

^{252}Cf SF decay 2002Zh02

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|--------------|----------------------|------------------------|
| Full Evaluation | Jean Blachot | NDS 109, 1383 (2008) | 1-Mar-2008 |

Parent: ^{252}Cf : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=2.645$ y δ ; %SF decay=?

Includes 1998Zh39.

Measured E_γ , I_γ and $\gamma\gamma$ using GAMMASPHERE spectrometer comprised of 102 escape-suppressed large volume Ge detectors.

907-824-722-583 γ cascade (related to $h_{11/2^-}$ band and built above the 371 γ from 673, (15/2 $^-$) level) reported by 2000Fo10: was not supported by 2002Zh02.

 ^{107}Ru Levels

| E(level) [†] | J^π | E(level) [†] | J^π | E(level) [†] | J^π | E(level) [†] | J^π |
|--------------------------|--------------|---------------------------|--------------|---------------------------|--------------|-----------------------|--------------|
| 0.0 [‡] | (5/2 $^+$) | 632.5 ^{&} 4 | (13/2 $^-$) | 1551.5 [‡] 4 | (17/2 $^+$) | 2787.3 [@] 7 | (27/2 $^-$) |
| 103.1 3 | (5/2 $^-$) | 672.7 [@] 4 | (15/2 $^-$) | 1870.4 [#] 5 | (19/2 $^+$) | 2884.3 [‡] 6 | (25/2 $^+$) |
| 142.4 3 | (7/2 $^-$) | 677.1 [#] 3 | (11/2 $^+$) | 1930.7 ^{&} 5 | (21/2 $^-$) | 3315.4 [#] 7 | (27/2 $^+$) |
| 199.9 [#] 3 | (7/2 $^+$) | 958.1 [‡] 3 | (13/2 $^+$) | 1937.2 [@] 6 | (23/2 $^-$) | 3765.7 [@] 7 | (31/2 $^-$) |
| 251.2 ^{&} 3 | (9/2 $^-$) | 1204.1 ^{&} 4 | (17/2 $^-$) | 2190.1 [‡] 5 | (21/2 $^+$) | | |
| 301.8 [@] 4 | (11/2 $^-$) | 1225.8 [@] 5 | (19/2 $^-$) | 2558.1 [#] 6 | (23/2 $^+$) | | |
| 428.8 [‡] 3 | (9/2 $^+$) | 1241.8 [#] 4 | (15/2 $^+$) | 2785.7 ^{&} 6 | (25/2 $^-$) | | |

[†] Uncertainties are based on a least-squares fit to E_γ 's, assuming $\Delta(E_\gamma)=0.3$ keV for each γ ray.

[‡] Band(A): (5/2 $^+$) band, $\alpha=+1/2$.

[#] Band(a): (5/2 $^+$) band, $\alpha=-1/2$.

[@] Band(B): $h_{11/2}$ band, $\alpha=-1/2$.

[&] Band(C): (9/2 $^-$) band, $\alpha=+1/2$.

 $\gamma(^{107}\text{Ru})$

| E_γ | I_γ | $E_i(\text{level})$ | J_i^π | E_f | J_f^π | E_γ | I_γ | $E_i(\text{level})$ | J_i^π | E_f | J_f^π |
|----------------------|------------|---------------------|--------------|--------|--------------|------------|------------|---------------------|--------------|--------|--------------|
| (39.3) | | 142.4 | (7/2 $^-$) | 103.1 | (5/2 $^-$) | 529.3 | 23 | 958.1 | (13/2 $^+$) | 428.8 | (9/2 $^+$) |
| (50.6 [†]) | | 301.8 | (11/2 $^-$) | 251.2 | (9/2 $^-$) | 531.4 | 3 | 1204.1 | (17/2 $^-$) | 672.7 | (15/2 $^-$) |
| 103.1 | 100 | 103.1 | (5/2 $^-$) | 0.0 | (5/2 $^+$) | 553.1 | 35 | 1225.8 | (19/2 $^-$) | 672.7 | (15/2 $^-$) |
| 108.8 | 73 | 251.2 | (9/2 $^-$) | 142.4 | (7/2 $^-$) | 564.7 | 22 | 1241.8 | (15/2 $^+$) | 677.1 | (11/2 $^+$) |
| 142.4 | 60 | 142.4 | (7/2 $^-$) | 0.0 | (5/2 $^+$) | 571.6 | 22 | 1204.1 | (17/2 $^-$) | 632.5 | (13/2 $^-$) |
| 148.1 | 9 | 251.2 | (9/2 $^-$) | 103.1 | (5/2 $^-$) | 593.4 | 13 | 1551.5 | (17/2 $^+$) | 958.1 | (13/2 $^+$) |
| 159.4 | 29 | 301.8 | (11/2 $^-$) | 142.4 | (7/2 $^-$) | 628.6 | 11 | 1870.4 | (19/2 $^+$) | 1241.8 | (15/2 $^+$) |
| 199.9 | 145 | 199.9 | (7/2 $^+$) | 0.0 | (5/2 $^+$) | 638.6 | 4 | 2190.1 | (21/2 $^+$) | 1551.5 | (17/2 $^+$) |
| 228.9 | 35 | 428.8 | (9/2 $^+$) | 199.9 | (7/2 $^+$) | 687.7 | 5 | 2558.1 | (23/2 $^+$) | 1870.4 | (19/2 $^+$) |
| 248.2 | 13 | 677.1 | (11/2 $^+$) | 428.8 | (9/2 $^+$) | 694.2 | 2 | 2884.3 | (25/2 $^+$) | 2190.1 | (21/2 $^+$) |
| 281.0 | 5 | 958.1 | (13/2 $^+$) | 677.1 | (11/2 $^+$) | 704.9 | 1 | 1930.7 | (21/2 $^-$) | 1225.8 | (19/2 $^-$) |
| 283.7 | 4 | 1241.8 | (15/2 $^+$) | 958.1 | (13/2 $^+$) | 711.4 | 14 | 1937.2 | (23/2 $^-$) | 1225.8 | (19/2 $^-$) |
| 309.7 | 1 | 1551.5 | (17/2 $^+$) | 1241.8 | (15/2 $^+$) | 726.6 | 10 | 1930.7 | (21/2 $^-$) | 1204.1 | (17/2 $^-$) |
| 330.7 | 6 | 632.5 | (13/2 $^-$) | 301.8 | (11/2 $^-$) | 757.3 | 3 | 3315.4 | (27/2 $^+$) | 2558.1 | (23/2 $^+$) |
| 370.9 | 75 | 672.7 | (15/2 $^-$) | 301.8 | (11/2 $^-$) | 850.1 | 4 | 2787.3 | (27/2 $^-$) | 1937.2 | (23/2 $^-$) |
| 381.3 | 18 | 632.5 | (13/2 $^-$) | 251.2 | (9/2 $^-$) | 855.0 | 3 | 2785.7 | (25/2 $^-$) | 1930.7 | (21/2 $^-$) |
| 428.8 | 43 | 428.8 | (9/2 $^+$) | 0.0 | (5/2 $^+$) | 978.4 | 2 | 3765.7 | (31/2 $^-$) | 2787.3 | (27/2 $^-$) |
| 477.2 | 30 | 677.1 | (11/2 $^+$) | 199.9 | (7/2 $^+$) | | | | | | |

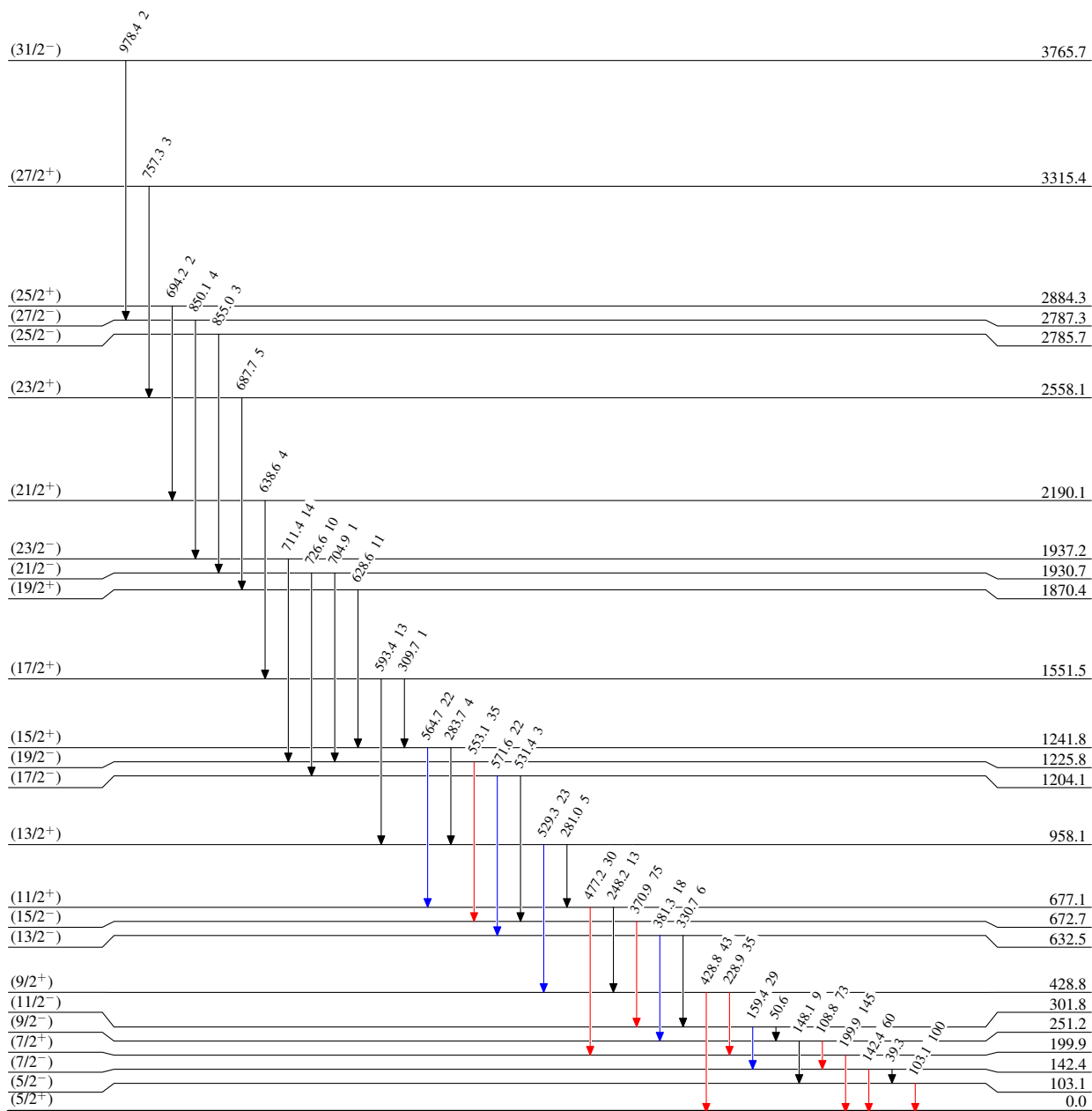
[†] Inferred from coin.

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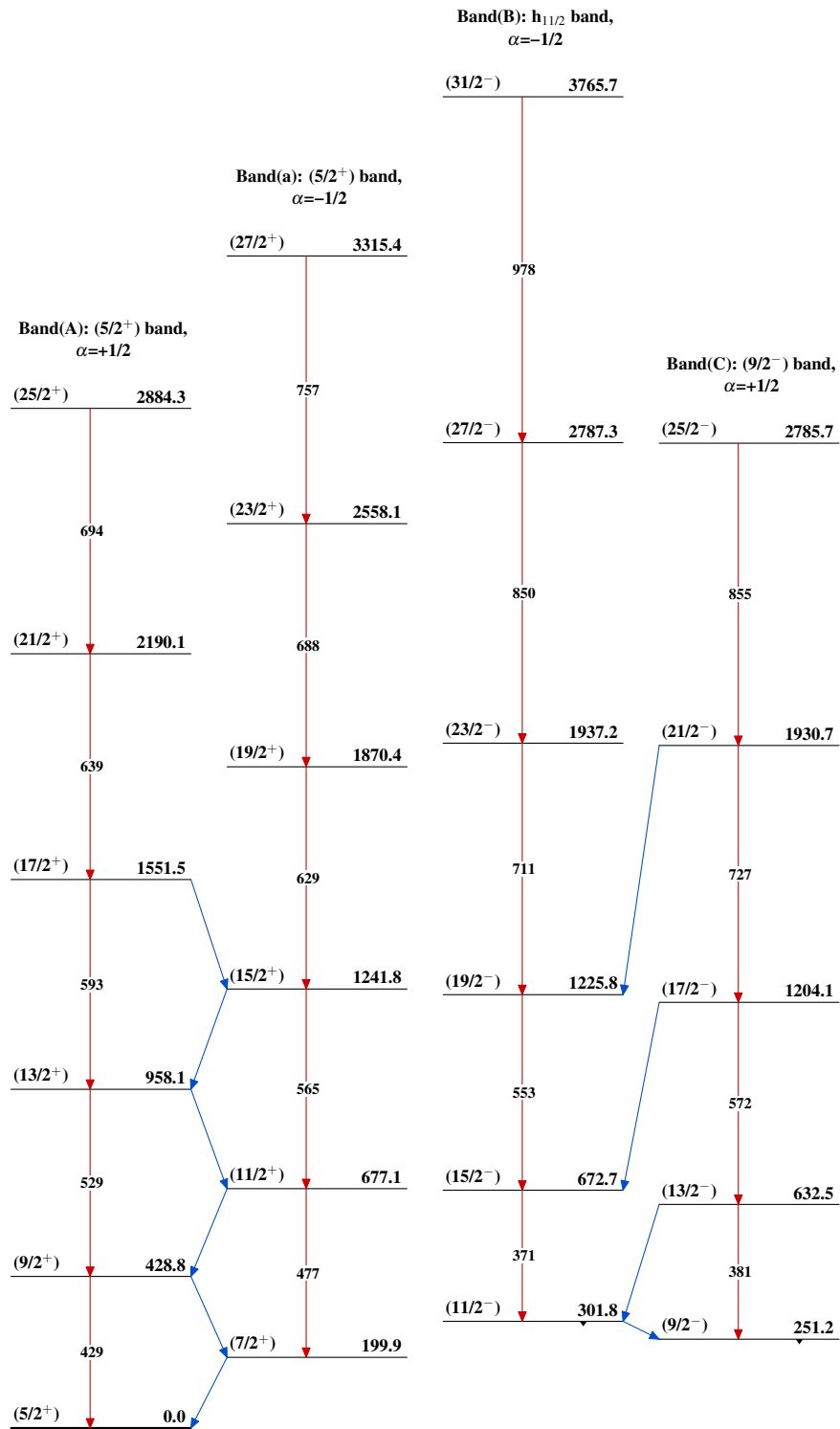
Legend

Level Scheme
Intensities: Relative I_γ

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



$^{107}_{44}\text{Ru}_{63}$

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