Coulomb excitation   2001Ke08,1971ChZT,1970Le17

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alan L. Nichols, Balraj Singh, Jagdish K. Tuli	NDS 113, 973 (2012)	15-Apr-2012

2001Ke08 (also 2001Ke02): Beam=^{62}Ni at 155, 160 MeV, target=^{12}C. Measured Eγ, (^{12}C)γ coin, lifetime of first 2^+ state by
    Doppler-shift attenuation method in inverse kinematic reaction and g factor by transient-field technique.

1998Ke01: ^{16}O beam At E=35-60 MeV. Measured $\sigma(\theta)$ for g.s., 2^+ and 3^-.

1978Ha13: ^{32}S beam At E=73.8 MeV, recoil nuclei in magnetized Fe, measured g factor of first 2^+ state.

1977We05: ^{16}O beam At E=42, 48 MeV, deduced deformation lengths βR=0.90, 0.99 fm for 1173,2^+ keV.

1975Re17: ^{18}O beam At E=63 MeV, deduced deformation parameter β_2=0.208 for 1173, 2^+ level.

1971ChZT: Beams=^{16}O at 30, 32, 34 MeV; ^{12}C at 21, 22 MeV. Measured B(E2).

Additional information 1.

1970Le17: Beams=^{16}O at 25, 28, 30 MeV; ^{32}S at 60, 65, 70 MeV. Measured B(E2).

1969Ha31: Beam=^{28}Si at 70 MeV. Measured B(E2).

1965Es01: Beam=^{16}O at 36 MeV. Measured lifetime by DSA.

1962St02: Beam=^{4}He at 4-8 MeV. Measured B(E2).

1960An07 (also 1959Al95): Beam=^{14}N (1959Al95). Measured B(E2).

^{62}Ni Levels

E(level)	J$^{\pi\dagger}$	T$_{1/2}$	Comments
0.0	0^+		
1172.9	2^+	1.39 ps 9	B(E2)↑=0.088 3
			g=+0.167 24 (2001Ke08)
			g: from transient magnetic field method following Coulomb excitation. Other: g=+0.32 11 (1978Ha13, in Coul. ex. with ^{32}S beam at 73.8 MeV, 73.8 MeV, recoil nuclei in magnetized Fe).
			T$_{1/2}$: from 2001Ke08 (also 2001Ke02). Method: DSA following Coulomb excitation in ^{12}C(^{62}Ni,^{62}Ni'γ) reaction. Uncertainty of 0.05 ps quoted by 2001Ke08 is statistical only. Systematic uncertainty from stopping powers is estimated to be 5% (as per email reply from one of the authors of 2001Ke08), which has been added in quadrature by the evaluator. Other values: 1.58 ps 13 (1965Es01, DSA method following Coulomb excitation); 1.45 ps 5 from adopted BE2=0.088 3.
			Adopted B(E2)(↑)=0.088 3 from weighted average of 0.088 3 (1971ChZT), 0.090 3 (1970Le17), 0.084 5 (1969Ha31), 0.083 8 (1962St02), 0.085 17 (1960An07). Other: 0.140 35 (1959Al95, same group as 1960An07; evaluator assumes that value from 1959Al95 is superseded by that in 1960An07). 1970Le17 measured B(E2)(^{62}Ni,first 2^+)/B(E2)(^{60}Ni,first 2^+)= 0.964 26.
			deformation length=0.99 fm (1977We05), β_2=0.208 (1975Re17).
2336.3	4^+		

† From Adopted Levels.

$\gamma(^{62}$Ni)

E$_\gamma$	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
1163.4	2336.3	4^+	1172.9	2^+
1172.9	1172.9	2^+	0.0	0^+

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Level Scheme

4$^+$	1163.4	2336.3
2$^+$	1172.9	1172.9 1.39 ps *9*
0$^+$		0.0

$^{62}_{28}$Ni$_{34}$

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