^{9}Be(^{107}Ag,Xγ) 2009Ga40,2007Re18

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson and W. D. Kulp(a)	NDS 129, 1 (2015)	27-Jul-2015

Search for long-lived isomers.

Fragmentation of ^{107}Ag beam at E=750 MeV. Particle identification through fragment recoil separator. Search for isomers using the RISING (Rare ISotope INvestigations at GSI) array of 15 seven-element cluster Ge detectors. The detectors were placed in three angular rings at 51°, 90°, and 129° with respect to the secondary beam axis.

Measured delayed γ-ray spectra.

^{87}Tc Levels

The isomeric ratio is defined as R=$N_{isomer}/(N_{ions}$(fragment)γ), N_{isomer}=number of ions observed in the isomeric state, N_{ions}=total number of ions of that nuclear species, F=correction factor for in-flight losses, g=correction factor for finite measuring time period.

E(level)	J^{π}	$T_{1/2}$	Comments
0+x			
7+x?			
71+x	(7/2$^+$)	647 ns *24*	%IT=100 J^{π}: Inferred from assuming hindered M1 and E1 transitions from the decay of an 7/2$^+$ oblate shape to 5/2$^+$ and 5/2$^-$ prolate shapes and comparison with systematics (2009Ga40). $T_{1/2}$: measured in 2009Ga40 from decay timing of 64γ and 70γ. Other: ≈700 ns (2007Re18). R=11 *5* (2009Ga40).

γ(^{87}Tc)

E_γ	E_i(level)	J_i^{π}	E_f
64[†‡]	71+x	(7/2$^+$)	7+x?
71[†‡]	71+x	(7/2$^+$)	0+x

† The 64- and 70-keV γ rays are not in mutual coincidence and so it is deduced that both γ rays deexcite the isomer.

‡ Placement of transition in the level scheme is uncertain.

Legend

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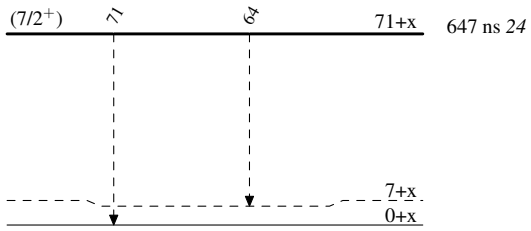
Level Scheme

γ Decay (Uncertain)



$^{87}_{43}Tc_{44}$