

$^{48}\text{Ca}(^{238}\text{U},\text{X}\gamma)$  2008Bh09

Type	Author	History Citation	Literature Cutoff Date
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Deep inelastic reactions near Coulomb barrier.

**2008Bh09:** E=1.310 GeV  $^{238}\text{U}$  beam was provided by GANIL cyclotron. Target was 1 mg/cm<sup>2</sup> isotopically enriched  $^{48}\text{Ca}$ .

Charged particles were identified using large acceptance variable mode spectrometer VAMOS and a focal plane detector;  $\gamma$  rays were detected with the EXOGAM array of eleven segmented clover Ge detectors with Compton-suppression. Measured  $E_\gamma$ ,  $I_\gamma$ . Deduced levels.

 $^{48}\text{Ar}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>
0	0 <sup>+</sup>
1041 9	(2 <sup>+</sup> )
2197 18	(2 <sup>+</sup> )
2770 16	(4 <sup>+</sup> )
3283?	(3 <sup>+</sup> )

<sup>†</sup> From  $E_\gamma$  data.

<sup>‡</sup> Assignments for excited states are proposed by **2008Bh09** from comparisons with shell-model calculations, and systematics of even-even Ar isotopes (A=36-46).

 $\gamma(^{48}\text{Ar})$ 

$E_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
1041 9	1041	(2 <sup>+</sup> )	0	0 <sup>+</sup>	
1085 <sup>†</sup>	3283?	(3 <sup>+</sup> )	2197	(2 <sup>+</sup> )	
1156 15	2197	(2 <sup>+</sup> )	1041	(2 <sup>+</sup> )	
1729 13	2770	(4 <sup>+</sup> )	1041	(2 <sup>+</sup> )	
2197 <sup>†</sup>	2197	(2 <sup>+</sup> )	0	0 <sup>+</sup>	$E_\gamma, I_\gamma$ : $\gamma$ not observed, limit of its intensity given as <30% of 1156 $\gamma$ .

<sup>†</sup> Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme-----▶  $\gamma$  Decay (Uncertain)