

$^{238}\text{U}(\alpha, \text{F}\gamma)$ 2004Wu08

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

2004Wu08: E=30 MeV alpha beam was produced from the 88-inch cyclotron at LBNL. Target was $300 \mu\text{g}/\text{cm}^2$ ^{238}U on a carbon backing. γ rays were detected with the Gammasphere array and fission fragments were detected with a 4π segmented heavy-ion detector array CHICO. Measured E_γ , I_γ , $\gamma\gamma$ -coin, (fission fragment) γ -coin. Deduced levels, J, π , band structures. Comparisons with available data and theoretical calculations.

 ^{98}Zr Levels

<u>$E(\text{level})^\dagger$</u>	<u>$J^\pi^\ddagger$</u>	<u>$E(\text{level})^\dagger$</u>	<u>$J^\pi^\ddagger$</u>	<u>$E(\text{level})^\dagger$</u>	<u>$J^\pi^\ddagger$</u>	<u>$E(\text{level})^\dagger$</u>	<u>$J^\pi^\ddagger$</u>
0.0	0^+	1843.4 [#]	4^+	3116.6		4756.4 [#]	12^+
852.7	0^+	2047.6	4^+	3216.4 [#]	8^+	5590.2 [#]	14^+
1222.7	2^+	2277.2	4^+	3811.2		6539.8 [#]	16^+
1590.7	2^+	2491.0 [#]	6^+	3894.0	7^-	7596.8 [#]	18^+
1806.0	3^-	2800.7	5^-	3986.4 [#]	10^+	8726.3 [#]	20^+

[†] From 2004Wu08.

[‡] As proposed in figure 3 of 2004Wu08.

[#] Band(A): Band based on 4^+ .

 $\gamma(^{98}\text{Zr})$

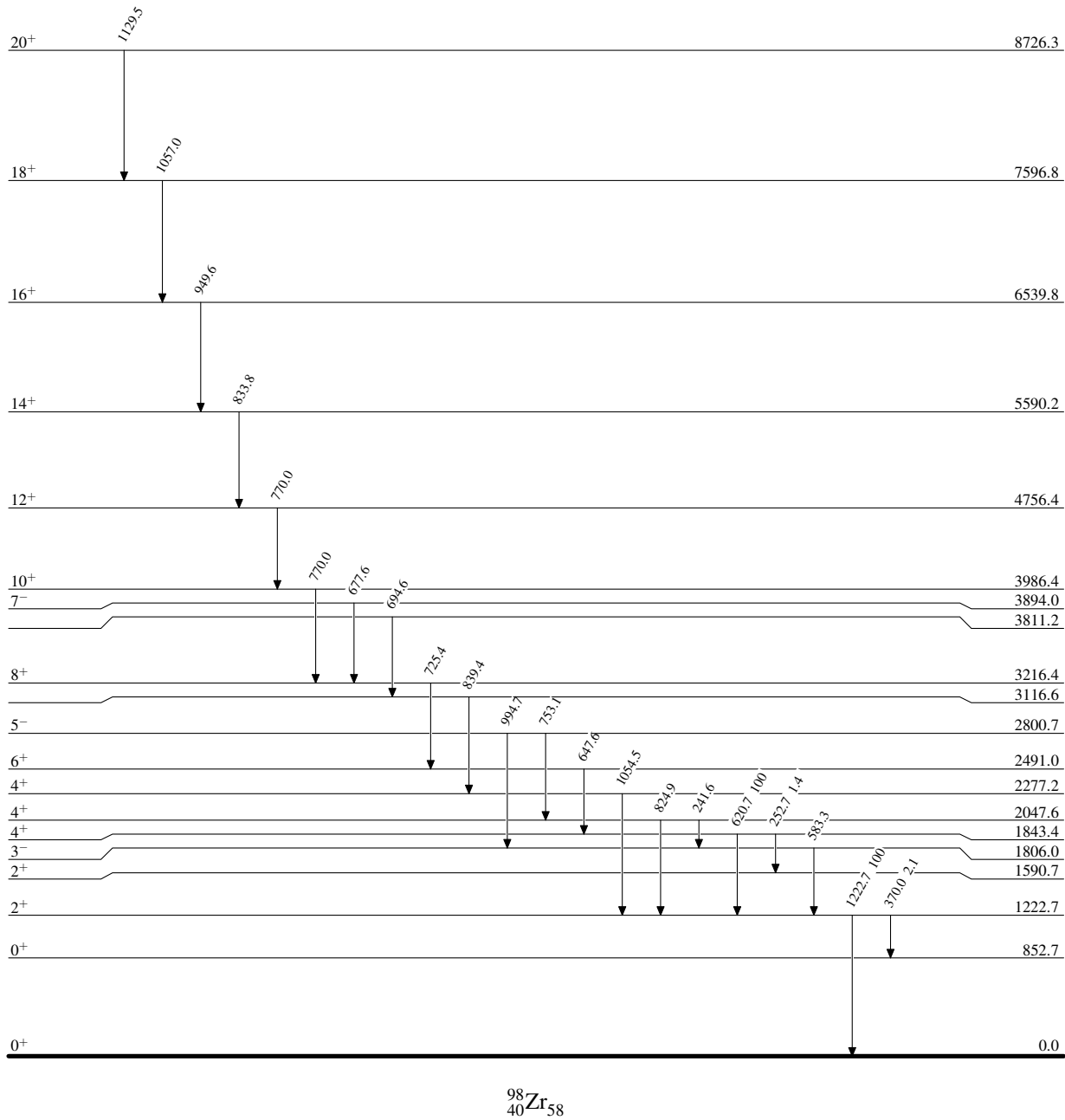
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>
1222.7	2^+	370.0 10	2.1 2	852.7 0^+		3116.6		839.4 10	2277.2 4^+	
		1222.7 10	100	0.0 0^+		3216.4	8^+	725.4 10	2491.0 6^+	
1806.0	3^-	583.3 10		1222.7 2^+		3811.2		694.6 10	3116.6	
1843.4	4^+	252.7 10	1.4 2	1590.7 2^+		3894.0	7^-	677.6 10	3216.4 8^+	
		620.7 10	100	1222.7 2^+		3986.4	10^+	770.0 10	3216.4 8^+	
2047.6	4^+	241.6 10		1806.0 3^-		4756.4	12^+	770.0 10	3986.4 10^+	
		824.9 10		1222.7 2^+		5590.2	14^+	833.8 10	4756.4 12^+	
2277.2	4^+	1054.5 10		1222.7 2^+		6539.8	16^+	949.6 10	5590.2 14^+	
2491.0	6^+	647.6 10		1843.4 4^+		7596.8	18^+	1057.0 10	6539.8 16^+	
2800.7	5^-	753.1 10		2047.6 4^+		8726.3	20^+	1129.5 10	7596.8 18^+	
		994.7 10		1806.0 3^-						

[†] From level-energy difference, 1 keV uncertainty assigned as stated in caption of Figure 3 in 2004Wu08.

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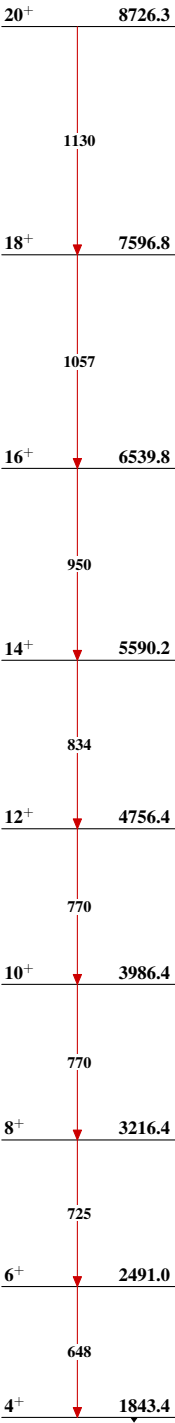
Level Scheme

Intensities: Relative photon branching from each level



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Band(A): Band based on 4^+



$^{98}_{40}\text{Zr}_{58}$