

Even Z $T_z = +1$

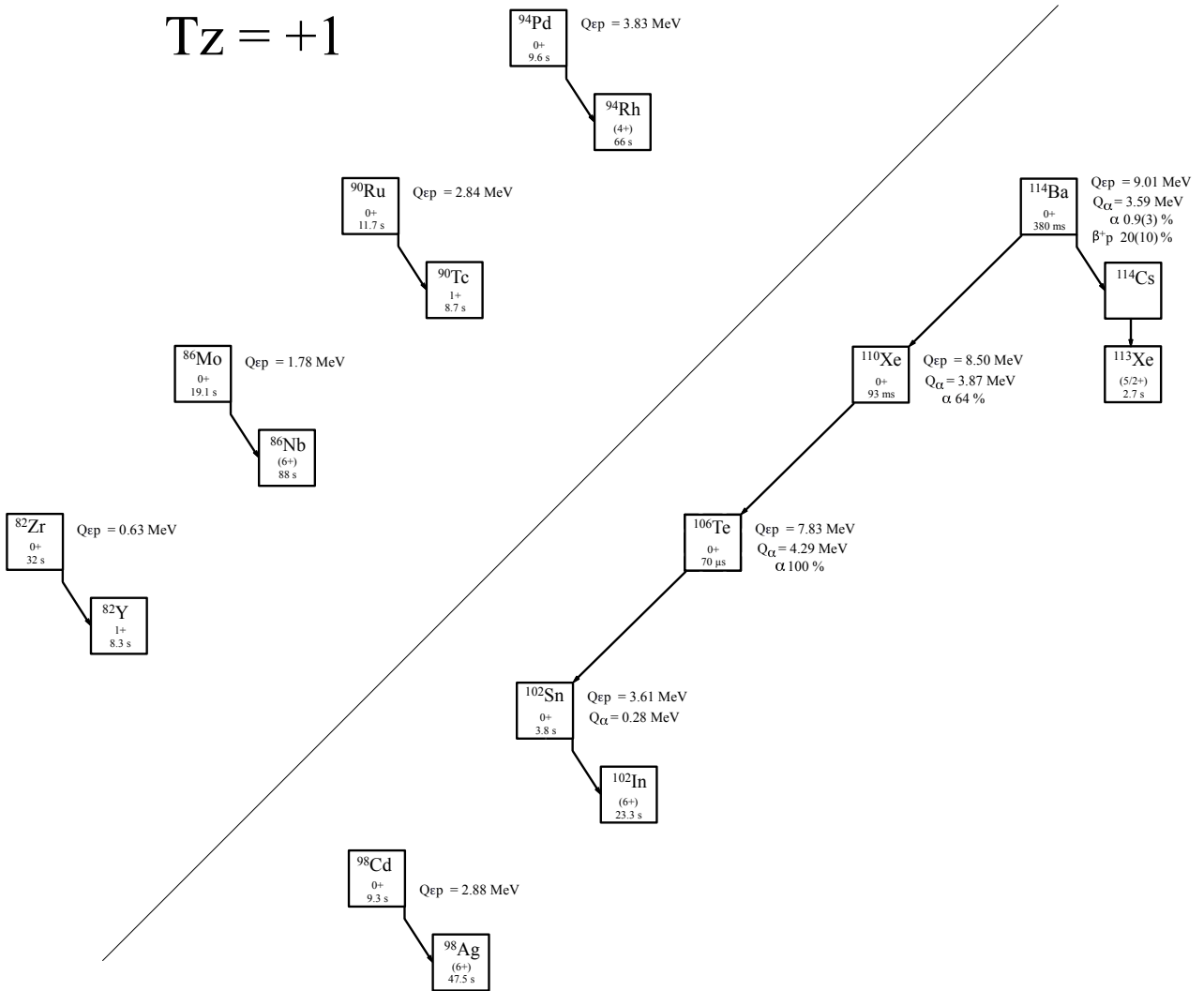


Fig. 1: Known experimental values for heavy particle emission of the even-Z $T_z = +1$ nuclei.

Last updated 3/20/23

Table 1

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

Nuclide	J^π	$T_{1/2}$	Q_ϵ	$Q_{\epsilon p}$	$BR_{\beta p}$	$Q_{\epsilon 2p}$	$Q_{\epsilon \alpha}$	Experimental
^{82}Zr	0^+	32(5) s	4.450(6)	0.625(4)		-6.017(3)	0.886(3)	[1982Li17]
^{86}Mo	0^+	19.1(3) s	5.023(6)	1.775(7)		-4.795(5)	1.528(6)	[2005Ka39]
^{90}Ru	0^+	11.7(9) s	5.841(4)	2.842(5)		-3.292(60)	1.825(6)	[2004De40]
^{94}Pd	0^+	9.6(2) s	6.805(5)	3.825(5)		-1.754(5)	2.198(4)	[2006Ba55]
^{98}Cd	0^+	9.3(1) s	5.430(40)	2.880(50)	<0.029%	-2.530(51)	2.843(50)	[2019Pa16, 1997Ra22, 1996He25]
^{102}Sn	0^+	3.8(2) s	5.76(10)	3.61(10)		-1.37(10)	5.72(10)	[2002Fa13]
^{106}Te	0^+	70^{+20}_{-15} μs	8.25(10)	7.83(10)		3.39(10)	10.05(10)	[2016Ca33, 2005Ja03, 2002Ma19, 1994Pa11, 1981Sc17]
^{110}Xe	0^+	93(3) ms	8.55(12)	8.50(10)		5.95(10)	12.13(10)	[2016Ca33, 2007Sa36, 2002Ma19, 1993HeZV, 1992HeZU, 1981Sc17]
^{114}Ba	0^+	380^{+190}_{-110} ms	8.78(13)	9.01(10)	20(10)%	6.58(10)	12.14(12)	[2016Ca33, 2002Ma19, 1997Ja12, 2003Mb01, 2001Ro35, 1995Gu10]

Table 2

Particle emission from the even- Z , $T_z = +1$ nuclei. Unless otherwise stated, all Q-values and separation energies are taken from [2021Wa16] or deduced from values therein.

Nuclide	S_p	S_{2p}	Q_α	BR_α	Experimental
^{82}Zr	5.190(6)	7.881(4)	-2.865(8)	—	
^{86}Mo	5.120(5)	7.267(6)	-2.922(3)	—	
^{90}Ru	4.778(5)	6.775(5)	-3.198(5)	—	
^{94}Pd	4.379(5)	6.379(5)	-3.643(6)	—	
^{98}Cd	4.020(50)	6.030(50)	-3.960(50)	—	
^{102}Sn	3.68(10)	5.32(10)	0.28(11)		
^{106}Te	1.49(10)	1.17(10)	4.290(9)	100%	[2016Ca33, 1994Pa11, 2005Ja03, 2002Ma19, 1981Sc17]
^{110}Xe	1.54(10)	0.72(10)	3.872(9)	64(35)%	[2016Ca33, 2002Ma19, 2007Sa36, 1993HeZS, 1992HeZU, 1981Sc17]
^{114}Ba	1.43(10)	0.46(10)	3.592(19)	0.9(3)%	[2016Ca33, 2002Ma19, 2003Mb01, 2001Ro35, 1997Ja12, 1995Gu10]

Table 3

direct α emission from $^{106}\text{Te}^*$, $J^\pi = 0^+$, $T_{1/2} = 70^{+20}_{-15}$ μs^{**} , $BR_\alpha = 100\%$.

E_α (c.m.)	E_α (lab)	I_α (rel)	I_α (abs)	J_f^π	$E_{daughter} (^{102}\text{Sn})$	coincident γ -rays	R_0 (fm)	HF
4.290(9)	4.128(9)	100%	100%	0^+	0.0	—	1.684(49)	0.94(27)

* All values from [1994Pa11], except where noted.

** [2016Ca33].

Table 4

direct α emission from $^{110}\text{Xe}^*$, $J^\pi = 0^+$, $T_{1/2} = 93(3)$ ms**, $BR_\alpha = 64(35)\%$.

E_α (c.m.)	E_α (lab)	I_α (rel)	I_α (abs)	J_f^π	$E_{daughter} (^{106}\text{Te})$	coincident γ -rays	R_0 (fm)	HF
3.860(20)	3.720(20)	100%	64(35)%	0^+	0.0	—	1.655(47)	$0.9^{+1.1}_{-0.3}$

* All values from [2016Ca33], except where noted

** [2007Sa36].

Table 5direct α emission from $^{114}\text{Ba}^*$, $J^\pi = 0^+$, $T_{1/2} = 380^{+190}_{-110}$ ms, $BR_\alpha = 0.9(3)\%$.

$E_\alpha(\text{c.m.})$	$E_\alpha(\text{lab})$	$I_\alpha(\text{rel})$	$I_\alpha(\text{abs})$	J_f^π	$E_{\text{daughter}}(^{110}\text{Xe})$	coincident γ -rays	R_0 (fm)	HF
3.610(20)	3.480(20)	100%	0.9(3)%	0^+	0.0	—	1.700(47)	$1.2^{1.5}_{-0.8}$

* All values from [2016Ca33].

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