Coulomb excitation 2008St04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 158, 1 (2019)	16-May-2019

Beam=^{73}Cu, target=^{120}Sn.

2008St04: E=2.99 MeV/nucleon ^{73}Cu beam provided by REX-ISOLDE facility. Radioactive ion beam produced in the reaction U(p,X) at 1.4 GeV protons (target=UC_x) using laser ionization RILIS. Measured Eγ, Iγ, (particle)γ coin using MINIBALL Ge array, and charged particles with a double-sided silicon strip detector. Deduced B(E2)(W.u.) values from experimental Coulomb excitation cross sections deduced from observed gamma-ray yields normalized to the known cross section for excitation of the first 2^+ state in ^{120}Sn target. Comparisons with large-scale shell-model calculations.

^{73}Cu Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0.0	$3/2^-$		
135.4 *1*	$1/2^-$		Measured B(E2)(W.u.)=23.1 21 (2008St04). Level and γ first reported by 2008St04. Since $\delta(135\gamma)$ is unknown, level half-life cannot be deduced.
166	$5/2^-$		Measured B(E2)(W.u.)=4.4 5 (2008St04). Since $\delta(166\gamma)$ is unknown, level half-life cannot be deduced.
961	$7/2^-$	2.6 ps *3*	Measured B(E2)(W.u.)=14.9 18 (2008St04). $T_{1/2}$: deduced by evaluator from experimental B(E2)(W.u.). Configuration=$\pi 2p_{3/2}\otimes 2^+$ in ^{70,72}Ni proposed earlier is consistent with B(E2) values (2008St04).

[†] As proposed by 2008St04.

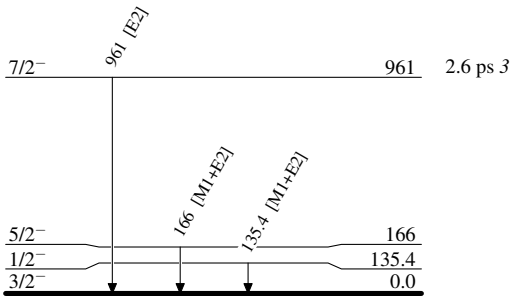
$\gamma(^{73}Cu)$

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[†]
135.4 *1*	135.4	$1/2^-$	0.0	$3/2^-$	[M1+E2]	0.11 *9*
166	166	$5/2^-$	0.0	$3/2^-$	[M1+E2]	0.05 *4*
961	961	$7/2^-$	0.0	$3/2^-$	[E2]	

[†] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Coulomb excitation 2008St04

Level Scheme



$^{73}_{29}Cu_{44}$