^{25}O n decay (2.7×10^{-9} ps)   2008Ho03,2013Ca18

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty	NDS 186, 2 (2022)	31-Mar-2022

Parent: ^{25}O: E=0.0; $J^{\pi}=(3/2^{+})$; $T_{1/2}=2.7 \times 10^{-9}$ ps 5; Q(n)=757 8; %n decay=100.0

^{25}O-E: Ground state of ^{25}O is unbound towards particle emission.

^{25}O-J^{π}: Proposed by 2008Ho03 based on shell-model predictions.

^{25}O-$T_{1/2}$: From Γ=172 keV 30 (2008Ho03). Other: $\geq 5.6 \times 10^{-9}$ ps (from $\tau \geq 8.2 \times 10^{-9}$ ps − 2013Ca18).

^{25}O-Q(n): From 2021Wa16 (AME 2020). Others: 770 $+20-10$ (2008Ho03) and 725 $+54-29$ (2013Ca18).

^{25}O-%n decay: %n=100 assumed.

2008Ho03: ^{25}O produced through one-proton knockout from ^{26}F. E=85 MeV/nucleon ^{26}F beam produced from fragmentation of ^{48}Ca beam on a Be target and using A1900 fragment separator at NSCL facility. The ^{26}F beam was counted on an event-by-event basis by time-of-flight method. The ^{24}O fragments emitted after the second target were recorded using position and energy sensitive detectors. The neutrons emitted by ^{25}O decay were detected with a Modular Neutron array. Neutron peak from ^{25}O decay is observed at 770 keV.

2013Ca18: ^{25}O produced in one-proton knockout reaction on ^{26}F beam on hydrogen (CH_2) target. ^{26}F beam produced in fragmentation of 490 MeV/nucleon ^{40}Ar beam on ^{9}Be target at GSI using R3B-LAND setup. Measured fragment-neutron correlated events; deduced decay energy, resonance energy, width and lifetime of ^{24}O+n system.

Additional information 1.

^{24}O Levels

E(level)	J^{π}
0.0	0^{+}