^{64}Ni(n,γ):resonances 2018MuZY

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 202,59 (2025)	25-Feb-2025

All resonance parameters taken from 2018MuZY evaluation, unless otherwise stated.
2018MuZY: evaluation of neutron resonance energies, J^π values, width parameters, and resonance strengths for nuclei of Z=1-60.

^{65}Ni Levels

All resonance parameters including resonance neutron energies, J^π, L, $g\Gamma_n$, Γ_γ and resonance strengths are from the compilation and evaluation in 2018MuZY, unless otherwise indicated.
$g\Gamma_n=(2J+1)\Gamma_n/2$.

E(level)[†]	J^π	$g\Gamma_n\Gamma_\gamma/\Gamma$	L	E_n(lab) (keV)	Comments
6097.09	1/2		0	−1.01	$\Gamma_\gamma\approx$1.04 eV.
6107.50 *17*	(3/2)		[1]	9.57 *10*	$g\Gamma_n\approx$7 eV, Γ_γ=0.4 eV.
6112.16 *24*	1/2	1.01 *7*	0	14.3 *2*	$g\Gamma_n=2.9\times10^3$ eV *5*, Γ_γ=1.01 eV *7*.
6112.65 *17*	(1/2)		[1]	14.8 *1*	$g\Gamma_n\approx$10 eV, Γ_γ=0.25 eV.
6129.39 *17*	(3/2)		[1]	31.8 *1*	$g\Gamma_n\approx$10 eV, Γ_γ=0.41 eV.
6131.36 *15*	1/2	1.16 *8*	0	33.81 *4*	$g\Gamma_n=8.9\times10^3$ eV *5*, Γ_γ=1.16 eV *8*.
6159.9 *4*	(3/2)		[1]	62.8 *4*	$g\Gamma_n\approx$20 eV, Γ_γ=0.44 eV.
6203.04 *16*			1	106.62 *8*	$g\Gamma_n$=110 eV *30*.
6225.39 *14*	1/2		0	129.32 *3*	$g\Gamma_n=1.40\times10^3$ eV *6*.
6237.38 *17*			1	141.5 *1*	$g\Gamma_n$=170 eV *20*.
6244.57 *17*	1/2		0	148.8 *1*	$g\Gamma_n$=80 eV *20*.
6250.67 *17*	1/2		0	155.0 *1*	$g\Gamma_n=3.96\times10^3$ eV *10*.
6258.75 *17*	1/2		0	163.2 *1*	$g\Gamma_n$=160 eV *20*.
6273.02 *17*	1/2		0	177.7 *1*	$g\Gamma_n$=470 eV *30*.
6286.11 *24*			1	191.0 *2*	$g\Gamma_n$=140 eV *30*.
6300.19 *24*	1/2		0	205.3 *2*	$g\Gamma_n$=60 eV *20*.
6309.45 *33*			1	214.7 *3*	$g\Gamma_n$=90 eV *20*.
6314.47 *17*	1/2		0	219.8 *1*	$g\Gamma_n$=30 eV *20*.
6321.46 *33*	1/2		0	226.9 *3*	$g\Gamma_n$=120 eV *30*.
6326.43 *15*	1/2		0	231.95 *4*	$g\Gamma_n=3.77\times10^3$ eV *9*.
6332.28 *17*			1	237.9 *1*	$g\Gamma_n=4.0\times10^2$ eV *8*.
6349.81 *33*			1	255.7 *3*	$g\Gamma_n$=580 eV *12*.
6363.59 *17*	1/2		0	269.7 *1*	$g\Gamma_n=2.21\times10^3$ eV *9*.
6377.2 *4*	1/2		0	283.5 *4*	$g\Gamma_n=3.5\times10^2$ eV *7*.
6389.5 *25*	1/2		0	296.0 *25*	$g\Gamma_n$=1000 eV.
6401.8 *25*	1/2		0	308.5 *25*	$g\Gamma_n$=1500 eV.
6420.0 *25*			1	327.0 *25*	$g\Gamma_n$=597 eV.
6425.9 *25*	1/2		0	333.0 *25*	$g\Gamma_n$=250 eV.
6433.0	1/2		0	340.2	$g\Gamma_n$=500 eV.
6457	3/2		1	365	$g\Gamma_n$=1857 eV.
6463.8	3/2		1	371.5	$g\Gamma_n$=1318 eV.
6468				376	$g\Gamma_n$=275 eV.
6475	3/2		1	383	$g\Gamma_n$=1597 eV.
6481	1/2		0	389	$g\Gamma_n$=6000 eV.
6484.5			1	392.5	$g\Gamma_n$=235 eV.
6487.4			1	395.5	$g\Gamma_n$=815 eV.
6499	3/2		1	407	$g\Gamma_n$=2020 eV.
6506			1	414	$g\Gamma_n$=759 eV.
6512.3	1/2		0	420.8	$g\Gamma_n$=8000 eV.
6546.5	1/2		1	455.5	$g\Gamma_n$=560 eV.

Continued on next page (footnotes at end of table)

^{64}Ni(n,γ):resonances 2018MuZY (continued)

^{65}Ni Levels (continued)

E(level)[†]	J$^{\pi}$	L	E_n(lab) (keV)	Comments
6550.4	3/2	1	459.5	gΓ_n=1100 eV.
6557.3	1/2	1	466.5	gΓ_n=995 eV.
6561		1	470	gΓ_n=535 eV.
6570	1/2	1	479	gΓ_n=1090 eV.
6574	1/2	0	483	gΓ_n=5000 eV.
6578.1			487.6	gΓ_n=435 eV.
6589.8		1	499.5	gΓ_n=535 eV.
6593		1	503	gΓ_n=766 eV.
6609		1	519	gΓ_n=477 eV.
6613	1/2	0	523	gΓ_n=1000 eV.
6619.2	1/2	0	529.3	gΓ_n=750 eV.
6626.2	1/2	0	536.5	gΓ_n=10000 eV.
6631.2	3/2	1	541.5	gΓ_n=1670 eV.
6642	1/2	0	552	gΓ_n=2000 eV.
6654		1	565	gΓ_n=900 eV.
6665	1/2	0	576	gΓ_n=4000 eV.
6672	1/2	0	583	gΓ_n=300 eV.

[†] From $E_{c.m.}$+S(n) where S(n)=6098.08 *14* (2021Wa16) and $E_{c.m.}=E_n(lab)\times m(^{64}Ni)/[m_n+m(^{64}Ni)]$ with mass values from 2021Wa16.