Coulomb excitation   1980Le24,1972Ha37

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. Abriola(a), A. A. Sonzogni	NDS 111,1 (2010)	1-May-2009

See 1990Ko38 for E2 matrix elements.

(^{16}O, ^{16}O'γ)   E=36-42 MeV, enriched thick target, Eγ, Iγ (1980Le24).
        E=35 MeV, Eγ, Iγ (1990Ko38).
        E=30-38 MeV (1967Kr01),   E=33-38 MeV (1969He11),
        E=32-36 MeV (1972Ha37),
        E=27-54 MeV (1972Ha37) (to establish energy region of

(α,α')   E=7.0 MeV, σ(e,e') at 157.5° and 172.5° (1980Le1   6)
($\alpha,\alpha'\gamma$)   E=4-6.5 MeV (1956Te26), E=8.5 MeV (1962Ga10),
        E=3-10 MeV (1962St02),   E=6-9 MeV (1965Ro09),
        E=2.6-4 MeV (1972Sa27).
(^{28}Si, ^{28}Si')   E=70 MeV; (^{12}C, ^{12}C')   E=27 MeV; (^{16}O, ^{16}O')   E=36 MeV,
        transient field method (1984Pa20).
(^{14}N, ^{14}N'γ)   E=36-53 MeV (1962Ga13),   E=36 MeV (1962Er05),
        E=36-53 MeV (1962Ga10).
(^{58}Ni, ^{58}Ni'γ)   E=155 MeV; ^{208}Pb(^{72}Ge, ^{72}Ge'γ)   E=270 MeV (1990Ko38).

^{72}Ge Levels

E(level)	J$^{\pi}$[†]	T$_{1/2}$[‡]	Comments
0	0$^+$		
691.2 *5*	0$^+$		
834.01 *19*	2$^+$	3.35 ps *5*	Q=−0.13 *6* (1980Le16), g=+0.40 *3* (1984Pa20).
			g: Others: 0.50 *25*, IMPAC measurement (1969He11); 0.58 *15*, data of 1969He11 reanalyzed, corrected for decay in flight (1974Hu01); 0.37 *9*, from reanalysis of 1969He11 data, making use of the linear recoil velocity dependence of the transient field (1977Fa07).
			B(E2)(691-834)=0.132 *24* (1972Ha37). There is discrepancy in values deduced by two methods. From β^- decay: 0.0255 *25* (1967Kr01). The 1972Ha37 value is consistent with that derived from branching ratio and B(E2) value of the 834 level.
			B(E2)(0-834)=0.208 *3* (1980Le16). Others: 0.16 (1956Te26), 0.23 *2* (1962St02), 0.18 *2* (1972Sa27), and 0.21 *3* (1962Er05).
1463.9 *4*	2$^+$	4.5 ps +*8*−*6*	B(E2)(0-1464)=0.00095 *40* (1980Le24). Other: 0.0017 *5* (1962Ga13).
			B(E2)(834-1464)=0.114 *13* (1980Le24).
1728.2 *5*	4$^+$	1.55 ps *16*	B(E2)(834-1728)=0.115 *12* (1980Le24).
2514.7 *4*	3$^-$	5.7 ps *13*	B(E3)=0.051 *11* (1980Le24).

[†] From Adopted Levels.
[‡] Derived from B(EL) (1980Le24).

γ(^{72}Ge)

E$_i$(level)	J$^{\pi}_i$	E$_{\gamma}$[†]	I$_{\gamma}$[‡]	E$_f$	J$^{\pi}_f$	Mult.
834.01	2$^+$	142.8[#] *5*	0.012[#] *1*	691.2	0$^+$	E2
		834.01 *19*	100	0	0$^+$	E2
1463.9	2$^+$	629.9 *5*	100	834.01	2$^+$	M1+E2
		772.7[#]	0.11[#] *3*	691.2	0$^+$	E2
		1463.9 *5*	11 *2*	0	0$^+$	E2
1728.2	4$^+$	894.2 *5*		834.01	2$^+$	
2514.7	3$^-$	786.5 *5*	50 *5*	1728.2	4$^+$	

Coulomb excitation　　1980Le24,1972Ha37 (continued)

$\gamma(^{72}$Ge) (continued)

E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[‡]	E$_f$	J$_f^\pi$
2514.7	3$^-$	1050.8 *5*	100	1463.9	2$^+$
		1680.7 *5*	23 *11*	834.01	2$^+$

[†] From 1980Le24, except where noted otherwise.
[‡] Photon branching ratios from 1980Le24, except as noted.
[#] Taken from 1968Ca20 and 1971Re04 in β^- decay (1980Le24).

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Level Scheme

Intensities: Relative photon branching from each level

$^{72}_{32}$Ge$_{40}$