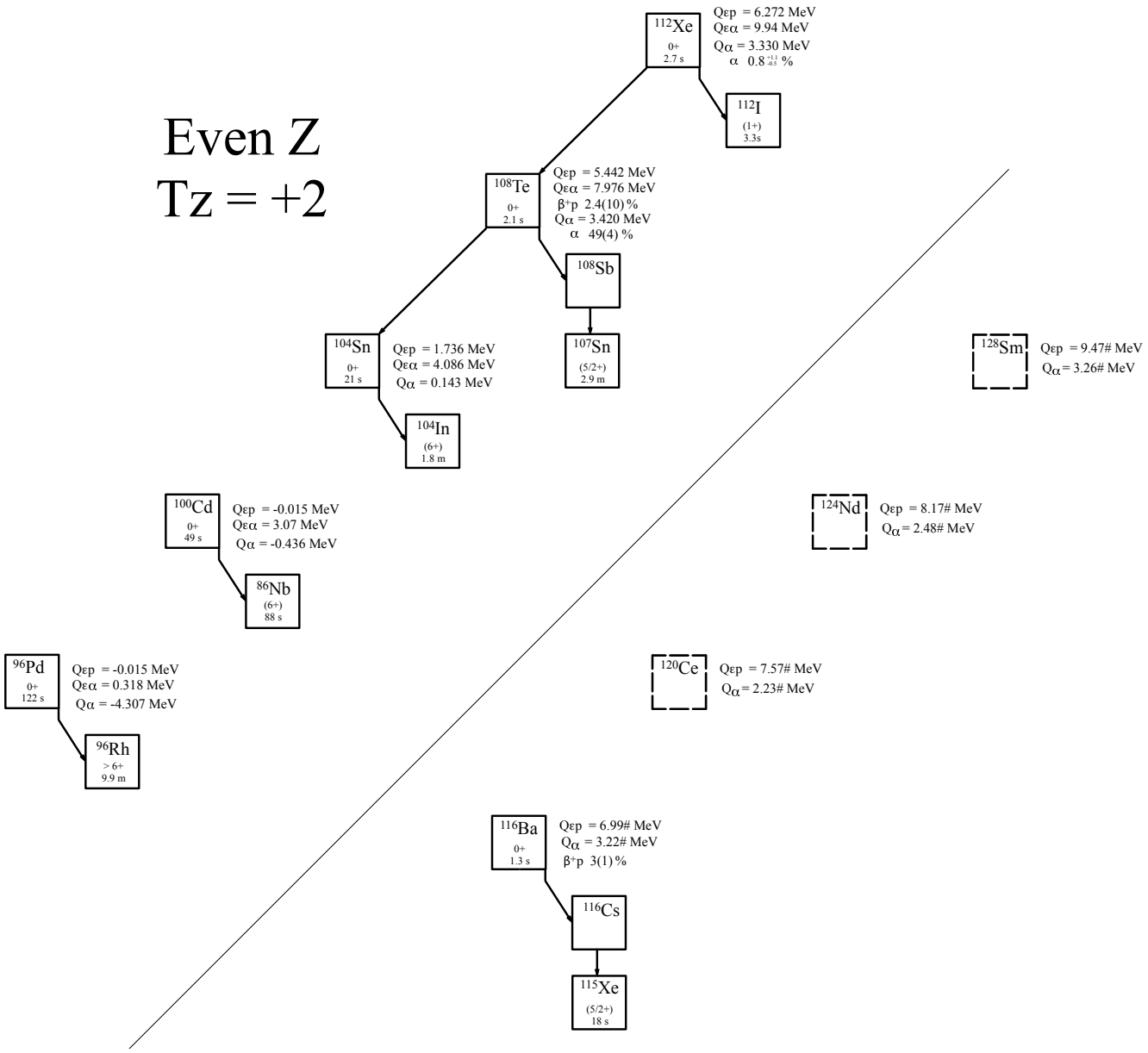

Fig. 1: Known experimental values for heavy particle emission of the even-Z T_z= +2 nuclei.

Last updated 3/21/23

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

Nuclide	J^π	$T_{1/2}$	Q_ε	$Q_{\varepsilon p}$	$BR_{\beta p}$	$Q_{\varepsilon 2p}$	$Q_{\varepsilon\alpha}$	Experimental
^{96}Pd	0^+	122(2) s	3.504(11)	-0.015(10)	——	-6.603(6)	0.318(5)	[**1982Ku15**]
^{100}Cd	0^+	49.1(5) s	3.943(5)	0.699(5)		-5.598(12)	3.068(10)	[**1989Ry02**]
^{104}Sn	0^+	21(1) s	4.556(8)	1.736(6)		-3.958(10)	4.086(8)	[**1985Ra19**]
^{108}Te	0^+	2.1(1) s	6.664(8)	5.442(8)	2.4(10)%	0.248(13)	7.976(8)	[**1979Sc22**, 2019Au02, 2019Xi06, 1994Pa11, 1993HeZS, 1985Ti02, 1965Ma12]
^{112}Xe	0^+	2.7(8) s	7.037(13)	6.272(10)		2.846(10)	9.940(90)	[**1979Sc22**, 1994Pa11, 1978Ro19]
^{116}Ba	0^+	1.3(2) s	7.66(22)#	6.99(20)#	3(1)%	3.68(20)#	10.06(20)#	[**1997Ja12**]
^{120}Ce	0^+		7.84(58)#	7.57(54)#		4.10(50)#	9.89(51)#	
^{124}Nd	0^+		8.32(64)#	8.17(58)#		5.13(58)#	10.32(58)#	
^{128}Sm	0^+		9.07(58)#	9.47(58)#		6.59(54)#	11.58(64)#	

Table 2
Particle emission from the even-Z, T_z = +2 nuclei. Unless otherwise stated, all Q-values and separation energies are taken from [2021Wa16] or deduced from values therein.

Nuclide	S_p	BR_{1p}	S_{2p}	Q_α	BR_α	Experimental
^{96}Pd	5.132(6)	——	8.178(5)	-4.307(5)	——	
^{100}Cd	4.771(6)	——	7.452(5)	-0.436(5)	——	
^{104}Sn	4.284(11)	——	6.545(6)	0.143(6)		
^{108}Te	2.417(7)	——	3.006(7)	3.445(4)*	49(4)%	[**1994Pa11, 1991He21,**1993HeZS, 1981Sc17]
^{112}Xe	2.362(10)	——	2.374(11)	3.330(6)	$0.8^{+1.1}_{-0.5}$ %	[**1994Pa11**, 1978Ro19, 1992HeZU, 1981Sc17]
^{116}Ba	1.97(23)#	——	1.87(20)#	3.22(30)#		
^{120}Ce	2.00(58)#	——	2.11(54)#	2.23(54)#		
^{124}Nd	1.89(64)#	——	1.53(64)#	2.48(71)#		
^{128}Sm	1.13(64)#	——	0.35(58)#	3.26(71)#		

* From α decay to ground state of ^{104}Sn [1991He21], 3.420(8) in [2021Wa16].

Table 3
direct α emission from ^{108}Te, $J^\pi = 0^+$, $T_{1/2}$ = 2.1(1) s*, BR_α =49(4) %**.

E_α(c.m.)	E_α(lab)	I_α(rel)	I_α(abs)	J^π_f	$E_{daughter}$(^{104}Sn)	coincident γ-rays	R_0 (fm)	HF
3.445(4)	3.318(4)***	100%	49(4) %**	0^+	0.0	——	1.6315(80)	1.50(14)

* [1979Sc22].
** [1994Pa11].
*** [1991He21].

Table 4
direct α emission from ^{112}Xe*, $J^\pi = 0^+$, $T_{1/2}$ = 2.7(8) s**, BR_α =$0.8^{+1.1}_{-0.5}$ %.

E_α(c.m.)	E_α(lab)	I_α(rel)	I_α(abs)	J^π_f	$E_{daughter}$(^{108}Te)	coincident γ-rays	R_0 (fm)	HF
3.335(7)	3.216(7)	100%	$0.8^{+1.1}_{-0.5}$ %	0^+	0.0	——	1.6671(75)	2^{+4}_{-1}

* All Values from [1994Pa11], except where noted.
** [1979Sc22].

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