

$^{48}\text{Ca}(^{238}\text{U},\text{X}\gamma)$ 2007Re19

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 157, 1 (2019)	15-Apr-2019

2007Re19: E=1.31 GeV beam energy, near the Coulomb barrier provided by CSSI cyclotron at GANIL facility. Enriched target.

Residues detected with VAMOS spectrometer at an angle of 35° to the beam axis. Focal plane detection provided by a secondary electron detector, a segmented ionization chamber and a 21-element Si ball. Measured E_γ , I_γ , $\gamma\gamma$ coin using EXOGAM array of 11 segmented clover Ge detectors. Comparisons with shell-model calculations.

 ^{50}Ca Levels

E(level) [†]	J^π [‡]	Comments
0.0	0 ⁺	
1026.2 3	2 ⁺	
3004.5 7	(2 ⁺)	
3997.7 7	(3 ⁻)	
4514.7 9	(4 ⁺)	Additional information 1.
4831.6 8	(4 ⁻)	
4870 5	(2 ⁺)	
5110.2 9	(5 ⁻)	

[†] From a least-squares fit to γ -ray energies.

[‡] As proposed in 2007Re19 based on decay pattern and shell-model predictions, most of the assignments are tentative.

 $\gamma(^{50}\text{Ca})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
595.5 3	6.5 3	5110.2	(5 ⁻)	4514.7	(4 ⁺)
833.9 5	4.8 4	4831.6	(4 ⁻)	3997.7	(3 ⁻)
1026.2 3	100 3	1026.2	2 ⁺	0.0	0 ⁺
1978.2 6	11.6 6	3004.5	(2 ⁺)	1026.2	2 ⁺
2971.4 6	20.0 6	3997.7	(3 ⁻)	1026.2	2 ⁺
3488.4 8	12.0 5	4514.7	(4 ⁺)	1026.2	2 ⁺
4870 5	2.3 5	4870	(2 ⁺)	0.0	0 ⁺




[†] From e-mail reply received from one of the authors of 2007Re19 (S. Bhattacharya) on Dec 18, 2007.

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Level Scheme

Intensities: Relative I_γ

Legend

-  $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
-  $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
-  $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

