^{140}Ce(p,t) 1977Sh06,1972Sh21

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

1977Sh06,1972Sh21: E=30.3 MeV proton beam was produced from the Lawrence Berkeley Laboratory 88-inch cyclotron. Targets were self-supporting 1.9-cm-diam ^{140}Ce (99.5% enriched) with thickness of 0.79 mg/cm^2. Charged particles were detected with a pair of ΔE-E telescopes of 5-mm Si(Li) detectors (FWHM= 55 keV). Measured $\sigma(E_t,\theta)$. Deduced levels, J, π, L-transfers, spectroscopic enhancement factors from DWBA analysis. Comparisons with theoretical calculations.

Other: 1970Ya05 (E=52.1 MeV).

All data are from 1977Sh06.

^{138}Ce Levels

E(level)	L	$\epsilon^\dagger$	E(level)	L	$\epsilon^\dagger$	E(level)	L	$\epsilon^\dagger$
0.0	0	19.3	2389 *16*	(2,3)	(1.3,8.7)	3082 *16*	4,5	0.78,2.1
788 *10*	2	18.3	2440 *16*	4,5	1.3,3.7	3220 *16*	2,3	3.4,28.9
1501 *10*	2	3.0	2640 *16*	2,3	3.9,32.1	3277 *16*	(3)	21.6
1822 *10*	4	5.7	2719 *16*	4,5	0.92,2.6	3356 *16*	2,3	3.7,27.5
2130 *10*	7	4.6	2885 *16*	2,3	3.9,27.5	3429 *16*	4,5	1.2,3.9
2219 *10*	5,6	20.6,6.4	2942 *16*	4,5	4.1,11.5	3531 *16*		
2336 *10*	0	2.7	3005 *16*	4,5	3.1,9.2	3646 *16*	(7)	1.8

† Enhancement factor ϵ is defined by $\sigma_{exp}(\theta)$=N×ϵ×$\sigma_{DW}(\theta)$, with normalization factor N=218 (1977Sh06).