Coulomb excitation **2013Ha06,1973To07**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen[#] and Balraj Singh	NDS 135, 1 (2016)	31-May-2016

2013Ha06: (^{42}Ca,^{42}Ca′γ) E=170 MeV ^{42}Ca beam was produced at the Laboratori Nazionali di Legnaro. A 1 mg/cm^2 ^{208}Pb target. γ-rays were detected with the γ-ray spectrometer AGATA and charged particles were detected with the DANTE array. Measured Eγ, Iγ, $\gamma\gamma$-coin. Deduced levels, deformation parameters.

1973To07 (also 1972To01): (^{32}S,^{32}S′γ) E=60 MeV. Measured static quadrupole moment by reorientation method, γ(^{32}S)(θ).

^{42}Ca Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0	0^+		
1525	2^+	0.825 ps *28*	Q=−0.14 *7* (1973To07) B(E2)↑=0.0412 *15* $T_{1/2}$: from B(E2) (1973To07).
1837	0^+		
2424	2^+		
2752	4^+		
3254	4^+		

[†] From 2013Ha06.
[‡] From Adopted Levels.

γ(^{42}Ca)

In 2013Ha06, two strong γ-rays at E-376 and 2048 were observed. From a dedicated experiment to study the low energy part of ^{42}Ca by the ^{12}C(^{32}S,2p) reaction, it is suggested that the two γ-rays could originate from the sub-barrier one neutron transfer reaction ^{208}Pb(^{42}Ca,^{43}Ca).

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
312	1837	0^+	1525	2^+
899	2424	2^+	1525	2^+
1227	2752	4^+	1525	2^+
1525	1525	2^+	0	0^+
1729	3254	4^+	1525	2^+
2424	2424	2^+	0	0^+

[†] From 2013Ha06.

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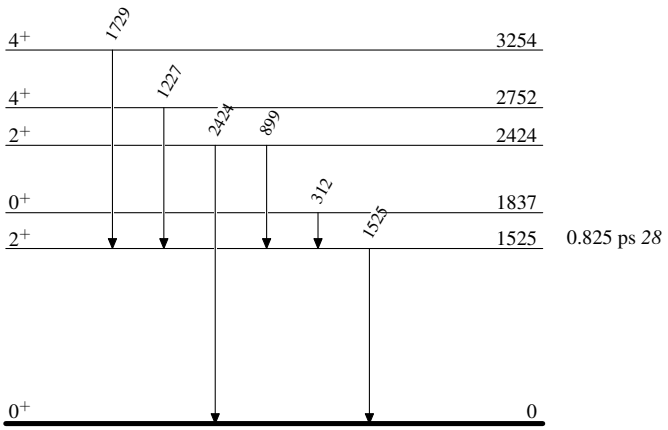
Level Scheme



$^{42}_{20}Ca_{22}$