03]
^{259}Sg	2.278(30)#	9.765(8)	≈ 97%	3(1)%**			[**2015An05**, 2013An08, 2009Dr02, 2009He20, 1985Mu11, 1984De07]
^{259m}Sg	2.191(20)#	9.852(22)	≈ 97%	3(1)%**			[**2015An05**, 2009He20]
^{263}Hs	1.86(22)#	10.733(78)	100%	<8.4%			[**2009Dr02**, 2009KaZU, 1984Og02
^{267}Ds	1.08(23)#	11.777(51)	≈ 100%				[**1995Gh05**]

* Weighted average of 58(9)% [2015An05] and 52(6)% [2001He35].
** Combination of ground state and isomer.

Table 3
direct α emission from ^{215}Po*, J^{π} = 9/2$^+$, $T_{1/2}$ = 1.780(4) ms**, BR_{α} = 99.99977(2)%***.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{211}Pb)	coincident γ-rays	R_0 (fm)	HF
6.641(20)	6.517(20)	$\approx 3\times10^{-4}$%	$\approx 3\times10^{-4}$%	(11/2$^+$)	0.894	0.894	1.54039(15)	$\approx$ 370
6.712(8)	6.587(8)	$2.0(6)\times10^{-3}$%	$2.0(6)\times10^{-3}$%	(9/2$^+$)	0.815	0.815	1.54039(15)	110^{+50}_{-30}
6.760(15)	6.634(15)	$\approx 3\times10^{-4}$%	$\approx 3\times10^{-4}$%	(3/2$^+$)	0.762		1.54039(15)	$\approx 1.2\times10^3$
6.795(10)	6.669(10)	$8(3)\times10^{-4}$%	$8(3)\times10^{-4}$%	(13/2$^+$)	0.733	0.733	1.54039(15)	560^{+340}_{-160}
6.880(10)	6.752(10)	$8(3)\times10^{-4}$%	$8(3)\times10^{-4}$%	(11/2$^+$)	0.643	0.643	1.54039(15)	$1.2^{+0.7}_{-0.3}\times10^3$
6.929(8)	6.800(8)	$1.6(5)\times10^{-3}$%	$1.6(5)\times10^{-3}$%	(5/2$^+$)	0.598	0.598	1.54039(15)	90^{+40}_{-20}
6.946(15)	6.817(15)	$4(2)\times10^{-4}$%	$4(2)\times10^{-4}$%		0.584	0.584	1.54039(15)	$4^{+4}_{-1}\times10^3$
7.084(3)	6.952(3)	0.06(2)%	0.06(2)%	(7/2$^+$)	0.4389	0.4389	1.54039(15)	80^{+40}_{-20}
7.5261(8)	7.3861(8)	100%	99.93(2)%	5/2$^+$	0.0	——	1.54039(15)	1.369(10)

* All values from [1998Li53], except where noted.
** Weighted average of 1.781(5) ms [2023Ta02] and 1.778(5) ms [1961Vo06].
*** [1950Av61] report a BR_{ε} = $2.3(2)\times10^{-4}$%.

Table 4
direct α emission from ^{219}Rn*, J^{π} = 5/2$^+$, $T_{1/2}$ = 3.96(1) s**, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{215}Po)	coincident γ-rays	R_0 (fm)	HF
5.851(15)	5.744(15)	$<\times10^{-4}$%	$< 1\times10^{-4}$%		1.094	0.2240, 0.2936, 0.5175 0.5766	1.55805(42)	>250
5.871(8)	5.764(8)	1×10^{-3}%	1×10^{-3}%	(5/2$^+$)	1.0737	0.2240, 0.2712, 0.2936, 0.4018 , 0.5175, 0.5581, 0.6719, 0.8025, 1.0737	1.55805(42)	31
6.010(15)	5.900(15)***				0.930	0.3218, 0.6083		
6.055(6)	5.944(6)	3×10^{-3}%	2×10^{-3}%		0.8911	0.2240, 0.2712, 0.2936, 0.2240, 0.2712, 0.2936, 0.3735, 0.4018, 0.4893, 0.5175, 0.6199, 0.8911	1.55805(42)	110
6.069(15)	5.958(15)	1×10^{-4}%	1×10^{-4}%		0.8772	0.8772	1.55805(42)	2.5×10^3
6.112(6)	6.000(6)	4×10^{-3}%	3×10^{-3}%		0.8353	0.2712, 0.5461, 0.8353	1.55805(42)	130
6.213(8)	6.100(8)	1×10^{-3}%	1×10^{-3}%		0.7328	0.1306, 0.2712, 0.3308, 0.4018, 0.4618, 0.7328	1.55805(42)	1.1×10^3
6.238(8)	6.124(8)	1×10^{-3}%	1×10^{-3}%		0.7081	0.2712, 0.4369, 0.7081	1.55805(42)	1.4×10^3
6.273(4)	6.158(4)	0.023%	0.018%		0.6767	0.2712, 0.2936, 0.3831, 0.4055, 0.6767	1.55805(42)	78
6.339(6)	6.223(6)	5×10^{-3}%	4×10^{-3}%	(11/2$^+$. 13/2$^+$)	0.6083	0.6083	1.55805(42)	350
6.428(3)	6.311(3)	0.068%	0.054%	(7/2$^+$. 9/2$^+$)	0.51755	0.2240, 0.2936, 0.5175	1.55805(42)	170
6.545(1)	6.425(1)	9.5%	7.5%	5/2$^+$	0.40181	0.1306, 0.2712, 0.4018	1.55805(42)	3.5
6.651(2)	6.530(2)	0.15%	0.12%	11/2$^+$	0.29360	0.2936	1.55805(42)	590
6.675(1)	6.553(1)	16%	13%	7/2$^+$	0.27123	0.2712	1.55805(42)	6.7
6.9460(3)	6.8191(3)	100%	79.3%	9/2$^+$	0.0	——	1.55805(42)	11.4

* All values from [1999Li05], except where noted.
** [1966Hu20].
*** tentative.

Table 5
direct α emission from ^{223}Ra*, J^{π} = 3/2^{+}, $T_{1/2}$ = 11.4354(17) d**, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_{f}***	$E_{daughter}$(^{219}Rn)	coincident γ-rays***	R_0 (fm)	HF
5.1056	5.0140	$\approx 8.4\times10^{-4}$%	$\approx 4.5\times10^{-4}$%		0.8729		1.54569(94)	≈121
5.1169	5.0251	$\approx 1.2\times10^{-3}$%	$\approx 6.4\times10^{-4}$%		0.8616		1.54569(94)	≈100
5.1276	5.0356	$\approx 7.4\times10^{-4}$%	$\approx 4.0\times10^{-4}$%		0.8509		1.54569(94)	≈190
5.1479	5.0556	$\approx 4.4\times10^{-4}$%	$\approx 2.0\times10^{-4}$%		0.8305		1.54569(94)	≈490
5.1787	5.0858	$\approx 5.6\times10^{-3}$%	$\approx 3.0\times10^{-3}$%		0.7997		1.54569(94)	≈500
5.2054	5.1120	$\approx 1.1\times10^{-3}$%	$\approx 6.0\times10^{-4}$%		0.7731		1.54569(94)	≈360
5.2282	5.1344	$\approx 3.2\times10^{-3}$%	$\approx 1.7\times10^{-3}$%		0.7503		1.54569(94)	≈170
5.2455	5.1514	0.044%	0.021%		0.7329	0.0345, 0.0695, 0.1040, 0.1085, 0.1108, 0.1443, 0.1543, 0.1587, 0.1773, 0.1796, 0.2551, 0.2695, 0.2860, 0.2881, 0.3284, 0.3383, 0.3428, 0.3555, 0.3900, 0.4324, 0.5741, 0.7184, 0.7284, 0.7328	1.54569(94)	18
5.2669	5.1724	0.048%	0.026%		0.7116	0.3284, 0.3428, 0.3685, 0.6969, 0.7113	1.54569(94)	19
5.3064	5.2112	0.010%	5.4×10^{-3}%		0.6721	0.1224, 0.5458,	1.54569(94)	150
5.3315	5.2359	0.078%	0.042%		0.6469	0.0345, 0.0695, 0.1040, 0.1108, 0.1224, 0.1317, 0.1383, 0.1443, 0.1543, 0.1587, 0.1773, 0.1993, 0.2493, 0.2551, 0.2695, 0.3284, 0.3428, 0.3557, 0.3617, 0.3717, 0.3761, 0.3876, 0.4234, 0.4874, 0.5000, 0.5100, 0.6417, 0.6461	1.54569(94)	27
5.3544	5.2584	0.080%	0.043%		0.6240	0.2462, 0.0345, 0.3284, 0.3428, 0.6091, 0.6191, 0.66235	1.54569(94)	36
5.3789	5.2824	0.18%	0.095%	(3/2,5/2,7/2)	0.5996	0.0345, 0.1443, 0.1543, 0.1587, 0.1796, 0.2214, 0.2604, 0.3284, 0.3383, 0.3428, 0.5843, 0.5987	1.54569(94)	22
5.3835	5.2869	0.24%	0.13%	$(7/2)^{-}$	0.5950	0.0695, 0.1032, 0.1040, 0.1085, 0.1147, 0.1224, 0.1443, 0.1472, 0.1543, 0.1587, 0.1773, 0.1796, 0.2493, 0.2512, 0.2557, 0.2881, 0.3284, 0.3383, 0.3428, 0.3617, 0.3717, 0.3761, 0.4324, 0.5796, 0.5940	1.54569(94)	17
5.4358	5.3383	0.19%	0.10%	(7/2, 9/2)	0.5426	0.1224, 0.1659, 0.2493, 0.3617, 0.3717, 0.3761, 0.5276, 0.5376, 0.5420	1.54569(94)	44
5.4632	5.3652	0.20%	0.11	(7/2,9/2)	0.5152	0.1224, 0.1383, 0.1443, 0.1543, 0.1587, 0.2493, 0.3557, 0.3617, 0.3717, 0.3761, 0.3876, 0.5000, 0.5100	1.54569(94)	56
5.5324	5.4332	4.28%	0.023%	$5/2^{-}$	0.4460	0.1022, 0.1067, 0.1108, 0.1443, 0.1543, 0.1587, 0.1755, 0.1796, 0.2551, 0.2695, 0.3239, 0.3284, 0.3339, 0.3383, 0.3428, 0.4306, 0.4450	1.54569(94)	640
5.5809	5.4808	≈0.023%	≈0.082%	(11/2)	0.3975	0.2703	1.54569(94)	320
5.6017	5.5012	1.5%	0.80%	$9/2^{+}$	0.3768	0.1224, 0.2493, 0.3617, 0.3717, 0.3761	1.54569(94)	42
5.6410(10)	5.5398(10)	16.95%	9.1%	$5/2^{+}$	0.3375	0.1443, 0.1543, 0.1587, 0.1796, 0.3383	1.54569(94)	6.0
5.7091(3)	5.6067(3)	48%	26%	$3/2^{+}$	0.2693	0.1108, 0.1443, 0.1543, 0.1587, 0.2551, 0.2695	1.54569(94)	4.7
5.8206(3)	5.7162(3)	100%	53.7%	$7/2^{+}$	0.1578	0.1443, 0.1543, 0.1587	1.54569(94)	8.2
5.8520(4)	5.7470(4)	17.0%	9.1%	11/2+	0.1265	0.1224	1.54569(94)	69
5.9641	5.8571	0.60%	0.32%	$7/2^{+}$	0.0144	0.0144	1.54569(94)	6.8×10^{3}
5.9784	5.8712	1.6%	0.87%	$5/2^{+}$	0.0	——	1.54569(94)	2.9×10^{3}

* All values from [1962Wa18], except where noted.
** [2015Co02].
*** [1998Sh02].

Table 6
direct ^{14}C emission from ^{223}Ra*, J^{π} = 3/2^{+}, $T_{1/2}$ = 11.4354(17) d**, Q_{14C} = 31.83 MeV, $BR_{14C} = 8.9(4)\times10^{-8}$%***.

E_{14C}(c.m.)	E_{14C}(lab)	I_{14C}(rel)	I_{14C}(abs)	J_f^{π}[@]	$E_{daughter}$(^{209}Pb)[@]	coincident γ-rays[@]	R_0 (fm)	HF
30.43	28.52	5%[@@]	3.6×10^{-9}%	15/2^{-}	1.423	0.6435, 0.7789, 1.4227	1.53069(10)	4.6[@@]
31.07	29.12	100%[@@]	7.2×10^{-8}%	11/2^{+}	0.779	0.7789	1.53069(10)	3.9[@@]
31.50	29.52	19%[@@]	1.3×10^{-8}%	9/2^{+}	0.0	—	1.53069(10)	583[@@]

* All values from [1992Ar02], except where noted.
** [2015Co02].
*** [1995Ho11].
[@] [2015Ch30].
[@@] HF values from [1992Ar02], intensity values reported as 4% (to 1.423 MeV), 81% to (to 0.779 MeV) and 15% (to ground state of ^{209}Pb).

Table 7
direct α emission from ^{227}Th* (1 of 3), J^{π} = (1/2^{+}), $T_{1/2}$ = 18.681(9) d**, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J_f^{π}	$E_{daughter}$(^{223}Ra)	coincident γ-rays	HF***
5.1236(40)	5.0333(40)	$1.3(1)\times10^{-3}$	$3.1(2)\times10^{-4}$%		1.025	1.025	29.8(20)
5.1466(40)	5.0559(40)	$1.0(2)\times10^{-3}$	$2.3(5)\times10^{-4}$%		1.000	0.0065, 0.0205, 0.0299, 0.0316, 0.0339, 0.0419, 0.0438, 0.0442, 0.0444, 0.0465, 0.0483, 0.0498, 0.0501, 0.0542, 0.0564, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.0950, 0. 0960, 0.0996, 0.1003, 0.1052, 0.1076, 0.1131, 0.1414, 0.1501, 0.1735, 0.1847, 0.2005, 0.2016, 0.2041, 0.2050, 0.2061, 0.2106, 0.2189, 0.2348, 0.2360, 0.2461, 0.2502, 0.2503, 0.2525, 0.2546, 0.2562, 0.2629, 0.2729, 0.2798, 0.2814, 0.2842, 0.2861, 0.2924, 0.2965, 0.3000, 0.3045, 0.3127, 0.3149, 0.3260, 0.3299, 0.3344, 0.3426, 0.3465, 0.3763, 0.6238, 0.9200, 0.9380, 0.9700, 0.9998	57^{+16}_{-10}
5.1745(40)	5.0833(40)	$6(1)\times10^{-3}$%	$1.5(2)\times10^{-4}$%		0.971	0.0205, 0.0299, 0.0316, 0.0438, 0.0442, 0.0498, 0.0501, 0.0614, 0.0625, 0.0736, 0.0797, 0.0939, 0.0950, 0.1735, 0.1847, 0.2050, 0.2061, 0.2348, 0.2503, 0.2798, 0.3000, 0.3299, 0.6410, 0.910, 0.9416	132^{+21}_{-16}
5.2020(40)	5.1103(40)	$1.2(1)\times10^{-3}$%	$2.8(2)\times10^{-4}$%	(3/2, 5/2)	0.943	0.0205, 0.0299, 0.0501, 0.893	105(8)
5.2205(30)	5.1285(30)	$2.6(1)\times10^{-3}$%	$6.2(2)\times10^{-4}$%	(3/2, 5/2^{-})	0.926	0.0205, 0.0299, 0.0316, 0.0498, 0.0501, 0.0614, 0.0644, 0.0797, 0.1735, 0.1847, 0.2050, 0.2348, 0.2360, 0.2562, 0.2861, 0.3005, 0.3505, 0.5760, 0.6920, 0.8467, 0.8763, 0.0.8961, 0.927	59.7(20)
5.2386(20)	5.1463(20)	0.0169(7)%	$4.1(8)\times10^{-3}$%		0.908	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.06874, 0.0736, 0.0797, 0.0939, 0.1003, 0.1131, 0.2360, 0.2562, 0.2855, 0.2861, 0.3986, 0.4480, 0.6124, 0.8573, 0.8785, 0.8782, 0.9086	$11.6^{+2.8}_{-1.9}$
5.2635(30)	5.1708(30)	$7.0(7)\times10^{-3}$%	$1.70(17)\times10^{-3}$%		0.884	0.0299, 0.8543	39(4)
5.2733(40)	5.1804(40)	$5.0(10)\times10^{-3}$%	$1.20(24)\times 10^{-3}$%		0.879	0.0299, 0.8378, 0.8673	59^{+15}_{-10}
5.2867(25)	5.1935(25)	0.0157(13)%	$3.80(27)\times10^{-3}$%		0.859	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0483, 0.0498, 0.0501, 0.0542, 0.0564, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.0996, 0.1003, 0.1052, 0.1076, 0.1131,0.1501, 0.1735, 0.1847, 0.2005, 0.2041, 0.2050, 0.2106, 0.2189, 0.2348, 0.2360, 0.2502, 0.2546, 0.2562, 0.2629, 0.2729, 0.2814, 0.2842, 0.2861, 0.2924, 0.3045, 0.3127, 0.3344, 0.3426, 0.5166, 0.5245, 0.5790, 0.7354, 0.7973, 0.8086, 0.8285, 0.8589	24.3(18)
5.3035(20)	5.2100(20)	0.029(2)%	$7(3)\times10^{-3}$%		0.842	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0483, 0.0498, 0.0501, 0.0542, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.0996, 0.1003, 0.1052, 0.1131, 0.1501, 0.1735, 0.1847, 0.2041, 0.2005, 0.2050, 0.2106, 0.2189, 0.2348, 0.2360, 0.2502, 0.2546, 0.2562, 0.2729, 0.2842, 0.2861, 0.3045, 0.3344, 0.5075, 0.5561, 0.6077, 0.7185, 0.7622, 0.7810, 0.8126, 0.8425	17^{+13}_{-5}
5.3228(20)	5.2290(20)	0.041(2)%	$9.8(3)\times10^{-3}$%		0.823	0.0205, 0.0299, 0.0316, 0.0438, 0.0442, 0.0442, 0.0493, 0.0498, 0.0501, 0.0614, 0.0625, 0.7734, 0.0736, 0.0797, 0.0939, 0.0950, 0.1735, 0.1847, 0.2050, 0.2061, 0.2348, 0.2360, 0.2503, 0.2562, 0.2798,0.2861, 0.3000, 0.3299, 0.5369, 0.8234	15.3(5)
5.3422(20)	5.2481(20)	0.0132(8)%	$3.20(1)\times 10^{-3}$%		0.803	0.0205, 0.0299, 0.0498, 0.0501, 0.7235, 0.7541, 0.0797, 0.8039	61.3(6)
5.3585(20)	5.2641(20)	0.0107(9)%	$2.6(2)\times10^{-3}$%		0.787	0.0205, 0.0299, 0.0316, 0.0498, 0.0501, 0.0614, 0.0797, 0.1735, 0.1847, 0.2050, 0.2348, 0.5524, 0.7072, 0.7569, 0.7874	93(7)
5.4171(40)	5.3216(40)	$1.0(4)\%\times10^{-3}$%	$2.4(10)\times10^{-4}$%		0.729		$2.2^{+1.6}_{-0.6}\times10^{3}$
5.4314(50)	5.3357(50)	$8(4)\times10^{-3}$%	$2(1)\times10^{-3}$%		0.713	0.0205, 0.0299, 0.0498, 0.0797, 0.6323, 0.6628	320^{+32}_{-11}

* All values from [1964Ba33], unless otherwise noted.
** [2019Ko06].
*** R_0 = 1.53569(39) fm.

Table 8
direct α emission from ^{227}Th* (2 of 3), J^{π} = (1/2$^+$), $T_{1/2}$ = 18.681(9) d**, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{223}Ra)	coincident γ-rays	HF***
5.4610(25)	5.3648(25)	$2.7(2)\times10^{-3}$%	$6.6(3)\times10^{-4}$%		0.685		$1.39(7) \times 10^3$
5.5055(30)	5.4085(30)	$1.8(3)\times10^{-3}$%	$4.4(7)\times10^{-4}$%		0.641		$3.7^{+0.7}_{-0.5} \times 10^3$
5.5563(20)	5.4584(20)	0.0112(5)%	$2.7(5)\times10^{-3}$%		0.590		$1.14^{+0.26}_{-0.18} \times 10^3$
5.5785(22)	5.4802(22)	$5.0(5)\times 10^{-3}$%	$1.2(1)\times10^{-3}$%		0.568		$3.37(28) \times 10^3$
5.6085(20)	5.5097(20)	0.0686(28)%	0.0166(3)%		0.537	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.06874, 0.0729, 0.0736, 0.0797, 0.0939, 0.1003, 0.1131, 0.1172, 0.1236, 0.2900	357(7)
5.6307(18)	5.5315(18)	0.0868(89)%	0.021(2)%	(11/2$^-$)	0.514	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0542, 0.0614, 0.0625, 0.0687 , 0.0736, 0.0797, 0.0939, 0.1003, 0.1131, 0.2671, 0.2855, 0.3398, 0.3986	380(40)
5.6859(16)	5.5857(16)	0.727(37)%	0.176(6)%	(9/2)$^-$	0.460	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.06874, 0.0736, 0.0797, 0.0939, 0.1003, 0.1131, 0.2855, 0.3986	86.3(3)
5.7009(18)	5.6004(18)	0.703(75)%	0.170(17)%	9/2$^+$	0.445	0.0065, 0.0205, 0.0209, 0.0299, 0.0316, 0.0339, 0.04020, 0.0419, 0.0438, 0.0442, 0.0444, 0.0465, 0.0483, 0.0498, 0.0501, 0.0542, 0.0564, 0.0614 0.0625, 0.0627, 0.06874, 0.0736, 0.0797, 0.0939, 0.0950, 0.0960, 0.0996, 0.1003, 0.1107, 0.1052, 0.1078, 0.1131, 0.1172, 0.1236, 0.1244, 0.1414, 0.1501, 0.1683, 0.1700, 0.1735, 0.1847, 0.1976, 0.4151, 0.2005, 0.2016, 0.2041, 0.2050, 0.2061, 0.2106, 0.2127, 0.2106, 0.2189, 0.2300, 0.2348, 0.2360, 0.2461, 0.2502, 0.2503, 0.2525, 0.2546, 0.2562, 0.2629, 0.2706, 0.2729, 0.2798, 0.2807, 0.2814, 0.2842, 0.2861, 0.2924, 0.2965, 0.3000, 0.3045, 0.3127, 0.3149, 0.3249, 0.3260, 0.3299, 0.3344, 0.3426, 0.3465, 0.3626, 0.3748, 0.3763, 0.3835	107^{+12}_{-10}
5.7138(16)	5.6131(16)	0.893(47)%	0.216(8)%	(5.2$^-$)	0.432	0.0065, 0.0205, 0.0299, 0.0316, 0.0339, 0.0419, 0.0438, 0.0442, 0.0444, 0.0465, 0.0483, 0.0498, 0.0501, 0.0542, 0.0560, 0.0564, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0896, 0.0939, 0.0950, 0.0960, 0.0996, 0.1003, 0.1025, 0.1052, 0.1076, 0.1131, 0.1414, 0.1501, 0.1735, 0.1847, 0.2005, 0.2016, 0.2041, 0.2050, 0.2061, 0.2106, 0.2189, 0.2348, 0.2360, 0.2461, 0.2502, 0.2503, 0.2525, 0.2546, 0.2562, 0.2629, 0.2729, 0.2798, 0.2814, 0.2842, 0.2861, 0.2924, 0.2965, 0.3000, 0.3045, 0.3084, 0.3127, 0.3149, 0.3260, 0.3299, 0.3344, 0.3426, 0.3465, 0.3526, 0.3709, 0.3763, 0.3822, 0.4022, 0.4323	99(4)
5.7226(17)	5.6218(17)	0.028(2)%	$7.0(4)\times10^{-3}$%	(11/2$^+$)	0.424	0.0299, 0.0316, 0.0614, 0.3626	$3^{+5}_{-1} \times 10^3$
5.7412(15)	5.6400(15)	0.0740(68)%	0.0179(15)%	(7/2)$^-$	0.405	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.0627, 0.0687, 0.0736, 0.0797, 0.0939, 0.1003, 0.1052, 0.1078, 0.1131, 0.1244, 0.1501, 0.1683, 0.1700, 0.1735, 0.1847, 0.2005, 0.2050, 0.2127, 0.2189, 0.2300, 0.2348, 0.2502, 0.2807, 0.2814, 0.3249, 0.3748	$31.64(14) \times 10^3$
5.7695(15)	5.6678(15)	8.51(59)%	2.06(12)%		0.376	0.0065, 0.0205, 0.0299, 0.0316, 0.0339, 0.0419, 0.0438, 0.0442, 0.0444, 0.0465, 0.0483, 0.0498, 0.0501, 0.0542, 0.0564, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.0950, 0. 0960, 0.0996, 0.1003, 0.1052, 0.1076, 0.1131, 0.1414, 0.1501, 0.1735, 0.1847, 0.2005, 0.2016, 0.2041, 0.2050, 0.2061, 0.2106, 0.2189, 0.2348, 0.2360, 0.2461, 0.2502, 0.2503, 0.2525, 0.2546, 0.2562, 0.2629, 0.2729, 0.2798, 0.2814, 0.2842, 0.2861, 0.2924, 0.2965, 0.3000, 0.3045, 0.3127, 0.3149, 0.3260, 0.3299, 0.3344, 0.3426, 0.3465, 0.3763	20.1(12)

* All values from [1964Ba33], unless otherwise noted.
** [2019Ko06].
*** R_0 = 1.53569(39) fm.

Table 9
direct α emission from ^{227}Th* (3 of 3), J^{π} = (1/2$^+$), $T_{1/2}$ = 18.681(9) d**, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{223}Ra)	coincident γ-rays	HF***
5.7759(16)	5.6741(16)	0.236(17)%	0.0572(35)%	(5/2)$^-$	0.369	0.0205, 0.0299, 0.0316, 0.0498, 0.0501, 0.0614, 0.0797, 0.1346, 0.1735, 0.1847, 0.2050, 0.2348, 0.2896, 0.3192, 0.3694	790(50)
5.7949(16)	5.6928(16)	6.2(5)%	1.5(1)%	(1/2$^-$)	0.351	0.0205, 0.0299, 0.0501, 0.0644, 0.2360, 0.253, 0.2861, 0.3005, 0.3505	37.1(25)
5.8029(16)	5.7006(16)	15(1)%	3.63(20)%	3/2$^+$	0.343	0.0205, 0.0299, 0.0316, 0.0498, 0.0501, 0.0564, 0.0614, 0.0797, 0.1076, 0.1735, 0.1847, 0.2050, 0.2348, 0.2360, 0.2562, 0.2629, 0.2814, 0.2861, 0.2924, 0.3127, 0.3426	16.8(10)
5.8110(16)	5.7086(16)	34.3(18)%	8.3(3)%	5/2$^+$	0.334	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0483, 0.0498, 0.0501, 0.0542, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.0996, 0.1003, 0.1052, 0.1131, 0.1501, 0.1735, 0.1847, 0.2041, 0.2005, 0.2050, 0.2106, 0.2189, 0.2348, 0.2360, 0.2502, 0.2546, 0.2729, 0.2842, 0.2861, 0.3045, 0.3344	8.18(31)
5.8155(16)	5.7130(16)	20.2(11)%	4.89(20)%	3/2$^-$	0.329	0.0205, 0.0299, 0.0316, 0.0438, 0.0442, 0.0498, 0.0501, 0.0614, 0.0625, 0.0736, 0.0797, 0.0939, 0.0950, 0.1735, 0.1847, 0.2050, 0.2061, 0.2348, 0.2503, 0.2798, 0.3000, 0.3299	14.7(6)
5.8306(16)	5.7279(16)	0.141(12)%	0.0342(25)%	(13/2$^-$)	0.316	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0498, 0.0501, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.1003, 0.1414	2.45(18) $\times$ 10^3
5.86013(15)	5.75687(15)	84.3(49)%	20.4(9)%	1/2$^+$	0.286	0.0205, 0.0299, 0.0501, 0.2360, 0.2562, 0.2861	5.81(26)
5.8655(15)	5.7621(15)	0.942(54)%	0.228(10)%	(7/2)$^+$	0.280	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.1003, 0.1052, 0.1131, 0.1501, 0.2005, 0.2189, 0.2502	557(25)
5.8993(15)	5.7953(15)	1.29(5)%	0.311(5)%	11/2$^-$	0.247	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.0687, 0.0729, 0.0736, 0.0797, 0.0939, 0.1003, 0.1131, 0.1172, 0.1236	596(11)
5.9115(15)	5.8073(15)	5.2(2)%	1.27(2)%	5/2$^+$	0.235	0.0205, 0.0299, 0.0316, 0.0501, 0.0614, 0.1735, 0.1847, 0.2050, 0.2348	167(3)
5.9716(15)	5.8664(15)	10.0(6)%	2.42(10)%	11/2$^+$	0.175	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0444, 0.0498, 0.0501, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.1003, 0.1131	173(7)
6.0157(15)	5.9097(15)	0.719(43)%	0.174(8)%	9/2$^+$	0.130	0.0065, 0.0205, 0.0299, 0.0316, 0.0442, 0.0498, 0.0501, 0.0614, 0.0625, 0.0687, 0.0736, 0.0797, 0.0939, 0.1003	3.97(19) $\times$ 10^3
6.0219(15)	5.9158(15)	3.20(17)%	0.775(30)%	7/2$^-$	0.124	0.0205, 0.0299, 0.0316, 0.0442, 0.0498, 0.0501, 0.0614, 0.0625, 0.0736, 0.0797, 0.0939	950(40)
6.0664(15)	5.9595(15)	12.40(77)%	3.00(15)%	(5/2)$^-$	0.080	0.0205, 0.0299, 0.0498, 0.0797	398(20)
6.08494(10)	5.97772(10)	97.1(52)%	23.5(9)%	(7/2$^+$)	0.061	0.0299, 0.0316, 0.0614	62.6(6)
6.0966(20)	5.9892(20)	8.3(13)$\times$10^{-3}%	2.0(3)$\times$10^{-3}%	3/2$^-$	0.050	0.0205, 0.0299, 0.0501	$8.3^{+1.5}_{-1.1} \times 10^5$
6.1164(15)	6.0086(15)	11.98(76)%	2.90(15)%	5/2$^+$	0.030	0.0299	710(40)
6.14632(15)	6.03801(15)	100(5)%	24.2(9)%	3/2$^+$	0.0	——	117(5)

* All values from [1964Ba33], unless otherwise noted.
** [2019Ko06].
*** R_0 = 1.53569(39) fm.

Table 10
directα emission from ^{231}U*, J^{π} = (5/2$^-$), $T_{1/2}$ = 4.2(1) d**, BR_{α} = 4(1)$\times10^{-3}$%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J_f^{π}	$E_{daughter}$(^{227}Th)	coincident γ-rays	R_0 (fm)	HF
5.177	5.087				0.40011	0.00243, 0.0386, 0.0379, 0.0399, 0.0532, 0.0606, 0.0613, 0.0683, 0.0749, 0.0899, 0.0991, 0.1111 0.1507, 0.1899, 0.2042, 0.2114, 0.2196, 0.2647, 0.2798, 0.2890		
5.258	5.167	0.52%	8.8$\times10^{-4}$%	(3/2,5/2,7/2)$^+$	0.31889	0.00243, 0.0386, 0.0379, 0.0399, 0.0532, 0.0683 0.2426, 0.2945, 0.3097		
5.288	5.196	1.8%	3.1$\times10^{-3}$%	(1/2,3/2,5/2)$^+$	0.28901	0.00243, 0.0386, 0.0379, 0.0399, 0.0532, 0.0606, 0.0613, 0.0683, 0.0749, 0.0899, 0.0991, 0.1507, 0.1899, 0.2042, 0.2114, 0.2196, 0.2647, 0.2798, 0.2890		
5.345	5.252	0.47%	8.0$\times10^{-4}$%	(-)	0.23143	0.0644, 0.1578		
5.348	5.255	≈0.14%	≈2.4$\times10^{-4}$%	(3/2,5/2)$^-$	0.22864	0.00243, 0.0386, 0.0379, 0.0399, 0.0532, 0.0683, 0.1507, 0.2042, 0.2196		
5.356	5.263	0.71%	1.2$\times10^{-3}$%	(-)	0.19999	0.0243, 0.0728, 0.1029, 0.1180, 0.1902		
5.392	5.299	0.92%	1.6$\times10^{-3}$%	(1/2,3/2,5/2)$^-$	0.18367	0.0564, 0.1029, 0.1180 0.1594		
5.449	5.355	1.6%	2.7$\times10^{-3}$%	(3/2,5/2)$^+$	0.12726	0.0243, 0.1029, 0.1180		
5.478	5.383	13%	2.2$\times10^{-2}$%	(1/2,3/2,5/2)$^+$	0.09916	0.0243, 0.0386, 0.0379, 0.0613, 0.0749, 0.0899, 0.0991		
5.499	5.404	50%	8.4$\times10^{-2}$%	*3/2,5/2)$^+$	0.07758	0.00243, 0.0386, 0.0379, 0.0399, 0.0532, 0.0683		
5.500	5.405				0.07620	0.00243, 0.0519, 0.0669		
5.503	5.408	<0.71%	<1.2$\times10^{-3}$%	(3/2,5/2,7/2)$^-$	0.07364	0.0644		
5.539	5.443	≈1.4%	≈2.4$\times10^{-3}$%	3/2$^-$	0.03788	0.0386, 0.0379		
5.552	5.456	100%	1.7$\times10^{-1}$%	3/2$^+$	0.02434	0.0243		
5.567	5.471	66%	1.1$\times10^{-1}$%	5/2$^+$	0.0926			
5.577	5.480	≈1.7%	≈2.8$\times10^{-3}$%	(1/2$^+$)	0.0	——		

* All values from [1997Mu08], unless otherwise noted.
** [1949Os01].
*** [1994Li12].

Table 11
directα emission from ^{235}Pu*, J^{π} = (5/2$^+$), $T_{1/2}$ = 25.8(1) m**, BR_{α} = 3.0(6)$\times10^{-3}$%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(abs)	J_f^{π}	$E_{daughter}$(^{231}U)	coincident γ-rays	R_0 (fm)	HF
5.951(20)	5.850(20)	3.0(6)$\times10^{-3}$%		x		1.514(14)	$1.1^{+0.6}_{-0.4}$

* All values from [1957Th10], unless otherwise noted.
** Weighted average of 25.6(1) m [1973Jo03] and 25.9(1) m [1971Ke22].

Table 12
directα emission from ^{243}Cf*, J^{π} = (1/2$^+$), $T_{1/2}$ = 10.3(5) m**, BR_{α} = obs.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J_f^{π}	$E_{daughter}$(^{235}Pu)	coincident γ-rays	R_0 (fm)	HF
7.178(10)	7.060(10)	≈40%		0.112				
7.290(10)	7.170(10)	100%	(7/2$^-$)	0.0	——			

* All values from [1967Fi04], unless otherwise noted.

Table 13
directα emission from ^{247}Fm*, J^{π} = (7/2$^+$), $T_{1/2}$ = 31(1) s, BR_{α} = 64%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{243}Cf)	coincident γ-rays	R_0 (fm)	HF
7.953(10)	7.824(10)	64%	(7/2$^+$)	0.315	0.082, 0.1218, 0.1418, 0.1666	1.5003(93)	0.84

* All values from [2006He27], unless otherwise noted.

Table 14
directα emission from ^{247m}Fm*, Ex. = 47(5) keV, J^{π} = (1/2$^+$), $T_{1/2}$ = 5.1(2) s, BR_{α} = 88(2)%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{243}Cf)	coincident γ-rays	R_0 (fm)	HF
8.307(5)	8.172(5)	88(2)%	(1/2$^+$)	0.0	——	1.5003(93)	$1.5^{+0.4}_{-0.3}$

* All values from [2006He27], unless otherwise noted.

Table 15
directα emission from ^{251}No*, J^{π} = (7/2$^+$), $T_{1/2}$ = 0.80(1) s, BR_{α} = 91^{+9}_{-22}%**.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{247}Fm)	coincident γ-rays	R_0 (fm)	HF
8.662(8)	8.524(8)***	≈0.05%	≈0.046%				1.485(12)	≈80
8.690(8)	8.552(8)***	≈1.02%	≈0.91%				1.485(12)	≈51
8.701(7)	8.562(7)	≈0.31%	≈0.27%		0.051		1.485(12)	≈180
8.710(7)	8.571(7)***	≈0.51%	≈0.46%				1.485(12)	≈120
8.751(4)	8.612(4)	100.00%	≈89.2%	(7/2$^+$)	0.0	——	1.485(12)	$0.81^{+0.28}_{-0.22}$

* All values from [2006He27], unless otherwise noted.
** [2001He35].
*** Tentative [2006He27].

Table 16
directα emission from ^{251m}No*, ex. = 106(6) keV, J^{π} = (1/2$^+$), $T_{1/2}$ = 1.02(3) s, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{247}Fm)	coincident γ-rays	R_0 (fm)	HF
8.765(10)	8.625(10)	≈ 2%	≈ 2%		0.043		1.485(12)	≈ 37
8.808(4)	8.668(4)	100.00%	≈98%	(7/2$^+$)	0.0	——	1.485(12)	$1.02^{+0.33}_{-0.25}$

* All values from [2006He27].

Table 17
directα emission from ^{255}Rf*, J^{π} = (9/2$^-$), $T_{1/2}$ = 1.66(7) s**, BR_{α} = 46(5)%***.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{251}No)	coincident γ-rays	R_0 (fm)	HF
8.712(5)	8.575(5)$^{@}$	1.1(5)%	0.46(24)%				1.472(38)	40^{+70}_{-30}
8.784(5)	8.646(5)$^{@}$	1.6(6)%	0.69(24)%				1.472(38)	70^{+110}_{-50}
8.816(8)	8.678(8)$^{@}$	3.3(11)%	1.38(48)%				1.472(38)	30^{+50}_{-20}
8.855(4)	8.716(4)	100(8)%	42.3(51)%	(9/2$^-$)	0.204	0.1433, 0.2036	1.472(38)	$1.3^{+2.0}_{-0.8}$
9.050(8)	8.908(8)$^{@}$	2.7(11)%	1.15(48)%				1.472(38)	180^{+310}_{-120}

* All values from [2006He27], except where noted
** Weighted average of 1.68(9) s [2006He27] and 1.64(11) s [2001He35].
*** Weighted average of 58(9)% [2015An05] and 52(6)% [2001He35].
$^{@}$ Tentative [2006He27].

Table 18
directα emission from ^{259}Sg*, J^{π} = (1/2$^+$), $T_{1/2}$ = 402(56) ms, BR_{α} = ≈ 97%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{255}Rf)	coincident γ-rays	R_0 (fm)	HF
9.182(10)	9.040(10)	12(2)%	≈10.7%		0.583		1.461(30)	$2.0^{+2.3}_{-1.2}$
9.765(8)	9.614(8)	100(2)%	≈86.3%		0.0	——	1.461(30)	11^{+12}_{-6}

* All values from [2015An05].

Table 19
directα emission from ^{259m}Sg*, Ex. = 87(22) keV, J^{π} = (11/2$^-$), $T_{1/2}$ = 226(27) ms, BR_{α} = ≈ 97%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(rel)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{255}Rf)	coincident γ-rays	R_0 (fm)	HF
9.344(25)	9.200(25)**	80(10)%	≈42%		0.508		1.461(30)	$0.8^{+0.9}_{-0.5}$
9.700(8)	9.550(8)	100(7)%	≈52%		0.152		1.461(30)	7^{+7}_{-4}
9.852(20)	9.700(20)	5.6(19)%	≈2.9%		0.0	——	1.461(30)	300^{+400}_{-200}

* All values from [2015An05].
** Tentative assignment.

Table 20
directα emission from ^{263}Hs, $T_{1/2} = 0.74^{+0.48}_{-0.21}$ ms, BR_{α} = 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{259}Sg)	coincident γ-rays	R_0 (fm)	HF
10.733(60)	10.570(60)	≈20%**					
10.886(60)	10.720(60)	≈40%**					
11.058(60)	10.890(60)	≈40%**	(1/2$^+$)?	0.0?			

* All values from [2009Dr02].
** Based on a total of 6 decay chains, with one of the chains containing an escape α from ^{263}Hs.

Table 21
directα emission from ^{267}Ds, $T_{1/2}$ = 4 μs, BR_{α} = ≈ 100%.

E_{α}(c.m.)	E_{α}(lab)	I_{α}(abs)	J^{π}_f	$E_{daughter}$(^{263}Hs)	coincident γ-rays	R_0 (fm)	HF
11.8	11.6						

* All values from [1995Gh05] based on observation of one event.

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