^{131}Xe(γ,γ') 2006Vo04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, I. Mitropolsky, A. Rodionov	NDS 107, 2715 (2006)	17-Jul-2006

2006Vo04: ^{131}Xe(γ,γ') bremsstrahlung with end point E=4.1 MeV; measured Eγ, Iγ, $\gamma(\theta)$ at 90°, 127° and 150° deduced ^{131}Xe E_x, Γ_0, B(M1)↑, B(E1)↑. Nuclear resonance fluorescence method.
J^π(^{131}Xe target)=3/2$^+$.

^{131}Xe Levels

g=(2J+1)/(2J_0+1) is statistical weight, where J_0=3/2, J=1/2,3/2,5/2 and Γ_0 is g.s. width; Γ_0^{red} is reduced g.s. width.

E(level)	J^π	gΓ_0 meV	$I_{s,0}$ eV b[†]	Comments
0	3/2$^+$			
565	(1/2,3/2)$^+$			J^π: from Adopted Levels.
1665	1/2,3/2,5/2	1.9 *5*	2.7 *7*	B(M1)↑=0.11 *3*, B(E1)↑=1.2×10^{-5} *3*. gΓ_0^{red}=0.42E−3 eV/MeV^3 *11*.
2007	1/2,3/2,5/2	2.2 *5*	2.1 *5*	B(M1)↑=0.071 *16*, B(E1)↑=0.78×10^{-5} *18*. gΓ_0^{red}=0.27E−3 eV/MeV^3 *6*.
2359	1/2,3/2,5/2	1.0 *5*	0.7 *4*	B(M1)↑=0.020 *11*, B(E1)↑=0.22×10^{-5} *12*. gΓ_0^{red}=0.08E−3 eV/MeV^3 *4*.
2378	1/2,3/2,5/2	3.4 *5*	2.3 *3*	B(M1)↑=0.066 *9*, B(E1)↑=0.73×10^{-5} *10*. gΓ_0^{red}=0.25E−3 eV/MeV^3 *4*.
2396	1/2,3/2,5/2	1.6 *5*	1.1 *3*	B(M1)↑=0.030 *8*, B(E1)↑=0.33×10^{-5} *9*. gΓ_0^{red}=0.11E−3 eV/MeV^3 *3*.
2570	1/2,3/2,5/2	2.3 *5*	1.3 *3*	B(M1)↑=0.035 *7*, B(E1)↑=0.39×10^{-5} *8*. gΓ_0^{red}=0.14E−3 eV/MeV^3 *3*.
2601	1/2,3/2,5/2	2.7 *5*	1.5 *3*	B(M1)↑=0.039 *8*, B(E1)↑=0.43×10^{-5} *8*. gΓ_0^{red}=0.15E−3 eV/MeV^3 *3*.
2662	1/2,3/2,5/2	2.1 *5*	1.2 *2*	B(M1)↑=0.029 *6*, B(E1)↑=0.33×10^{-5} *7*. gΓ_0^{red}=0.11E−3 eV/MeV^3 *2*.
2675	1/2,3/2,5/2	2.6 *5*	1.4 *3*	B(M1)↑=0.035 *7*, B(E1)↑=0.39×10^{-5} *8*. gΓ_0^{red}=0.14E−3 eV/MeV^3 *3*.
2833	1/2,3/2,5/2	3.2 *6*	1.5 *3*	B(M1)↑=0.036 *7*, B(E1)↑=0.40×10^{-5} *8*. gΓ_0^{red}=0.14E−3 eV/MeV^3 *3*.
2848	1/2,3/2,5/2	6.3 *10*	3.0 *5*	B(M1)↑=0.071 *12*, B(E1)↑=0.78×10^{-5} *13*. gΓ_0^{red}=0.27E−3 eV/MeV^3 *4*.
2852	1/2,3/2,5/2	4.2 *9*	2.0 *4*	B(M1)↑=0.047 *10*, B(E1)↑=0.52×10^{-5} *11*. gΓ_0^{red}=0.18E−3 eV/MeV^3 *4*.
3088	1/2,3/2,5/2	0.0115 *15*	1.0 *3*	B(M1)↑=0.101 *13*, B(E1)↑=1.120×10^{-5} *15*. gΓ_0^{red}=0.39E−3 eV/MeV^3 *5*.
3126	1/2,3/2,5/2	3.9 *8*	1.5 *3*	B(M1)↑=0.033 *6*, B(E1)↑=0.37×10^{-5} *7*. gΓ_0^{red}=0.13E−3 eV/MeV^3 *2*.
3175	1/2,3/2,5/2	2.7 *7*	1.0 *3*	B(M1)↑=0.021 *6*, B(E1)↑=0.24×10^{-5} *7*. gΓ_0^{red}=0.08E−3 eV/MeV^3 *2*.

[†] Integrated cross section.

^{131}Xe(γ,γ') 2006Vo04 (continued)

$\gamma(^{131}Xe)$

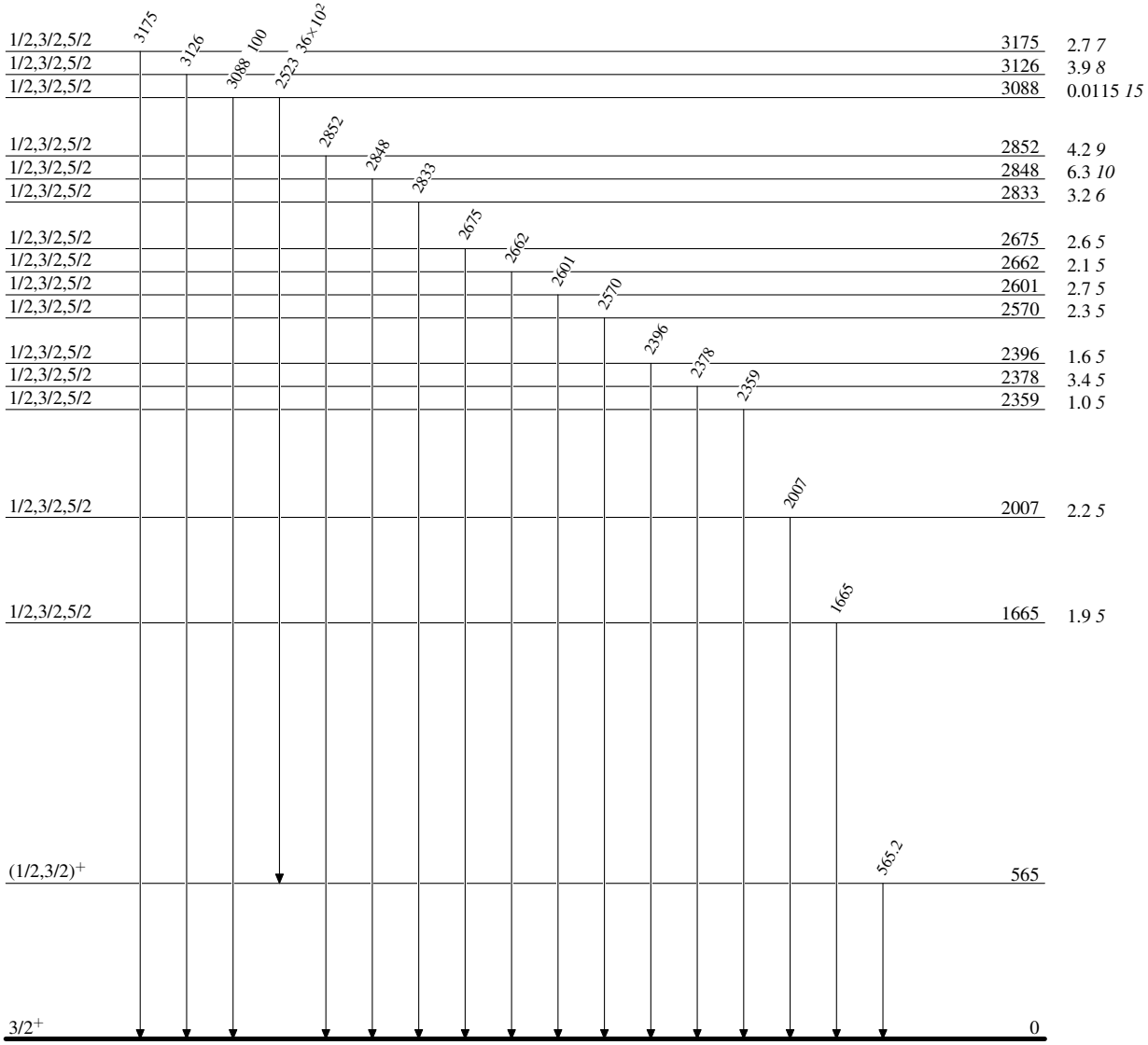
E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Comments
565	$(1/2,3/2)^+$	565.2† *2*		0	$3/2^+$	
1665	1/2,3/2,5/2	1665		0	$3/2^+$	
2007	1/2,3/2,5/2	2007		0	$3/2^+$	
2359	1/2,3/2,5/2	2359		0	$3/2^+$	
2378	1/2,3/2,5/2	2378		0	$3/2^+$	
2396	1/2,3/2,5/2	2396		0	$3/2^+$	
2570	1/2,3/2,5/2	2570		0	$3/2^+$	
2601	1/2,3/2,5/2	2601		0	$3/2^+$	
2662	1/2,3/2,5/2	2662		0	$3/2^+$	
2675	1/2,3/2,5/2	2675		0	$3/2^+$	
2833	1/2,3/2,5/2	2833		0	$3/2^+$	
2848	1/2,3/2,5/2	2848		0	$3/2^+$	
2852	1/2,3/2,5/2	2852		0	$3/2^+$	
3088	1/2,3/2,5/2	2523	36×10^2 *11*	565	$(1/2,3/2)^+$	I_γ: deduced by the evaluators from R(expt) value listed by 2006Vo04.
		3088	100	0	$3/2^+$	
3126	1/2,3/2,5/2	3126		0	$3/2^+$	
3175	1/2,3/2,5/2	3175		0	$3/2^+$	

† From Adopted Levels.

^{131}Xe(γ,γ') **2006Vo04**

Level Scheme

Intensities: Relative photon branching from each level



$^{131}_{54}Xe_{77}$