

$^{208}\text{Pb}(^{18}\text{O},\text{F}\gamma)$ [2003Po11,2003Fo09](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev	NDS 124, 157 (2015)		1-Aug-2014

[2003Po11](#): Facility: IReS Vivitron accelerator; Beam: $E(^{18}\text{O})=85$ MeV; Target: 20 mg/cm² ^{208}Pb ; Detectors: EUROBALL IV consisting of 15 Cluster, 26 Clover and 30 single HPGe detectors; Measured: $\gamma\gamma$, $\gamma\gamma\gamma$, $E\gamma$, $I\gamma$; Deduced: ^{112}Rh level scheme.

[2003Fo09](#): Facility: 88-inch cyclotron at LBNL and Gammasphere. In addition to the $^{208}\text{Pb}(^{18}\text{O},\text{F}\gamma)$ reaction (91 MeV beam energy with a 45 mg/cm² thick target and 100 detectors), the $^{173}\text{Yb}(^{24}\text{Mg},\text{F}\gamma)$ (134.5 MeV, 1 mg/cm² thick target on a 7 mg/cm² thick Au backing and 92 detectors) and $^{173}\text{Yb}(^{23}\text{Na},\text{F}\gamma)$ (129 MeV, 1 mg/cm² thick target on a 10 mg/cm² thick Au backing and 100 detectors) were used. Measured: 3- and 4-fold γ -ray coincidences; $E\gamma$, $I\gamma$; Deduced: level scheme.

 ^{112}Rh Levels

E(level) [†]	$J\pi^{\ddagger}$	Comments
y	(6 ⁺)	Additional information 1.
y+59.7 [#] 4	(7 ⁻)	
y+218.3 5	(8 ⁻)	
y+400.6 [@] 5	(9 ⁻)	
y+668.8 [#] 6	(10 ⁻)	
y+910.4 [@] 6	(11 ⁻)	
y+1238.4 [#] 6	(12 ⁻)	
y+1600.7 [@] 7	(13 ⁻)	
y+1943.9 [#] 7	(14 ⁻)	

[†] From least-squares fit to $E\gamma$'s.

[‡] From the Adopted Levels.

[#] Band(A): member of $\pi g_{9/2} \otimes \nu h_{11/2}$, $\alpha=1$ rotational band.

[@] Band(a): member of $\pi g_{9/2} \otimes \nu h_{11/2}$, $\alpha=0$ rotational band.

 $\gamma(^{112}\text{Rh})$

$E_{\gamma}^{\dagger}$	$I_{\gamma}^{\dagger}$	$E_i(\text{level})$	J_i^{π}	E_f	J_f^{π}	Comments
59.7 [‡] 4		y+59.7	(7 ⁻)	y	(6 ⁺)	E_{γ} : Not reported in 2003Fo09 .
158.6 [‡] 2		y+218.3	(8 ⁻)	y+59.7	(7 ⁻)	E_{γ} : 159.8 in 2003Fo09 .
182.4 2	100 10	y+400.6	(9 ⁻)	y+218.3	(8 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=182.8$ and $I_{\gamma}=100$ in 2003Fo09 .
241.5 2	45 5	y+910.4	(11 ⁻)	y+668.8	(10 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=241.7$ and $I_{\gamma}=50.3$ 5 in 2003Fo09 .
268.2 2	52 5	y+668.8	(10 ⁻)	y+400.6	(9 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=268.3$ and $I_{\gamma}=55.4$ 5 in 2003Fo09 .
327.8 4	20 5	y+1238.4	(12 ⁻)	y+910.4	(11 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=327.8$ and $I_{\gamma}=23.9$ 3 in 2003Fo09 .
343.5 5	5 2	y+1943.9	(14 ⁻)	y+1600.7	(13 ⁻)	
362.2 4	9 3	y+1600.7	(13 ⁻)	y+1238.4	(12 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=362.1$ and $I_{\gamma}=11.9$ 2 in 2003Fo09 .
449.9 7	10 3	y+668.8	(10 ⁻)	y+218.3	(8 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=451.2$ and $I_{\gamma}=10.3$ 2 in 2003Fo09 .
510.0 5	13 3	y+910.4	(11 ⁻)	y+400.6	(9 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=510.2$ and $I_{\gamma}=19.7$ 3 in 2003Fo09 .
569.7 5	8 2	y+1238.4	(12 ⁻)	y+668.8	(10 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=569.7$ and $I_{\gamma}=6.0$ 8 in 2003Fo09 .
690.5 5	11 3	y+1600.7	(13 ⁻)	y+910.4	(11 ⁻)	E_{γ}, I_{γ} : $E_{\gamma}=690.2$ and $I_{\gamma}=5.6$ 5 in 2003Fo09 .
705.3 5	4 2	y+1943.9	(14 ⁻)	y+1238.4	(12 ⁻)	

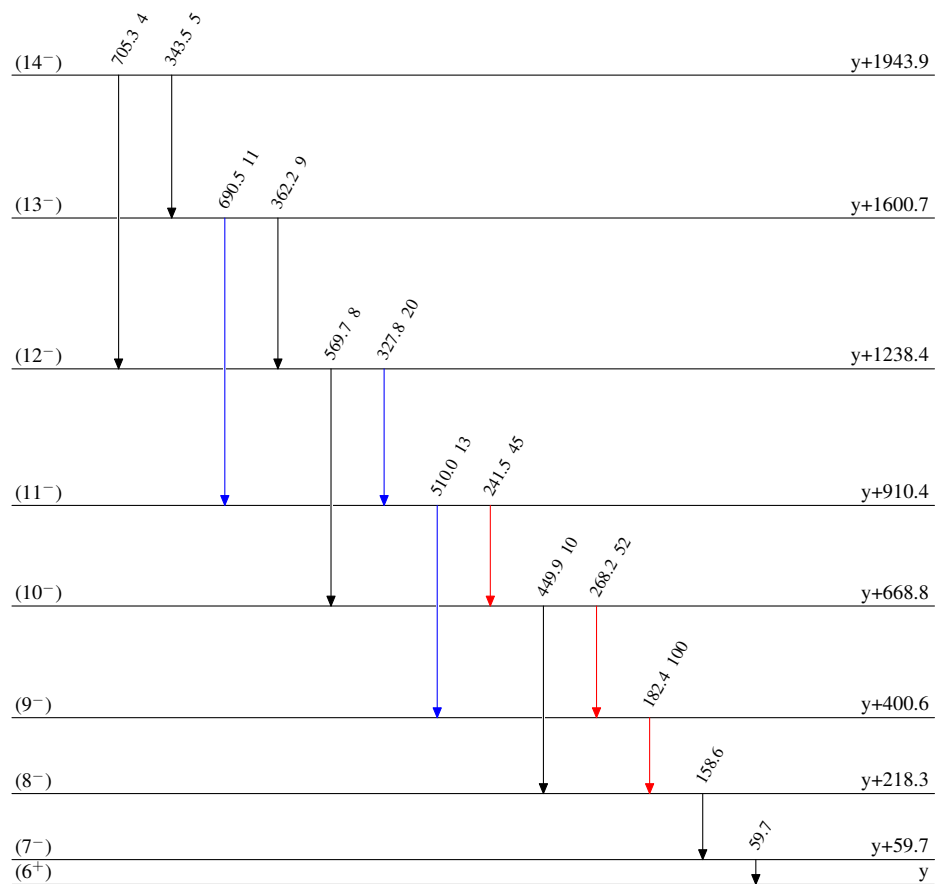
[†] From [2003Po11](#).

[‡] The ordering of the 59.7-keV and 158.6-keV transitions in [2003Po11](#) is reversed by the evaluators in the adopted level scheme, based on the ^{252}Cf SF decay data.

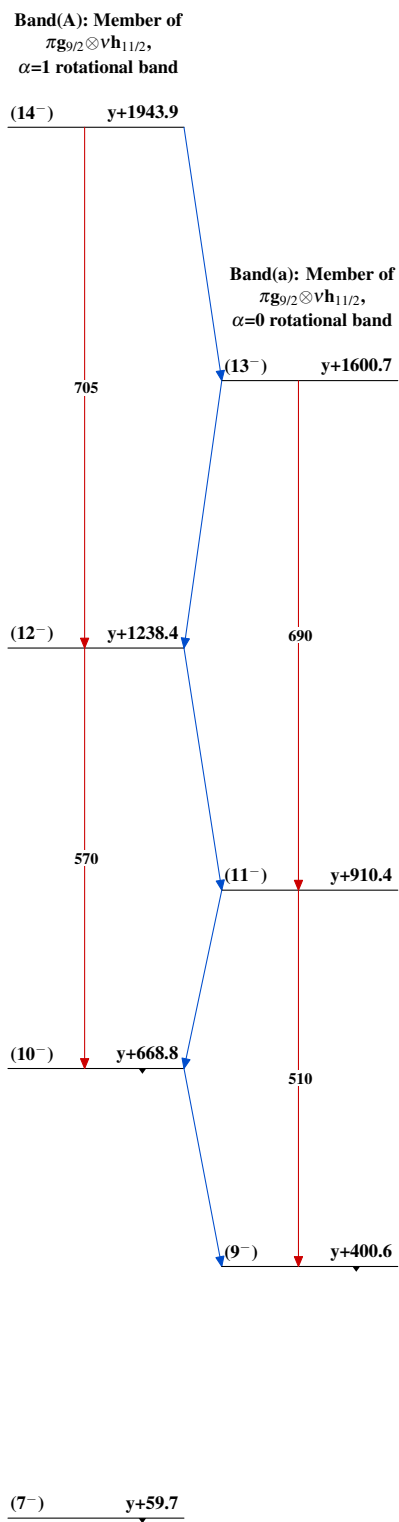
$^{208}\text{Pb}(^{18}\text{O},\text{F}\gamma)$ 2003Po11,2003Fo09Level SchemeIntensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$

 $^{112}_{45}\text{Rh}_{67}$

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$^{112}_{45}\text{Rh}_{67}$