

^{210}Fr ε decay (3.18 min) 1972KeYY

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|------------------------|---------|---------------------|------------------------|
| Full Evaluation | M. Shamsuzzoha Basunia | | NDS 121, 561 (2014) | 31-Mar-2014 |

Parent: ^{210}Fr : $E=0.0$; $J^\pi=6^+$; $T_{1/2}=3.18$ min 6; $Q(\varepsilon)=6272$ 16; $\% \varepsilon + \% \beta^+$ decay=40.0 SY

^{210}Fr - $\% \varepsilon + \% \beta^+$ decay: from Hf(α) syst (1980Sc26).

Source: $^{197}\text{Au}(^{18}\text{O},5n)$ $E=102$ MeV.

Absolute I_γ was not determined because the decay scheme is incomplete.

 ^{210}Rn Levels

| E(level) | J^π † | $T_{1/2}$ | Comments |
|----------|-----------|-----------|---|
| 0.0 | 0^+ | 2.4 h 1 | |
| 643.8 | 2^+ | | |
| 1461.0 | (4^+) | | |
| 1544.6 | (4^+) | | |
| 1664.3 | $(6)^+$ | 7.6 ns 7 | Partial level scheme I($\gamma+ce$) balance indicates $\approx 50\%$ ($\varepsilon+\beta^+$)-Branching to 1664 level. Branching: $I_\gamma(120\gamma)/I_\gamma(203\gamma)=0.071$ 5 from (HI,xny). E(level): from (256 γ) (644,817,901 γ)-coin. Level not Adopted. |
| 1920.5? | | | |

† From Adopted Levels.

 $\gamma(^{210}\text{Rn})$

Measured E_γ , I_γ , $\gamma\gamma$ -coin (semi).

| E_γ | I_γ † | $E_i(\text{level})$ | J_i^π | E_f | J_f^π | Mult.‡ | $\alpha^\#$ | Comments |
|--------------------|--------------|---------------------|-----------|--------|-----------|--------|-------------|---|
| (120) | 2.5 | 1664.3 | $(6)^+$ | 1544.6 | (4^+) | E2 | 3.83 | $\alpha(\text{K})=0.361$ 5; $\alpha(\text{L})=2.56$ 4; $\alpha(\text{M})=0.689$ 10 $\alpha(\text{N})=0.179$ 3; $\alpha(\text{O})=0.0362$ 5; $\alpha(\text{P})=0.00404$ 6 E_γ : unobserved; based on delayed γ -spectra in (HI,xny). I_γ : from $I_\gamma(120\gamma)$ -Branching=6.6% in (HI,xny). |
| 203.3 | 35 2 | 1664.3 | $(6)^+$ | 1461.0 | (4^+) | E2 | 0.494 | $\alpha(\text{K})=0.1591$ 23; $\alpha(\text{L})=0.247$ 4; $\alpha(\text{M})=0.0660$ 10 $\alpha(\text{N})=0.01720$ 24; $\alpha(\text{O})=0.00350$ 5; $\alpha(\text{P})=0.000404$ 6 |
| 256.2 | 11 2 | 1920.5? | | 1664.3 | $(6)^+$ | | | |
| ^x 425.2 | 10 3 | | | | | | | |
| ^x 461 | 11 3 | | | | | | | |
| 643.8 | 100 | 643.8 | 2^+ | 0.0 | 0^+ | E2 | 0.0199 | $\alpha(\text{K})=0.01440$ 21; $\alpha(\text{L})=0.00410$ 6; $\alpha(\text{M})=0.001022$ 15 $\alpha(\text{N})=0.000266$ 4; $\alpha(\text{O})=5.64 \times 10^{-5}$ 8; $\alpha(\text{P})=7.49 \times 10^{-6}$ 11 |
| ^x 733 | 10 3 | | | | | | | |
| 817.2 | 60 6 | 1461.0 | (4^+) | 643.8 | 2^+ | E2 | 0.01209 | $\alpha(\text{K})=0.00920$ 13; $\alpha(\text{L})=0.00218$ 3; $\alpha(\text{M})=0.000536$ 8 $\alpha(\text{N})=0.0001394$ 20; $\alpha(\text{O})=2.98 \times 10^{-5}$ 5; $\alpha(\text{P})=4.07 \times 10^{-6}$ 6 |
| 900.8 | 30 3 | 1544.6 | (4^+) | 643.8 | 2^+ | E2 | 0.00996 | $\alpha(\text{K})=0.00768$ 11; $\alpha(\text{L})=0.001720$ 24; $\alpha(\text{M})=0.000419$ 6 $\alpha(\text{N})=0.0001091$ 16; $\alpha(\text{O})=2.34 \times 10^{-5}$ 4; $\alpha(\text{P})=3.23 \times 10^{-6}$ 5 For alternate γ ray placement, see 1972KeYY. |

† Photon intensity relative to $I_\gamma(644\gamma)=100$.

‡ From Adopted Gammas.

Additional information 1.

^x γ ray not placed in level scheme.

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Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - - - - γ Decay (Uncertain)
- Coincidence

Decay Scheme

Intensities: Relative I_γ 