

$^{208}\text{Pb}(x,x'),(x,x'\gamma)$ 

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 108,1583 (2007)	1-Jun-2007

See [1986Ma17](#) for detailed information from these reactions. For excitation of levels below the giant resonance region, the data from these works are all of low resolution relative to recent (p,p') or ( $\alpha,\alpha'$ ) data. Below 6 MeV, only the 2615, 3198, 4085, 4324, and 5482 levels have been populated, with L determined as 3, 5, 2, 4, and 5, respectively.  $\beta_L$  values have also been determined. Data for the giant resonance region have generally been superseded by data from ( $\alpha,\alpha'$ ), (d,d'), (p,p'), ( $\gamma,\gamma'$ ), and (e,e'). However, the following data from ( $^3\text{He},^3\text{He}'$ ) should be noted.

For the giant quadrupole resonance, [1983Ya02](#) report E=10.9 MeV with  $\Gamma=2.7$  MeV, and %EWSR=32-50 for L=2 and 23-29 for L=4, or 89-137 if analyzed as L=2 only. [1979Bu08](#) report E=10.6 with  $\Gamma=2.8$  MeV and %EWSR=102 and [1975Ho05](#) report E=10.9 5 with  $\Gamma=5.9$  MeV.

For the giant monopole resonance [1983Ya02](#) report E=13.7 MeV with  $\Gamma=2.7$  MeV and %EWSR=53-114, and [1980Bu16](#) report E=13.2 3 with  $\Gamma=2.80$  25 and %EWSR=92 12.

For the giant octupole resonance, [1981Ya02](#) report E=20.5 10 MeV with %EWSR=78 15 and determine L=3.

Also, in pion scattering, [1983SeZX](#) report that for the resonance at  $\approx 21.5$  MeV, the forward angle scattering is not consistent with quadrupole or octupole excitation, but is consistent with an isoscalar dipole resonance.

x=N	<a href="#">1960Pr02</a> E=4.1 MeV
	<a href="#">1965St16</a> E=14 MeV
	<a href="#">1967Cr06</a> E=2-5, 7, 8 MeV
	<a href="#">1972Be49</a> E=13.7 MeV
	<a href="#">1978Ra04</a> , <a href="#">1977Ba49</a> E=11, 25.7 MeV
	<a href="#">1982Gu02</a> E(pol N)=10 MeV
x= $^3\text{He}$	<a href="#">1972Ba07</a> E=43, 67 MeV
	<a href="#">1975Ho05</a> E=80 MeV, FWHM $\approx$ 250 keV
	<a href="#">1980Bu16</a> , <a href="#">1979Bu08</a> E=108.5 MeV
	<a href="#">1981Ya02</a> E=110-140 MeV, FWHM=150-300 keV
	<a href="#">1983Ya02</a> E=140 MeV, FWHM $\approx$ 100, Except $\approx$ 30 For low-lying levels
x= $^6\text{Li}$	<a href="#">1977Gi08</a> E=156 MeV
x= $^7\text{Li}$	<a href="#">1983YaZT</a> , <a href="#">1984YaZV</a> E=115, 150 MeV
	<a href="#">2005Ya17</a> E=150 MeV, FWHM $\approx$ 700 keV
x= $^9\text{Be}$	<a href="#">1981Le03</a> E=245 MeV, FWHM $\approx$ 600 keV
x= $^{11}\text{B}$	<a href="#">1973Fo17</a> E=72.2 MeV
x= $^{12}\text{C}$	<a href="#">1975Sa17</a> E=98 MeV
	<a href="#">1978Bu10</a> E=120 MeV, FWHM=500-800 keV
	<a href="#">1979Ka08</a> E=200 MeV
x= $^{14}\text{N}$	<a href="#">1978Bu10</a> E=161 MeV, FWHM=500-800 keV
	<a href="#">1980Ga15</a> E=266 MeV, FWHM $\approx$ 800 keV
x= $^{16}\text{O}$	<a href="#">1972Be75</a> E=104 MeV
	<a href="#">1979Do01</a> E=315 MeV
	<a href="#">1984Sj01</a> E=350, 400 MeV, FWHM $\approx$ 550 keV
x= $^{17}\text{O}$	See Coulomb Excitation
x= $^{20}\text{Ne}$	<a href="#">1984Bl09</a> E=600 MeV
x= $^{28}\text{Si}$	<a href="#">1984Ch01</a> E=209.8 MeV, FWHM $\approx$ 150 keV
x= $^{36}\text{Ar}$	<a href="#">1984Bl09</a> E=392 MeV
x= $^{136}\text{Xe}$	<a href="#">1977ChZH</a> E=802 MeV
x= $\pi^+$	<a href="#">1980O102</a> E=162 MeV, FWHM $\approx$ 350 keV
	<a href="#">1981Ge03</a> E=291 MeV, FWHM $\approx$ 600 keV
	<a href="#">1983SeZX</a> E=164 MeV

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