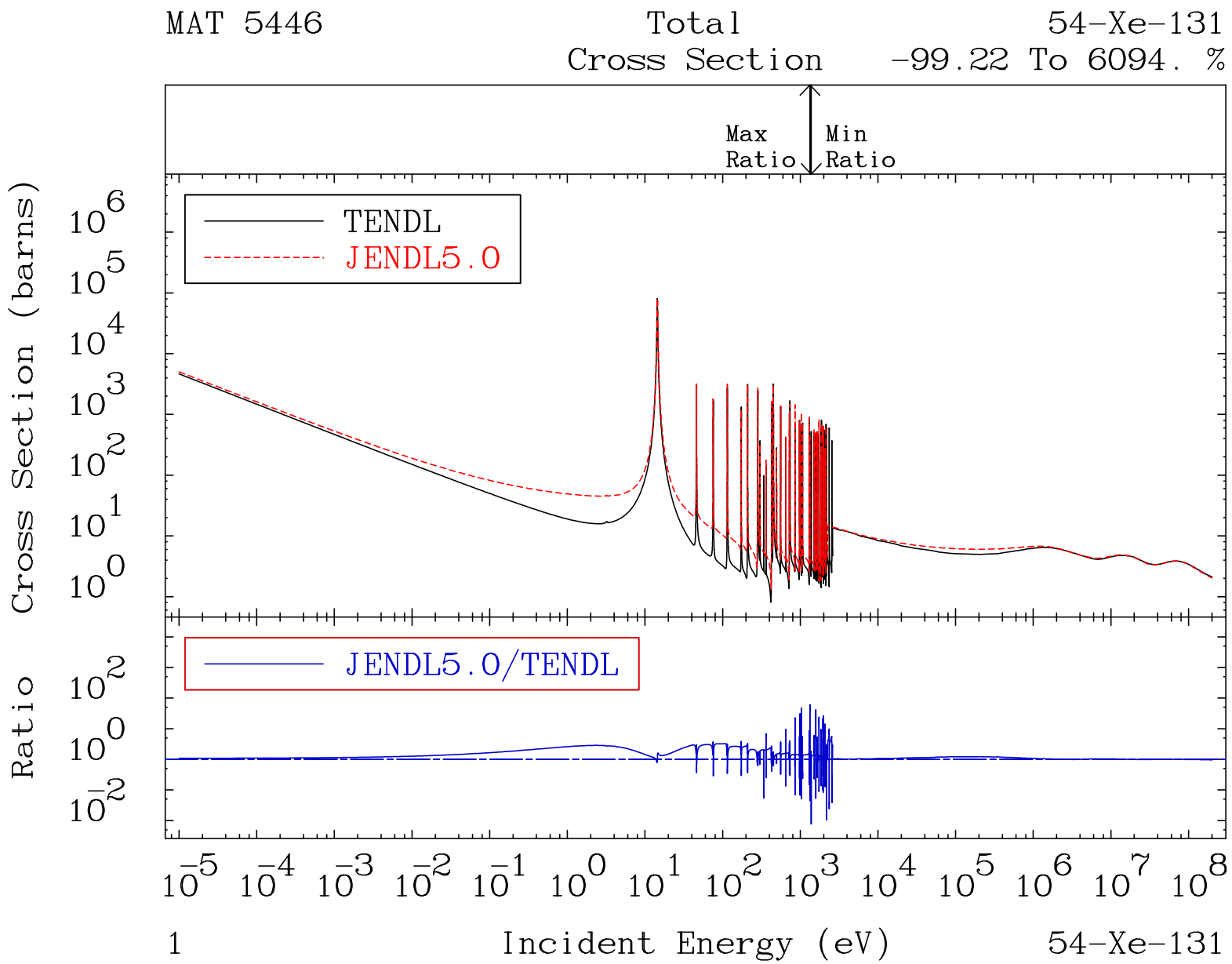
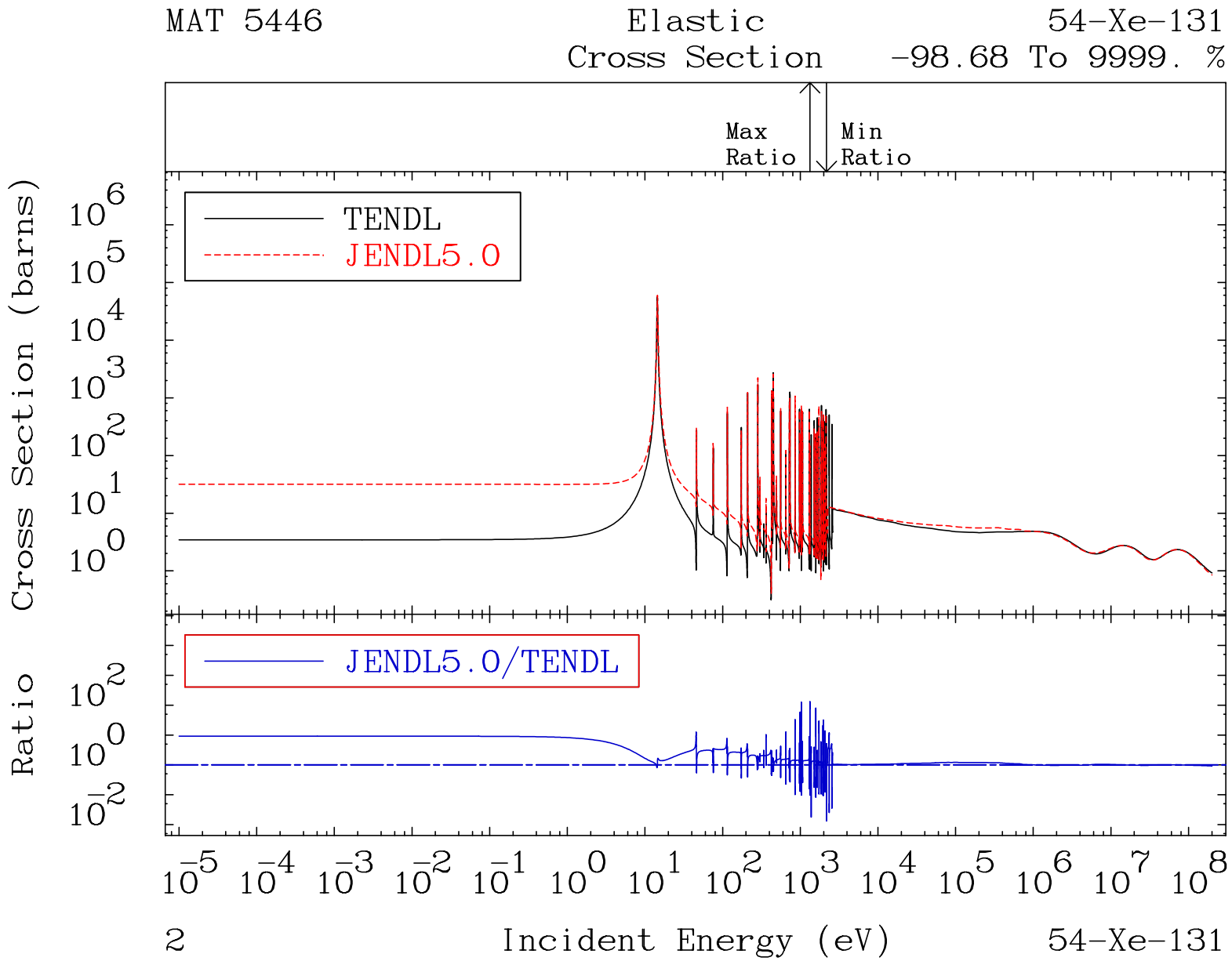
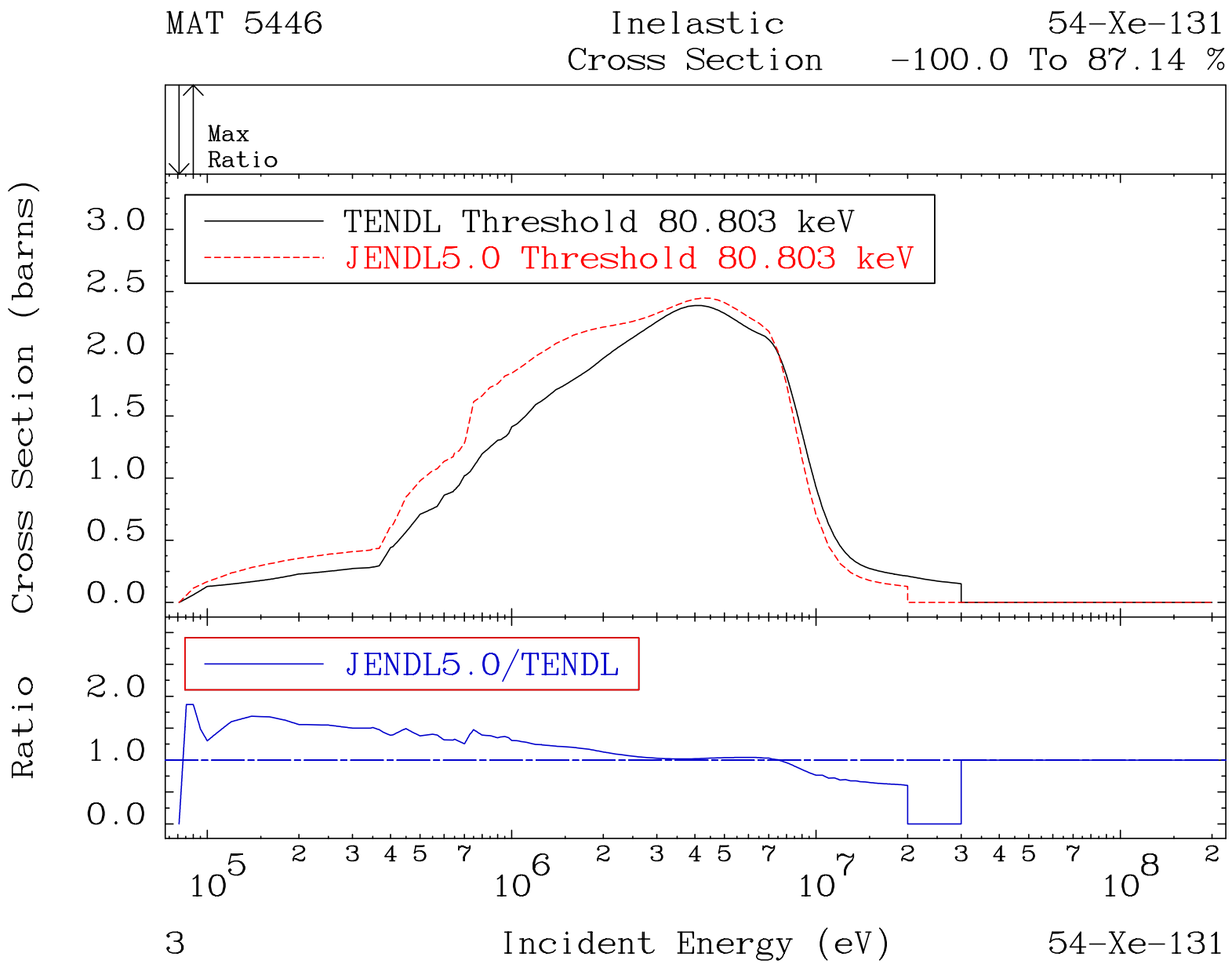
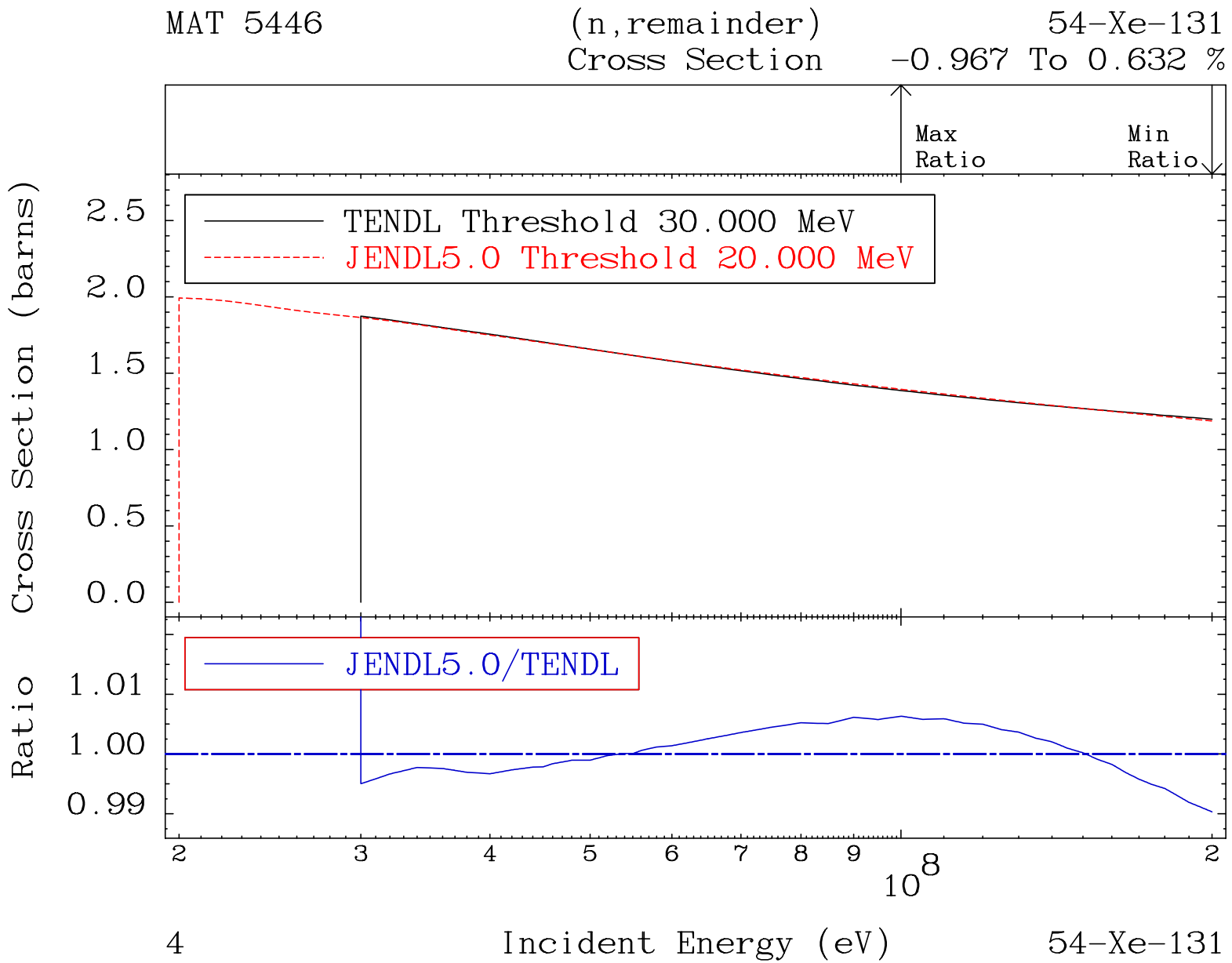
Program Complot
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

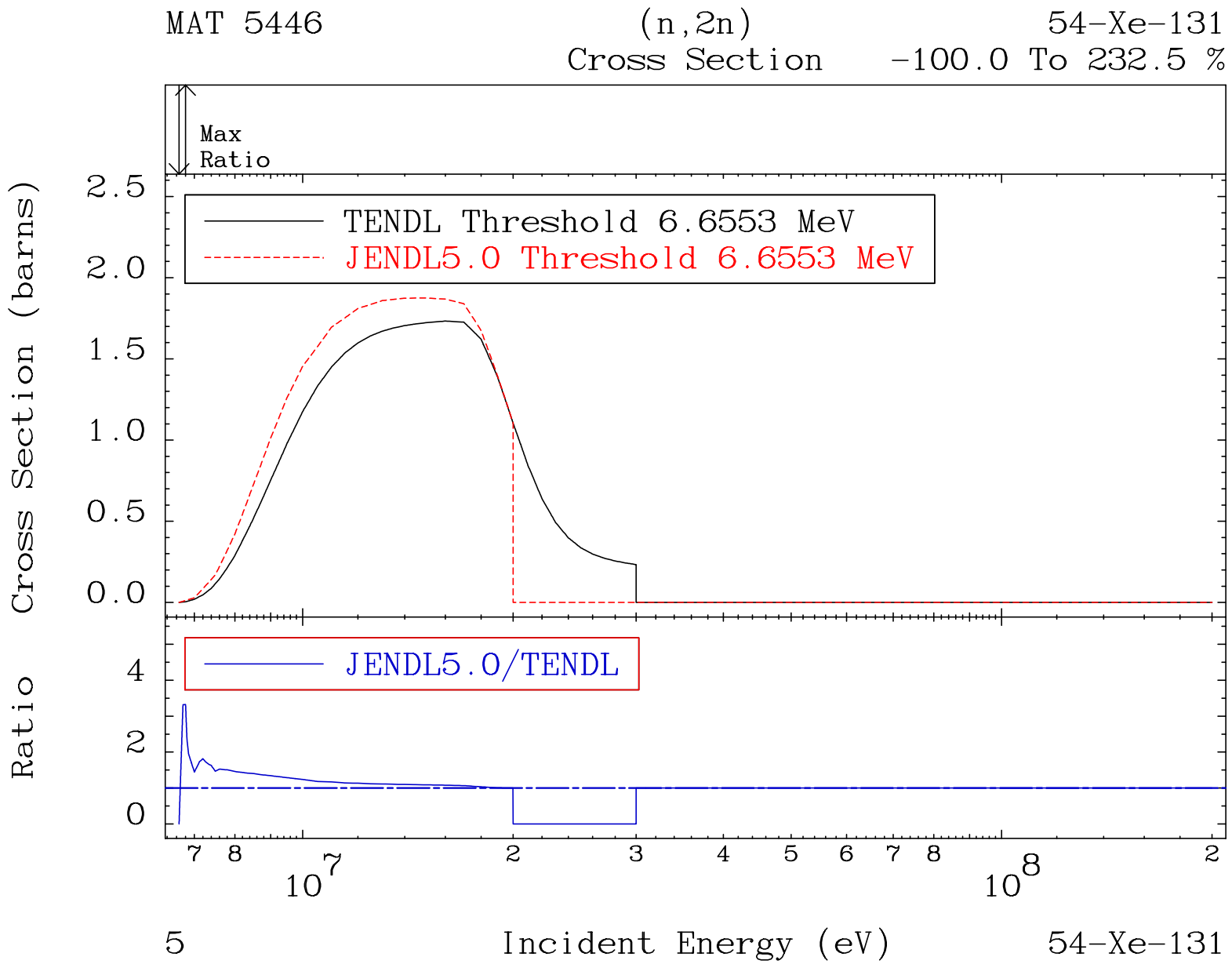
Press Mouse Button to Start

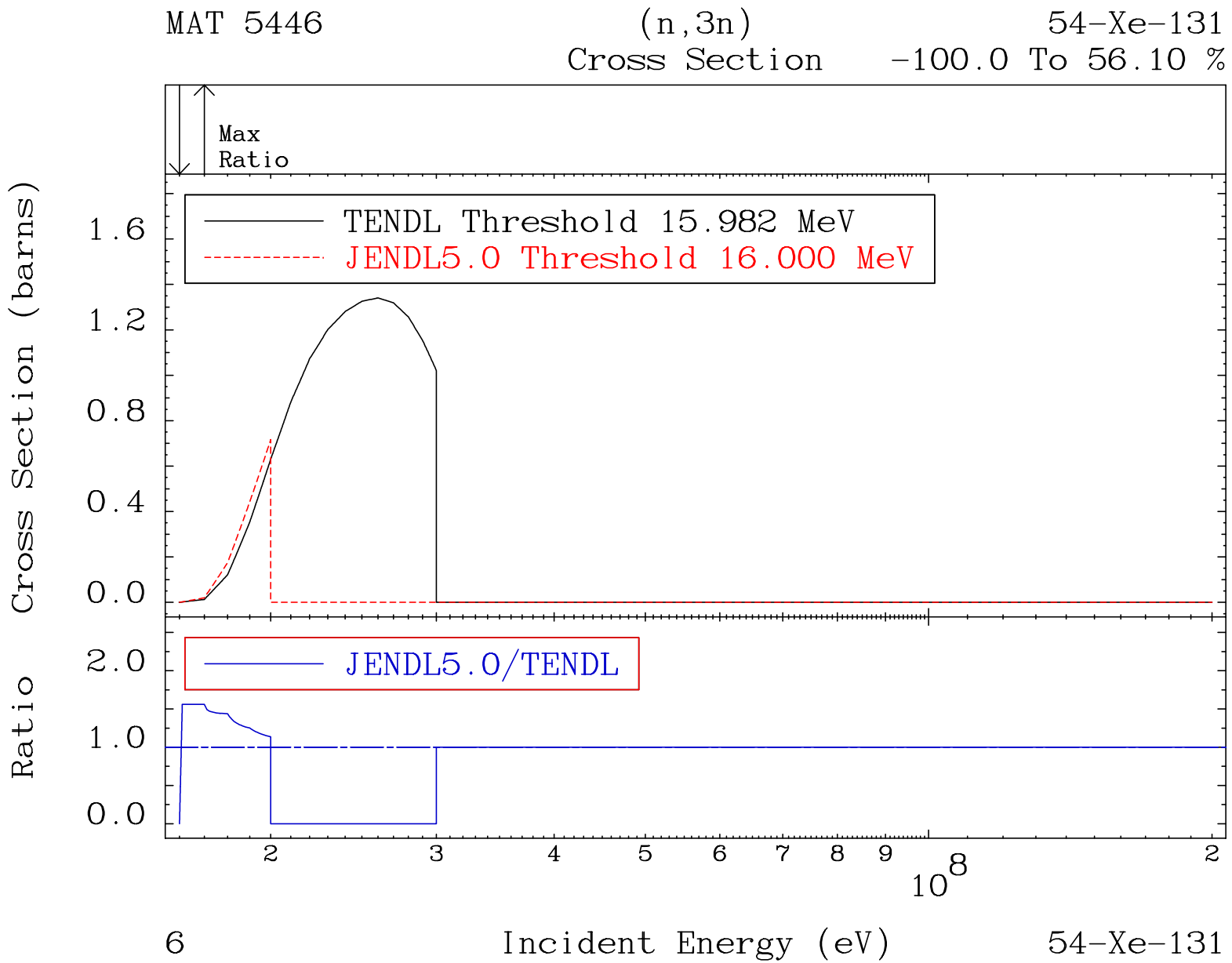

MAT 5446
Total
Cross Section
54-Xe-131
-99.22 To 6094. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
1
54-Xe-131

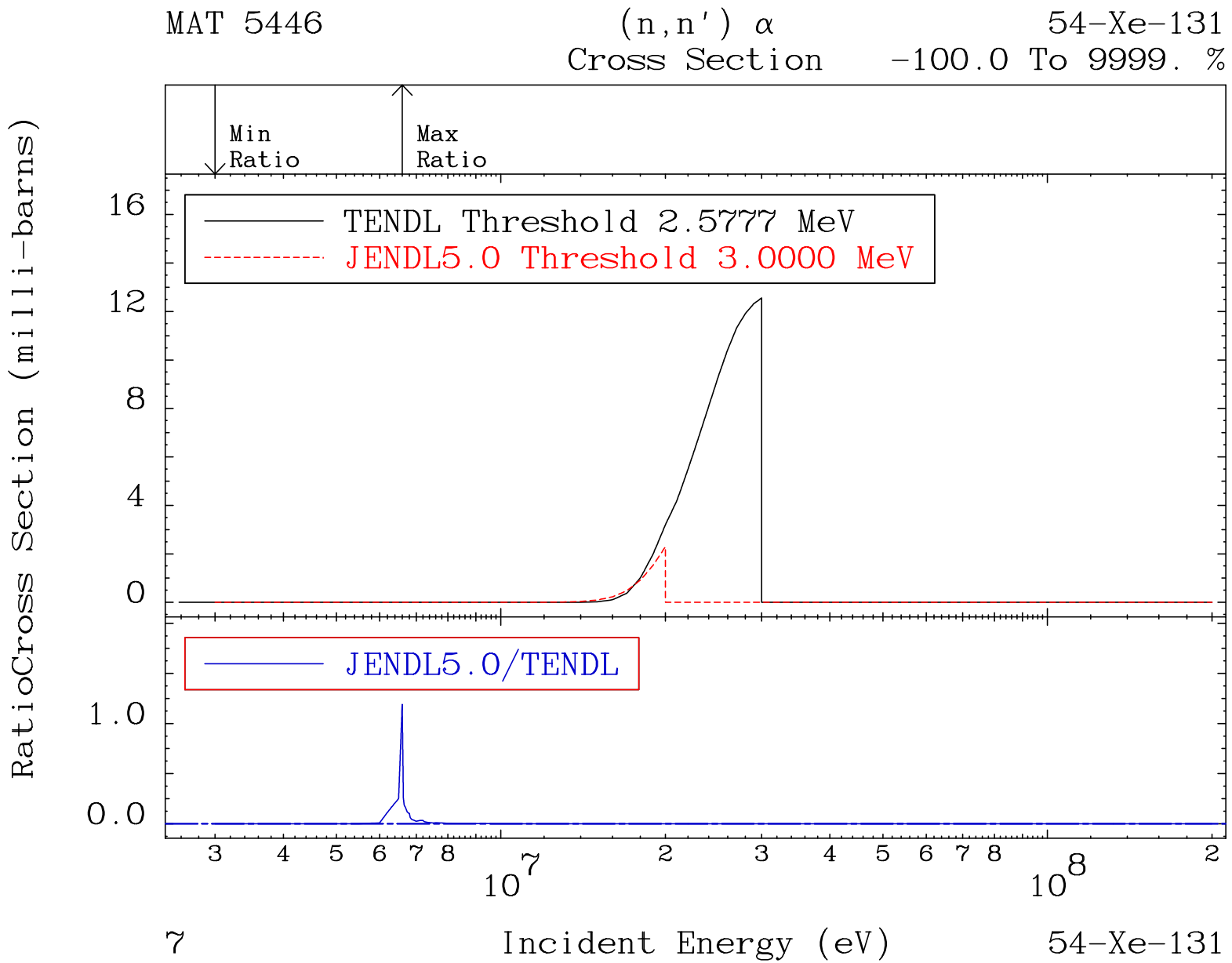

MAT 5446
Elastic
Cross Section
54-Xe-131
-98.68 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
2
54-Xe-131

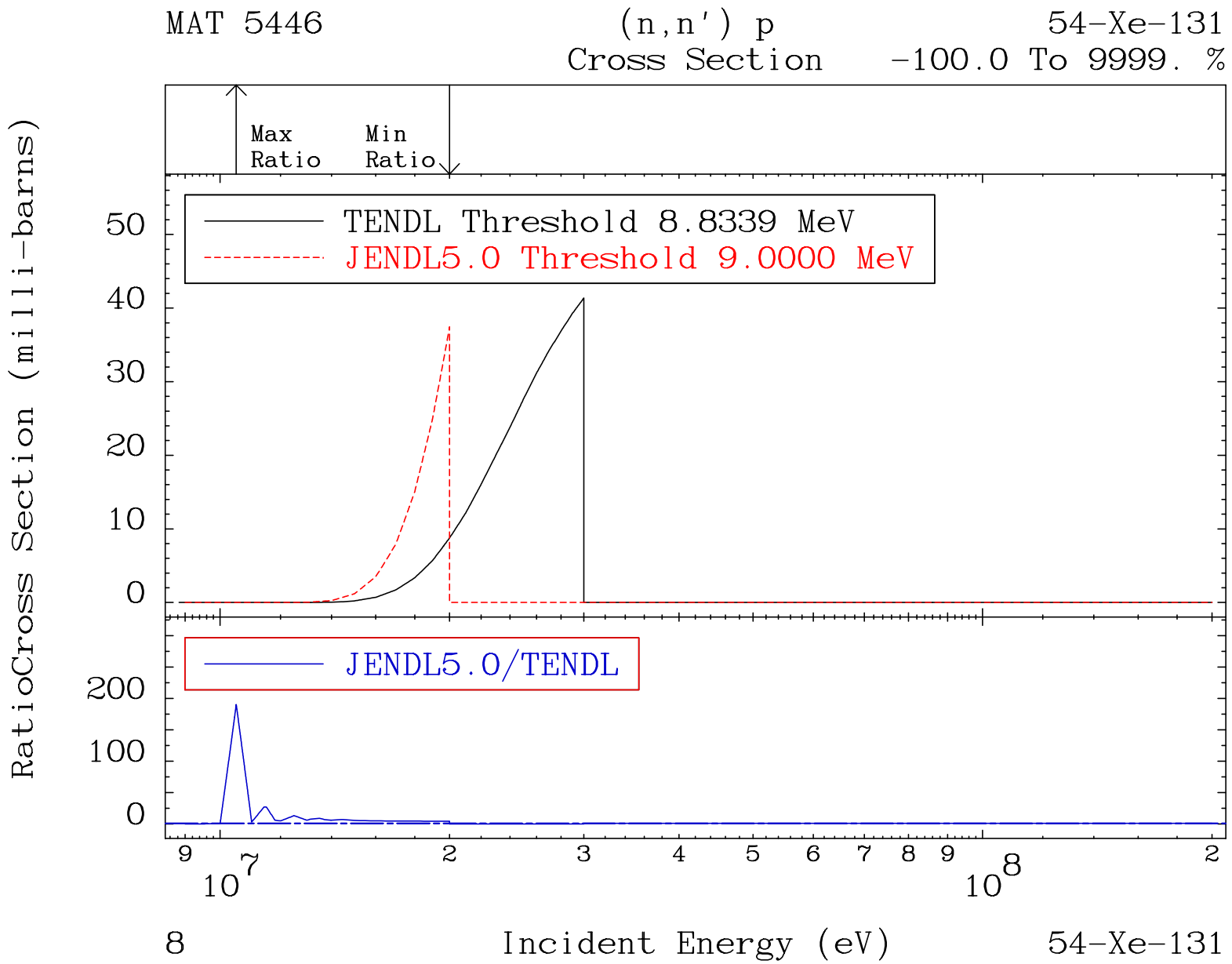

MAT 5446
Inelastic
Cross Section
54-Xe-131
-100.0 To 87.14 %
Max
Ratio
TENDL Threshold 80.803 keV
JENDL5.0 Threshold 80.803 keV
Cross Section (barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
JENDL5.0/TENDL
Ratio
2.0
1.0
0.0
10^5
10^6
10^7
10^8
Incident Energy (eV)
3
54-Xe-131

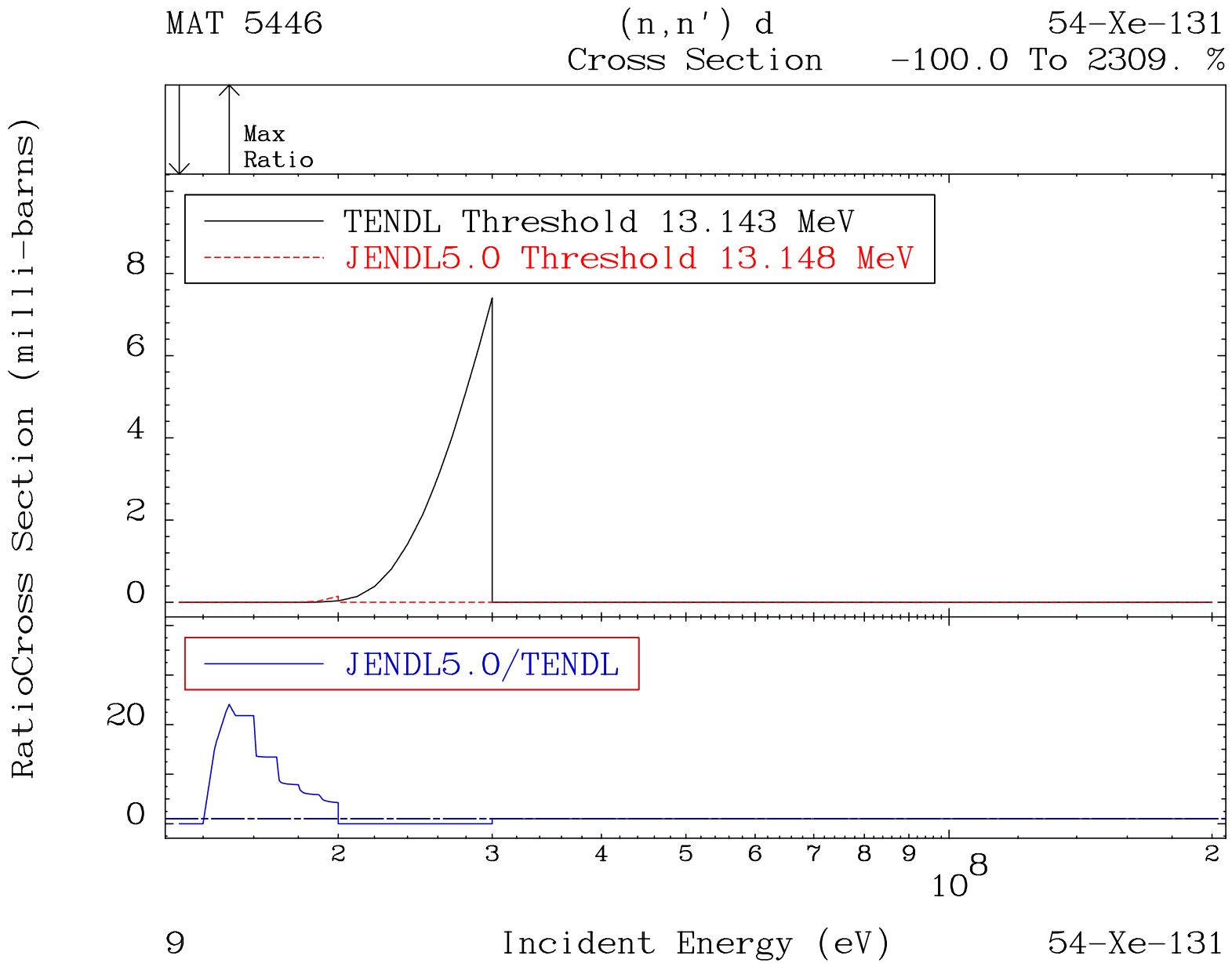

MAT 5446
(n,remainder)
Cross Section
54-Xe-131
-0.967 To 0.632 %
Max Ratio
Min Ratio
TENDL Threshold 30.000 MeV
JENDL5.0 Threshold 20.000 MeV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
JENDL5.0/TENDL
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
2
10^8
4
Incident Energy (eV)
54-Xe-131

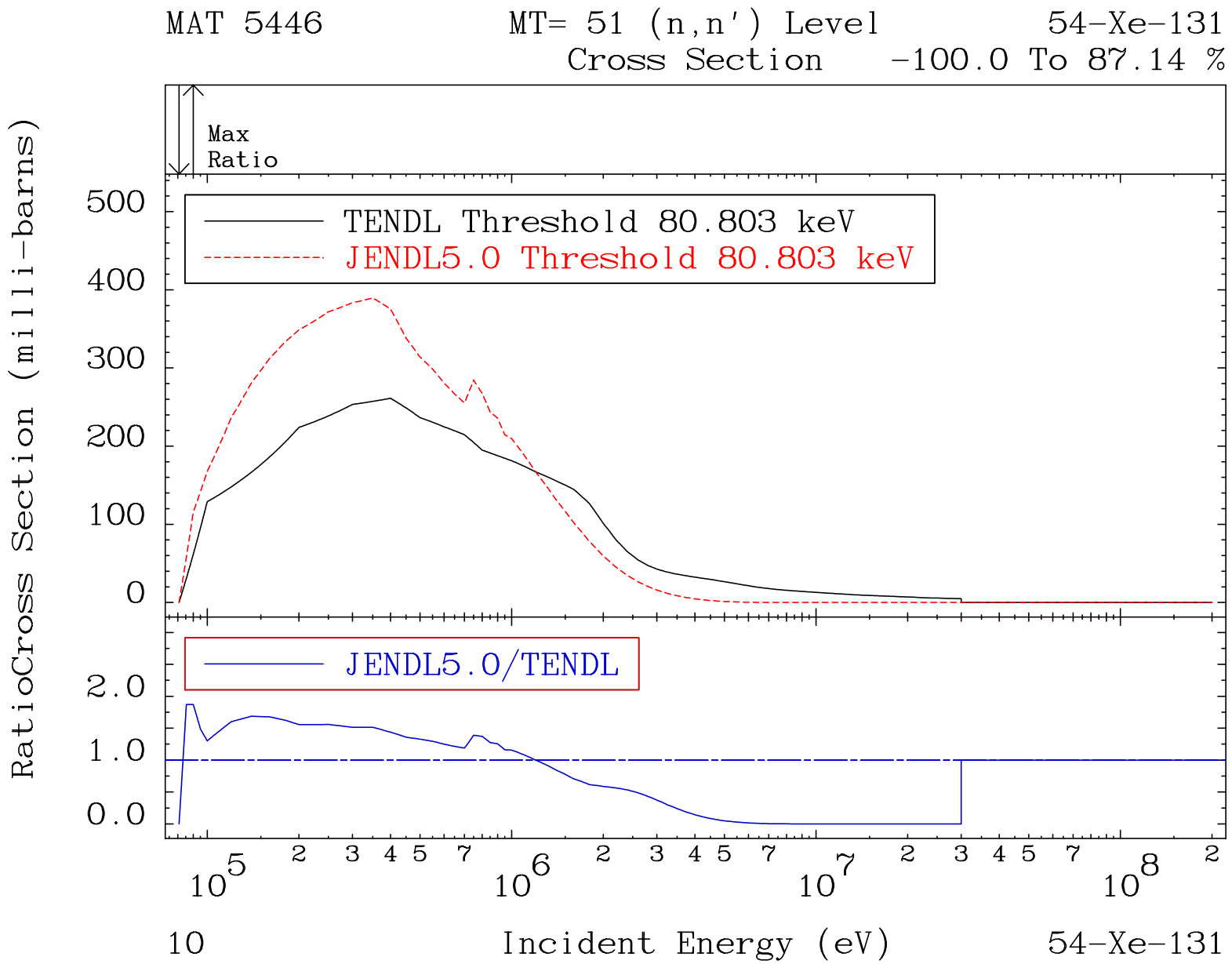

MAT 5446
(n,2n)
Cross Section
54-Xe-131
-100.0 To 232.5 %
Max
Ratio
TENDL Threshold 6.6553 MeV
JENDL5.0 Threshold 6.6553 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
5
54-Xe-131

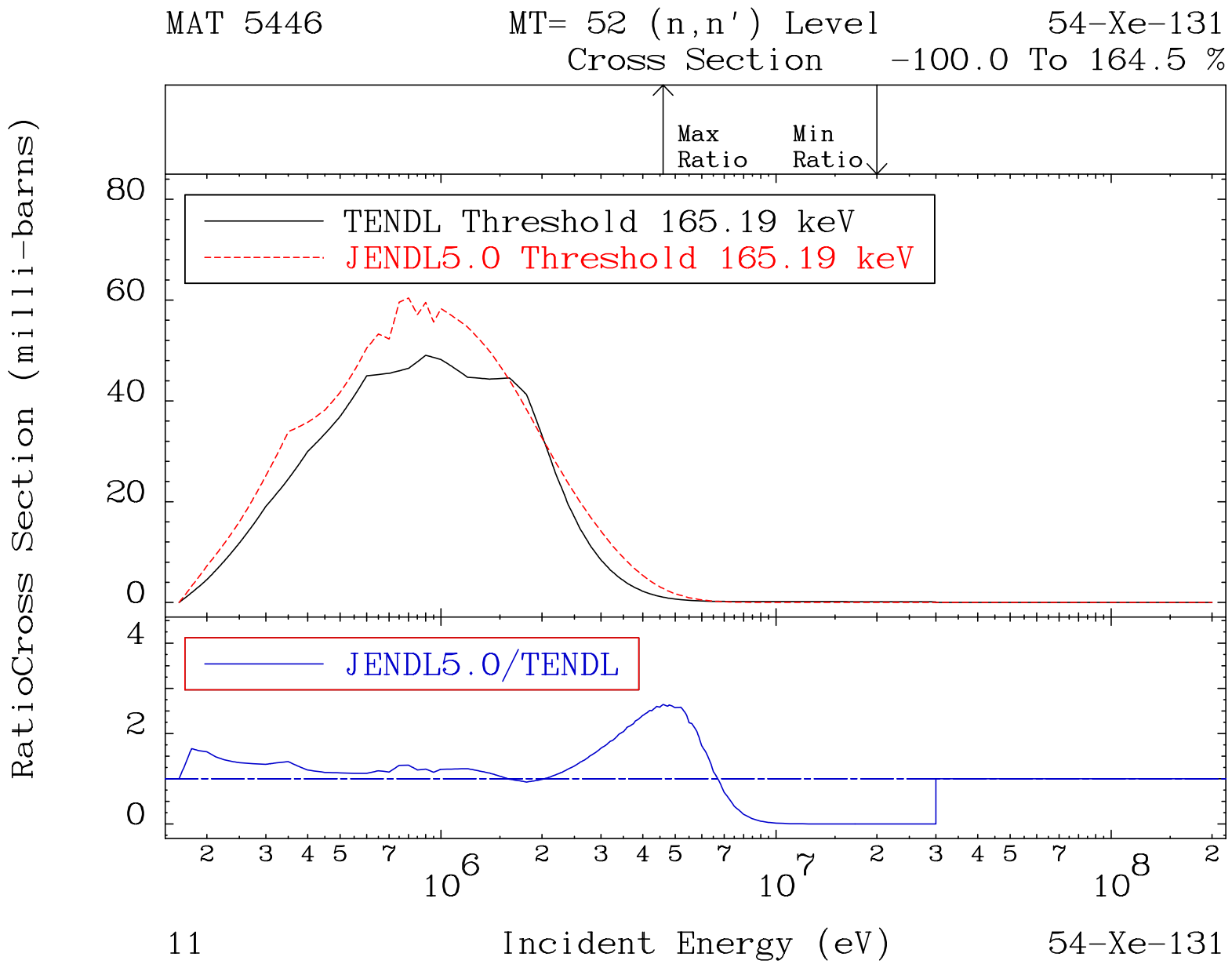

MAT 5446
(n,3n)
Cross Section
54-Xe-131
-100.0 To 56.10 %
Max
Ratio
TENDL Threshold 15.982 MeV
JENDL5.0 Threshold 16.000 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.6
1.2
0.8
0.4
0.0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
10^8
2
6
Incident Energy (eV)
54-Xe-131

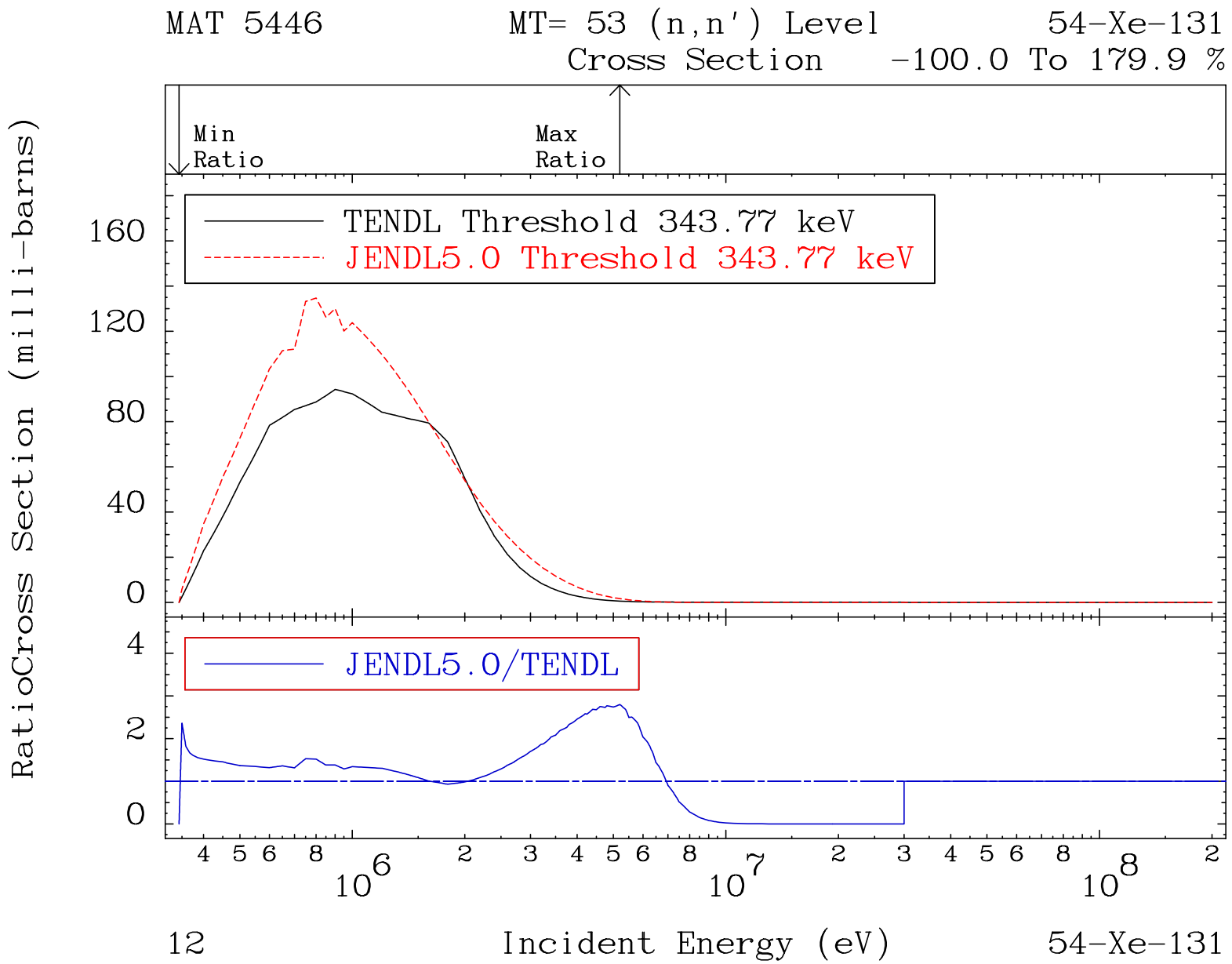

MAT 5446
(n,n') α
54-Xe-131
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 2.5777 MeV
JENDL5.0 Threshold 3.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
16
12
8
4
0
1.0
0.0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
7
Incident Energy (eV)
54-Xe-131

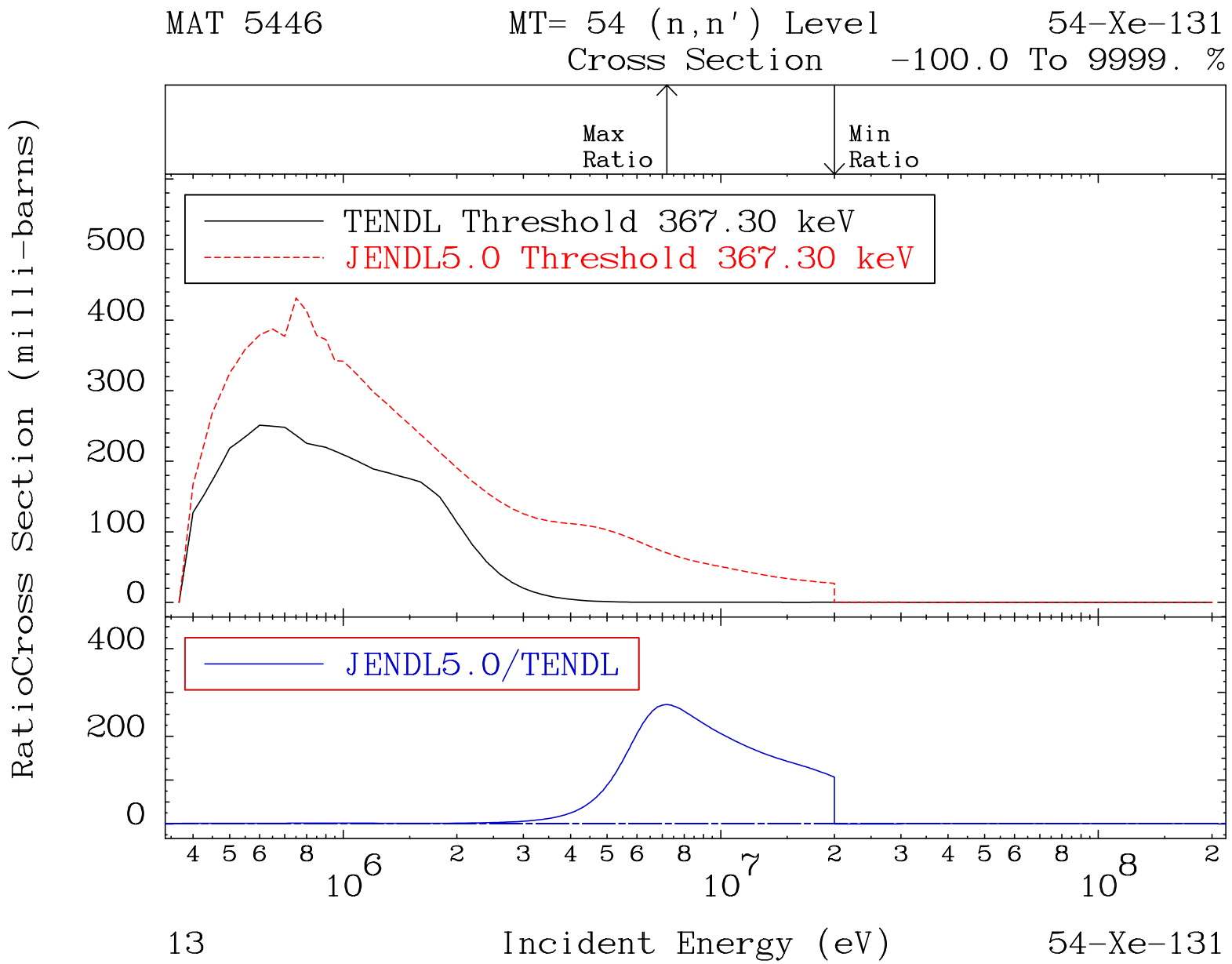

MAT 5446
(n,n') p
Cross Section
54-Xe-131
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 8.8339 MeV
JENDL5.0 Threshold 9.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
200
100
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
8
Incident Energy (eV)
54-Xe-131

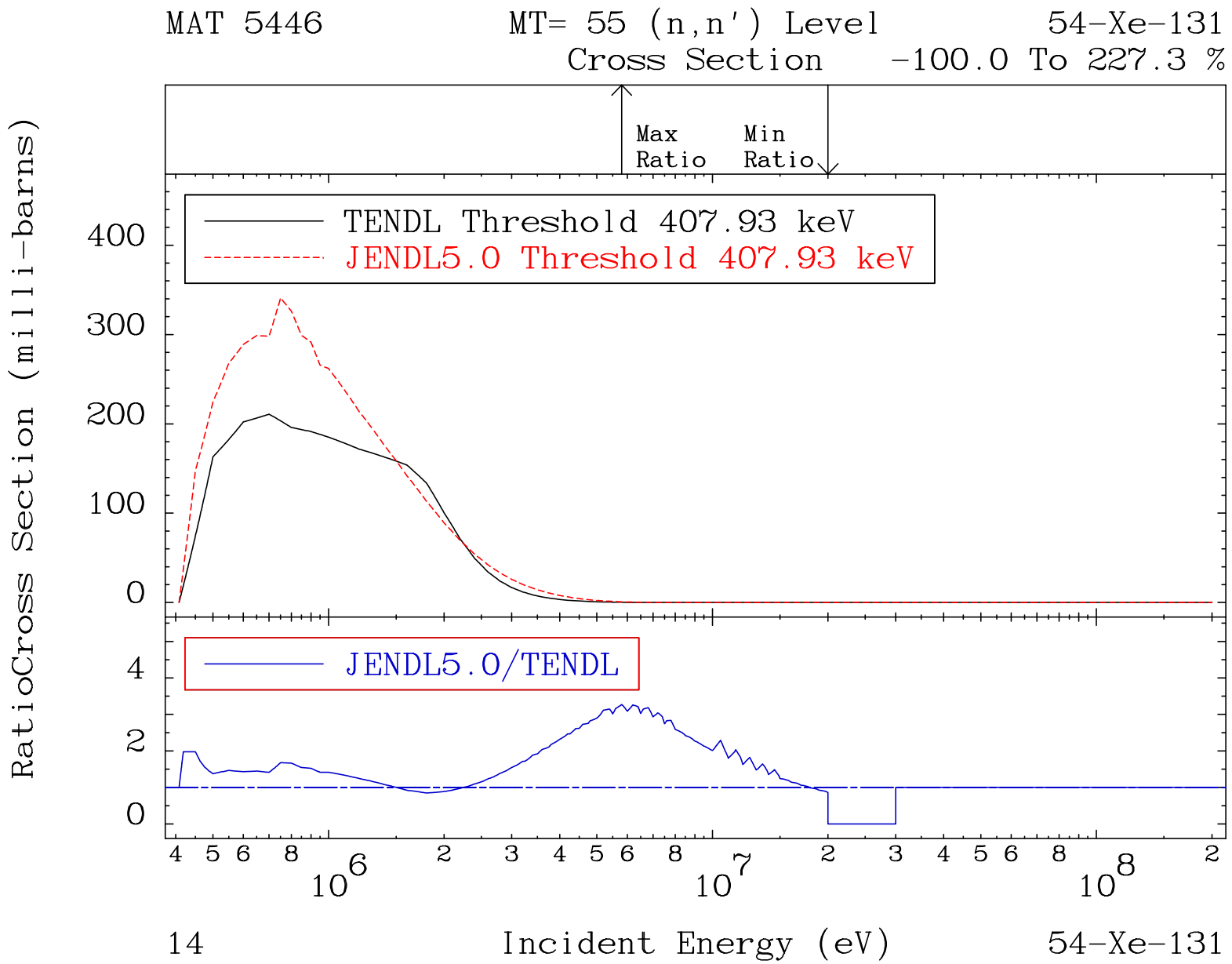

MAT 5446
(n,n') d
54-Xe-131
Cross Section
-100.0 To 2309. %
Max
Ratio
TENDL Threshold 13.143 MeV
JENDL5.0 Threshold 13.148 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
8
6
4
2
0
20
0
2
3
4
5
6
7
8
9
10^8
2
9
Incident Energy (eV)
54-Xe-131

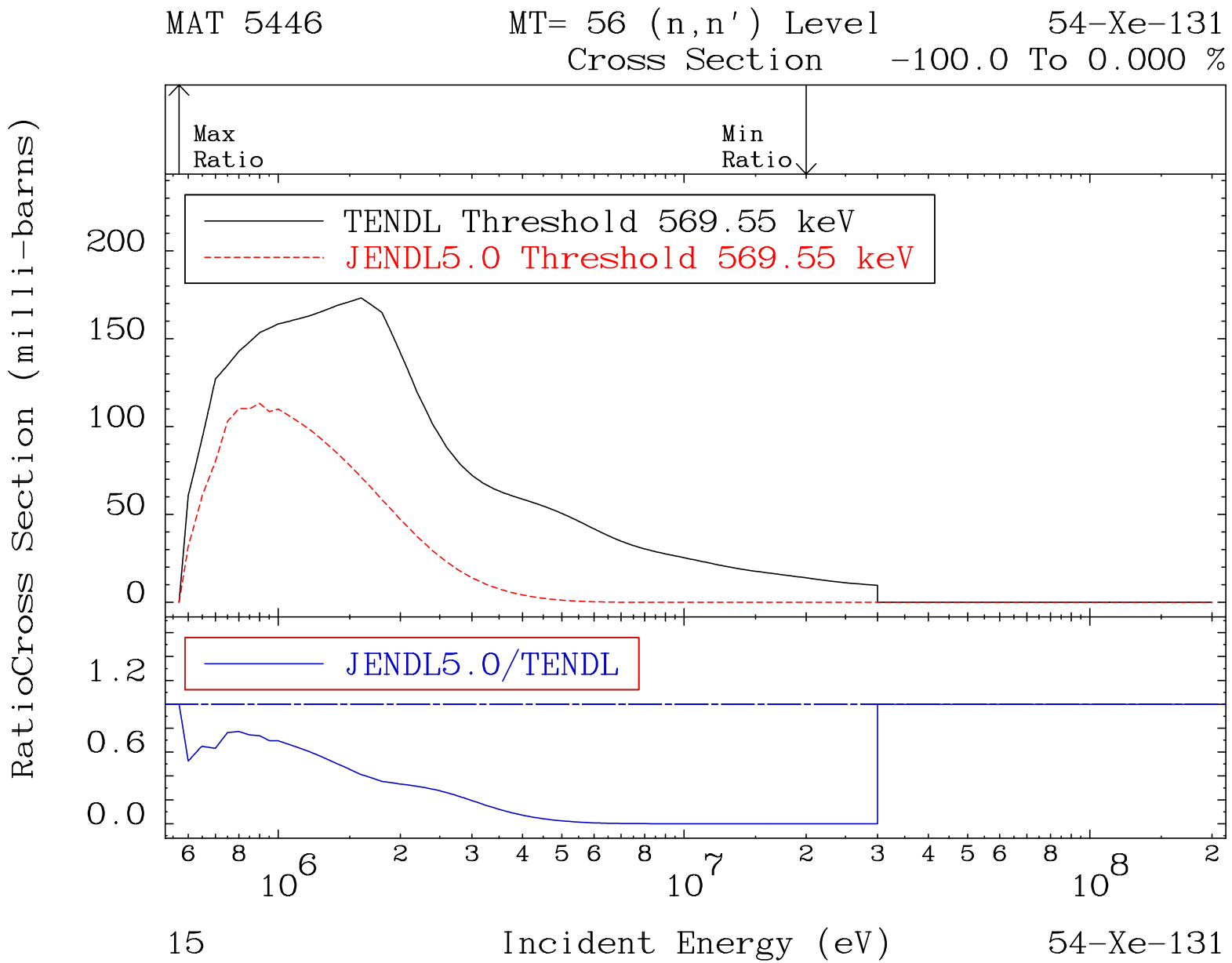

MAT 5446
MT= 51 (n,n') Level
54-Xe-131
Cross Section -100.0 To 87.14 %
Max
Ratio
TENDL Threshold 80.803 keV
JENDL5.0 Threshold 80.803 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
2.0
1.0
0.0
10^5
10^6
10^7
10^8
10
Incident Energy (eV)
54-Xe-131

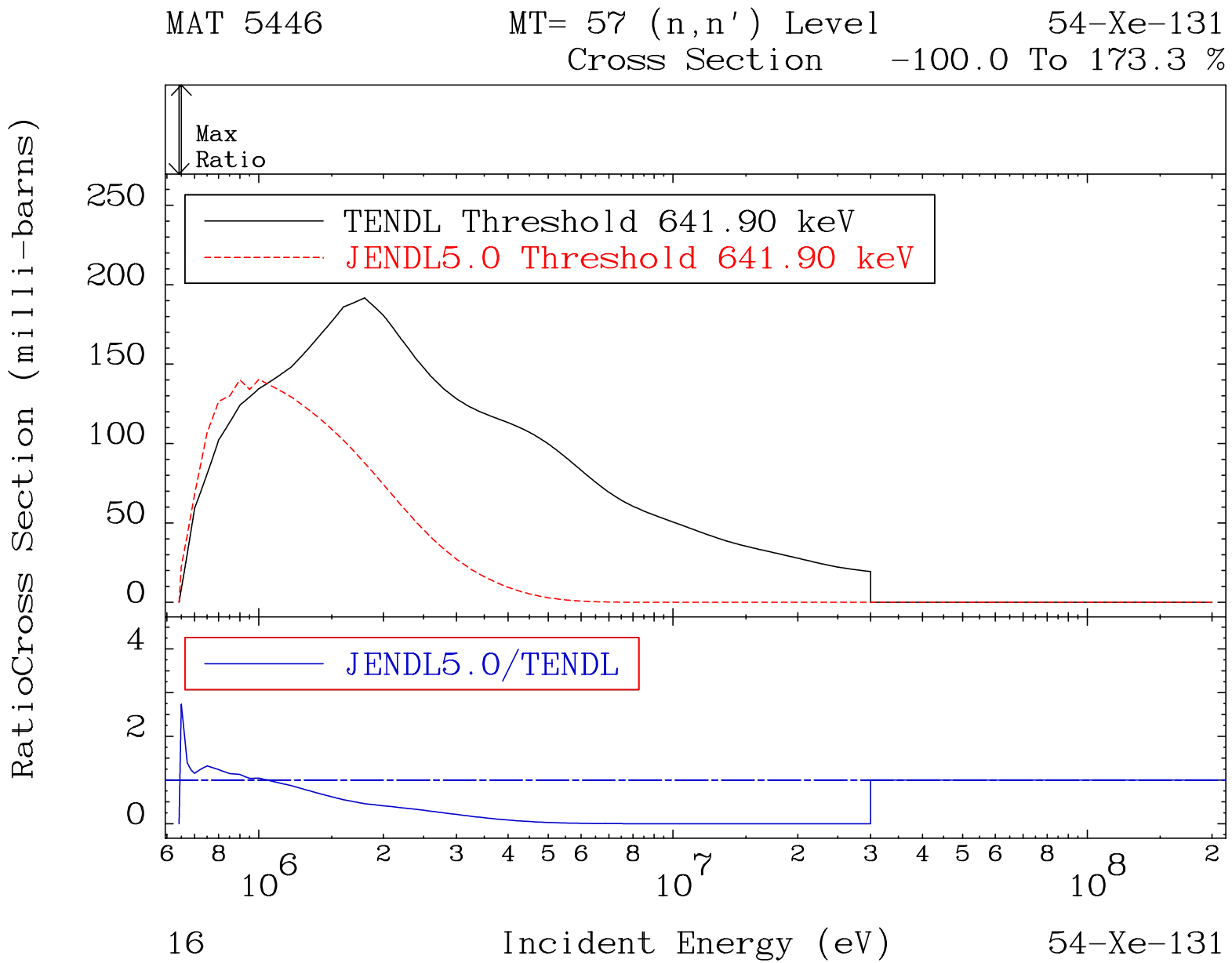

MAT 5446
MT= 52 (n,n') Level
54-Xe-131
Cross Section
-100.0 To 164.5 %
Max Ratio
Min Ratio
TENDL Threshold 165.19 keV
JENDL5.0 Threshold 165.19 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
11
54-Xe-131

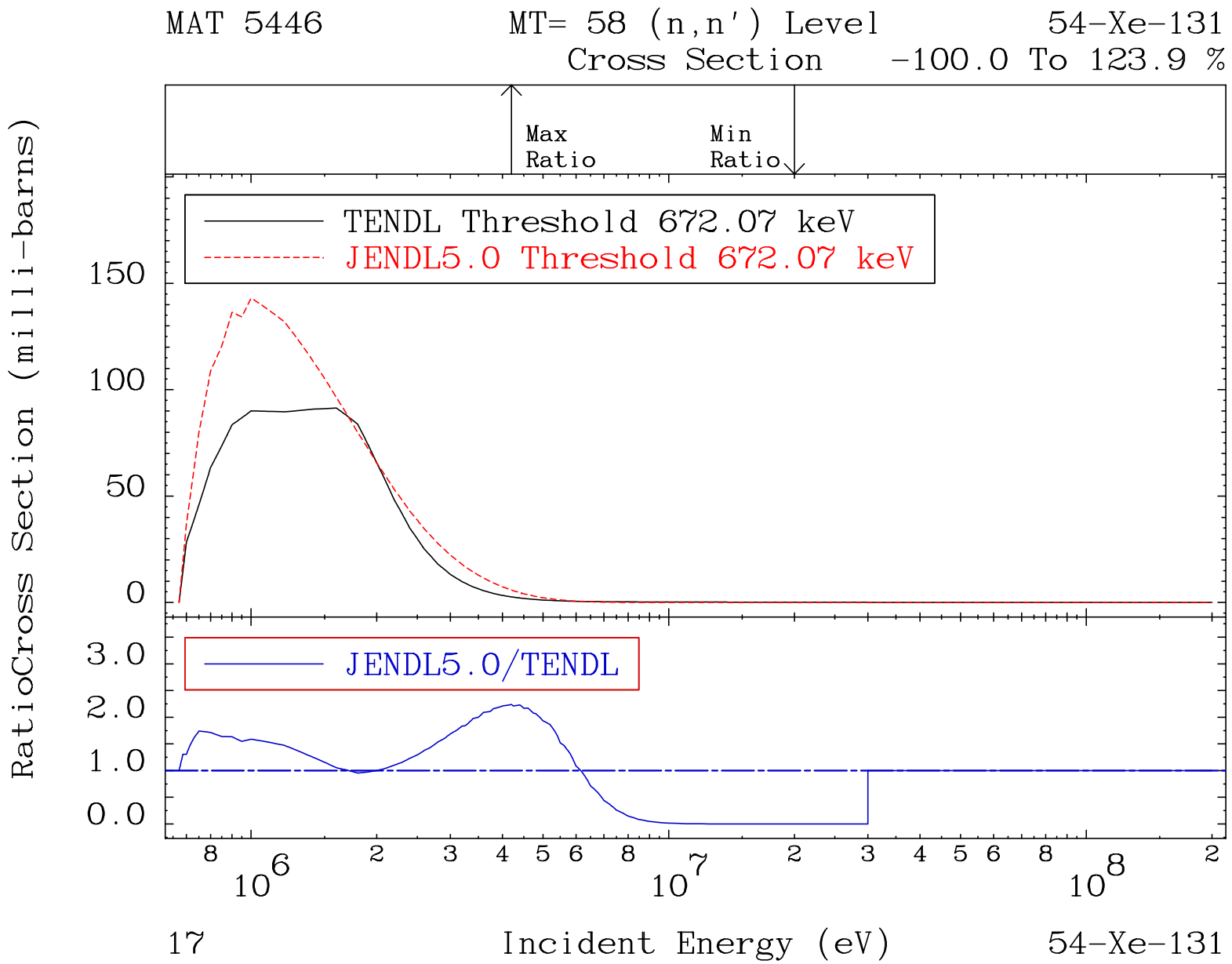

MAT 5446
MT= 53 (n,n') Level
54-Xe-131
Cross Section -100.0 To 179.9 %
Min Ratio
Max Ratio
TENDL Threshold 343.77 keV
JENDL5.0 Threshold 343.77 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
4
2
0
4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
12
Incident Energy (eV)
54-Xe-131

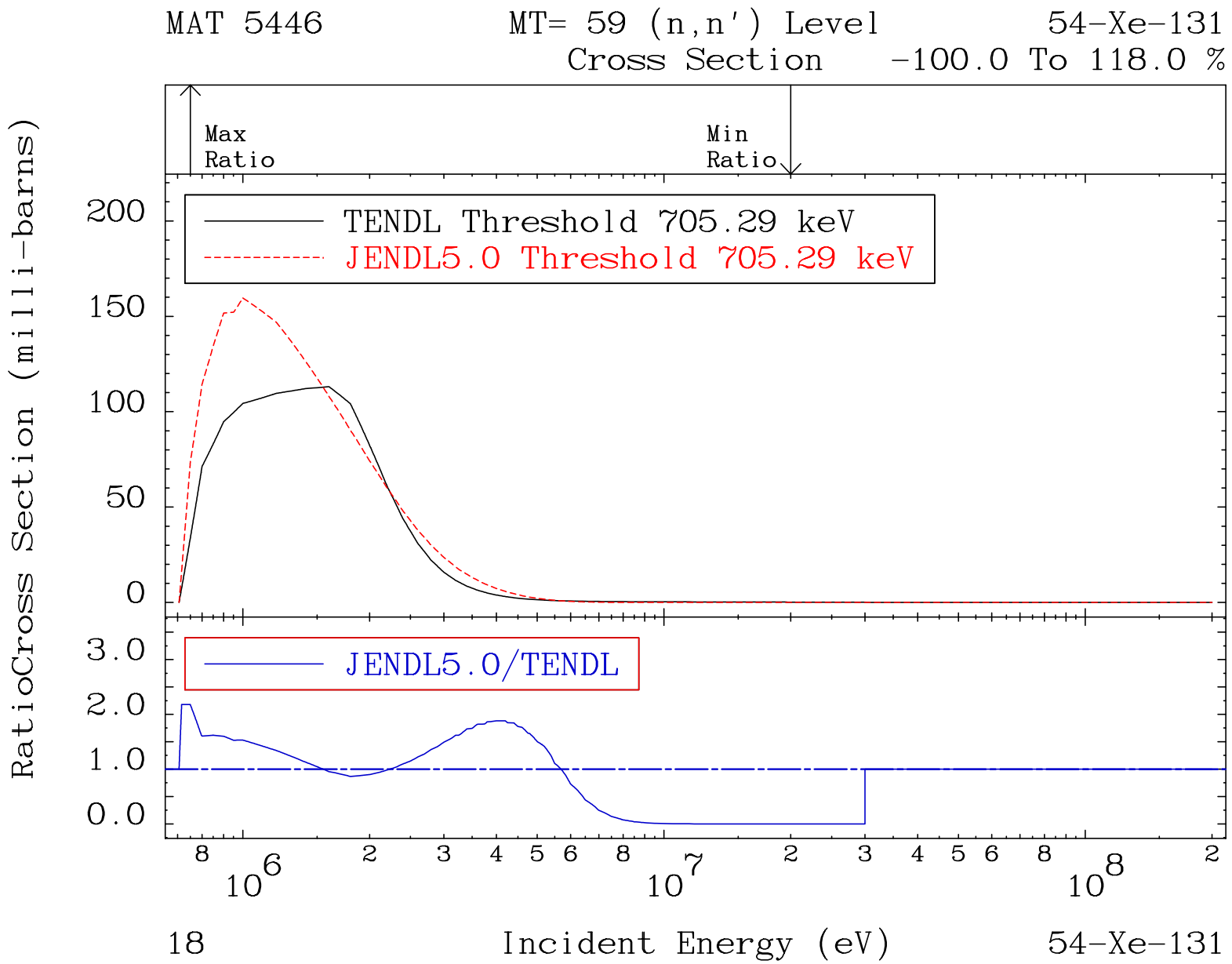

MAT 5446
MT= 54 (n,n') Level
54-Xe-131
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 367.30 keV
JENDL5.0 Threshold 367.30 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
400
200
0
4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
13
Incident Energy (eV)
54-Xe-131

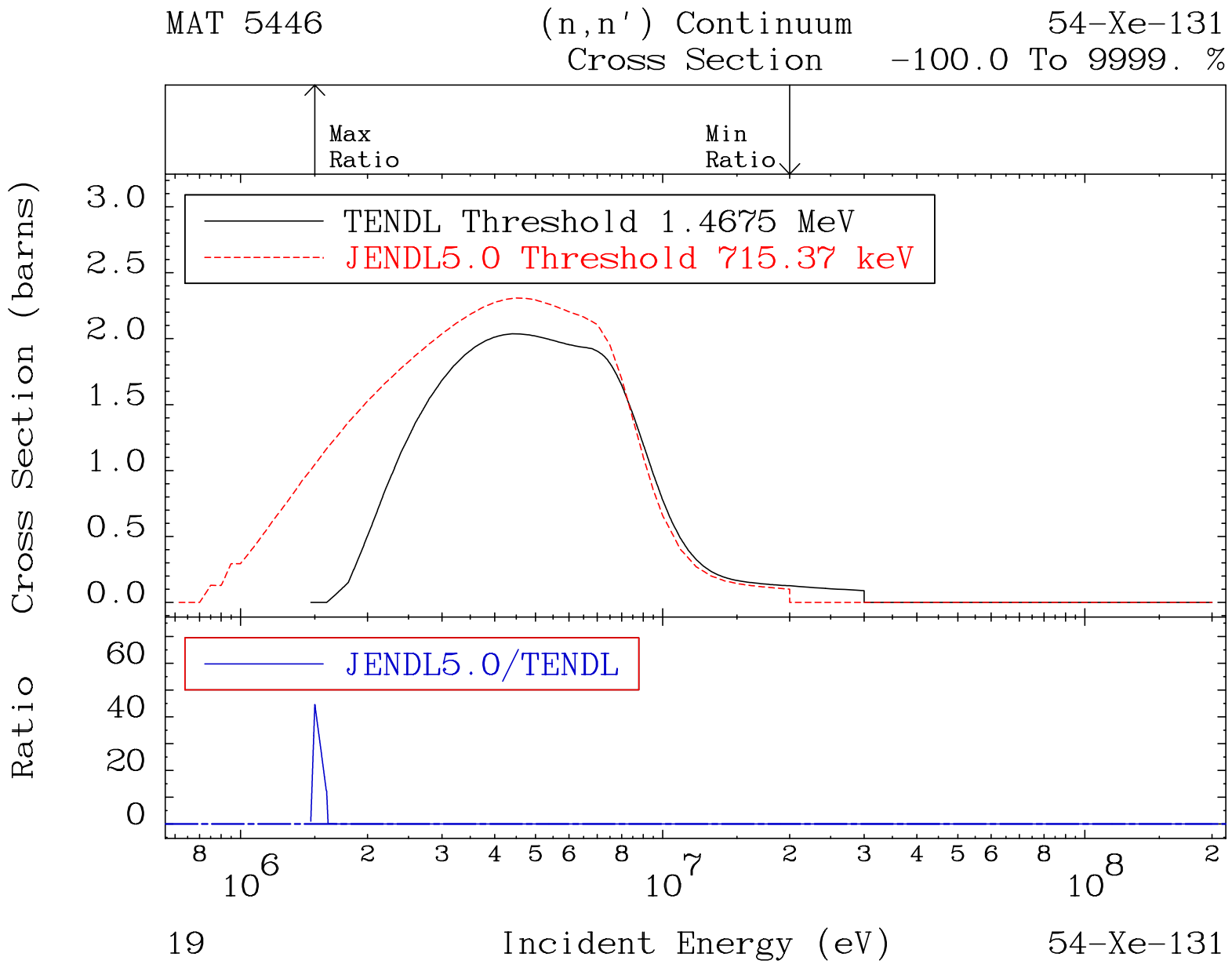

MAT 5446
MT= 55 (n,n') Level
54-Xe-131
Cross Section -100.0 To 227.3 %
Max Ratio
Min Ratio
TENDL Threshold 407.93 keV
JENDL5.0 Threshold 407.93 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
4
2
0
4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
14
Incident Energy (eV)
54-Xe-131

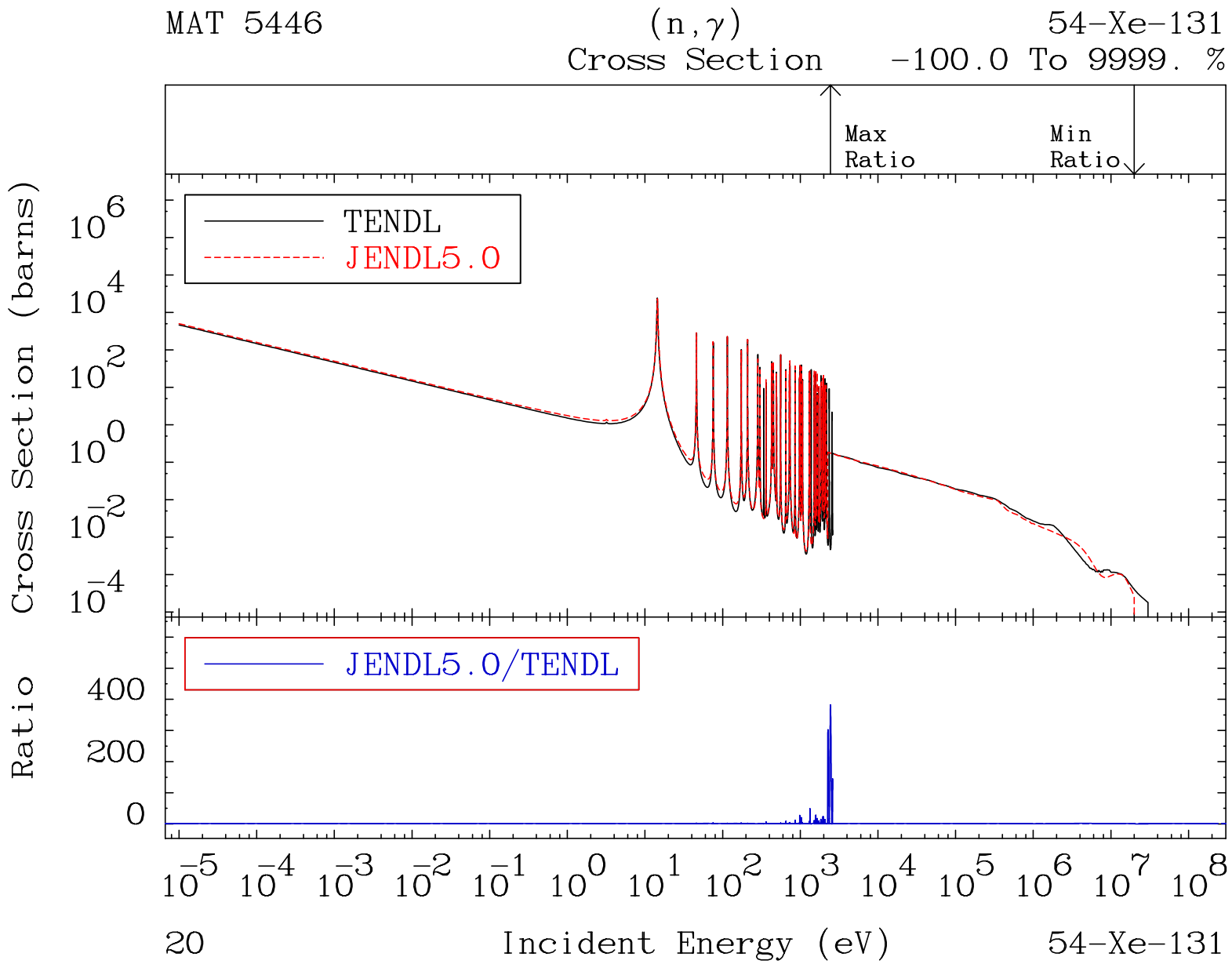

MAT 5446
MT= 56 (n,n') Level
54-Xe-131
Cross Section -100.0 To 0.000 %
Max Ratio
Min Ratio
TENDL Threshold 569.55 keV
JENDL5.0 Threshold 569.55 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
1.2
0.6
0.0
6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
15
Incident Energy (eV)
54-Xe-131

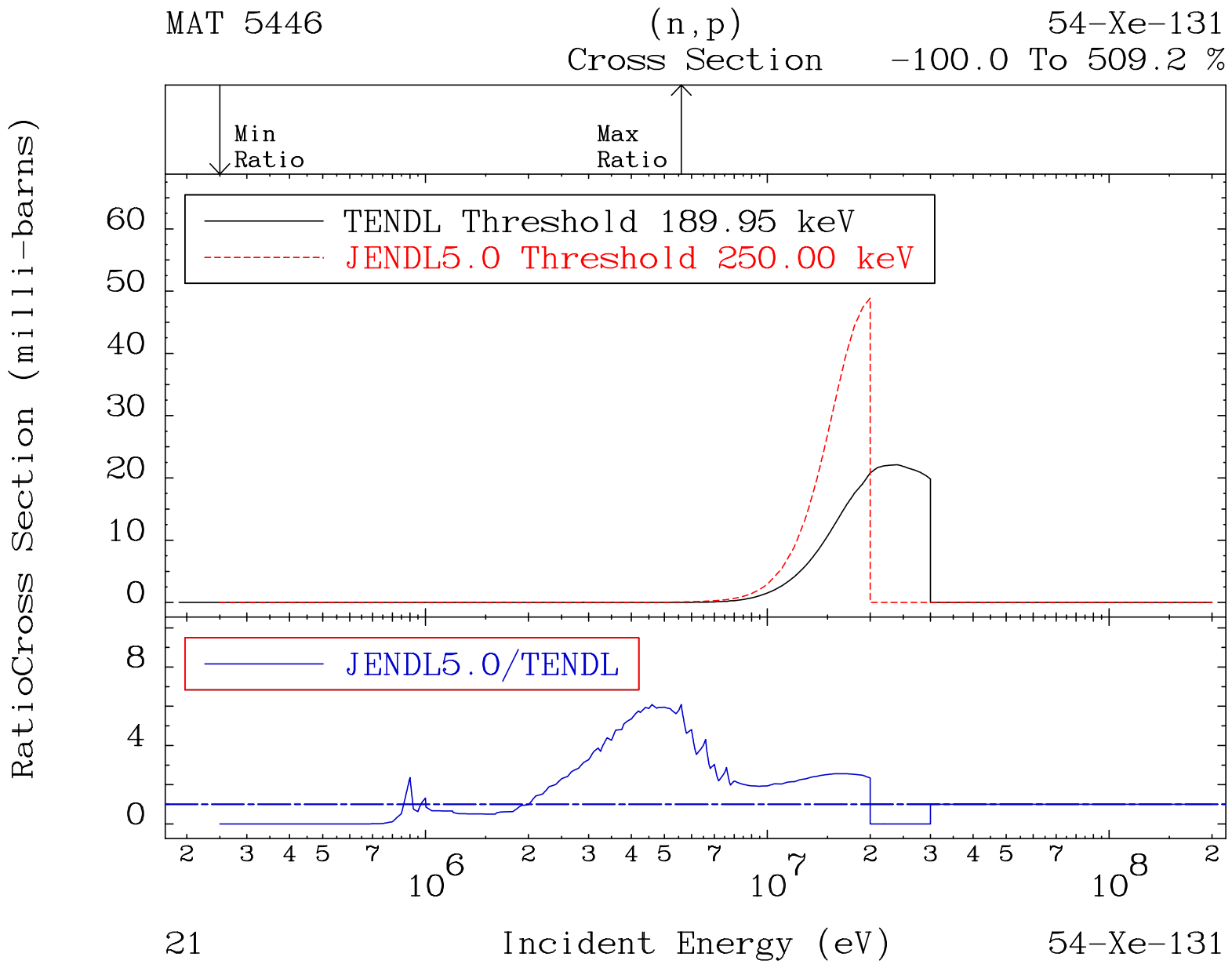

MAT 5446
MT= 57 (n,n') Level
54-Xe-131
Cross Section -100.0 To 173.3 %
Max
Ratio
TENDL Threshold 641.90 keV
JENDL5.0 Threshold 641.90 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
4
2
0
6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
16
Incident Energy (eV)
54-Xe-131

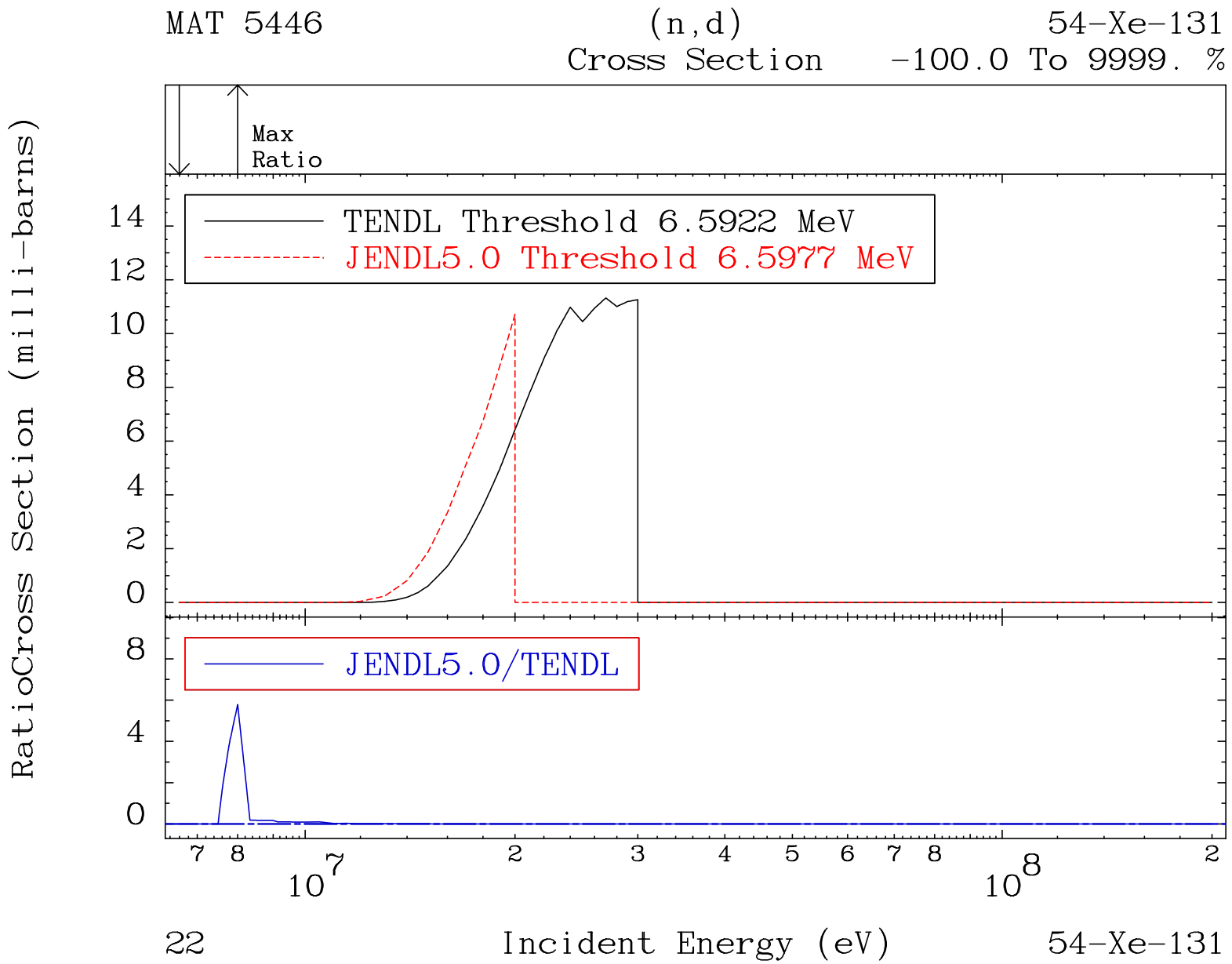

MAT 5446
MT= 58 (n,n') Level
54-Xe-131
Cross Section
-100.0 To 123.9 %
Max Ratio
Min Ratio
TENDL Threshold 672.07 keV
JENDL5.0 Threshold 672.07 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
150
100
50
0
3.0
2.0
1.0
0.0
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
17
Incident Energy (eV)
54-Xe-131

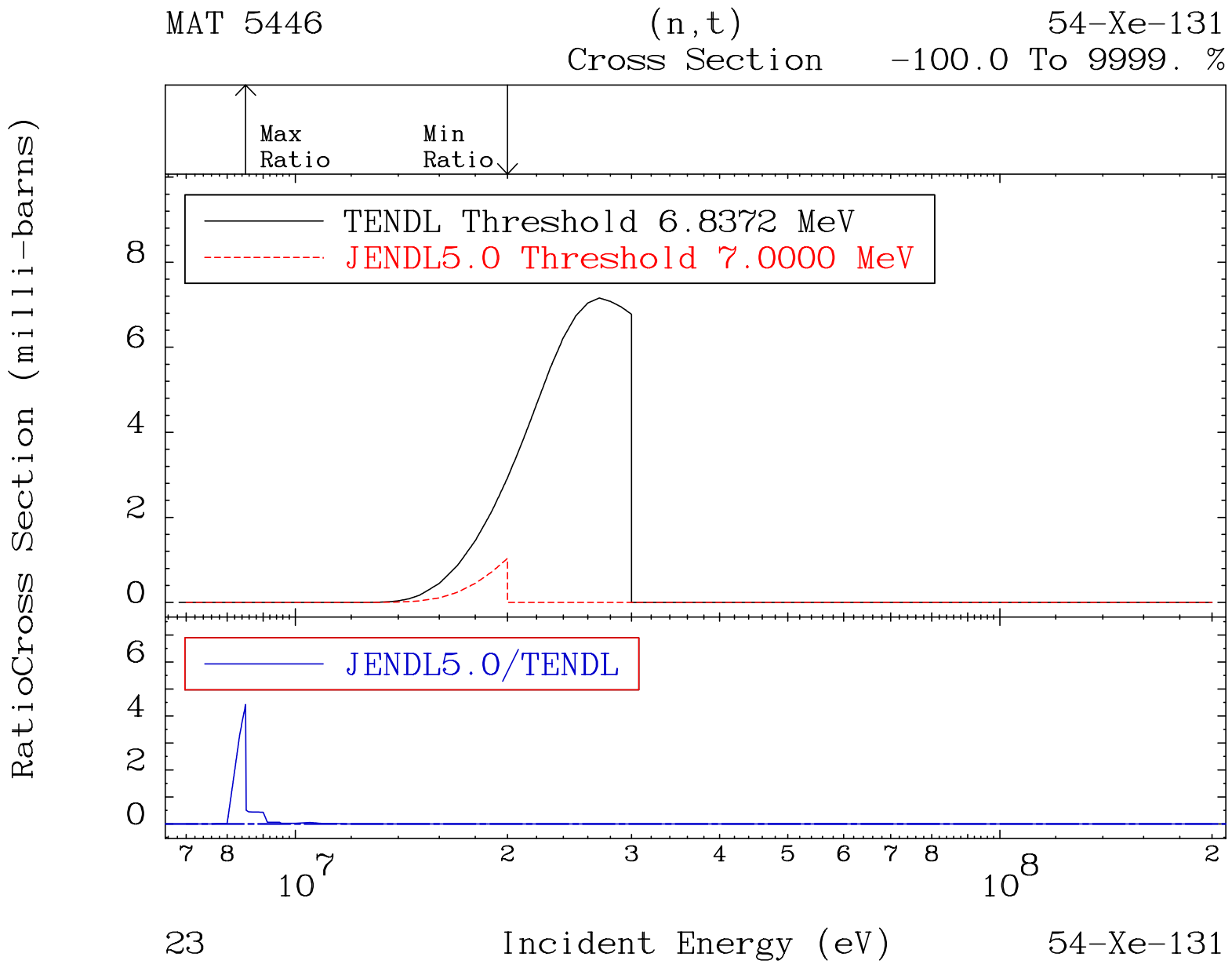

MAT 5446
MT= 59 (n,n') Level
54-Xe-131
Cross Section
-100.0 To 118.0 %
Max Ratio
Min Ratio
TENDL Threshold 705.29 keV
JENDL5.0 Threshold 705.29 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
3.0
2.0
1.0
0.0
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
18
Incident Energy (eV)
54-Xe-131

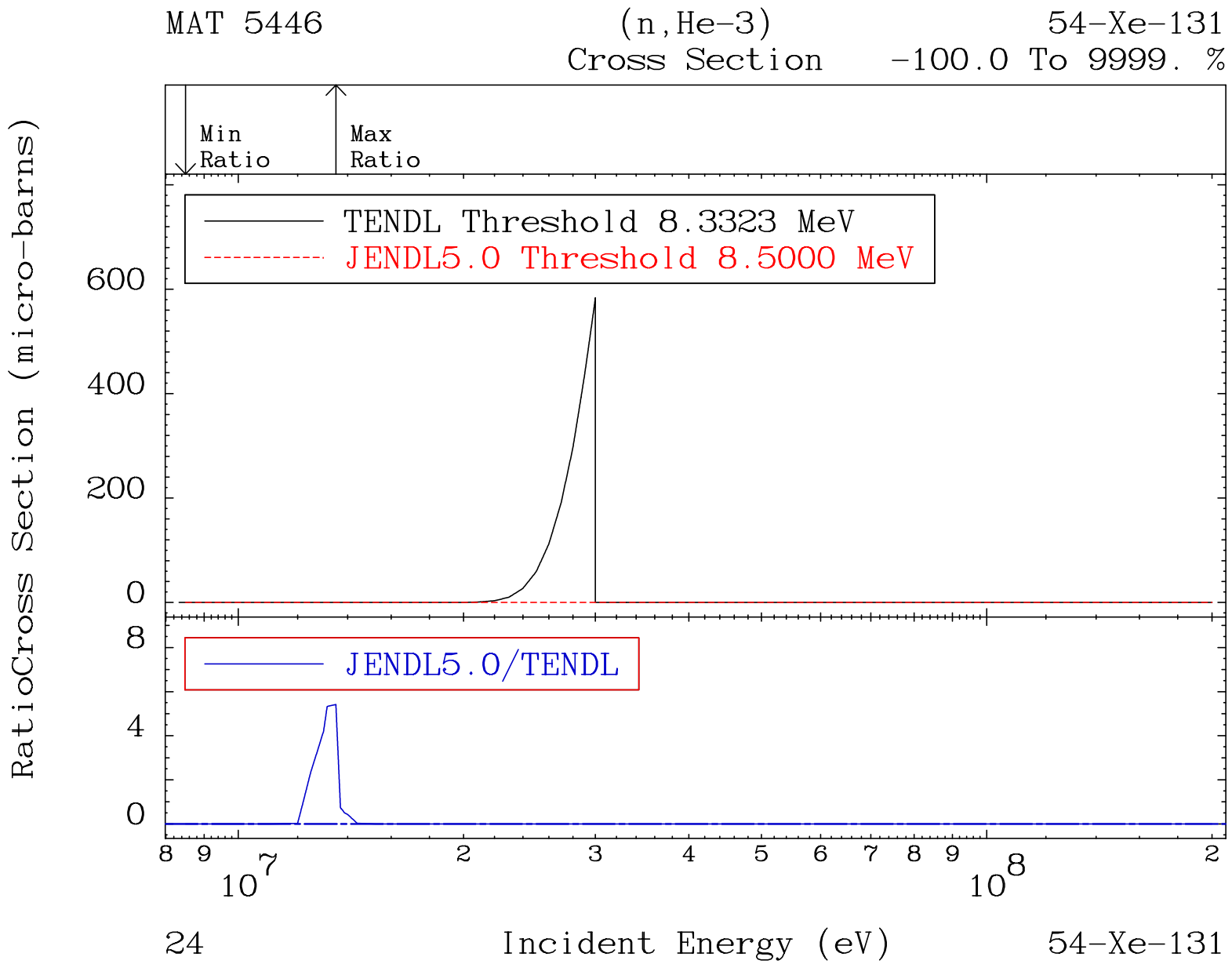

MAT 5446
(n,n') Continuum
Cross Section
54-Xe-131
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 1.4675 MeV
JENDL5.0 Threshold 715.37 keV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
3.0
2.5
2.0
1.5
1.0
0.5
0.0
60
40
20
0
8
2
3
4
5
6
8
10^6
10^7
10^8
19
Incident Energy (eV)
54-Xe-131

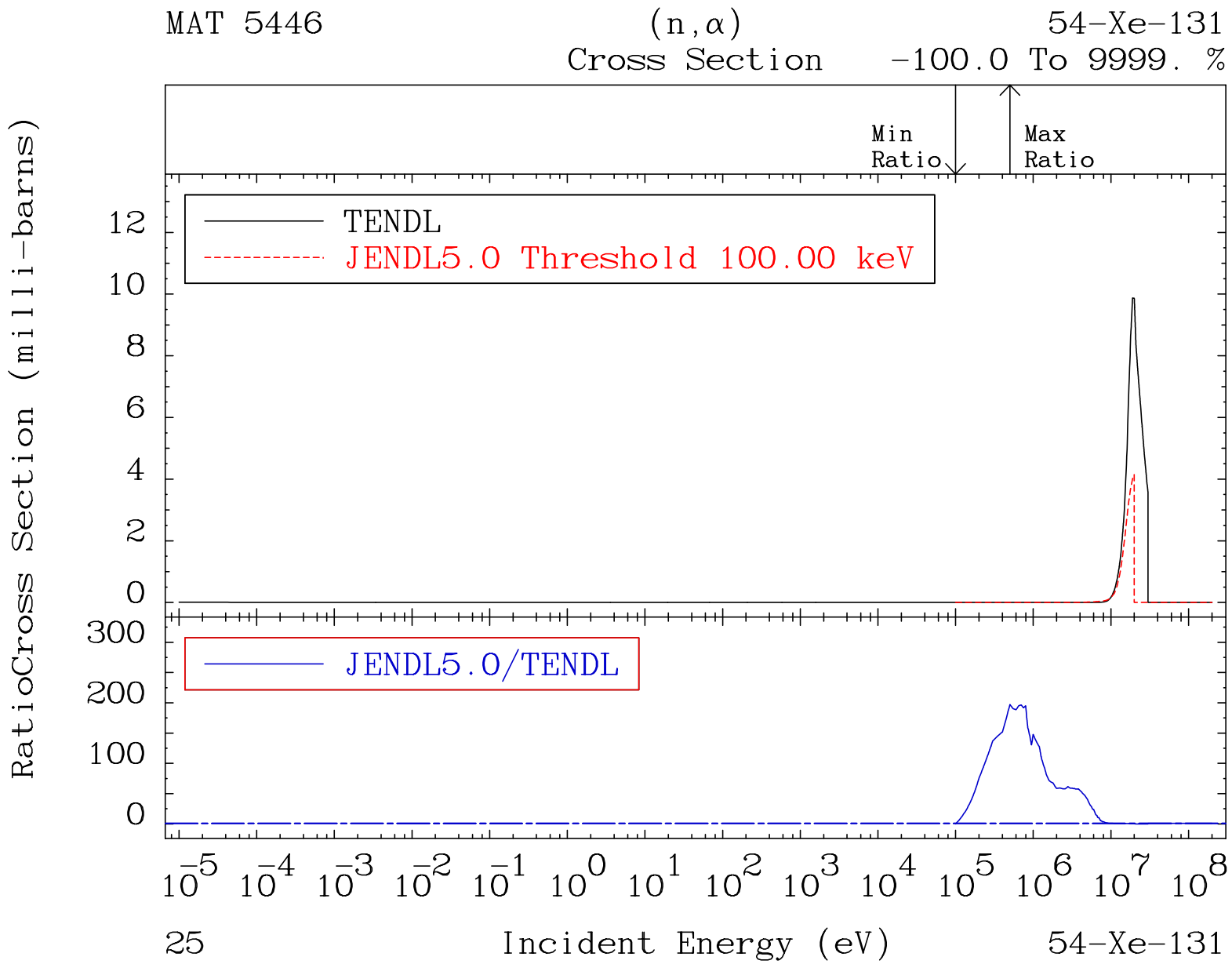

MAT 5446
(n,γ)
Cross Section
54-Xe-131
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
20
54-Xe-131

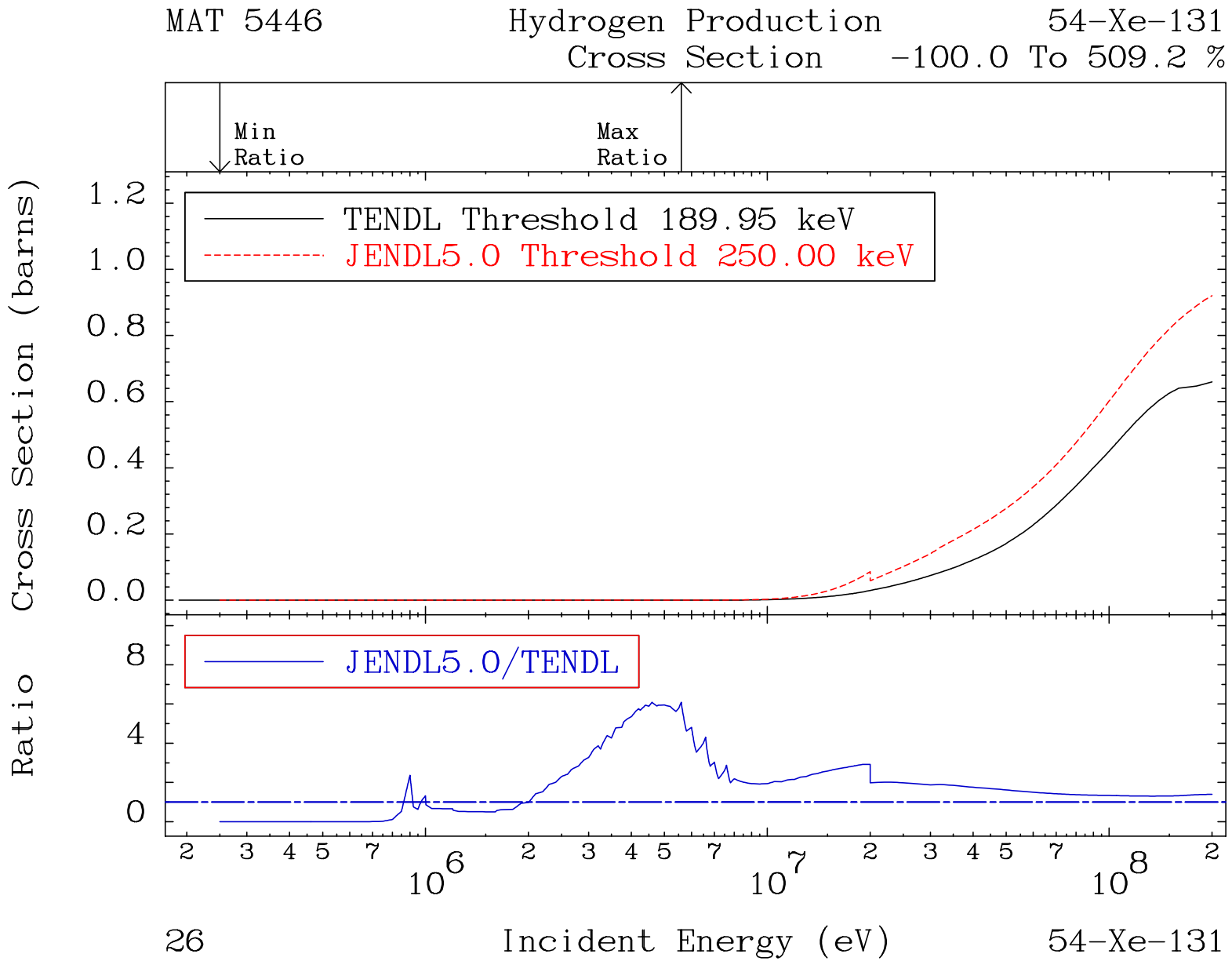

MAT 5446
(n,p)
Cross Section
54-Xe-131
-100.0 To 509.2 %
Min Ratio
Max Ratio
TENDL Threshold 189.95 keV
JENDL5.0 Threshold 250.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
60
50
40
30
20
10
0
8
4
0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
21
Incident Energy (eV)
54-Xe-131

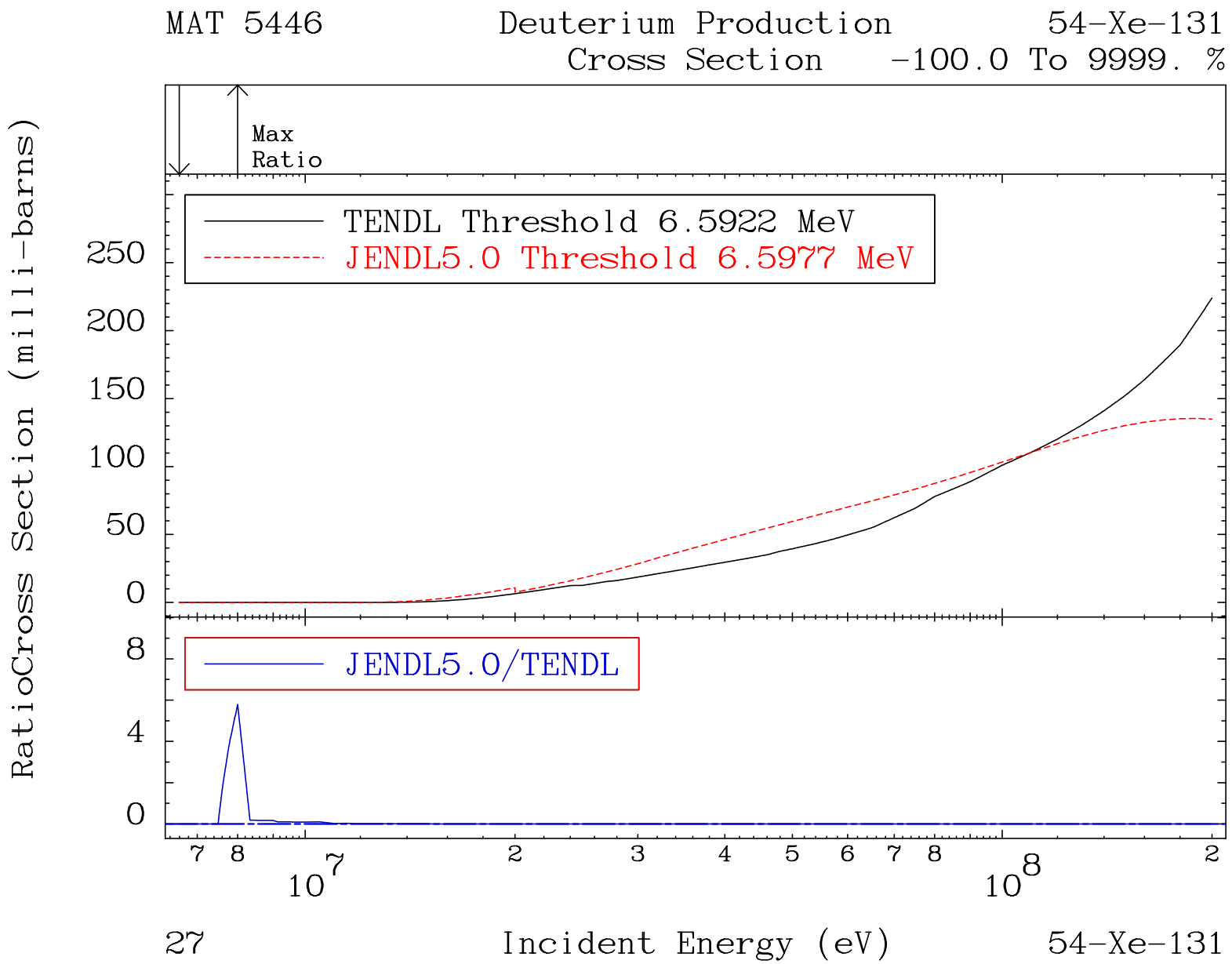

MAT 5446
(n,d)
54-Xe-131
Cross Section
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 6.5922 MeV
JENDL5.0 Threshold 6.5977 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
14
12
10
8
6
4
2
0
8
4
0
7 8
10^7
2 3 4 5 6 7 8
10^8
2
22
Incident Energy (eV)
54-Xe-131

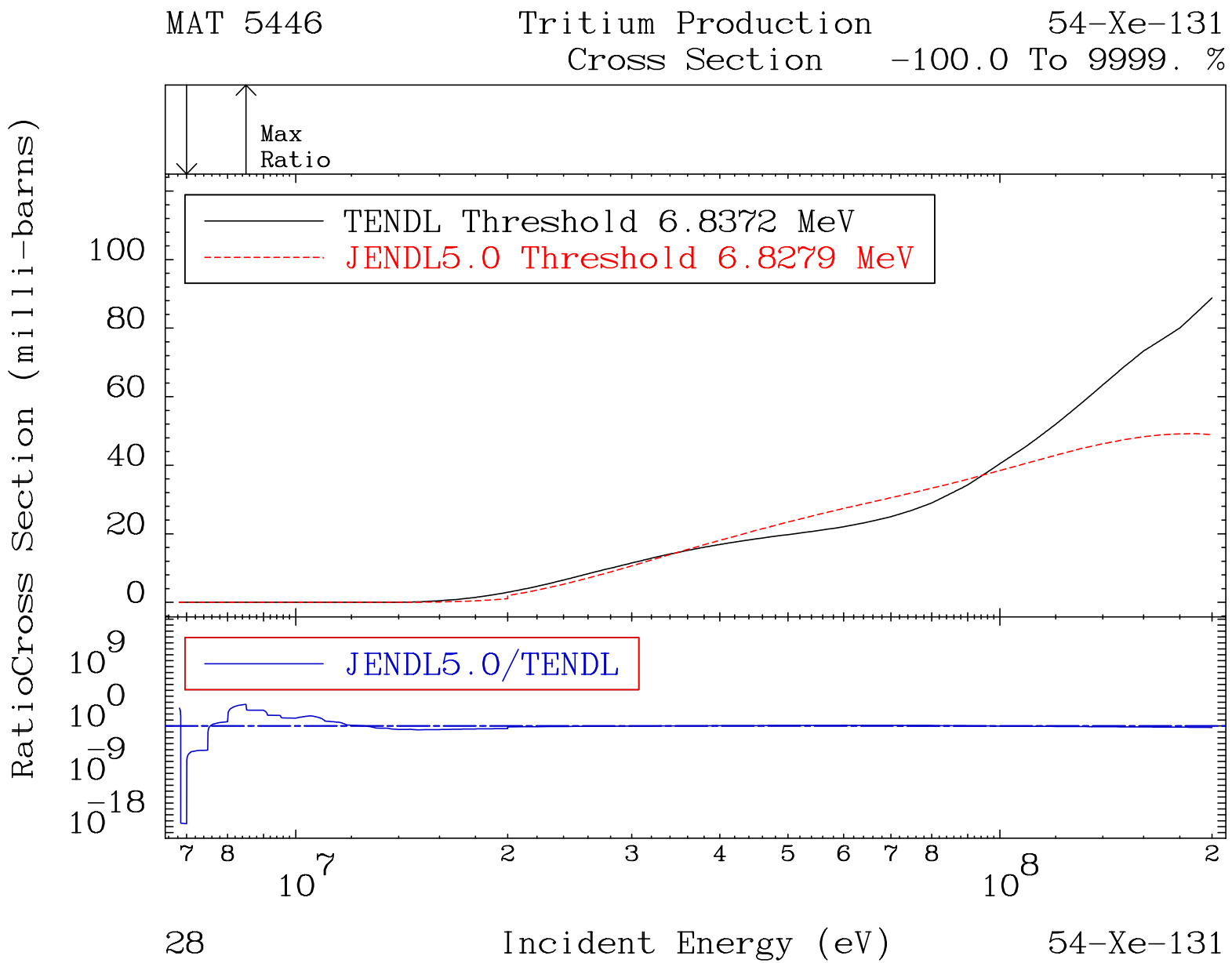

MAT 5446
(n,t)
54-Xe-131
Cross Section
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 6.8372 MeV
JENDL5.0 Threshold 7.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
23
54-Xe-131

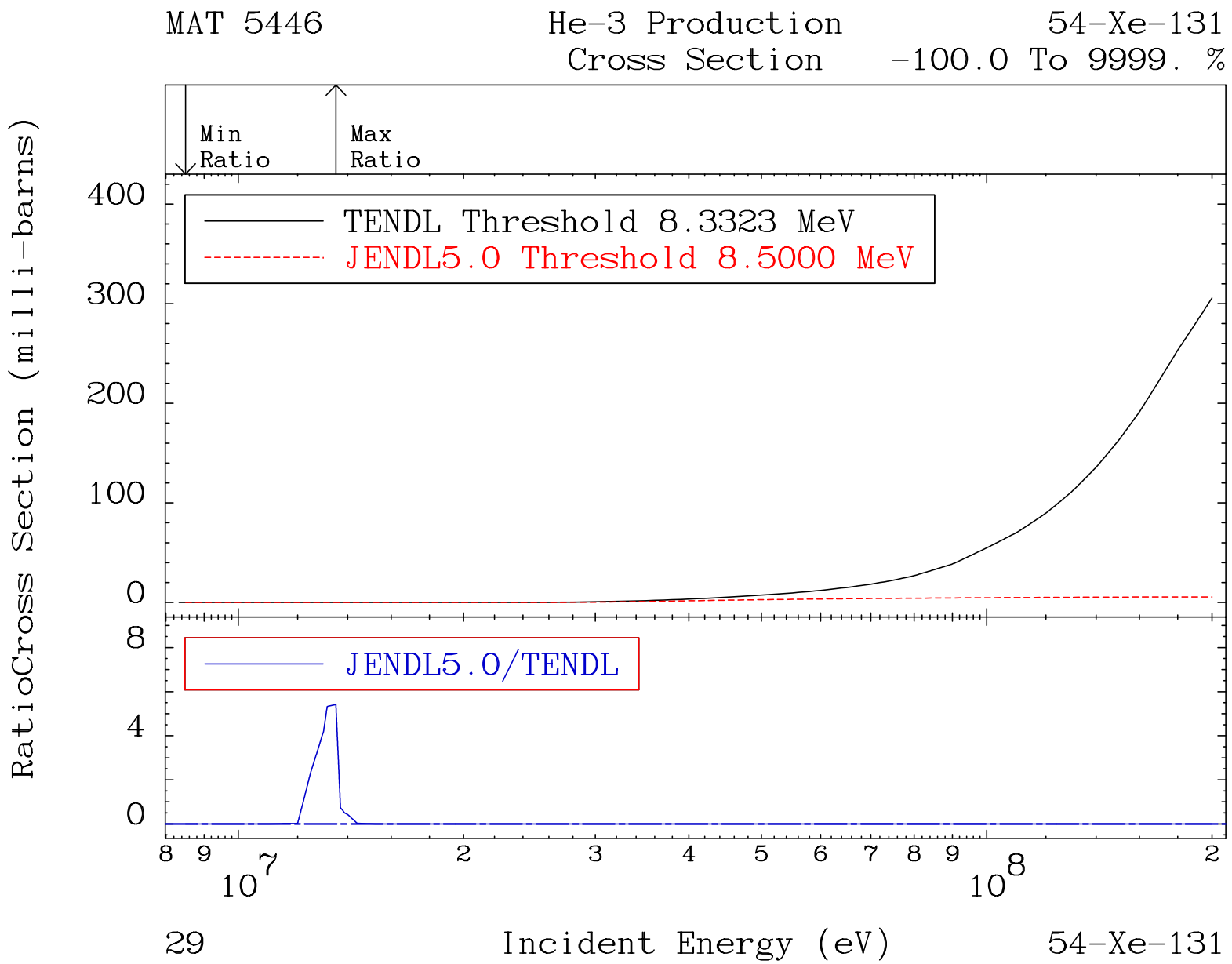

MAT 5446
(n,He-3)
54-Xe-131
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 8.3323 MeV
JENDL5.0 Threshold 8.5000 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
600
400
200
0
8
4
0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
24
Incident Energy (eV)
54-Xe-131

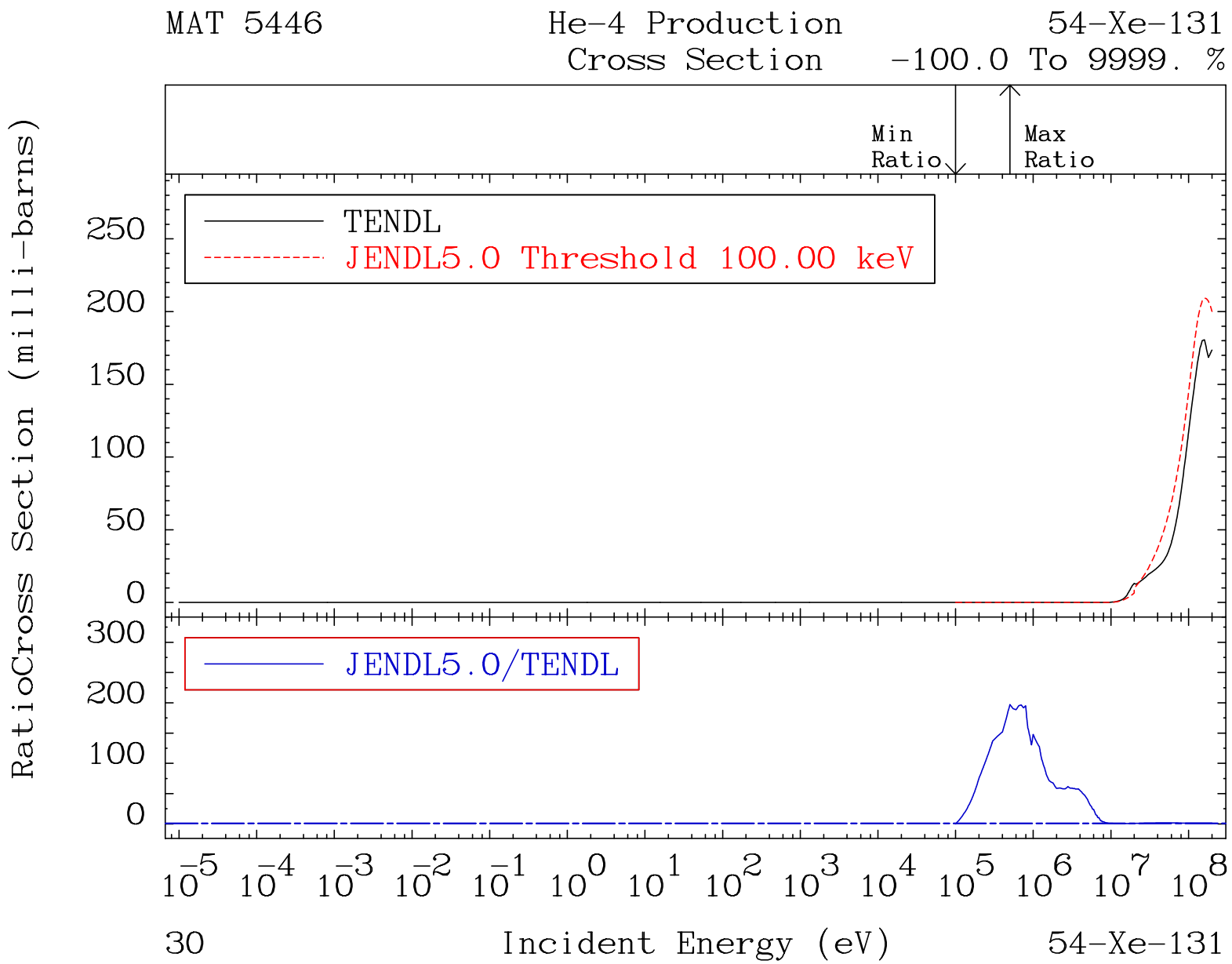

MAT 5446
(n,α)
54-Xe-131
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0 Threshold 100.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
12
10
8
6
4
2
0
300
200
100
0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
25
Incident Energy (eV)
54-Xe-131

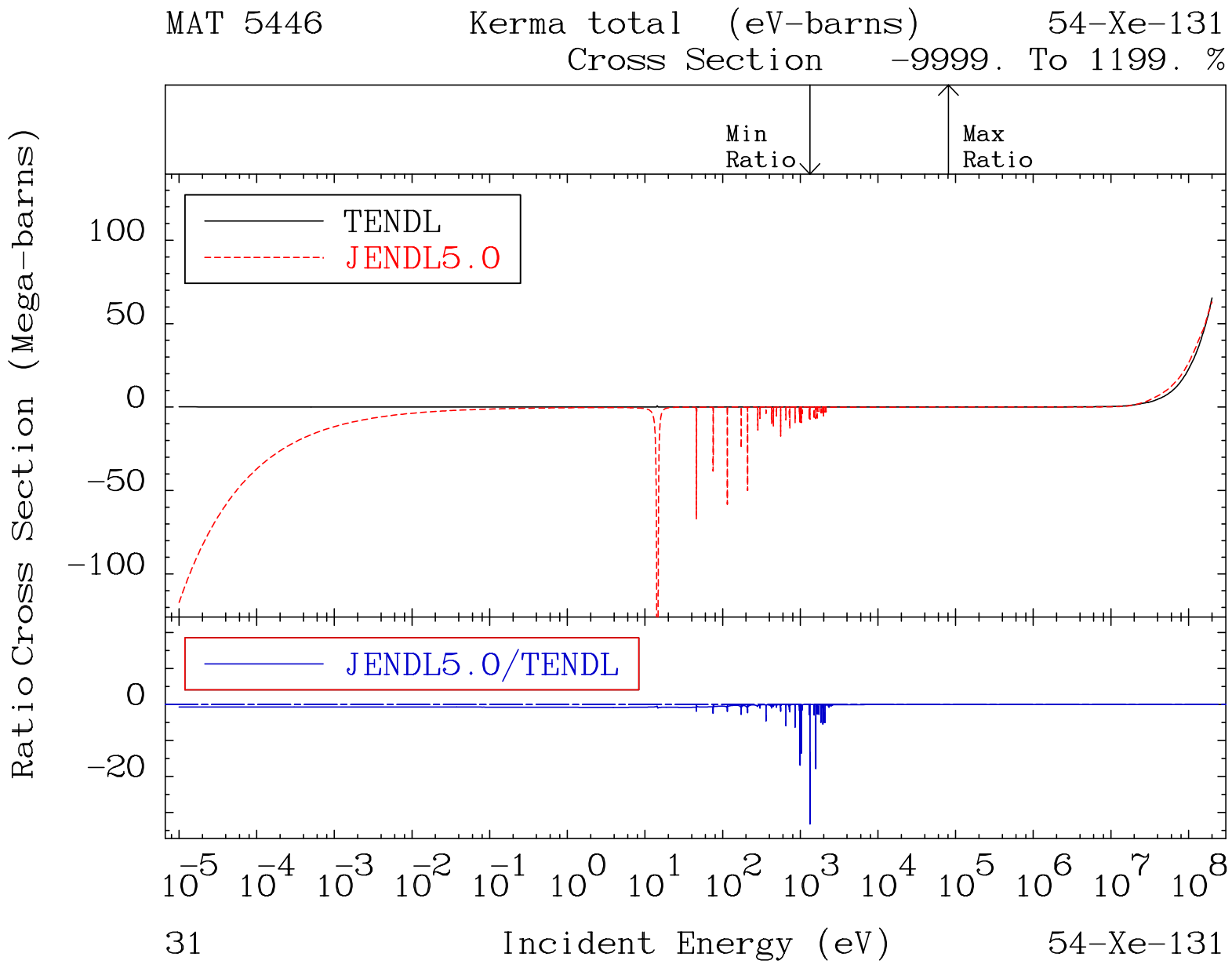

MAT 5446
Hydrogen Production
54-Xe-131
Cross Section -100.0 To 509.2 %
Min Ratio
Max Ratio
TENDL Threshold 189.95 keV
JENDL5.0 Threshold 250.00 keV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.2
1.0
0.8
0.6
0.4
0.2
0.0
8
4
0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
26
Incident Energy (eV)
54-Xe-131

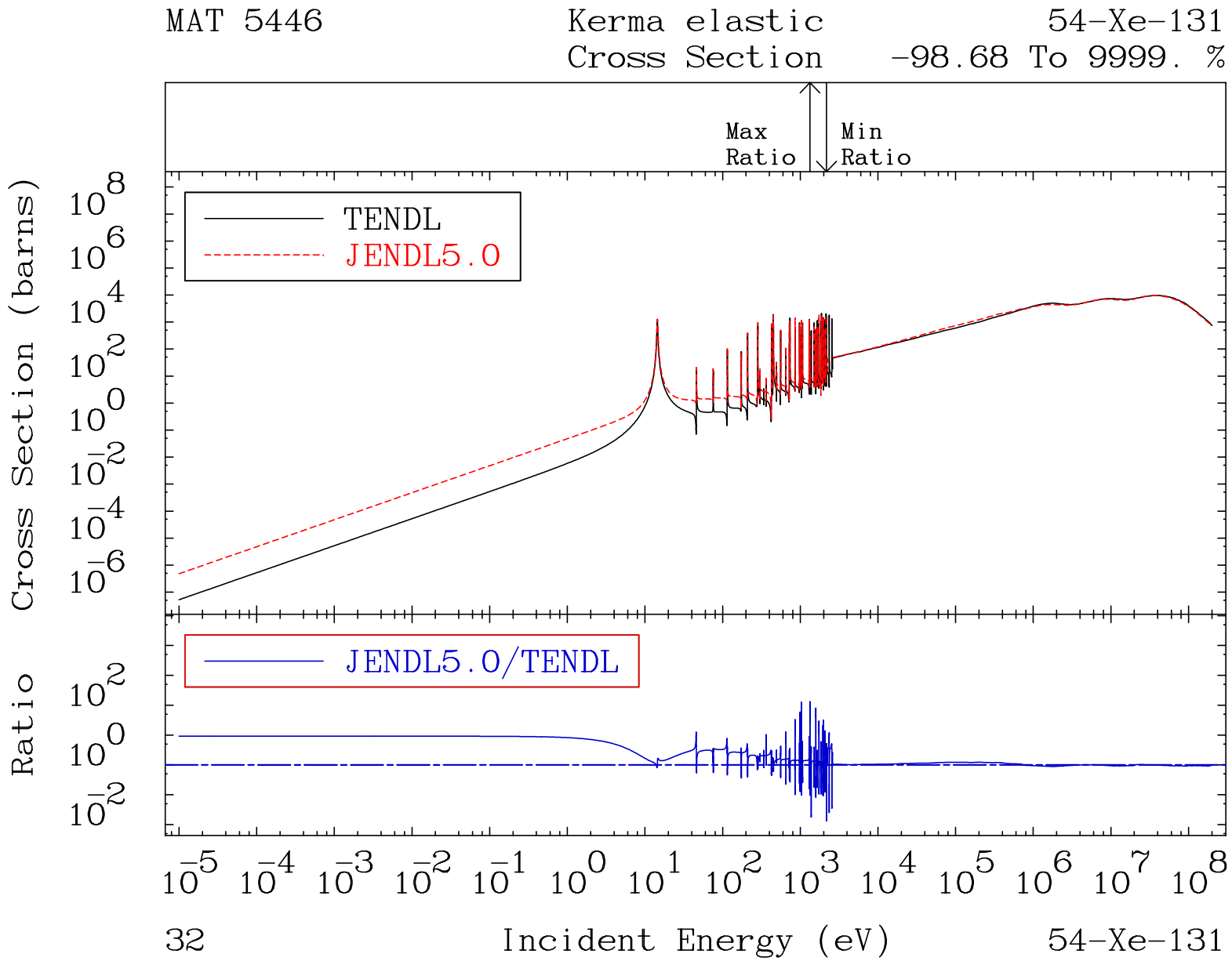

MAT 5446
Deuterium Production
54-Xe-131
Cross Section -100.0 To 9999. %
Max
Ratio
TENDL Threshold 6.5922 MeV
JENDL5.0 Threshold 6.5977 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
8
4
0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
27
Incident Energy (eV)
54-Xe-131

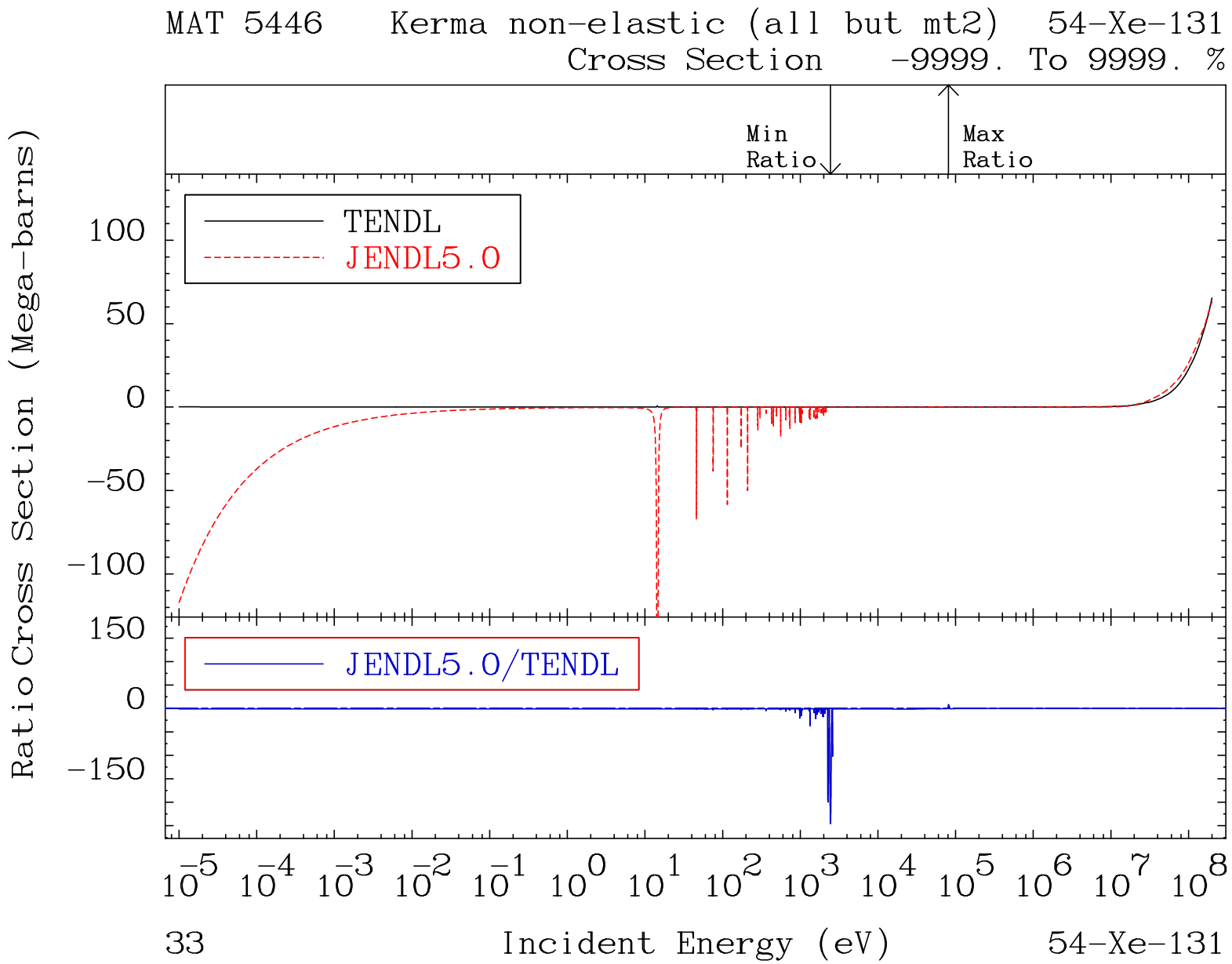

MAT 5446
Tritium Production
54-Xe-131
Cross Section
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 6.8372 MeV
JENDL5.0 Threshold 6.8279 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
10^9
10^0
10^-9
10^-18
7 8
10^7
2 3 4 5 6 7 8
10^8
2
28
Incident Energy (eV)
54-Xe-131

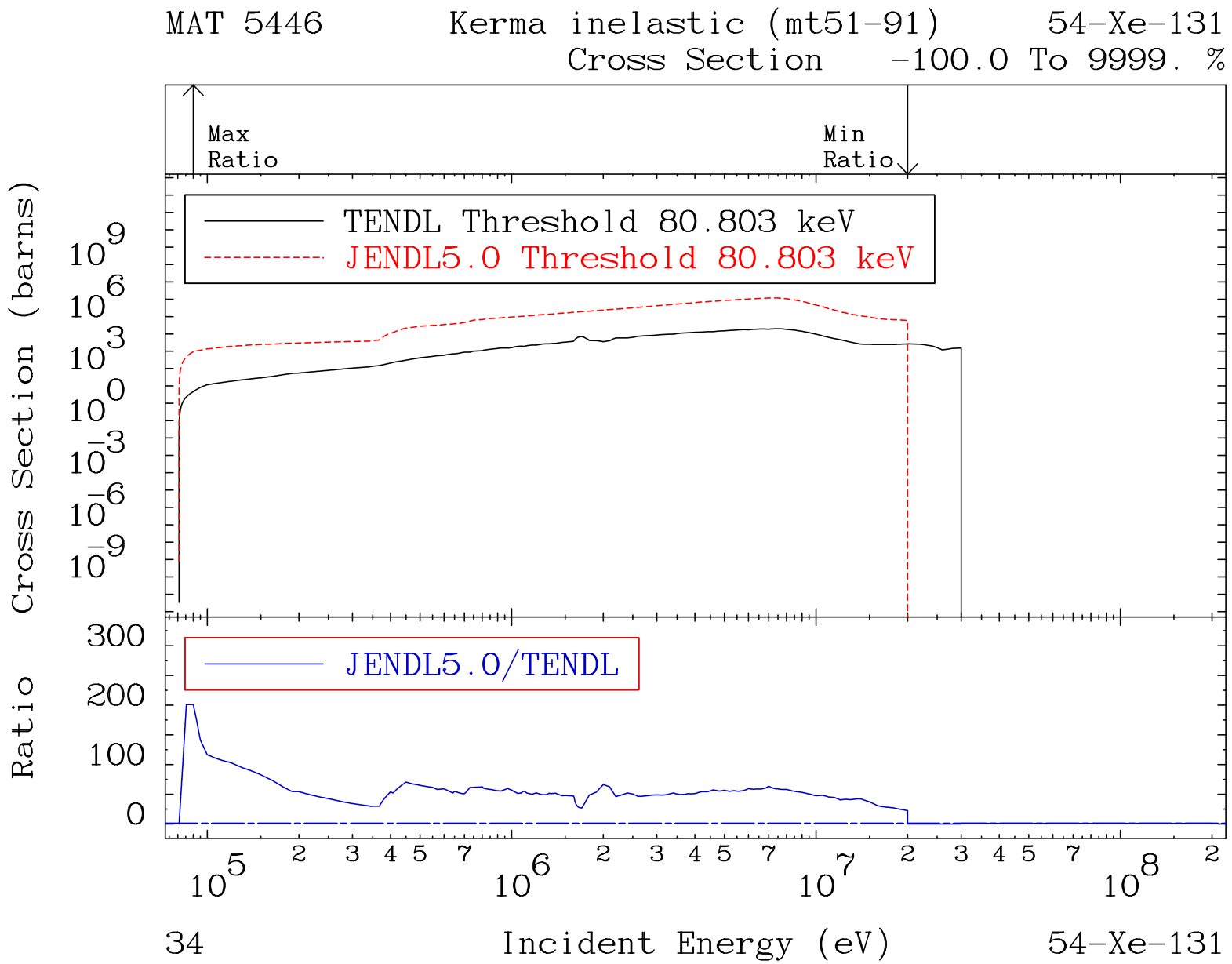

MAT 5446
He-3 Production
54-Xe-131
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 8.3323 MeV
JENDL5.0 Threshold 8.5000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
8
4
0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
29
Incident Energy (eV)
54-Xe-131

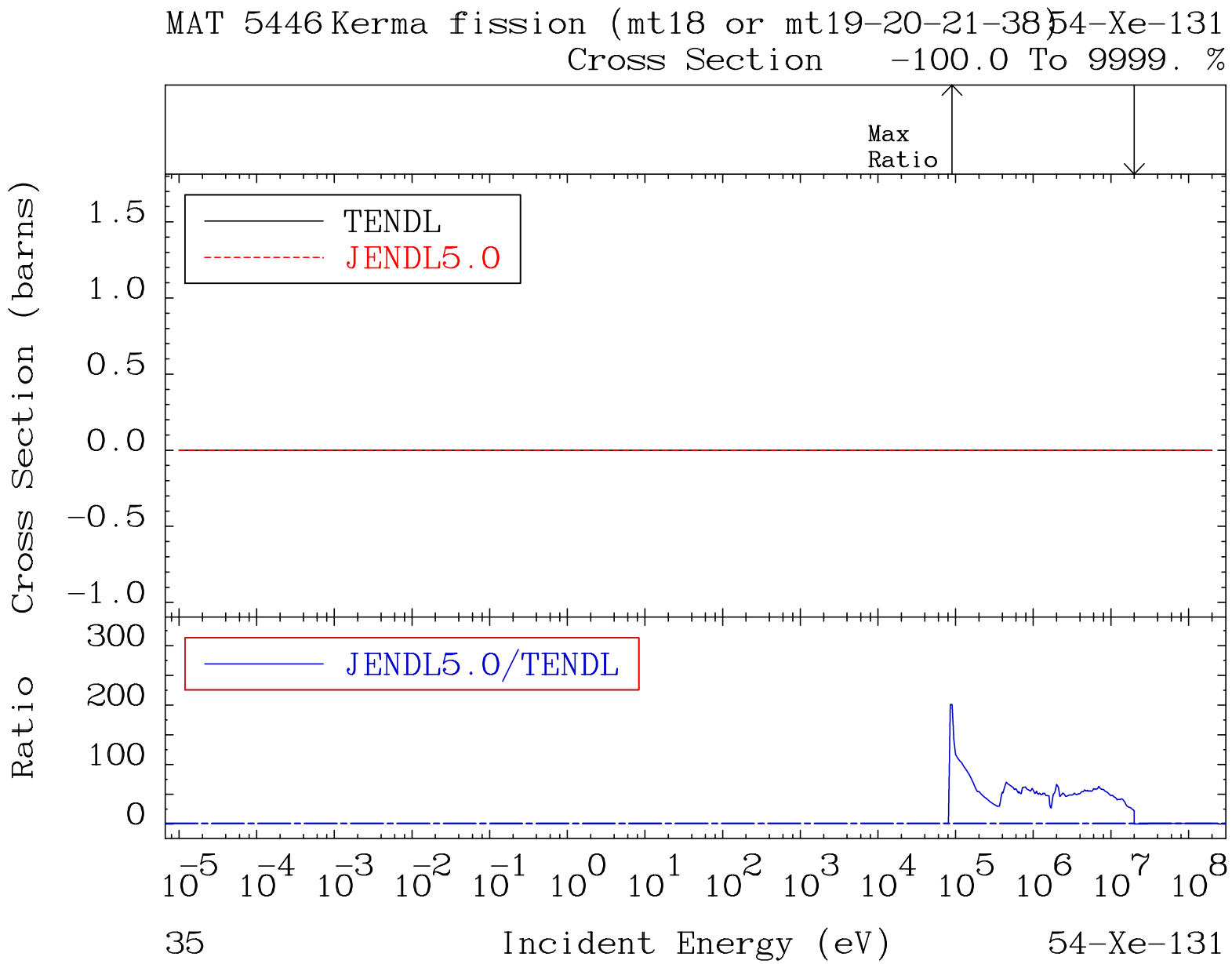

MAT 5446
He-4 Production
Cross Section
54-Xe-131
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0 Threshold 100.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
300
200
100
0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
Incident Energy (eV)
30
54-Xe-131

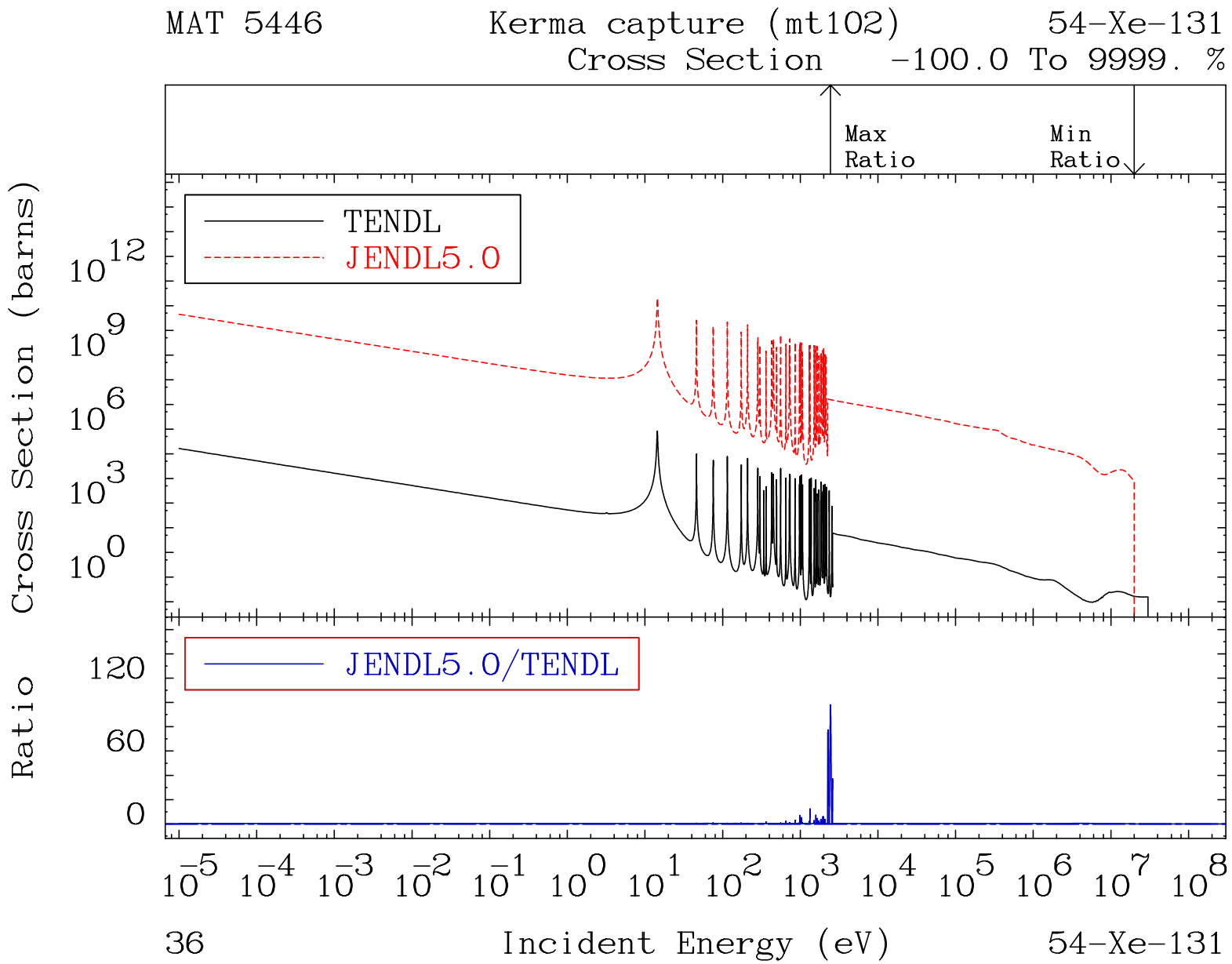

MAT 5446
Kerma total (eV-barns)
54-Xe-131
Cross Section -9999. To 1199. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Ratio Cross Section (Mega-barns)
100
50
0
-50
-100
0
-20
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
31
Incident Energy (eV)
54-Xe-131

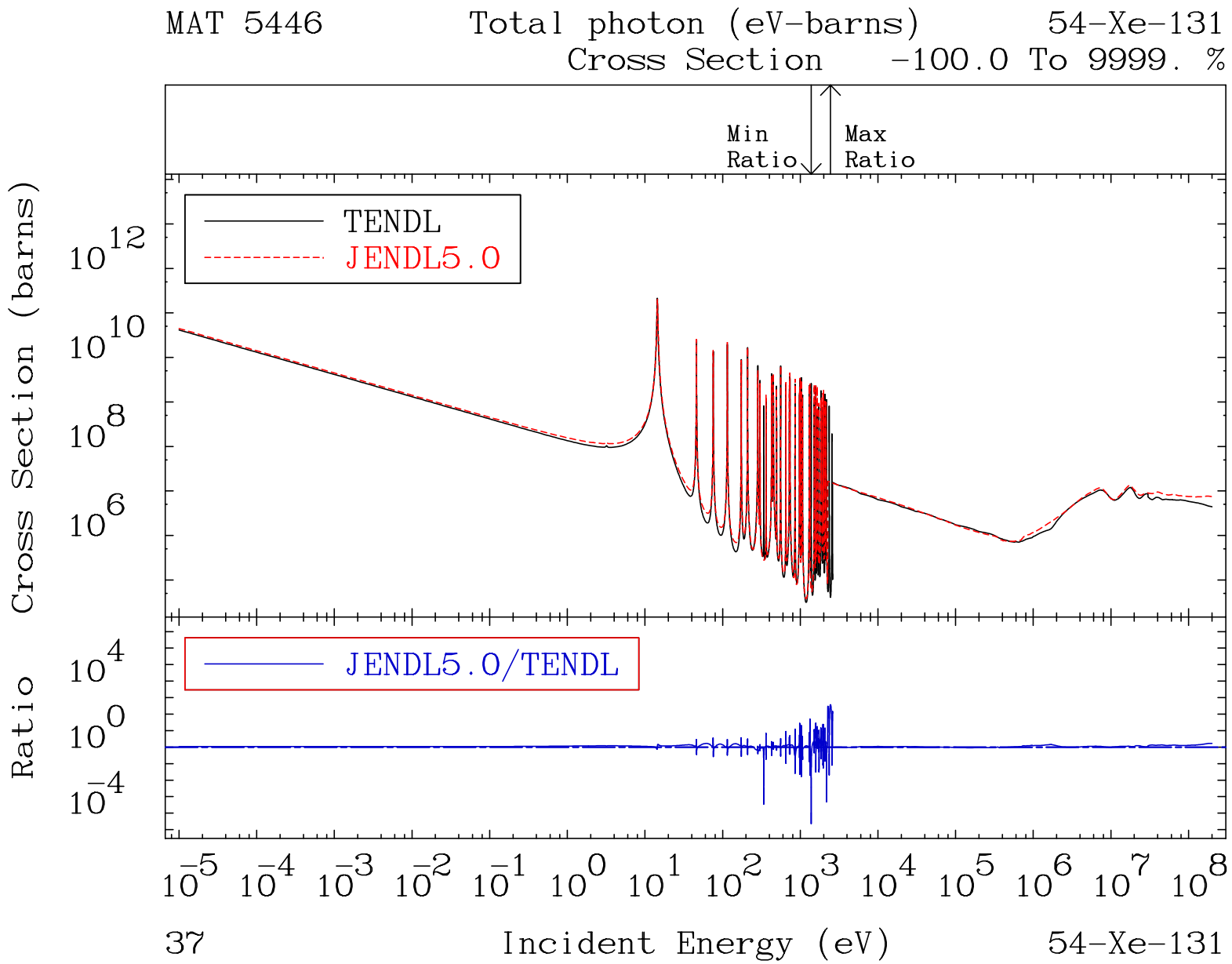

MAT 5446
Kerma elastic
54-Xe-131
Cross Section
-98.68 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
32
54-Xe-131

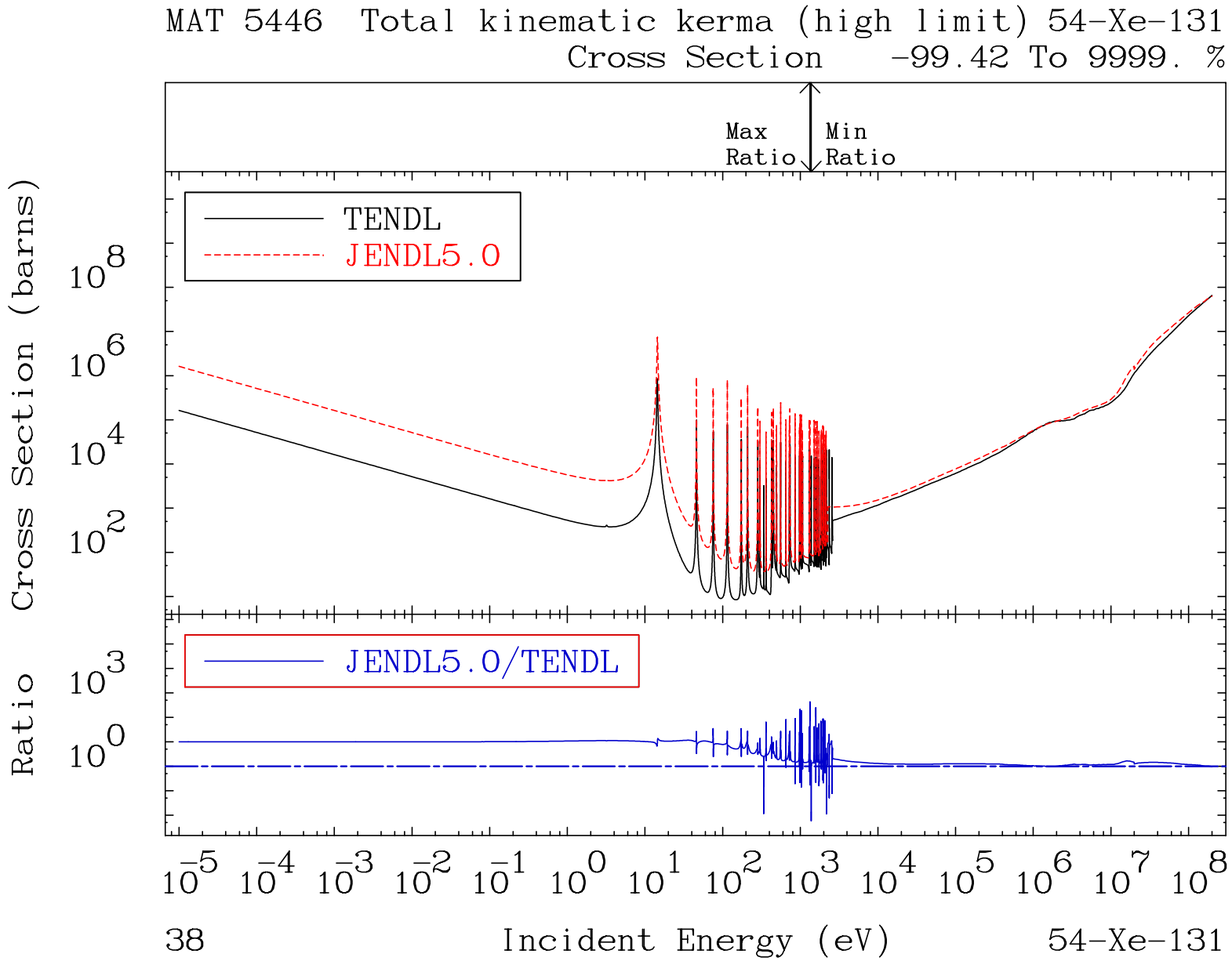

MAT 5446 Kerma non-elastic (all but mt2) 54-Xe-131
Cross Section -9999. To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Ratio Cross Section (Mega-barns)
100
50
0
-50
-100
150
0
-150
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
33
Incident Energy (eV)
54-Xe-131

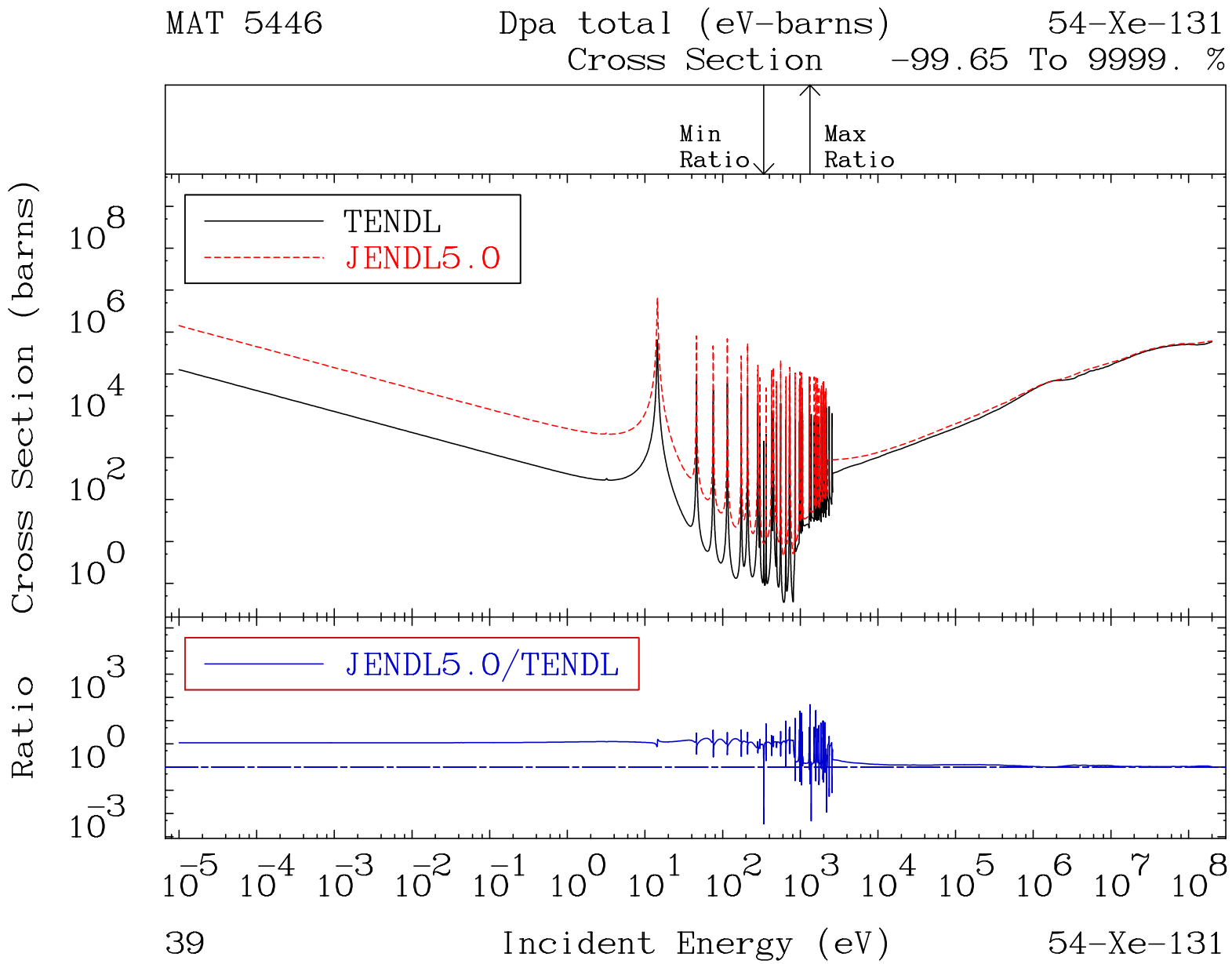

MAT 5446
Kerma inelastic (mt51-91)
54-Xe-131
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 80.803 keV
JENDL5.0 Threshold 80.803 keV
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
34
54-Xe-131

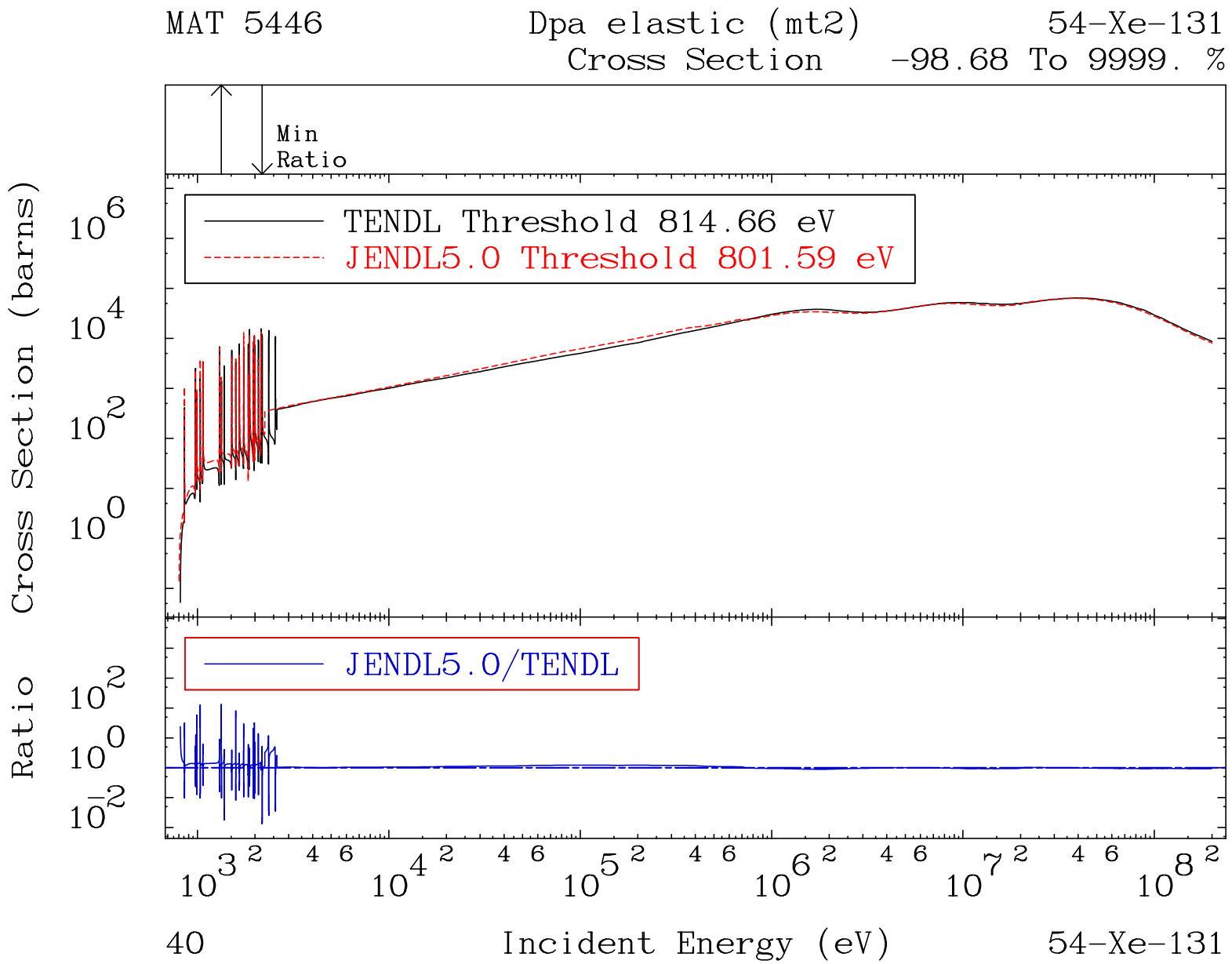

MAT 5446 Kerma fission (mt18 or mt19-20-21-38) 54-Xe-131
Cross Section -100.0 To 9999. %
Max
Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
300
200
100
0
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
35
Incident Energy (eV)
54-Xe-131

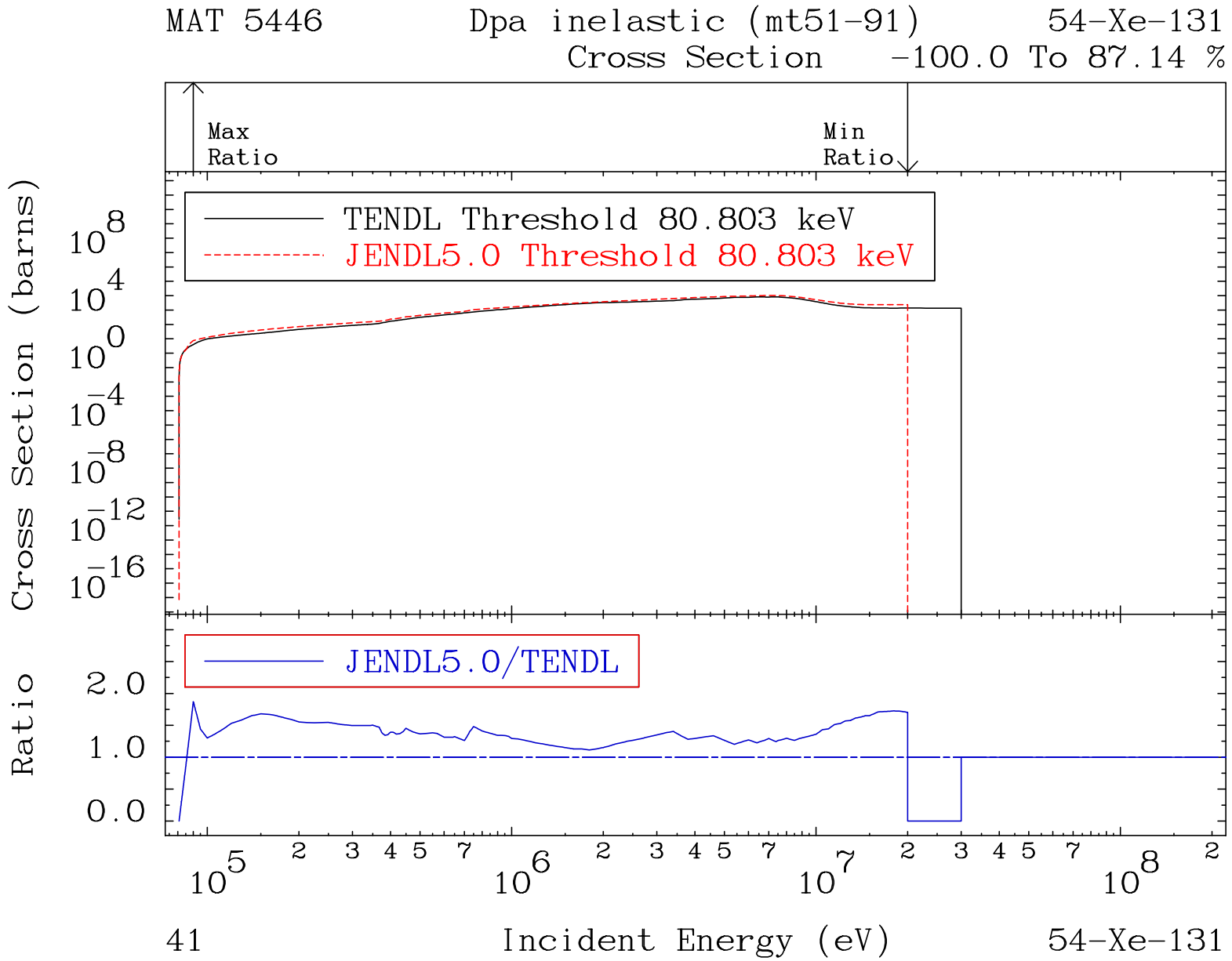

MAT 5446
Kerma capture (mt102)
54-Xe-131
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
10^12
10^9
10^6
10^3
10^0
JENDL5.0/TENDL
Ratio
120
60
0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
36
Incident Energy (eV)
54-Xe-131

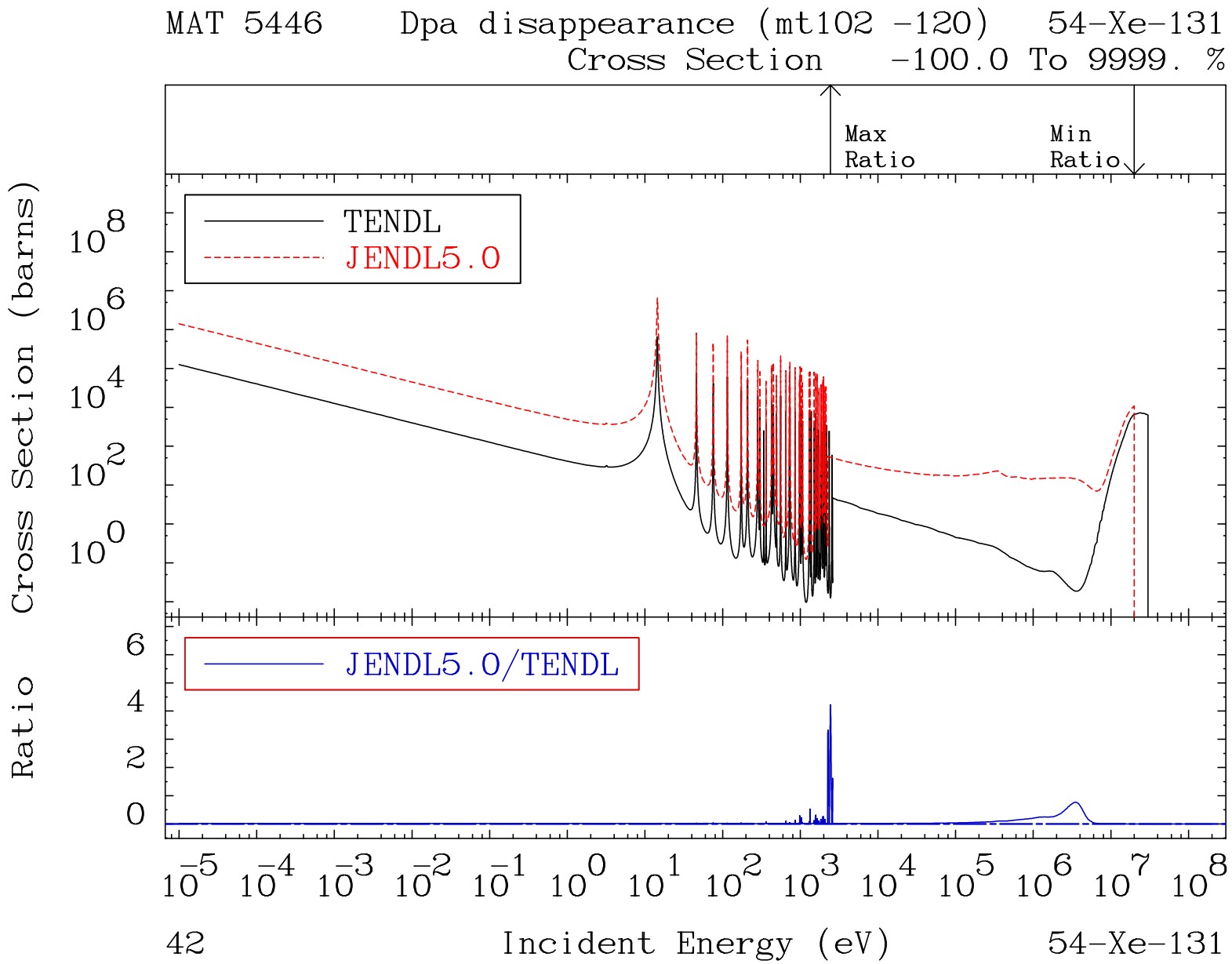

MAT 5446
Total photon (eV-barns)
54-Xe-131
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
37
54-Xe-131

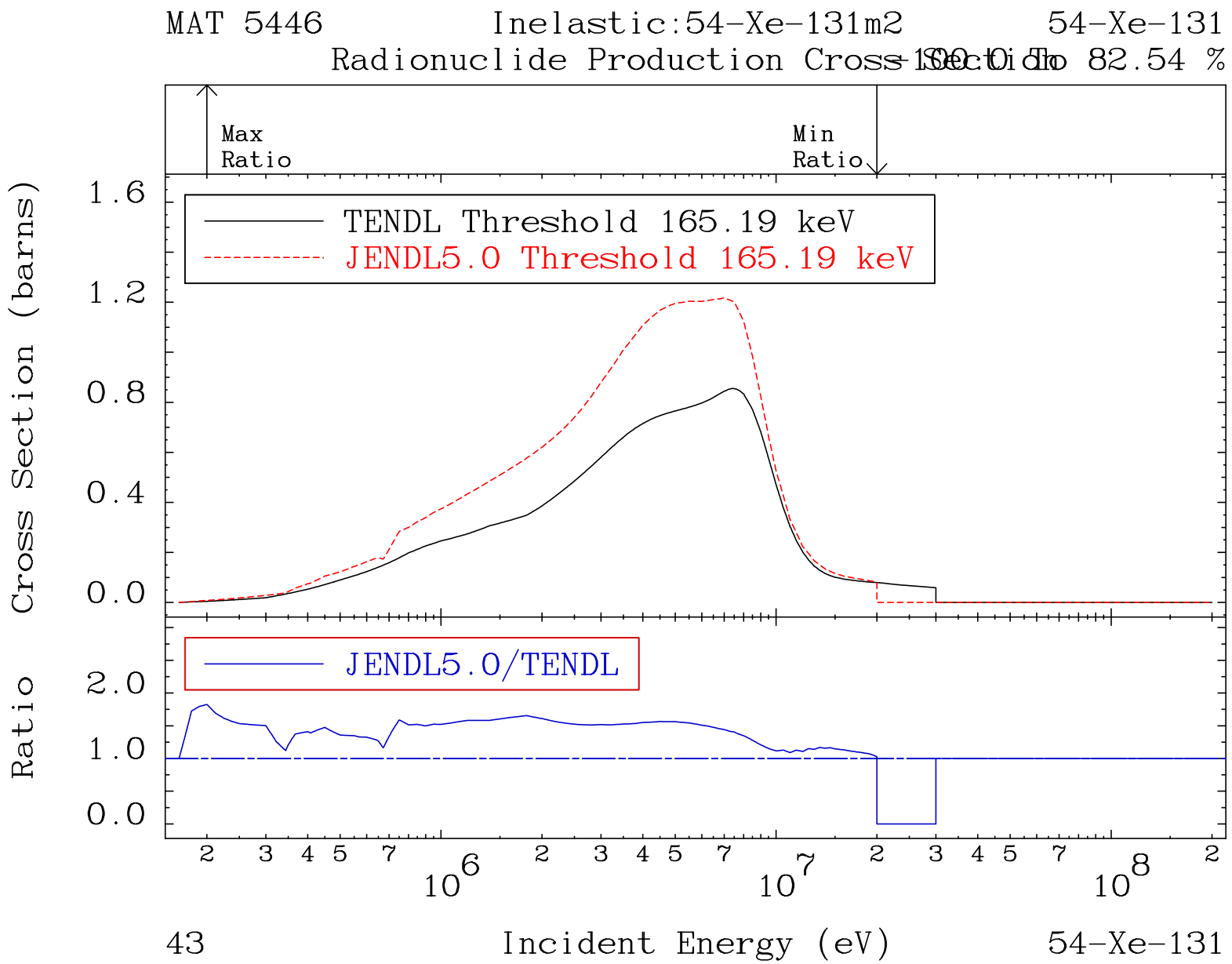

MAT 5446 Total kinematic kerma (high limit) 54-Xe-131
Cross Section -99.42 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
38
54-Xe-131

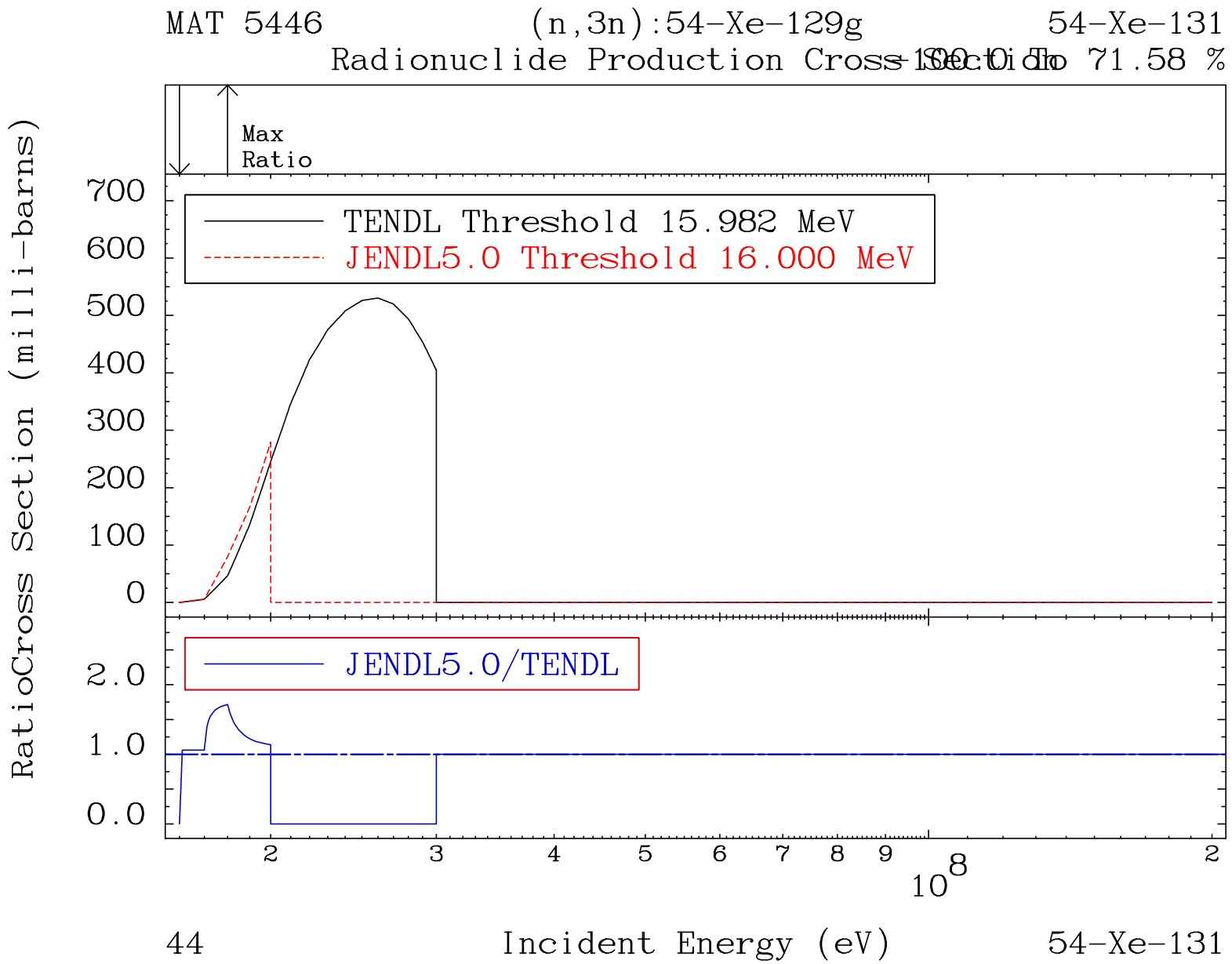

MAT 5446
Dpa total (eV-barns)
54-Xe-131
Cross Section -99.65 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
39
54-Xe-131

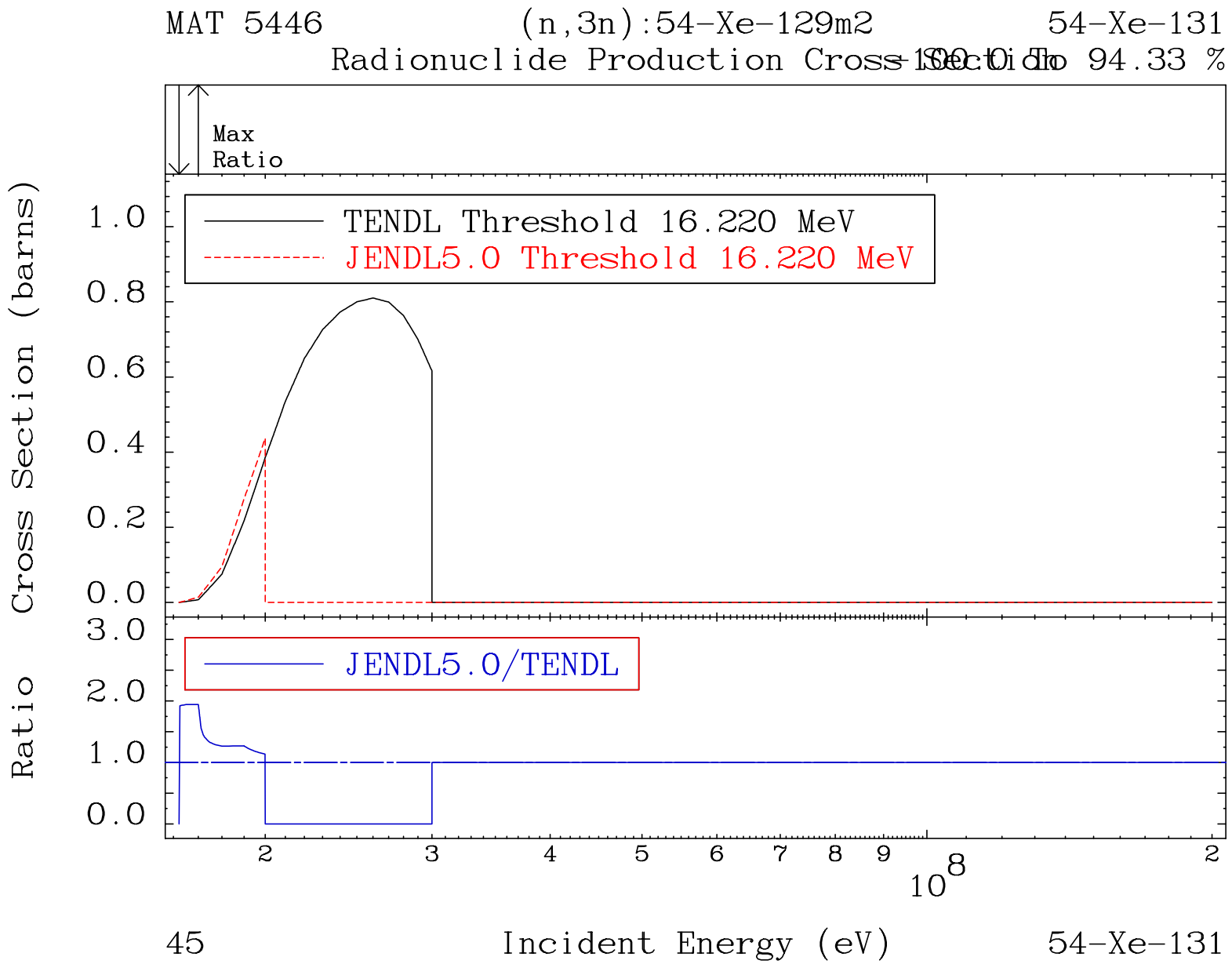

MAT 5446
Dpa elastic (mt2)
Cross Section
54-Xe-131
-98.68 To 9999. %
Min
Ratio
TENDL Threshold 814.66 eV
JENDL5.0 Threshold 801.59 eV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
40
54-Xe-131

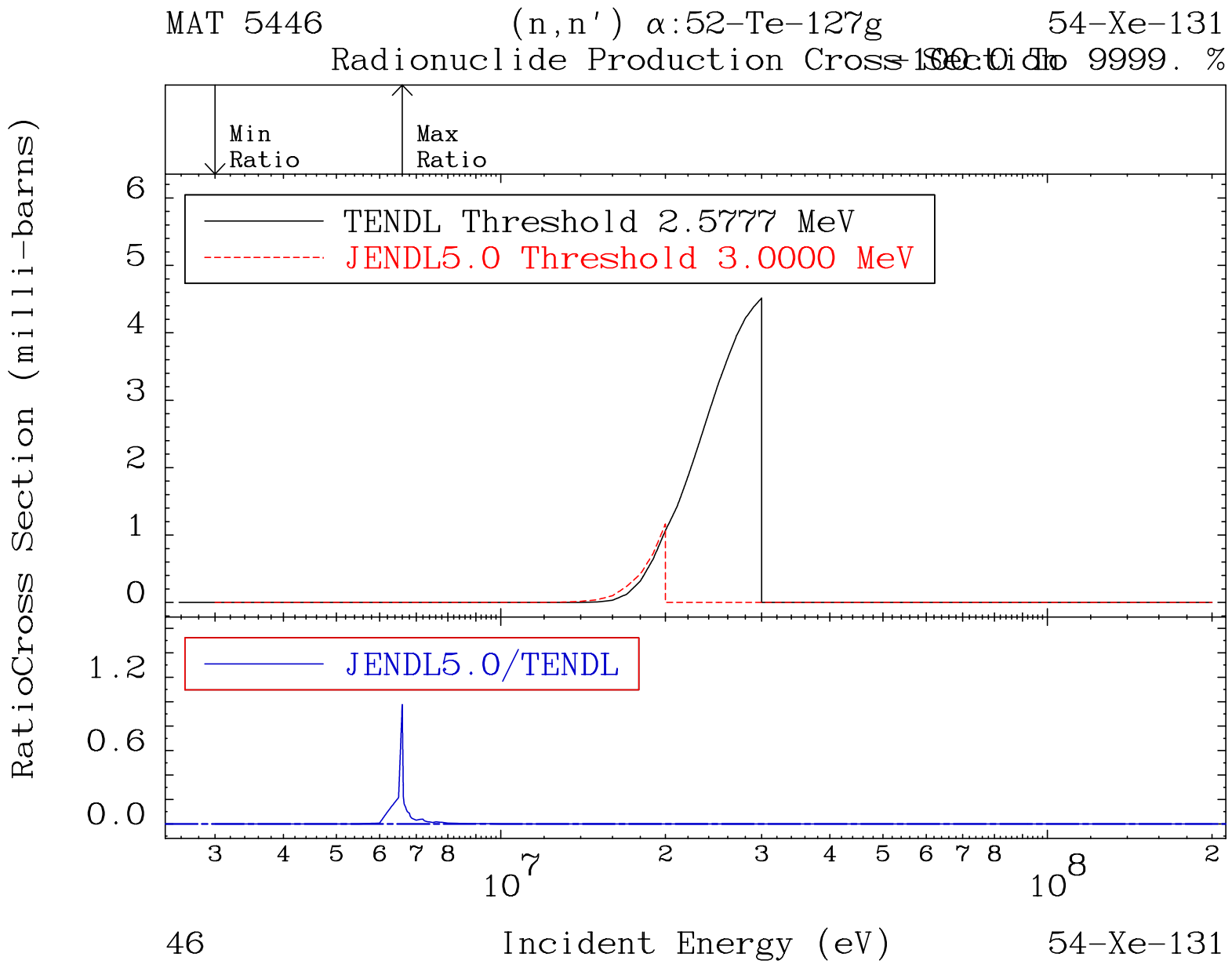

MAT 5446
Dpa inelastic (mt51-91)
54-Xe-131
Cross Section -100.0 To 87.14 %
Max Ratio
Min Ratio
TENDL Threshold 80.803 keV
JENDL5.0 Threshold 80.803 keV
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
41
54-Xe-131

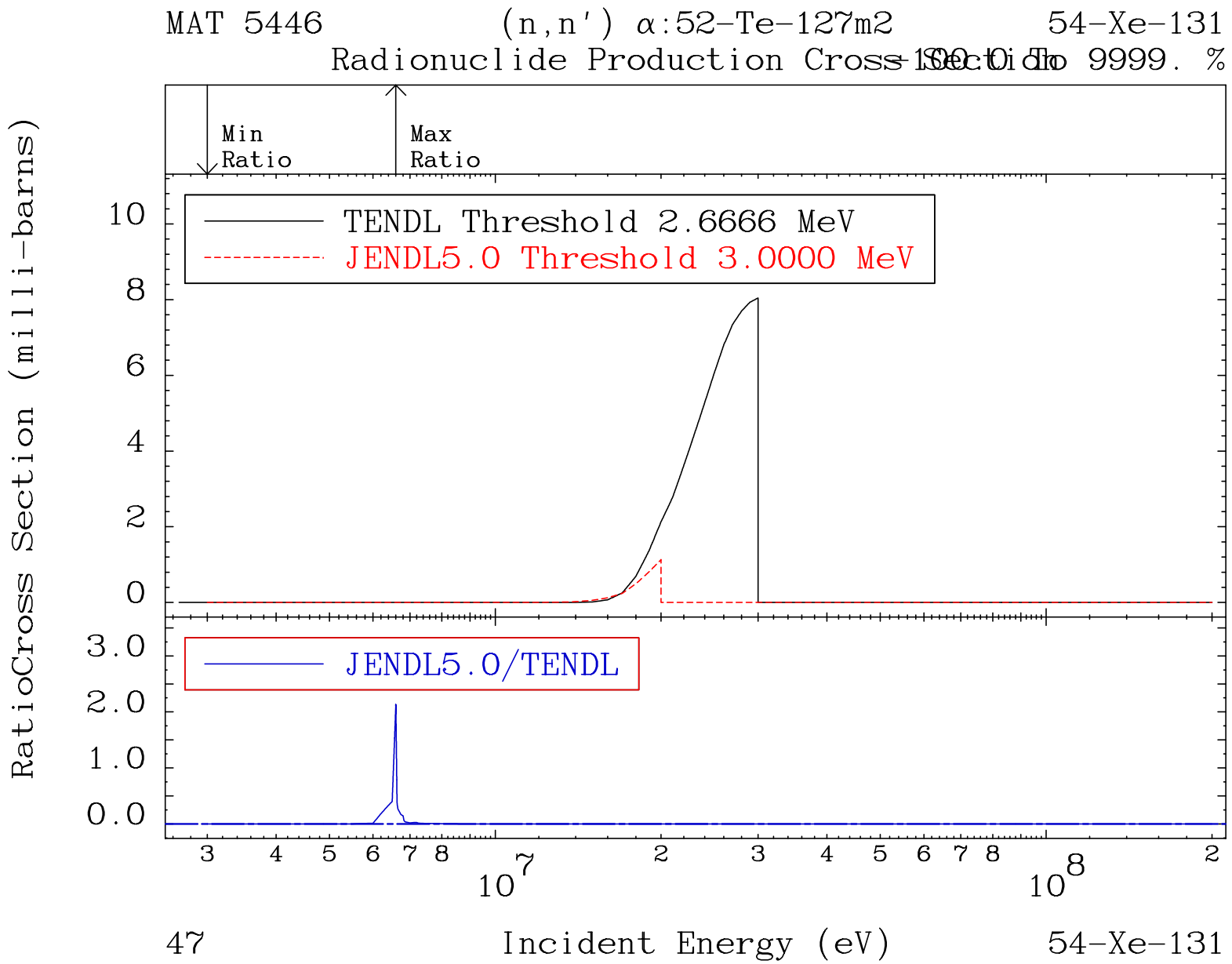

MAT 5446 Dpa disappearance (mt102 -120) 54-Xe-131
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
42
54-Xe-131

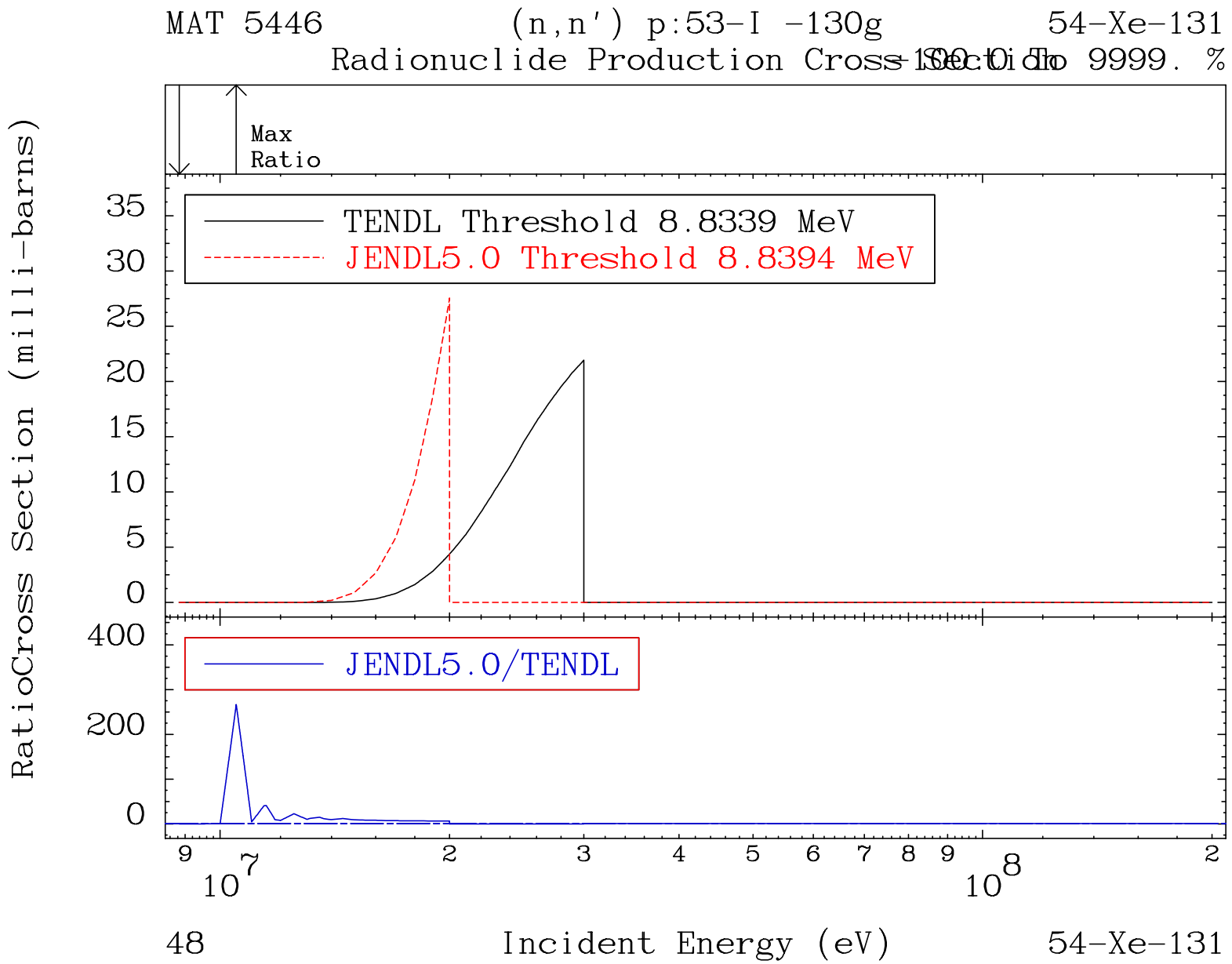

MAT 5446
Inelastic:54-Xe-131m2
54-Xe-131
Radionuclide Production Cross Section To 82.54 %
Max Ratio
Min Ratio
TENDL Threshold 165.19 keV
JENDL5.0 Threshold 165.19 keV
Cross Section (barns)
1.6
1.2
0.8
0.4
0.0
JENDL5.0/TENDL
Ratio
2.0
1.0
0.0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
43
Incident Energy (eV)
54-Xe-131

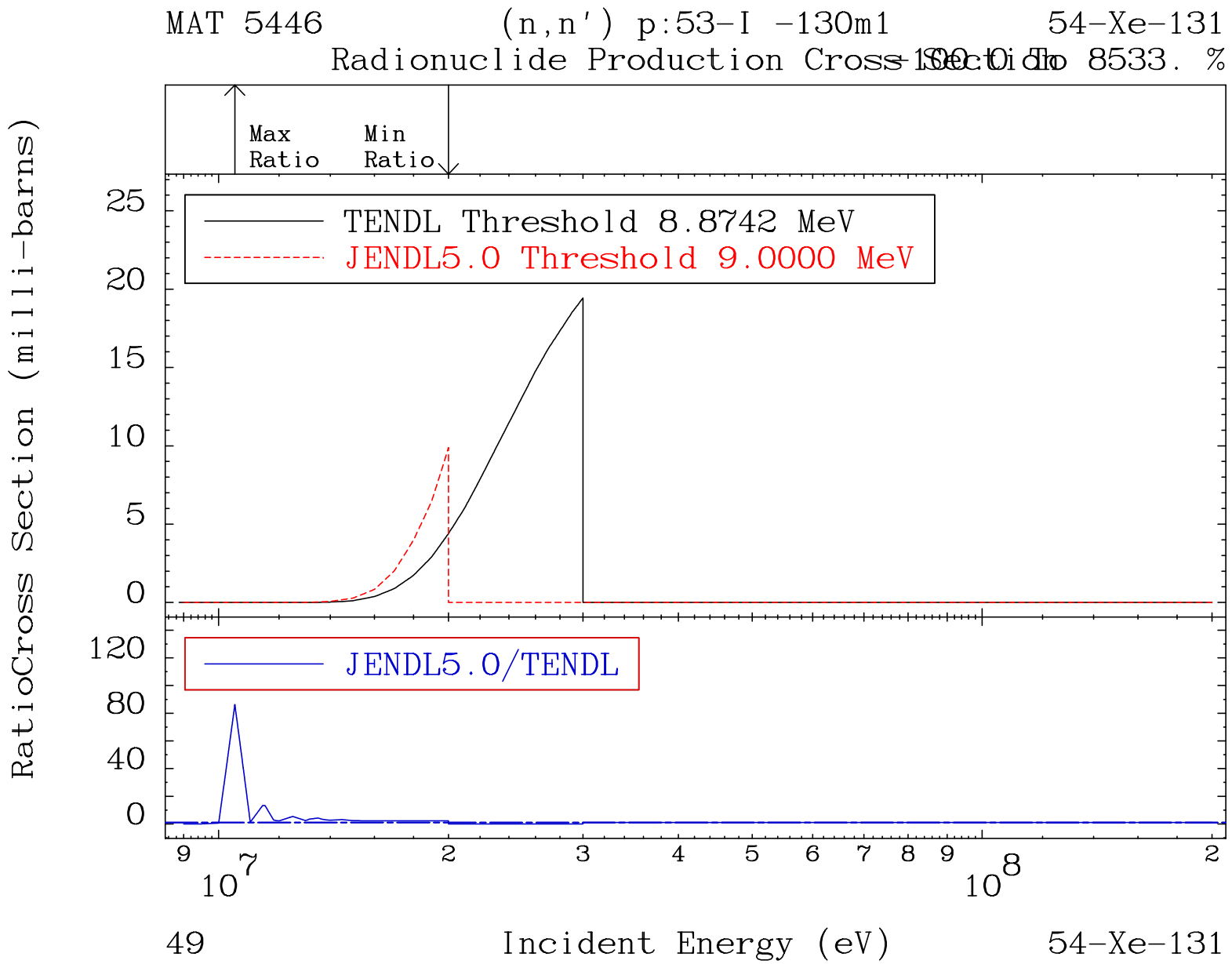

MAT 5446
(n,3n):54-Xe-129g
54-Xe-131
Radionuclide Production Cross Section
Max
Ratio
TENDL Threshold 15.982 MeV
JENDL5.0 Threshold 16.000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
700
600
500
400
300
200
100
0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
10^8
2
44
Incident Energy (eV)
54-Xe-131

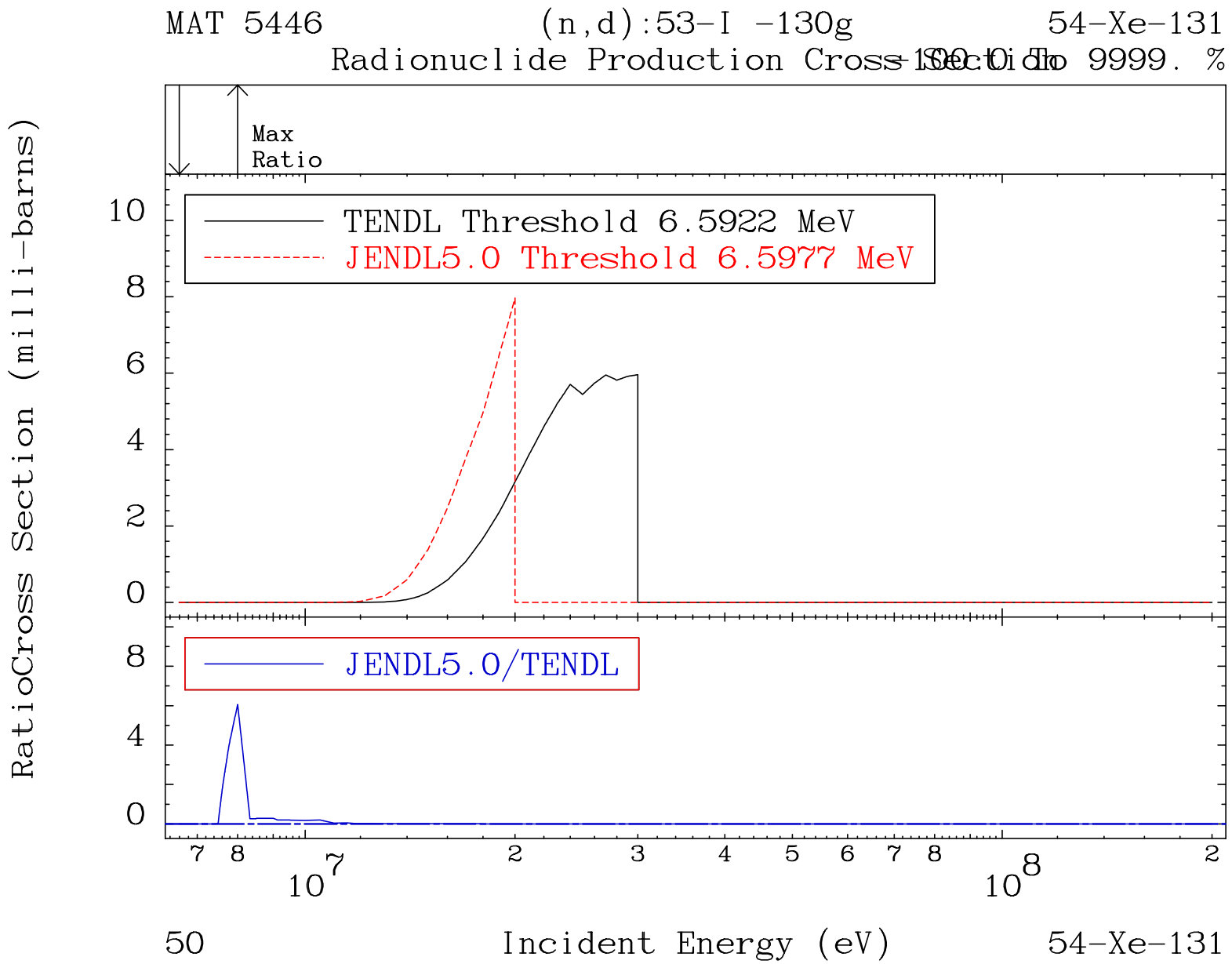

MAT 5446
(n,3n):54-Xe-129m2
54-Xe-131
Radionuclide Production Cross Section To 94.33 %
Max
Ratio
TENDL Threshold 16.220 MeV
JENDL5.0 Threshold 16.220 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.0
0.8
0.6
0.4
0.2
0.0
3.0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
2
10^8
45
Incident Energy (eV)
54-Xe-131

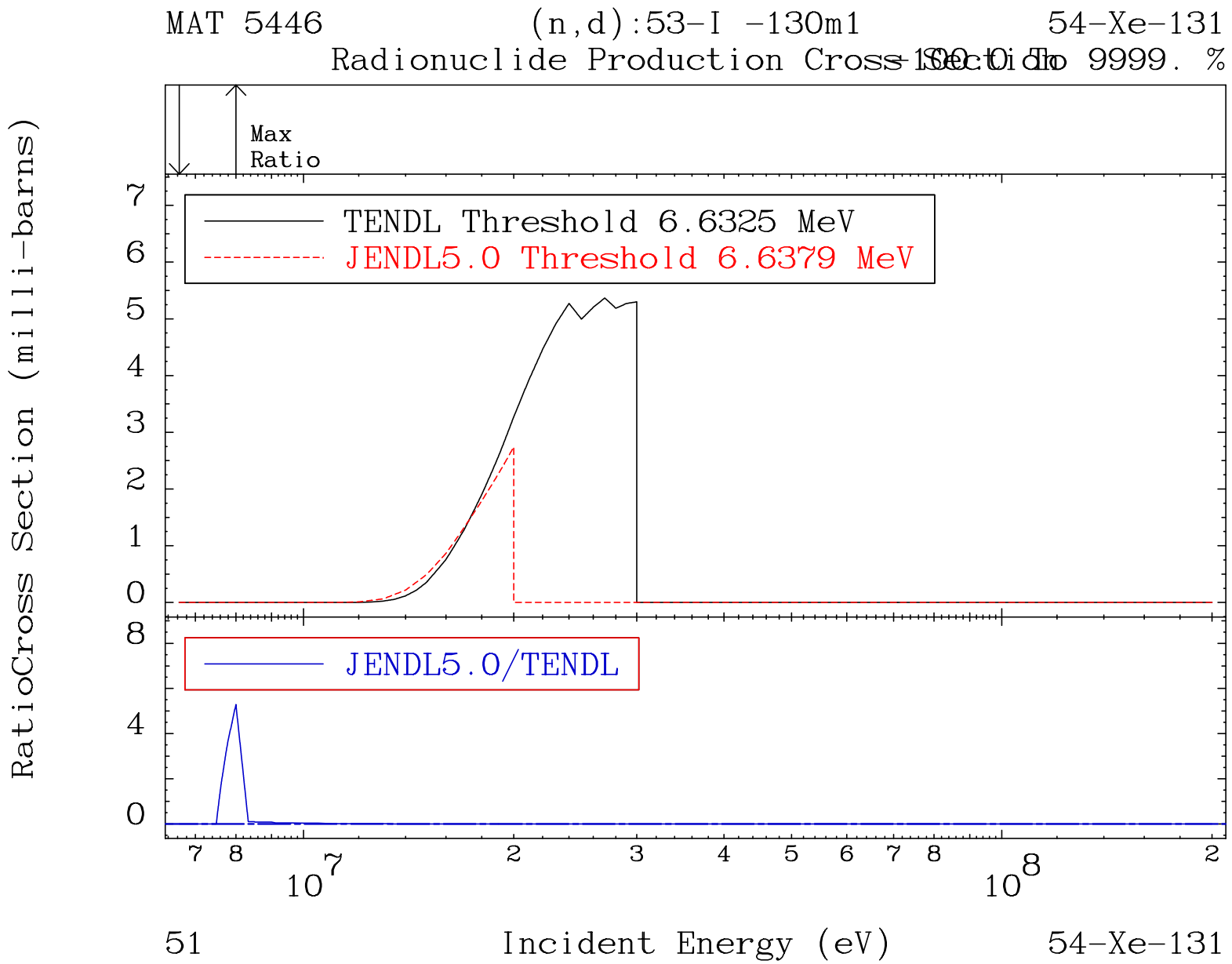

MAT 5446
(n,n') α:52-Te-127g
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 2.5777 MeV
JENDL5.0 Threshold 3.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
46
54-Xe-131

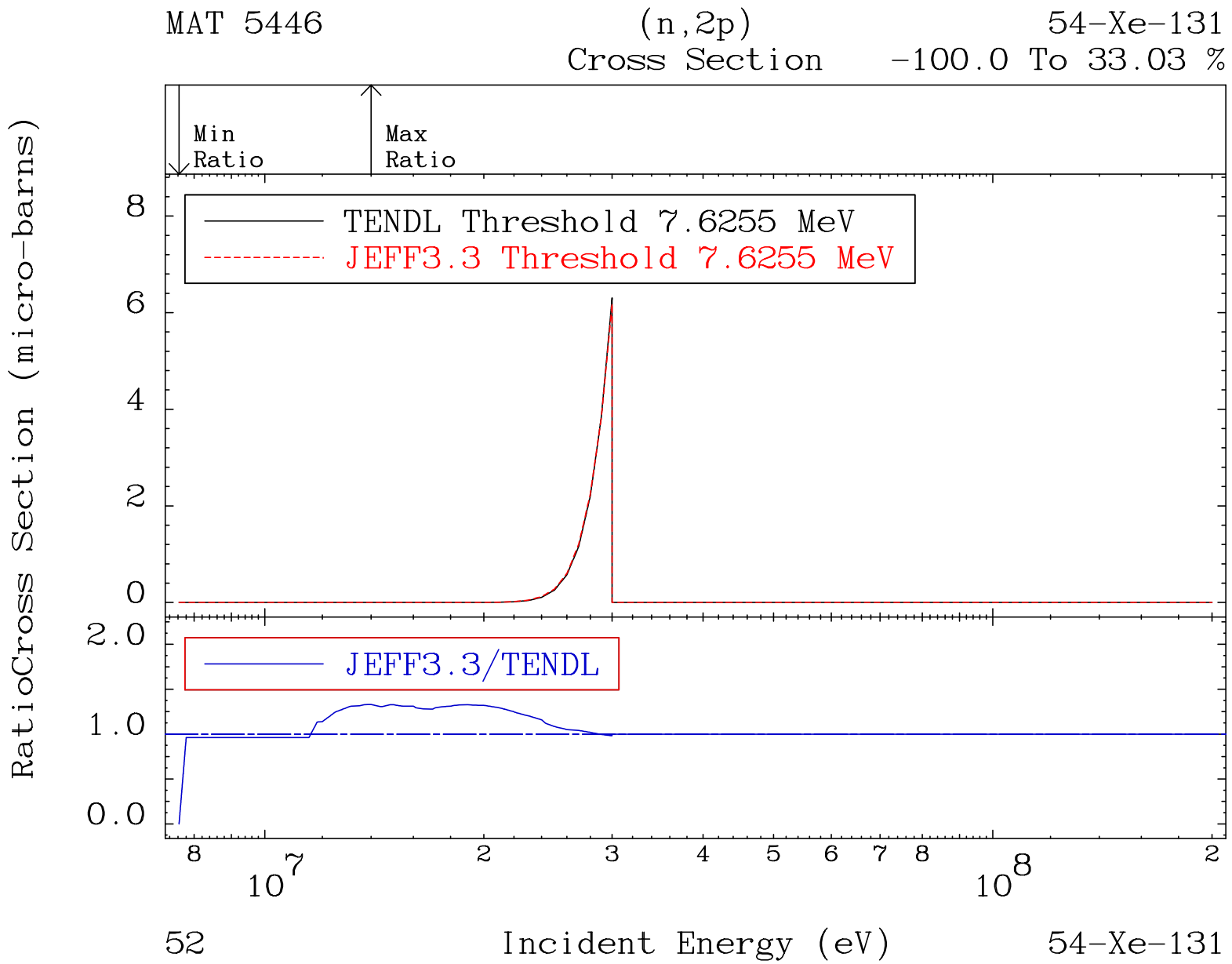

MAT 5446
(n,n') α:52-Te-127m2
54-Xe-131
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 2.6666 MeV
JENDL5.0 Threshold 3.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
47
54-Xe-131

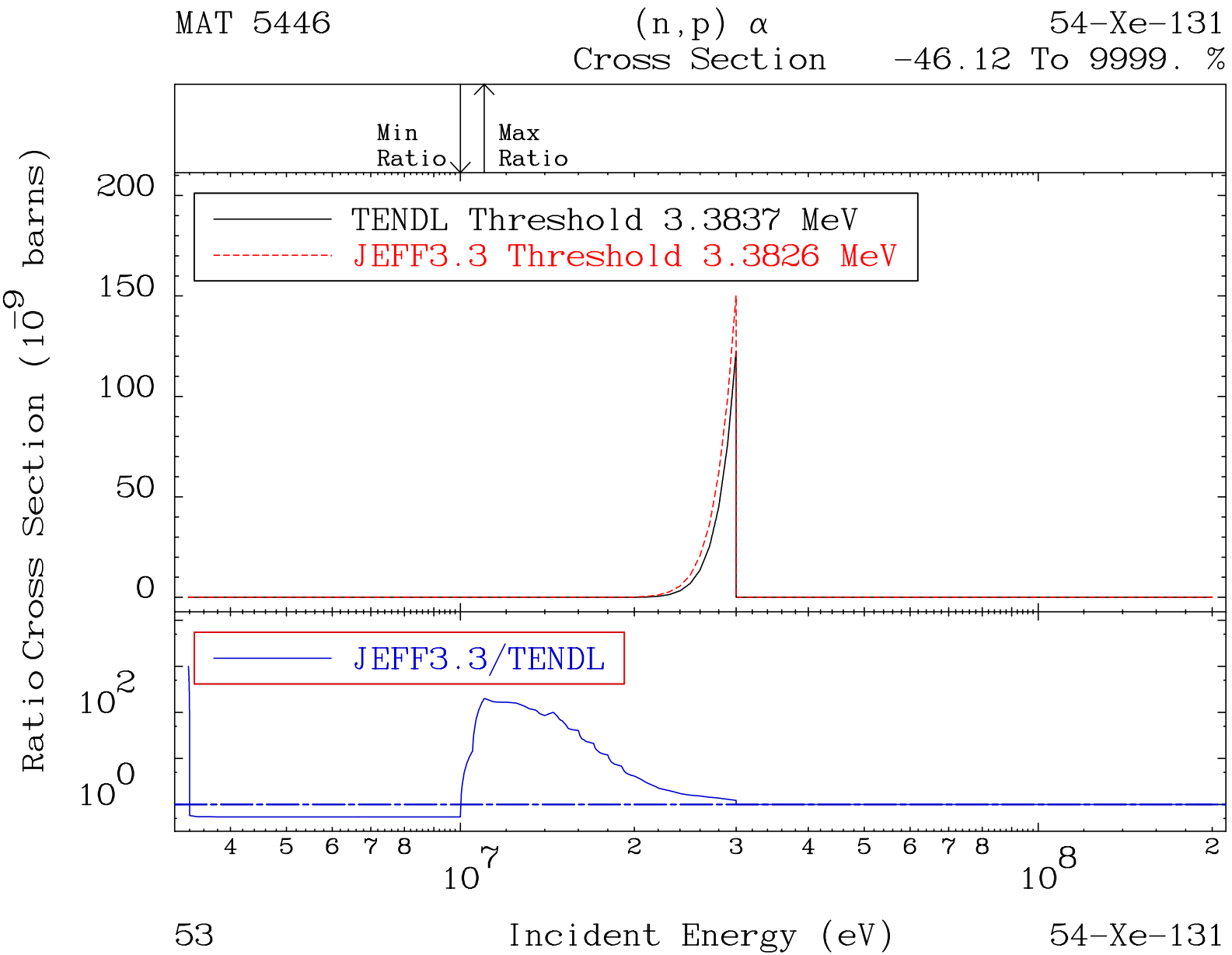

MAT 5446
(n,n') p:53-I -130g
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 8.8339 MeV
JENDL5.0 Threshold 8.8394 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
35
30
25
20
15
10
5
0
400
200
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
48
Incident Energy (eV)
54-Xe-131

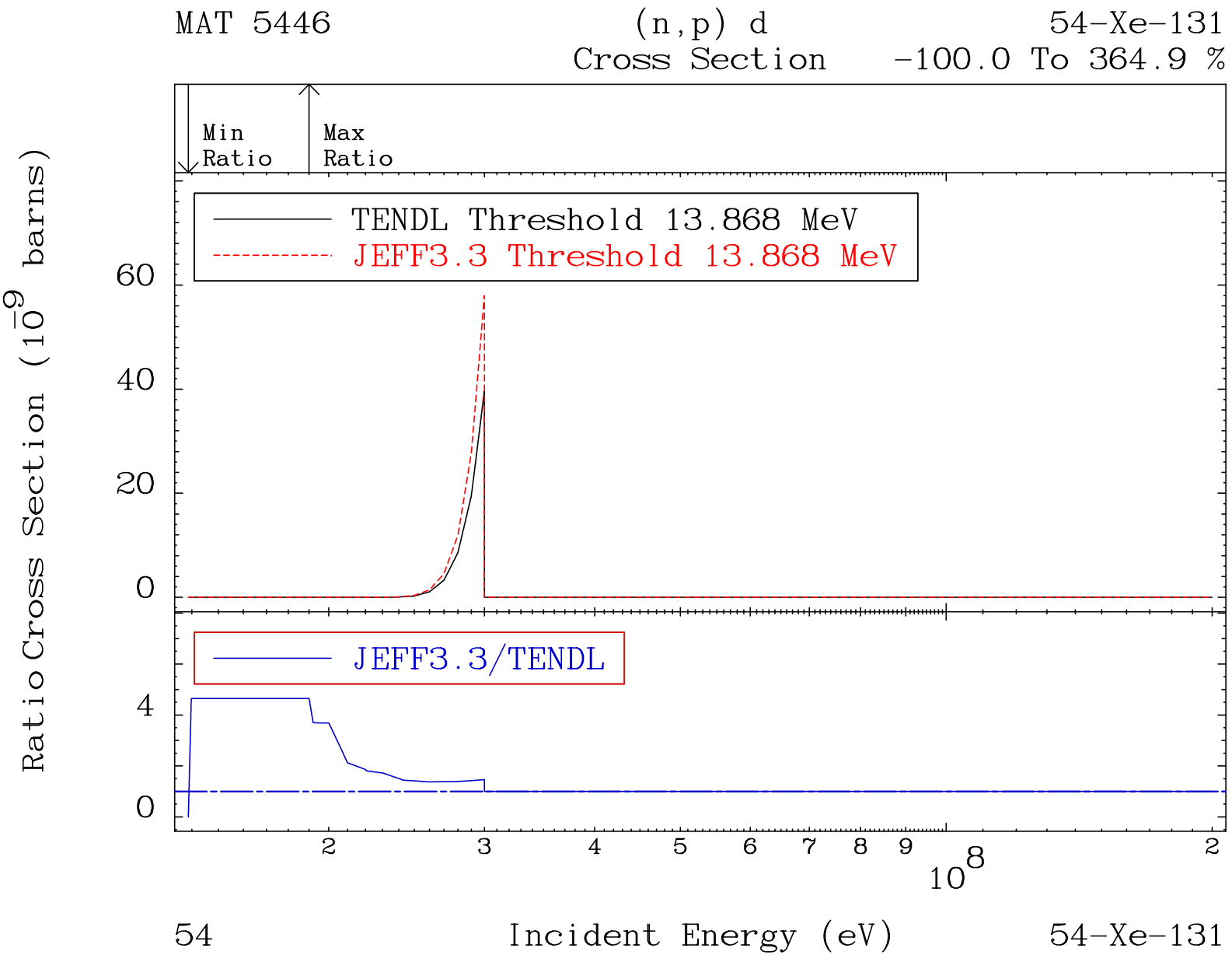

MAT 5446
(n,n') p:53-I -130m1
54-Xe-131
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 8.8742 MeV
JENDL5.0 Threshold 9.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
49
54-Xe-131

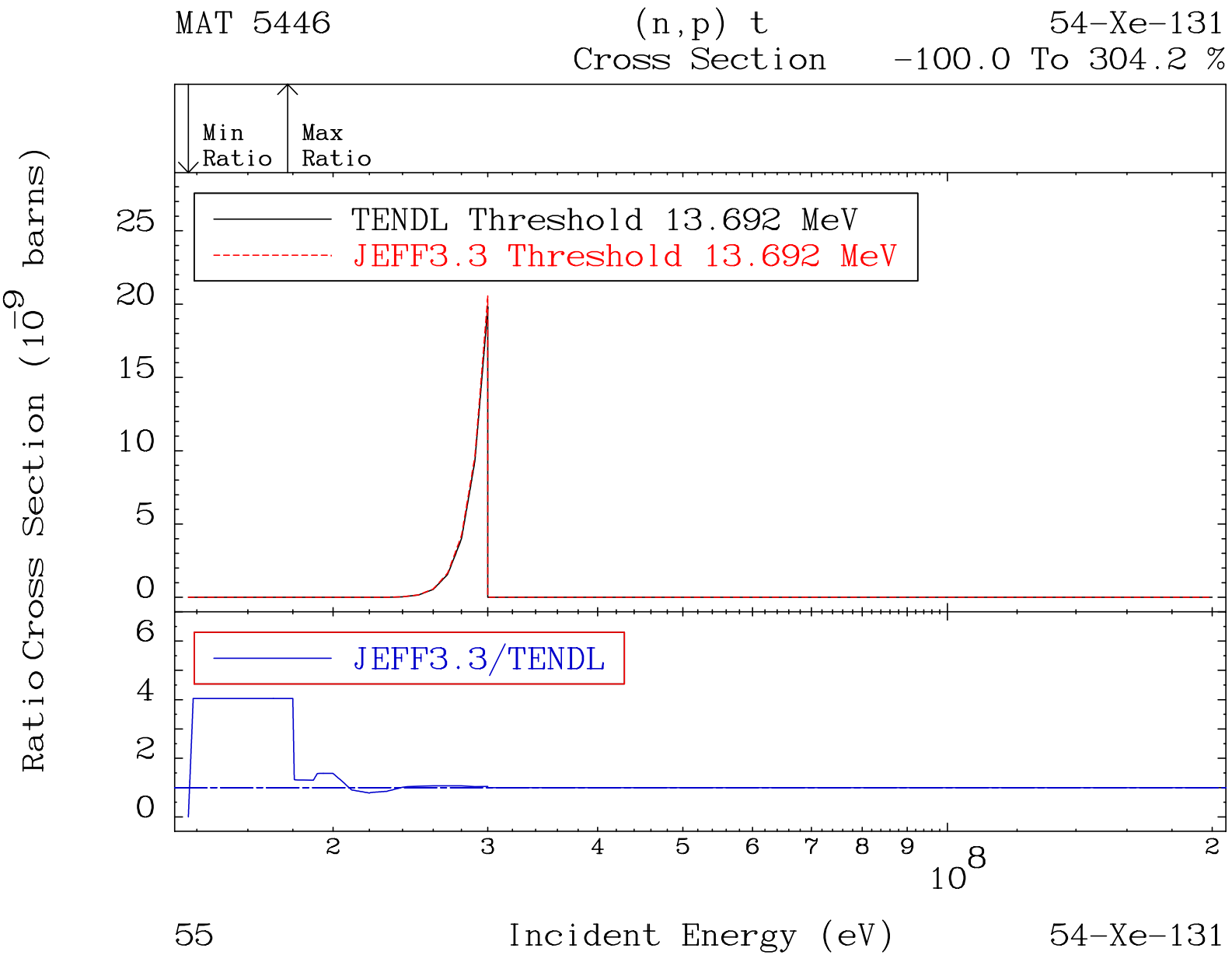

MAT 5446
(n,d):53-I -130g
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 6.5922 MeV
JENDL5.0 Threshold 6.5977 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
50
54-Xe-131

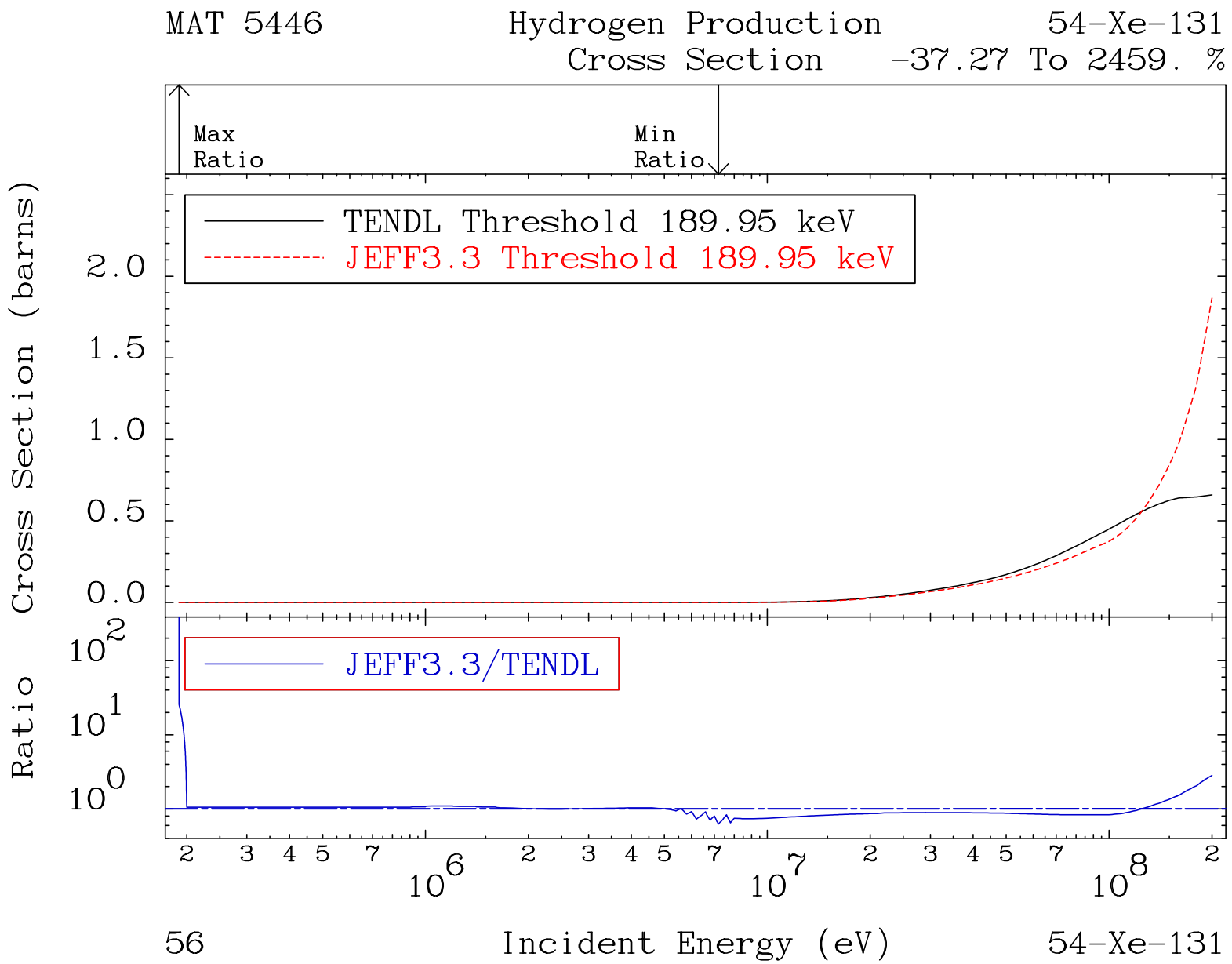

MAT 5446
(n,d):53-I -130m1
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 6.6325 MeV
JENDL5.0 Threshold 6.6379 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
51
54-Xe-131

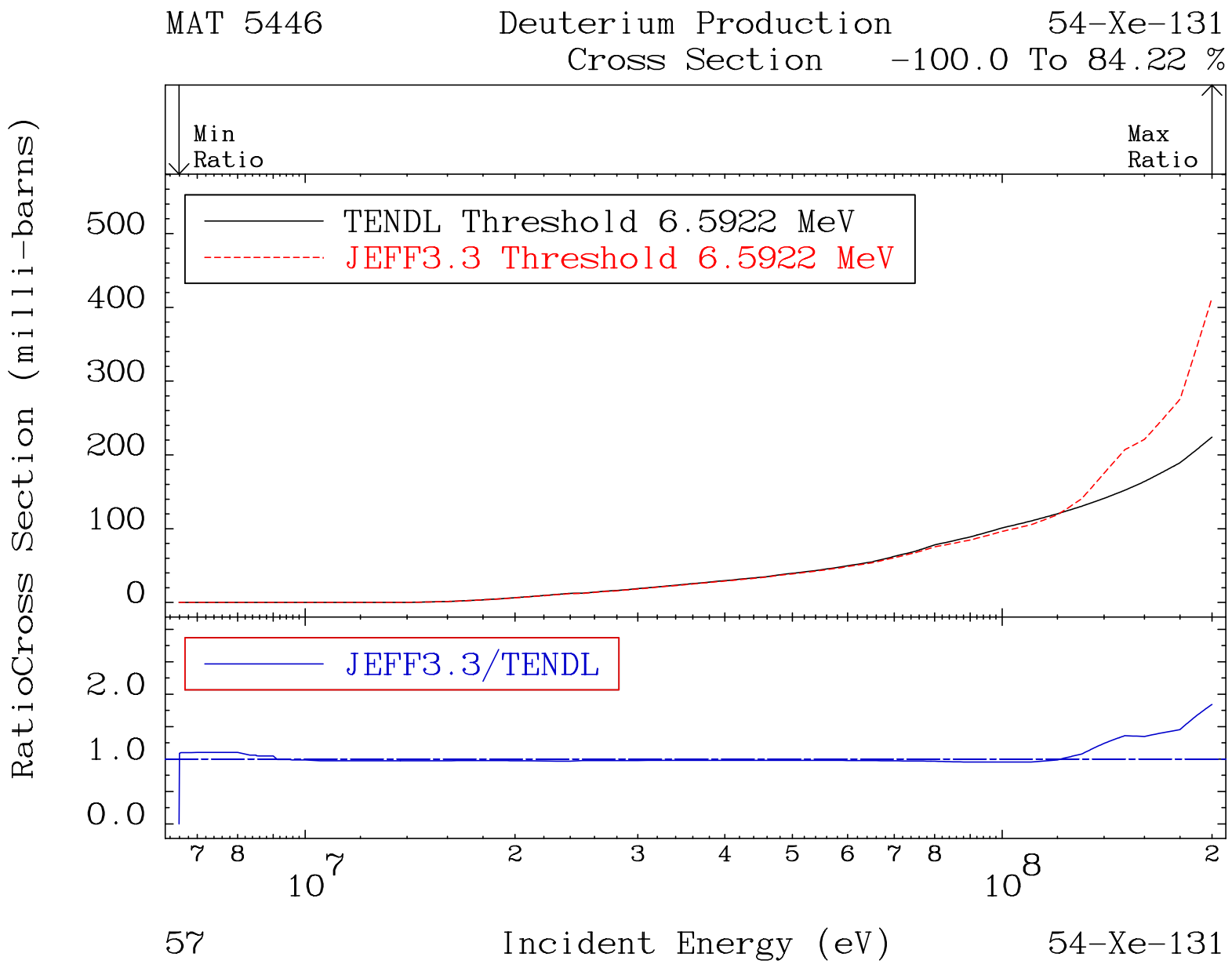

MAT 5446
(n,2p)
Cross Section
54-Xe-131
-100.0 To 33.03 %
Min Ratio
Max Ratio
TENDL Threshold 7.6255 MeV
JEFF3.3 Threshold 7.6255 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
52
54-Xe-131

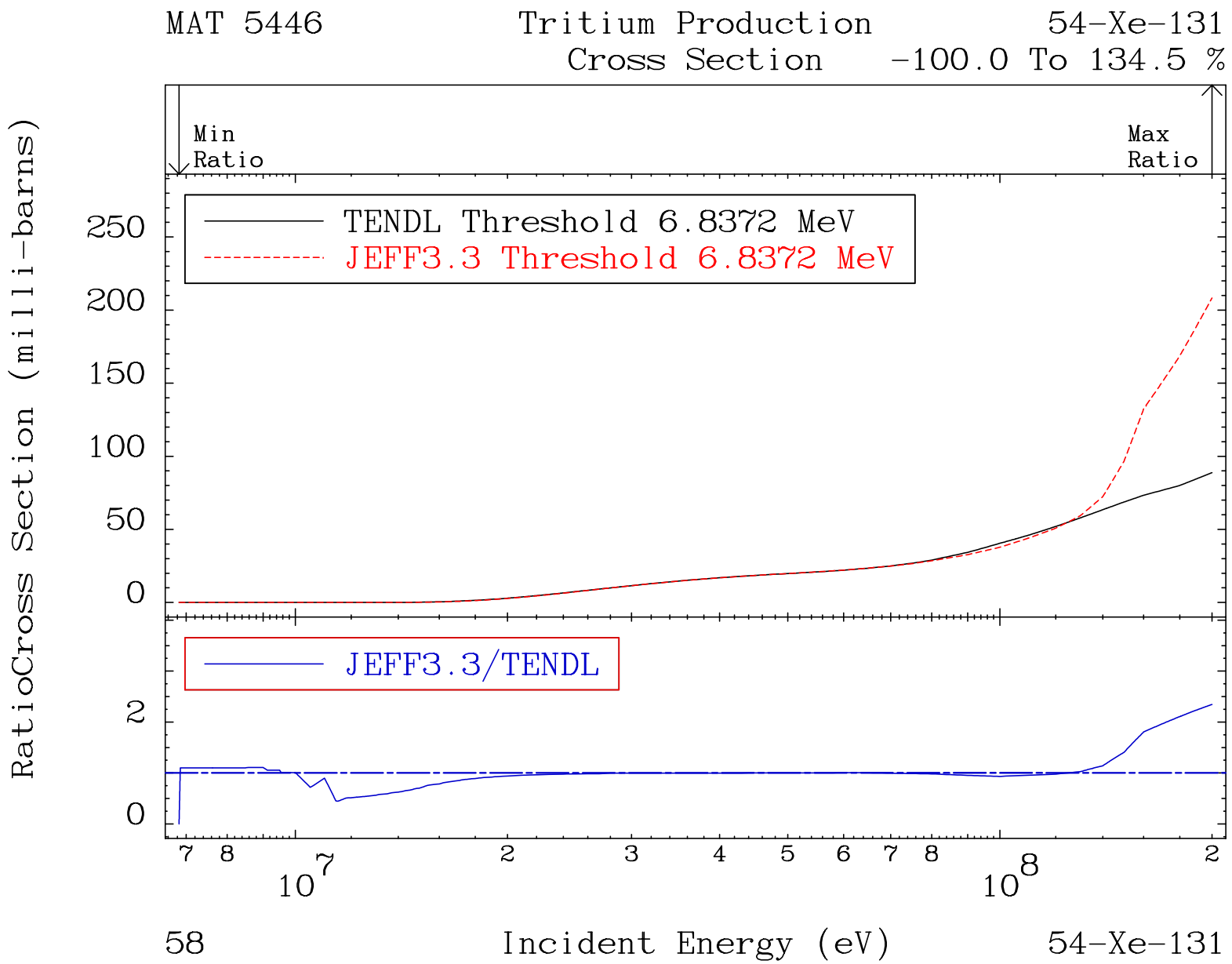

MAT 5446
(n,p) α
54-Xe-131
Cross Section
-46.12 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 3.3837 MeV
JEFF3.3 Threshold 3.3826 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
200
150
100
50
0
10^2
10^0
4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
53
Incident Energy (eV)
54-Xe-131

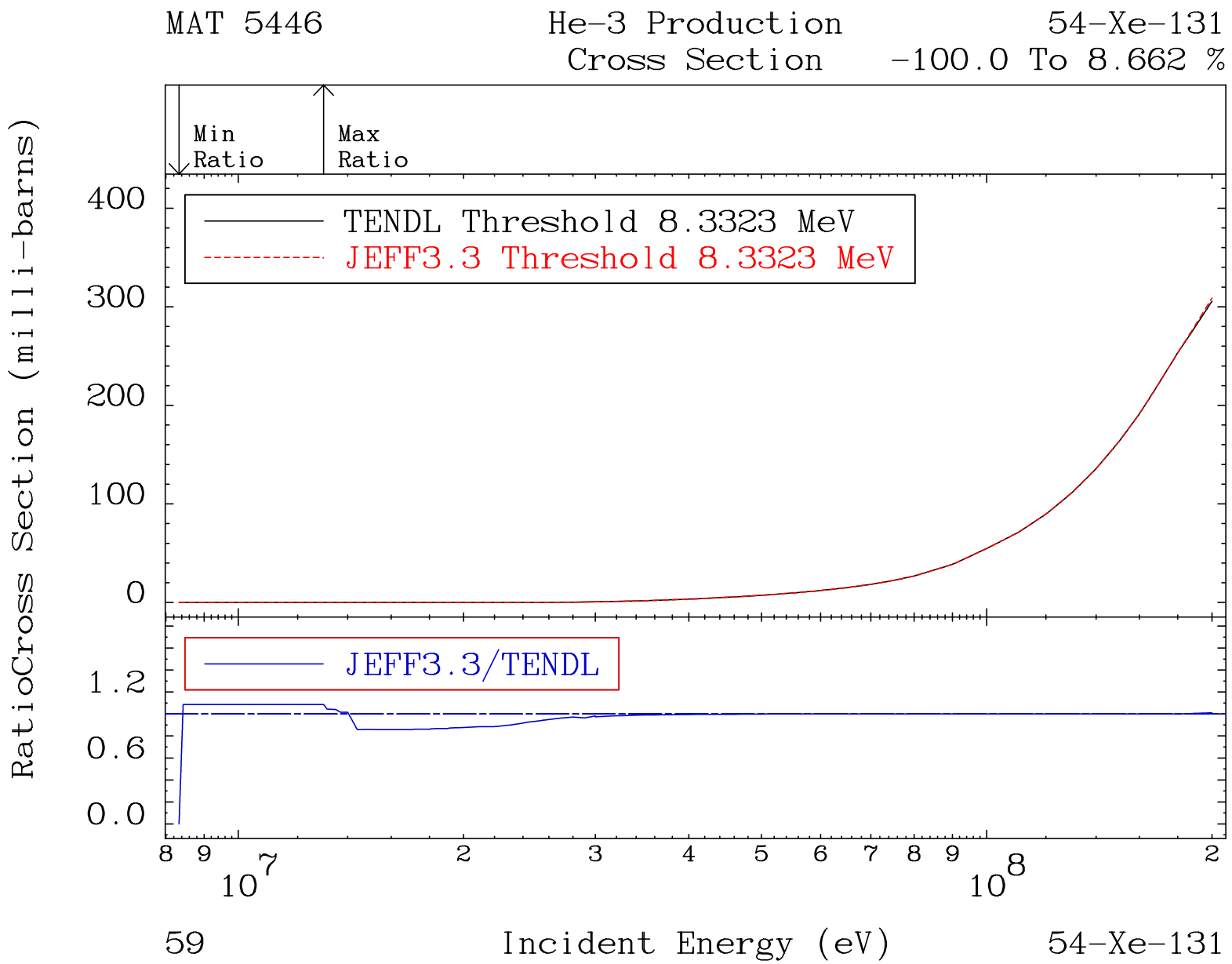

MAT 5446
(n,p) d
Cross Section
54-Xe-131
-100.0 To 364.9 %
Min Ratio
Max Ratio
TENDL Threshold 13.868 MeV
JEFF3.3 Threshold 13.868 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
60
40
20
0
4
0
2
3
4
5
6
7
8
9
10^8
2
54
Incident Energy (eV)
54-Xe-131

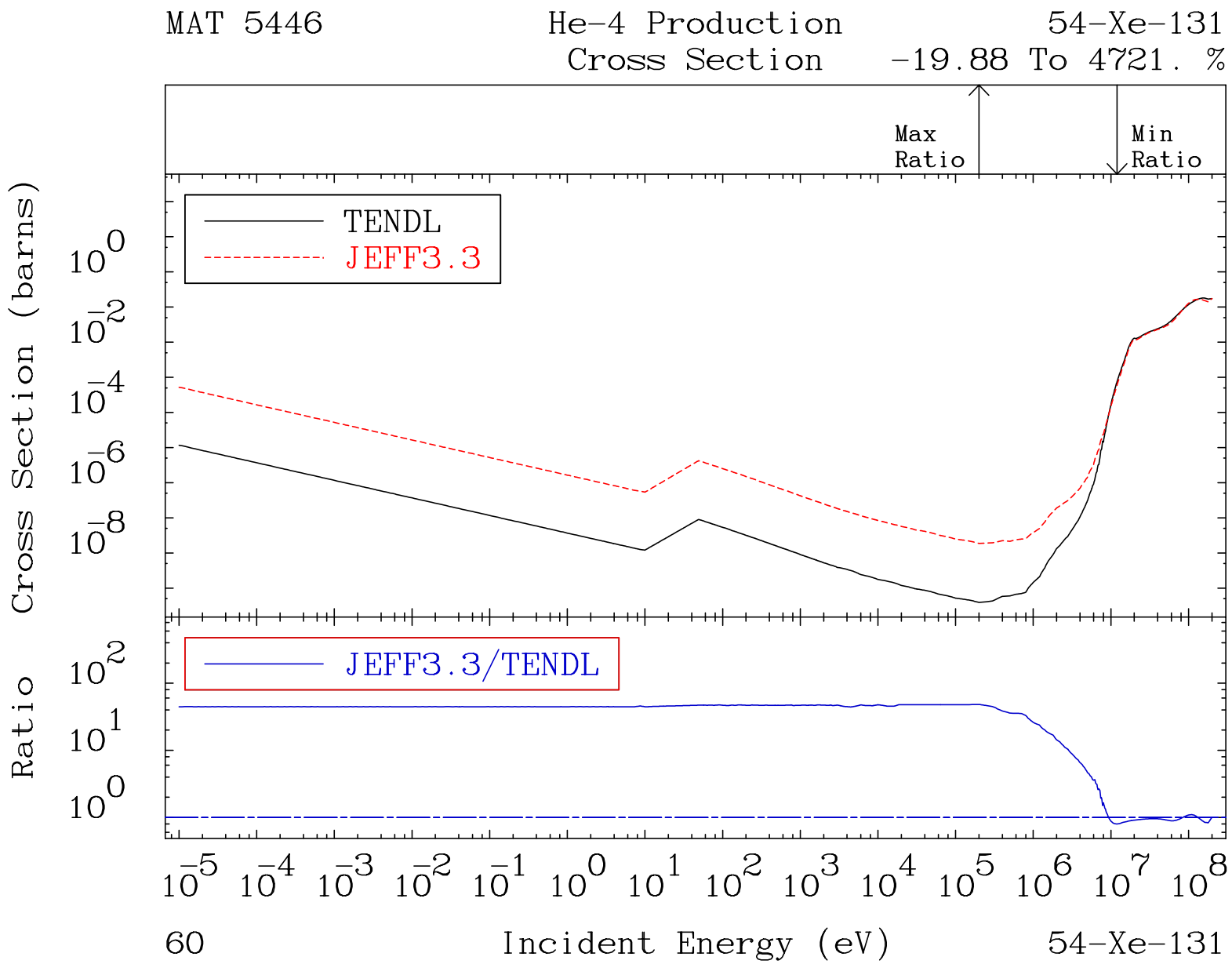

MAT 5446
(n,p) t
Cross Section
54-Xe-131
-100.0 To 304.2 %
Min Ratio
Max Ratio
TENDL Threshold 13.692 MeV
JEFF3.3 Threshold 13.692 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
25
20
15
10
5
0
6
4
2
0
2
3
4
5
6
7
8
9
10^8
2
55
Incident Energy (eV)
54-Xe-131

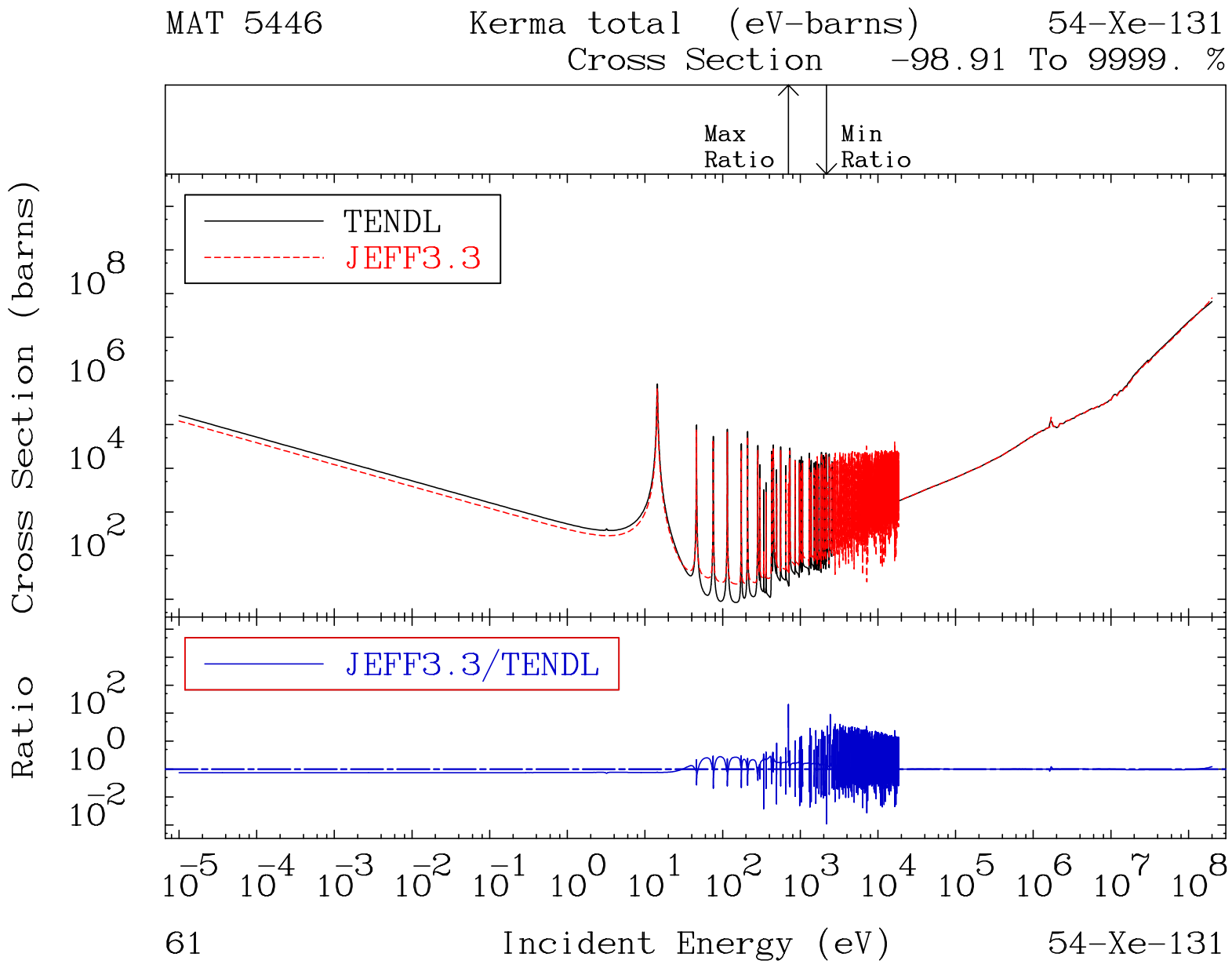

MAT 5446
Hydrogen Production
54-Xe-131
Cross Section -37.27 To 2459. %
Max Ratio
Min Ratio
TENDL Threshold 189.95 keV
JEFF3.3 Threshold 189.95 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
2.0
1.5
1.0
0.5
0.0
10^2
10^1
10^0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
56
Incident Energy (eV)
54-Xe-131

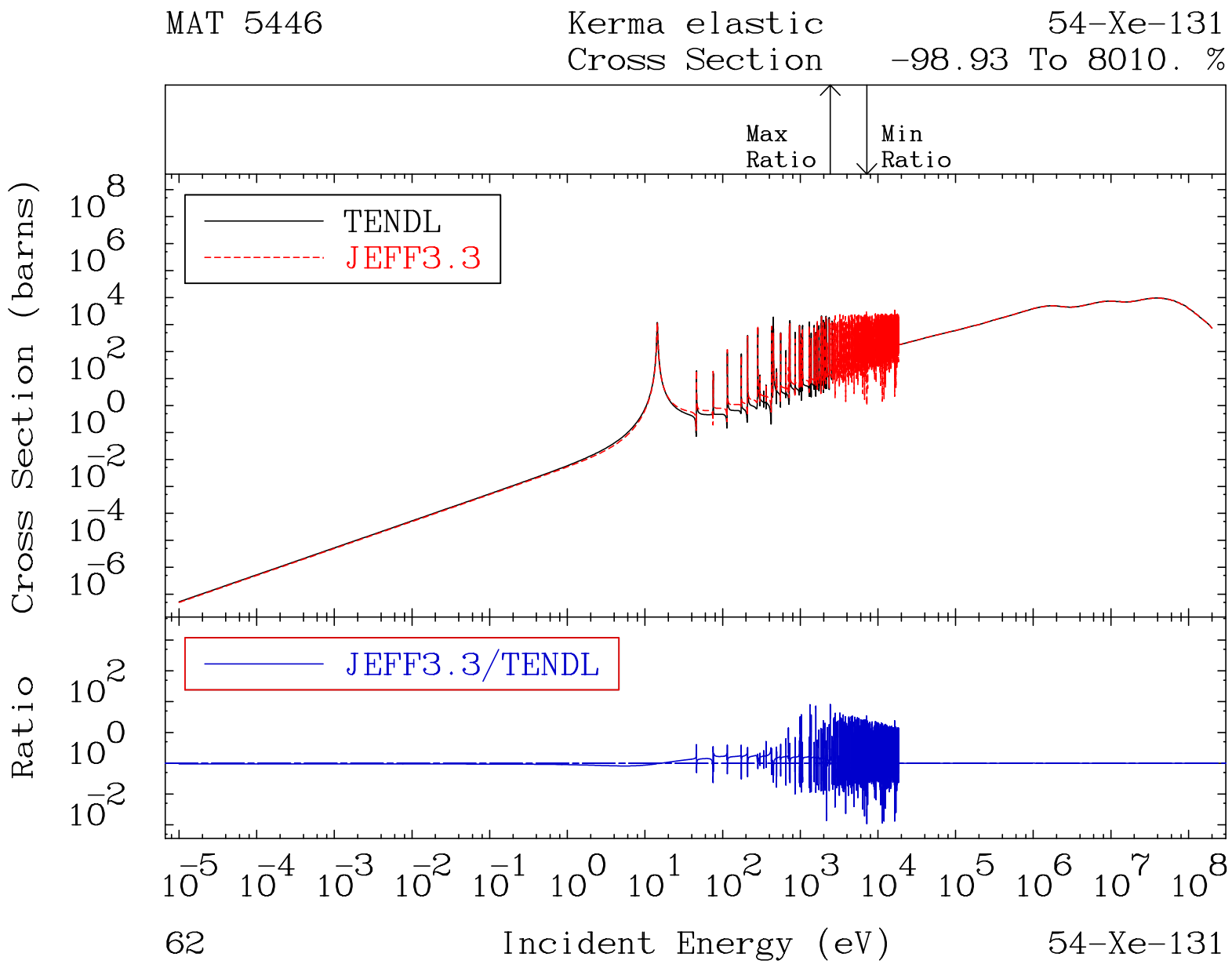

MAT 5446
Deuterium Production
54-Xe-131
Cross Section -100.0 To 84.22 %
Min Ratio
Max Ratio
TENDL Threshold 6.5922 MeV
JEFF3.3 Threshold 6.5922 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
2.0
1.0
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
57
Incident Energy (eV)
54-Xe-131

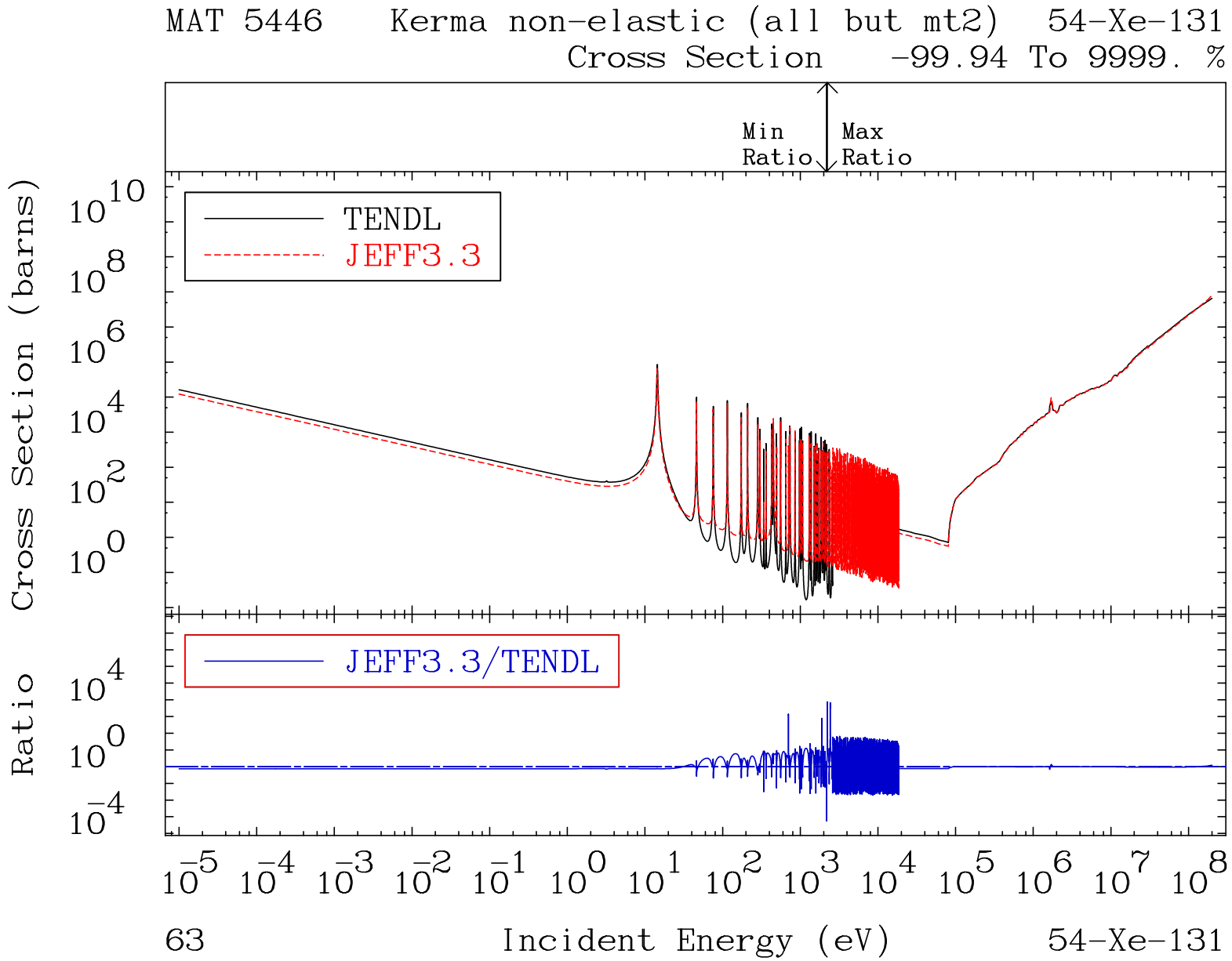

MAT 5446
Tritium Production
54-Xe-131
Cross Section
-100.0 To 134.5 %
Min
Ratio
Max
Ratio
TENDL Threshold 6.8372 MeV
JEFF3.3 Threshold 6.8372 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
2
0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
58
Incident Energy (eV)
54-Xe-131

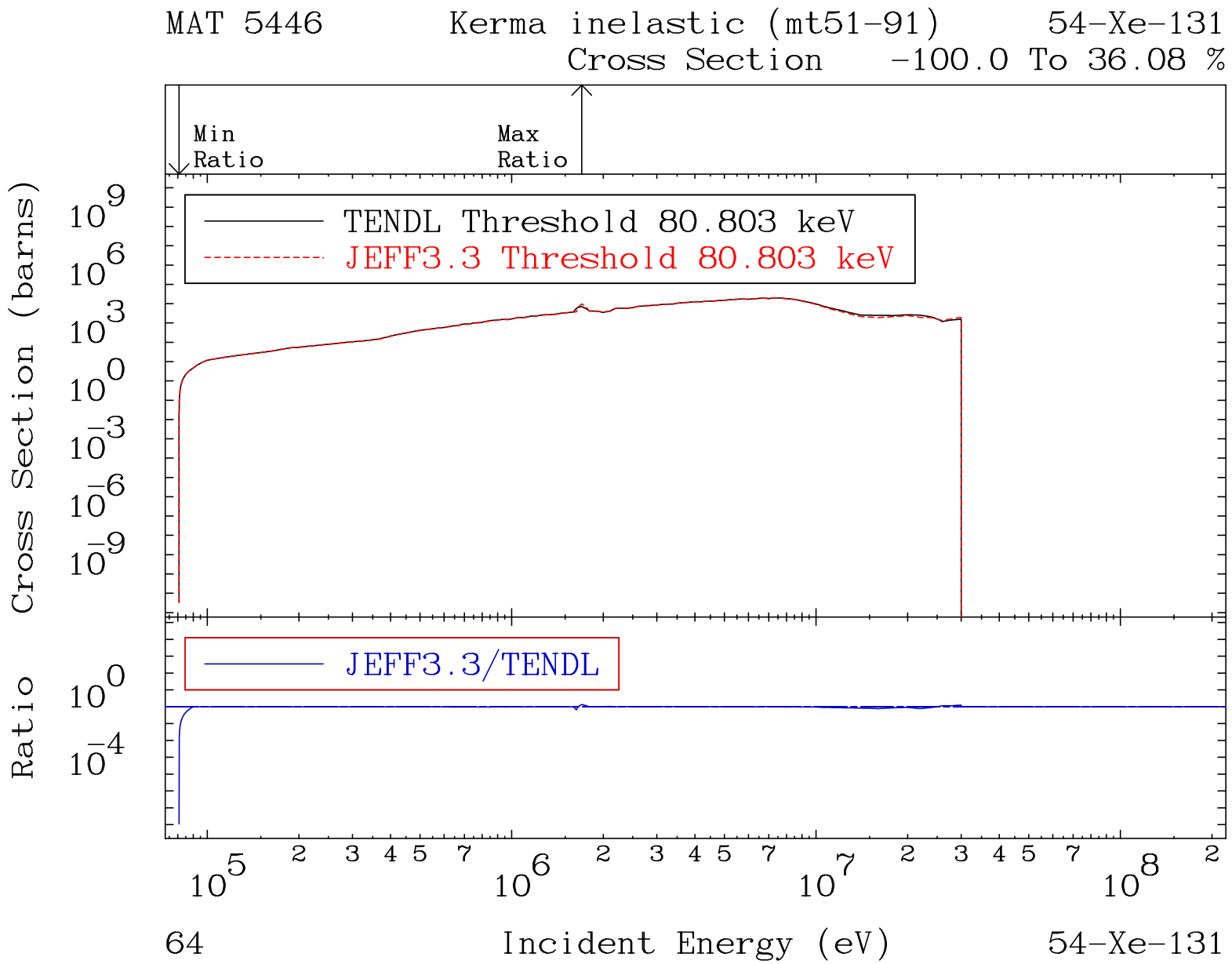

MAT 5446
He-3 Production
54-Xe-131
Cross Section
-100.0 To 8.662 %
Min Ratio
Max Ratio
TENDL Threshold 8.3323 MeV
JEFF3.3 Threshold 8.3323 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
1.2
0.6
0.0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
59
Incident Energy (eV)
54-Xe-131

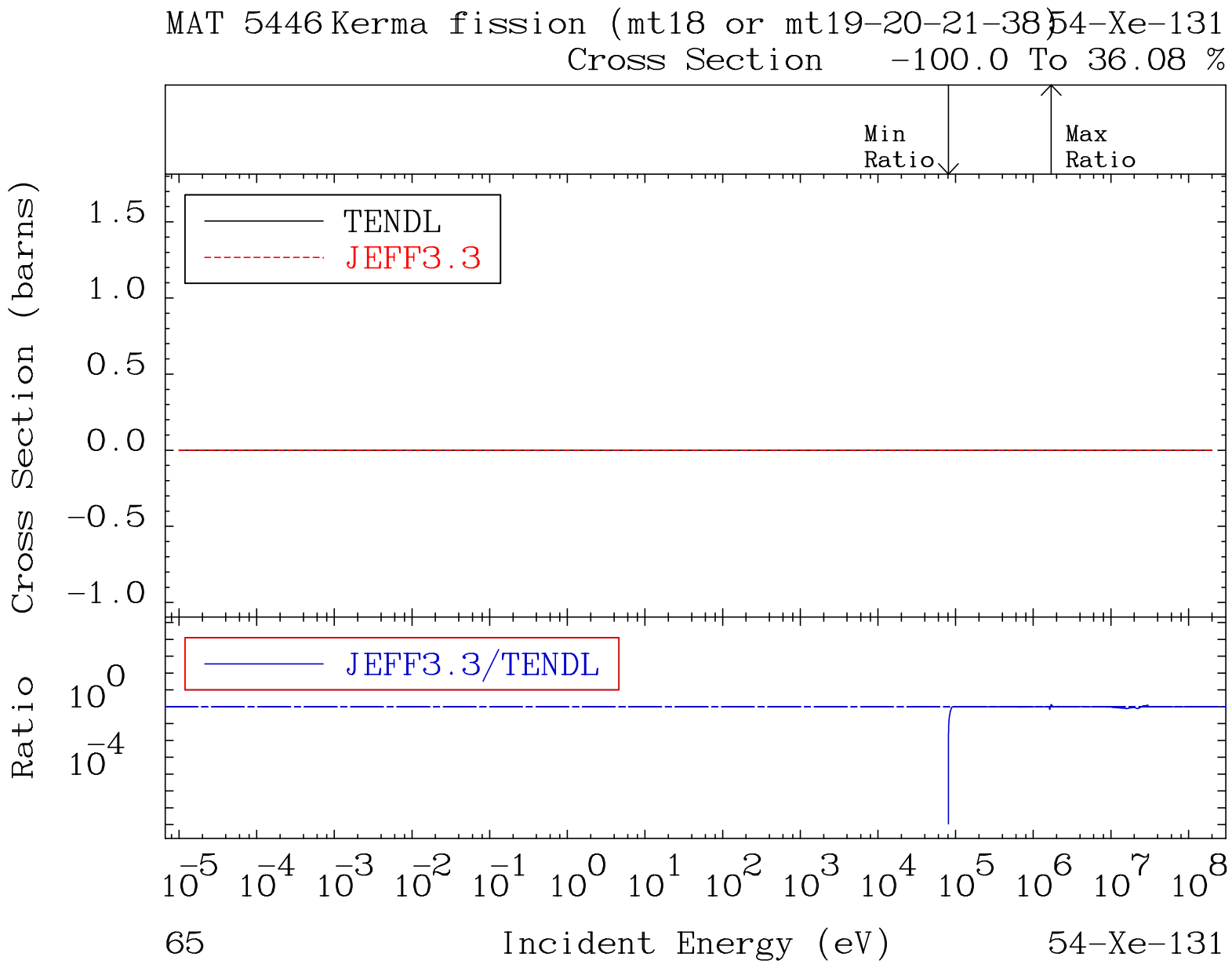

MAT 5446
He-4 Production
Cross Section
54-Xe-131
-19.88 To 4721. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
60
54-Xe-131

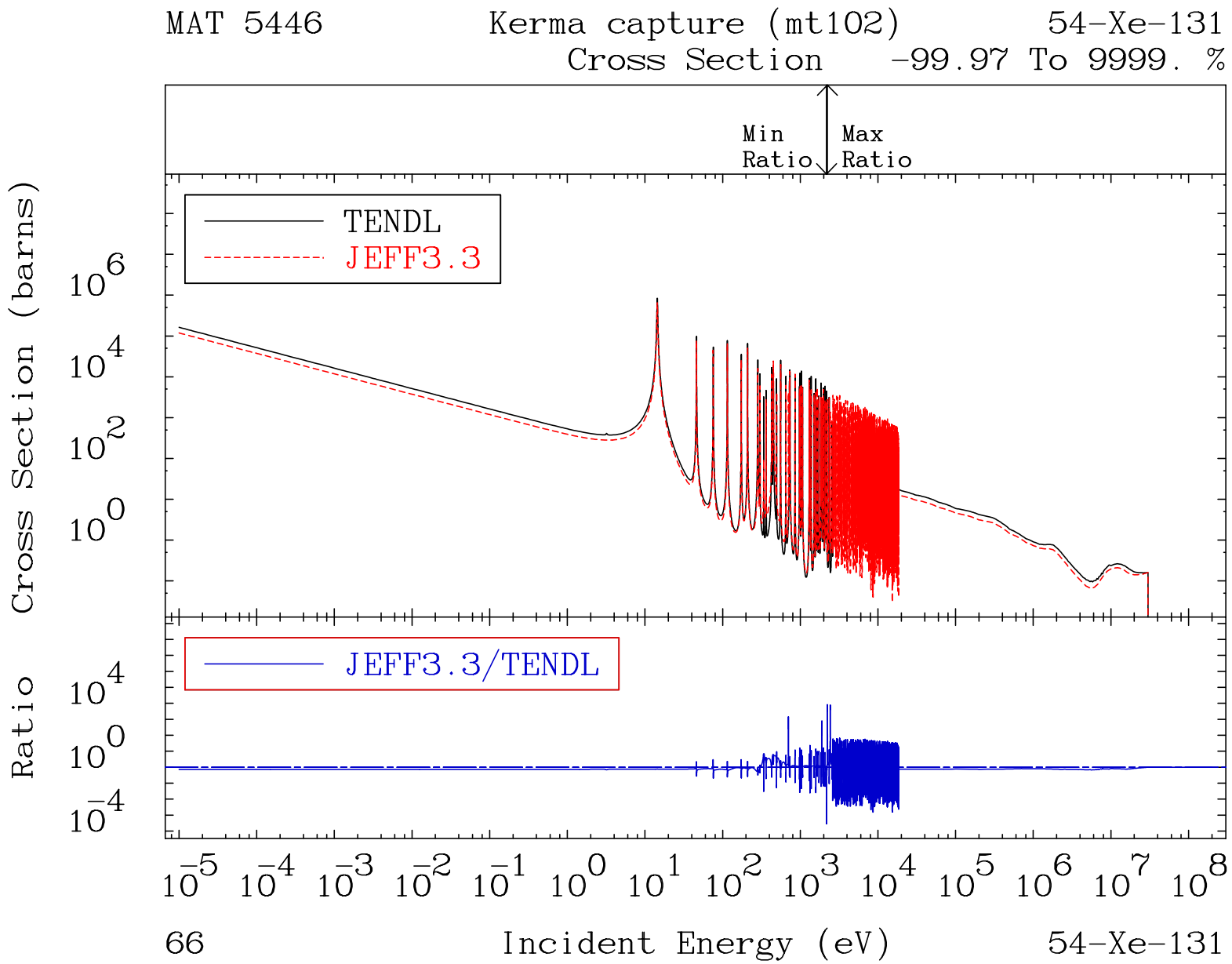

MAT 5446
Kerma total (eV-barns)
54-Xe-131
Cross Section -98.91 To 9999. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
61
54-Xe-131

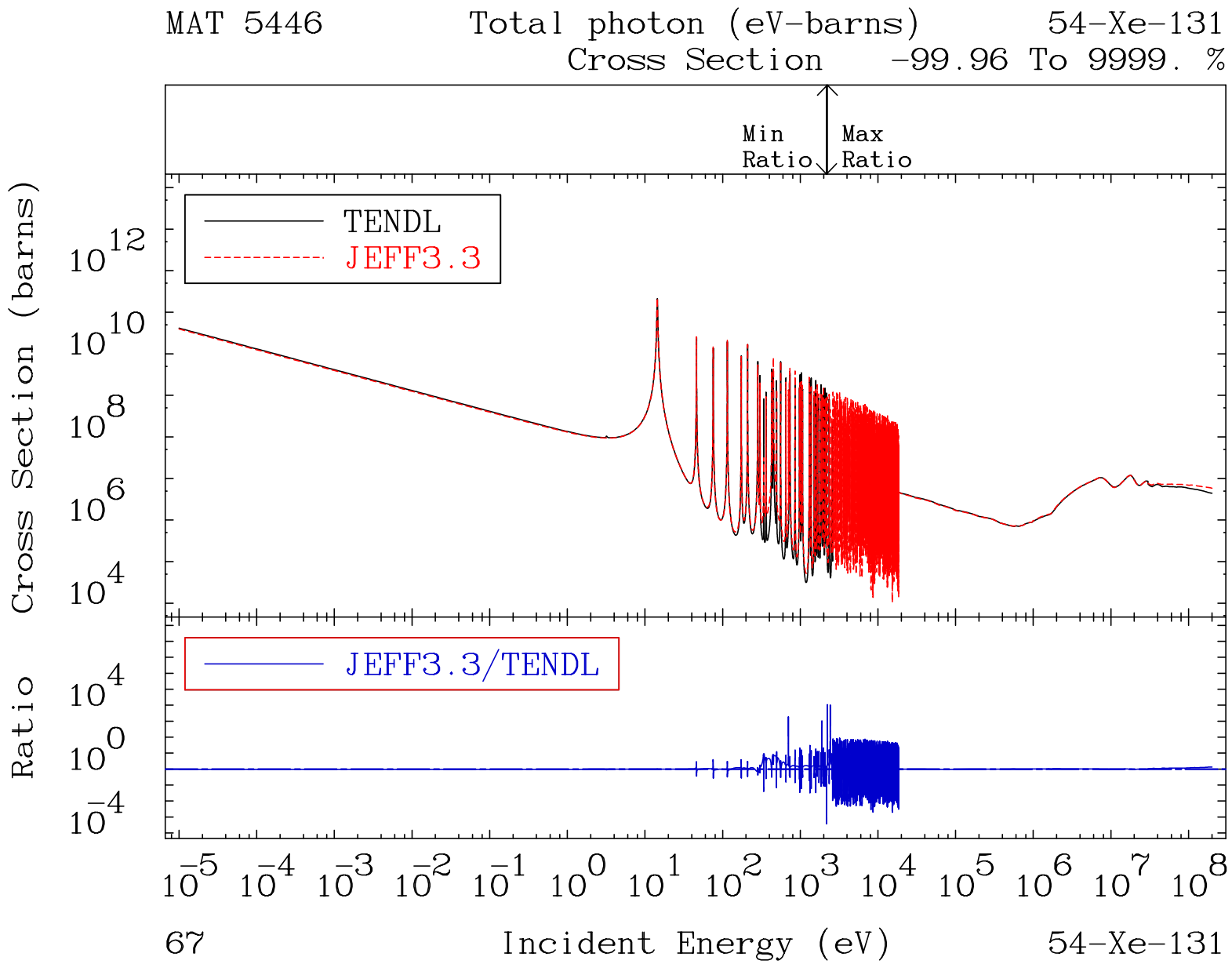

MAT 5446
Kerma elastic
Cross Section
54-Xe-131
-98.93 To 8010. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
62
54-Xe-131

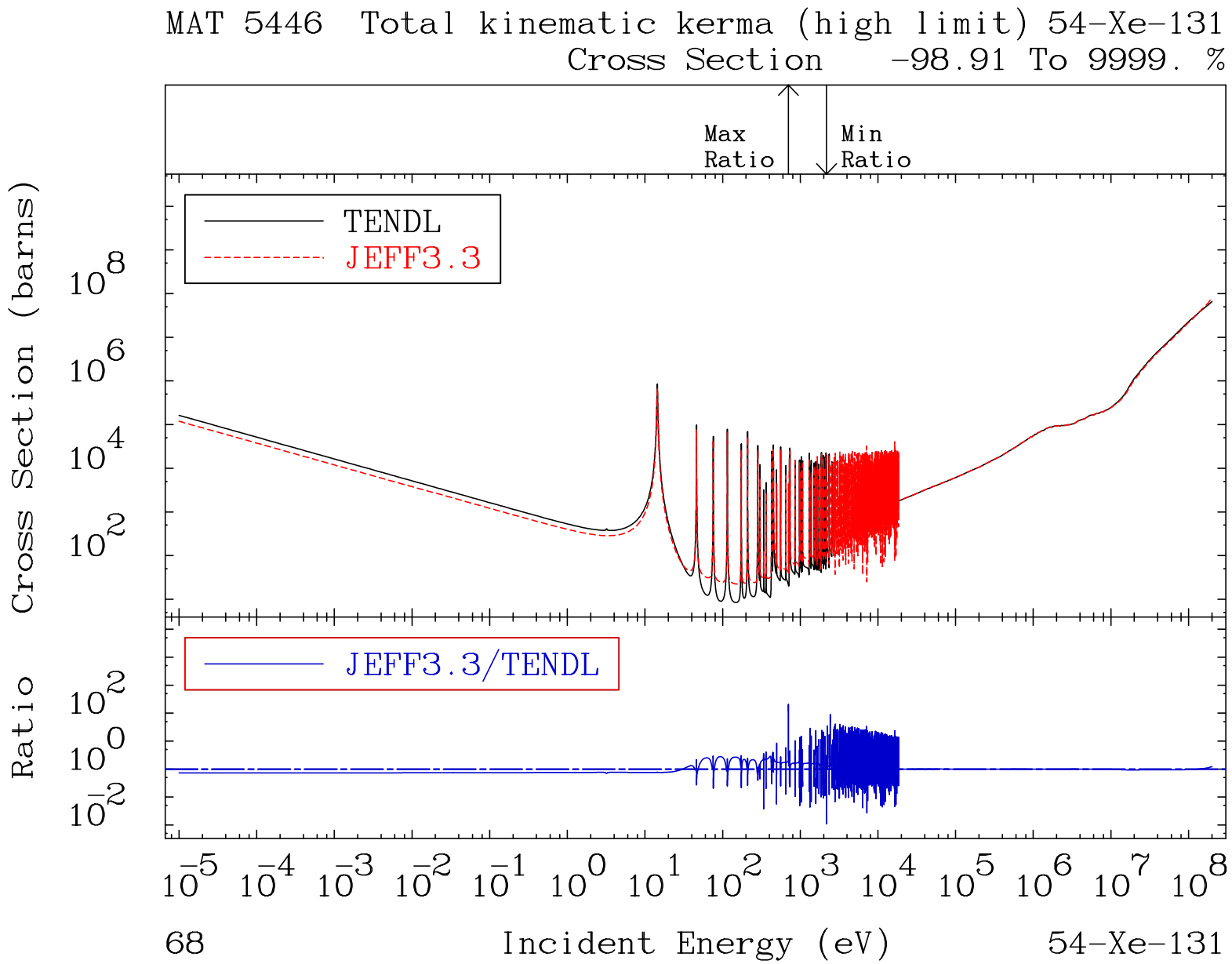

MAT 5446 Kerma non-elastic (all but mt2) 54-Xe-131
Cross Section -99.94 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
63
54-Xe-131

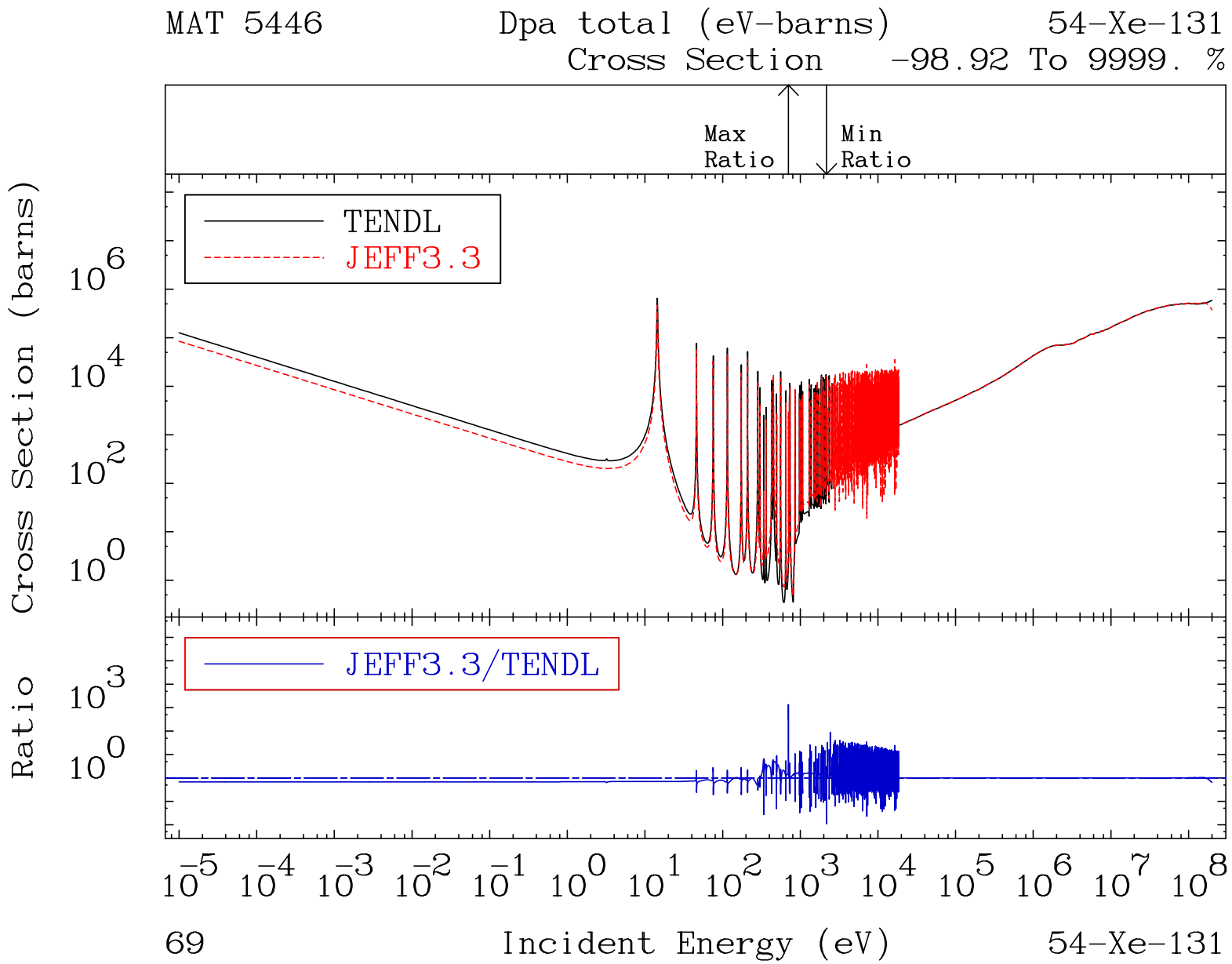

MAT 5446
Kerma inelastic (mt51-91)
54-Xe-131
Cross Section -100.0 To 36.08 %
Min Ratio
Max Ratio
TENDL Threshold 80.803 keV
JEFF3.3 Threshold 80.803 keV
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
64
54-Xe-131

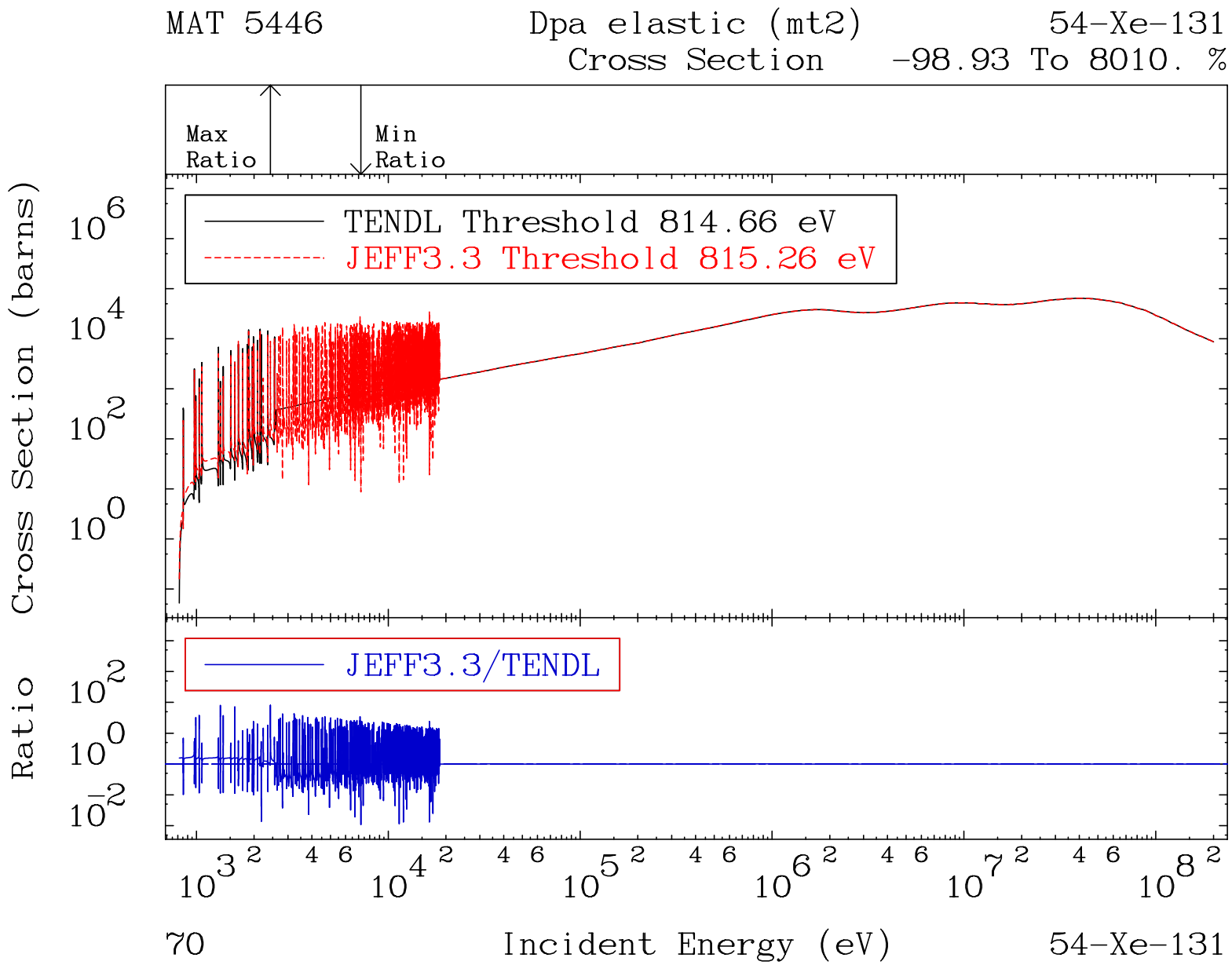

MAT 5446 Kerma fission (mt18 or mt19-20-21-38) 54-Xe-131
Cross Section -100.0 To 36.08 %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
10^{0}
10^{-4}
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
65
Incident Energy (eV)
54-Xe-131

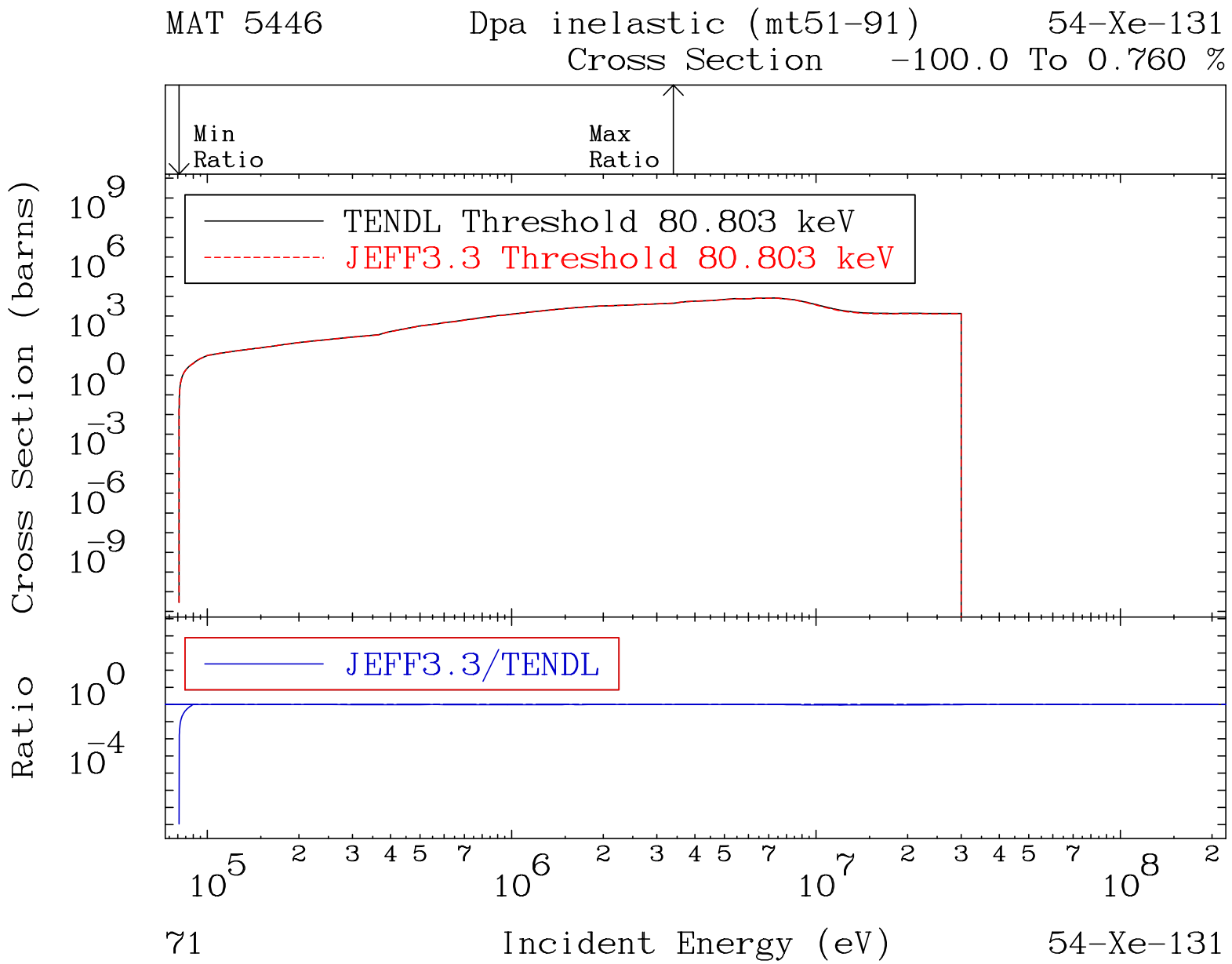

MAT 5446
Kerma capture (mt102)
54-Xe-131
Cross Section -99.97 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
66
54-Xe-131

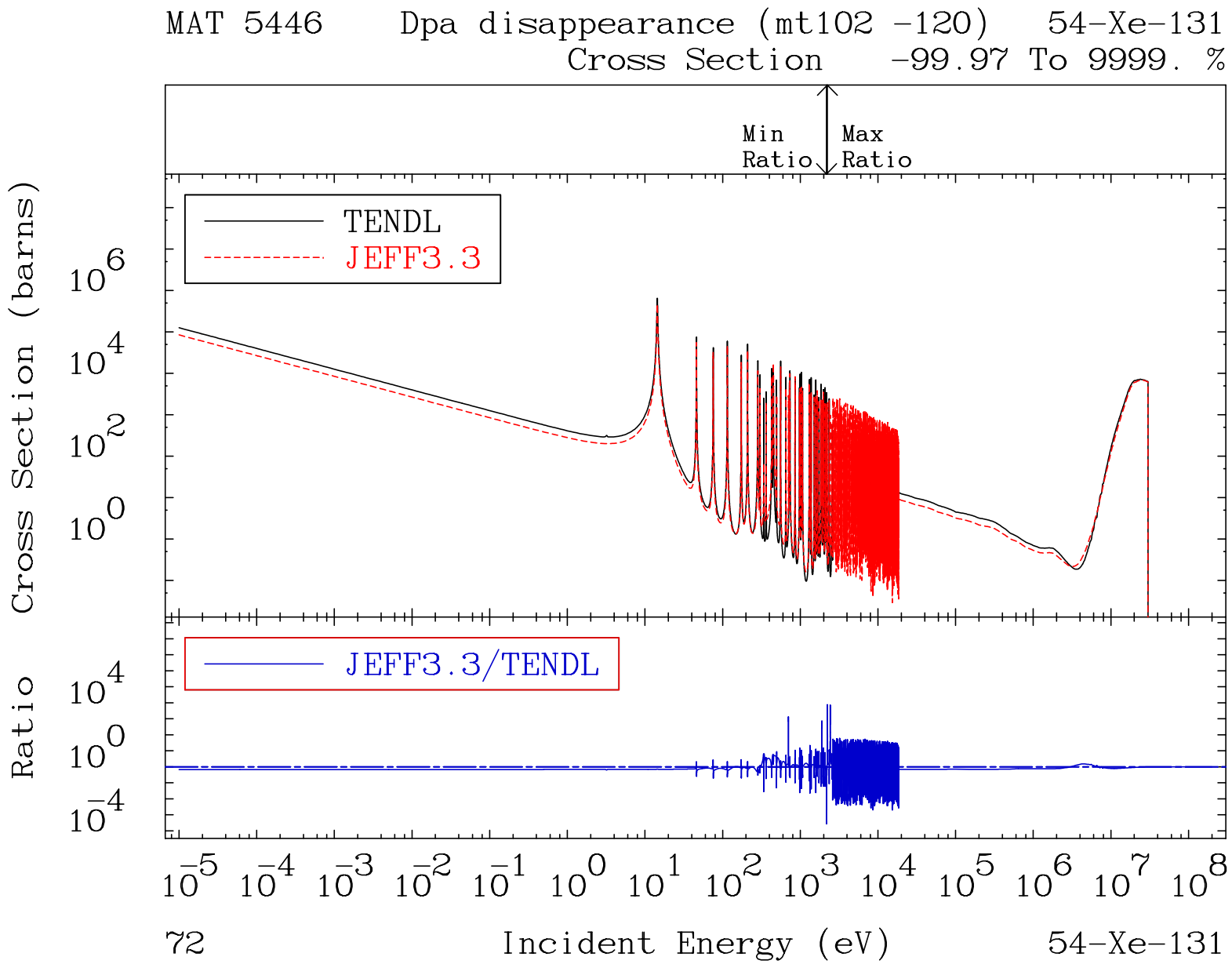

MAT 5446
Total photon (eV-barns)
54-Xe-131
Cross Section -99.96 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
67
54-Xe-131

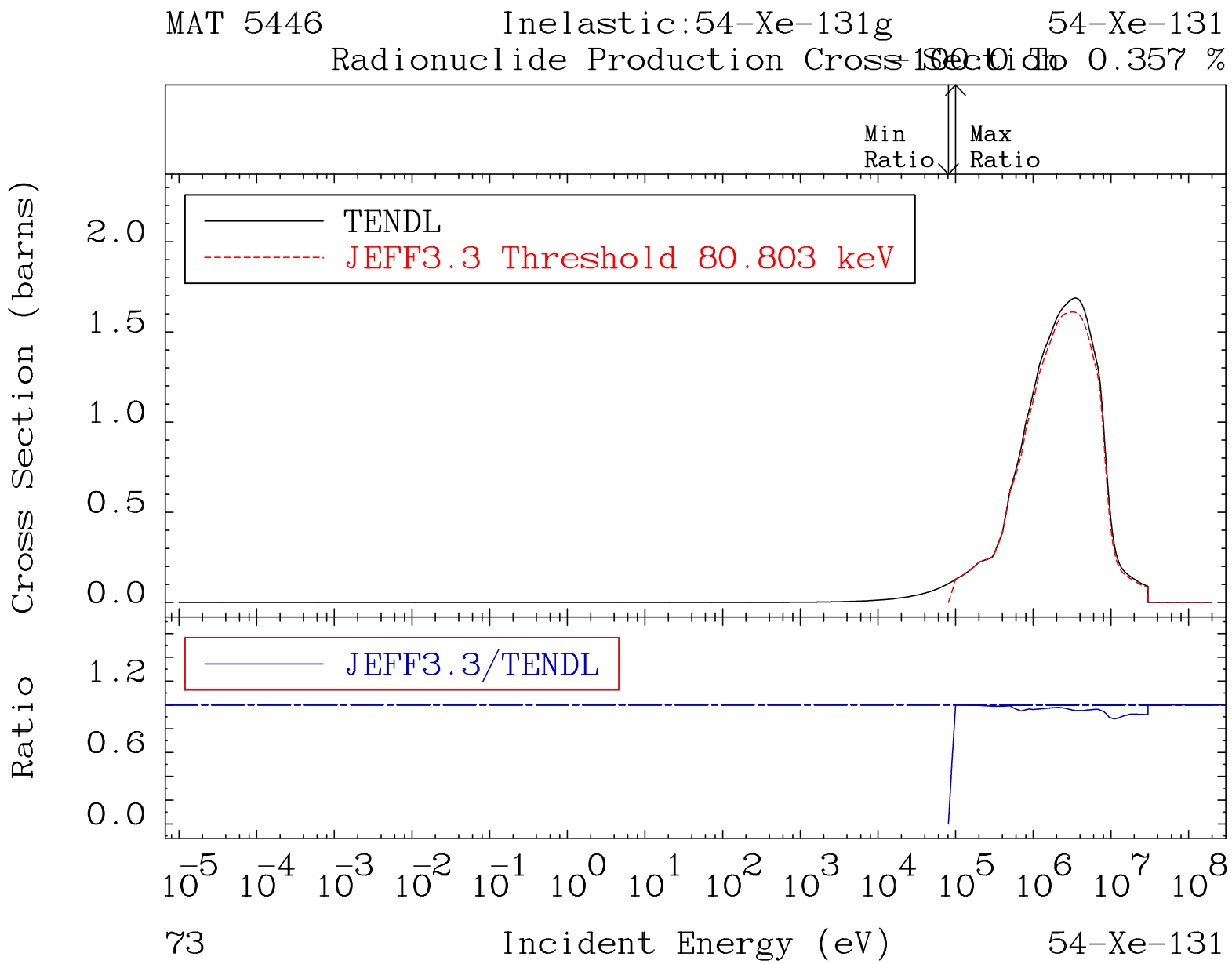

MAT 5446 Total kinematic kerma (high limit) 54-Xe-131
Cross Section -98.91 To 9999. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
68
54-Xe-131

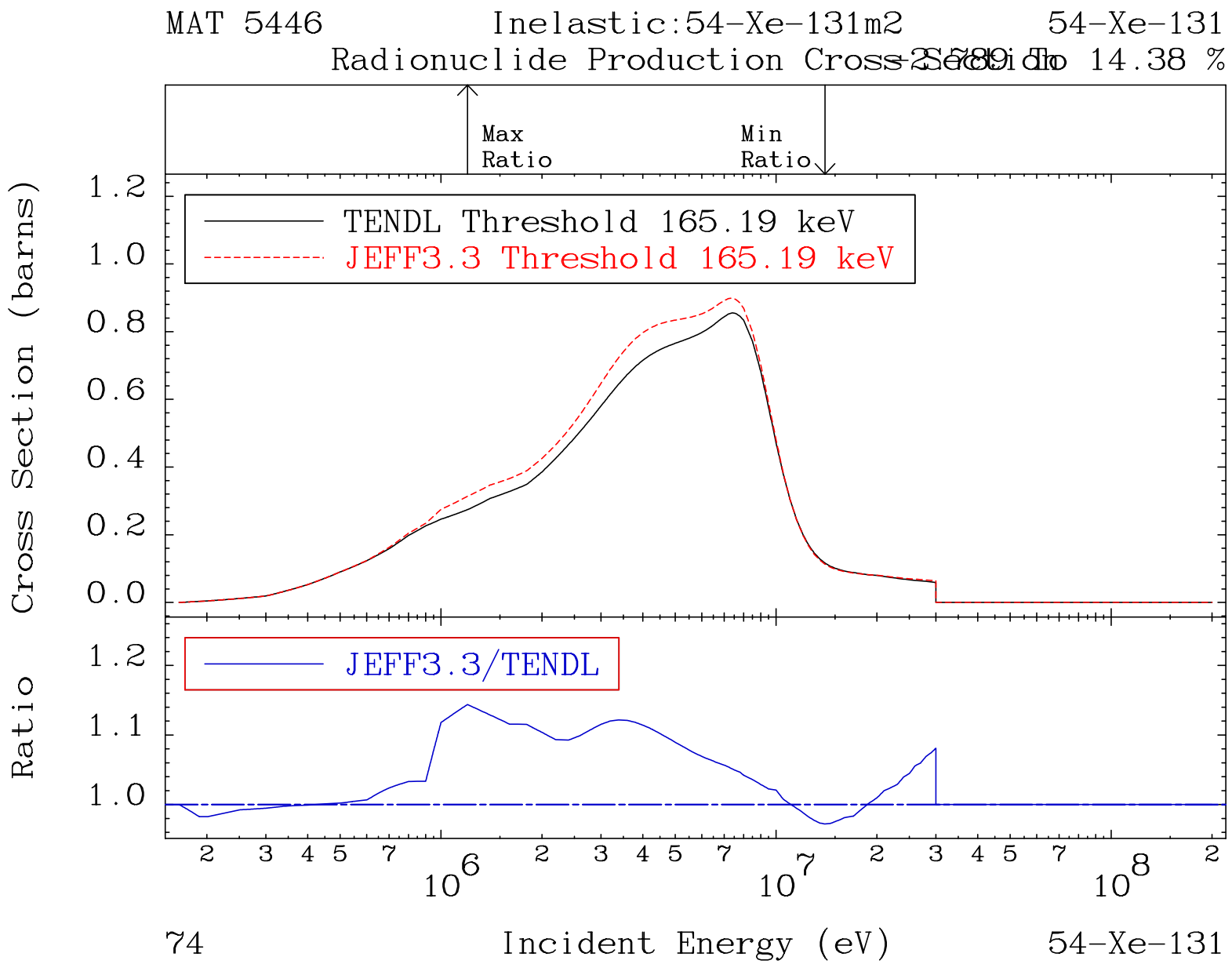

MAT 5446
Dpa total (eV-barns)
54-Xe-131
Cross Section -98.92 To 9999. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
69
54-Xe-131

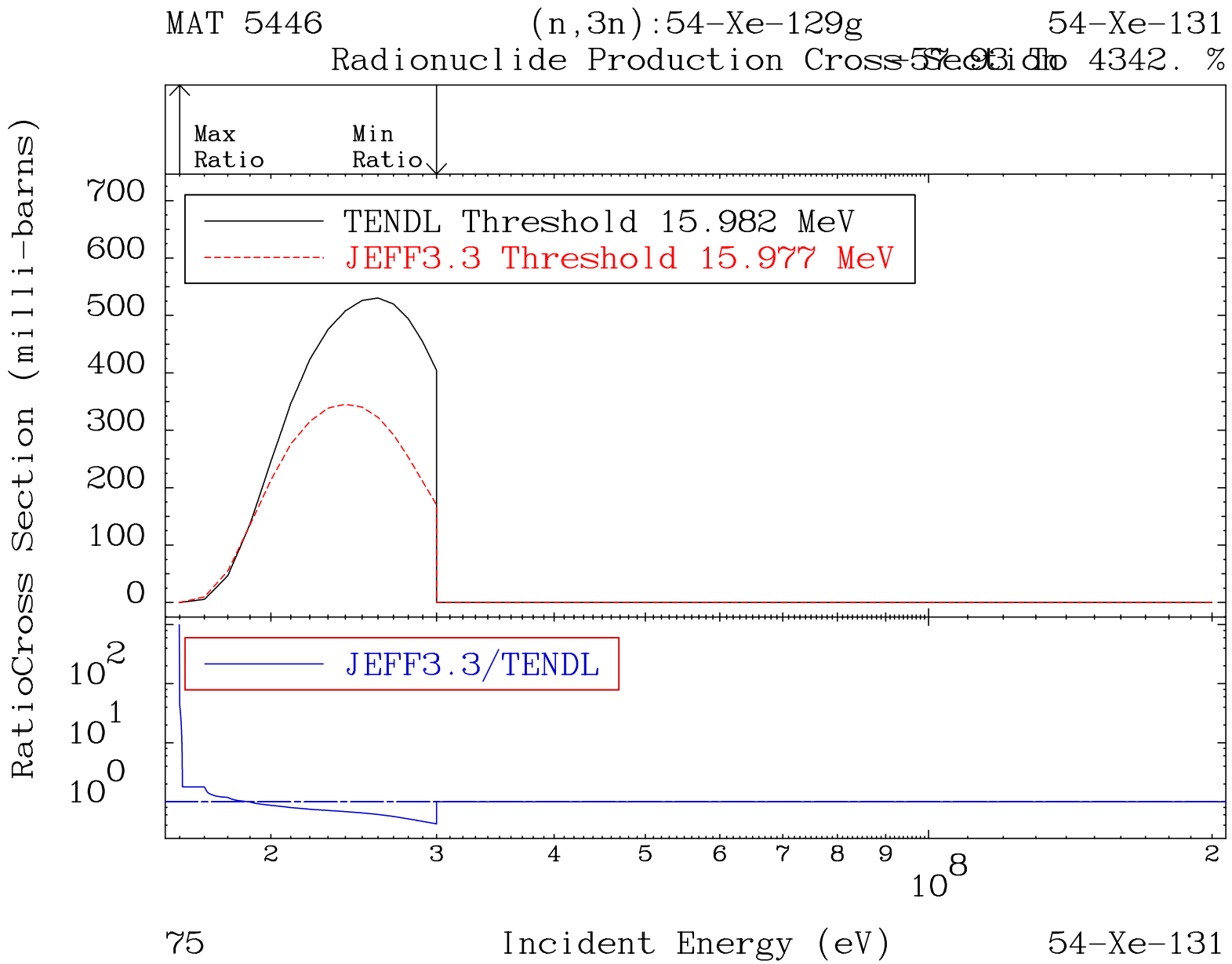

MAT 5446
Dpa elastic (mt2)
Cross Section
54-Xe-131
-98.93 To 8010. %
Max Ratio
Min Ratio
TENDL Threshold 814.66 eV
JEFF3.3 Threshold 815.26 eV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
70
54-Xe-131

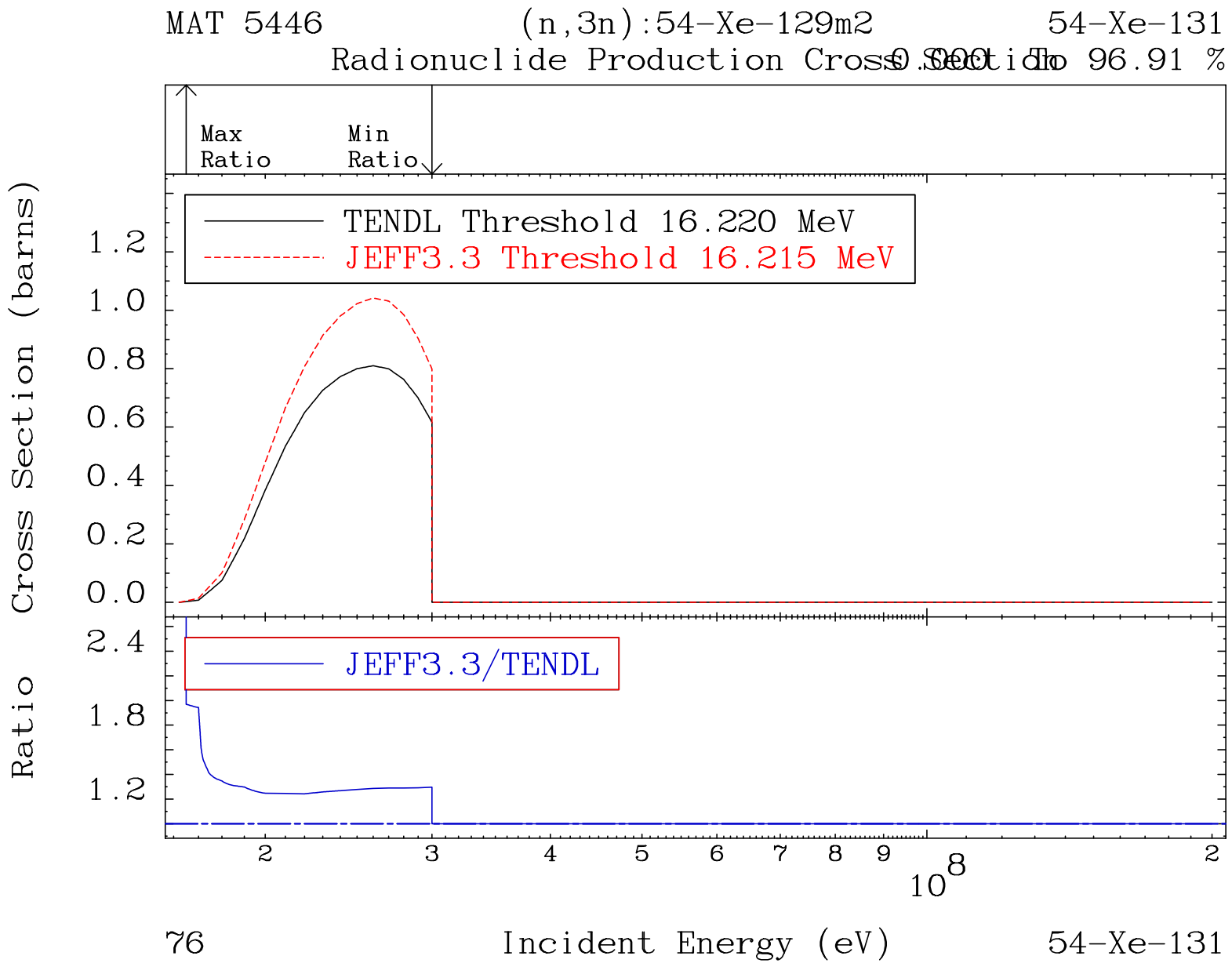

MAT 5446
Dpa inelastic (mt51-91)
54-Xe-131
Cross Section -100.0 To 0.760 %
Min Ratio
Max Ratio
TENDL Threshold 80.803 keV
JEFF3.3 Threshold 80.803 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
71
54-Xe-131

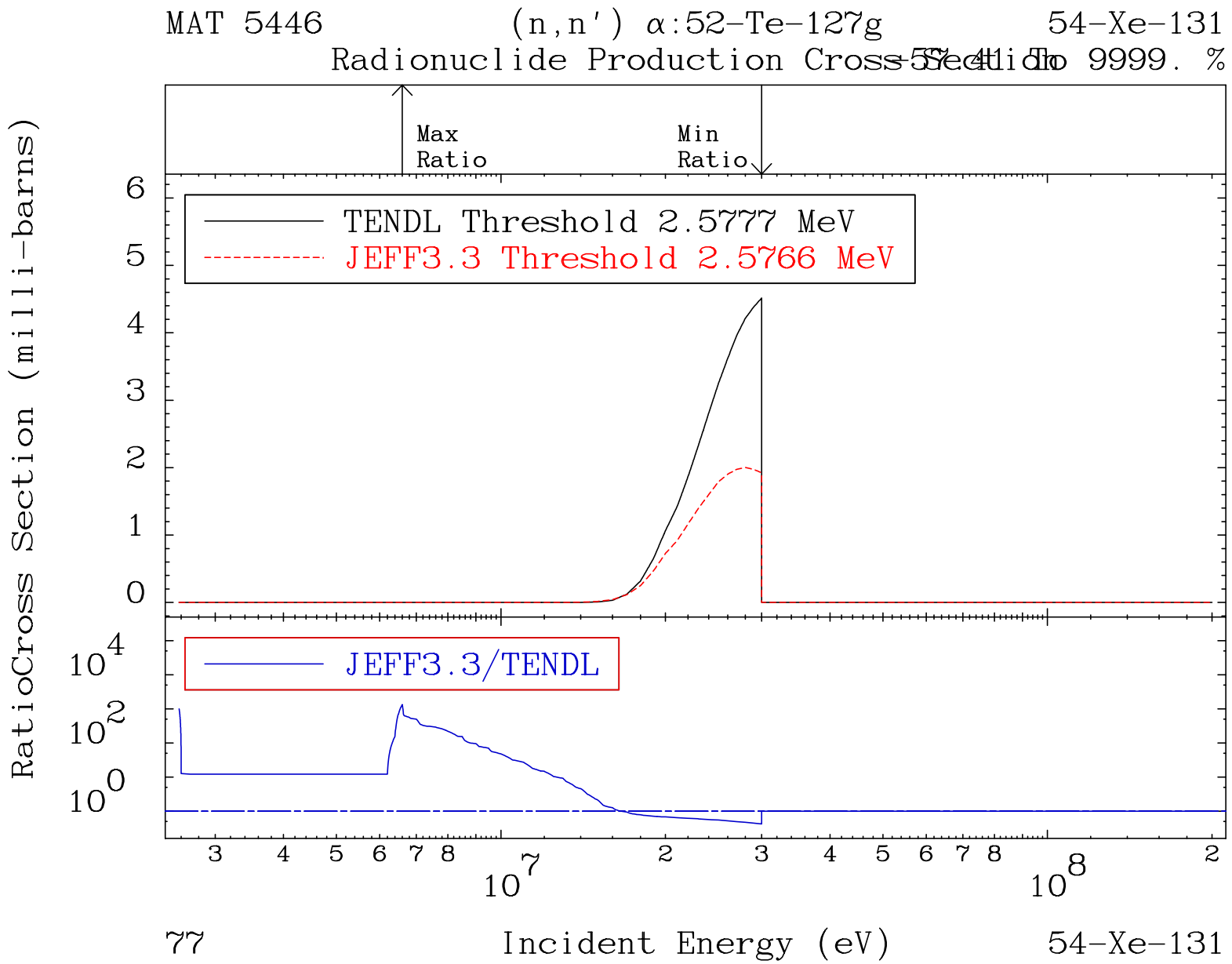

MAT 5446 Dpa disappearance (mt102 -120) 54-Xe-131
Cross Section -99.97 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
72
54-Xe-131

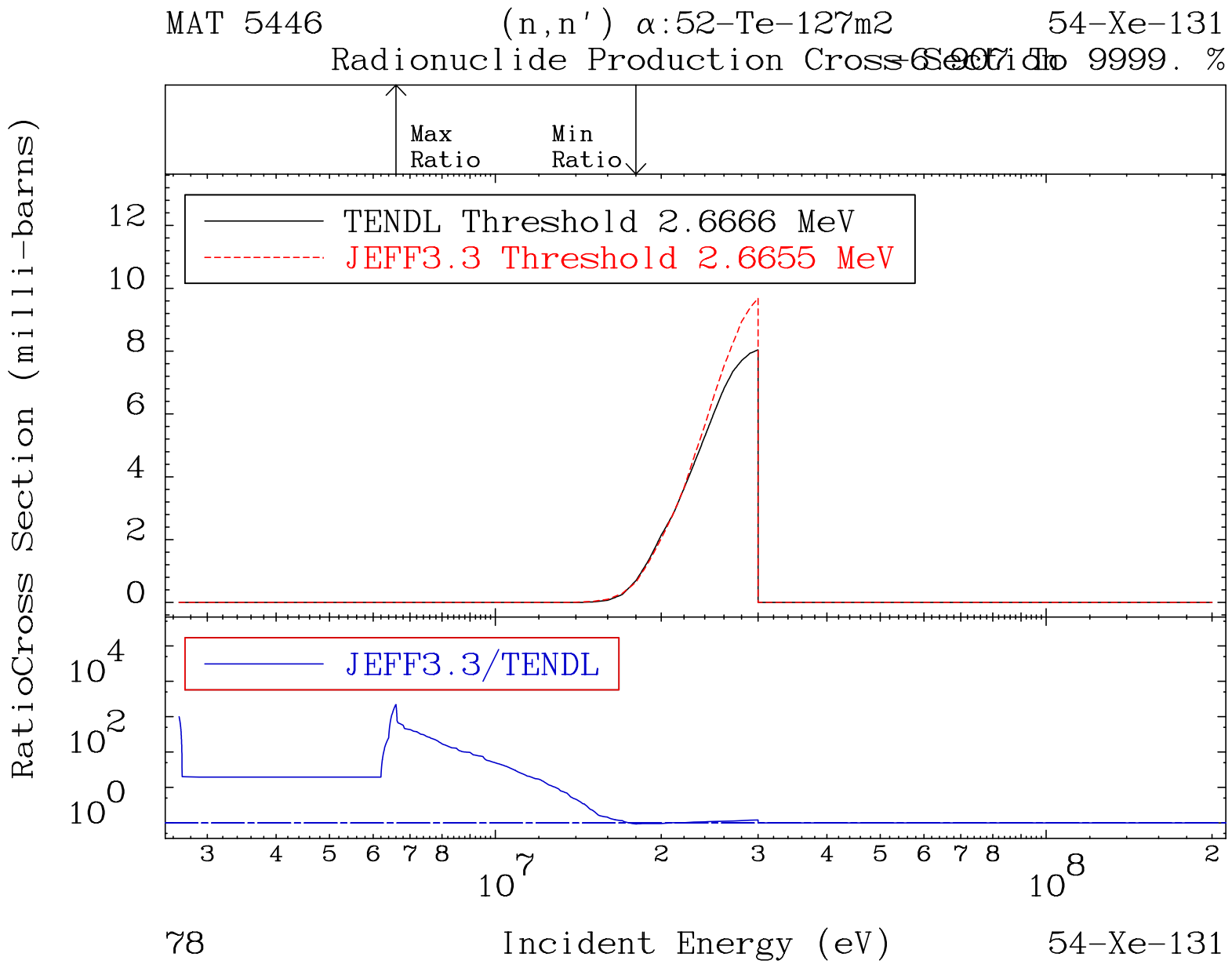

MAT 5446
Inelastic:54-Xe-131g
54-Xe-131
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL
JEFF3.3 Threshold 80.803 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
2.0
1.5
1.0
0.5
0.0
1.2
0.6
0.0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
73
Incident Energy (eV)
54-Xe-131

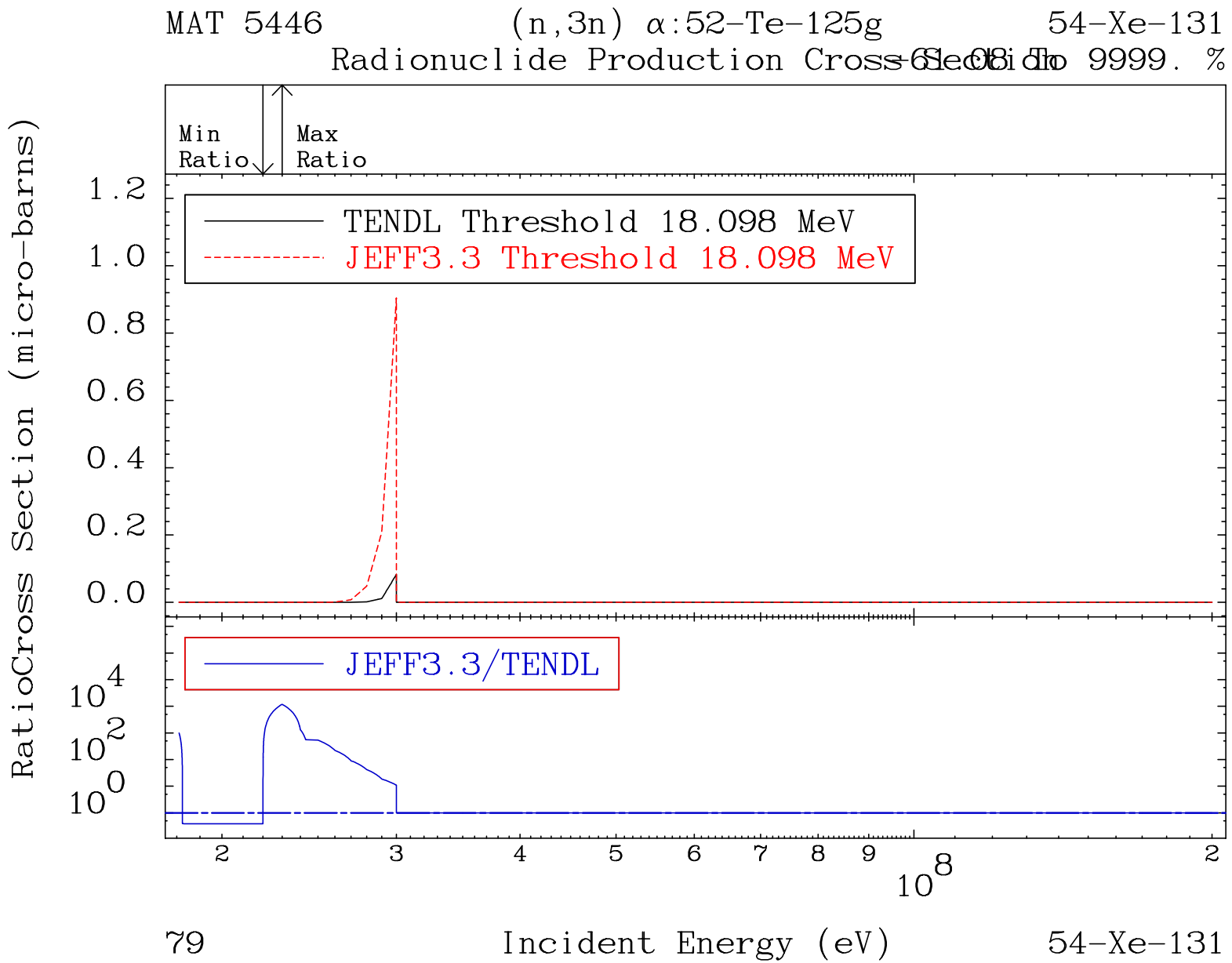

MAT 5446
Inelastic:54-Xe-131m2
54-Xe-131
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 165.19 keV
JEFF3.3 Threshold 165.19 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
74
54-Xe-131

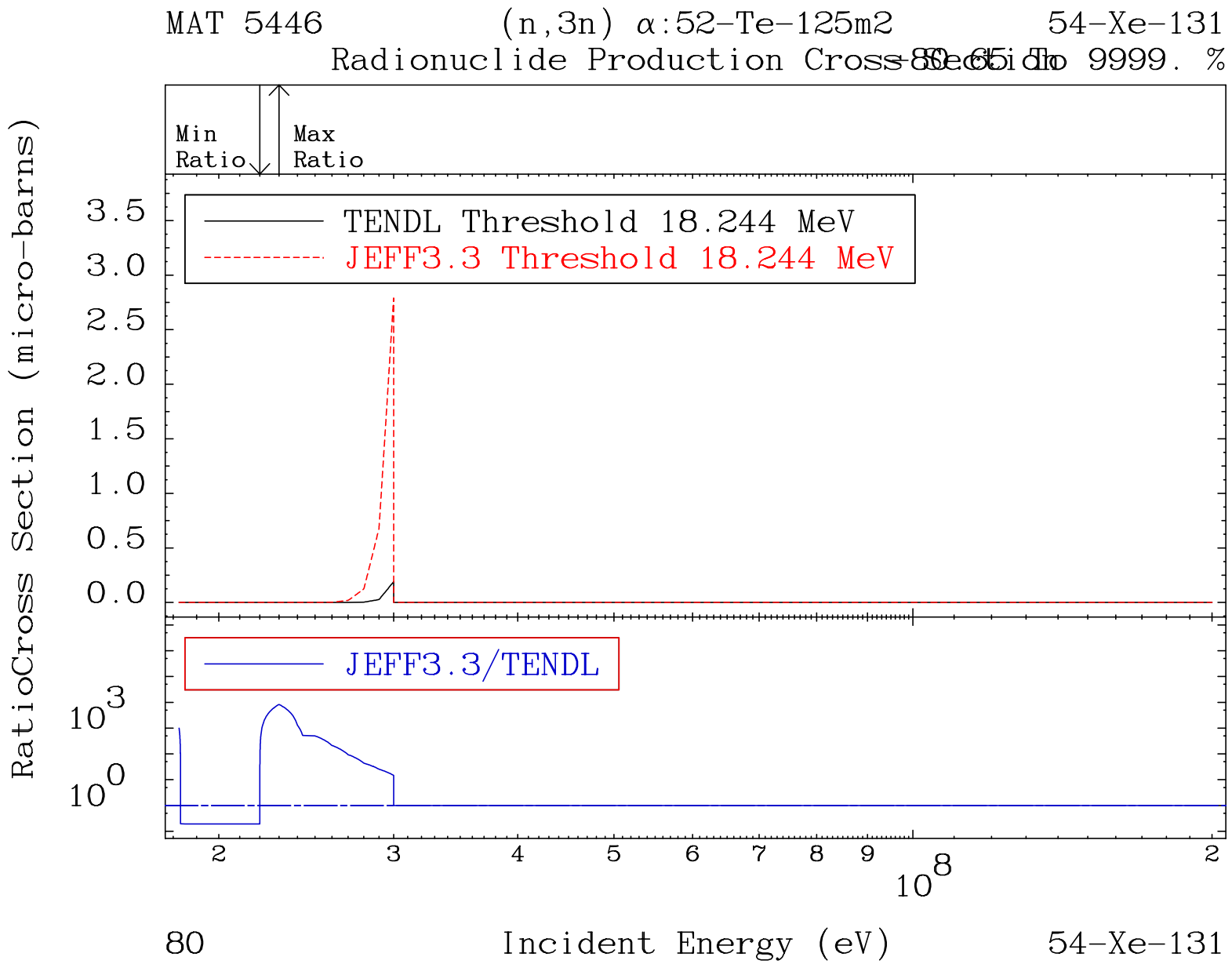

MAT 5446
(n,3n):54-Xe-129g
54-Xe-131
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 15.982 MeV
JEFF3.3 Threshold 15.977 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
75
54-Xe-131

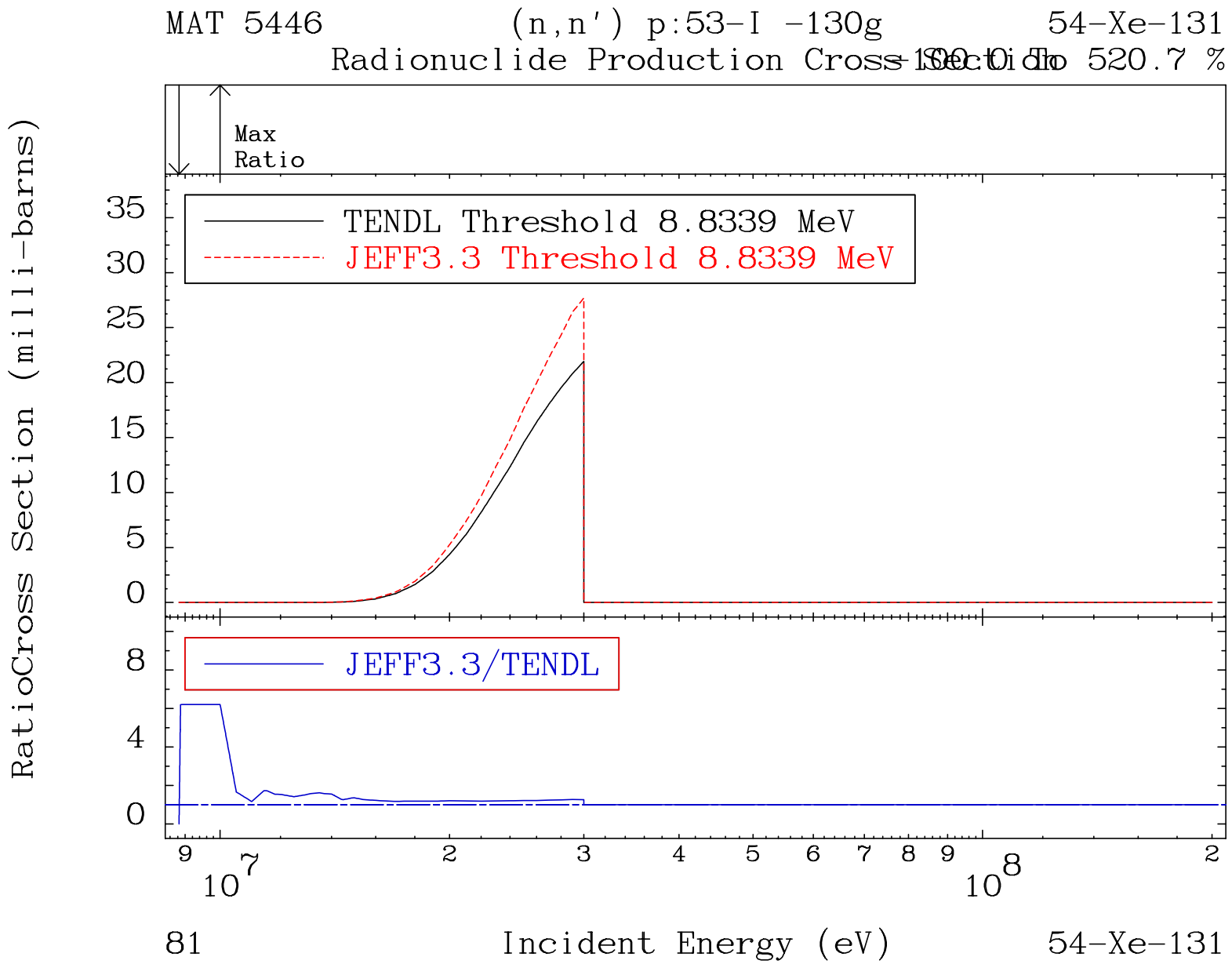

MAT 5446
(n,3n):54-Xe-129m2
54-Xe-131
Radionuclide Production Cross Section
0.000 To 96.91 %
Max Ratio
Min Ratio
TENDL Threshold 16.220 MeV
JEFF3.3 Threshold 16.215 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2.4
1.8
1.2
2
3
4
5
6
7
8
9
10^8
2
76
Incident Energy (eV)
54-Xe-131

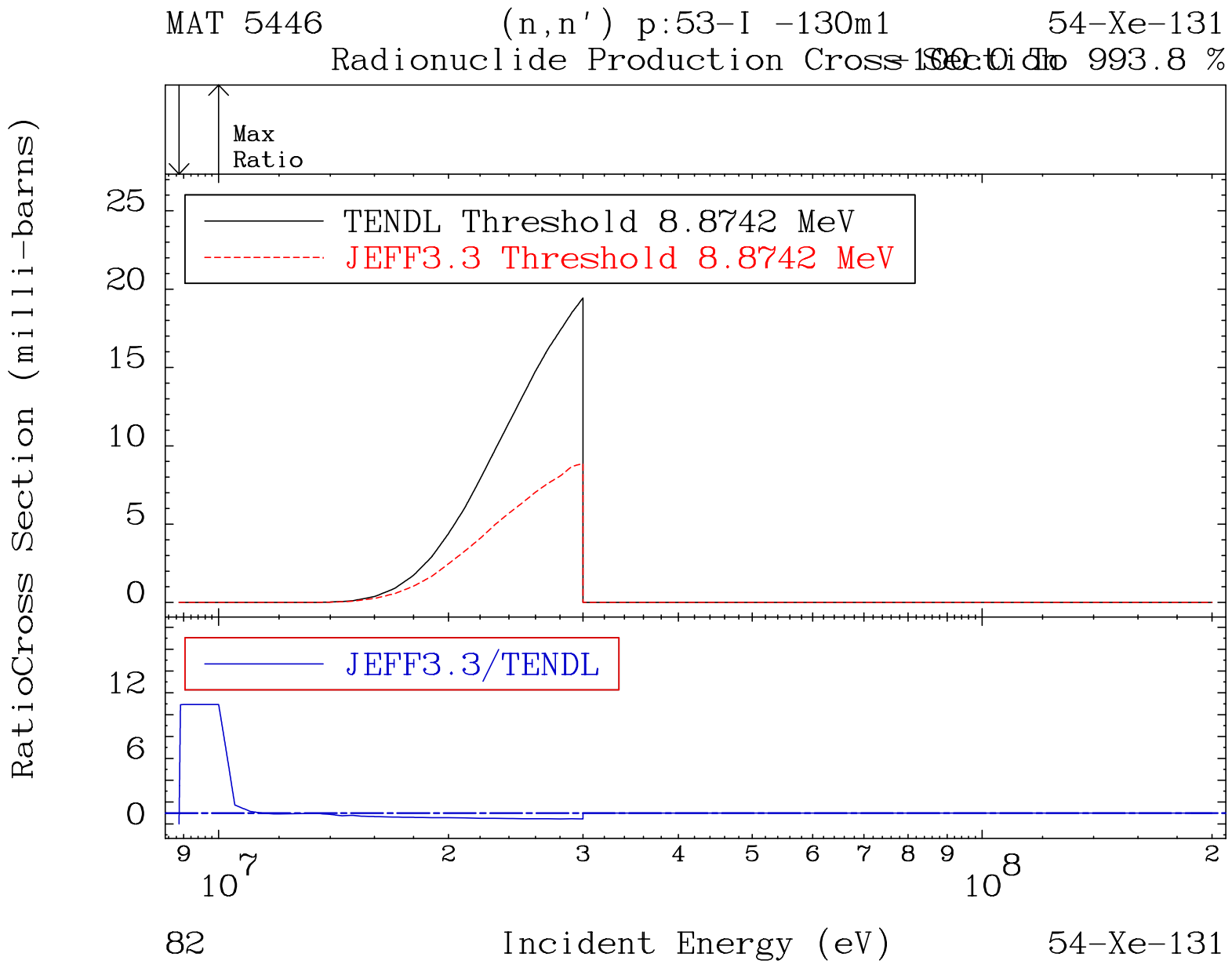

MAT 5446
(n,n') α:52-Te-127g
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 2.5777 MeV
JEFF3.3 Threshold 2.5766 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
77
54-Xe-131

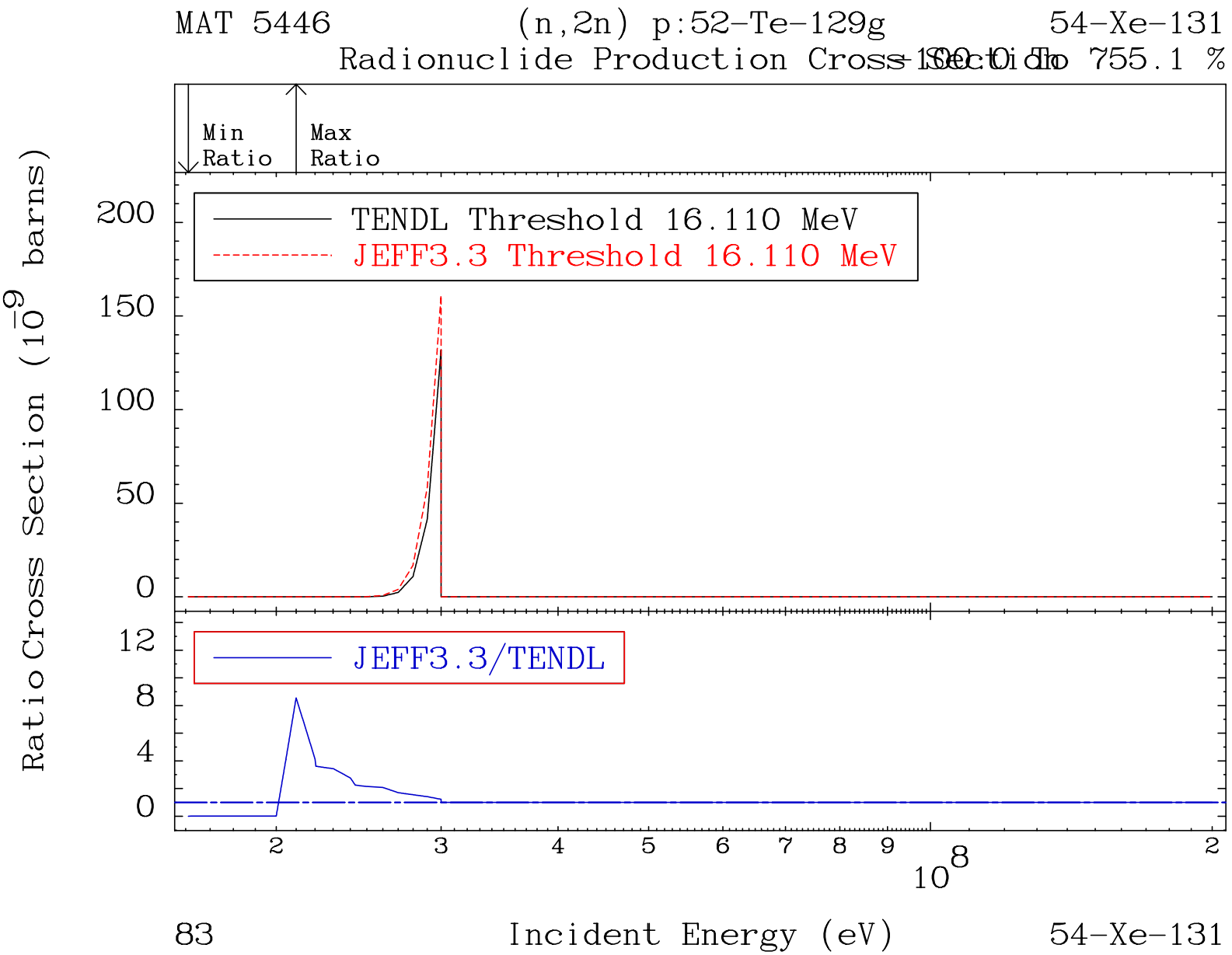

MAT 5446
(n,n') α:52-Te-127m2
54-Xe-131
Radionuclide Production Cross-Section
Max Ratio
Min Ratio
TENDL Threshold 2.6666 MeV
JEFF3.3 Threshold 2.6655 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
78
54-Xe-131

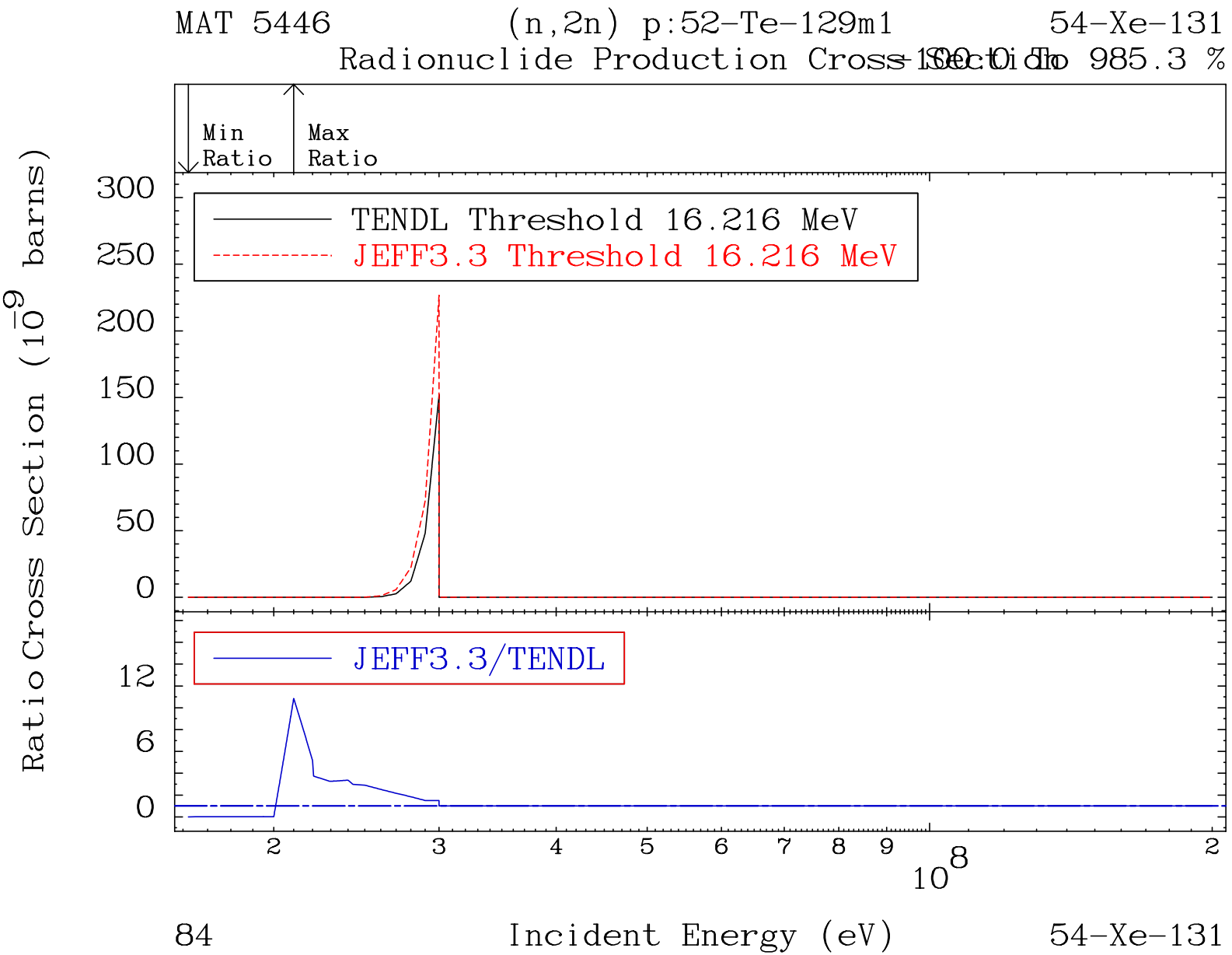

MAT 5446
(n,3n) α:52-Te-125g
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 18.098 MeV
JEFF3.3 Threshold 18.098 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
10^4
10^2
10^0
2
3
4
5
6
7
8
9
10^8
2
79
Incident Energy (eV)
54-Xe-131

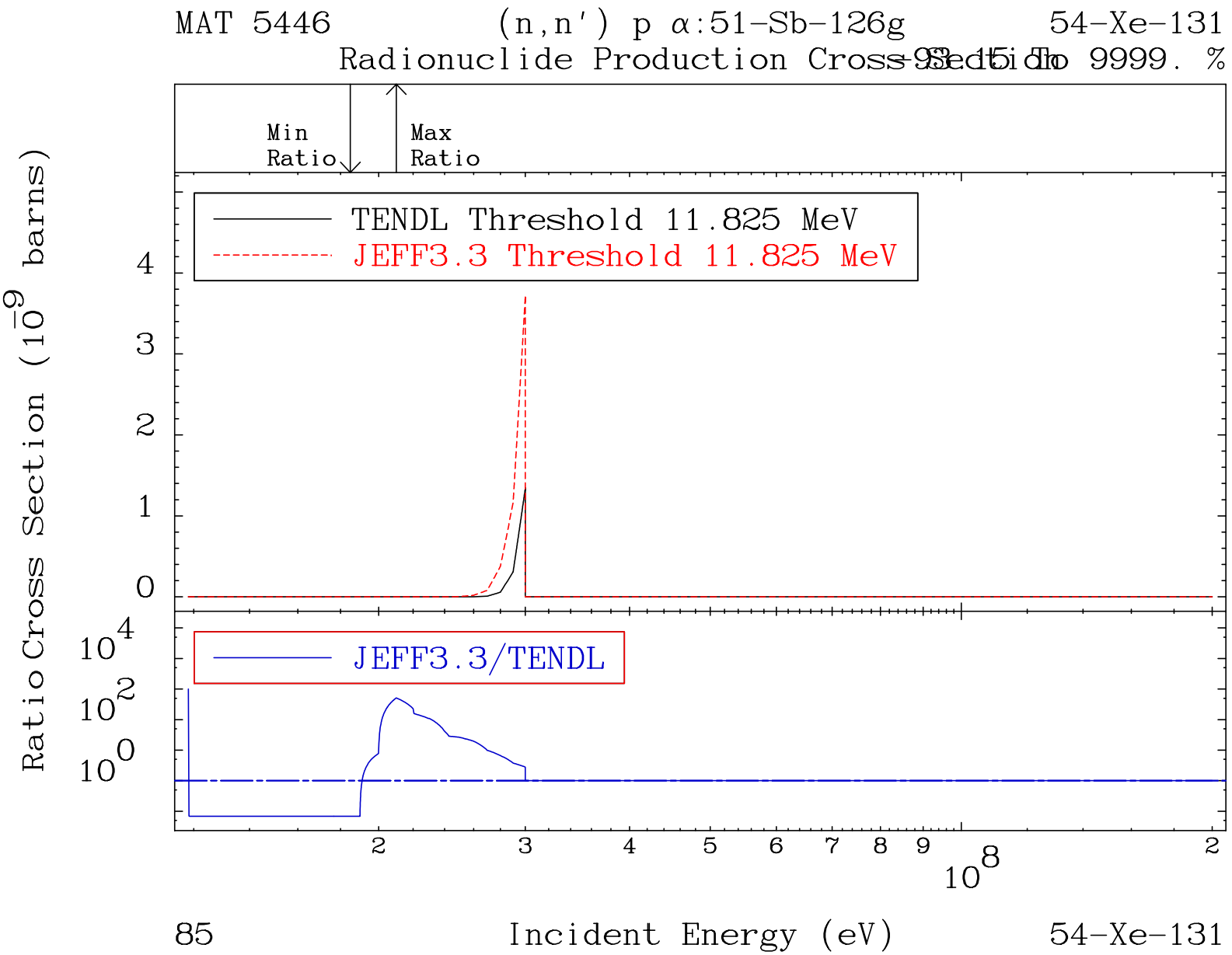

MAT 5446
(n,3n) α:52-Te-125m2
54-Xe-131
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 18.244 MeV
JEFF3.3 Threshold 18.244 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
10^3
10^0
2
3
4
5
6
7
8
9
10^8
2
80
Incident Energy (eV)
54-Xe-131

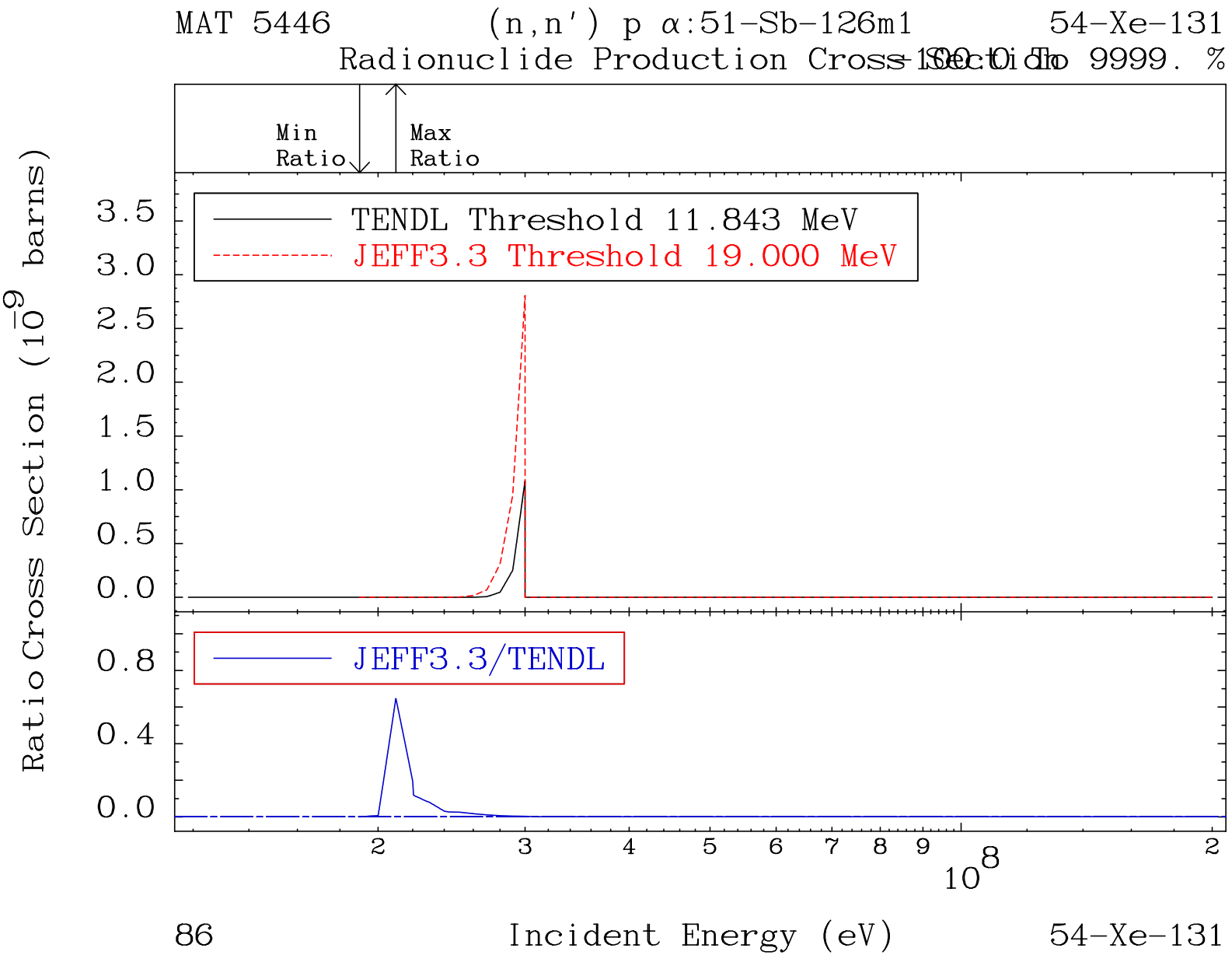

MAT 5446
(n,n') p:53-I -130g
54-Xe-131
Radionuclide Production Cross Section To 520.7 %
Max
Ratio
TENDL Threshold 8.8339 MeV
JEFF3.3 Threshold 8.8339 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
35
30
25
20
15
10
5
0
8
4
0
9
2
3
4
5
6
7
8
9
2
10^7
10^8
81
Incident Energy (eV)
54-Xe-131

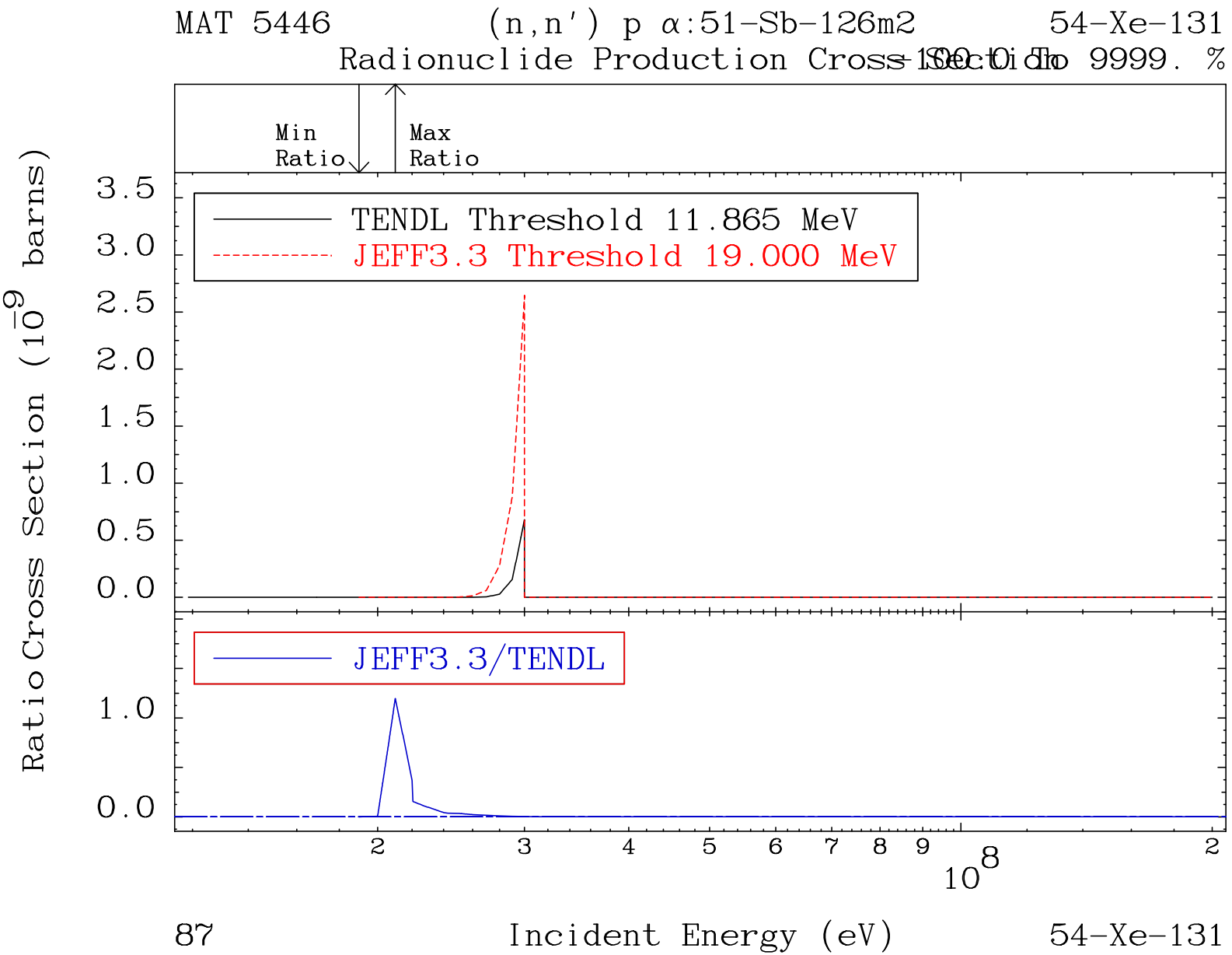

MAT 5446
(n,n') p:53-I -130m1
54-Xe-131
Radionuclide Production Cross Section To 993.8 %
Max
Ratio
TENDL Threshold 8.8742 MeV
JEFF3.3 Threshold 8.8742 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
12
6
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
82
Incident Energy (eV)
54-Xe-131

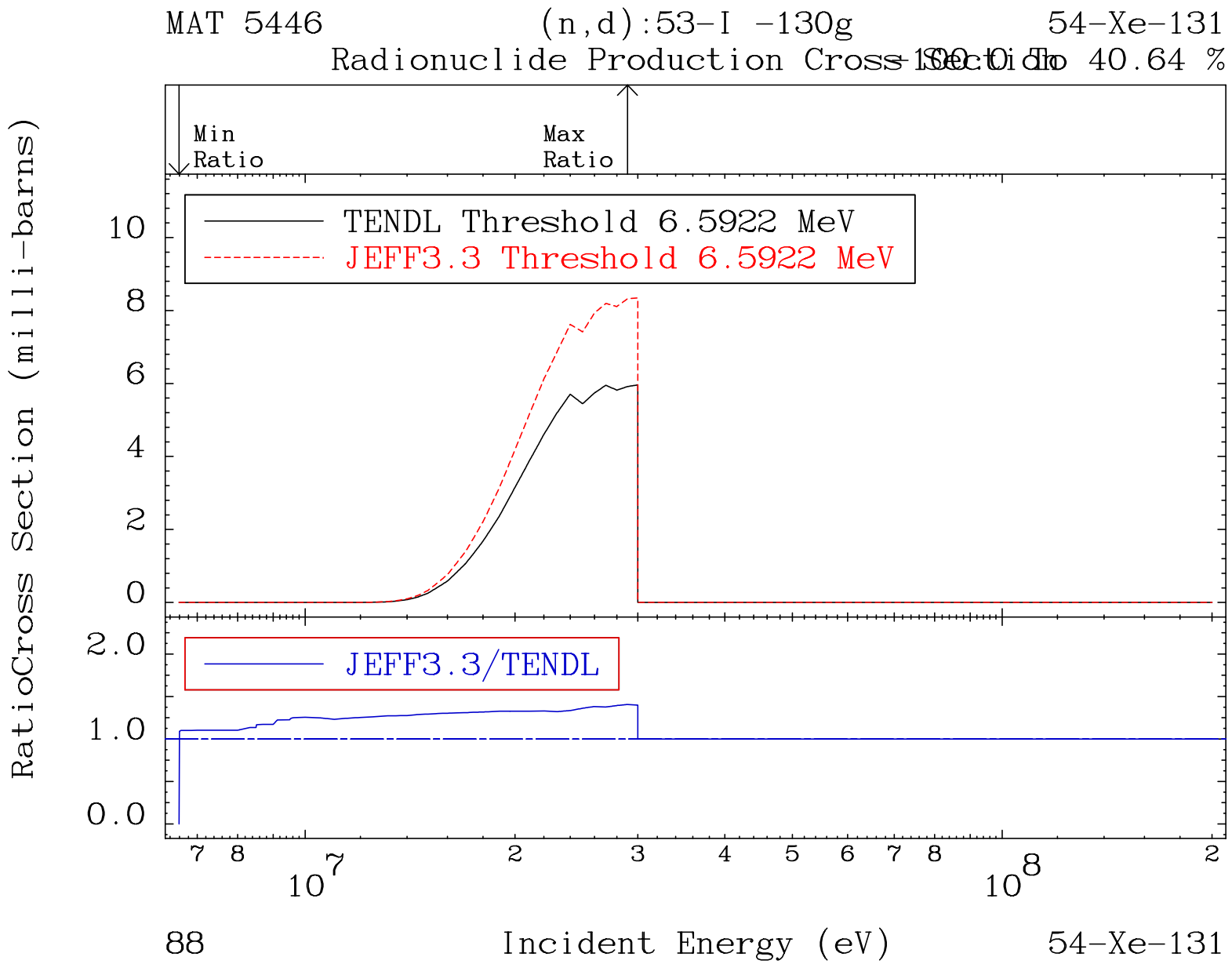

MAT 5446
(n,2n) p:52-Te-129g
54-Xe-131
Radionuclide Production Cross Section To 755.1 %
Min Ratio
Max Ratio
TENDL Threshold 16.110 MeV
JEFF3.3 Threshold 16.110 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
200
150
100
50
0
12
8
4
0
2
3
4
5
6
7
8
9
10^8
2
83
Incident Energy (eV)
54-Xe-131

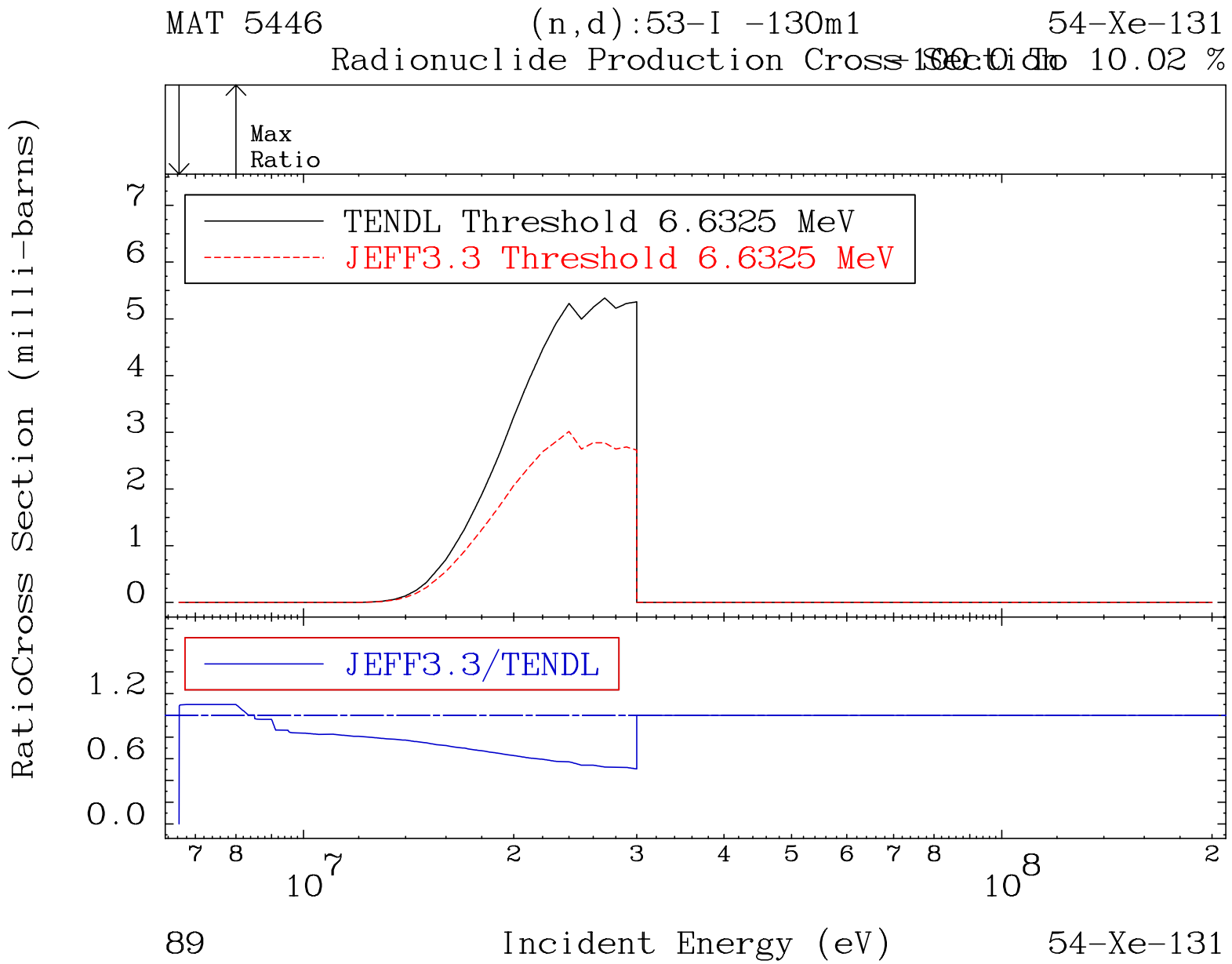

MAT 5446
(n,2n) p:52-Te-129m1
54-Xe-131
Radionuclide Production Cross Section To 985.3 %
Min Ratio
Max Ratio
TENDL Threshold 16.216 MeV
JEFF3.3 Threshold 16.216 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
300
250
200
150
100
50
0
12
6
0
2
3
4
5
6
7
8
9
10^8
2
84
Incident Energy (eV)
54-Xe-131

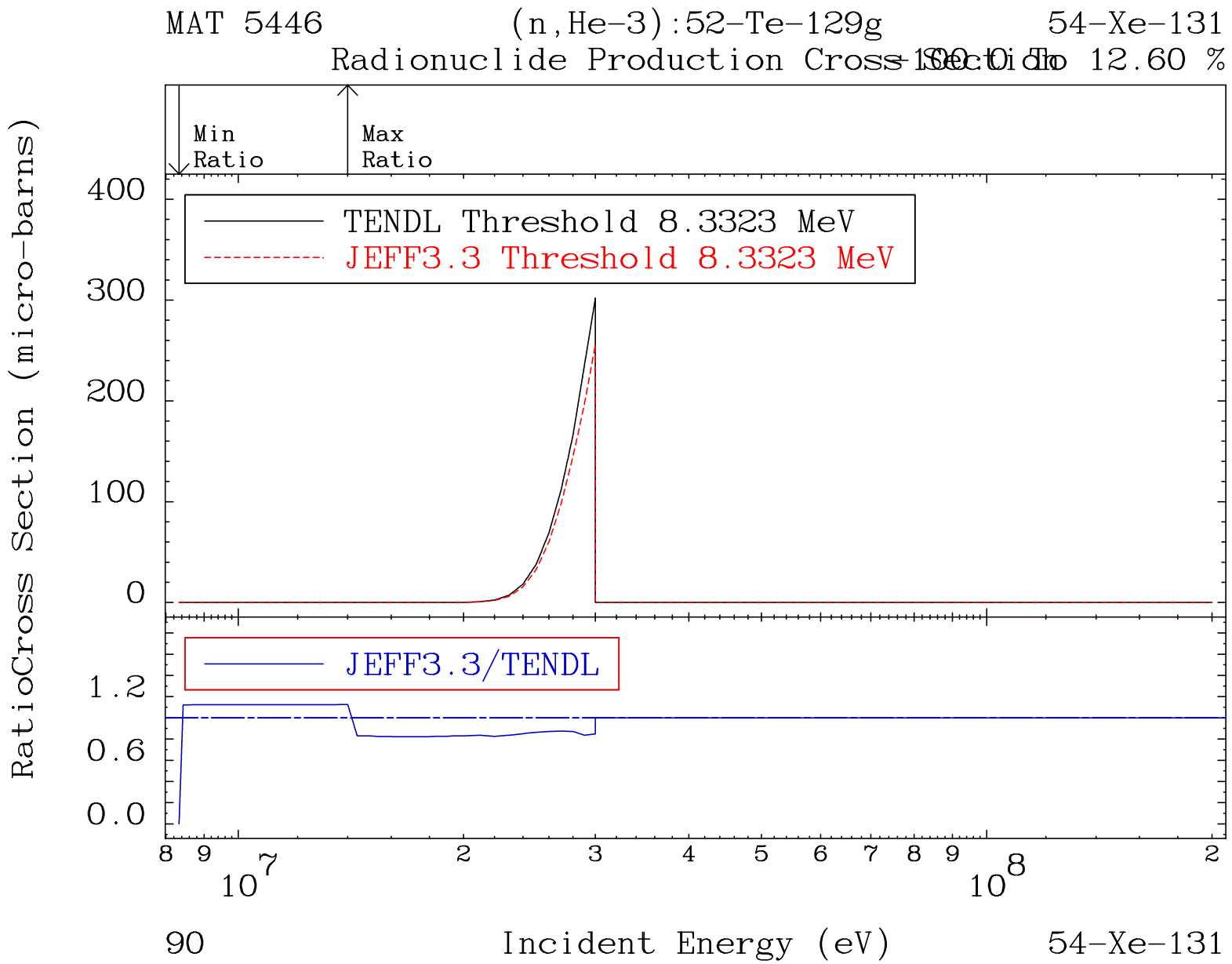

MAT 5446
(n,n') p α:51-Sb-126g
54-Xe-131
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 11.825 MeV
JEFF3.3 Threshold 11.825 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
Incident Energy (eV)
85
54-Xe-131

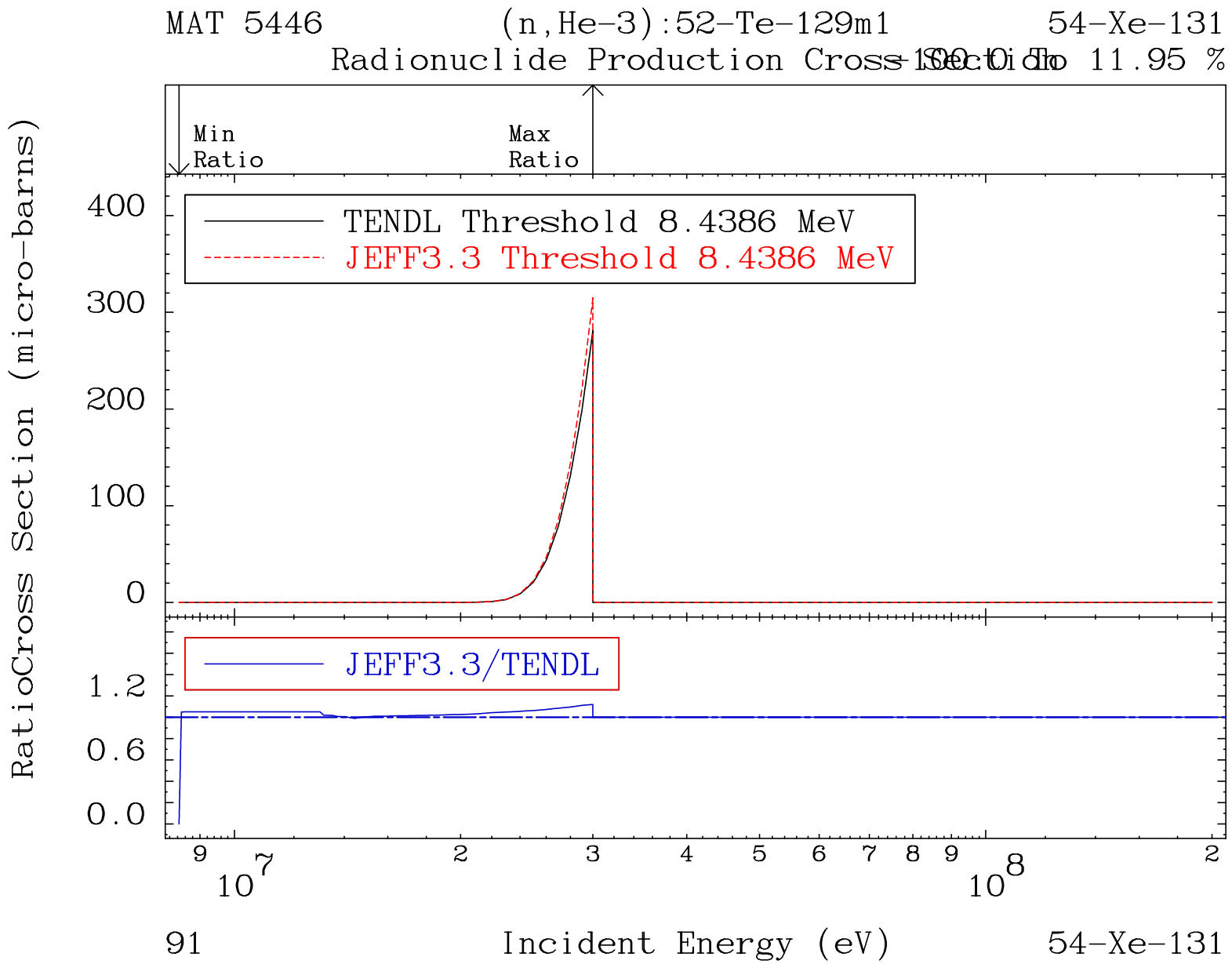

MAT 5446
(n,n') p α:51-Sb-126m1
54-Xe-131
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 11.843 MeV
JEFF3.3 Threshold 19.000 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.8
0.4
0.0
2
3
4
5
6
7
8
9
10^8
2
86
Incident Energy (eV)
54-Xe-131

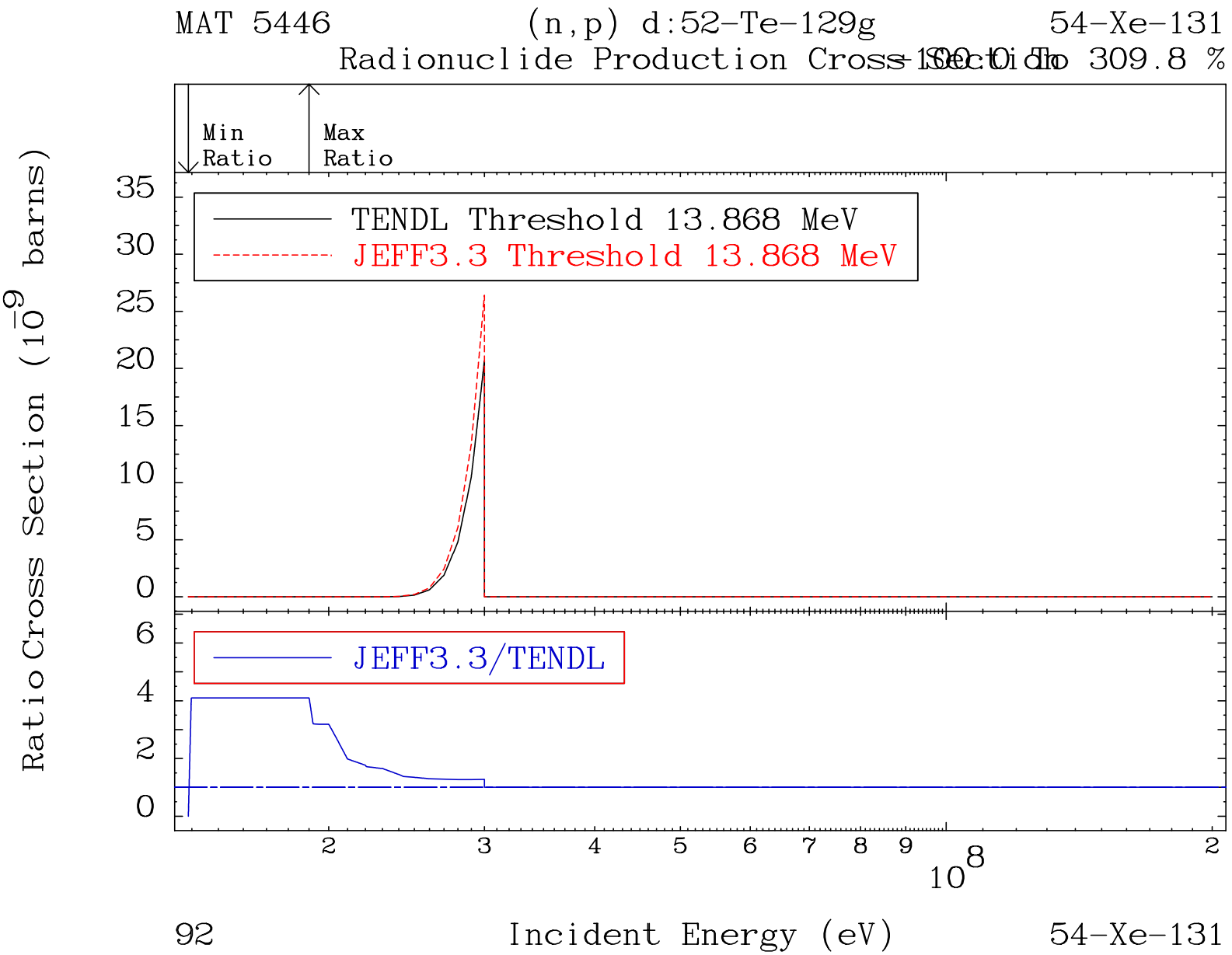

MAT 5446
(n,n') p α:51-Sb-126m2
54-Xe-131
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 11.865 MeV
JEFF3.3 Threshold 19.000 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.0
0.0
2
3
4
5
6
7
8
9
10^8
2
87
Incident Energy (eV)
54-Xe-131

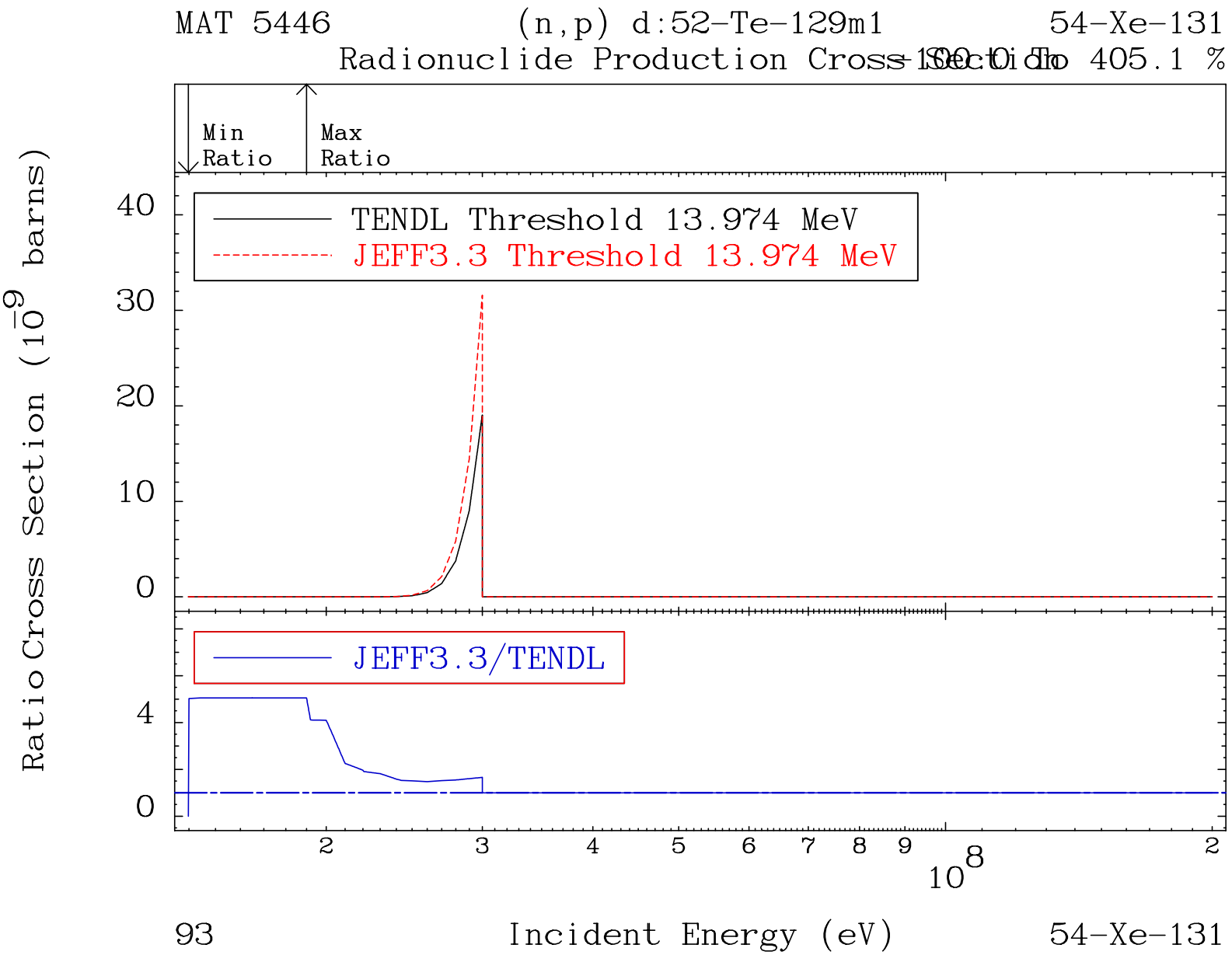

MAT 5446
(n,d):53-I -130g
54-Xe-131
Radionuclide Production Cross Section To 40.64 %
Min Ratio
Max Ratio
TENDL Threshold 6.5922 MeV
JEFF3.3 Threshold 6.5922 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
10
8
6
4
2
0
2.0
1.0
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
88
Incident Energy (eV)
54-Xe-131


MAT 5446
(n,d):53-I -130m1
54-Xe-131
Radionuclide Production Cross Section
Max
Ratio
TENDL Threshold 6.6325 MeV
JEFF3.3 Threshold 6.6325 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
89
54-Xe-131


MAT 5446
(n,He-3):52-Te-129g
54-Xe-131
Radionuclide Production Cross Section To 12.60 %
Min Ratio
Max Ratio
TENDL Threshold 8.3323 MeV
JEFF3.3 Threshold 8.3323 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
1.2
0.6
0.0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
90
Incident Energy (eV)
54-Xe-131


MAT 5446
(n,He-3):52-Te-129m1
54-Xe-131
Radionuclide Production Cross Section To 11.95 %
Min Ratio
Max Ratio
TENDL Threshold 8.4386 MeV
JEFF3.3 Threshold 8.4386 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
1.2
0.6
0.0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
91
Incident Energy (eV)
54-Xe-131


MAT 5446
(n,p) d:52-Te-129g
54-Xe-131
Radionuclide Production Cross Section To 309.8 %
Min Ratio
Max Ratio
TENDL Threshold 13.868 MeV
JEFF3.3 Threshold 13.868 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
35
30
25
20
15
10
5
0
6
4
2
0
2
3
4
5
6
7
8
9
10^8
2
92
Incident Energy (eV)
54-Xe-131


MAT 5446
(n,p) d:52-Te-129m1
54-Xe-131
Radionuclide Production Cross Section To 405.1 %
Min Ratio
Max Ratio
TENDL Threshold 13.974 MeV
JEFF3.3 Threshold 13.974 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
40
30
20
10
0
4
0
2
3
4
5
6
7
8
9
10^8
2
93
Incident Energy (eV)
54-Xe-131