^{41}K(^{3}He,dγ) 1969Te05

History

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

Target ^{41}K g.s. $J^{\pi}=3/2^{+}$.

1969Te05: E=18 MeV ^{3}He beam. Deuterons were detected with ΔE-E counter telescopes and γ-rays were detected with a NaI crystal. Measured γ, particle-γ coin, particle-$\gamma(\theta)$. Deduced decay of isobaric-analog states.

^{42}Ca Levels

E(level)	J^{π}[†]	L	Comments
0	0^{+}		
1510	2^{+}		
2420			
2750			
3190			
3440[‡]	3^{-}		
3950[‡]	(4^{-})		
4100[‡] *5*	5^{-}		E(level): doublet: 4095 and 4113 in (p,p′γ) (1969Te05).
4420[‡] *5*	(2^{-})		E(level): triplet: 4417, 4442 and 4450 in (p,p′γ) (1969Te05).
9750 *10*	(2^{-})[#]	3	
9850 *10*	(3^{-})[#]	3	
10000 *10*	(4^{-})[#]	3	
10450 *10*	(5^{-})[#]	3	

[†] From 1969Te05.
[‡] Possible T=1 state.
[#] Possible $T=^{2,}F_{7/2}d^{-1}_{3/2}$ multiplet, in analogy with low-lying states in ^{42}K.

$\gamma(^{42}Ca)$

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}[‡]	E_f	J^{π}_f	Comments
3440	3^{-}	690	17 *3*	2750		
		1020	50 *8*	2420		
		1930	100 *15*	1510	2^{+}	
3950	(4^{-})	510	100	3440	3^{-}	
		1200	<70	2750		
4100	5^{-}	660	100 *15*	3440	3^{-}	
		910	30 *4*	3190		
		1350	14 *2*	2750		
4420	(2^{-})	980	43 *6*	3440	3^{-}	
		2910	100 *15*	1510	2^{+}	
10450	(5^{-})	6350		4100	5^{-}	I_{γ}: >60% branch.

[†] From level-energy differences.
[‡] From 1969Te05.

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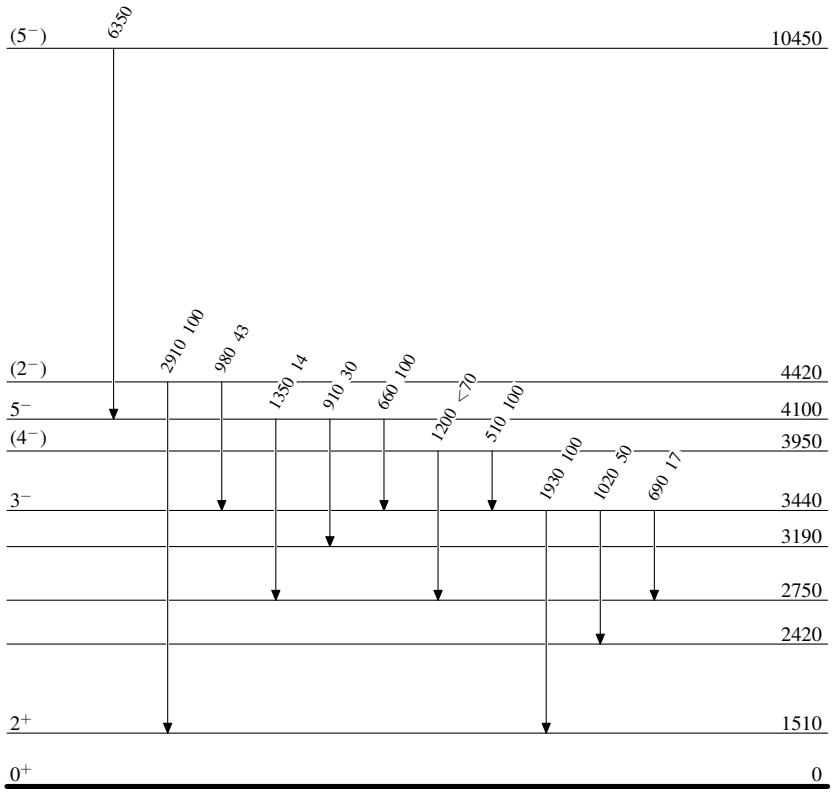
Level Scheme

Intensities: Relative photon branching from each level



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