^{36}Ar(e,e′) 1972Fa02,1994Fo03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, John Cameron and Balraj Singh	NDS 113, 1 (2012)	31-Dec-2011

1972Fa02: E=39, 56 MeV; measured scattered electrons At θ=180° and deduced J^π, $\Gamma(0)$ values for M1 and M2 excitations.
1972Fa02: ^{36}Ar(e,e) E=65-115; measured $\sigma(E,\theta)$ and deduced nuclear charge radius.
1977Fi09: E=65-115 MeV; measured $\sigma(E,\theta)$ and deduced J^π and $\Gamma(0)$ values.
1994Fo03: E=35-65 MeV; measured $\sigma(E,\theta)$ and deduced transition probabilities.

^{36}Ar Levels

Nuclear charge radius: 3.33 *2* fm (1976Fi12).
For levels from 1972Fa02 and for most of the levels from 1994Fo03 the resolution is not sufficient to establish the correspondence with known ^{36}Ar levels. Consequently all these levels are questioned (and not adopted).

E(level)	J^π	$T_{1/2}$	$\Gamma(0)$ eV[†]	Comments
0				
1970[‡]	2^+[‡]	341 fs *20*	1.34×10^{-3}[‡] *8*	$T_{1/2}$: from $\Gamma(0)$ and branching to g.s. (100 %).
4180[‡]	3^-[‡]	2.30 ps *14*	1.35×10^{-5}[‡] *8*	$T_{1/2}$: from $\Gamma(0)$ and branching to g.s. (6.5 *4* %).
7440[@] *15*	1^+[@]	1.5 fs *3*		E(level): corresponds to adopted 7423 level. $T_{1/2}$: from B(M1)↑. B(M1)↑=0.126 *24* μ_N^2 (1994Fo03).
7460?[#] *50*	(2^-)[#]		3.3×10^{-3}[#] *20*	
7719[@] *15*	2^-[@]			E(level): corresponds to adopted 7750 level. B(M2)↑=27.1 *30* fm$^2\times\mu_N^2$ (1994Fo03).
8158[@] *15*	1^+[@]	1.6 fs *4*		E(level): corresponds to adopted 8133 level. $T_{1/2}$: from B(M1)↑. B(M1)↑=0.087 *18* μ_N^2 (1994Fo03).
8333[@] *15*	2^-[@]			E(level): corresponds to adopted 8303 level. B(M2)↑=21.1 *31* fm$^2\times\mu_N^2$ (1994Fo03).
8385[@] *15*	2^-[@]			E(level): corresponds to adopted 8365 level. B(M2)↑=32.7 *32* fm$^2\times\mu_N^2$ (1994Fo03).
8440?[#] *40*	2^-[#]		10.6×10^{-3}[#] *55*	
8482[@] *15*	1^+[@]			E(level): corresponds to adopted 8472 level. B(M1)↑=0.123 *27* μ_N^2 (1994Fo03).
9136[@] *15*	2^-[@]			E(level): corresponds to adopted 9132 level. B(M2)↑=21.4 *31* fm$^2\times\mu_N^2$ (1994Fo03).
9225[@] *15*	2^-[@]			E(level): corresponds to adopted 9219 level. B(M2)↑=31.7 *32* fm$^2\times\mu_N^2$ (1994Fo03).
9270?[#] *40*	(1^+)[#]		1.8×10^{-3}[#] *8*	
9995?[&] *15*				B(M1)↑=0.57 *3* μ_N^2 (1994Fo03).
10050?[#] *60*	1^+[#]		6.2×10^{-3}[#] *19*	
10276?[&] *15*				B(M1)↑=0.12 *3* μ_N^2 (1994Fo03).
10434?[&] *15*				B(M2)↑=21 *3* fm$^2\times\mu_N^2$ (1994Fo03).
10550?[#] *60*	$(1^+,2^-)$[#]		2.2×10^{-3}[#] *14*	$\Gamma(0)$ eV: for (1^+), 0.051 *32* for (2^-).
10615?[&] *15*				B(M1)↑=0.12 *5* μ_N^2 (1994Fo03).
10719?[&] *15*				B(M1)↑=0.14 *3* μ_N^2 (1994Fo03).
10764?[&] *15*				B(M1)↑=0.12 *3* μ_N^2 (1994Fo03).
11177?[&] *15*				B(M1)↑=0.310 *25* μ_N^2 (1994Fo03).

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^{36}Ar(e,e′) 1972Fa02,1994Fo03 (continued)

^{36}Ar Levels (continued)

E(level)	Jπ	Γ(0) eV†	Comments
11250?# *60*	1+#	8.9×10−3# *35*	
11384?& *15*			B(M1)↑=0.106 *24* μ_N^2 (1994Fo03).
11515?& *15*			B(M2)↑=21 *4* fm^2×μ_N^2 (1994Fo03).
11580?# *60*	(2−)#	6.9×10−3# *52*	
11594?& *15*			B(M2)↑=16 *4* fm^2×μ_N^2 (1994Fo03).
11745?& *15*			B(M2)↑=16 *3* fm^2×μ_N^2 (1994Fo03).
11946?& *15*			B(M2)↑=17 *4* fm^2×μ_N^2 (1994Fo03).
12066?& *15*			B(M1)↑=0.16 *3* μ_N^2 (1994Fo03).
12090?# *70*	(1+)#	5.0×10−3# *33*	
12801?& *15*			B(M1)↑=0.13 *3* μ_N^2 (1994Fo03).
13201?& *15*			B(M1)↑=0.13 *3* μ_N^2 (1994Fo03).
13481?& *15*			B(M1)↑=0.12 *3* μ_N^2 (1994Fo03).
13740?& *15*			B(M1)↑=0.12 *4* μ_N^2 (1994Fo03).
13800?& *15*			B(M1)↑=0.17 *3* μ_N^2 (1994Fo03).

† From 1972Fa02 (uncertainties symmeterized by evaluators).
‡ From 1977Fi09.
# From 1972Fa02.
@ From 1994Fo03.
& From 1994Fo03.