

<sup>64</sup>Ni( $\pi^+, \pi^+$ ), ( $\pi^-, \pi^-$ )    **1988Mi14, 1989Oa01, 1996La04**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 178,41 (2021).	12-Nov-2021

**1988Mi14:** E=50 MeV  $\pi$  beam from LAMPF. Measured  $\sigma(\theta)$ . See also [1987Wr04](#) (E=30 MeV), [1986Fi12](#) and [1986FiZZ](#) (E=65 MeV) from the same group.

**1989Oa01:** ( $\pi^+, \pi^{+'}$ ), ( $\pi^-, \pi^{-'}$ ) E=180 MeV  $\pi$  beam from the Clinton P. Anderson Meson Physics Facility at LANL. Measured  $\sigma(\theta)$  for giant-quadrupole resonance at 16.5 MeV.

**1996La04:** E=180 MeV at LAMPF. Measured  $\sigma(\theta)$  for first  $2^+$  and first  $3^-$ .

Analysis of data for 1346,  $2^+$  and 3560,  $3^-$  states: [1993Pe09](#).

Analysis of elastic scattering data: [2004Sa28](#).

[Additional information 1.](#)

<sup>64</sup>Ni Levels

B(E2) values given are squares of the matrix elements given by [1996La04](#) and [1993Pe09](#).

E(level) <sup>†</sup>	J $\pi$ <sup>†</sup>	T <sub>1/2</sub>	Comments
0	0 <sup>+</sup>		
1346	2 <sup>+</sup>		$\beta_2$ (neutron)=0.210, $\beta_2$ (proton)=0.212 ( <a href="#">1996La04</a> ). Other: $\beta_2$ =0.139 for $\pi^+$ and 0.175 for $\pi^-$ data ( <a href="#">2004Sa28</a> ). B(E2)(neutron)=0.125, 0.135 ( <a href="#">1996La04</a> ), 0.207 ( <a href="#">1993Pe09, 1989Oa01</a> ). B(E2)(proton)=0.078 ( <a href="#">1996La04</a> ), 0.067 ( <a href="#">1993Pe09, 1989Oa01</a> ).
3560	3 <sup>-</sup>		B(E3)(neutron)=0.058 ( <a href="#">1993Pe09, 1989Oa01</a> ). B(E3)(proton)=0.0225 ( <a href="#">1993Pe09, 1989Oa01</a> ).
16.4×10 <sup>3</sup>	10	6.8 MeV	E(level), T <sub>1/2</sub> : energy and width for a giant quadrupole resonance ( <a href="#">1989Oa01</a> ). %EWSR=170 23 ( <a href="#">1989Oa01</a> ).

<sup>†</sup> From the Adopted Levels.