^{44}Ca(e,e′) 1989It02,1971He08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 190,1 (2023)	20-Jun-2023

1989It02: E=62.5-250 MeV electron beams were produced from the linear accelerators both at the Laboratory of Nuclear Science, Tohoku University and at the Accelerator Laboratory, University of Saskatchewan. Target was 44.3 mg/cm^2 98.6% enriched ^{44}Ca metallic foil. Scattered electrons were detected by a hodoscope-type array of solid state detector or plastic scintillators. Measured σ(E(e′),θ). Deduced levels, B(El).

1971He08: E=198, 250, 300 MeV electron sources were produced from the Stanford Mark 3 electron accelerator. Enriched target of ^{44}Ca. Scattered electrons detected by a ladder detector. Measured σ(E(e′),θ). Deduced levels, B(El).

Others:

1968Fr11: E=250, 500 MeV. σ(E(e′),θ).

1970Ra31: E=250 MeV. Deduced nuclear charge distributions.

1978Gr02: E=31-67 MeV. Measured σ(E(e′),θ). Matrix element for 0^+ level.

1980St17: E=39 MeV. Measured σ(E(e′),θ). No 1^+ states seen.

1981It02: E=124-250 MeV. Measured σ(E(e′),θ). Deduced GDR.

1984Ra04: E=50 MeV. Measured σ(E(e′),θ).

^{44}Ca Levels

B(EL)↑ values from 1989It02 are based on TASSIE model.

E(level)[†]	J$^\pi$[#]	L[‡]	Comments
0	0^+		Strongly populated level.
1160	2^+	2	B(E2)↑=0.0550 *20* (1989It02) BE2=0.048 *3* (1971He08).
1880	0^+		Level from 1978Gr02. E0 matrix element=5.45 fm^2 *41*.
2280	4^+	4	E(level): from 1971He08.
2660	2^+		B(E2)↑=0.0079 *7* (1989It02)
3259?		2	B(E2)↑=0.0054 *10* (1971He08) E(level): from 1971He08. No such level is found in any other studies, thus is not given in Adopted Levels.
3310	3^-	3	B(E3)↑=0.0095 *9* (1989It02) BE3=0.00559 *23* (1971He08). The most intense peak in (e,e′) E=250 MeV spectrum (1989It02).
3910	5^-	5	B(E5)↑=0.000096 *8* (1989It02) BE5=0.000053 *5* (1971He08).
4350	3^-		B(E3)↑=0.0018 *2* (1989It02) for 4350+4390.
4390	3^-		B(E3)↑: see comment for 4350 level.
4560	(5^-)		B(E5)↑=0.000036 *5* (1989It02)
4900	3^-		
11850 *10*			E(level): from 1984Ra04. B(M2)↑=0.30 *7* (1984Ra04).

[†] From 1989It02, unless otherwise stated. M2 excitation at 11850 is from 1984Ra04. Some additional weak M2 excitations are also found by 1984Ra04 near this energy, but no energies are given.

[‡] From 1971He08.

[#] From the Adopted Levels.