

${}^{238}\text{U}({}^{48}\text{Ca},\text{X}\gamma)$  **2005Br18**

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

Also includes  ${}^{208}\text{Pb}({}^{48}\text{Ca},\text{X}\gamma)$  in **2005Br18**.

**2005Br18**: E=210 MeV beam from the ALPI Linac at the INFN Legnaro and measured  $\gamma$  rays with the GASP array; E=280 MeV beam with  ${}^{208}\text{Pb}$  target and E=330 MeV beam with  ${}^{238}\text{U}$  target from the ATLAS accelerator at ANL, and measured  $\gamma$  rays with the Gammasphere array. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma\gamma$ -coin. Deduced level scheme. Comparison with shell-model calculations.

 ${}^{50}\text{Ca}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	Comments
0.0	$0^+$	
1026.71 <i>10</i>	$2^+$	
3997.11 <i>18</i>	$(3^-)$	
4515.02 <i>14</i>	$(4^+)$	<a href="#">Additional information 1.</a>
4830.4 <i>3</i>	$(4^-)$	
5084.48 <i>23</i>	$(4^-)$	
5109.80 <i>16</i>	$(5^-)$	
5147.32 <i>17</i>	$(5^+)$	
5516.85 <i>18</i>	$(5^-)$	
6869.19 <i>23</i>	$(7^-)$	

<sup>†</sup> From yrast population arguments,  $\gamma$ -decays, and shell model calculations.

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

$E_\gamma$ <sup>†</sup>	$I_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	$E_\gamma$ <sup>†</sup>	$I_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$
407.3 <i>2</i>	<i>6 1</i>	5516.85	$(5^-)$	5109.80	$(5^-)$	1087.2 <i>3</i>	<i>5 1</i>	5084.48	$(4^-)$	3997.11	$(3^-)$
432.3 <i>2</i>	<i>6 1</i>	5516.85	$(5^-)$	5084.48	$(4^-)$	1112.6 <i>2</i>	<i>5 1</i>	5109.80	$(5^-)$	3997.11	$(3^-)$
518.4 <i>7</i>	<i>2 1</i>	4515.02	$(4^+)$	3997.11	$(3^-)$	1352.9 <i>3</i>	<i>10 2</i>	6869.19	$(7^-)$	5516.85	$(5^-)$
594.8 <i>1</i>	<i>73 4</i>	5109.80	$(5^-)$	4515.02	$(4^+)$	1519.7 <i>5</i>	<i>4 1</i>	5516.85	$(5^-)$	3997.11	$(3^-)$
632.3 <i>1</i>	<i>13 2</i>	5147.32	$(5^+)$	4515.02	$(4^+)$	1759.1 <i>2</i>	<i>11 1</i>	6869.19	$(7^-)$	5109.80	$(5^-)$
833.3 <i>2</i>	<i>31 3</i>	4830.4	$(4^-)$	3997.11	$(3^-)$	2970.2 <i>2</i>	<i>42 4</i>	3997.11	$(3^-)$	1026.71	$2^+$
1001.9 <i>2</i>	<i>8 1</i>	5516.85	$(5^-)$	4515.02	$(4^+)$	3488.2 <i>1</i>	<i>100</i>	4515.02	$(4^+)$	1026.71	$2^+$
1026.7 <i>1</i>	$\geq 142$	1026.71	$2^+$	0.0	$0^+$						




<sup>†</sup> From e-mail reply received from one of the authors of **2005Br18** (R. Broda) on June 23, 2009.

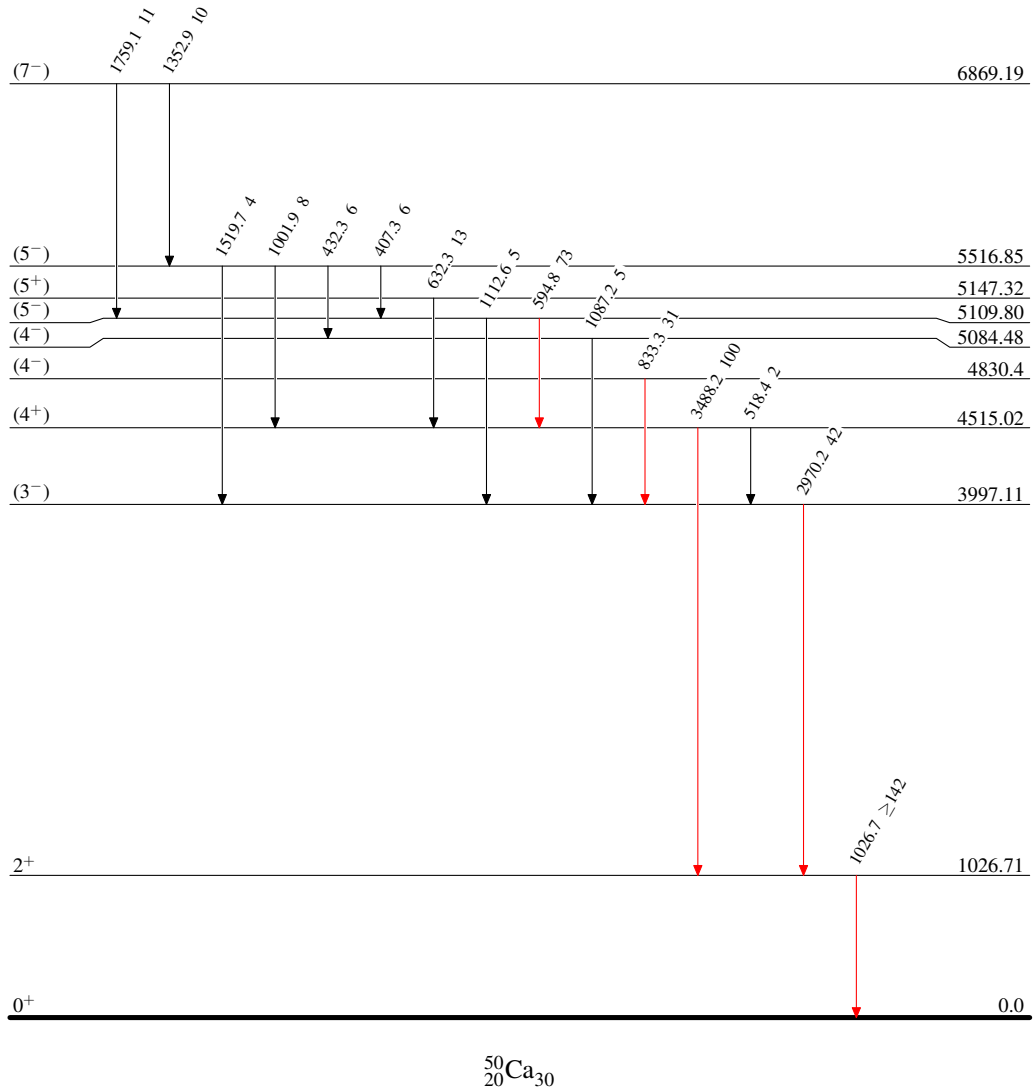
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Legend

## Level Scheme

Intensities: Relative  $I_\gamma$ 

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

 $^{50}_{20}\text{Ca}_{30}$