

Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 197,259 (2024).	26-Sep-2023

$Q(\beta^-)=4970$ 12; $S(n)=4253$ 8; $S(p)=7165$ 15; $Q(\alpha)=2402$ syst [2021Wa16](#)

$\Delta Q(\alpha)=300$ ([2021Wa16](#)).

$S(2n)=10040$ 9, $S(2p)=16971$ SY 400 ([2021Wa16](#)).

[1979Ca16](#): First observation of ^{230}Fr . Production cross sections for various isotopes were measured for a variety of target materials using ISOL methods. Measured $T_{1/2}$.

[1987Ku04](#): Studied rotational bands in ^{230}Ra populated by β^- decay of ^{230}Fr . Observed transitions placed in the $K^\pi=0^+$ ground-state band, $K^\pi=0^-$ octupole band, and $K^\pi=2^+$ γ -vibrational band. Measured E_γ , I_γ , $\gamma\gamma$ coincidence, and $T_{1/2}$.

[1990Me13](#): Searched for β -delayed fission in neutron-rich nuclei, which produced negative results. Placed limits on delayed-fission probabilities in neutron-rich actinide nuclei.

 ^{230}Fr Levels

E(level)	J^π	$T_{1/2}$	Comments
0	(3)	19.1 s 4	$\% \beta^- = 100$ J^π : β^- decay to 2^+ and 4^+ states in ^{230}Ra daughter suggests $J=3$ (1987Ku04). $T_{1/2}$: Weighted average of 19.1 s 5 (1987Ku04) and 19 s 1 (1979Ca16). $\% \beta^-$: Only the β^- decay mode has been observed. A negative search for spontaneous-fission activity resulted in an upper limit for the β -delayed fission of $\% \beta^- F < 3 \times 10^{-8}$ (1990Me13).