

Coulomb excitation 1999Ib01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja, E. A. Mccutchan		NDS 133, 1 (2016)	30-Sep-2015

${}^{197}\text{Au}({}^{41}\text{S}, {}^{41}\text{S}')$ with $E({}^{41}\text{S})=47.4$ MeV/nucleon. ${}^{41}\text{S}$ beam produced by fragmentation of a ${}^{48}\text{Ca}$ beam with $E=70$ MeV/nucleon on a ${}^9\text{Be}$ target. Fragments separated in the A1200 separator and identified through energy loss and TOF measurements. Measured E_γ , I_γ with an array of 38 cylindrical NaI(Tl) detectors and scattered beam- γ coincidences using a fast/slow plastic phoswich detector.

1999Ib01 consider systematics of transition strengths in this mass region and argue that the observed transitions observed correspond to E2 transitions since 1) the largest known M1 transition strengths result in cross sections comparable to the slowest E2 transitions and 2) with E1 strengths commonly on the order of 10^{-4} W.u. it is expected that no strong E1 excitations would be observed. However, they also state that since large E1 strengths are observed in ${}^{29}\text{P}$ and ${}^{30}\text{P}$, E1 excitations cannot be completely ruled out.

 ${}^{41}\text{S}$ Levels

E(level) [†]	Comments
0	J^π : (7/2 ⁻) proposed by 1999Ib01 based on particle-rotor model calculations (1999Ib01).
449 8	$B(E2)\uparrow=0.0167$ 65 J^π : (5/2 ⁻) proposed by 1999Ib01 based on particle-rotor model calculations (1999Ib01).
904 16	$B(E2)\uparrow=0.0232$ 56 J^π : (9/2 ⁻) proposed by 1999Ib01 based on particle-rotor model calculations (1999Ib01).

[†] From E_γ .

 $\gamma({}^{41}\text{S})$

E_γ	$E_i(\text{level})$	E_f
449 8	449	0
904 16	904	0

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