

^{138}Pr $Z = 59$ $N = 79$ adopted link ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 1150.812 (0.010) MeV

Qbeta+ = 4.437 (0.010) MeV

	Energy T	J+	J-	J-other	T1/2
138PR 1	0.000	1+			1 1.45 M 5
138PR 2				0.194 0+,1+,2+	2
138PR 3				0.200 0+,1+,2+	3
138PR 4	0.326	1+			4
138PR 5				0.327 0+,1+,2+	5

S-alpha=	0.335 (0.022)				
138PR 6			0.364 7-		6 2.03 H 2
138PR 7				0.383 (8)	7
138PR 8				0.390 (0,1,2)+	8
138PR 9				0.506 (1)+	9
138PR 10	0.541	1+			10

138PR 11				0.563 (8-)	11
138PR 12				0.624 (1)+	12
138PR 13				0.674 (1)+	13
138PR 14				0.696 (8-)	14
138PR 15				0.718 (0-,1-,2-)	15
138PR 16				0.913 (9+)	16
138PR 17				1.076 (8-)	17
138PR 18				1.078 (9+)	18
138PR 19				1.214 (10+)	19
138PR 20				1.328 (10-)	20

138PR 21				1.434 (10-)	21
138PR 22				1.599 (11+)	22
138PR 23				1.616 (11+)	23
138PR 24				1.938 (11+)	24
138PR 25				2.013 (12+)	25
138PR 26				2.421 (12+)	26
138PR 27				2.559 (13+)	27
138PR 28				2.611 (12+)	28
138PR 29				2.640 (13+)	29
138PR 30				2.689 (13+)	30

138PR 31				2.798 (13+)	31
138PR 32				2.878 (14+)	32
138PR 33				2.905 (14+)	33
138PR 34				2.982 (13+)	34
138PR 35				3.001 (13+)	35
138PR 36				3.050 (14+)	36

138PR 37				3.248	(14+)	37
138PR 38				3.294	(15+)	38
138PR 39				3.358	(14+)	39
138PR 40				3.391	(15+)	40

138PR 41				3.400	(14-)	41
138PR 42				3.510	(15+)	42
138PR 43				3.545	(15+)	43
138PR 44				3.552	(15+)	44
138PR 45				3.553	(15-)	45
138PR 46				3.773	(14+)	46
138PR 47				3.776	(16+)	47
138PR 48				3.833	(14)	48
138PR 49				3.920	(16-)	49
138PR 50				3.935	(16+)	50

138PR 51				3.966	(15+)	51
138PR 52				4.109	(15)	52
138PR 53				4.187	(16+)	53
138PR 54				4.188	(16+)	54
138PR 55				4.315	(17+)	55
138PR 56				4.435	(17+)	56
138PR 57				4.444	(16)	57
138PR 58				4.481	(17+)	58
S-p	=	4.499	(0.010)	-----		
138PR 59				4.562	(18+)	59
138PR 60				4.798	(17)	60

138PR 61				4.821	(17)	61
138PR 62				4.893	(18+)	62
138PR 63				4.948	(19+)	63
138PR 64				4.982	(18-)	64
138PR 65				5.083	(18+)	65
138PR 66				5.230	(19-)	66
138PR 67				5.406	(20+)	67
138PR 68				5.420	(19+)	68
138PR 69				5.466	(19+)	69
138PR 70				5.596	(20-)	70

138PR 71				5.898	(21+)	71
138PR 72				6.040	(21-)	72
138PR 73				6.108	(20+)	73
138PR 74				6.591	(22-)	74

S-p = 4.499 (0.010)-----
S-n = 7.999 (0.013)-----
S-2p = 11.670 (0.054)-----
S-2n = 17.931 (0.015)-----
S-alpha= 0.335 (0.022)-----

S+p = -6.177 (0.029)
S+n = -9.771 (0.011)
S+2p = -9.661 (0.026)
S+2n = -17.700 (0.012)
S+alpha = -0.438 (0.026)

gap p = -1.678 (0.031)
gap n = -1.772 (0.017)
gap 2p = 2.009 (0.060)
gap 2n = 0.231 (0.019)
gap alpha = -0.102 (0.034)