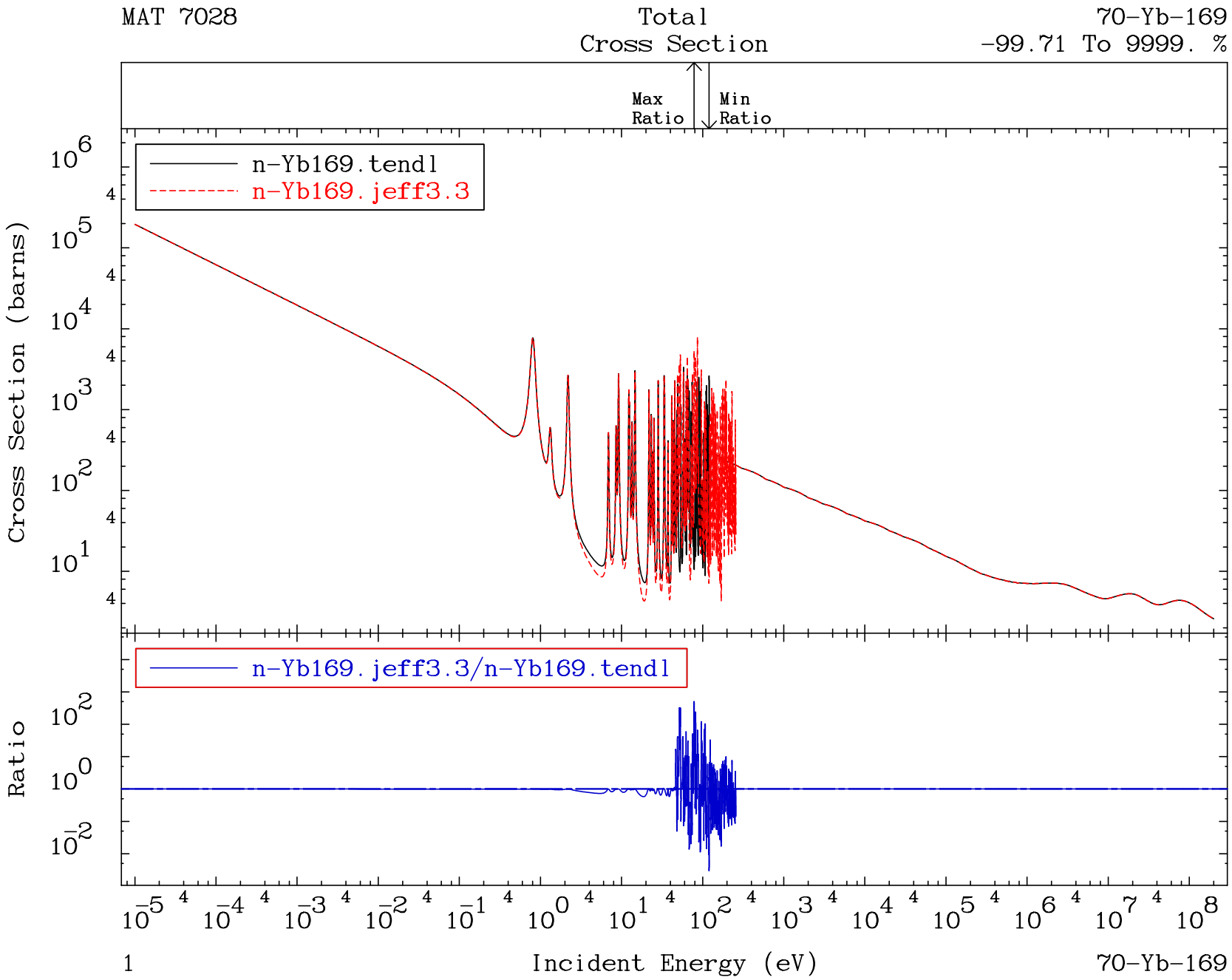
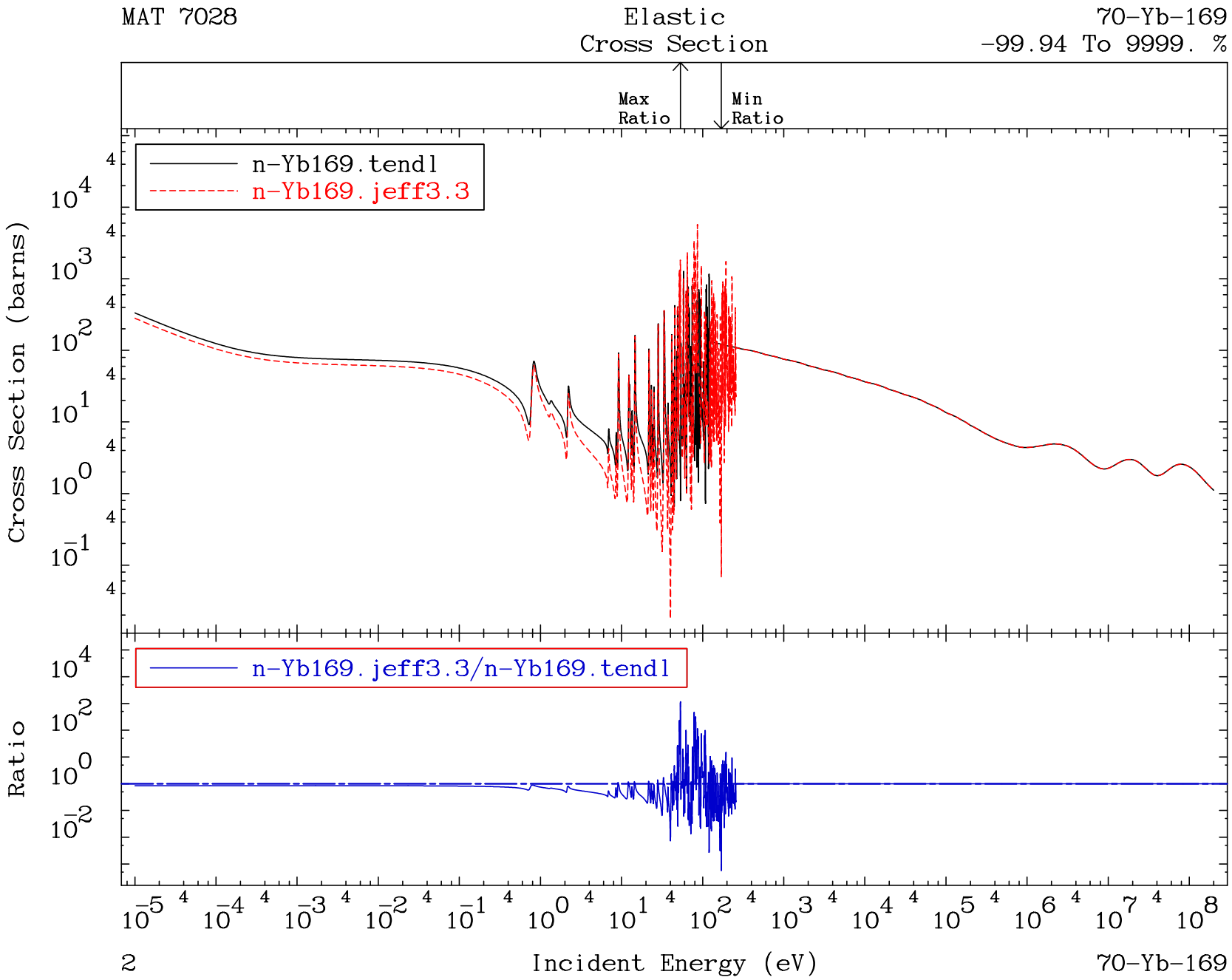
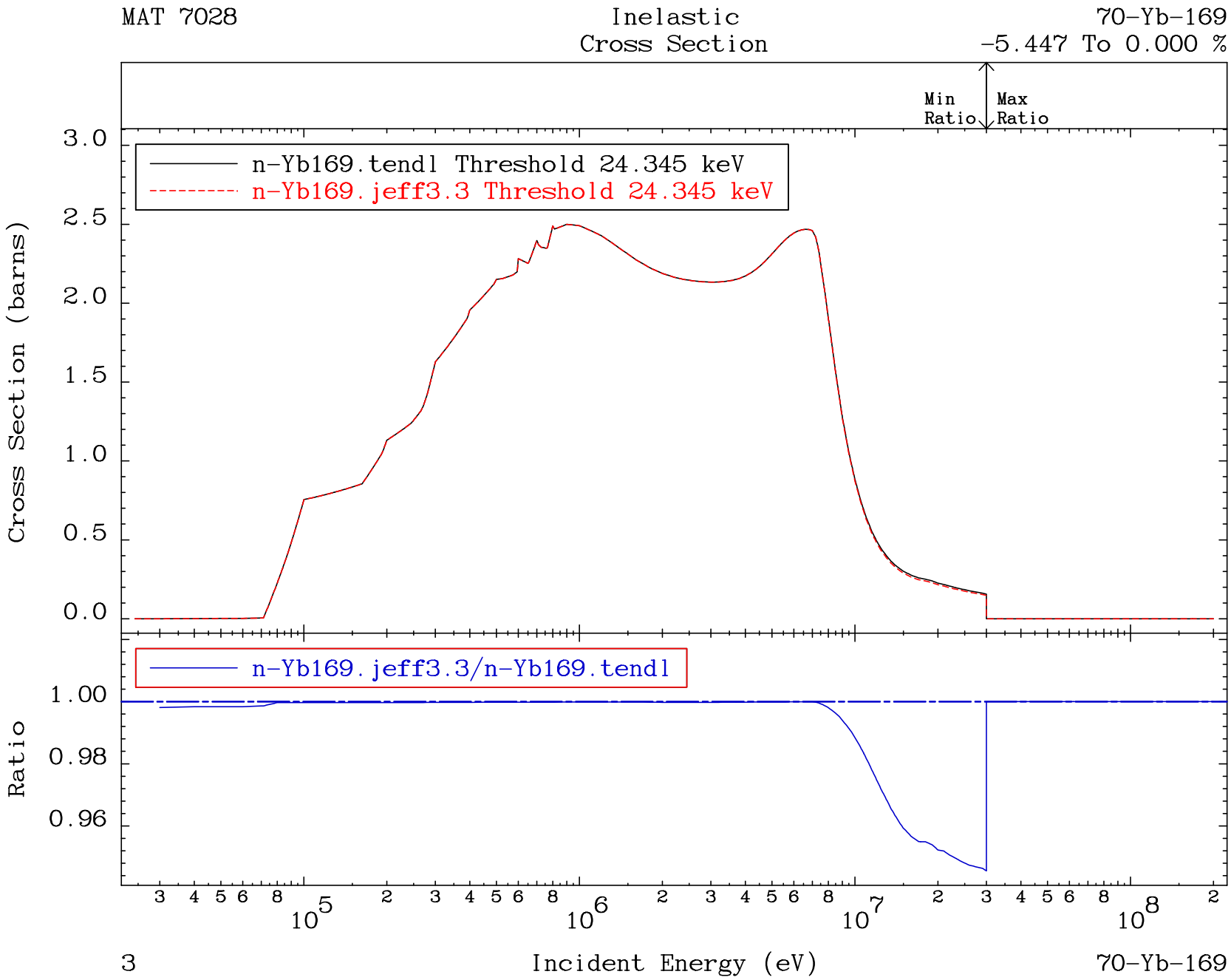
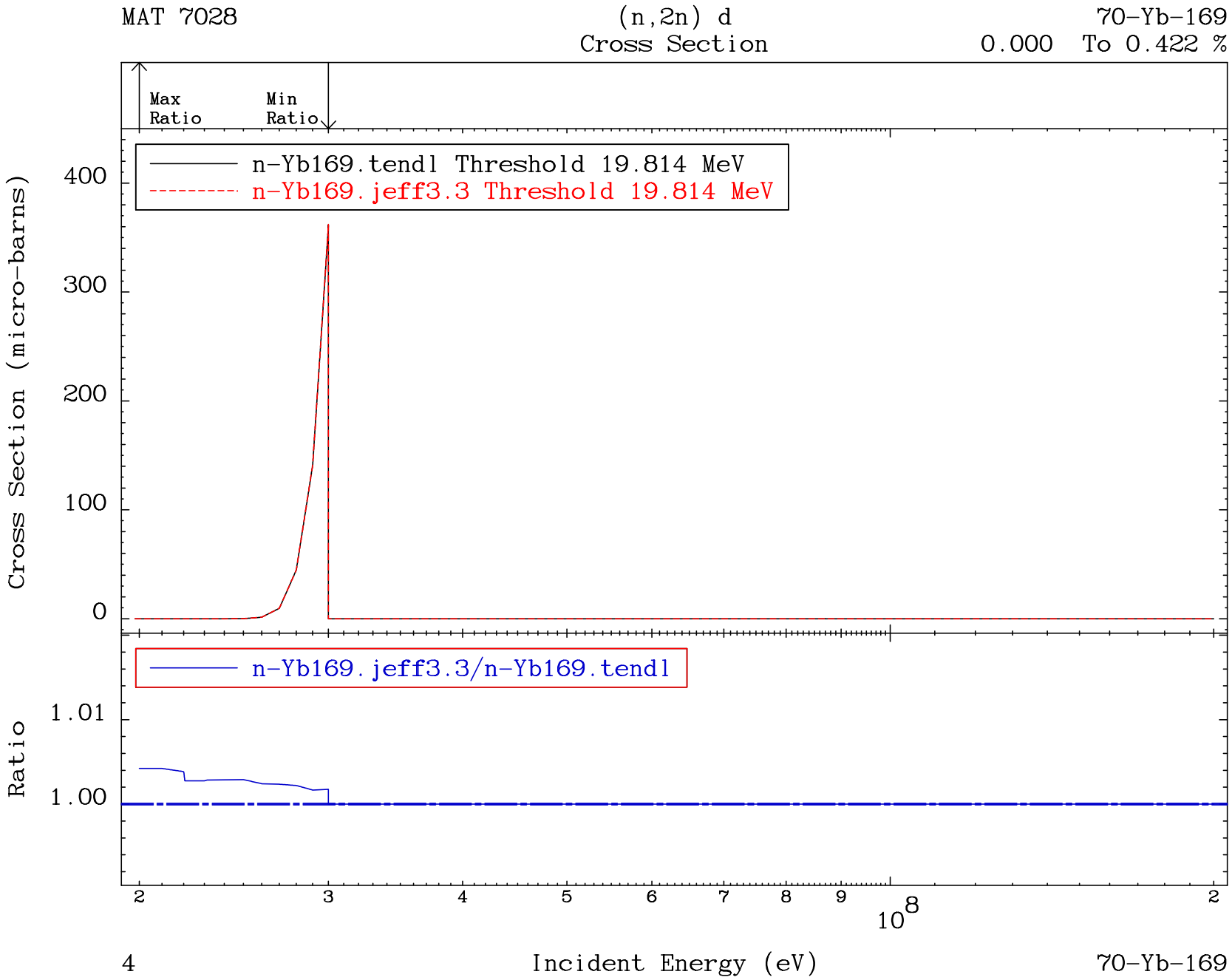
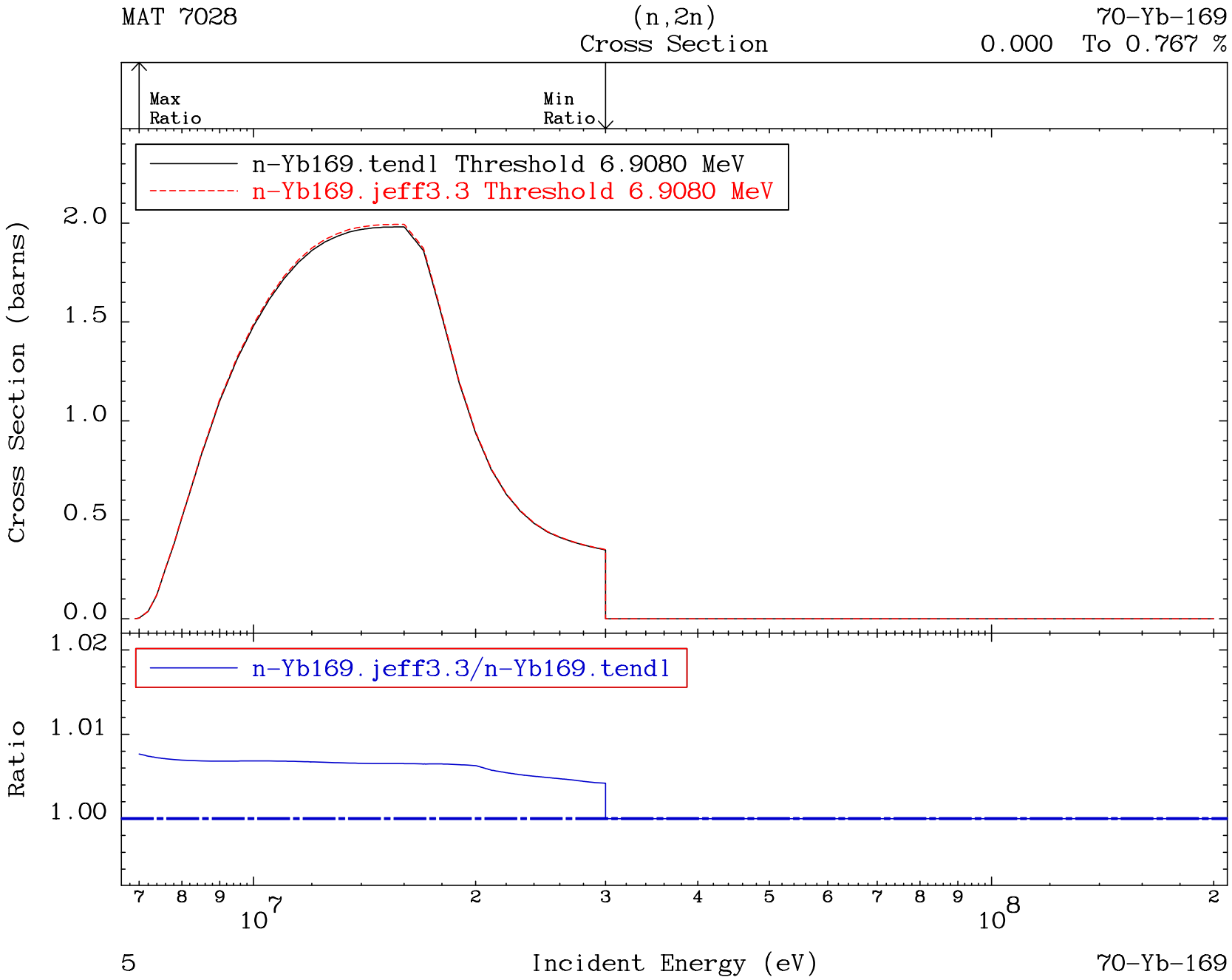
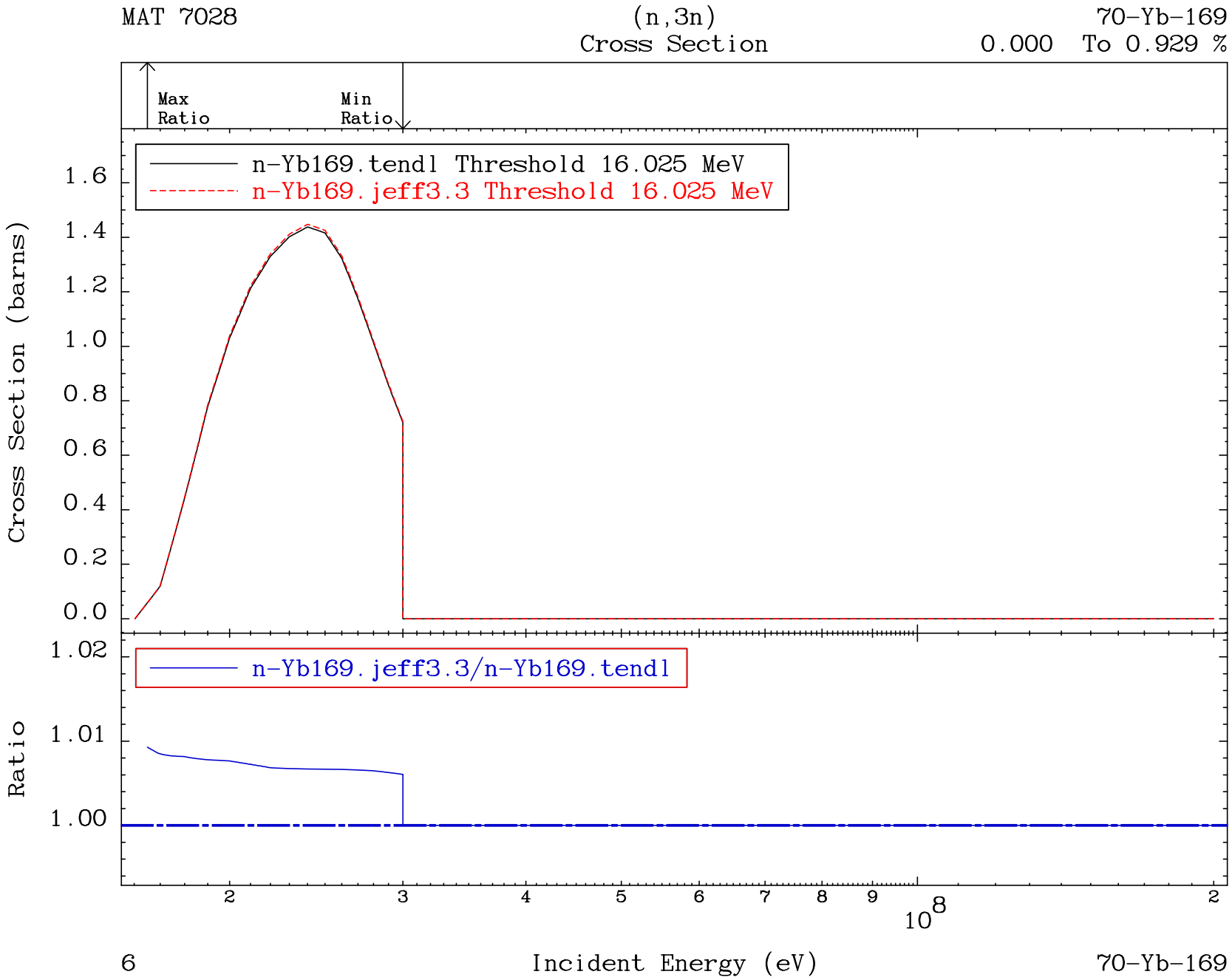

MAT 7028
Total
Cross Section
70-Yb-169
-99.71 To 9999. %
Max
Ratio
Min
Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
1
70-Yb-169

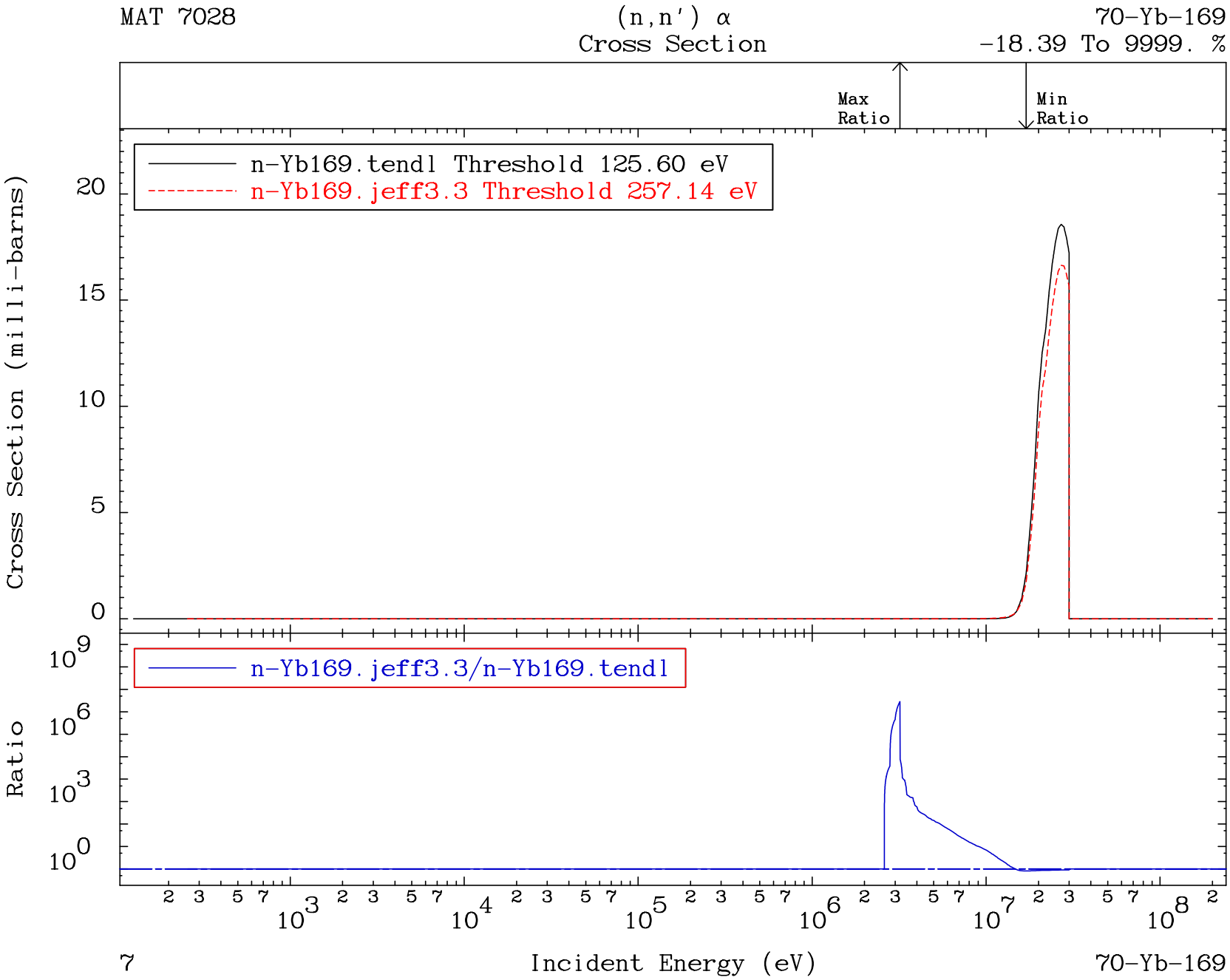

MAT 7028
Elastic
Cross Section
70-Yb-169
-99.94 To 9999. %
Max
Ratio
Min
Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
2
70-Yb-169

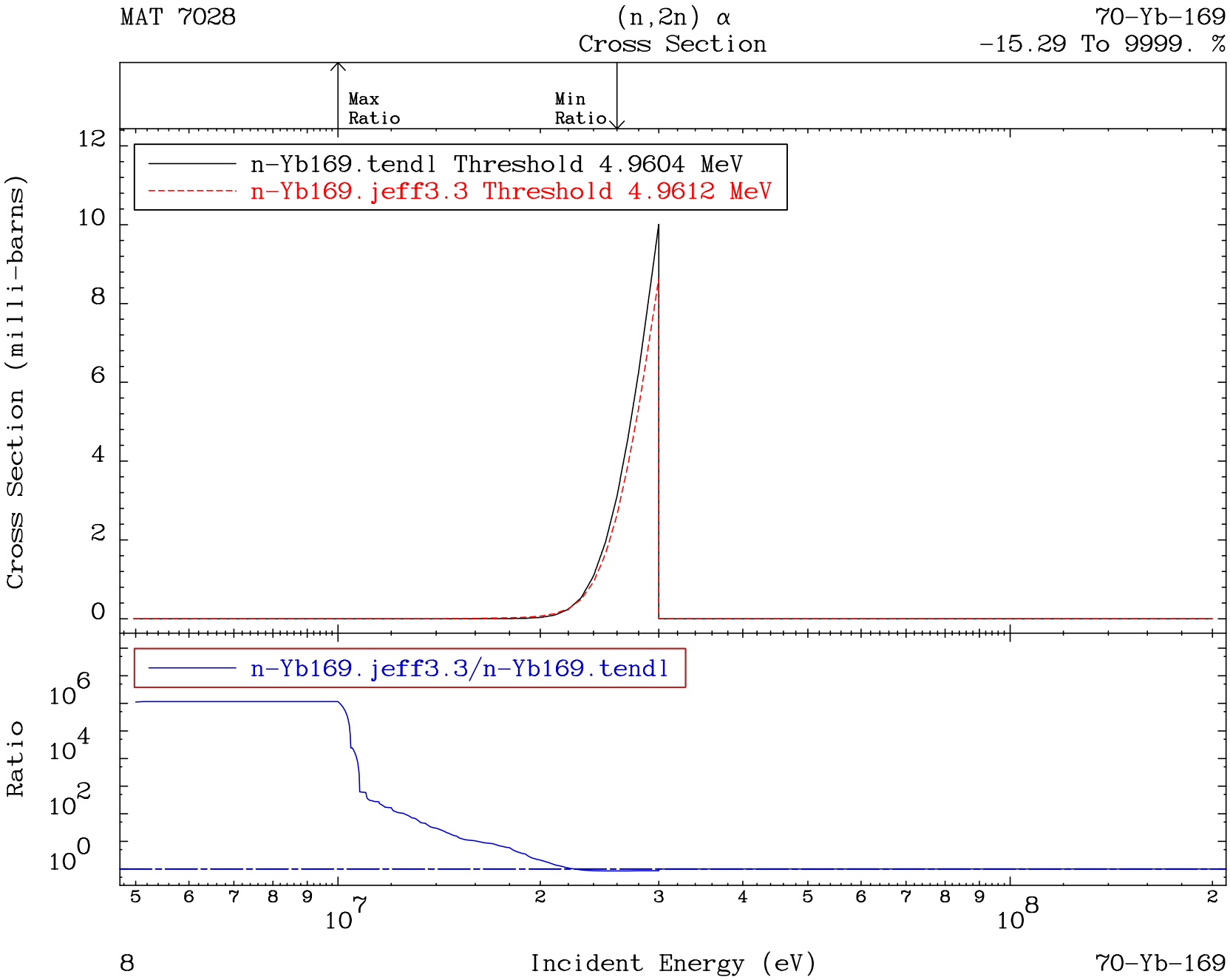

MAT 7028
Inelastic
Cross Section
70-Yb-169
-5.447 To 0.000 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 24.345 keV
n-Yb169.jeff3.3 Threshold 24.345 keV
Cross Section (barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
0.98
0.96
3 4 5 6 8 10^5 2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
Incident Energy (eV)
3
70-Yb-169

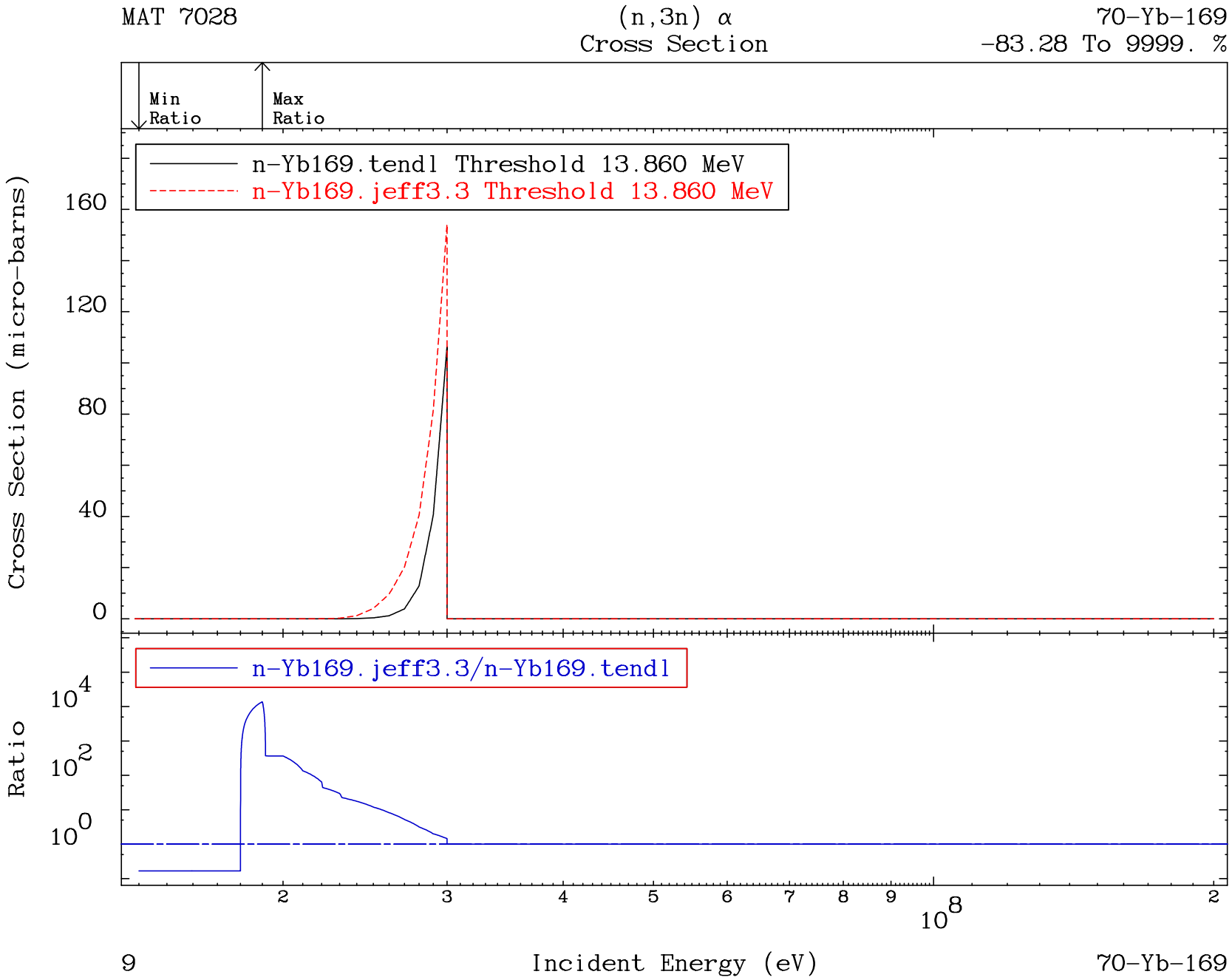

MAT 7028
(n,2n) d
Cross Section
70-Yb-169
0.000 To 0.422 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 19.814 MeV
n-Yb169.jeff3.3 Threshold 19.814 MeV
Cross Section (micro-barns)
400
300
200
100
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
9
10^8
2
4
Incident Energy (eV)
70-Yb-169

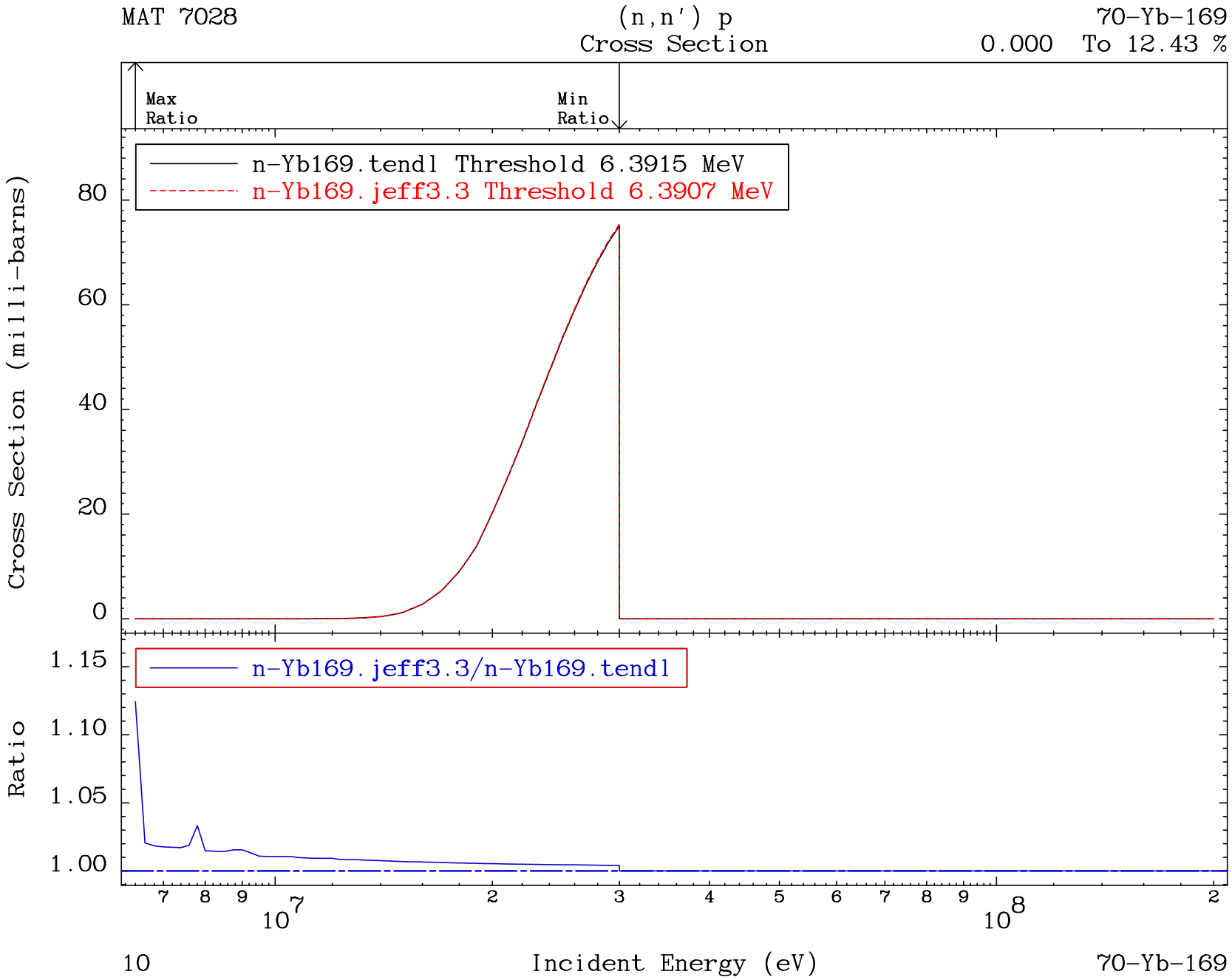

MAT 7028
(n,2n)
Cross Section
70-Yb-169
0.000 To 0.767 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 6.9080 MeV
n-Yb169.jeff3.3 Threshold 6.9080 MeV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
1.02
1.01
1.00
Ratio
n-Yb169.jeff3.3/n-Yb169.tendl
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
5
Incident Energy (eV)
70-Yb-169

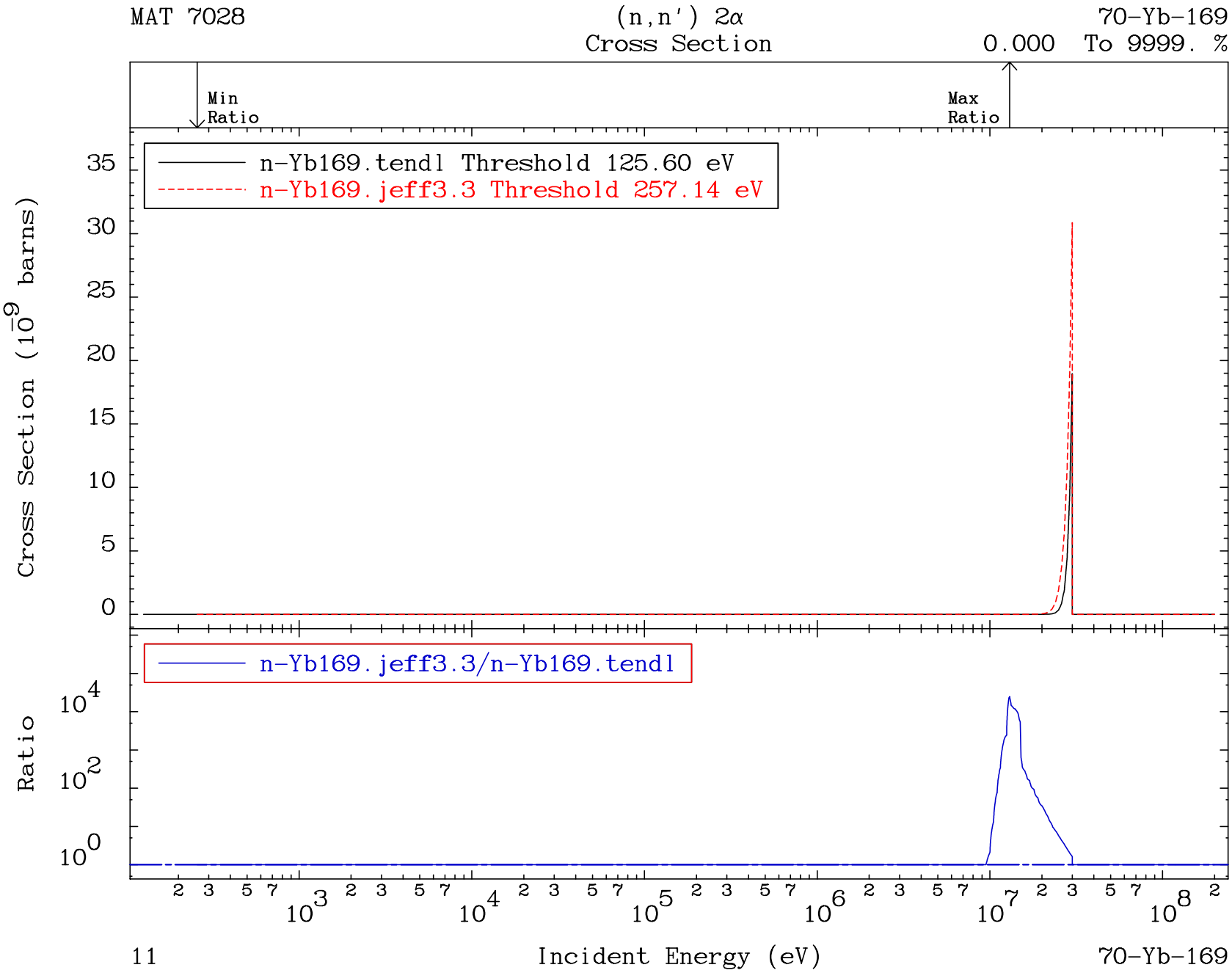

MAT 7028
(n,3n)
Cross Section
70-Yb-169
0.000 To 0.929 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 16.025 MeV
n-Yb169.jeff3.3 Threshold 16.025 MeV
Cross Section (barns)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
2
3
4
5
6
7
8
9
10^8
2
6
Incident Energy (eV)
70-Yb-169

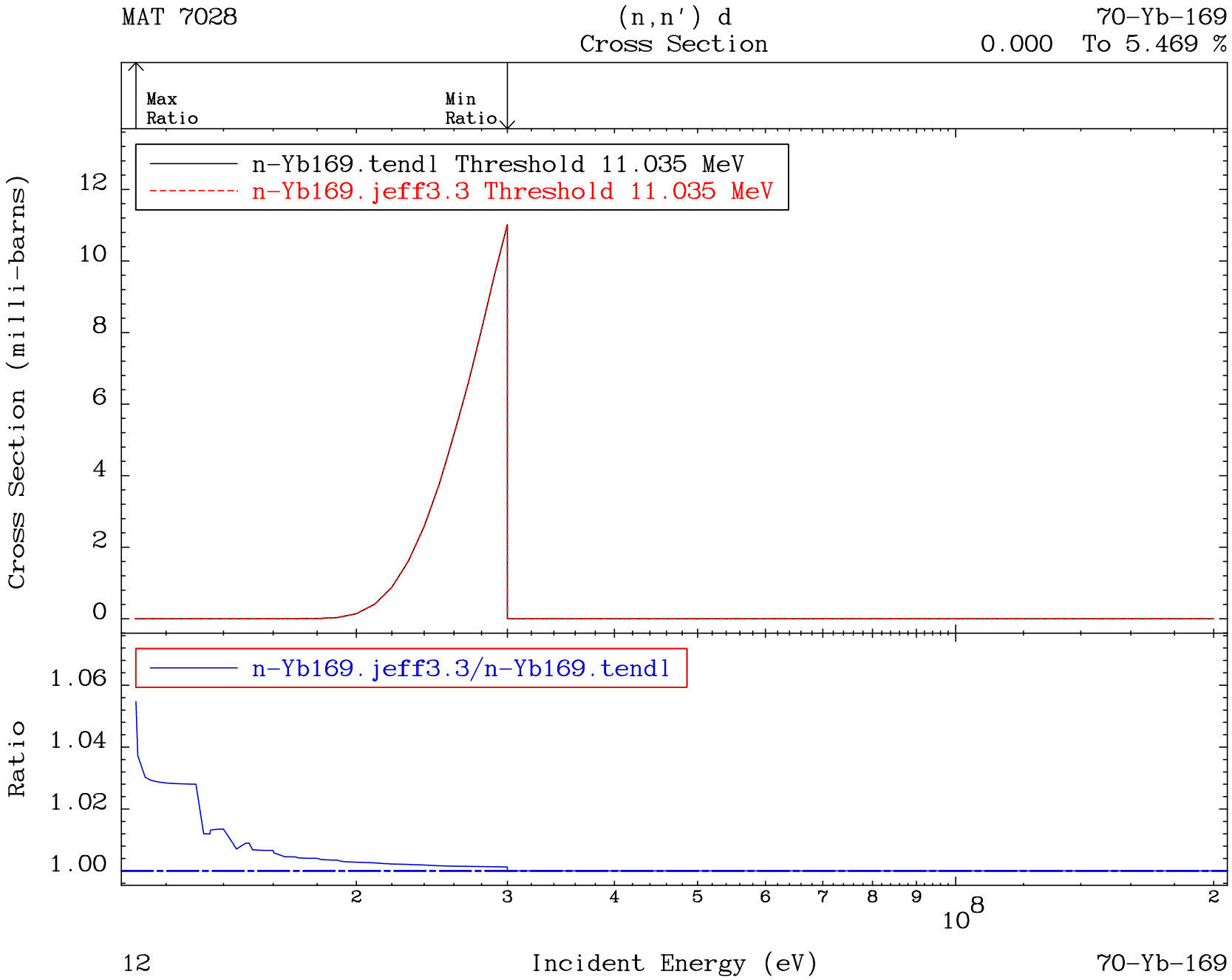

MAT 7028
(n,n') α
Cross Section
70-Yb-169
-18.39 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 125.60 eV
n-Yb169.jeff3.3 Threshold 257.14 eV
Cross Section (milli-barns)
20
15
10
5
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
10^9
10^6
10^3
10^0
2 3 5 7 10^3 2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
7
Incident Energy (eV)
70-Yb-169

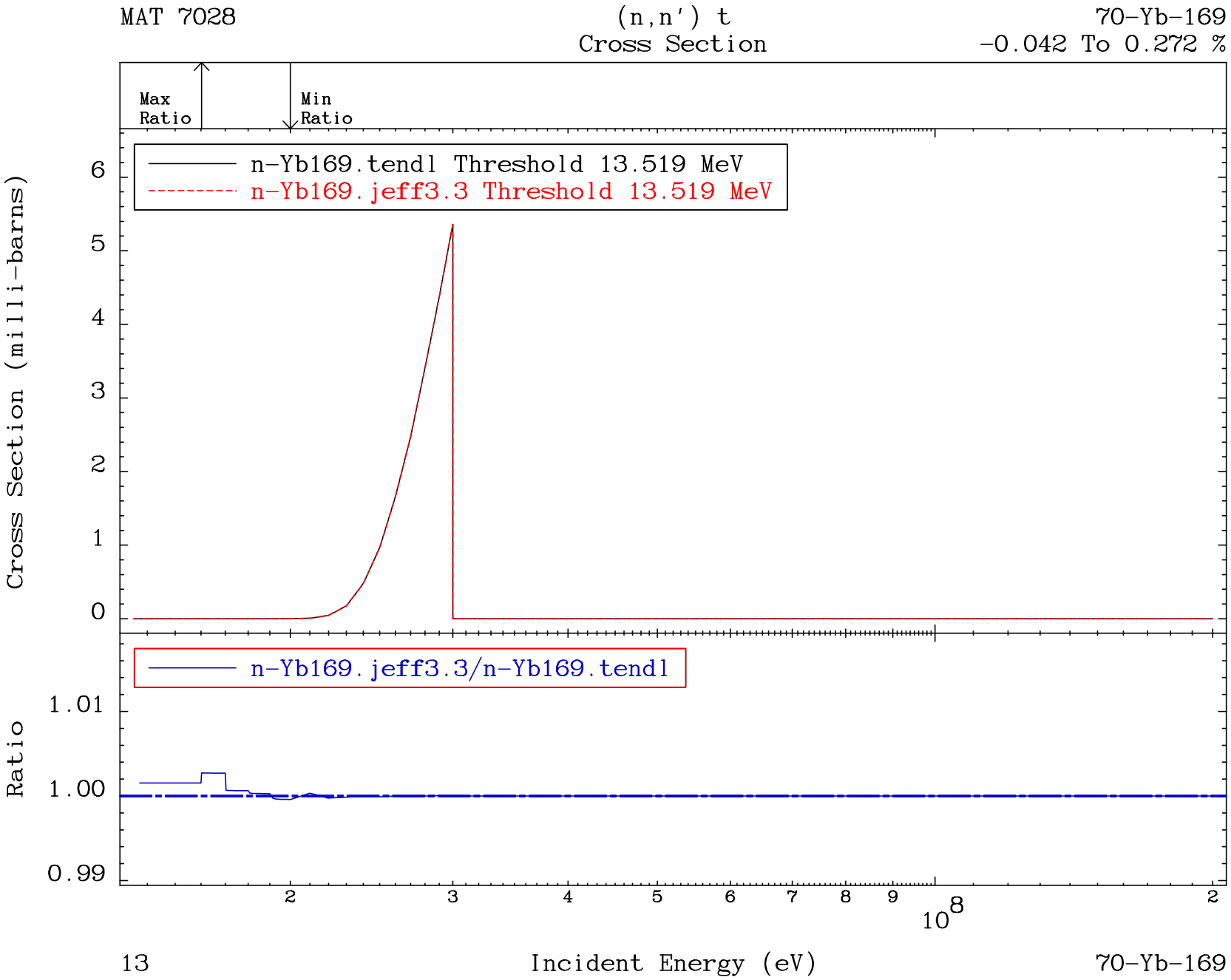

MAT 7028
(n,2n) α
Cross Section
70-Yb-169
-15.29 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 4.9604 MeV
n-Yb169.jeff3.3 Threshold 4.9612 MeV
Cross Section (milli-barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
8
70-Yb-169

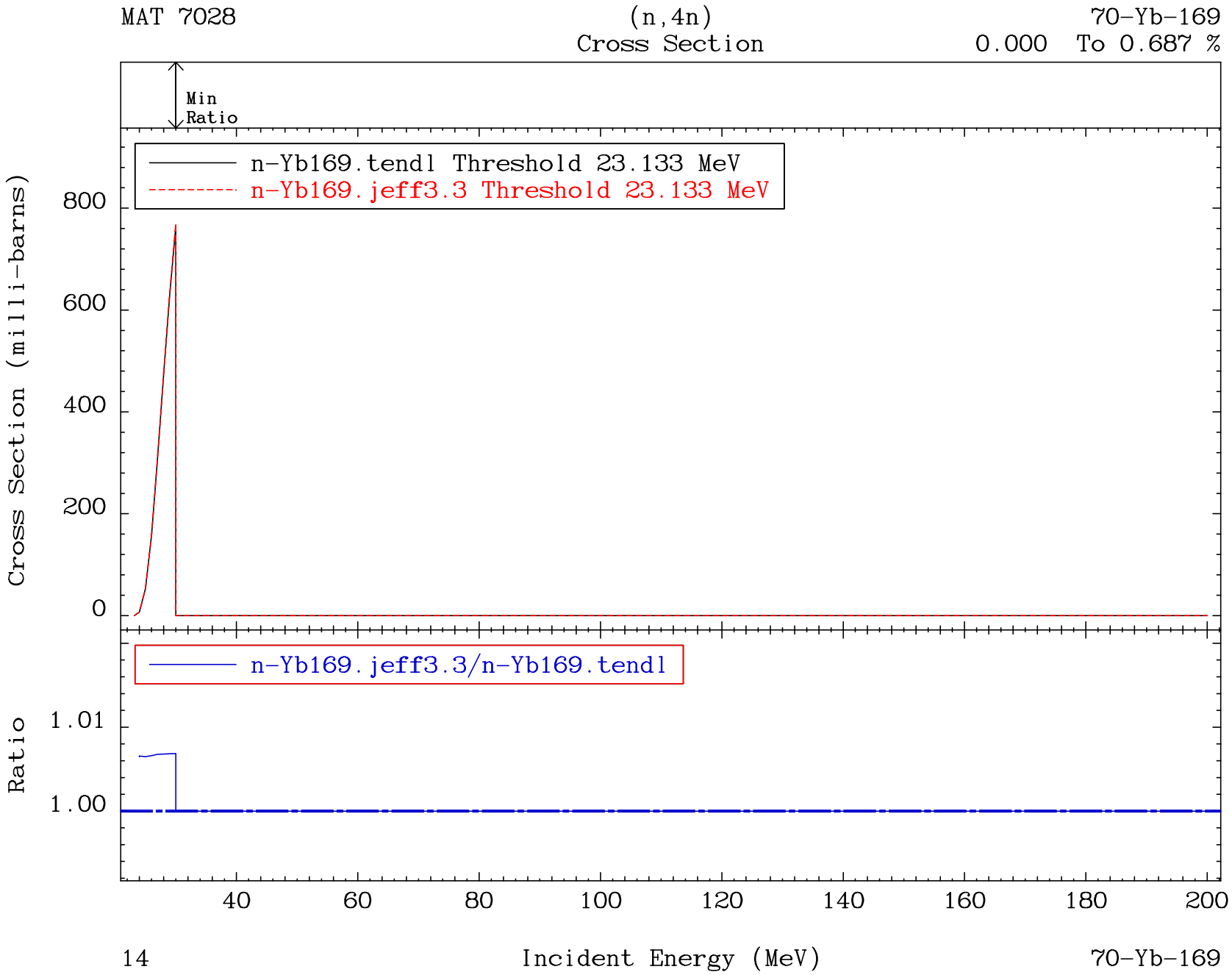

MAT 7028
(n,3n) α
Cross Section
70-Yb-169
-83.28 To 9999. %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 13.860 MeV
n-Yb169.jeff3.3 Threshold 13.860 MeV
Cross Section (micro-barns)
160
120
80
40
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
10^4
10^2
10^0
2
3
4
5
6
7
8
9
10^8
2
9
Incident Energy (eV)
70-Yb-169

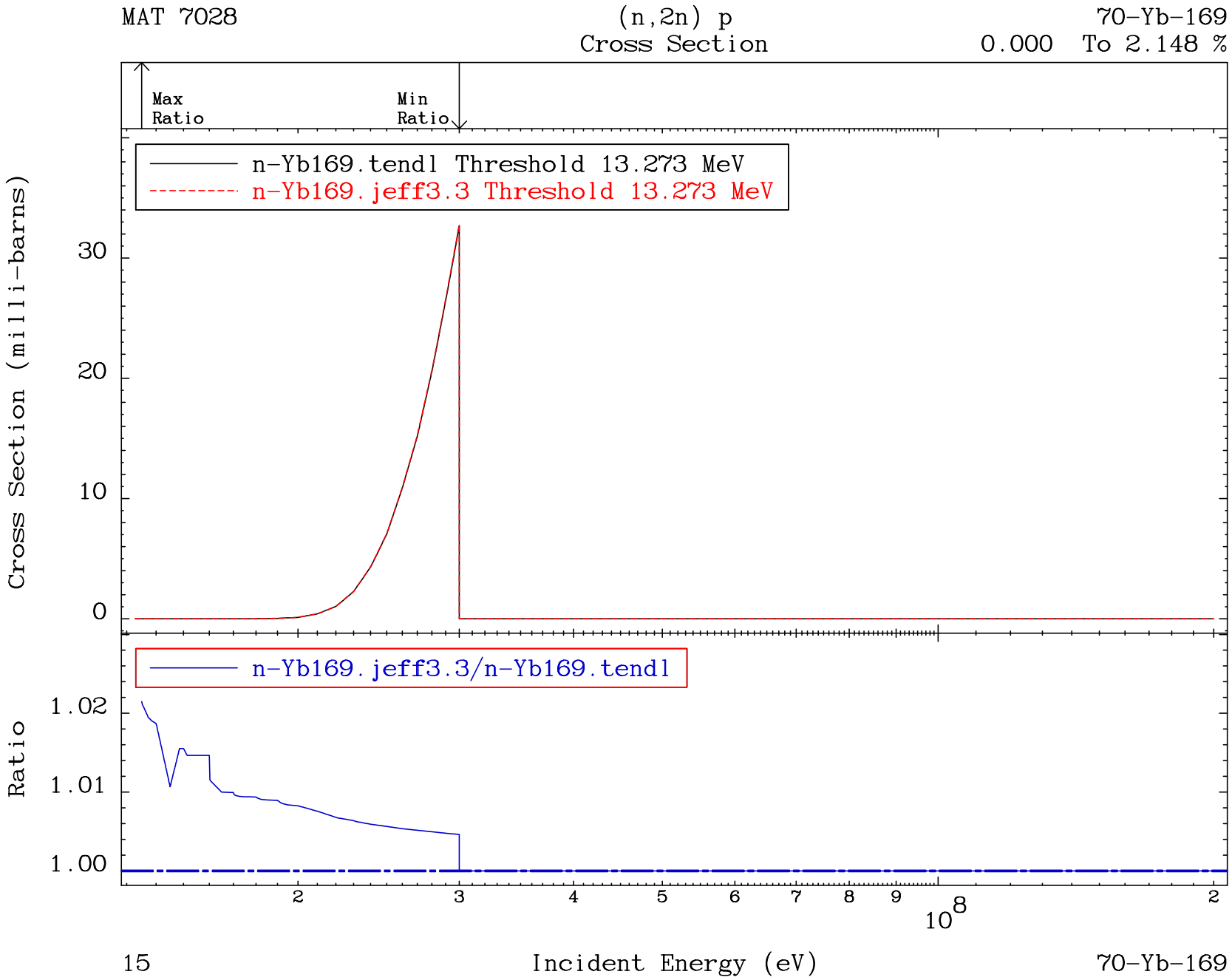

MAT 7028
(n,n') p
Cross Section
70-Yb-169
0.000 To 12.43 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 6.3915 MeV
n-Yb169.jeff3.3 Threshold 6.3907 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.15
1.10
1.05
1.00
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
10
Incident Energy (eV)
70-Yb-169

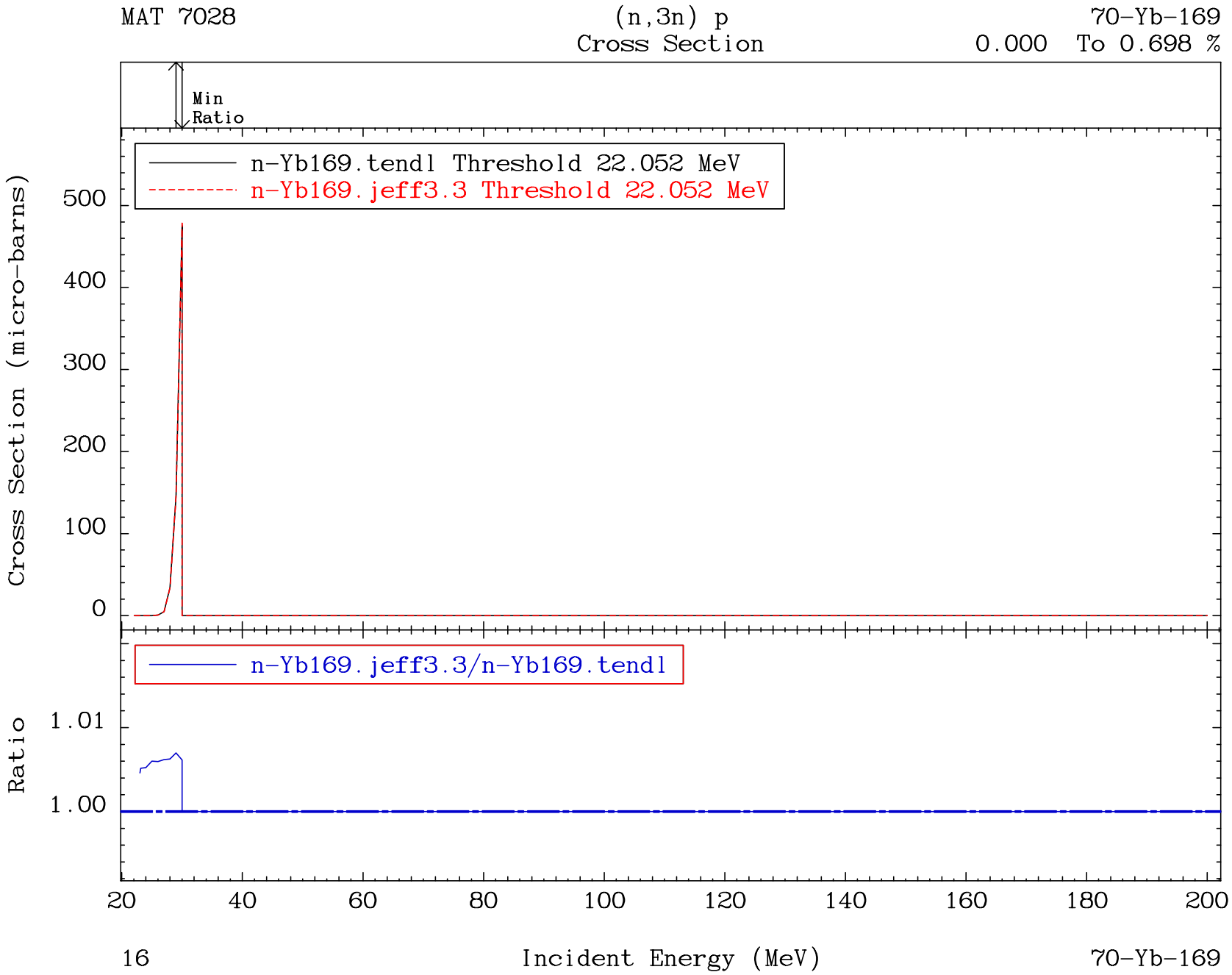

MAT 7028
(n,n') 2α
Cross Section
70-Yb-169
0.000 To 9999. %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 125.60 eV
n-Yb169.jeff3.3 Threshold 257.14 eV
Cross Section (10^-9 barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
11
70-Yb-169

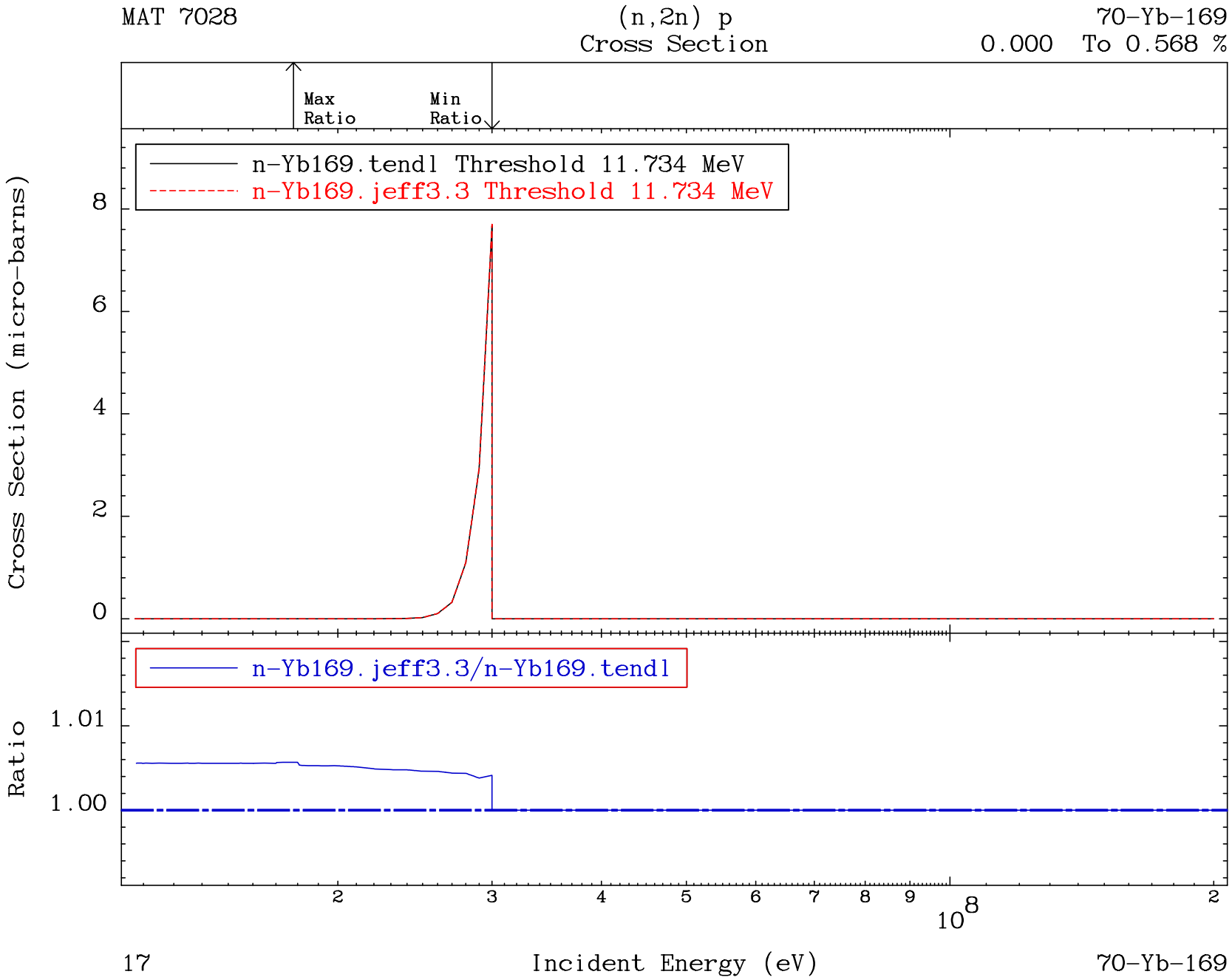

MAT 7028
(n,n') d
Cross Section
70-Yb-169
0.000 To 5.469 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 11.035 MeV
n-Yb169.jeff3.3 Threshold 11.035 MeV
Cross Section (milli-barns)
0
2
4
6
8
10
12
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
1.02
1.04
1.06
2
3
4
5
6
7
8
9
10^8
2
12
Incident Energy (eV)
70-Yb-169

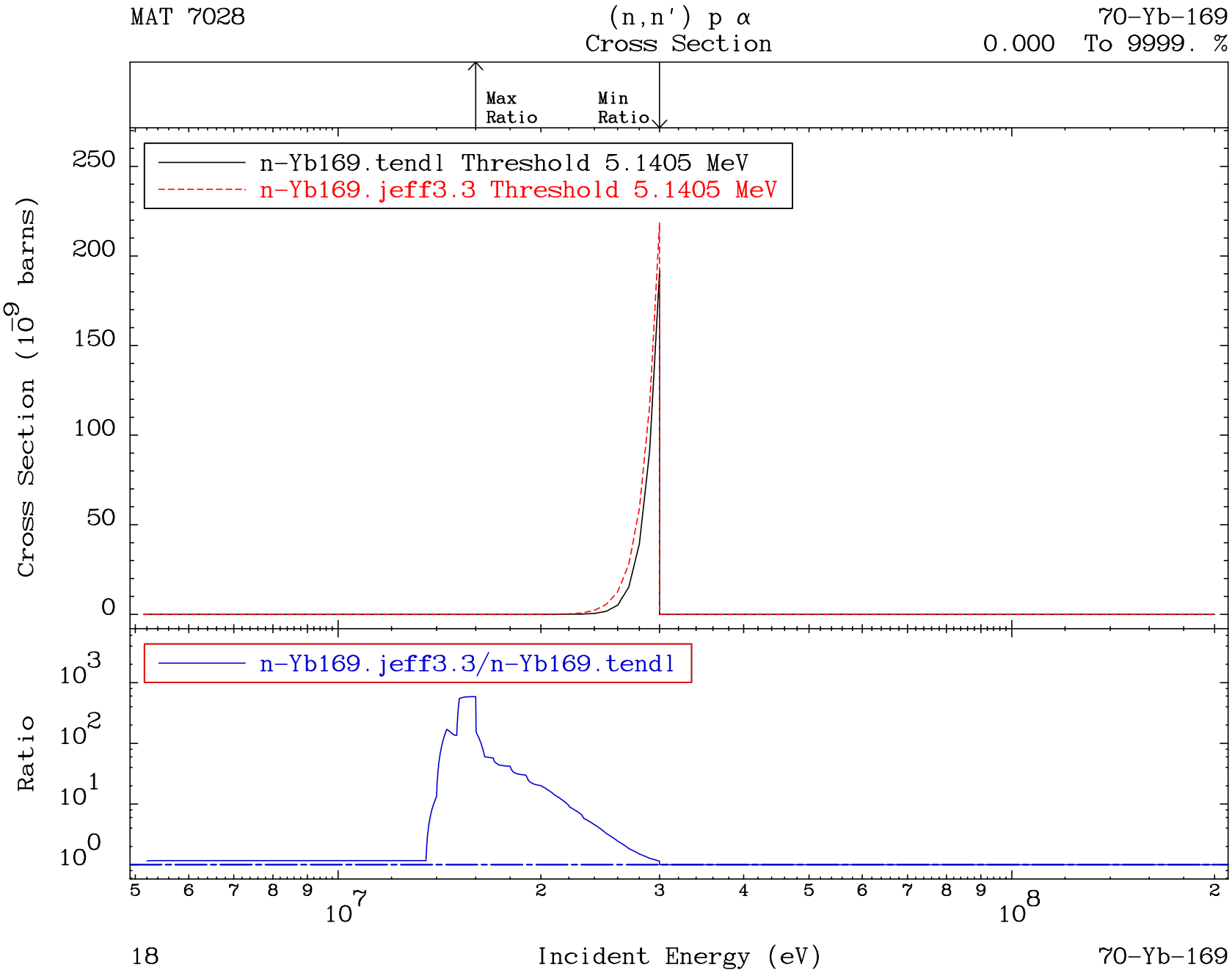

MAT 7028
(n,n') t
Cross Section
70-Yb-169
-0.042 To 0.272 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 13.519 MeV
n-Yb169.jeff3.3 Threshold 13.519 MeV
Cross Section (milli-barns)
0
1
2
3
4
5
6
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
0.99
1.00
1.01
2
3
4
5
6
7
8
9
10^8
2
13
Incident Energy (eV)
70-Yb-169

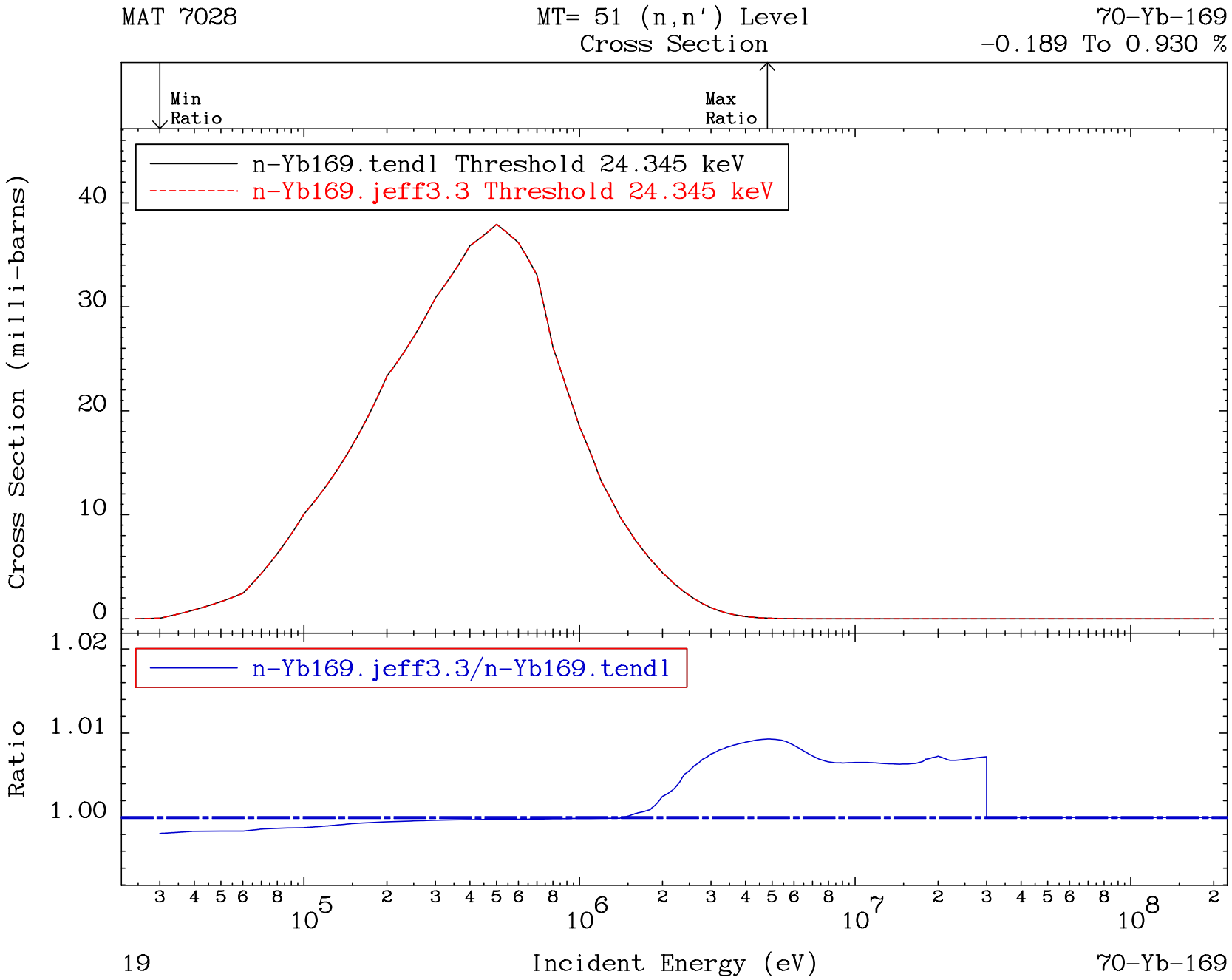

MAT 7028
(n,4n)
Cross Section
70-Yb-169
0.000 To 0.687 %
Min
Ratio
n-Yb169.tendl Threshold 23.133 MeV
n-Yb169.jeff3.3 Threshold 23.133 MeV
Cross Section (milli-barns)
800
600
400
200
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
40
60
80
100
120
140
160
180
200
14
Incident Energy (MeV)
70-Yb-169

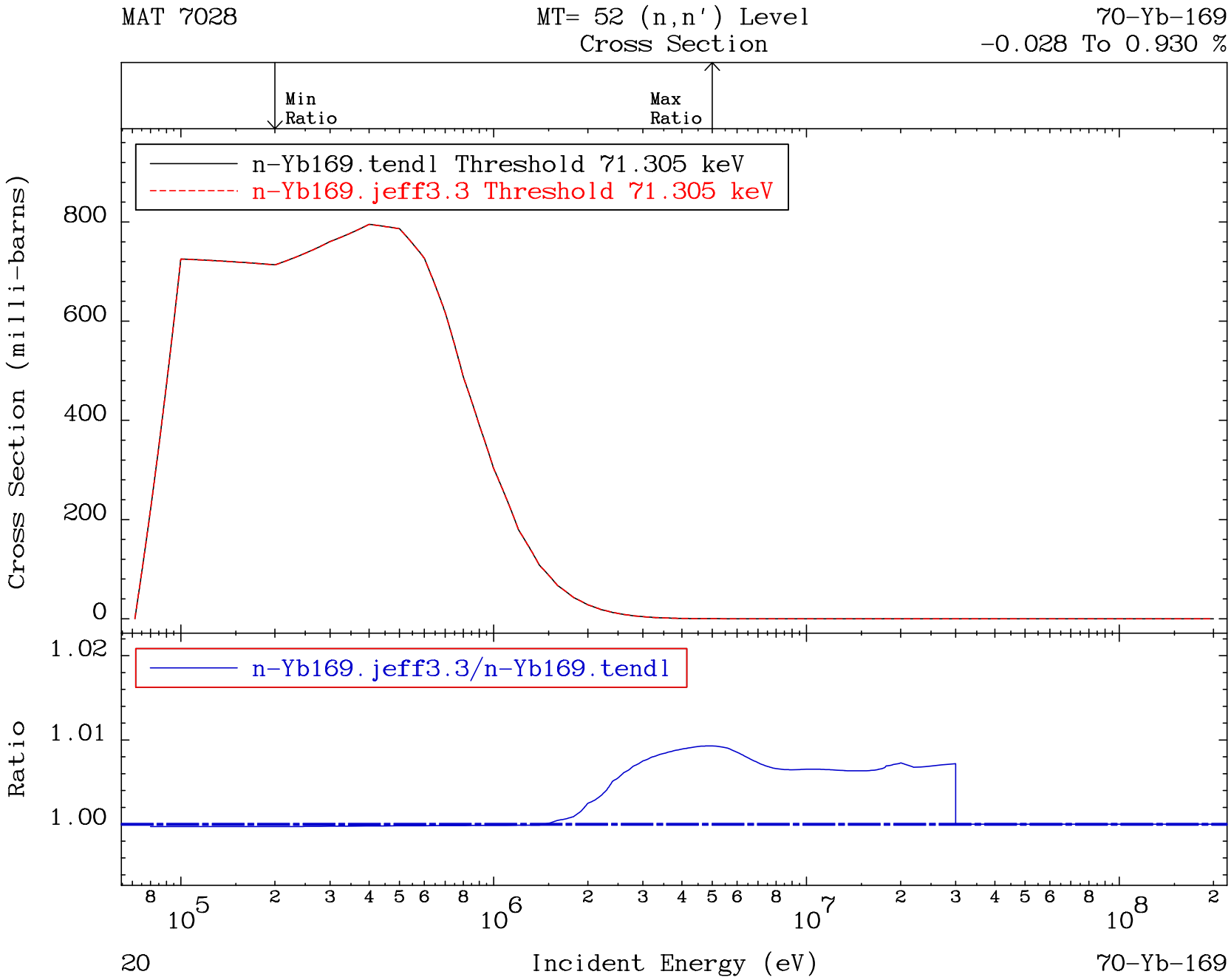

MAT 7028
(n,2n) p
Cross Section
70-Yb-169
0.000 To 2.148 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 13.273 MeV
n-Yb169.jeff3.3 Threshold 13.273 MeV
Cross Section (milli-barns)
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
2
3
4
5
6
7
8
9
10^8
2
15
Incident Energy (eV)
70-Yb-169

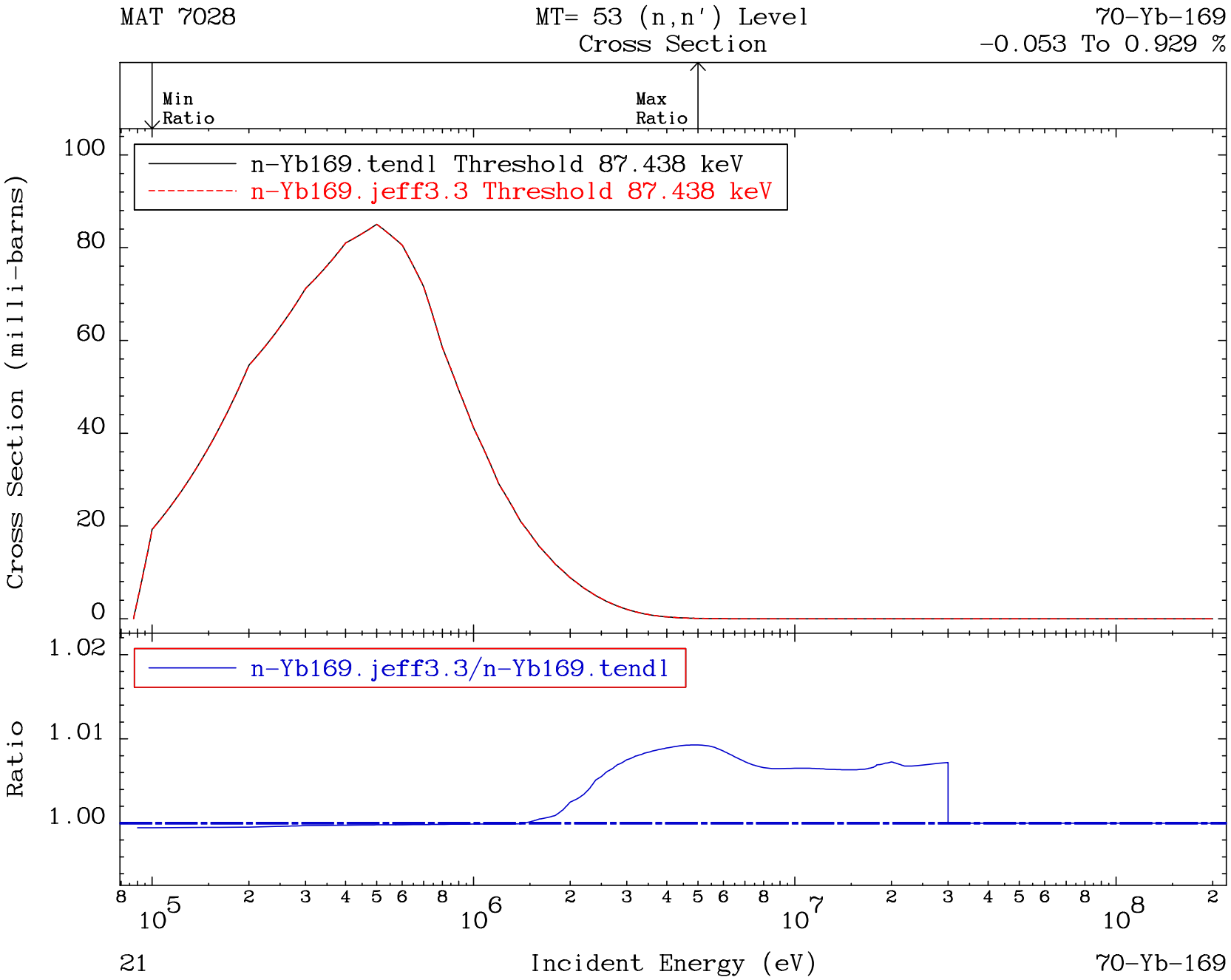

MAT 7028
(n,3n) p
Cross Section
70-Yb-169
0.000 To 0.698 %
Min
Ratio
n-Yb169.tendl Threshold 22.052 MeV
n-Yb169.jeff3.3 Threshold 22.052 MeV
Cross Section (micro-barns)
500
400
300
200
100
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
20
40
60
80
100
120
140
160
180
200
16
Incident Energy (MeV)
70-Yb-169

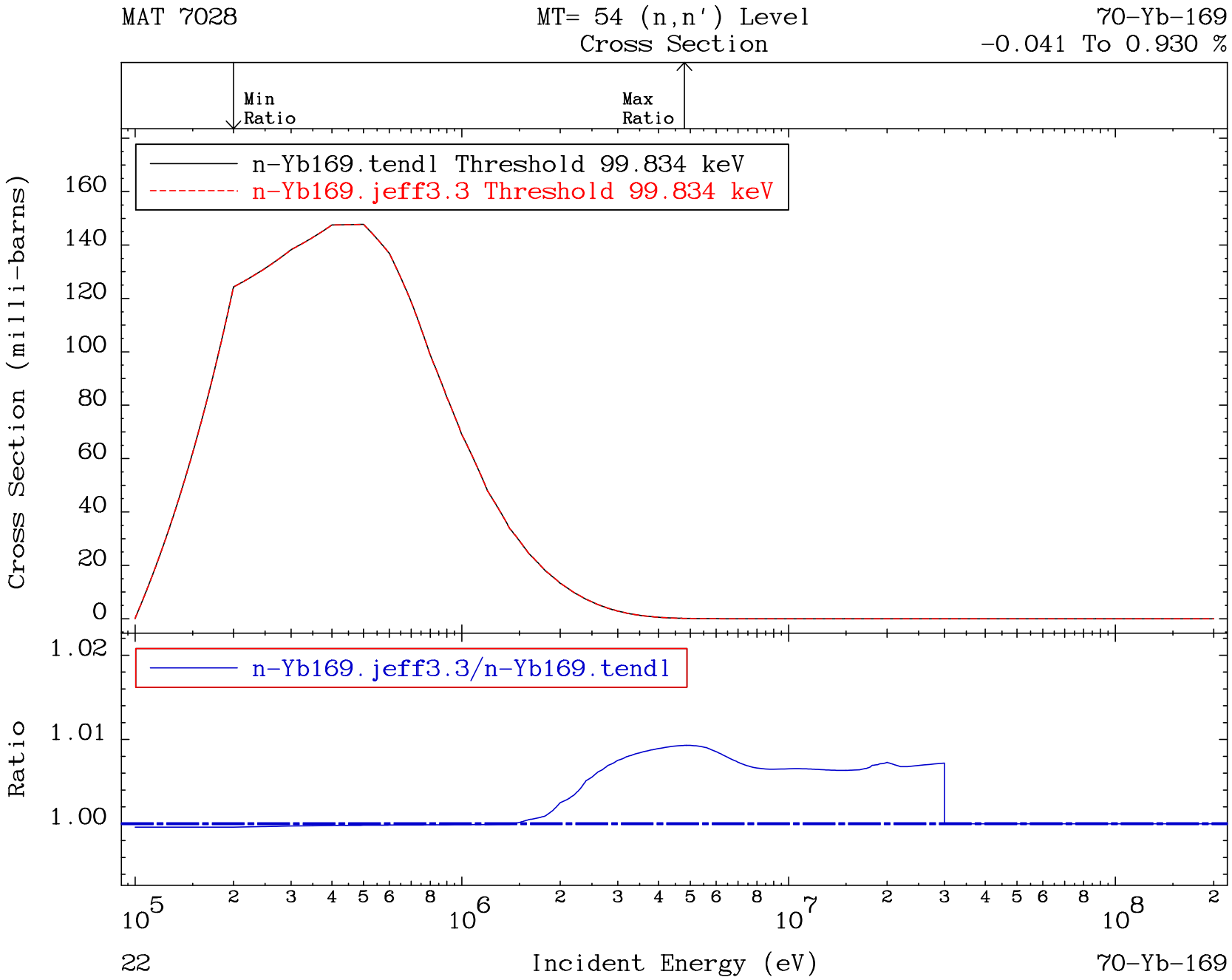

MAT 7028
(n,2n) p
Cross Section
70-Yb-169
0.000 To 0.568 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 11.734 MeV
n-Yb169.jeff3.3 Threshold 11.734 MeV
Cross Section (micro-barns)
0
2
4
6
8
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
1.01
2
3
4
5
6
7
8
9
10^8
2
17
Incident Energy (eV)
70-Yb-169

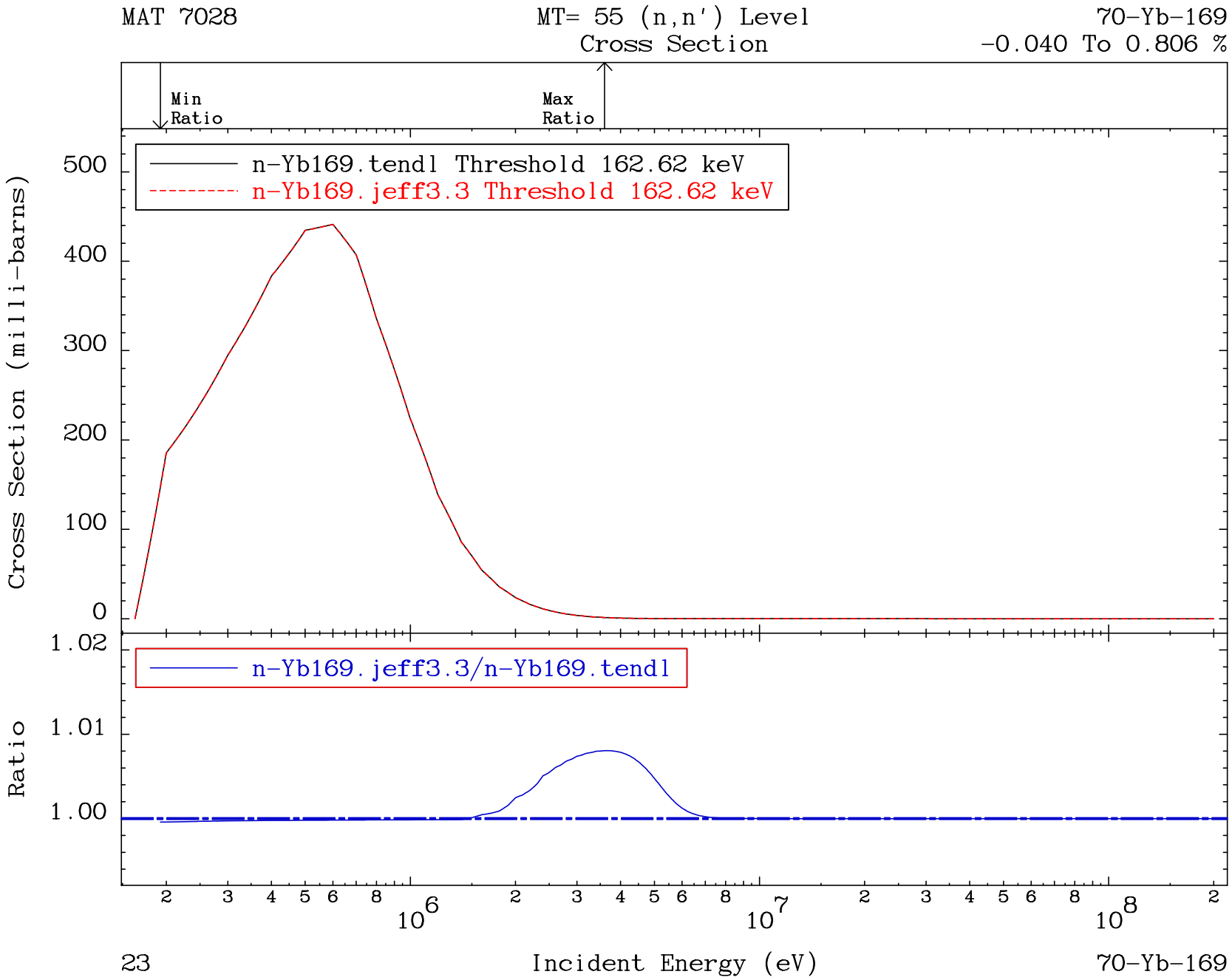

MAT 7028
(n,n') p α
Cross Section
70-Yb-169
0.000 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 5.1405 MeV
n-Yb169.jeff3.3 Threshold 5.1405 MeV
Cross Section ($10^{-9}$ barns)
250
200
150
100
50
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
$10^3$
$10^2$
$10^1$
$10^0$
5 6 7 8 9 $10^7$ 2 3 4 5 6 7 8 9 $10^8$ 2
18
Incident Energy (eV)
70-Yb-169

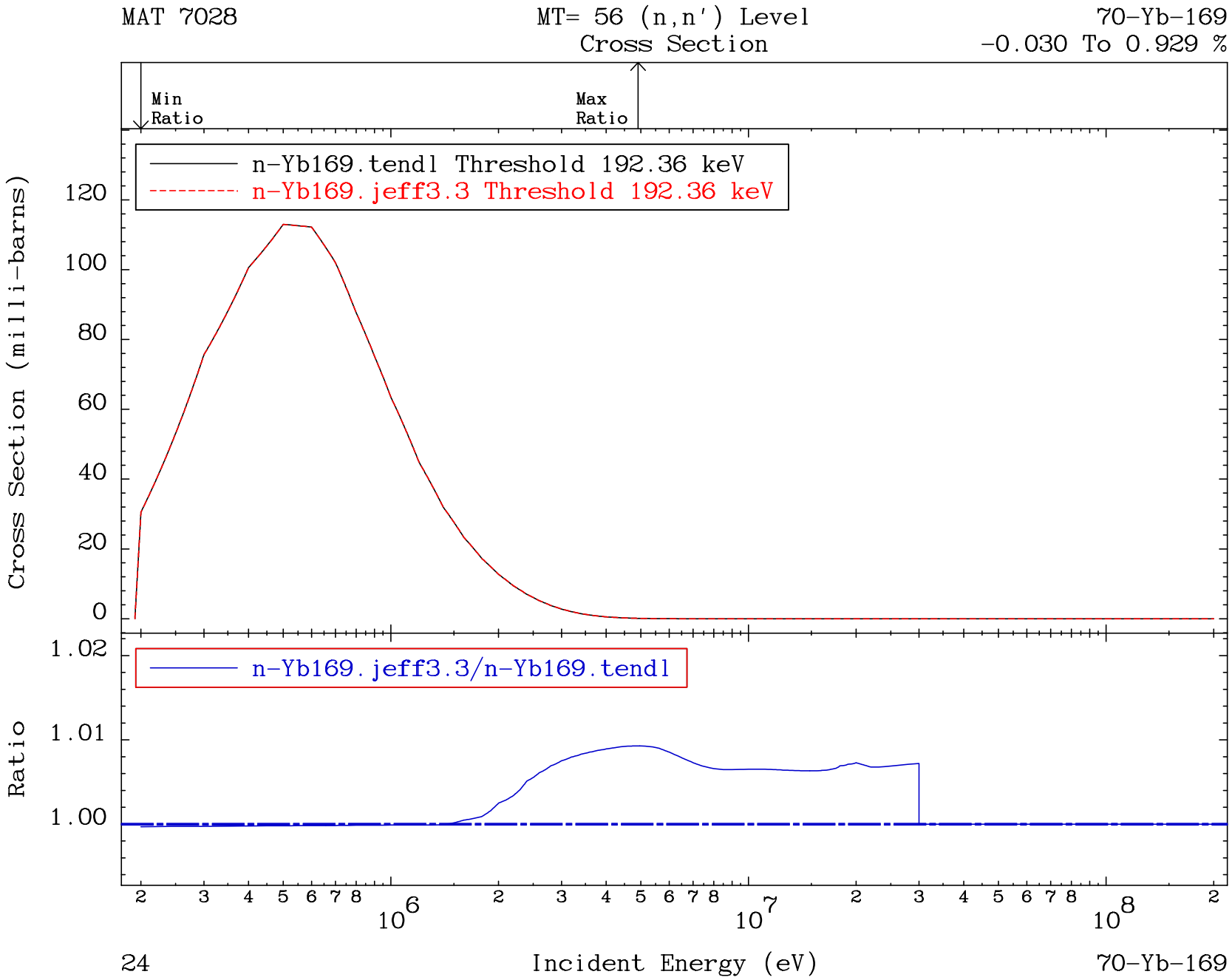

MAT 7028
MT= 51 (n,n') Level
Cross Section
70-Yb-169
-0.189 To 0.930 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 24.345 keV
n-Yb169.jeff3.3 Threshold 24.345 keV
Cross Section (milli-barns)
40
30
20
10
0
1.02
1.01
1.00
Ratio
n-Yb169.jeff3.3/n-Yb169.tendl
3 4 5 6 8 10^5 2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
19
Incident Energy (eV)
70-Yb-169

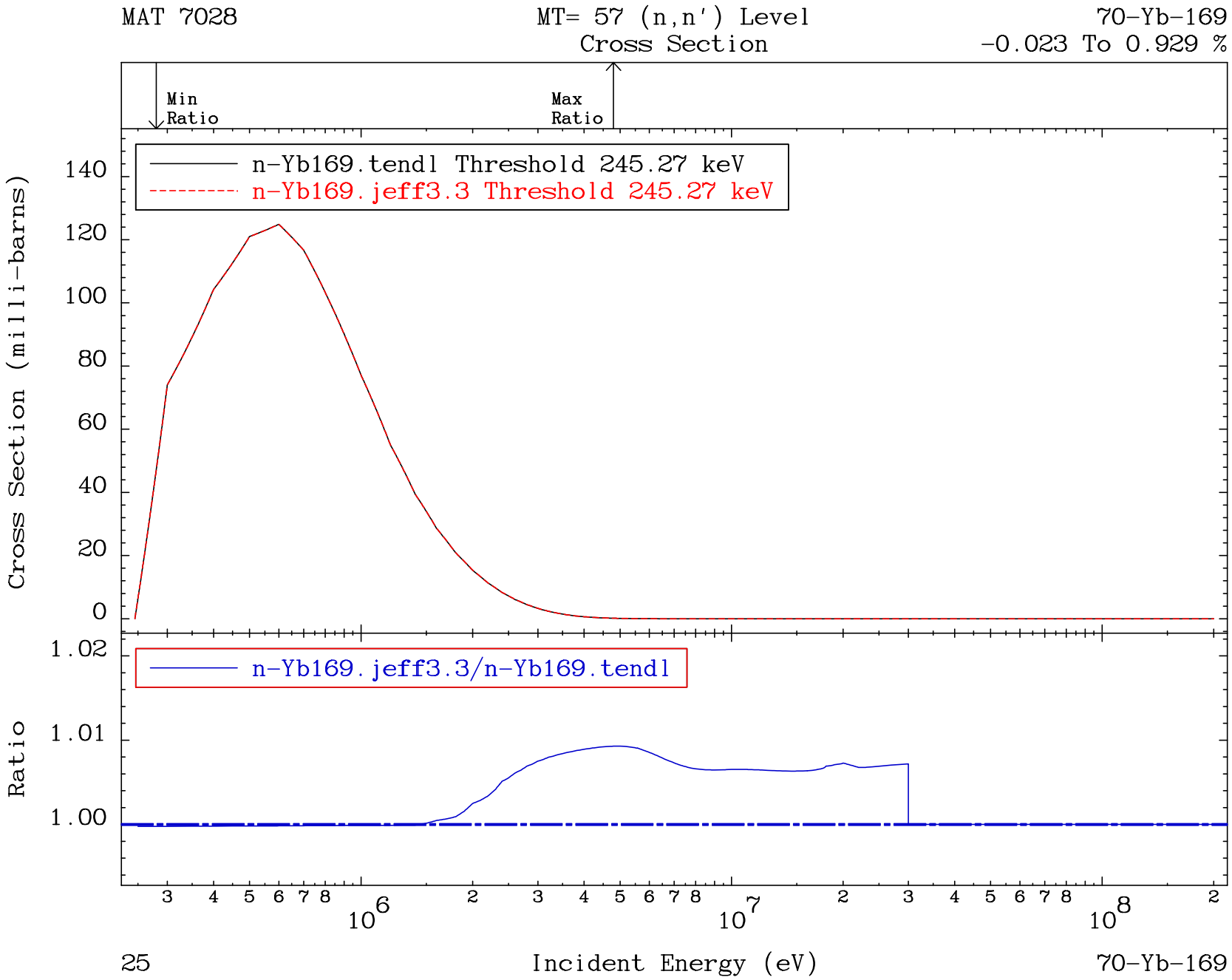

MAT 7028
MT= 52 (n,n') Level
Cross Section
70-Yb-169
-0.028 To 0.930 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 71.305 keV
n-Yb169.jeff3.3 Threshold 71.305 keV
Cross Section (milli-barns)
800
600
400
200
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
8
10^5
2
3
4
5
6
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
20
Incident Energy (eV)
70-Yb-169

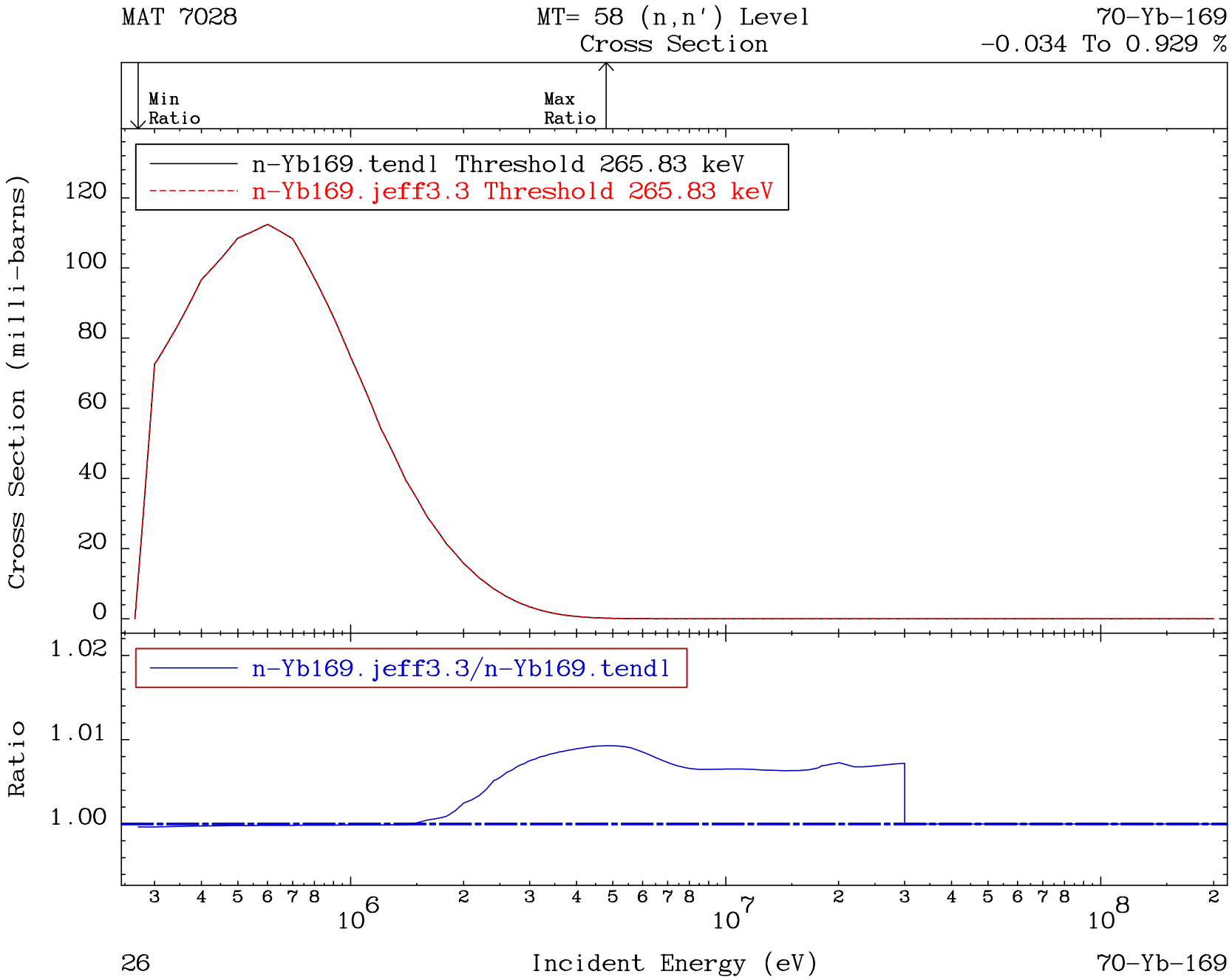

MAT 7028
MT= 53 (n,n') Level
Cross Section
70-Yb-169
-0.053 To 0.929 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 87.438 keV
n-Yb169.jeff3.3 Threshold 87.438 keV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
10^5
10^6
10^7
10^8
21
Incident Energy (eV)
70-Yb-169

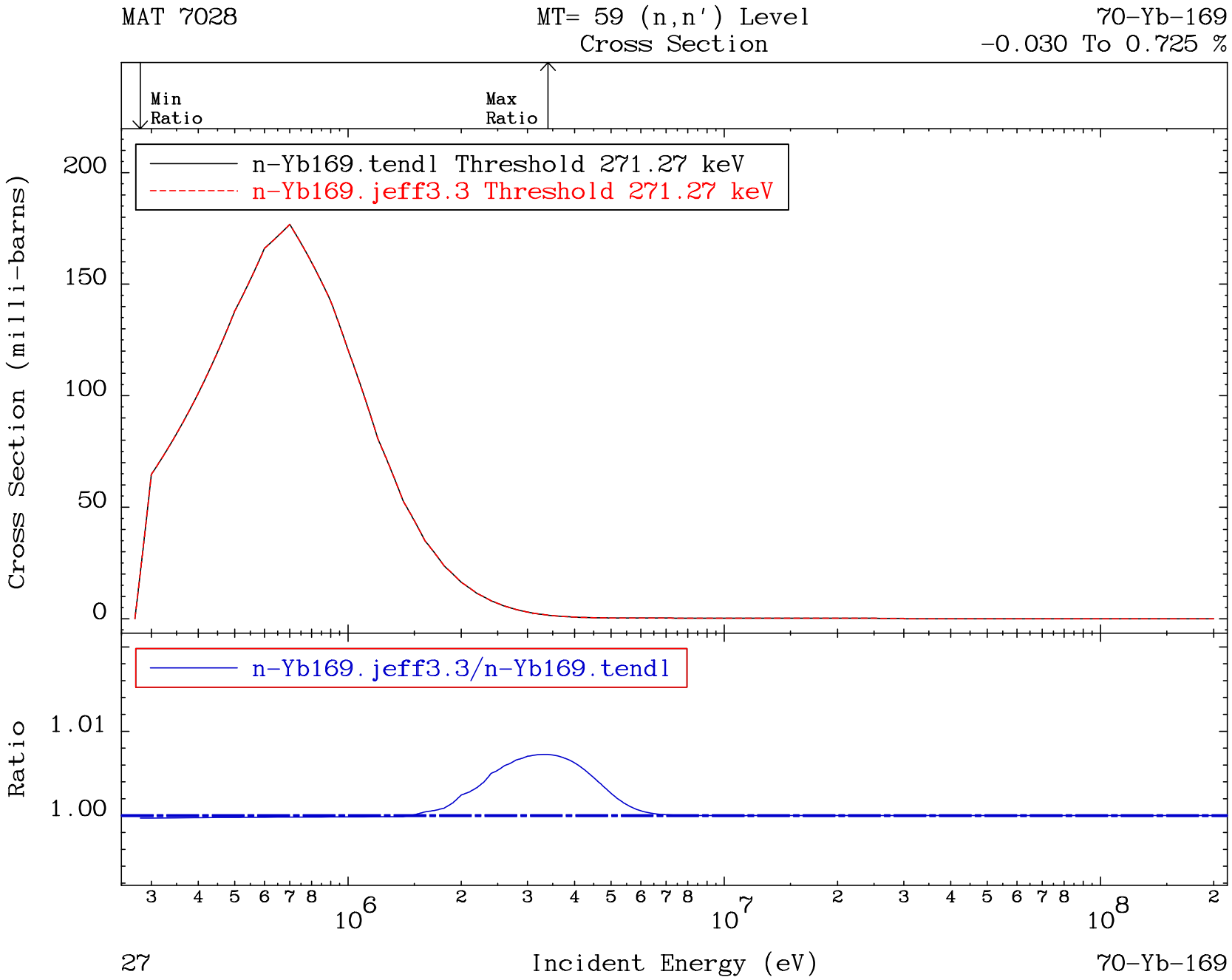

MAT 7028
MT= 54 (n,n') Level
Cross Section
70-Yb-169
-0.041 To 0.930 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 99.834 keV
n-Yb169.jeff3.3 Threshold 99.834 keV
Cross Section (milli-barns)
160
140
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
10^5
10^6
10^7
10^8
22
Incident Energy (eV)
70-Yb-169

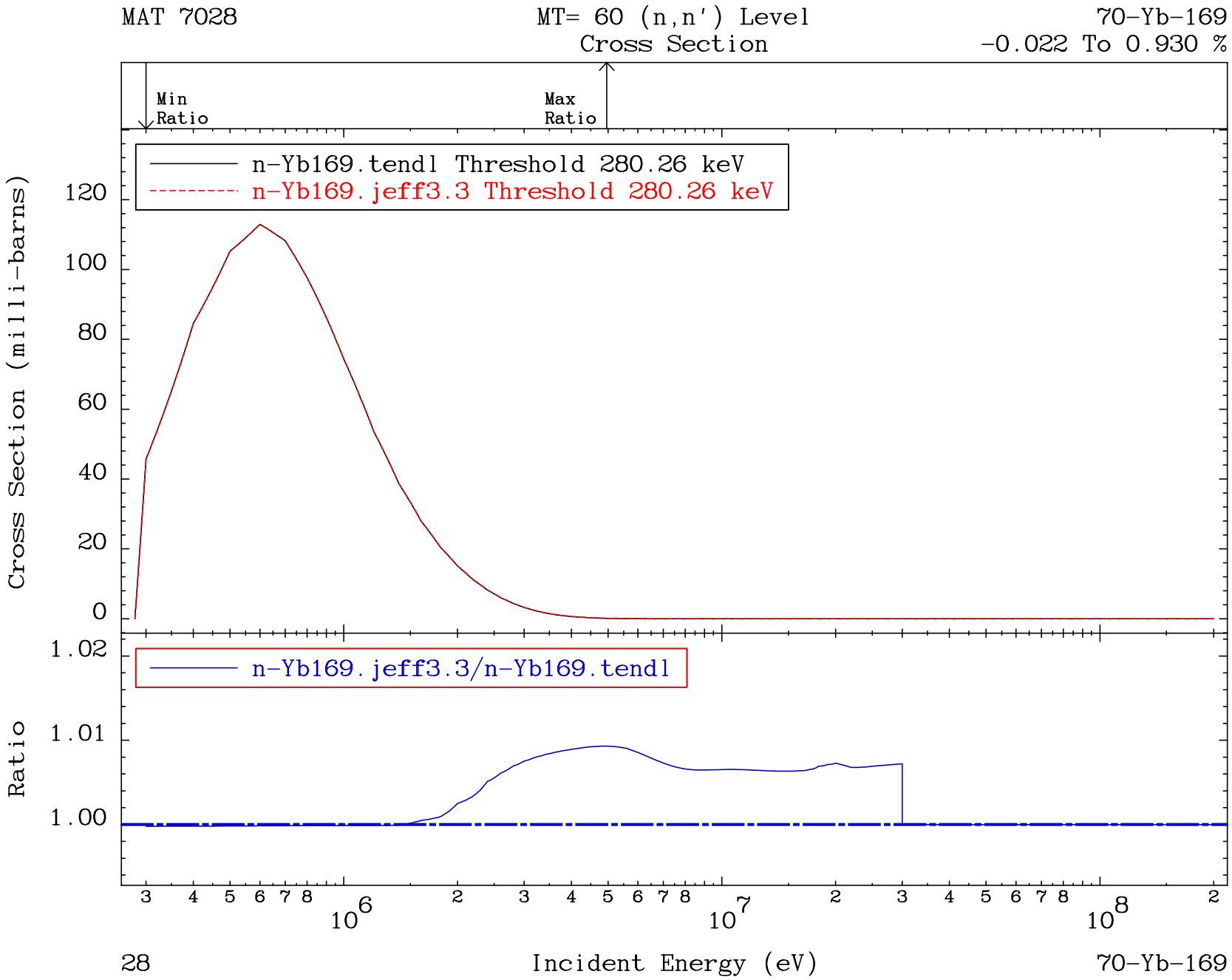

MAT 7028
MT= 55 (n,n') Level
Cross Section
70-Yb-169
-0.040 To 0.806 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 162.62 keV
n-Yb169.jeff3.3 Threshold 162.62 keV
Cross Section (milli-barns)
500
400
300
200
100
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
23
Incident Energy (eV)
70-Yb-169

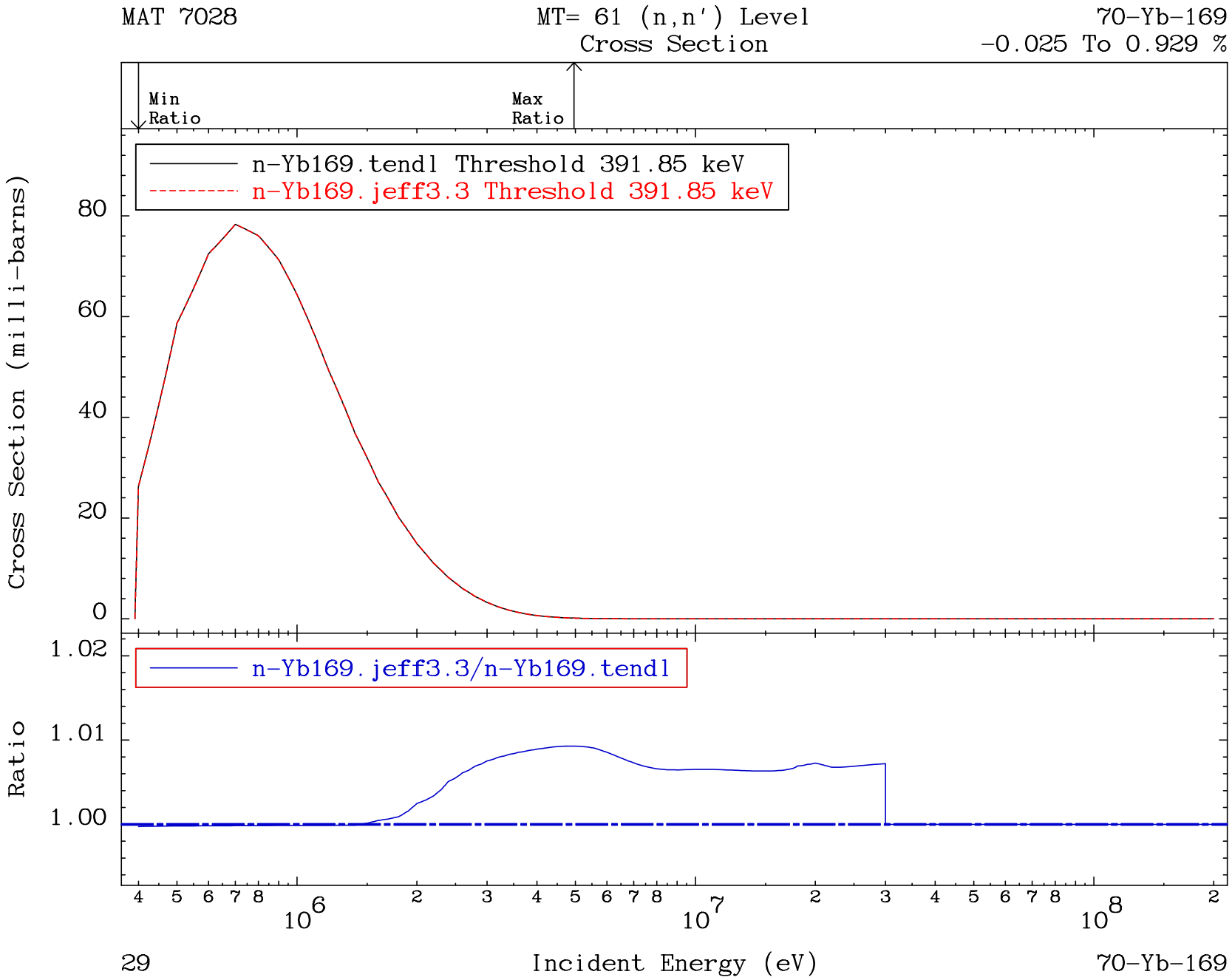

MAT 7028
MT= 56 (n,n') Level
Cross Section
70-Yb-169
-0.030 To 0.929 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 192.36 keV
n-Yb169.jeff3.3 Threshold 192.36 keV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
2 3 4 5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
24
Incident Energy (eV)
70-Yb-169

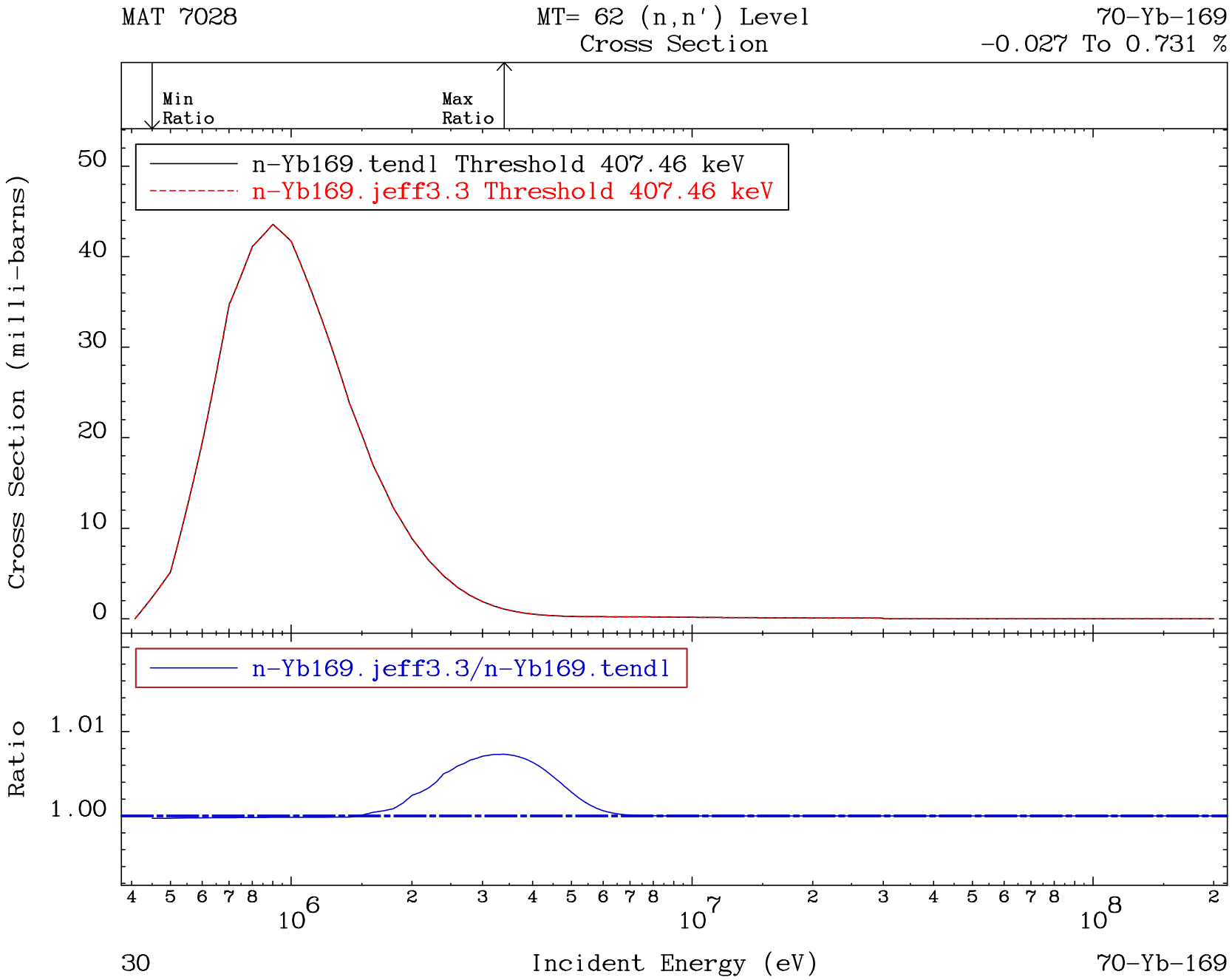

MAT 7028
MT= 57 (n,n') Level
Cross Section
70-Yb-169
-0.023 To 0.929 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 245.27 keV
n-Yb169.jeff3.3 Threshold 245.27 keV
Cross Section (milli-barns)
140
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
25
Incident Energy (eV)
70-Yb-169

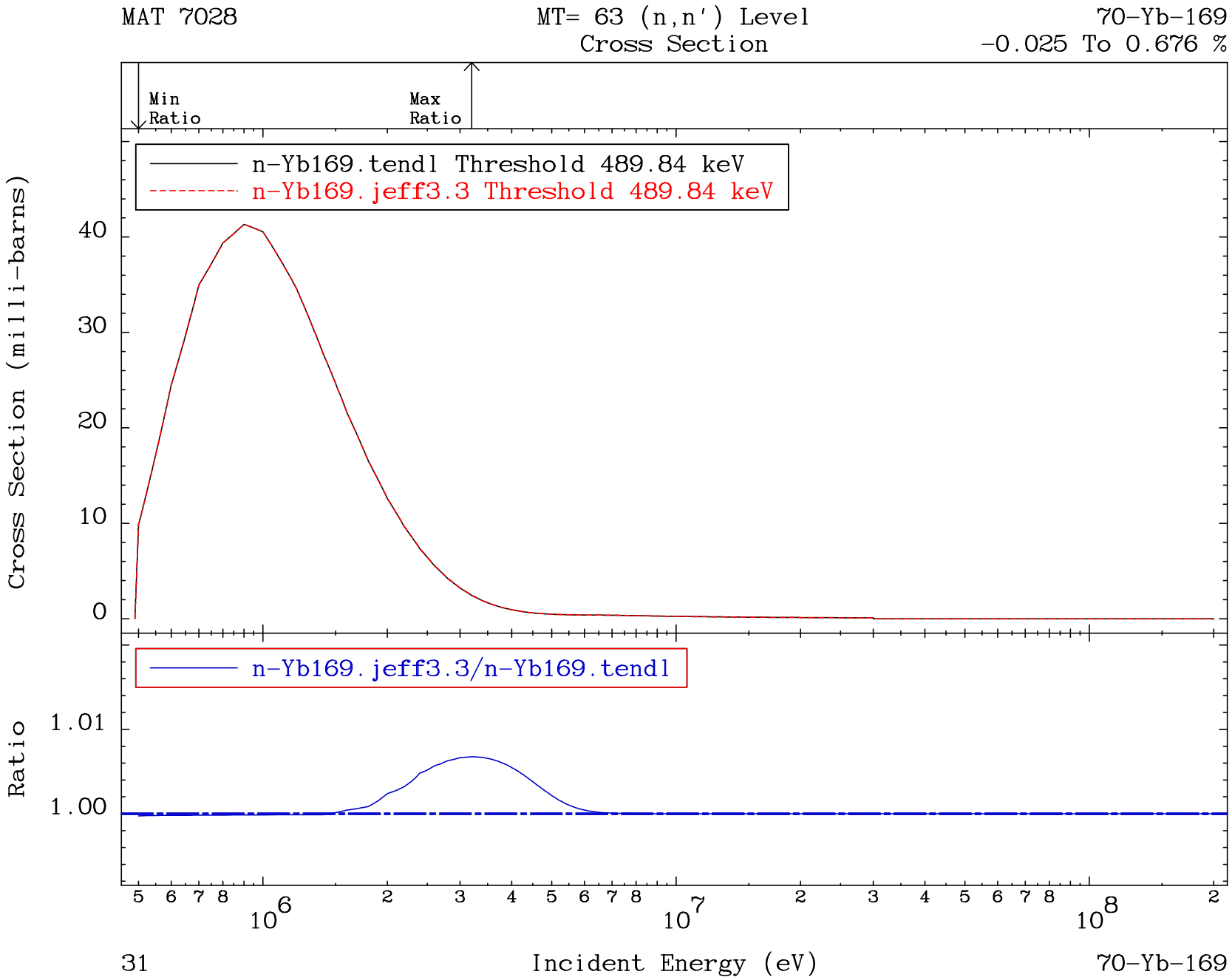

MAT 7028
MT= 58 (n,n') Level
Cross Section
70-Yb-169
-0.034 To 0.929 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 265.83 keV
n-Yb169.jeff3.3 Threshold 265.83 keV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
26
Incident Energy (eV)
70-Yb-169

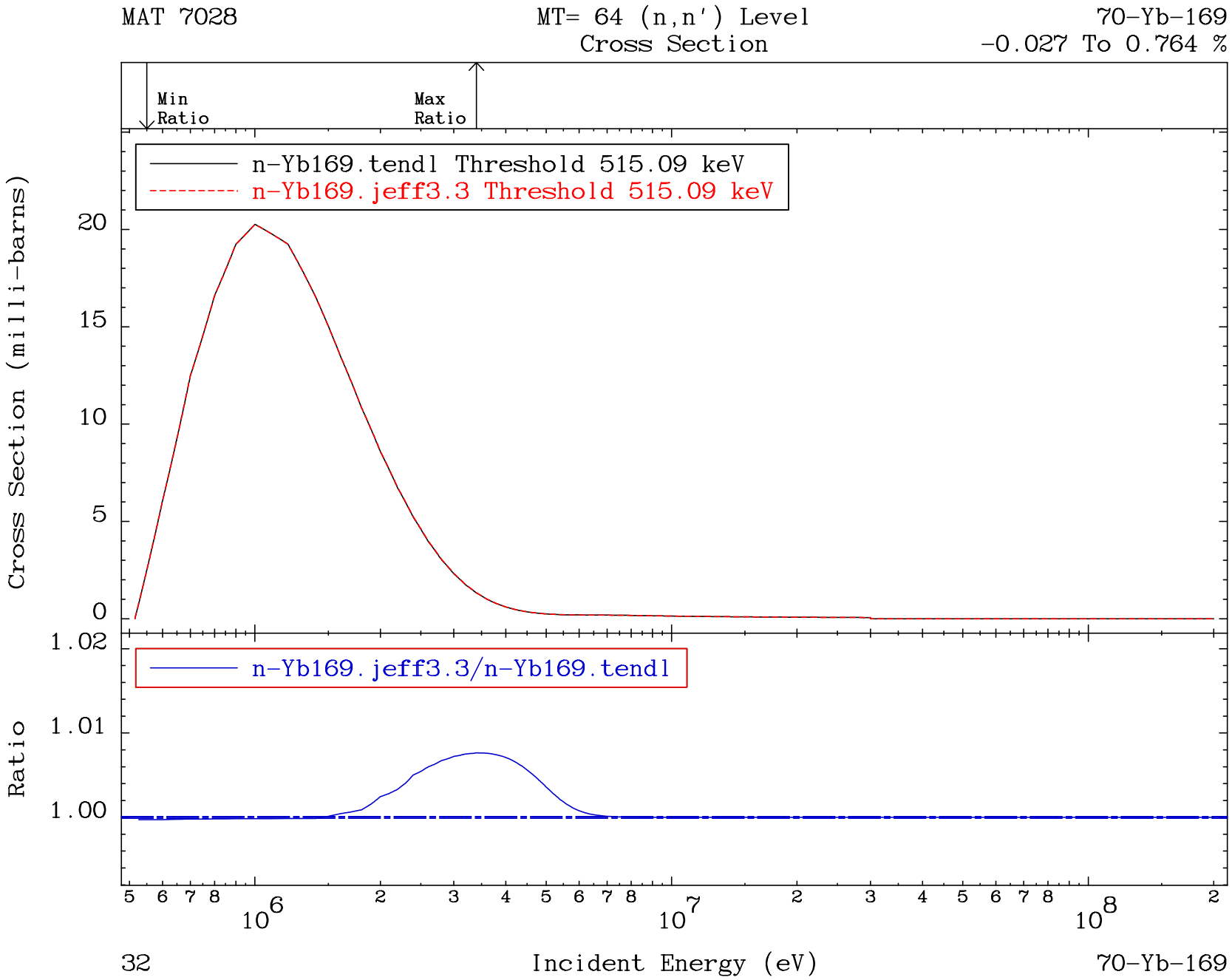

MAT 7028
MT= 59 (n,n') Level
Cross Section
70-Yb-169
-0.030 To 0.725 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 271.27 keV
n-Yb169.jeff3.3 Threshold 271.27 keV
Cross Section (milli-barns)
200
150
100
50
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
27
Incident Energy (eV)
70-Yb-169

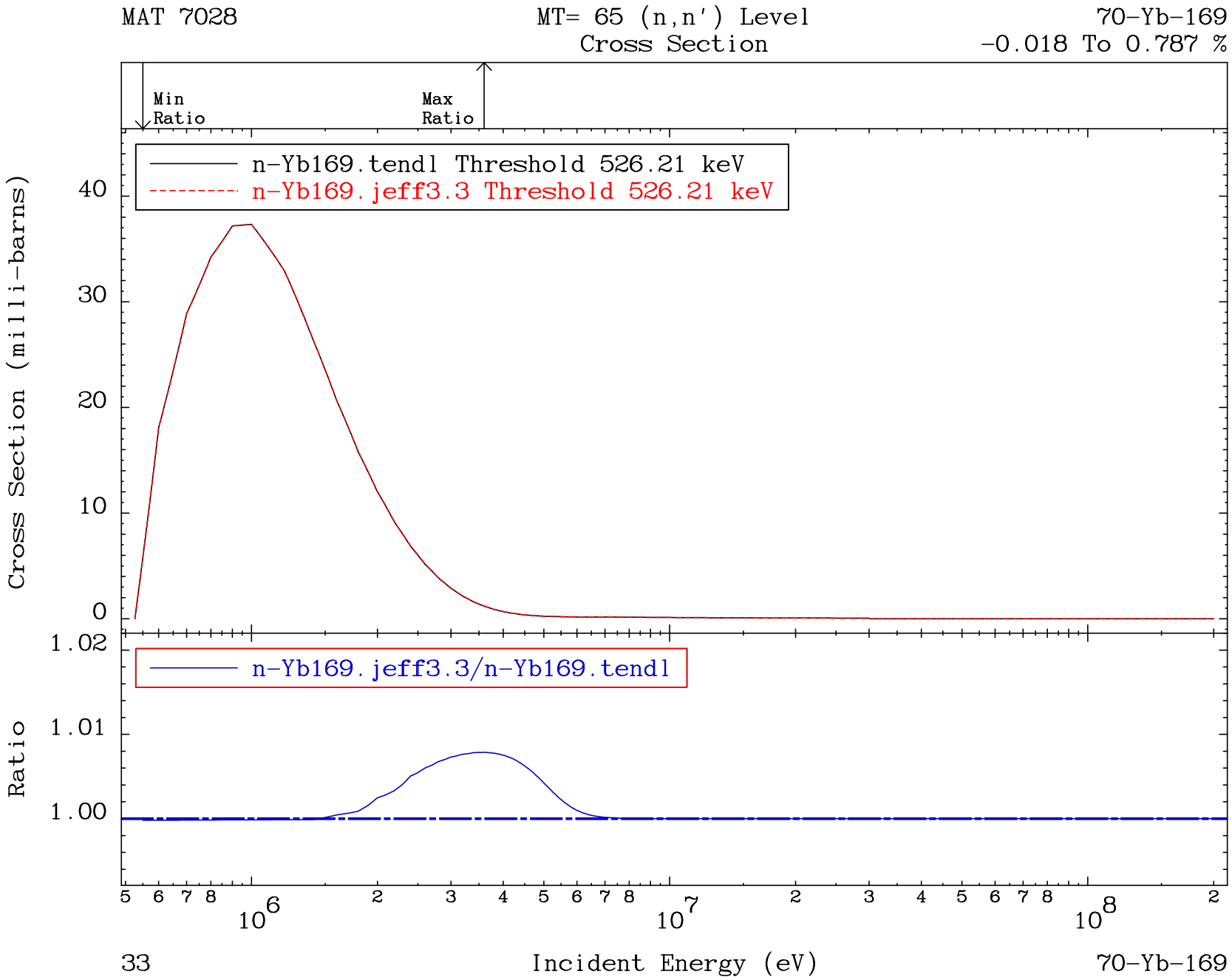

MAT 7028
MT= 60 (n,n') Level
Cross Section
70-Yb-169
-0.022 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 280.26 keV
n-Yb169.jeff3.3 Threshold 280.26 keV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
28
Incident Energy (eV)
70-Yb-169

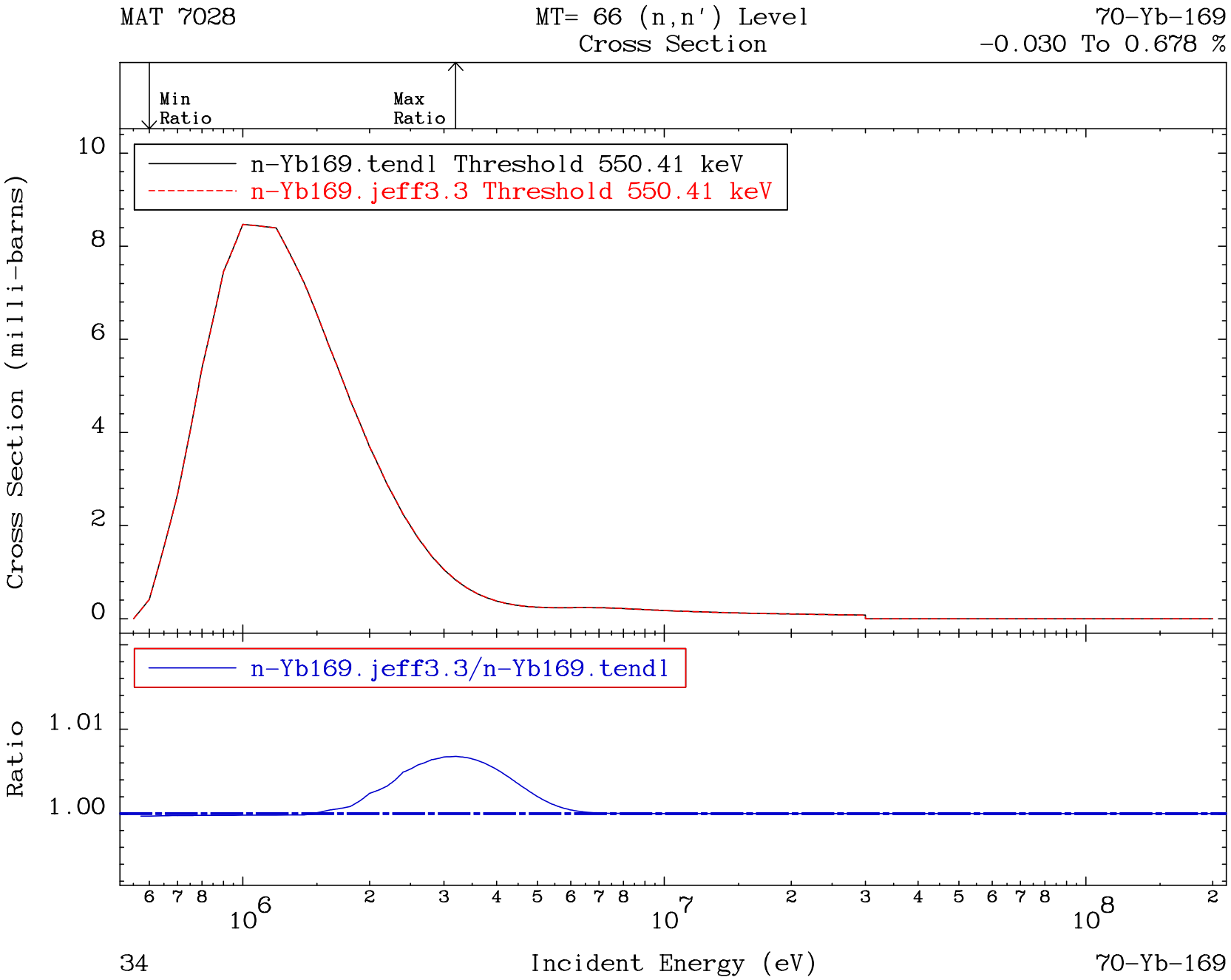

MAT 7028
MT= 61 (n,n') Level
Cross Section
70-Yb-169
-0.025 To 0.929 %
Min
Ratio
Max
Ratio
n-Yb169.tendl Threshold 391.85 keV
n-Yb169.jeff3.3 Threshold 391.85 keV
Cross Section (milli-barns)
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
4 5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
29
Incident Energy (eV)
70-Yb-169

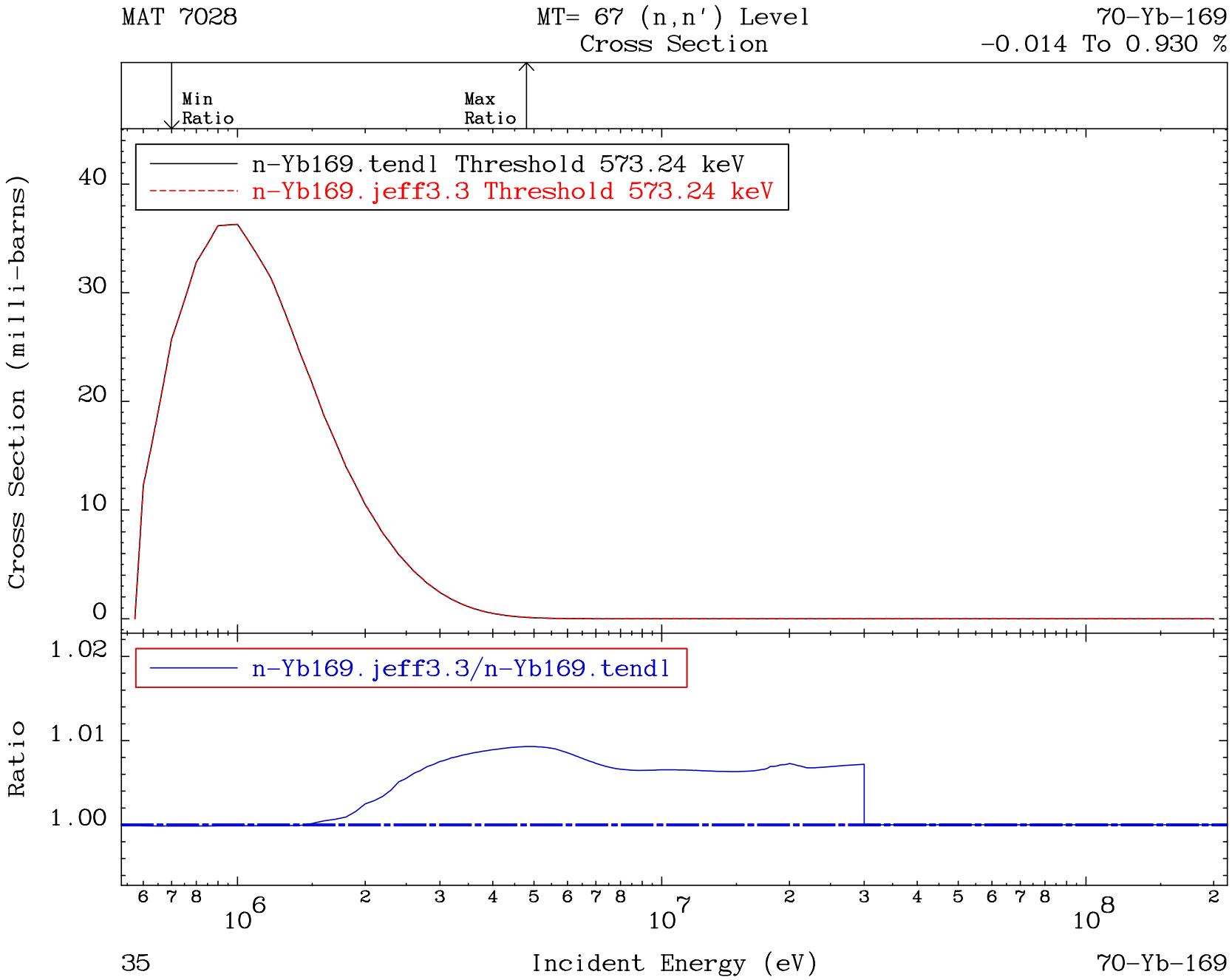

MAT 7028
MT= 62 (n,n') Level
Cross Section
70-Yb-169
-0.027 To 0.731 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 407.46 keV
n-Yb169.jeff3.3 Threshold 407.46 keV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
30
Incident Energy (eV)
70-Yb-169

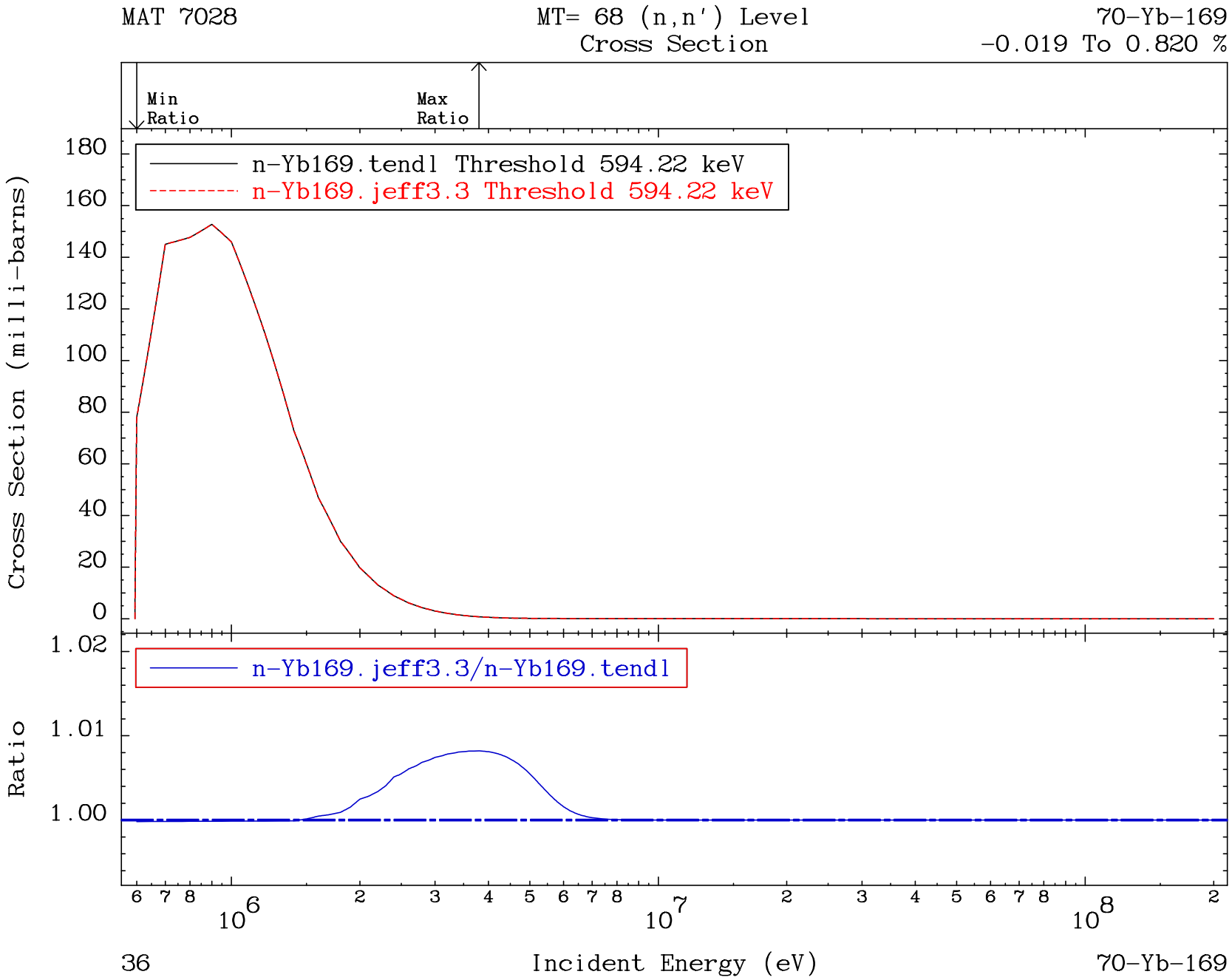

MAT 7028
MT= 63 (n,n') Level
Cross Section
70-Yb-169
-0.025 To 0.676 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 489.84 keV
n-Yb169.jeff3.3 Threshold 489.84 keV
Cross Section (milli-barns)
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
31
Incident Energy (eV)
70-Yb-169

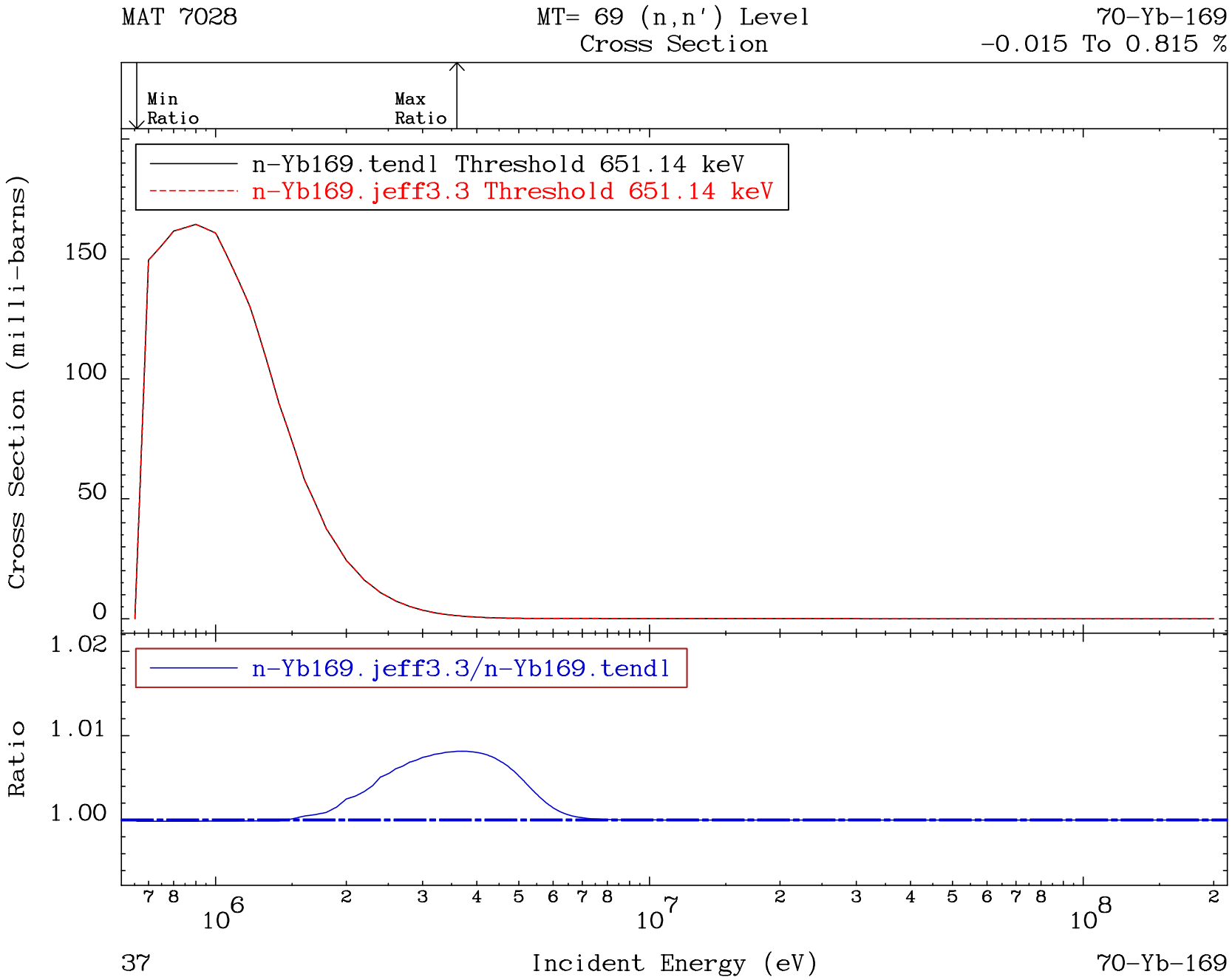

MAT 7028
MT= 64 (n,n') Level
Cross Section
70-Yb-169
-0.027 To 0.764 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 515.09 keV
n-Yb169.jeff3.3 Threshold 515.09 keV
Cross Section (milli-barns)
20
15
10
5
0
1.02
1.01
1.00
Ratio
n-Yb169.jeff3.3/n-Yb169.tendl
5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
32
Incident Energy (eV)
70-Yb-169

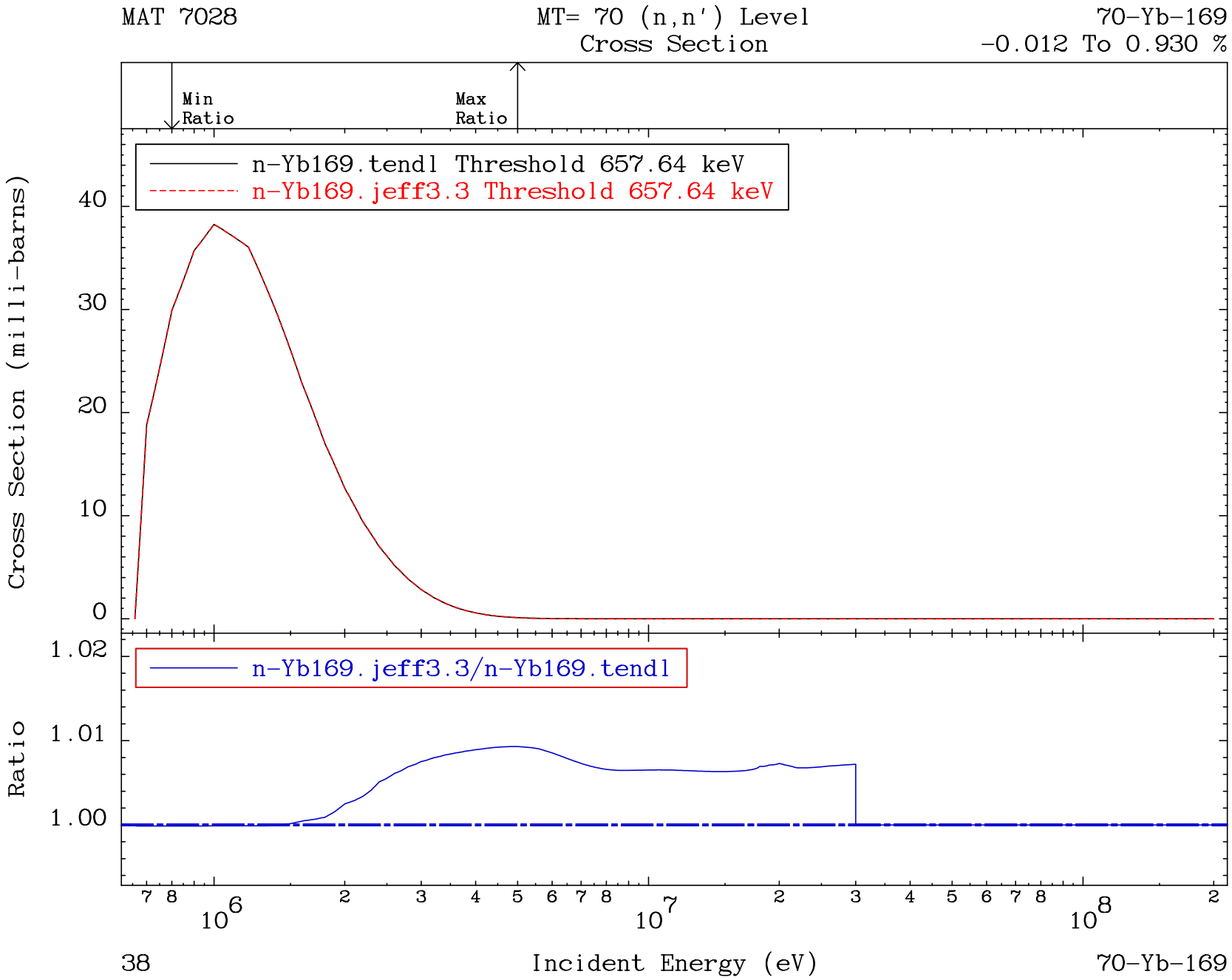

MAT 7028
MT= 65 (n,n') Level
Cross Section
70-Yb-169
-0.018 To 0.787 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 526.21 keV
n-Yb169.jeff3.3 Threshold 526.21 keV
Cross Section (milli-barns)
40
30
20
10
0
1.02
1.01
1.00
Ratio
n-Yb169.jeff3.3/n-Yb169.tendl
5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
33
Incident Energy (eV)
70-Yb-169

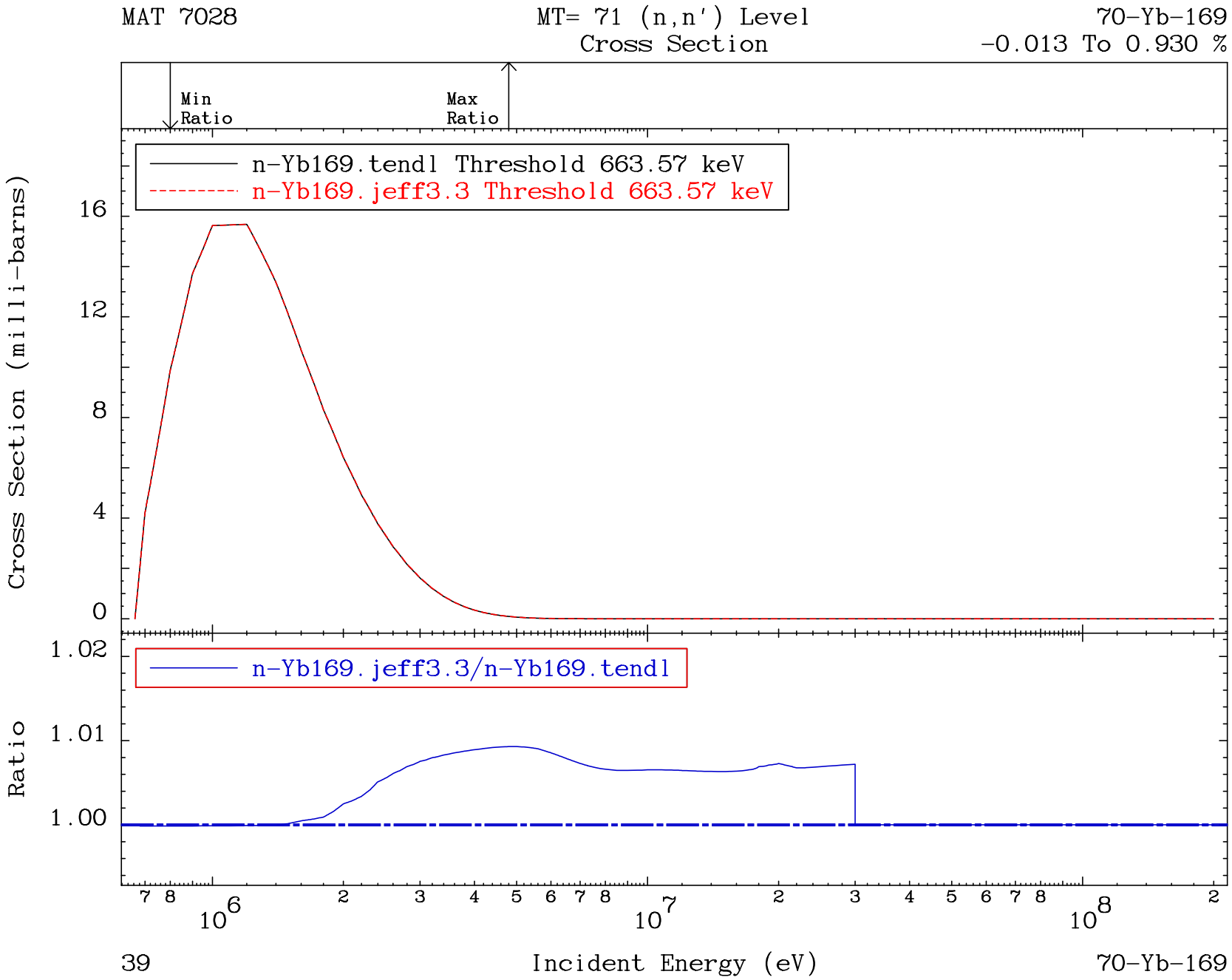

MAT 7028
MT= 66 (n,n') Level
Cross Section
70-Yb-169
-0.030 To 0.678 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 550.41 keV
n-Yb169.jeff3.3 Threshold 550.41 keV
Cross Section (milli-barns)
10
8
6
4
2
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
34
Incident Energy (eV)
70-Yb-169

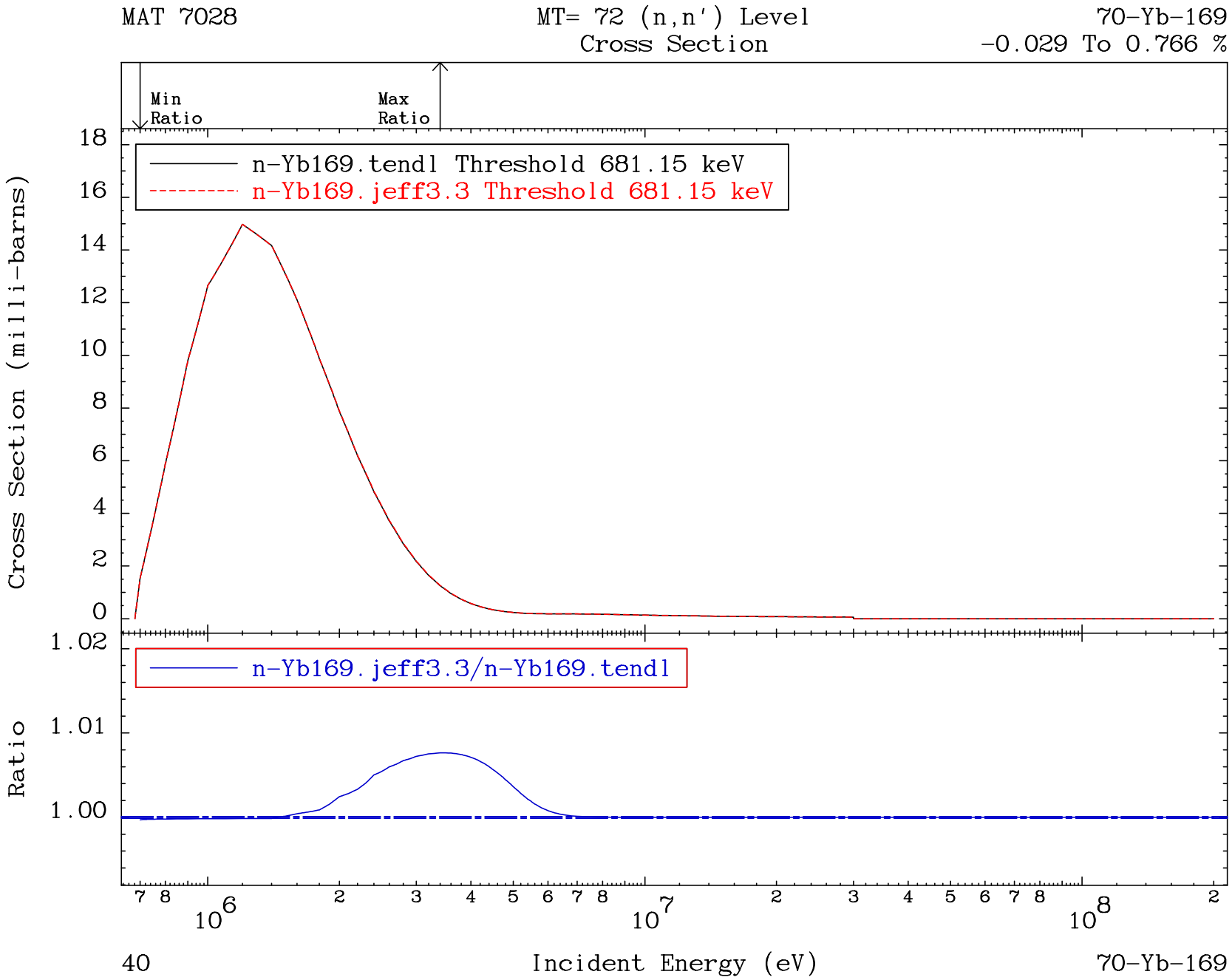

MAT 7028
MT= 67 (n,n') Level
Cross Section
70-Yb-169
-0.014 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 573.24 keV
n-Yb169.jeff3.3 Threshold 573.24 keV
Cross Section (milli-barns)
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
35
Incident Energy (eV)
70-Yb-169

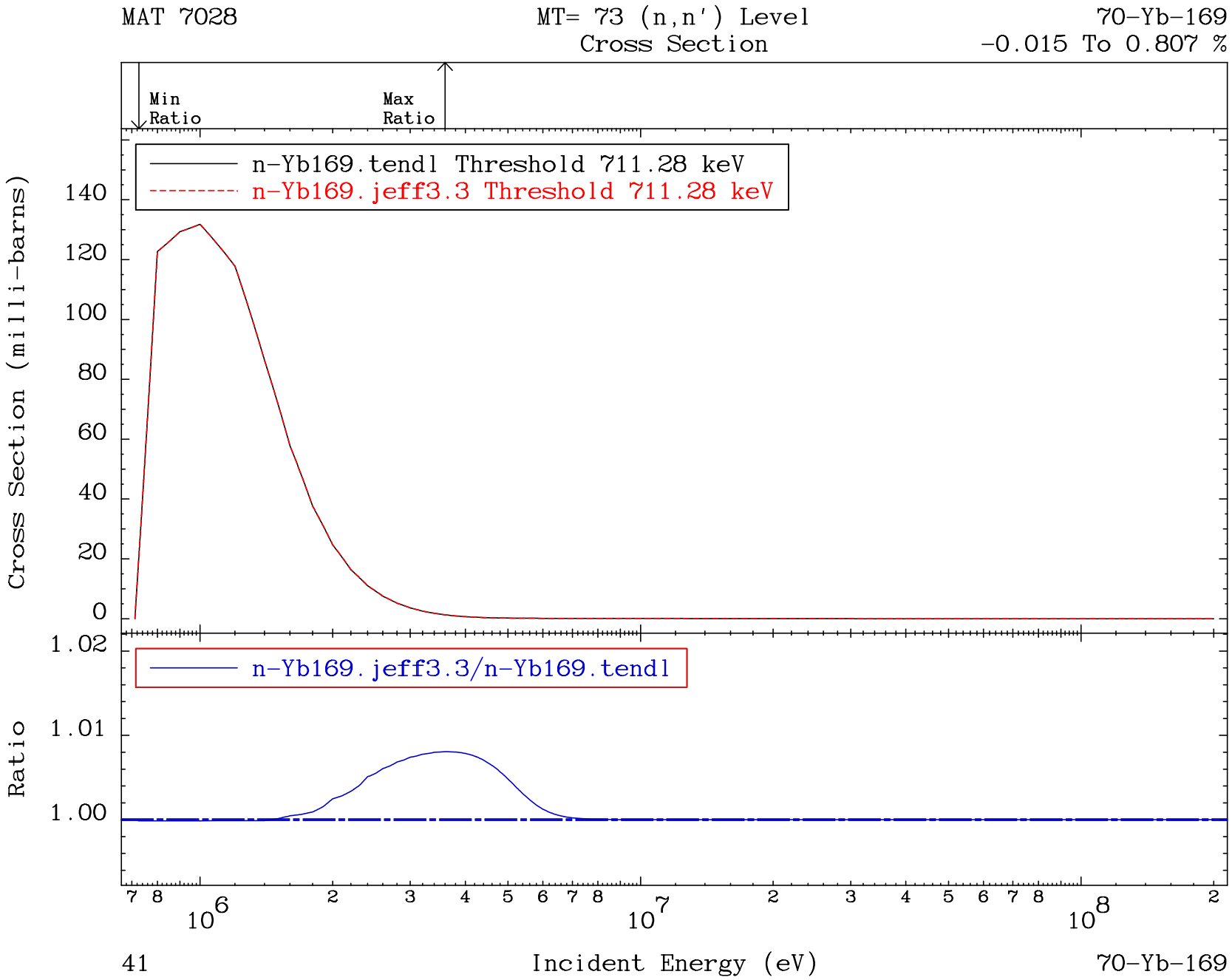

MAT 7028
MT= 68 (n,n') Level
Cross Section
70-Yb-169
-0.019 To 0.820 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 594.22 keV
n-Yb169.jeff3.3 Threshold 594.22 keV
Cross Section (milli-barns)
180
160
140
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
36
Incident Energy (eV)
70-Yb-169

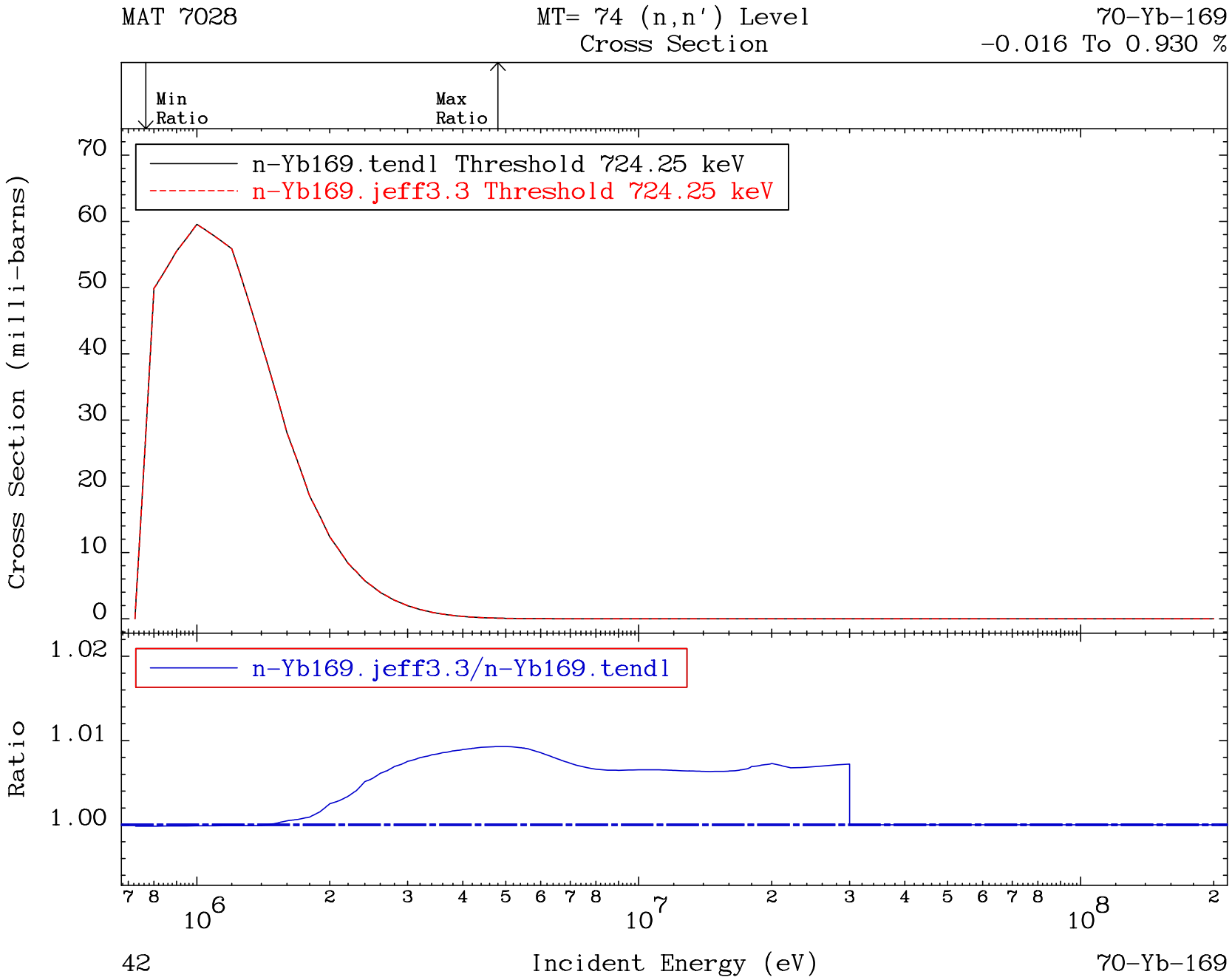

MAT 7028
MT= 69 (n,n') Level
Cross Section
70-Yb-169
-0.015 To 0.815 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 651.14 keV
n-Yb169.jeff3.3 Threshold 651.14 keV
Cross Section (milli-barns)
150
100
50
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
37
Incident Energy (eV)
70-Yb-169

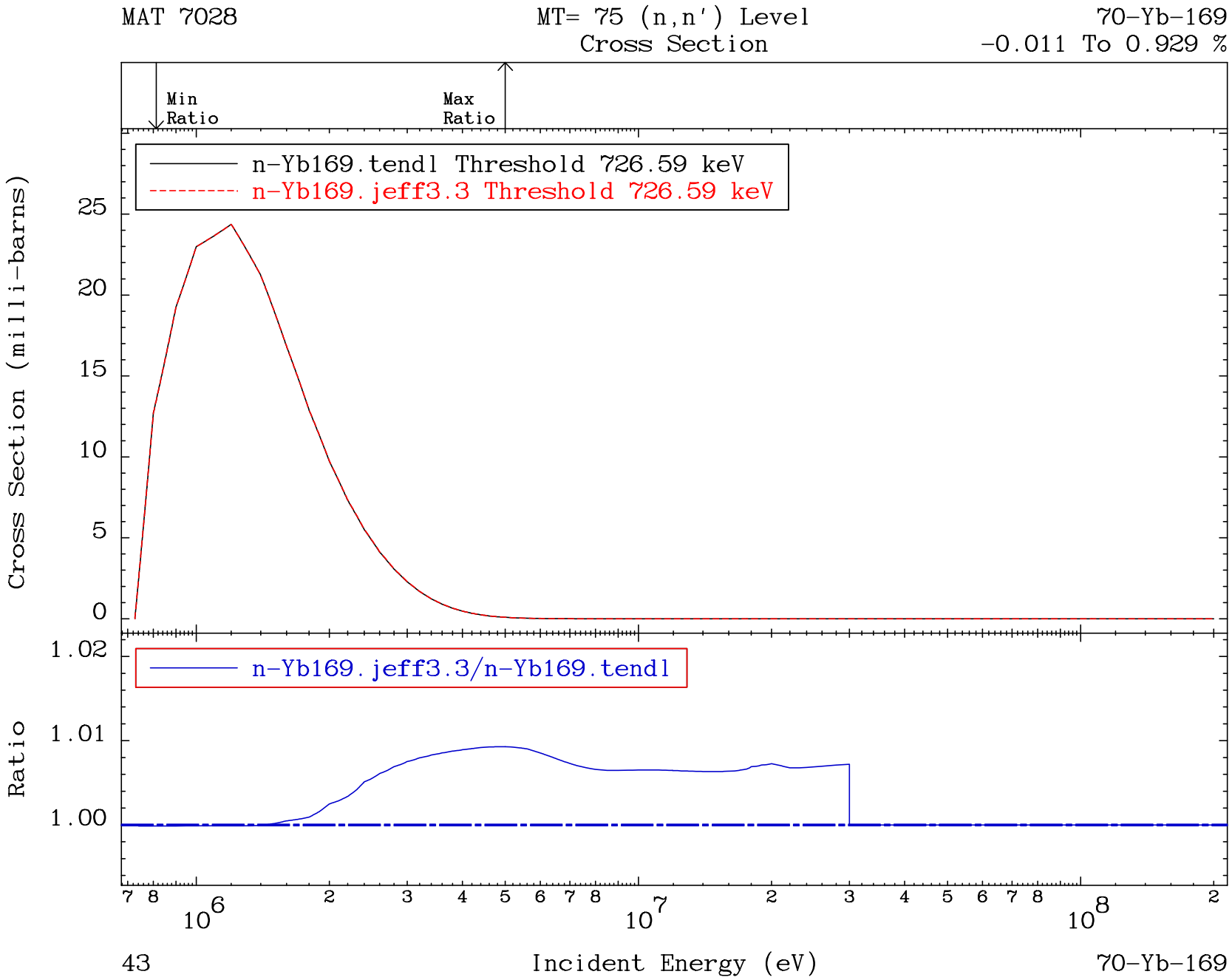

MAT 7028
MT= 70 (n,n') Level
Cross Section
70-Yb-169
-0.012 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 657.64 keV
n-Yb169.jeff3.3 Threshold 657.64 keV
Cross Section (milli-barns)
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
38
Incident Energy (eV)
70-Yb-169

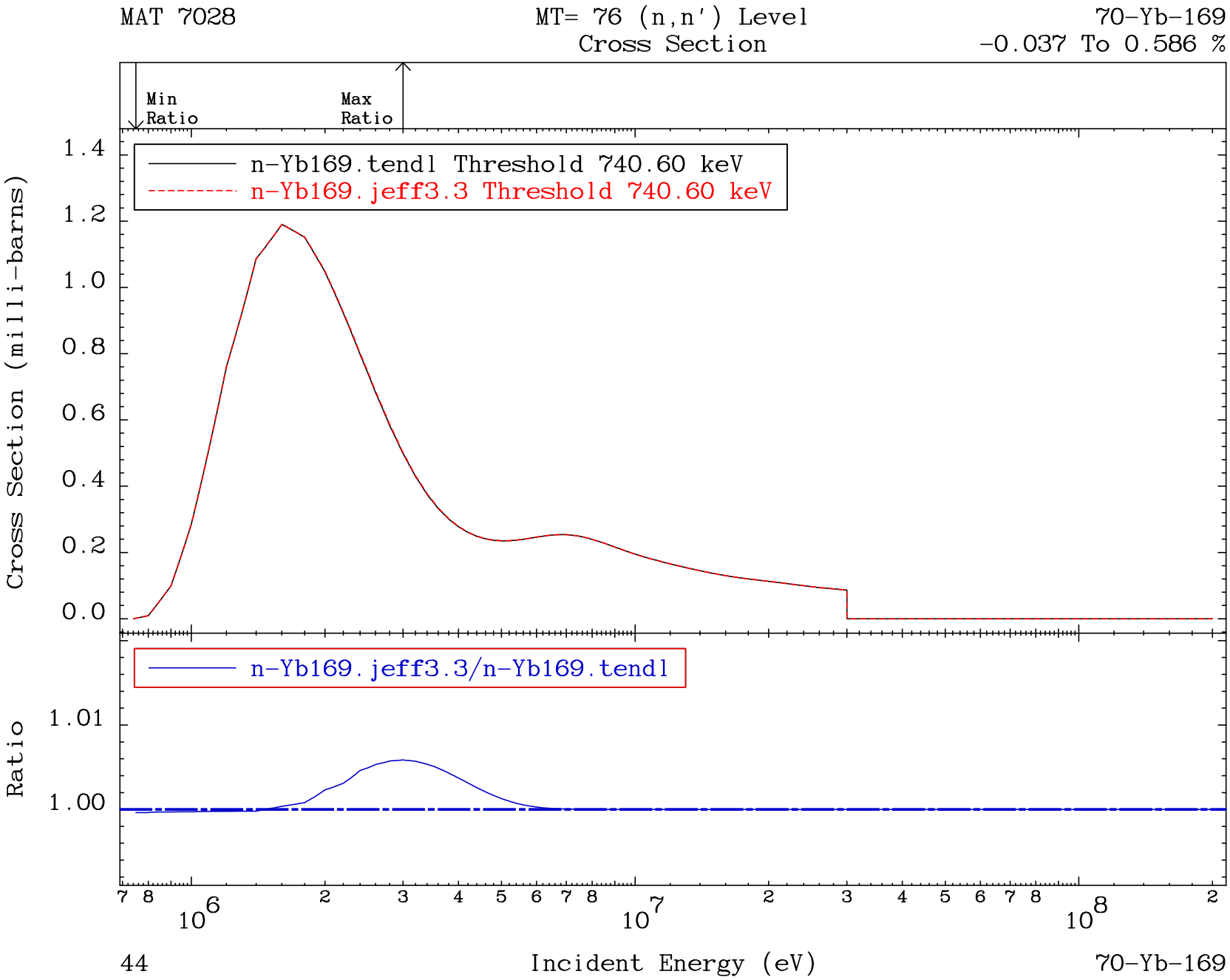

MAT 7028
MT= 71 (n,n') Level
Cross Section
70-Yb-169
-0.013 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 663.57 keV
n-Yb169.jeff3.3 Threshold 663.57 keV
Cross Section (milli-barns)
16
12
8
4
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
39
Incident Energy (eV)
70-Yb-169

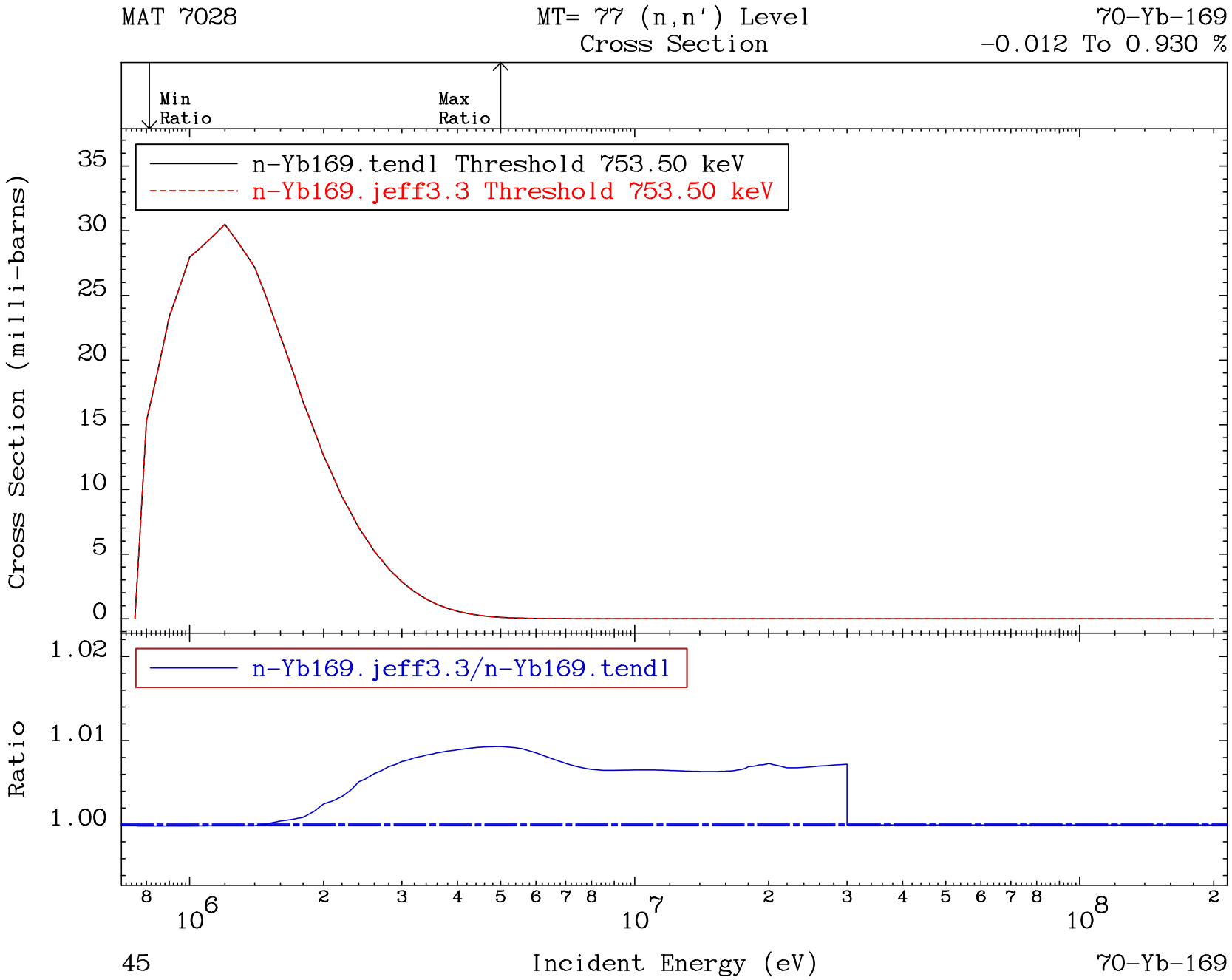

MAT 7028
MT= 72 (n,n') Level
Cross Section
70-Yb-169
-0.029 To 0.766 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 681.15 keV
n-Yb169.jeff3.3 Threshold 681.15 keV
Cross Section (milli-barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
40
70-Yb-169

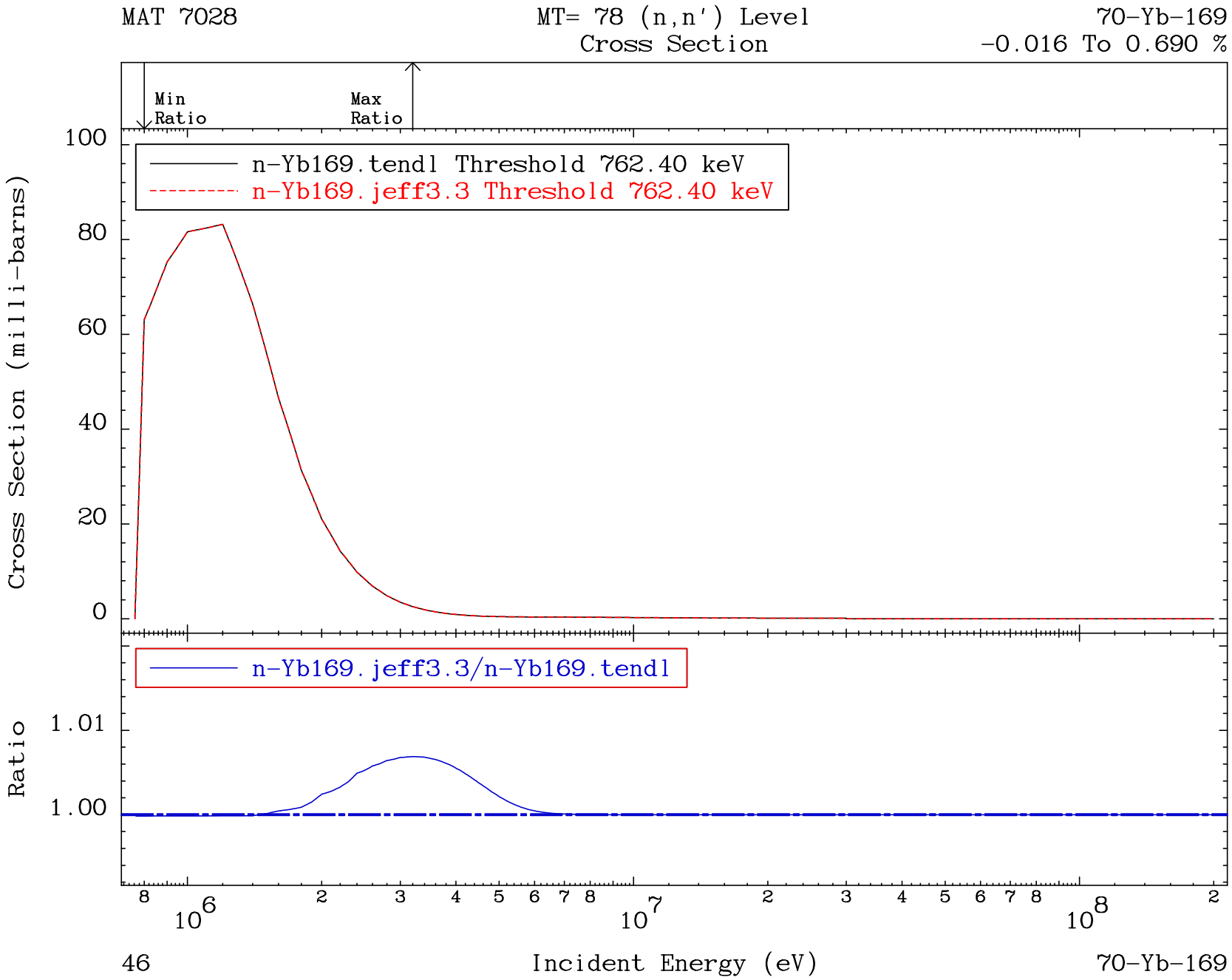

MAT 7028
MT= 73 (n,n') Level
Cross Section
70-Yb-169
-0.015 To 0.807 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 711.28 keV
n-Yb169.jeff3.3 Threshold 711.28 keV
Cross Section (milli-barns)
140
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
41
Incident Energy (eV)
70-Yb-169

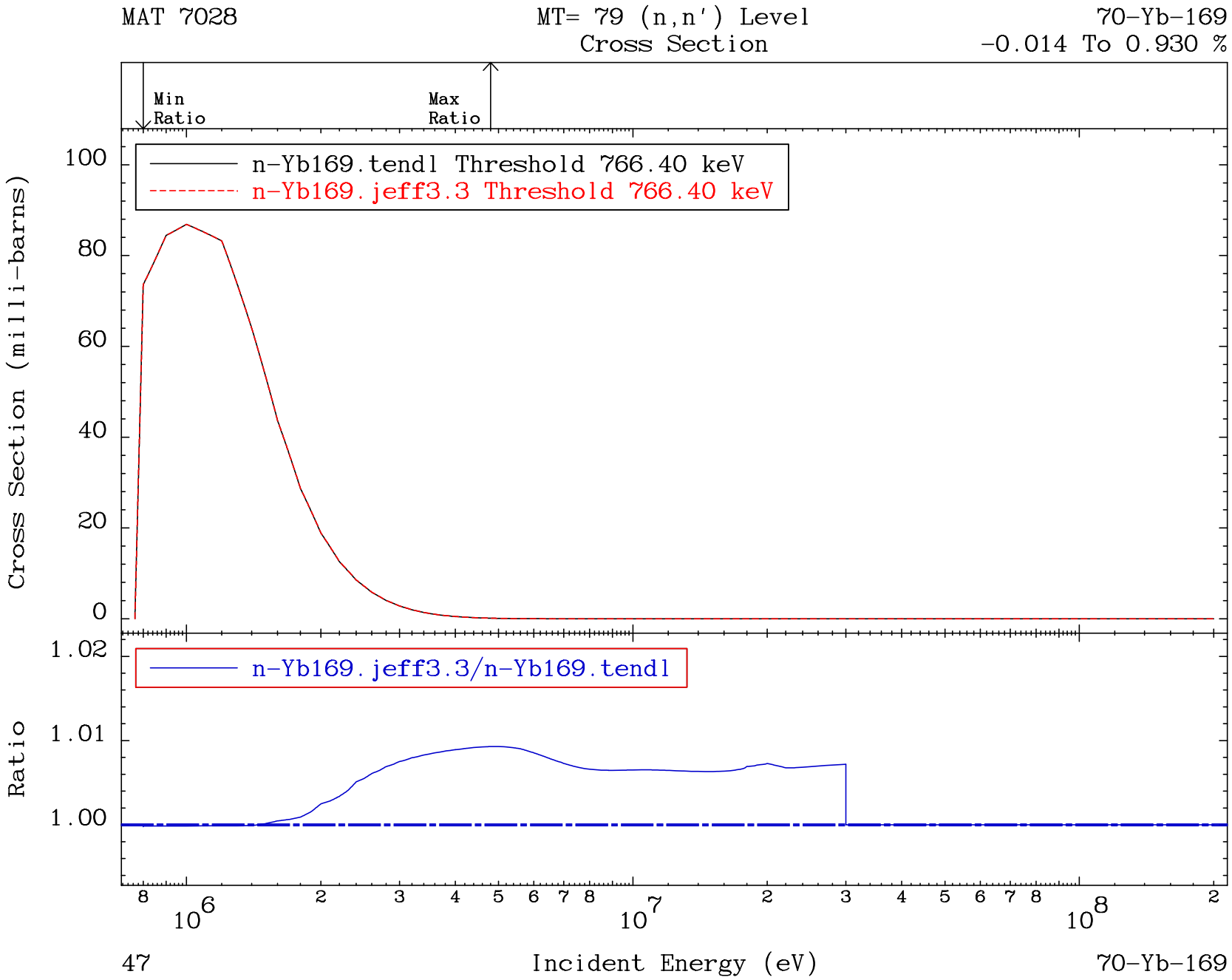

MAT 7028
MT= 74 (n,n') Level
Cross Section
70-Yb-169
-0.016 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 724.25 keV
n-Yb169.jeff3.3 Threshold 724.25 keV
Cross Section (milli-barns)
70
60
50
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
42
Incident Energy (eV)
70-Yb-169

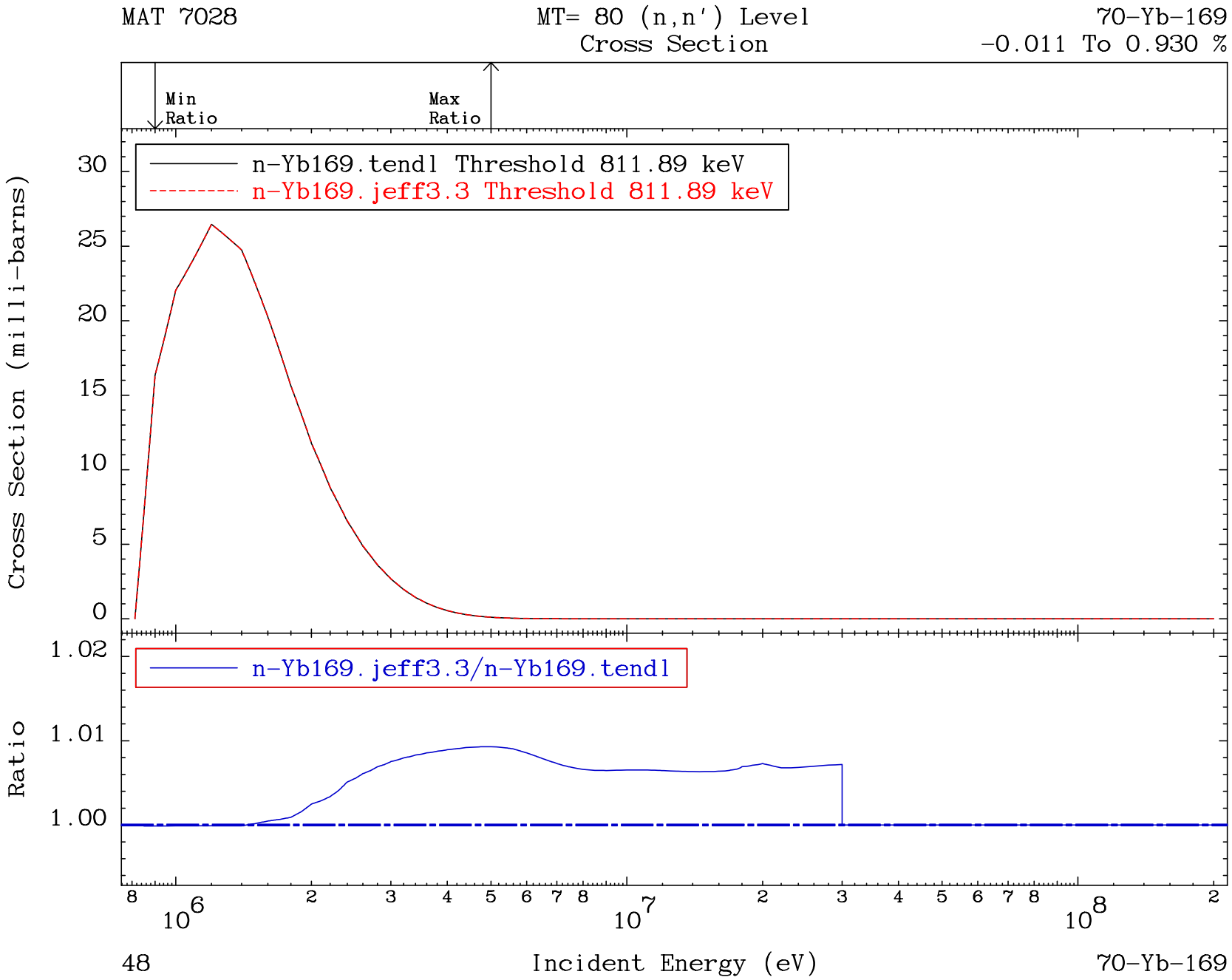

MAT 7028
MT= 75 (n,n') Level
Cross Section
70-Yb-169
-0.011 To 0.929 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 726.59 keV
n-Yb169.jeff3.3 Threshold 726.59 keV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
43
Incident Energy (eV)
70-Yb-169

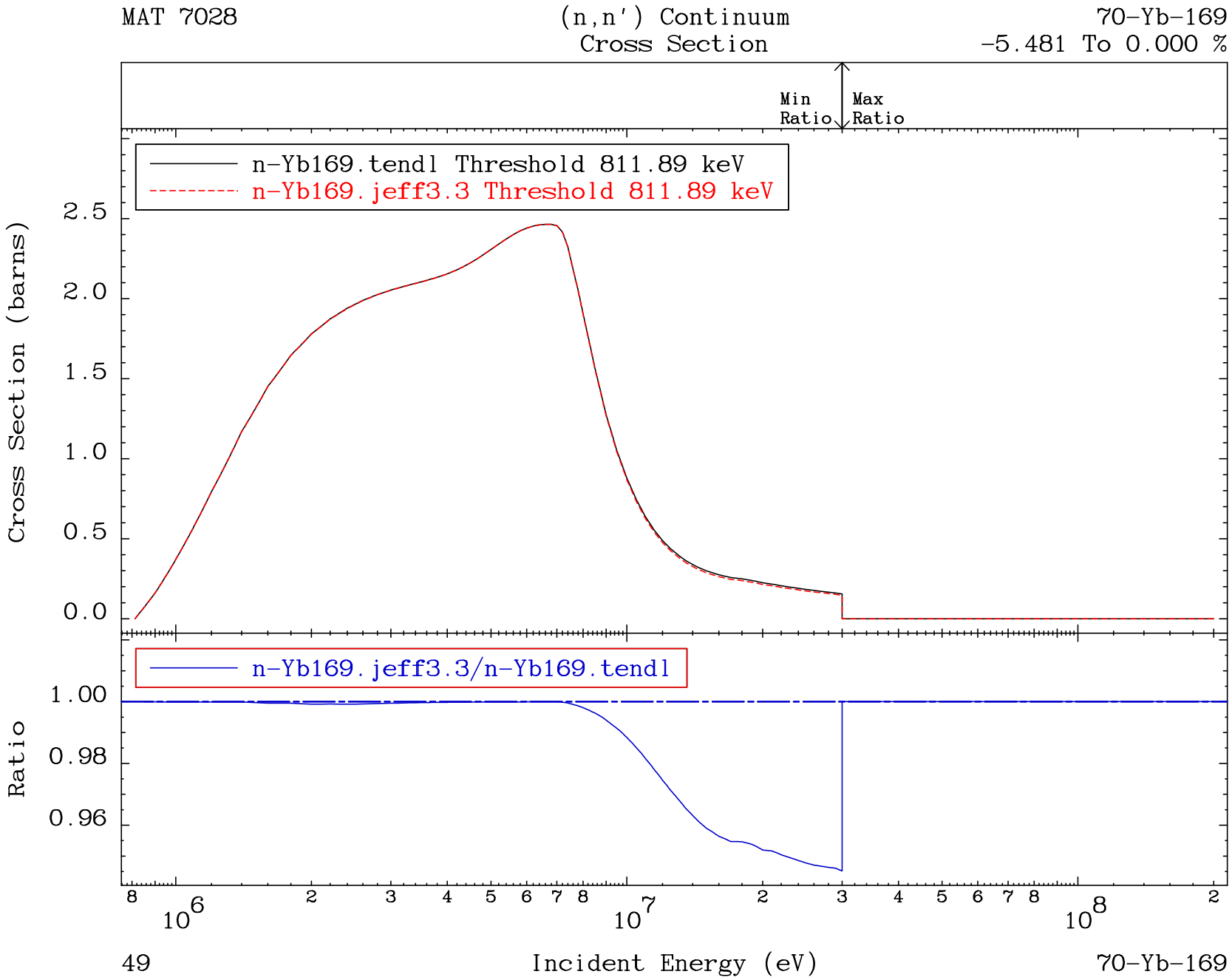

MAT 7028
MT= 76 (n,n') Level
Cross Section
70-Yb-169
-0.037 To 0.586 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 740.60 keV
n-Yb169.jeff3.3 Threshold 740.60 keV
Cross Section (milli-barns)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
44
Incident Energy (eV)
70-Yb-169

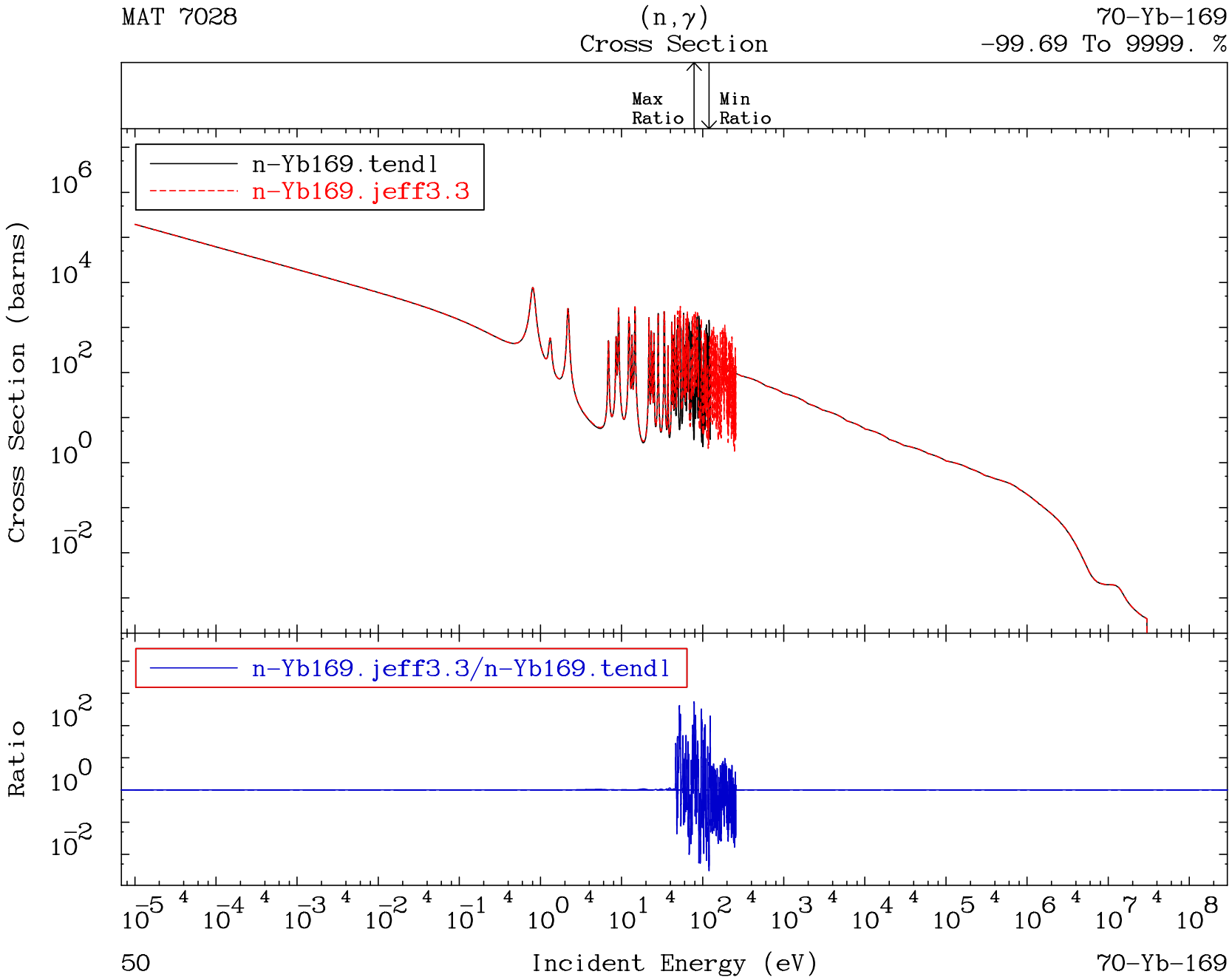

MAT 7028
MT= 77 (n,n') Level
Cross Section
70-Yb-169
-0.012 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 753.50 keV
n-Yb169.jeff3.3 Threshold 753.50 keV
Cross Section (milli-barns)
35
30
25
20
15
10
5
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
8
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
45
Incident Energy (eV)
70-Yb-169

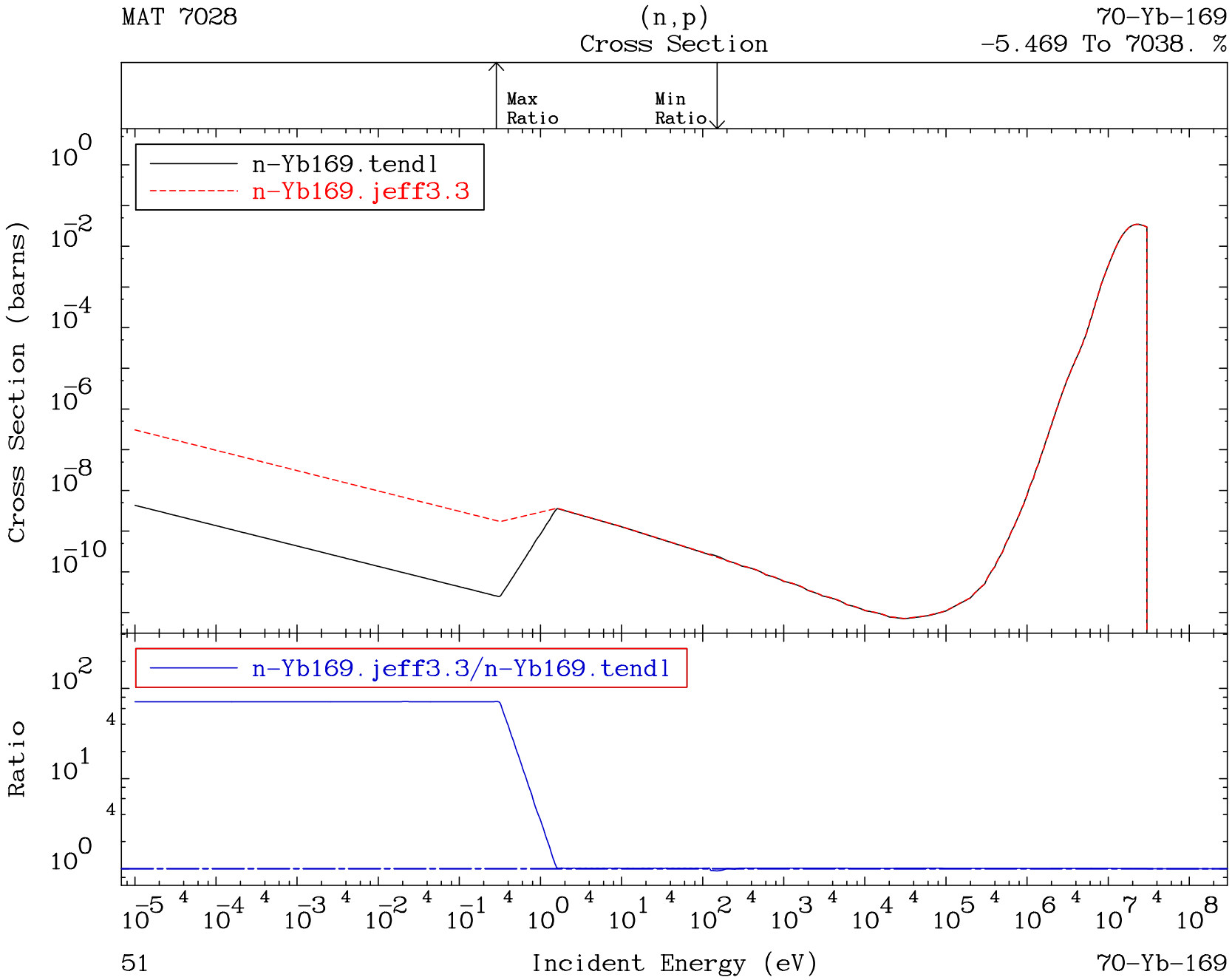

MAT 7028
MT= 78 (n,n') Level
Cross Section
70-Yb-169
-0.016 To 0.690 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 762.40 keV
n-Yb169.jeff3.3 Threshold 762.40 keV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
46
Incident Energy (eV)
70-Yb-169

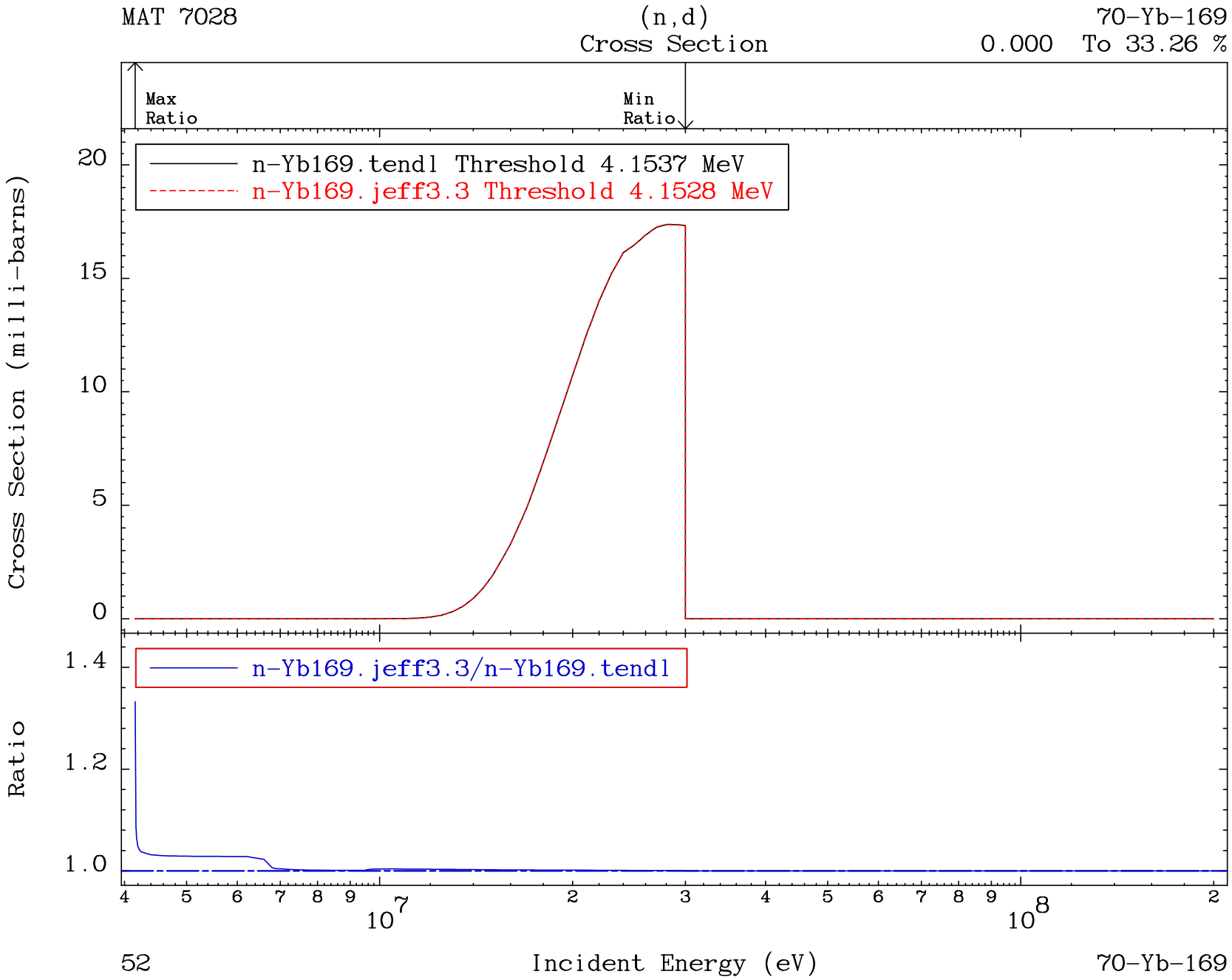

MAT 7028
MT= 79 (n,n') Level
Cross Section
70-Yb-169
-0.014 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 766.40 keV
n-Yb169.jeff3.3 Threshold 766.40 keV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
47
Incident Energy (eV)
70-Yb-169

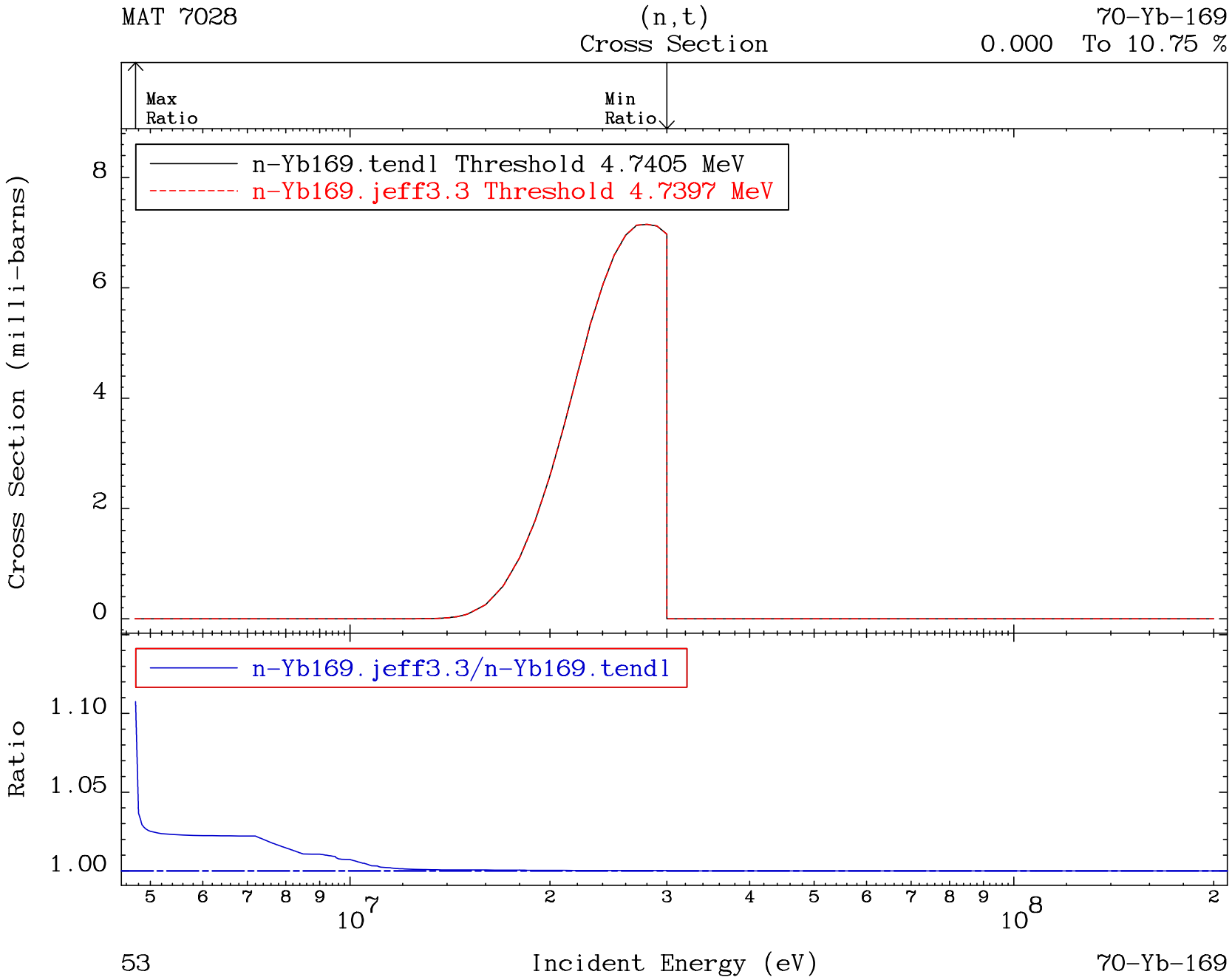

MAT 7028
MT= 80 (n,n') Level
Cross Section
70-Yb-169
-0.011 To 0.930 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 811.89 keV
n-Yb169.jeff3.3 Threshold 811.89 keV
Cross Section (milli-barns)
30
25
20
15
10
5
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
8
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
48
Incident Energy (eV)
70-Yb-169

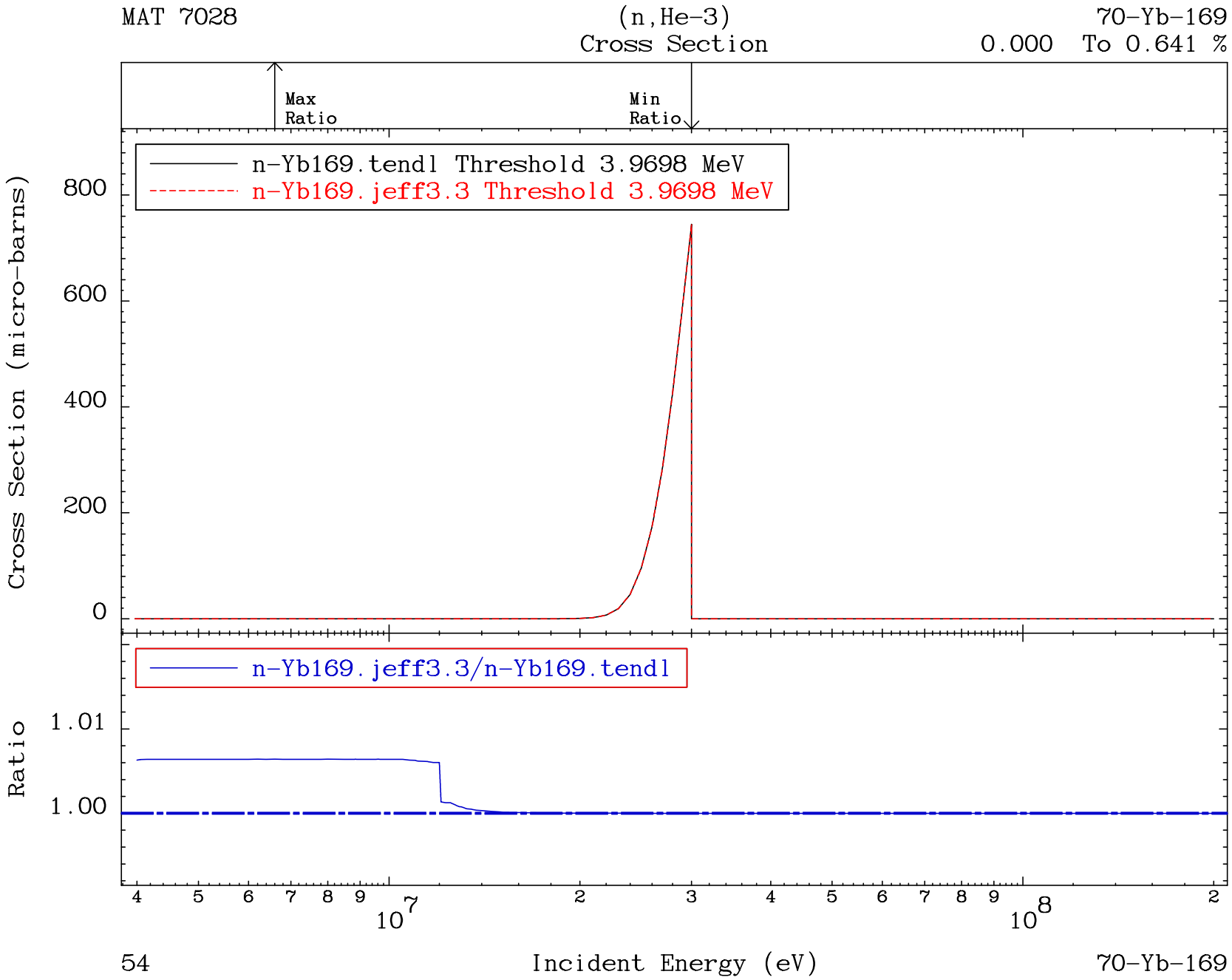

MAT 7028
(n,n') Continuum
Cross Section
70-Yb-169
-5.481 To 0.000 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 811.89 keV
n-Yb169.jeff3.3 Threshold 811.89 keV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
0.98
0.96
8 2 3 4 5 6 7 8 2 3 4 5 6 7 8 2
10^6
10^7
10^8
49
Incident Energy (eV)
70-Yb-169

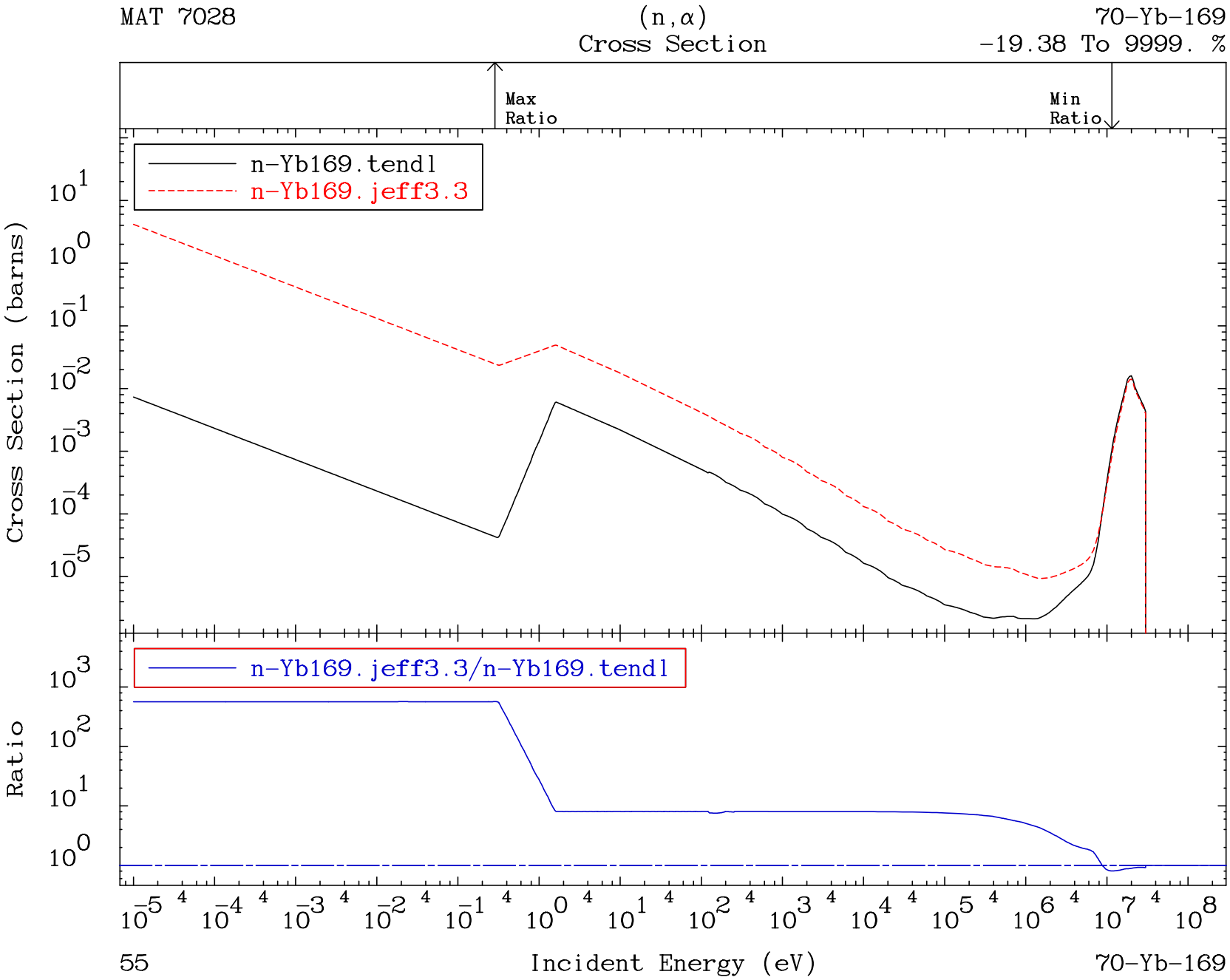

MAT 7028
(n,γ)
Cross Section
70-Yb-169
-99.69 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
50
70-Yb-169

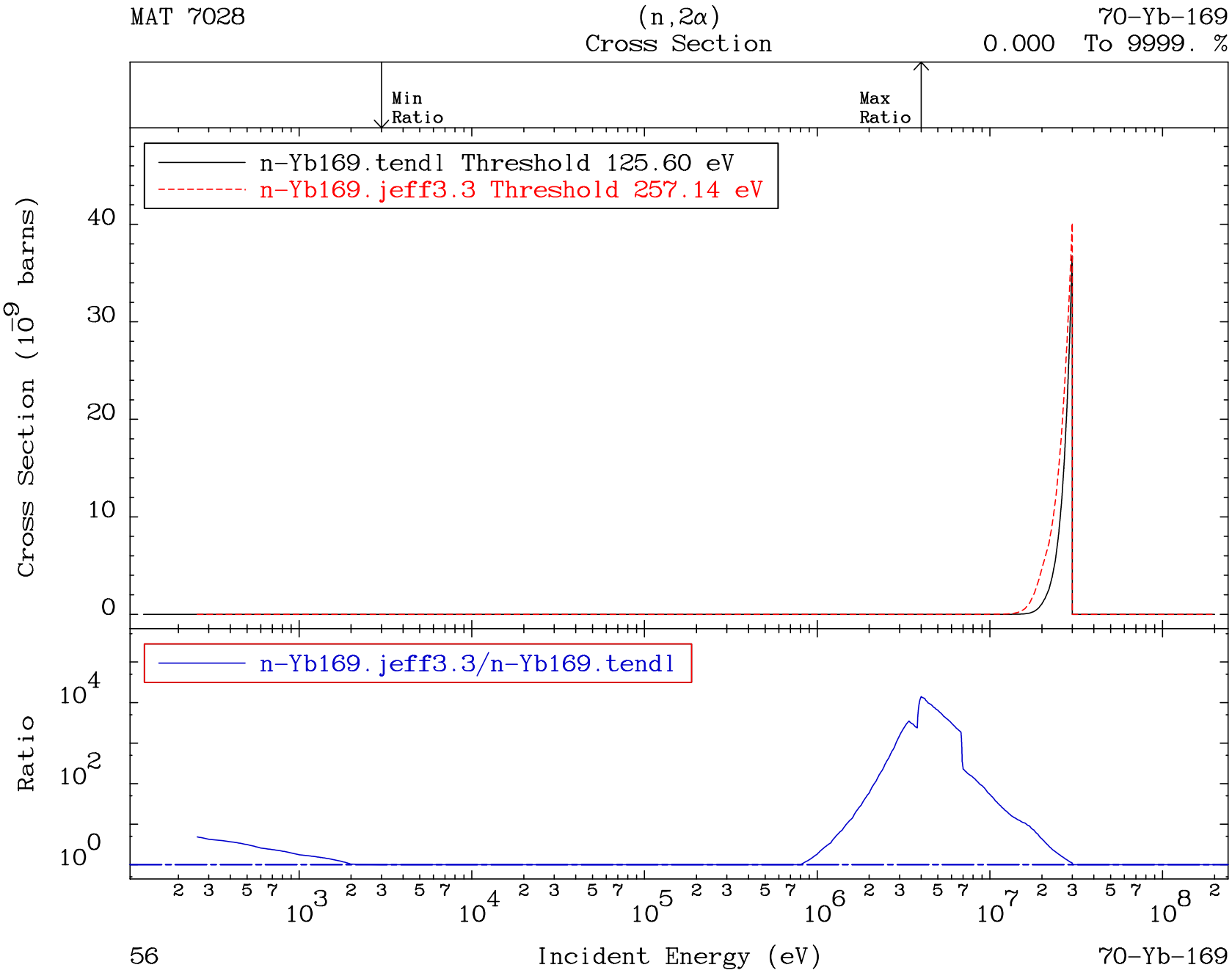

MAT 7028
(n,p)
Cross Section
70-Yb-169
-5.469 To 7038. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
51
70-Yb-169

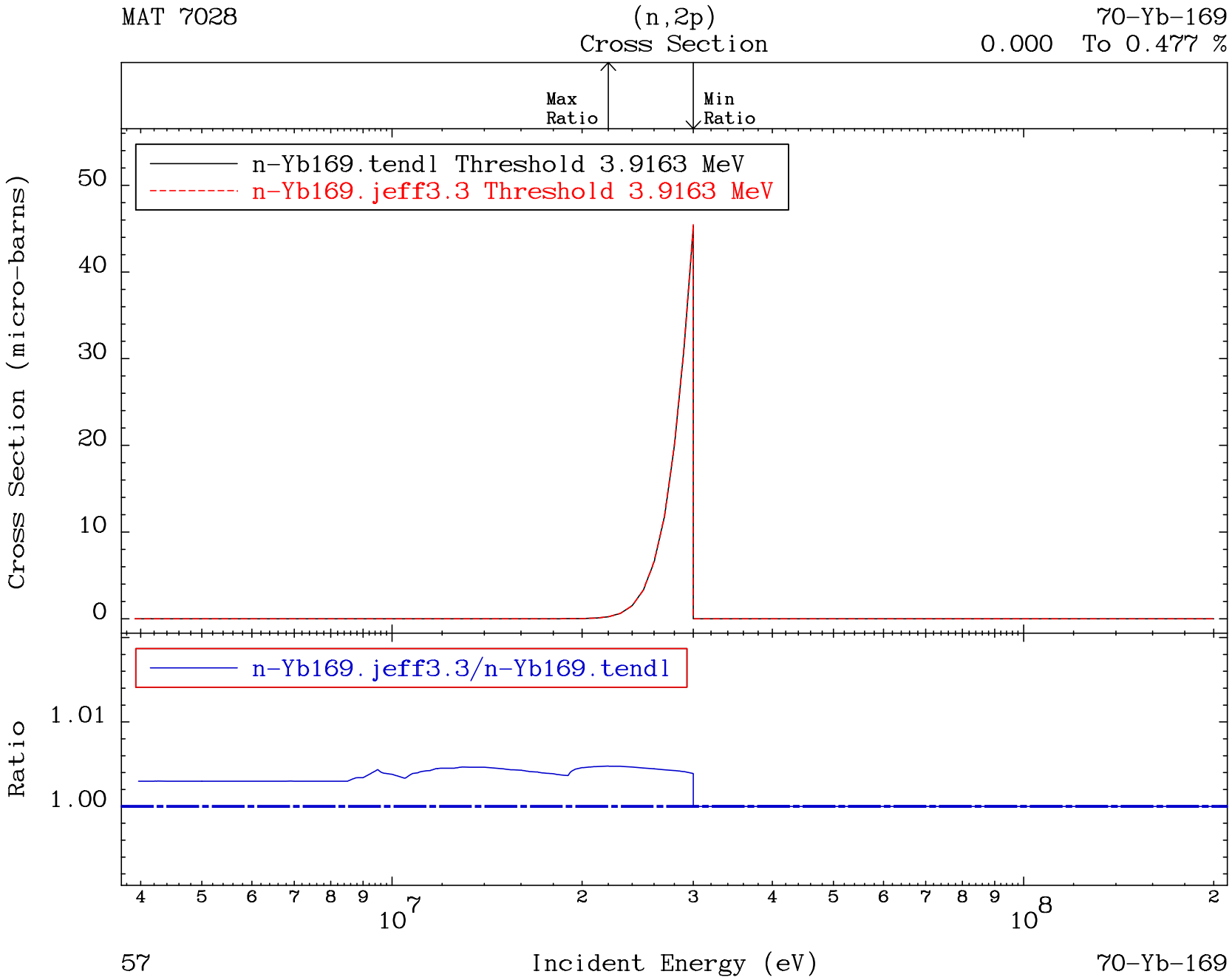

MAT 7028
(n,d)
Cross Section
70-Yb-169
0.000 To 33.26 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 4.1537 MeV
n-Yb169.jeff3.3 Threshold 4.1528 MeV
Cross Section (milli-barns)
20
15
10
5
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.4
1.2
1.0
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
52
Incident Energy (eV)
70-Yb-169

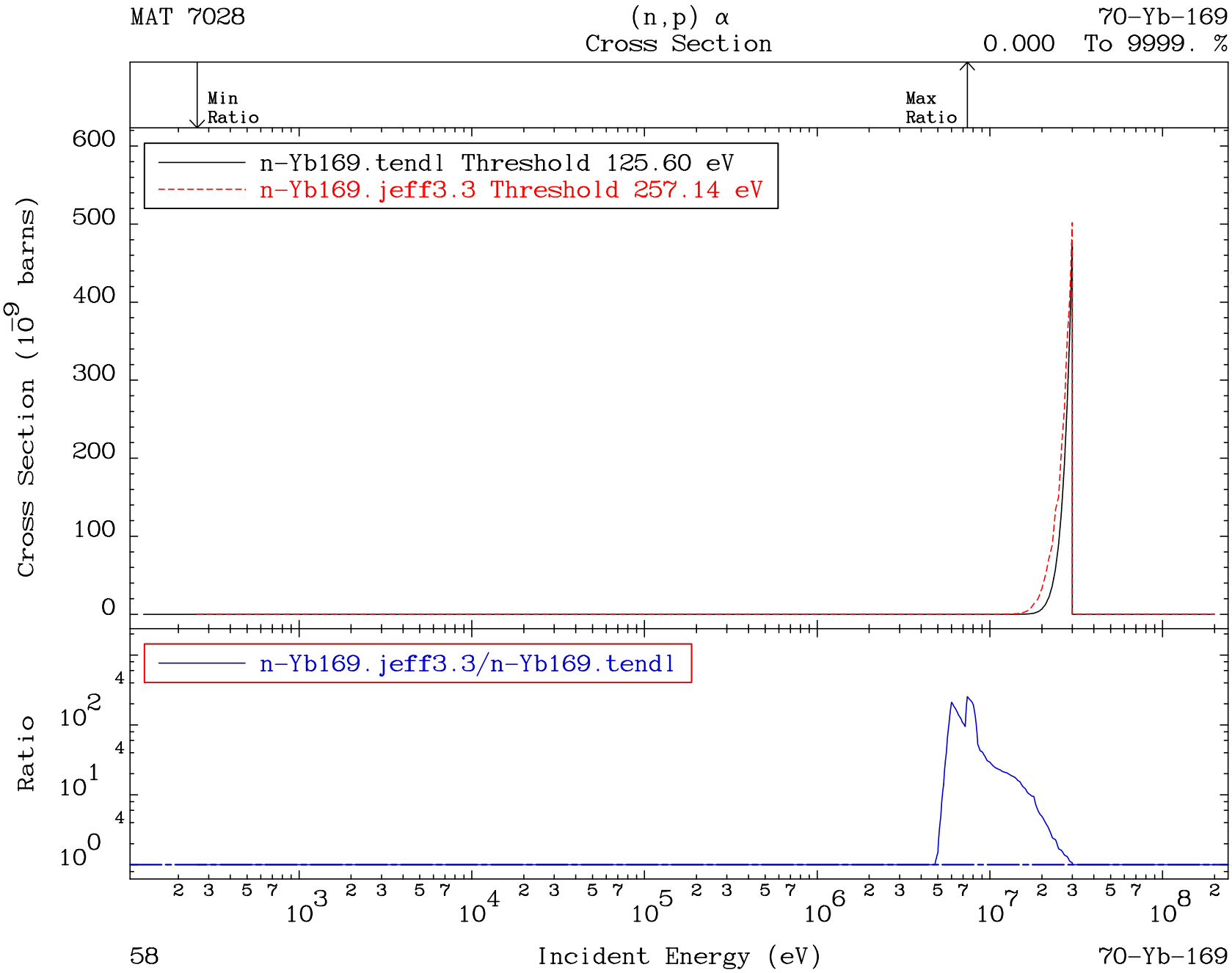

MAT 7028
(n,t)
Cross Section
70-Yb-169
0.000 To 10.75 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 4.7405 MeV
n-Yb169.jeff3.3 Threshold 4.7397 MeV
Cross Section (milli-barns)
0
2
4
6
8
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
1.05
1.10
5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
53
Incident Energy (eV)
70-Yb-169

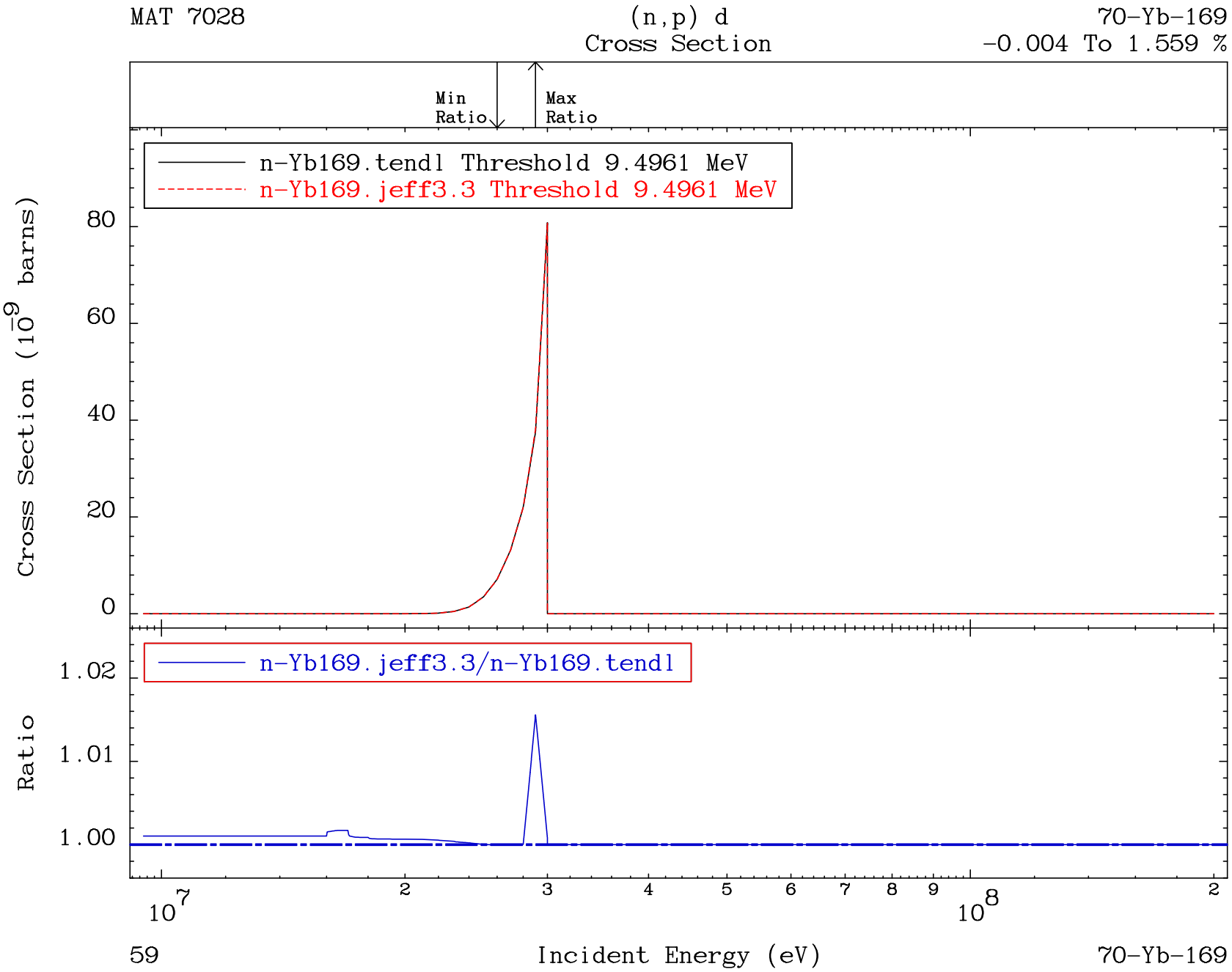

MAT 7028
(n,He-3)
Cross Section
70-Yb-169
0.000 To 0.641 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 3.9698 MeV
n-Yb169.jeff3.3 Threshold 3.9698 MeV
Cross Section (micro-barns)
800
600
400
200
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
54
Incident Energy (eV)
70-Yb-169

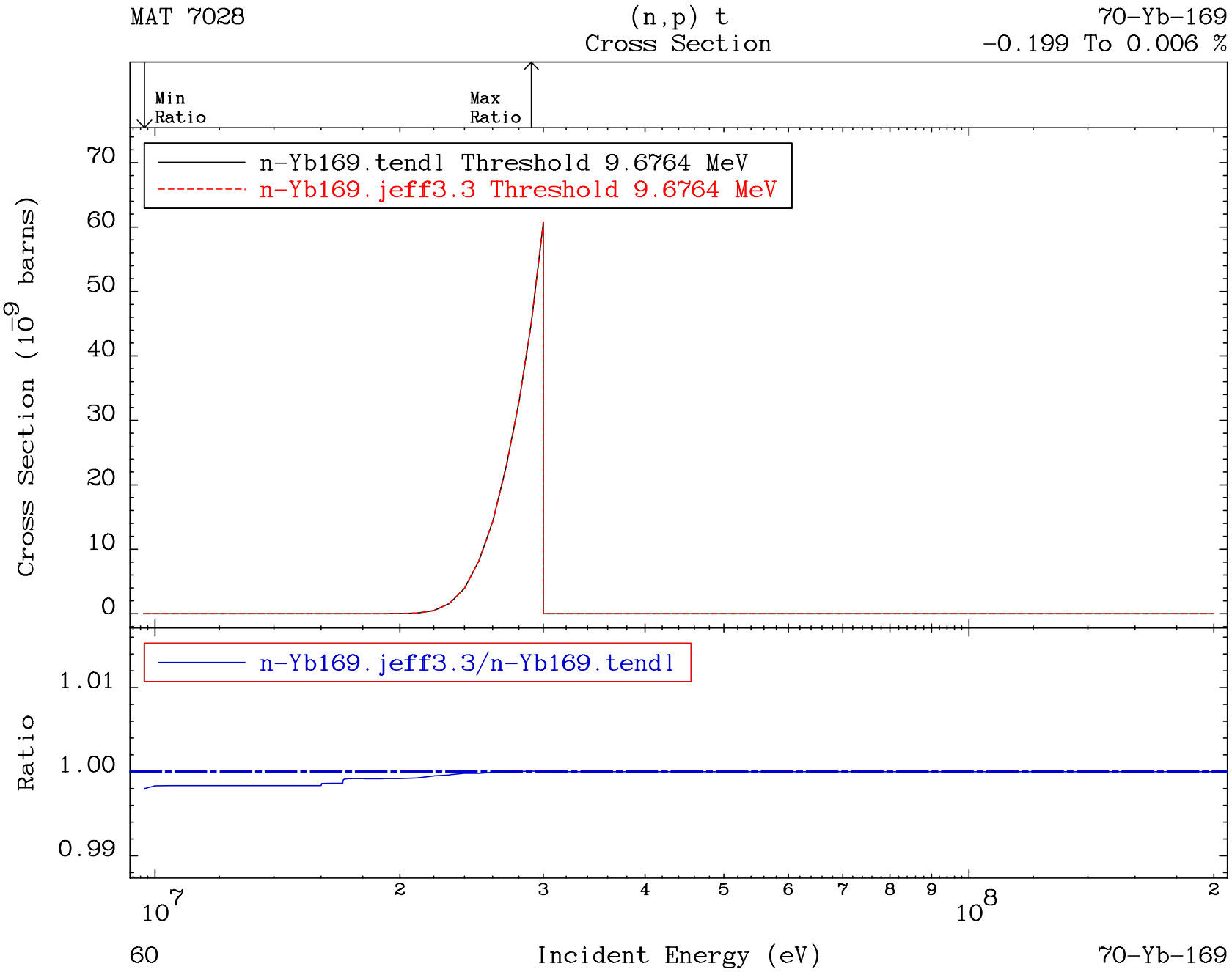

MAT 7028
(n,α)
Cross Section
70-Yb-169
-19.38 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
55
70-Yb-169

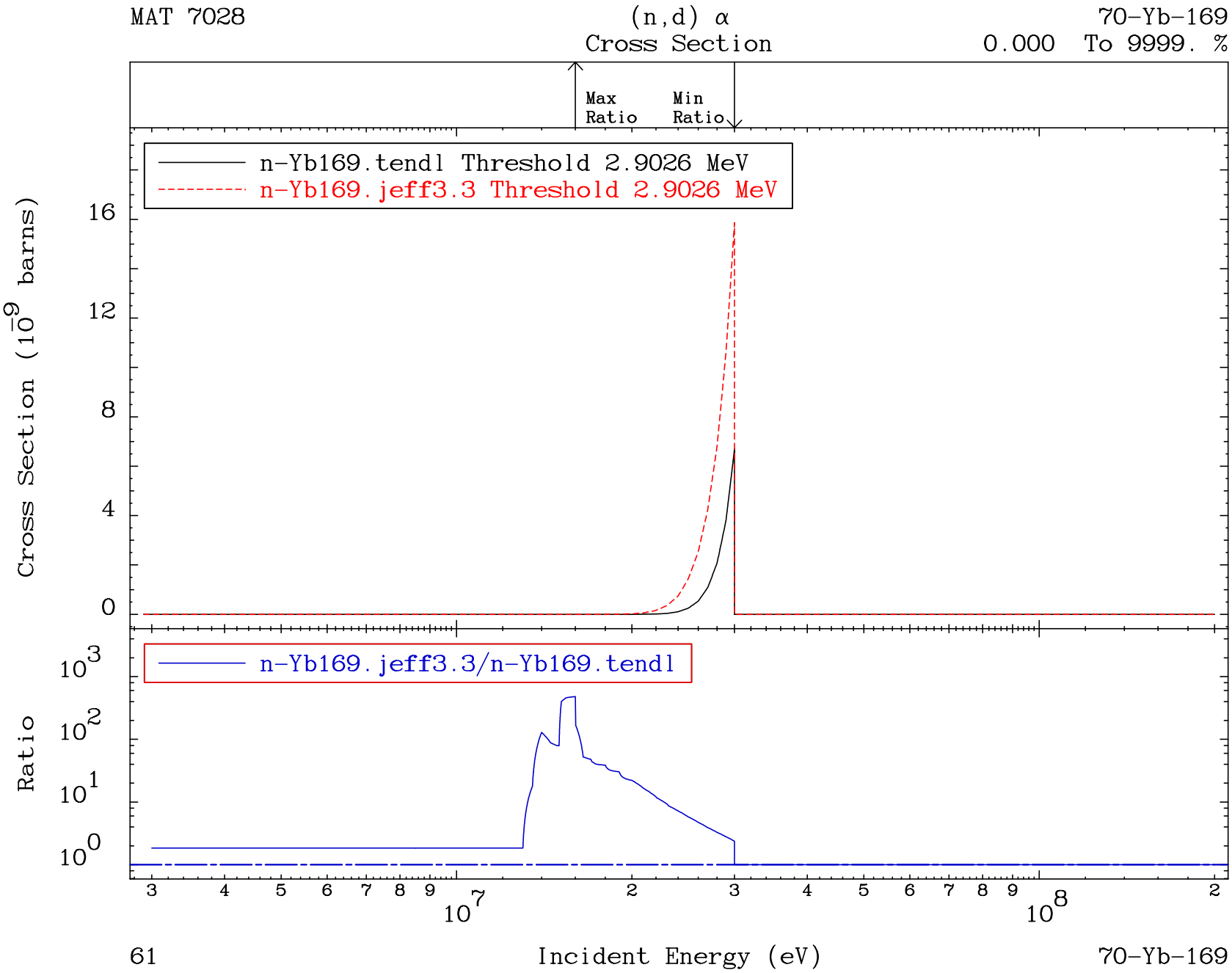

MAT 7028
(n,2α)
Cross Section
70-Yb-169
0.000 To 9999. %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 125.60 eV
n-Yb169.jeff3.3 Threshold 257.14 eV
Cross Section (10^-9 barns)
0
10
20
30
40
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
10^0
10^2
10^4
2 3 5 7 10^3 2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
56
Incident Energy (eV)
70-Yb-169

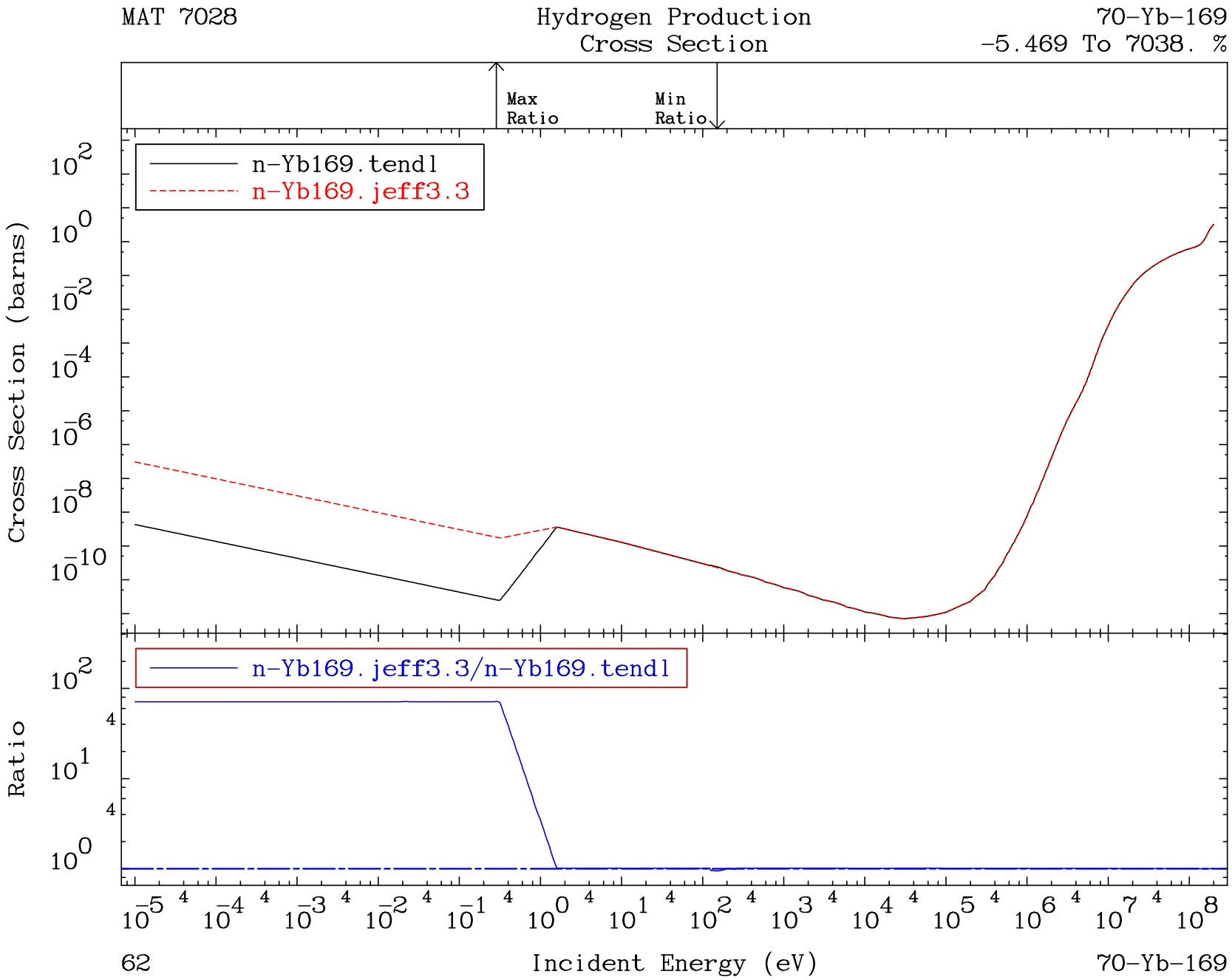

MAT 7028
(n,2p)
Cross Section
70-Yb-169
0.000 To 0.477 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 3.9163 MeV
n-Yb169.jeff3.3 Threshold 3.9163 MeV
Cross Section (micro-barns)
50
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
57
Incident Energy (eV)
70-Yb-169

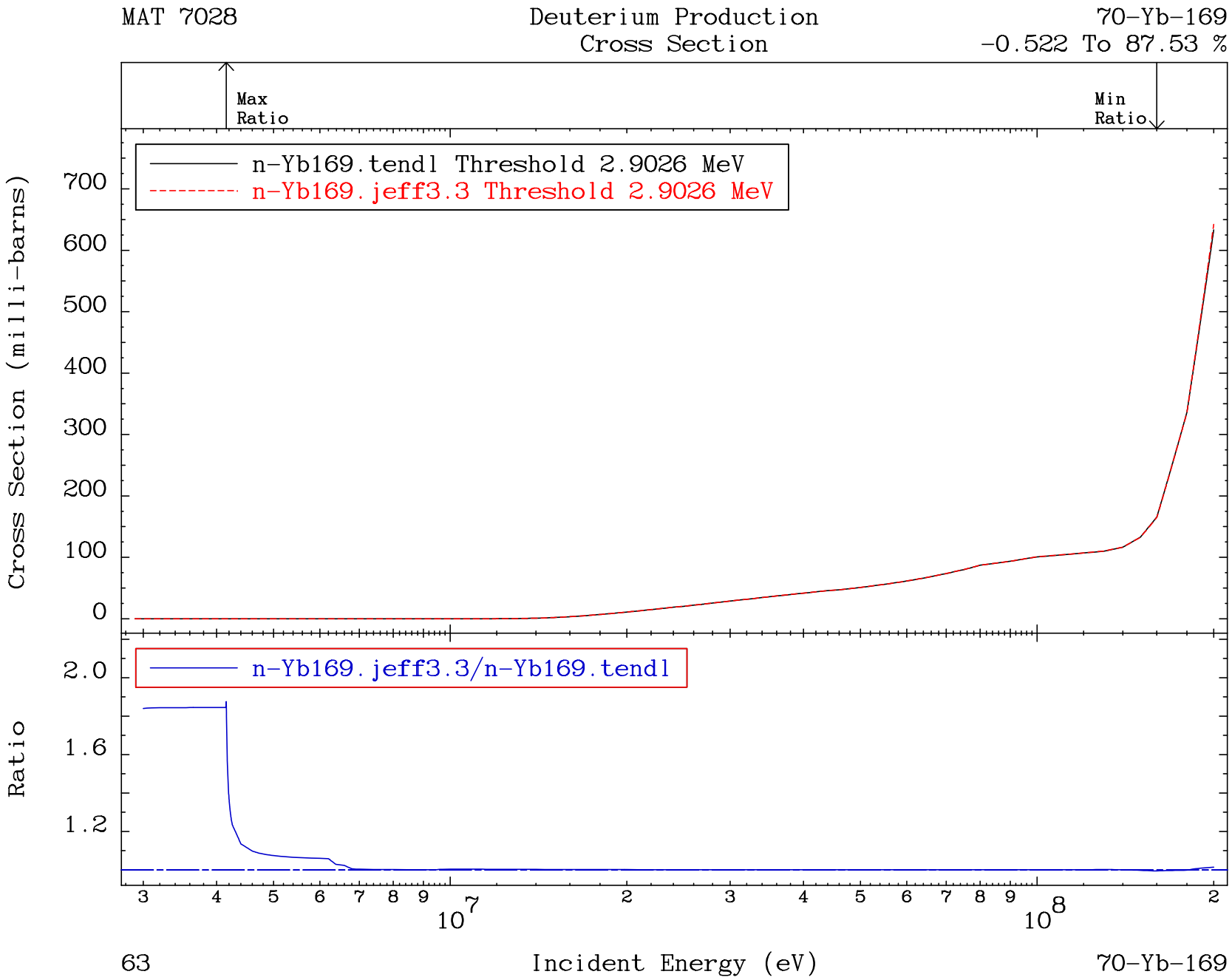

MAT 7028
(n,p) α
Cross Section
70-Yb-169
0.000 To 9999. %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 125.60 eV
n-Yb169.jeff3.3 Threshold 257.14 eV
Cross Section (10^-9 barns)
600
500
400
300
200
100
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
10^2
10^1
10^0
2 3 5 7 10^3 2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
58
Incident Energy (eV)
70-Yb-169

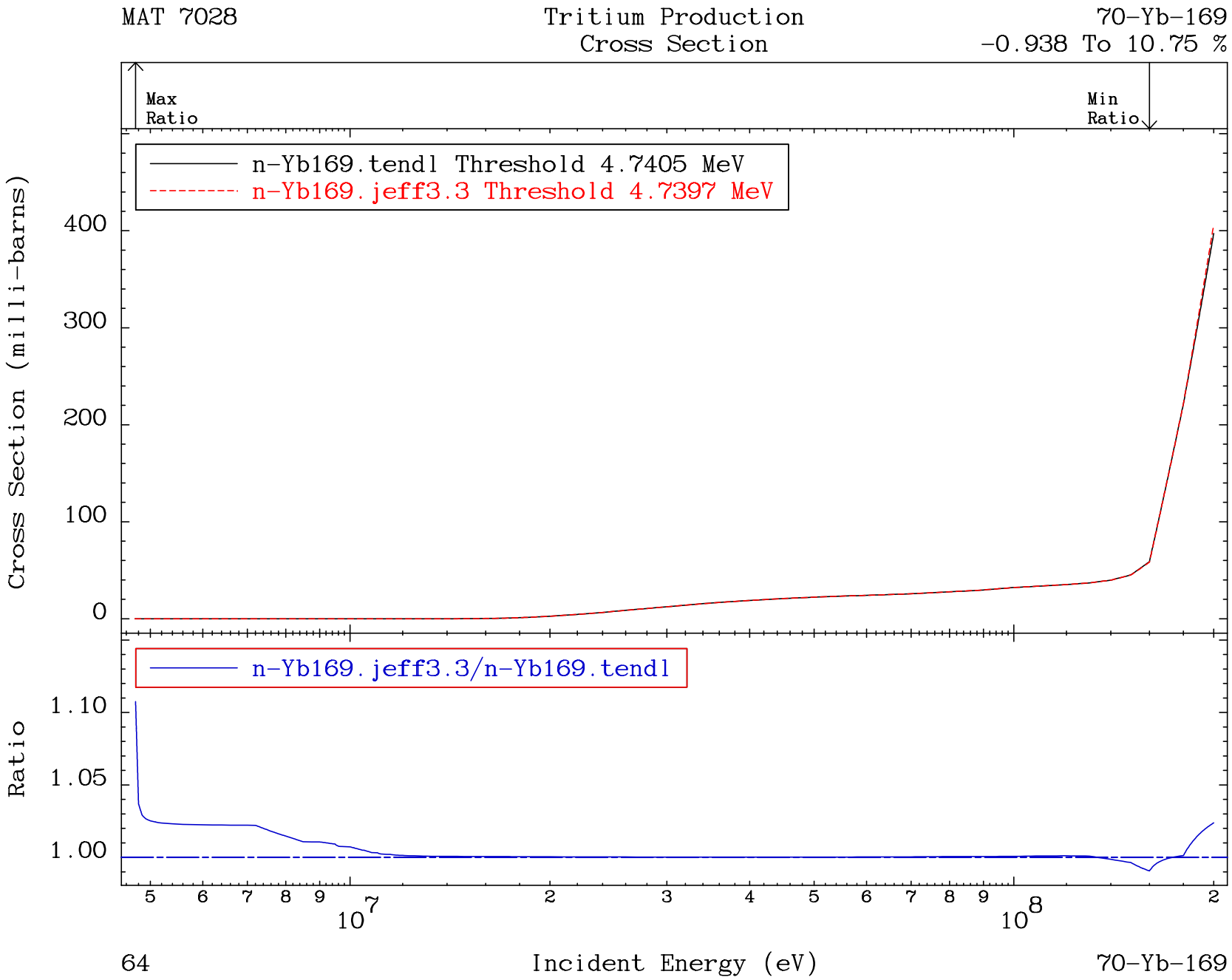

MAT 7028
(n,p) d
Cross Section
70-Yb-169
-0.004 To 1.559 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 9.4961 MeV
n-Yb169.jeff3.3 Threshold 9.4961 MeV
Cross Section ($10^{-9}$ barns)
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
$10^7$
2
3
4
5
6
7
8
9
$10^8$
2
59
Incident Energy (eV)
70-Yb-169

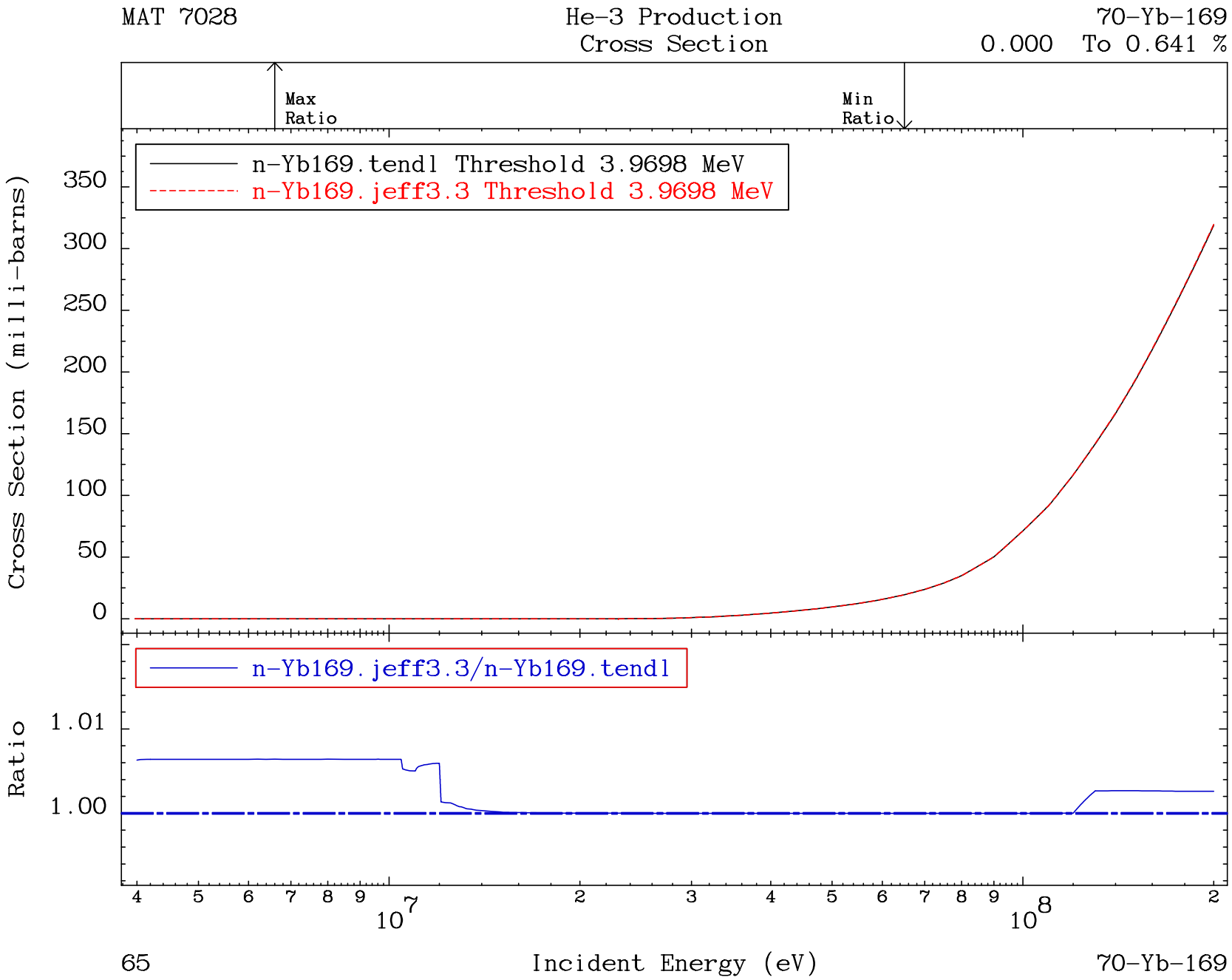

MAT 7028
(n,p) t
Cross Section
70-Yb-169
-0.199 To 0.006 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 9.6764 MeV
n-Yb169.jeff3.3 Threshold 9.6764 MeV
Cross Section ($10^{-9}$ barns)
70
60
50
40
30
20
10
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
0.99
$10^7$
2
3
4
5
6
7
8
9
$10^8$
2
60
Incident Energy (eV)
70-Yb-169

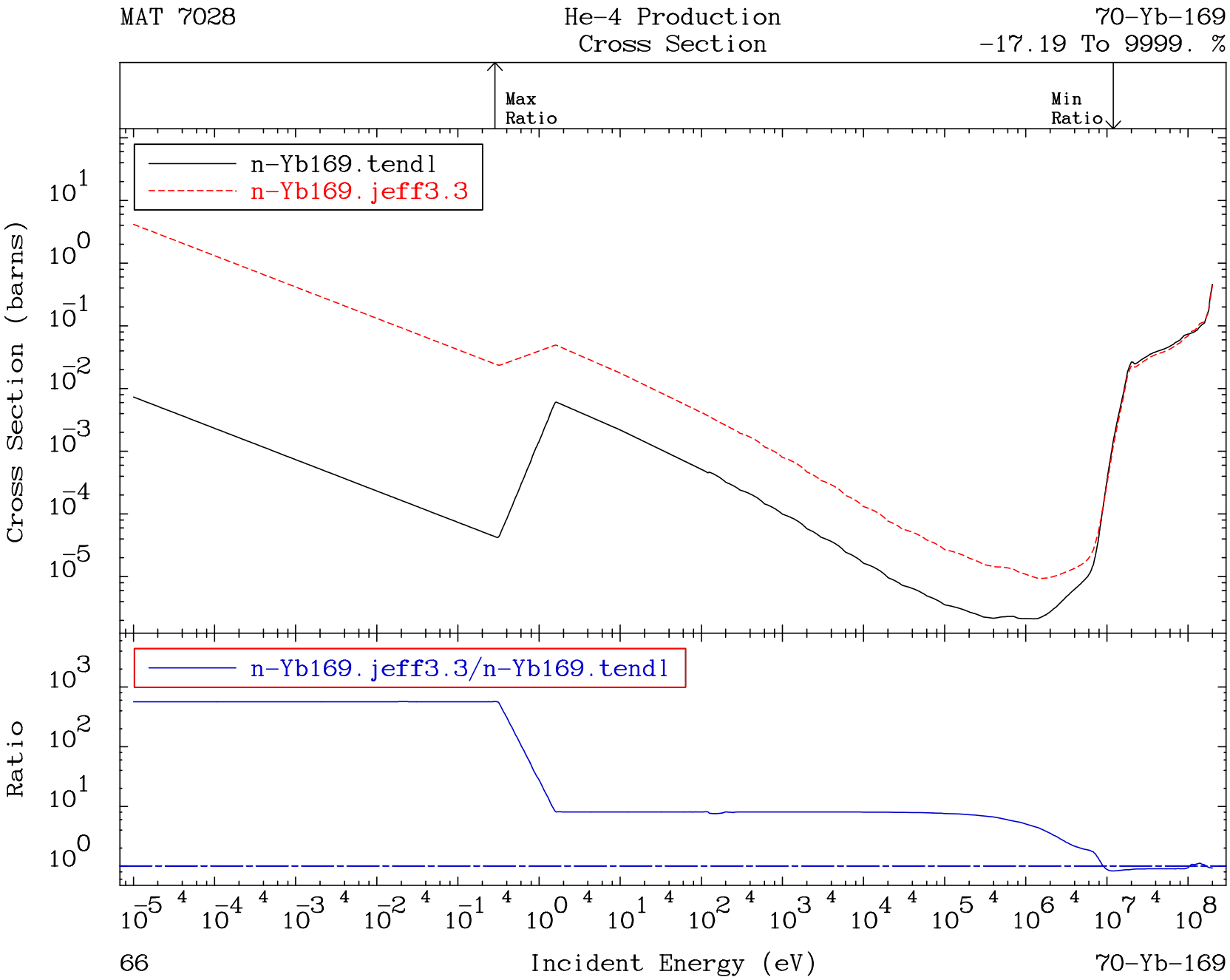

MAT 7028
(n,d) α
Cross Section
70-Yb-169
0.000 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 2.9026 MeV
n-Yb169.jeff3.3 Threshold 2.9026 MeV
Cross Section ($10^{-9}$ barns)
16
12
8
4
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
$10^3$
$10^2$
$10^1$
$10^0$
3 4 5 6 7 8 9 $10^7$ 2 3 4 5 6 7 8 9 $10^8$ 2
61
Incident Energy (eV)
70-Yb-169

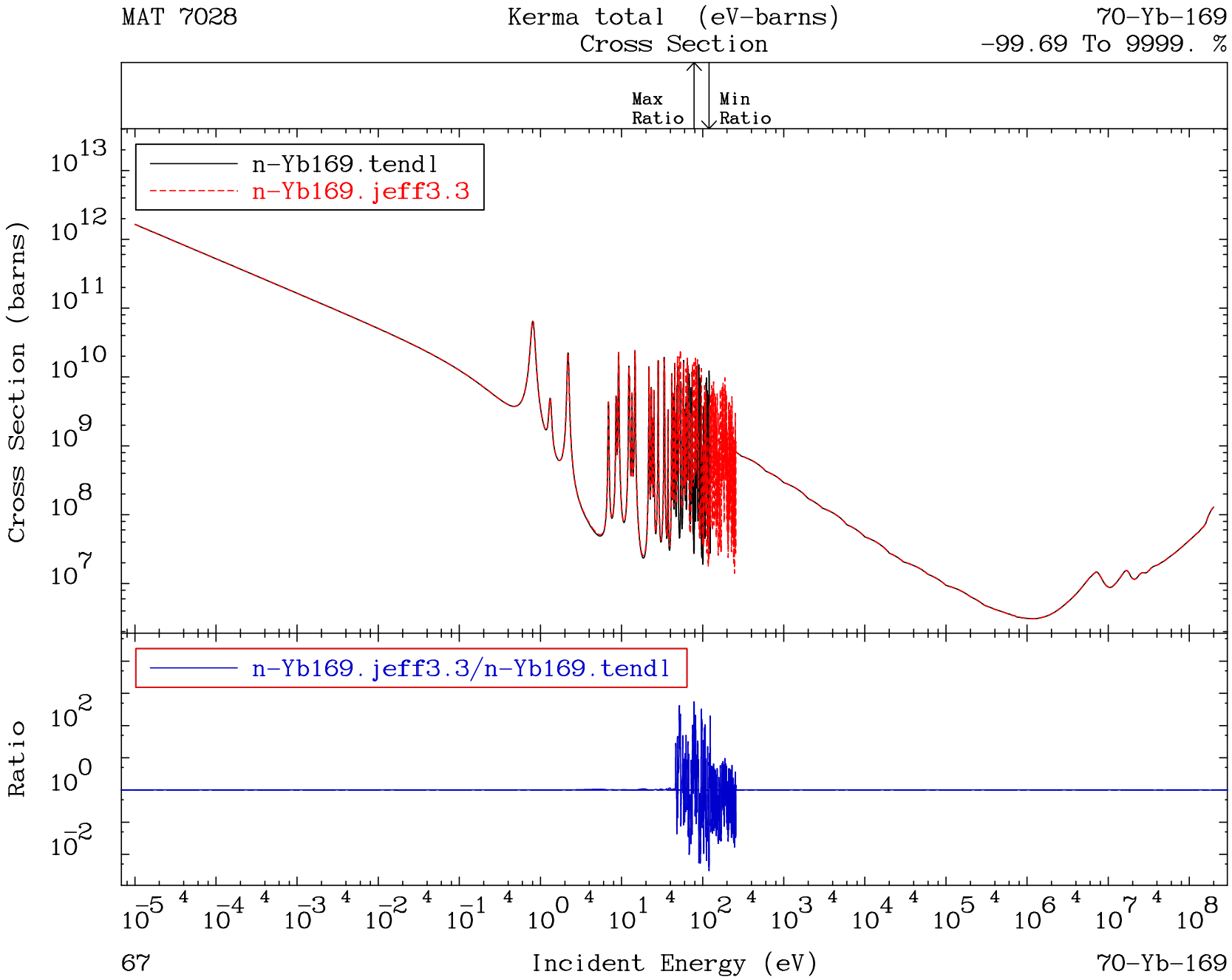

MAT 7028
Hydrogen Production
Cross Section
70-Yb-169
-5.469 To 7038. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
62
70-Yb-169

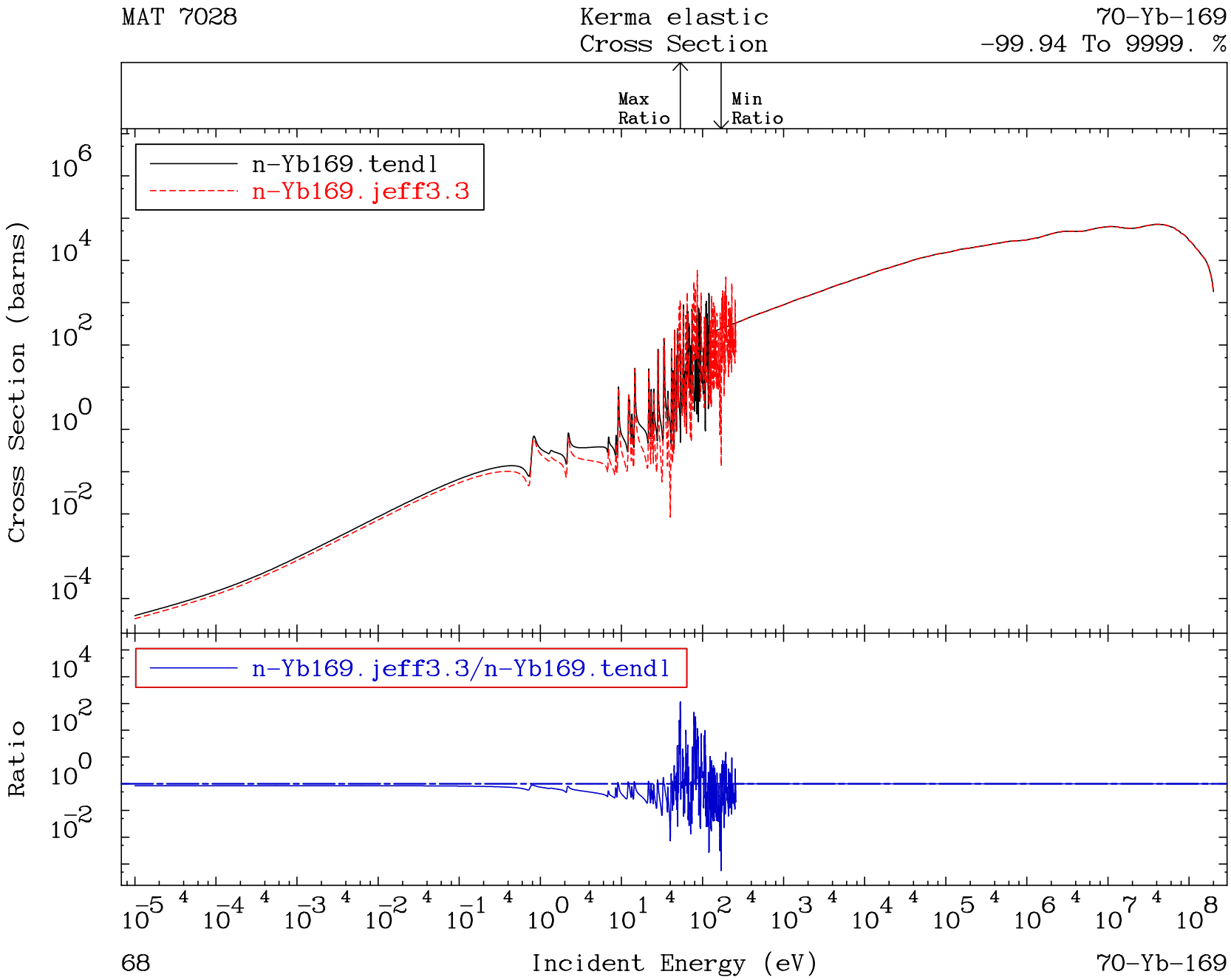

MAT 7028
Deuterium Production
Cross Section
70-Yb-169
-0.522 To 87.53 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 2.9026 MeV
n-Yb169.jeff3.3 Threshold 2.9026 MeV
Cross Section (milli-barns)
700
600
500
400
300
200
100
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
2.0
1.6
1.2
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
63
Incident Energy (eV)
70-Yb-169

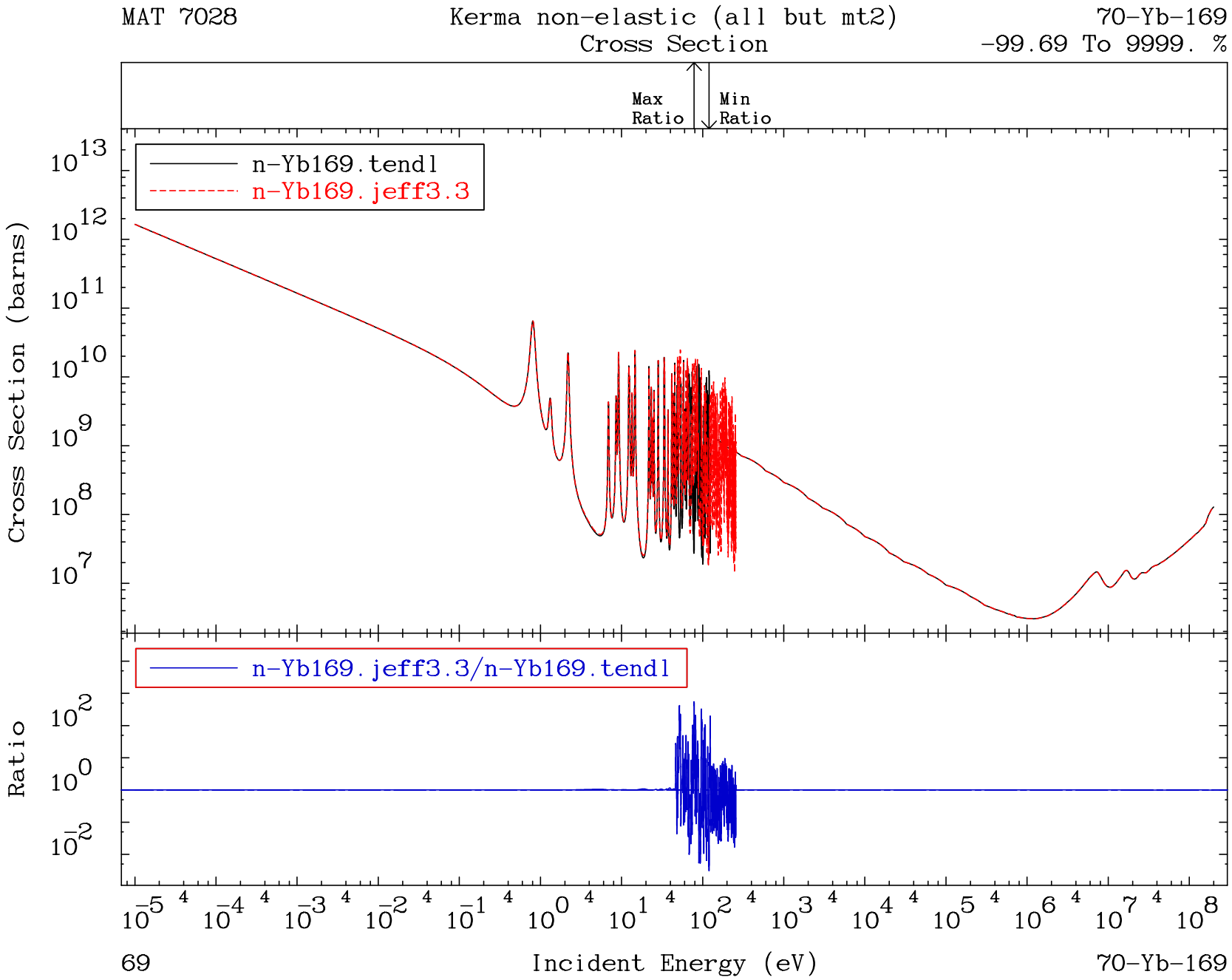

MAT 7028
Tritium Production
Cross Section
70-Yb-169
-0.938 To 10.75 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 4.7405 MeV
n-Yb169.jeff3.3 Threshold 4.7397 MeV
Cross Section (milli-barns)
400
300
200
100
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.10
1.05
1.00
5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
64
Incident Energy (eV)
70-Yb-169

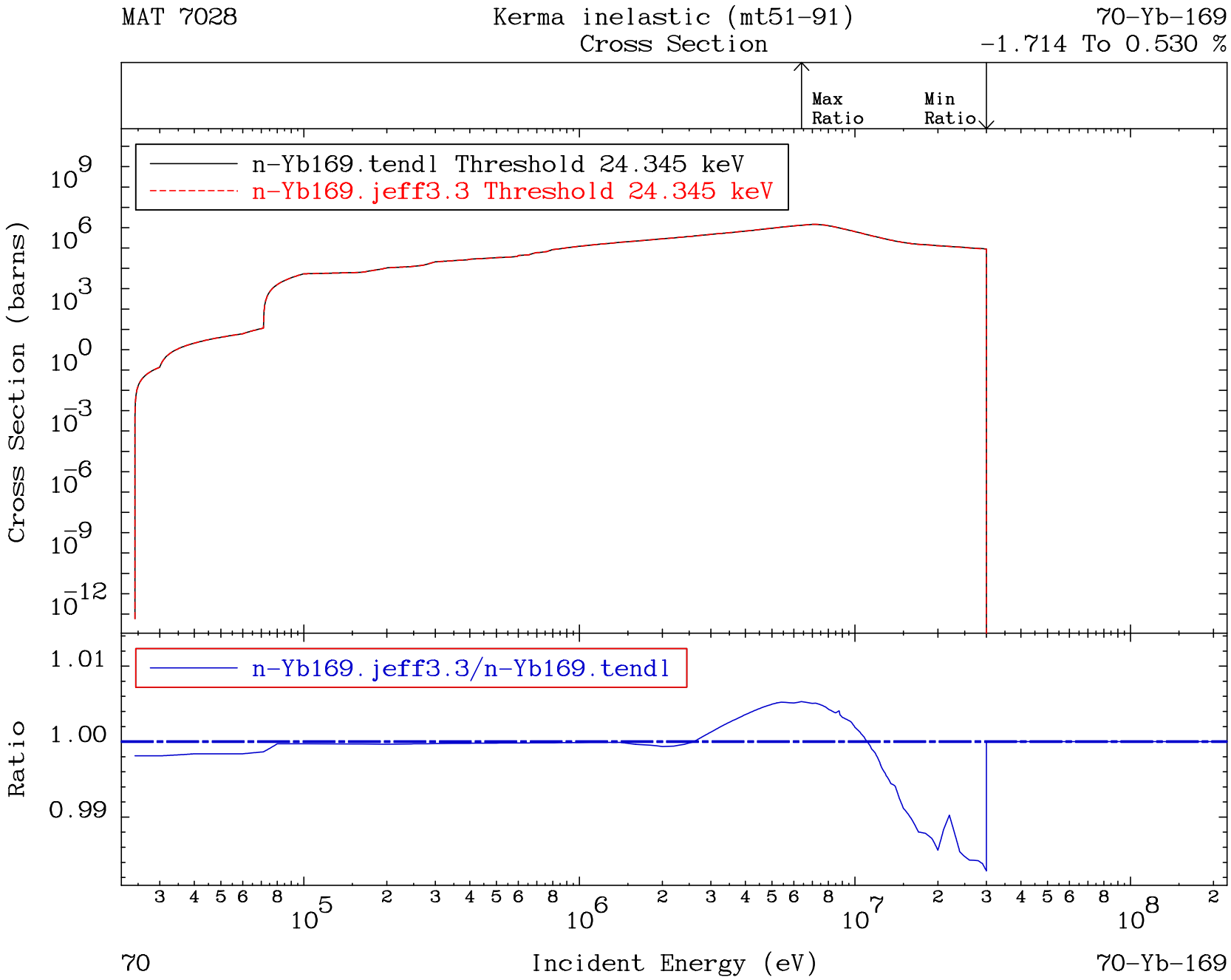

MAT 7028
He-3 Production
Cross Section
70-Yb-169
0.000 To 0.641 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 3.9698 MeV
n-Yb169.jeff3.3 Threshold 3.9698 MeV
Cross Section (milli-barns)
350
300
250
200
150
100
50
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
65
Incident Energy (eV)
70-Yb-169

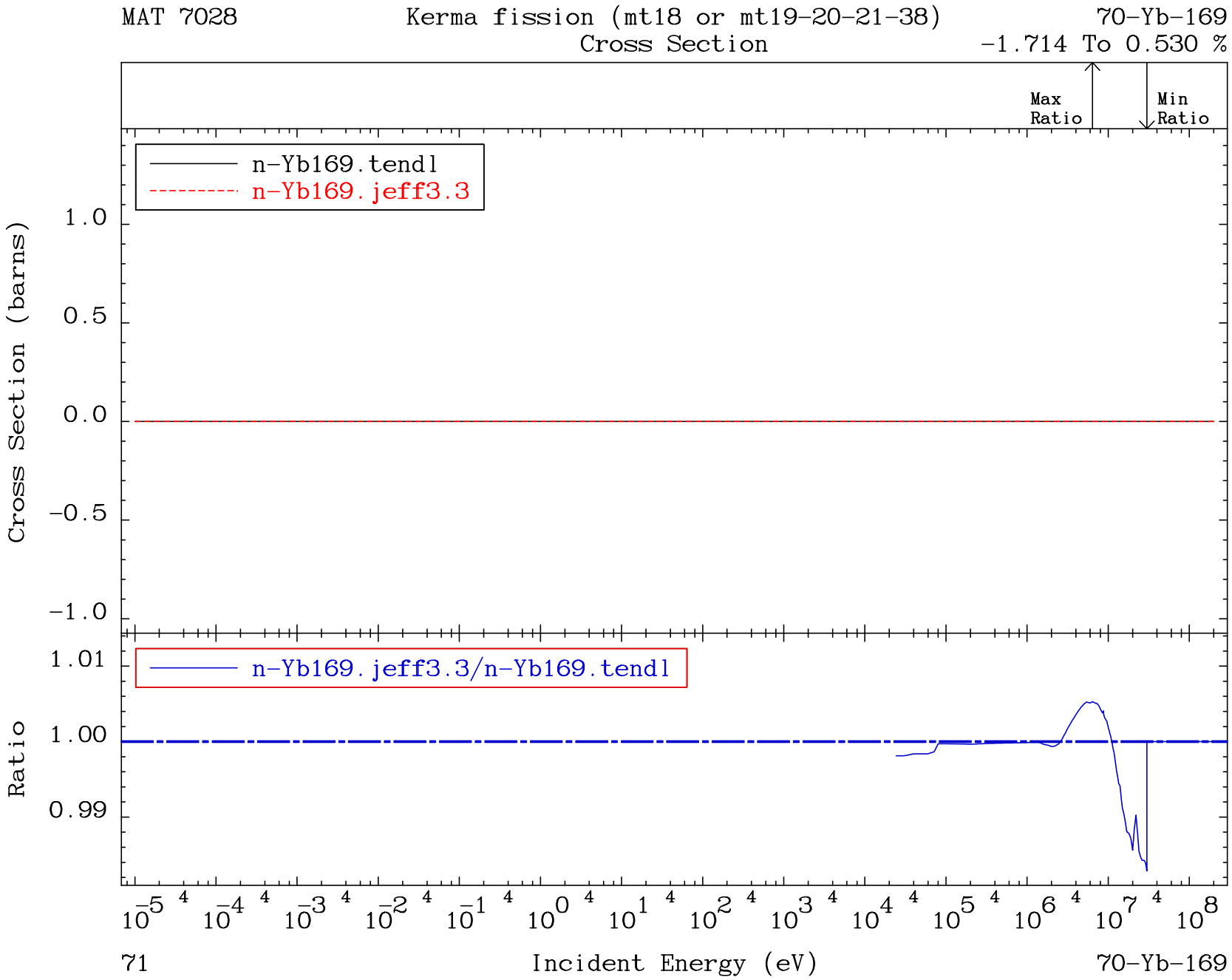

MAT 7028
He-4 Production
Cross Section
70-Yb-169
-17.19 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
66
Incident Energy (eV)
70-Yb-169

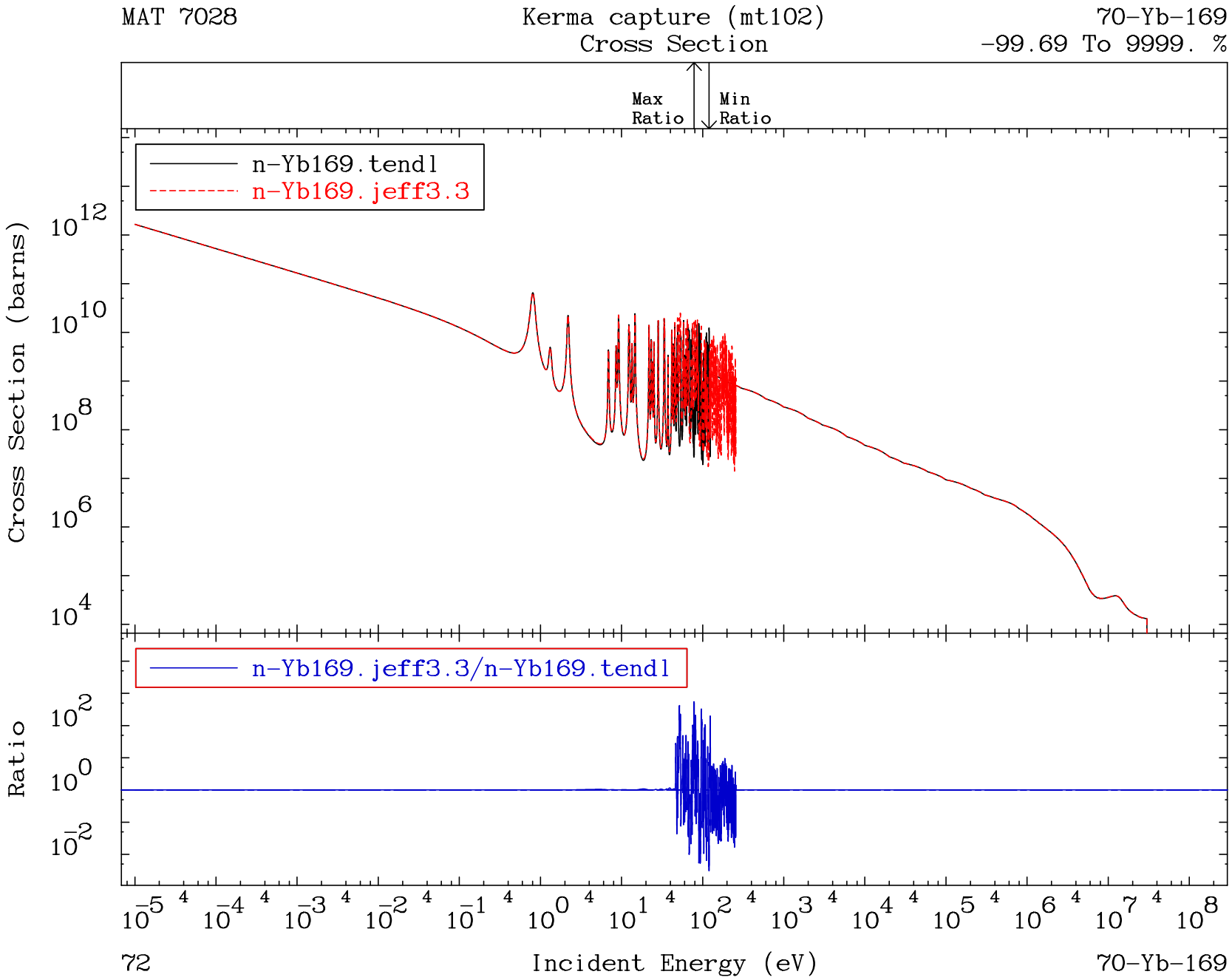

MAT 7028
Kerma total (eV-barns)
Cross Section
70-Yb-169
-99.69 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
67
70-Yb-169

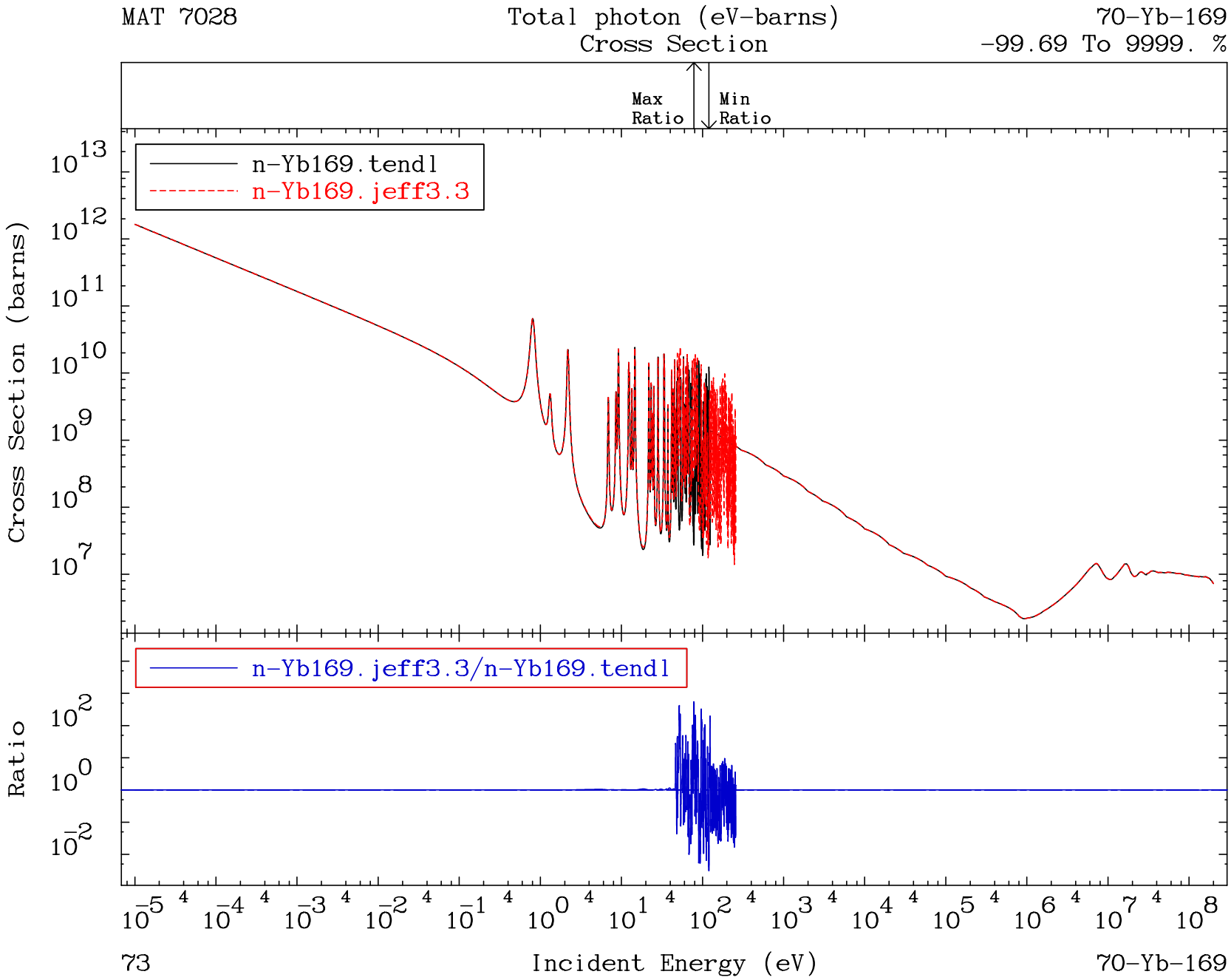

MAT 7028
Kerma elastic
Cross Section
70-Yb-169
-99.94 To 9999. %
Max
Ratio
Min
Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
68
70-Yb-169

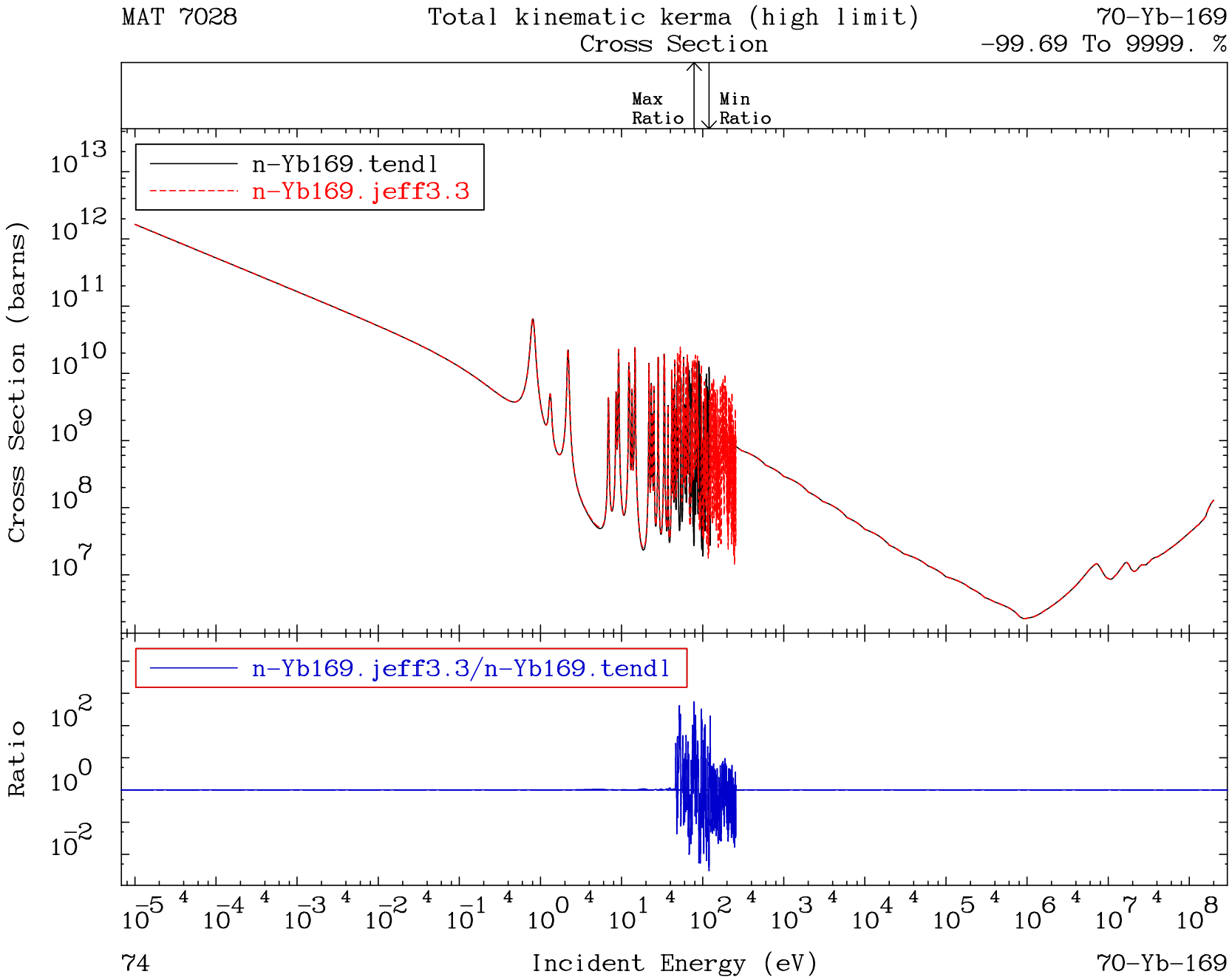

MAT 7028
Kerma non-elastic (all but mt2)
Cross Section
70-Yb-169
-99.69 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
69
70-Yb-169

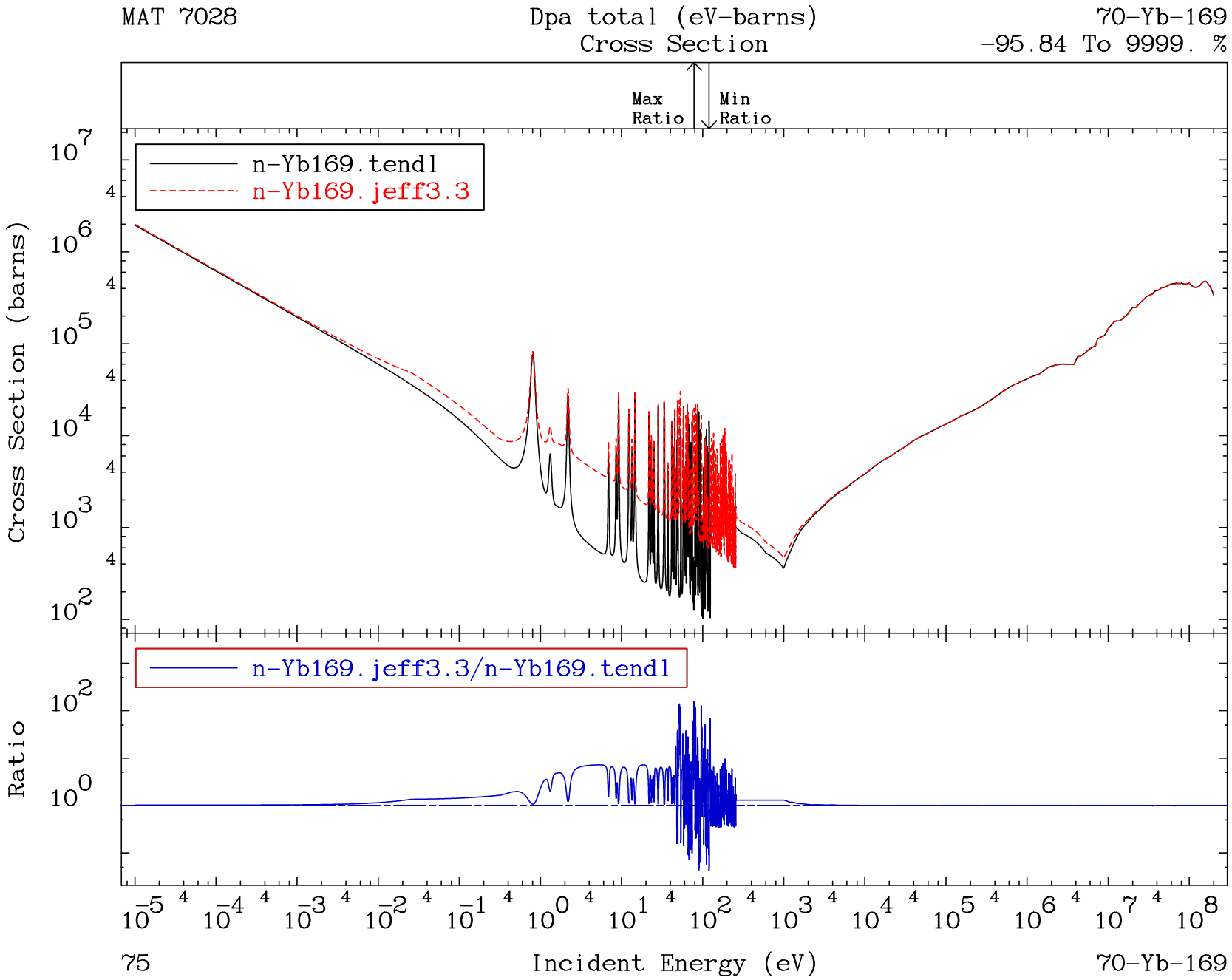

MAT 7028
Kerma inelastic (mt51-91)
Cross Section
70-Yb-169
-1.714 To 0.530 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 24.345 keV
n-Yb169.jeff3.3 Threshold 24.345 keV
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
70
70-Yb-169

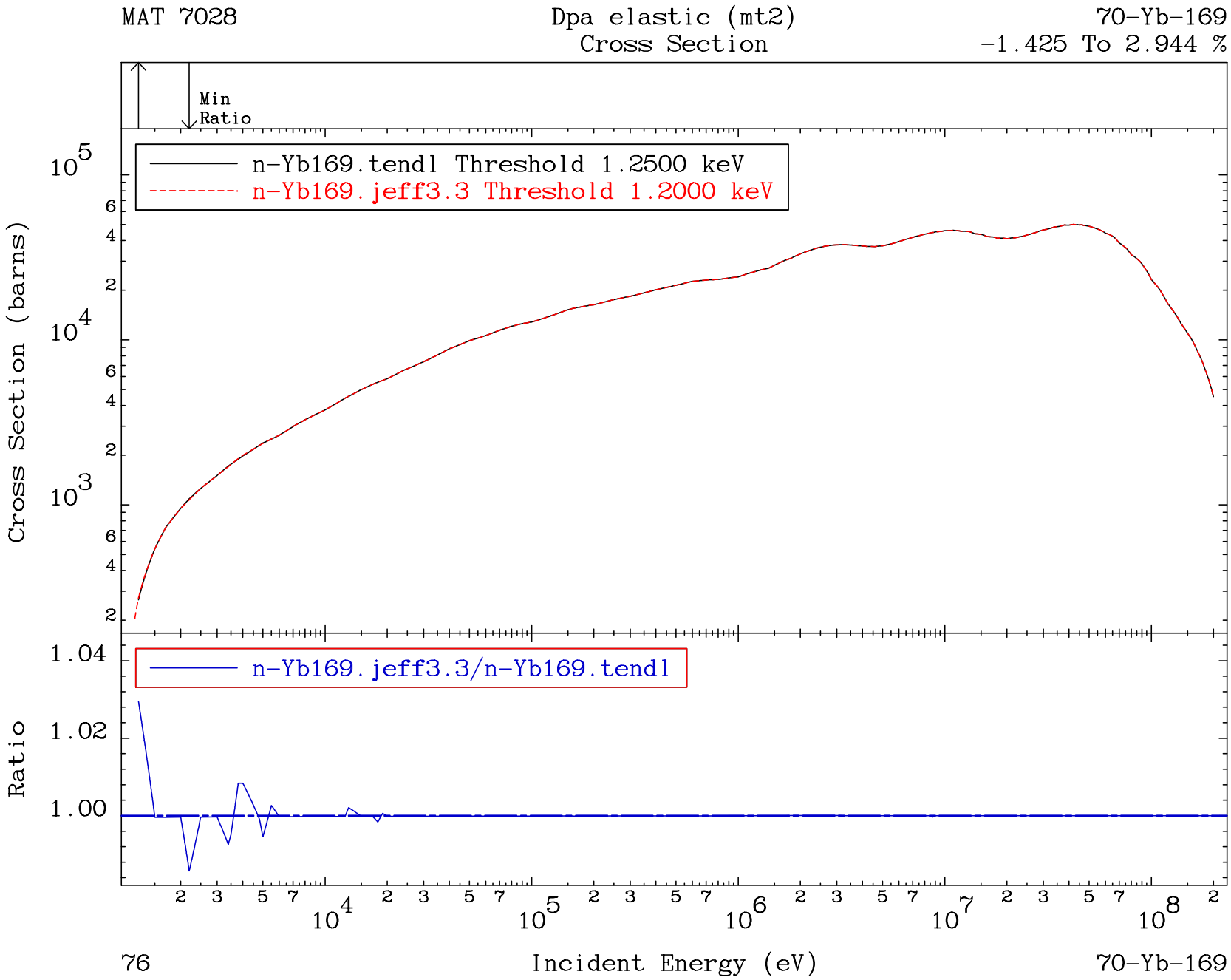

MAT 7028
Kerma fission (mt18 or mt19-20-21-38)
Cross Section
70-Yb-169
-1.714 To 0.530 %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
1.0
0.5
0.0
-0.5
-1.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
0.99
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
71
Incident Energy (eV)
70-Yb-169

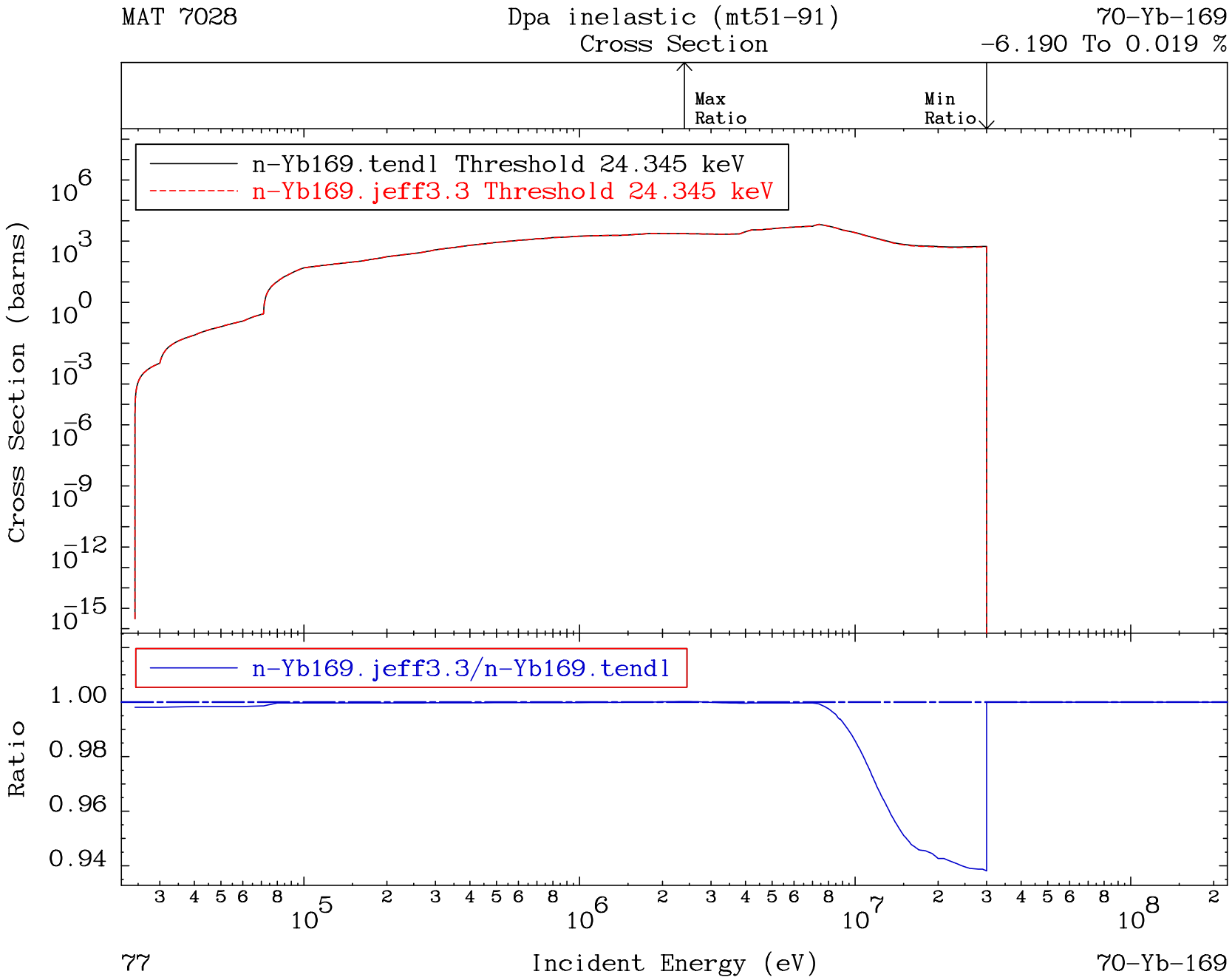

MAT 7028
Kerma capture (mt102)
Cross Section
70-Yb-169
-99.69 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
72
70-Yb-169

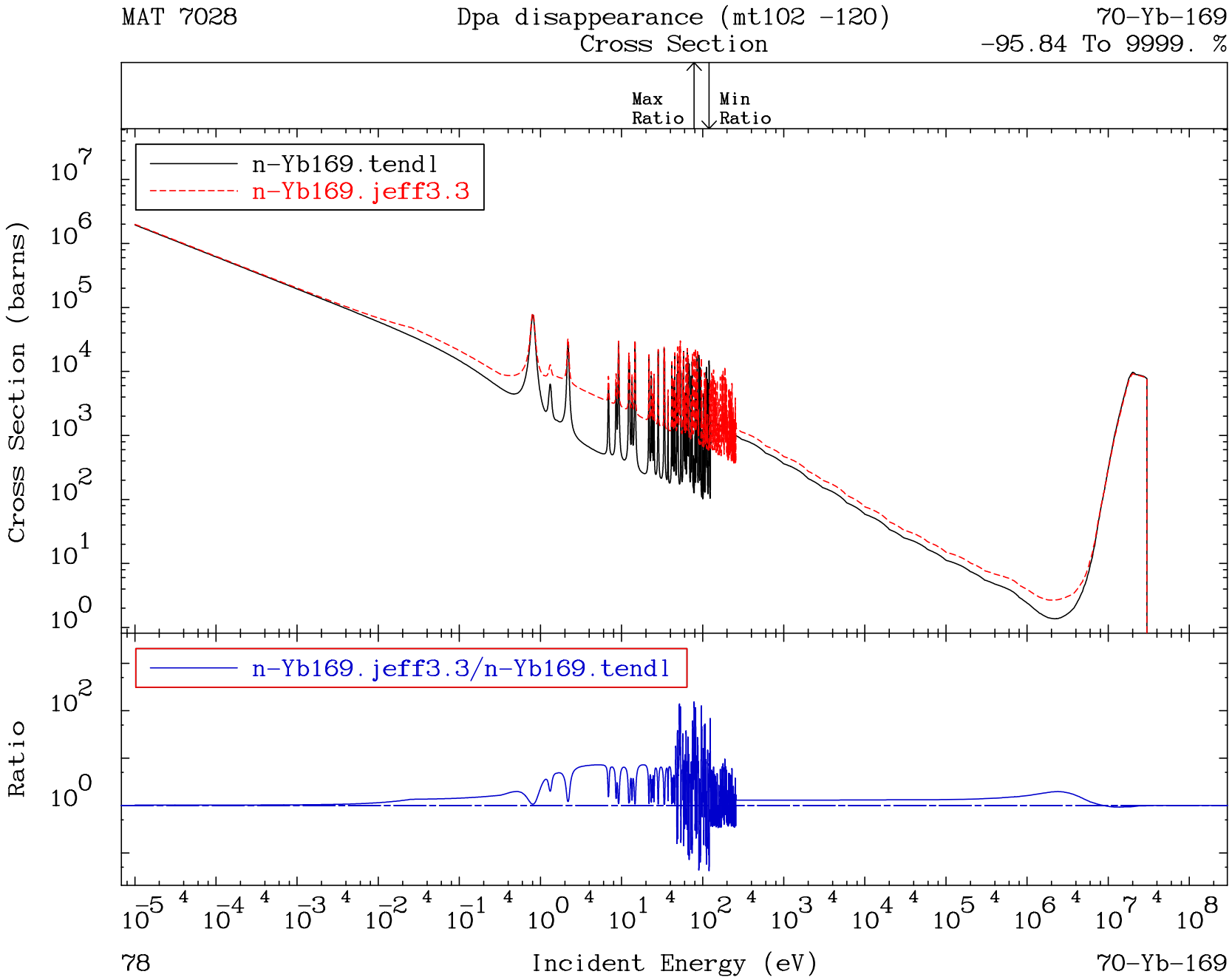

MAT 7028
Total photon (eV-barns)
Cross Section
70-Yb-169
-99.69 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
73
70-Yb-169

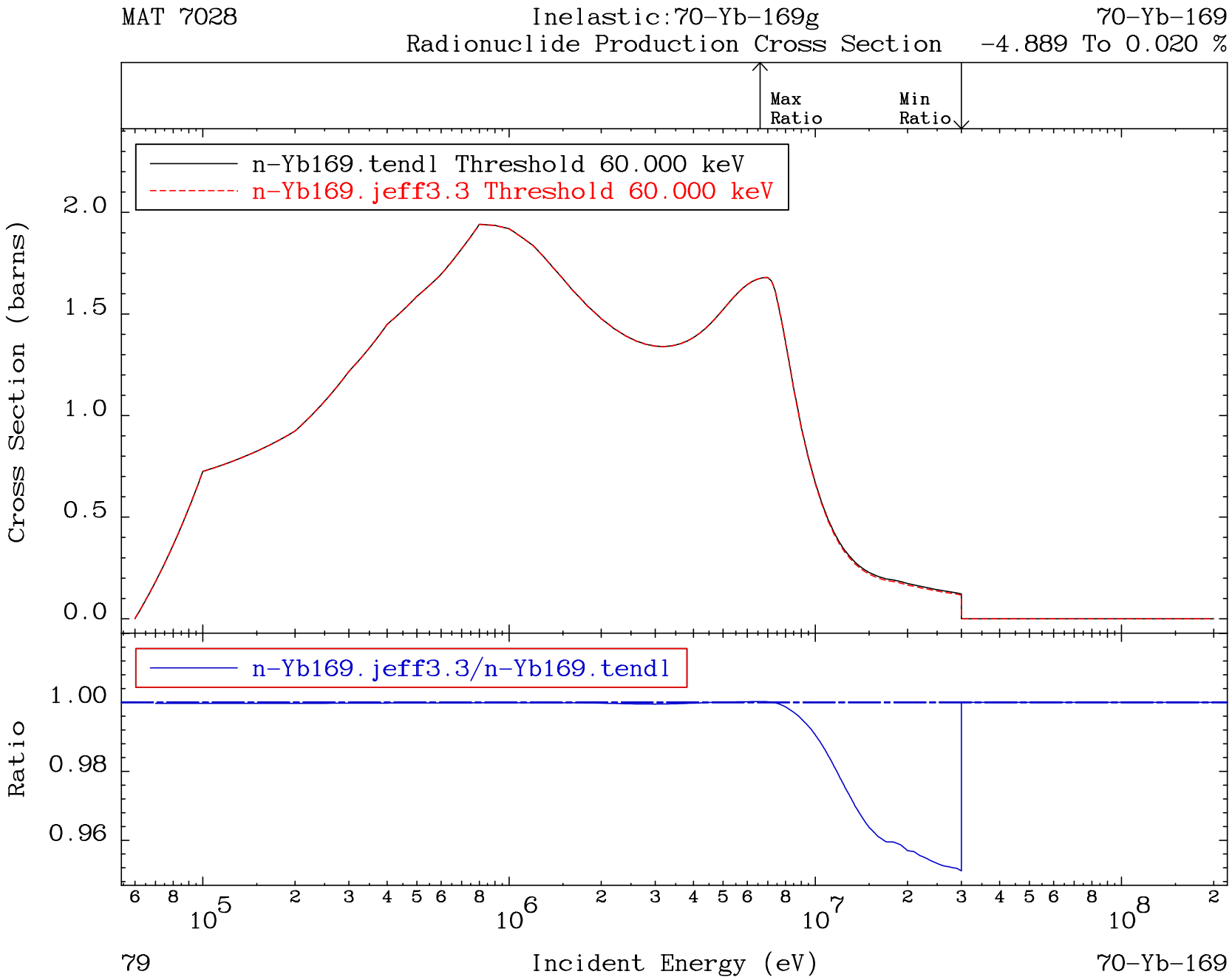

MAT 7028
Total kinematic kerma (high limit)
Cross Section
70-Yb-169
-99.69 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
74
70-Yb-169

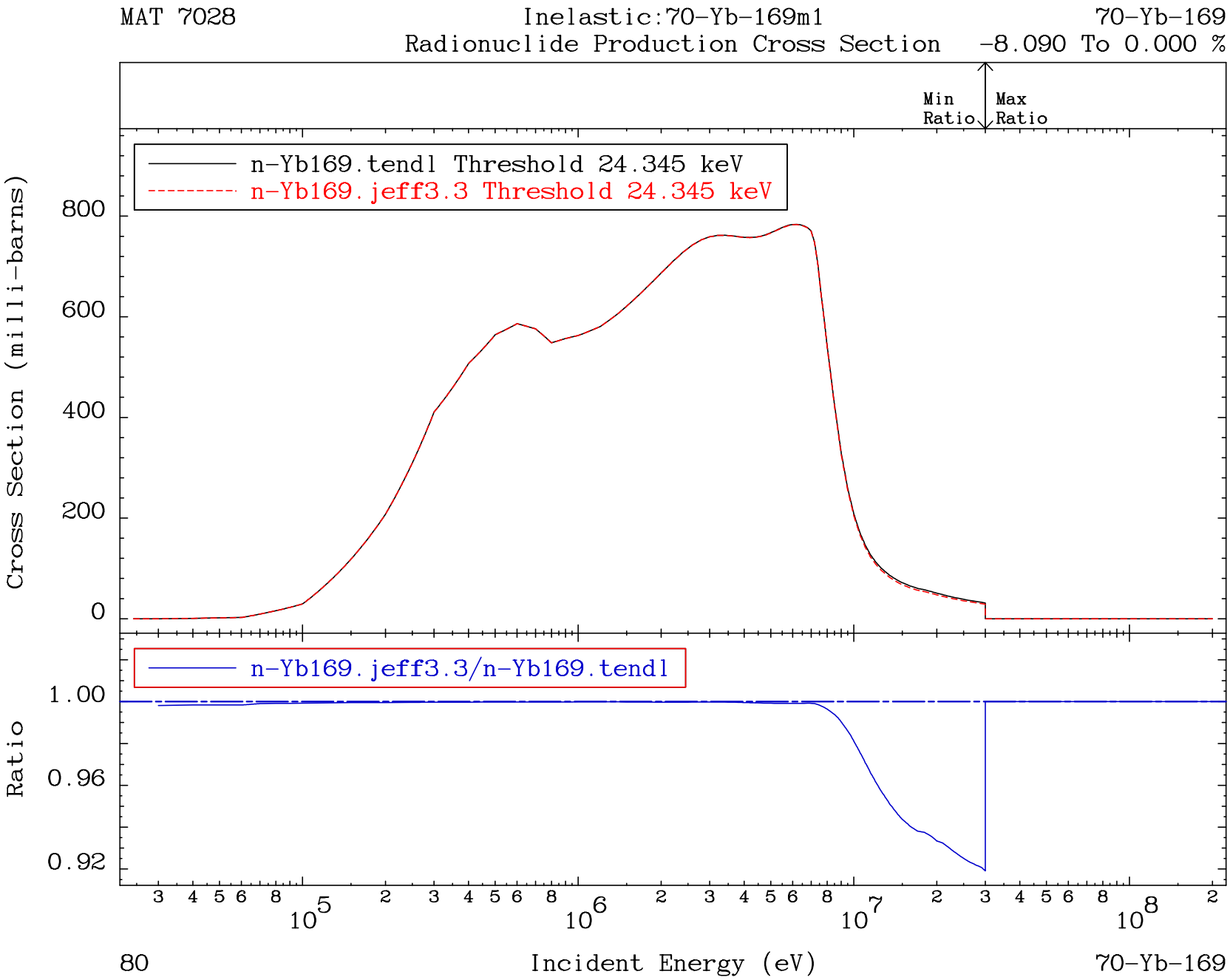

MAT 7028
Dpa total (eV-barns)
Cross Section
70-Yb-169
-95.84 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
75
70-Yb-169

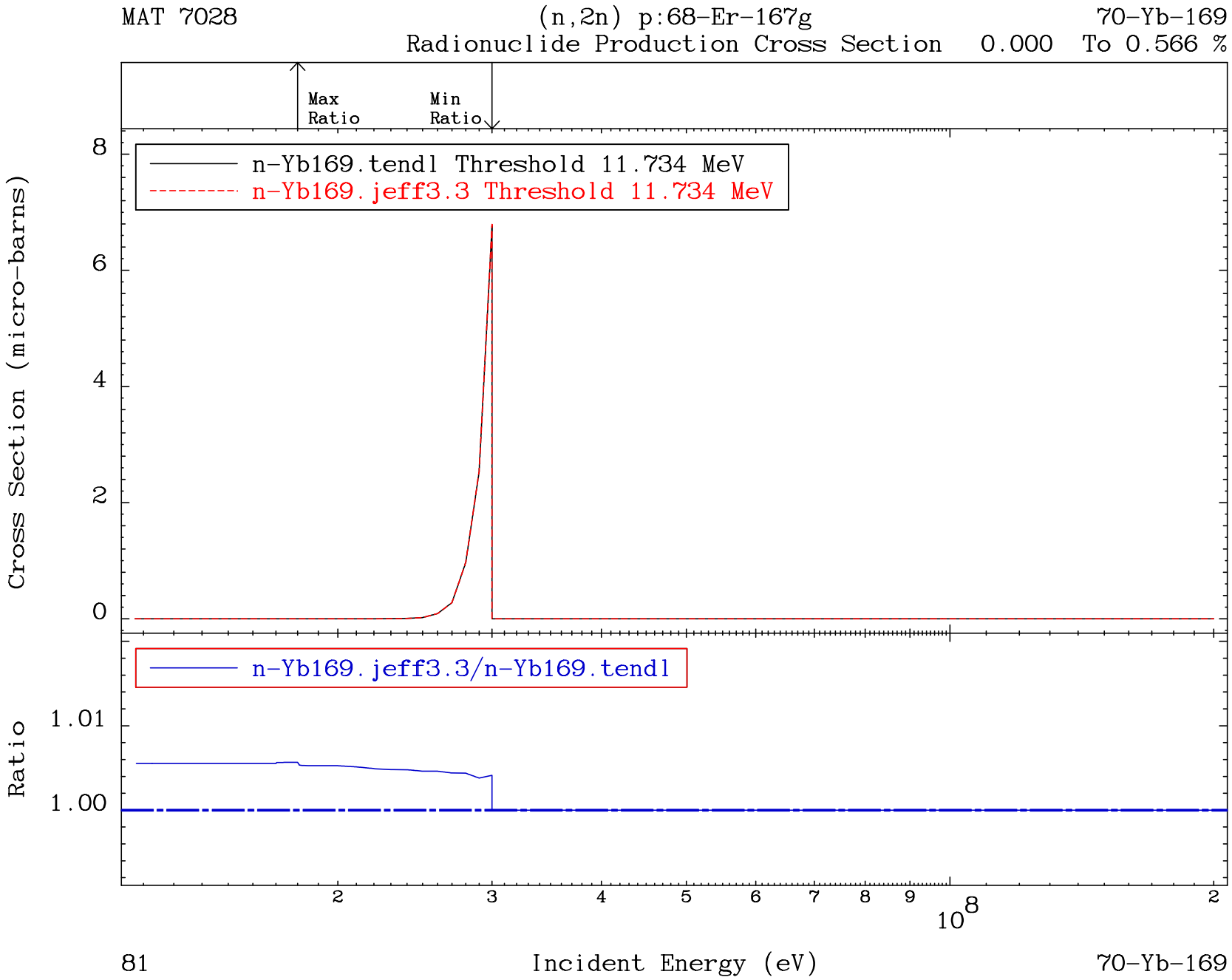

MAT 7028
Dpa elastic (mt2)
Cross Section
70-Yb-169
-1.425 To 2.944 %
Min
Ratio
n-Yb169.tendl Threshold 1.2500 keV
n-Yb169.jeff3.3 Threshold 1.2000 keV
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
76
70-Yb-169

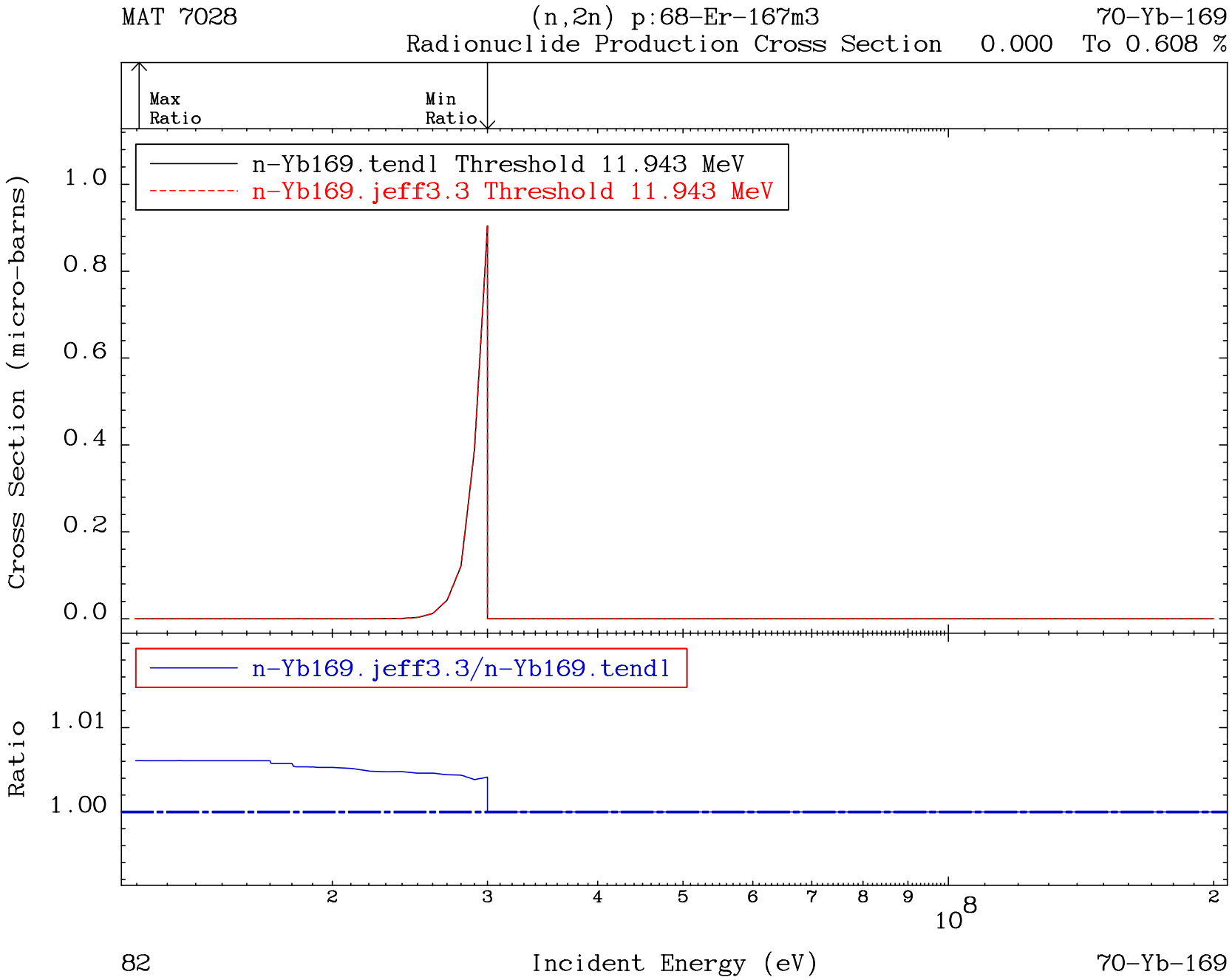

MAT 7028
Dpa inelastic (mt51-91)
Cross Section
70-Yb-169
-6.190 To 0.019 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 24.345 keV
n-Yb169.jeff3.3 Threshold 24.345 keV
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
77
70-Yb-169

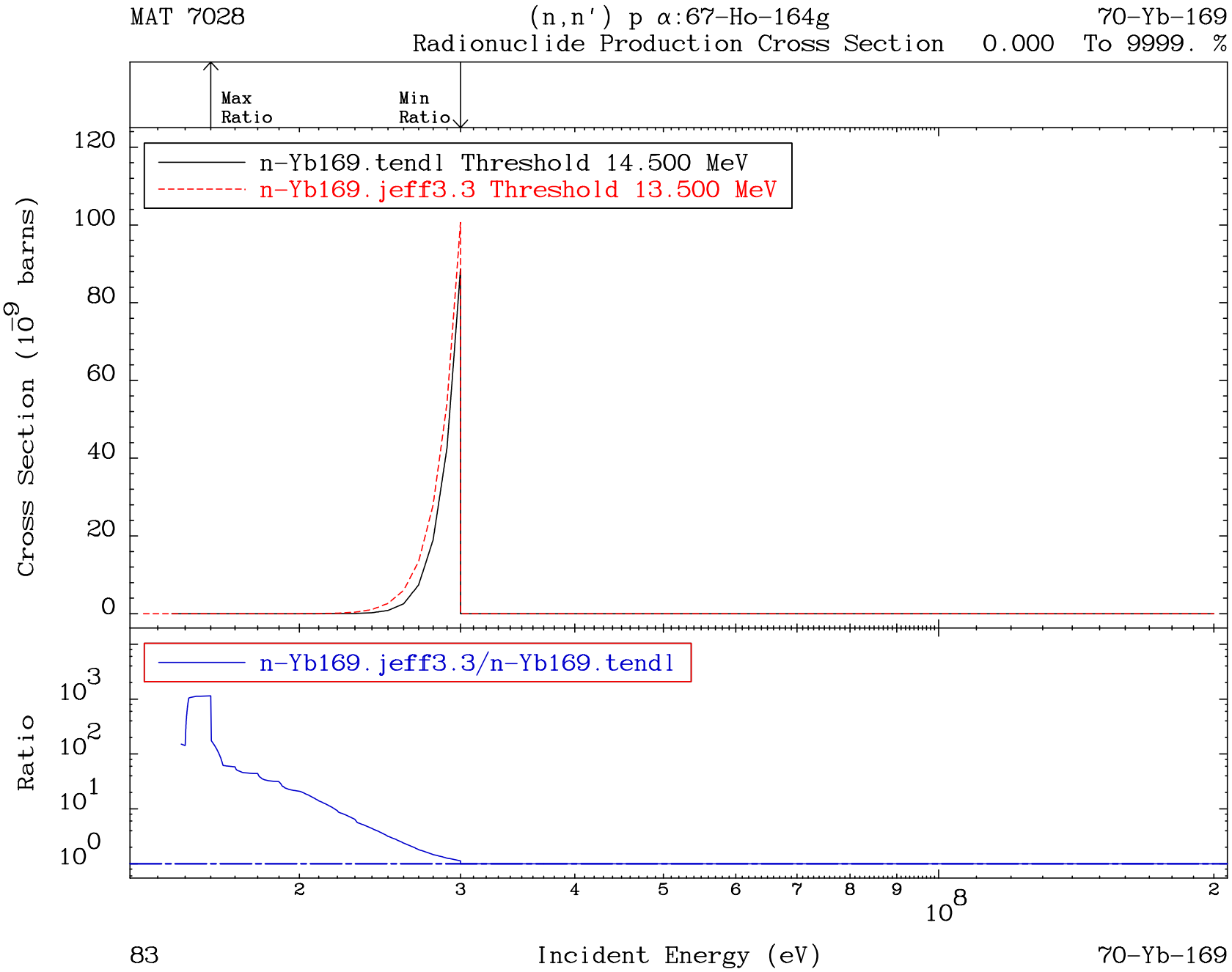

MAT 7028
Dpa disappearance (mt102 -120)
Cross Section
70-Yb-169
-95.84 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl
n-Yb169.jeff3.3
Cross Section (barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
78
70-Yb-169

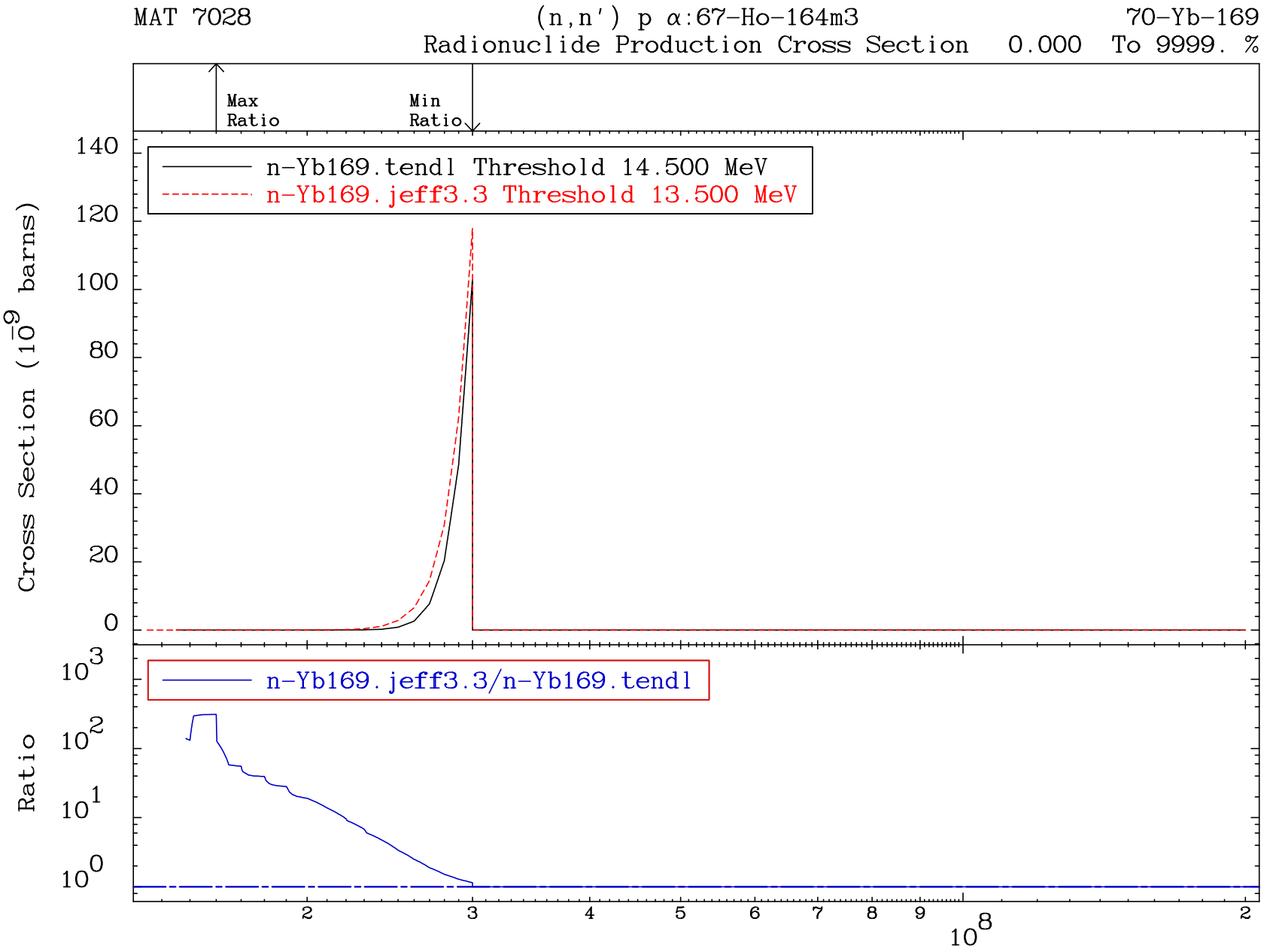

MAT 7028
Inelastic:70-Yb-169g
70-Yb-169
Radionuclide Production Cross Section
-4.889 To 0.020 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 60.000 keV
n-Yb169.jeff3.3 Threshold 60.000 keV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
0.98
0.96
6 8 10^5 2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
79
Incident Energy (eV)
70-Yb-169

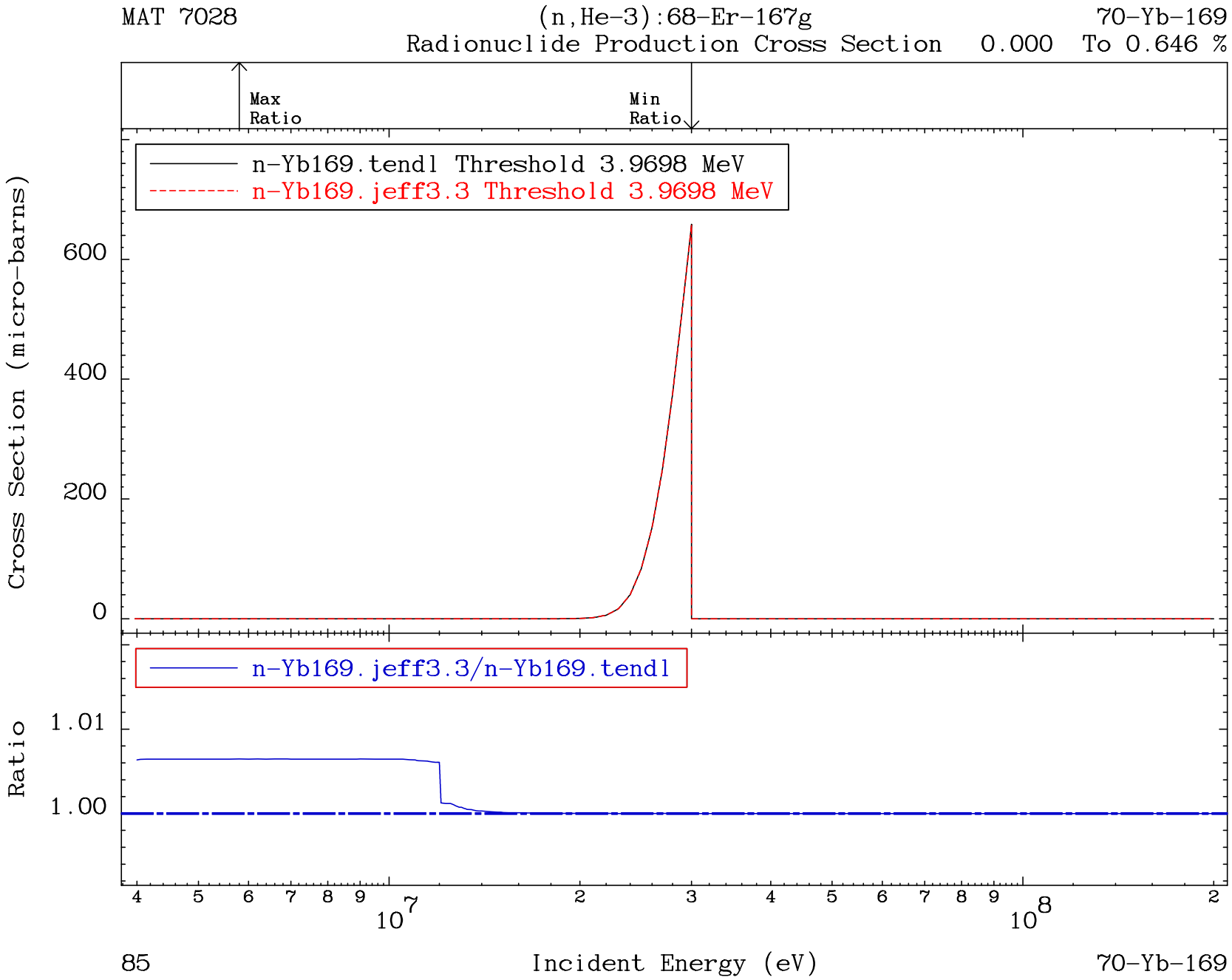

MAT 7028
Inelastic:70-Yb-169m1
70-Yb-169
Radionuclide Production Cross Section
-8.090 To 0.000 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 24.345 keV
n-Yb169.jeff3.3 Threshold 24.345 keV
Cross Section (milli-barns)
800
600
400
200
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
0.96
0.92
3 4 5 6 8 10^5 2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
80
Incident Energy (eV)
70-Yb-169

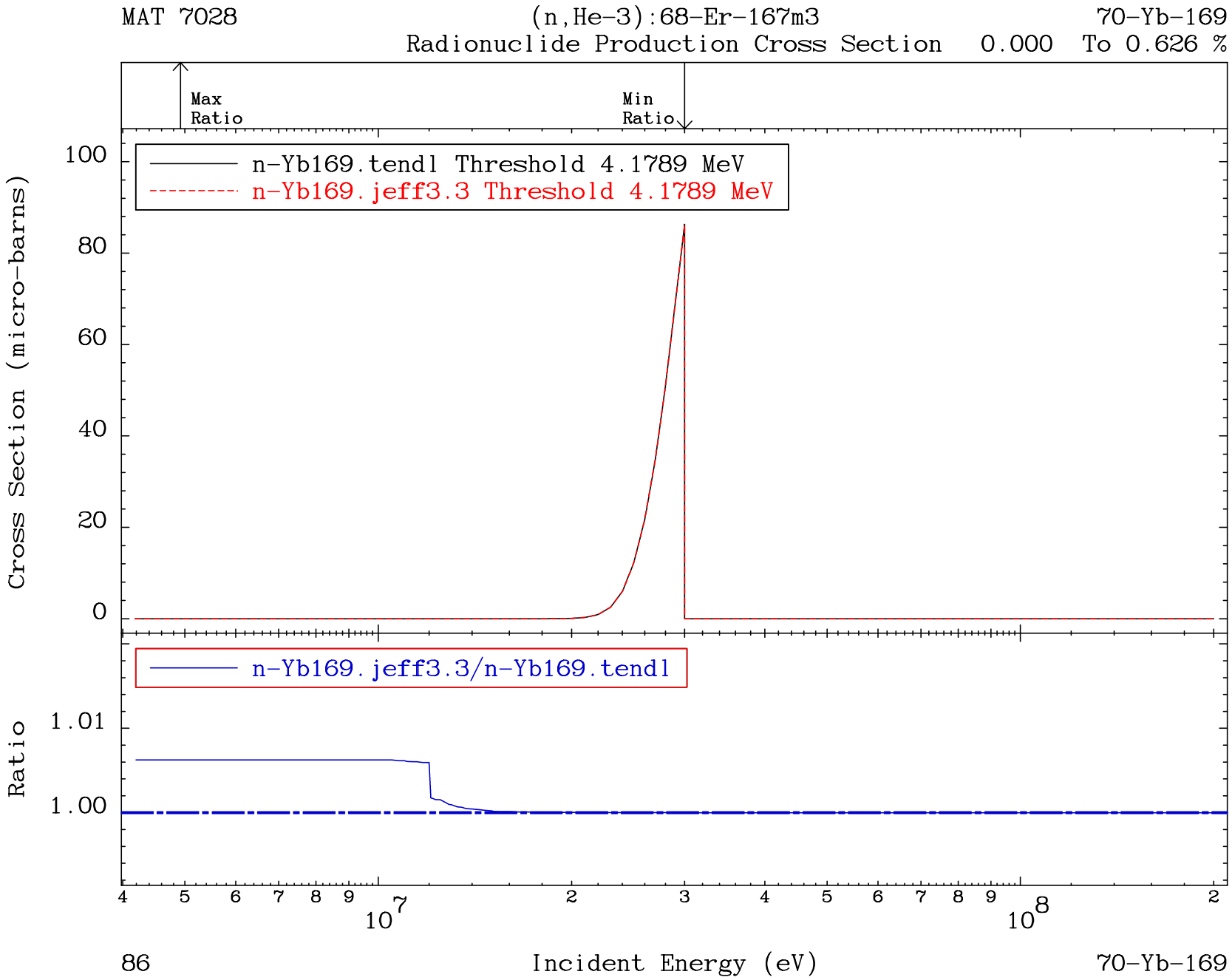

MAT 7028
(n,2n) p:68-Er-167g
70-Yb-169
Radionuclide Production Cross Section 0.000 To 0.566 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 11.734 MeV
n-Yb169.jeff3.3 Threshold 11.734 MeV
Cross Section (micro-barns)
0
2
4
6
8
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.00
1.01
2
3
4
5
6
7
8
9
10^8
2
81
Incident Energy (eV)
70-Yb-169

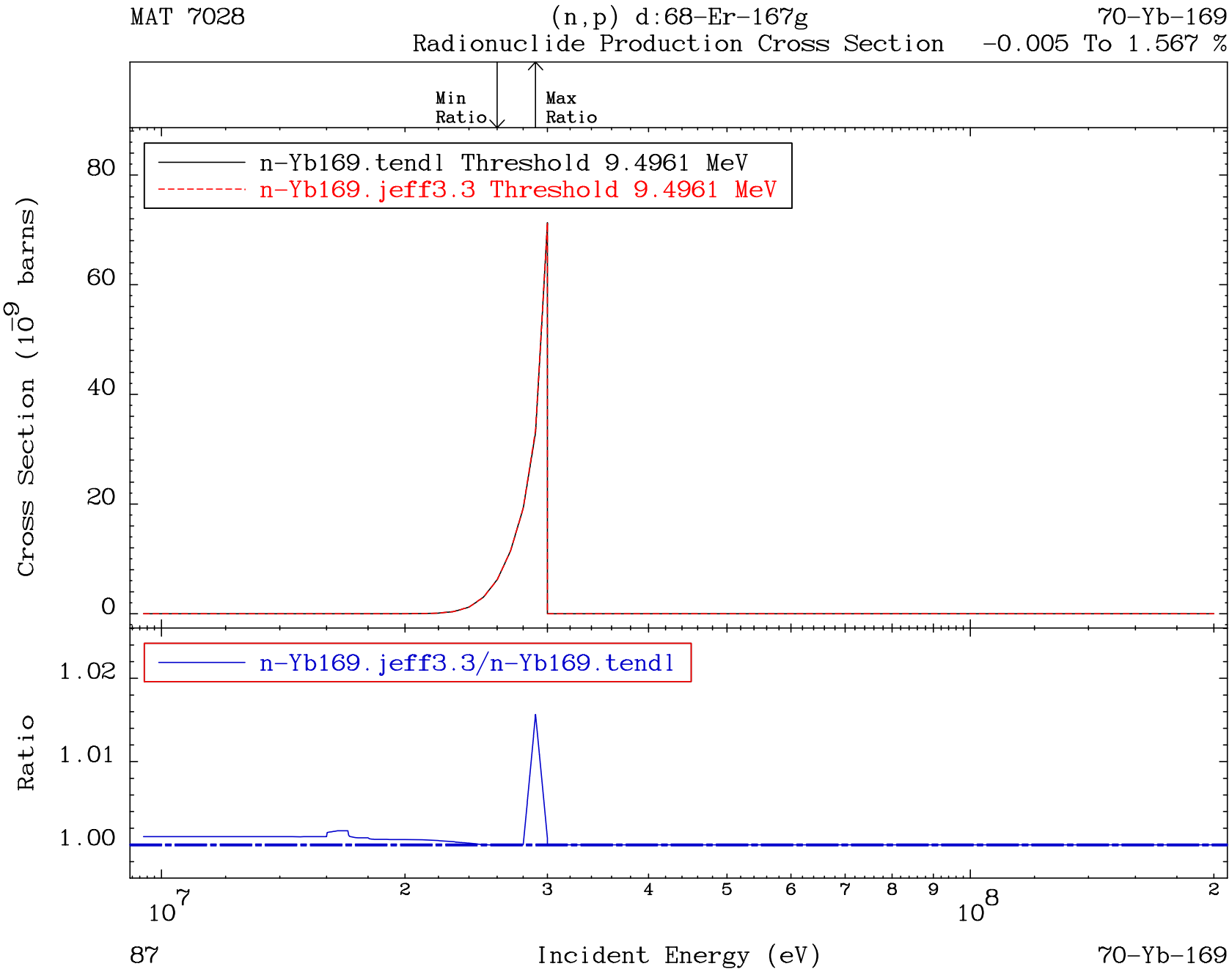

MAT 7028
(n,2n) p:68-Er-167m3
70-Yb-169
Radionuclide Production Cross Section 0.000 To 0.608 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 11.943 MeV
n-Yb169.jeff3.3 Threshold 11.943 MeV
Cross Section (micro-barns)
1.0
0.8
0.6
0.4
0.2
0.0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
9
10^8
2
82
Incident Energy (eV)
70-Yb-169

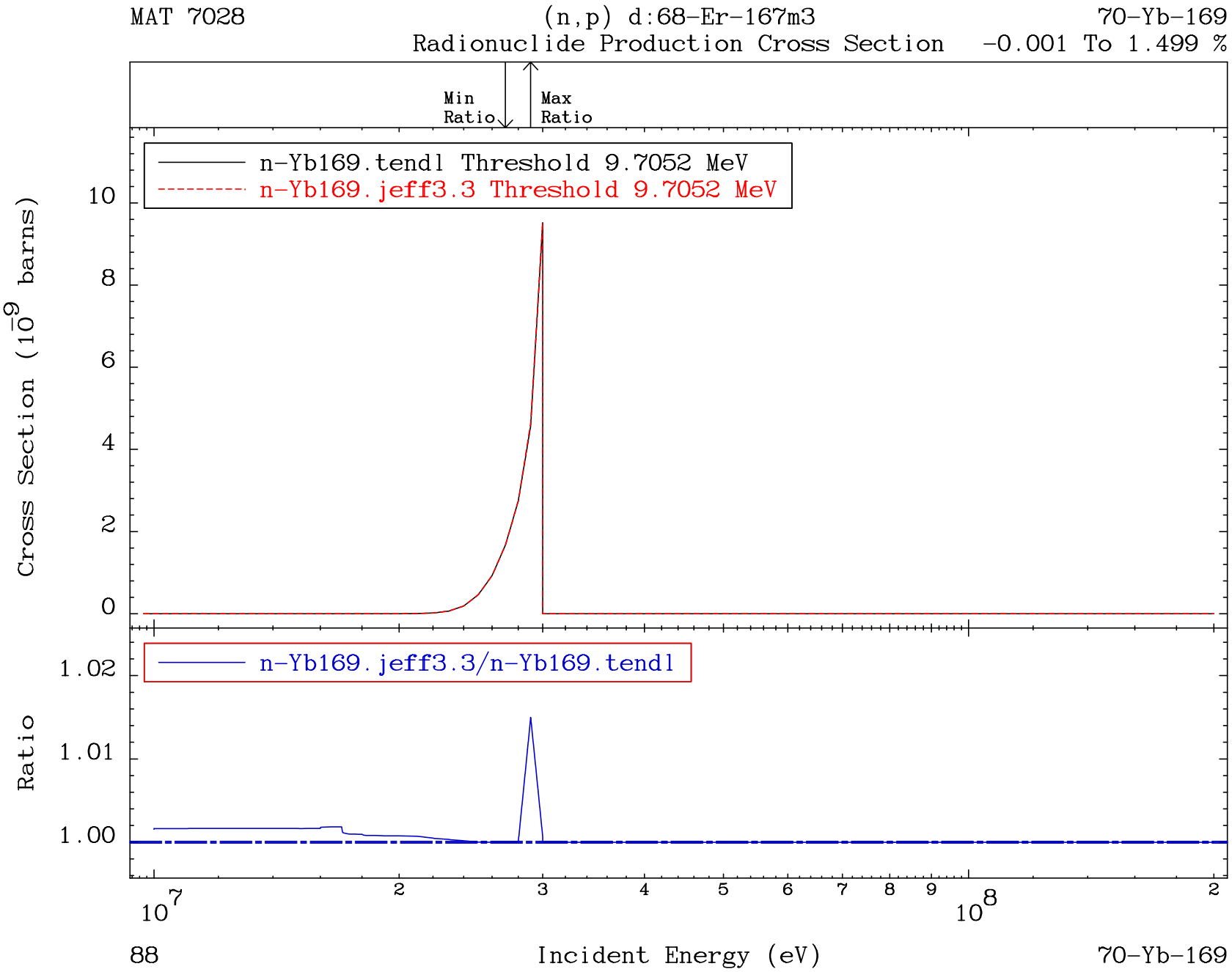

MAT 7028
(n,n') p α:67-Ho-164g
70-Yb-169
Radionuclide Production Cross Section 0.000 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 14.500 MeV
n-Yb169.jeff3.3 Threshold 13.500 MeV
Cross Section ($10^{-9}$ barns)
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
$10^3$
$10^2$
$10^1$
$10^0$
2
3
4
5
6
7
8
9
$10^8$
2
83
Incident Energy (eV)
70-Yb-169

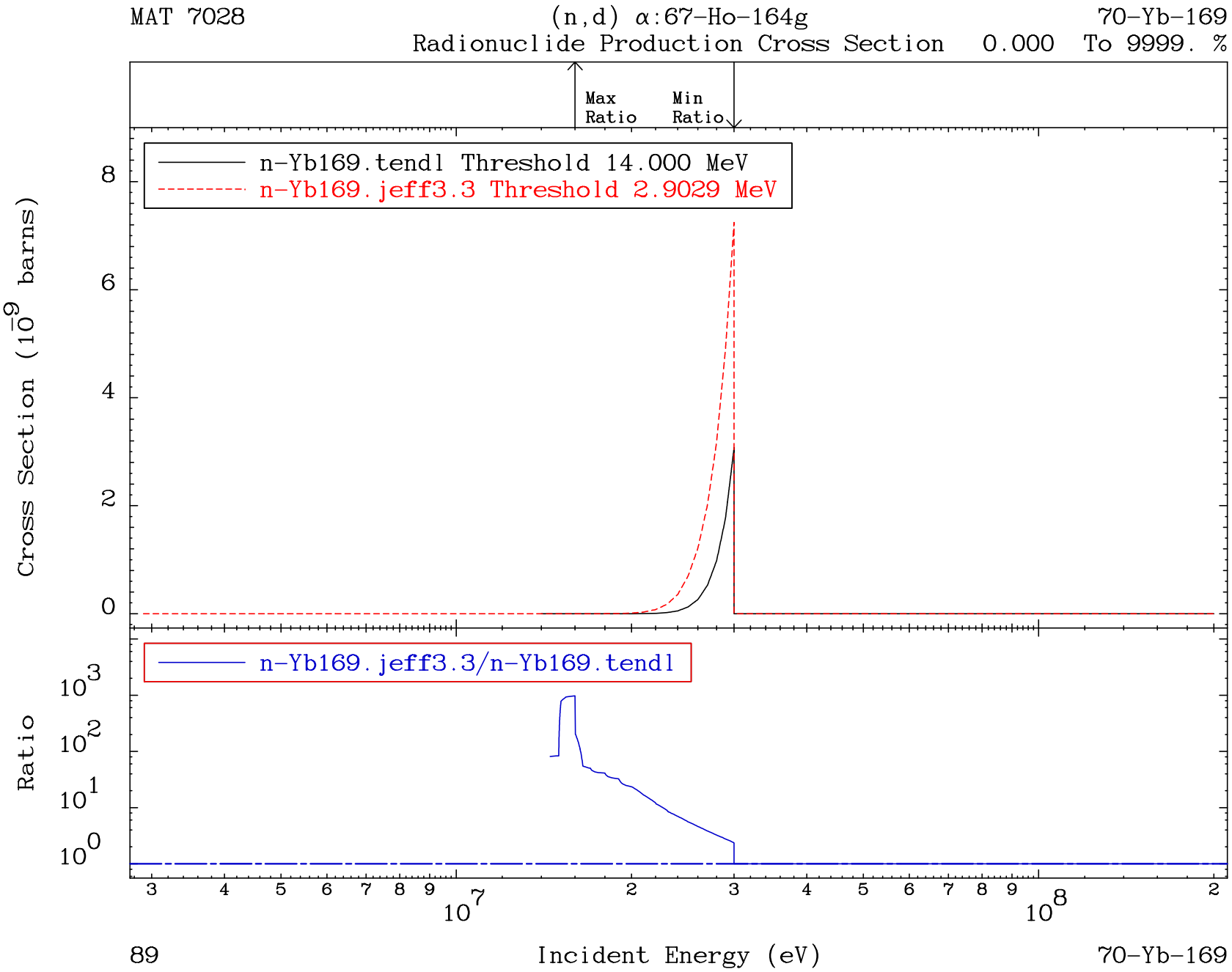

MAT 7028
(n,n') p α:67-Ho-164m3
70-Yb-169
Radionuclide Production Cross Section 0.000 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 14.500 MeV
n-Yb169.jeff3.3 Threshold 13.500 MeV
Cross Section ($10^{-9}$ barns)
140
120
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
$10^3$
$10^2$
$10^1$
$10^0$
2
3
4
5
6
7
8
9
$10^8$
2
84
Incident Energy (eV)
70-Yb-169

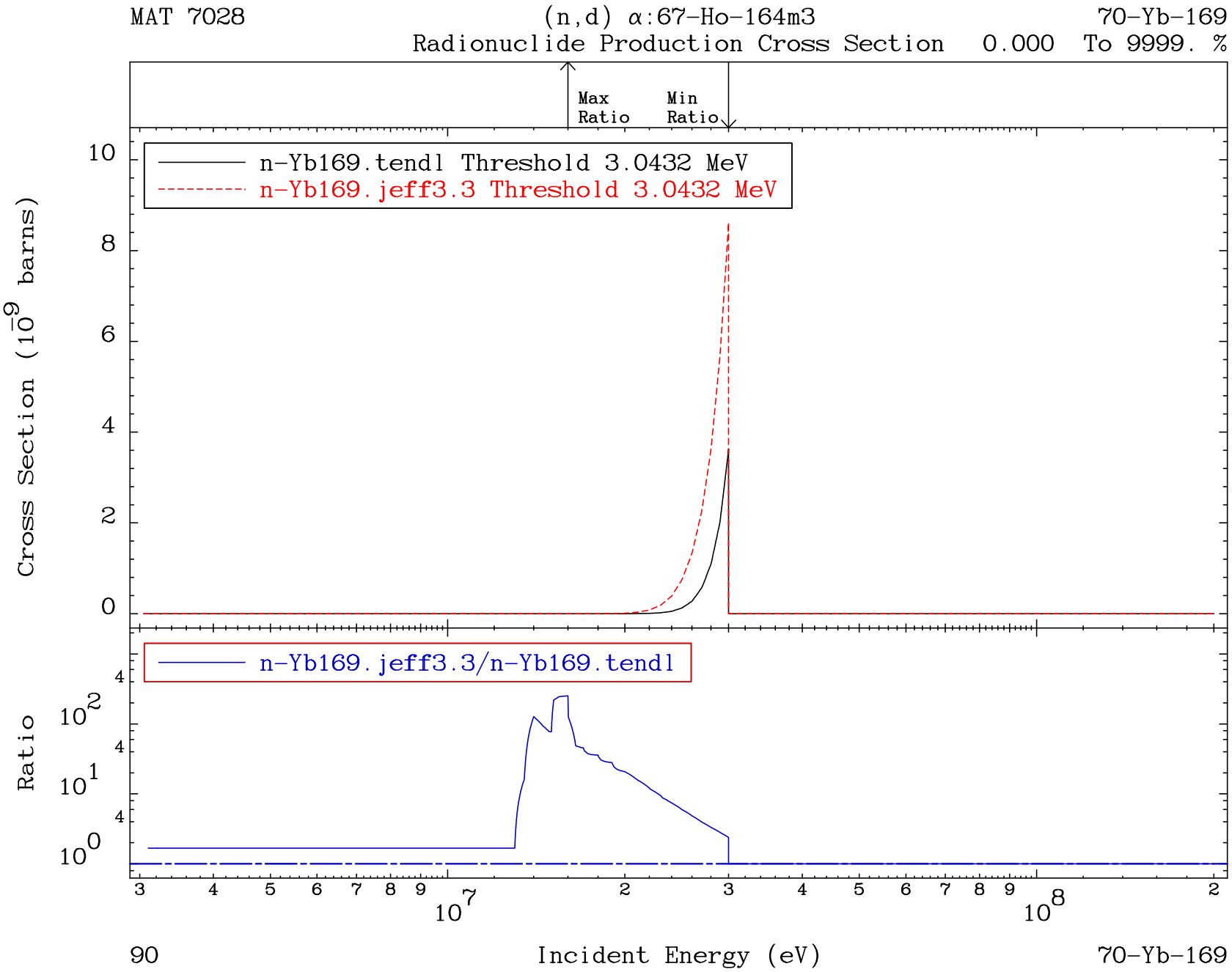

MAT 7028
(n,He-3):68-Er-167g
70-Yb-169
Radionuclide Production Cross Section 0.000 To 0.646 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 3.9698 MeV
n-Yb169.jeff3.3 Threshold 3.9698 MeV
Cross Section (micro-barns)
600
400
200
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
85
Incident Energy (eV)
70-Yb-169


MAT 7028
(n,He-3):68-Er-167m3
70-Yb-169
Radionuclide Production Cross Section 0.000 To 0.626 %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 4.1789 MeV
n-Yb169.jeff3.3 Threshold 4.1789 MeV
Cross Section (micro-barns)
100
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.01
1.00
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
86
Incident Energy (eV)
70-Yb-169


MAT 7028
(n,p) d:68-Er-167g
70-Yb-169
Radionuclide Production Cross Section -0.005 To 1.567 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 9.4961 MeV
n-Yb169.jeff3.3 Threshold 9.4961 MeV
Cross Section ($10^{-9}$ barns)
80
60
40
20
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
$10^{7}$
2
3
4
5
6
7
8
9
$10^{8}$
2
87
Incident Energy (eV)
70-Yb-169


MAT 7028
(n,p) d:68-Er-167m3
70-Yb-169
Radionuclide Production Cross Section -0.001 To 1.499 %
Min Ratio
Max Ratio
n-Yb169.tendl Threshold 9.7052 MeV
n-Yb169.jeff3.3 Threshold 9.7052 MeV
Cross Section ($10^{-9}$ barns)
10
8
6
4
2
0
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
1.02
1.01
1.00
$10^{7}$
2
3
4
5
6
7
8
9
$10^{8}$
2
88
Incident Energy (eV)
70-Yb-169


MAT 7028
(n,d) α:67-Ho-164g
70-Yb-169
Radionuclide Production Cross Section 0.000 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 14.000 MeV
n-Yb169.jeff3.3 Threshold 2.9029 MeV
Cross Section ($10^{-9}$ barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
89
70-Yb-169


MAT 7028
(n,d) α:67-Ho-164m3
70-Yb-169
Radionuclide Production Cross Section 0.000 To 9999. %
Max Ratio
Min Ratio
n-Yb169.tendl Threshold 3.0432 MeV
n-Yb169.jeff3.3 Threshold 3.0432 MeV
Cross Section ($10^{-9}$ barns)
n-Yb169.jeff3.3/n-Yb169.tendl
Ratio
Incident Energy (eV)
90
70-Yb-169