^{238}U(P,Fγ) 2016Ra07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh	NDS 164, 1 (2020)	15-Feb-2020

2016Ra07: E(p)=25 MeV beam from K130 cyclotron of the Accelerator Laboratory of the University of Jyvaskyla (JYFL). Target=74 mg/cm^2 thick, with an estimated fission rate of ≈105 fissions/s. Measured Eγ, Iγ, $\gamma\gamma$-coin using JUROGAM-II array of 24 Clovers and 15 single-crystal Ge detectors. Deduced high-spin levels, J^π, rotational band. Comparison with Generalized Intermediate Coupling Model (GICM), and the Quasi-Particle Rotor Model (QPRM) calculations. This paper is a conference report.

^{98}Y Levels

E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]
0.0	0$^-$	445.7 *12*	3$^-$	883.4[#] *14*	7$^-$	1530.4[#] *15*	(10$^-$)
119.3 *10*	1$^-$	495.7[#] *13*	4$^-$	1069.2[#] *15*	8$^-$	1840.0[#] *15*	(11$^-$)
170.7 *10*	2$^-$	596.3[#] *14*	5$^-$	1179.5 *16*	10$^-$	2097.4[#] *15*	(12$^-$)
374.7 *12*	4$^-$	725.9[#] *14*	6$^-$	1289.7[#] *15*	(9$^-$)		

[†] Deduced by evaluators from least-squares fit to Eγ data, assuming 0.5 keV uncertainty when stated to nearest tenth of a keV, 1 keV otherwise.

[‡] As given by 2016Ra07, based on previous assignments, band structure in the present work, and comparison with GICM and QPRM calculations.

[#] Band(A): K^π=4$^-$, prolate band. Proposed configuration=π5/2[422]⊗ν3/2[541] for 4$^-$ to 10$^-$ states, and dominant π5/2[422]⊗ν1/2[550] for 11$^-$ and 12$^-$ states.

γ(^{98}Y)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
50	495.7	4$^-$	445.7	3$^-$	220.5	1289.7	(9$^-$)	1069.2	8$^-$
51	170.7	2$^-$	119.3	1$^-$	230	725.9	6$^-$	495.7	4$^-$
71	445.7	3$^-$	374.7	4$^-$	240.7	1530.4	(10$^-$)	1289.7	(9$^-$)
100.7	596.3	5$^-$	495.7	4$^-$	257.4	2097.4	(12$^-$)	1840.0	(11$^-$)
110.3	1179.5	10$^-$	1069.2	8$^-$	275	445.7	3$^-$	170.7	2$^-$
119	119.3	1$^-$	0.0	0$^-$	287.1	883.4	7$^-$	596.3	5$^-$
121	495.7	4$^-$	374.7	4$^-$	309.6	1840.0	(11$^-$)	1530.4	(10$^-$)
129.7	725.9	6$^-$	596.3	5$^-$	343	1069.2	8$^-$	725.9	6$^-$
157.8	883.4	7$^-$	725.9	6$^-$	406.4	1289.7	(9$^-$)	883.4	7$^-$
171	170.7	2$^-$	0.0	0$^-$	461.2	1530.4	(10$^-$)	1069.2	8$^-$
185.9	1069.2	8$^-$	883.4	7$^-$	550.3	1840.0	(11$^-$)	1289.7	(9$^-$)
204	374.7	4$^-$	170.7	2$^-$	567.0	2097.4	(12$^-$)	1530.4	(10$^-$)

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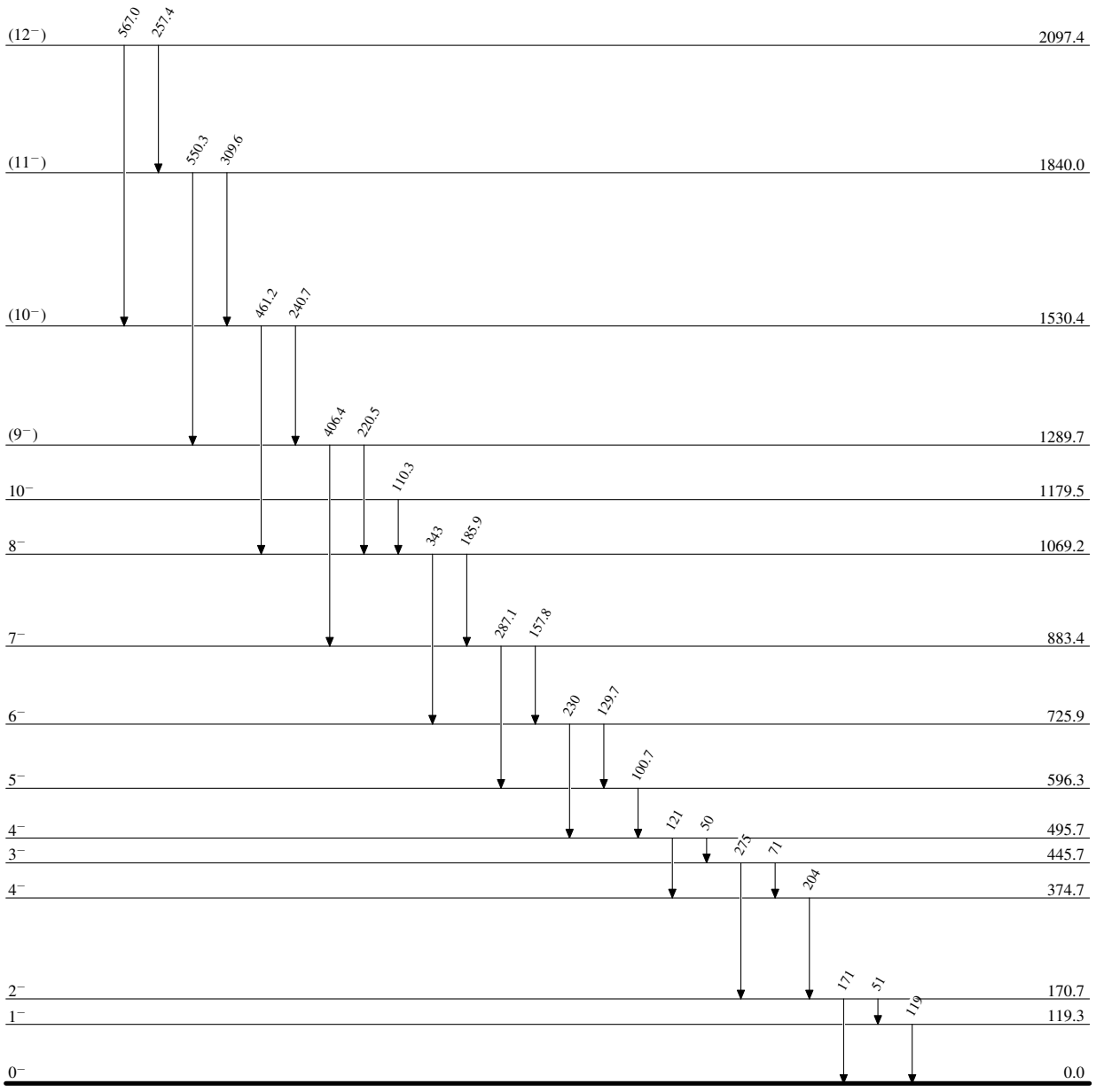
Level Scheme



$^{98}_{39}Y_{59}$

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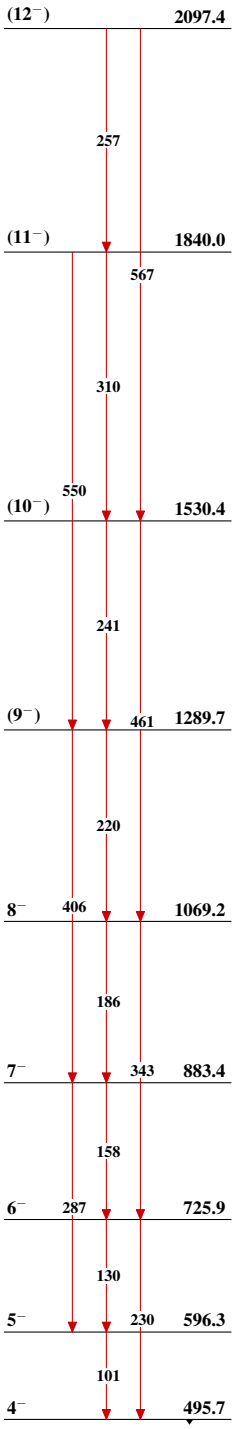
Band(A): $K^{\pi}=4^{-}$, prolate band



$^{98}_{39}Y_{59}$