

## INDC International Nuclear Data Committee

# TABLE OF NUCLEAR MAGNETIC DIPOLE AND ELECTRIC QUADRUPOLE MOMENTS

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February 2014

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## ABSTRACT

This Table is a compilation of experimental measurements of static magnetic dipole and electric quadrupole moments of ground states and excited states of atomic nuclei throughout the periodic table. To aid identification of the states, their excitation energy, half-life, spin and parity are given, along with a brief indication of the method and any reference standard used in the particular measurement. The literature search covers the period to early 2014. Many of the entries prior to 1988 follow those in Raghavan P., Atomic and Nuclear Data Tables 42, 189 (1989).

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Nucleus	Ex	T1/2	I	$\mu$ (nm)	Q(b)	[Ref. Std.]	Method	NSR Keynumber	Journal Reference				
87 Fr 210	0	3.2 m	6+	+4.38(5)		[211Fr]	TLS	<a href="#">2008GO11</a>	PRL 100 172502 (08)				
				+4.40(9)		[211Fr]	ABLS	<a href="#">1985Co24</a>	PL 163B 66 (85)				
					+0.19(2) st	R	ABLS	<a href="#">1985Co24</a>	PL 163B 66 (85)				
87 Fr 211	0	3.1 m	9/2-	+4.00(8)			AB/D	<a href="#">1986Ek02</a>	PS 34 624 (86)				
					-0.19(3) st	R	ABLS	<a href="#">1985Co24</a>	PL 163B 66 (85)				
				2423	146 ns	29/2+	15.37(15)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
								-1.07(18)	R	[213Fr 2538]	LEMS	<a href="#">1991Ha02</a>	PR C43 514 (91)
				4657	123 ns	45/2-	24.3(2)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
87 Fr 212	0	19.3 m	5+	+4.62(9)		[211Fr]	ABLS	<a href="#">1985Co24</a>	PL 163B 66 (85)				
					-0.10(1) st	R	ABLS	<a href="#">1985Co24</a>	PL 163B 66 (85)				
				1551	27 $\mu$ s	11+	9.89(4)		SOPAD	<a href="#">1977Be56</a>	HFI 3 297 (77)		
				2492	604 ns	(15-)	+15.65(12)		TDPAD	<a href="#">1989By01</a>	PL B217 38 (89)		
							15.60(15)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
								(-)0.84(13)	R	[213Fr 2538]	TDPAD	<a href="#">1990By03</a>	NP A516 145 (90)
								-0.80(12)		[213Fr 2538]	LEMS	<a href="#">1991Ha02</a>	PR C43 514 (91)
				4834	4.2 ns	22+	22(4)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
				5854	312 ns	(27-)	21.9(3)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
								(-)1.7(3)	R	[213Fr 2538]	TDPAD	<a href="#">1990By03</a>	NP A516 145 (90)
				-1.5(3)		[213Fr 2538]	LEMS	<a href="#">1991Ha02</a>	PR C43 514 (91)				
87 Fr 213	0	34.7 s	9/2-	+4.02(8)		[211Fr]	ABLS	<a href="#">1985Co24/1986Ek02</a>	PL 163B 66 (85)/PS 34 624 (86)				
					-0.14(2) st	R	ABLS	<a href="#">1985Co24</a>	PL 163B 66 (85)				
				1411	18 ns	17/2-	7.5(14)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
				1590	499 ns	21/2-	9.4(2)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
							9.32(3)		TDPAD, R	<a href="#">1977Be56/1978Ha50</a>	HFI 3 397 (77)/HFI 4 219 (78)		
				2538	243 ns	29/2+	+15.30(7)		TDPAD	<a href="#">1989By01</a>	PL B217 38 (89)		
							15.23(14)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
							15.22(3)		TDPAD	<a href="#">1977Be56/1978Ha50</a>	HFI 3 397 (77)/HFI 4 219 (78)		
								[-0.70(7)]		calculated	not measured	<a href="#">1990By03</a>	NP A516 145 (90)
				4993	13 ns	45/2-	23.2(7)		TDPAD	<a href="#">1986By01</a>	NP A448 137 (86)		
87 Fr 214	640	103 ns	11+	+5.62(7) K, d		[213Fr 2538]	TDPAD	<a href="#">1994By01</a>	NP A567 445 (94)				
					0.8(2)	R	[213Fr 2538]	LEMS	<a href="#">1995Ne06</a>	PR C51 3483 (95)			
				1663 or 1734	11 or 10 ns	14- or 15-	+8.5(4) K, d		[213Fr 2538]	TDPAD	<a href="#">1994By01</a>	NP A567 445 (94)	
				4318+D	8 ns	27-	+19.7(8) K, d		[213Fr 2538]	TDPAD	<a href="#">1994By01</a>	NP A567 445 (94)	















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