

$^{42}\text{Ca}(\pi^+, \pi^{+'}), (\pi^-, \pi^{-'})$ **1984Bo02**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen [#] and Balraj Singh		NDS 135, 1 (2016)	31-May-2016

1984Bo02, 1981Bo26: E=116.0, 180.0, 292.5 MeV pions were produced at the Clinton P. Anderson Meson Physics Facility (LAMPF). Scattered particles were analyzed with the epics spectrometer and detected by position-sensitive, delay-line read-out drift chambers, FWHM=300 keV. Measured $\sigma(\theta)$. Deduced levels, J^π , L from Distorted Wave Impulse Approximation (DWIA) and optical-model analysis.

1984KaZY: E=130, 180, 235, 292 MeV. Measured $\sigma(\theta)$, deduced core-excitation role.

1999Ha66: E=164-292 MeV.

 ^{42}Ca Levels

All data are from **1984Bo02**, unless otherwise noted.

E(level)	J^π [#]	L
0	0 ⁺	0
1520 [†]	2 ⁺	2
2420	2 ⁺	2
3440 [‡]	3 ⁻	3
4104	5 ⁻	5
4680	3 ⁻	3
6300	(3 ⁻)	(3)

[†] E2 matrix elements (from microscopic model, in s.p.u.): 3.22 22 (for neutron), 2.80 21 (for proton) (**1981Bo26**).

[‡] E3 matrix elements (from microscopic model, in s.p.u.): 3.59 27 (for neutron), 4.06 28 (for proton) (**1981Bo26**).

[#] From L-transfer.