# **BERKELEY LAB**



LAWRENCE BERKELEY NATIONAL LABORATORY

**Source Reference:** 

# <sup>229</sup>Th half-life from NuDAT and other items for discussion

M. Shamsuzzoha Basunia

USNDP meeting, BNL, 13-15 Nov, 2023

## <sup>229</sup>Th half-life from NuDAT

One of our group members was looking for it:

$$T_{1/2} = 7932 \text{ y } (28)$$

Source is missing

Ground and isomeric state information for <sup>229</sup><sub>90</sub>Th

E(level) (MeV)	Jn	Mass Excess (keV)	T <sub>1/2</sub>	Decay Modes	
0.0	5/2+	29585.5 24	7932 y 28	a = 100.00%	
0.0000082	(3/2+)	29585.5 24	7 µs 1	IT = 100.00%	

The following are available

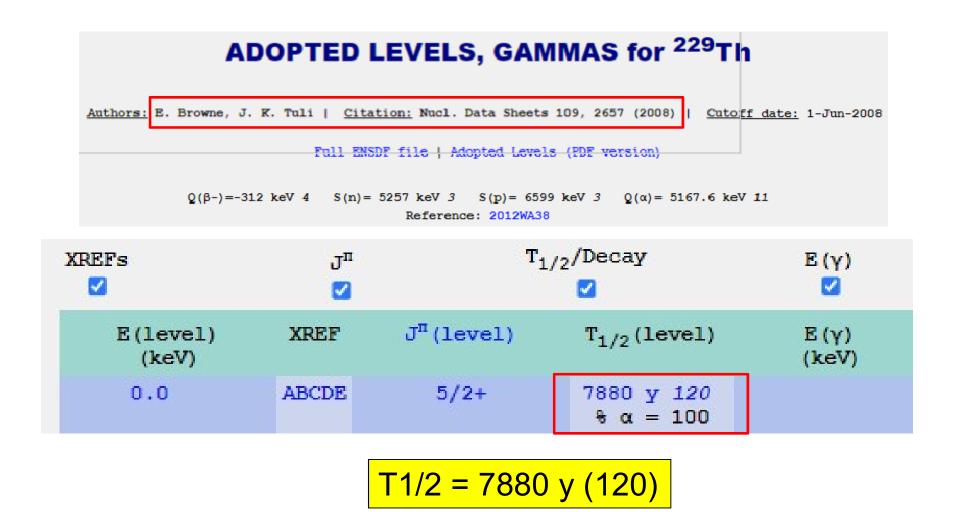
List of levels Interactive Level Scheme (Beta) Level Scheme | J vs. E\* plot | J vs. E(γ) plot | E(γ)/J plot | Band parameters | Decay radiation information

$$T_{1/2} = 7880 \text{ y } (120)$$

$$T_{1/2} = 7340 \text{ y } (160)$$



# <sup>229</sup>Th half-life (NuDAT) – list of levels





# <sup>229</sup>Th half-life (NuDAT) – decay radiation information

Authors: A. K. Jain , R. Raut , J. K. Tuli <u>Citation</u>: Nuclear Data Sheets 110, 1409 (2009)

Parent Nucleus			Parent T <sub>1/2</sub>	Decay Mode	GS-GS Q-value (keV)	Nucleus	ENCOL
<sup>229</sup> <sub>90</sub> Th	0.0	5/2+	7340 y 160	α: 100 %	5168.1 12	225 88 <b>Ra</b>	ENSDF file

T1/2 = 7340 y (160)



### Half-life retrieval

- ☐ Users often reference NNDC web site instead of a printed version
  - Reference of the printed version is easier for tracking and evaluators get citation credit
  - If from the Wallet Card provide information for citation

$$T_{1/2} = 7932 \text{ y } (28)$$

Source is missing

Ground and isomeric state information for  $^{229}_{\ \ 90}Th$ 

E(level) (MeV)	Jn	Mass Excess (keV)	T <sub>1/2</sub>	Decay Modes	
0.0	5/2+	29585.5 24	7932 y 28	a = 100.00%	
0.0000082	(3/2+)	29585.5 24	7 µs 1	IT = 100.00%	

The following are available

List of levels Interactive Level Scheme (Beta) Level Scheme | J vs. E\* plot | J vs. E(γ) plot | E(γ)/J plot | Band parameters | Decay radiation information



### Other items for discussion

#### □ NSDD action items:

#### How to proceed

Action #3: Balraj Singh will re-write an addendum to the guidelines regarding all four issues listed in the action. Evaluators should communicate to him any other issues they identify in the guidelines (See new **Action item #11**).

McMaster	Policy implementation:	Prepare addendum with new items recorded in the recent
(B. Singh)	check and modify	meetings and not included in the Guidelines for
264 00-7940 30	Guidelines for	Evaluators published in 2021 (including items of Action
	Evaluators.	#3 of INDC(NDS)-0850). Share new document with
		evaluators for feedback.
All Evaluators		Recommendation to evaluators: to share with Balraj comments and suggestions on the existing Guidelines for anything missing
	(B. Singh)	(B. Singh) check and modify  Guidelines for  Evaluators.

