Release notes for ENDF/B Development n-092_U_235 evaluation

May 26, 2017

- `fizcon` Warnings:

  1. Resonances with negative widths are allowed and used to denote the spins when have degenerate spins
     MAT=9228, MF= 2, MT=151 (1): Neg. widths OK

```
ERROR(S) FOUND IN MAT=9228, MF= 2, MT=151
   NEGATIVE WIDTHS FOR RESONANCE-7.22215E+02        SEQUENCE NUMBER     1
```

- `fizcon` Errors:

  1. A level's energy is somehow off
     MAT=9228, MF= 3, MT= 4 (1): Bad Elevel (a)

```
WARNING(S)     IN MAT=9228, MF= 3, MT=  4
   ELEVEL= 7.70000E+01 MIGHT BE UNREASONABLE        SEQUENCE NUMBER     1
```

  2. A level's energy is somehow off
     MAT=9228, MF= 3, MT= 51 (1): Bad Elevel (a)

```
WARNING(S)     IN MAT=9228, MF= 3, MT= 51
   ELEVEL= 7.70000E+01 MIGHT BE UNREASONABLE        SEQUENCE NUMBER     1
```

  3. A level's energy is somehow off
     MAT=9228, MF= 3, MT= 91 (1): Bad Elevel (a)

```
WARNING(S)     IN MAT=9228, MF= 3, MT= 91
   ELEVEL= 0.00000E+00 MIGHT BE UNREASONABLE        SEQUENCE NUMBER     1
```

  4. The cross section and an outgoing distribution don't span the same energy region.
     MAT=9228, MF=35, MT= 18 (1): Diff limits (a)

```
ERROR(S) FOUND IN MAT=9228, MF=35, MT= 18
   SECTION DOES NOT SPAN THE SAME ENERGY RANGE AS FILE   5, MT=  18
```

- `psyche` Warnings:

  1. Gamma width not in agreement with PSYCHE's expectations
     FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / AT RESONANCE ENERGY 1.77526E+02 EV. THE GAMMA WIDTH 5.77164E-03 DEVIATES TOO MUCH FROM THE AVERAGE 4.20364E-02 (0): Gamma width

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 AT RESONANCE ENERGY  1.77526E+02 EV. THE GAMMA WIDTH  5.77164E-03 DEVIATES TOO MUCH FROM THE AV
```

  2. Gamma width not in agreement with PSYCHE's expectations
     FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / AT RESONANCE ENERGY 1.89993E+02 EV. THE GAMMA WIDTH 9.03299E-03 DEVIATES TOO MUCH FROM THE AVERAGE 4.20364E-02 (0): Gamma width

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 AT RESONANCE ENERGY  1.89993E+02 EV. THE GAMMA WIDTH  9.03299E-03 DEVIATES TOO MUCH FROM THE AV
```

3. Gamma width not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / AT RESONANCE ENERGY 1.98122E+02 EV. THE GAMMA WIDTH 1.36639E-02 DEVIATES TOO MUCH FROM THE AVERAGE 4.20364E-02 (0): Gamma width

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 AT RESONANCE ENERGY  1.98122E+02 EV. THE GAMMA WIDTH  1.36639E-02 DEVIATES TOO MUCH FROM THE AV
```

4. Gamma width not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / AT RESONANCE ENERGY 7.37780E+02 EV. THE GAMMA WIDTH 1.28724E-01 DEVIATES TOO MUCH FROM THE AVERAGE 4.20364E-02 (0): Gamma width

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 AT RESONANCE ENERGY  7.37780E+02 EV. THE GAMMA WIDTH  1.28724E-01 DEVIATES TOO MUCH FROM THE AV
```

5. Gamma width not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / AT RESONANCE ENERGY 7.45397E+02 EV. THE GAMMA WIDTH 1.45502E-01 DEVIATES TOO MUCH FROM THE AVERAGE 4.20364E-02 (0): Gamma width

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 AT RESONANCE ENERGY  7.45397E+02 EV. THE GAMMA WIDTH  1.45502E-01 DEVIATES TOO MUCH FROM THE AV
```

6. Gamma width not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / AT RESONANCE ENERGY 1.46767E+03 EV. THE GAMMA WIDTH 1.35513E-02 DEVIATES TOO MUCH FROM THE AVERAGE 4.20364E-02 (0): Gamma width

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 AT RESONANCE ENERGY  1.46767E+03 EV. THE GAMMA WIDTH  1.35513E-02 DEVIATES TOO MUCH FROM THE AV
```

7. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ISOTOPE MASS = 235. L = 0 / STRENGTH FUNCTION IS 2.85827E-05 / STRENGTH FUNCTION 2.85827E-05 / LIES OUTSIDE LIMITS 4.00000E-05 TO 2.00000E-04 (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ISOTOPE MASS = 235. L =  0
                 STRENGTH FUNCTION IS  2.85827E-05
                              STRENGTH FUNCTION 2.85827E-05
... [1 more lines]
```

8. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 9.03767E-05 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 9.03767E-05 / DENSITY 8.71036E-01 SHOULD BE 8.23332E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
         ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  9.03767E-05
                  ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  9.03767E-05
                                DENSITY  8.71036E-01 SHOULD BE  8.23332E-01
```

9. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+03. STRENGTH FUNCTION IS 9.03088E-05 / DENSITY 8.70601E-01 SHOULD BE 8.22921E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+03. STRENGTH FUNCTION IS  9.03088E-05
                           DENSITY  8.70601E-01 SHOULD BE  8.22921E-01
```

10. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.50000E+03. STRENGTH FUNCTION IS 9.00666E-05 / DENSITY 8.68862E-01 SHOULD BE 8.21277E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  3.50000E+03. STRENGTH FUNCTION IS  9.00666E-05
                           DENSITY  8.68862E-01 SHOULD BE  8.21277E-01
```

11. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 4.50000E+03. STRENGTH FUNCTION IS 8.98572E-05 / DENSITY 8.67127E-01 SHOULD BE 8.19637E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  4.50000E+03. STRENGTH FUNCTION IS  8.98572E-05
                           DENSITY  8.67127E-01 SHOULD BE  8.19637E-01
```

12. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.50000E+03. STRENGTH FUNCTION IS 8.96701E-05 / DENSITY 8.65395E-01 SHOULD BE 8.18000E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  5.50000E+03. STRENGTH FUNCTION IS  8.96701E-05
                           DENSITY  8.65395E-01 SHOULD BE  8.18000E-01
```

13. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.50000E+03. STRENGTH FUNCTION IS 8.94995E-05 / DENSITY 8.63667E-01 SHOULD BE 8.16366E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  6.50000E+03. STRENGTH FUNCTION IS  8.94995E-05
                           DENSITY  8.63667E-01 SHOULD BE  8.16366E-01
```

14. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 7.50000E+03. STRENGTH FUNCTION IS 8.93417E-05 / DENSITY 8.61942E-01 SHOULD BE 8.14736E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  7.50000E+03. STRENGTH FUNCTION IS  8.93417E-05
                          DENSITY  8.61942E-01 SHOULD BE  8.14736E-01
```

15. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 8.50000E+03. STRENGTH FUNCTION IS 8.91942E-05 / DENSITY 8.60221E-01 SHOULD BE 8.13110E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  8.50000E+03. STRENGTH FUNCTION IS  8.91942E-05
                          DENSITY  8.60221E-01 SHOULD BE  8.13110E-01
```

16. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 9.50000E+03. STRENGTH FUNCTION IS 8.90552E-05 / DENSITY 8.58504E-01 SHOULD BE 8.11487E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  9.50000E+03. STRENGTH FUNCTION IS  8.90552E-05
                          DENSITY  8.58504E-01 SHOULD BE  8.11487E-01
```

17. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.31000E+04. STRENGTH FUNCTION IS 8.86083E-05 / DENSITY 8.52350E-01 SHOULD BE 8.05670E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.31000E+04. STRENGTH FUNCTION IS  8.86083E-05
                          DENSITY  8.52350E-01 SHOULD BE  8.05670E-01
```

18. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.50000E+04. STRENGTH FUNCTION IS 8.83979E-05 / DENSITY 8.49121E-01 SHOULD BE 8.02618E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.50000E+04. STRENGTH FUNCTION IS  8.83979E-05
                          DENSITY  8.49121E-01 SHOULD BE  8.02618E-01
```

19. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.00000E+04. STRENGTH FUNCTION IS 8.79022E-05 / DENSITY 8.40684E-01 SHOULD BE 7.94642E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.00000E+04. STRENGTH FUNCTION IS  8.79022E-05
                          DENSITY  8.40684E-01 SHOULD BE  7.94642E-01
```

20. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.40000E+04. STRENGTH FUNCTION IS 8.75507E-05 / DENSITY 8.33997E-01 SHOULD BE 7.88321E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.40000E+04. STRENGTH FUNCTION IS  8.75507E-05
                          DENSITY  8.33997E-01 SHOULD BE  7.88321E-01
```

21. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+04. STRENGTH FUNCTION IS 8.74678E-05 / DENSITY 8.32334E-01 SHOULD BE 7.86749E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+04. STRENGTH FUNCTION IS  8.74678E-05
                          DENSITY  8.32334E-01 SHOULD BE  7.86749E-01
```

22. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 1.91441E-04 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 1.91441E-04 / DENSITY 1.05857E+00 SHOULD BE 1.01479E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
         ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  1.91441E-04
                  ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  1.91441E-04
                               DENSITY  1.05857E+00 SHOULD BE  1.01479E+00
```

23. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+03. STRENGTH FUNCTION IS 1.91385E-04 / DENSITY 1.05804E+00 SHOULD BE 1.01428E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+03. STRENGTH FUNCTION IS  1.91385E-04
                          DENSITY  1.05804E+00 SHOULD BE  1.01428E+00
```

24. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.50000E+03. STRENGTH FUNCTION IS 1.91162E-04 / DENSITY 1.05593E+00 SHOULD BE 1.01225E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  3.50000E+03. STRENGTH FUNCTION IS  1.91162E-04
                          DENSITY  1.05593E+00 SHOULD BE  1.01225E+00
```

25. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 4.50000E+03. STRENGTH FUNCTION IS 1.90936E-04 / DENSITY 1.05382E+00 SHOULD BE 1.01023E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  4.50000E+03. STRENGTH FUNCTION IS  1.90936E-04
                          DENSITY  1.05382E+00 SHOULD BE  1.01023E+00
```

26. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.50000E+03. STRENGTH FUNCTION IS 1.90707E-04 / DENSITY 1.05171E+00 SHOULD BE 1.00821E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  5.50000E+03. STRENGTH FUNCTION IS  1.90707E-04
                          DENSITY  1.05171E+00 SHOULD BE  1.00821E+00
```

27. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.50000E+03. STRENGTH FUNCTION IS 1.90477E-04 / DENSITY 1.04961E+00 SHOULD BE 1.00620E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  6.50000E+03. STRENGTH FUNCTION IS  1.90477E-04
                          DENSITY  1.04961E+00 SHOULD BE  1.00620E+00
```

28. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 7.50000E+03. STRENGTH FUNCTION IS 1.90244E-04 / DENSITY 1.04752E+00 SHOULD BE 1.00419E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  7.50000E+03. STRENGTH FUNCTION IS  1.90244E-04
                          DENSITY  1.04752E+00 SHOULD BE  1.00419E+00
```

29. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 8.50000E+03. STRENGTH FUNCTION IS 1.90010E-04 / DENSITY 1.04543E+00 SHOULD BE 1.00218E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  8.50000E+03. STRENGTH FUNCTION IS  1.90010E-04
                          DENSITY  1.04543E+00 SHOULD BE  1.00218E+00
```

30. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 9.50000E+03. STRENGTH FUNCTION IS 1.89776E-04 / DENSITY 1.04334E+00 SHOULD BE 1.00018E+00 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  9.50000E+03. STRENGTH FUNCTION IS  1.89776E-04
                          DENSITY  1.04334E+00 SHOULD BE  1.00018E+00
```

31. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.31000E+04. STRENGTH FUNCTION IS 1.88924E-04 / DENSITY 1.03586E+00 SHOULD BE 9.93015E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.31000E+04. STRENGTH FUNCTION IS  1.88924E-04
                          DENSITY  1.03586E+00 SHOULD BE  9.93015E-01
```

32. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.50000E+04. STRENGTH FUNCTION IS 1.88471E-04 / DENSITY 1.03194E+00 SHOULD BE 9.89253E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.50000E+04. STRENGTH FUNCTION IS  1.88471E-04
                          DENSITY  1.03194E+00 SHOULD BE  9.89253E-01
```

33. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.00000E+04. STRENGTH FUNCTION IS 1.87277E-04 / DENSITY 1.02168E+00 SHOULD BE 9.79424E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.00000E+04. STRENGTH FUNCTION IS  1.87277E-04
                          DENSITY  1.02168E+00 SHOULD BE  9.79424E-01
```

34. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.40000E+04. STRENGTH FUNCTION IS 1.86322E-04 / DENSITY 1.01356E+00 SHOULD BE 9.71633E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.40000E+04. STRENGTH FUNCTION IS  1.86322E-04
                          DENSITY  1.01356E+00 SHOULD BE  9.71633E-01
```

35. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+04. STRENGTH FUNCTION IS 1.86084E-04 / DENSITY 1.01154E+00 SHOULD BE 9.69695E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+04. STRENGTH FUNCTION IS  1.86084E-04
                          DENSITY  1.01154E+00 SHOULD BE  9.69695E-01
```

36. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 1.91441E-04 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 1.91441E-04 / DENSITY 8.71036E-01 SHOULD BE 7.89277E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
         ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  1.91441E-04
                  ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  1.91441E-04
                                DENSITY  8.71036E-01 SHOULD BE  7.89277E-01
```

37. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+03. STRENGTH FUNCTION IS 1.91385E-04 / DENSITY 8.70601E-01 SHOULD BE 7.88883E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+03. STRENGTH FUNCTION IS  1.91385E-04
                          DENSITY  8.70601E-01 SHOULD BE  7.88883E-01
```

38. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.50000E+03. STRENGTH FUNCTION IS 1.91162E-04 / DENSITY 8.68862E-01 SHOULD BE 7.87307E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  3.50000E+03. STRENGTH FUNCTION IS  1.91162E-04
                          DENSITY  8.68862E-01 SHOULD BE  7.87307E-01
```

39. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 4.50000E+03. STRENGTH FUNCTION IS 1.90936E-04 / DENSITY 8.67127E-01 SHOULD BE 7.85734E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  4.50000E+03. STRENGTH FUNCTION IS  1.90936E-04
                          DENSITY  8.67127E-01 SHOULD BE  7.85734E-01
```

40. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.50000E+03. STRENGTH FUNCTION IS 1.90707E-04 / DENSITY 8.65395E-01 SHOULD BE 7.84165E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  5.50000E+03. STRENGTH FUNCTION IS  1.90707E-04
                          DENSITY  8.65395E-01 SHOULD BE  7.84165E-01
```

41. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.50000E+03. STRENGTH FUNCTION IS 1.90476E-04 / DENSITY 8.63667E-01 SHOULD BE 7.82599E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  6.50000E+03. STRENGTH FUNCTION IS  1.90476E-04
                          DENSITY  8.63667E-01 SHOULD BE  7.82599E-01
```

42. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 7.50000E+03. STRENGTH FUNCTION IS 1.90244E-04 / DENSITY 8.61942E-01 SHOULD BE 7.81037E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  7.50000E+03. STRENGTH FUNCTION IS  1.90244E-04
                          DENSITY  8.61942E-01 SHOULD BE  7.81037E-01
```

43. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 8.50000E+03. STRENGTH FUNCTION IS 1.90011E-04 / DENSITY 8.60221E-01 SHOULD BE 7.79477E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  8.50000E+03. STRENGTH FUNCTION IS  1.90011E-04
                          DENSITY  8.60221E-01 SHOULD BE  7.79477E-01
```

44. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 9.50000E+03. STRENGTH FUNCTION IS 1.89776E-04 / DENSITY 8.58504E-01 SHOULD BE 7.77921E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  9.50000E+03. STRENGTH FUNCTION IS  1.89776E-04
                          DENSITY  8.58504E-01 SHOULD BE  7.77921E-01
```

45. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.31000E+04. STRENGTH FUNCTION IS 1.88924E-04 / DENSITY 8.52350E-01 SHOULD BE 7.72345E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.31000E+04. STRENGTH FUNCTION IS  1.88924E-04
                          DENSITY  8.52350E-01 SHOULD BE  7.72345E-01
```

46. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.50000E+04. STRENGTH FUNCTION IS 1.88471E-04 / DENSITY 8.49121E-01 SHOULD BE 7.69419E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.50000E+04. STRENGTH FUNCTION IS  1.88471E-04
                          DENSITY  8.49121E-01 SHOULD BE  7.69419E-01
```

47. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.00000E+04. STRENGTH FUNCTION IS 1.87277E-04 / DENSITY 8.40684E-01 SHOULD BE 7.61774E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.00000E+04. STRENGTH FUNCTION IS  1.87277E-04
                          DENSITY  8.40684E-01 SHOULD BE  7.61774E-01
```

48. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.40000E+04. STRENGTH FUNCTION IS 1.86322E-04 / DENSITY 8.33997E-01 SHOULD BE 7.55714E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.40000E+04. STRENGTH FUNCTION IS  1.86322E-04
                          DENSITY  8.33997E-01 SHOULD BE  7.55714E-01
```

49. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+04. STRENGTH FUNCTION IS 1.86084E-04 / DENSITY 8.32334E-01 SHOULD BE 7.54207E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+04. STRENGTH FUNCTION IS  1.86084E-04
                          DENSITY  8.32334E-01 SHOULD BE  7.54207E-01
```

50. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 1.91441E-04 / ENERGY = 2.25000E+03. STRENGTH FUNCTION IS 1.91441E-04 / DENSITY 7.64650E-01 SHOULD BE 6.45772E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
         ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  1.91441E-04
                  ENERGY =  2.25000E+03. STRENGTH FUNCTION IS  1.91441E-04
                                DENSITY  7.64650E-01 SHOULD BE  6.45772E-01
```

51. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+03. STRENGTH FUNCTION IS 1.91385E-04 / DENSITY 7.64267E-01 SHOULD BE 6.45450E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+03. STRENGTH FUNCTION IS  1.91385E-04
                           DENSITY  7.64267E-01 SHOULD BE  6.45450E-01
```

52. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.50000E+03. STRENGTH FUNCTION IS 1.91162E-04 / DENSITY 7.62741E-01 SHOULD BE 6.44160E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  3.50000E+03. STRENGTH FUNCTION IS  1.91162E-04
                           DENSITY  7.62741E-01 SHOULD BE  6.44160E-01
```

53. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 4.50000E+03. STRENGTH FUNCTION IS 1.90936E-04 / DENSITY 7.61217E-01 SHOULD BE 6.42874E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  4.50000E+03. STRENGTH FUNCTION IS  1.90936E-04
                           DENSITY  7.61217E-01 SHOULD BE  6.42874E-01
```

54. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.50000E+03. STRENGTH FUNCTION IS 1.90707E-04 / DENSITY 7.59697E-01 SHOULD BE 6.41590E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  5.50000E+03. STRENGTH FUNCTION IS  1.90707E-04
                           DENSITY  7.59697E-01 SHOULD BE  6.41590E-01
```

55. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.50000E+03. STRENGTH FUNCTION IS 1.90477E-04 / DENSITY 7.58180E-01 SHOULD BE 6.40309E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  6.50000E+03. STRENGTH FUNCTION IS  1.90477E-04
                           DENSITY  7.58180E-01 SHOULD BE  6.40309E-01
```

56. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 7.50000E+03. STRENGTH FUNCTION IS 1.90244E-04 / DENSITY 7.56666E-01 SHOULD BE 6.39030E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  7.50000E+03. STRENGTH FUNCTION IS  1.90244E-04
                          DENSITY  7.56666E-01 SHOULD BE  6.39030E-01
```

57. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 8.50000E+03. STRENGTH FUNCTION IS 1.90010E-04 / DENSITY 7.55155E-01 SHOULD BE 6.37754E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  8.50000E+03. STRENGTH FUNCTION IS  1.90010E-04
                          DENSITY  7.55155E-01 SHOULD BE  6.37754E-01
```

58. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 9.50000E+03. STRENGTH FUNCTION IS 1.89776E-04 / DENSITY 7.53648E-01 SHOULD BE 6.36481E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  9.50000E+03. STRENGTH FUNCTION IS  1.89776E-04
                          DENSITY  7.53648E-01 SHOULD BE  6.36481E-01
```

59. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.31000E+04. STRENGTH FUNCTION IS 1.88924E-04 / DENSITY 7.48246E-01 SHOULD BE 6.31919E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.31000E+04. STRENGTH FUNCTION IS  1.88924E-04
                          DENSITY  7.48246E-01 SHOULD BE  6.31919E-01
```

60. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 1.50000E+04. STRENGTH FUNCTION IS 1.88471E-04 / DENSITY 7.45411E-01 SHOULD BE 6.29525E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  1.50000E+04. STRENGTH FUNCTION IS  1.88471E-04
                          DENSITY  7.45411E-01 SHOULD BE  6.29525E-01
```

61. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.00000E+04. STRENGTH FUNCTION IS 1.87277E-04 / DENSITY 7.38004E-01 SHOULD BE 6.23270E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.00000E+04. STRENGTH FUNCTION IS  1.87277E-04
                          DENSITY  7.38004E-01 SHOULD BE  6.23270E-01
```

62. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.40000E+04. STRENGTH FUNCTION IS 1.86322E-04 / DENSITY 7.32134E-01 SHOULD BE 6.18312E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.40000E+04. STRENGTH FUNCTION IS  1.86322E-04
                          DENSITY  7.32134E-01 SHOULD BE  6.18312E-01
```

63. Level density in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 2.50000E+04. STRENGTH FUNCTION IS 1.86084E-04 / DENSITY 7.30674E-01 SHOULD BE 6.17079E-01 (0): URR dens. (a)

```
FILE  2
   SECTION 151
            ENERGY =  2.50000E+04. STRENGTH FUNCTION IS  1.86084E-04
                          DENSITY  7.30674E-01 SHOULD BE  6.17079E-01
```

- `fudge-4.0` Warnings:

1. A covariance format not yet supported by fudge (LB3)
Reading ENDF file: ../n-092_U_235.endf (Error # 0): Cov. unimp. (b)

```
WARNING: skipping LB3 section for MF31 MT452
WARNING: skipping LB3 section for MF31 MT452
WARNING: skipping LB3 section for MF31 MT452
```

2. Missing a channel with a particular angular momenta combination
resonances / resolved / Reich_Moore (Error # 0): missingResonanceChannel

```
WARNING: Missing a channel with angular momenta combination L = 1, J = 3.0 and S = 3.0 for "competitive"
WARNING: Missing a channel with angular momenta combination L = 1, J = 3.0 and S = 4.0 for "competitive"
WARNING: Missing a channel with angular momenta combination L = 1, J = 4.0 and S = 3.0 for "competitive"
WARNING: Missing a channel with angular momenta combination L = 1, J = 4.0 and S = 4.0 for "competitive"
        ... plus 28 more instances of this message
```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 15.56%
```

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 0 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] [nubar]): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 0 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] [nubar]): / Form 'eval': / Component 2 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 0 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] [nubar]): / Form 'eval': / Component 4 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] vs. MAT9437_MF31_MT452 [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] vs. MAT9443_MF31_MT452 [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 4 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (4.640126e-19) is too small
```

- `fudge-4.0` Errors:

1. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 1): Level mismatch (d)

```
WARNING: MT83 MF12 level energy 533228.1 differs from MF3 value 533228.2. Setting to MF3 value.
```

2. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 2): Level mismatch (d)

```
WARNING: MT84 MF12 level energy 550400.1 differs from MF3 value 550400.2. Setting to MF3 value.
```

3. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 3): Level mismatch (d)

```
WARNING: MT801 MF12 level energy 49369.0 differs from MF3 value 49370.0. Setting to MF12 value.
```

4. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 4): Level mismatch (d)

```
WARNING: MT806 MF12 level energy 730350.1 differs from MF3 value 730350.0. Setting to MF12 value.
```

5. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 5): Level mismatch (d)

   ```
   WARNING: MT807 MF12 level energy 774100.1 differs from MF3 value 774100.0. Setting to MF12 value.
   ```

6. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 6): Level mismatch (d)

   ```
   WARNING: MT813 MF12 level energy 883600.1 differs from MF3 value 883600.0. Setting to MF12 value.
   ```

7. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 7): Level mismatch (d)

   ```
   WARNING: MT826 MF12 level energy 1137100.0 differs from MF3 value 1137098.0. Setting to MF3 value.
   ```

8. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 8): Level mismatch (d)

   ```
   WARNING: MT827 MF12 level energy 1143300.0 differs from MF3 value 1143297.0. Setting to MF3 value.
   ```

9. Level energy in gamma data doesn't match level energy in cross section data
   Reading ENDF file: ../n-092_U_235.endf (Error # 9): Level mismatch (d)

   ```
   WARNING: MT830 MF12 level energy 1182500.0 differs from MF3 value 1182498.0. Setting to MF3 value.
   ```

10. Level energy in gamma data doesn't match level energy in cross section data
    Reading ENDF file: ../n-092_U_235.endf (Error # 10): Level mismatch (d)

    ```
    WARNING: MT831 MF12 level energy 1208900.0 differs from MF3 value 1208898.0. Setting to MF3 value.
    ```

11. Level energy in gamma data doesn't match level energy in cross section data
    Reading ENDF file: ../n-092_U_235.endf (Error # 11): Level mismatch (d)

    ```
    WARNING: MT833 MF12 level energy 1222100.0 differs from MF3 value 1222098.0. Setting to MF3 value.
    ```

12. Energy range of data set does not match cross section range
    reaction label 20: n + U235_e20 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Domain mismatch (a)

    ```
    WARNING: Domain doesn't match the cross section domain: (368644.3 -> 30000000.0) vs (368644.4 -> 30000000.0)
    ```

13. Calculated and tabulated Q values disagree.
    reaction label 41: n[multiplicity:'2'] + U234 + photon (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: -5261566.040679932 eV vs -5.298e6 eV!
    ```

14. Calculated and tabulated Q values disagree.
    reaction label 42: n[multiplicity:'3'] + U233 + photon (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: -12120393.20095825 eV vs -1.2141e7 eV!
    ```

15. Calculated and tabulated Q values disagree.
    reaction label 43: n[multiplicity:'4'] + U232 + photon (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: -17945698.46035767 eV vs -1.7901e7 eV!
    ```

16. Calculated and tabulated Q values disagree.
reaction label 45: n + H1 + Pa234 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -6734102.44354248 eV vs -6711002. eV!
```

17. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 45: n + H1 + Pa234 / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 1.16e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.2e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.3e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.35e7 eV
        ... plus 8 more instances of this message
```

18. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 47: n + H3 + Pa232 + photon / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 1.7e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.9e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.1e7 eV
        ... plus 4 more instances of this message
```

19. Energy range of data set does not match cross section range
reaction label 48: H1 + (Pa235_c ->Pa235 + photon) / Product: H1 / Distribution: / energyAngular - XYs3d: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (823518.8 -> 30000000.0) vs (823518.9 -> 30000000.0)
```

20. Energy range of data set does not match cross section range
reaction label 48: H1 + (Pa235_c ->Pa235 + photon) / Product: Pa235_c / Decay product: Pa235 / Distribution: / uncorrelated - energy - XYs2d: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (823518.8 -> 30000000.0) vs (823518.9 -> 30000000.0)
```

21. Energy range of data set does not match cross section range
reaction label 48: H1 + (Pa235_c ->Pa235 + photon) / Product: Pa235_c / Decay product: photon / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (823518.8 -> 30000000.0) vs (823518.9 -> 30000000.0)
```

22. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 86: n[multiplicity:'2'] + H2 + Pa232 + photon / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 1.9e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.1e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.2e7 eV
        ... plus 3 more instances of this message
```

23. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 89: n[multiplicity:'3'] + H1 + Pa232 + photon / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 2.1e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.2e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.5e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.7e7 eV
        ... plus 1 more instances of this message
```

24. Calculated and tabulated Q values disagree.
reaction label 90: H1 + He4 + Ac231 + photon (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 3395675.889984131 eV vs 3361001. eV!
```

25. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 90: H1 + He4 + Ac231 + photon / Product: He4 / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 2.2e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 2.5e7 eV
```

26. Calculated and tabulated Q values disagree.
reaction label 91: H2 + (Pa234_s ->Pa234 + photon) (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -4509775.353240967 eV vs -4.487e6 eV!
```

27. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 93: sumOfRemainingOutputChannels / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 8.e6 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 8400001. eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.1e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.25e7 eV
        ... plus 8 more instances of this message
```

28. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 93: sumOfRemainingOutputChannels / Product: H1 / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 3.e7 eV
```

29. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 93: sumOfRemainingOutputChannels / Product: H2 / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 2.2e7 eV
```

30. Found a negative probability
reaction label 93: sumOfRemainingOutputChannels / Product: H3 / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.

```
WARNING: Negative probabilities encountered. Incident energy: 3.e7 eV, worst case: -2.85703860294e-31
```

31. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.
reaction label 93: sumOfRemainingOutputChannels / Product: He4 / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy

```
WARNING: Extra zero-probability outgoing energies found at incident energy 8.e6 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 8400001. eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.1e7 eV
WARNING: Extra zero-probability outgoing energies found at incident energy 1.16e7 eV
        ... plus 3 more instances of this message
```

32. Cross section domain does not match domain of linked reaction cross section sum
crossSectionSum label 1: (z,n) (Error # 0): summedCrossSectionDomainMismatch

```
WARNING: Cross section domain does not match domain of linked reaction cross section sum
```

33. Since the min allowed variance is 0, this means really you have a negative variance!!!!
Section 0 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] [nubar]): / Form 'eval': / Component 3 (Error # 0): Very small variance

```
WARNING: Encountered very small variance (-7.300000e-03%) at index 1.
```

34. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.
Section 0 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + photon [total fission] [nubar]): / Form 'eval': (Error # 3): Bad evs

```
WARNING: 1 negative eigenvalues! Worst case = -7.300000e-03
```

- `inter4web` Failures:

1. AttributeError("'columnHeader' object has no attribute 'unit'",)
Run failed!

```
Traceback (most recent call last):
  File "/home/dbrown/advance.trunk/src/advance/code_runner.py", line 215, in run
    run_results, stdout_result, stderr_result = self._run( workdir, prefix, non_error_list = non_error_list )
  File "/home/dbrown/advance.trunk/src/project_endf/code_runners/inter4web_runner.py", line 306, in _run
    header.append('%s (%s)' % (metric.name,metric.unit))
... [2 more lines]
```

- `njoy2012` Warnings:

  1. Message comes from several resonance types that do not support the calculation of angular distributions. Some of them can be used if `Want_SAMRL_RM or Want_SAMRML_BW are true.`
     reconr...reconstruct pointwise cross sections in pendf format (0): RECONR/calculation of angular distribution not installed (0)

     ```
     ---message from rdf2bw---calculation of angular distribution not installed.
       samm max legendre order:  0
     ```

  2. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (0): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 11 does not give recoil za= 91232
                              one-particle recoil approx. used.
     ```

  3. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (1): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 16 does not give recoil za=     0
                              one-particle recoil approx. used.
     ```

  4. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (2): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 17 does not give recoil za=     0
                              one-particle recoil approx. used.
     ```

  5. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (3): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 22 does not give recoil za= 90231
                              one-particle recoil approx. used.
     ```

  6. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (4): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 32 does not give recoil za= 91233
                              one-particle recoil approx. used.
     ```

  7. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (5): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 33 does not give recoil za= 91232
                              one-particle recoil approx. used.
     ```

  8. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (6): HEATR/hinit (4)

     ```
     ---message from hinit---mf6, mt 41 does not give recoil za= 91233
                              one-particle recoil approx. used.
     ```

  9. Recoil is not given, so one-particle recoil approximation used.
     heatr...prompt kerma (7): HEATR/hinit (4)

```
---message from hinit---mf6, mt 42 does not give recoil za= 91232
                        one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.
    heatr...prompt kerma (8): HEATR/hinit (4)

```
---message from hinit---mf6, mt102 does not give recoil za= 92236
                        photon momentum recoil used.
```

11. Recoil is not given, so one-particle recoil approximation used.
    heatr...prompt kerma (9): HEATR/hinit (4)

```
---message from hinit---mf6, mt104 does not give recoil za=     0
                        one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.
    heatr...prompt kerma (10): HEATR/hinit (4)

```
---message from hinit---mf6, mt105 does not give recoil za= 91233
                        one-particle recoil approx. used.
```

13. Recoil is not given, so one-particle recoil approximation used.
    heatr...prompt kerma (11): HEATR/hinit (4)

```
---message from hinit---mf6, mt112 does not give recoil za= 89231
                        one-particle recoil approx. used.
```

14. There is a problem with the fission energy release.
    heatr...prompt kerma (12): HEATR/nheat (3)

```
---message from nheat---changed q from   1.934054E+08 to   1.805680E+08
                        for mt  18
```

- `njoy2012` Errors:

  1. An angular distribution is negative
     acer...monte carlo neutron and photon data (0): Neg. P(Ejμ) (b)

```
---message from ptleg2---negative probs found
                         141 for mt=  5 e= 2.496E+01
```

- `acelst` Warnings:

  1. The incident energy grid is not monotonic for this angular distribution
     0: Bad Ang. Dist.

```
ACELST WARNING - Processing Ang.Dist.MT         2
                 E-grid non-monotonic   1.500000000E+01 1.500000000E+01
```

- `xsectplotter` Warnings:

  1. A covariance format not yet supported by fudge (LB3)
     (Error # 2): Cov. unimp. (b)

```
WARNING: skipping LB3 section for MF31 MT452
WARNING: skipping LB3 section for MF31 MT452
WARNING: skipping LB3 section for MF31 MT452
```

2. Encountered runtime warning in xsectplotter or Fudge or matplotlib
   (Error # 14): RuntimeWarning

```
/usr/local/lib/python2.7/site-packages/matplotlib-1.5.3-py2.7-linux-x86_64.egg/matplotlib/font_manager.py:273: U
/usr/local/lib/python2.7/site-packages/matplotlib-1.5.3-py2.7-linux-x86_64.egg/matplotlib/pyplot.py:524: Runtime
```

3. Encountered runtime warning in xsectplotter or Fudge or matplotlib
   /usr/local/lib/python2.7/site-packages/matplotlib-1.5.3-py2.7-linux-x86_64.egg/matplotlib/pyplot.py:524: RuntimeWarning: More than 20 figures have been opened. Figures created through the pyplot interface (‘matplotlib.pyplot.figure‘) are retained until explicitly closed and may consume too much memory. (To control this warning, see the rcParam ‘figure.max_open_warning‘).
   (Error # 0): RuntimeWarning

```
max_open_warning, RuntimeWarning)
```

- `xsectplotter` Errors:

1. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 3): Level mismatch (d)

```
WARNING: MT83 MF12 level energy 533228.1 differs from MF3 value 533228.2. Setting to MF3 value.
```

2. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 4): Level mismatch (d)

```
WARNING: MT84 MF12 level energy 550400.1 differs from MF3 value 550400.2. Setting to MF3 value.
```

3. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 5): Level mismatch (d)

```
WARNING: MT801 MF12 level energy 49369.0 differs from MF3 value 49370.0. Setting to MF12 value.
```

4. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 6): Level mismatch (d)

```
WARNING: MT806 MF12 level energy 730350.1 differs from MF3 value 730350.0. Setting to MF12 value.
```

5. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 7): Level mismatch (d)

```
WARNING: MT807 MF12 level energy 774100.1 differs from MF3 value 774100.0. Setting to MF12 value.
```

6. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 8): Level mismatch (d)

```
WARNING: MT813 MF12 level energy 883600.1 differs from MF3 value 883600.0. Setting to MF12 value.
```

7. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 9): Level mismatch (d)

```
WARNING: MT826 MF12 level energy 1137100.0 differs from MF3 value 1137098.0. Setting to MF3 value.
```

8. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 10): Level mismatch (d)

   ```
   WARNING: MT827 MF12 level energy 1143300.0 differs from MF3 value 1143297.0. Setting to MF3 value.
   ```

9. Level energy in gamma data doesn't match level energy in cross section data
   (Error # 11): Level mismatch (d)

   ```
   WARNING: MT830 MF12 level energy 1182500.0 differs from MF3 value 1182498.0. Setting to MF3 value.
   ```

10. Level energy in gamma data doesn't match level energy in cross section data
    (Error # 12): Level mismatch (d)

    ```
    WARNING: MT831 MF12 level energy 1208900.0 differs from MF3 value 1208898.0. Setting to MF3 value.
    ```

11. Level energy in gamma data doesn't match level energy in cross section data
    (Error # 13): Level mismatch (d)

    ```
    WARNING: MT833 MF12 level energy 1222100.0 differs from MF3 value 1222098.0. Setting to MF3 value.
    ```