

Even Z

$T_z = +31$

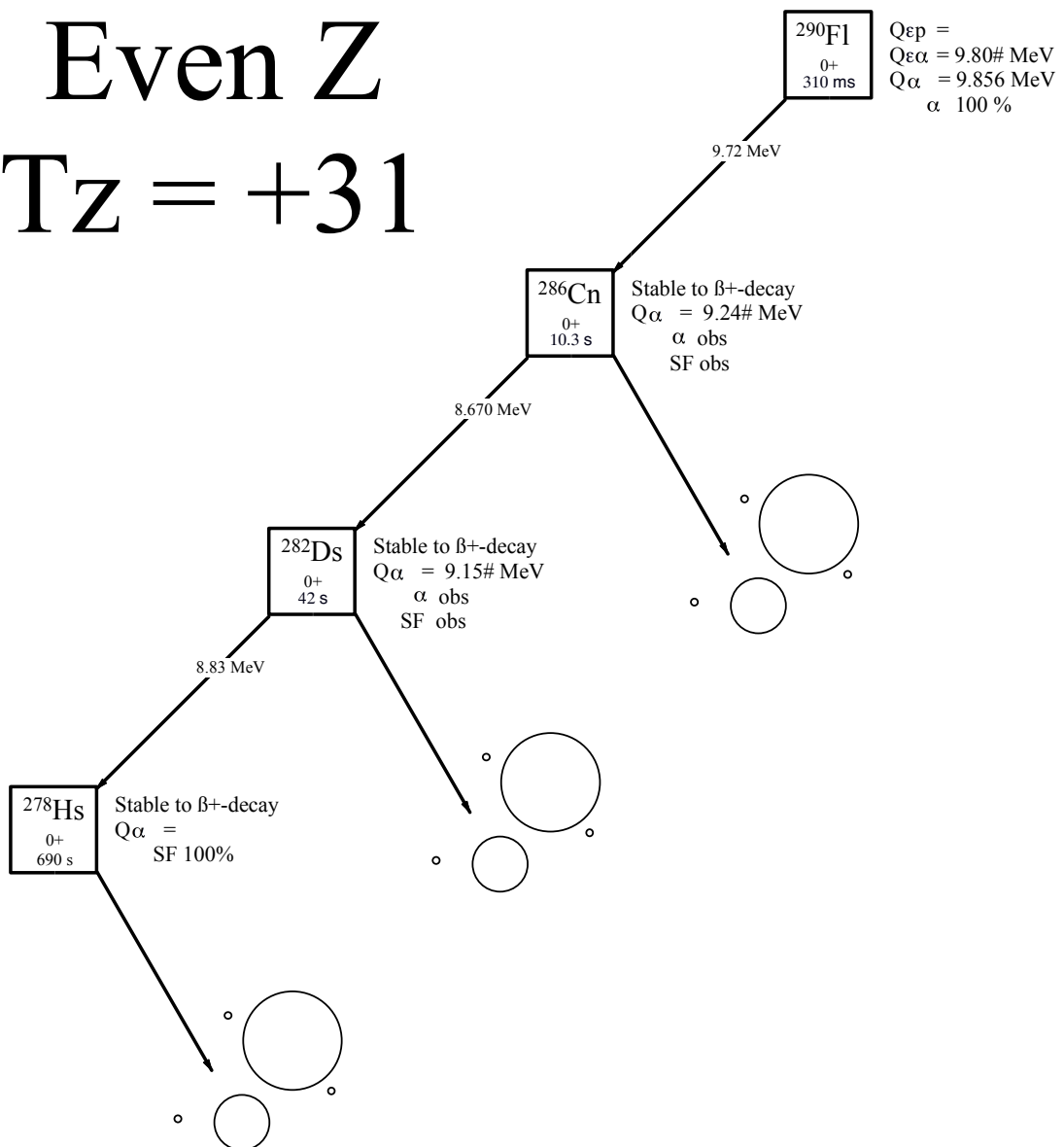


Fig. 1: Known experimental values for heavy particle emission of the even-Z $T_z = +31$ nuclei.

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Table 1

Observed and predicted β -delayed particle emission from the even- Z , $T_z = +31$ nuclei. Unless otherwise stated, all Q -values are taken from [2021Wa16] or deduced from values therein.

Nuclide	J^π	$T_{1/2}$	Q_ε	$Q_{\varepsilon p}$	$Q_{\varepsilon \alpha}$	Experimental
^{278}Hs	0^+	690^{+3300}_{-310} s	-1.15(50)#	—	—	[2016Ho09]
^{282}Ds	0^+	42^{+146}_{-13} s*	-0.67(54)#	—	—	[2023Sa03, 2016Ho09]
^{286}Cn	0^+	$10.3^{+37.0}_{-3.5}$ s**	-0.06(84)#	—	—	[2023Sa03, 2017Ka66]
^{290}Fl	0^+	$0.31^{+1.48}_{-0.14}$ s	0.42(84)#		9.80(84)#	[2023Sa03]

* Weighted average of 38^{+165}_{-15} s [2023Sa03] and 67^{+320}_{-30} s [2016Ho09].

** Weighted average of 19^{+91}_{-8} s [2023Sa03] and $8.4^{+40.5}_{-3.9}$ s [2017Ka66].

Table 2

Particle separation, Q -values, and measured values for direct particle emission of the even- Z , $T_z = +31$ 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}	Experimental
^{278}Hs	5.17(67)#			100%	[2016Ho09]
^{282}Ds	4.90(67)#	9.15(42)#	obs	obs	[2023Sa03, 2016Ho09]
^{286}Cn	4.57(92)#	9.24(76)#	obs	obs	[2023Sa03, 2017Ka66, 2016Ho09]
^{290}Fl	4.11(86)#	9.856(30)	100%		[2023Sa03, 2017Ka66, 2016Ho09]

Table 3

direct α emission from $^{282}\text{Ds}^*$, $T_{1/2} = 42^{+146}_{-13}$ s**, $BR_\alpha = \text{obs}$.

$E_\alpha(\text{c.m.})$	$E_\alpha(\text{lab})$	$I_\alpha(\text{abs})$	J_f^π	$E_{\text{daughter}}(^{278}\text{Hs})$	coincident γ -rays (keV)	HF
8.96(18)	8.83(18)					

* All values from [2016Ho09], except where noted.

** Weighted average of 38^{+165}_{-15} s [2023Sa03] and 67^{+320}_{-30} s [2016Ho09].

Table 4

direct α emission from $^{286}\text{Cn}^*$, $T_{1/2} = 10.3^{+37.0}_{-3.5}$ s**, $BR_\alpha = \text{obs}$.

$E_\alpha(\text{c.m.})$	$E_\alpha(\text{lab})$	$I_\alpha(\text{abs})$	J_f^π	$E_{\text{daughter}}(^{282}\text{Ds})$	coincident γ -rays (keV)	HF
8.793(45)	8.670(45)					

* All values from [2016Ho09], except where noted.

** Weighted average of 19^{+91}_{-8} s [2023Sa03] and $8.4^{+40.5}_{-3.9}$ s [2017Ka66].

Table 5

direct α emission from $^{290}\text{Fl}^*$, $T_{1/2} = 0.31^{+1.48}_{-0.14}$ s, $BR_\alpha = 100\%$.

$E_\alpha(\text{c.m.})$	$E_\alpha(\text{lab})$	$I_\alpha(\text{abs})$	J_f^π	$E_{\text{daughter}}(^{286}\text{Cn})$	coincident γ -rays (keV)	HF
9.86(3)	9.72(3)	100%				

* All values from [2023Sa03].

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