
 $^{208}\text{Pb}(n,\gamma)$: E=0.8-20 MeV [1972Be46](#),[1981Dr08](#),[1982Jo01](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. Chen [#] and F. G. Kondev		NDS 126, 373 (2015)	30-Sep-2013

$S(n)=3937.4 \pm 13$ ([2012Wa38](#)).

[1972Be46](#): E=6.2-14.7 MeV neutrons were produced by $^3\text{H}(p,n)$ with proton beams from the Los Alamos Van de Graaff accelerator. γ -rays were detected with a NaI(Tl) detector. Measured $\sigma(E\gamma)$. Deduced giant resonance structure.

[1981Dr08](#): E=10-20 MeV neutrons at the Los Alamos tandem. NaI detector. Measured $\sigma(E\gamma)$, asymmetry. Deduced E2 giant isovector resonance.

[1982Jo01](#): E=0.8-7.7 MeV neutrons at the tandem accelerators at Bruyeres-le-Chatel and Uppsala. NaI(Tl) detector. Measured $\sigma(E\gamma)$.

[1982Ki05](#): E=7-13 MeV. Measure $\sigma(E\gamma,\gamma)$. Deduced dipole EWSR in GDR region.

Others: [2010Se03](#), [2008Re07](#), [2004Ra29](#), [2003Be49](#), [1971Be38](#), [1971Dr07](#), [1967Cs01](#).

[1972Be46](#) studied $\sigma(E)$ for transitions to bound single-particle states of ^{209}Pb (unresolved). Energy of giant dipole state found to be 13.6 MeV $\frac{5}{2}$ (from decay to $2g_{9/2}$), 13.7 MeV $\frac{5}{2}$ (from decay to $1i_{11/2}$), 13.8 MeV $\frac{5}{2}$ (from decay to $1j_{15/2}+3d_{5/2}$), and 13.7 MeV $\frac{5}{2}$ (from decay to $2g_{7/2}+3d_{3/2}$).

[1981Dr08](#) measured fore-aft asymmetry (ratio of difference to sum of yields at 55° and 125°). From a comparison of this asymmetry with theory, they suggest that the E2 giant isoscalar resonance is centered within 1 MeV of 23.5 MeV.

[1982Jo01](#) looked for an asymmetry in the yield around 90° as evidence for possible excitation of isoscalar E2 and M1 giant resonances. No asymmetry was seen.

[1982Ki05](#) measured $\gamma(\theta)$ for the transitions to the g.s. and first excited states. These exhaust 0.39% and 0.13%, respectively, of the classical dipole sum rule between $E(\text{exc})=10.9$ and 16.9 MeV.

 ^{209}Pb Levels

E(level)	Comments
$13.7 \times 10^3 \frac{5}{2}$	E(level): from 1972Be46 .