^{127}I(n,X): resonances 2006No12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129, 191 (2015)	28-Feb-2015

2006No12: E=150 MeV pulsed neutron source at Geel electron linear accelerator (GELINA) facility. High-resolution transmission and time-of flight measurements. Deduced resonance parameters using the resonance shape analysis technique and R-matrix theory. Authors state that a total of 719 resonances were observed below 10 keV, only 135 resonances are listed in the paper. For others, consult reference 38 in 2006No12, where data (as draft status report) are available to only the JEF members at website: www.nea.fr/html/dbdata/projects/901-1000.html.

J^π(^{127}I g.s.)=5/2$^+$.

^{128}I Levels

E(level)[†]	J^π[#]	Comments
S(n)-0.05419?[‡] *11*	2$^+$	gΓ$_n$=48.5 meV *5*. Γ$_\gamma$=99.8 meV *10*.
S(n)-0.04331?[‡] *10*	3$^+$	gΓ$_n$=65.2 meV *6*. Γ$_\gamma$=98.3 meV *9*.
S(n)+0.00755 *1*	1$^-$	gΓ$_n$=0.00012 meV. Γ$_\gamma$=100.0 meV.
S(n)+0.01035 *1*	1$^-$	gΓ$_n$=0.003 meV *1*. Γ$_\gamma$=90 meV *6*.
S(n)+0.01395 *1*	2$^-$	gΓ$_n$=0.002 meV *1*. Γ$_\gamma$=99 meV *21*.
S(n)+0.02038 *1*	2$^+$	gΓ$_n$=0.719 meV *24*. Γ$_\gamma$=95.7 meV *6*.
S(n)+0.02463 *1*	$^-$	gΓ$_n$=0.00064 meV. Γ$_\gamma$=100.0 meV.
S(n)+0.03121 *1*	3$^+$	gΓ$_n$=10.0 meV *3*. Γ$_\gamma$=94.7 meV *3*.
S(n)+0.03765 *2*	3$^+$	gΓ$_n$=23.3 meV *7*. Γ$_\gamma$=95.5 meV *4*.
S(n)+0.03974 *2*	3$^-$	gΓ$_n$=0.010 meV *3*. Γ$_\gamma$=96 meV *10*.
S(n)+0.04531 *2*	2$^+$	gΓ$_n$=9.4 meV *3*. Γ$_\gamma$=99.8 meV *3*.
S(n)+0.05374 *2*	4$^-$	gΓ$_n$=0.017 meV *1*. Γ$_\gamma$=100.0 meV.
S(n)+0.06405 *3*	1$^-$	gΓ$_n$=0.005 meV *1*. Γ$_\gamma$=100.0 meV.
S(n)+0.06592 *3*	2$^+$	gΓ$_n$=0.91 meV *3*. Γ$_\gamma$=104 meV *10*.
S(n)+0.07842 *4*	3$^+$	gΓ$_n$=14.7 meV *6*. Γ$_\gamma$=102.8 meV *5*.
S(n)+0.08576 *4*	3$^-$	gΓ$_n$=0.019 meV *1*. Γ$_\gamma$=100.0 meV.
S(n)+0.09040 *8*	3$^+$	gΓ$_n$=10.7 meV *4*. Γ$_\gamma$=103.8 meV *4*.
S(n)+0.10110 *10*	4$^-$	gΓ$_n$=0.014 meV *1*. Γ$_\gamma$=100.0 meV.
S(n)+0.11827 *11*	2$^-$	gΓ$_n$=0.007 meV *1*. Γ$_\gamma$=100.0 meV.
S(n)+0.13410 *13*	3$^-$	gΓ$_n$=0.024 meV *2*. Γ$_\gamma$=100.0 meV.
S(n)+0.13683 *13*	1$^-$	gΓ$_n$=0.044 meV *2*. Γ$_\gamma$=100.0 meV.
S(n)+0.13959 *13*	3$^+$	gΓ$_n$=22.8 meV *7*.

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^{127}I(n,X): resonances 2006No12 (continued)

^{128}I Levels (continued)

E(level)[†]	J$^{\pi}$[#]	Comments
		Γ_γ=95.3 meV *8*.
S(n)+0.14568 *14*	4$^-$	gΓ_n=0.036 meV *2*. Γ_γ=100.0 meV.
S(n)+0.15376 *14*	2$^-$	gΓ_n=0.101 meV *4*. Γ_γ=100.0 meV.
S(n)+0.15940 *15*	3$^-$	gΓ_n=0.007 meV *1*. Γ_γ=100.0 meV.
S(n)+0.16777 *16*	3$^+$	gΓ_n=0.585 meV *21*. Γ_γ=100.0 meV.
S(n)+0.16856 *16*	2$^+$	gΓ_n=44.9 meV *14*. Γ_γ=105.5 meV *5*.
S(n)+0.17409 *16*	2$^+$	gΓ_n=1.69 meV *6*. Γ_γ=157 meV *4*.
S(n)+0.17830 *17*	3$^+$	gΓ_n=0.450 meV *15*. Γ_γ=103 meV *5*.
S(n)+0.19546 *18*	3$^+$	gΓ_n=64.5 meV *19*. Γ_γ=102.3 meV *5*.
S(n)+0.20110 *15*	4$^-$	gΓ_n=0.039 meV *2*. Γ_γ=100.0 meV.
S(n)+0.20634 *15*	2$^+$	gΓ_n=19.9 meV *9*. Γ_γ=91.4 meV *8*.
S(n)+0.22362 *17*	2$^-$	gΓ_n=0.011 meV *1*. Γ_γ=100.0 meV.
S(n)+0.22712 *17*	3$^-$	gΓ_n=0.012 meV *1*. Γ_γ=100.0 meV.
S(n)+0.23731 *18*	2$^+$	gΓ_n=24.4 meV *9*. Γ_γ=111.9 meV *15*.
S(n)+0.24484 *18*	3$^+$	gΓ_n=5.76 meV *25*. Γ_γ=124.9 meV *24*.
S(n)+0.25668 *19*	4$^-$	gΓ_n=0.063 meV *3*. Γ_γ=100.0 meV.
S(n)+0.26523 *20*	3$^+$	gΓ_n=20.7 meV *9*. Γ_γ=120.4 meV *19*.
S(n)+0.27130 *20*	3$^+$	gΓ_n=4.25 meV *18*. Γ_γ=112 meV *3*.
S(n)+0.27448 *20*	3$^-$	gΓ_n=0.023 meV *9*. Γ_γ=100.0 meV.
S(n)+0.28260 *21*	2$^-$	gΓ_n=0.011 meV *5*. Γ_γ=100.0 meV.
S(n)+0.29241 *22*	1$^-$	gΓ_n=0.143 meV *6*. Γ_γ=100.0 meV.
S(n)+0.29957 *22*	2$^+$	gΓ_n=8.0 meV *3*. Γ_γ=111.0 meV *22*.
S(n)+0.3064 *3*	4$^-$	gΓ_n=0.035 meV *3*. Γ_γ=100.0 meV.
S(n)+0.3109 *3*	2$^+$	gΓ_n=10.3 meV *4*. Γ_γ=118.6 meV *23*.
S(n)+0.3146 *3*	3$^-$	gΓ_n=0.047 meV *4*. Γ_γ=100.0 meV.
S(n)+0.3242 *3*	2$^+$	gΓ_n=0.233 meV *10*. Γ_γ=100.0 meV.
S(n)+0.3254 *3*	2$^+$	gΓ_n=0.460 meV *17*. Γ_γ=100.0 meV.
S(n)+0.3290 *3*	3$^+$	gΓ_n=1.67 meV *5*. Γ_γ=125 meV *7*.
S(n)+0.3464 *3*	4$^-$	gΓ_n=0.122 meV *6*.

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^{127}I(n,X): resonances 2006No12 (continued)

^{128}I Levels (continued)

E(level)[†]	J$^{\pi}$[#]	Comments
		Γ_γ=100.0 meV.
S(n)+0.3520 *3*	2$^-$	gΓ_n=0.093 meV *6*.
		Γ_γ=100.0 meV.
S(n)+0.3534 *3*	1$^-$	gΓ_n=0.094 meV *5*.
		Γ_γ=100.0 meV.
S(n)+0.3625 *3*	2$^+$	gΓ_n=3.87 meV *13*.
		Γ_γ=144 meV *5*.
S(n)+0.3747 *3*	2$^+$	gΓ_n=67.3 meV *20*.
		Γ_γ=98.9 meV *10*.
S(n)+0.3821 *3*	3$^-$	gΓ_n=0.198 meV *11*.
		Γ_γ=100.0 meV.
S(n)+0.3862 *3*	2$^+$	gΓ_n=108 meV *4*.
		Γ_γ=89.6 meV *8*.
S(n)+0.3921 *3*	4$^-$	gΓ_n=0.148 meV *12*.
		Γ_γ=100.0 meV.
S(n)+0.3932 *3*	2$^-$	gΓ_n=0.321 meV *16*.
		Γ_γ=100.0 meV.
S(n)+0.4130 *4*	1$^-$	gΓ_n=0.084 meV *9*.
		Γ_γ=100.0 meV.
S(n)+0.4203 *4*	3$^+$	gΓ_n=14.0 meV *6*.
		Γ_γ=100.0 meV.
S(n)+0.4219 *4*	3$^-$	gΓ_n=0.186 meV *16*.
		Γ_γ=100.0 meV.
S(n)+0.4269 *4*	2$^+$	gΓ_n=60.5 meV *18*.
		Γ_γ=99.4 meV *7*.
S(n)+0.4314 *4*	4$^-$	gΓ_n=0.148 meV *10*.
		Γ_γ=100.0 meV.
S(n)+0.4350 *4*	3$^+$	gΓ_n=27.2 meV *13*.
		Γ_γ=100.9 meV *20*.
S(n)+0.4401 *4*	2$^-$	gΓ_n=0.187 meV *10*.
		Γ_γ=100.0 meV.
S(n)+0.4483 *4*	2$^+$	gΓ_n=26.6 meV *11*.
		Γ_γ=117.9 meV *15*.
S(n)+0.4548 *4*	3$^+$	gΓ_n=0.677 meV *23*.
		Γ_γ=100.0 meV.
S(n)+0.4583 *4*	1$^-$	gΓ_n=0.104 meV *17*.
		Γ_γ=100.0 meV.
S(n)+0.4684 *4*	3$^-$	gΓ_n=0.128 meV *13*.
		Γ_γ=100.0 meV.
S(n)+0.4758 *5*	2$^+$	gΓ_n=5.35 meV *20*.
		Γ_γ=108 meV *6*.
S(n)+0.4801 *5*	2$^+$	gΓ_n=8.2 meV *3*.
		Γ_γ=115 meV *4*.
S(n)+0.4994 *5*	2$^+$	gΓ_n=23.2 meV *8*.
		Γ_γ=128.6 meV *24*.
S(n)+0.5154 *5*	2$^+$	gΓ_n=23.1 meV *8*.
		Γ_γ=121 meV *3*.
S(n)+0.5182 *5*	3$^+$	gΓ_n=19.6 meV *7*.
		Γ_γ=111 meV *4*.
S(n)+0.5333 *6*	3$^+$	gΓ_n=59.3 meV *21*.
		Γ_γ=100.6 meV *14*.
S(n)+0.5460 *6*	4$^-$	gΓ_n=0.128 meV *13*.
		Γ_γ=100.0 meV.
S(n)+0.5505 *6*	2$^+$	gΓ_n=0.632 meV *23*.
		Γ_γ=100.0 meV.
S(n)+0.5631 *6*	3$^-$	gΓ_n=0.48 meV *3*.

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^{127}I(n,X): resonances 2006No12 (continued)

^{128}I Levels (continued)

E(level)[†]	J$^{\pi}$[#]	Comments
		Γ_γ=100.0 meV.
S(n)+0.5659 *6*	3$^+$	gΓ_n=87 meV *3*.
		Γ_γ=99.2 meV *18*.
S(n)+0.5691 *6*	2$^+$	gΓ_n=10.6 meV *4*.
		Γ_γ=95 meV *6*.
S(n)+0.5787 *6*	2$^-$	gΓ_n=0.321 meV *16*.
		Γ_γ=100.0 meV.
S(n)+0.5843 *6*	2$^+$	gΓ_n=2.01 meV *7*.
		Γ_γ=100.0 meV.
S(n)+0.5887 *6*	4$^-$	gΓ_n=0.233 meV *12*.
		Γ_γ=100.0 meV.
S(n)+0.5966 *6*	1$^-$	gΓ_n=0.128 meV *13*.
		Γ_γ=100.0 meV.
S(n)+0.6192 *7*	3$^+$	gΓ_n=36.7 meV *13*.
		Γ_γ=95.5 meV *21*.
S(n)+0.6243 *7*	3$^-$	gΓ_n=0.71 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.6326 *7*	3$^+$	gΓ_n=21.4 meV *8*.
		Γ_γ=97 meV *3*.
S(n)+0.6358 *7*	4$^-$	gΓ_n=0.386 meV *24*.
		Γ_γ=100.0 meV.
S(n)+0.6436 *7*	2$^-$	gΓ_n=0.51 meV *12*.
		Γ_γ=100.0 meV.
S(n)+0.6447 *7*	2$^+$	gΓ_n=5.53 meV *22*.
		Γ_γ=85 meV *12*.
S(n)+0.6470 *7*	1$^-$	gΓ_n=0.150 meV *16*.
		Γ_γ=100.0 meV.
S(n)+0.6589 *7*	3$^+$	gΓ_n=3.97 meV *13*.
		Γ_γ=126 meV *9*.
S(n)+0.6624 *7*	3$^-$	gΓ_n=0.405 meV *19*.
		Γ_γ=100.0 meV.
S(n)+0.6693 *7*	2$^+$	gΓ_n=30.0 meV *11*.
		Γ_γ=98.6 meV *23*.
S(n)+0.6901 *8*	3$^+$	gΓ_n=0.89 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.7021 *8*	3$^+$	gΓ_n=64.0 meV *20*.
		Γ_γ=101.3 meV *20*.
S(n)+0.7084 *8*	2$^+$	gΓ_n=105 meV *9*.
		Γ_γ=87 meV *5*.
S(n)+0.7087 *8*	3$^+$	gΓ_n=123 meV *7*.
		Γ_γ=99 meV *4*.
S(n)+0.7140 *9*	4$^-$	gΓ_n=0.15 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.7268 *9*	2$^-$	gΓ_n=0.358 meV *24*.
		Γ_γ=100.0 meV.
S(n)+0.7309 *9*	2$^+$	gΓ_n=61.1 meV *20*.
		Γ_γ=97.4 meV *19*.
S(n)+0.7345 *9*	3$^-$	gΓ_n=0.48 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.7445 *9*	3$^+$	gΓ_n=110 meV *4*.
		Γ_γ=97.7 meV *15*.
S(n)+0.7579 *9*	4$^-$	gΓ_n=0.69 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.7625 *9*	2$^+$	gΓ_n=112 meV *4*.
		Γ_γ=99.0 meV *16*.
S(n)+0.7671 *9*	1$^-$	gΓ_n=0.38 meV *3*.

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^{127}I(n,X): resonances 2006No12 (continued)

^{128}I Levels (continued)

E(level)[†]	J$^{\pi}$[#]	Comments
		Γ_γ=100.0 meV.
S(n)+0.7721 *9*	2$^-$	gΓ_n=0.082 meV *15*.
		Γ_γ=100.0 meV.
S(n)+0.7773 *9*	3$^-$	gΓ_n=0.168 meV *21*.
		Γ_γ=100.0 meV.
S(n)+0.7798 *9*	3$^+$	gΓ_n=4.20 meV *15*.
		Γ_γ=100.0 meV.
S(n)+0.7906 *9*	3$^+$	gΓ_n=11.0 meV *4*.
		Γ_γ=107 meV *7*.
S(n)+0.7967 *9*	4$^-$	gΓ_n=0.075 meV *8*.
		Γ_γ=100.0 meV.
S(n)+0.8055 *4*	1$^-$	gΓ_n=0.420 meV *21*.
		Γ_γ=100.0 meV.
S(n)+0.8134 *4*	2$^+$	gΓ_n=38.9 meV *14*.
		Γ_γ=103.1 meV *23*.
S(n)+0.8181 *4*	2$^-$	gΓ_n=0.255 meV *18*.
		Γ_γ=100.0 meV.
S(n)+0.8282 *5*	3$^+$	gΓ_n=6.50 meV *25*.
		Γ_γ=136 meV *6*.
S(n)+0.8341 *5*	3$^+$	gΓ_n=88 meV *3*.
		Γ_γ=92.7 meV *17*.
S(n)+0.8400 *5*	4$^-$	gΓ_n=0.40 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.8625 *5*	3$^+$	gΓ_n=6.74 meV *24*.
		Γ_γ=125 meV *12*.
S(n)+0.8674 *5*	3$^-$	gΓ_n=0.67 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.8906 *5*	2$^+$	gΓ_n=10.7 meV *3*.
		Γ_γ=113 meV *7*.
S(n)+0.8981 *5*	4$^-$	gΓ_n=0.176 meV *25*.
		Γ_γ=100.0 meV.
S(n)+0.9017 *5*	2$^+$	gΓ_n=11.2 meV *4*.
		Γ_γ=132 meV *9*.
S(n)+0.9152 *5*	3$^+$	gΓ_n=13.0 meV *4*.
		Γ_γ=102 meV *8*.
S(n)+0.9182 *5*	3$^-$	gΓ_n=0.52 meV *4*.
		Γ_γ=100.0 meV.
S(n)+0.9200 *5*	2$^-$	gΓ_n=0.31 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.9253 *5*	1$^-$	gΓ_n=0.45 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.9280 *5*	4$^-$	gΓ_n=0.95 meV *4*.
		Γ_γ=100.0 meV.
S(n)+0.9433 *5*	3$^+$	gΓ_n=29.6 meV *10*.
		Γ_γ=161 meV *6*.
S(n)+0.9552 *5*	3$^+$	gΓ_n=79 meV *3*.
		Γ_γ=96.6 meV *22*.
S(n)+0.9613 *5*	3$^+$	gΓ_n=12.2 meV *4*.
		Γ_γ=102 meV *9*.
S(n)+0.9665 *5*	4$^-$	gΓ_n=0.73 meV *4*.
		Γ_γ=100.0 meV.
S(n)+0.9697 *5*	3$^-$	gΓ_n=0.14 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.9721 *5*	2$^-$	gΓ_n=0.50 meV *3*.
		Γ_γ=100.0 meV.
S(n)+0.9874 *5*	1$^-$	gΓ_n=0.97 meV *4*.

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^{127}I(n,X): resonances 2006No12 (continued)

^{128}I Levels (continued)

E(level)[†]	J$^{\pi}$[#]	Comments
		Γ_{γ}=100.0 meV.
S(n)+1.0038 *6*	4^{-}	gΓ_{n}=0.97 meV *8*. Γ_{γ}=100.0 meV.

[†] The neutron energies are in the lab system.
[‡] Fictitious level, defined by a resonance energy below the neutron separation energy.
[#] Based on the statistical evaluation of the measured experimental widths using codes ESTIMA and CALENDF.