$^{89}\text{Y}(\alpha,\alpha')$ 1966Al03, 1969Bi03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 114, 1 (2013)	20-Oct-2012

Includes (α,α).

1966Al03: E=42 MeV. Measured $\sigma(\theta)$ for ten levels, deduced deformation lengths.

1969Bi03: E=65 MeV. Measured $\sigma(\theta)$, deduced deformation parameters. Levels reported at 1510, 1750, 2220, 2530, 2840, 3090, 3750.

2009Ki16: (α,α) E=15.51, 18.63 MeV; measured σ; deduced optical model parameters. Analyzed $\sigma(\theta)$ data for (α,α) E=20-159 MeV. 2008Ki06 is from the same group.

Additional information 1.

1988Tu01: E=172.5 MeV. Measured $\sigma(\theta)$, deduced giant-quadrupole resonance (GQR).

1970PaZV: E=26 MeV. Population of odd parity states.

1978Mo10: E=96, 115 MeV. Measured low-energy octupole resonance. The spectrum of scattered α particles shows several peaks up to 15 MeV of excitation.

Other (α,α): 1988Go25 (100 MeV), 1982En04 (25 MeV), 1979Be55 (27.3 MeV), 1976Be31 (104 MeV), 1975Wi24 (18-25 MeV), 1972Br30 and (166 MeV).

^{89}Y Levels

Reduced transition probabilities (in W.u.) from 1966Al03 are given under comments.

E(level)[†]	J^{π}[‡]	L[†]	β_L[#]	Comments
0	$1/2^-$			
906	$9/2^+$	5	0.014	G=0.25.
1510	$3/2^-$	2	0.020	G=0.42. β_2=0.047 (1969Bi03).
1750	$5/2^-$	2	0.028	G=0.84. β_2=0.049 (1969Bi03).
2220	$5/2^+$	3	0.037	G=1.47. β_3=0.109 (1969Bi03).
2530	$7/2^+$	3	0.047	G=2.32. β_3=0.109 (1969Bi03).
2840	$(7/2)^+$	(3)	0.034	G=1.27.
3100		2,4	0.023	G=0.53.
3700	$5/2^+$	(3)	0.027	G=1.0. β_3=0.086 (1969Bi03).
3980	$3/2^-$	(2)	0.024	G=0.51.
4170		(2)	0.024	G=0.51.
4310				
4470				
4580?				
7.1×10^3				E(level): low-energy octupole resonance from 1978Mo10 with G≈13.
14.8×10^3 _3_		2		E(level),L: GQR from 1988Tu01, FWHM=4.5 MeV _4_.

[†] From 1966Al03. See also 1969Bi03 for energies and L-values for selected groups.

[‡] From Adopted Levels.

[#] Deformation parameter β_L deduced from $\beta_L R$ (1966Al03), using R_0=1.6 for the imaginary part of the potential.