^{175}Lu(^{238}U,^{238}U′γ) 1998Wh02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 102, 719 (2004)	1-Jun-2004

Target: Thick target of ^{175}Lu. Projectile: Pulsed beam of 1600 MeV ^{238}U from the ATLAS accelerator, Argonne National Lab. Inelastic scattering. Detector: Argonne-Notre Dame BGO array with 12 Compton-suppressed germanium detectors and a 50 element BGO inner ball. Measured Eγ, γ(t), γγ delayed coin.

^{175}Lu Levels

E(level)[†]	Jπ[@]	$T_{1/2}$	Comments
0.0[‡]	7/2+		
114.4[‡] *8*	9/2+		
251.6[‡] *8*	11/2+		
412.6[‡] *10*	13/2+		
595.5[‡] *11*	15/2+		
799.7[‡] *12*	17/2+		
1024.5[‡] *12*	19/2+		
1392.2[#] *12*	19/2+	930 μs *80*	Jπ: From systematics of reduced γ-ray transition probabilities for this isomer in other N=104 neighboring nuclei. $T_{1/2}$: From 1998Wh02.

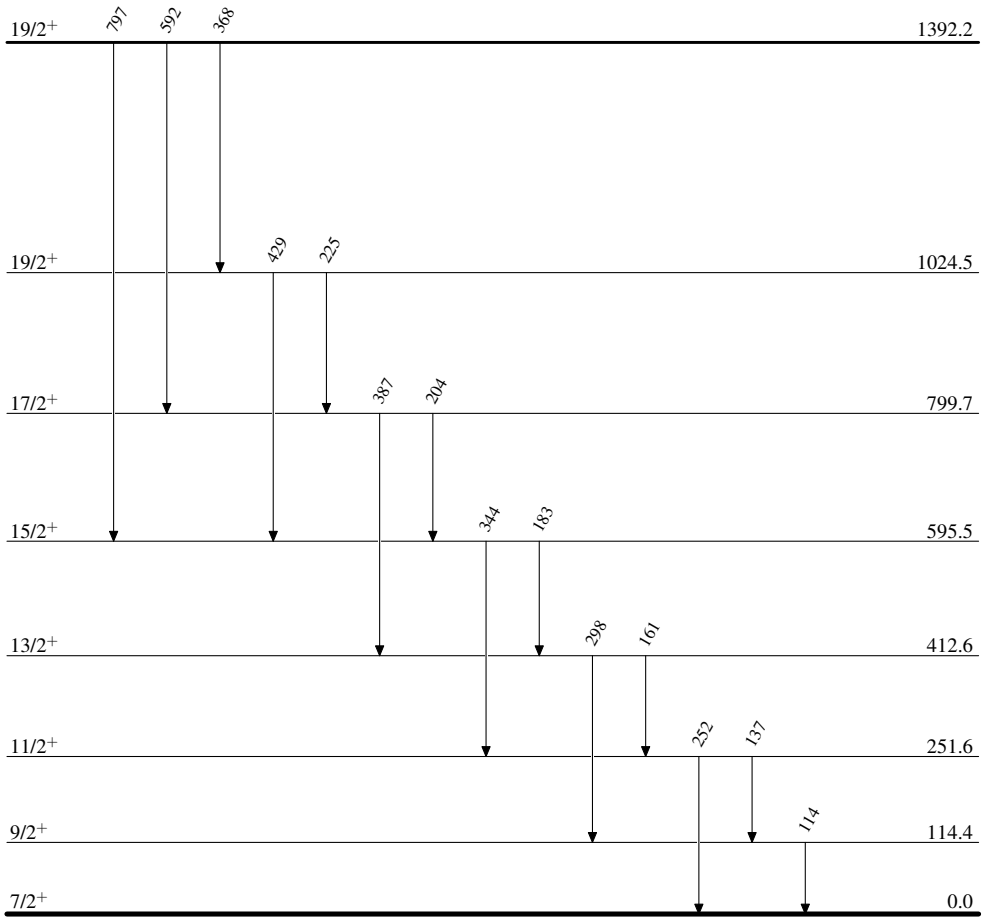
[†] Deduced by evaluator from a least-squares fit to γ-ray energies using ΔE=1 keV for all γ-rays.
[‡] 7/2[404] band, known from previous studies (1974Fo01,1971Mi01).
[#] K=19/2 band: Probable configuration = (π 7/2[404])+(ν 7/2[514])+(ν 5/2[512]).
[@] From adopted level, except as noted.

γ(^{175}Lu)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
114	114.4	9/2+	0.0	7/2+	298	412.6	13/2+	114.4	9/2+
137	251.6	11/2+	114.4	9/2+	344	595.5	15/2+	251.6	11/2+
161	412.6	13/2+	251.6	11/2+	368	1392.2	19/2+	1024.5	19/2+
183	595.5	15/2+	412.6	13/2+	387	799.7	17/2+	412.6	13/2+
204	799.7	17/2+	595.5	15/2+	429	1024.5	19/2+	595.5	15/2+
225	1024.5	19/2+	799.7	17/2+	592	1392.2	19/2+	799.7	17/2+
252	251.6	11/2+	0.0	7/2+	797	1392.2	19/2+	595.5	15/2+

^{175}Lu(^{238}U,^{238}U′γ) **1998Wh02**

Level Scheme



$^{175}_{71}Lu_{104}$