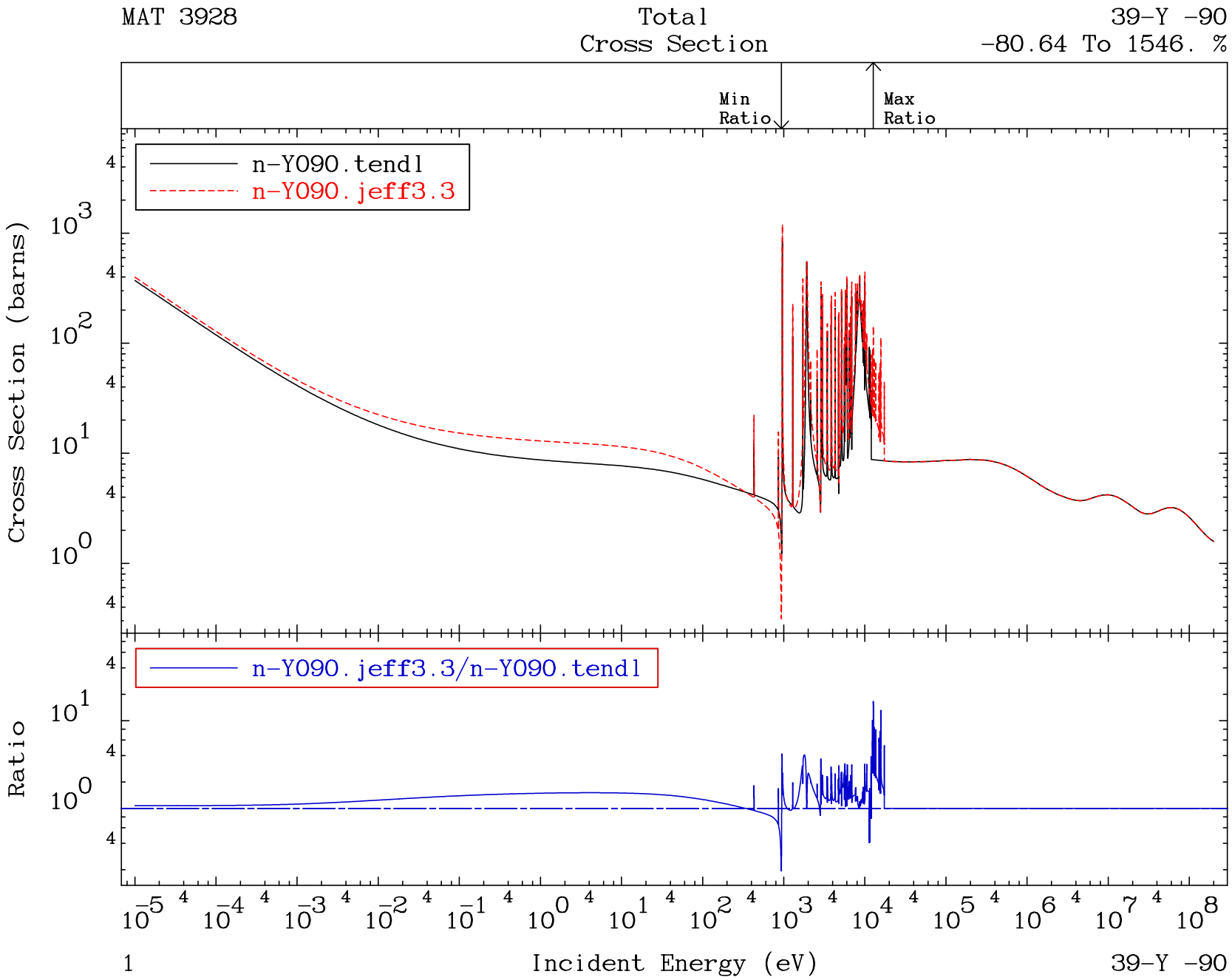
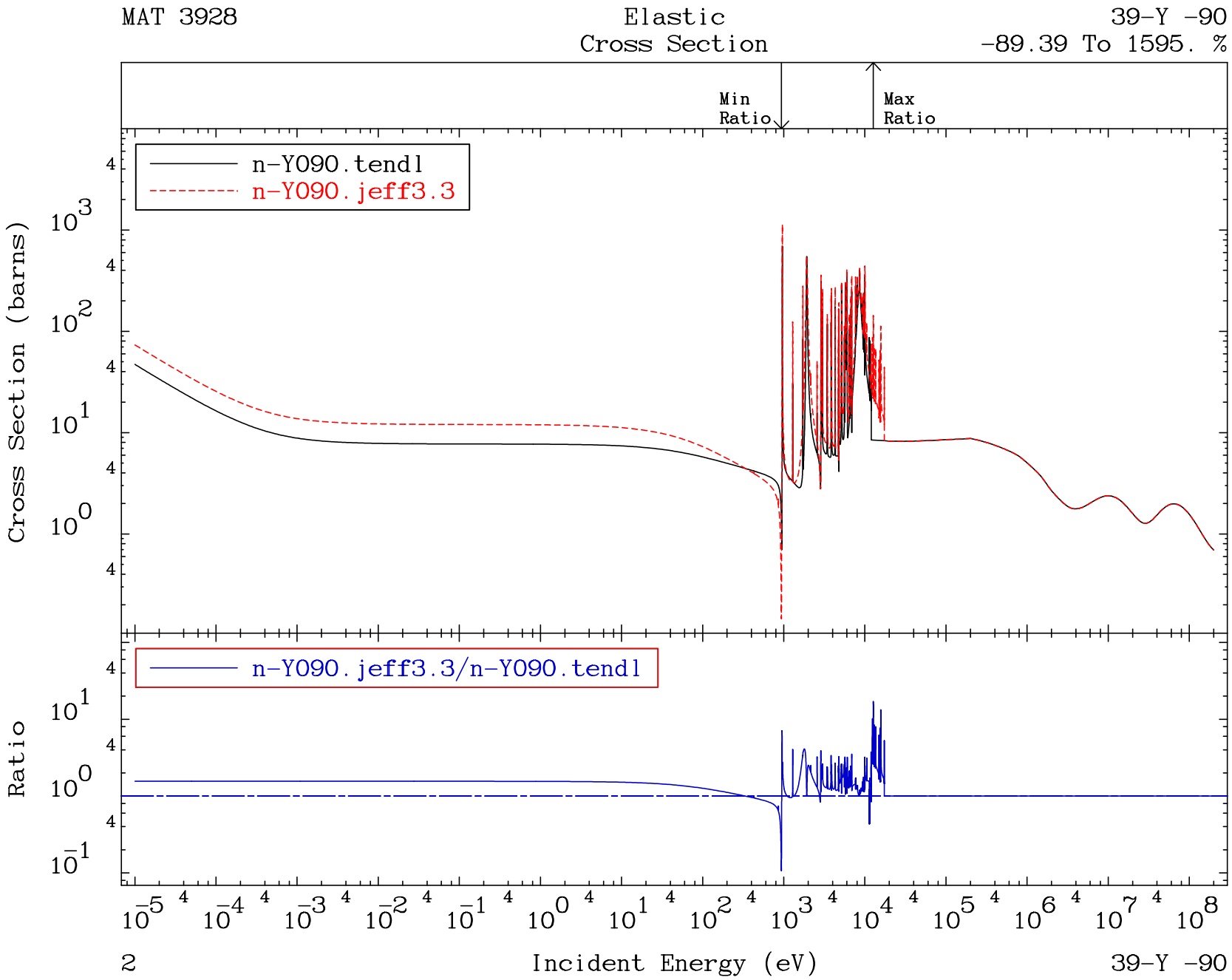
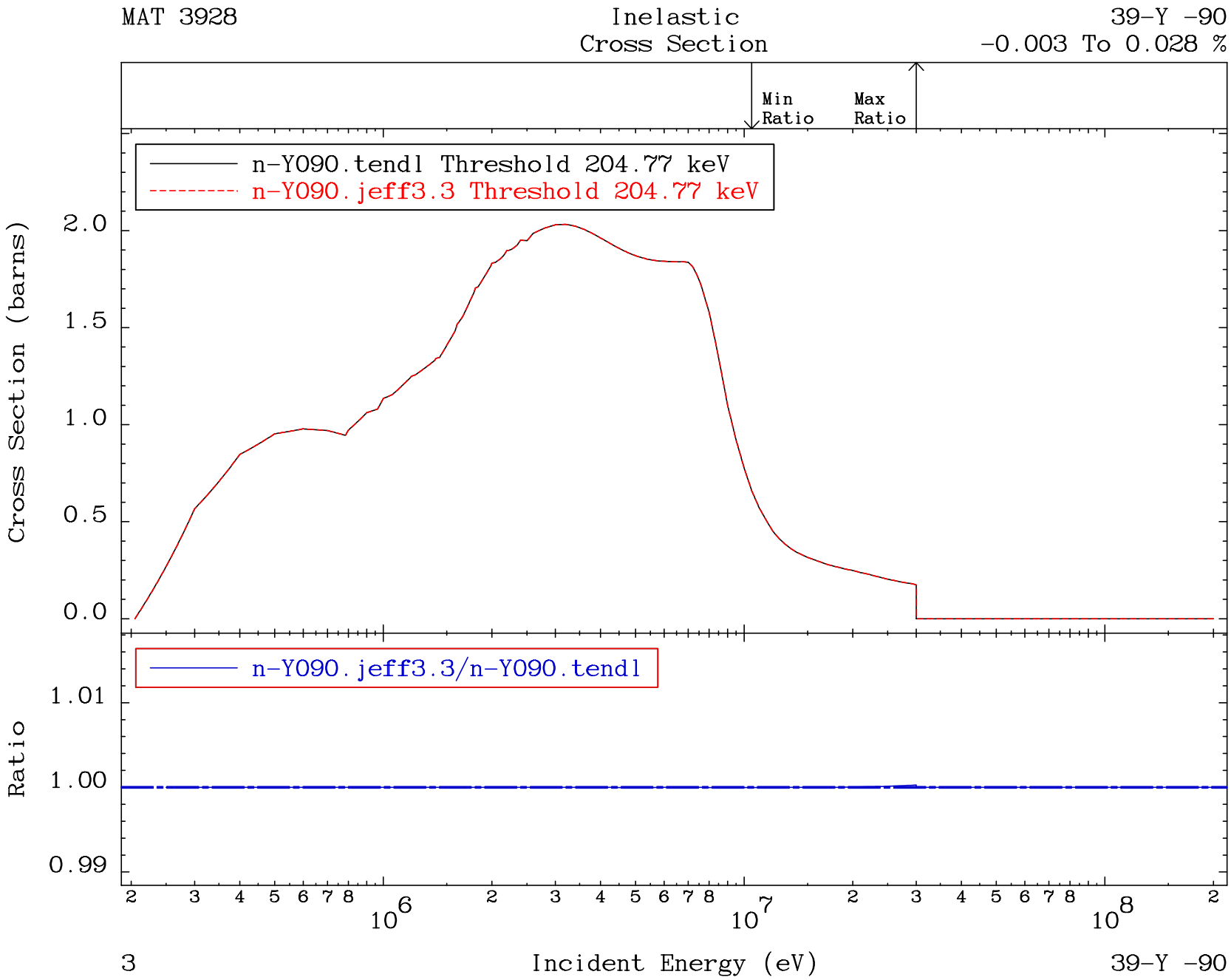
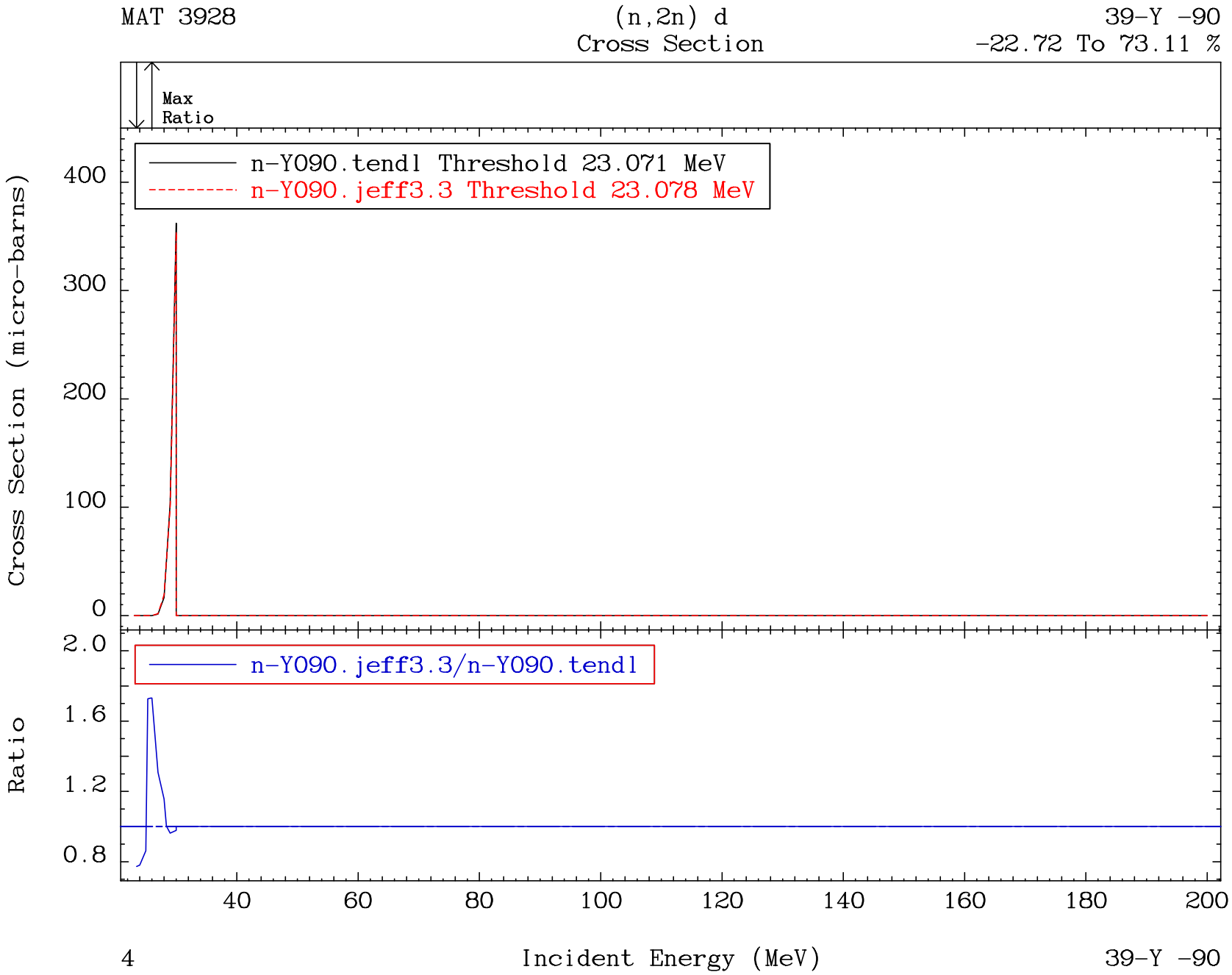
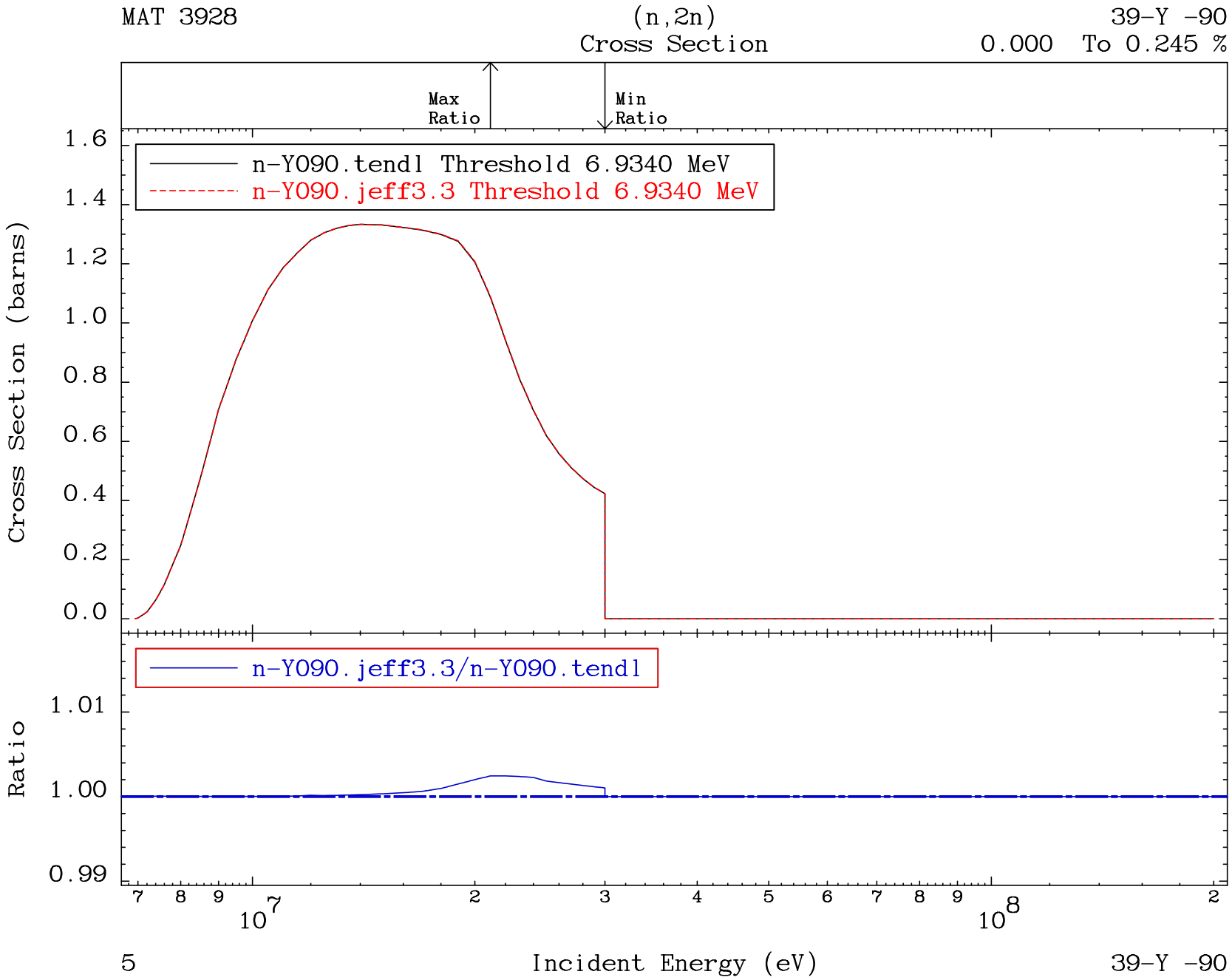
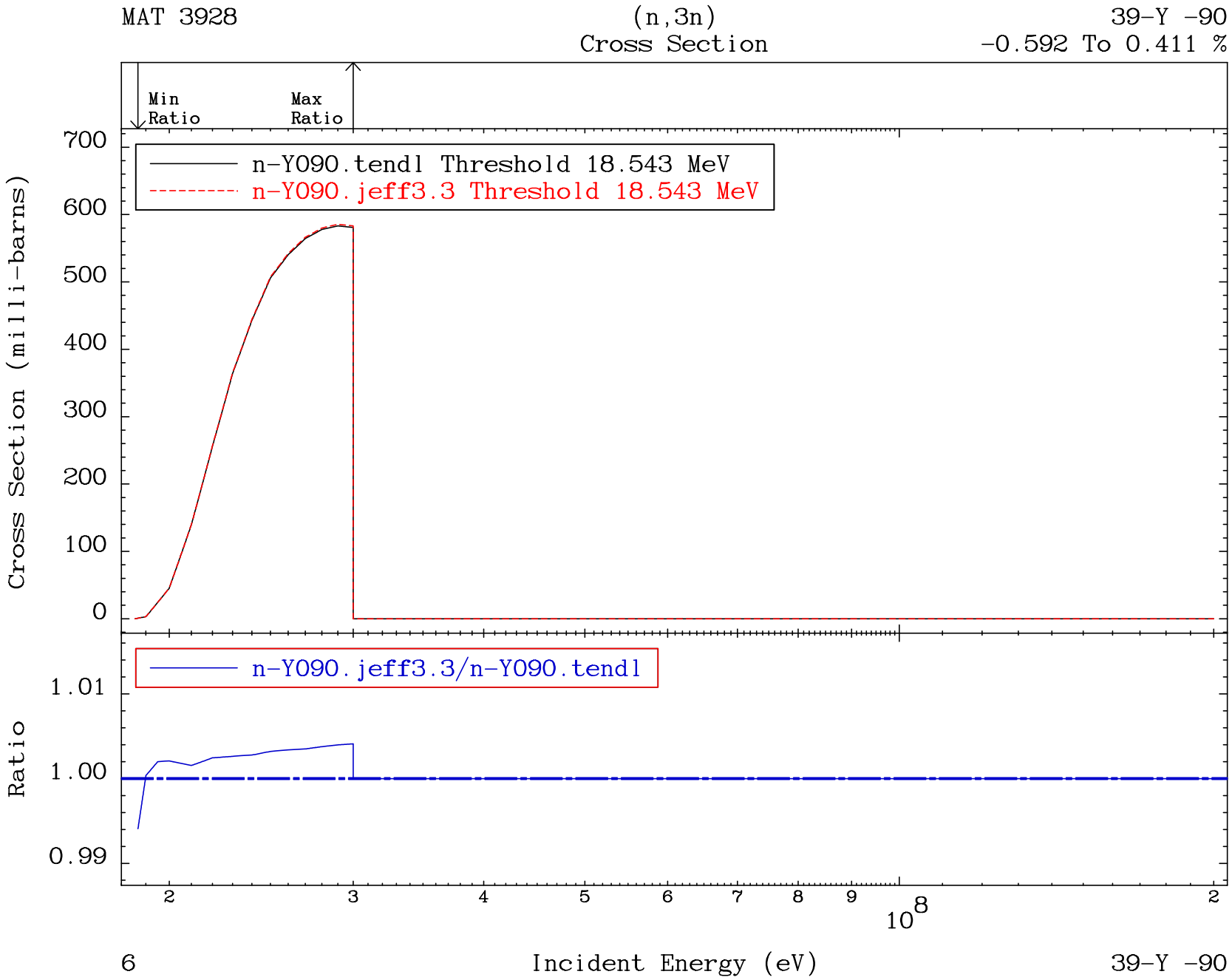

MAT 3928
Total
Cross Section
39-Y -90
-80.64 To 1546. %
Min
Ratio
Max
Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
1
39-Y -90

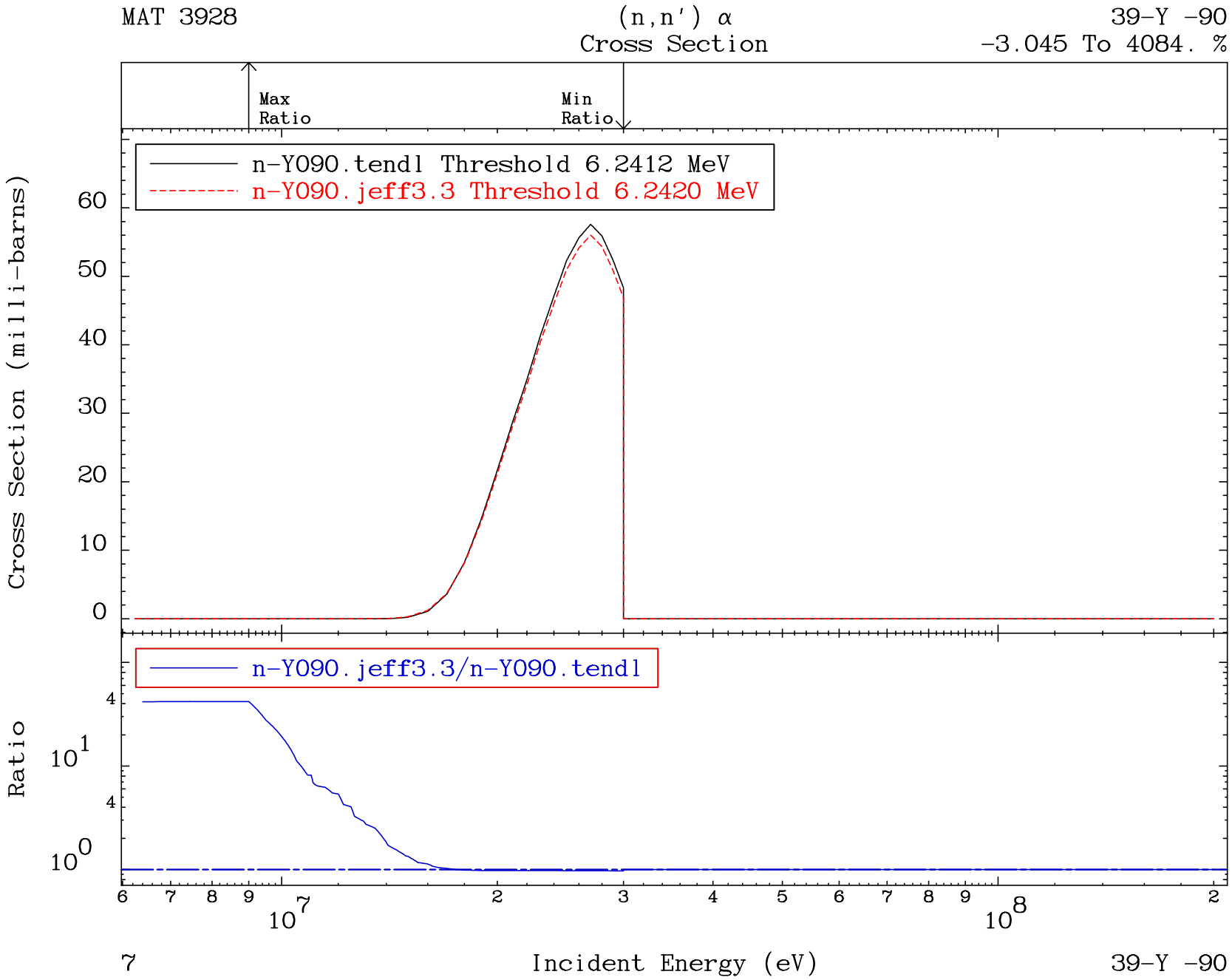

MAT 3928
Elastic
Cross Section
39-Y -90
-89.39 To 1595. %
Min
Ratio
Max
Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
2
39-Y -90

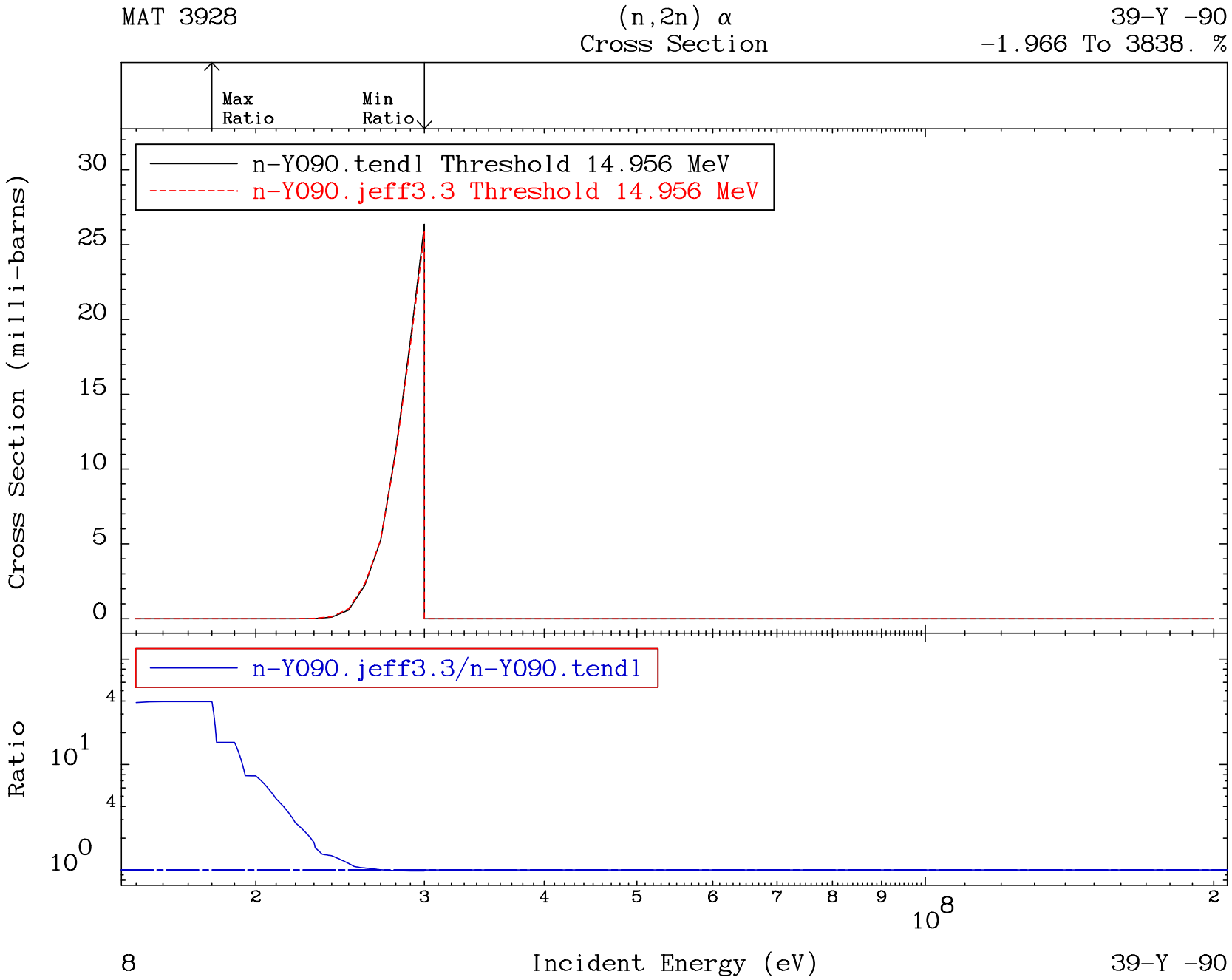

MAT 3928
Inelastic
Cross Section
39-Y -90
-0.003 To 0.028 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 204.77 keV
n-Y090.jeff3.3 Threshold 204.77 keV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
2 3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
Incident Energy (eV)
3
39-Y -90

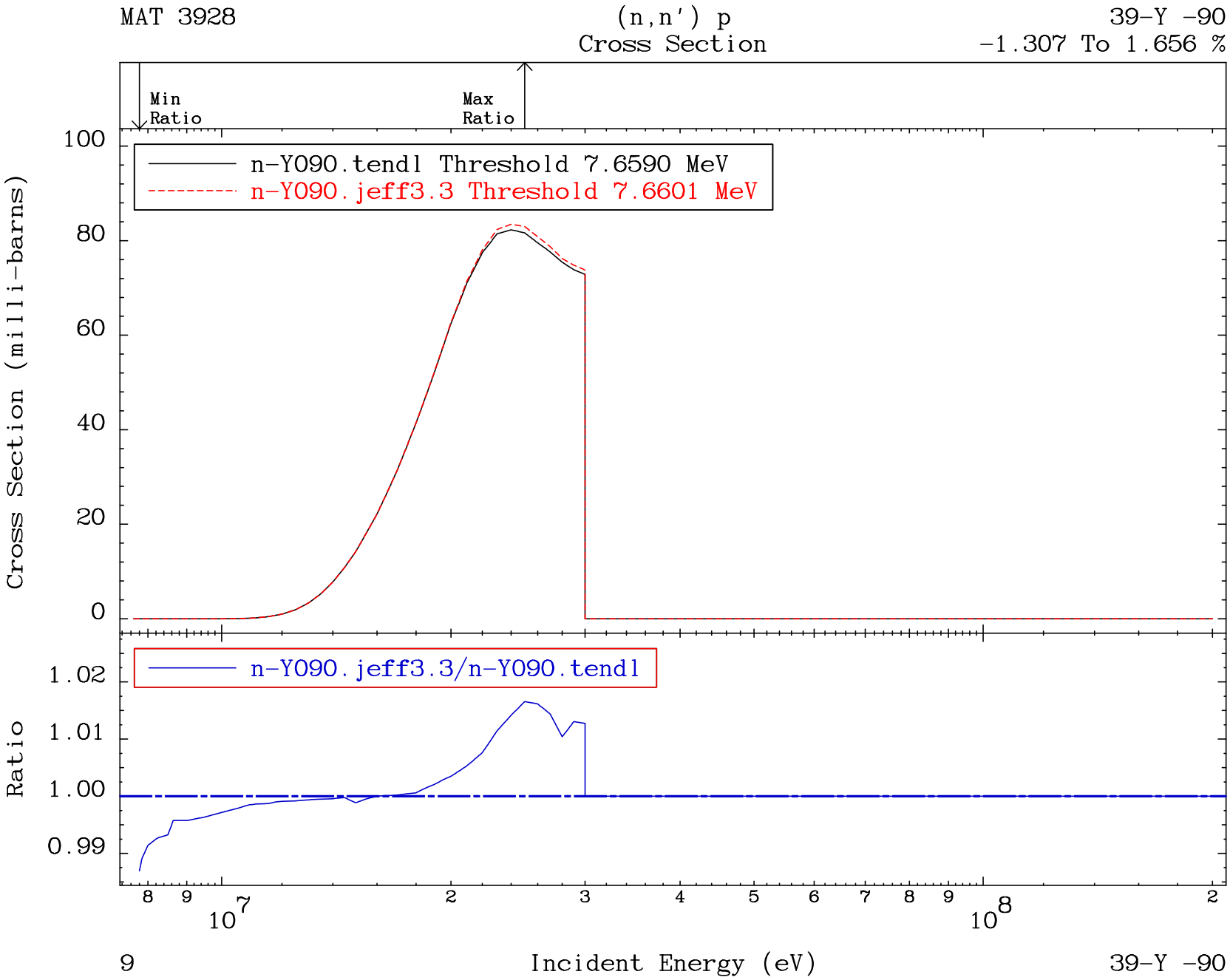

MAT 3928
(n,2n) d
Cross Section
39-Y -90
-22.72 To 73.11 %
Max
Ratio
n-Y090.tendl Threshold 23.071 MeV
n-Y090.jeff3.3 Threshold 23.078 MeV
Cross Section (micro-barns)
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
2.0
1.6
1.2
0.8
40
60
80
100
120
140
160
180
200
4
Incident Energy (MeV)
39-Y -90

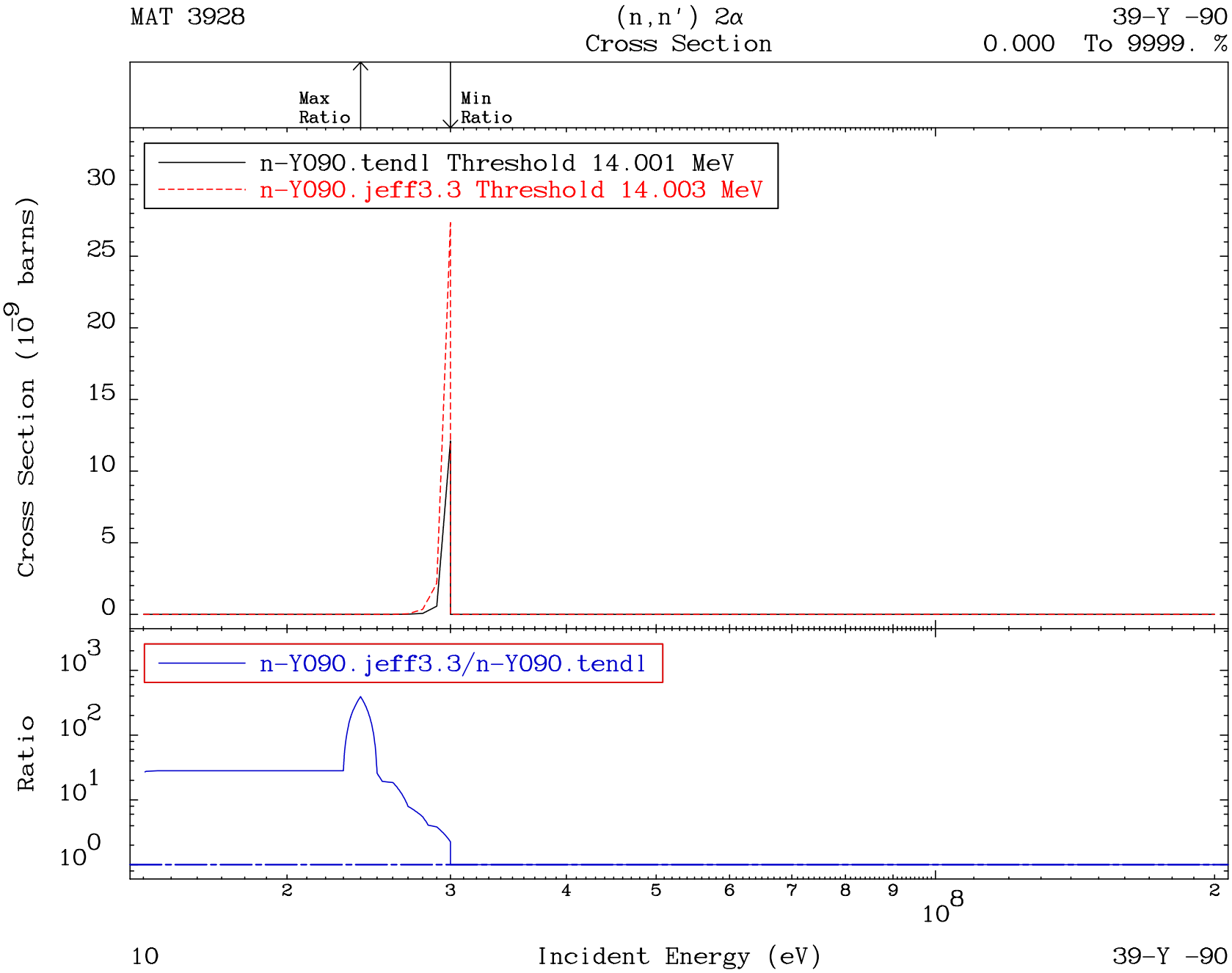

MAT 3928
(n,2n)
Cross Section
39-Y -90
0.000 To 0.245 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 6.9340 MeV
n-Y090.jeff3.3 Threshold 6.9340 MeV
Cross Section (barns)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
5
Incident Energy (eV)
39-Y -90

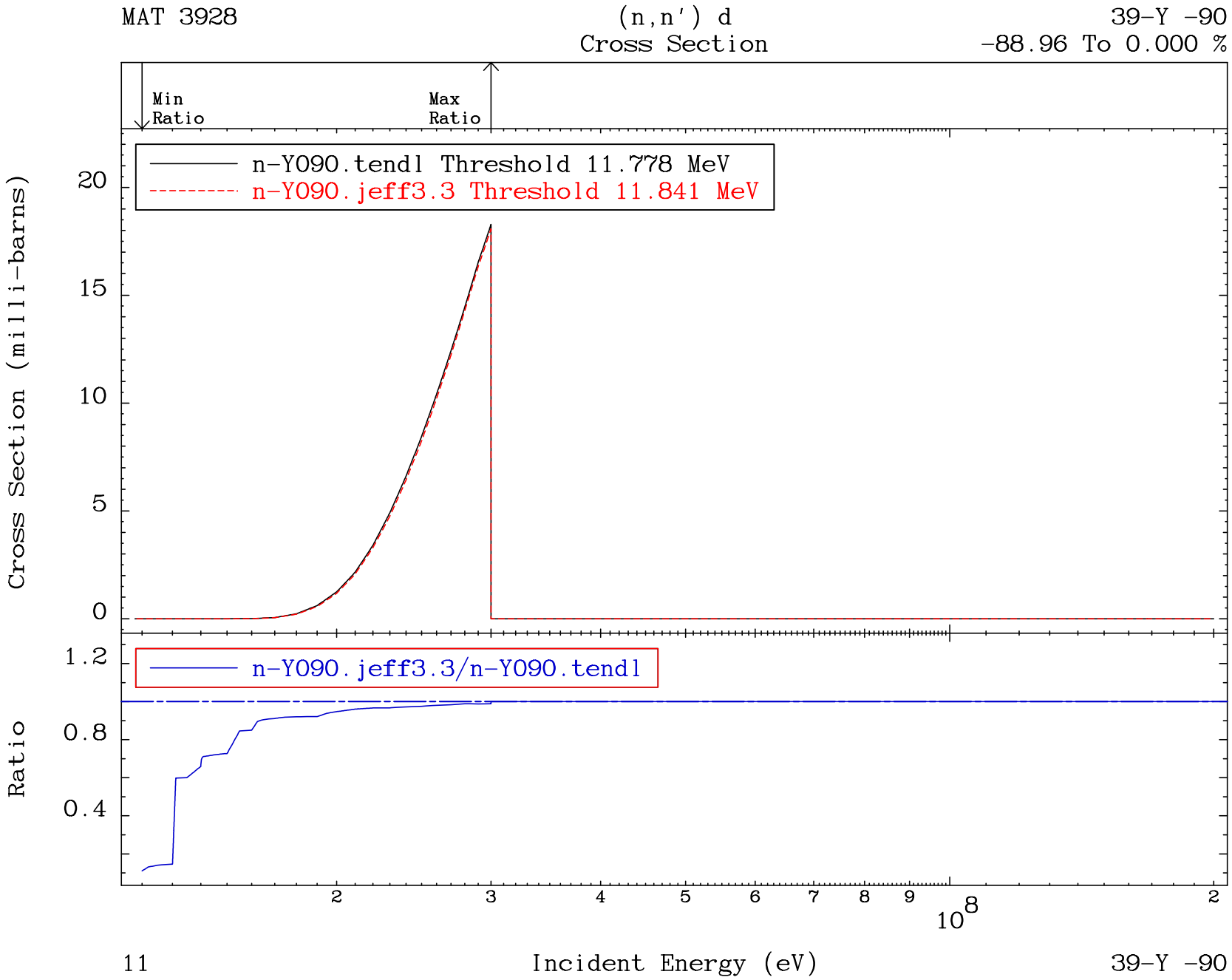

MAT 3928
(n,3n)
Cross Section
39-Y -90
-0.592 To 0.411 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 18.543 MeV
n-Y090.jeff3.3 Threshold 18.543 MeV
Cross Section (milli-barns)
700
600
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
10^8
2
6
Incident Energy (eV)
39-Y -90

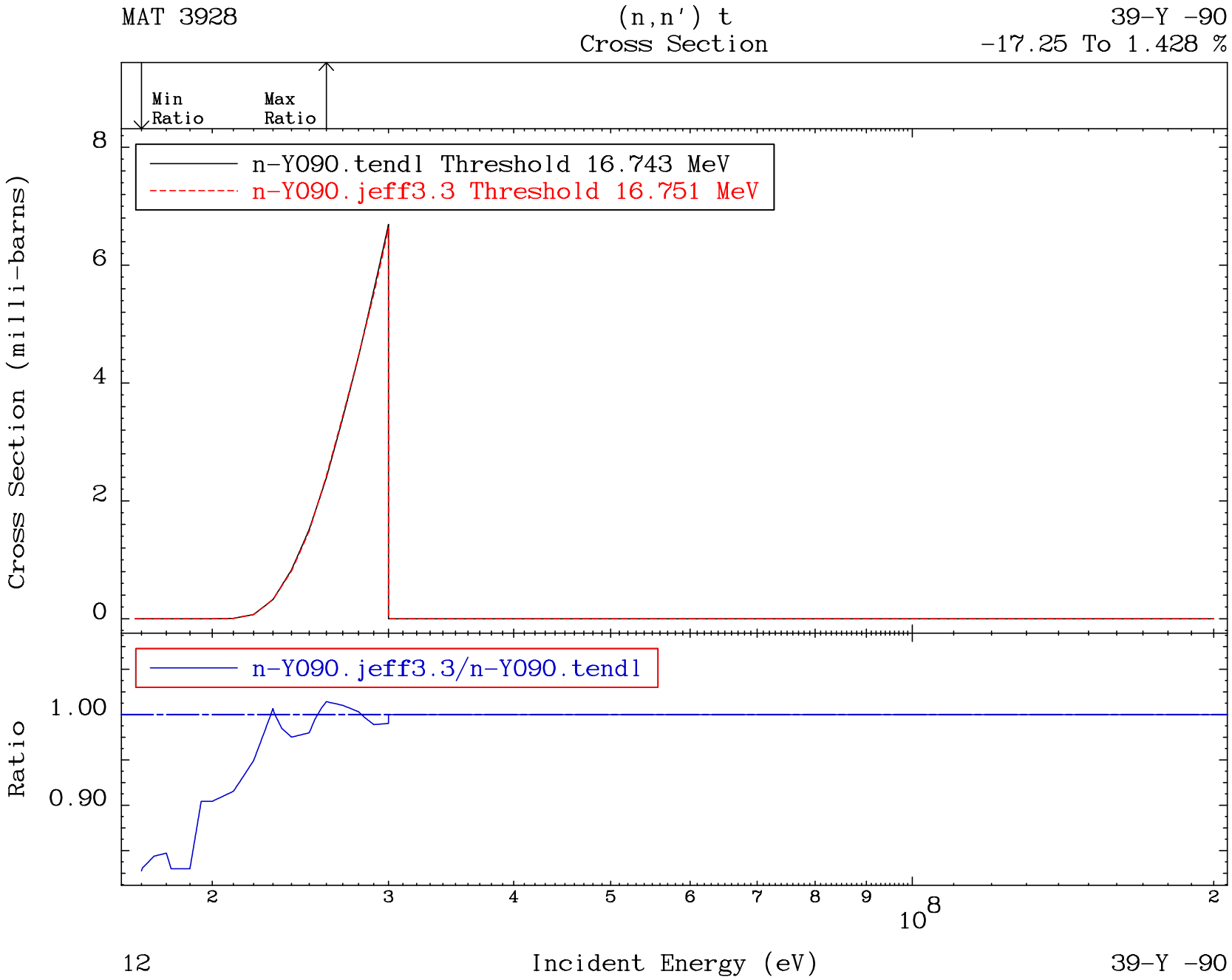

MAT 3928
(n,n') α
Cross Section
39-Y -90
-3.045 To 4084. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 6.2412 MeV
n-Y090.jeff3.3 Threshold 6.2420 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
4
10^0
4
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
7
Incident Energy (eV)
39-Y -90

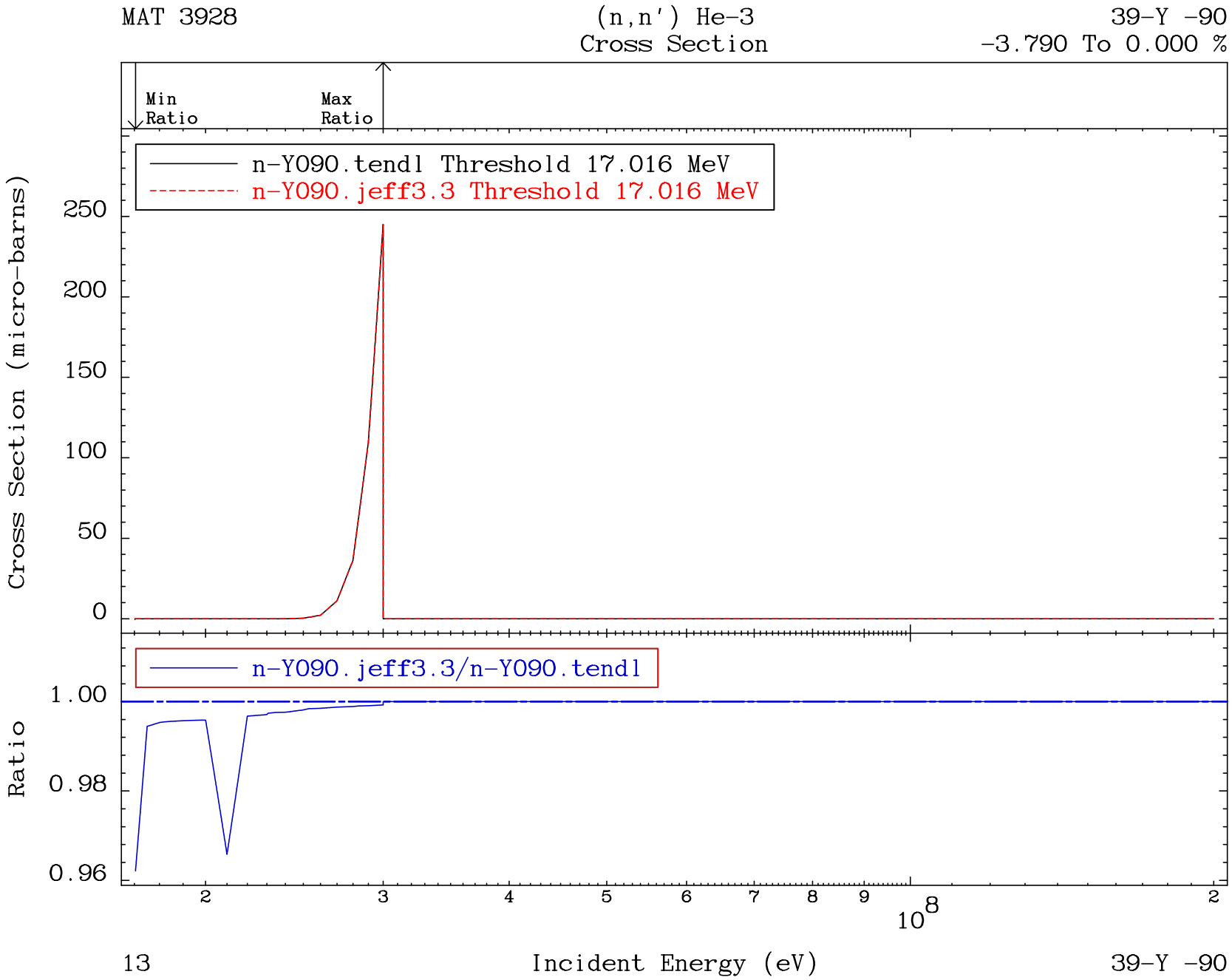

MAT 3928
(n,2n) α
Cross Section
39-Y -90
-1.966 To 3838. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 14.956 MeV
n-Y090.jeff3.3 Threshold 14.956 MeV
Cross Section (milli-barns)
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
4
10^0
4
2
3
4
5
6
7
8
9
10^8
2
8
Incident Energy (eV)
39-Y -90

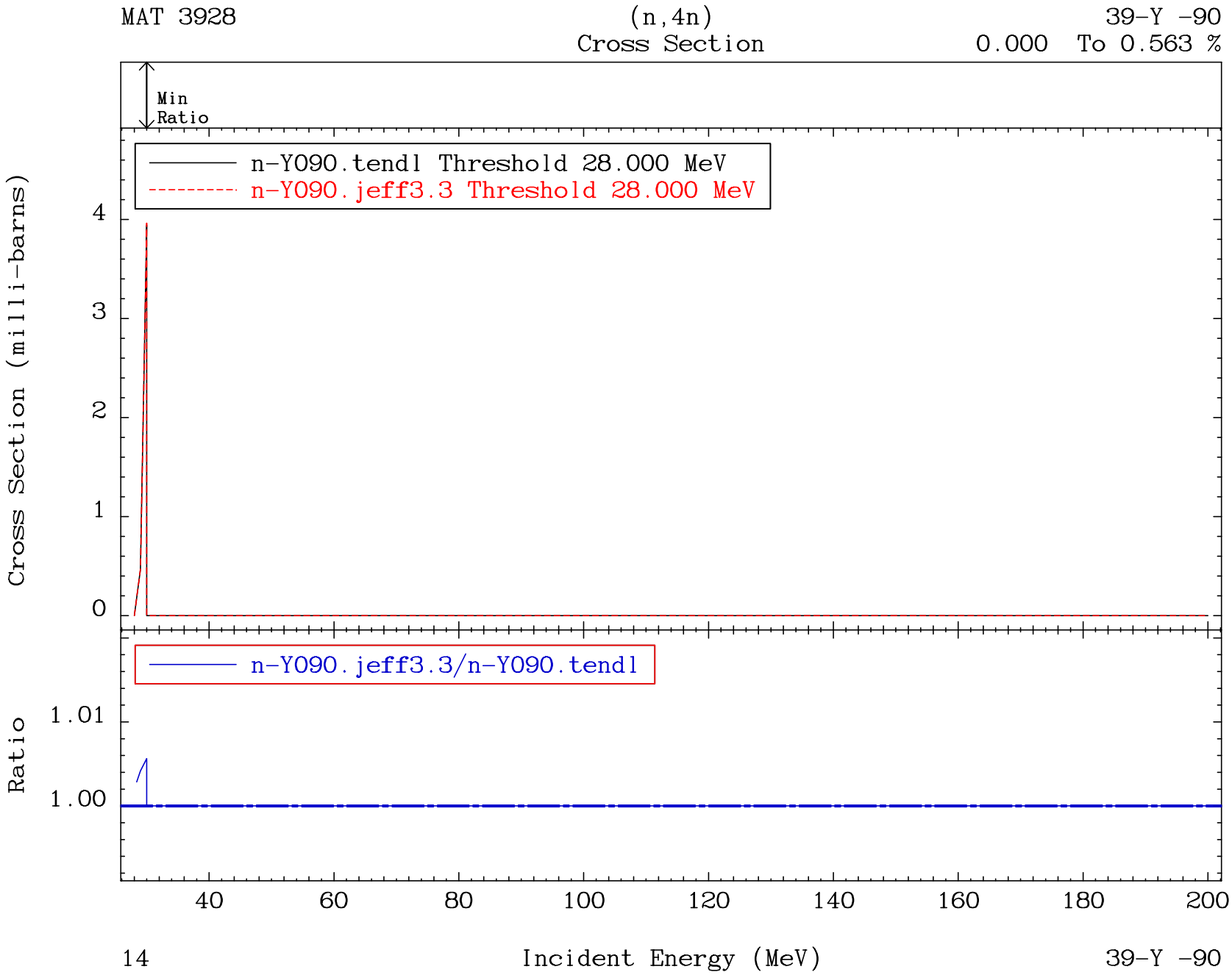

MAT 3928
(n,n') p
Cross Section
39-Y -90
-1.307 To 1.656 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 7.6590 MeV
n-Y090.jeff3.3 Threshold 7.6601 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.02
1.01
1.00
0.99
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
9
Incident Energy (eV)
39-Y -90

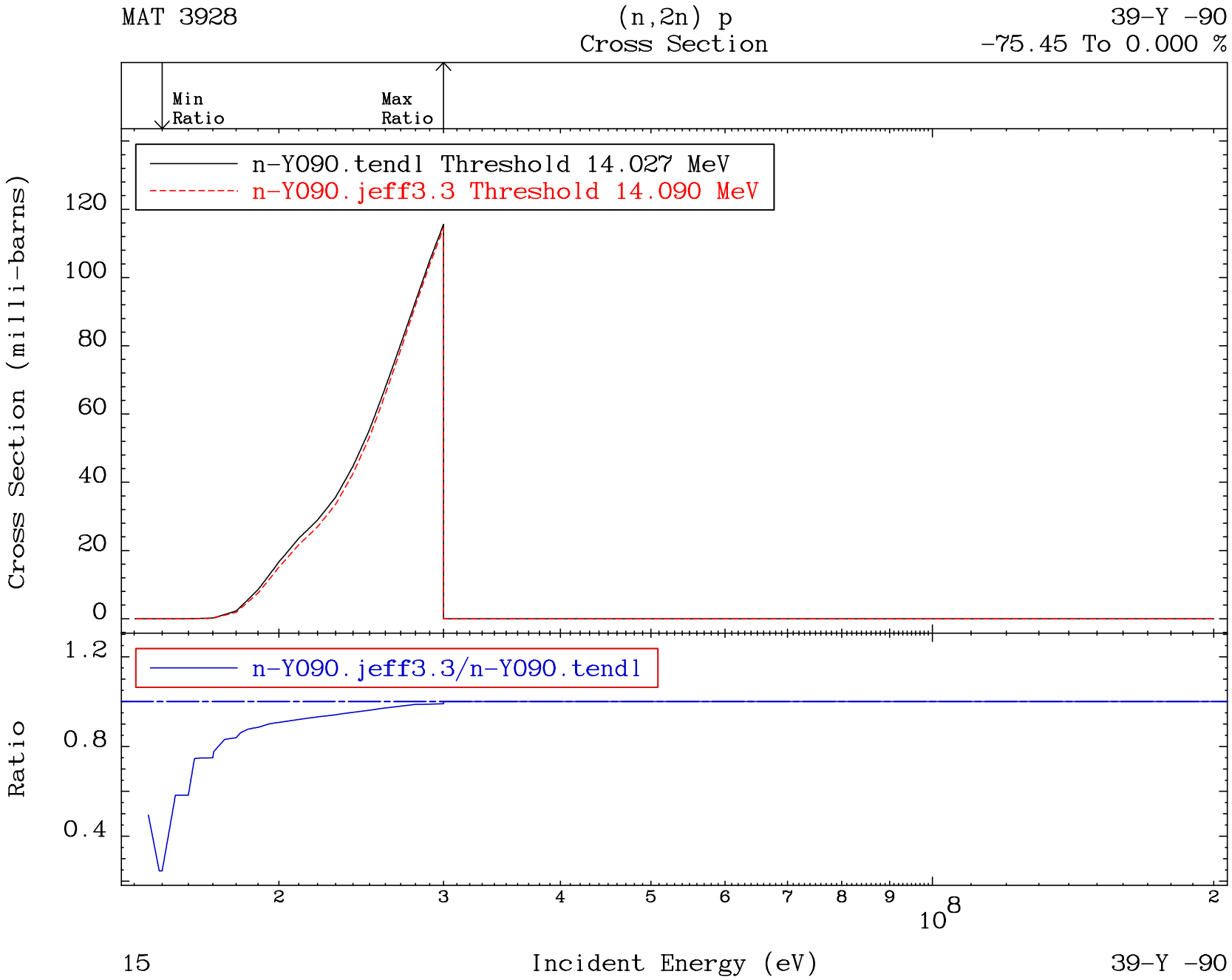

MAT 3928
(n,n') 2α
Cross Section
39-Y -90
0.000 To 9999. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 14.001 MeV
n-Y090.jeff3.3 Threshold 14.003 MeV
Cross Section (10^{-9} barns)
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^3
10^2
10^1
10^0
2
3
4
5
6
7
8
9
10^8
2
10
Incident Energy (eV)
39-Y -90

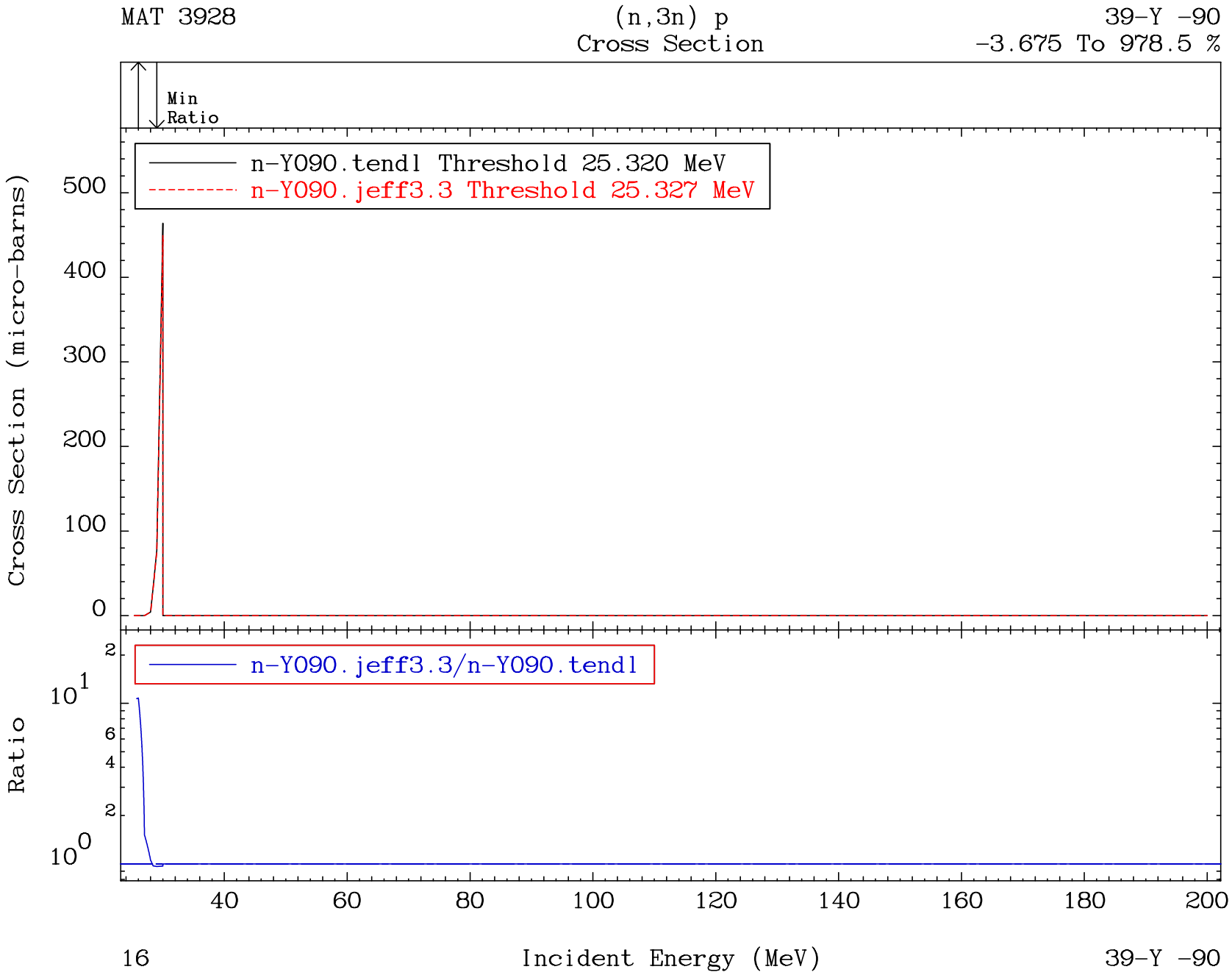

MAT 3928
(n,n') d
Cross Section
39-Y -90
-88.96 To 0.000 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 11.778 MeV
n-Y090.jeff3.3 Threshold 11.841 MeV
Cross Section (milli-barns)
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.2
0.8
0.4
2
3
4
5
6
7
8
9
10^8
2
11
Incident Energy (eV)
39-Y -90

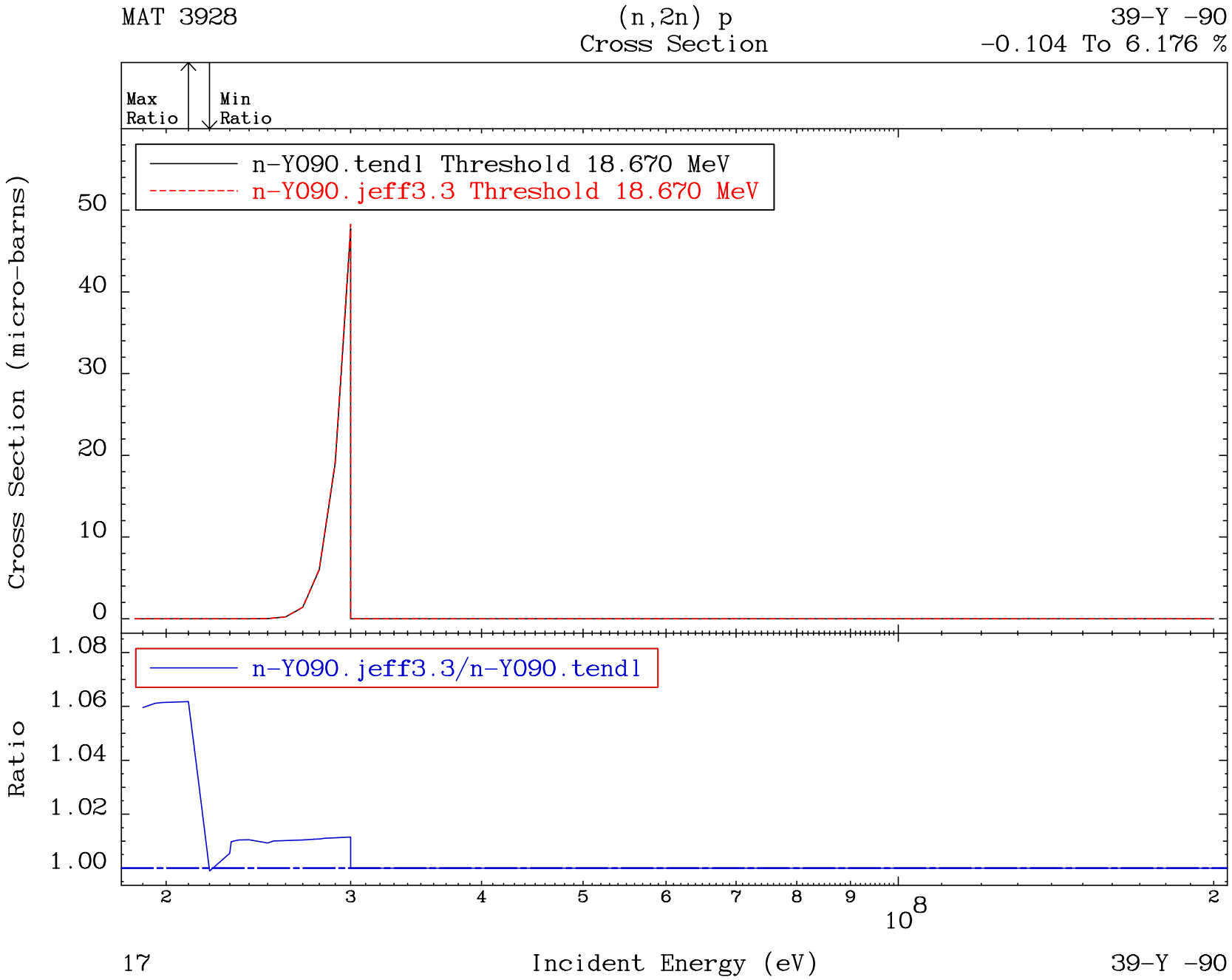

MAT 3928
(n,n') t
Cross Section
39-Y -90
-17.25 To 1.428 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 16.743 MeV
n-Y090.jeff3.3 Threshold 16.751 MeV
Cross Section (milli-barns)
8
6
4
2
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
0.90
2
3
4
5
6
7
8
9
10^8
2
12
Incident Energy (eV)
39-Y -90

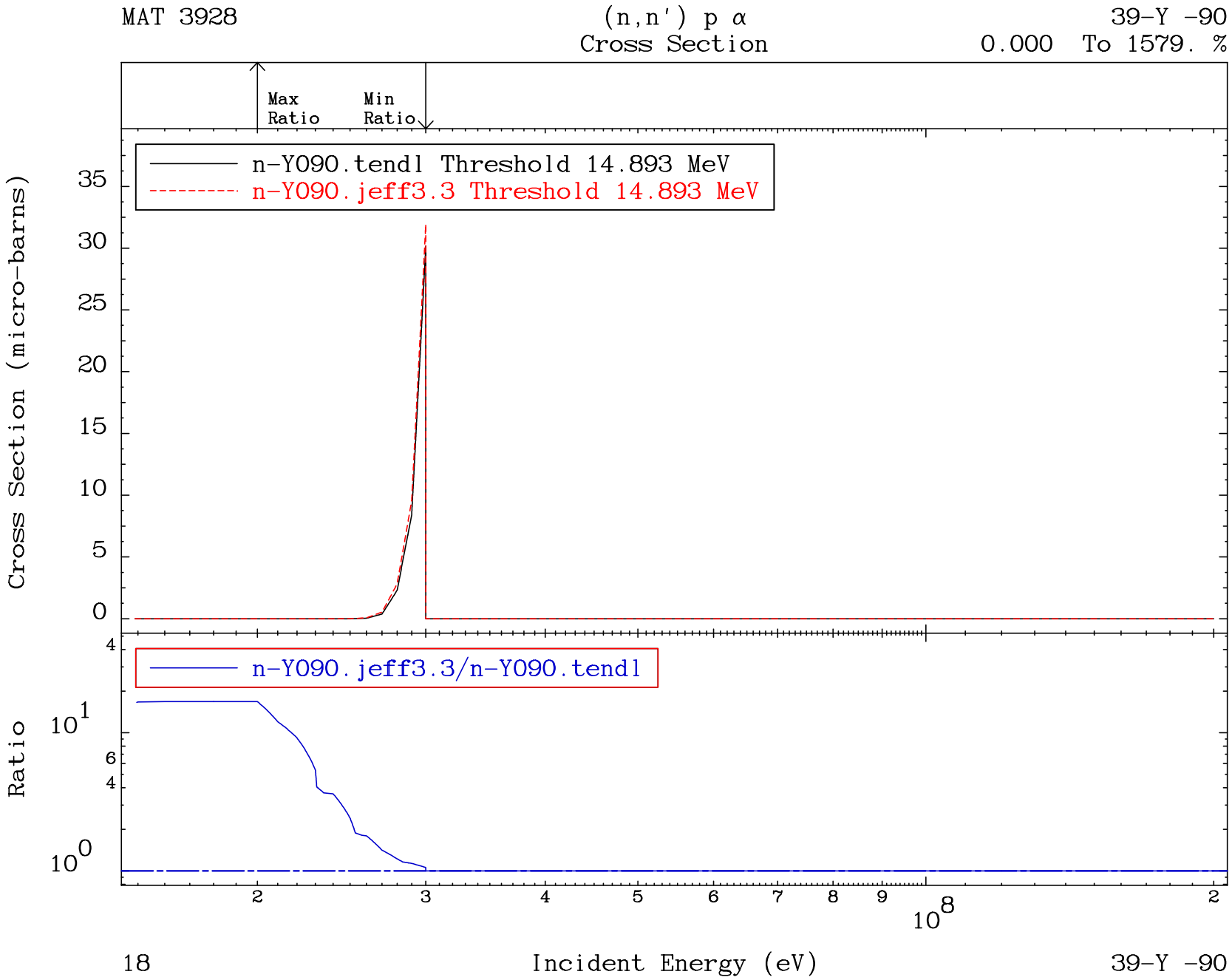

MAT 3928
(n,n') He-3
Cross Section
39-Y -90
-3.790 To 0.000 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 17.016 MeV
n-Y090.jeff3.3 Threshold 17.016 MeV
Cross Section (micro-barns)
250
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
0.98
0.96
2
3
4
5
6
7
8
9
10^8
2
13
Incident Energy (eV)
39-Y -90

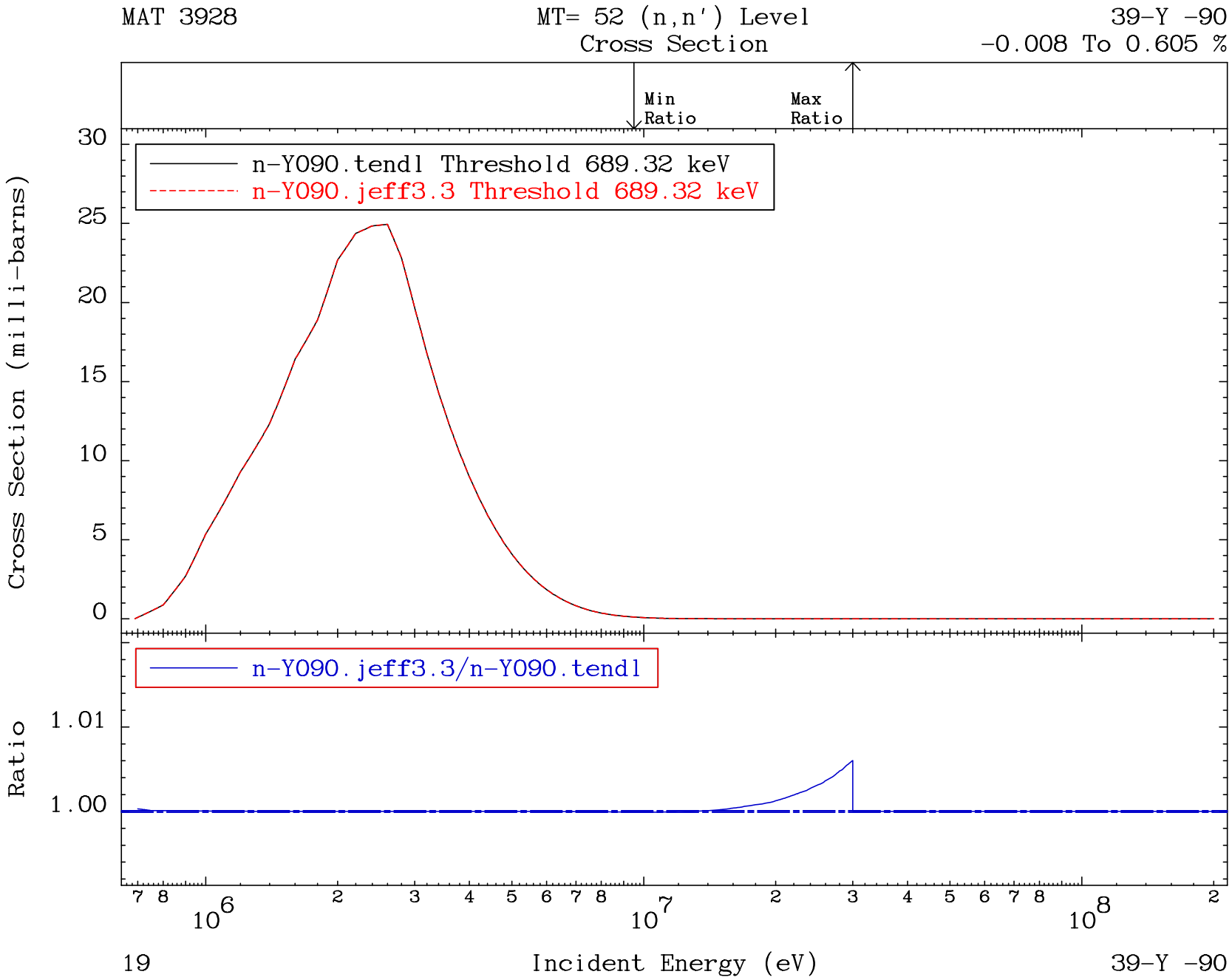

MAT 3928
(n,4n)
Cross Section
39-Y -90
0.000 To 0.563 %
Min
Ratio
n-Y090.tendl Threshold 28.000 MeV
n-Y090.jeff3.3 Threshold 28.000 MeV
Cross Section (milli-barns)
0
1
2
3
4
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
1.01
40
60
80
100
120
140
160
180
200
14
Incident Energy (MeV)
39-Y -90

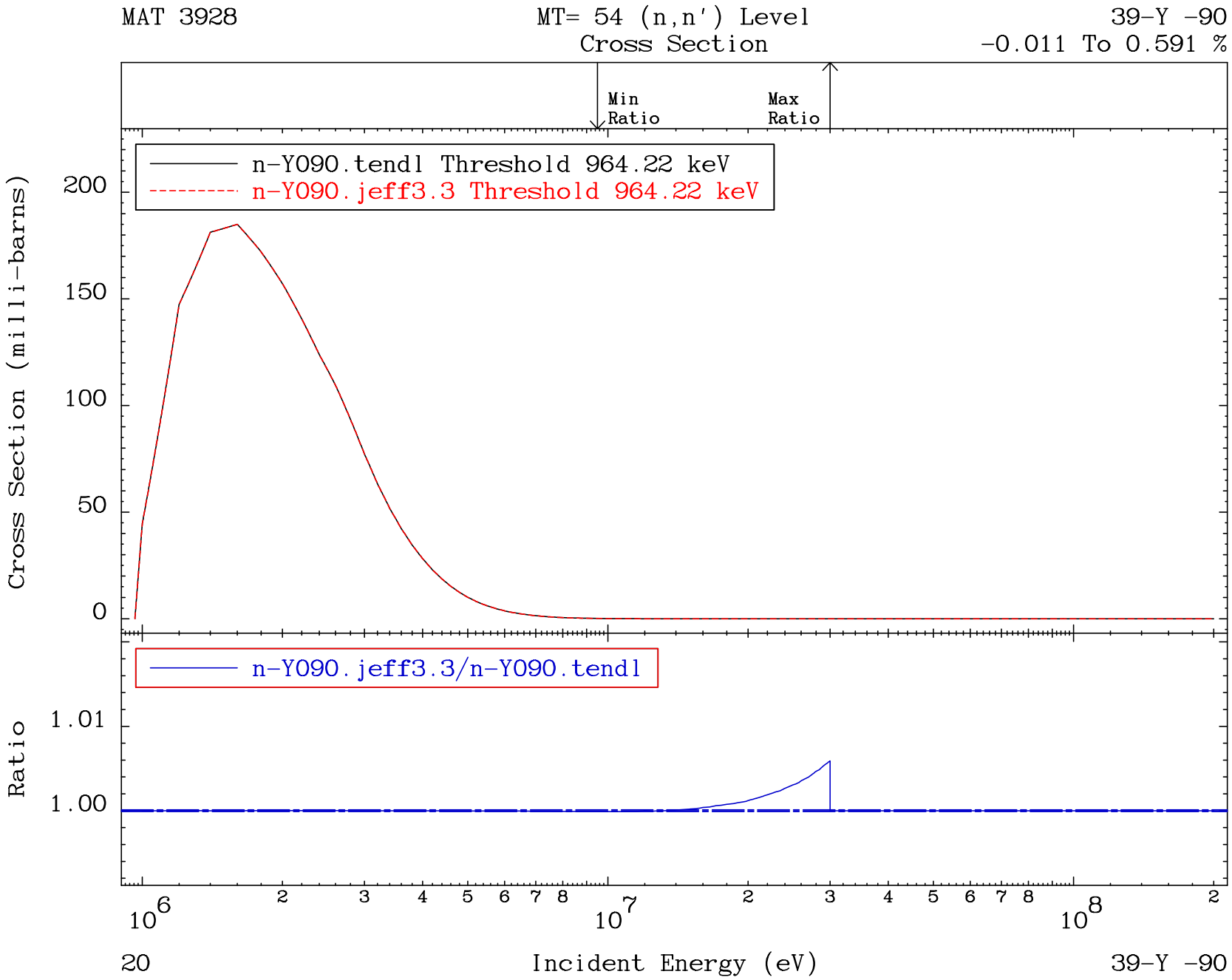

MAT 3928
(n,2n) p
Cross Section
39-Y -90
-75.45 To 0.000 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 14.027 MeV
n-Y090.jeff3.3 Threshold 14.090 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.2
0.8
0.4
2
3
4
5
6
7
8
9
10^8
2
15
Incident Energy (eV)
39-Y -90

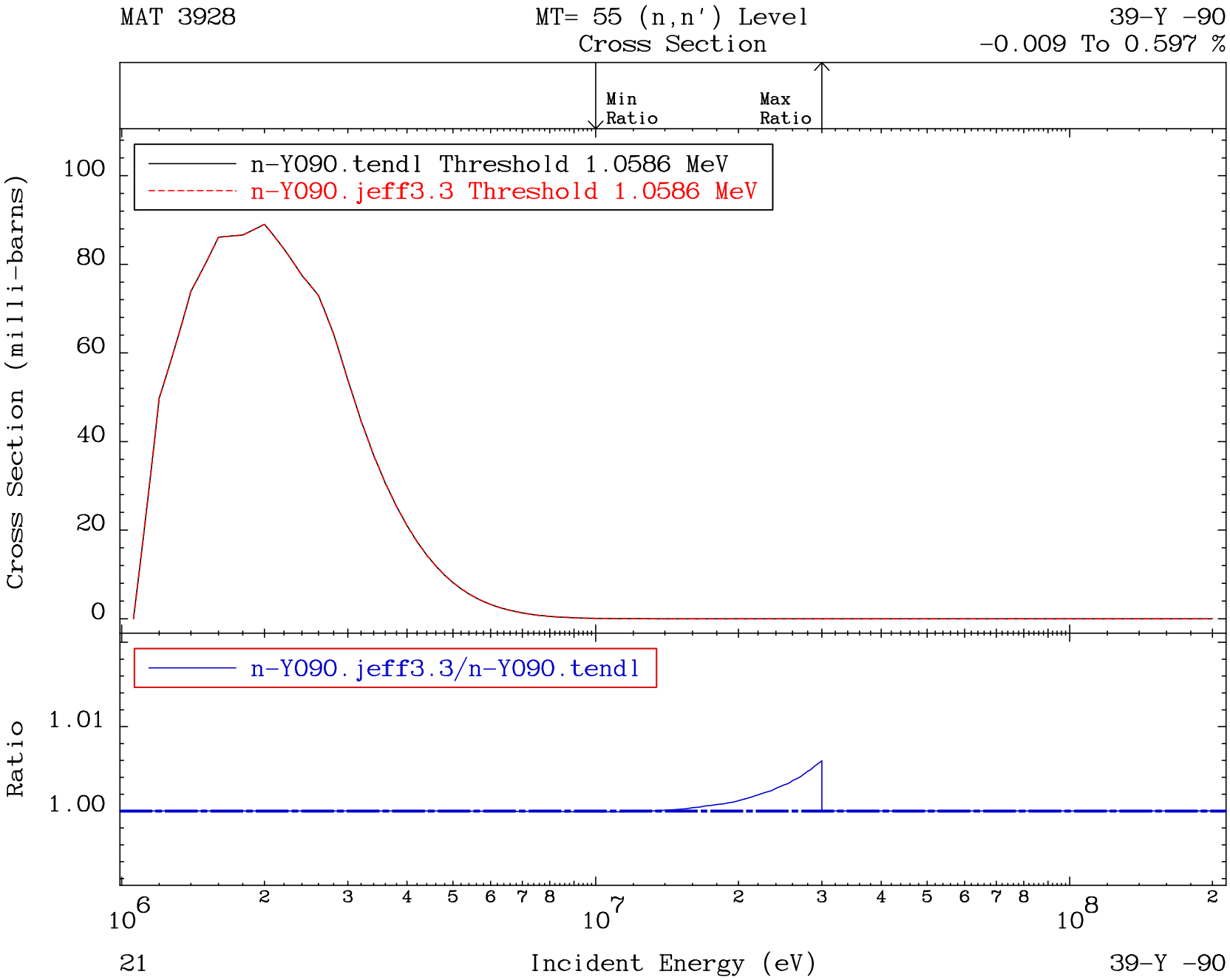

MAT 3928
(n,3n) p
Cross Section
39-Y -90
-3.675 To 978.5 %
Min
Ratio
n-Y090.tendl Threshold 25.320 MeV
n-Y090.jeff3.3 Threshold 25.327 MeV
Cross Section (micro-barns)
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
2
10^1
6
4
2
10^0
40
60
80
100
120
140
160
180
200
16
Incident Energy (MeV)
39-Y -90

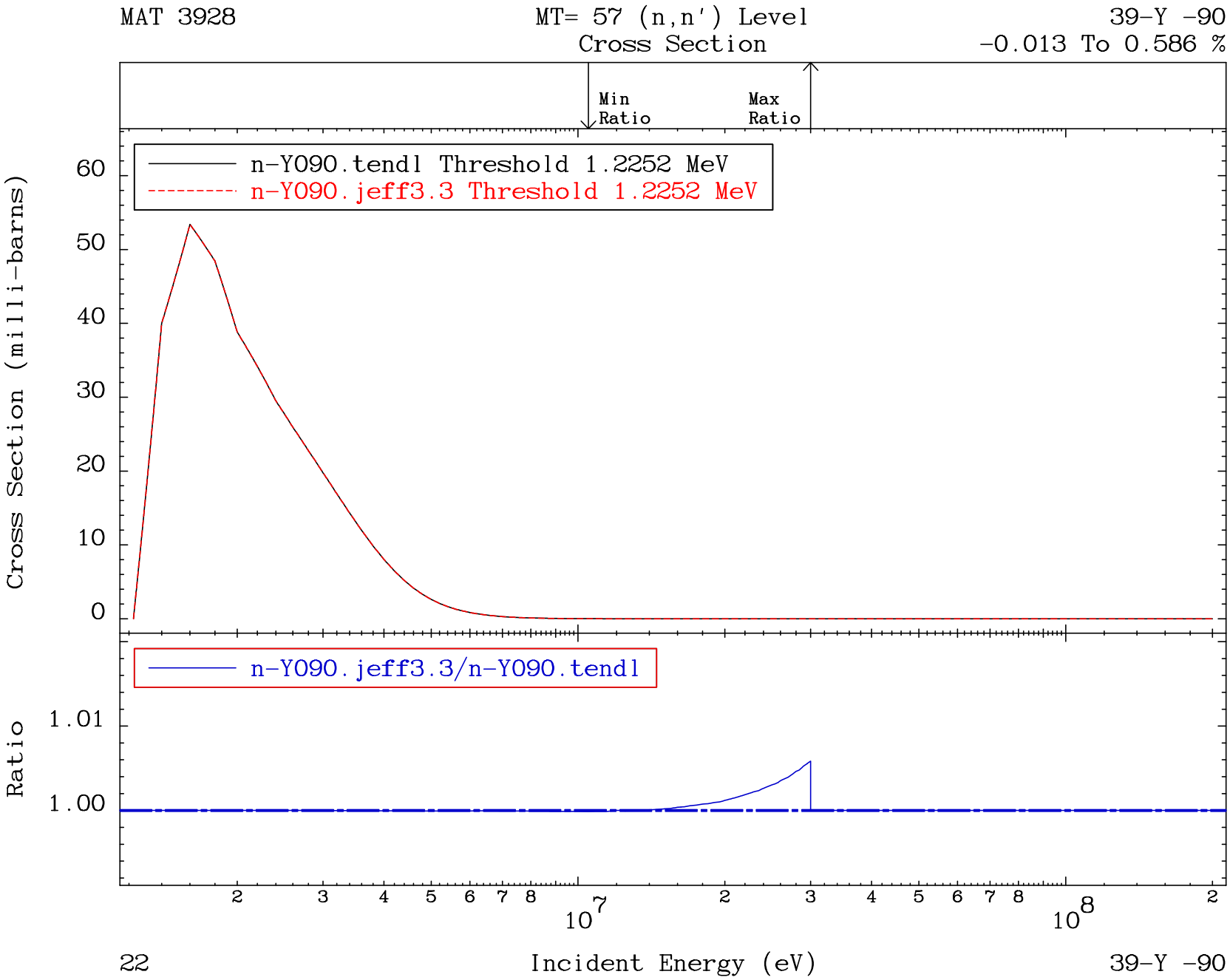

MAT 3928
(n,2n) p
Cross Section
39-Y -90
-0.104 To 6.176 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 18.670 MeV
n-Y090.jeff3.3 Threshold 18.670 MeV
Cross Section (micro-barns)
50
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.08
1.06
1.04
1.02
1.00
2
3
4
5
6
7
8
9
10^8
2
17
Incident Energy (eV)
39-Y -90

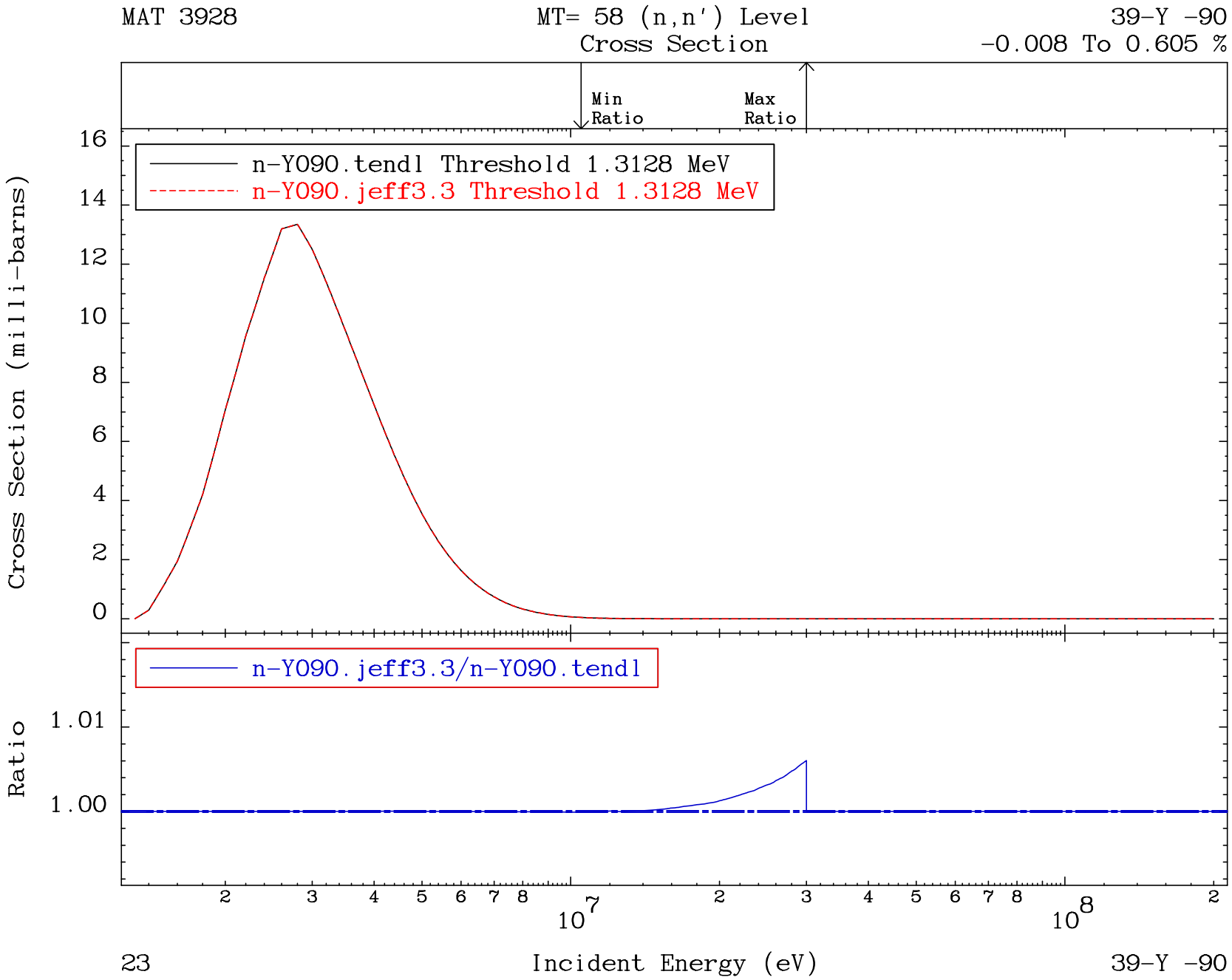

MAT 3928
(n,n') p α
Cross Section
39-Y -90
0.000 To 1579. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 14.893 MeV
n-Y090.jeff3.3 Threshold 14.893 MeV
Cross Section (micro-barns)
35
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
6
4
10^0
2
3
4
5
6
7
8
9
10^8
2
18
Incident Energy (eV)
39-Y -90

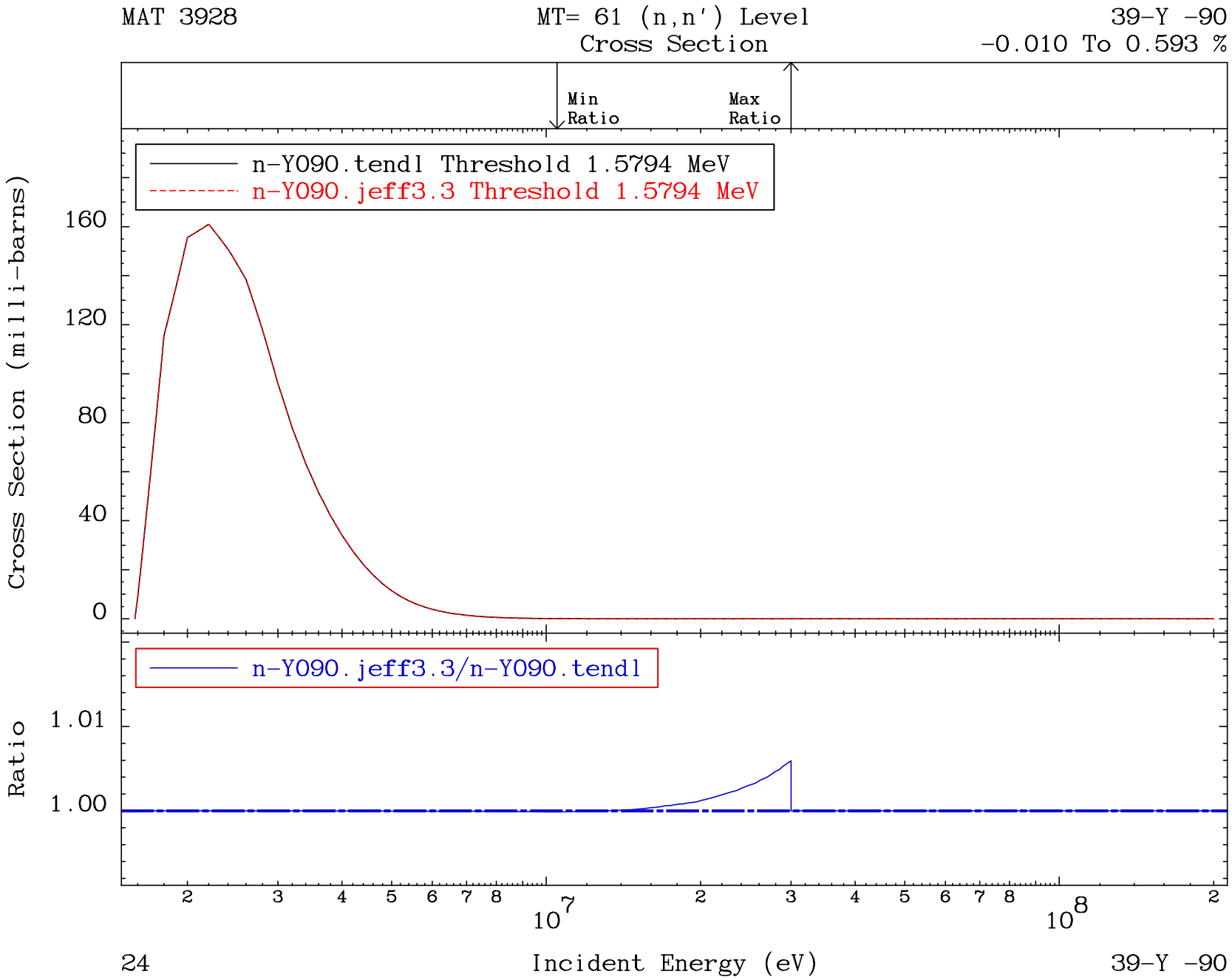

MAT 3928
MT= 52 (n,n') Level
Cross Section
39-Y -90
-0.008 To 0.605 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 689.32 keV
n-Y090.jeff3.3 Threshold 689.32 keV
Cross Section (milli-barns)
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
19
Incident Energy (eV)
39-Y -90

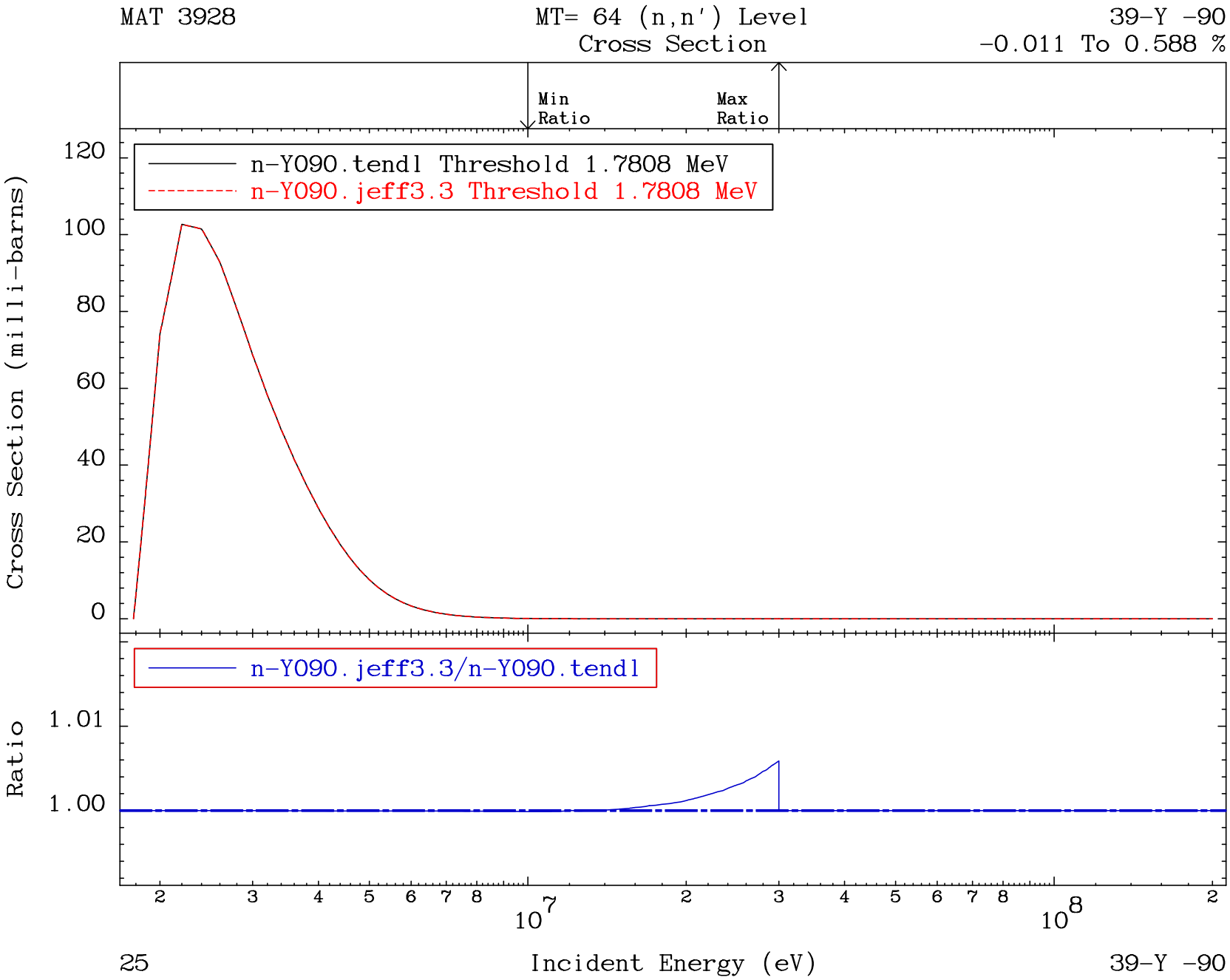

MAT 3928
MT= 54 (n,n') Level
Cross Section
39-Y -90
-0.011 To 0.591 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 964.22 keV
n-Y090.jeff3.3 Threshold 964.22 keV
Cross Section (milli-barns)
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
20
Incident Energy (eV)
39-Y -90

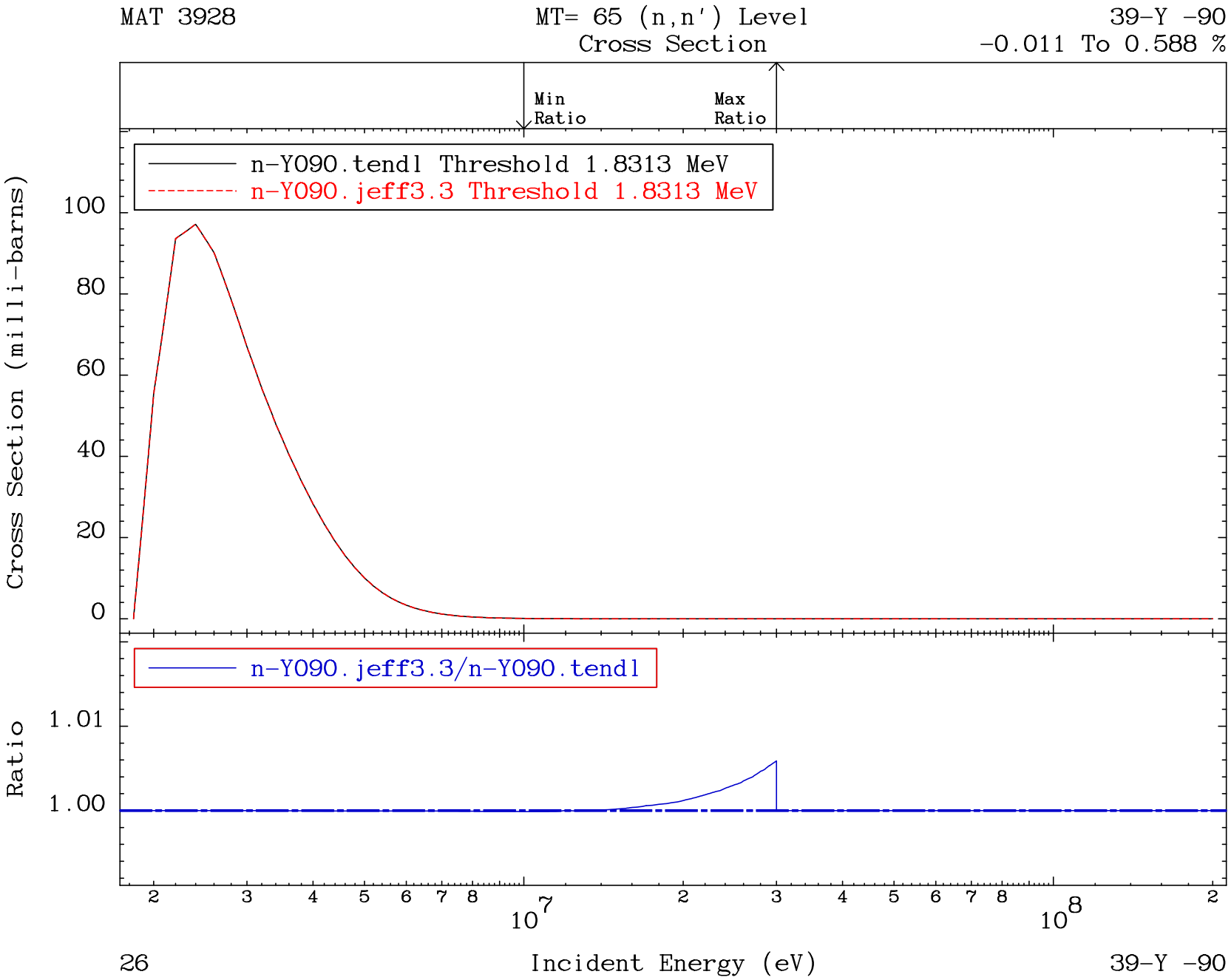

MAT 3928
MT= 55 (n,n') Level
Cross Section
39-Y -90
-0.009 To 0.597 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 1.0586 MeV
n-Y090.jeff3.3 Threshold 1.0586 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
21
Incident Energy (eV)
39-Y -90

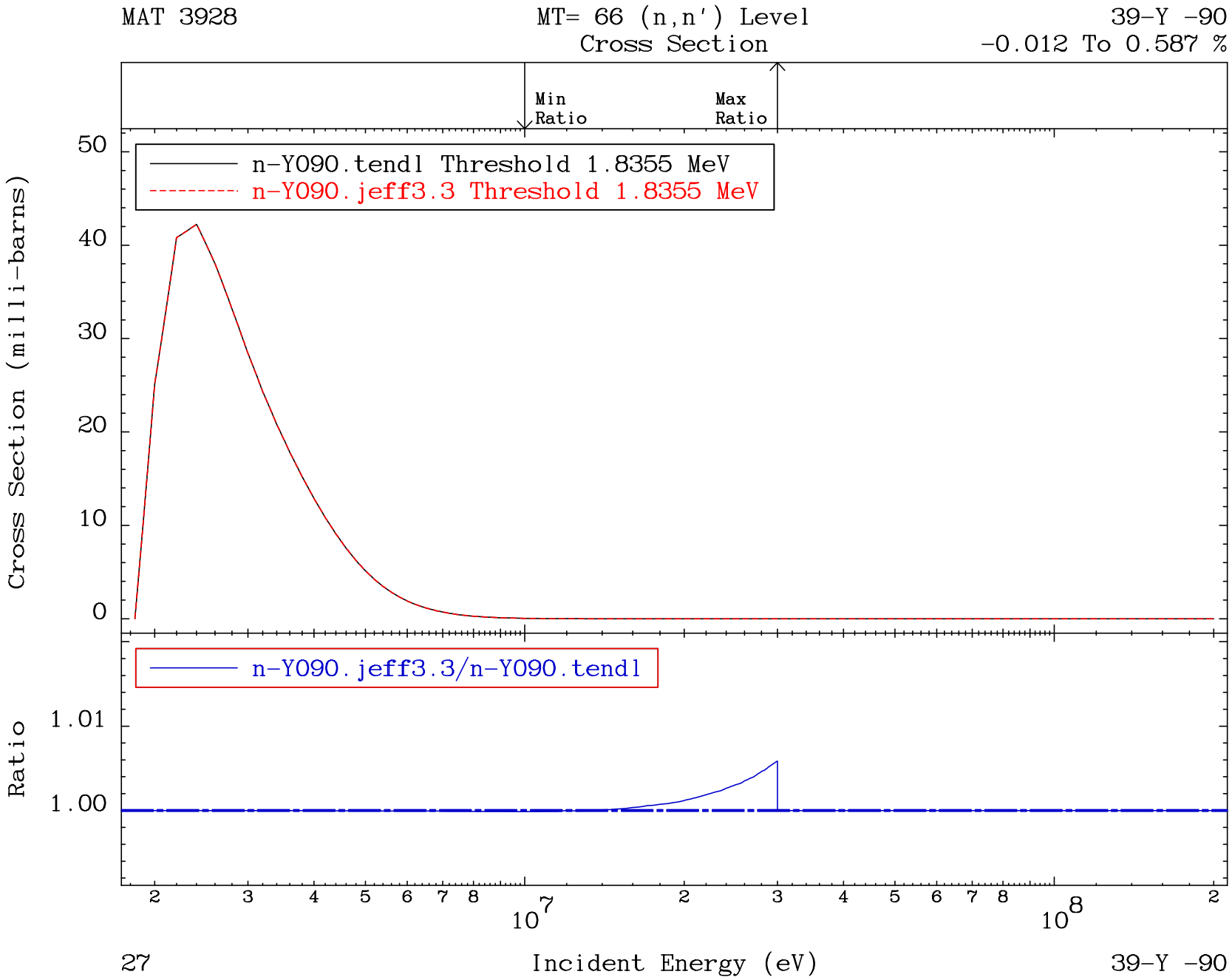

MAT 3928
MT= 57 (n,n') Level
Cross Section
39-Y -90
-0.013 To 0.586 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 1.2252 MeV
n-Y090.jeff3.3 Threshold 1.2252 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
22
Incident Energy (eV)
39-Y -90

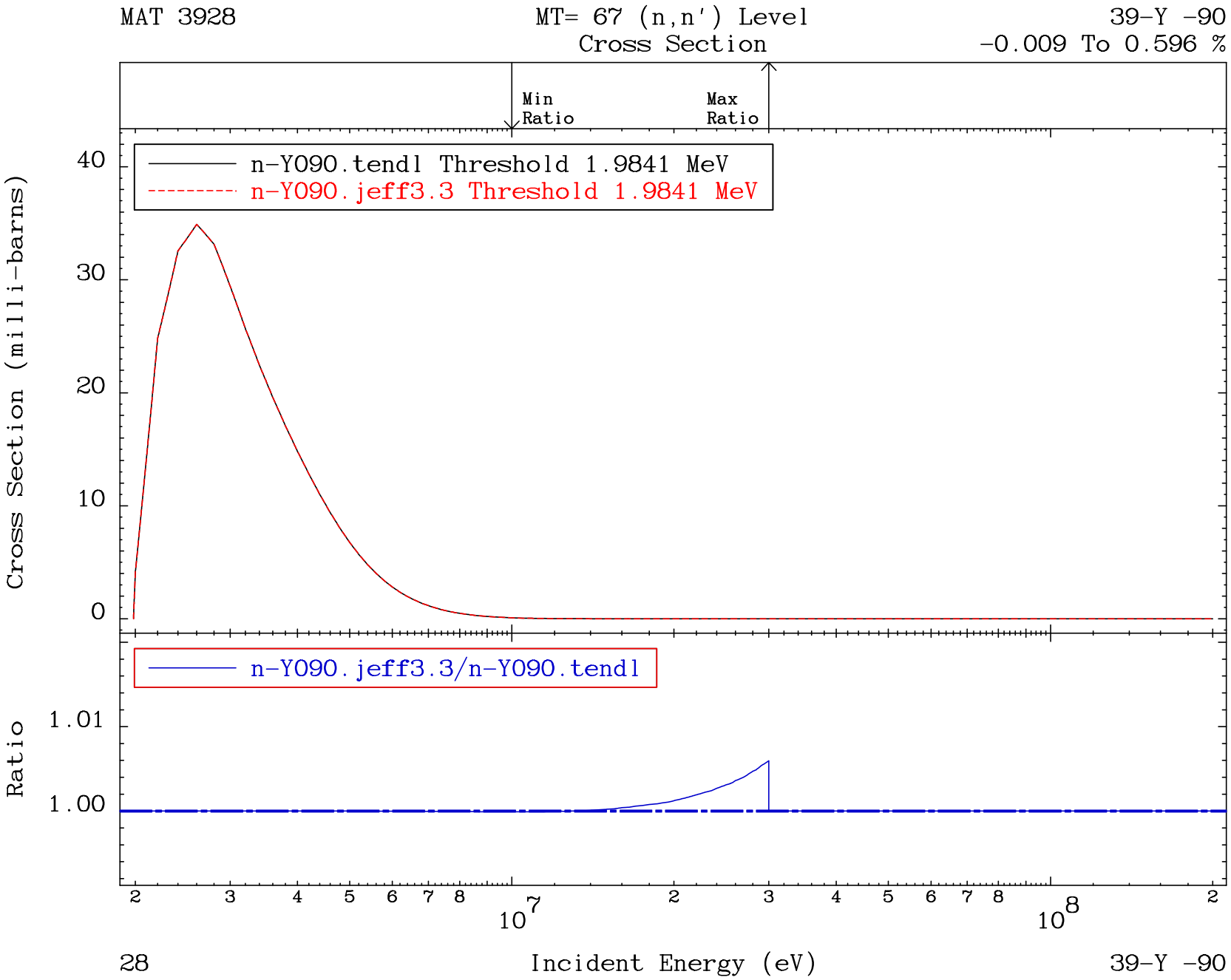

MAT 3928
MT= 58 (n,n') Level
Cross Section
39-Y -90
-0.008 To 0.605 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 1.3128 MeV
n-Y090.jeff3.3 Threshold 1.3128 MeV
Cross Section (milli-barns)
16
14
12
10
8
6
4
2
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
23
Incident Energy (eV)
39-Y -90

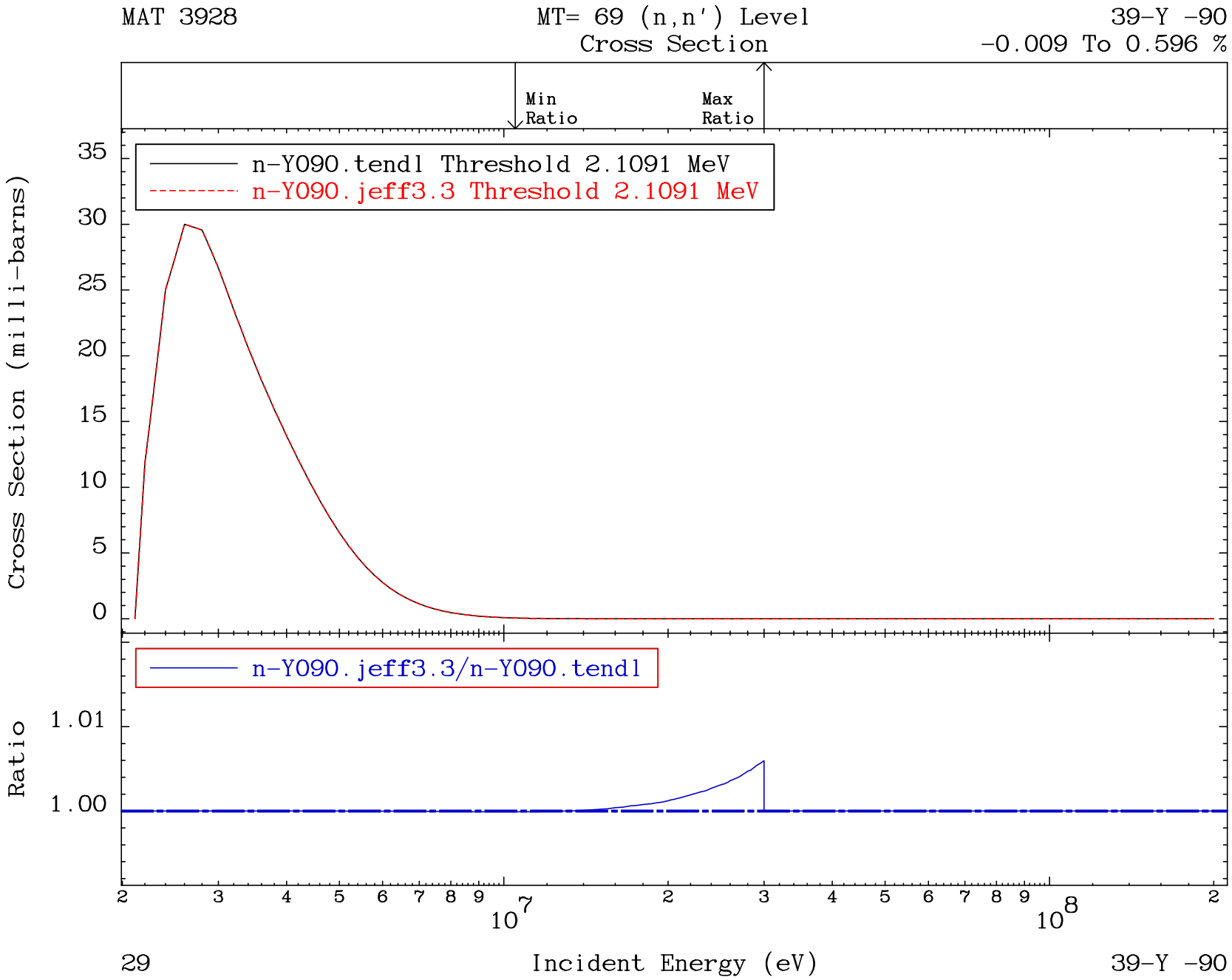

MAT 3928
MT= 61 (n,n') Level
Cross Section
39-Y -90
-0.010 To 0.593 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 1.5794 MeV
n-Y090.jeff3.3 Threshold 1.5794 MeV
Cross Section (milli-barns)
160
120
80
40
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
24
Incident Energy (eV)
39-Y -90

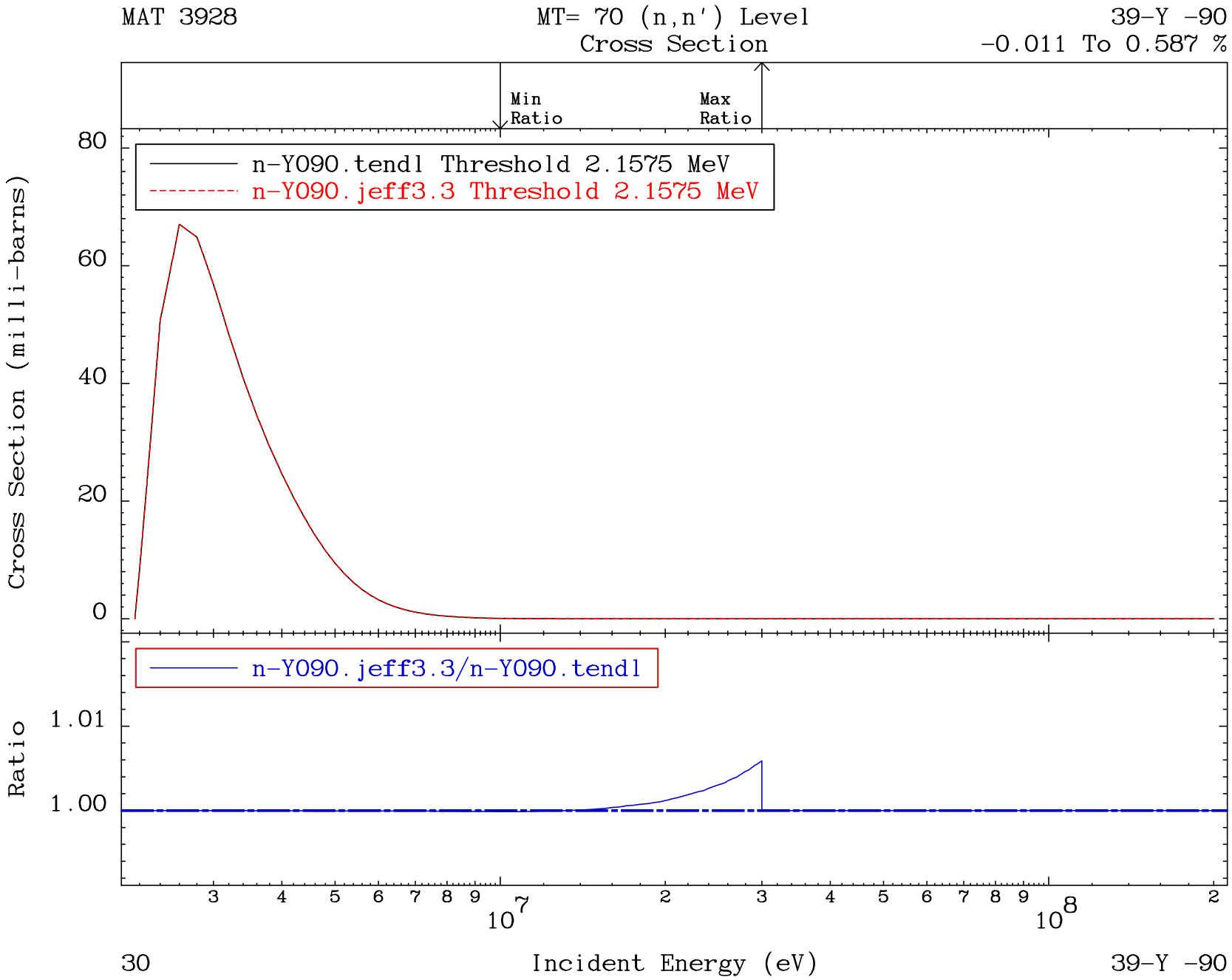

MAT 3928
MT= 64 (n,n') Level
Cross Section
39-Y -90
-0.011 To 0.588 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 1.7808 MeV
n-Y090.jeff3.3 Threshold 1.7808 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
25
Incident Energy (eV)
39-Y -90

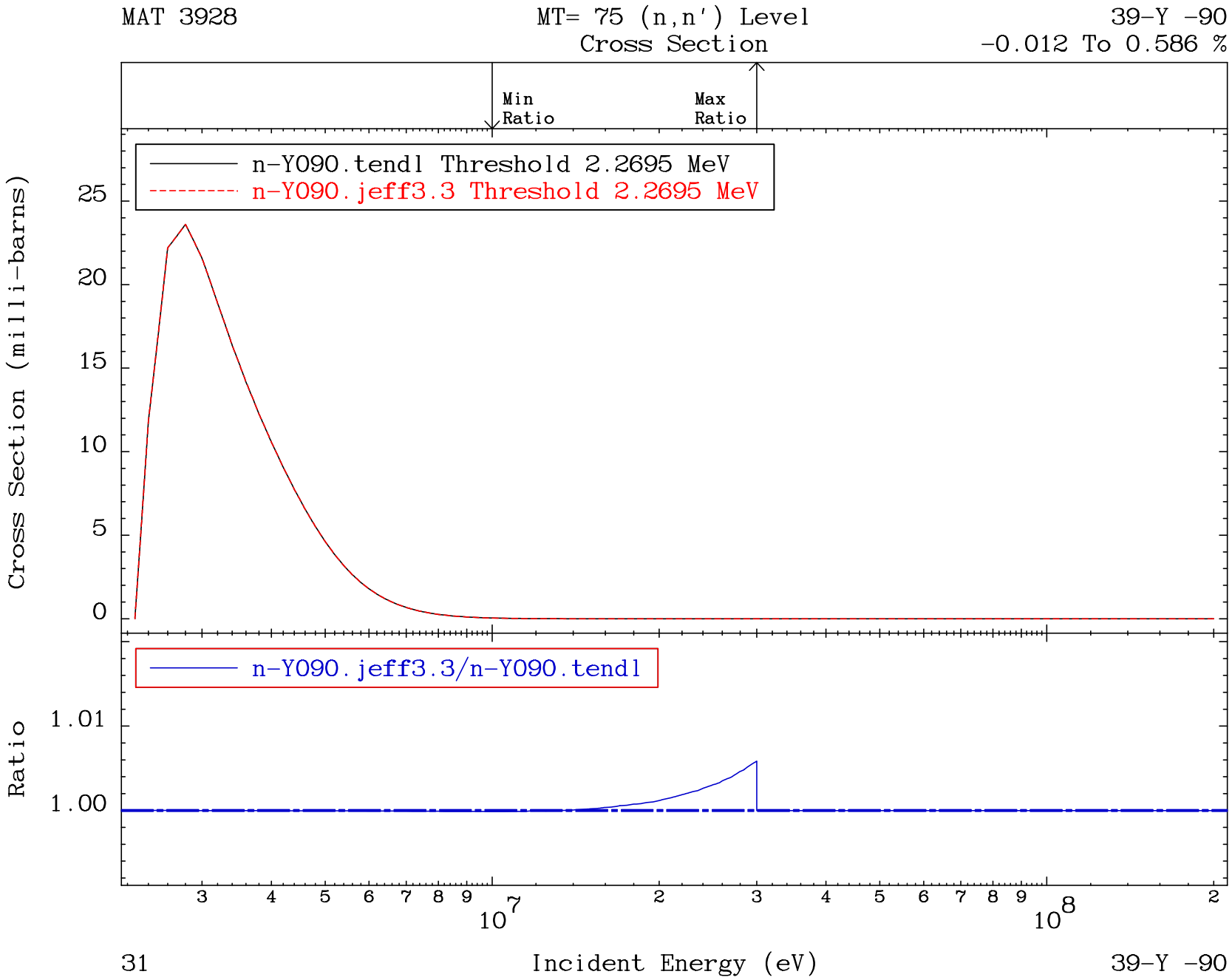

MAT 3928
MT= 65 (n,n') Level
Cross Section
39-Y -90
-0.011 To 0.588 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 1.8313 MeV
n-Y090.jeff3.3 Threshold 1.8313 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
26
Incident Energy (eV)
39-Y -90

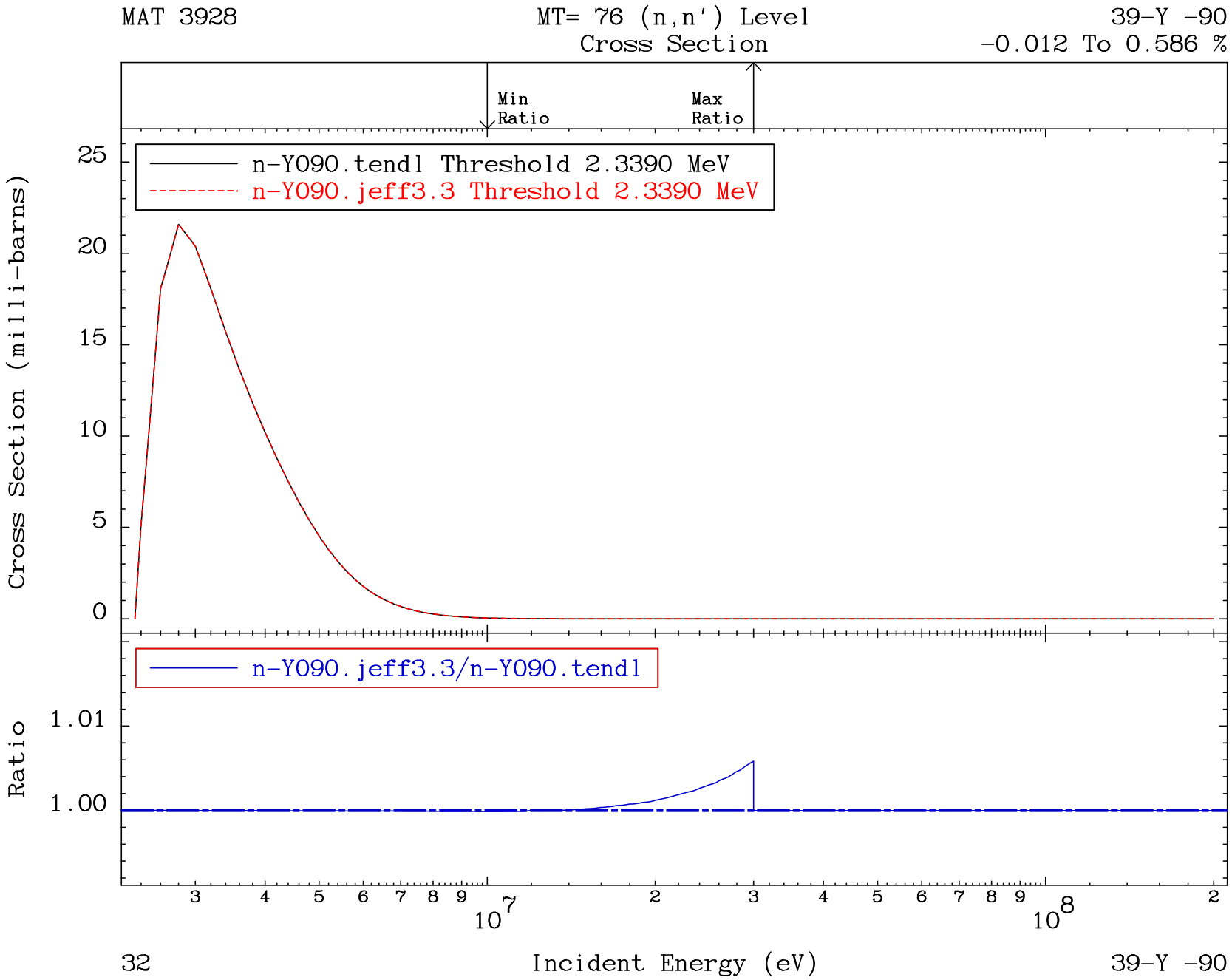

MAT 3928
MT= 66 (n,n') Level
Cross Section
39-Y -90
-0.012 To 0.587 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 1.8355 MeV
n-Y090.jeff3.3 Threshold 1.8355 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
27
Incident Energy (eV)
39-Y -90

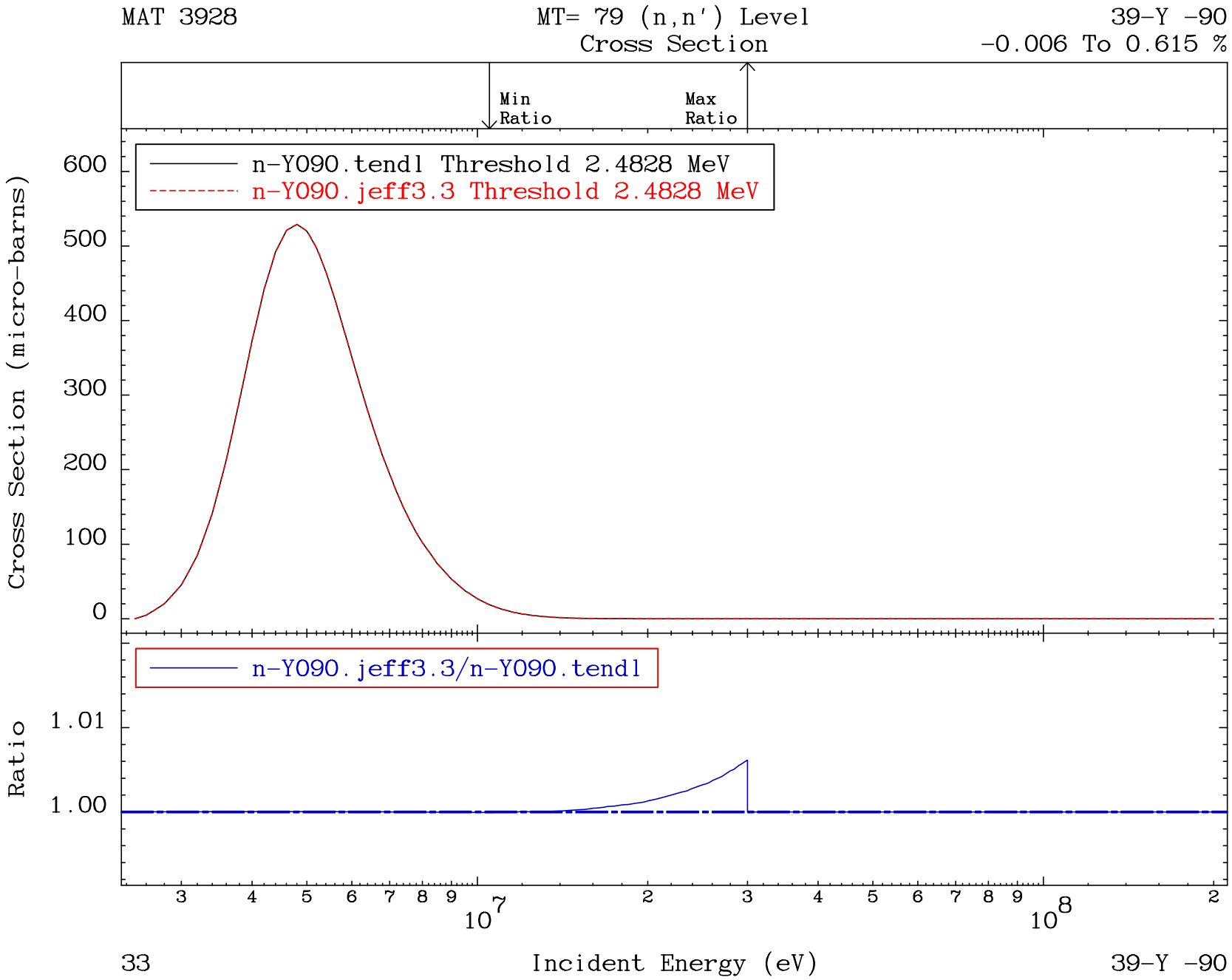

MAT 3928
MT= 67 (n,n') Level
Cross Section
39-Y -90
-0.009 To 0.596 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 1.9841 MeV
n-Y090.jeff3.3 Threshold 1.9841 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
28
Incident Energy (eV)
39-Y -90

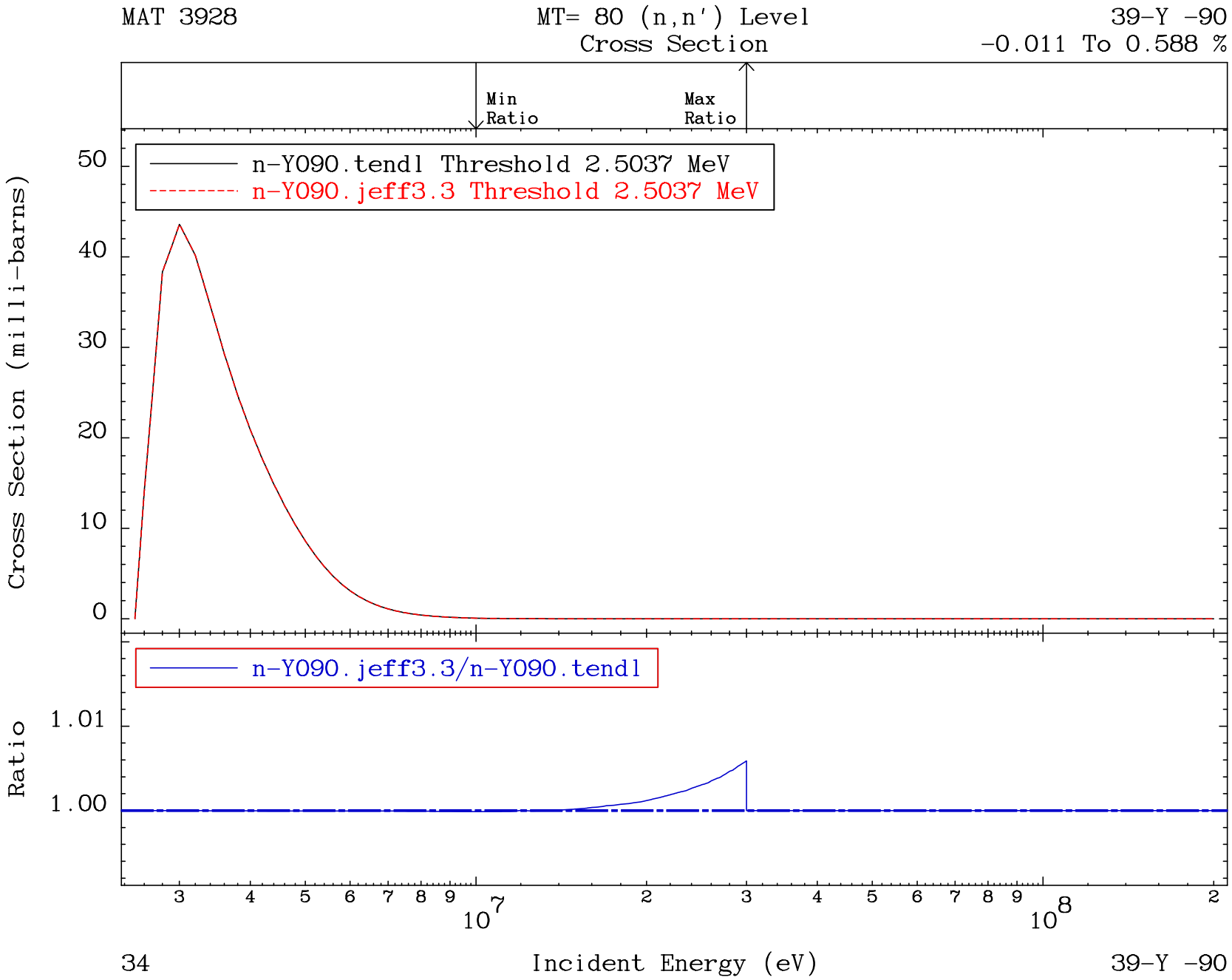

MAT 3928
MT= 69 (n,n') Level
Cross Section
39-Y -90
-0.009 To 0.596 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 2.1091 MeV
n-Y090.jeff3.3 Threshold 2.1091 MeV
Cross Section (milli-barns)
35
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
2 3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
29
Incident Energy (eV)
39-Y -90

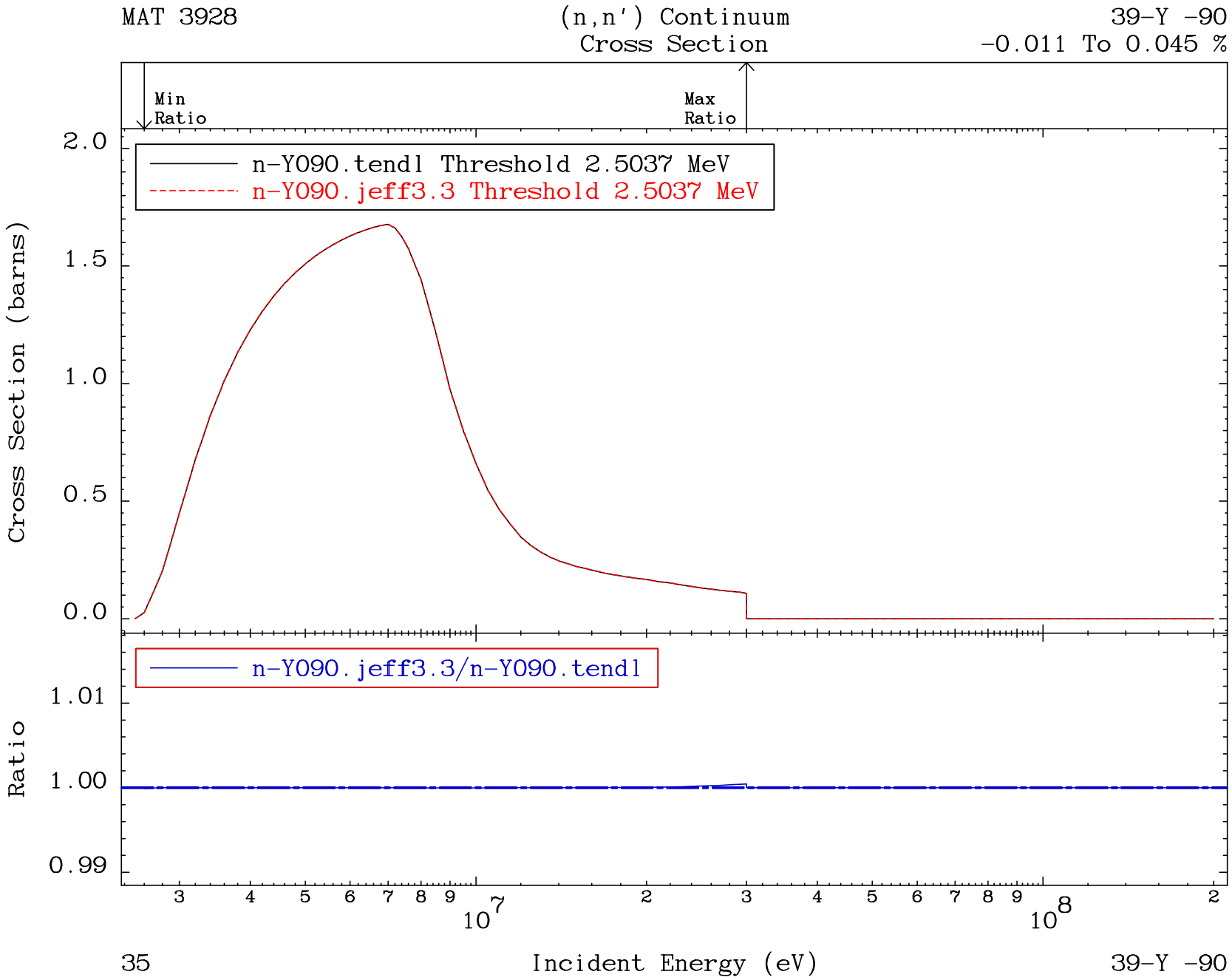

MAT 3928
MT= 70 (n,n') Level
Cross Section
39-Y -90
-0.011 To 0.587 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 2.1575 MeV
n-Y090.jeff3.3 Threshold 2.1575 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
30
Incident Energy (eV)
39-Y -90

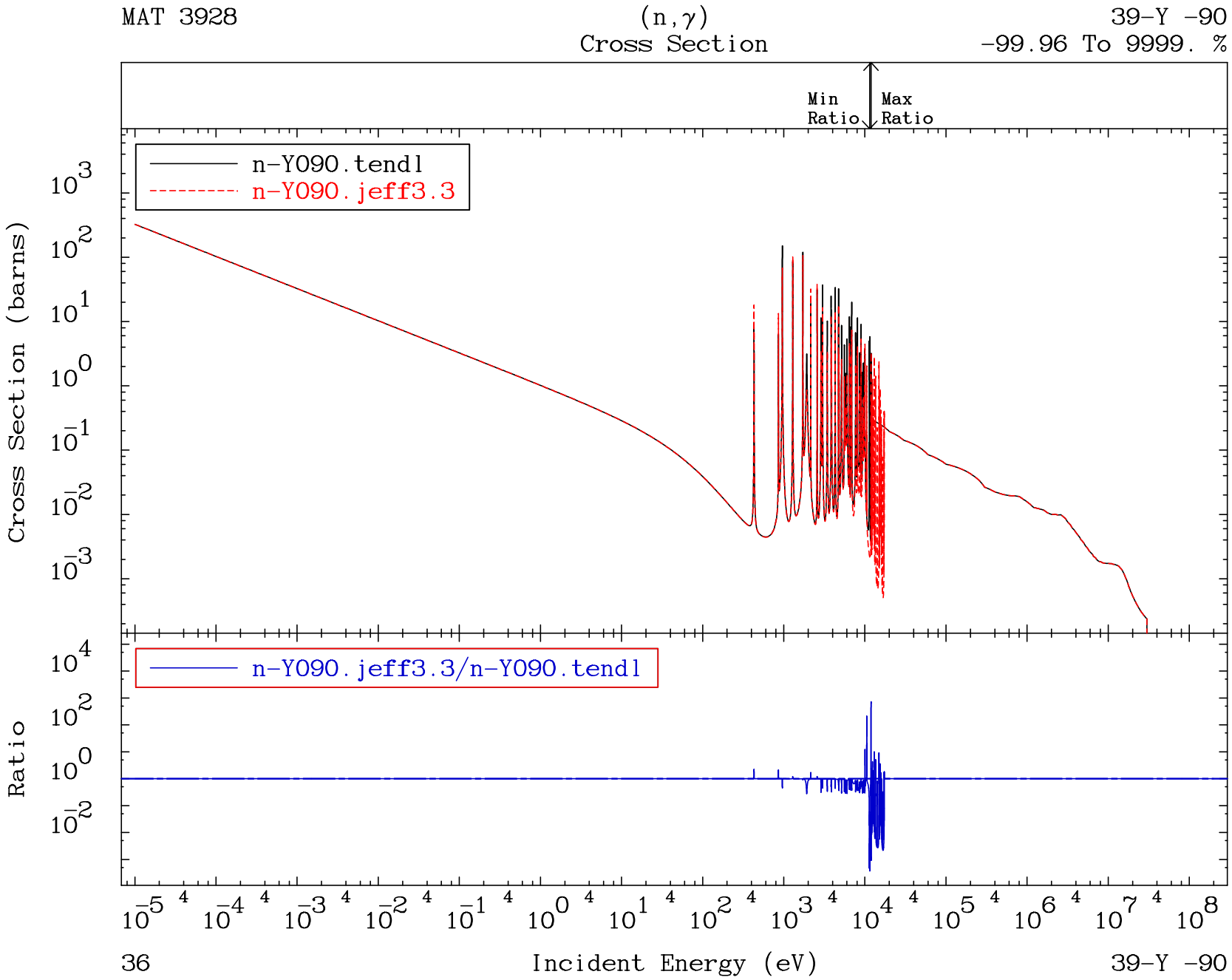

MAT 3928
MT= 75 (n,n') Level
Cross Section
39-Y -90
-0.012 To 0.586 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 2.2695 MeV
n-Y090.jeff3.3 Threshold 2.2695 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
31
Incident Energy (eV)
39-Y -90

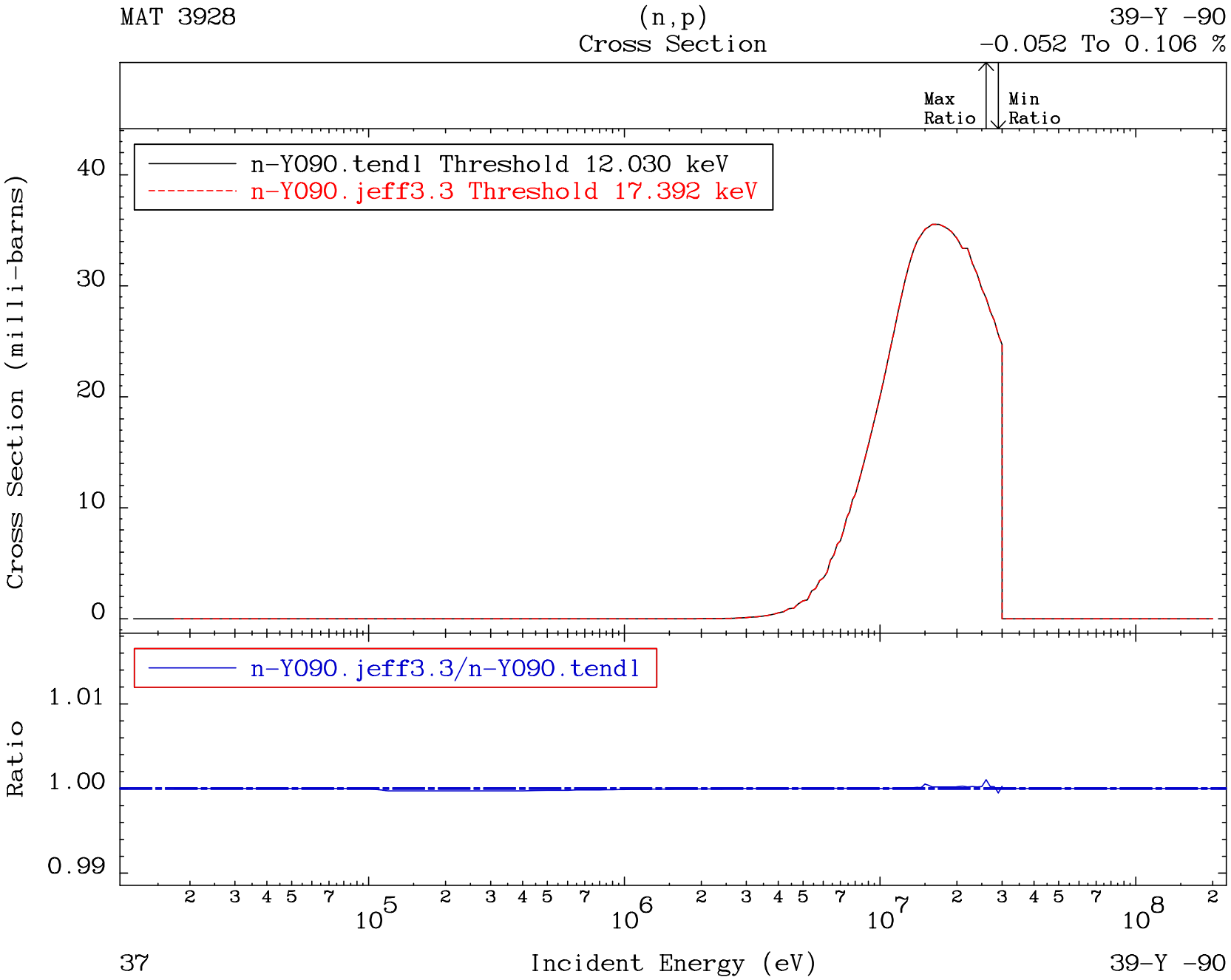

MAT 3928
MT= 76 (n,n') Level
Cross Section
39-Y -90
-0.012 To 0.586 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 2.3390 MeV
n-Y090.jeff3.3 Threshold 2.3390 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
32
Incident Energy (eV)
39-Y -90

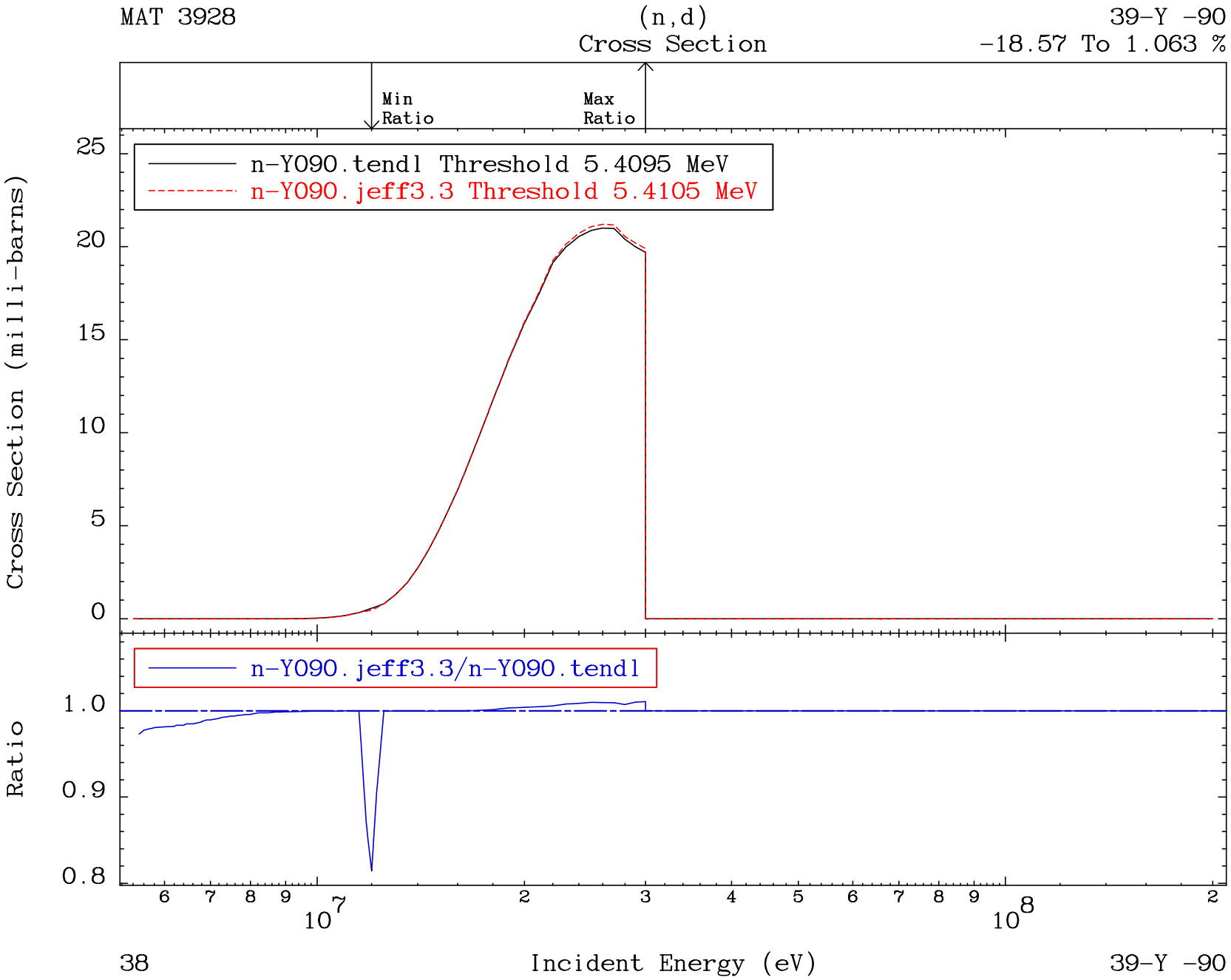

MAT 3928
MT= 79 (n,n') Level
Cross Section
39-Y -90
-0.006 To 0.615 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 2.4828 MeV
n-Y090.jeff3.3 Threshold 2.4828 MeV
Cross Section (micro-barns)
600
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
33
Incident Energy (eV)
39-Y -90

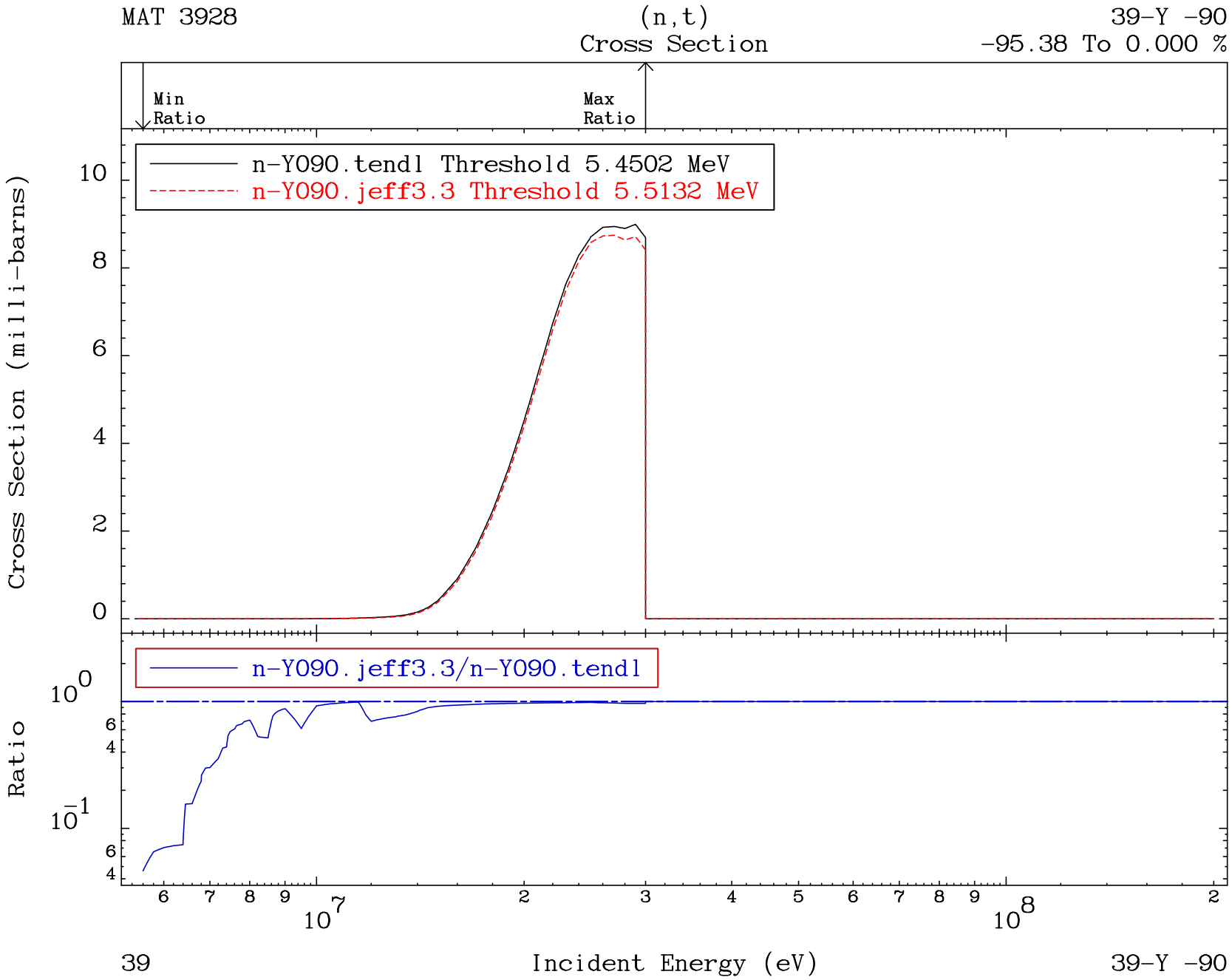

MAT 3928
MT= 80 (n,n') Level
Cross Section
39-Y -90
-0.011 To 0.588 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 2.5037 MeV
n-Y090.jeff3.3 Threshold 2.5037 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
34
Incident Energy (eV)
39-Y -90

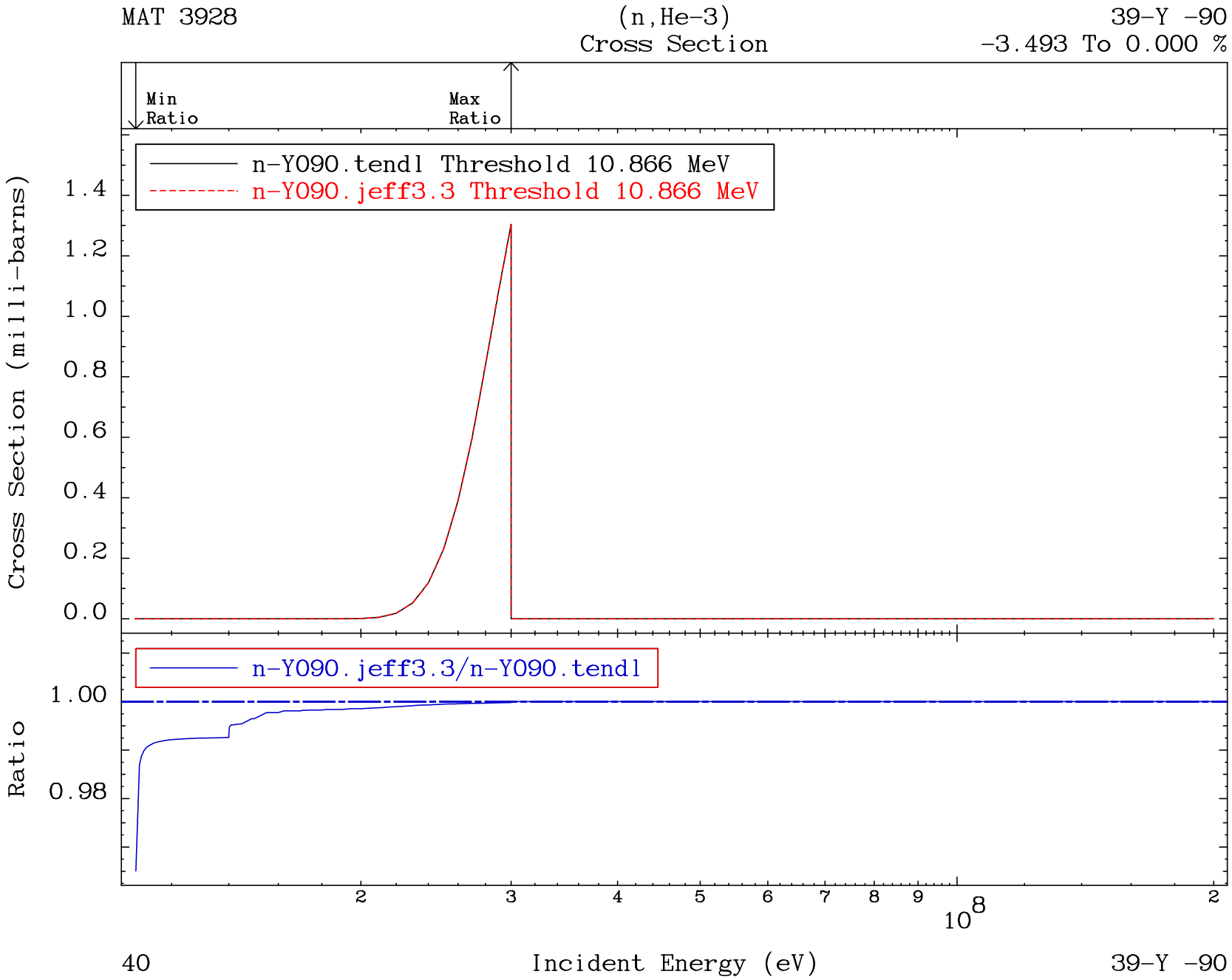

MAT 3928
(n,n') Continuum
Cross Section
39-Y -90
-0.011 To 0.045 %
Min
Ratio
Max
Ratio
n-Y090.tendl Threshold 2.5037 MeV
n-Y090.jeff3.3 Threshold 2.5037 MeV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
35
Incident Energy (eV)
39-Y -90

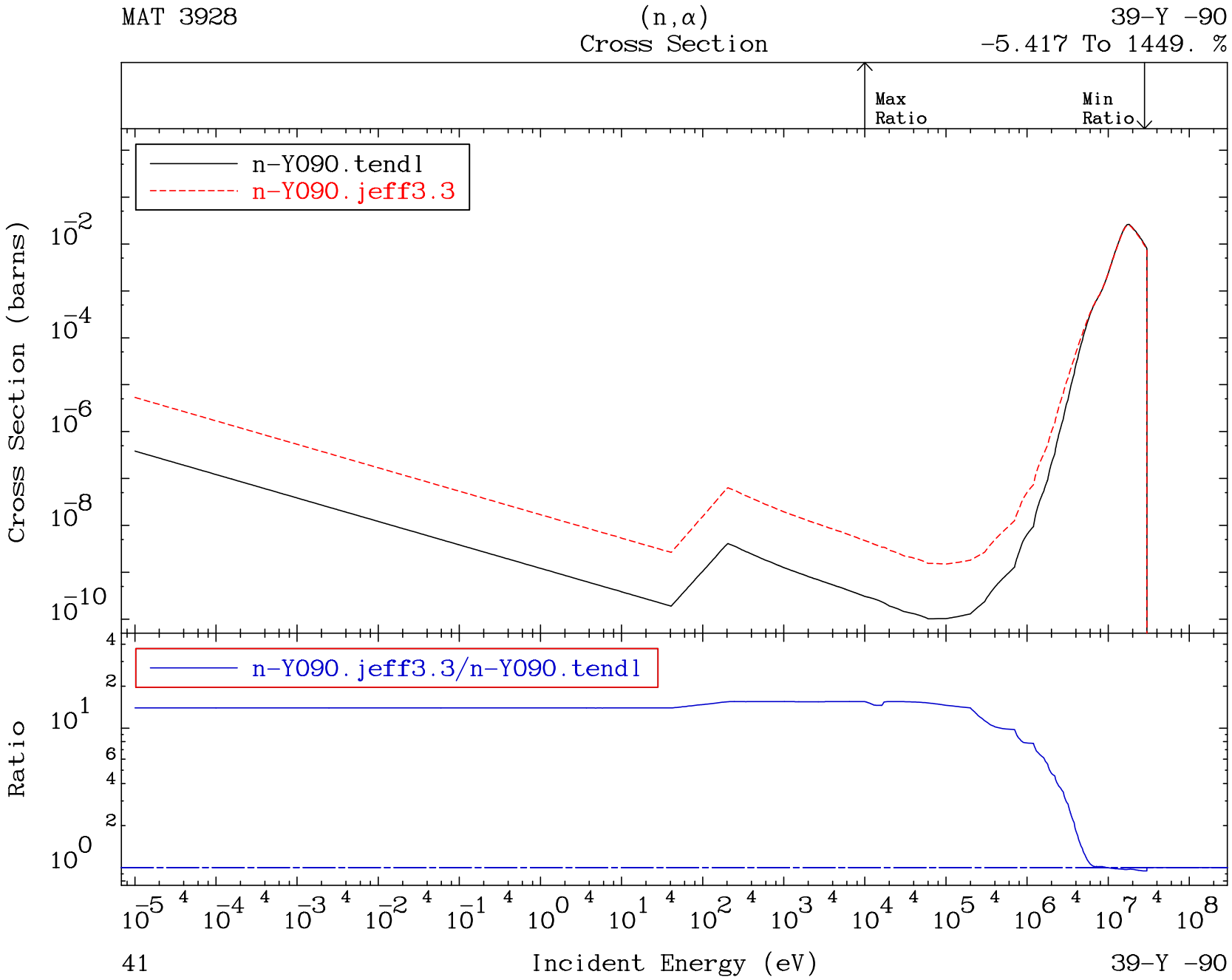

MAT 3928
(n,γ)
Cross Section
39-Y -90
-99.96 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
36
39-Y -90

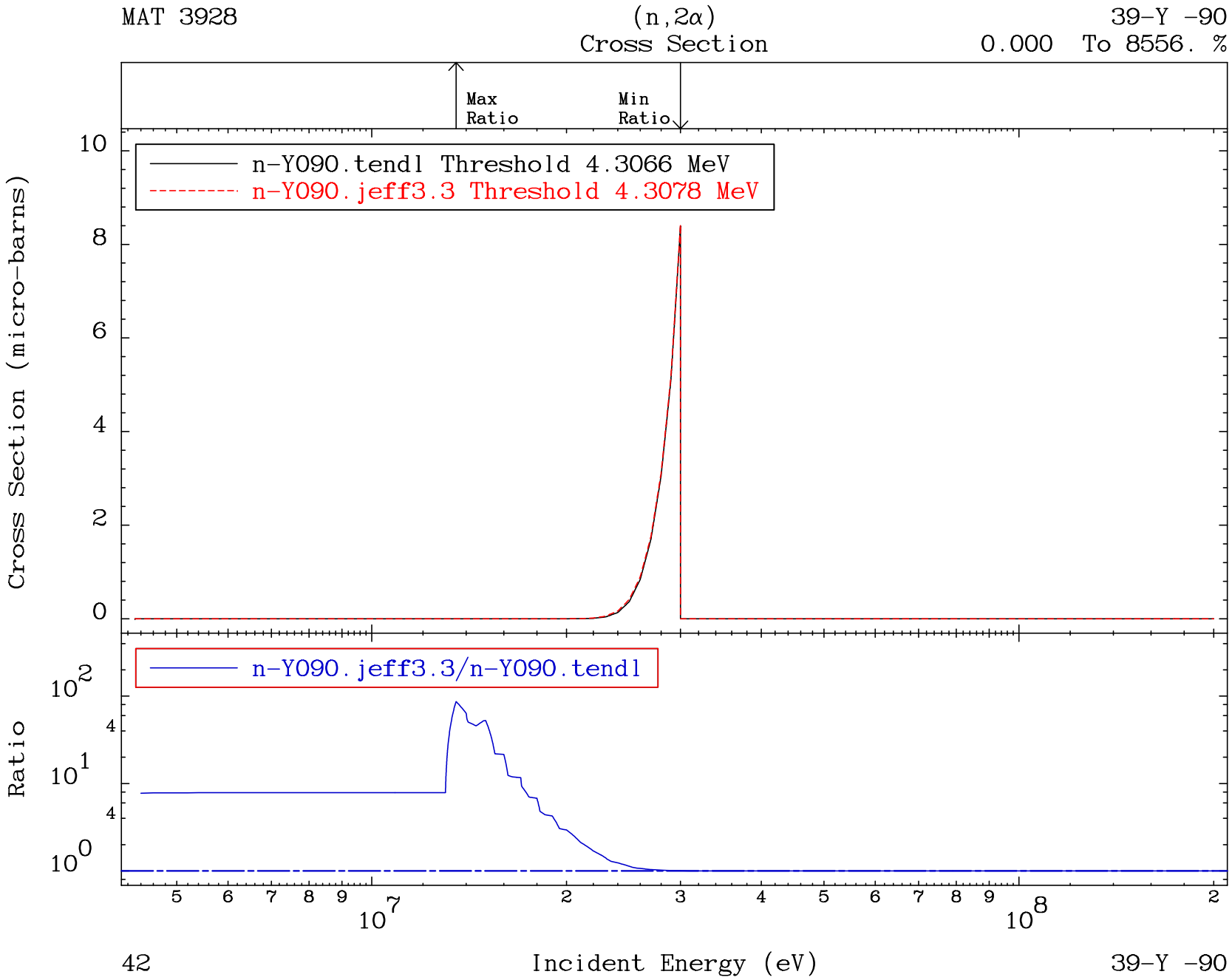

MAT 3928
(n,p)
Cross Section
39-Y -90
-0.052 To 0.106 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 12.030 keV
n-Y090.jeff3.3 Threshold 17.392 keV
Cross Section (milli-barns)
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
2 3 4 5 7 10^5 2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
37
Incident Energy (eV)
39-Y -90

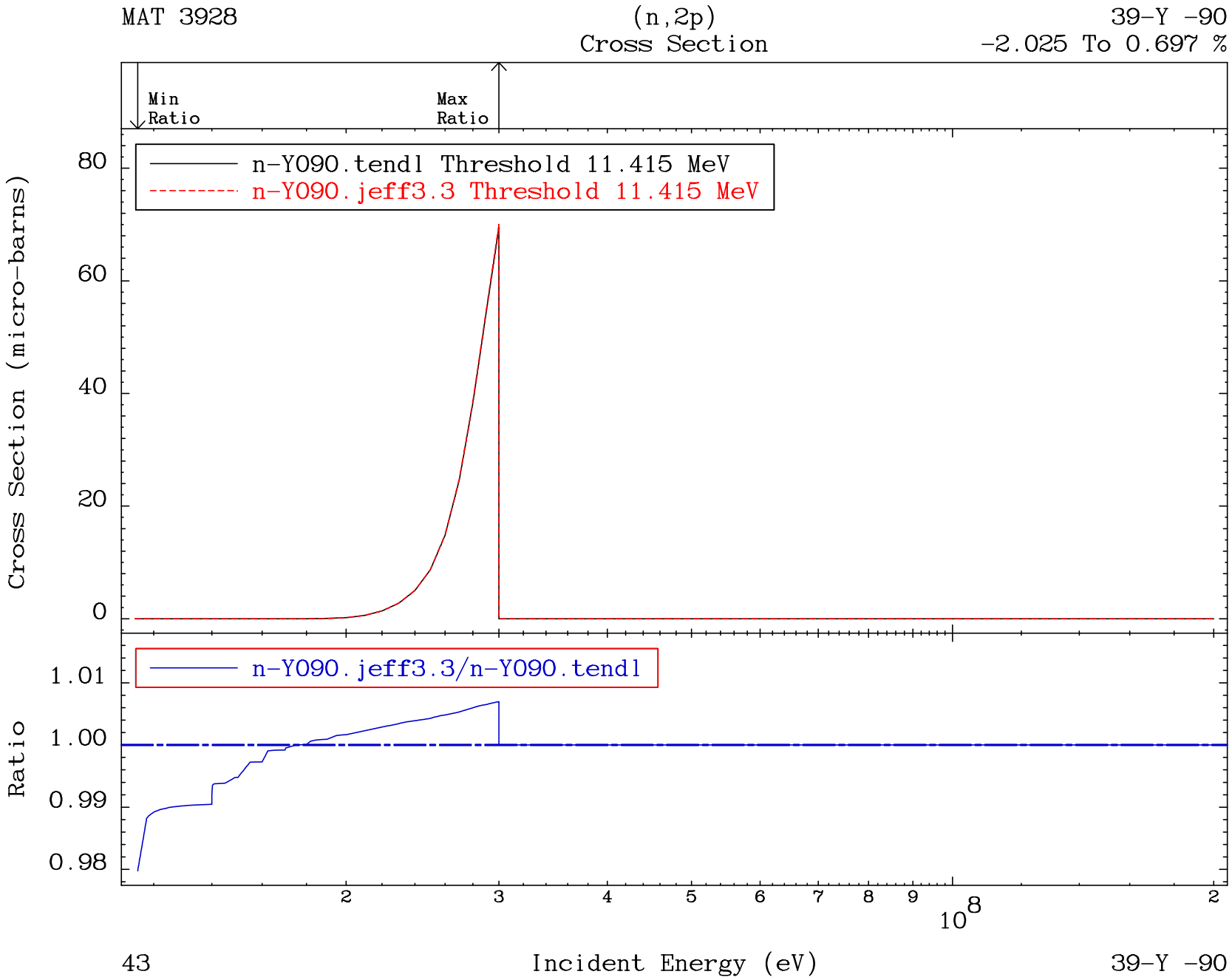

MAT 3928
(n,d)
Cross Section
39-Y -90
-18.57 To 1.063 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 5.4095 MeV
n-Y090.jeff3.3 Threshold 5.4105 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.0
0.9
0.8
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
38
Incident Energy (eV)
39-Y -90

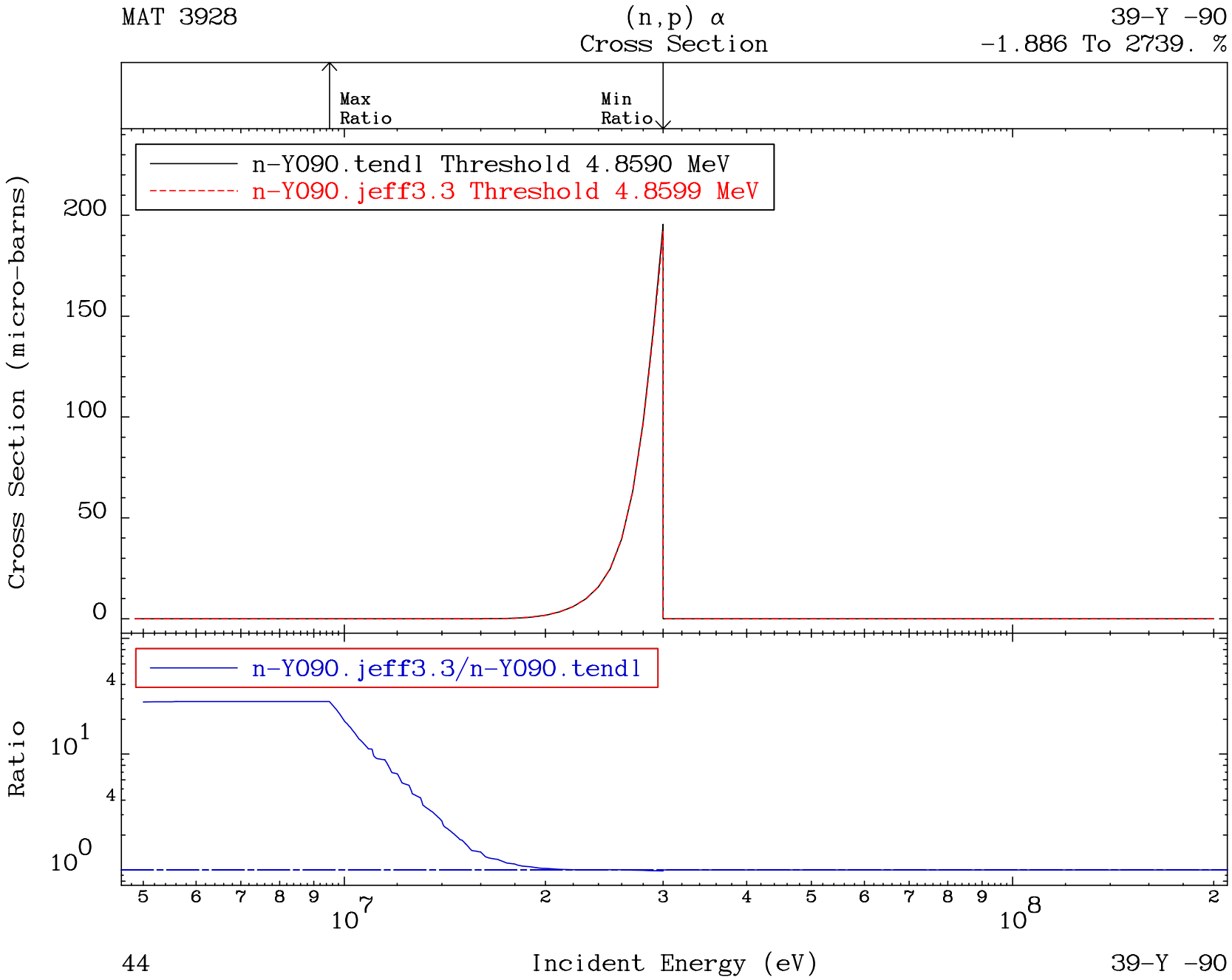

MAT 3928
(n,t)
Cross Section
39-Y -90
-95.38 To 0.000 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 5.4502 MeV
n-Y090.jeff3.3 Threshold 5.5132 MeV
Cross Section (milli-barns)
10
8
6
4
2
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^0
10^-1
6
4
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
39
Incident Energy (eV)
39-Y -90

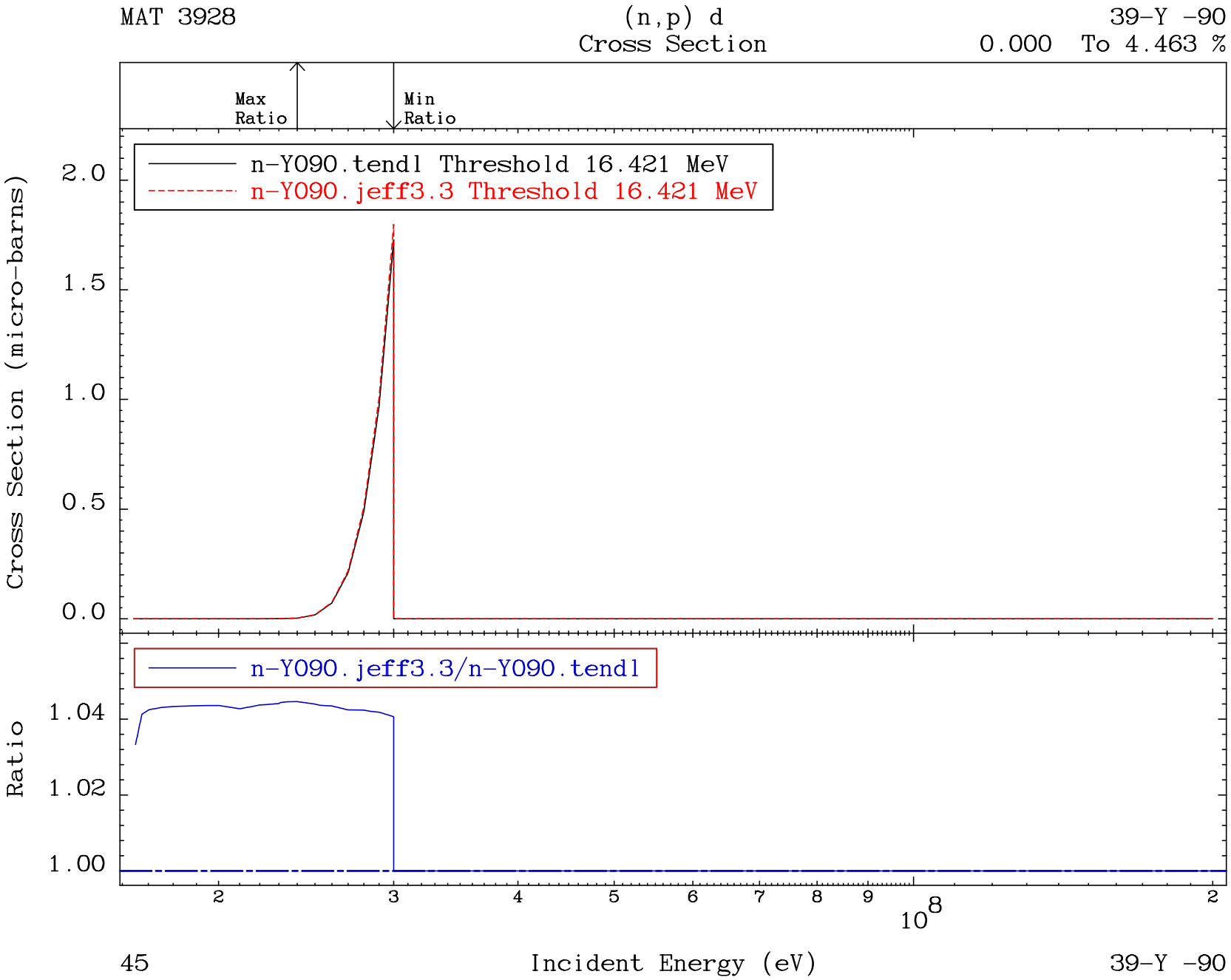

MAT 3928
(n,He-3)
Cross Section
39-Y -90
-3.493 To 0.000 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 10.866 MeV
n-Y090.jeff3.3 Threshold 10.866 MeV
Cross Section (milli-barns)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
0.98
2
3
4
5
6
7
8
9
10^8
2
40
Incident Energy (eV)
39-Y -90

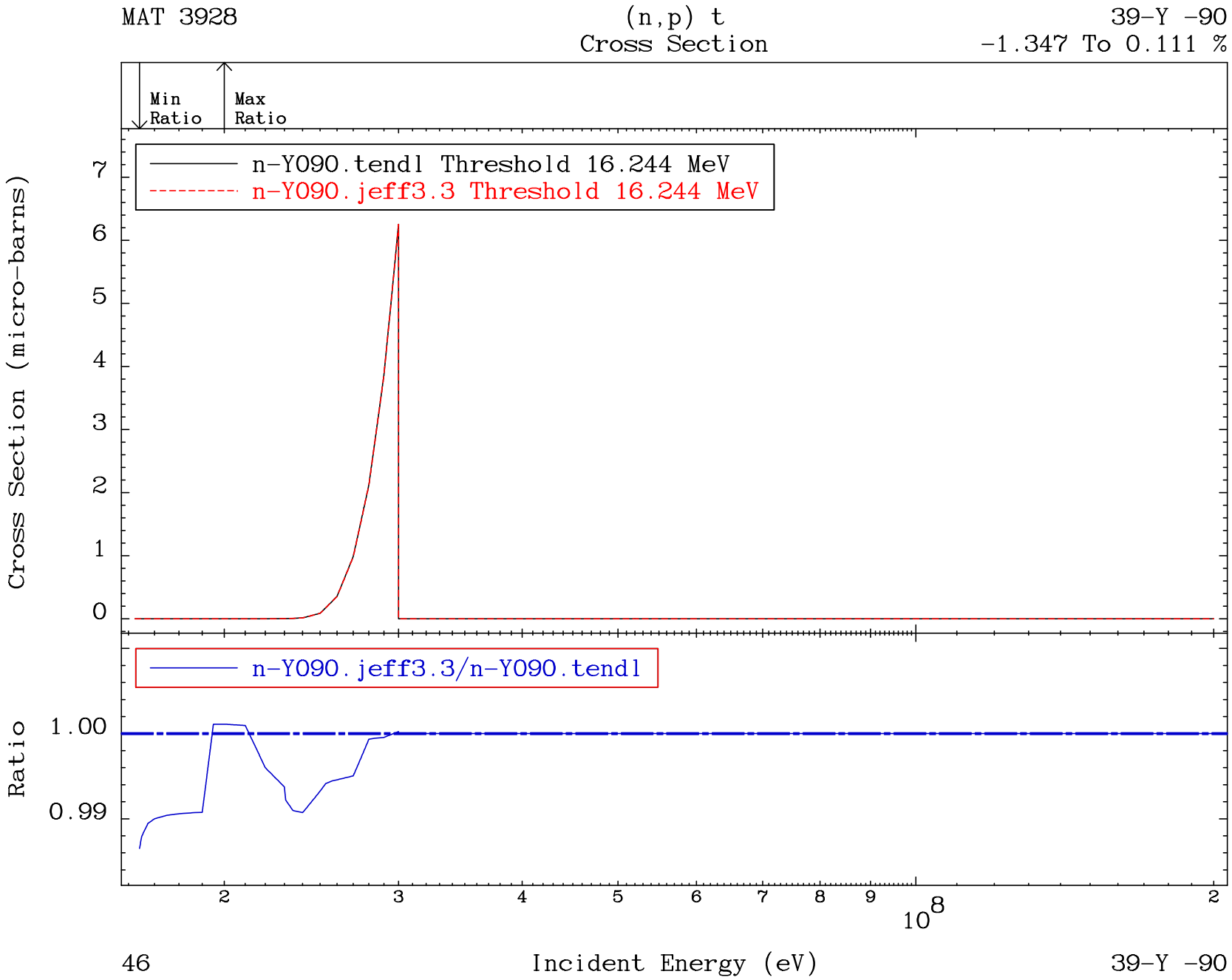

MAT 3928
(n,α)
Cross Section
39-Y -90
-5.417 To 1449. %
Max Ratio
Min Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
41
39-Y -90

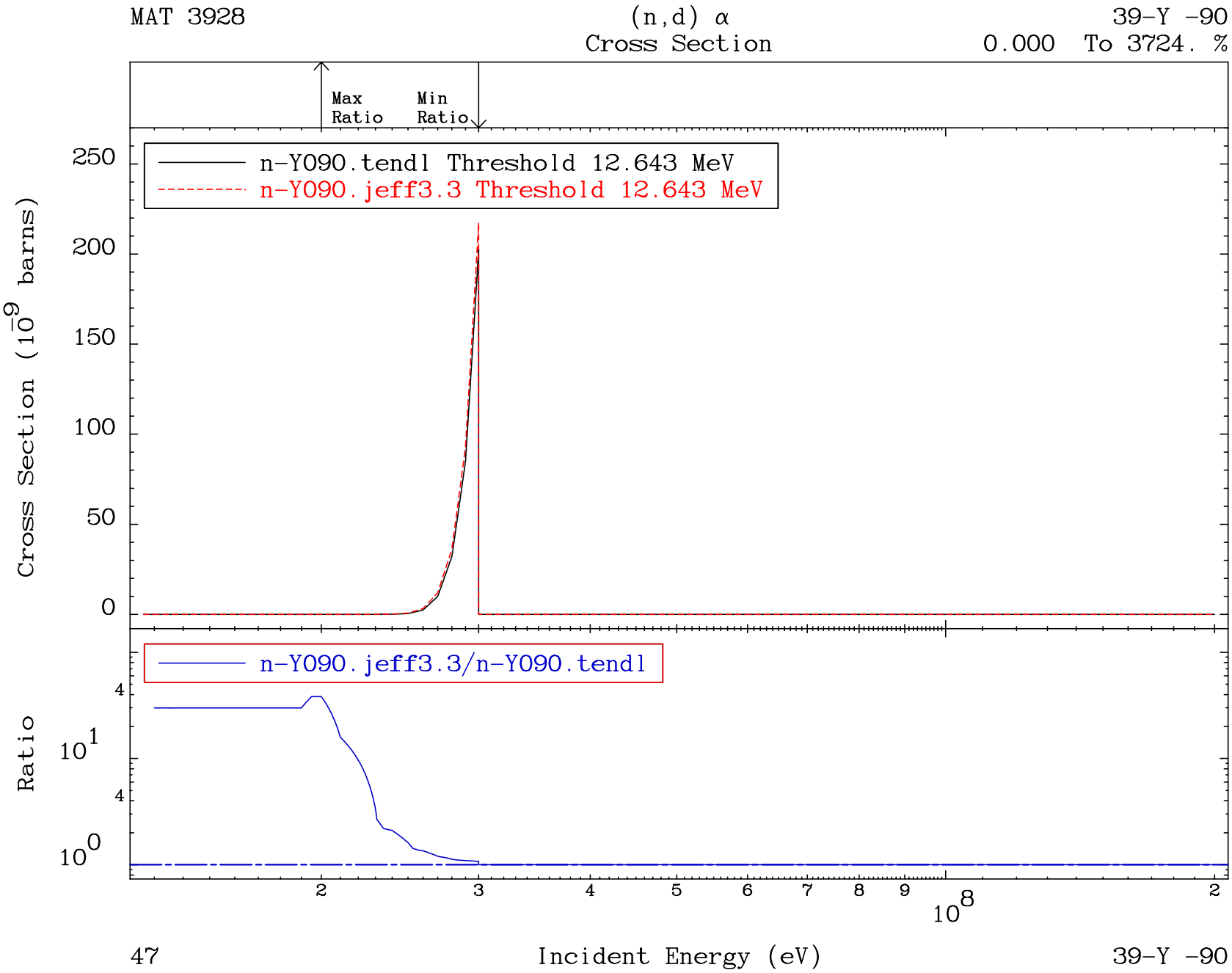

MAT 3928
(n,2α)
Cross Section
39-Y -90
0.000 To 8556. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 4.3066 MeV
n-Y090.jeff3.3 Threshold 4.3078 MeV
Cross Section (micro-barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
42
39-Y -90

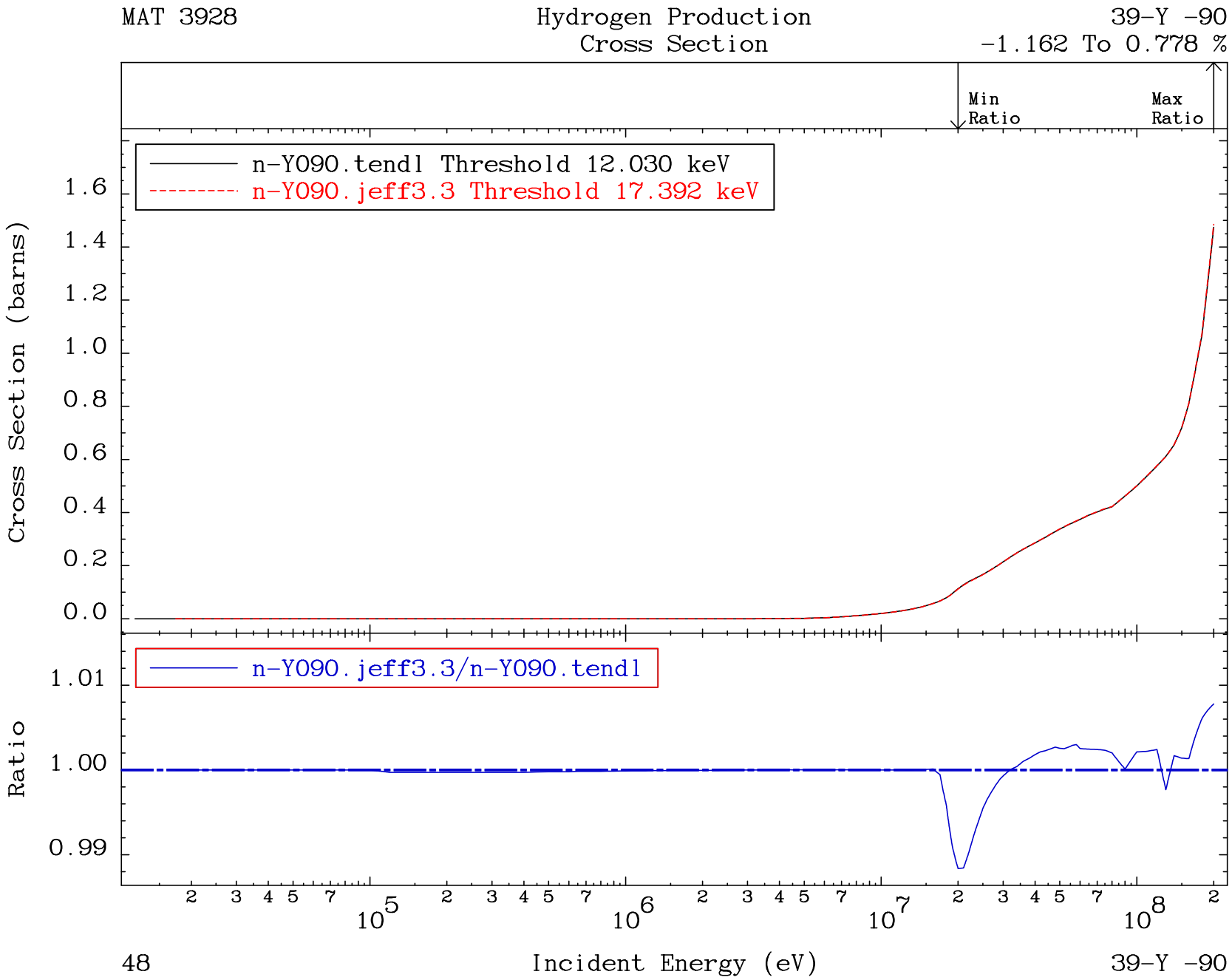

MAT 3928
(n,2p)
Cross Section
39-Y -90
-2.025 To 0.697 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 11.415 MeV
n-Y090.jeff3.3 Threshold 11.415 MeV
Cross Section (micro-barns)
80
60
40
20
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
0.98
2
3
4
5
6
7
8
9
10^8
2
43
Incident Energy (eV)
39-Y -90

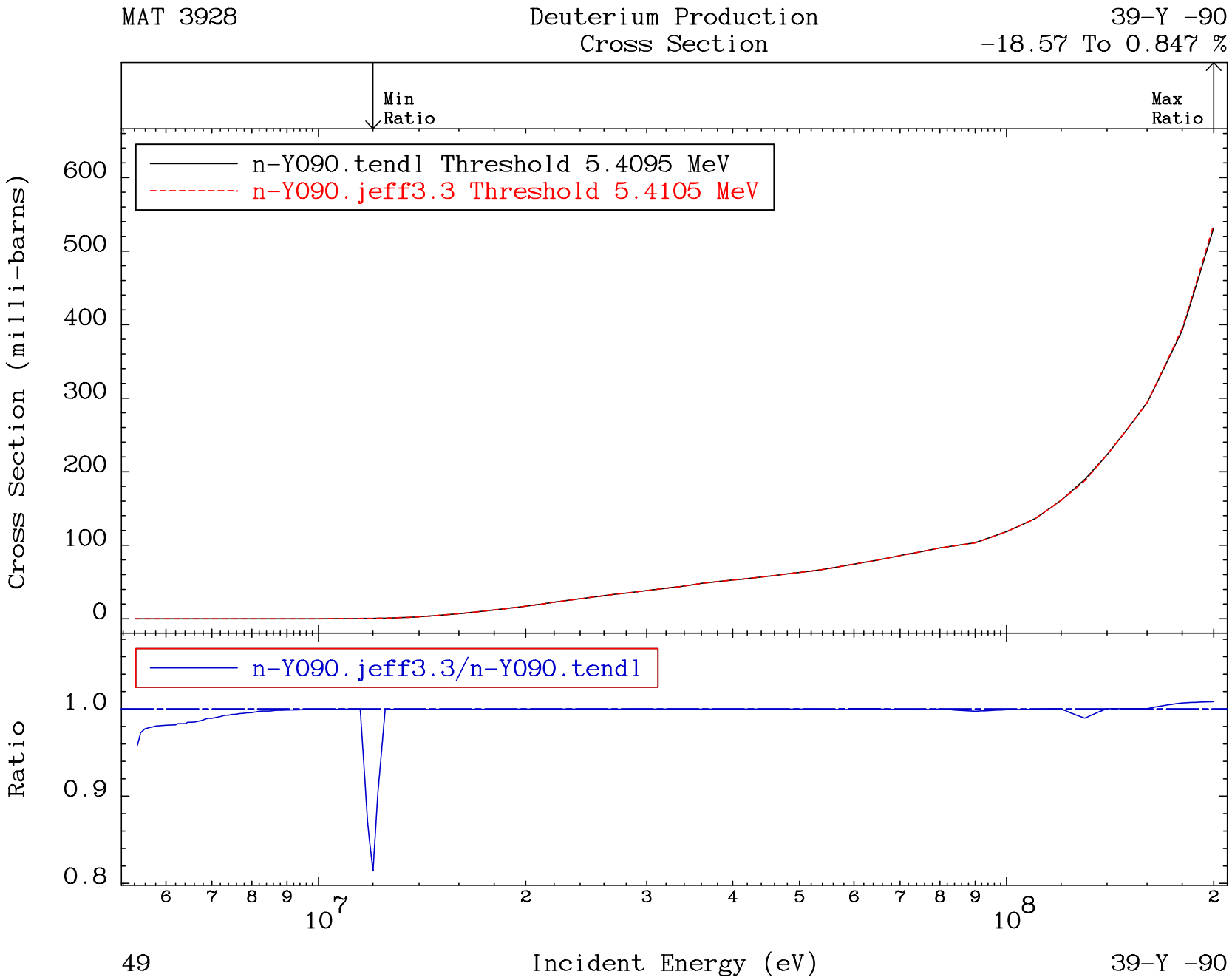

MAT 3928
(n,p) α
Cross Section
39-Y -90
-1.886 To 2739. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 4.8590 MeV
n-Y090.jeff3.3 Threshold 4.8599 MeV
Cross Section (micro-barns)
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
4
10^1
4
10^0
5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
44
Incident Energy (eV)
39-Y -90

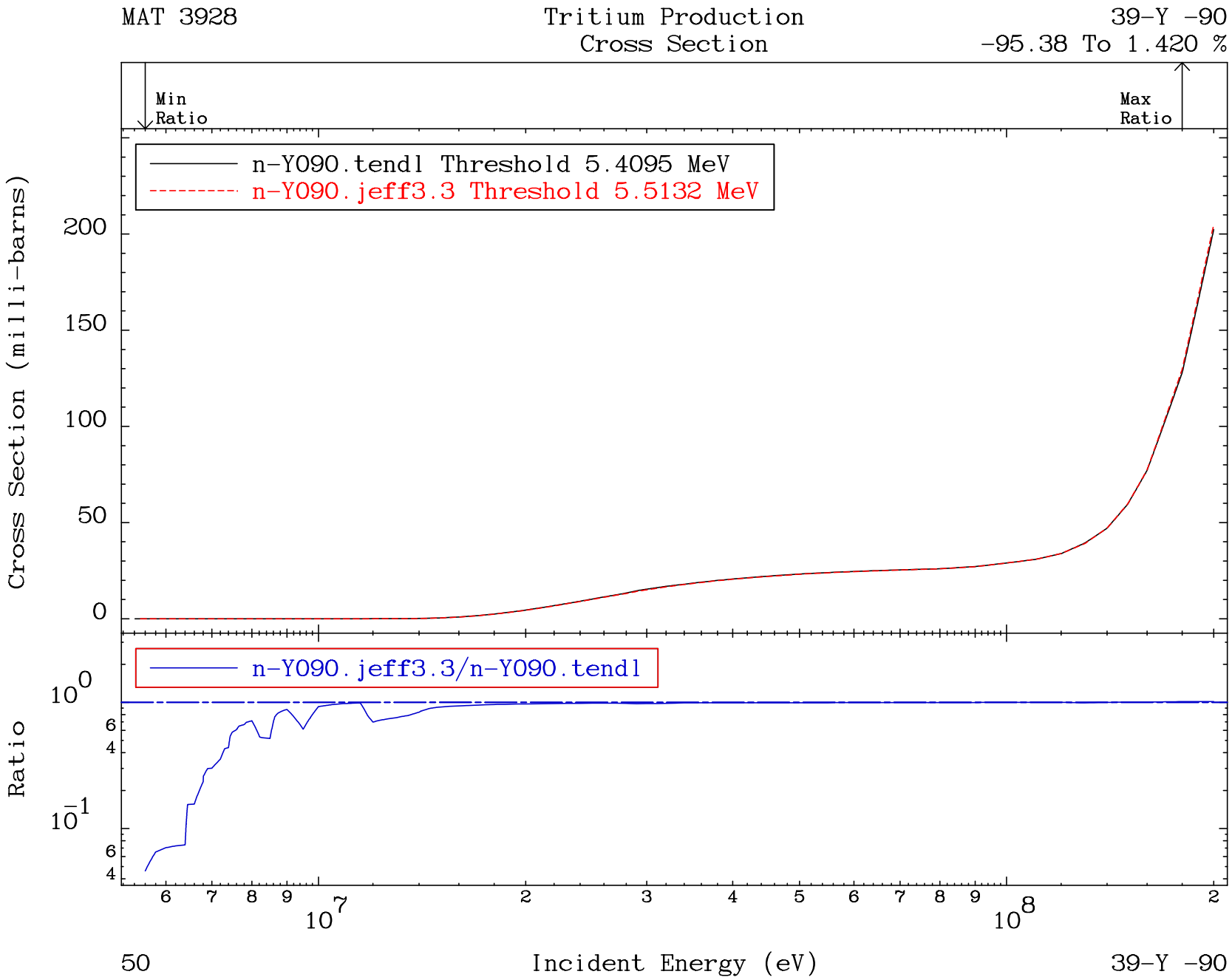

MAT 3928
(n,p) d
Cross Section
39-Y -90
0.000 To 4.463 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 16.421 MeV
n-Y090.jeff3.3 Threshold 16.421 MeV
Cross Section (micro-barns)
2.0
1.5
1.0
0.5
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.04
1.02
1.00
2
3
4
5
6
7
8
9
10^8
2
45
Incident Energy (eV)
39-Y -90

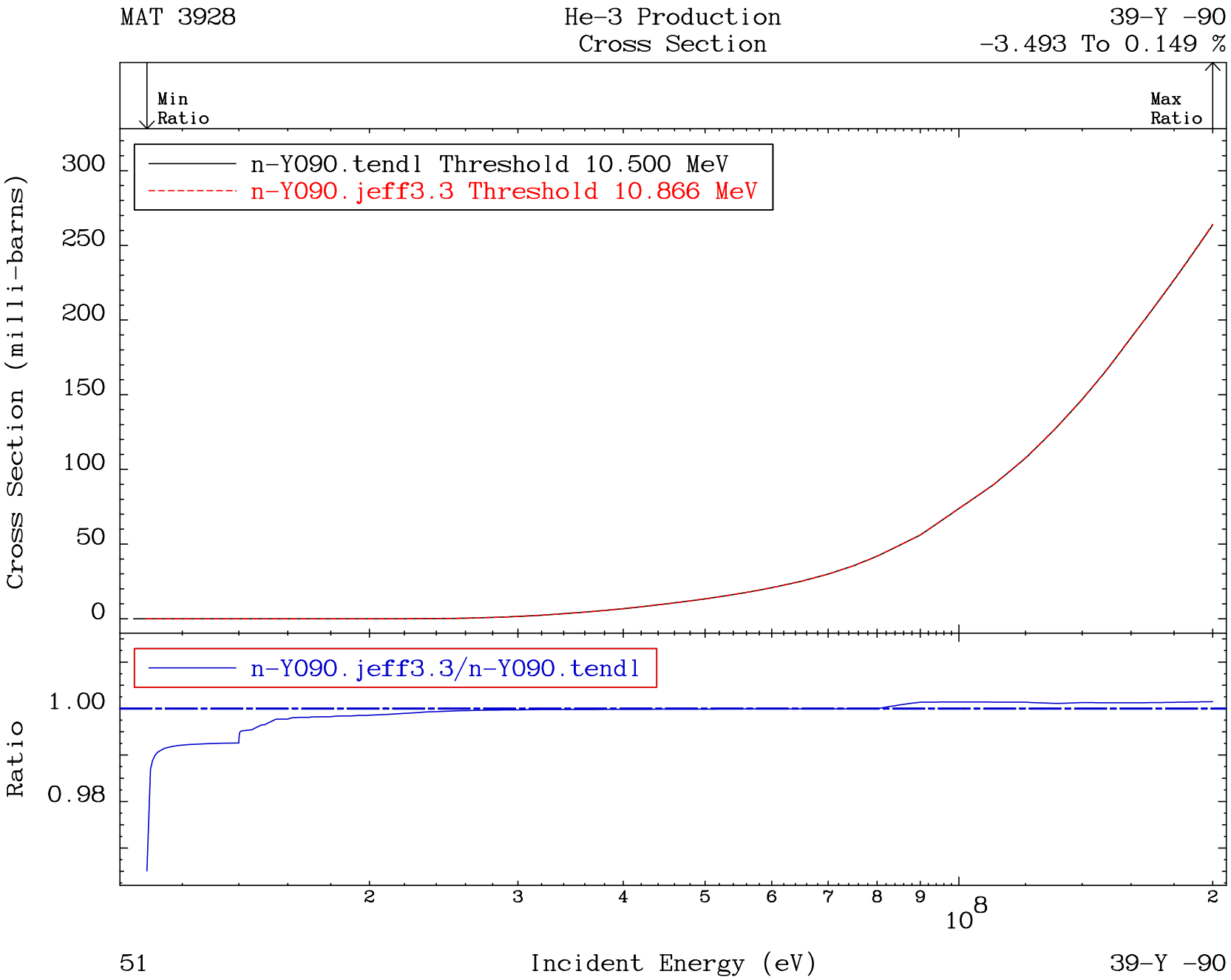

MAT 3928
(n,p) t
Cross Section
39-Y -90
-1.347 To 0.111 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 16.244 MeV
n-Y090.jeff3.3 Threshold 16.244 MeV
Cross Section (micro-barns)
0
1
2
3
4
5
6
7
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
0.99
2
3
4
5
6
7
8
9
10^8
2
46
Incident Energy (eV)
39-Y -90

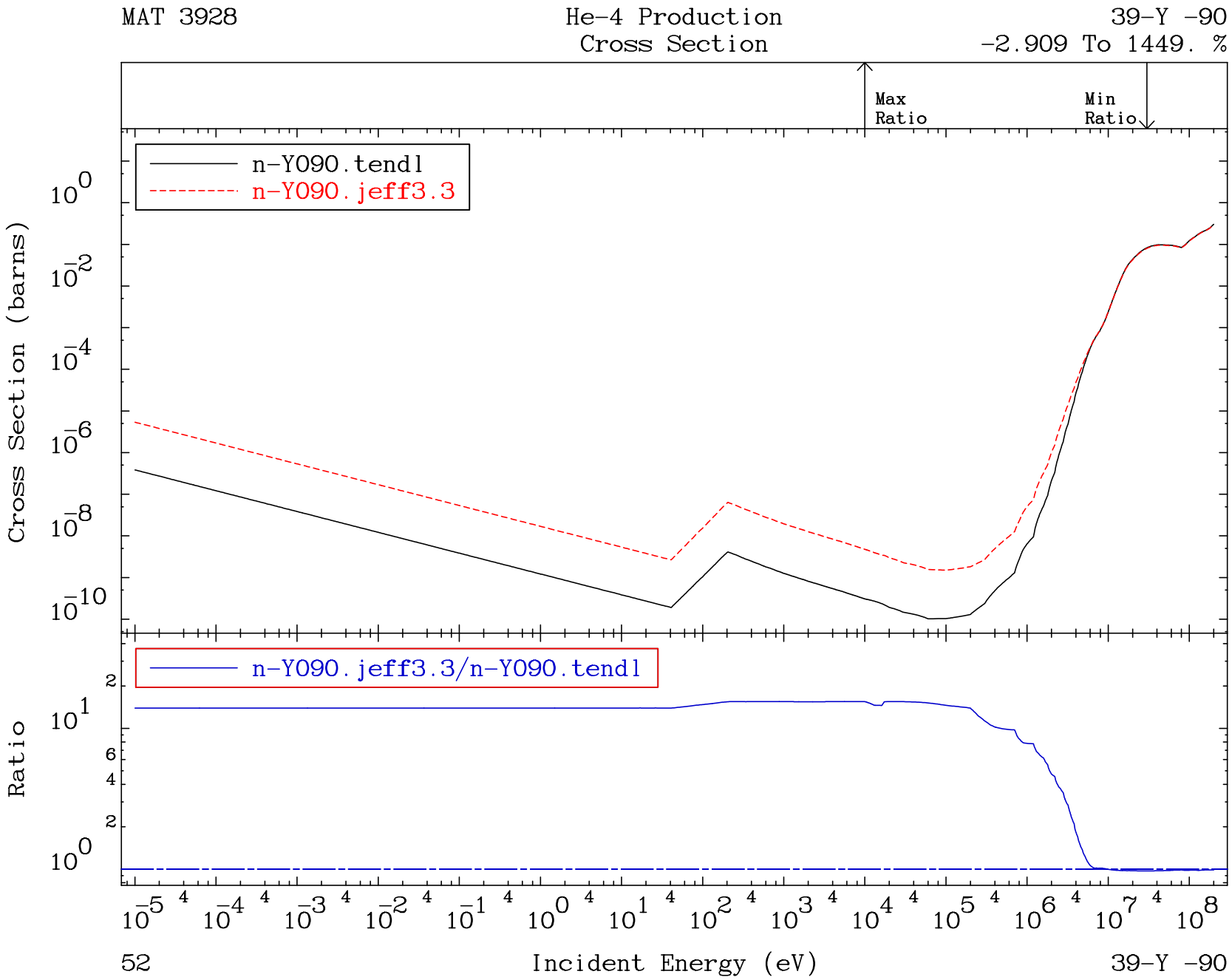

MAT 3928
(n,d) α
Cross Section
39-Y -90
0.000 To 3724. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 12.643 MeV
n-Y090.jeff3.3 Threshold 12.643 MeV
Cross Section (10^{-9} barns)
250
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^{1}
4
4
10^{0}
2
3
4
5
6
7
8
9
10^{8}
2
47
Incident Energy (eV)
39-Y -90

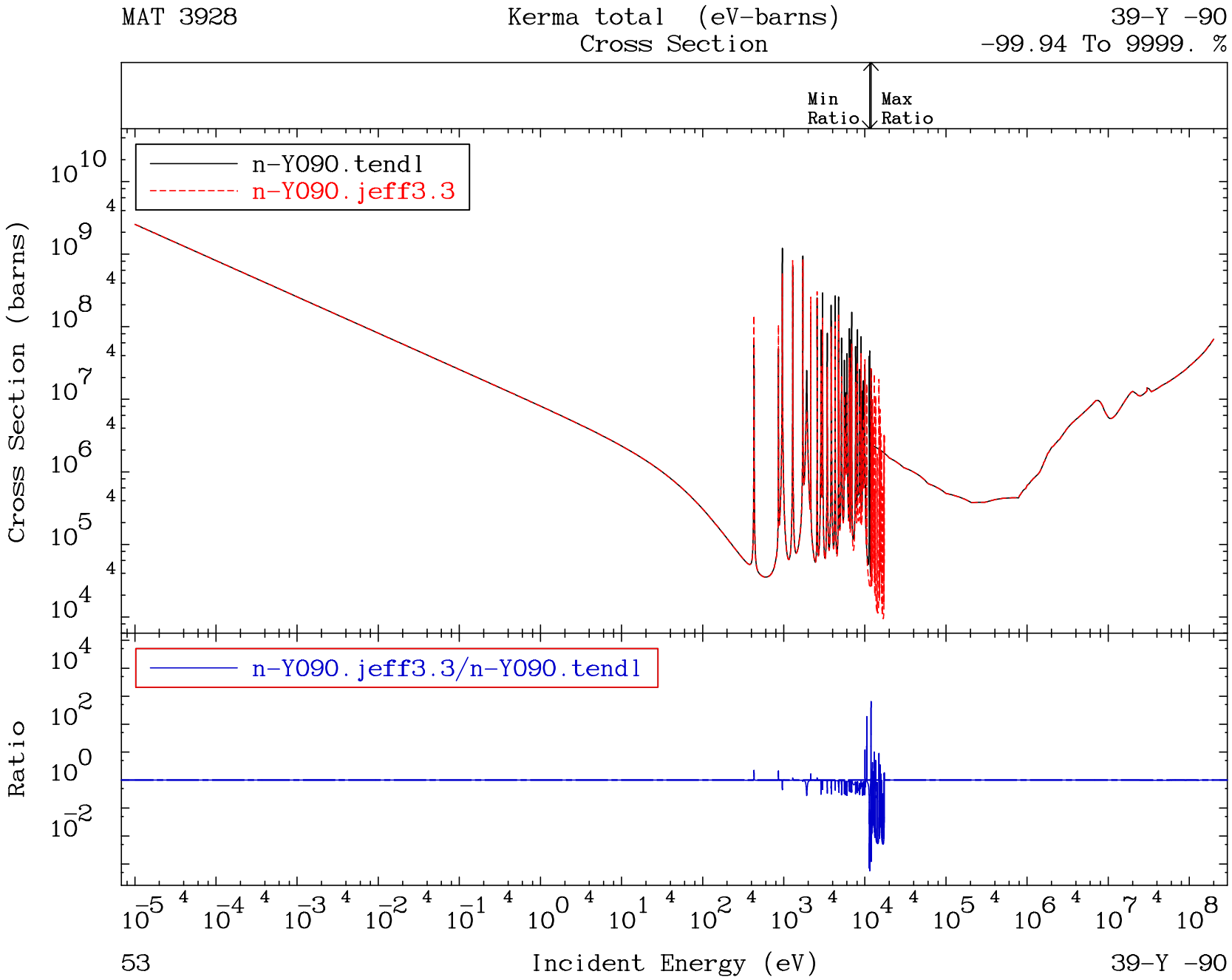

MAT 3928
Hydrogen Production
Cross Section
39-Y -90
-1.162 To 0.778 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 12.030 keV
n-Y090.jeff3.3 Threshold 17.392 keV
Cross Section (barns)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
2 3 4 5 7 10^5 2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
48
Incident Energy (eV)
39-Y -90

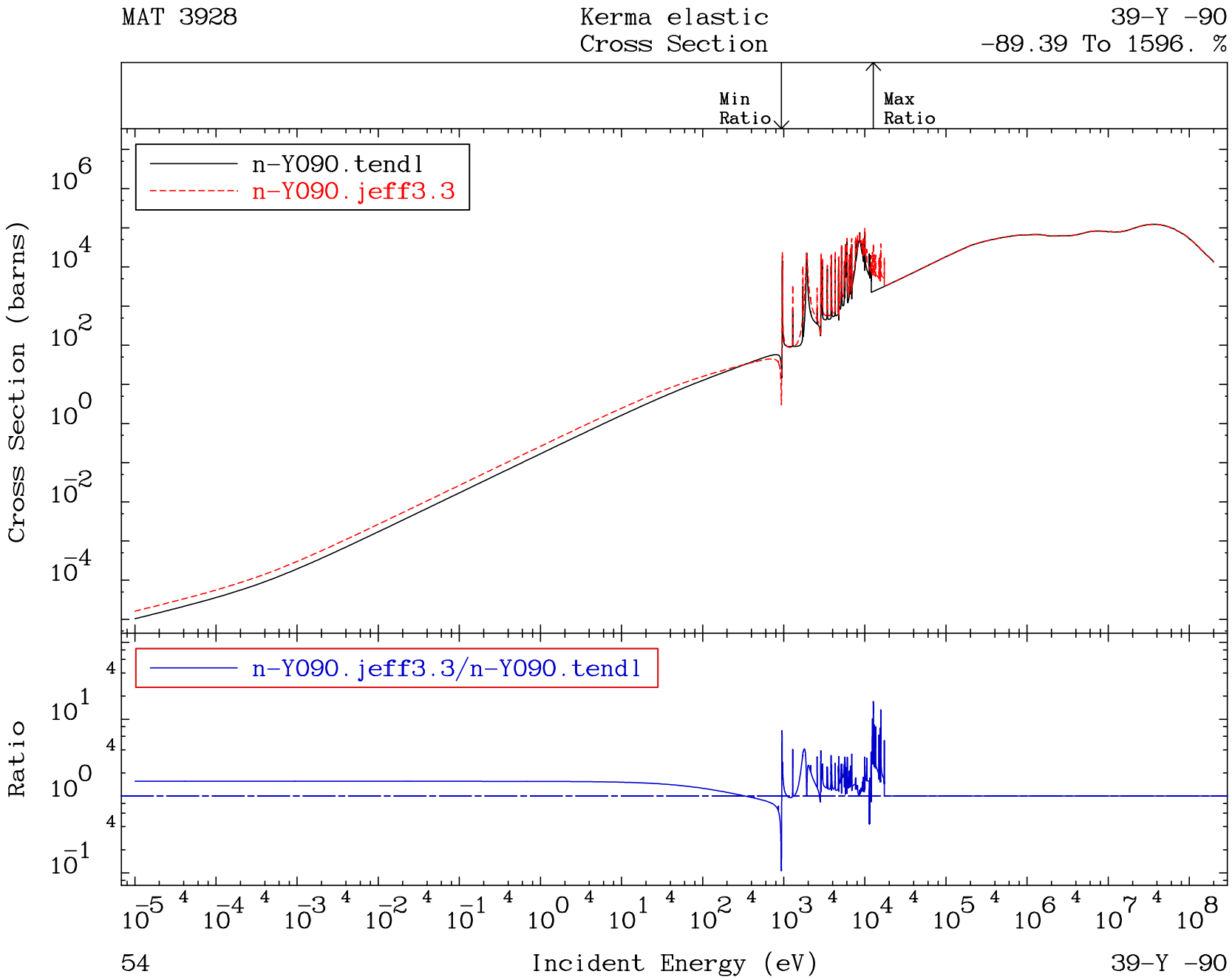

MAT 3928
Deuterium Production
Cross Section
39-Y -90
-18.57 To 0.847 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 5.4095 MeV
n-Y090.jeff3.3 Threshold 5.4105 MeV
Cross Section (milli-barns)
600
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.0
0.9
0.8
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
49
Incident Energy (eV)
39-Y -90

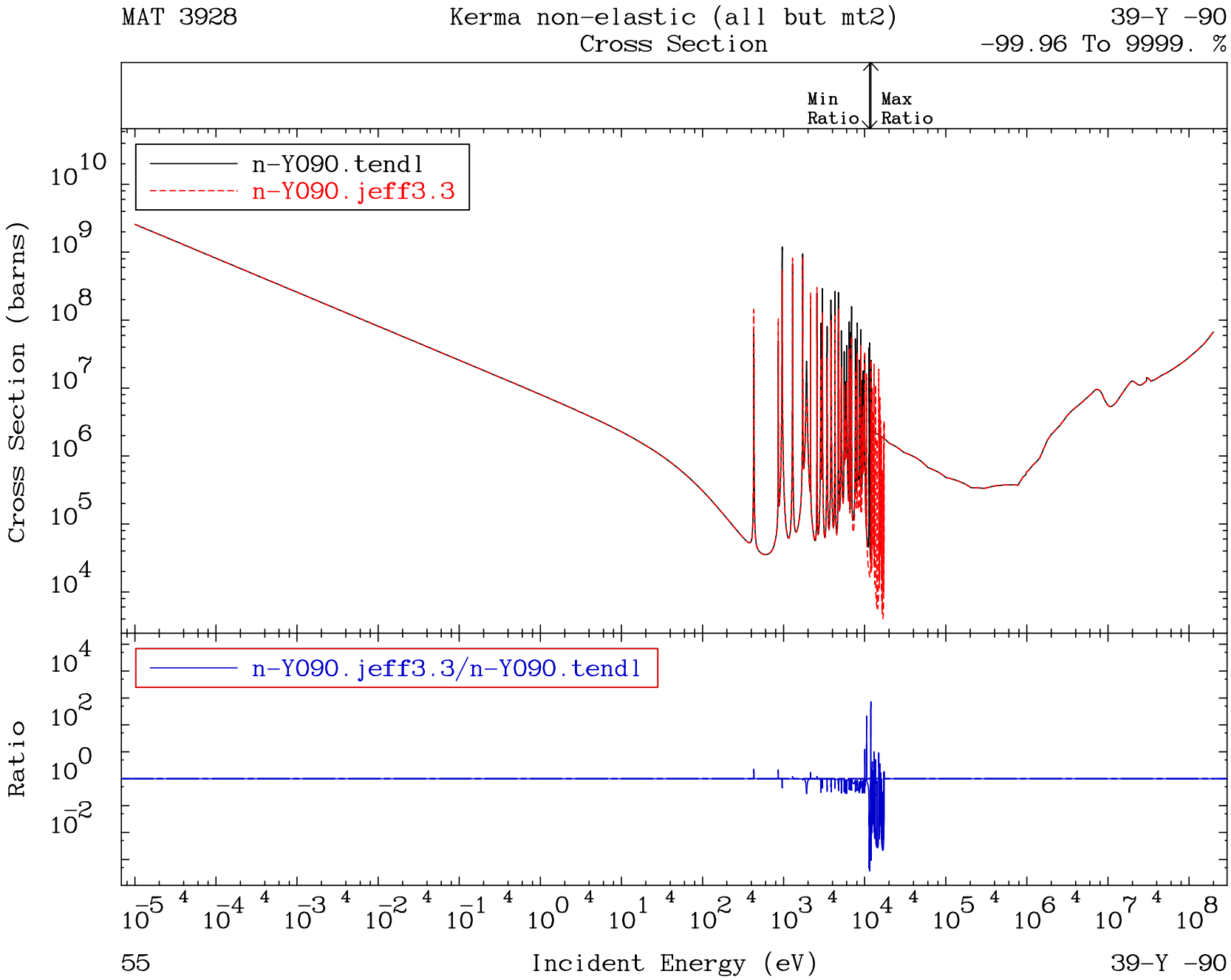

MAT 3928
Tritium Production
Cross Section
39-Y -90
-95.38 To 1.420 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 5.4095 MeV
n-Y090.jeff3.3 Threshold 5.5132 MeV
Cross Section (milli-barns)
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^0
6
4
10^-1
6
4
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
50
Incident Energy (eV)
39-Y -90

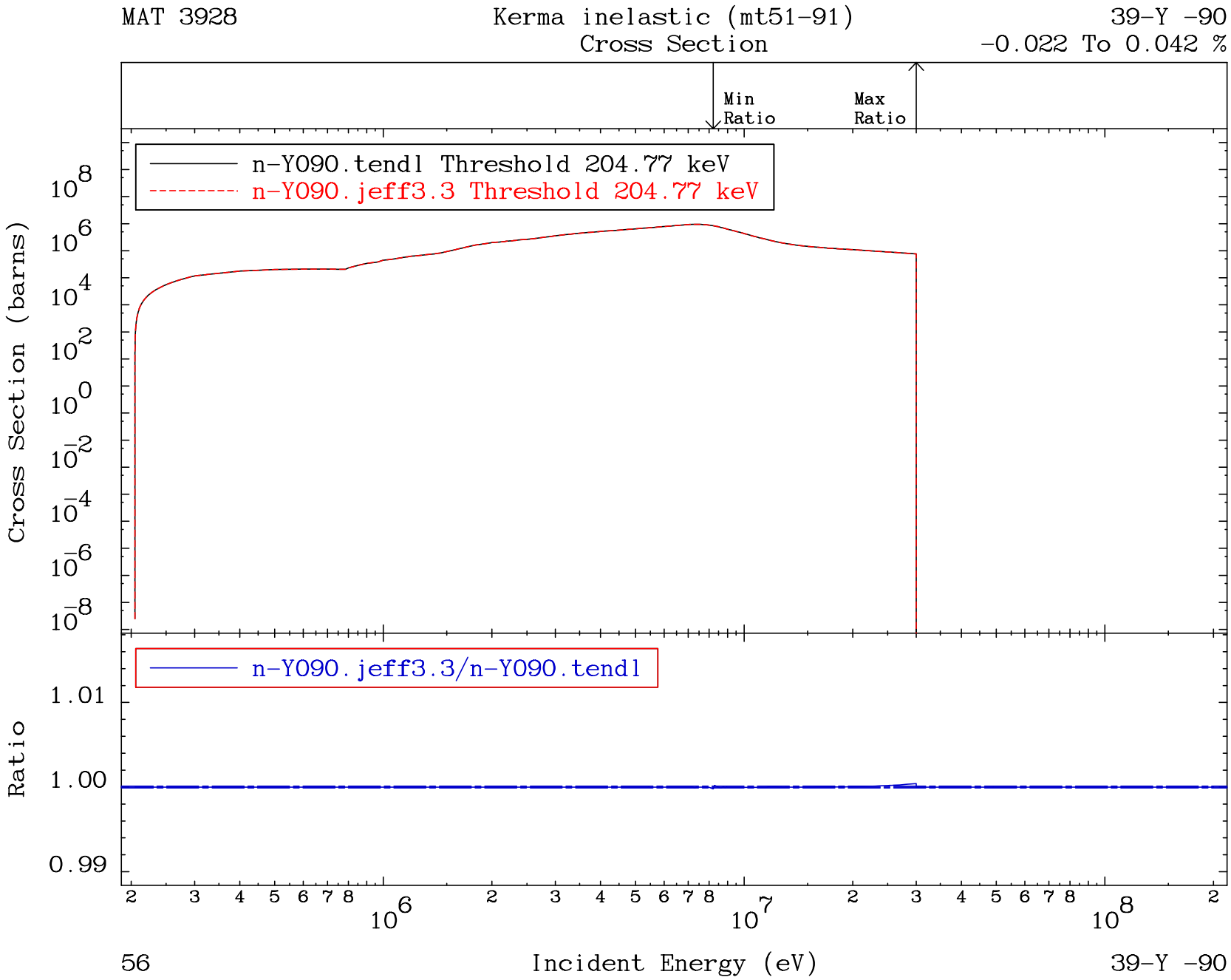

MAT 3928
He-3 Production
Cross Section
39-Y -90
-3.493 To 0.149 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 10.500 MeV
n-Y090.jeff3.3 Threshold 10.866 MeV
Cross Section (milli-barns)
300
250
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
0.98
2
3
4
5
6
7
8
9
10^8
2
51
Incident Energy (eV)
39-Y -90

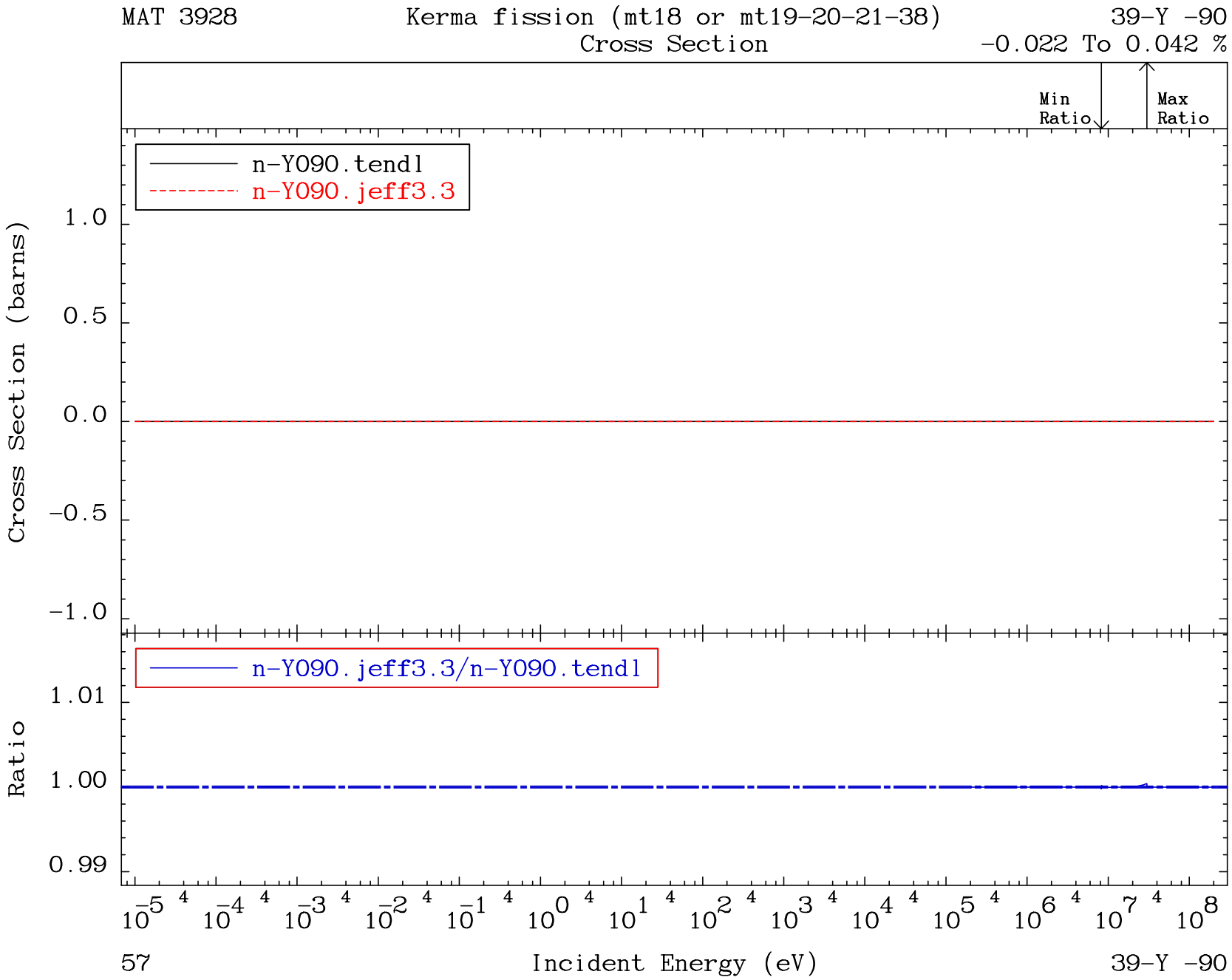

MAT 3928
He-4 Production
Cross Section
39-Y -90
-2.909 To 1449. %
Max Ratio
Min Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
52
39-Y -90

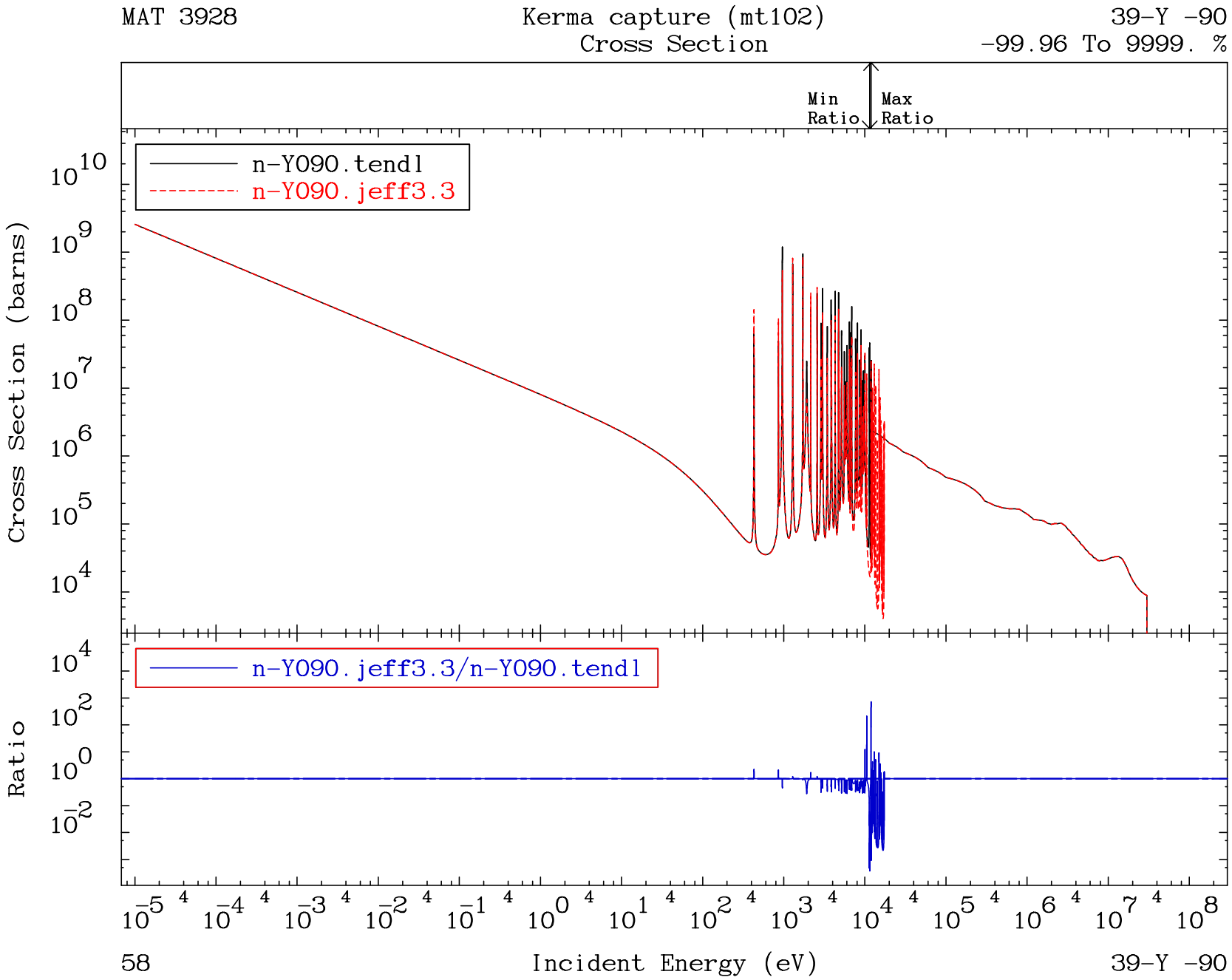

MAT 3928
Kerma total (eV-barns)
Cross Section
39-Y -90
-99.94 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
53
39-Y -90

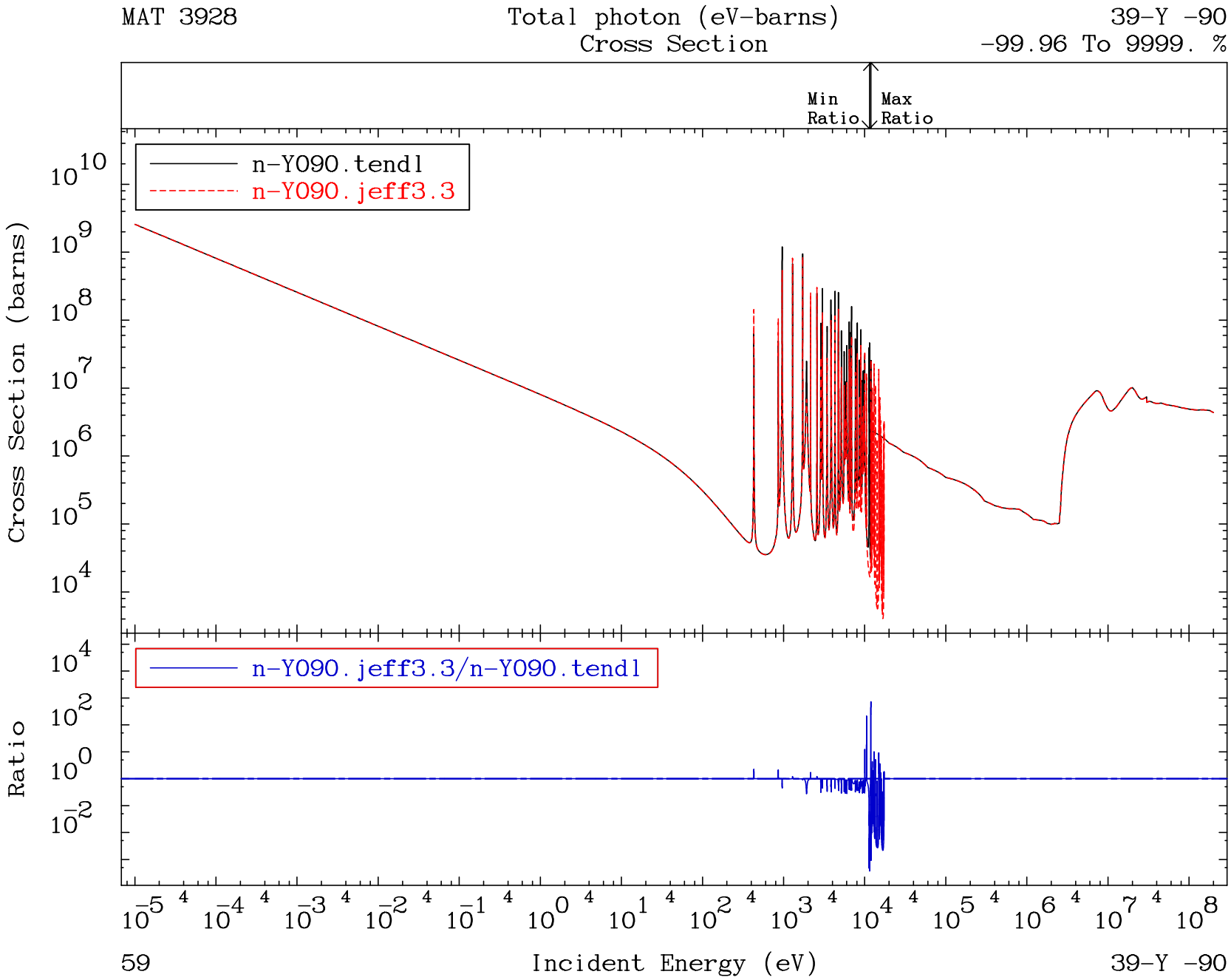

MAT 3928
Kerma elastic
Cross Section
39-Y -90
-89.39 To 1596. %
Min
Ratio
Max
Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
54
Incident Energy (eV)
39-Y -90

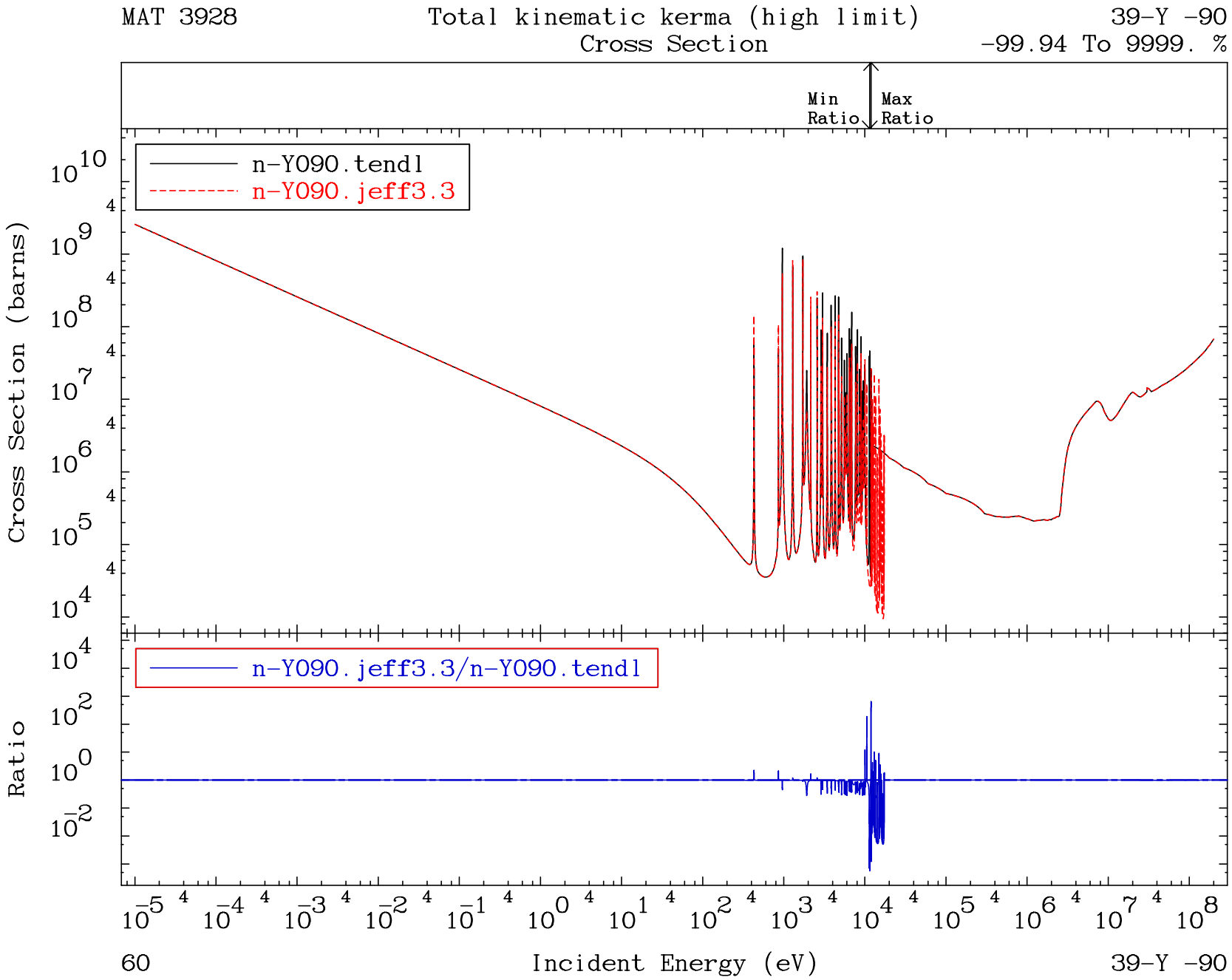

MAT 3928
Kerma non-elastic (all but mt2)
Cross Section
39-Y -90
-99.96 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
55
39-Y -90

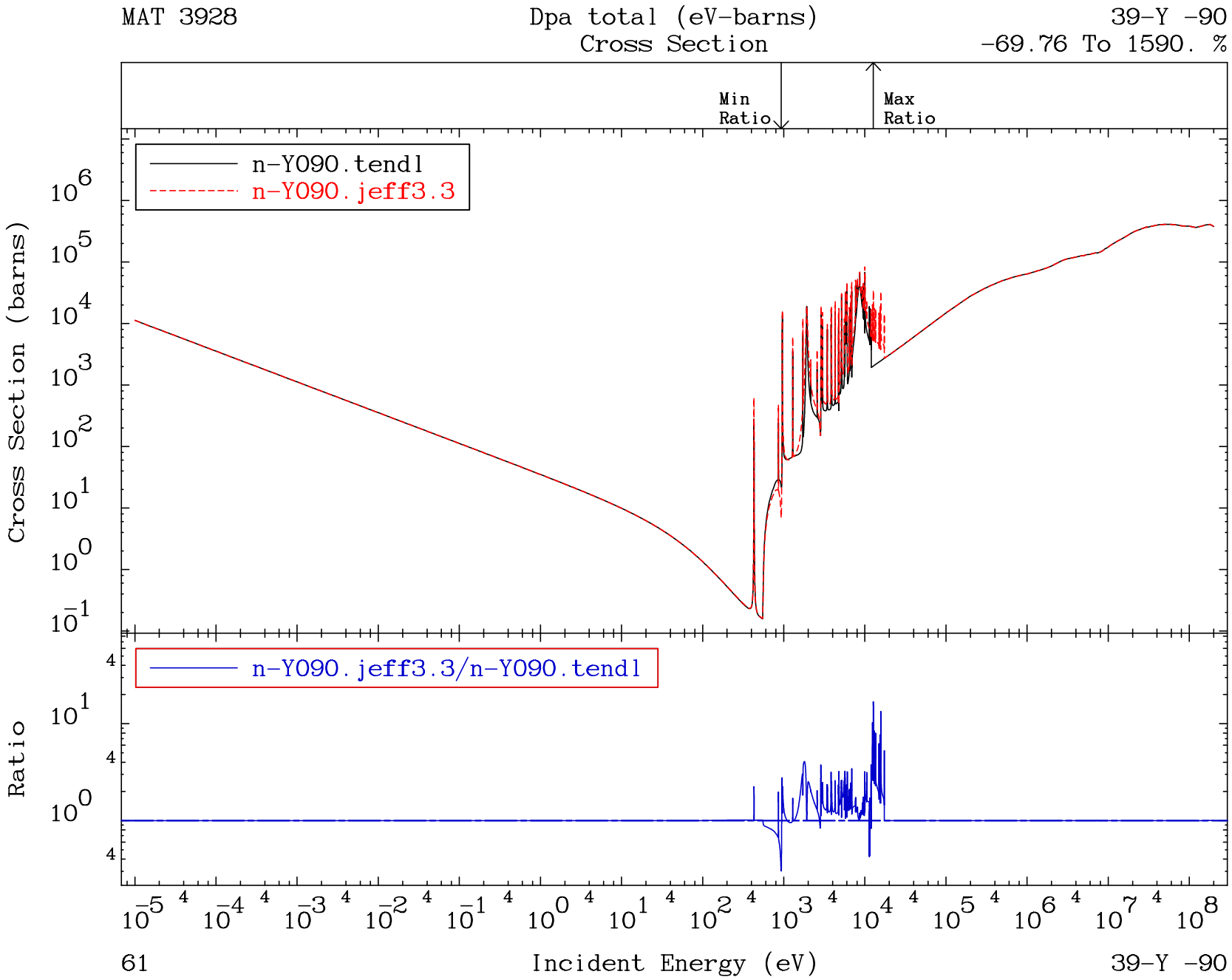

MAT 3928
Kerma inelastic (mt51-91)
Cross Section
39-Y -90
-0.022 To 0.042 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 204.77 keV
n-Y090.jeff3.3 Threshold 204.77 keV
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
56
39-Y -90

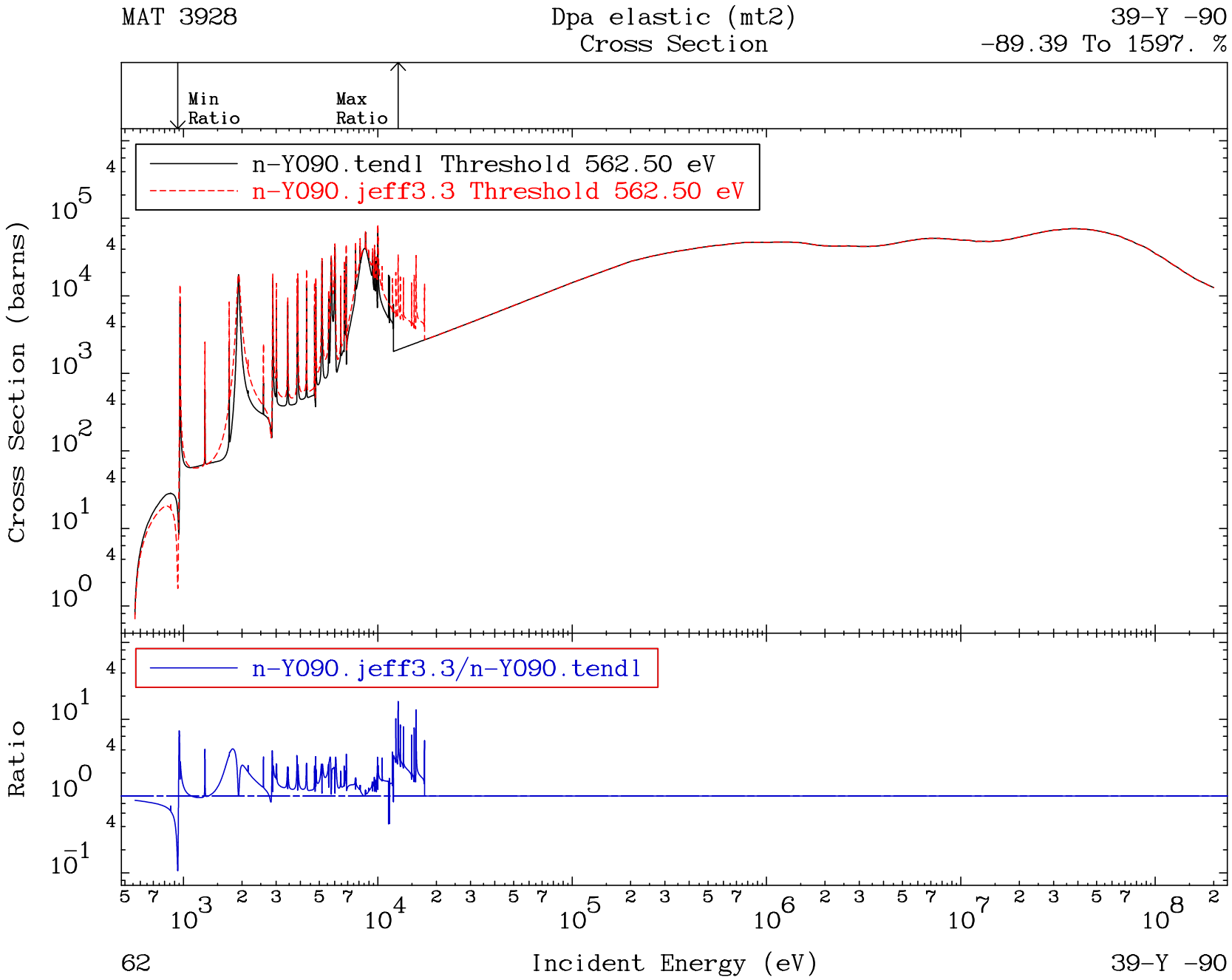

MAT 3928
Kerma fission (mt18 or mt19-20-21-38)
Cross Section
39-Y -90
-0.022 To 0.042 %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
1.0
0.5
0.0
-0.5
-1.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
57
Incident Energy (eV)
39-Y -90

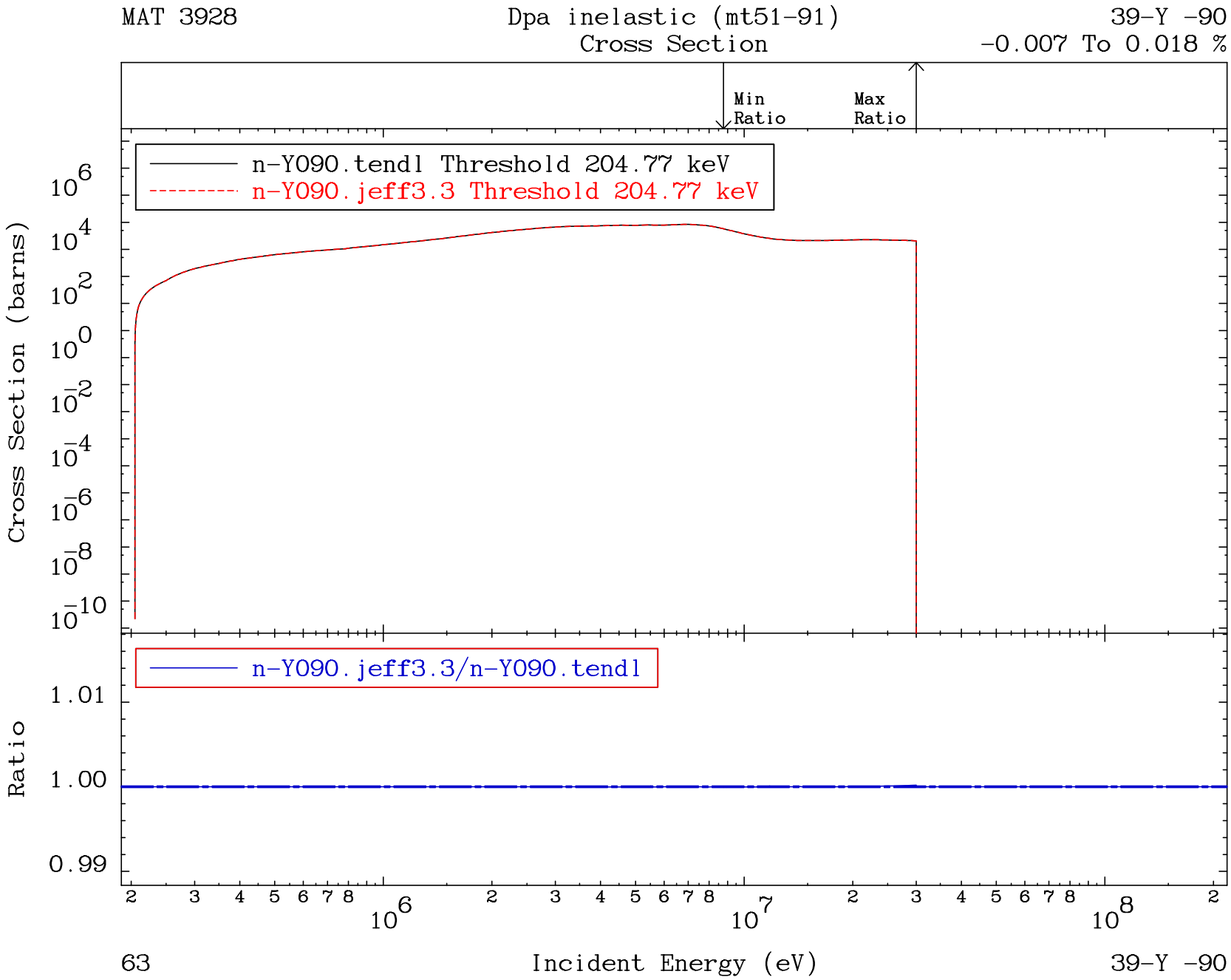

MAT 3928
Kerma capture (mt102)
Cross Section
39-Y -90
-99.96 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
58
39-Y -90

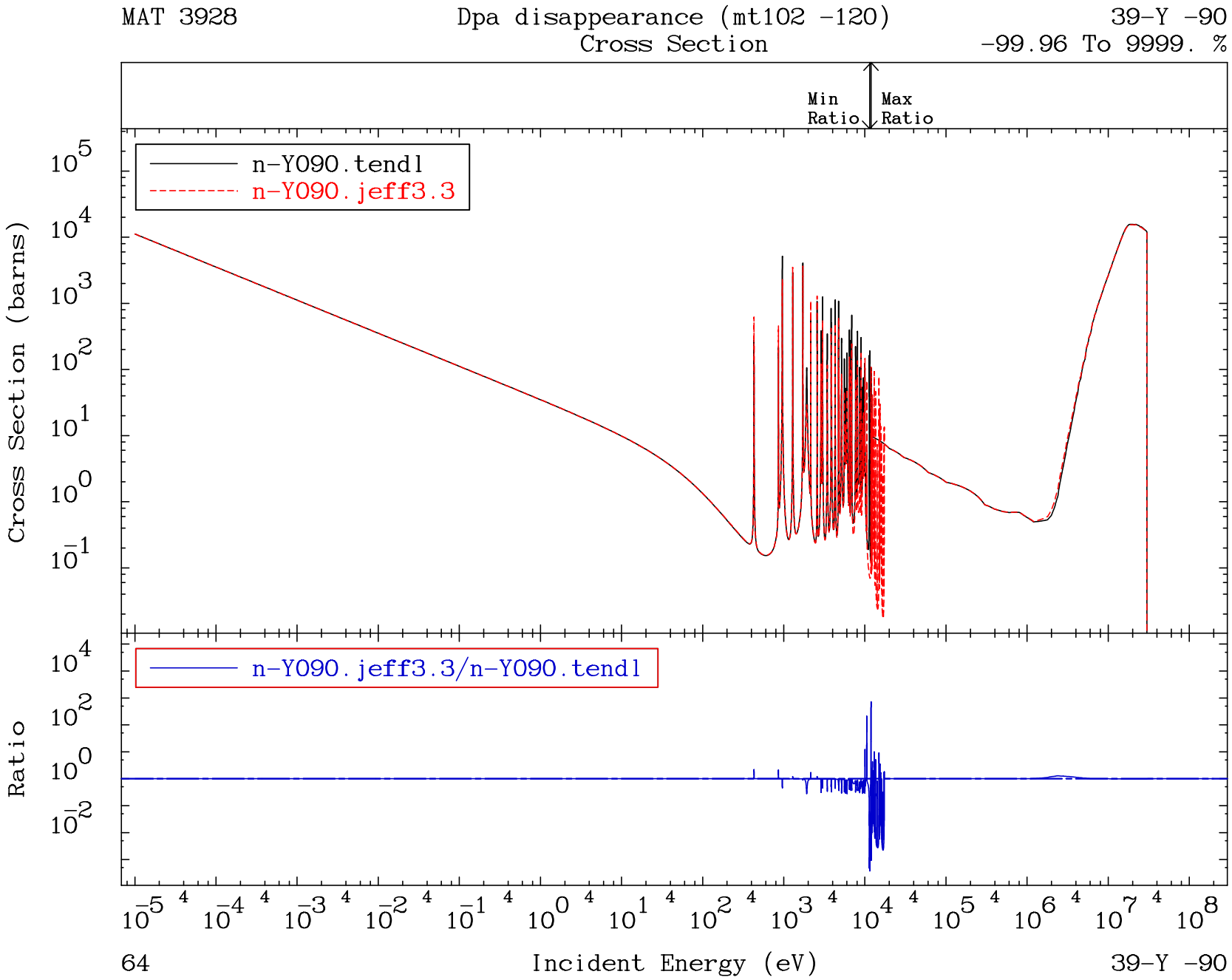

MAT 3928
Total photon (eV-barns)
Cross Section
39-Y -90
-99.96 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
59
Incident Energy (eV)
39-Y -90

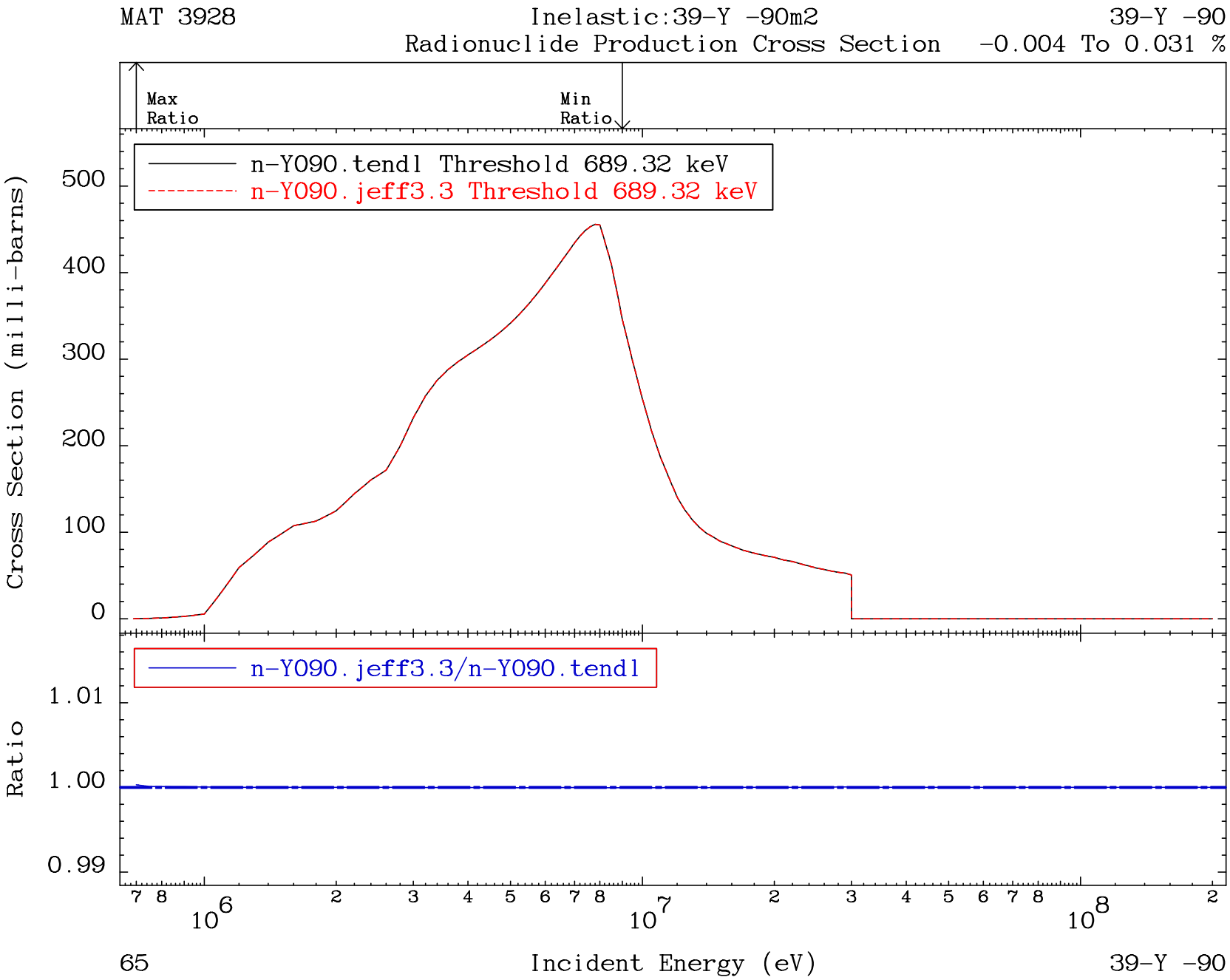

MAT 3928
Total kinematic kerma (high limit)
Cross Section
39-Y -90
-99.94 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
60
39-Y -90

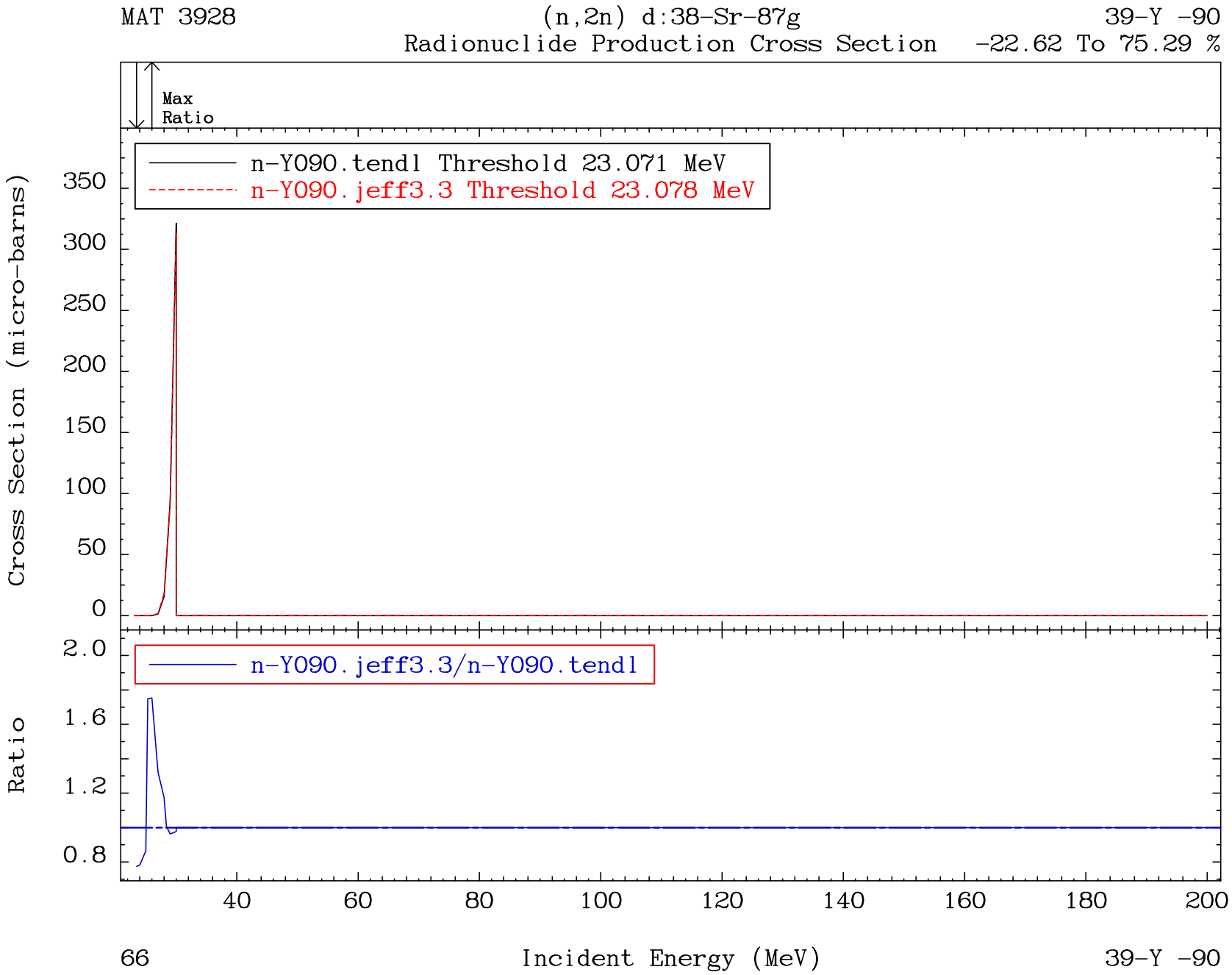

MAT 3928
Dpa total (eV-barns)
Cross Section
39-Y -90
-69.76 To 1590. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
61
Incident Energy (eV)
39-Y -90

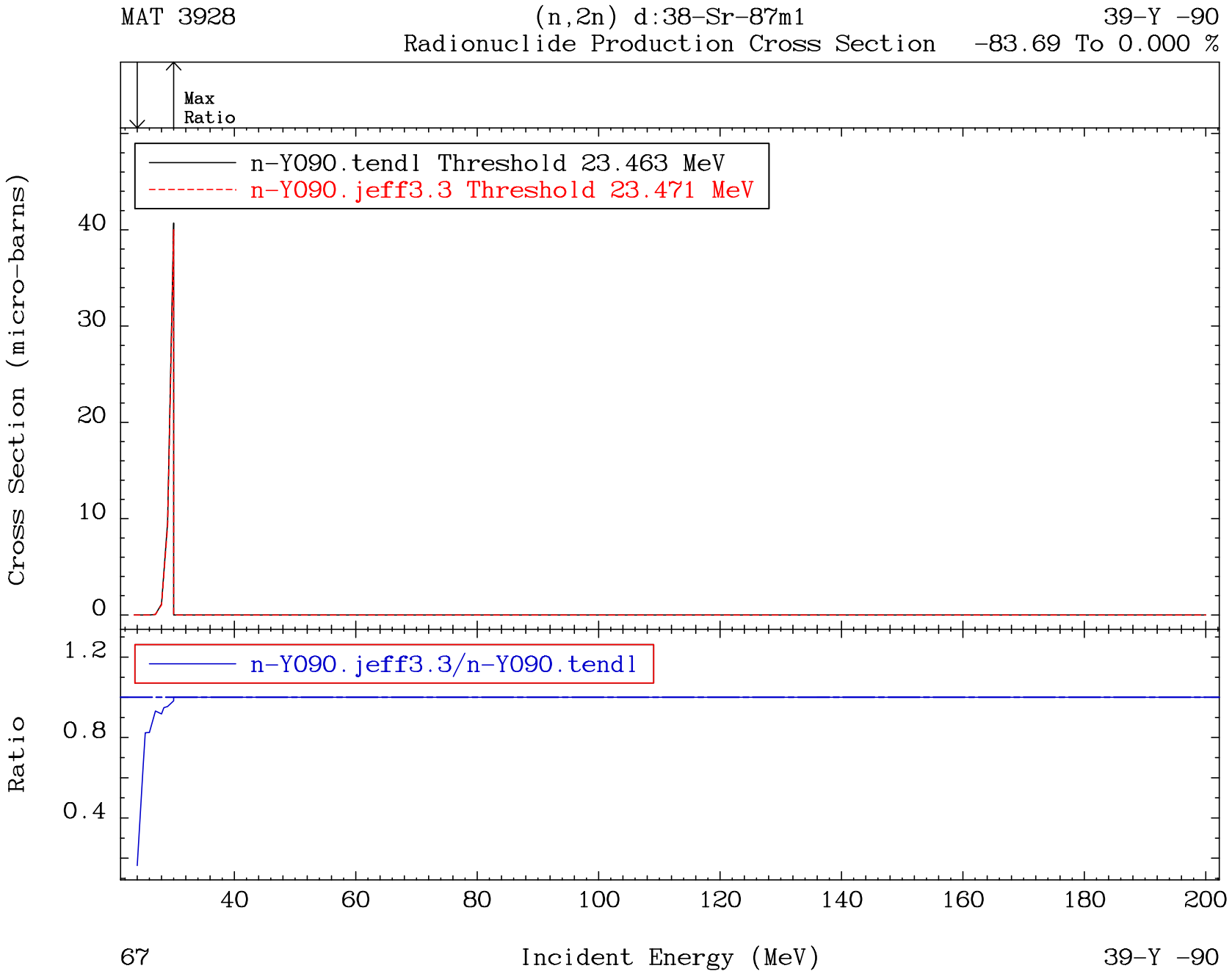

MAT 3928
Dpa elastic (mt2)
Cross Section
39-Y -90
-89.39 To 1597. %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 562.50 eV
n-Y090.jeff3.3 Threshold 562.50 eV
Cross Section (barns)
Ratio
n-Y090.jeff3.3/n-Y090.tendl
Incident Energy (eV)
62
39-Y -90

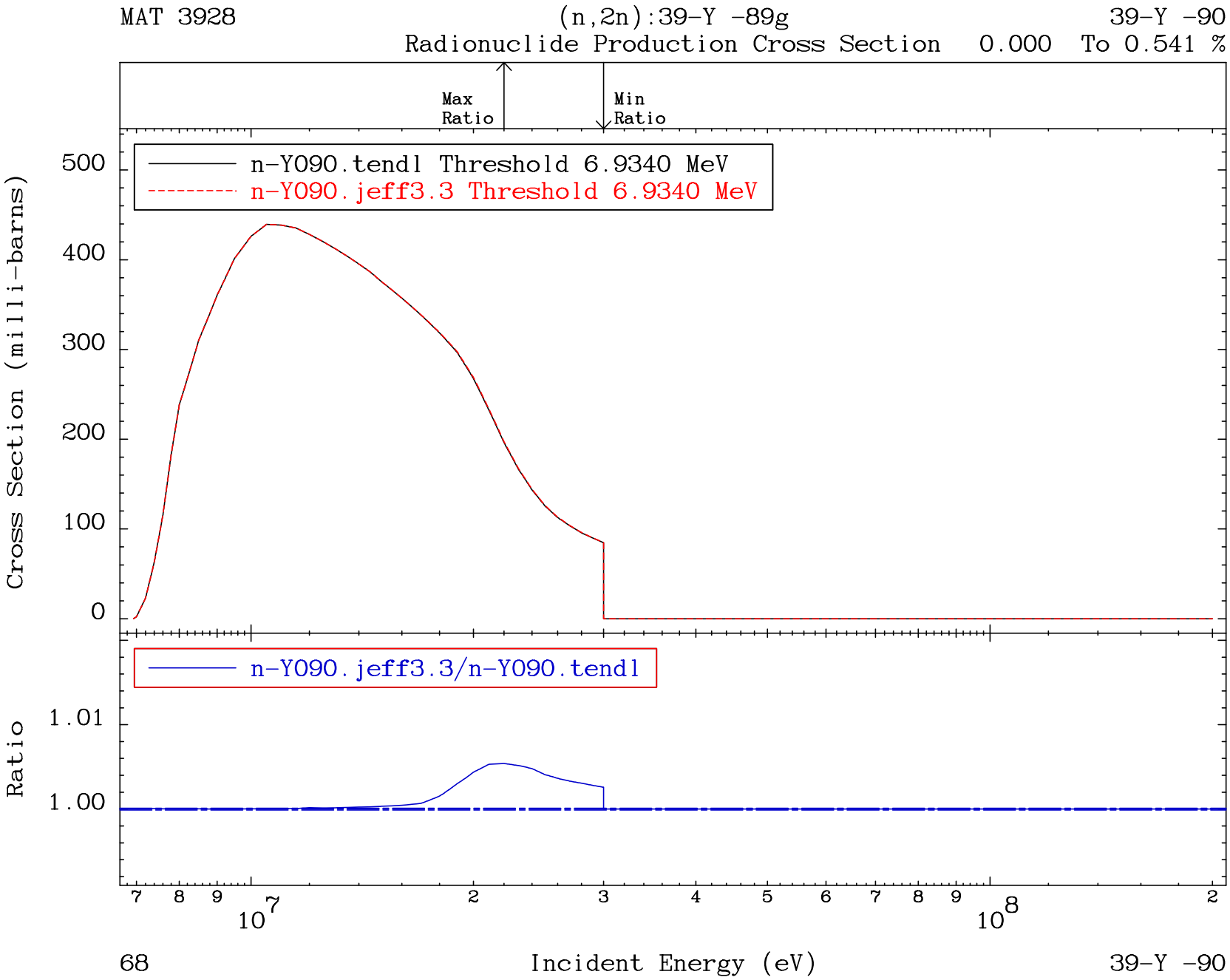

MAT 3928
Dpa inelastic (mt51-91)
Cross Section
39-Y -90
-0.007 To 0.018 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 204.77 keV
n-Y090.jeff3.3 Threshold 204.77 keV
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
Incident Energy (eV)
63
39-Y -90

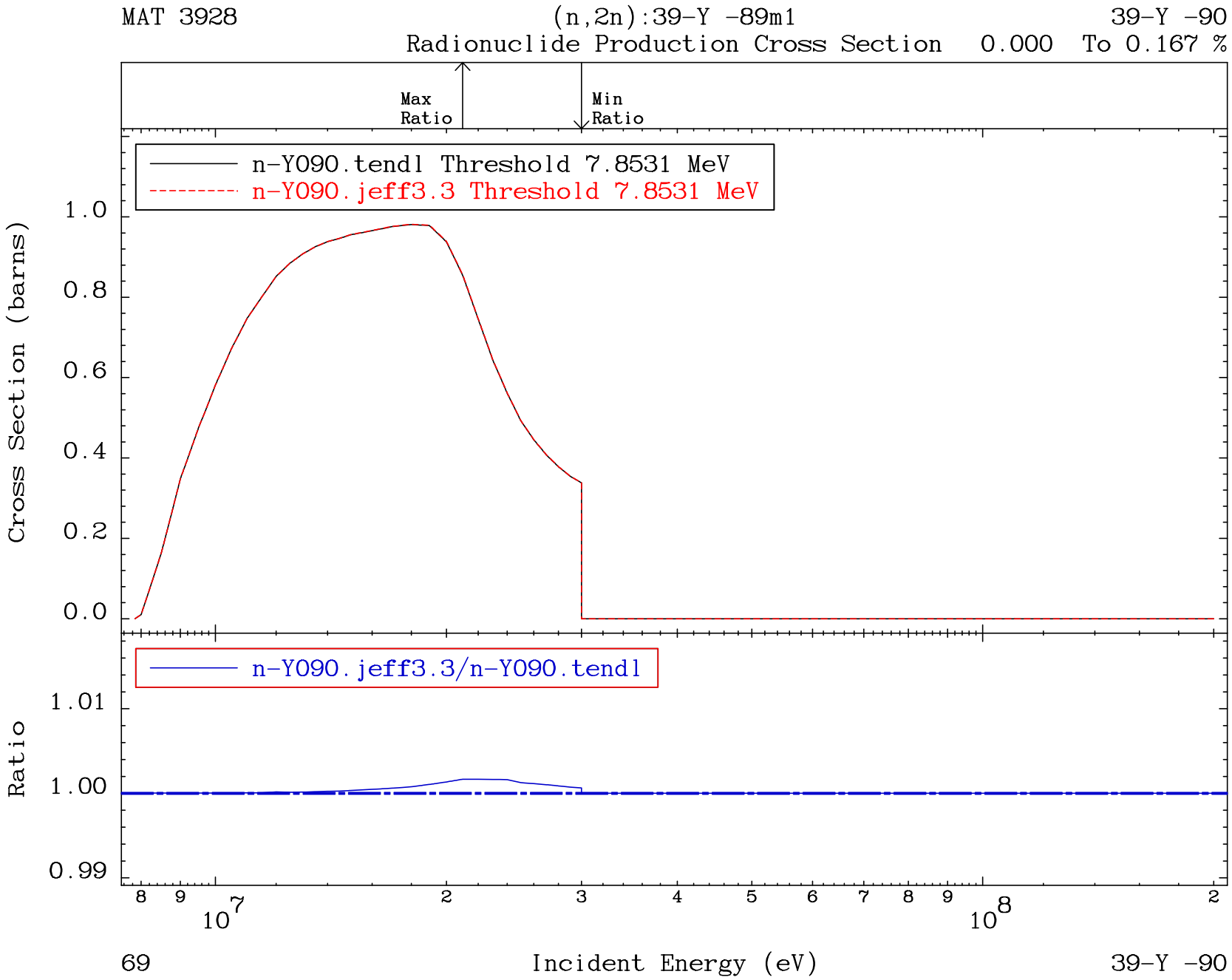

MAT 3928
Dpa disappearance (mt102 -120)
Cross Section
39-Y -90
-99.96 To 9999. %
Min Ratio
Max Ratio
n-Y090.tendl
n-Y090.jeff3.3
Cross Section (barns)
n-Y090.jeff3.3/n-Y090.tendl
Ratio
64
Incident Energy (eV)
39-Y -90

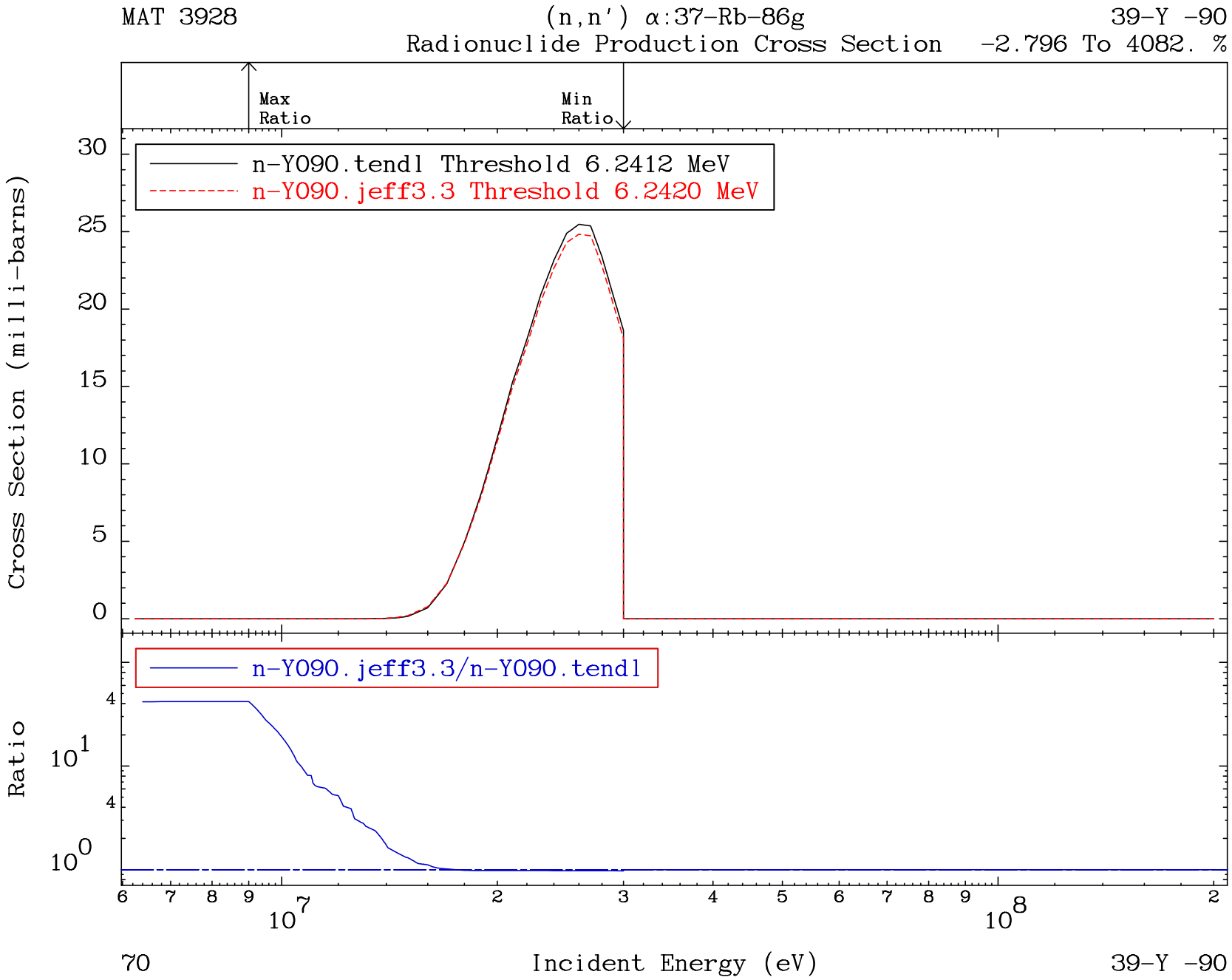

MAT 3928
Inelastic:39-Y -90m2
39-Y -90
Radionuclide Production Cross Section -0.004 To 0.031 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 689.32 keV
n-Y090.jeff3.3 Threshold 689.32 keV
Cross Section (milli-barns)
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
65
Incident Energy (eV)
39-Y -90

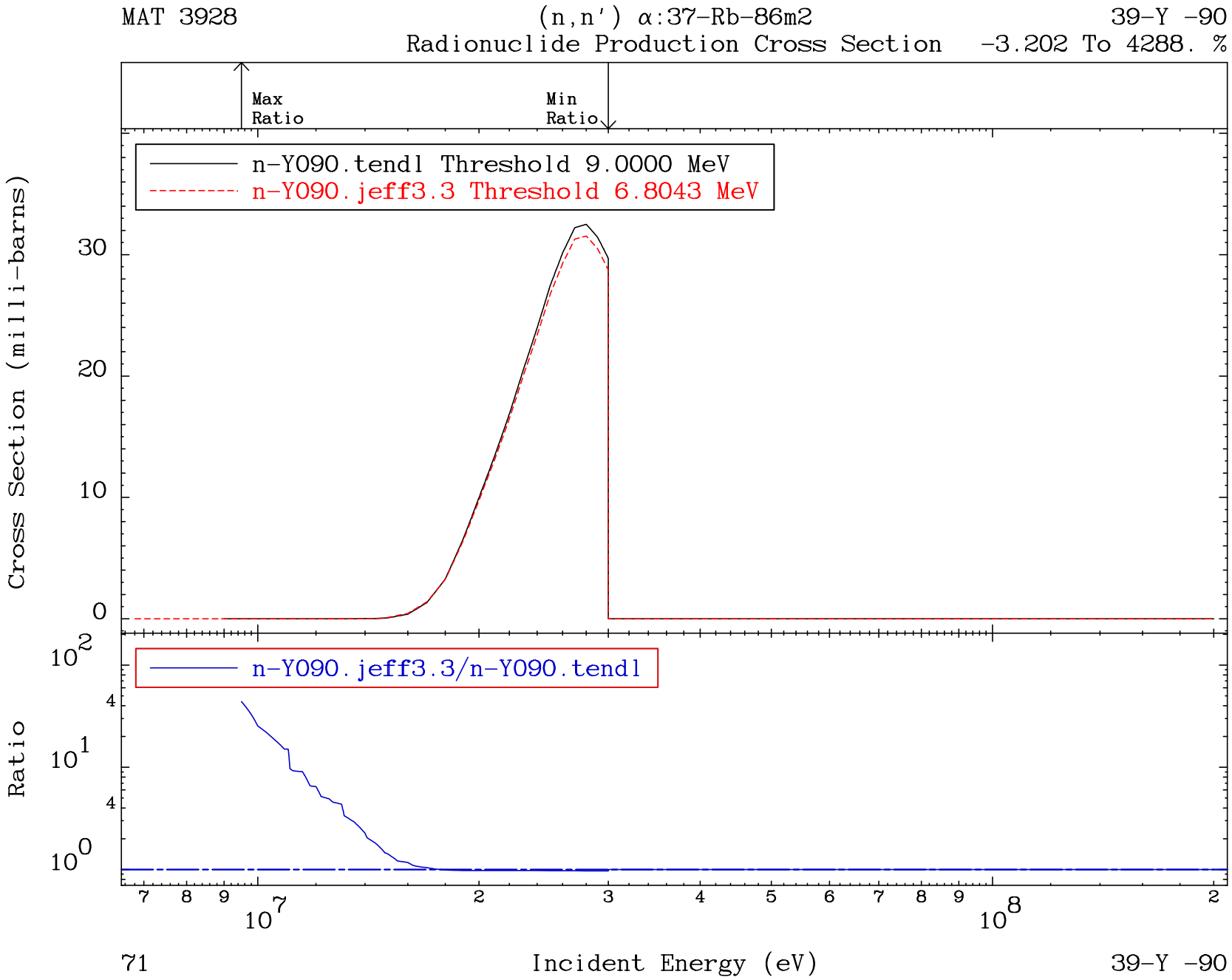

MAT 3928
(n,2n) d:38-Sr-87g
39-Y -90
Radionuclide Production Cross Section -22.62 To 75.29 %
Max
Ratio
n-Y090.tendl Threshold 23.071 MeV
n-Y090.jeff3.3 Threshold 23.078 MeV
Cross Section (micro-barns)
350
300
250
200
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
2.0
1.6
1.2
0.8
40
60
80
100
120
140
160
180
200
66
Incident Energy (MeV)
39-Y -90

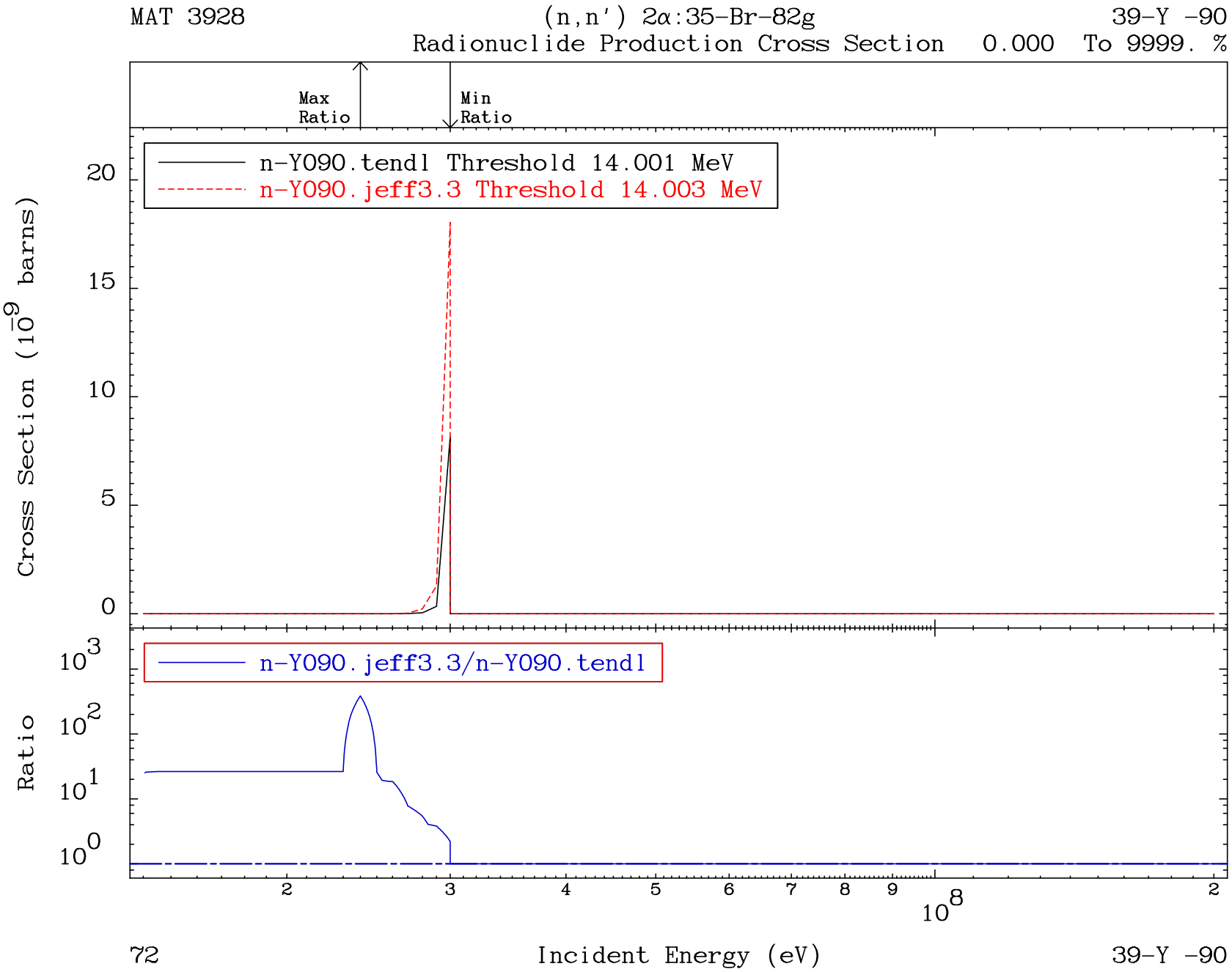

MAT 3928
(n,2n) d:38-Sr-87m1
39-Y -90
Radionuclide Production Cross Section -83.69 To 0.000 %
Max
Ratio
n-Y090.tendl Threshold 23.463 MeV
n-Y090.jeff3.3 Threshold 23.471 MeV
Cross Section (micro-barns)
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.2
0.8
0.4
40
60
80
100
120
140
160
180
200
67
Incident Energy (MeV)
39-Y -90

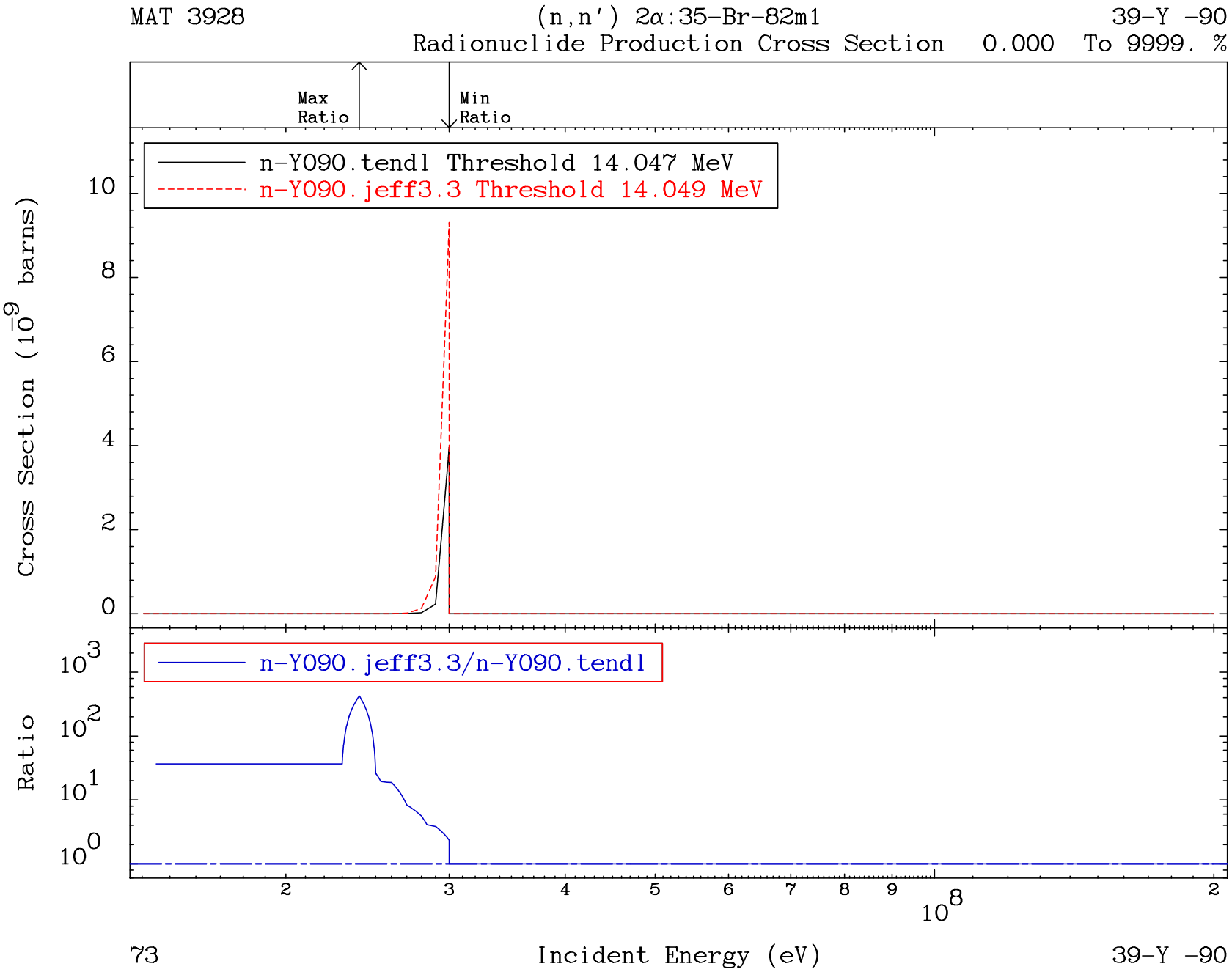

MAT 3928
(n,2n):39-Y -89g
39-Y -90
Radionuclide Production Cross Section 0.000 To 0.541 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 6.9340 MeV
n-Y090.jeff3.3 Threshold 6.9340 MeV
Cross Section (milli-barns)
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
68
Incident Energy (eV)
39-Y -90

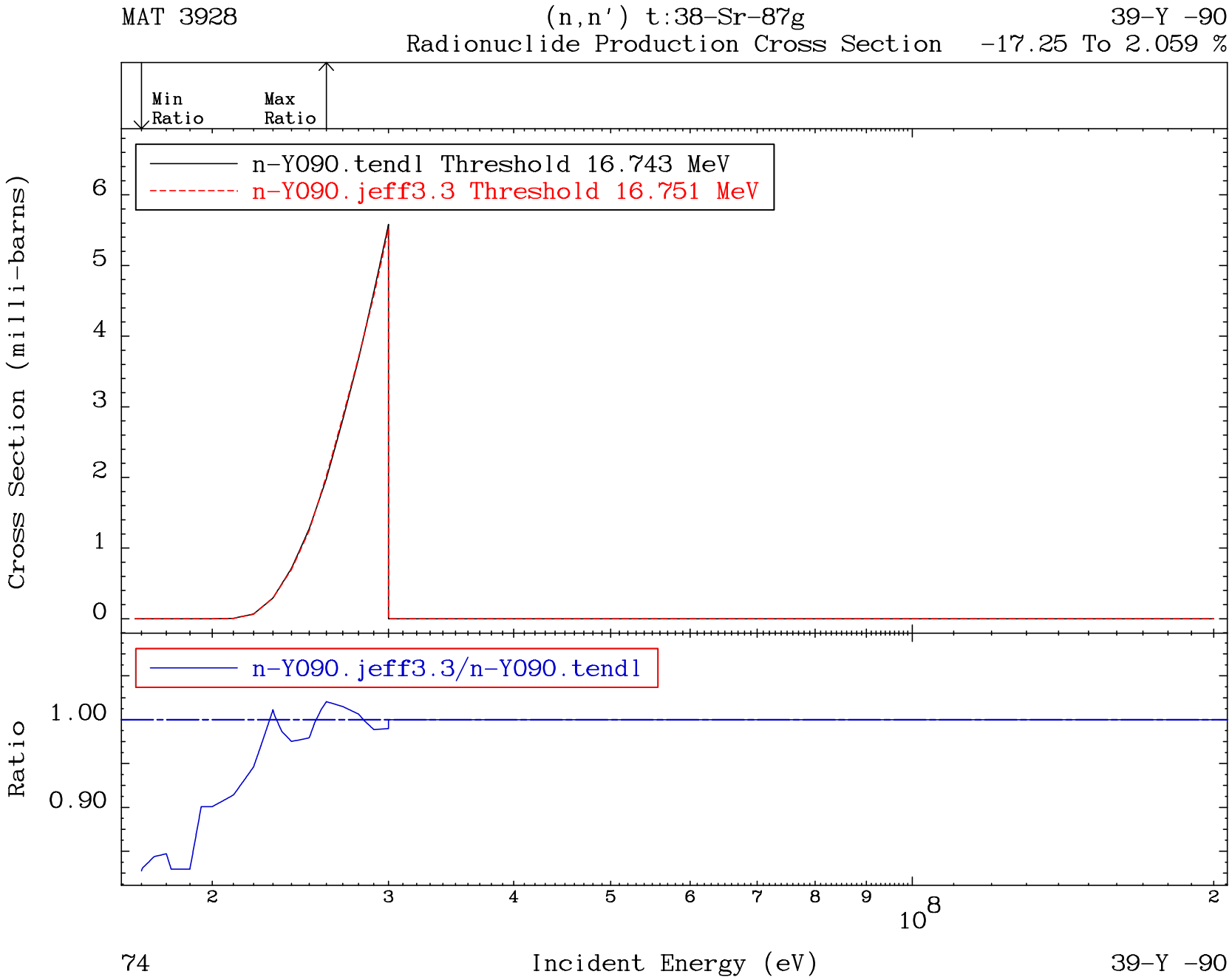

MAT 3928
(n,2n):39-Y -89m1
39-Y -90
Radionuclide Production Cross Section 0.000 To 0.167 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 7.8531 MeV
n-Y090.jeff3.3 Threshold 7.8531 MeV
Cross Section (barns)
1.0
0.8
0.6
0.4
0.2
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
0.99
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
69
Incident Energy (eV)
39-Y -90

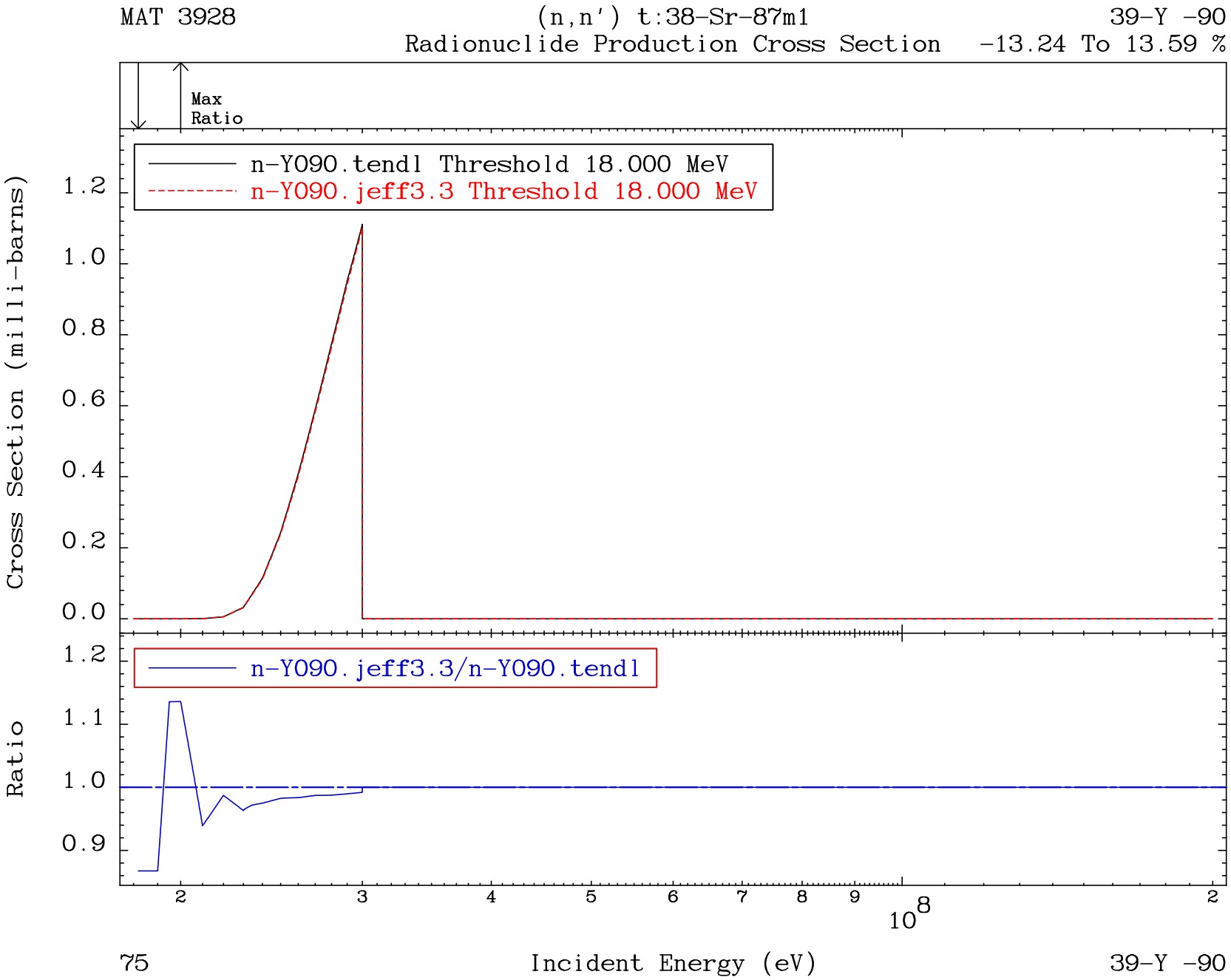

MAT 3928
(n,n') α:37-Rb-86g
39-Y -90
Radionuclide Production Cross Section -2.796 To 4082. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 6.2412 MeV
n-Y090.jeff3.3 Threshold 6.2420 MeV
Cross Section (milli-barns)
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
4
10^0
4
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
Incident Energy (eV)
70
39-Y -90

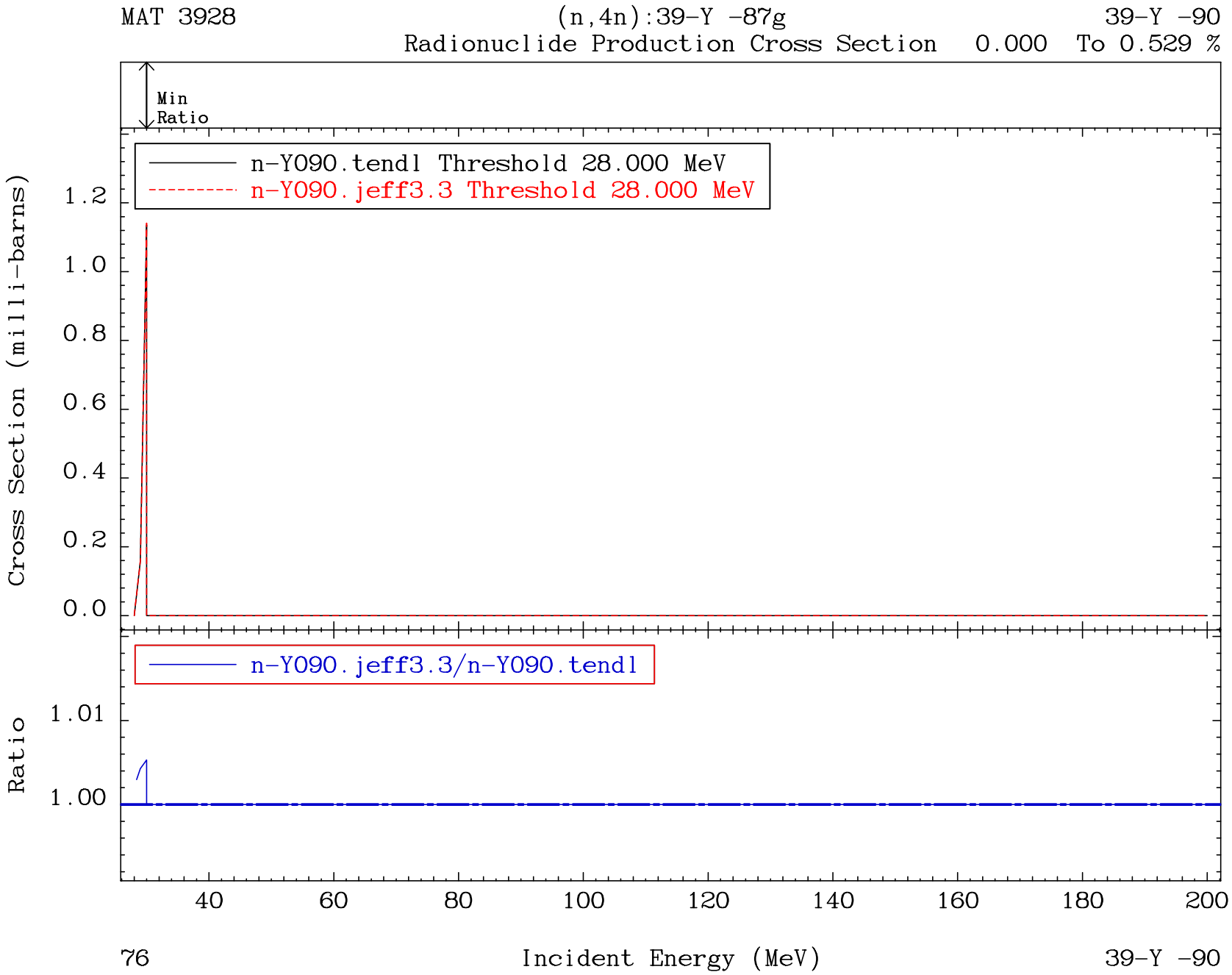

MAT 3928
(n,n') α:37-Rb-86m2
39-Y -90
Radionuclide Production Cross Section -3.202 To 4288. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 9.0000 MeV
n-Y090.jeff3.3 Threshold 6.8043 MeV
Cross Section (milli-barns)
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^2
4
10^1
4
10^0
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
71
Incident Energy (eV)
39-Y -90

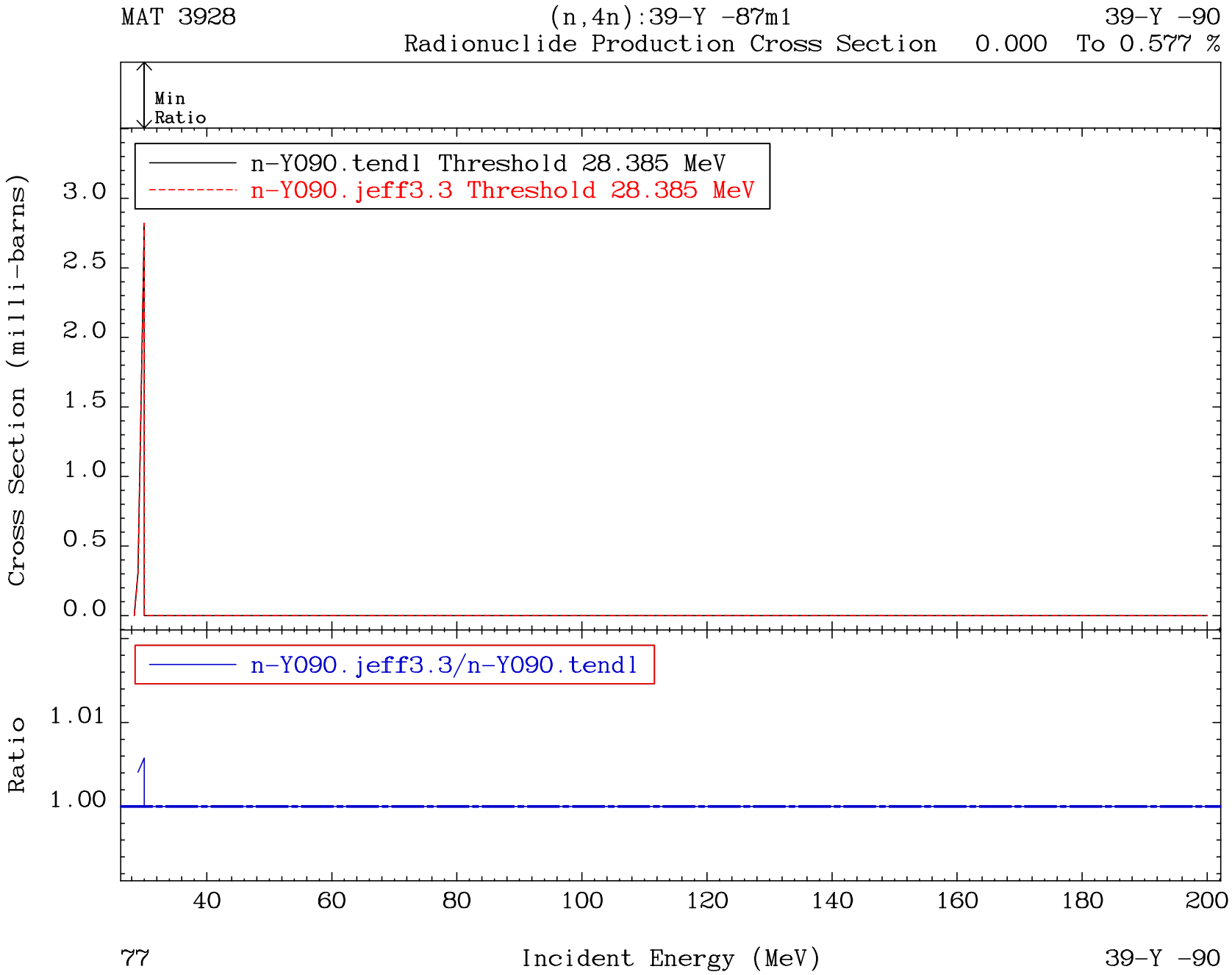

MAT 3928
(n,n') 2α:35-Br-82g
39-Y -90
Radionuclide Production Cross Section 0.000 To 9999. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 14.001 MeV
n-Y090.jeff3.3 Threshold 14.003 MeV
Cross Section (10^{-9} barns)
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^3
10^2
10^1
10^0
2
3
4
5
6
7
8
9
10^8
2
72
Incident Energy (eV)
39-Y -90

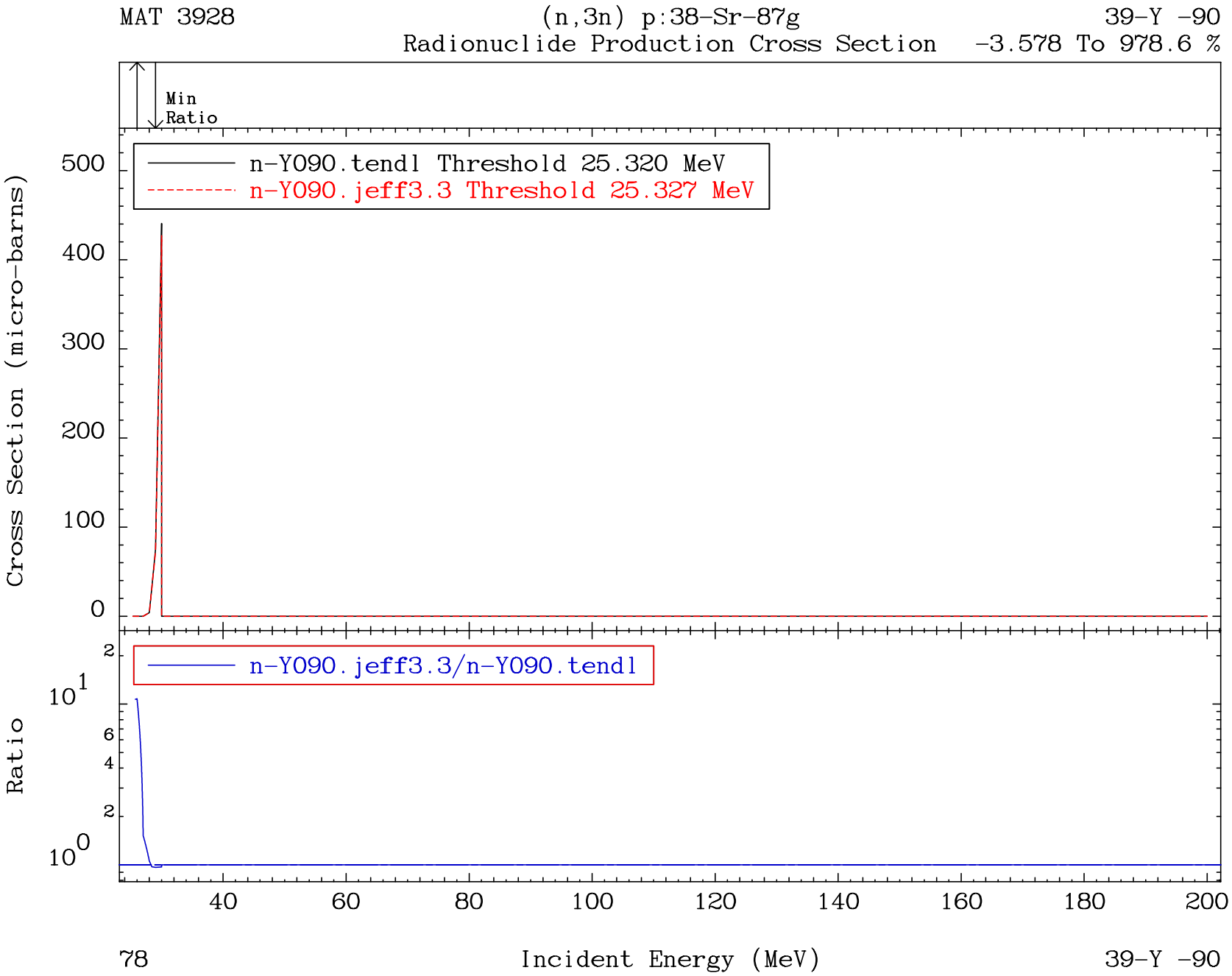

MAT 3928
(n,n') 2α:35-Br-82m1
39-Y -90
Radionuclide Production Cross Section 0.000 To 9999. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 14.047 MeV
n-Y090.jeff3.3 Threshold 14.049 MeV
Cross Section (10^{-9} barns)
10
8
6
4
2
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^{3}
10^{2}
10^{1}
10^{0}
2
3
4
5
6
7
8
9
10^{8}
2
73
Incident Energy (eV)
39-Y -90

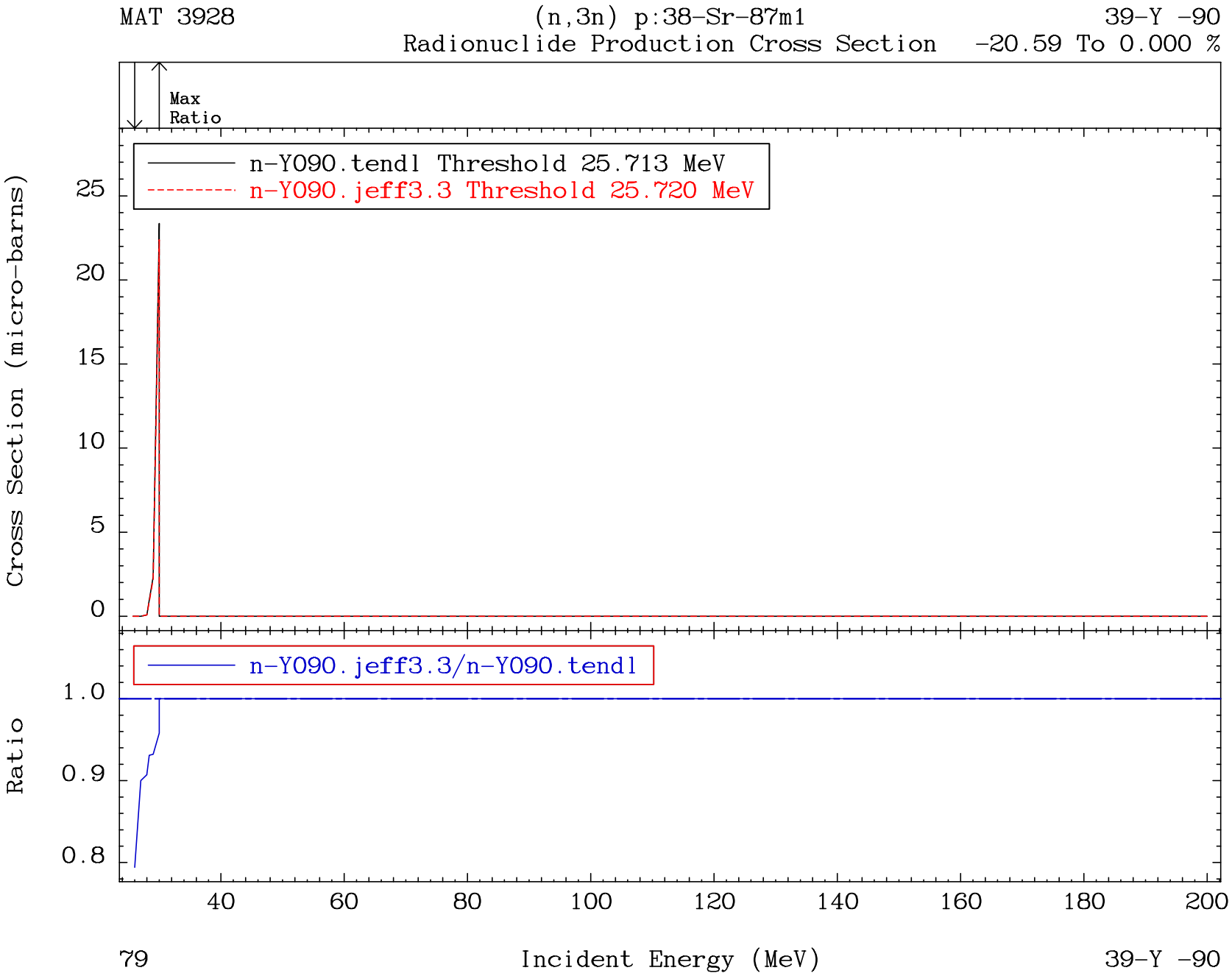

MAT 3928
(n,n') t:38-Sr-87g
39-Y -90
Radionuclide Production Cross Section -17.25 To 2.059 %
Min Ratio
Max Ratio
n-Y090.tendl Threshold 16.743 MeV
n-Y090.jeff3.3 Threshold 16.751 MeV
Cross Section (milli-barns)
0
1
2
3
4
5
6
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.00
0.90
2
3
4
5
6
7
8
9
10^8
2
74
Incident Energy (eV)
39-Y -90

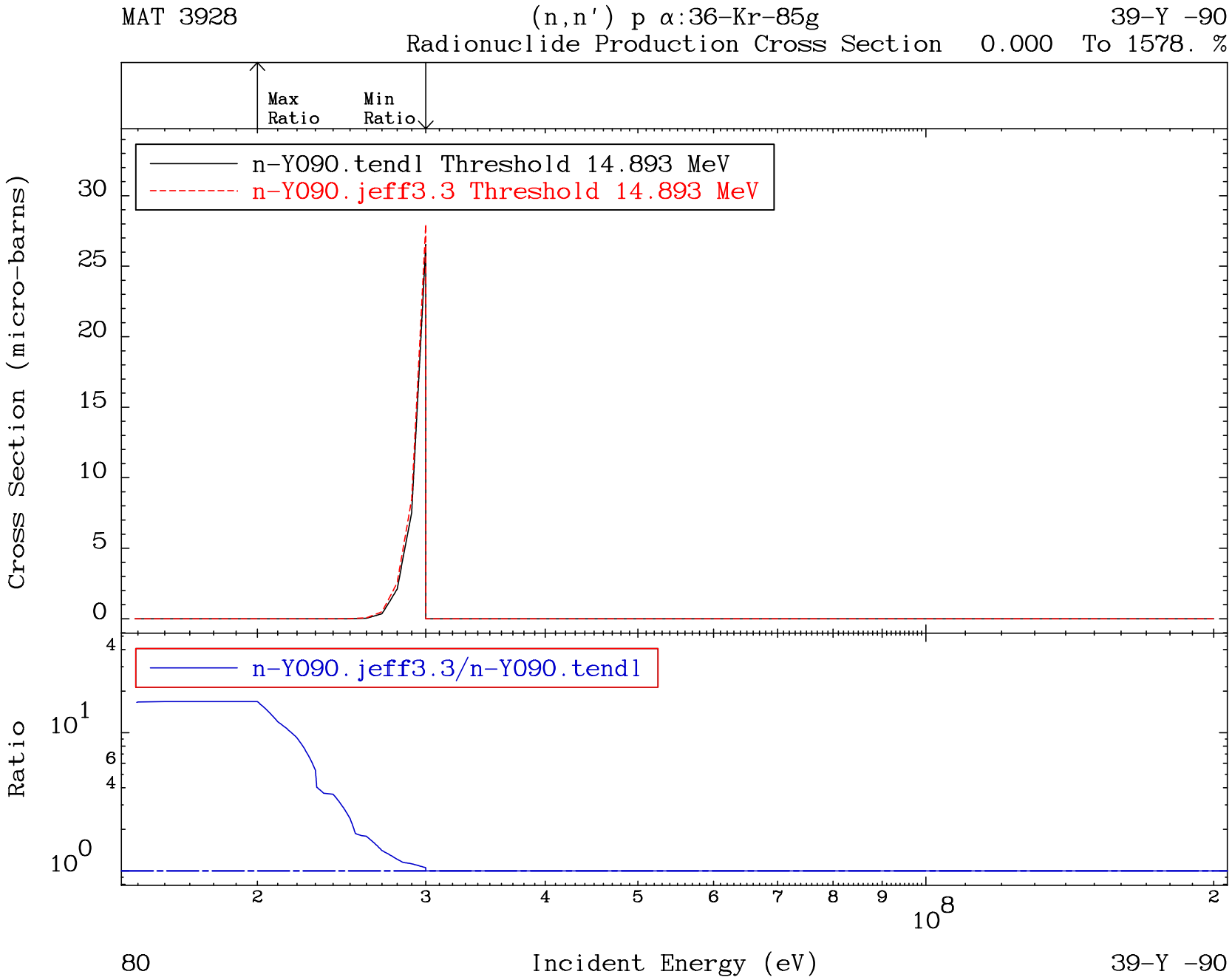

MAT 3928
(n,n') t:38-Sr-87m1
39-Y -90
Radionuclide Production Cross Section -13.24 To 13.59 %
Max
Ratio
n-Y090.tendl Threshold 18.000 MeV
n-Y090.jeff3.3 Threshold 18.000 MeV
Cross Section (milli-barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.2
1.1
1.0
0.9
2
3
4
5
6
7
8
9
10^8
2
75
Incident Energy (eV)
39-Y -90

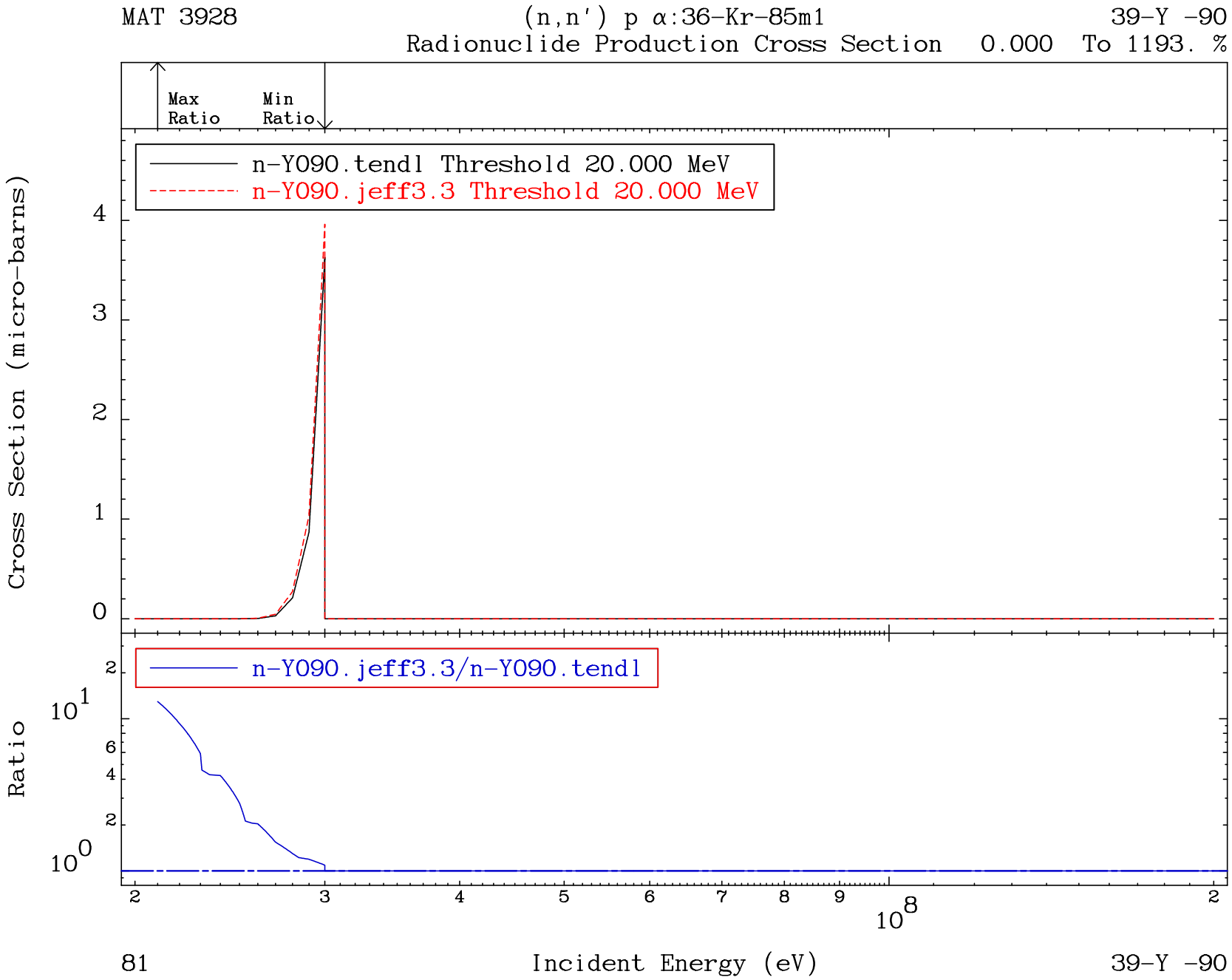

MAT 3928
(n,4n):39-Y -87g
39-Y -90
Radionuclide Production Cross Section 0.000 To 0.529 %
Min Ratio
n-Y090.tendl Threshold 28.000 MeV
n-Y090.jeff3.3 Threshold 28.000 MeV
Cross Section (milli-barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
40
60
80
100
120
140
160
180
200
76
Incident Energy (MeV)
39-Y -90

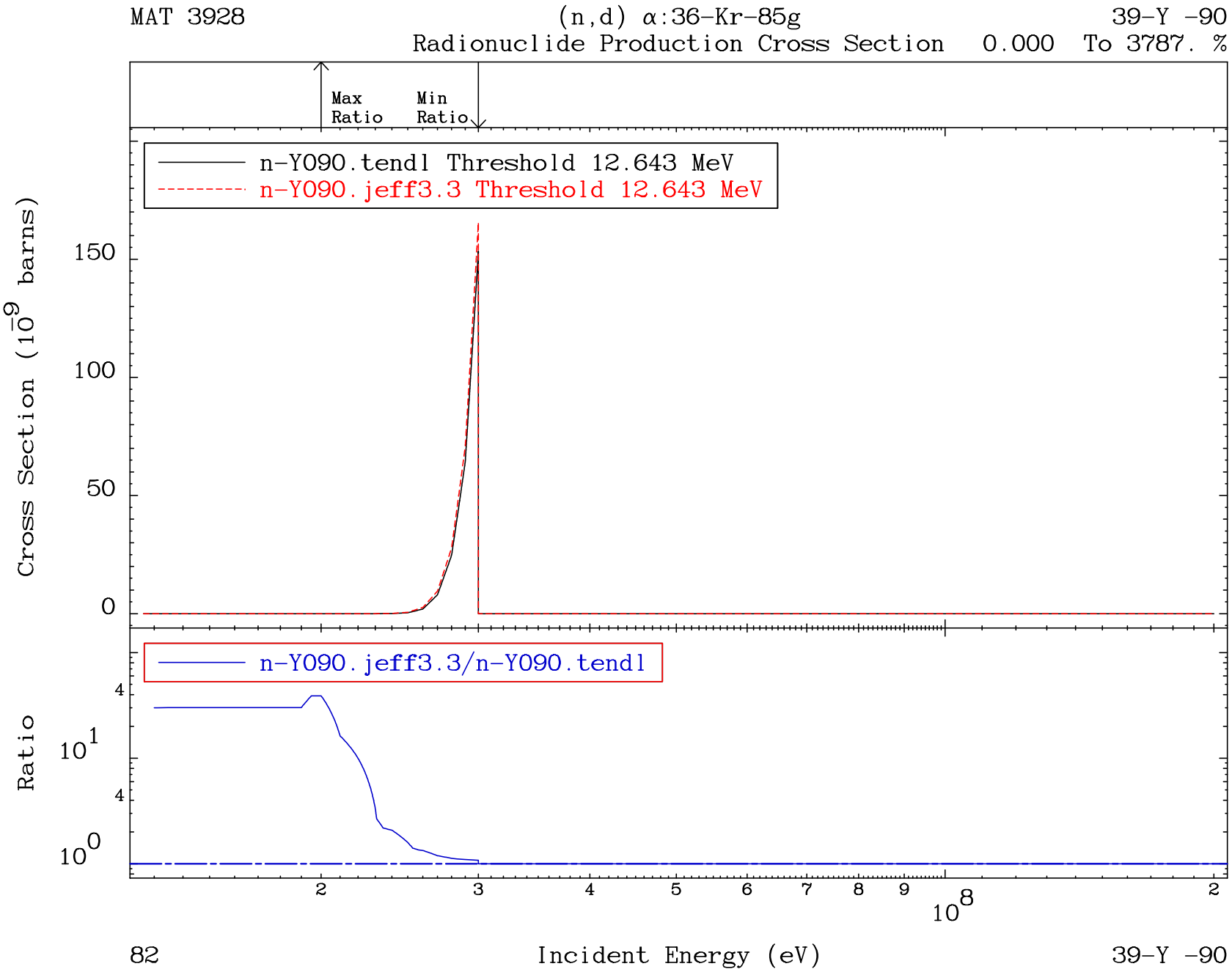

MAT 3928
(n,4n):39-Y -87m1
39-Y -90
Radionuclide Production Cross Section 0.000 To 0.577 %
Min Ratio
n-Y090.tendl Threshold 28.385 MeV
n-Y090.jeff3.3 Threshold 28.385 MeV
Cross Section (milli-barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.01
1.00
40
60
80
100
120
140
160
180
200
77
Incident Energy (MeV)
39-Y -90

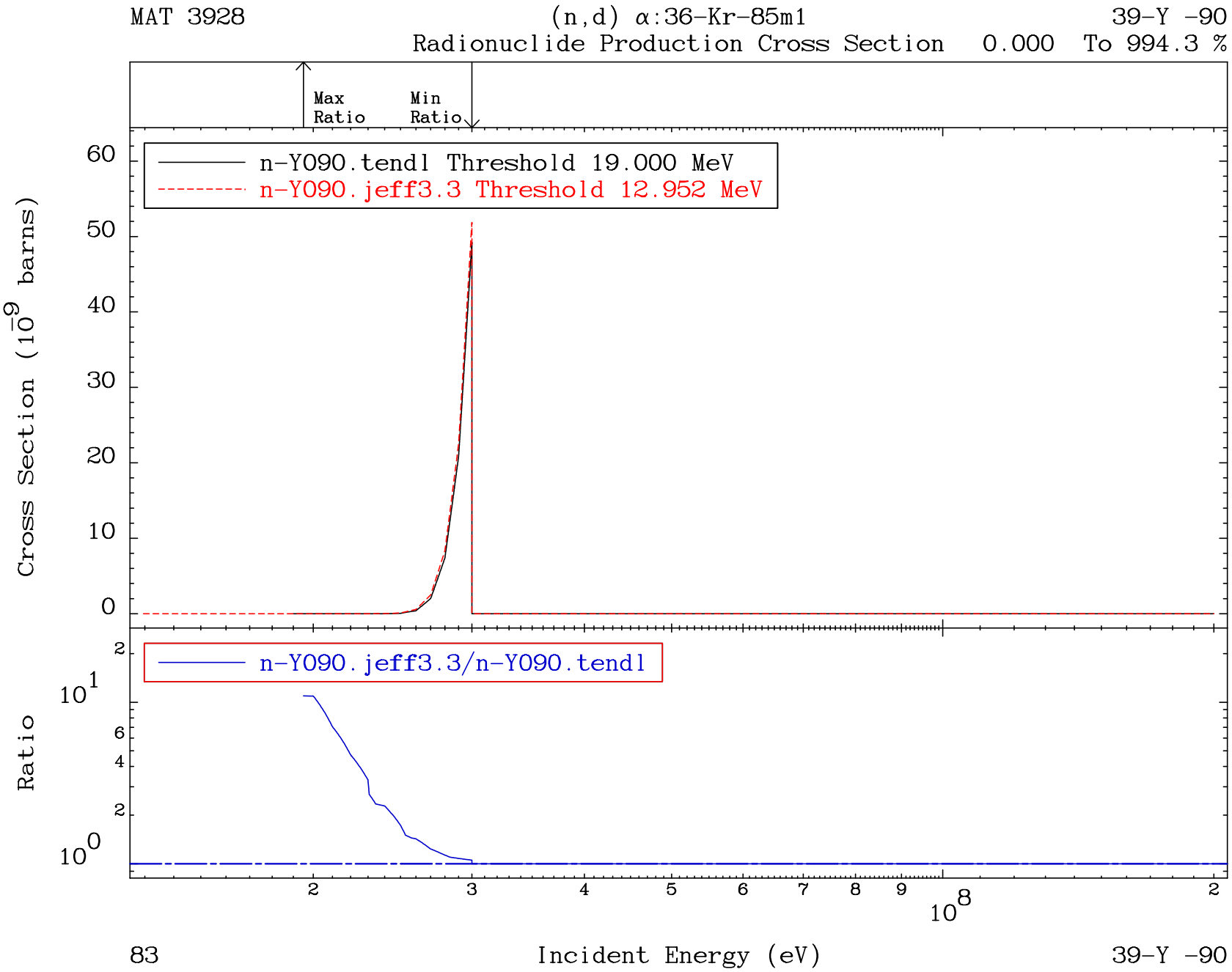

MAT 3928
(n,3n) p:38-Sr-87g
39-Y -90
Radionuclide Production Cross Section -3.578 To 978.6 %
Min
Ratio
n-Y090.tendl Threshold 25.320 MeV
n-Y090.jeff3.3 Threshold 25.327 MeV
Cross Section (micro-barns)
500
400
300
200
100
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
2
10^1
6
4
2
10^0
40
60
80
100
120
140
160
180
200
78
Incident Energy (MeV)
39-Y -90


MAT 3928
(n,3n) p:38-Sr-87m1
39-Y -90
Radionuclide Production Cross Section -20.59 To 0.000 %
Max
Ratio
n-Y090.tendl Threshold 25.713 MeV
n-Y090.jeff3.3 Threshold 25.720 MeV
Cross Section (micro-barns)
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
1.0
0.9
0.8
40
60
80
100
120
140
160
180
200
79
Incident Energy (MeV)
39-Y -90


MAT 3928
(n,n') p α:36-Kr-85g
39-Y -90
Radionuclide Production Cross Section 0.000 To 1578. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 14.893 MeV
n-Y090.jeff3.3 Threshold 14.893 MeV
Cross Section (micro-barns)
30
25
20
15
10
5
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
6
4
10^0
2
3
4
5
6
7
8
9
10^8
2
80
Incident Energy (eV)
39-Y -90


MAT 3928
(n,n') p α:36-Kr-85m1
39-Y -90
Radionuclide Production Cross Section 0.000 To 1193. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 20.000 MeV
n-Y090.jeff3.3 Threshold 20.000 MeV
Cross Section (micro-barns)
0
1
2
3
4
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
10^0
2
6
4
2
2
3
4
5
6
7
8
9
10^8
2
81
Incident Energy (eV)
39-Y -90


MAT 3928
(n,d) α:36-Kr-85g
39-Y -90
Radionuclide Production Cross Section 0.000 To 3787. %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 12.643 MeV
n-Y090.jeff3.3 Threshold 12.643 MeV
Cross Section (10^{-9} barns)
150
100
50
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^{1}
4
4
10^{0}
2
3
4
5
6
7
8
9
10^{8}
2
82
Incident Energy (eV)
39-Y -90


MAT 3928
(n,d) α:36-Kr-85m1
39-Y -90
Radionuclide Production Cross Section 0.000 To 994.3 %
Max Ratio
Min Ratio
n-Y090.tendl Threshold 19.000 MeV
n-Y090.jeff3.3 Threshold 12.952 MeV
Cross Section (10^{-9} barns)
60
50
40
30
20
10
0
n-Y090.jeff3.3/n-Y090.tendl
Ratio
10^1
6
4
2
10^0
2
3
4
5
6
7
8
9
10^8
2
83
Incident Energy (eV)
39-Y -90