Coulomb excitation   2005Ch66,2001Iw07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, Balraj Singh	NDS 113, 1563 (2012)	28-May-2012

2005Ch66: Target=^{209}Bi, Beam=^{34}Mg. E(^{34}Mg)=76.4 MeV/nucleon. The radioactive beam of ^{34}Mg produced by fragmentation of ^{48}Ca ions by ^{9}Be target followed by separation of fragments by A1900 fragment separator at NSCL facility. Measured Eγ, Iγ using an array of 24 position-sensitive trapezoidal NaI(Tl) detectors. Deduced B(E2) for first excited 2^{+} state.

2001Iw07 (also 2002Mo35): Target=Pb, beam=^{34}Mg at 44.9 MeV/nucleon. The ^{34}Mg beam obtained from fragmentation of ^{40}Ar beam with a Be target at 95 MeV/nucleon beam energy. RIKEN-RIPS facility. Beam fragments identified using time-of-flight and energy loss techniques. An array of 66 NaI(Tl) detectors was used.

1999Pr09 (also 2002Gl01): Target=^{197}Au, beam=^{34}Mg at 50 MeV/nucleon at 4°. The ^{34}Mg beam obtained from fragmentation of 80 MeV/nucleon beam of ^{48}Ca with a Be target. The γ rays were detected with a NaI(Tl) array. The ^{34}Mg beam was very weak in this work.

^{34}Mg Levels

E(level)	J$^{\pi}$	Comments
0	0^{+}	
656 7	2^{+}	B(E2)↑=0.057 10
		β_2=0.58 6 (2001Iw07)
		B(E2): weighted average of 0.054 10 (2005Ch66) and B(E2)=0.063 13 (2001Iw07). Other: ≤0.067 (1999Pr09).
		In 2005Ch66, B(E2)=0.054 10 if no correction for feeding from 2116 level is applied, >0.044 8 if possible correction for feeding from the 2116 level is considered.
		T$_{1/2}$: 42 ps 8 if B(E2)=0.054 10, <52 ps if B(E2)>0.044 (deduced by evaluators).
2116?	(4^{+})	

γ(^{34}Mg)

E$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	Comments
656 7	656	2^{+}	0	0^{+}	E$_\gamma$: from 2001Iw07. Others: 659 14 (2005Ch66), 900-1400 (1999Pr09).
1460[†]	2116?	(4^{+})	656	2^{+}	E$_\gamma$: γ not observed by 2005Ch66 or 2001Iw07; only an upper limit of intensity of this γ obtained by 2005Ch66 to correct for the feeding of first 2^{+} state at 659.

[†] Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme

- - - - - ► γ Decay (Uncertain)

(4⁺) —————————— 2116 (with 1460)

2⁺ —————————— 656 (with 656)

0⁺ —————————— 0

$^{34}_{12}$Mg$_{22}$