⁹¹**Zr**(**n**, γ),(**n**,**n**) **E=res 2008Ta29**

		History	
Туре	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

$J^{\pi}(^{91}Zr)=5/2^{+}.$

Other: 1972BiZS.

1972BiZS: E(n)=5-80 keV. Primary γ rays observed to the following levels: 0, 940, 1490, 1840, 2040.

2008Ta29: E(n)<250 MeV pulsed beam from n_TOF facility at CERN, produced after slowing/moderating spallation neutrons from 1 GeV proton bombardment of a massive Pb target surrounded by 2.8 cm layer of water; ⁶Li layer on mylar foil for n flux determination; two thin C₆D₆ liquid scintillator cells In low-background area detected prompt γ cascade following n capture; 89.9% enriched ⁹¹Zr oxide target; measured σ (E(n)=1-26 eV,≤0.1% resolution), Γ_{γ} , Γ_{n} , capture kernel K, resonance energies; R-matrix analysis see also 2005Ta23 and 2005MoZW.

⁹²Zr Levels

E(level) [†]	Jπ‡	L‡	K (eV) [@]	Comments
S(n)+0.15943 2	1	1	0.00092 3	$\Gamma_{\gamma} = 0.334 \text{ eV } 26, \Gamma_{n} = 0.000374 \text{ eV } 14.$
S(n)+0.181987 2	4	1	0.00499 <i>3</i>	$\Gamma_{\nu} = 0.167 \text{ eV} 3$, $\Gamma_{n} = 0.00693 \text{ eV} 4$.
S(n)+0.240404 6	2	1	0.00161 21	$\Gamma_{\gamma} = 0.228 \text{ eV } 10, \ \Gamma_{\text{n}} = 0.00393 \text{ eV } 5.$
S(n)+0.292702 5	3	0	0.0589 2	$\Gamma_{\gamma} = 0.1200 \text{ eV } 6, \Gamma_{n} = 0.643 \text{ eV } 3.$
S(n)+0.44976 1	3	1	0.00203 4	$\Gamma_{\gamma} = 0.237 \text{ eV } 18, \Gamma_{n} = 0.00354 \text{ eV } 7.$
S(n)+0.68176 1	3	0	0.0552 4	$\Gamma_{\gamma} = 0.1070 \text{ eV } 9, \Gamma_{n} = 0.825 \text{ eV } 10.$
S(n)+0.89314 1	3	1	0.0150 3	$\Gamma_{\gamma} = 0.163 \text{ eV} \ 13, \ \Gamma_{n} = 0.0304 \text{ eV} \ 6.$
S(n)+1.5323 2	2	0	0.0569 13	$\Gamma_{\gamma} = 0.138 \text{ eV } 3, \Gamma_{n} = 10.0 \text{ eV } 4.$
S(n)+1.53328 4	3	1	0.0424 19	$\Gamma_{\gamma} = 0.109 \text{ eV} 5$, $\Gamma_{n} = 0.220 \text{ eV} 21$.
S(n)+1.95448 3	3	1	0.076 3	$\Gamma_{\gamma} = 0.209 \text{ eV } 9, \ \Gamma_{n} = 0.34 \text{ eV } 3.$
S(n)+1.99878 6	3	0	0.0115 4	$\Gamma_{\nu} = 0.157 \text{ eV} 15$, $\Gamma_{n} = 0.0226 \text{ eV} 8$.
S(n)+2.01318 3	3	1	0.0549 15	$\Gamma_{\gamma} = 0.124 \text{ eV} 3$, $\Gamma_{n} = 0.39 \text{ eV} 3$.
S(n)+2.3614 6	2	0	0.00286 21	$\Gamma_{\gamma} = 0.0069 \text{ eV } 5, \Gamma_{n} = 4.9 \text{ eV } 4.$
S(n)+2.38516 5	3	1	0.0405 21	$\Gamma_{\gamma} = 0.135 \text{ eV } 10, \Gamma_{n} = 0.143 \text{ eV } 11.$
S(n)+2.4767 1	2	0	0.0489 12	$\Gamma_{\gamma} = 0.120 \text{ eV} 3$, $\Gamma_{n} = 6.42 \text{ eV} 23$.
S(n)+2.7271 2	3	0	0.0711 19	$\Gamma_{\gamma} = 0.124 \text{ eV } 3, \Gamma_n = 8.6 \text{ eV } 4.$
S(n)+2.7578 1	1	1	0.0181 11	$\Gamma_{\gamma} = 0.145 \text{ eV} 12, \Gamma_{n} = 0.145 \text{ eV} 12.$
S(n)+2.76362 6	2	1	0.0490 17	$\Gamma_{\gamma} = 0.152 \text{ eV} 5$, $\Gamma_{n} = 0.53 \text{ eV} 5$.
S(n)+3.15899 6	4	1	0.0759 18	$\Gamma_{\gamma} = 0.120 \text{ eV } 3, \Gamma_n = 0.64 \text{ eV } 5.$
S(n)+3.6124 1	4	1	0.0316 17	$\Gamma_{\gamma} = 0.079 \text{ eV } 6, \Gamma_n = 0.091 \text{ eV } 7.$
S(n)+3.64429 7	3	1	0.0515 23	$\Gamma_{\gamma} = 0.127 \text{ eV } 6, \Gamma_n = 0.29 \text{ eV } 3.$
S(n)+3.8640 1	3	1	0.062 4	$\Gamma_{\gamma} = 0.133 \text{ eV } 12, \Gamma_{n} = 0.52 \text{ eV } 5.$
$S(n)+3.8667^{\#}5$	(3)	(0)	0.0136 13	Γ_{γ} =0.0230 eV 22, Γ_{n} =4.5 eV 4.
S(n)+4.0075 1	3	1	0.058 3	$\Gamma_{\gamma} = 0.168 \text{ eV } 11, \Gamma_{n} = 0.241 \text{ eV } 21.$
S(n)+4.2786 1	2	0	0.0397 15	$\Gamma_{\gamma} = 0.112 \text{ eV } 5, \Gamma_{n} = 0.66 \text{ eV } 7.$
S(n)+4.3272 1	1	1	0.150 5	Γ_{γ} =0.729 eV 25, Γ_{n} =3.38 eV 24.
S(n)+4.7490 1	2	1	0.068 3	Γ_{γ} =0.228 eV 11, $\Gamma_{\rm n}$ =0.57 eV 5.
S(n)+4.9796 2	3	0	0.0427 20	Γ_{γ} =0.096 eV 5, Γ_{n} =0.31 eV 3.
S(n)+5.3603 1	3	1	0.0107 6	Γ_{γ} =0.238 eV 22, Γ_{n} =0.0200 eV 12.
S(n)+5.5276 6	2	0	0.055 3	$\Gamma_{\gamma} = 0.133 \text{ eV } 7, \Gamma_n = 12.0 \text{ eV } 9.$
S(n)+5.6340 2	3	1	0.0601 24	Γ_{γ} =0.120 eV 5, Γ_{n} =0.74 eV 7.
S(n)+5.8251 3	4	1	0.0458 26	Γ_{γ} =0.089 eV 6, Γ_{n} =0.190 eV 18.
S(n)+6.09051 5	4	1	0.0340 22	Γ_{γ} =0.095 eV 9, Γ_{n} =0.087 eV 7.
S(n)+6.16918 3	4	1	0.0050 4	$\Gamma_{\gamma} = 0.089 \text{ eV } 9, \Gamma_{n} = 0.0071 \text{ eV } 6.$
$S(n)+6.17904^{\#} 4$	(4)	(1)	0.0051 5	Γ_{γ} =0.093 eV 9, Γ_{n} =0.0073 eV 7.
S(n)+6.4726 3	3	0	0.058 <i>3</i>	$\Gamma_{\gamma} = 0.102 \text{ eV } 5, \Gamma_{n} = 4.3 \text{ eV } 4.$
S(n)+6.7595 4	2	1	0.0276 17	$\Gamma_{\gamma} = 0.098 \text{ eV } 8$, $\Gamma_{n} = 0.204 \text{ eV } 20$.
S(n)+6.8590 3	2	0	0.0395 22	$\Gamma_{\gamma} = 0.100 \text{ eV } 6$, $\Gamma_{n} = 1.88 \text{ eV } 18$.
S(n)+7.0405 3	4	1	0.125 4	$\Gamma_{\gamma} = 0.174 \text{ eV } 6, \Gamma_{n} = 3.8 \text{ eV } 3.$
S(n)+7.1259 3	3	1	0.078 <i>3</i>	$\Gamma_{\gamma} = 0.154 \text{ eV } 7, \Gamma_{n} = 1.05 \text{ eV } 10.$
S(n)+7.2598 4	(3)	(0)	0.064 4	$\Gamma_{\gamma} = 0.121 \text{ eV } 7, \Gamma_{n} = 1.22 \text{ eV } 11.$

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⁹¹Zr(\mathbf{n},γ),(\mathbf{n},\mathbf{n}) E=res 2008Ta29 (continued)

⁹²Zr Levels (continued)

E(level) [†]	J ^{π‡}	L‡	K (eV) [@]	Comments
S(n)+7.3542 5	3	0	0.070 3	$\Gamma_{\gamma} = 0.122 \text{ eV } 6, \Gamma_{p} = 7.5 \text{ eV } 6.$
S(n)+7.7555 4	2	1	0.121 7	$\Gamma_{\rm v} = 0.314 \text{ eV } 17, \ \Gamma_{\rm n} = 4.24 \text{ eV } 4.$
S(n)+7.7660 8	1	1	0.049 4	$\Gamma_{\rm v} = 0.218 \text{ eV} \ 18, \ \Gamma_{\rm p} = 1.80 \text{ eV} \ 17.$
S(n)+8.4987 4	3	0	0.062 3	$\Gamma_{\rm y} = 0.121 \text{ eV } 8$, $\Gamma_{\rm p} = 0.80 \text{ eV } 7$.
S(n)+8.5169 3	2	1	0.078 4	$\Gamma_{\rm v} = 0.203 \text{ eV} 11, \ \Gamma_{\rm p} = 2.30 \text{ eV} 21.$
S(n)+8.9447 5	3	0	0.0411 25	$\Gamma_{\rm y} = 0.076 \text{ eV} 5$, $\Gamma_{\rm n} = 1.00 \text{ eV} 10$.
S(n)+9.0350 4	4	1	0.066 4	$\Gamma_{\rm y} = 0.106 \text{ eV } 7, \ \Gamma_{\rm p} = 0.54 \text{ eV } 5.$
S(n)+9.0984 4	3	1	0.063 <i>3</i>	$\Gamma_{\rm y} = 0.129 \text{ eV } 8, \ \Gamma_{\rm n} = 0.64 \text{ eV } 6.$
S(n)+9.2266 4	3	1	0.047 3	$\Gamma_{\gamma} = 0.087 \text{ eV} 5$, $\Gamma_{n} = 1.18 \text{ eV} 12$.
S(n)+9.3010 6	2	0	0.0318 21	$\Gamma_{\gamma} = 0.167 \text{ eV } 16, \Gamma_{n} = 0.140 \text{ eV } 13.$
S(n)+9.8267 3	2	0	0.085 5	$\Gamma_{\gamma} = 0.254 \text{ eV } 16, \Gamma_{n} = 1.00 \text{ eV } 10.$
S(n)+9.8708 8	2	0	0.051 3	$\Gamma_{\gamma} = 0.124 \text{ eV } 8$, $\Gamma_{n} = 7.7 \text{ eV } 7$.
S(n)+9.9895 4	4	1	0.098 5	$\Gamma_{\gamma}^{'}=0.141 \text{ eV } 7, \Gamma_{n}=1.90 \text{ eV } 19.$
S(n)+10.1248 6	2	1	0.075 4	$\Gamma_{\gamma} = 0.190 \text{ eV } 11, \Gamma_{n} = 3.3 \text{ eV } 3.$
S(n)+10.5177 6	4	1	0.068 4	$\Gamma_{\gamma}^{'}=0.100 \text{ eV } 7, \Gamma_{n}=0.75 \text{ eV } 6.$
S(n)+10.5504 4	3	1	0.076 4	$\Gamma_{\gamma}^{'}=0.160 \text{ eV } 10, \Gamma_{n}=0.80 \text{ eV } 8.$
S(n)+10.7018 5	2	1	0.065 4	$\Gamma_{\gamma}^{'}=0.190 \text{ eV } 13, \Gamma_{n}=0.89 \text{ eV } 9.$
S(n)+10.7349 8	2	0	0.0364 23	$\Gamma_{\gamma} = 0.150 \text{ eV } 14, \Gamma_{n} = 0.106 \text{ eV } 9.$
S(n)+11.0243 1	(3)	(1)	0.0142 11	$\dot{E}(\text{level}): E(n)(\text{lab})=11.02434 \ 4 \ (2008Ta29).$
				$\Gamma_{\gamma} = 0.035 \text{ eV } 4, \ \Gamma_{n} = 0.080 \text{ eV } 8.$
S(n)+11.0661 6	3	1	0.067 4	$\Gamma_{\gamma} = 0.123 \text{ eV } 8, \Gamma_n = 1.80 \text{ eV } 18.$
S(n)+11.1175 4	2	0	0.0281 20	$\Gamma_{\gamma} = 0.130 \text{ eV } 13, \Gamma_{n} = 0.140 \text{ eV } 14.$
S(n)+11.1232 9	2	1	0.046 4	$\Gamma_{\gamma} = 0.120 \text{ eV } 11, \Gamma_{n} = 2.10 \text{ eV } 20.$
S(n)+11.2307 7	3	0	0.053 <i>3</i>	$\Gamma_{\gamma} = 0.094 \text{ eV } 6, \Gamma_{n} = 3.0 \text{ eV } 3.$
S(n)+12.1021 5	3	1	0.091 5	Γ_{γ} =0.176 eV 11, Γ_{n} =1.30 eV 13.
S(n)+12.1503 1	(3)	(1)	0.0196 16	$E(\text{level}): E(n)(\text{lab})=12.15026 \ 3 \ (2008\text{Ta}29).$
				$\Gamma_{\gamma} = 0.140 \text{ eV } 14, \Gamma_{n} = 0.044 \text{ eV } 4.$
S(n)+12.2179 5	4	1	0.154 7	Γ_{γ} =0.221 eV 11, Γ_{n} =2.8 eV 3.
S(n)+12.3186 7	3	0	0.066 4	$\Gamma_{\gamma} = 0.120 \text{ eV } 8$, $\Gamma_{n} = 1.90 \text{ eV } 19$.
$S(n)+12.5118^{\#} 4$	(2)	(1)	0.0202 18	$\Gamma_{\gamma} = 0.055 \text{ eV } 6, \Gamma_{\eta} = 0.40 \text{ eV } 4.$
S(n)+12.546 2	2	1	0.121 11	$\Gamma_{\gamma}^{'}=0.30 \text{ eV } 3, \Gamma_{n}=8.8 \text{ eV } 8.$
S(n)+12.5592 6	2	1	0.083 7	$\Gamma_{\gamma} = 0.32 \text{ eV} 3$, $\Gamma_{n} = 0.54 \text{ eV} 5$.
S(n)+12.924 4	2	1	0.036 3	$\Gamma_{\gamma} = 0.087 \text{ eV } 8, \Gamma_n = 9.4 \text{ eV } 9.$
S(n)+12.933 4	3	0	0.0289 26	$\Gamma_{\gamma} = 0.050 \text{ eV } 5, \Gamma_{n} = 3.9 \text{ eV } 4.$
S(n)+13.1519 8	1	1	0.0756 21	Γ_{γ} =0.350 eV 11, Γ_{n} =2.30 eV 19.
S(n)+13.2555 9	3	1	0.060 4	$\Gamma_{\gamma} = 0.108 \text{ eV } 8, \Gamma_{n} = 2.10 \text{ eV } 21.$
S(n)+13.3010 9	3	0	0.086 6	$\Gamma_{\gamma} = 0.152 \text{ eV } 11, \Gamma_{n} = 4.5 \text{ eV } 5.$
S(n)+13.348 4	(2)	(1)	0.0221 20	$\Gamma_{\gamma} = 0.053 \text{ eV} 5$, $\Gamma_{n} = 20 \text{ eV} 2$.
S(n)+13.5673 9	2	0	0.048 3	$\Gamma_{\gamma} = 0.140 \text{ eV } 11, \Gamma_{n} = 0.74 \text{ eV } 7.$
S(n)+13.6940 7	3	1	0.156 8	$\Gamma_{\gamma} = 0.283 \text{ eV } 16, \Gamma_{n} = 4.8 \text{ eV } 5.$
S(n)+13.802 1	3	0	0.059 4	$\Gamma_{\gamma} = 0.108 \text{ eV } 8, \Gamma_{n} = 4.2 \text{ eV } 4.$
S(n)+13.9345 2	(3)	(0)	0.0139 13	$\Gamma_{\gamma} = 0.0260 \text{ eV } 25, \Gamma_{n} = 0.33 \text{ eV } 3.$
S(n)+14.074 1	3	0	0.109 7	$\Gamma_{\gamma}=0.192 \text{ eV} 12, \Gamma_{n}=6.9 \text{ eV} 7.$
S(n)+14.18/ 1	1	1	0.039 3	$\Gamma_{\gamma} = 0.200 \text{ eV } 18, \Gamma_{n} = 0.66 \text{ eV } 7.$
S(n) + 14.236 I	2		0.05/4	$\Gamma_{\gamma} = 0.160 \text{ eV } 13, \Gamma_{n} = 0.97 \text{ eV } 10.$
S(n) + 14.485 I	(4)	(1)	0.072 7	$I_{\gamma} = 0.009 / \text{ eV} I0, I_n = 0.61 \text{ eV} 0.$
S(n) + 14.382 I S(n) + 14.911.2	4	1	0.132 8	$\Gamma_{\gamma} = 0.180 \text{ eV} II, \Gamma_{n} = 8.1 \text{ eV} \delta.$
S(n) + 14.811 2 S(n) + 14.820 1	(3)	(0)	0.0105 9	$\Gamma_{\gamma}=0.0200 \text{ eV} 20, \Gamma_{n}=0.190 \text{ eV} 17.$
S(II) + 14.039 I S(n) + 15.175 I	2	1	0.031 4	$\Gamma_{\gamma} = 0.126 \text{ eV} 10, \Gamma_{0} = 3.4 \text{ eV} 3.$
S(1)+13.173 I S(n)+15.220 2	$\frac{2}{2}$	1	0.137 0	$\Gamma_{\gamma} = 0.343 \text{ cv} 22, \Gamma_{\text{B}} = 0.4 \text{ cv} 0.$ $\Gamma_{\gamma} = 0.110 \text{ eV} 0 \Gamma_{\gamma} = 130 \text{ eV} 13$
S(1) = 15.230 2	4	0	0.0474	$1_{\gamma} - 0.110 \text{ V} 7, 1_{\text{B}} - 1.50 \text{ V} 15.$
S(n)+15./633'' I	(3)	(U)	0.000 3	$1_{\gamma} = 0.30 \text{ eV} \text{ s}, 1_{\text{n}} = 0.180 \text{ eV} 18.$
S(n)+15.///5.5	3 (1)	(1)	0.0212 19	$I_{\gamma} = 0.040 \text{ eV} 4$, $I_n = 0.41 \text{ eV} 4$.
S(11)+15.95/4 S(n)+15.079/4	(4) 4	(1)	0.075 /	$\Gamma_{\gamma} = 0.0100 \text{ eV} 10, \Gamma_{n} = 0.0 / \text{eV} /.$
S(11) + 13.978 I S(n) + 16.100 2	4	1	0.080 0	$\Gamma_{\gamma} = 0.119 \text{ ev } 9, \Gamma_{\text{n}} = 3.0 \text{ ev } 3.$ $\Gamma_{\gamma} = 0.210 \text{ ev } 17 \Gamma_{\gamma} = 1.80 \text{ ev } 1.8$
3(11)+10.190 3	2	1	0.080 /	$1_{\gamma} = 0.210 \text{ ev} 1/, 1_{\text{n}} = 100 \text{ ev} 10.$

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⁹¹Zr(\mathbf{n},γ),(\mathbf{n},\mathbf{n}) E=res 2008Ta29 (continued)

⁹²Zr Levels (continued)

E(level) [†]	J ^{π‡}	L [‡]	K (eV) [@]	Comments
S(n)+16.699 1	2	0	0.062 5	$\Gamma_{\rm v}=0.170 \text{ eV} 16$, $\Gamma_{\rm p}=1.40 \text{ eV} 12$.
S(n)+16.8263 1	(3)	(1)	0.0326 24	E(level): E(n)(lab)=16.82625 5 (2008Ta29).
				$\Gamma_{\rm y} = 0.081 \text{ eV } 8$, $\Gamma_{\rm p} = 0.180 \text{ eV } 17$.
S(n)+16.972 6	3	1	0.034 3	$\Gamma_{\rm y} = 0.060 \text{ eV} 6$, $\Gamma_{\rm n} = 3.4 \text{ eV} 3$.
S(n)+17.062 2	2	1	0.0261 20	$\Gamma_{\gamma} = 0.081 \text{ eV } 8$, $\Gamma_{\eta} = 0.280 \text{ eV } 26$.
$S(n)+17.424^{\#}$ 3	(3)	(1)	0.045 4	$\Gamma_{\rm y} = 0.078 \text{ eV} 7$, $\Gamma_{\rm p} = 6.7 \text{ eV} 6$.
S(n)+17.454 2	3	1	0.077 6	$\Gamma_{\rm v} = 0.140 \text{ eV} II$, $\Gamma_{\rm n} = 6.1 \text{ eV} 6$.
S(n)+17.800 1	4	1	0.107 7	$\Gamma_{\gamma} = 0.160 \text{ eV } 12, \Gamma_{n} = 1.30 \text{ eV } 12.$
$S(n) + 18543^{\#} l$	3	1	0.071.5	$\Gamma_{\rm e}=0.140 \text{ eV} 12$ $\Gamma_{\rm e}=0.88 \text{ eV} 9$
S(n) + 18.5840	(3)	(1)	0.00175 18	E(level): E(n)(lab)=18.58403 I (2008Ta29).
	(-)	(-)		$\Gamma_{\gamma} = 0.0030 \text{ eV} 3$, $\Gamma_{\rm p} = 3.5 \text{ eV} 3$.
S(n)+18.632 1	2	1	0.212 13	$\Gamma_{\gamma} = 0.54 \text{ eV } 3$, $\Gamma_{n} = 8.6 \text{ eV } 8$.
S(n)+19.487 1	4	1	0.166 11	$\Gamma_{\gamma} = 0.300 \text{ eV} 24$, $\Gamma_{n} = 0.81 \text{ eV} 8$.
S(n)+19.5902 1	2	1	0.050 4	$\Gamma_{\rm v} = 0.20 \text{ eV } 2, \ \Gamma_{\rm p} = 0.30 \text{ eV } 3.$
S(n)+19.760 2	3	1	0.082 6	$\Gamma_{\gamma} = 0.160 \text{ eV } 14, \Gamma_{\rm p} = 1.00 \text{ eV } 9.$
S(n)+19.800 2	3	0	0.057 4	$\Gamma_{\gamma} = 0.150 \text{ eV } 14, \Gamma_{n} = 0.160 \text{ eV } 15.$
S(n)+20.0127 1	4	1	0.057 4	$\Gamma_{\gamma} = 0.150 \text{ eV } 14, \Gamma_{n} = 0.160 \text{ eV } 16.$
S(n)+20.0587 1	3	0	0.049 4	$\Gamma_{\gamma} = 0.110 \text{ eV } 11, \Gamma_n = 0.39 \text{ eV } 4.$
S(n)+20.171 2	3	0	0.101 8	$\Gamma_{\gamma} = 0.180 \text{ eV } 15, \Gamma_{n} = 2.00 \text{ eV } 19.$
S(n)+20.241 3	4	1	0.107 10	$\Gamma_{\gamma} = 0.140 \text{ eV } 13, \Gamma_n = 13.0 \text{ eV } 13.$
S(n)+20.250 4	2	0	0.0133 9	$\Gamma_{\gamma} = 0.080 \text{ eV } 8$, $\Gamma_{n} = 0.053 \text{ eV } 5$.
S(n)+20.3095 1	2	1	0.056 4	$\Gamma_{\gamma} = 0.240 \text{ eV } 23, \Gamma_n = 0.31 \text{ eV } 3.$
S(n)+20.4028 5	3	1	0.068 5	$\Gamma_{\gamma} = 0.220 \text{ eV} 22, \Gamma_n = 0.250 \text{ eV} 25.$
S(n)+20.626 2	3	0	0.079 6	$\Gamma_{\gamma} = 0.140 \text{ eV } 13, \Gamma_{n} = 0.63 \text{ eV } 6.$
S(n)+20.913 1	4	1	0.0134 9	$\Gamma_{\gamma} = 0.260 \text{ eV } 23, \Gamma_{n} = 0.58 \text{ eV } 6.$
S(n)+21.234 1	3	0	0.073 6	$\Gamma_{\gamma} = 0.140 \text{ eV } 13, \Gamma_{n} = 1.60 \text{ eV } 16.$
S(n)+21.277 1	(3)	(1)	0.068 6	$\Gamma_{\gamma} = 0.130 \text{ eV } 12, \Gamma_n = 1.54 \text{ eV } 15.$
S(n)+21.3458 2	4	1	0.0115 11	Γ_{γ} =0.39 eV 4, Γ_{n} =0.0160 eV 16.
S(n)+21.396 3	(3)	(1)	0.0230 21	Γ_{γ} =0.042 eV 4, Γ_{n} =0.068 eV 7.
S(n)+21.476 2	1	1	0.108 8	$\Gamma_{\gamma} = 0.47 \text{ eV } 4, \Gamma_{n} = 5.4 \text{ eV } 5.$
S(n)+21.747 3	2	0	0.107 9	Γ_{γ} =0.260 eV 22, Γ_{n} =12.0 eV 12.
S(n)+21.782 2	3	1	0.033 3	$\Gamma_{\gamma} = 0.061 \text{ eV } 6, \Gamma_{n} = 0.75 \text{ eV } 7.$
S(n)+22.113 1	(3)	(1)	0.0328 23	$\Gamma_{\gamma} = 0.096 \text{ eV } 10, \Gamma_{n} = 0.140 \text{ eV } 13.$
S(n)+22.161 4	3	0	0.039 3	$\Gamma_{\gamma} = 0.069 \text{ eV } 6, \Gamma_{n} = 2.30 \text{ eV } 23.$
S(n)+22.276 2	(1)	(1)	0.035 3	$\Gamma_{\gamma} = 0.160 \text{ eV} 15, \Gamma_{n} = 1.10 \text{ eV} 10.$
S(n)+22.3749.3	(3)	(1)	0.0237 16	$\Gamma_{\gamma} = 0.0/6 \text{ eV } 8$, $\Gamma_n = 0.090 \text{ eV } 9$.
S(n)+22.454 2	(1)	(1)	0.051 4	$\Gamma_{\gamma} = 0.210 \text{ eV} 23, \Gamma_{n} = 0.88 \text{ eV} 0.$
S(n)+22.515 2 S(n)+22.508 1	(1)	(1)	0.045 5	$\Gamma_{\gamma} = 0.210 \text{ eV} 20, \Gamma_{\rm n} = 1.00 \text{ eV} 10.$
S(n) + 22.598 I S(n) + 22.744 A	4	1	0.008 4	$\Gamma_{\gamma} = 0.220 \text{ eV} 21$, $\Gamma_{n} = 0.130 \text{ eV} 15$. $\Gamma_{\gamma} = 0.180 \text{ eV} 16$, $\Gamma_{\gamma} = 6.5 \text{ eV} 6$
S(n) + 22.744 4 S(n) + 22.706 2	(2)	(1)	0.072 0	$\Gamma_{\gamma} = 0.100 \text{ eV} 10, \Gamma_{n} = 0.5 \text{ eV} 0.$
S(n) + 22.790.2 S(n) + 22.820.6	(3)	(1)	0.105 8	$\Gamma_{\gamma} = 0.220 \text{ eV} 12, \Gamma_{0} = 1.00 \text{ eV} 10.$ $\Gamma_{\gamma} = 0.0082 \text{ eV} 8 \Gamma_{\gamma} = 0.58 \text{ eV} 5$
S(n)+22.8200 S(n)+22.8507.7		(1)	0.030 3	$\Gamma_{\gamma} = 0.0002 \text{ eV} 0.7 \text{ n} = 0.50 \text{ eV} 3.$
S(n)+22.03077 S(n)+22.975.2	(3)	(1)	0.091 8	$\Gamma_{\gamma} = 0.100 \text{ eV} 10, \Gamma_{\text{B}} = 0.110 \text{ eV} 11.$ $\Gamma_{\gamma} = 0.220 \text{ eV} 20, \Gamma_{\gamma} = 105 \text{ eV} 10$
S(n)+23.231.3	(2)	(0)	0.0196 18	$\Gamma_{\gamma} = 0.036 \text{ eV} 4 \Gamma_{\gamma} = 0.52 \text{ eV} 5$
S(n) + 23.231 3 S(n) + 23.318 4	$\binom{3}{2}$	1	0.035 3	$\Gamma_{\gamma} = 0.030 \text{ eV} + \Gamma_{\text{fl}} = 0.52 \text{ eV} = 3.$
S(n)+23.512 3	(3)	(1)	0.0251.24	$\Gamma_{\nu}=0.044 \text{ eV} 4$ $\Gamma_{\nu}=1.50 \text{ eV} 14$
S(n)+23.695.5	4	1	0.057.5	$\Gamma_{v} = 0.100 \text{ eV} 10 \Gamma_{v} = 0.31 \text{ eV} 3$
S(n)+23.785 2	2	0	0.047 3	$\Gamma_{\rm v} = 0.200 \text{ eV} 19$, $\Gamma_{\rm p} = 0.260 \text{ eV} 24$.
S(n)+23.925 2	(3)	(1)	0.088 8	$\Gamma_{\rm v} = 0.150 \text{ eV} 14$, $\Gamma_{\rm p} = 55 \text{ eV} 5$.
S(n)+24.190 3	(3)	(1)	0.097 8	$\Gamma_{\rm y} = 0.170 \text{ eV } 15, \Gamma_{\rm p} = 3.1 \text{ eV } 3.$
S(n)+24.236 2	3	1	0.161 12	$\Gamma_{\rm y} = 0.280 \text{ eV} 22, \Gamma_{\rm n} = 9.8 \text{ eV} 10.$
S(n)+24.294 2	3	1	0.054 4	$\Gamma_{\rm y} = 0.140 \text{ eV } 14, \ \Gamma_{\rm n} = 0.29 \text{ eV } 3.$
S(n)+24.775 3	(2)	(1)	0.067 5	$\Gamma_{\gamma} = 0.210 \text{ eV } 20, \Gamma_{n} = 0.66 \text{ eV } 6.$
S(n)+24.800 3	2	1	0.056 5	$\Gamma_{\gamma} = 0.140 \text{ eV } 13, \Gamma_n = 1.90 \text{ eV } 19.$
S(n)+24.852 6	(2)	(1)	0.0169 16	Γ_{γ} =0.043 eV 4, Γ_{n} =0.77 eV 8.

Continued on next page (footnotes at end of table)

⁹¹**Zr**(\mathbf{n},γ),(\mathbf{n},\mathbf{n}) **E=res** 2008Ta29 (continued)

⁹²Zr Levels (continued)

E(level) [†]	$J^{\pi \ddagger}$	L [‡]	K (eV) [@]	Comments
S(n)+24.892 4	(3)	(1)	0.049 5	Γ_{γ} =0.089 eV 9, Γ_{n} =1.50 eV 15.
S(n)+24.924 2	2	1	0.110 9	$\Gamma_{\gamma} = 0.30 \text{ eV} 3$, $\Gamma_{n} = 2.20 \text{ eV} 21$.
S(n)+24.996 2	(3)	(0)	0.0152 11	$\Gamma_{\gamma} = 0.084 \text{ eV } 8$, $\Gamma_n = 0.038 \text{ eV } 4$.
S(n)+25.222 5	2	0	0.039 3	$\Gamma_{\gamma} = 0.110 \text{ eV } 11, \Gamma_{n} = 0.65 \text{ eV } 6.$
S(n)+25.2651 2	3	1	0.070 6	$\Gamma_{\gamma} = 0.160 \text{ eV } 16, \Gamma_{n} = 0.48 \text{ eV } 5.$
S(n)+25.6981 4	4	1	0.080 6	$\Gamma_{\gamma} = 0.180 \text{ eV } 17, \Gamma_{n} = 0.260 \text{ eV } 25.$
S(n)+25.990 2	3	0	0.160 11	$\Gamma_{\gamma} = 0.33 \text{ eV } 3, \Gamma_{n} = 1.56 \text{ eV } 15.$
S(n)+26.126 3	(4)	(1)	0.073 6	$\Gamma_{\gamma}^{'}=0.120 \text{ eV } 12, \Gamma_{n}=0.55 \text{ eV } 5.$

[†] Given here As S(n)+E(n)(lab), where $S(n)({}^{92}Zr)=8634.79$ 11 (2011AuZZ), E(n)(c.m.)=E(n)(lab)(91/92). The uncertainty shown does not include the uncertainty in S(n).

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