

${}^{40}\text{Ca}(\pi^-,2\text{n}),(\pi^-,2\text{n}\gamma)$ 1978Ba35,1976En02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 152, 1 (2018)	30-Sep-2017

1978Ba35: $(\pi^-,2\text{n})$ π^- was produced from the CERN synchro-cyclotron and stopped in a 3 g/cm² target of natural calcium powder.

Neutrons were detected with a pair of neutron counters. Measured neutron spectra, opening-angle distributions and recoil momentum distributions. Deduced levels, reaction mechanism.

1976En02: $(\pi^-,2\text{n}\gamma)$ π^- capture at rest at CERN. Natural Ca target. γ rays were detected with a Ge(Li) detector. Measured E_γ , transition and isotopic yields.

 ${}^{38}\text{K}$ Levels

E(level)	L	Comments
0		
2645 <i>I</i>		E(level): from 1976En02. 1978Ba35 report a peak near 3 MeV in neutron spectrum.
$\approx 8 \times 10^3$ †	0	E(level): population from 1978Ba35; yield/100 π^- captures ≈ 5 . L: from opening-angle distributions and recoil momentum distributions.
$\approx 14 \times 10^3$ †		
$\approx 38 \times 10^3$ †		

† From $(\pi^-,2\text{n})$ (1978Ba35). Due to poor resolution, this group is not included in Adopted Levels.

 $\gamma({}^{38}\text{K})$

E_γ	$E_i(\text{level})$	E_f	Comments
2645 <i>I</i>	2645	0	E_γ : from 1976En02. Yield/100 π^- captures=0.3 <i>I</i> (1976En02).

 ${}^{40}\text{Ca}(\pi^-,2\text{n}),(\pi^-,2\text{n}\gamma)$ 1978Ba35,1976En02Level Scheme