Coulomb excitation 2000Er06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

2000Er06 (also 2000Er01): ^{50}Cr beam with E=110-120 MeV from the tandem accelerators at Cologne and Munich. Target: 0.75 mg/cm^2 natural carbon deposited on a gadolinium layer evaporated on tantalum. γ rays detected by NaI(Tl) and BaF_2 scintillators and a Ge detector. Coulomb excitation events separated from fusion channel by time spectrum. Measured g factor, B(E2) and lifetime by DSAM.

Others:

1960An09: E(^{20}Ne)=23.2 MeV. Natural target. Measured thick-target γ-yield; NaI.

1961Mc18, 1966Mc18: beam=α. No experimental details given.

1965Ro09: Eα=6-9 MeV. Measured Eγ values.

1971DaZM: E(^{16}O)=21, 24, 27, and 30 MeV; E(^{35}Cl)=60, 70, 80 MeV. Measured 783γ thick target yield.

1972Ra14: E(^{35}Cl)=54 MeV. Measured 783γ thick-target yield, B(E2) and level lifetime by DSAM.

1975To06: E(^{12}C)=17-20 MeV, E(^{16}O)=24-28 MeV, E(^{32}S)=50-63 MeV; natural target; measured γ thick-target yield; θ=107°, FWHM≈3.5 keV. E(^{32}S)=50-63 MeV; measured Q using reorientation method ^{32}S-γ coincidences (NaI,Si).

^{50}Cr Levels

E(level)†	J$^\pi$†	$T_{1/2}$	Comments
0	0$^+$		
783	2$^+$	9.15‡ ps *28*	g=0.619 *31* (2000Er06) Q=−0.36 *7* (1975To06) B(E2)↑=0.106 *5* B(E2)↑: from excitation cross section in Coul. ex., weighted average of 0.102 *5* (1975To06); 0.115 *10* (1972Ra14); 0.092 *10* (1971DaZM); 0.115 *12* (1966Mc18,1961Mc18); 0.15 *3* (1960An09, uncertainty estimated in 2001Ra27 evaluation). Additional information 1. $T_{1/2}$: other: 6.9 ps *14* (1972Ra14). g: transient-magnetic field method (2000Er06). Others: +0.59 *10* based on $T_{1/2}$=9.22 ps *35* (1977Fa07,IMPAC; E(^{16}O)=36 MeV; recoil into Fe); +0.45 *15* (1987Pa28,E(^{16}O)=36 MeV; $\gamma(\theta$,H); based on $T_{1/2}$=9.00 ps).
1881	4$^+$	2.22‡ ps *49*	g=0.78 *13*

† From the Adopted Levels.

‡ From DSAM and line-shape analysis in inverse kinematics (2000Er06).

γ(^{50}Cr)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
783	783	2$^+$	0	0$^+$
1098	1881	4$^+$	783	2$^+$

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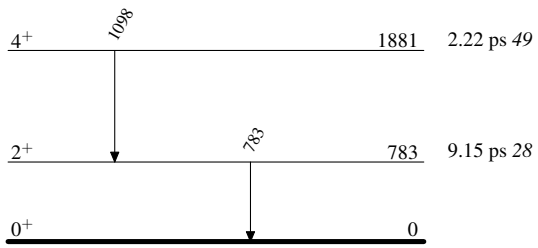
Level Scheme



$^{50}_{24}Cr_{26}$