^{22}Ne(e,e′) 1974Ma43,1979Ma13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 127, 69(2015)	1-Apr-2015

1974Ma43: ^{22}Ne(e,e′) E=37,50,60 MeV. 99.5% enriched target. Measured σ(Ee′). Measured cross sections, reduced matrix elements, and widths multiplied by 2 according to erratum.

1979Ma13: ^{22}Ne(e,e′) E=60-110 MeV. Enriched target. Measured σ(Ee′). Scattered electrons were momentum analyzed in a 169.8° double focusing magnetic spectrometer and detected in a 48 detector hodoscope of Si(Li) detectors. Measured cross sections, reduced matrix elements, width, etc.

Other references: 1971Mo15, 1973Si31, 1992Ro08, 1981Kn07.

^{22}Ne Levels

E(level)[†]	J^π[@]	$T_{1/2}$[&]	Comments
0.0	0^+		
1275[#] *10*	2^+	3.2 ps *4*	B(E2)↑=0.0271 *36* (1979Ma13)
3360 *20*	4^+		
4460 *20*	2^+	3.7 fs *25*	B(E2)↑=0.0013 *2* (1979Ma13)
5310 *30*	1^+	1.2 fs *2*	E(level): From 1974Ma43. 1979Ma13 report this as a doublet at 5336 keV. $T_{1/2}$: From total width of 0.38 eV *7*, deduced in 1979Ma13.
5910 *20*	3^-		B(E3)↑=8.7×10^{-4} *25* (1979Ma13)
6140 *40*	2^+	14 fs *7*	B(E2)↑=0.00032 *15* (1979Ma13)
6270 *50*			
6700 *20*			B(E2)↑=0.00039 *15* and B(E2)↑=0.00075 *40* (1979Ma13) are listed assuming $J^\pi=2^+$ and 3^-, respectively. $J^\pi=1^-$ in Adopted Levels.
6820[‡] *30*	2^+		
6900 *30*			
7060 *30*			
7460 *30*			
7630[‡] *30*	2^-		
7650 *20*	2^+	470 as *200*	B(E2)↑=0.0018 *3* (1979Ma13) E(level): From longitudinal and transverse cross section analysis, 1979Ma13 suggests two states contributing to the cross section.
7930 *20*	2^+		B(E2)↑=0.00057 *24* (1979Ma13)
8170 *20*	2^+		
8590[#] *20*	(2^+)		J^π: Tentative assignment because of complicated level scheme near this level energy (1979Ma13). Assignment $J^\pi=2^-$ at 8540 *30* (1974Ma43).
9140[‡] *30*	1^+		
11860[‡] *80*	2^-		
12560[‡] *60*	$(1^+,1^-)$		J^π: (1^-) in Adopted Levels.

[†] From 1979Ma13, except otherwise noted.
[‡] From 1974Ma43, not reported in 1979Ma13.
[#] Also reported in 1974Ma43.
[@] Assigned in 1979Ma13 from comparison of experimental and calculated momentum transfer dependence of the longitudinal form factors, except otherwise noted.
[&] Deduced from B(E2)↑ and adopted γ-ray properties, except otherwise noted.

^{22}Ne(e,e′) 1974Ma43,1979Ma13 (continued)

$\gamma(^{22}Ne)$

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	Comments
1275	2^+	1275	100	0.0	0^+	E2		
4460	2^+	3185	100.0 *2*	1275	2^+			
		4460	3.1 *2*	0.0	0^+	E2		
5310	1^+	4035	50 *12*	1275	2^+	M1+E2	+1.9 *5*	
		5309	100 *12*	0.0	0^+	M1		
6140	2^+	1680	10.25 *13*	4460	2^+	M1+E2	+1.1 *3*	
		4864	100 *4*	1275	2^+	M1+E2	+2.3 *3*	
		6139	18 *3*	0.0	0^+	E2		Mult.: From B(E2).
6820	2^+	2360	100 *16*	4460	2^+	M1+E2	+2.5 *4*	
		5544	70 *16*	1275	2^+	M1		
7650	2^+	3190	42 *5*	4460	2^+			
		6374	100 *5*	1275	2^+	M1+E2	−0.08 *5*	
		7649	12 *5*	0.0	0^+	E2		

[†] Calculated from level energy differences, recoil energy subtracted.
[‡] Placement and branching from Adopted Gammas.
[#] From Adopted Gammas, except otherwise noted.

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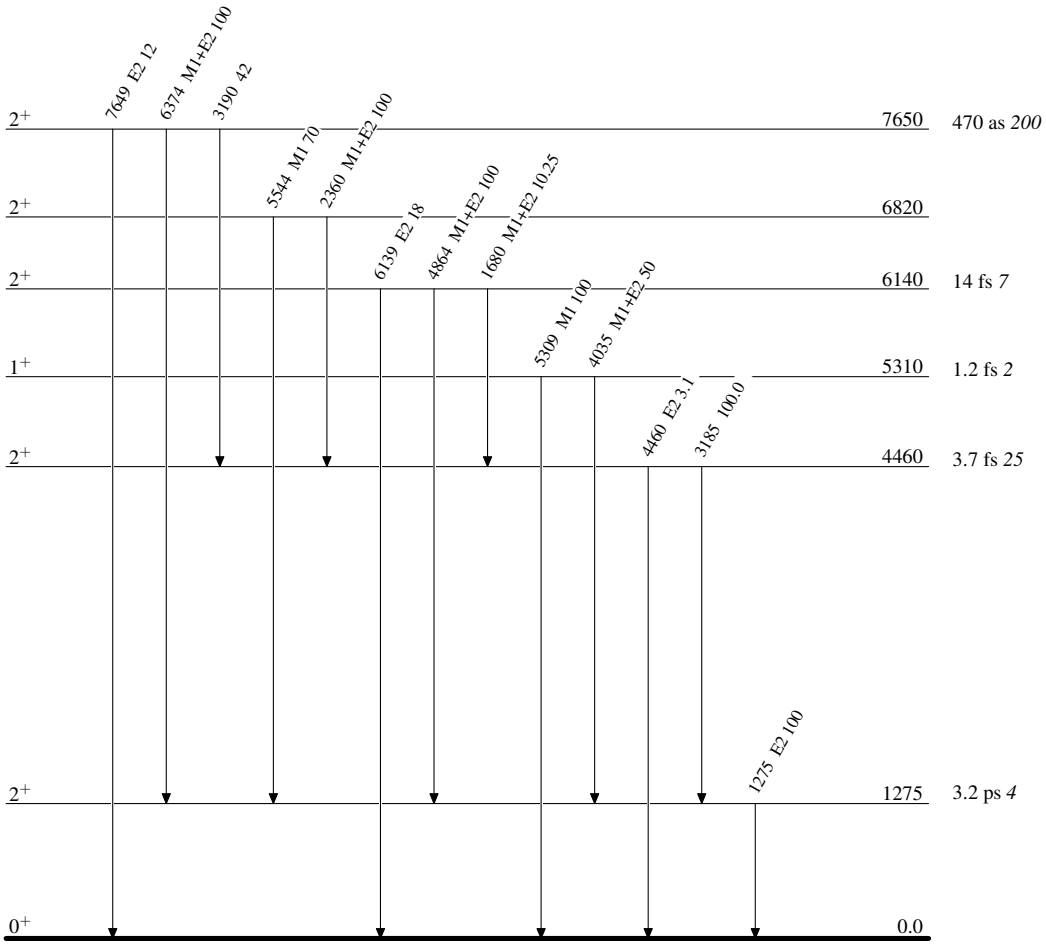
Level Scheme

Intensities: Relative photon branching from each level



$^{22}_{10}Ne_{12}$