^{90}Zr(n,γ) E=res 2006MuZX,2008Ta04

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 114, 1293 (2013)	1-Sep-2013

Others: 1975Bo17 (E(n)=3-200 keV); 1974To01 (E(n)=5-225 keV); 2005Ta23.

2008Ta04: E(n)<250 MeV pulsed beam from n_TOF facility at CERN, produced after slowing/moderating spallation neutrons from 20 GeV p bombardment of a massive Pb target surrounded by 5.8 cm layer of water; ^{6}Li layer on mylar foil for relative n flux determination; two thin C_6D_6 liquid scin cells 9.2 cm upstream of sample to detect prompt γ cascade following n capture; 97.7% enriched ^{90}Zr oxide target; measured capture yield, Γ_γ, Γ_n, capture kernel, resonance energies (E(n)=3-70 keV); analyzed using the R matrix code SAMMY; deduced Maxwellian averaged cross sections. see also 2005Ta23.

Resonance-property data have been taken from the evaluation by 2006MuZX for E(res)>70 keV, but from 2008Ta04 for E(res)<70 keV. The statistical weighting factor g is 1 for J=1/2 and 2 for J=3/2. 2008Ta04 note that their data for Γ_γ are typically 10% lower than the values adopted by 2006MuZX.

^{91}Zr Levels

E(level)[†]	J$^\pi$	L	E(res)(lab) eV	Comments
7198.7188[‡] *4*	1/2[‡]	0[‡]	3.8612 *4*	Γ_γ=0.0780 eV *23*, Γ_n=10.8 eV *5*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0770 eV *23* (2008Ta04).
7198.86427[‡] *6*	3/2[‡]	1[‡]	4.00832 *6*	Γ_γ=0.250 eV *22*, Γ_n=0.089 eV *4*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.130 eV *5* (2008Ta04).
7202.0805[‡] *2*	3/2[‡]	1[‡]	7.2603 *2*	Γ_γ=0.150 eV *5*, Γ_n=3.20 eV *19*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.287 eV *9* (2008Ta04). other E(res): 7.251 *5* (2006MuZX).
7203.6578[‡] *4*	1/2[‡]	1[‡]	8.8551 *4*	Γ_γ=0.218 eV *8*, Γ_n=6.0 eV *4*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.211 eV *7* (2008Ta04).
7204.39652[‡] *7*	1/2[‡]	1[‡]	9.60204 *7*	Γ_γ=0.44 eV *4*, Γ_n=0.0200 eV *16*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0190 eV *14* (2008Ta04).
7206.97387[‡] *2*	1/2[‡]	0[‡]	12.20802 *2*	Γ_γ=0.241 eV *20*, Γ_n=0.0070 eV *6*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0067 eV *6* (2008Ta04).
7207.16354[‡] *7*	1/2[‡]	1[‡]	12.39980 *7*	Γ_γ=0.081 eV *8*, Γ_n=0.049 eV *4*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0310 eV *20* (2008Ta04).
7207.20615[‡] *1*	1/2[‡]	1[‡]	12.44288 *1*	Γ_γ=0.057 eV *5*, Γ_n=0.046 eV *4*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0260 eV *17* (2008Ta04).
7208.118[‡] *3*	1/2[‡]	0[‡]	13.365 *3*	Γ_γ=0.068 eV *5*, Γ_n=30 eV *3*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0.068 eV *5* (2008Ta04).
7208.19616[‡] *1*	1/2[‡]	0[‡]	13.44390 *1*	Γ_γ=0.053 eV *4*, Γ_n=53 eV *5*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.053 eV *5* (2008Ta04).
7211.608[‡] *1*	1/2[‡]	1[‡]	16.894 *1*	Γ_γ=0.099 eV *7*, gΓ_n=1.46 eV *15*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.092 eV *6* (2008Ta04).
7211.64354[‡] *2*	1/2[‡]	1[‡]	16.92958 *2*	Γ_γ=0.279 eV *26*, Γ_n=0.0260 eV *25*. $\Gamma_n\Gamma_\gamma/\Gamma$=0.0240 eV *20* (2008Ta04).
7211.6926[‡] *1*	1/2[‡]	0[‡]	16.9792 *1*	Γ_γ=0.246 eV *21*, Γ_n=0.020 eV *2*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0.0180 eV *17* (2008Ta04).
7212.11[‡] *2*	1/2[‡]	0[‡]	17.402 *20*	Γ_γ=0.162 eV *12*, Γ_n=241 eV *18*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.162 eV *12* (2008Ta04). other E(res): 17.313 *15* (2006MuZX).
7213.76964[‡] *1*	1/2[‡]	1[‡]	19.07930 *1*	Γ_γ=0.0200 eV *18*, Γ_n=0.105 eV *11*. $\Gamma_n\Gamma_\gamma/\Gamma$=0.0170 eV *13* (2008Ta04).
7213.788[‡] *2*	1/2[‡]	1[‡]	19.098 *2*	Γ_γ=0.11 eV *1*, Γ_n=0.70 eV *7*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.097 eV *7* (2008Ta04).
7214.396[‡] *2*	1/2[‡]	1[‡]	19.713 *2*	Γ_γ=0.270 eV *15*, Γ_n=13.0 eV *12*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.267 eV *15* (2008Ta04). other E(res): 19.685 *10* (2006MuZX).
7221.078[‡] *3*	3/2[‡]	1[‡]	26.469 *3*	Γ_γ=0.065 eV *6*, Γ_n=1.30 eV *13*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.124 eV *10* (2008Ta04).
7221.146[‡] *1*	3/2[‡]	1[‡]	26.538 *1*	Γ_γ=0.210 eV *13*, Γ_n=5.8 eV *6*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.410 eV *25* (2008Ta04).
7223.410[‡] *3*	3/2[‡]	1[‡]	28.827 *3*	Γ_γ=0.150 eV *15*, Γ_n=1.10 eV *11*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.270 eV *24* (2008Ta04).
7229.867[‡] *4*	1/2[‡]	0[‡]	35.356 *4*	Γ_γ=0.59 eV *4*, Γ_n=38 eV *4*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.58 eV *4* (2008Ta04).
7233.973[‡] *3*	3/2[‡]	1[‡]	39.507 *3*	Γ_γ=0.180 eV *15*, Γ_n=1.30 eV *13*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.329 eV *24* (2008Ta04). other E(res): 39.54 *2* (2006MuZX).
7234.86[‡] *1*	1/2[‡]	1[‡]	40.40 *1*	Γ_γ=0.160 eV *15*, Γ_n=58 eV *6*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.162 eV *15* (2008Ta04).
7235.84[‡] *1*	3/2[‡]	1[‡]	41.39 *1*	Γ_γ=0.98 eV *5*, Γ_n=236 eV *17*, g$\Gamma_n\Gamma_\gamma/\Gamma$=1.96 eV *11* (2008Ta04).
7236.5076[‡] *1*	3/2[‡]	1[‡]	42.0699 *1*	Γ_γ=0.040 eV *4*, Γ_n=0.20 eV *2*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.068 eV *6* (2008Ta04).
7236.65[‡] *6*	1/2[‡]	0[‡]	42.21 *6*	Γ_γ=0.200 eV *19*, Γ_n=285 eV *28*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.203 eV *19* (2008Ta04).
7236.888[‡] *6*	1/2[‡]	0[‡]	42.455 *6*	Γ_γ=0.071 eV *7*, Γ_n=0.49 eV *5*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.062 eV *5* (2008Ta04).
7237.071[‡] *20*	1/2[‡]	0[‡]	42.64 *2*	Γ_γ=0.200 eV *17*, Γ_n=116 eV *11*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.200 eV *17* (2008Ta04).

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^{90}Zr(n,γ) E=res 2006MuZX,2008Ta04 (continued)

^{91}Zr Levels (continued)

E(level)[†]	Jπ	L	E(res)(lab) eV	Comments
7239.229[‡] *8*	3/2[‡]	1[‡]	44.822 *8*	Γ_γ=0.310 eV *22*, Γ_n=83 eV *8*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.63 eV *5* (2008Ta04). other E(res): 44.70 *3* (2006MuZX).
7247.579[‡] *7*	1/2[‡]	0[‡]	53.264 *7*	Γ_γ=0.0250 eV *25*, Γ_n=0.81 eV *8*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.0250 eV *24* (2008Ta04). Other E(res): 53.38 *3* (2006MuZX).
7247.685[‡] *8*	1/2[‡]	0[‡]	53.371 *8*	Γ_γ=0.094 eV *9*, Γ_n=1.50 eV *15*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.088 eV *8* (2008Ta04). Other E(res): 53.45 *5* (2006MuZX).
7247.982[‡] *1*	1/2[‡]	0[‡]	53.672 *1*	Γ_γ=0.190 eV *19*, Γ_n=0.48 eV *5*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.134 eV *10* (2008Ta04). Other E(res): 53.77 *5* (2006MuZX).
7248.656[‡] *1*	1/2[‡]	1[‡]	54.353 *1*	Γ_γ=0.240 eV *24*, Γ_n=0.098 eV *10*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.070 eV *5* (2008Ta04).
7248.847[‡] *1*	1/2[‡]	1[‡]	54.546 *1*	Γ_γ=0.250 eV *25*, Γ_n=0.22 eV *2*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.117 eV *8* (2008Ta04).
7250.09[‡] *2*	1/2[‡]	1[‡]	55.80 *2*	Γ_γ=0.190 eV *18*, Γ_n=64 eV *6*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.192 eV *18* (2008Ta04).
7250.80[‡] *1*	1/2[‡]	1[‡]	56.52 *1*	Γ_γ=0.250 eV *22*, Γ_n=41 eV *4*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.244 eV *21* (2008Ta04). other E(res): 56.43 *3* (2006MuZX).
7252.055[‡] *4*	1/2[‡]	0[‡]	57.790 *4*	Γ_γ/Γ=0.42 eV *4*, Γ_n=0.65 eV *6*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.257 eV *18* (2008Ta04).
7252.570[‡] *8*	1/2[‡]	1[‡]	58.311 *8*	Γ_γ/Γ=0.180 eV *16*, Γ_n=9.4 eV *9*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.174 eV *15* (2008Ta04). other E(res): 58.18 *4* (2006MuZX).
7256.1198[‡] *2*	3/2[‡]	1[‡]	61.9000 *2*	Γ_γ=0.200 eV *20*, gΓ_n=0.70 eV *7*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.313 eV *25* (2008Ta04).
7256.624[‡] *2*	1/2[‡]	1[‡]	62.410 *2*	Γ_γ=0.150 eV *15*, Γ_n=1.0 eV *1*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.128 eV *11* (2008Ta04).
7258.1392[‡] *3*	1/2[‡]	1[‡]	63.9419 *3*	Γ_γ=0.160 eV *16*, Γ_n=0.70 eV *7*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.133 eV *11* (2008Ta04).
7259.14[‡] *6*	1/2[‡]	1[‡]	64.95 *6*	Γ_γ=0.079 eV *8*, Γ_n=127 eV *13*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.079 eV *8* (2008Ta04).
7259.36[‡] *2*	3/2[‡]	1[‡]	65.18 *2*	Γ_γ=0.47 eV *4*, gΓ_n=129 eV *13*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.94 eV *7* (2008Ta04).
7259.544[‡] *2*	1/2[‡]	0[‡]	65.362 *2*	Γ_γ=0.30 eV *3*, Γ_n=0.70 eV *7*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.212 eV *16* (2008Ta04).
7262.737[‡] *7*	3/2[‡]	1[‡]	68.591 *7*	Γ_γ=0.43 eV *4*, gΓ_n=5.5 eV *5*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.80 eV *7* (2008Ta04).
7264.96 *8*	1/2	0	70.84 *8*	Γ_γ=0.139 eV *20*, Γ_n=205 eV *25*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.139 eV.
7266.57 *5*	3/2	1	72.47 *5*	Γ_γ=0.121 eV *15*, gΓ_n=300 eV *20*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.241 eV.
7267.42 *5*	1/2	0	73.33 *5*	Γ_γ=0.135 eV *20*, Γ_n=170 eV *20*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.134 eV.
7268.57 *5*	3/2	1	74.49 *5*	Γ_γ=0.105 eV *11*, gΓ_n=42 eV *8*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.209 eV.
7269.59 *5*		1	75.52 *5*	gΓ_n=2 eV *1*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.086 eV.
7270.06 *5*		≥1	76.00 *5*	gΓ_n=1.5 eV *10*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.175 eV.
7273.70 *5*			79.68 *5*	gΓ_n=0.5 eV *5*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.1 eV.
7274.18 *5*			80.16 *5*	gΓ_n=0.5 eV *5*.
7274.46 *8*			80.44 *8*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.251 eV.
7275.48 *8*			81.48 *8*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.36 eV.
7276.16 *5*	3/2	1	82.16 *5*	Γ_γ=0.28 eV *4*, gΓ_n=210 eV *10*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.557 eV.
7277.22 *5*	[1/2]	1	83.23 *5*	Γ_γ=0.102 eV *11*, gΓ_n=14 eV *3*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.102 eV.
7279.69 *5*	1/2	0	85.73 *5*	Γ_γ=0.127 eV *22*, Γ_n=6.5 eV *10*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.125 eV.
7284.28 *5*	1/2	0	90.37 *5*	Γ_γ=0.249 eV *25*, Γ_n=19 eV *3*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.246 eV.
7286.77 *5*	3/2	1	92.89 *5*	Γ_γ=0.19 eV *4*, gΓ_n=4.00 eV *14*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.345 eV.
7288.16 *5*	(1/2)	[1]	94.30 *5*	Γ_γ=0.31 eV *3*, gΓ_n=2 eV *1*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.272 eV.
7288.68 *5*		[1]	94.82 *5*	gΓ_n=4 eV *1*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.418 eV.
7289.63 *5*	3/2	1	95.78 *5*	Γ_γ=0.21 eV *4*, gΓ_n=30 eV *4*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.408 eV.
7291.17 *95*	3/2	1	97.34 *95*	Γ_γ=0.38 eV *5*, gΓ_n=42 eV *4*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.745 eV.
7292.99 *5*	3/2	1	99.18 *5*	Γ_γ=0.46 eV *5*, gΓ_n=7 eV *2*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.82 eV.
7294.20 *10*	3/2	1	100.4 *1*	Γ_γ=0.36 eV *3*, gΓ_n=2 eV *1*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.533 eV.
7298.45 *10*	1/2	1	104.7 *1*	Γ_γ=1.38 eV *20*, Γ_n=210 eV *15*, $\Gamma_n\Gamma_\gamma/\Gamma$=1.373 eV.
7298.94 *10*	3/2	1	105.2 *1*	Γ_γ=0.63 eV *10*, gΓ_n=300 eV *30*, g$\Gamma_n\Gamma_\gamma/\Gamma$=1.26 eV.
7302.01 *20*			108.3 *2*	gΓ_n<0.5 eV. g$\Gamma_n\Gamma_\gamma/\Gamma$=0.372 eV.
7302.90 *10*	3/2	1	109.2 *1*	Γ_γ=0.41 eV *6*, gΓ_n=116 eV *14*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.806 eV.
7303.89 *10*	3/2	1	110.2 *1*	Γ_γ=0.53 eV *6*, gΓ_n=150 eV *15*, g$\Gamma_n\Gamma_\gamma/\Gamma$=1.049 eV.
7305.08 *10*	3/2	1	111.4 *1*	Γ_γ=0.40 eV *6*, gΓ_n=238 eV *20*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.806 eV.
7307.75 *10*	1/2	0	114.1 *1*	gΓ_n=136 eV *12*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.577 eV.
7312.39 *10*	1/2	1	118.8 *1*	Γ_γ=0.206 eV *21*, gΓ_n=142 eV *14*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.206 eV.

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^{90}Zr(n,γ) E=res 2006MuZX,2008Ta04 (continued)

^{91}Zr Levels (continued)

E(level)[†]	Jπ	L	E(res)(lab) eV	Comments
7315.06 *10*	(3/2)	2	121.5 *1*	Γ_γ=0.272 eV *24*, gΓ_n=3 eV *1*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.461 eV.
7315.76 *10*	[3/2]	[1]	122.2 *1*	Γ_γ=0.225 eV *25*, gΓ_n=23 eV *3*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.442 eV.
7316.15 *10*			122.6 *1*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.605 eV.
7317.74 *10*	1/2	1	124.2 *1*	Γ_γ=0.50 eV *8*, Γ_n=26 eV *3*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.49 eV.
7320.21 *10*		2	126.7 *1*	gΓ_n=34 eV *5*.
7320.70 *10*	3/2	1	127.2 *1*	Γ_γ=0.65 eV *20*, gΓ_n=426 eV *30*, g$\Gamma_n\Gamma_\gamma/\Gamma$=1.3 eV.
7323.08 *10*	1/2	0	129.6 *1*	Γ_γ=0.25 eV *9*, Γ_n=140 eV *10*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.252 eV.
7323.77 *10*		[2]	130.3 *1*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.312 eV.
7324.36 *10*		[2]	130.9 *1*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.486 eV.
7325.05 *10*	3/2	1	131.6 *1*	Γ_γ=0.32 eV *5*, gΓ_n=342 eV *16*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.641 eV.
7327.13 *10*		[2]	133.7 *1*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.448 eV.
7327.53 *10*	3/2	1	134.1 *1*	Γ_γ=0.35 eV *8*, gΓ_n=334 eV *14*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.7 eV.
7332.47 *10*	3/2	1	139.1 *1*	Γ_γ=0.30 eV *8*, gΓ_n=14 eV *2*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.57 eV.
7337.61 *10*	1/2	0	144.3 *1*	Γ_n=325 eV *15*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.57 eV.
7338.70 *10*		[2]	145.4 *1*	gΓ_n=29 eV *3*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.473 eV.
7341.57 *10*		[2]	148.3 *1*	gΓ_n=3 eV *2*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.464 eV.
7343.55 *10*	1/2	1	150.3 *1*	Γ_γ=0.47 eV *5*, Γ_n=190 eV *15*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.464 eV.
7344.44 *10*	1/2	0	151.2 *1*	Γ_n=225 eV *25*.
7348.8 *5*	1/2	1	155.6 *5*	Γ_γ=0.70 eV *15*, gΓ_n=1900 eV *250*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.697 eV.
7349.8 *5*	3/2	1	156.6 *5*	Γ_γ=0.64 eV *10*, gΓ_n=720 eV *60*, g$\Gamma_n\Gamma_\gamma/\Gamma$=1.271 eV.
7352.85 *10*	1/2	0	159.7 *1*	gΓ_n=49 eV *6*.
7353.14 *10*		[2]	160.0 *1*	gΓ_n=10 eV *5*. g$\Gamma_n\Gamma_\gamma/\Gamma$=0.895 eV.
7354.23 *10*	[3/2]	1	161.1 *1*	Γ_γ=0.36 eV *4*, gΓ_n=42 eV *5*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.716 eV.
7356.41 *10*	1/2	1	163.3 *1*	Γ_γ=0.83 eV *16*, gΓ_n=1090 eV *200*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.83 eV.
7357.39 *10*	1/2	0	164.3 *1*	Γ_n=350 eV *50*.
7359.37 *10*	3/2	1	166.3 *1*	Γ_γ=1.40 eV *2*, gΓ_n=860 eV *60*, g$\Gamma_n\Gamma_\gamma/\Gamma$=2.799 eV.
7361.85 *10*	1/2	0	168.8 *1*	Γ_n=130 eV *20*.
7365.41 *10*	3/2	1	172.4 *1*	Γ_γ=1.33 eV *20*, gΓ_n=600 eV *50*, g$\Gamma_n\Gamma_\gamma/\Gamma$=2.648 eV.
7369.06 *10*	1/2	1	176.1 *1*	Γ_n=170 eV *20*.
7370.55 *10*	3/2	1	177.6 *1*	Γ_γ=0.46 eV *9*, gΓ_n=1750 eV *300*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.911 eV.
7372.72 *10*	[1/2]	1	179.8 *1*	Γ_n=90 eV *9*.
7374.41 *10*	3/2	1	181.5 *1*	Γ_γ=0.33 eV *6*, gΓ_n=544 eV *40*, g$\Gamma_n\Gamma_\gamma/\Gamma$=0.663 eV.
7377.17 *10*	3/2	1	184.3 *1*	Γ_γ=0.55 eV *16*, gΓ_n=820 eV *60*, g$\Gamma_n\Gamma_\gamma/\Gamma$=1.098 eV.
7378.86 *10*	1/2	0	186.0 *1*	Γ_n=50 eV *7*.
7381.23 *20*			188.4 *2*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.406 eV.
7381.92 *20*			189.1 *2*	g$\Gamma_n\Gamma_\gamma/\Gamma$=0.499 eV.
7382.71 *10*	1/2	1	189.9 *1*	Γ_γ=0.76 eV *25*, Γ_n=78 eV *8*, $\Gamma_n\Gamma_\gamma/\Gamma$=0.756 eV.
7385.58 *10*	1/2	0	192.8 *1*	Γ_n=92 eV *10*.
7386.17 *10*	1/2	1	193.4 *1*	Γ_n=106 eV *10*.
7391.12 *10*	1/2	0	198.4 *1*	Γ_n=470 eV *30*.
7392.70 *10*		[0]	200.0 *1*	gΓ_n=30 eV *10*.
7394.48 *10*		[0]	201.8 *1*	gΓ_n=10 eV *5*.
7396.66 *10*		[0]	204.0 *1*	gΓ_n=50 eV *10*.
7399.43 *10*		[0]	206.8 *1*	gΓ_n=67 eV *10*.
7400.42 *10*		[0]	207.8 *1*	gΓ_n=24 eV *10*.
7400.71 *10*	1/2	0	208.1 *1*	Γ_n=96 eV *10*.
7403.68 *20*	3/2	1	211.1 *2*	gΓ_n=1300 eV *200*.
7407.54 *20*	3/2	1	215.0 *2*	gΓ_n=750 eV *140*.
7411.7 *3*	1/2	1	219.2 *3*	Γ_n=2400 eV *300*.
7412.8 *3*	3/2	1	220.3 *3*	gΓ_n=1510 eV *150*.
7415.3 *3*	1/2	0	222.8 *3*	Γ_n=345 eV *35*.
7416.0 *3*	[3/2]	1	223.6 *3*	gΓ_n=320 eV *40*.
7419.70 *20*	3/2	1	227.3 *2*	gΓ_n=466 eV *50*.
7423.56 *20*	1/2	1	231.2 *2*	Γ_n=413 eV *45*.
7430.4 *5*	3/2	1	238.1 *5*	gΓ_n=3000 eV *300*.
7432.3 *5*	1/2	1	240.0 *5*	Γ_n=3250 eV *300*.
7436.61 *20*		(0)	244.4 *2*	gΓ_n=42 eV *6*.

Continued on next page (footnotes at end of table)

^{90}Zr(n,γ) E=res 2006MuZX,2008Ta04 (continued)

^{91}Zr Levels (continued)

E(level)[†]	Jπ	L	E(res)(lab) eV	Comments
7438.89 *20*		(0)	246.7 *2*	$g\Gamma_n$=164 eV *20*.
7440.67 *20*	1/2	0	248.5 *2*	Γ_n=96 eV *10*.
7445.91 *20*	3/2	1	253.8 *2*	$g\Gamma_n$=580 eV *50*.
7448.09 *20*	1/2	1	256.0 *2*	Γ_n=300 eV *30*.
7456.00 *20*	1/2	1	264.0 *2*	Γ_n=200 eV *20*.
7456.89 *20*	1/2	0	264.9 *2*	Γ_n=170 eV *25*.
7464.2 *3*	3/2	1	272.3 *3*	$g\Gamma_n$=1100 eV *100*.
7464.6 *3*	1/2	0	272.7 *3*	Γ_n=290 eV *30*.
7472.5 *3*	[3/2]	1	280.7 *3*	$g\Gamma_n$=2190 eV *300*.
7475.9 *3*		[1]	284.1 *3*	$g\Gamma_n$=360 eV *50*.
7478.8 *3*	3/2	1	287.1 *3*	$g\Gamma_n$=2140 eV *200*.
7481.1 *3*	3/2	1	289.4 *3*	$g\Gamma_n$=480 eV *80*.
7482.6 *3*		[1]	290.9 *3*	$g\Gamma_n$=420 eV *50*.
7485.4 *3*	3/2	1	293.7 *3*	$g\Gamma_n$=492 eV *60*.
7492.5 *3*	1/2	0	300.9 *3*	Γ_n=410 eV *50*.

[†] From S(n)+E(n)(c.m.), where S(n)(^{91}Zr)=7193.9 *4* (2012Wa38) and resonance E(n)(c.m.)=(90/91)E(n)(lab). note that the systematic uncertainty of 0.4 keV arising from the adopted S(n) value needs to be combined In quadrature with the uncertainties shown here.

[‡] From 2008Ta04.