^{92}Mo(^{90}Zr,2nγ) 2010Ra12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

E(^{90}Zr)=400 MeV. Measured Eα, $T_{1/2}$ using RITU recoil separator for channel selection and 300−μm double-sided silicon strip detector. Measured Eγ, Iγ, (recoil)$\alpha\gamma$ coin with the recoil decay tagging technique and the JUROGAM II array comprised of 24 EUROGAM HPGe clover detectors and 15 EUROGAM phase one HPGe detectors. Similar results presented in 2011PaZT. Subset of results presented in 2010Ju02.

Cross section for population of ^{180}Pb in this reaction is estimated to be 10 nb.

α: Additional information 1.

^{180}Pb Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0	0^+	4.1 ms *3*	$T_{1/2}$: from (recoil)α correlations.
1168[#] *1*	(2^+)		
1446[#] *1*	(4^+)		
1758[#] *2*	(6^+)		
2138[#] *2*	(8^+)		

[†] From Eγ.

[‡] From yrast structure and systematics of even A=182-188 Pb nuclei.

[#] Band(A): Band based on (2^+). Prolate structure based on systematics of heavier Pb isotopes and beyond-mean-field calculations (2010Ra12).

γ(^{180}Pb)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α
278 *1*	93 *21*	1446	(4^+)	1168	(2^+)	[E2]	0.145 *3*
312 *1*	56 *17*	1758	(6^+)	1446	(4^+)	[E2]	0.1029 *18*
380 *1*	33 *14*	2138	(8^+)	1758	(6^+)	[E2]	0.0591 *10*
1168 *1*	100 *33*	1168	(2^+)	0	0^+	[E2]	0.00494

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Level Scheme

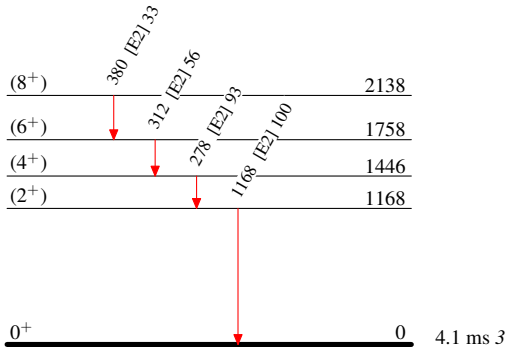
Intensities: Relative I_γ

Legend

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

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

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



$^{180}_{82}Pb_{98}$

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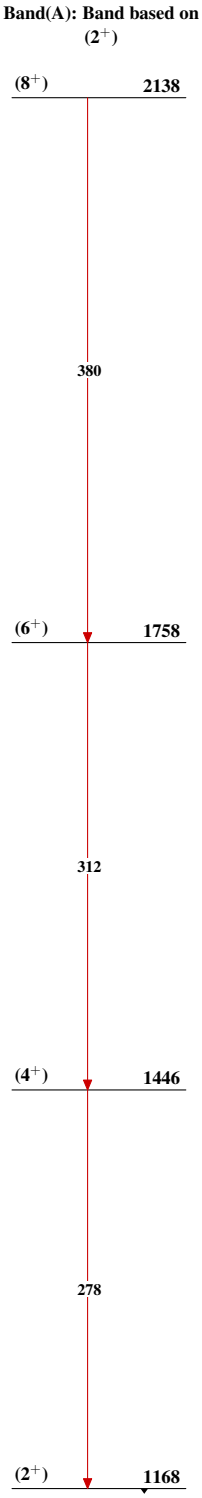

$^{180}_{82}Pb_{98}$