

$^9\text{Be}(^{238}\text{U}, \text{F}\gamma)$  2017Na04

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	14-Jan-2022

2017Na04: high-spin excited states in  $^{118}\text{Rh}$  were studied by their population in the fission of 6.2 MeV/nucleon  $^{238}\text{U}$  beam by 10  $\mu\text{m}$  thick  $^9\text{Be}$  target at GANIL accelerator facility. The fission fragments were identified by mass and charge numbers through energy loss  $\Delta E$ , time-of flight and magnetic rigidity using VAMOS++ magnetic spectrometer. The gamma rays were detected using EXOGAM array of 11 Compton-suppressed segmented clover HPGe detectors. Measured  $E_\gamma$ ,  $I_\gamma$  and  $\gamma\gamma$ - and (fission fragment) $\gamma$ -coin. Deduced high-spin levels,  $J^\pi$ , band, and energy signature splitting. Comparison with triaxial projected shell model (TPSM) calculations.

[Additional information 1.](#)

 $^{118}\text{Rh}$  Levels

<u>E(level)<sup>†</sup></u>	<u><math>J^\pi</math></u>	<u>Comments</u>
0+x <sup>‡</sup>	(7 <sup>-</sup> )	Possible $\beta^-$ -decaying isomer, half-life is unknown.
213+x <sup>‡</sup> 1	(8 <sup>-</sup> )	
373+x <sup>‡</sup> 2	(9 <sup>-</sup> )	
615+x <sup>‡</sup> 2	(10 <sup>-</sup> )	

<sup>†</sup> From  $E_\gamma$  data, assuming uncertainty of 1 keV for each  $\gamma$  ray.

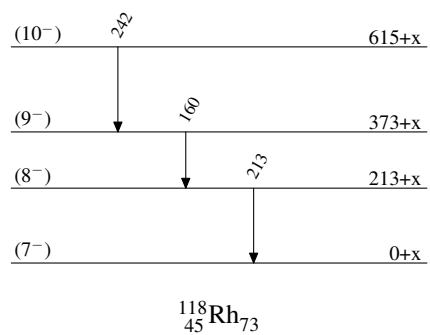
<sup>‡</sup> Band(A):  $\Delta J=1$  band.

 $\gamma(^{118}\text{Rh})$ 

<u><math>E_\gamma</math></u>	<u><math>E_i(\text{level})</math></u>	<u><math>J_i^\pi</math></u>	<u><math>E_f</math></u>	<u><math>J_f^\pi</math></u>
160	373+x	(9 <sup>-</sup> )	213+x	(8 <sup>-</sup> )
213	213+x	(8 <sup>-</sup> )	0+x	(7 <sup>-</sup> )
242	615+x	(10 <sup>-</sup> )	373+x	(9 <sup>-</sup> )

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Level Scheme



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Band(A):  $\Delta J=1$  band

$(10^-)$  615+x

242

$(9^-)$  373+x

160

$(8^-)$  213+x

213

$(7^-)$  0+x

$^{118}_{45}\text{Rh}_{73}$