Coulomb excitation

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

1963Bj04: E(p)=4.5 MeV, ED=4.5 MeV.

1977Ro27: E(α)=13 MeV; 1982Ro07: E(α)=13 MeV, 16 MeV.

1979Ri13: E(^{16}O)=58-62 MeV; 1971RiZJ: E(^{16}O)=60 MeV.

Data are from 1979Ri13, except where noted; E(^{16}O)=60 MeV, θ=60°; metallic target enriched to 18% in ^{168}Yb; measured Eγ, Iγ, ^{16}O-γ coin (Ge(Li)), γ-ray yields, $\gamma(\theta)$. 1977Ro27 and 1982Ro07 used >99% pure isotope-separated sources.

Charge deformation parameters: β_2(Coulomb)=0.297, β_4(Coulomb)=−0.030 20 (1988Ne07); β_2(Coulomb)=0.325 +9−12, β_4(Coulomb)≈−0.01 (1977Ro27).

^{168}Yb Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	Comments
0.0	0$^+$		
87.9	2$^+$	1.49 ns 4	B(E2)↑=5.77 4 (1977Ro27)
			B(E2)↑: others: 5.43 25 (1963Bj04), 5.7 10 (1971RiZJ).
286.9	4$^+$		
586	6$^+$		
971	8$^+$		
984	2$^+$	1.03 ps 10	B(E2)↑=0.128 5
			B(E2)↑: weighted average of B(E2)=0.127 6 (1982Ro07) and B(E2)=0.132 12 (1979Ri13).
1154	(0$^+$)		B(E2)(2+(87.9) to 0+(1154))=0.016 6 (deduced from B(E2)(1066γ)=0.080 29 (1979Ri13)).
1171	(4$^+$)		
1234[@]	2$^+$		B(E2)↑=0.050 5 (1982Ro07)
1480[@]	3$^-$		B(E3)↑=0.22 4 (1982Ro07)
1600[@]	3$^-$		B(E3)↑=0.09 2 (1982Ro07)

[†] From Eγ, except As noted.

[‡] Adopted values.

[#] Deduced from B(E2) and adopted transition properties.

[@] From 1982Ro07.

$\gamma(^{168}$Yb)

E$_{\gamma}$[†]	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$
87.9	87.9	2$^+$	0.0	0$^+$
199.0	286.9	4$^+$	87.9	2$^+$
299	586	6$^+$	286.9	4$^+$
385	971	8$^+$	586	6$^+$
884	1171	(4$^+$)	286.9	4$^+$
896	984	2$^+$	87.9	2$^+$
984	984	2$^+$	0.0	0$^+$
1066	1154	(0$^+$)	87.9	2$^+$

[†] From 1979Ri13.

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Level Scheme

${}^{168}_{70}\text{Yb}_{98}$