

Coulomb excitation **1999Co23**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 152, 1 (2018)	30-Sep-2017

**1999Co23:**  $^{197}\text{Au}(^{38}\text{Ca}, ^{38}\text{Ca}'\gamma)$   $E=56.1$  MeV/nucleon  $^{38}\text{Ca}$  beam was produced by fragmentation of 80 MeV/nucleon  $^{40}\text{Ca}$  beam from the K1200 cyclotron at NSCL on a  $202$  mg/cm $^2$   $^9\text{Be}$  target. Fragments were identified and separated by the A1200 fragment separator. The secondary target was  $184.1$  mg/cm $^2$   $^{197}\text{Au}$ .  $\gamma$  rays were detected with an array of 38 NaI(Tl) detectors and scattered particles were detected with a cylindrical fast-slow plastic phoswich detector. Measured  $\sigma(E\gamma)$ , particle- $\gamma$ -coin. Deduced B(E2).

 $^{38}\text{Ca}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	$\sigma$ (mb)	Comments
0	$0^+$		
2206	$2^+$	19 4	B(E2) $\uparrow=0.0096$ 21
3685	$2^+$	21 5	B(E2) $\uparrow=0.0122$ 30

$J^\pi$ : **1999Co23** have considered the possibility that this level may be  $3^-$ ; but the deduced B(E3) (from cross section) disagrees with RUL, concluding, therefore, that most of the strength must come from  $2^+$ .

<sup>†</sup> From Coulomb excitation from  $0^+$  for excited states.

 $\gamma(^{38}\text{Ca})$ 

$E_i$ (level)	$J_i^\pi$	$E_\gamma$	$I_\gamma$	$E_f$	$J_f^\pi$	Comments
2206	$2^+$	2206 10		0	$0^+$	
3685	$2^+$	1448 25	16 12	2206	$2^+$	$\sigma(E\gamma)=3.3$ mb 22.
		3685 21	84 12	0	$0^+$	$\sigma(E\gamma)=17$ mb 5.

**Coulomb excitation 1999Co23**Level Scheme

Intensities: % photon branching from each level

