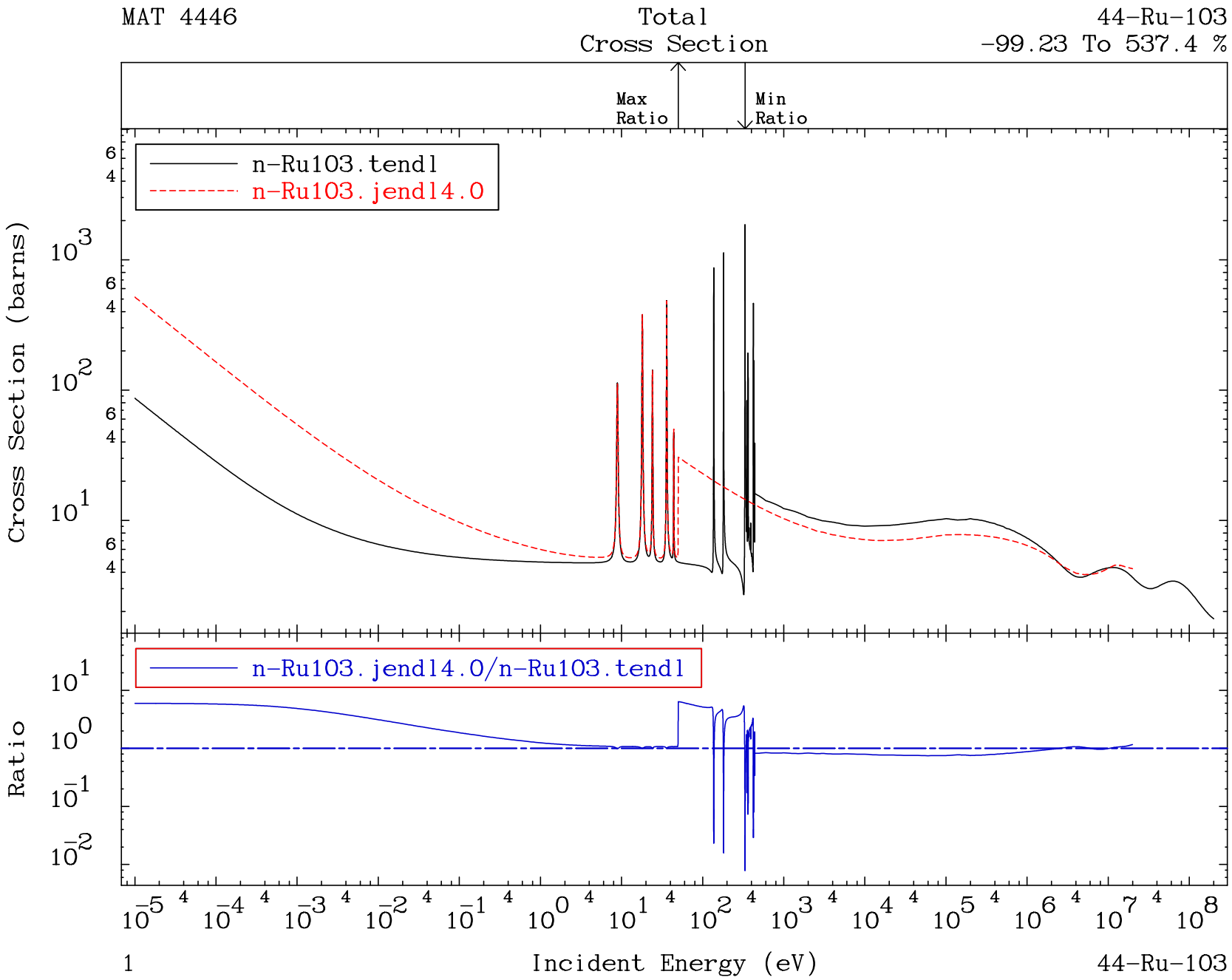
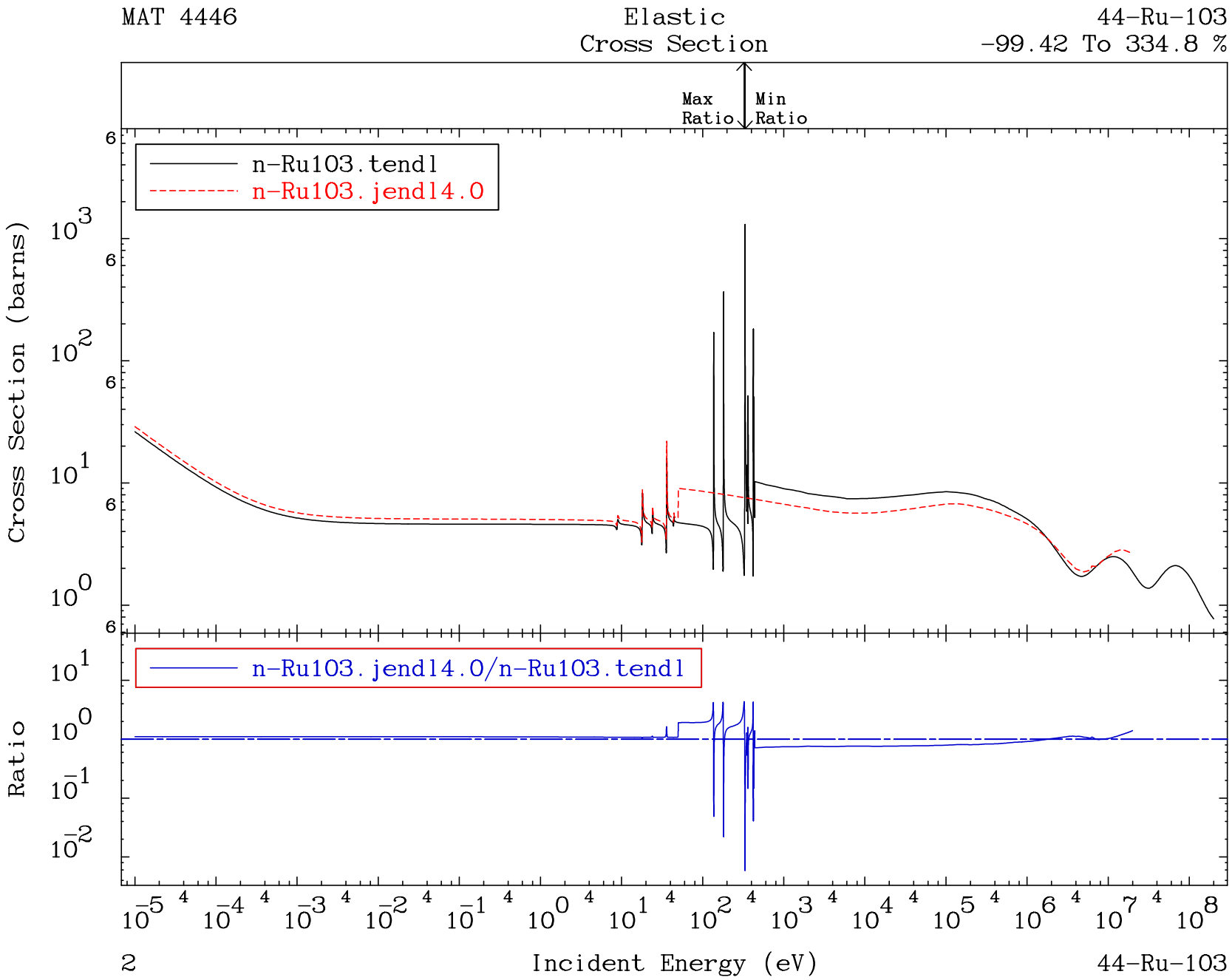
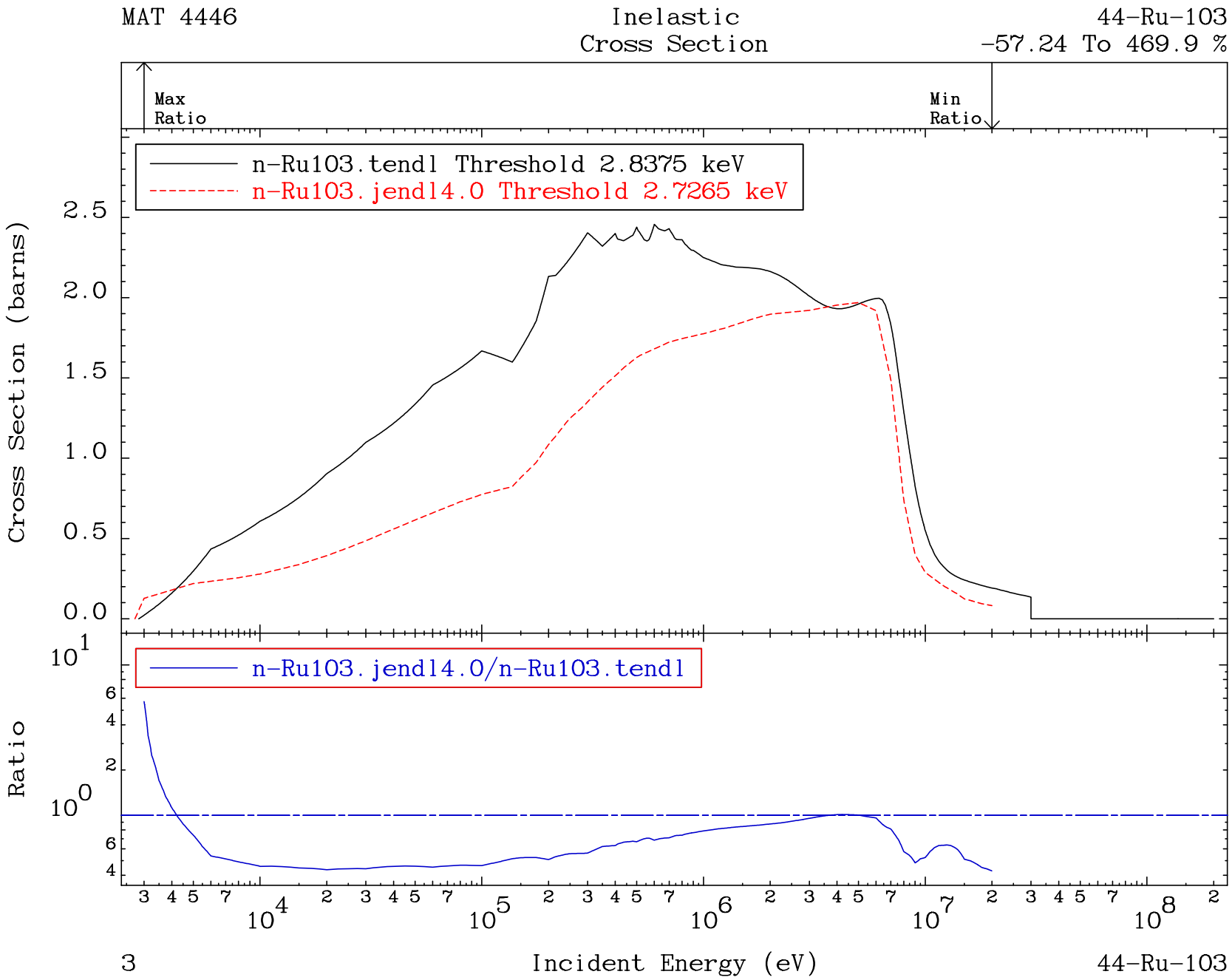
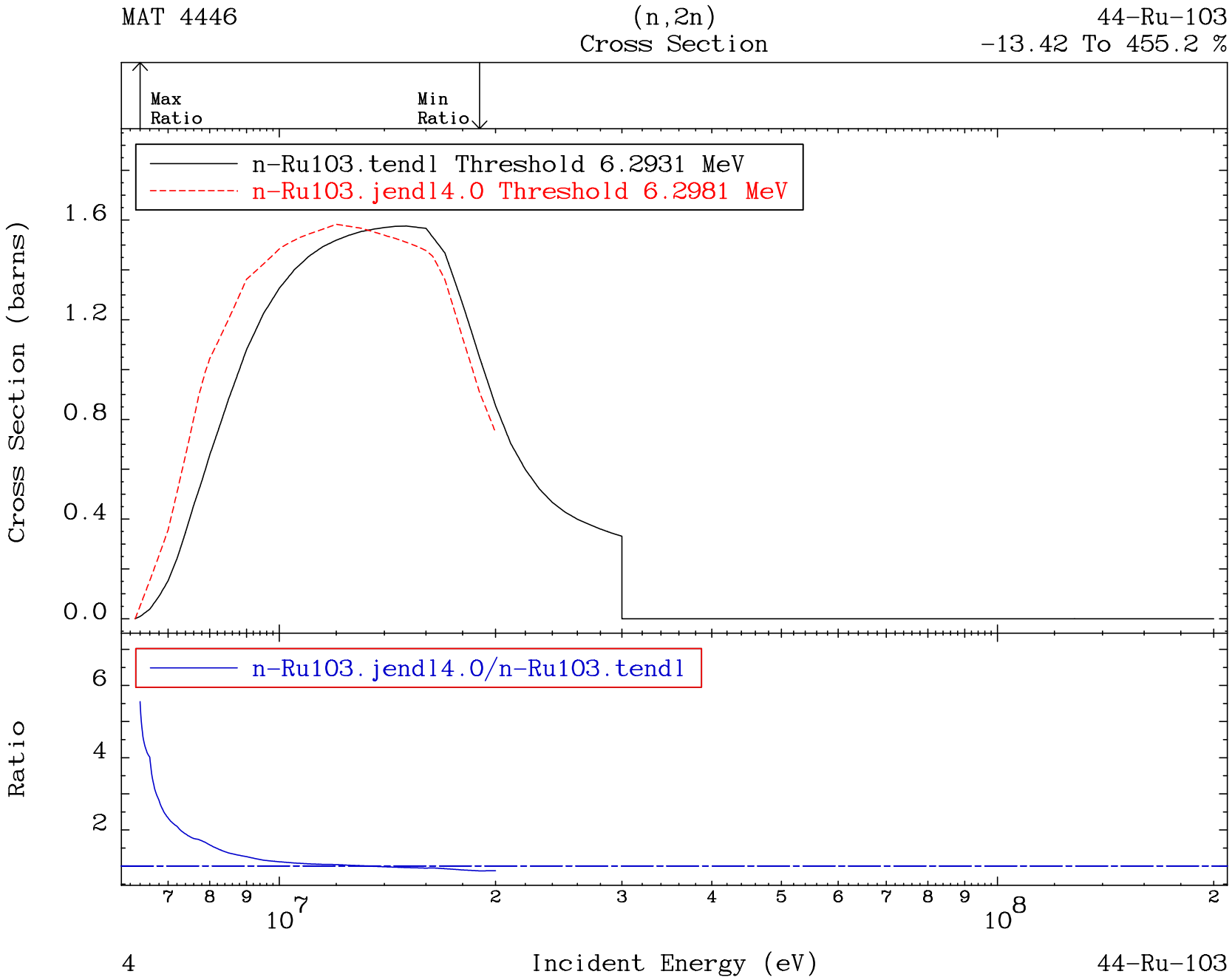
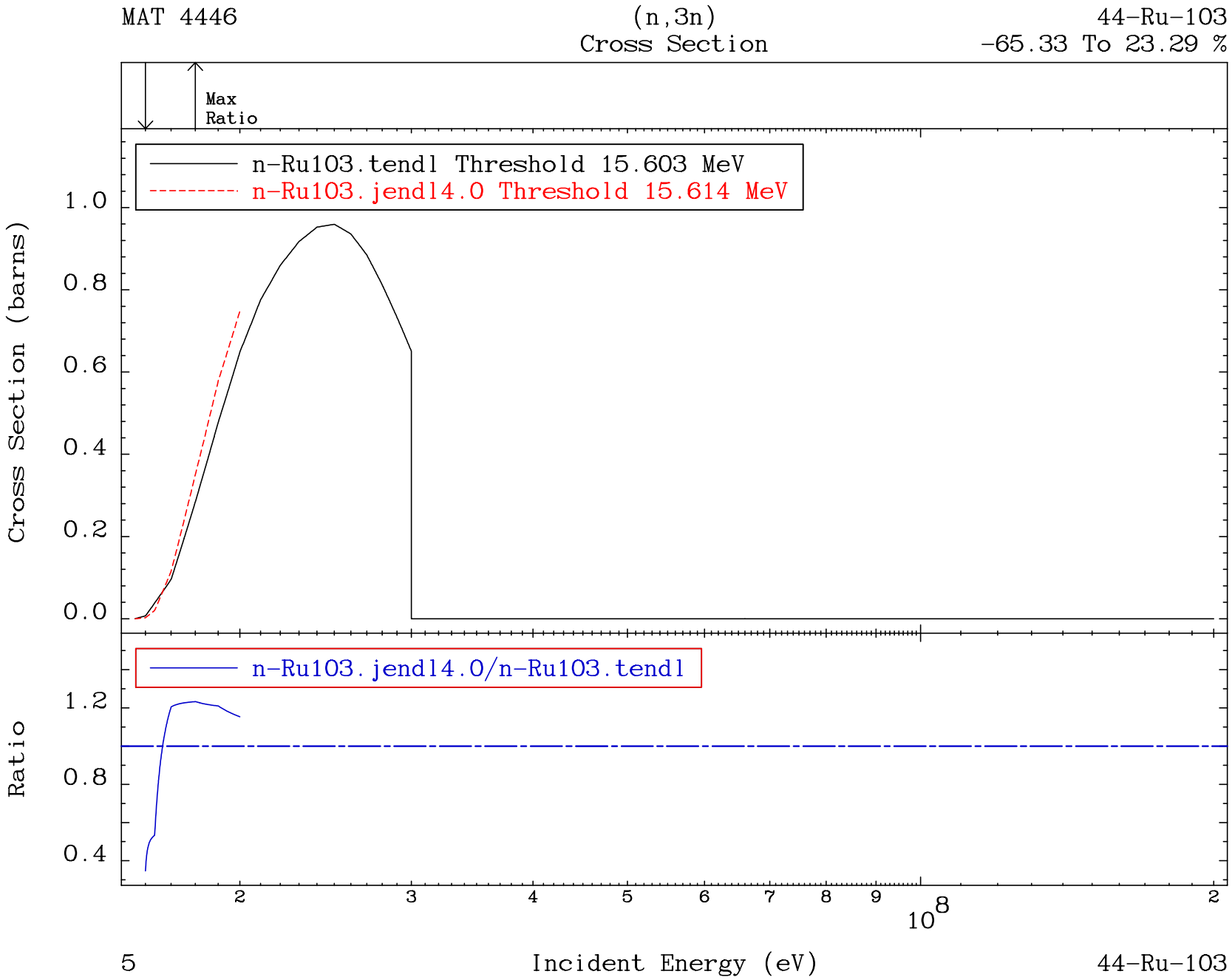
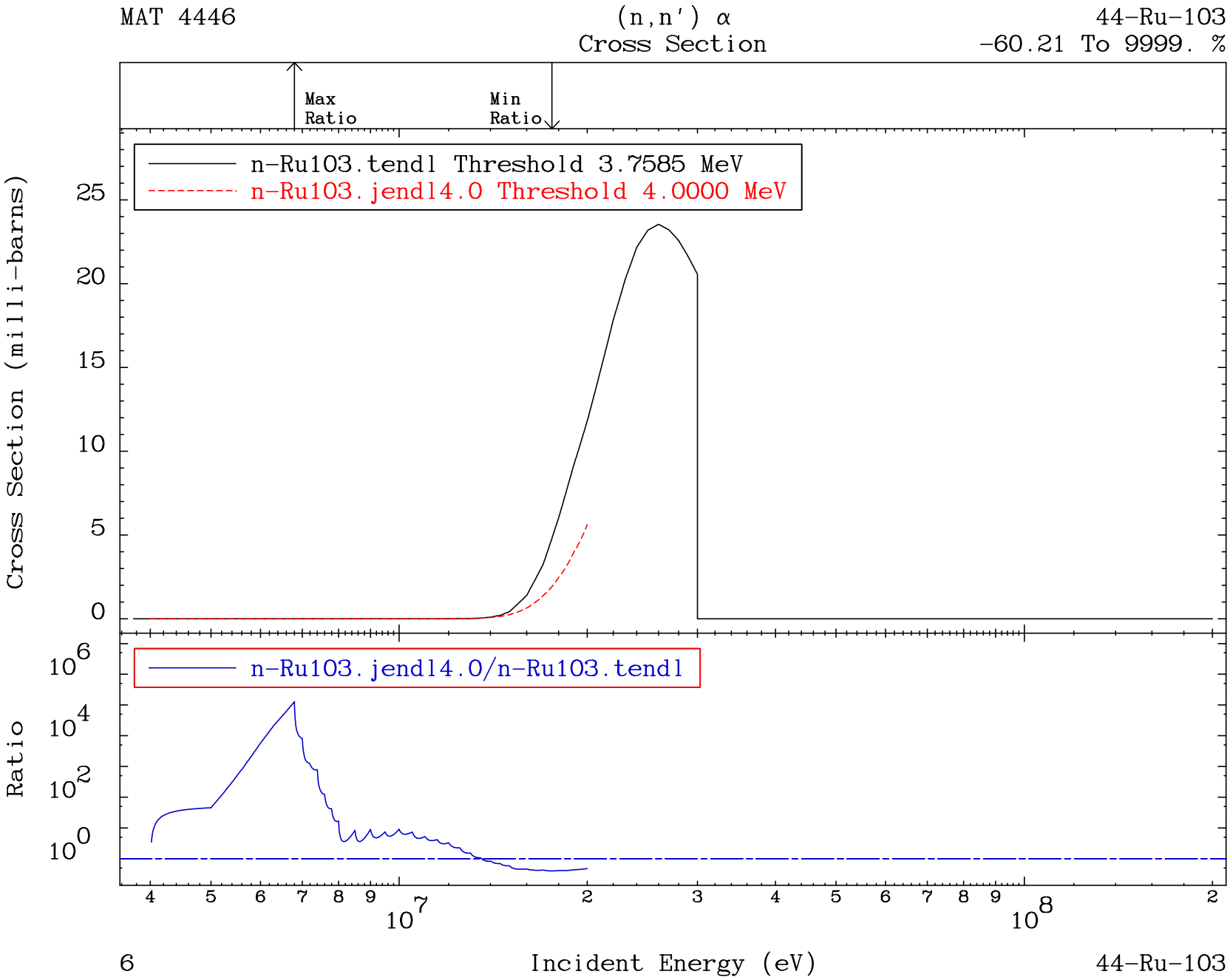

MAT 4446
Total
Cross Section
44-Ru-103
-99.23 To 537.4 %
Max
Ratio
Min
Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
1
44-Ru-103

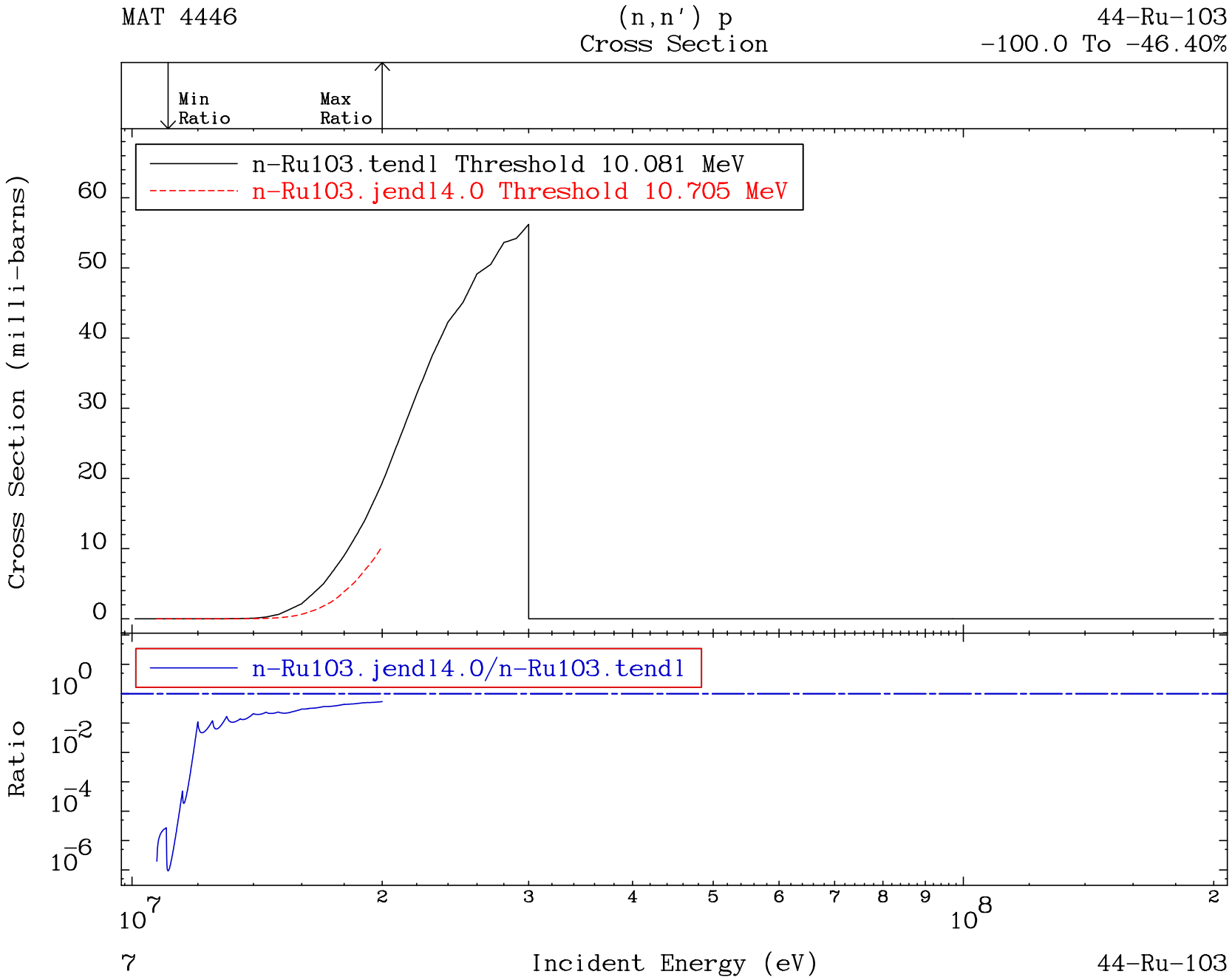

MAT 4446
Elastic
Cross Section
44-Ru-103
-99.42 To 334.8 %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
2
44-Ru-103

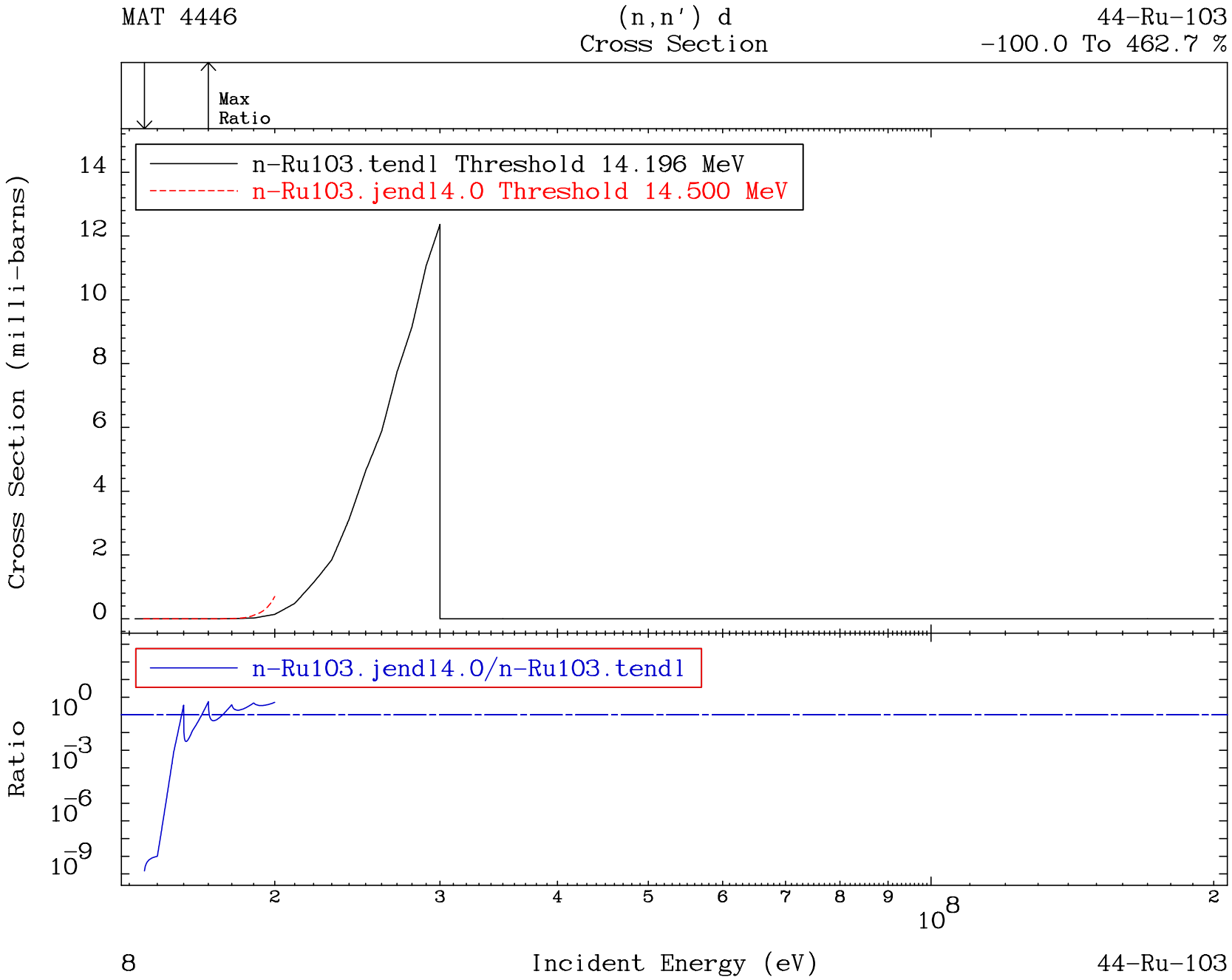

MAT 4446
Inelastic
Cross Section
44-Ru-103
-57.24 To 469.9 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 2.8375 keV
n-Ru103.jendl4.0 Threshold 2.7265 keV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^1
10^0
6
4
2
6
4
3 4 5 7 10^4 2 3 4 5 7 10^5 2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
3
Incident Energy (eV)
44-Ru-103

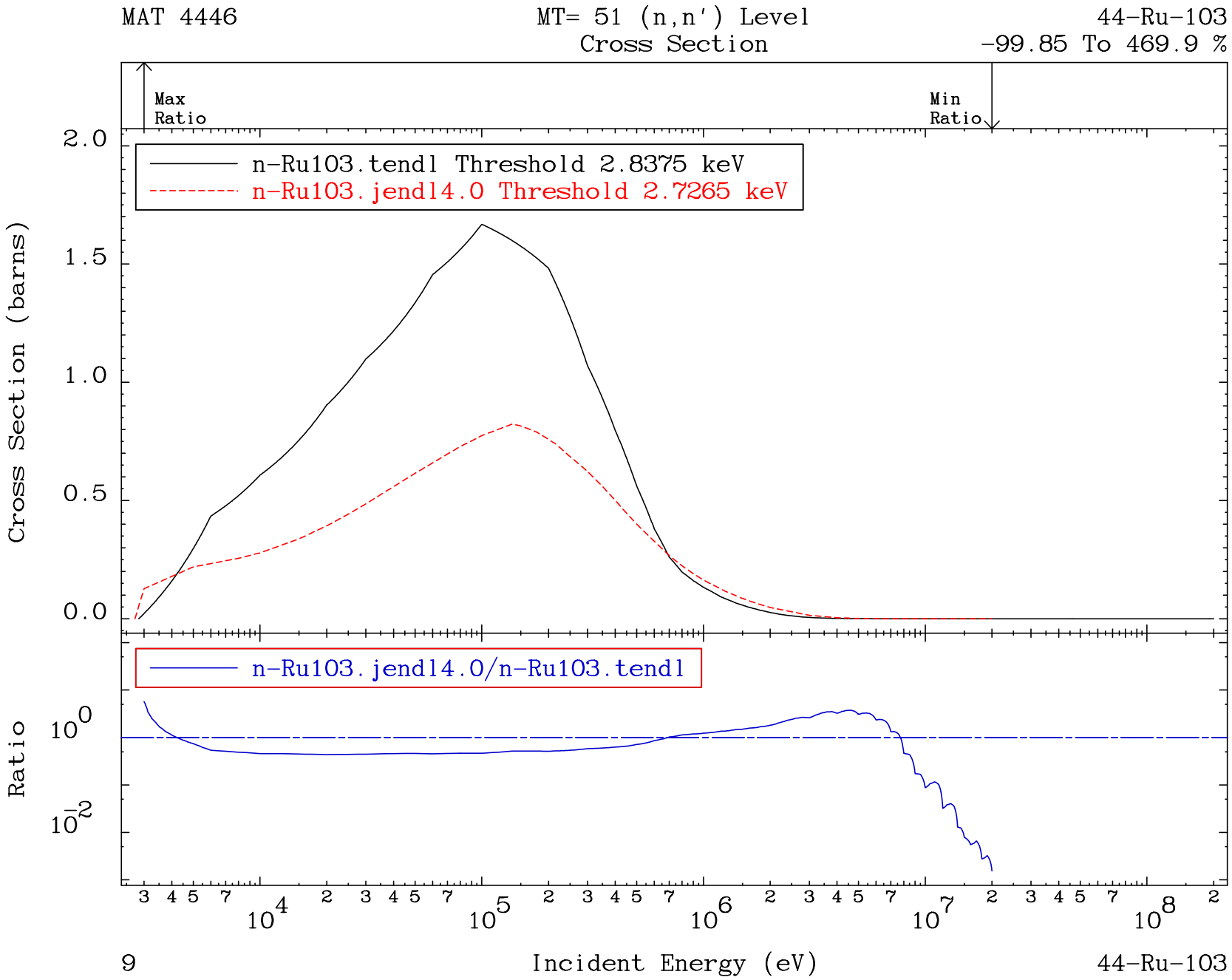

MAT 4446
(n,2n)
Cross Section
44-Ru-103
-13.42 To 455.2 %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 6.2931 MeV
n-Ru103.jendl4.0 Threshold 6.2981 MeV
Cross Section (barns)
1.6
1.2
0.8
0.4
0.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
6
4
2
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
4
Incident Energy (eV)
44-Ru-103

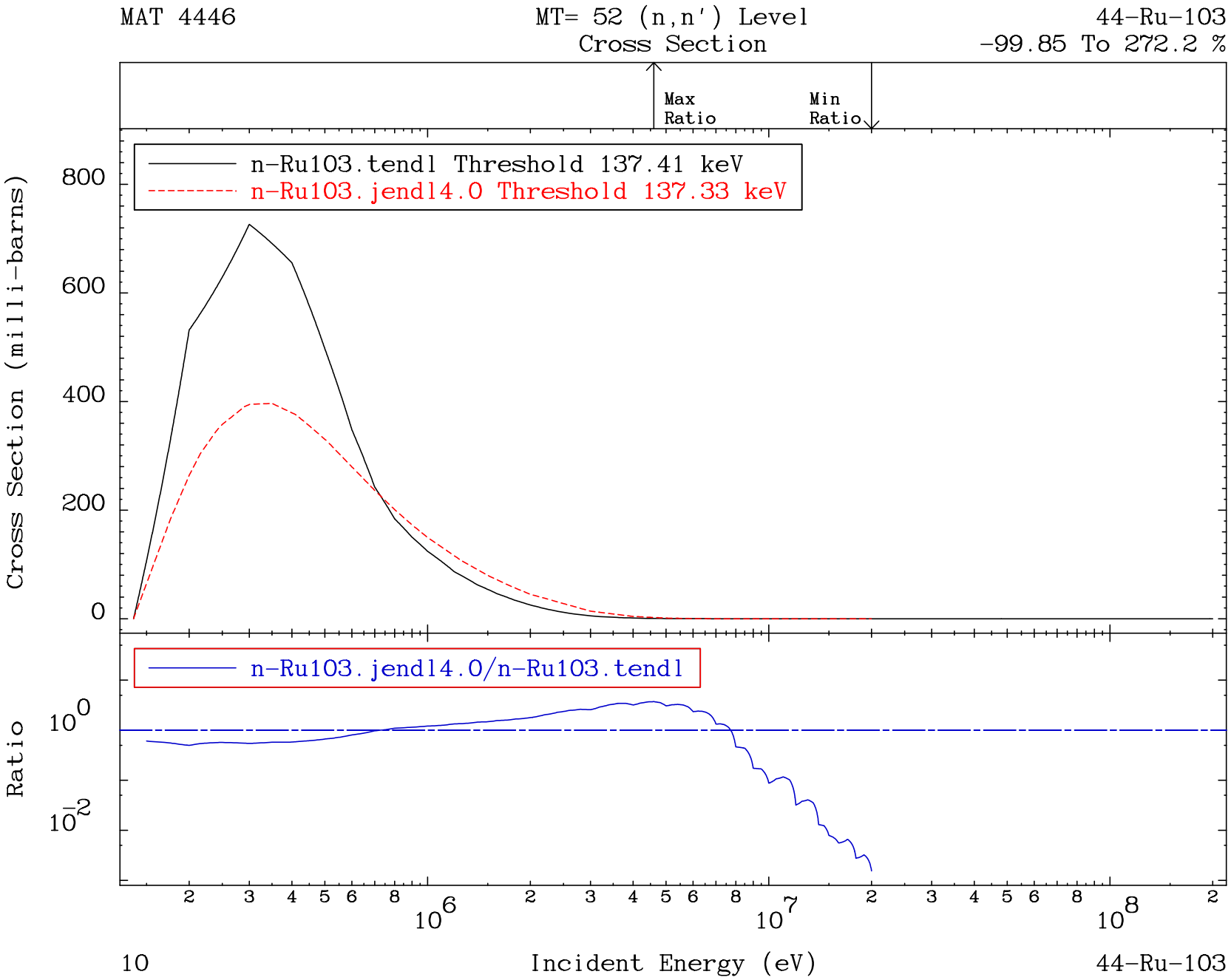

MAT 4446
(n,3n)
Cross Section
44-Ru-103
-65.33 To 23.29 %
Max
Ratio
n-Ru103.tendl Threshold 15.603 MeV
n-Ru103.jendl4.0 Threshold 15.614 MeV
Cross Section (barns)
1.0
0.8
0.6
0.4
0.2
0.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
1.2
0.8
0.4
2
3
4
5
6
7
8
9
10^8
2
5
Incident Energy (eV)
44-Ru-103

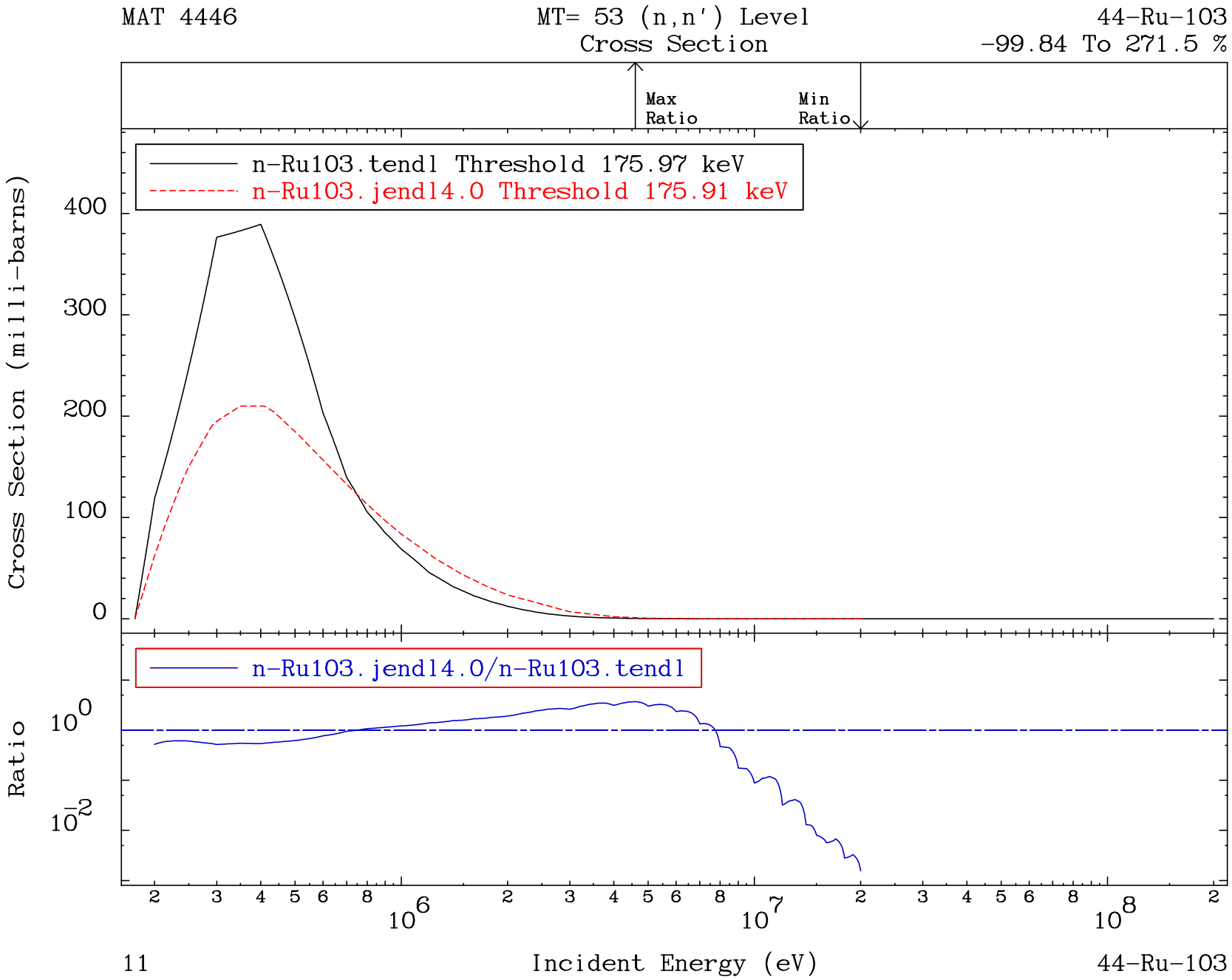

MAT 4446
(n,n') α
Cross Section
44-Ru-103
-60.21 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 3.7585 MeV
n-Ru103.jendl4.0 Threshold 4.0000 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^6
10^4
10^2
10^0
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
6
Incident Energy (eV)
44-Ru-103

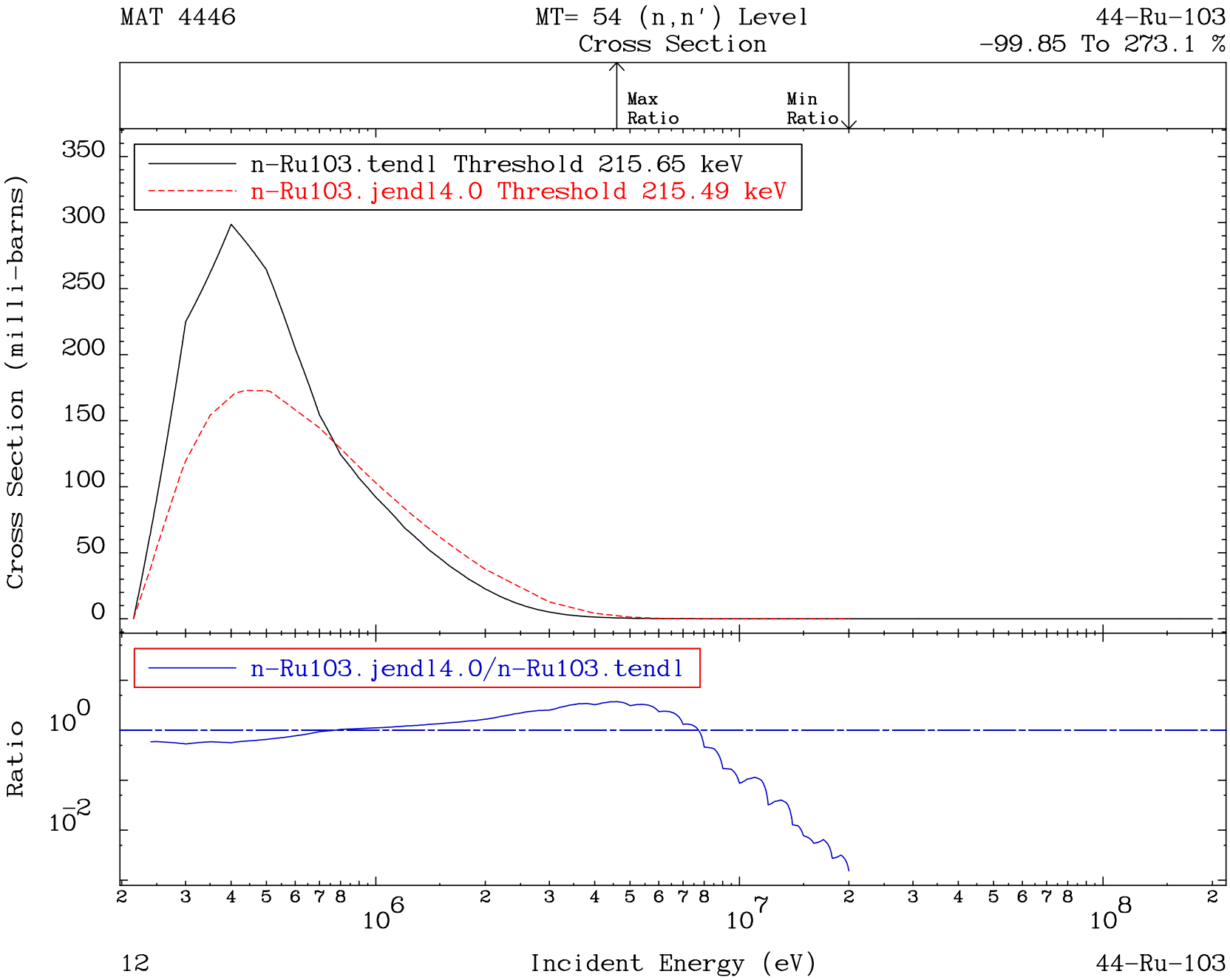

MAT 4446
(n,n') p
Cross Section
44-Ru-103
-100.0 To -46.40%
Min Ratio
Max Ratio
n-Ru103.tendl Threshold 10.081 MeV
n-Ru103.jendl4.0 Threshold 10.705 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
10^-4
10^-6
10^7
2
3
4
5
6
7
8
9
10^8
2
7
Incident Energy (eV)
44-Ru-103

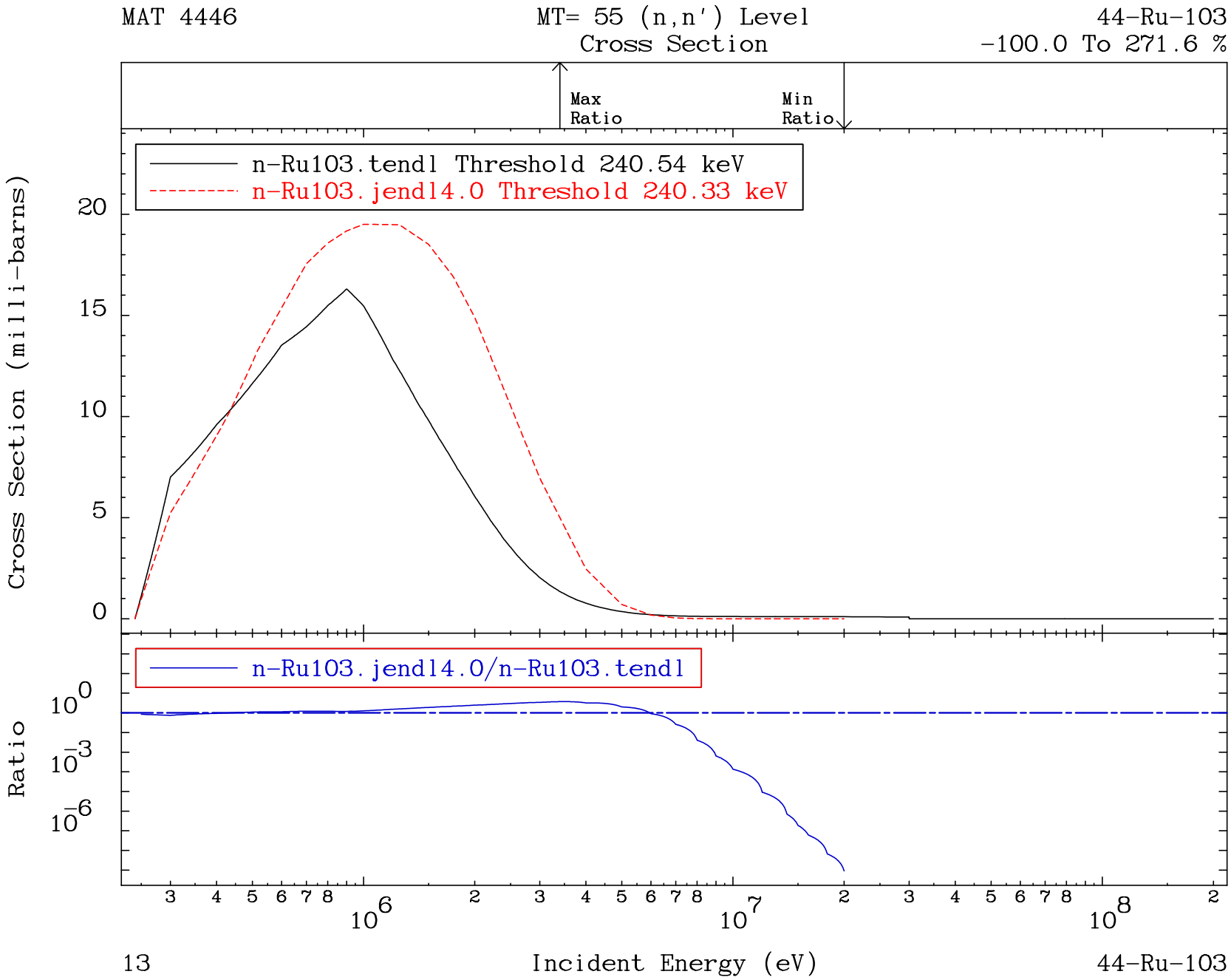

MAT 4446
(n,n') d
Cross Section
44-Ru-103
-100.0 To 462.7 %
Max
Ratio
n-Ru103.tendl Threshold 14.196 MeV
n-Ru103.jendl4.0 Threshold 14.500 MeV
Cross Section (milli-barns)
0
2
4
6
8
10
12
14
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-3
10^-6
10^-9
2
3
4
5
6
7
8
9
10^8
2
8
Incident Energy (eV)
44-Ru-103

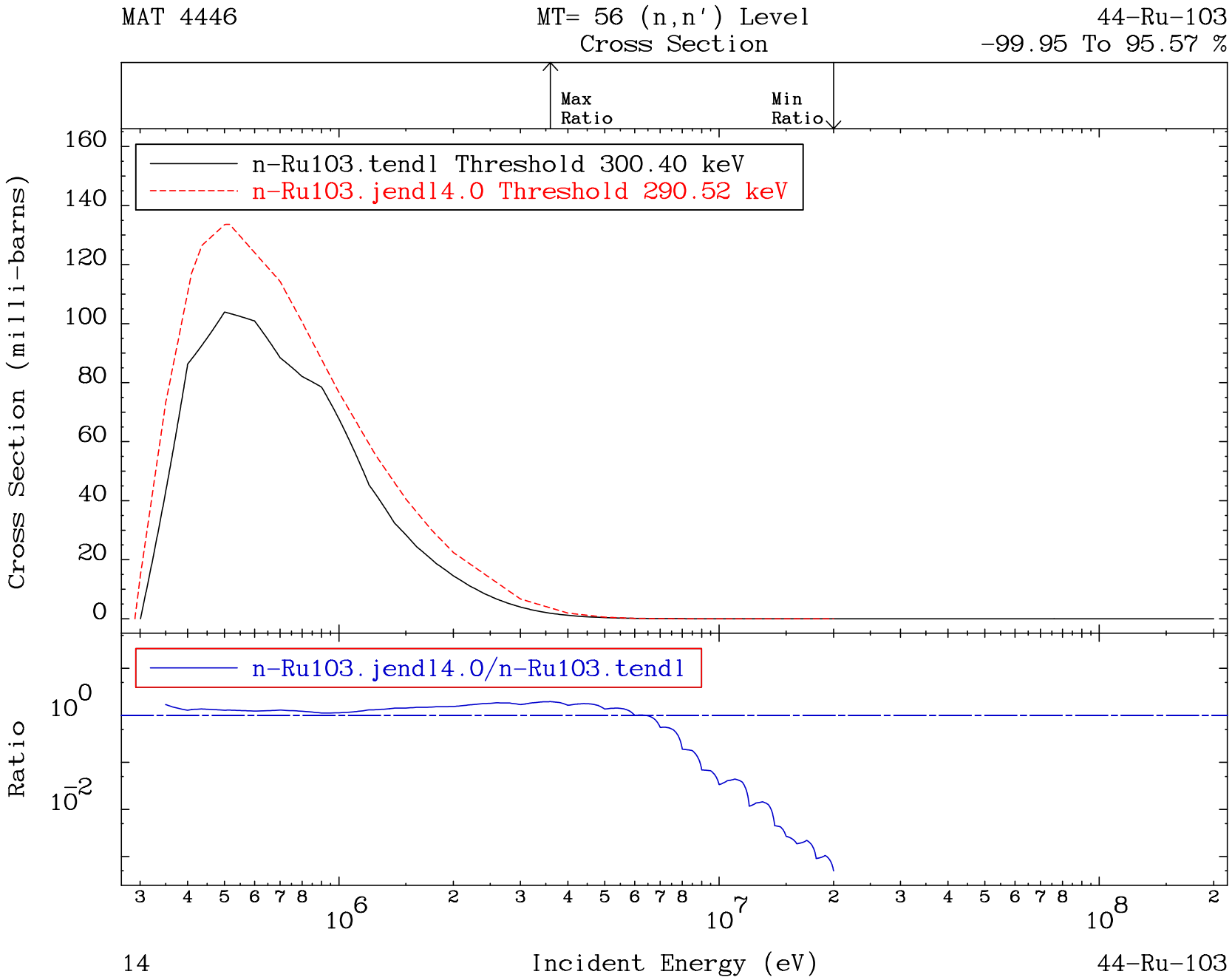

MAT 4446
MT= 51 (n,n') Level
Cross Section
44-Ru-103
-99.85 To 469.9 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 2.8375 keV
n-Ru103.jendl4.0 Threshold 2.7265 keV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
3 4 5 7 10^4 2 3 4 5 7 10^5 2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
9
Incident Energy (eV)
44-Ru-103

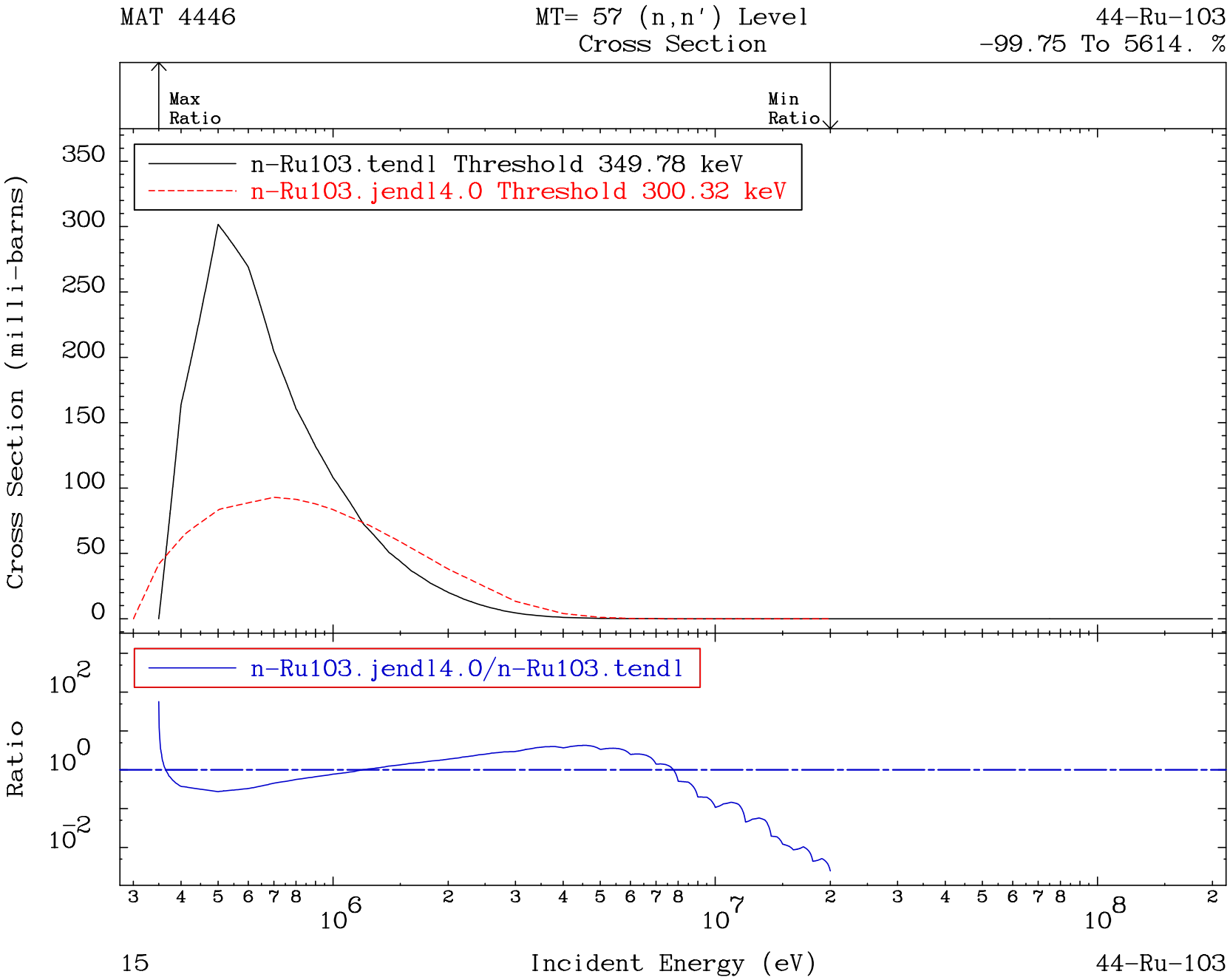

MAT 4446
MT= 52 (n,n') Level
Cross Section
44-Ru-103
-99.85 To 272.2 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 137.41 keV
n-Ru103.jendl4.0 Threshold 137.33 keV
Cross Section (milli-barns)
800
600
400
200
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
10
Incident Energy (eV)
44-Ru-103

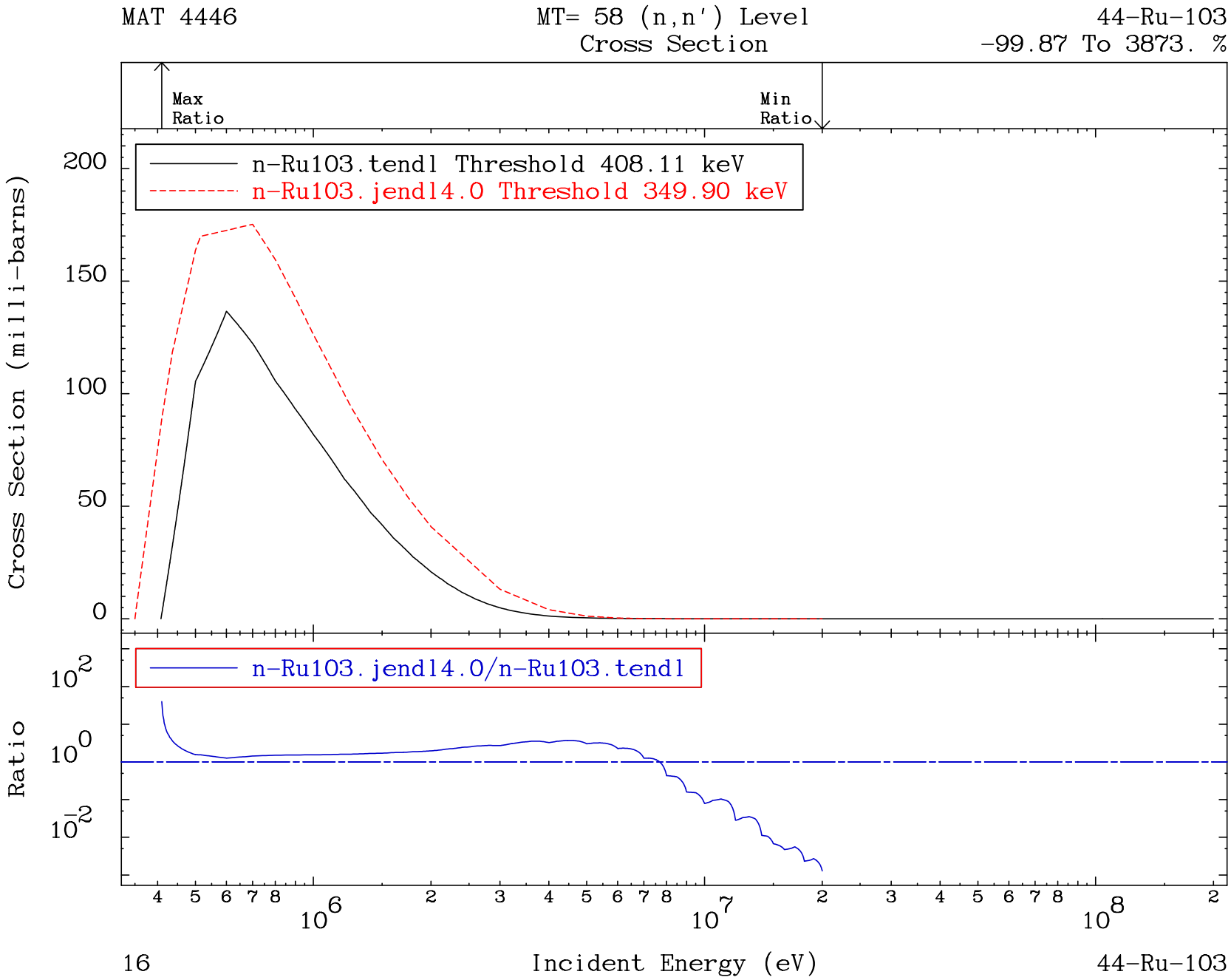

MAT 4446
MT= 53 (n,n') Level
Cross Section
44-Ru-103
-99.84 To 271.5 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 175.97 keV
n-Ru103.jendl4.0 Threshold 175.91 keV
Cross Section (milli-barns)
400
300
200
100
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
11
Incident Energy (eV)
44-Ru-103

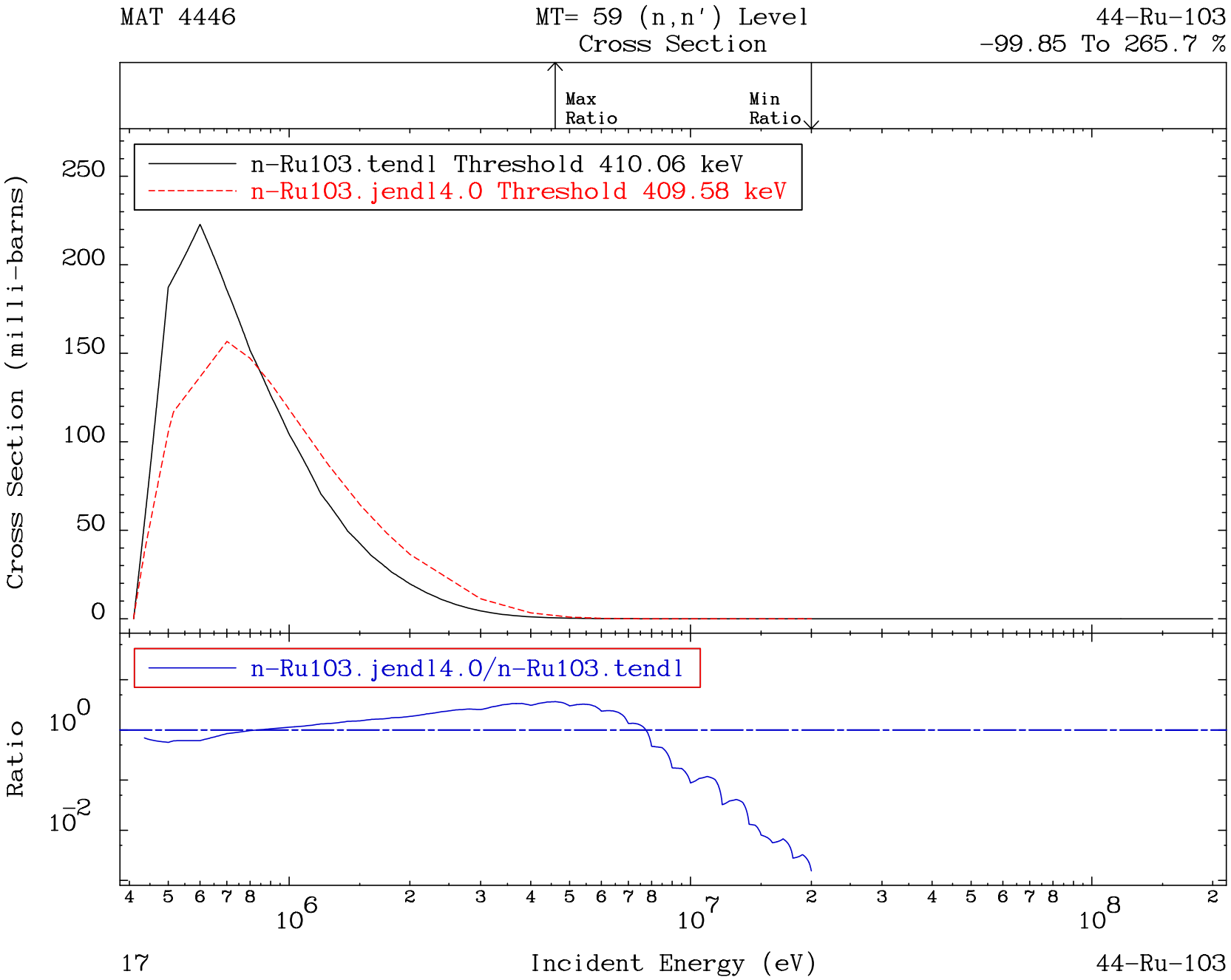

MAT 4446
MT= 54 (n,n') Level
Cross Section
44-Ru-103
-99.85 To 273.1 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 215.65 keV
n-Ru103.jendl4.0 Threshold 215.49 keV
Cross Section (milli-barns)
350
300
250
200
150
100
50
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
2 3 4 5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
12
Incident Energy (eV)
44-Ru-103

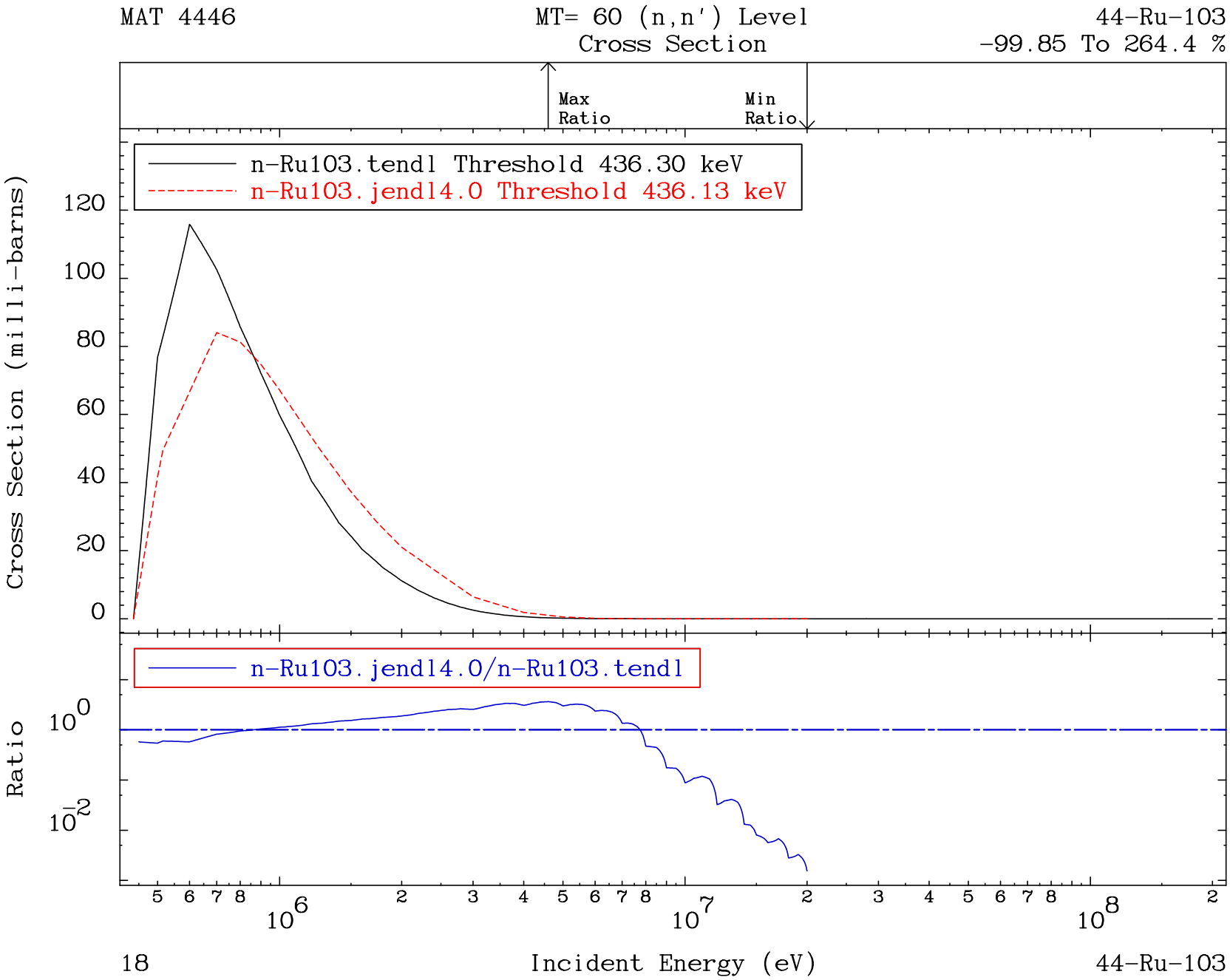

MAT 4446
MT= 55 (n,n') Level
Cross Section
44-Ru-103
-100.0 To 271.6 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 240.54 keV
n-Ru103.jendl4.0 Threshold 240.33 keV
Cross Section (milli-barns)
20
15
10
5
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-3
10^-6
3 4 5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
13
Incident Energy (eV)
44-Ru-103

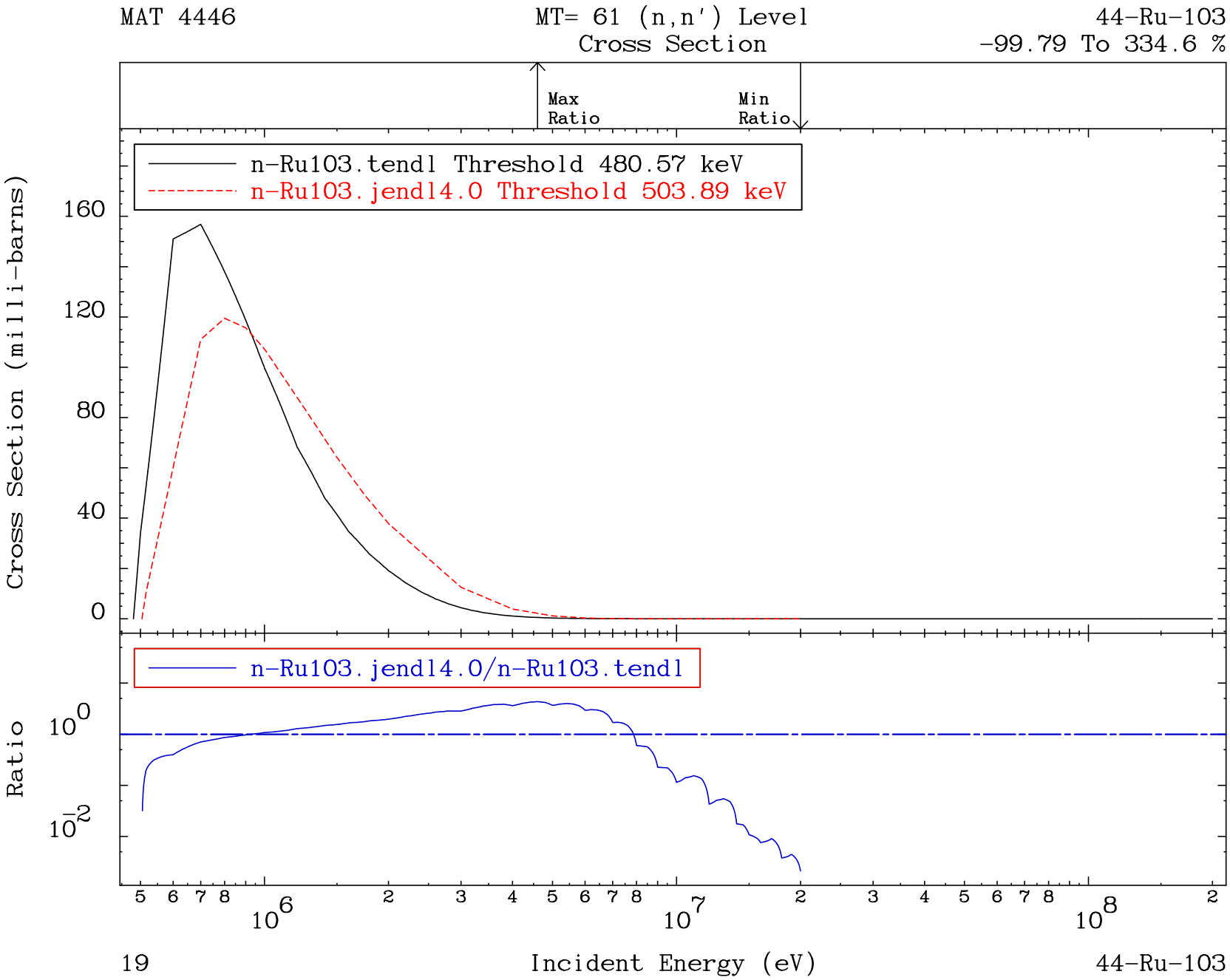

MAT 4446
MT= 56 (n,n') Level
Cross Section
44-Ru-103
-99.95 To 95.57 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 300.40 keV
n-Ru103.jendl4.0 Threshold 290.52 keV
Cross Section (milli-barns)
160
140
120
100
80
60
40
20
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
14
Incident Energy (eV)
44-Ru-103

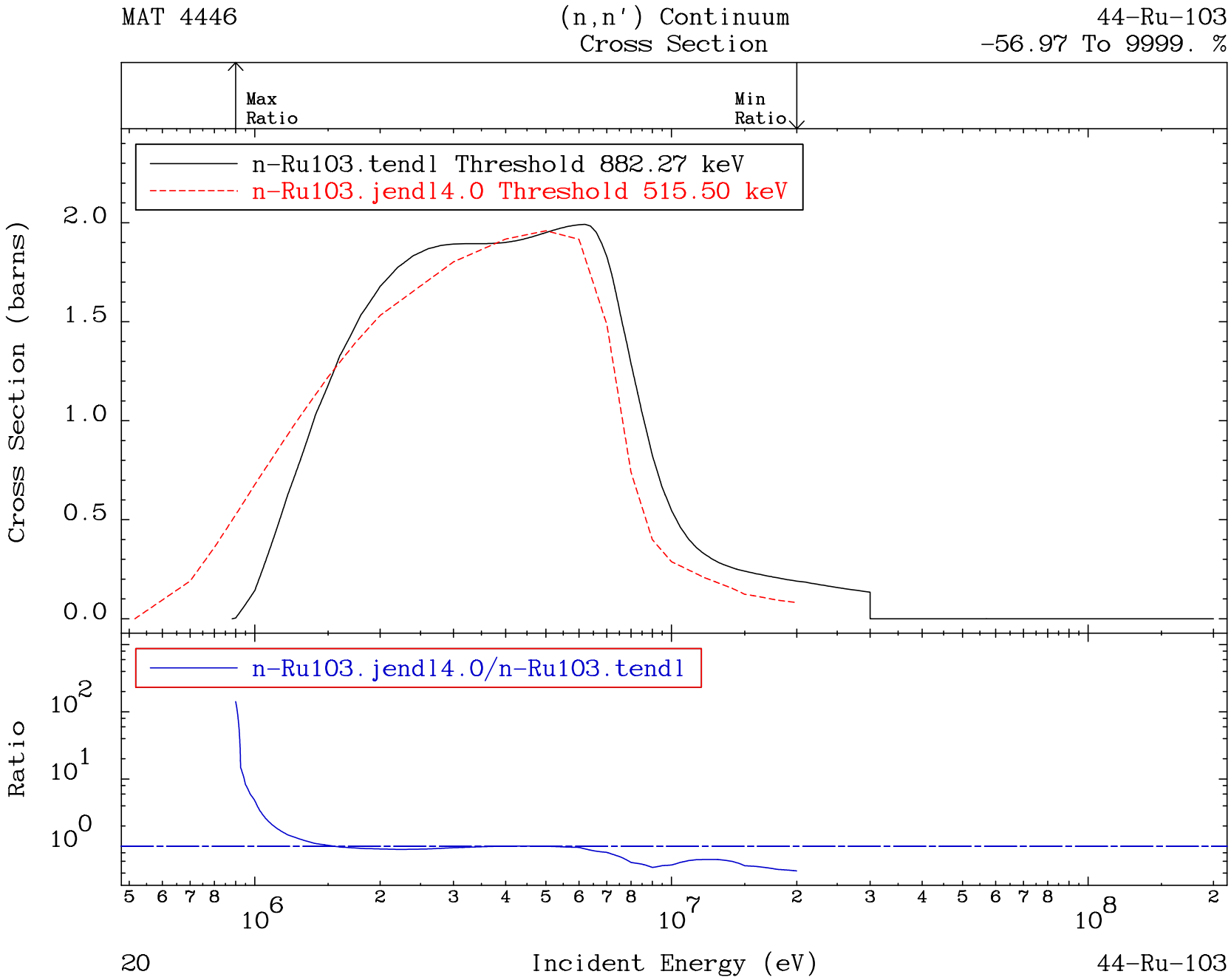

MAT 4446
MT= 57 (n,n') Level
Cross Section
44-Ru-103
-99.75 To 5614. %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 349.78 keV
n-Ru103.jendl4.0 Threshold 300.32 keV
Cross Section (milli-barns)
350
300
250
200
150
100
50
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^2
10^0
10^-2
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
15
Incident Energy (eV)
44-Ru-103

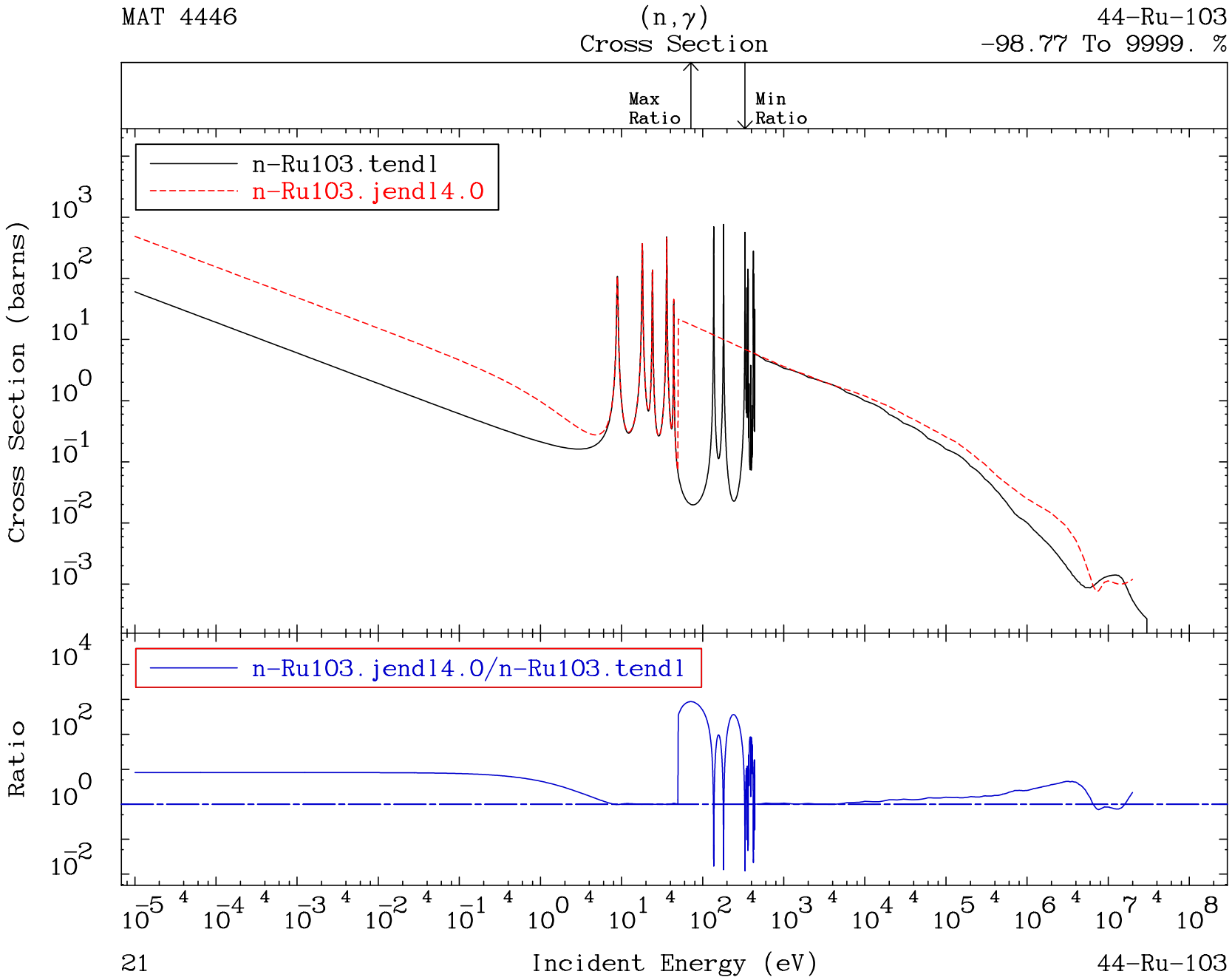

MAT 4446
MT= 58 (n,n') Level
Cross Section
44-Ru-103
-99.87 To 3873. %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 408.11 keV
n-Ru103.jendl4.0 Threshold 349.90 keV
Cross Section (milli-barns)
200
150
100
50
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^2
10^0
10^-2
4 5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
16
Incident Energy (eV)
44-Ru-103

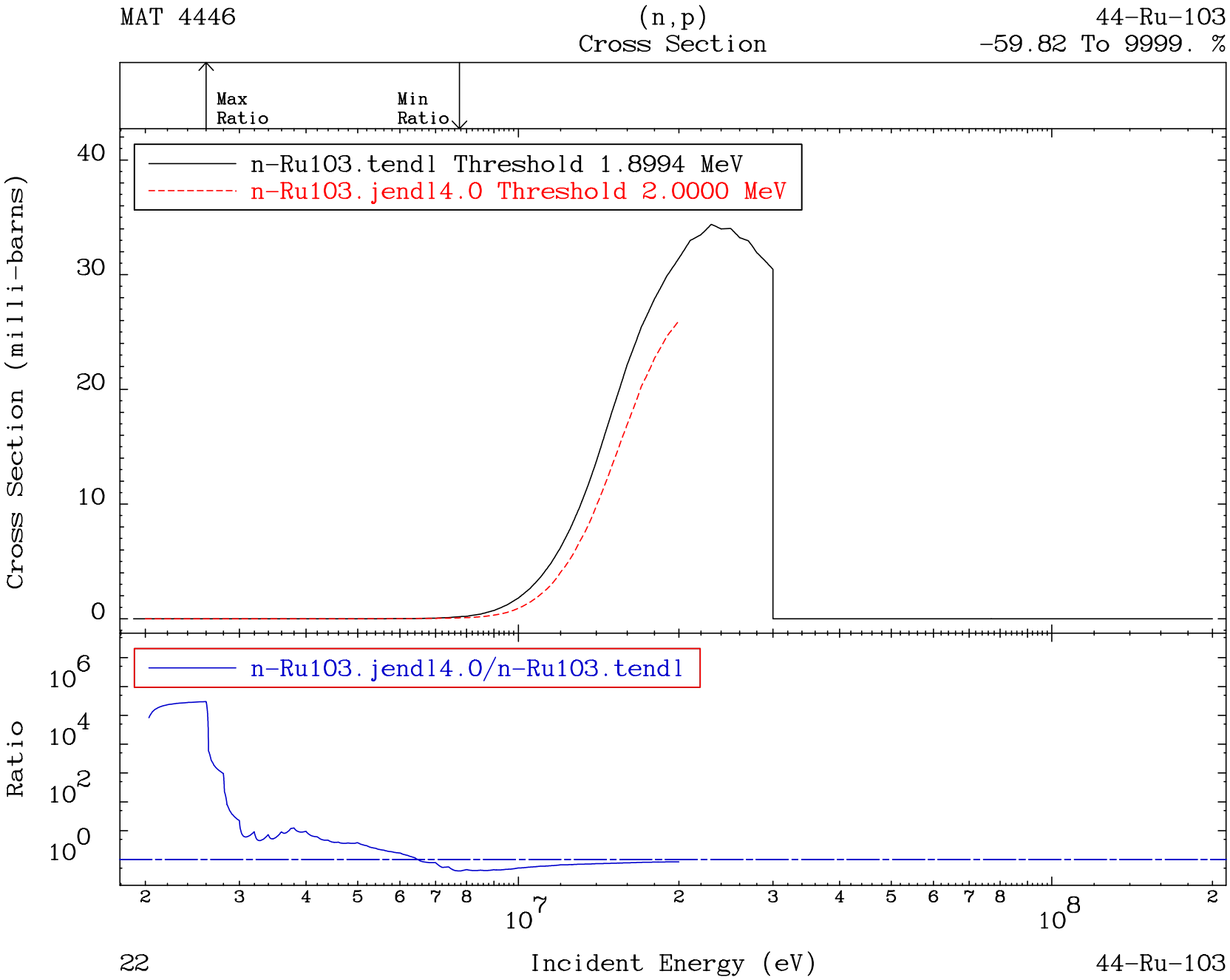

MAT 4446
MT= 59 (n,n') Level
Cross Section
44-Ru-103
-99.85 To 265.7 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 410.06 keV
n-Ru103.jendl4.0 Threshold 409.58 keV
Cross Section (milli-barns)
250
200
150
100
50
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
4 5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
17
Incident Energy (eV)
44-Ru-103

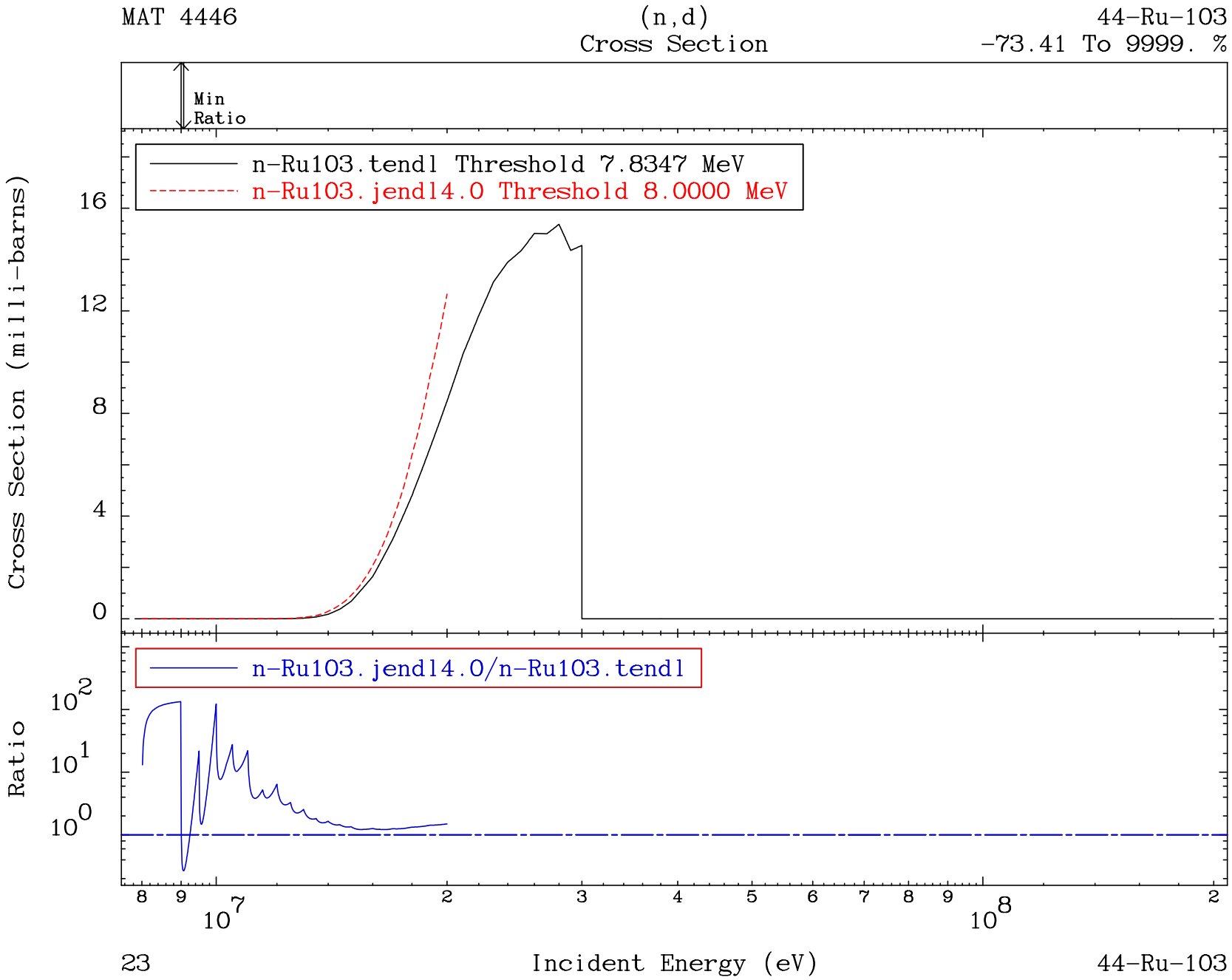

MAT 4446
MT= 60 (n,n') Level
Cross Section
44-Ru-103
-99.85 To 264.4 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 436.30 keV
n-Ru103.jendl4.0 Threshold 436.13 keV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
18
Incident Energy (eV)
44-Ru-103

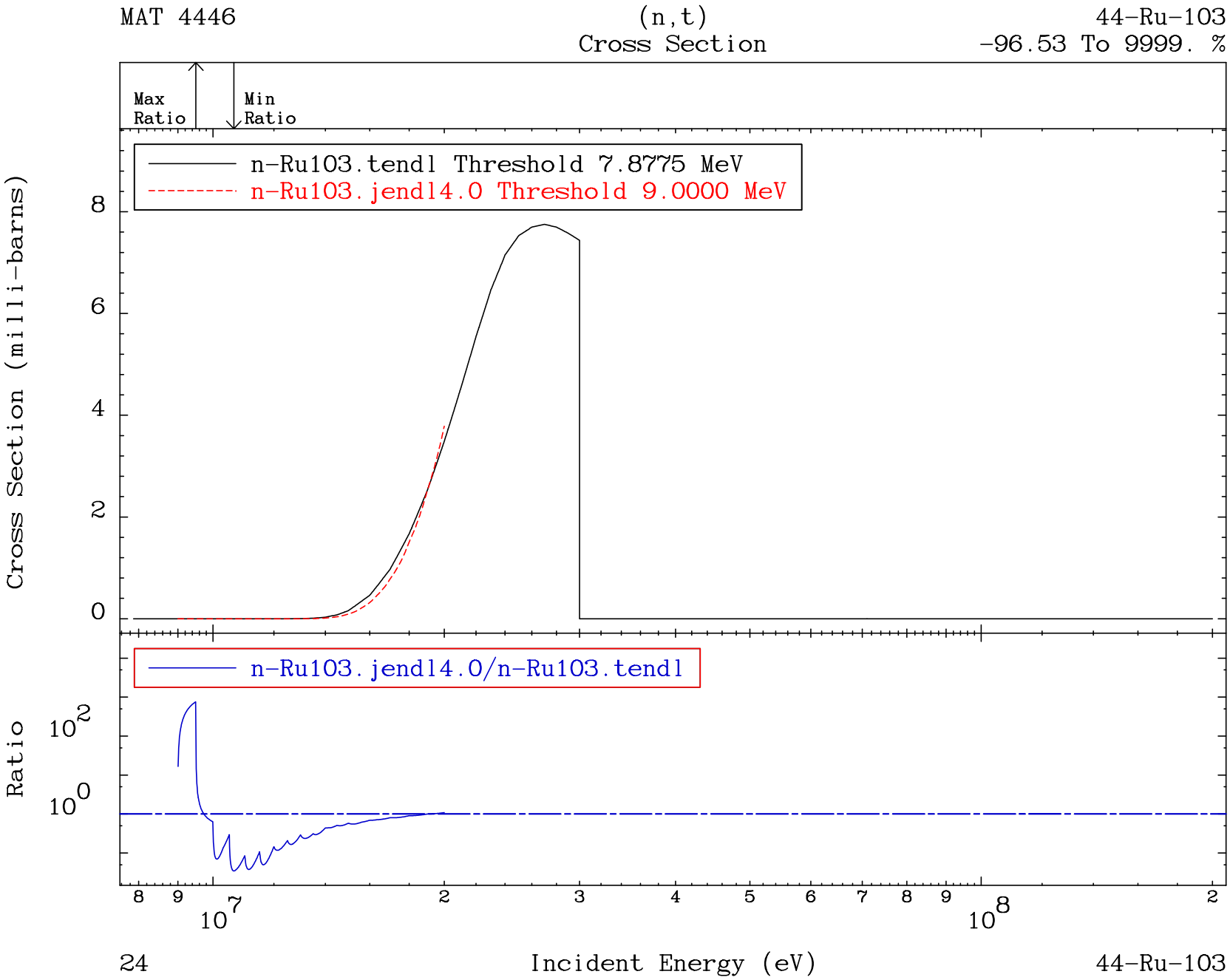

MAT 4446
MT= 61 (n,n') Level
Cross Section
44-Ru-103
-99.79 To 334.6 %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 480.57 keV
n-Ru103.jendl4.0 Threshold 503.89 keV
Cross Section (milli-barns)
160
120
80
40
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
19
Incident Energy (eV)
44-Ru-103

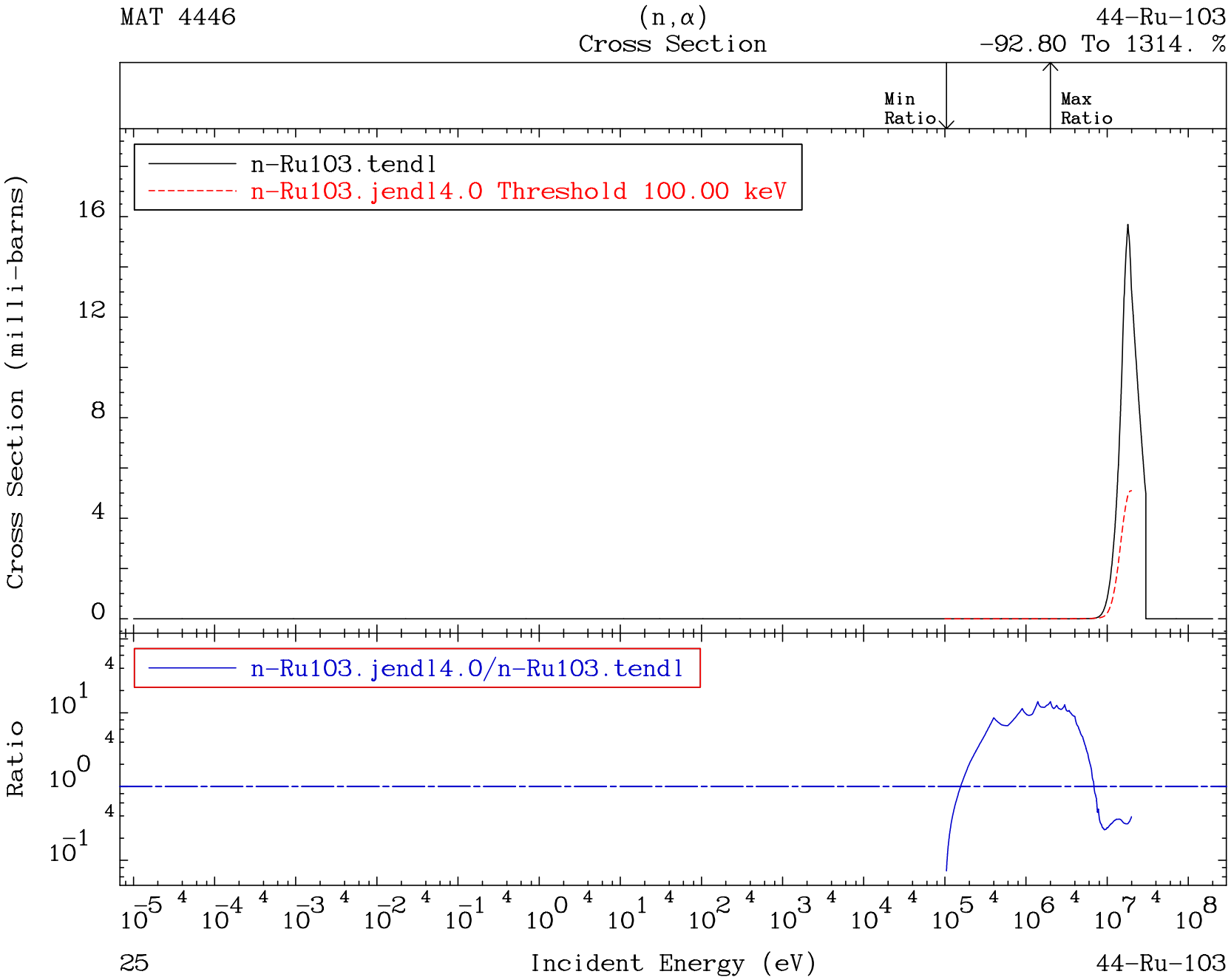

MAT 4446
(n,n') Continuum
Cross Section
44-Ru-103
-56.97 To 9999. %
Max
Ratio
Min
Ratio
n-Ru103.tendl Threshold 882.27 keV
n-Ru103.jendl4.0 Threshold 515.50 keV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^2
10^1
10^0
5 6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
20
Incident Energy (eV)
44-Ru-103

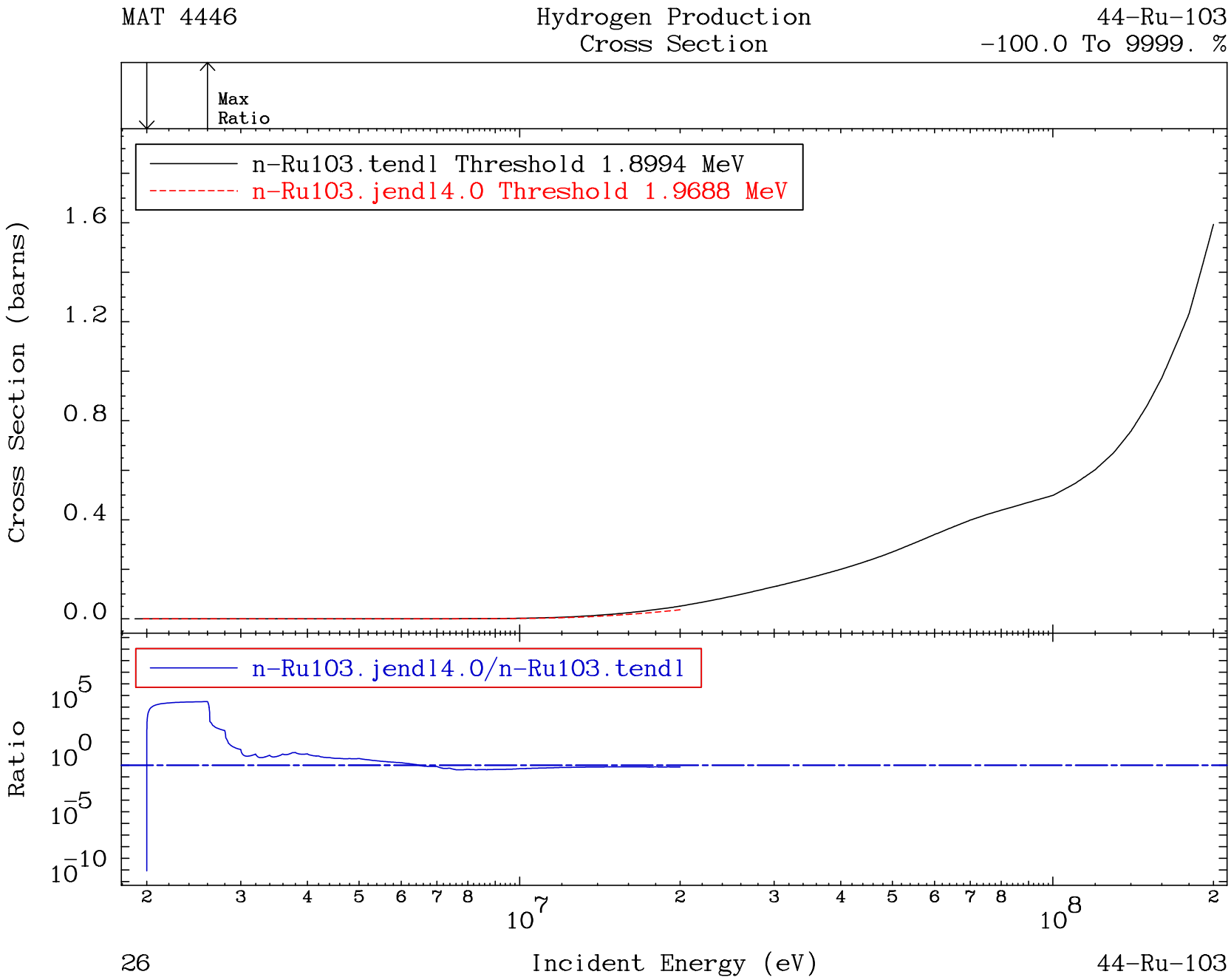

MAT 4446
(n,γ)
Cross Section
44-Ru-103
-98.77 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
21
44-Ru-103

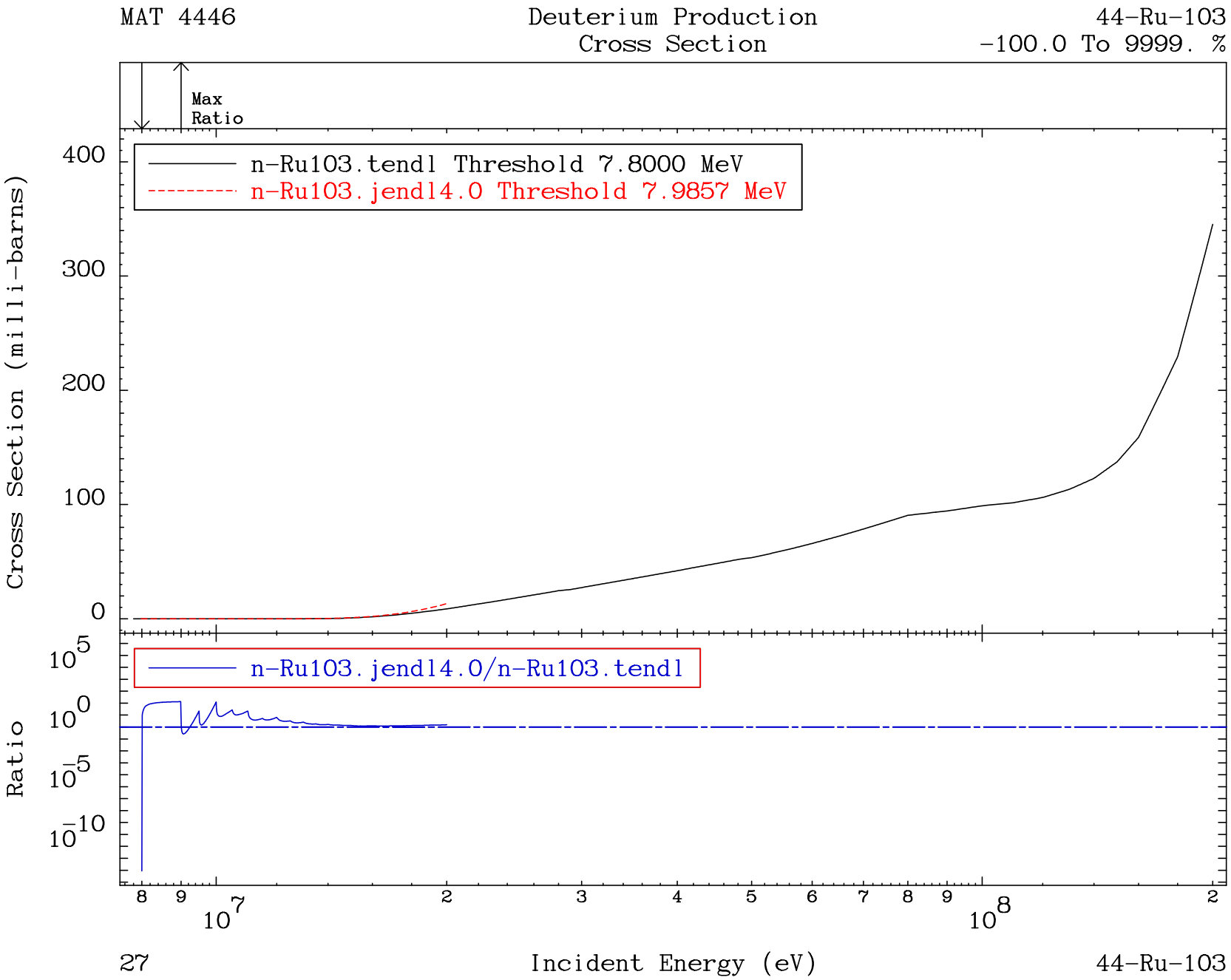

MAT 4446
(n,p)
Cross Section
44-Ru-103
-59.82 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 1.8994 MeV
n-Ru103.jendl4.0 Threshold 2.0000 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^6
10^4
10^2
10^0
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
22
Incident Energy (eV)
44-Ru-103

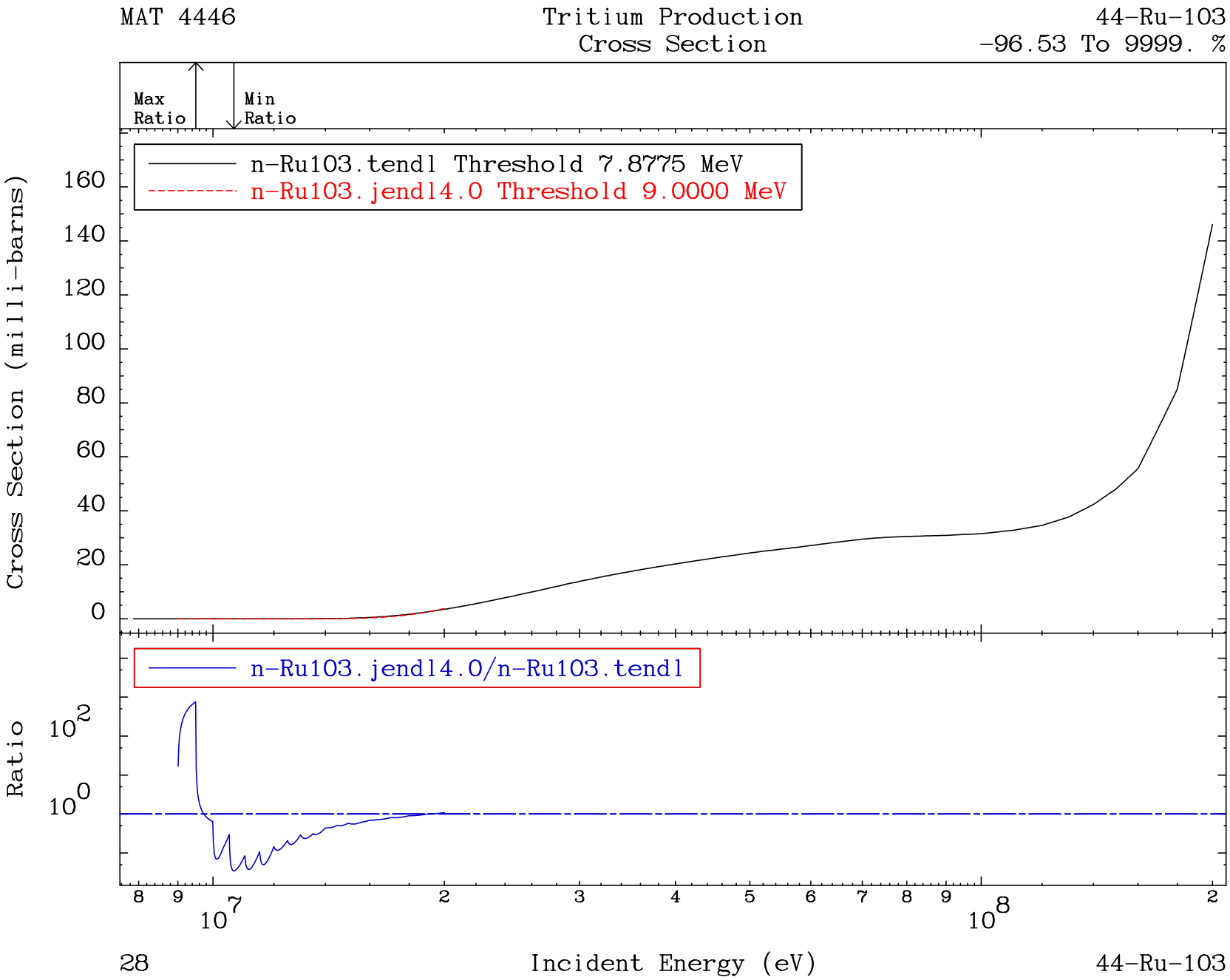

MAT 4446
(n,d)
Cross Section
44-Ru-103
-73.41 To 9999. %
Min
Ratio
n-Ru103.tendl Threshold 7.8347 MeV
n-Ru103.jendl4.0 Threshold 8.0000 MeV
Cross Section (milli-barns)
16
12
8
4
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^2
10^1
10^0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
23
Incident Energy (eV)
44-Ru-103

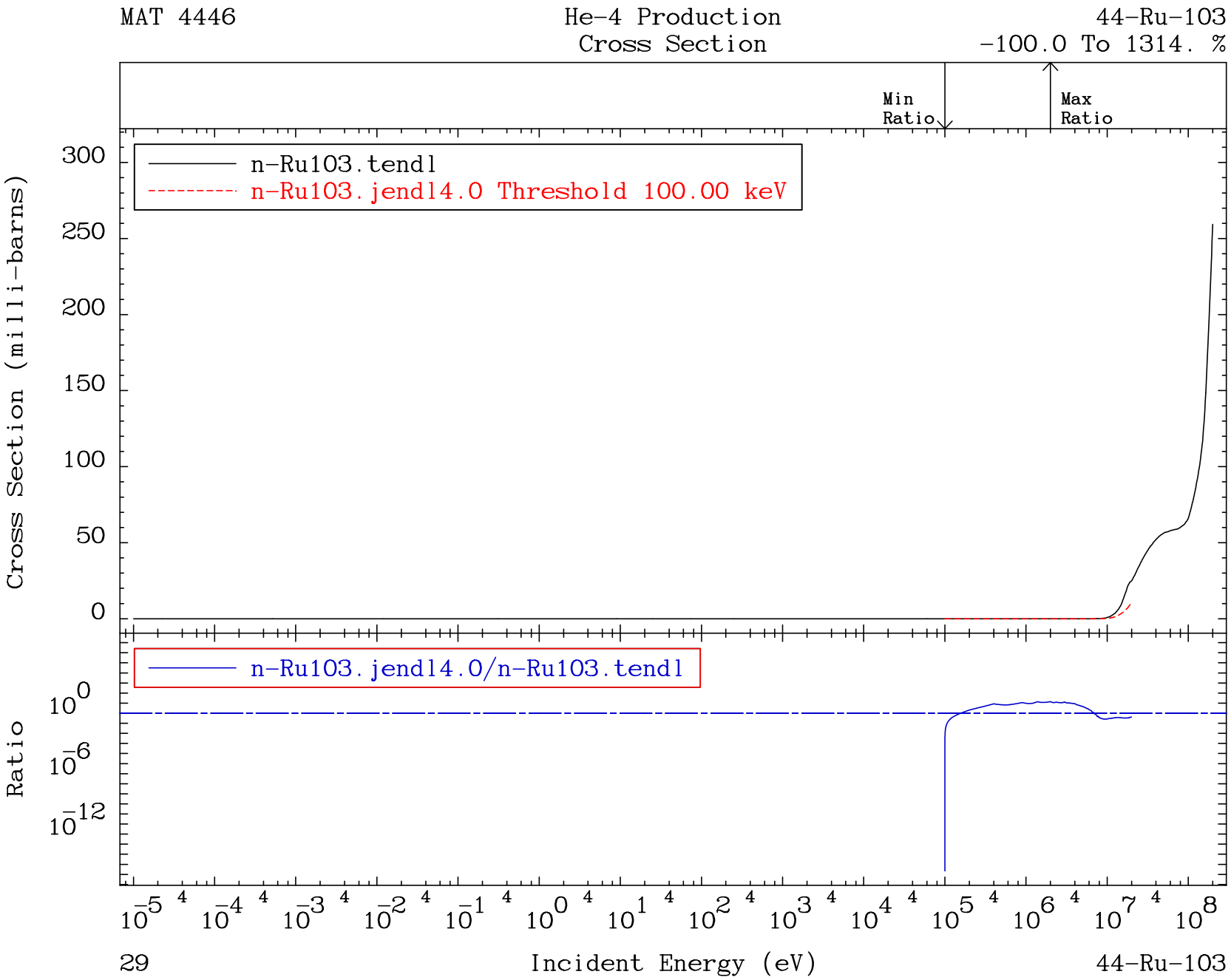

MAT 4446
(n,t)
Cross Section
44-Ru-103
-96.53 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 7.8775 MeV
n-Ru103.jendl4.0 Threshold 9.0000 MeV
Cross Section (milli-barns)
0
2
4
6
8
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^2
10^0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
24
Incident Energy (eV)
44-Ru-103

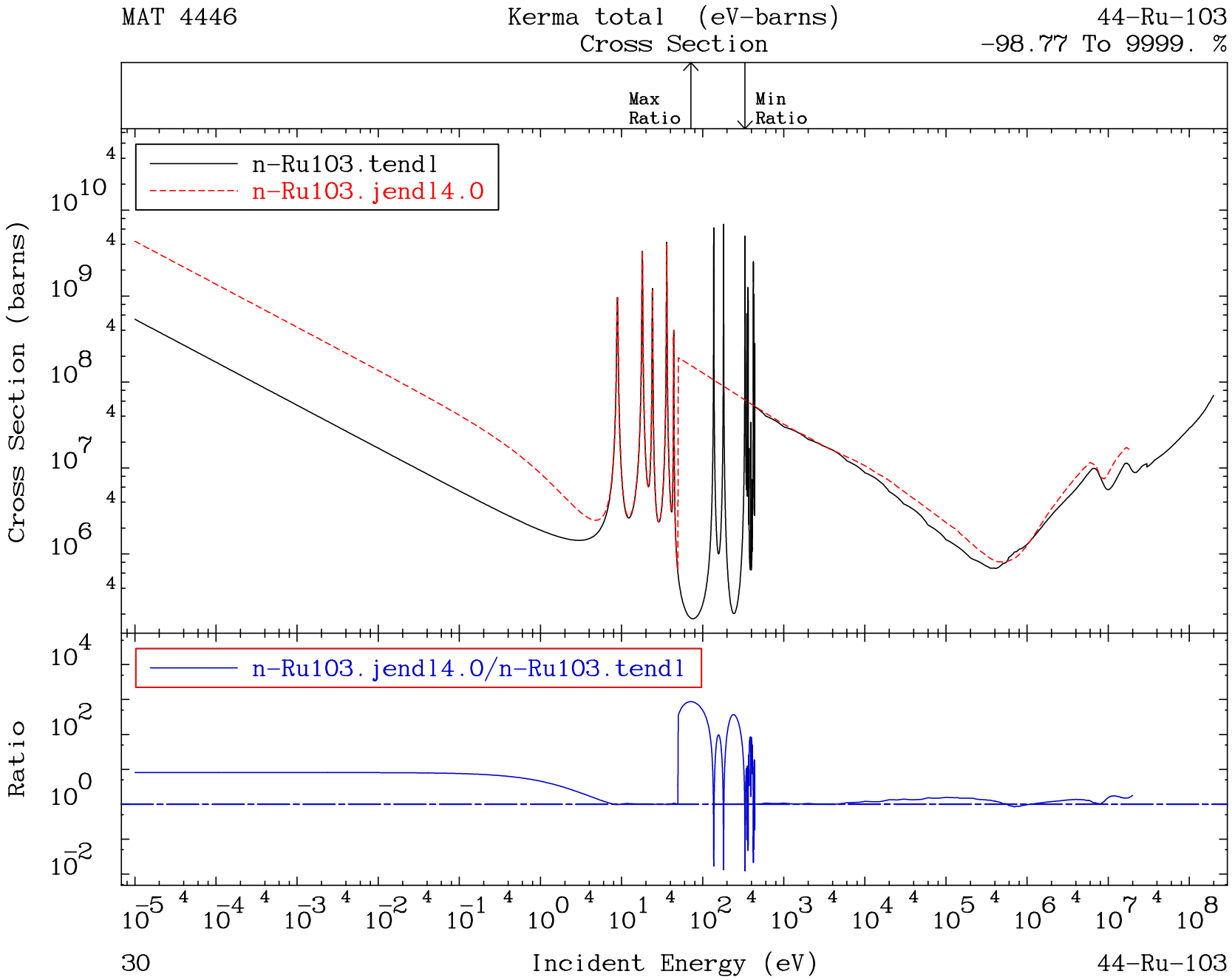

MAT 4446
(n,α)
Cross Section
44-Ru-103
-92.80 To 1314. %
Min Ratio
Max Ratio
n-Ru103.tendl
n-Ru103.jendl4.0 Threshold 100.00 keV
Cross Section (milli-barns)
16
12
8
4
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^1
10^0
10^-1
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
Incident Energy (eV)
25
44-Ru-103

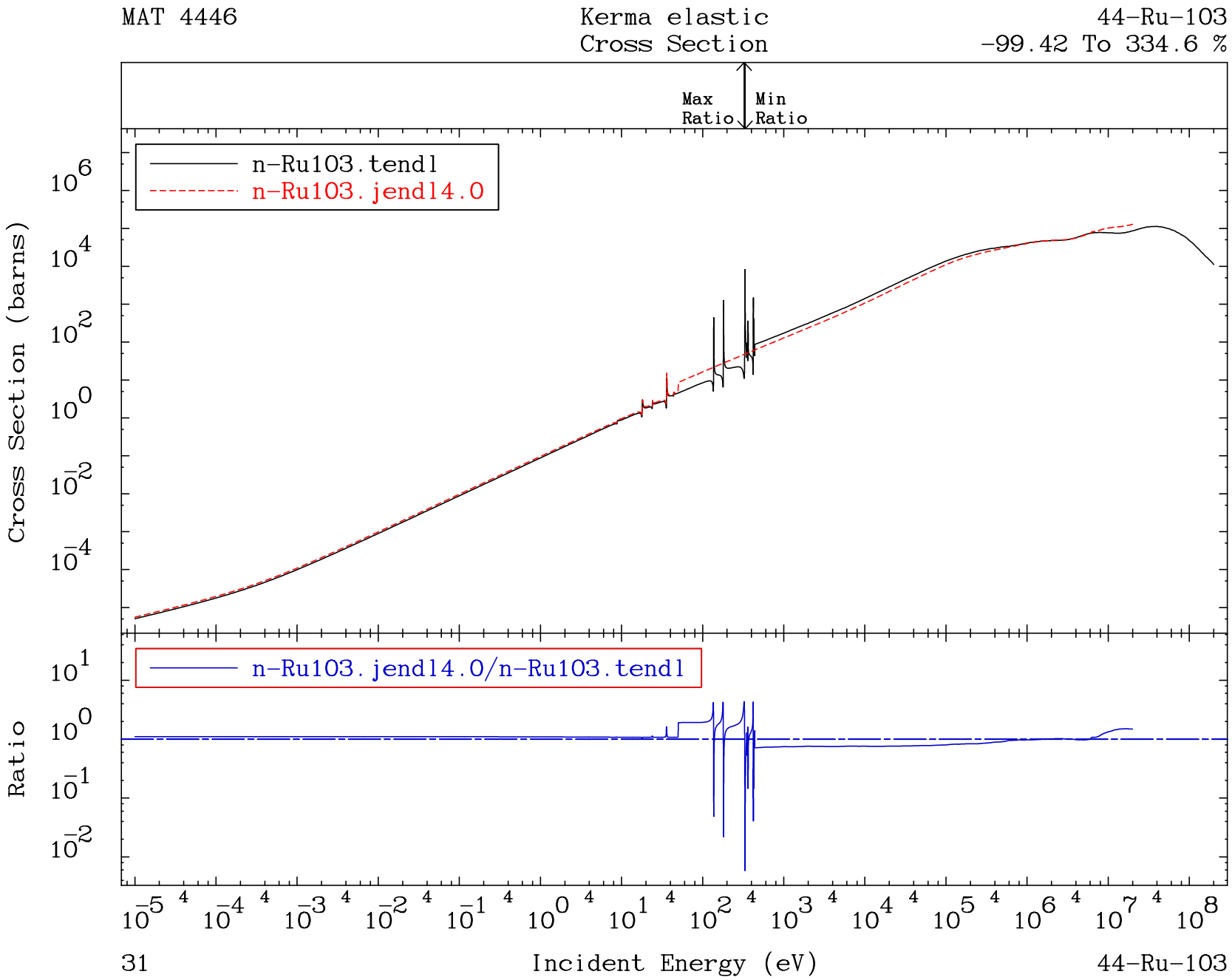

MAT 4446
Hydrogen Production
Cross Section
44-Ru-103
-100.0 To 9999. %
Max
Ratio
n-Ru103.tendl Threshold 1.8994 MeV
n-Ru103.jendl4.0 Threshold 1.9688 MeV
Cross Section (barns)
1.6
1.2
0.8
0.4
0.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^5
10^0
10^-5
10^-10
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
26
Incident Energy (eV)
44-Ru-103

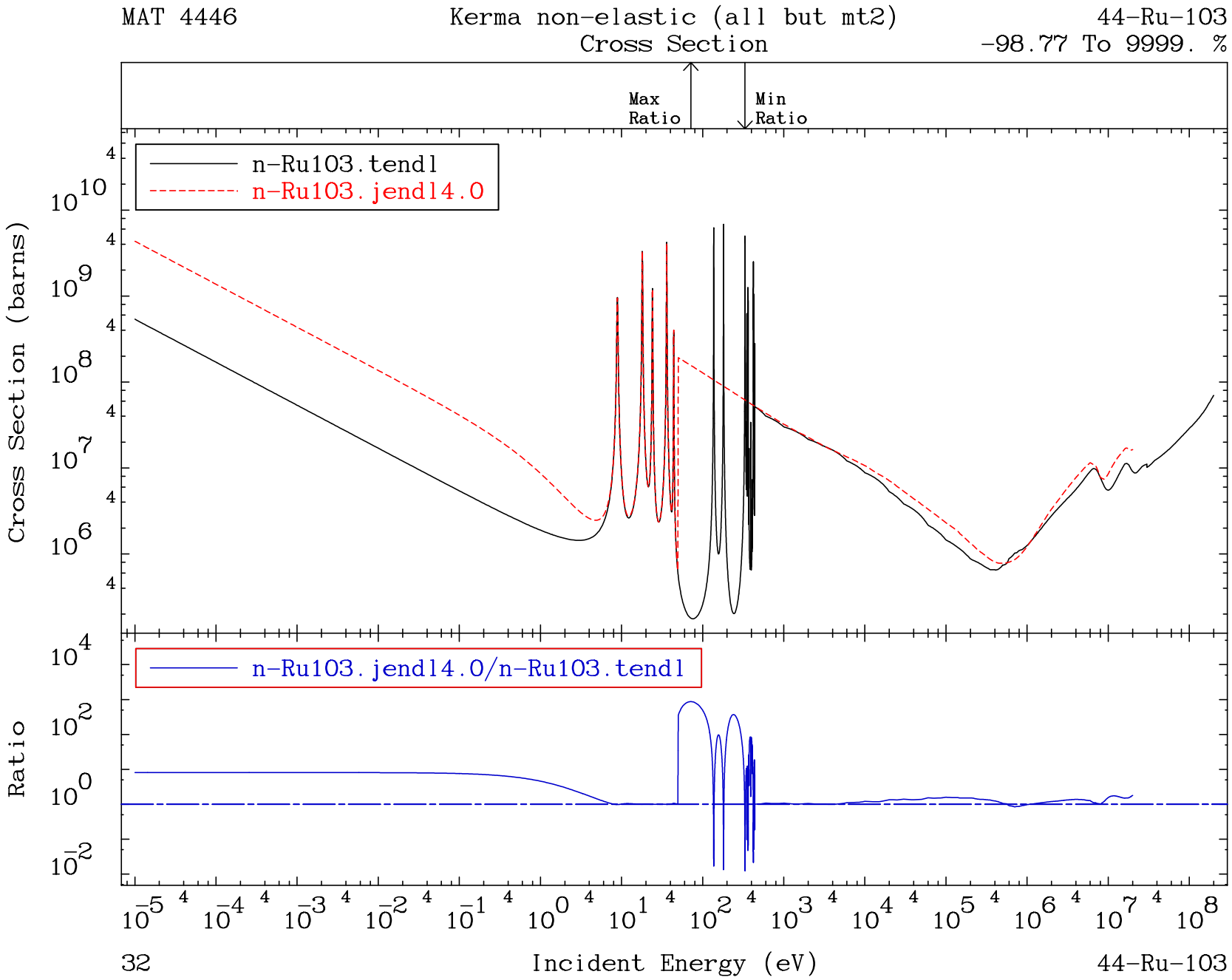

MAT 4446
Deuterium Production
Cross Section
44-Ru-103
-100.0 To 9999. %
Max
Ratio
n-Ru103.tendl Threshold 7.8000 MeV
n-Ru103.jendl4.0 Threshold 7.9857 MeV
Cross Section (milli-barns)
400
300
200
100
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^5
10^0
10^-5
10^-10
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
27
Incident Energy (eV)
44-Ru-103

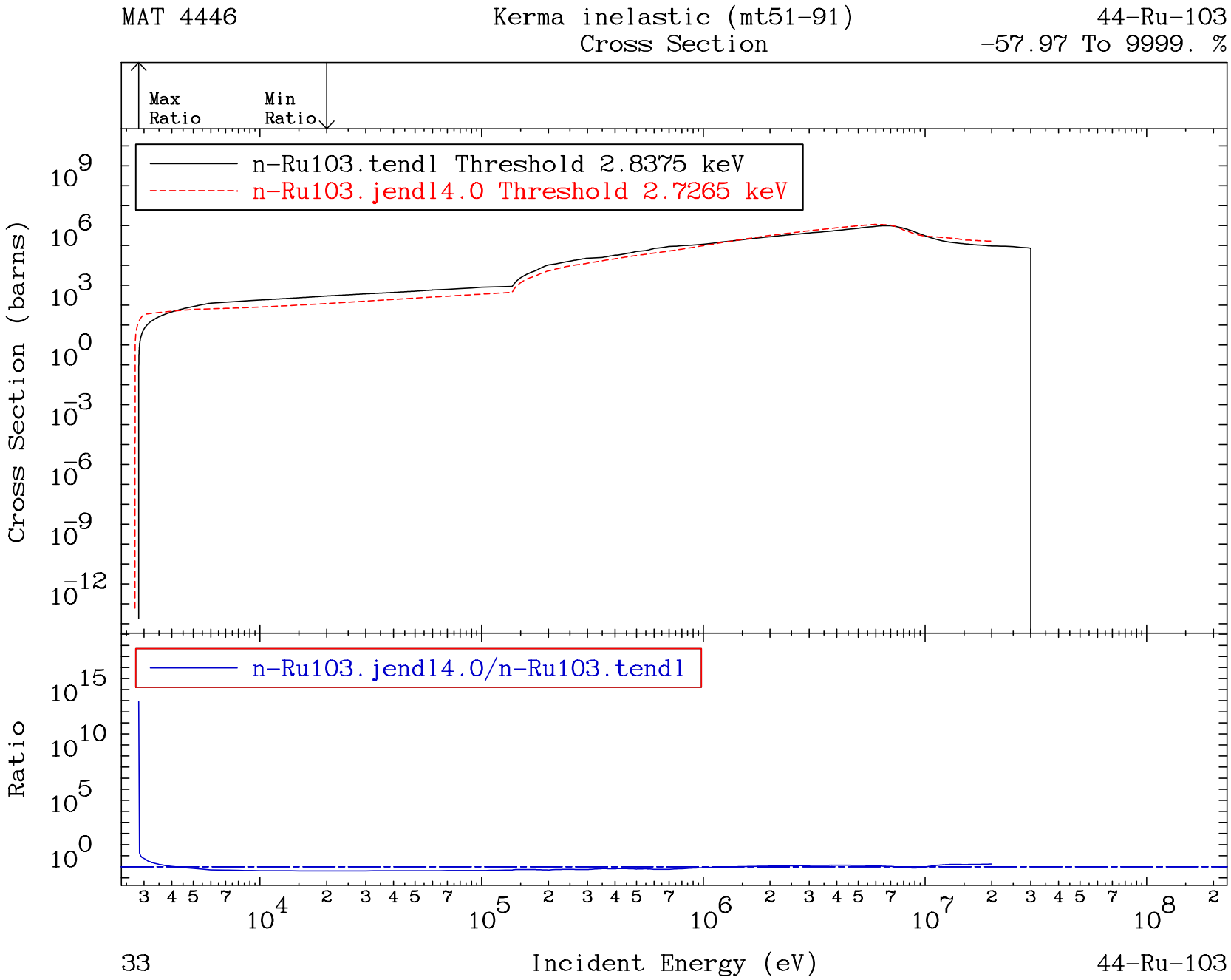

MAT 4446
Tritium Production
Cross Section
44-Ru-103
-96.53 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 7.8775 MeV
n-Ru103.jendl4.0 Threshold 9.0000 MeV
Cross Section (milli-barns)
160
140
120
100
80
60
40
20
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^2
10^0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
28
Incident Energy (eV)
44-Ru-103

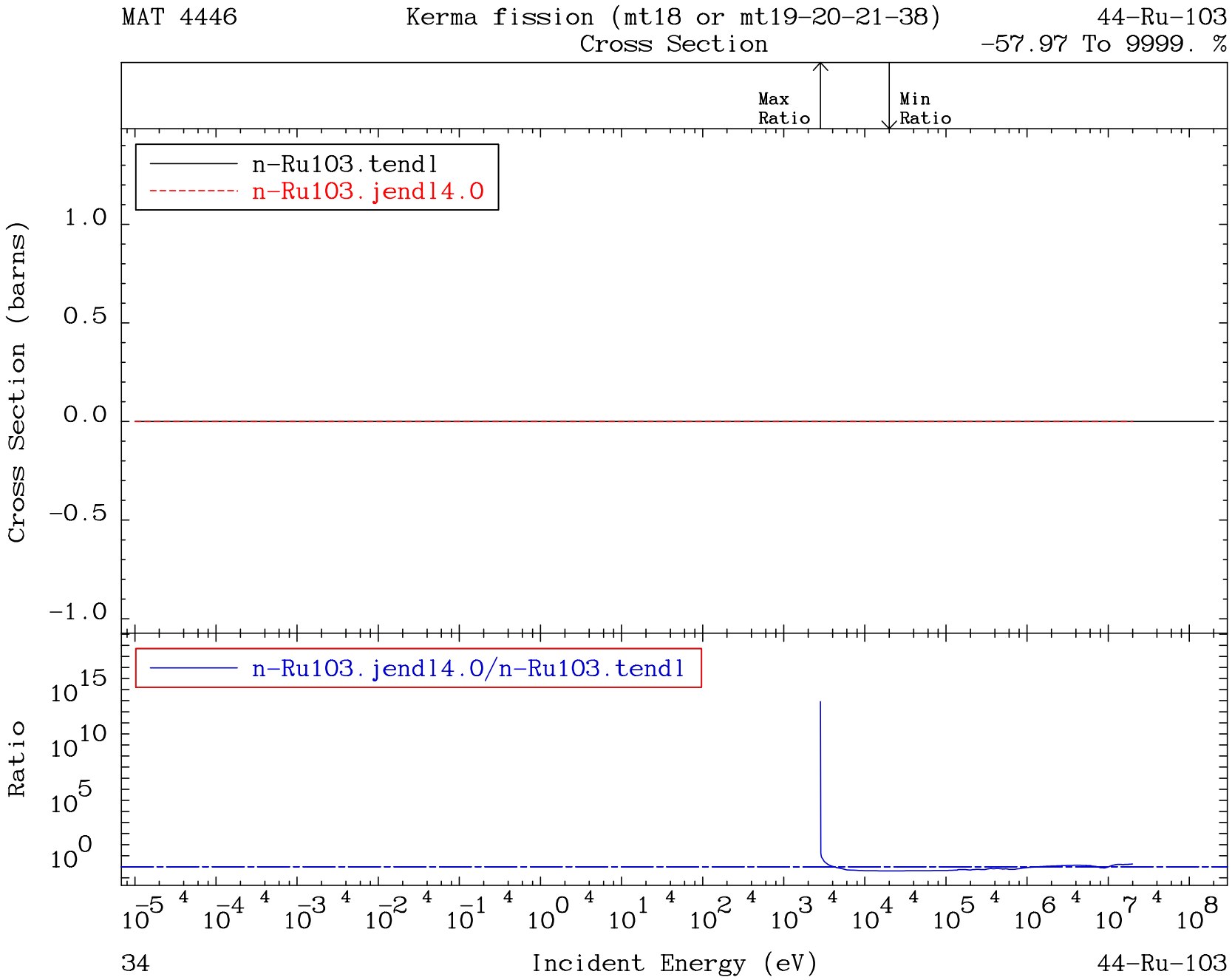

MAT 4446
He-4 Production
Cross Section
44-Ru-103
-100.0 To 1314. %
Min Ratio
Max Ratio
n-Ru103.tendl
n-Ru103.jendl4.0 Threshold 100.00 keV
Cross Section (milli-barns)
300
250
200
150
100
50
0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-6
10^-12
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
29
Incident Energy (eV)
44-Ru-103

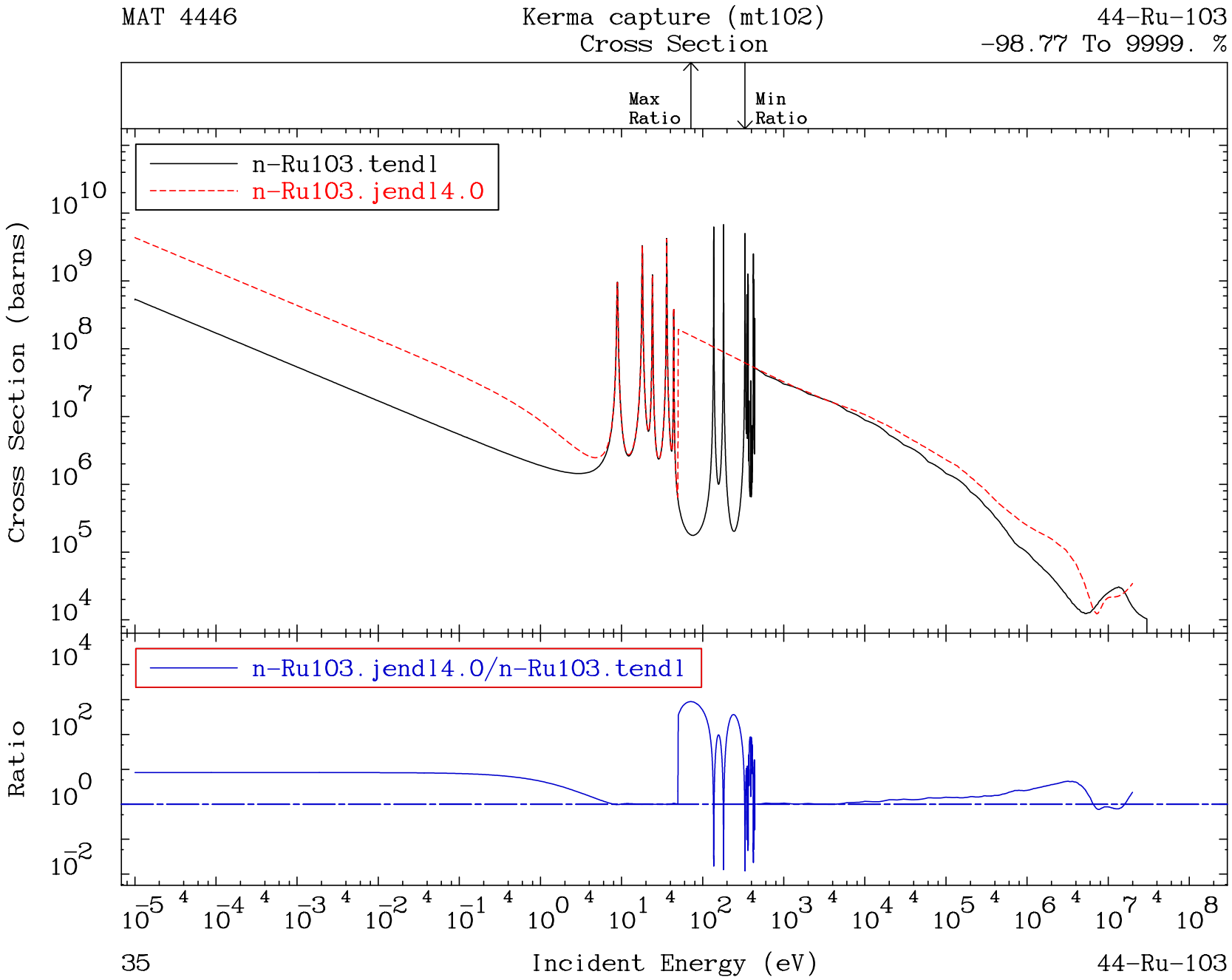

MAT 4446
Kerma total (eV-barns)
Cross Section
44-Ru-103
-98.77 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
30
44-Ru-103

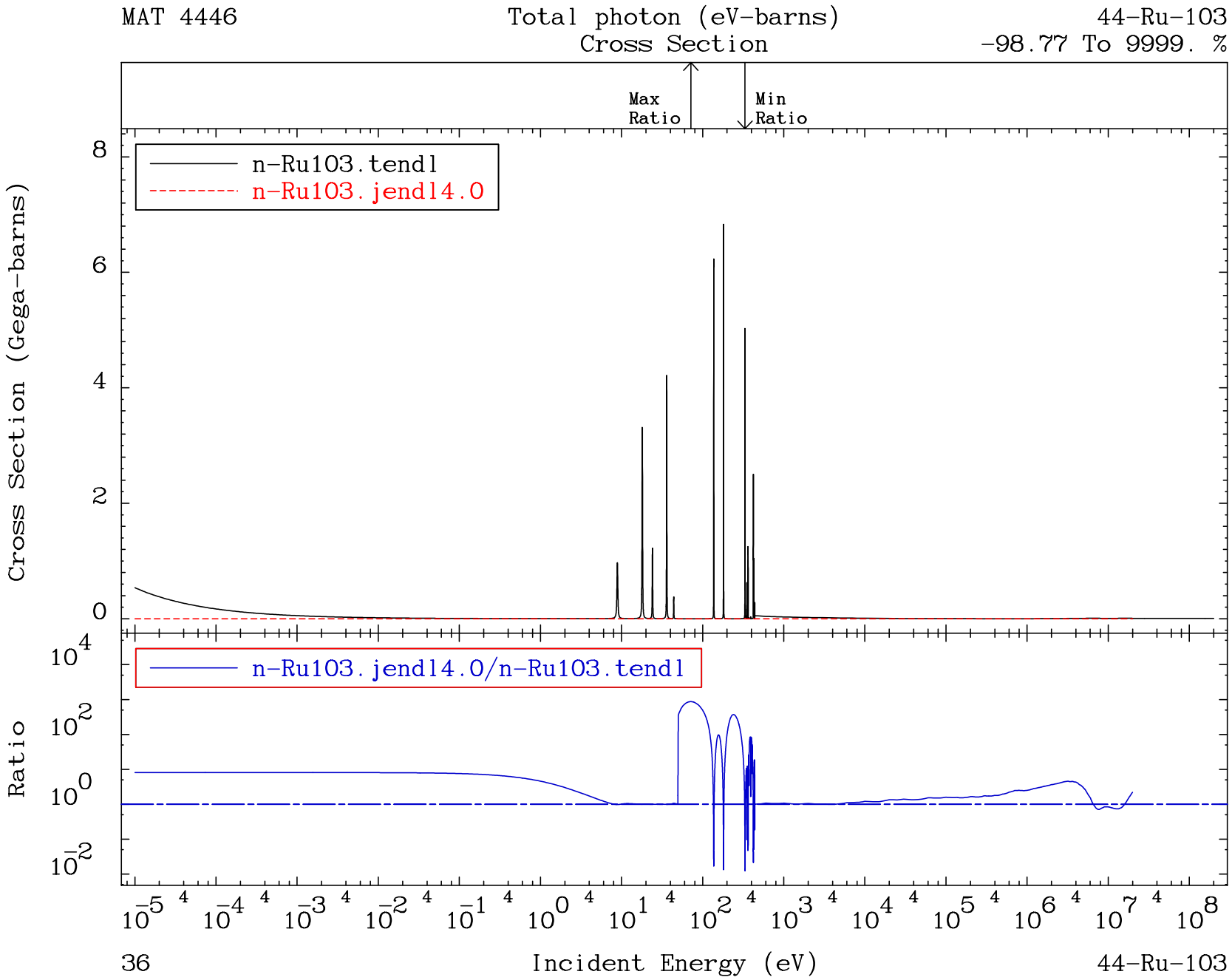

MAT 4446
Kerma elastic
Cross Section
44-Ru-103
-99.42 To 334.6 %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
31
44-Ru-103

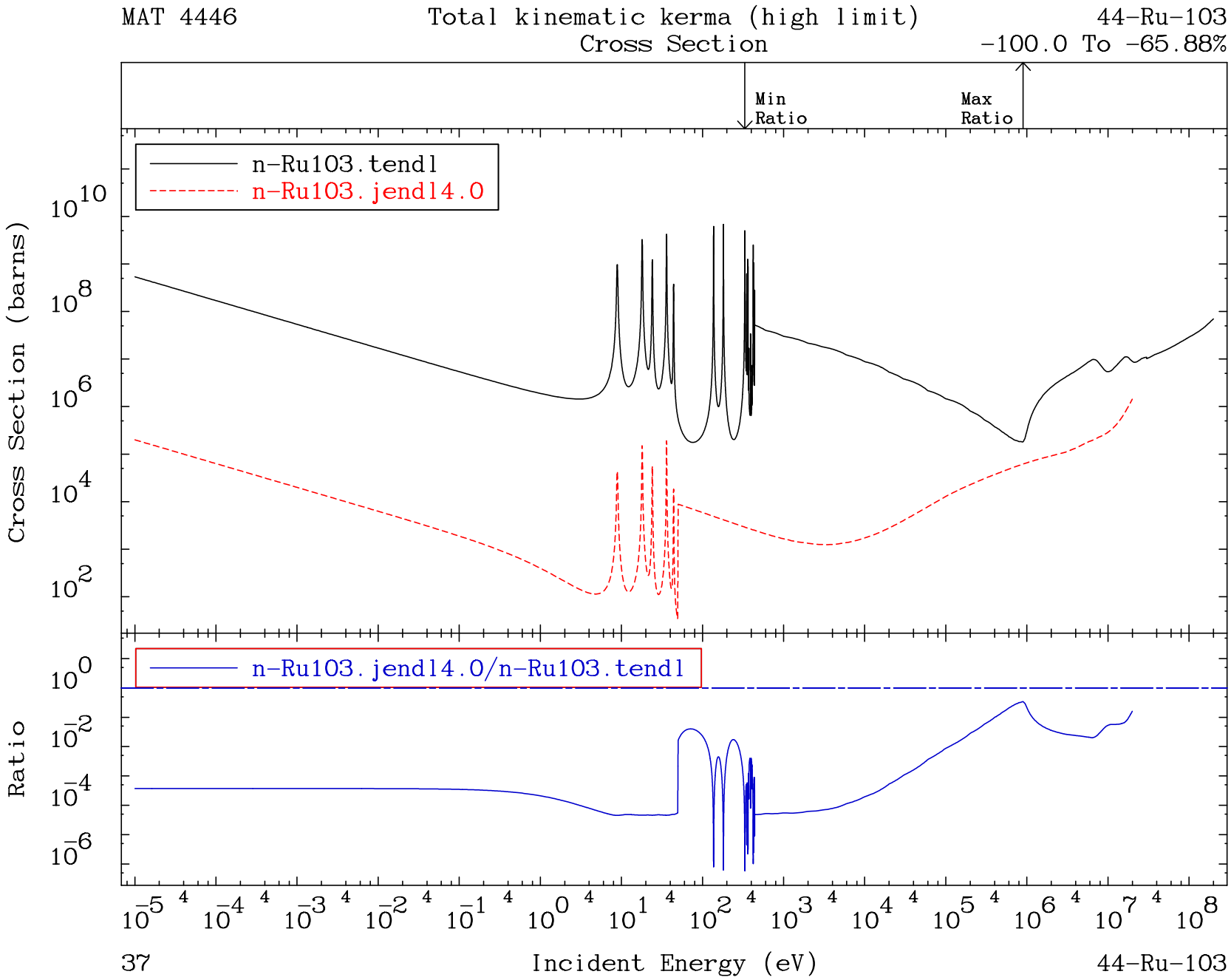

MAT 4446
Kerma non-elastic (all but mt2)
Cross Section
44-Ru-103
-98.77 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
32
44-Ru-103

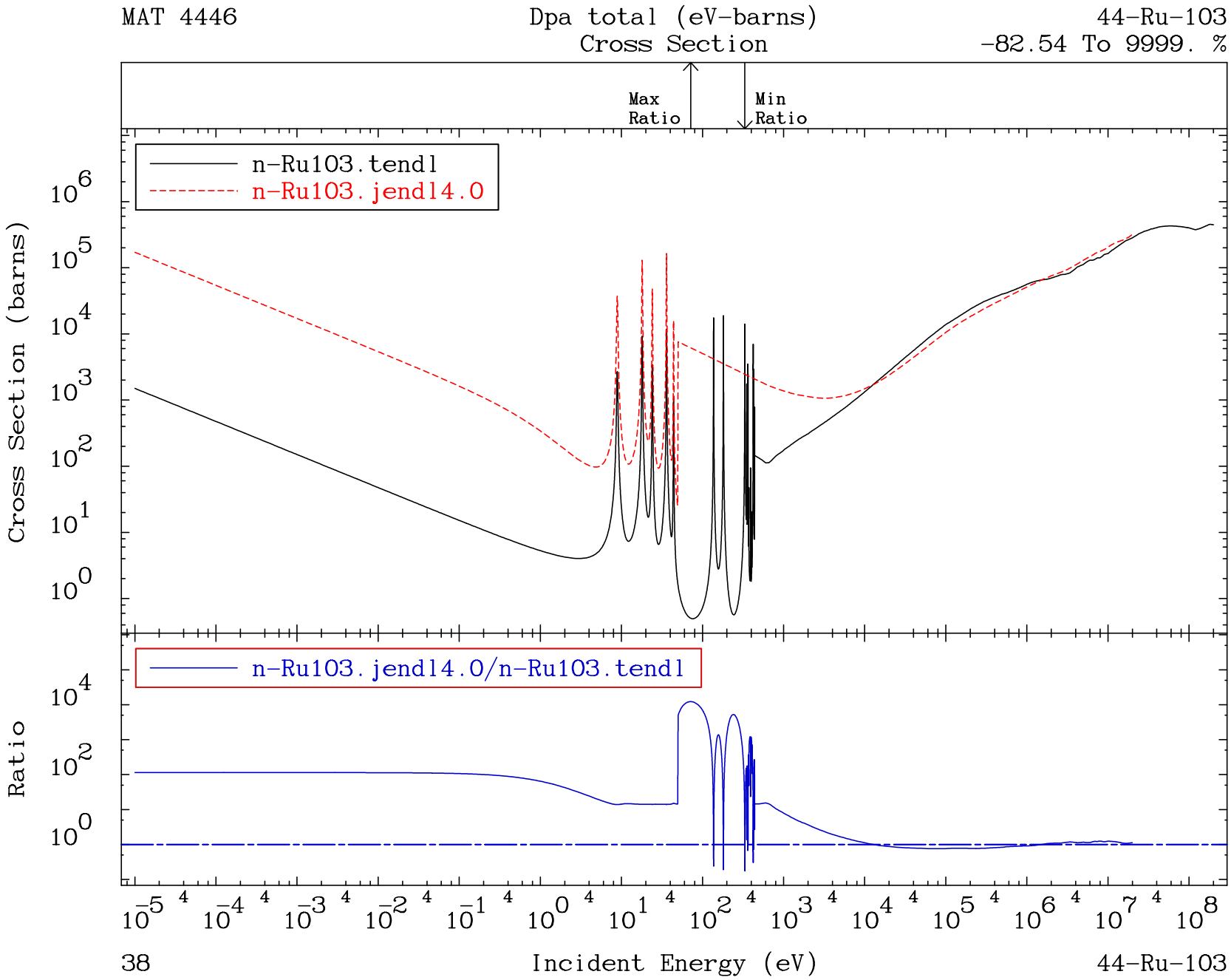

MAT 4446
Kerma inelastic (mt51-91)
Cross Section
44-Ru-103
-57.97 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 2.8375 keV
n-Ru103.jendl4.0 Threshold 2.7265 keV
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
33
44-Ru-103

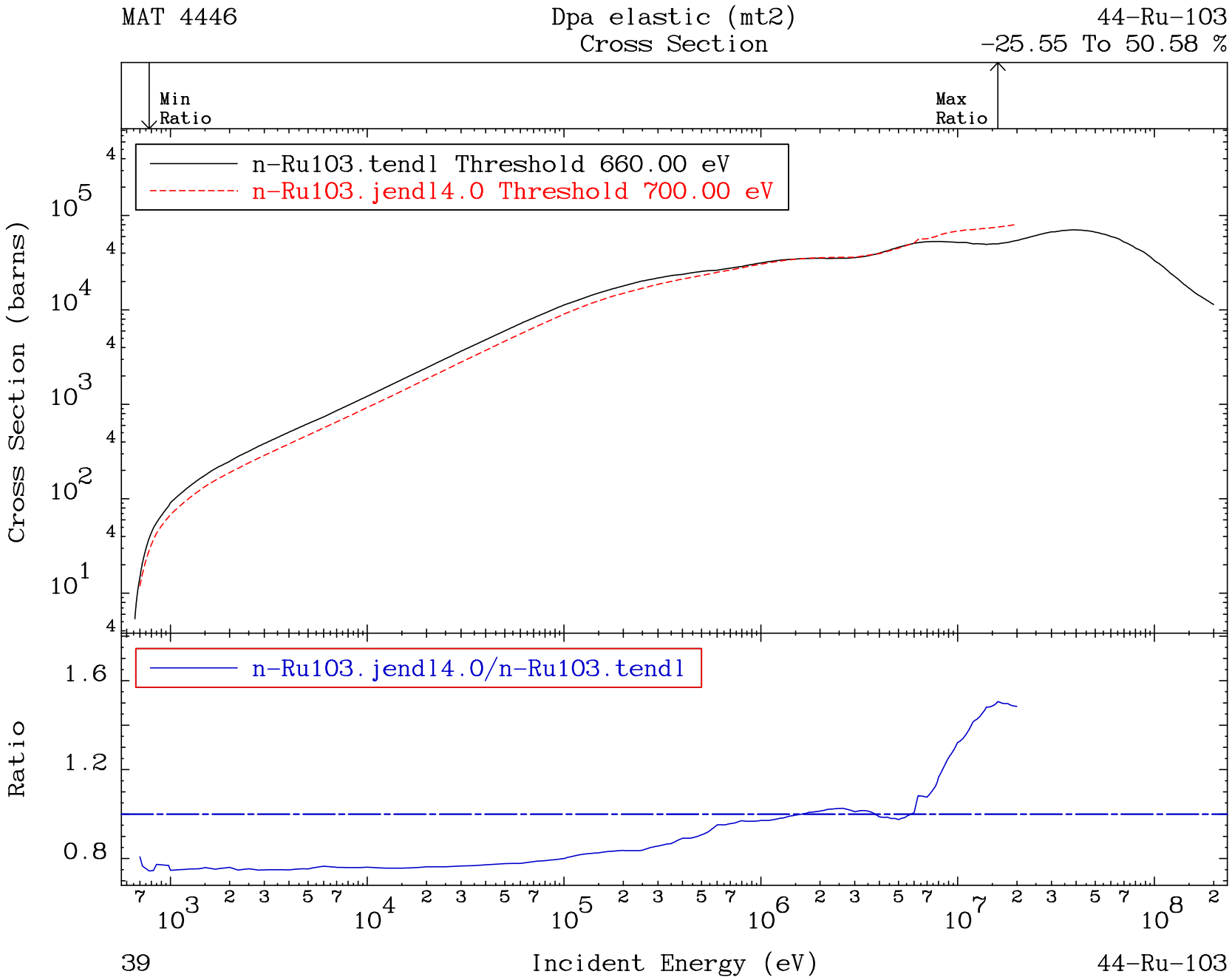

MAT 4446
Kerma fission (mt18 or mt19-20-21-38)
Cross Section
44-Ru-103
-57.97 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
1.0
0.5
0.0
-0.5
-1.0
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^15
10^10
10^5
10^0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
34
Incident Energy (eV)
44-Ru-103

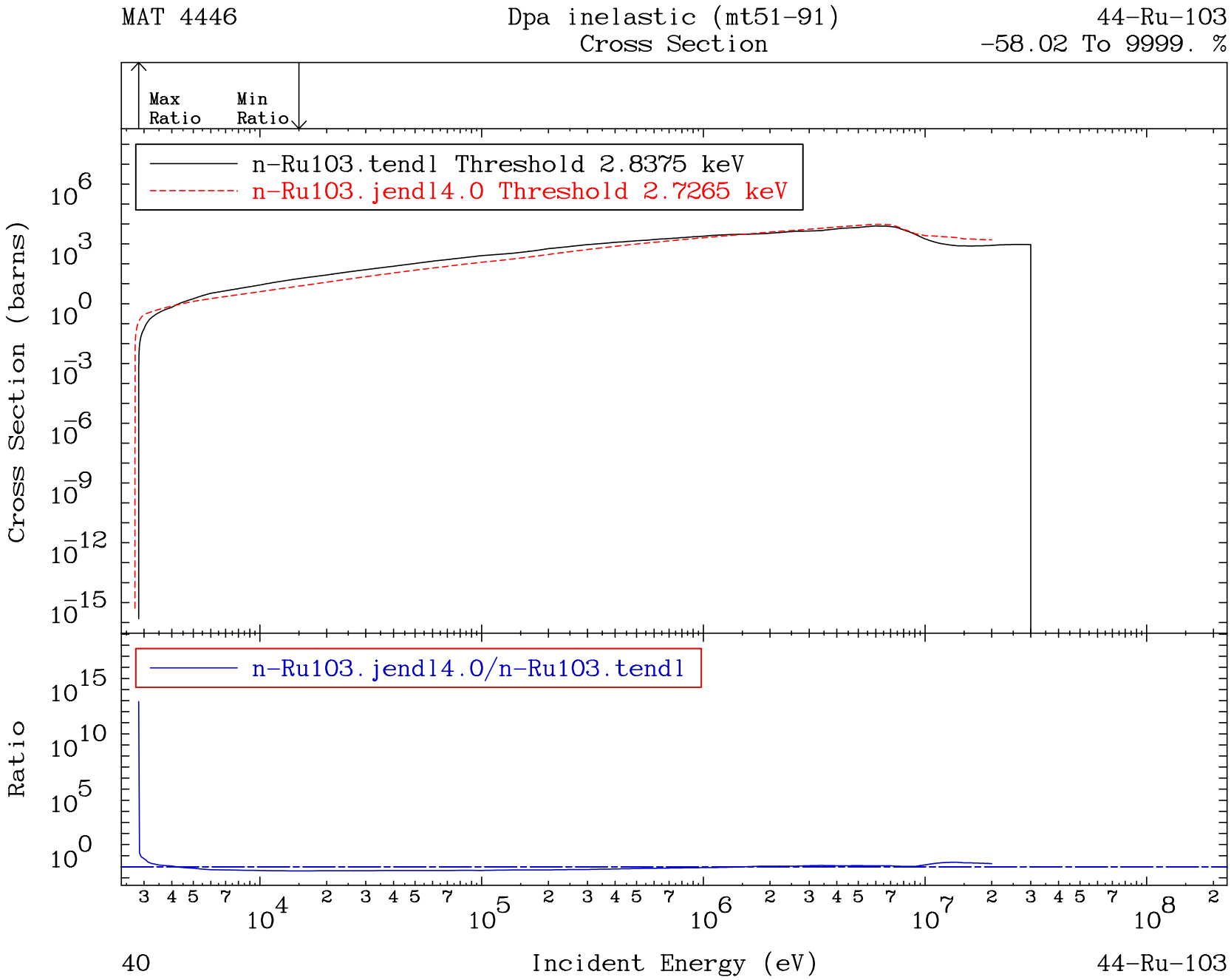

MAT 4446
Kerma capture (mt102)
Cross Section
44-Ru-103
-98.77 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
35
44-Ru-103

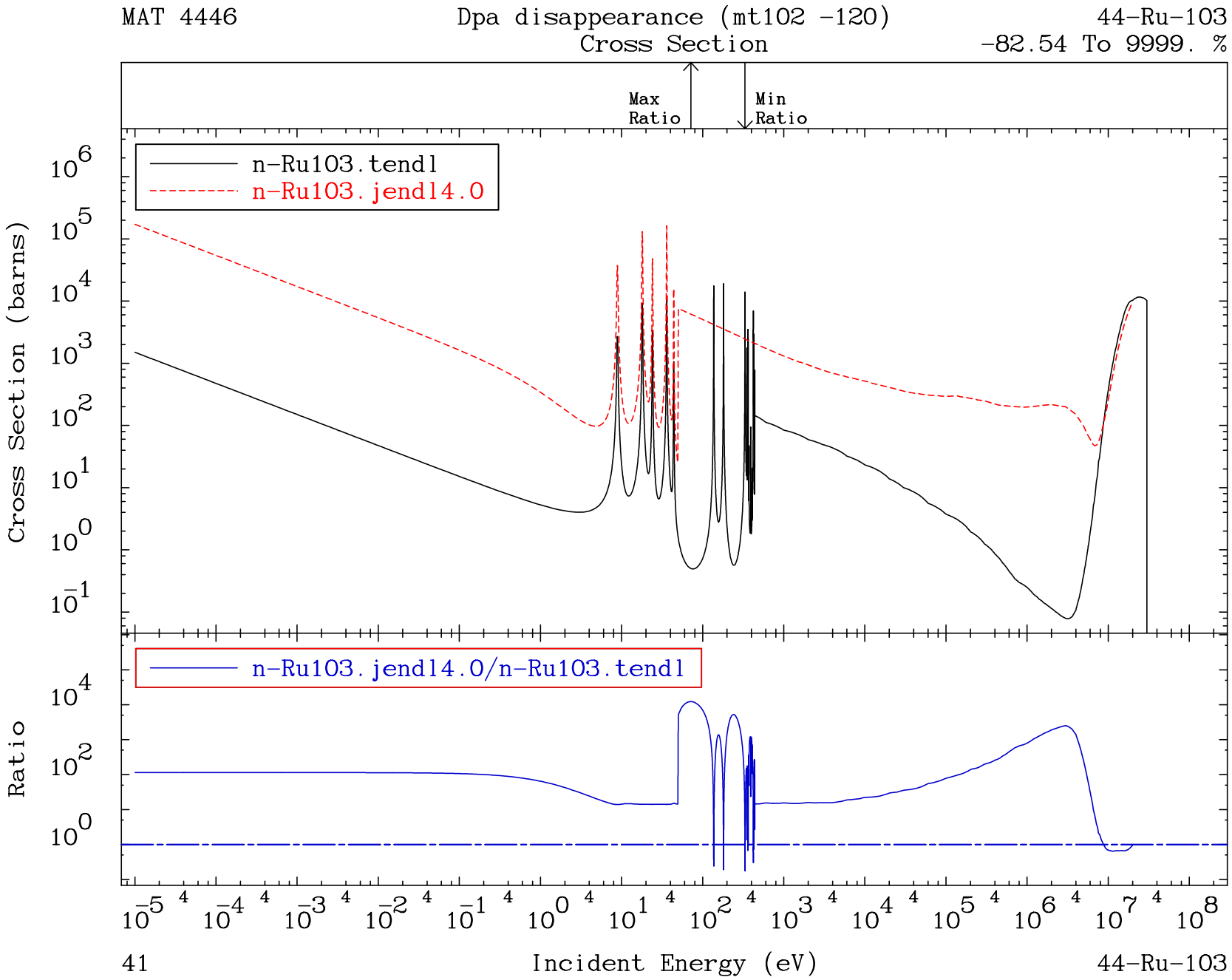

MAT 4446
Total photon (eV-barns)
Cross Section
44-Ru-103
-98.77 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (Giga-barns)
0
2
4
6
8
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^{4}
10^{2}
10^{0}
10^{-2}
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
36
Incident Energy (eV)
44-Ru-103


MAT 4446
Total kinematic kerma (high limit)
Cross Section
44-Ru-103
-100.0 To -65.88%
Min Ratio
Max Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
10^10
10^8
10^6
10^4
10^2
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
10^0
10^-2
10^-4
10^-6
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
37
Incident Energy (eV)
44-Ru-103


MAT 4446
Dpa total (eV-barns)
Cross Section
44-Ru-103
-82.54 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
38
44-Ru-103


MAT 4446
Dpa elastic (mt2)
Cross Section
44-Ru-103
-25.55 To 50.58 %
Min Ratio
Max Ratio
n-Ru103.tendl Threshold 660.00 eV
n-Ru103.jendl4.0 Threshold 700.00 eV
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
39
44-Ru-103


MAT 4446
Dpa inelastic (mt51-91)
Cross Section
44-Ru-103
-58.02 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl Threshold 2.8375 keV
n-Ru103.jendl4.0 Threshold 2.7265 keV
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
40
44-Ru-103


MAT 4446
Dpa disappearance (mt102 -120)
Cross Section
44-Ru-103
-82.54 To 9999. %
Max Ratio
Min Ratio
n-Ru103.tendl
n-Ru103.jendl4.0
Cross Section (barns)
n-Ru103.jendl4.0/n-Ru103.tendl
Ratio
Incident Energy (eV)
41
44-Ru-103