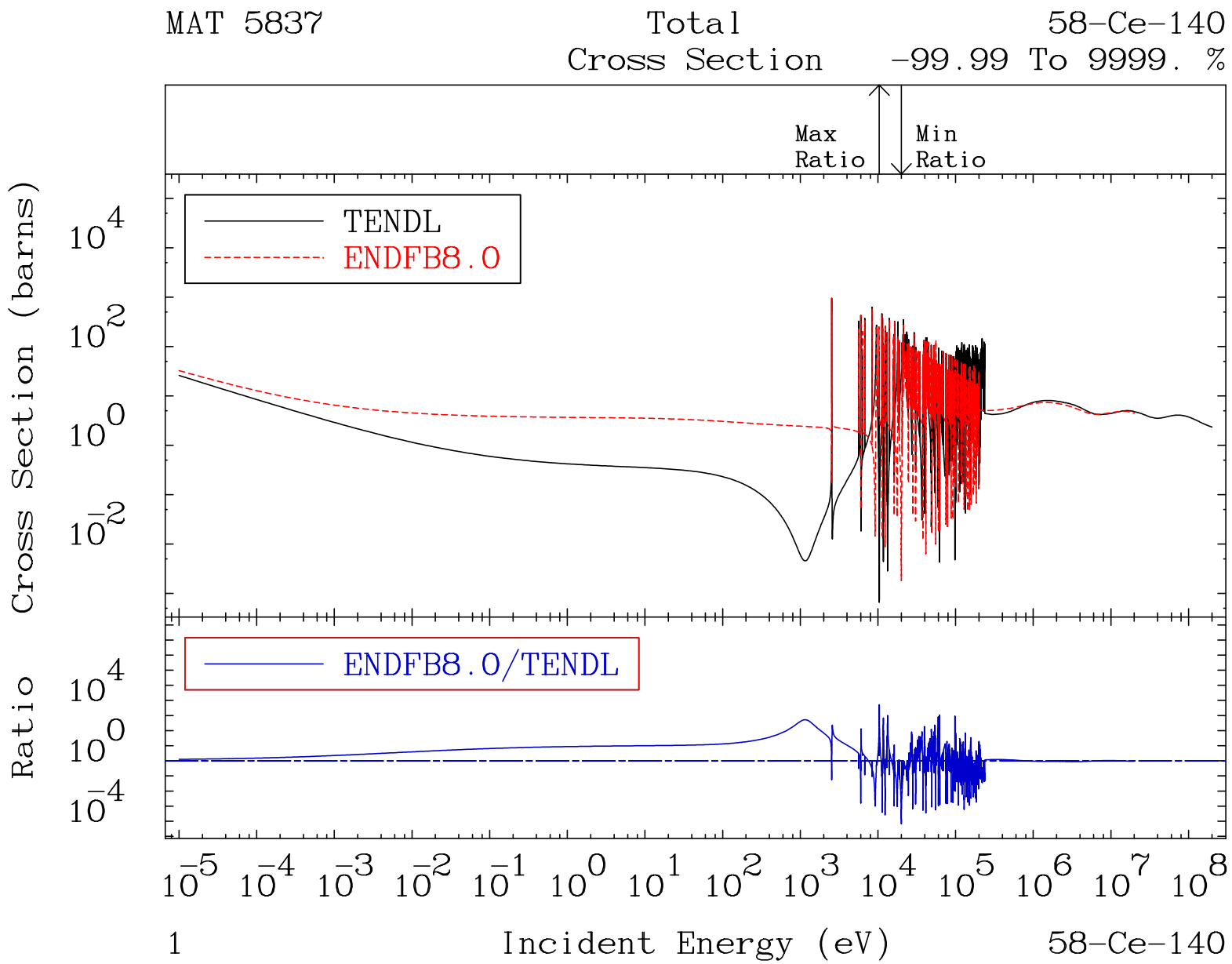
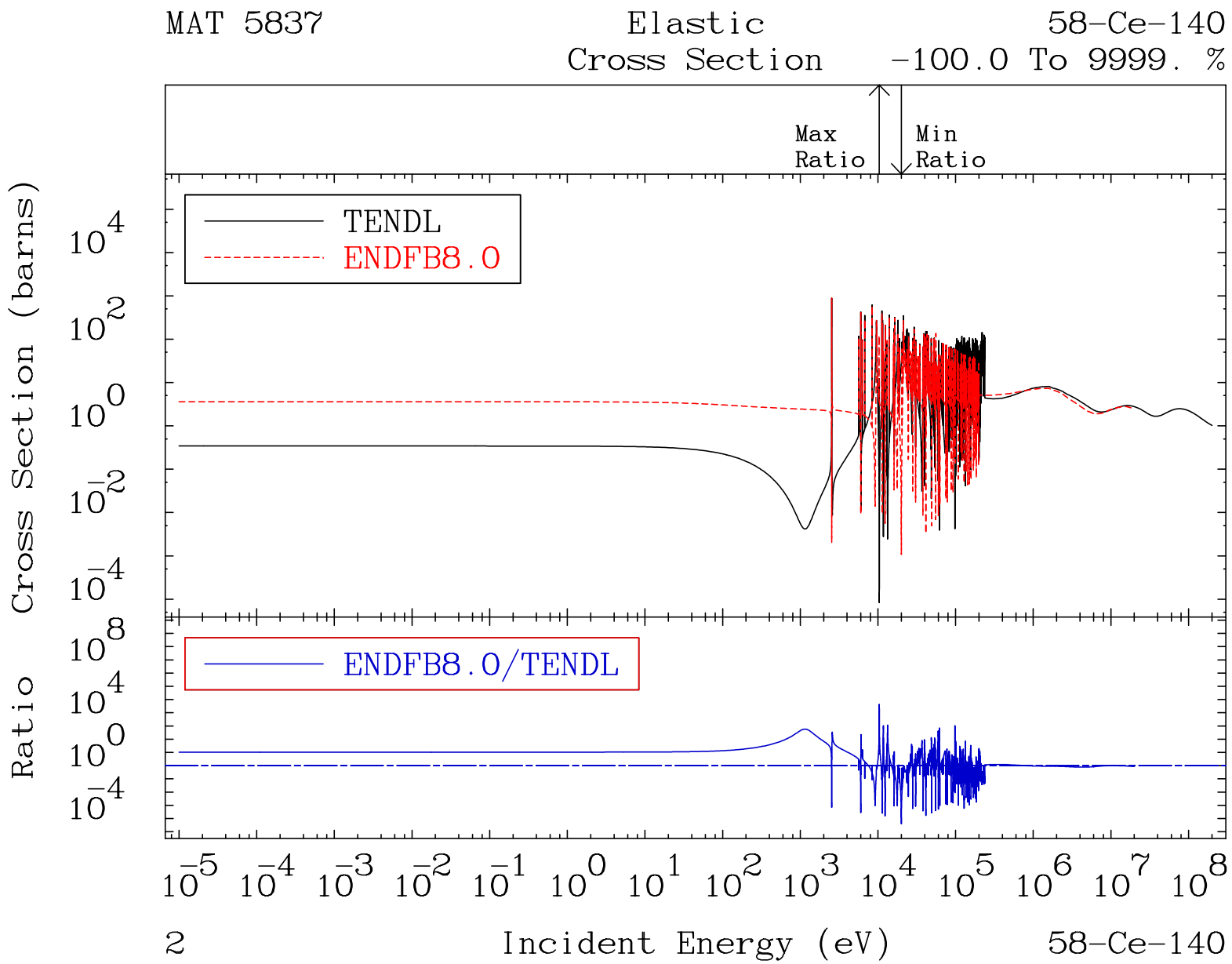
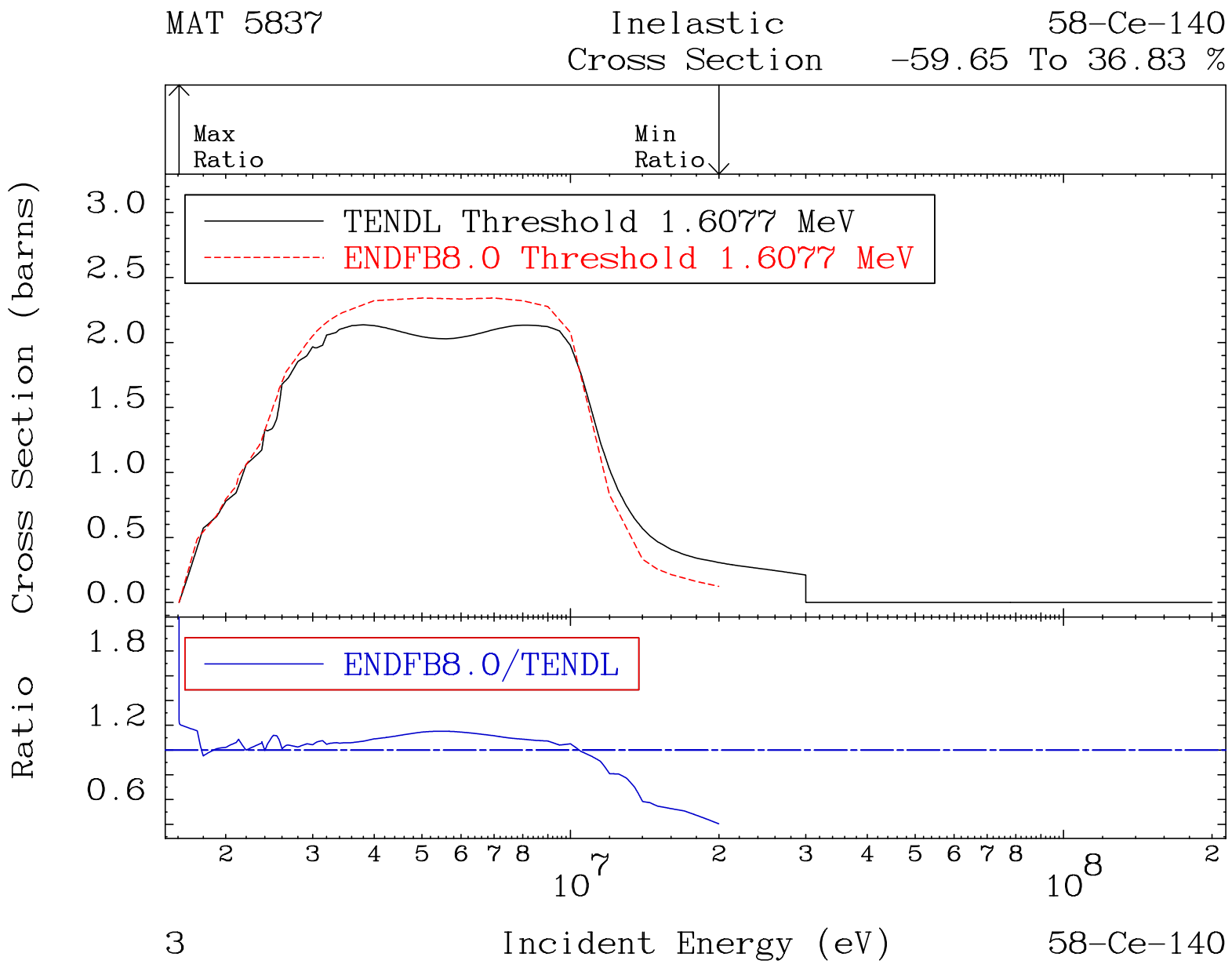
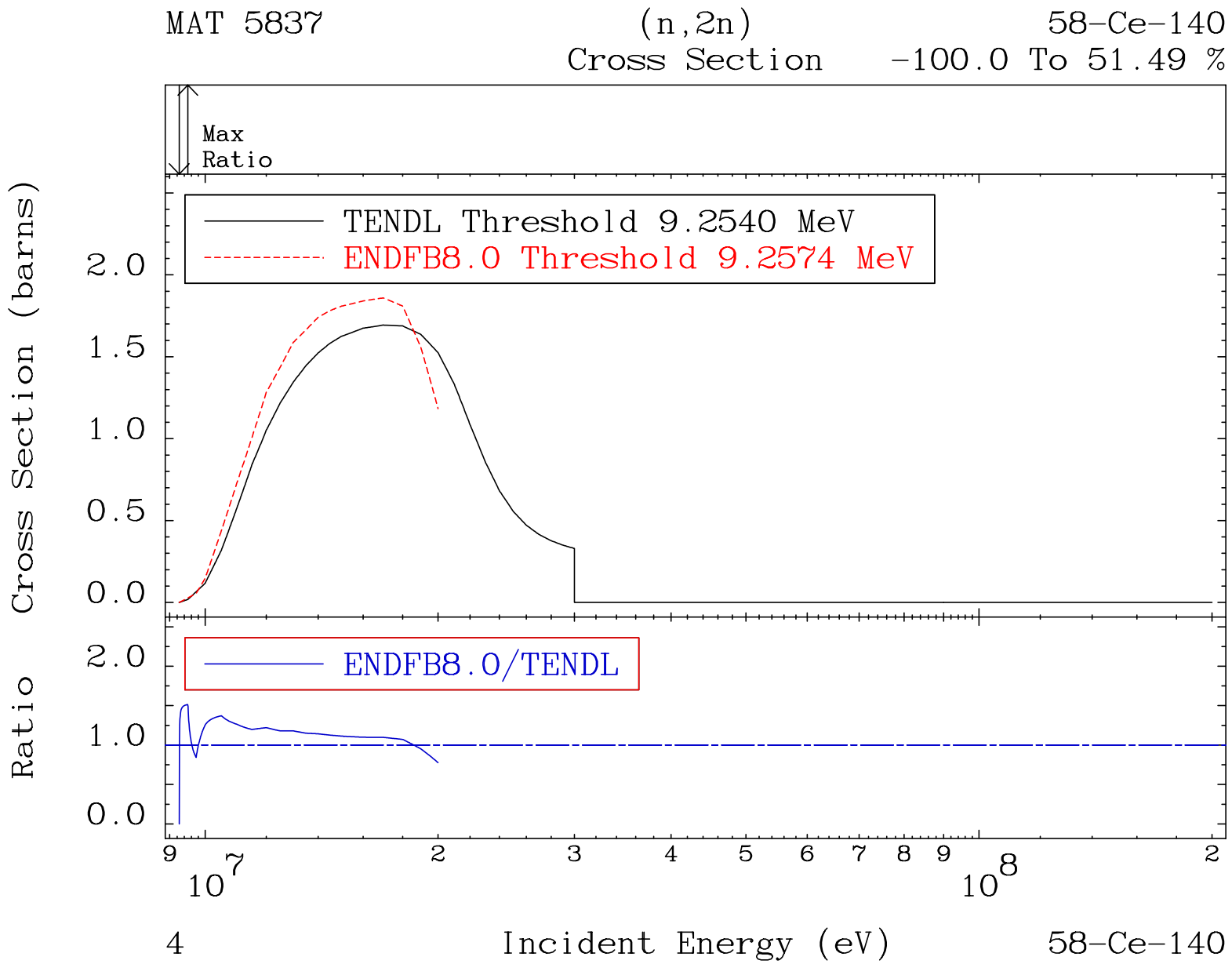
Program Complot
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

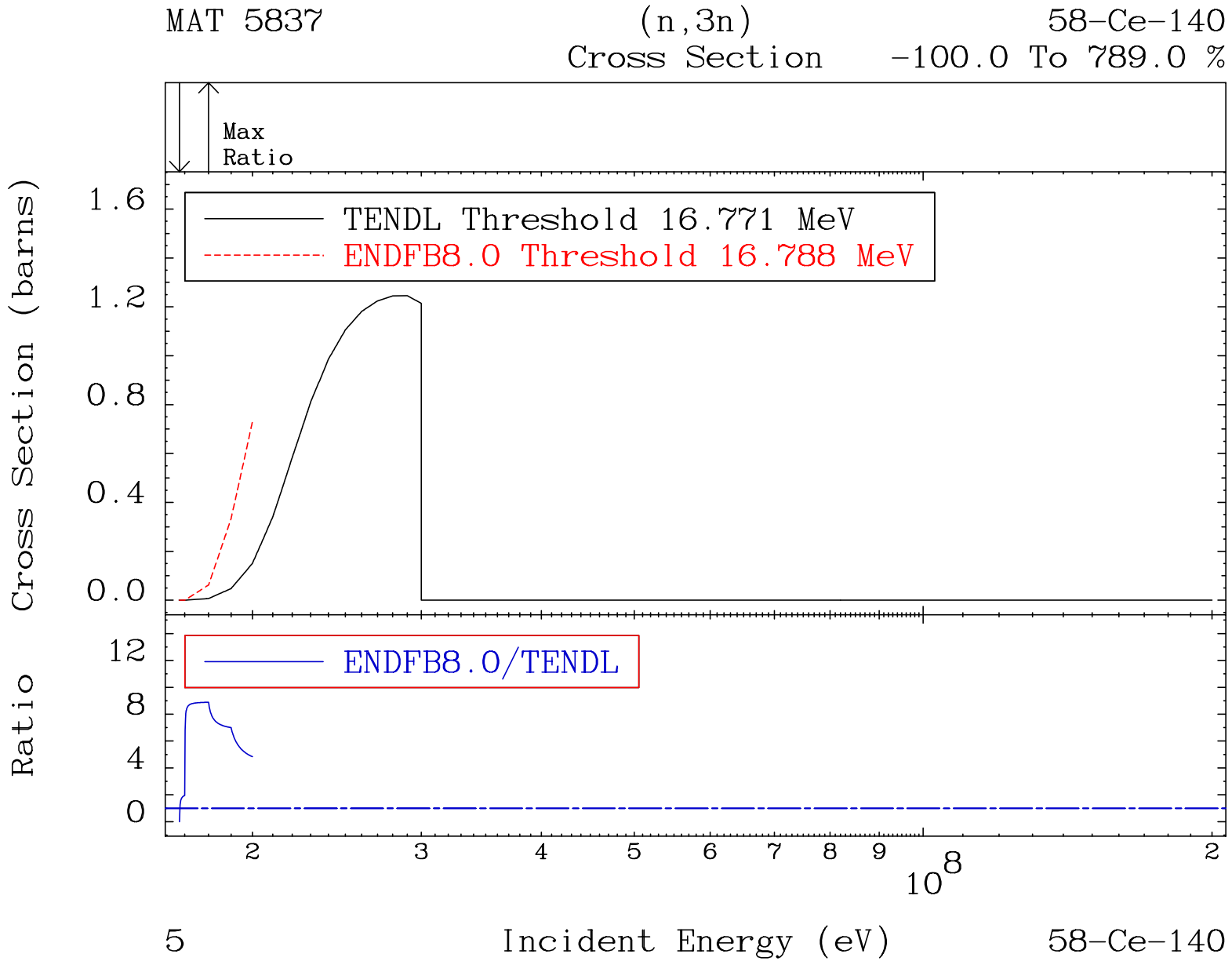
Press Mouse Button to Start

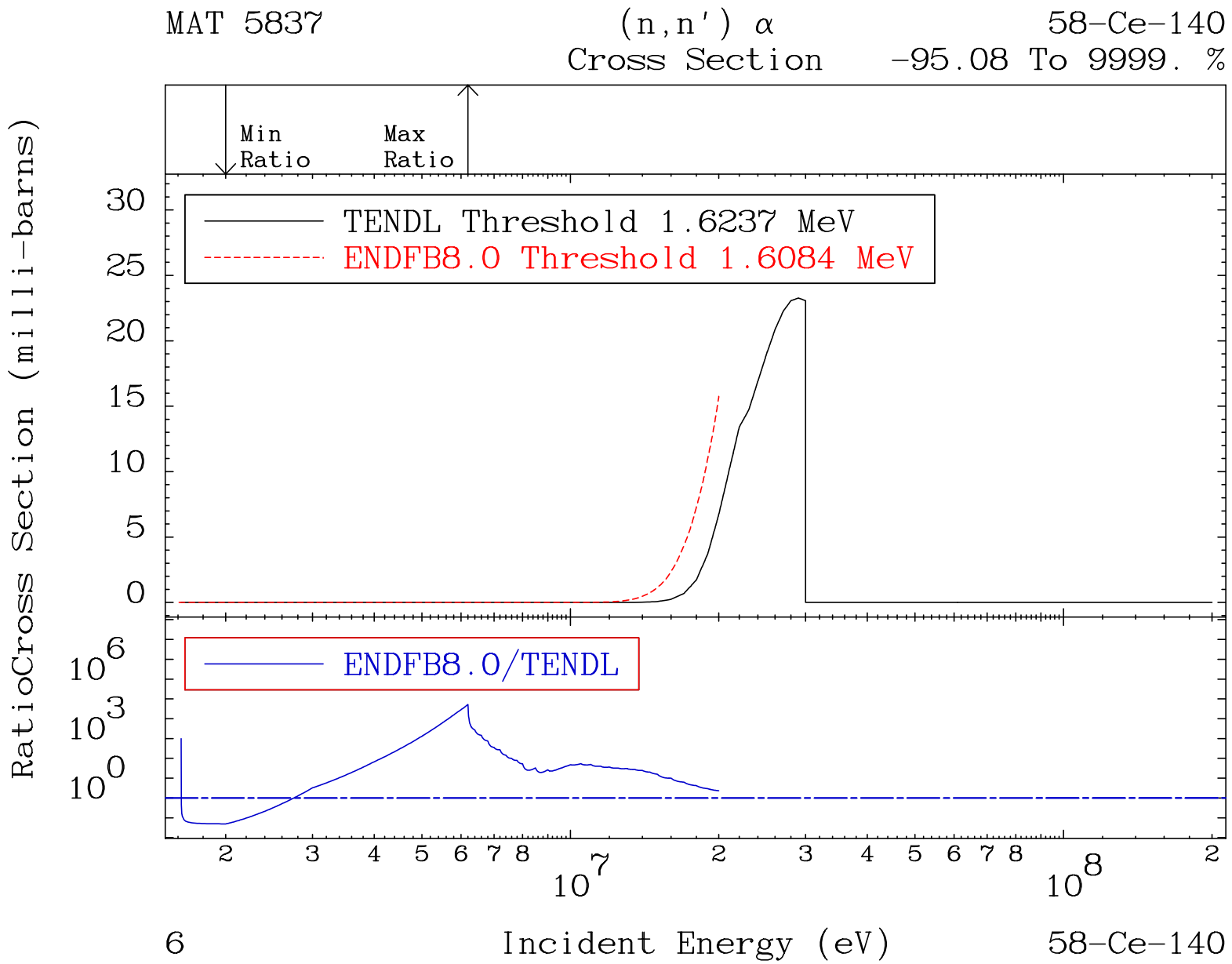

MAT 5837
Total
Cross Section
58-Ce-140
-99.99 To 9999. %
Max
Ratio
Min
Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
1
58-Ce-140

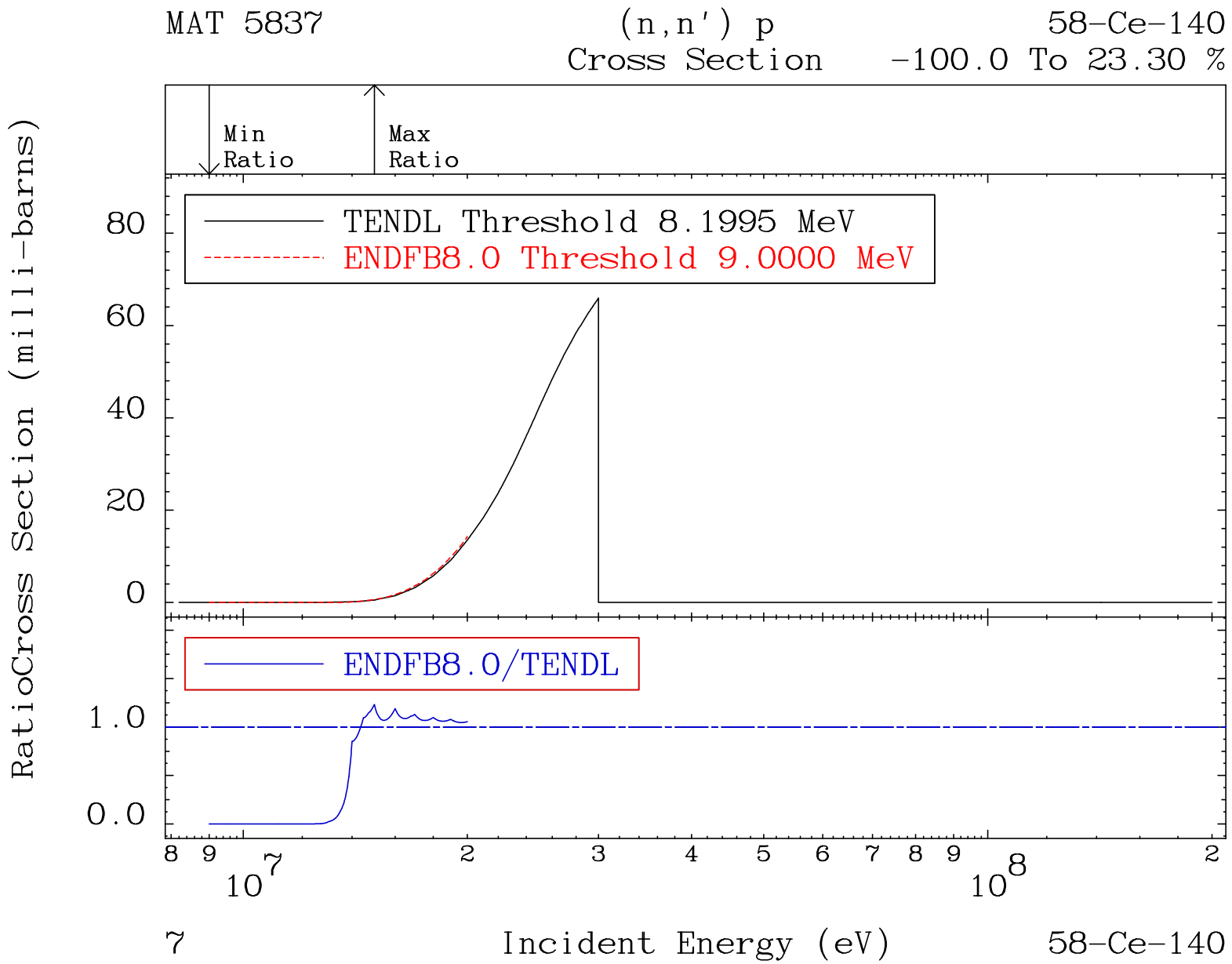

MAT 5837
Elastic
Cross Section
58-Ce-140
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Ratio Cross Section (barns)
Incident Energy (eV)
2
58-Ce-140

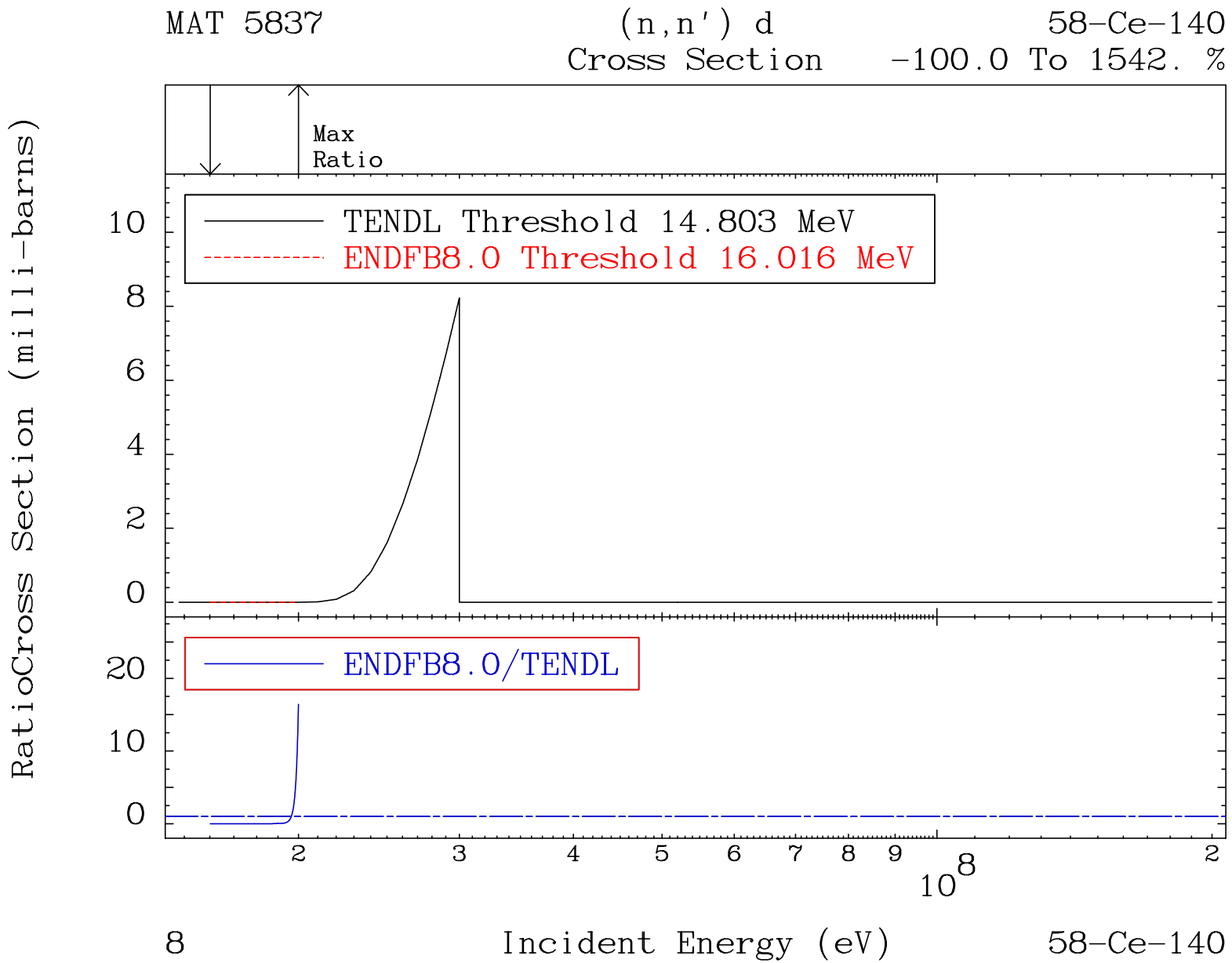

MAT 5837
Inelastic
Cross Section
58-Ce-140
-59.65 To 36.83 %
Max
Ratio
Min
Ratio
TENDL Threshold 1.6077 MeV
ENDFB8.0 Threshold 1.6077 MeV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
3
58-Ce-140

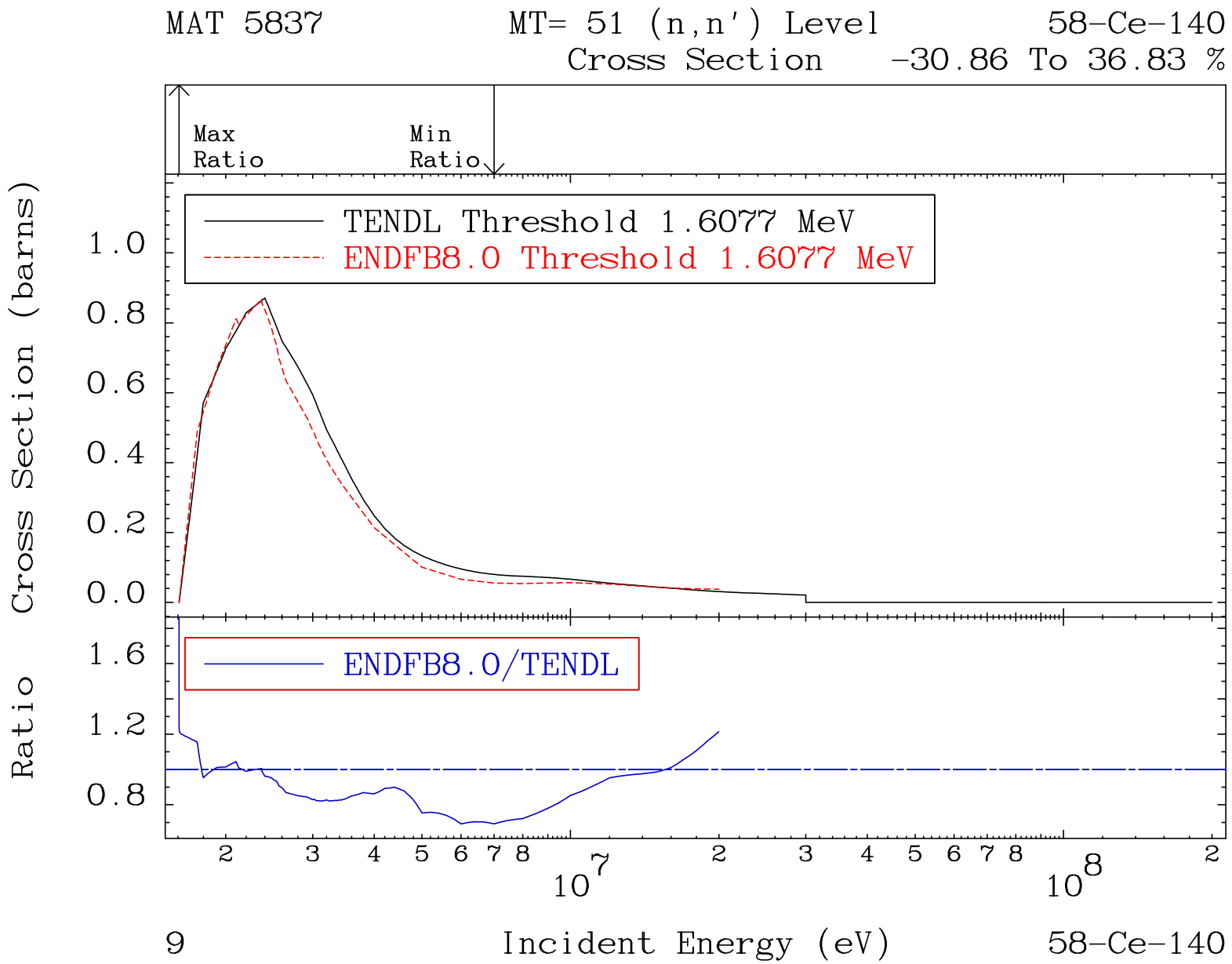

MAT 5837
(n,2n)
Cross Section
58-Ce-140
-100.0 To 51.49 %
Max
Ratio
TENDL Threshold 9.2540 MeV
ENDFB8.0 Threshold 9.2574 MeV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
2.0
1.5
1.0
0.5
0.0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
Incident Energy (eV)
4
58-Ce-140

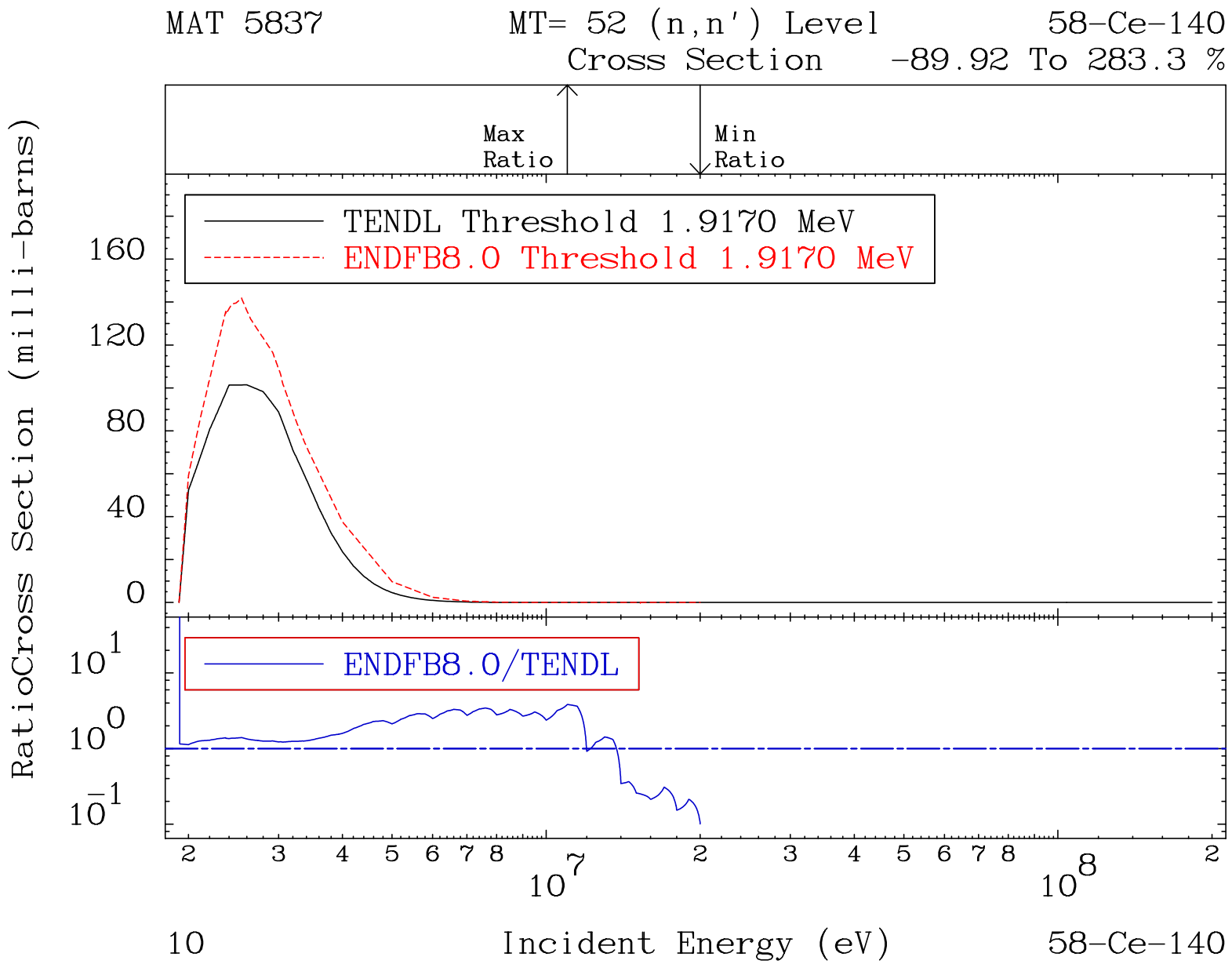

MAT 5837
(n,3n)
Cross Section
58-Ce-140
-100.0 To 789.0 %
Max
Ratio
TENDL Threshold 16.771 MeV
ENDFB8.0 Threshold 16.788 MeV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
1.6
1.2
0.8
0.4
0.0
12
8
4
0
2
3
4
5
6
7
8
9
10^8
2
5
Incident Energy (eV)
58-Ce-140

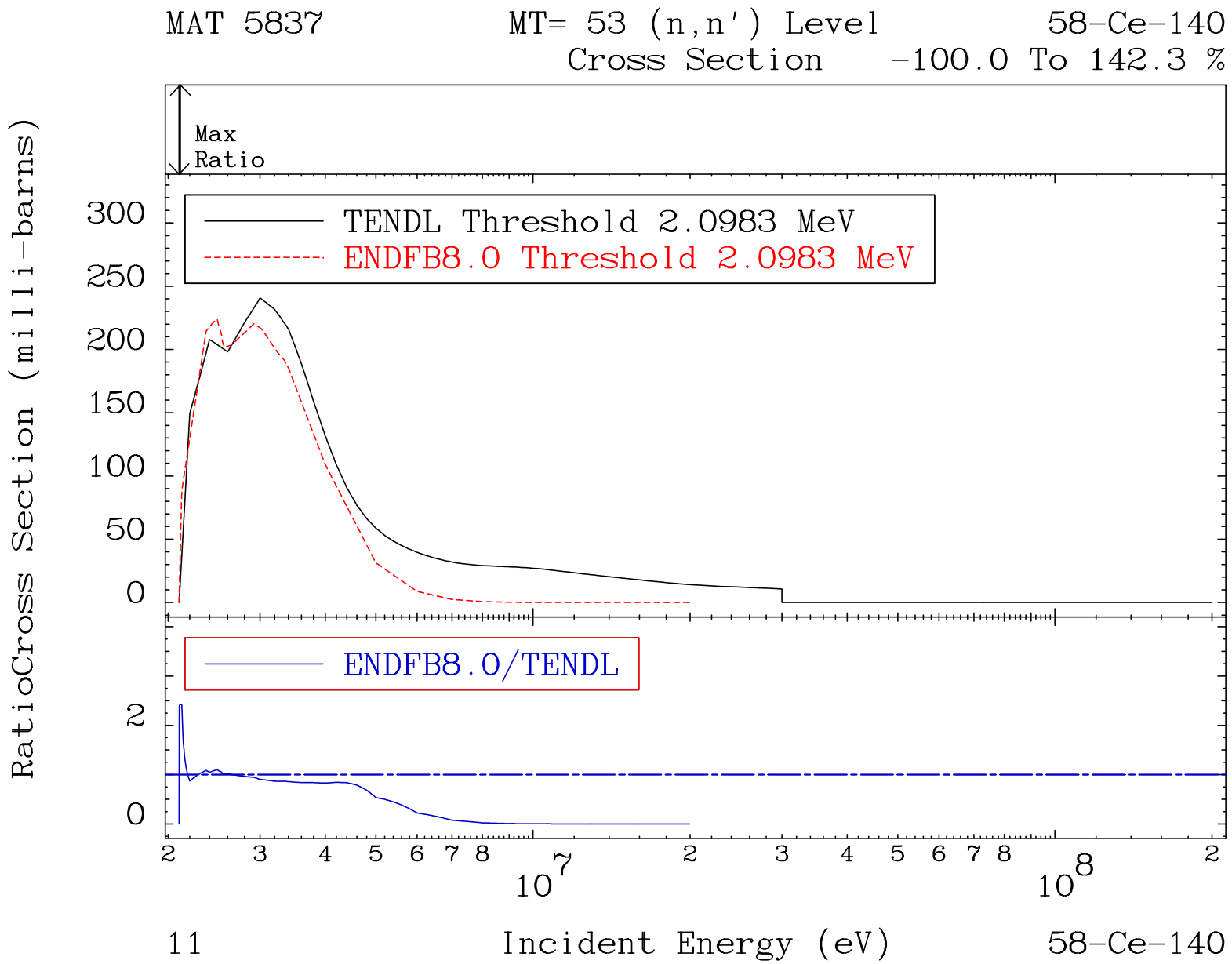

MAT 5837
(n,n') α
58-Ce-140
Cross Section
-95.08 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 1.6237 MeV
ENDFB8.0 Threshold 1.6084 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
6
58-Ce-140

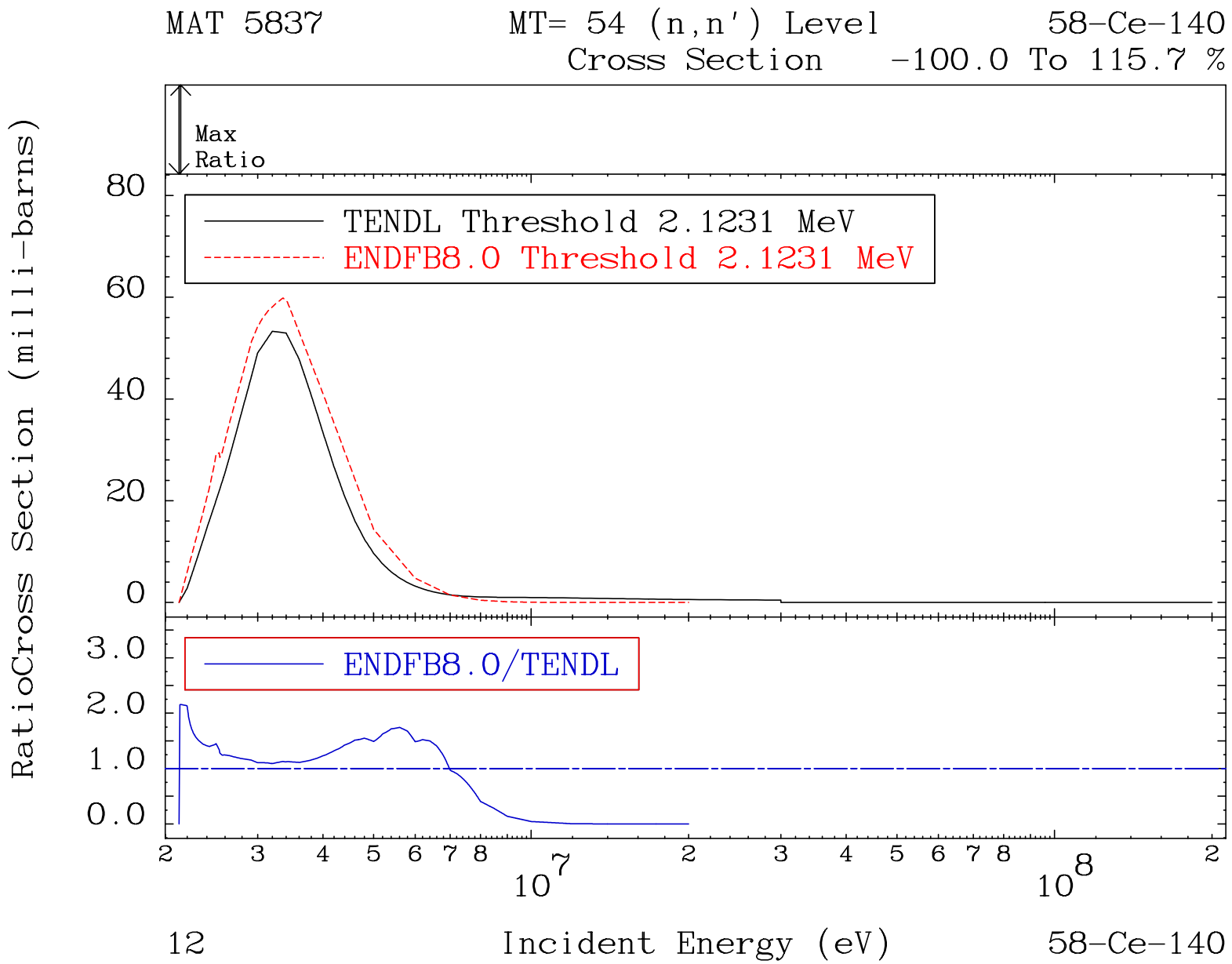

MAT 5837
(n,n') p
Cross Section
58-Ce-140
-100.0 To 23.30 %
Min Ratio
Max Ratio
TENDL Threshold 8.1995 MeV
ENDFB8.0 Threshold 9.0000 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
1.0
0.0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
7
Incident Energy (eV)
58-Ce-140

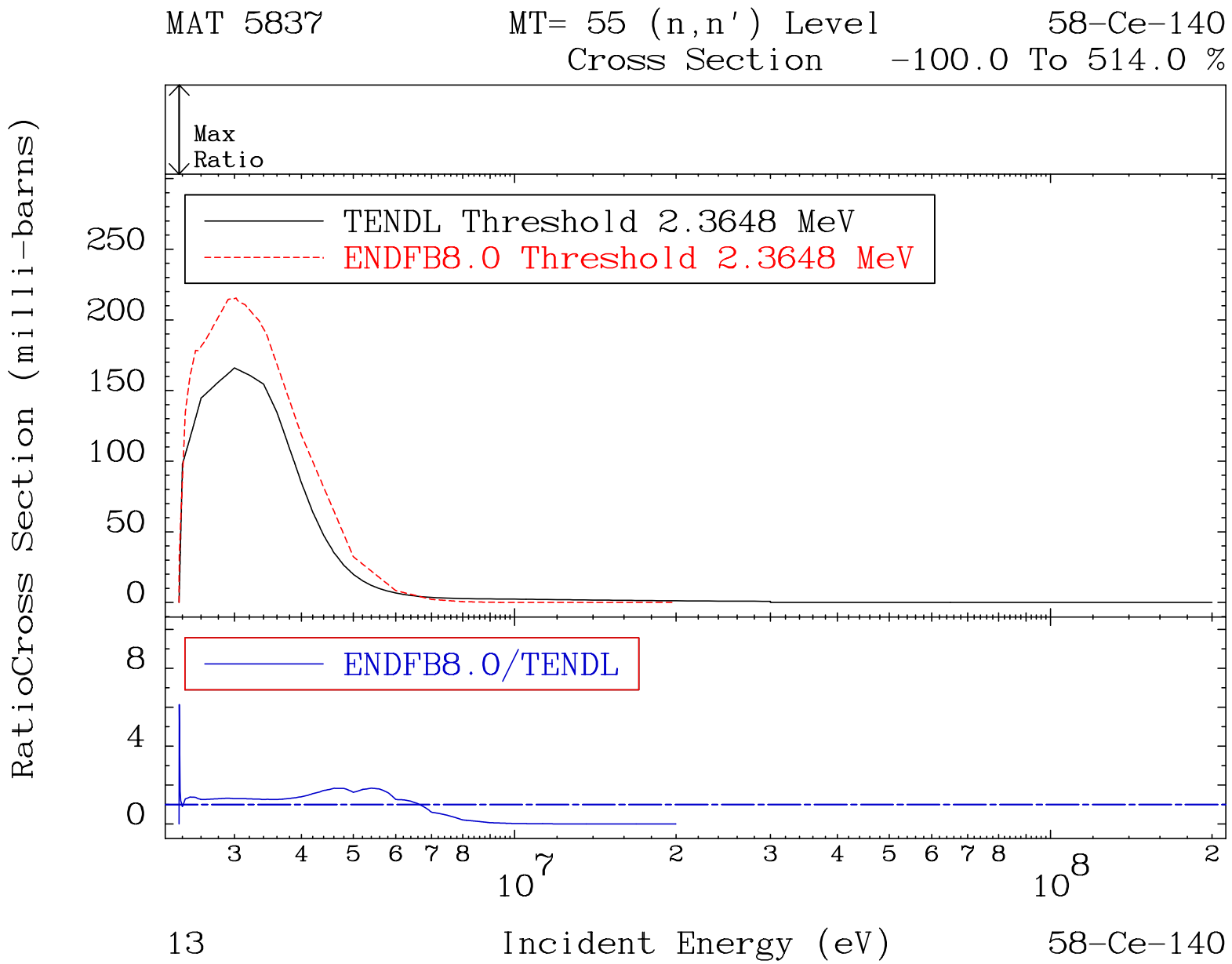

MAT 5837
(n,n') d
Cross Section
58-Ce-140
-100.0 To 1542. %
Max
Ratio
TENDL Threshold 14.803 MeV
ENDFB8.0 Threshold 16.016 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
10
8
6
4
2
0
20
10
0
2
3
4
5
6
7
8
9
10^8
2
8
Incident Energy (eV)
58-Ce-140

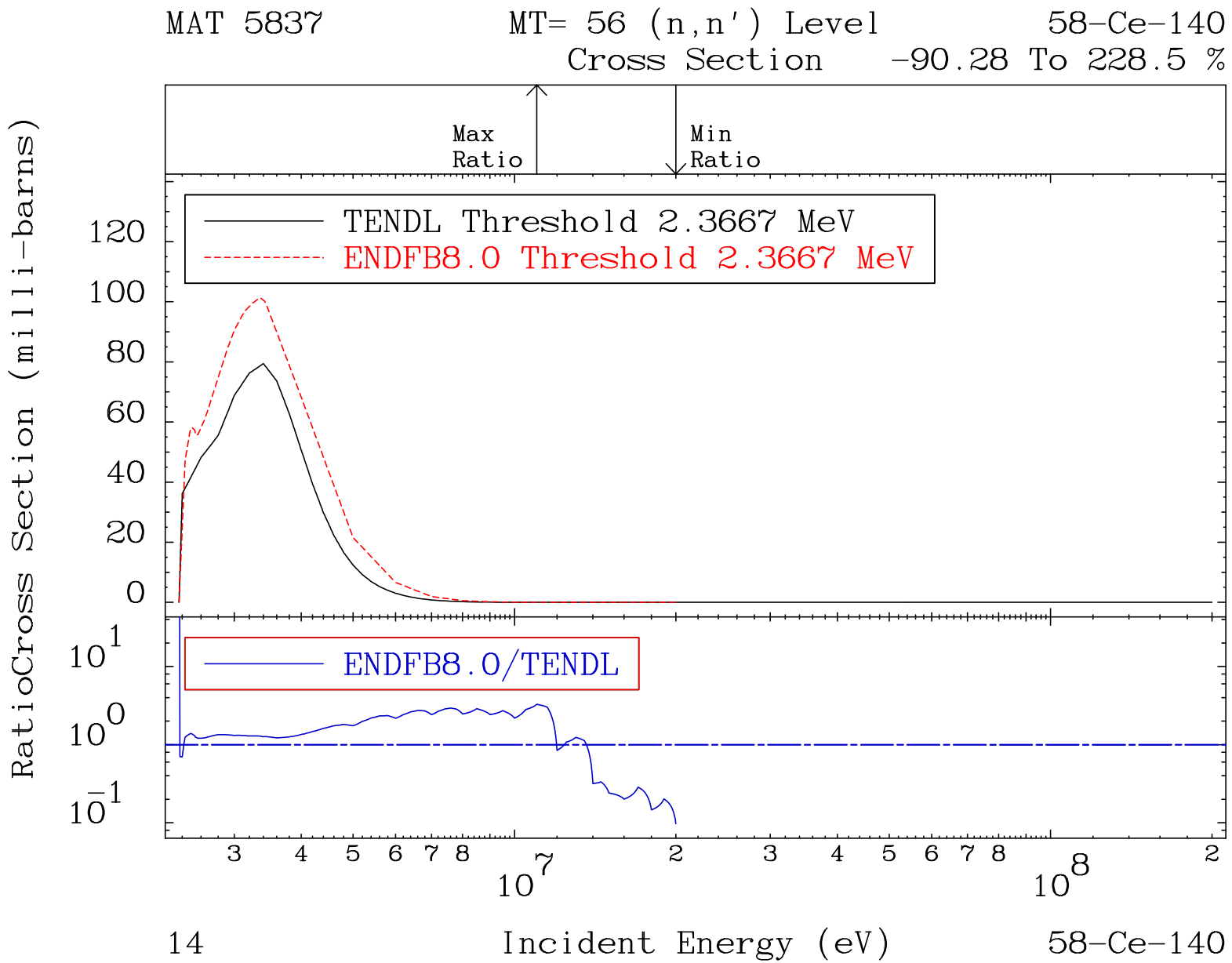

MAT 5837
MT= 51 (n,n') Level
58-Ce-140
Cross Section
-30.86 To 36.83 %
Max Ratio
Min Ratio
TENDL Threshold 1.6077 MeV
ENDFB8.0 Threshold 1.6077 MeV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
1.0
0.8
0.6
0.4
0.2
0.0
1.6
1.2
0.8
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
9
Incident Energy (eV)
58-Ce-140

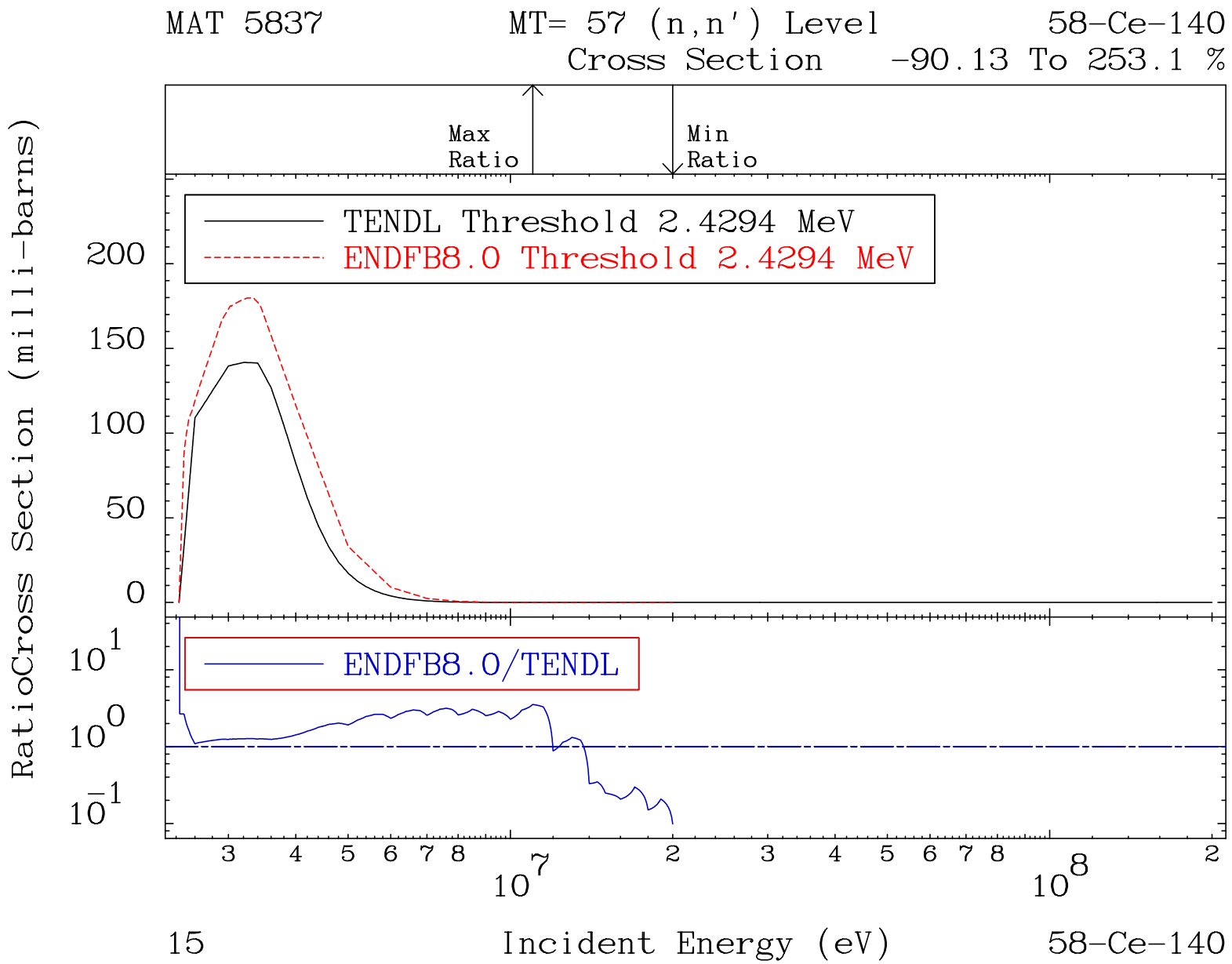

MAT 5837
MT= 52 (n,n') Level
58-Ce-140
Cross Section
-89.92 To 283.3 %
Max Ratio
Min Ratio
TENDL Threshold 1.9170 MeV
ENDFB8.0 Threshold 1.9170 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
10^1
10^0
10^-1
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
10
Incident Energy (eV)
58-Ce-140

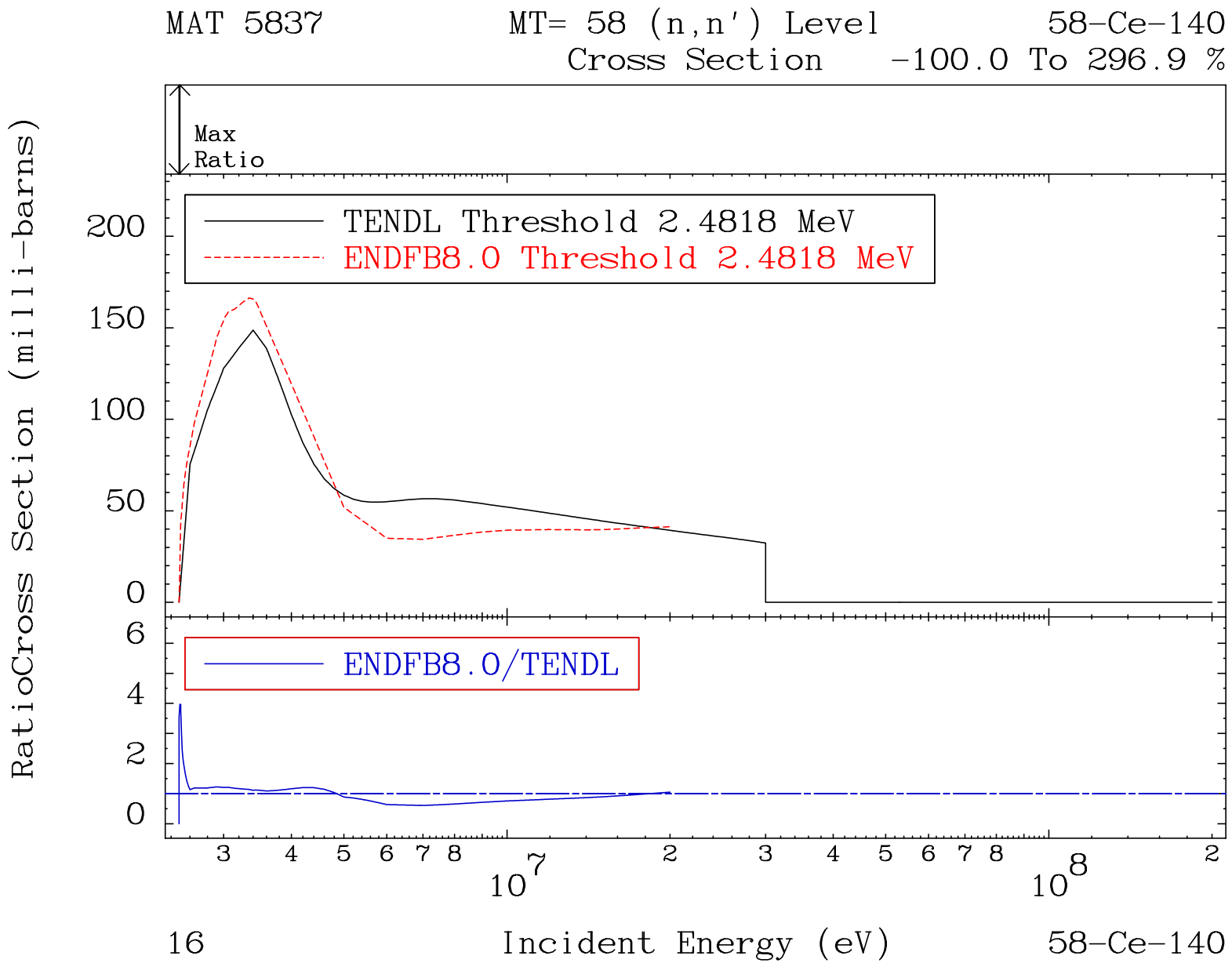

MAT 5837
MT= 53 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 142.3 %
Max
Ratio
TENDL Threshold 2.0983 MeV
ENDFB8.0 Threshold 2.0983 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
300
250
200
150
100
50
0
2
0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
11
Incident Energy (eV)
58-Ce-140

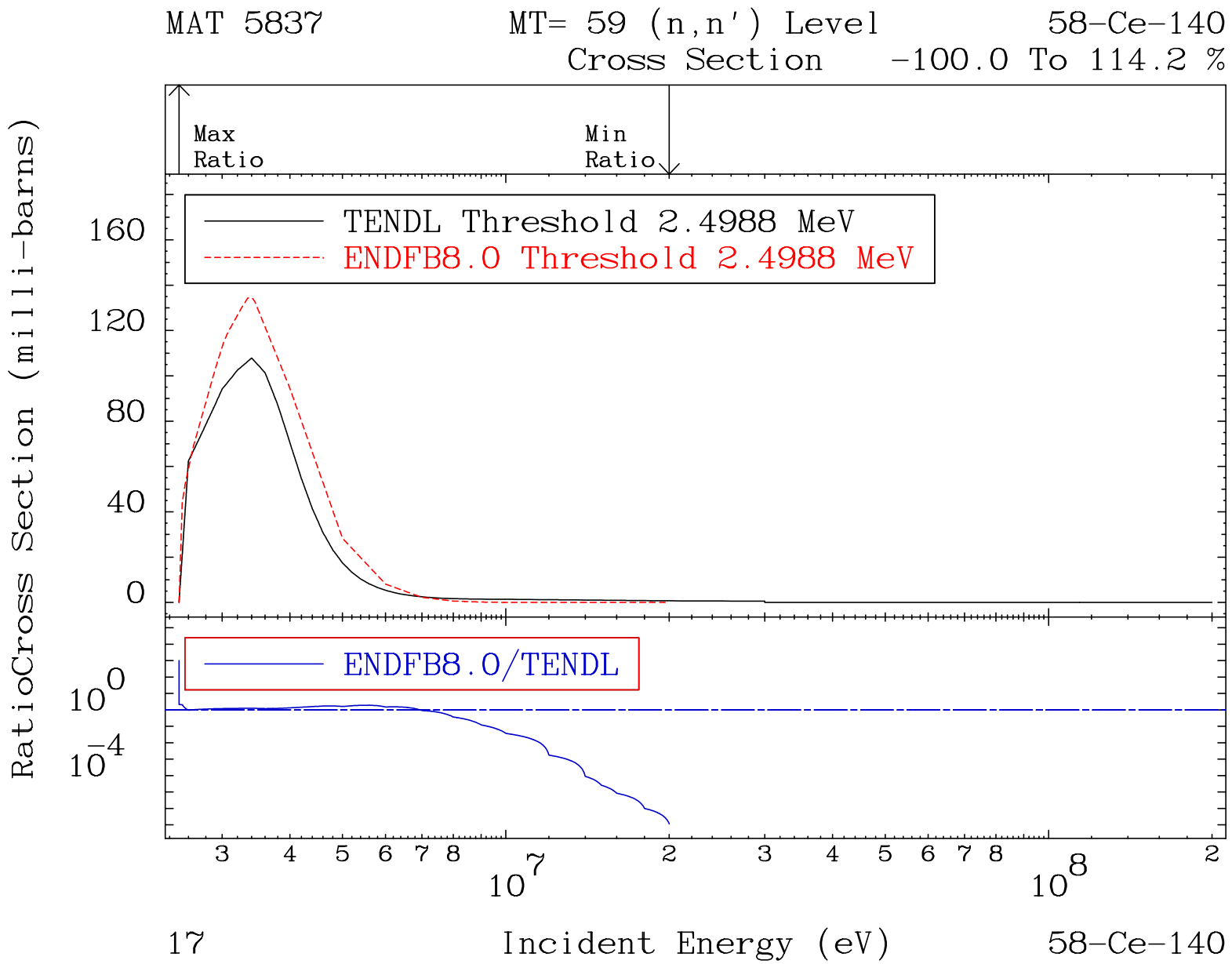

MAT 5837
MT= 54 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 115.7 %
Max
Ratio
TENDL Threshold 2.1231 MeV
ENDFB8.0 Threshold 2.1231 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
3.0
2.0
1.0
0.0
2
3
4
5
6
7
8
10^7
10^8
12
Incident Energy (eV)
58-Ce-140

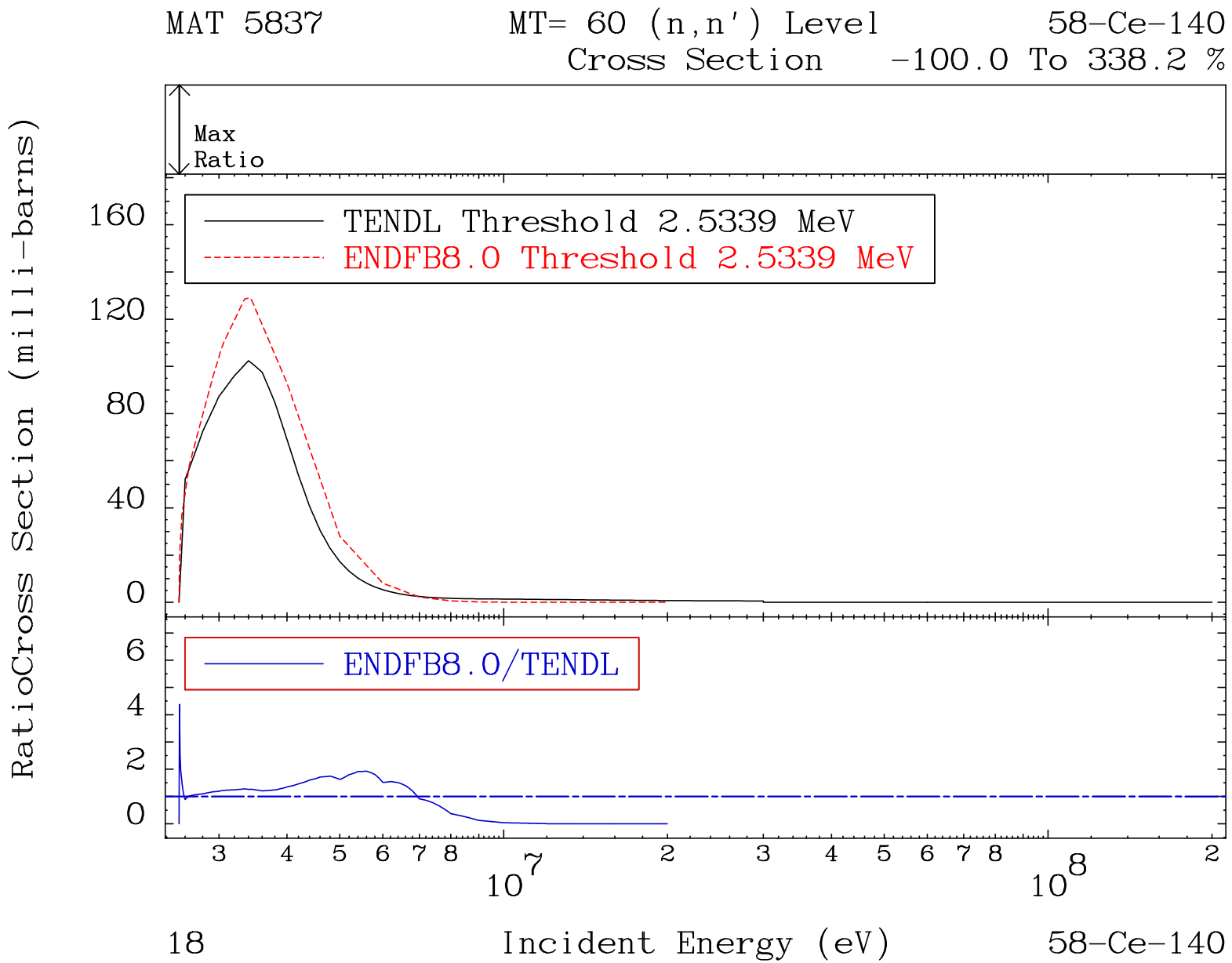

MAT 5837
MT= 55 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 514.0 %
Max
Ratio
TENDL Threshold 2.3648 MeV
ENDFB8.0 Threshold 2.3648 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
8
4
0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
13
Incident Energy (eV)
58-Ce-140

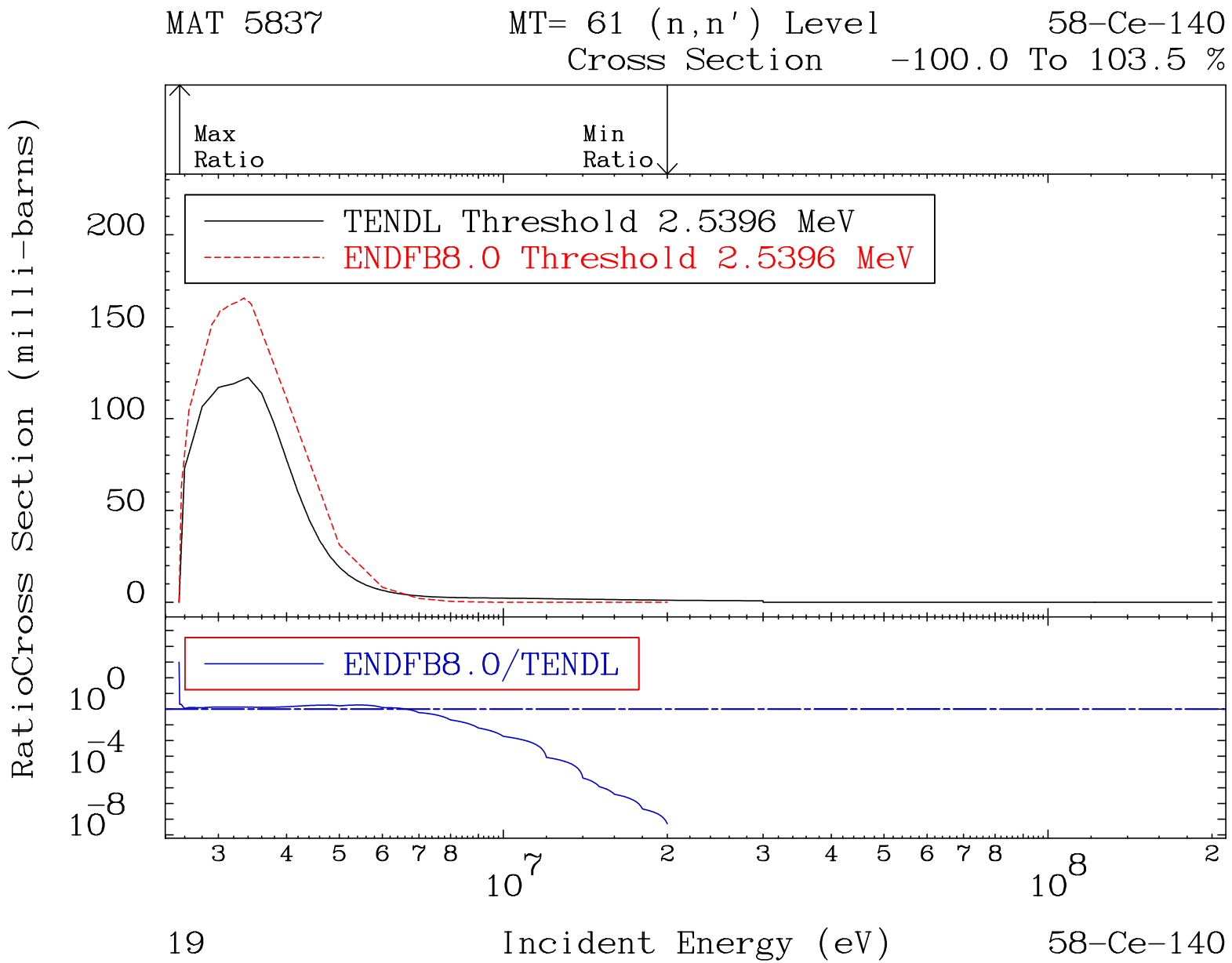

MAT 5837
MT= 56 (n,n') Level
58-Ce-140
Cross Section -90.28 To 228.5 %
Max Ratio
Min Ratio
TENDL Threshold 2.3667 MeV
ENDFB8.0 Threshold 2.3667 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
10^1
10^0
10^-1
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
14
Incident Energy (eV)
58-Ce-140

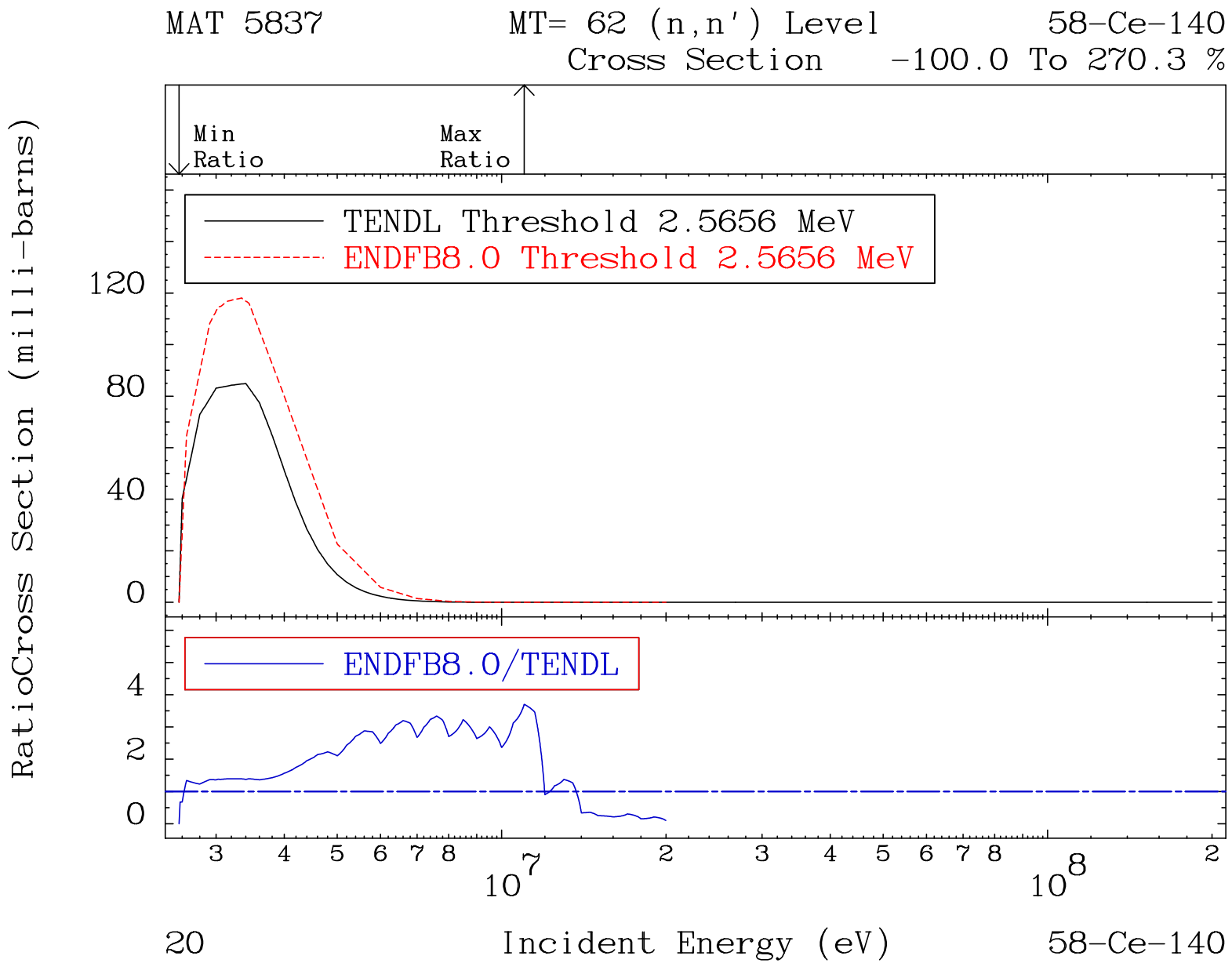

MAT 5837
MT= 57 (n,n') Level
58-Ce-140
Cross Section
-90.13 To 253.1 %
Max Ratio
Min Ratio
TENDL Threshold 2.4294 MeV
ENDFB8.0 Threshold 2.4294 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
10^1
10^0
10^-1
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
15
Incident Energy (eV)
58-Ce-140

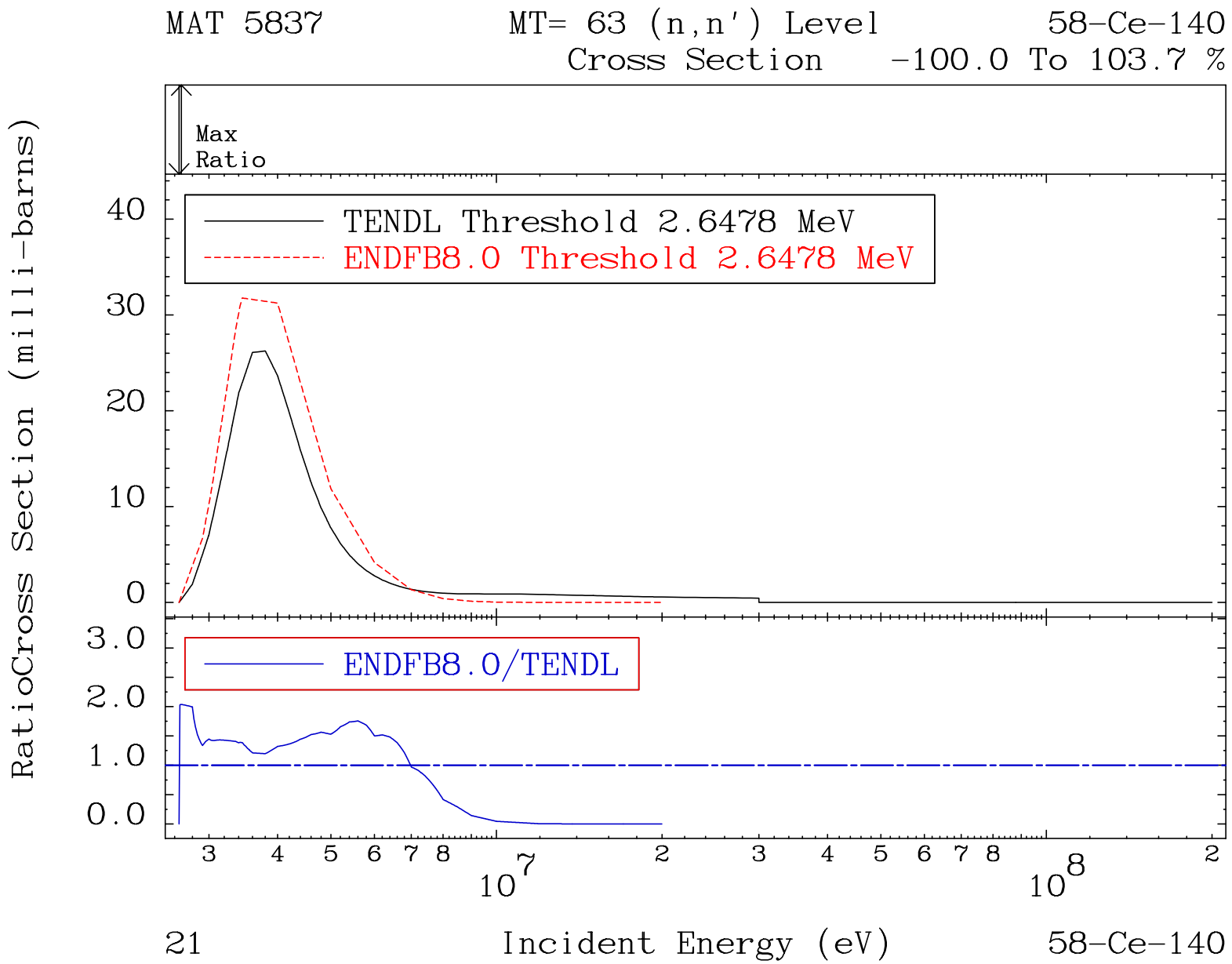

MAT 5837
MT= 58 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 296.9 %
Max
Ratio
TENDL Threshold 2.4818 MeV
ENDFB8.0 Threshold 2.4818 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
6
4
2
0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
16
Incident Energy (eV)
58-Ce-140

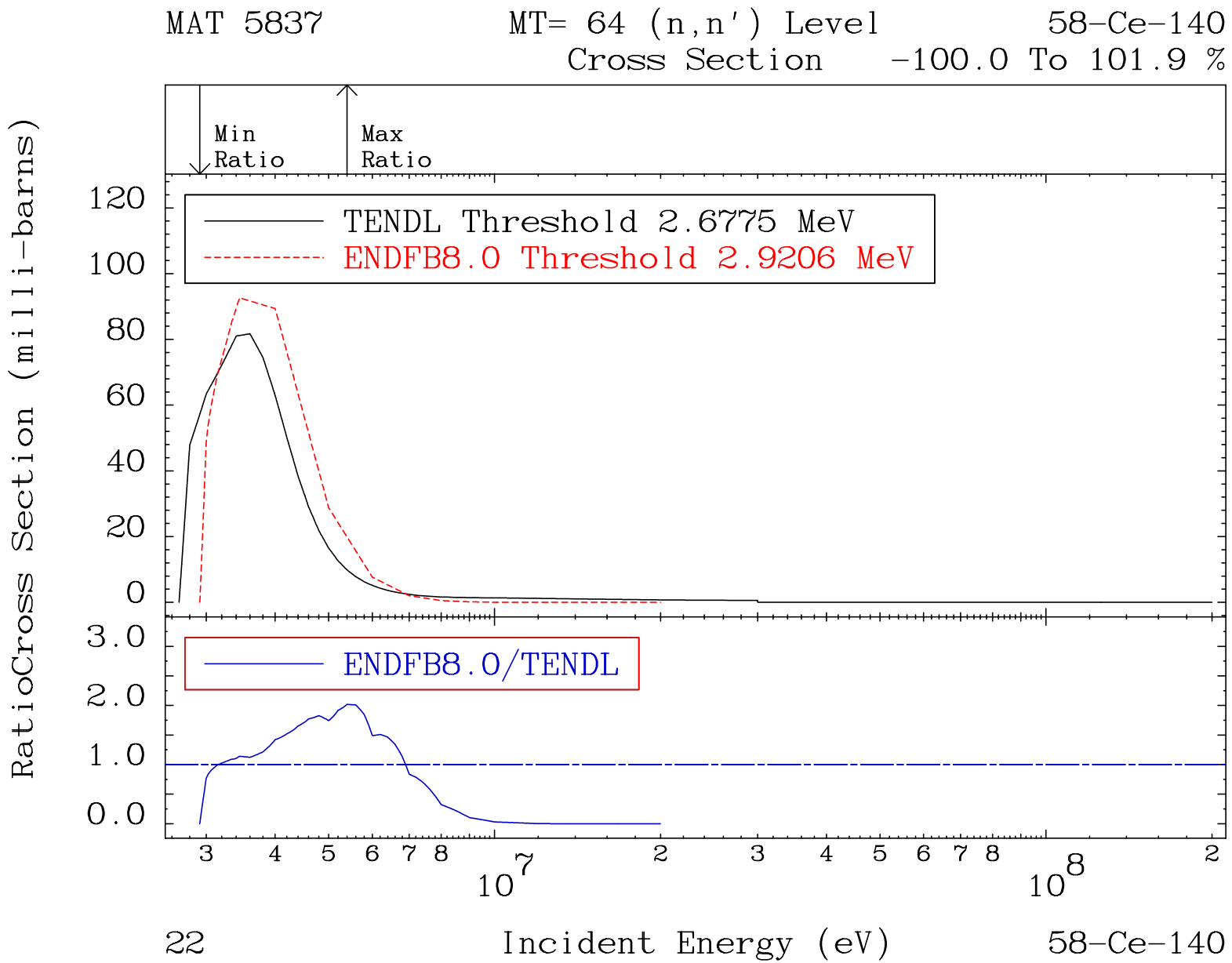

MAT 5837
MT= 59 (n,n') Level
58-Ce-140
Cross Section -100.0 To 114.2 %
Max Ratio
Min Ratio
TENDL Threshold 2.4988 MeV
ENDFB8.0 Threshold 2.4988 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
10^{0}
10^{-4}
3 4 5 6 7 8 10^{7} 2 3 4 5 6 7 8 10^{8} 2
17
Incident Energy (eV)
58-Ce-140

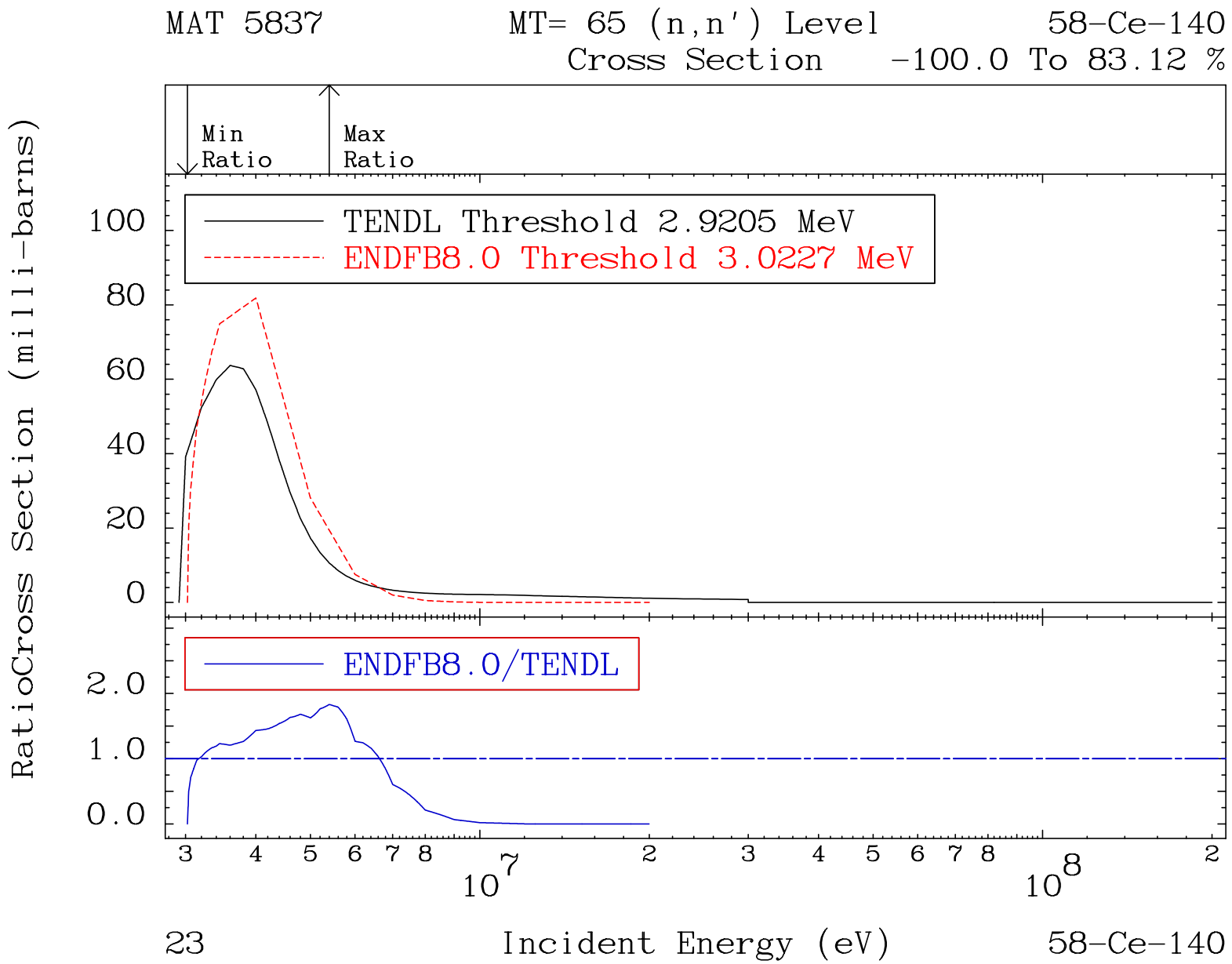

MAT 5837
MT= 60 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 338.2 %
Max
Ratio
TENDL Threshold 2.5339 MeV
ENDFB8.0 Threshold 2.5339 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
6
4
2
0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
18
Incident Energy (eV)
58-Ce-140

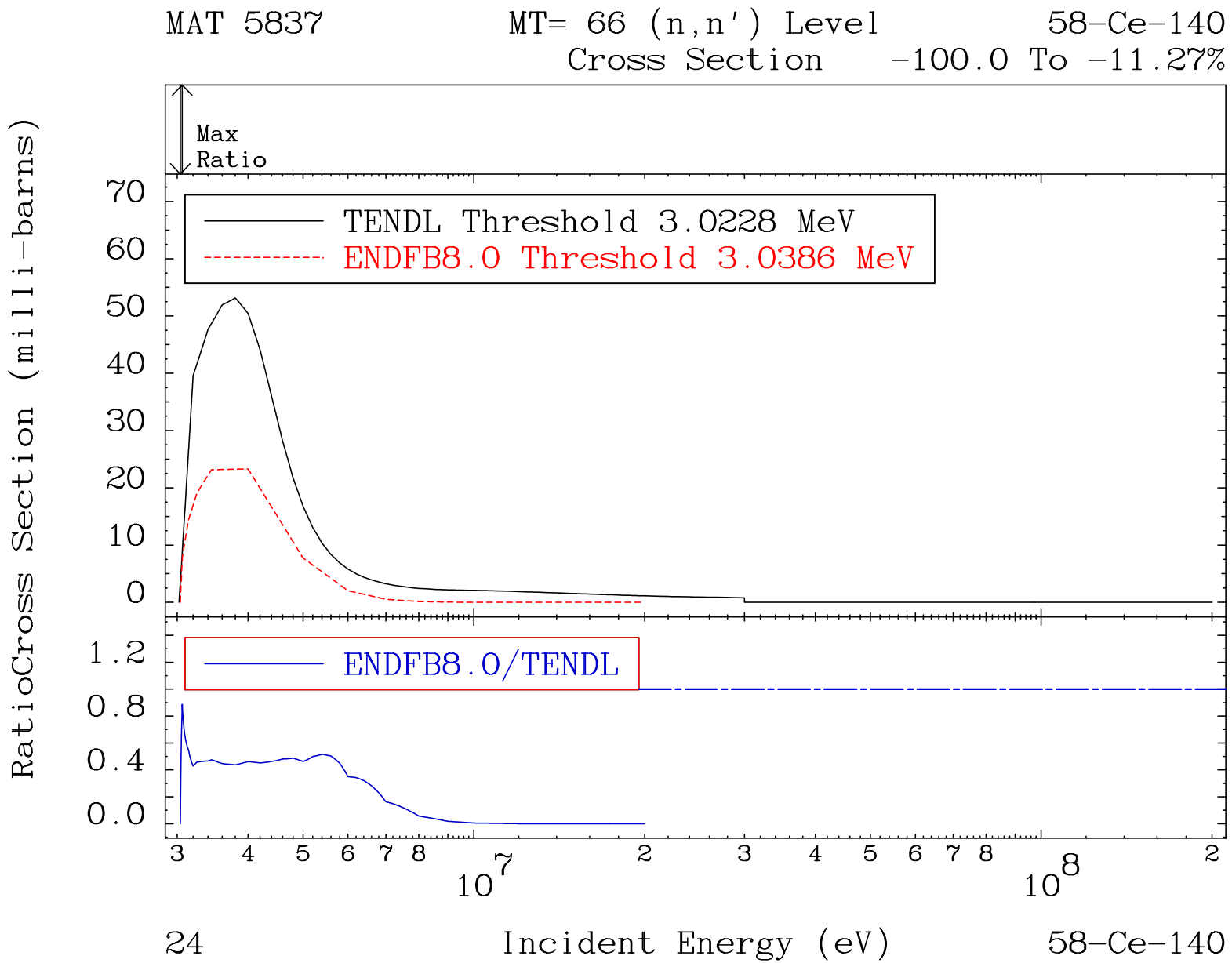

MAT 5837
MT= 61 (n,n') Level
58-Ce-140
Cross Section -100.0 To 103.5 %
Max Ratio
Min Ratio
TENDL Threshold 2.5396 MeV
ENDFB8.0 Threshold 2.5396 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
10^0
10^-4
10^-8
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
19
Incident Energy (eV)
58-Ce-140

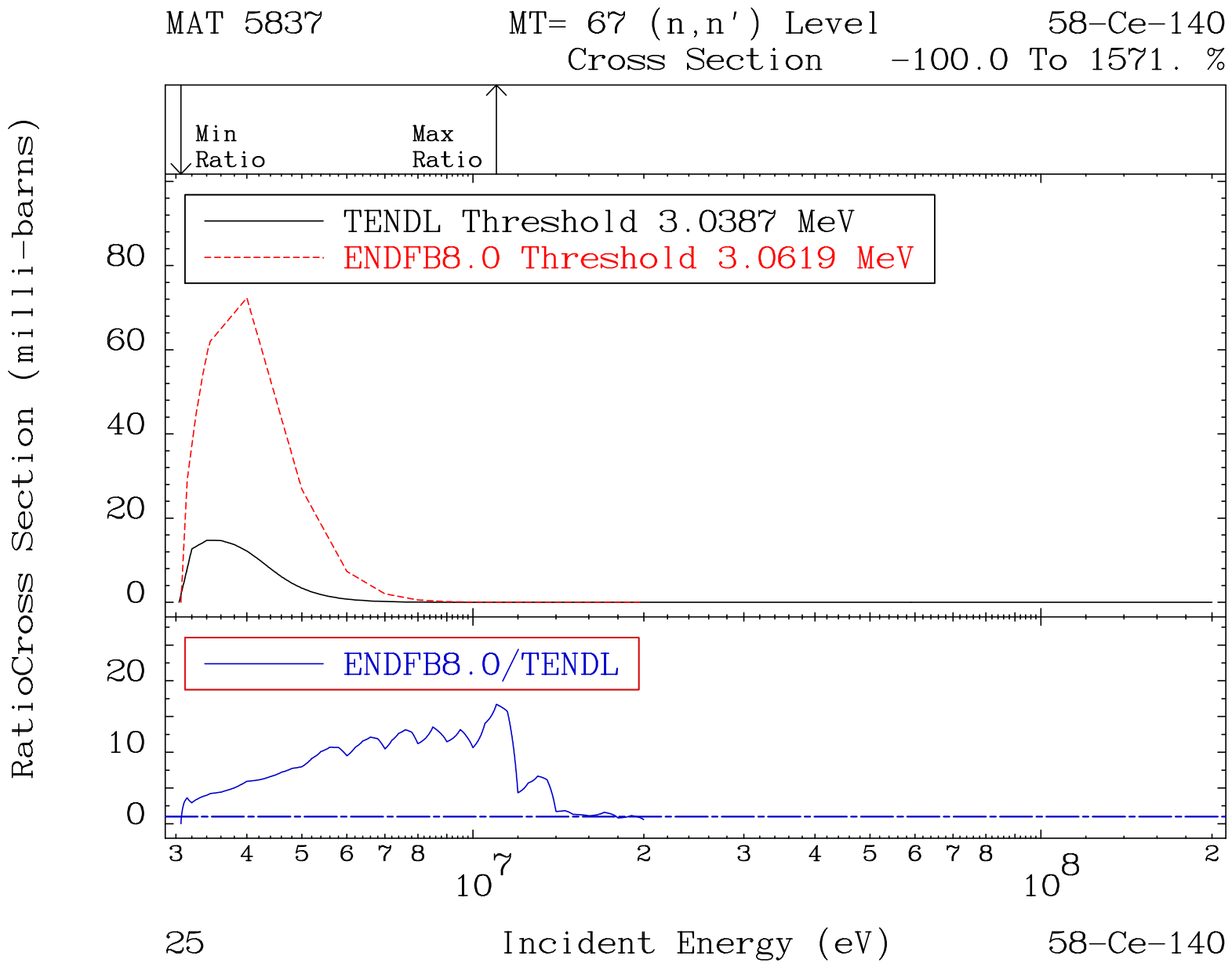

MAT 5837
MT= 62 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 270.3 %
Min Ratio
Max Ratio
TENDL Threshold 2.5656 MeV
ENDFB8.0 Threshold 2.5656 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
120
80
40
0
4
2
0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
20
Incident Energy (eV)
58-Ce-140

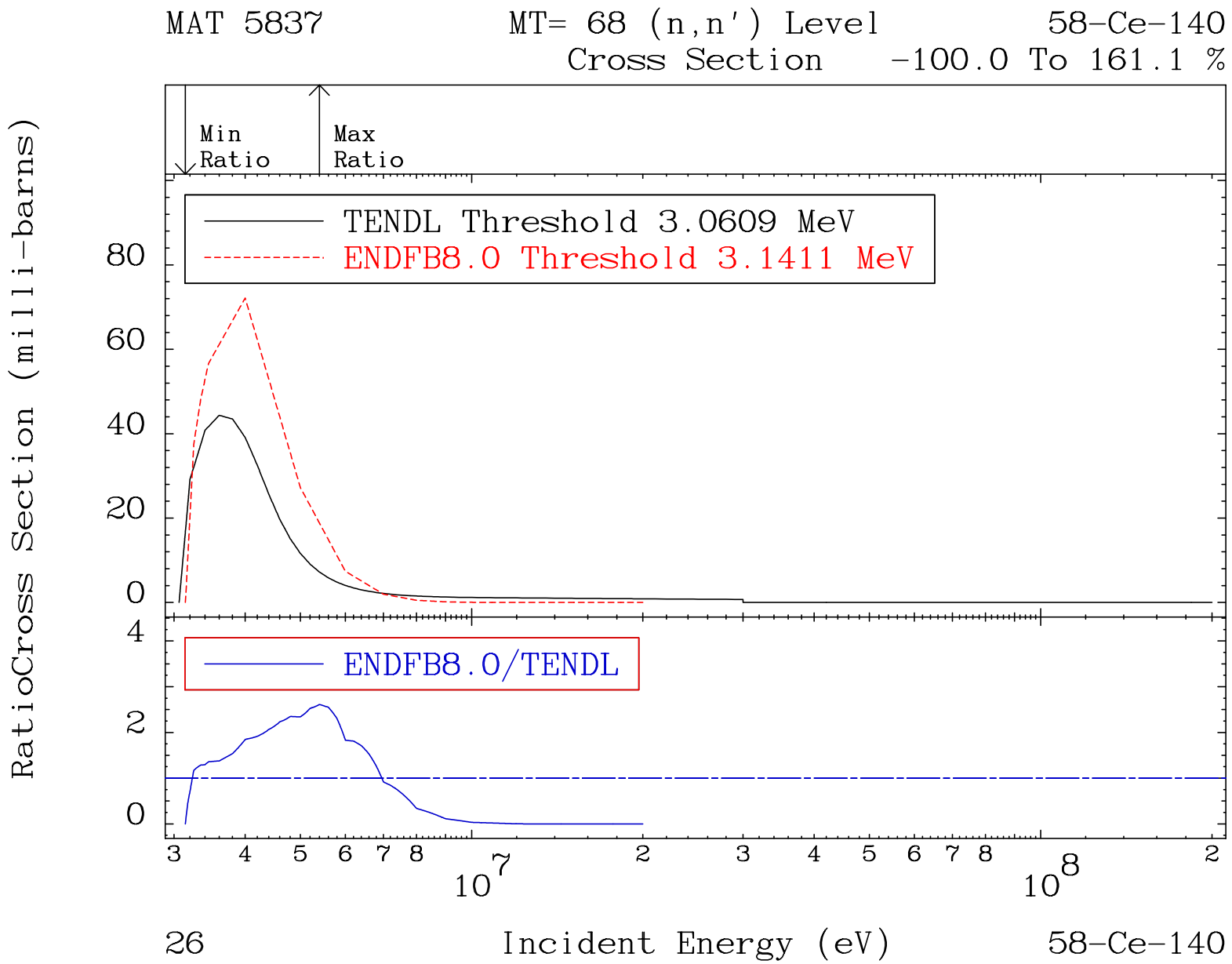

MAT 5837
MT= 63 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 103.7 %
Max
Ratio
TENDL Threshold 2.6478 MeV
ENDFB8.0 Threshold 2.6478 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
40
30
20
10
0
3.0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
21
Incident Energy (eV)
58-Ce-140

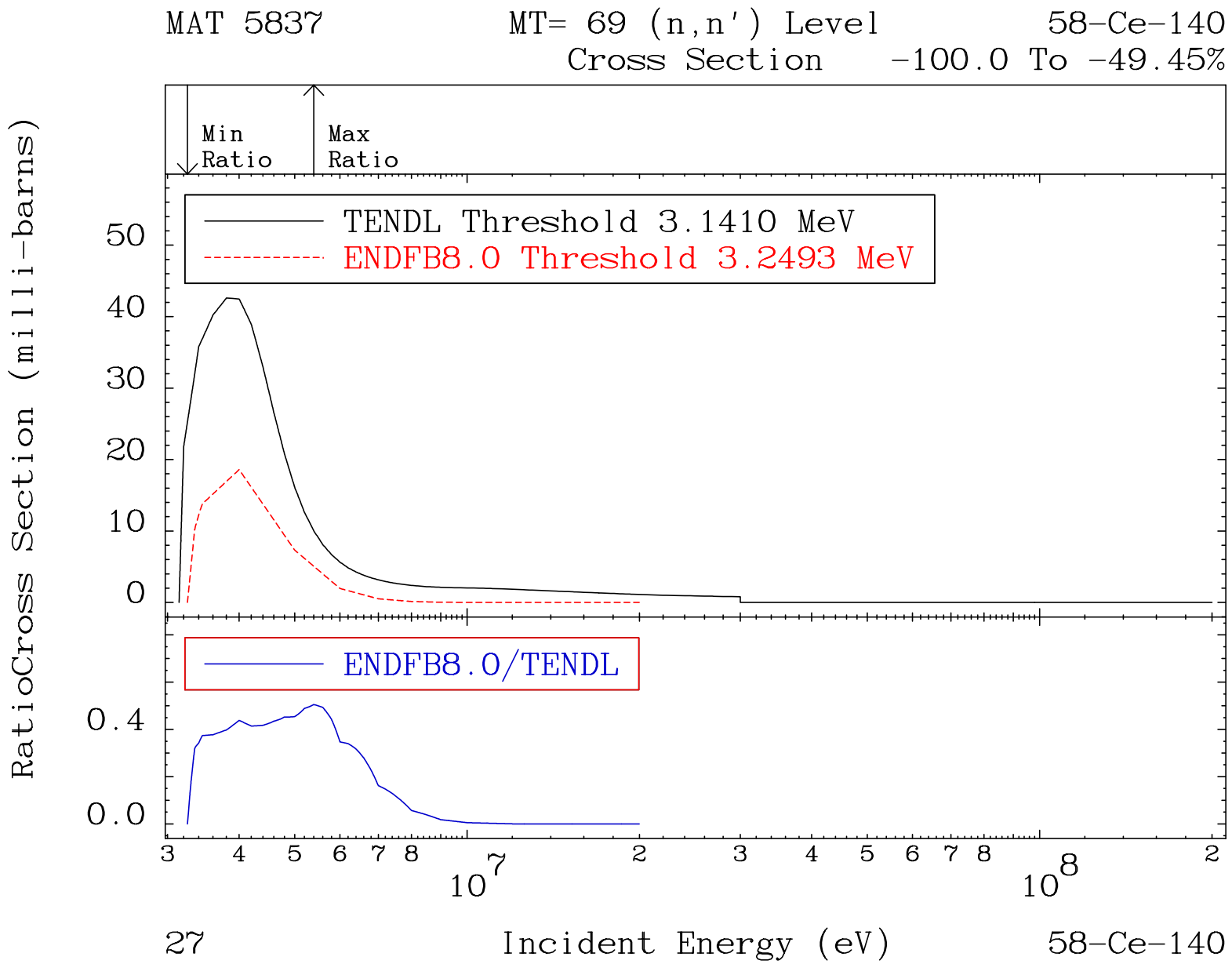

MAT 5837
MT= 64 (n,n') Level
58-Ce-140
Cross Section -100.0 To 101.9 %
Min Ratio
Max Ratio
TENDL Threshold 2.6775 MeV
ENDFB8.0 Threshold 2.9206 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
3.0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
22
Incident Energy (eV)
58-Ce-140

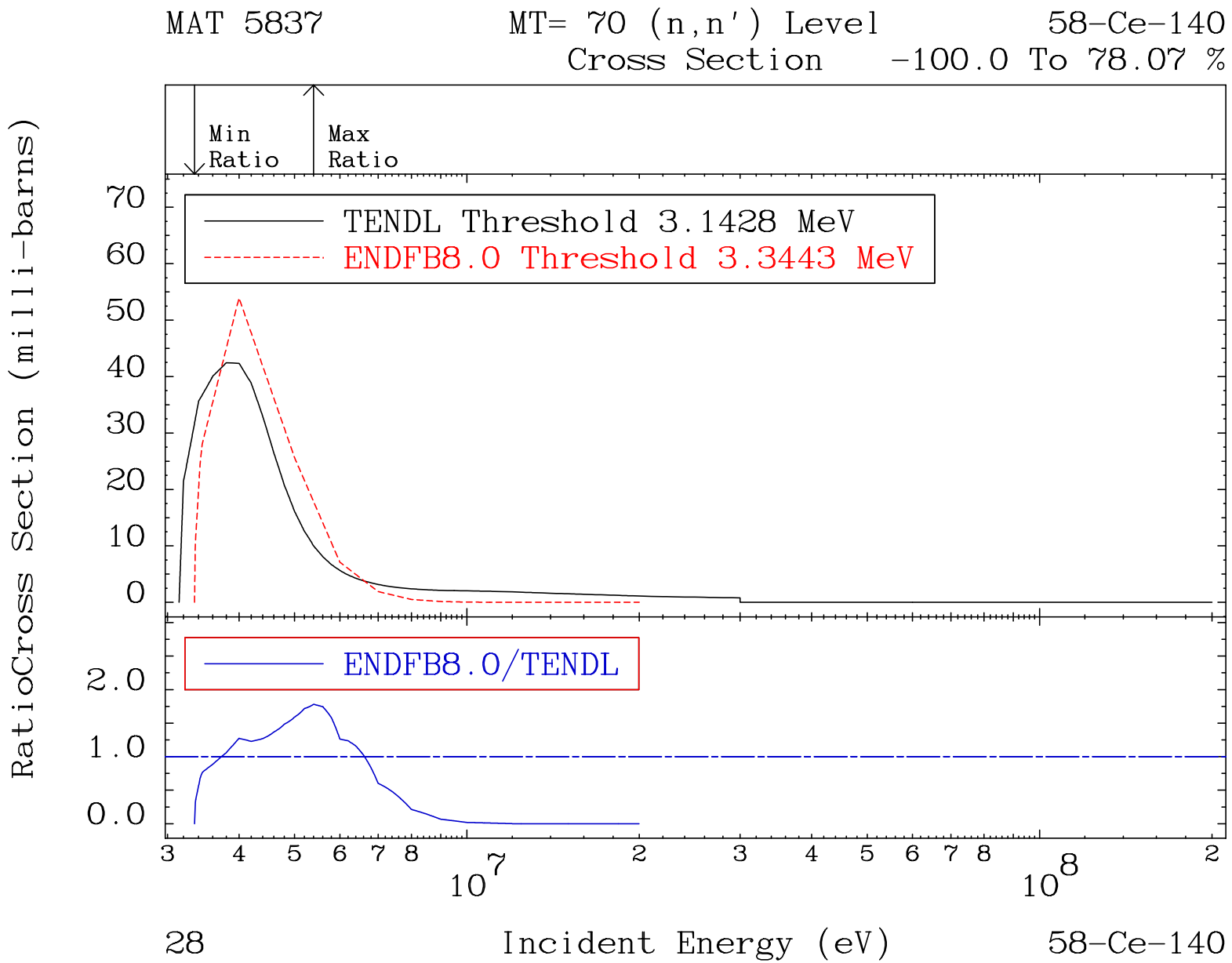

MAT 5837
MT= 65 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 83.12 %
Min Ratio
Max Ratio
TENDL Threshold 2.9205 MeV
ENDFB8.0 Threshold 3.0227 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
23
Incident Energy (eV)
58-Ce-140

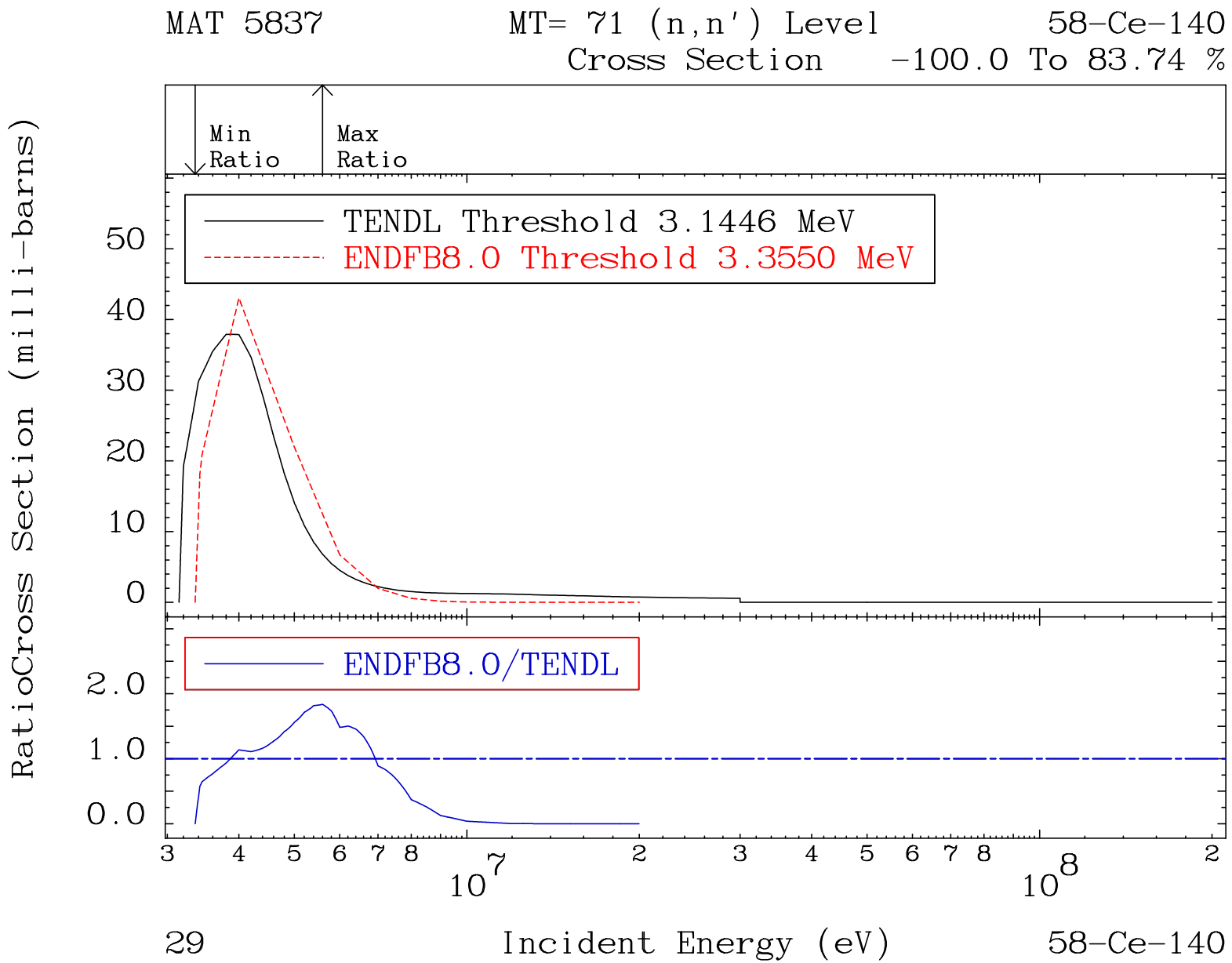

MAT 5837
MT= 66 (n,n') Level
58-Ce-140
Cross Section -100.0 To -11.27%
Max
Ratio
TENDL Threshold 3.0228 MeV
ENDFB8.0 Threshold 3.0386 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
70
60
50
40
30
20
10
0
1.2
0.8
0.4
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
24
Incident Energy (eV)
58-Ce-140

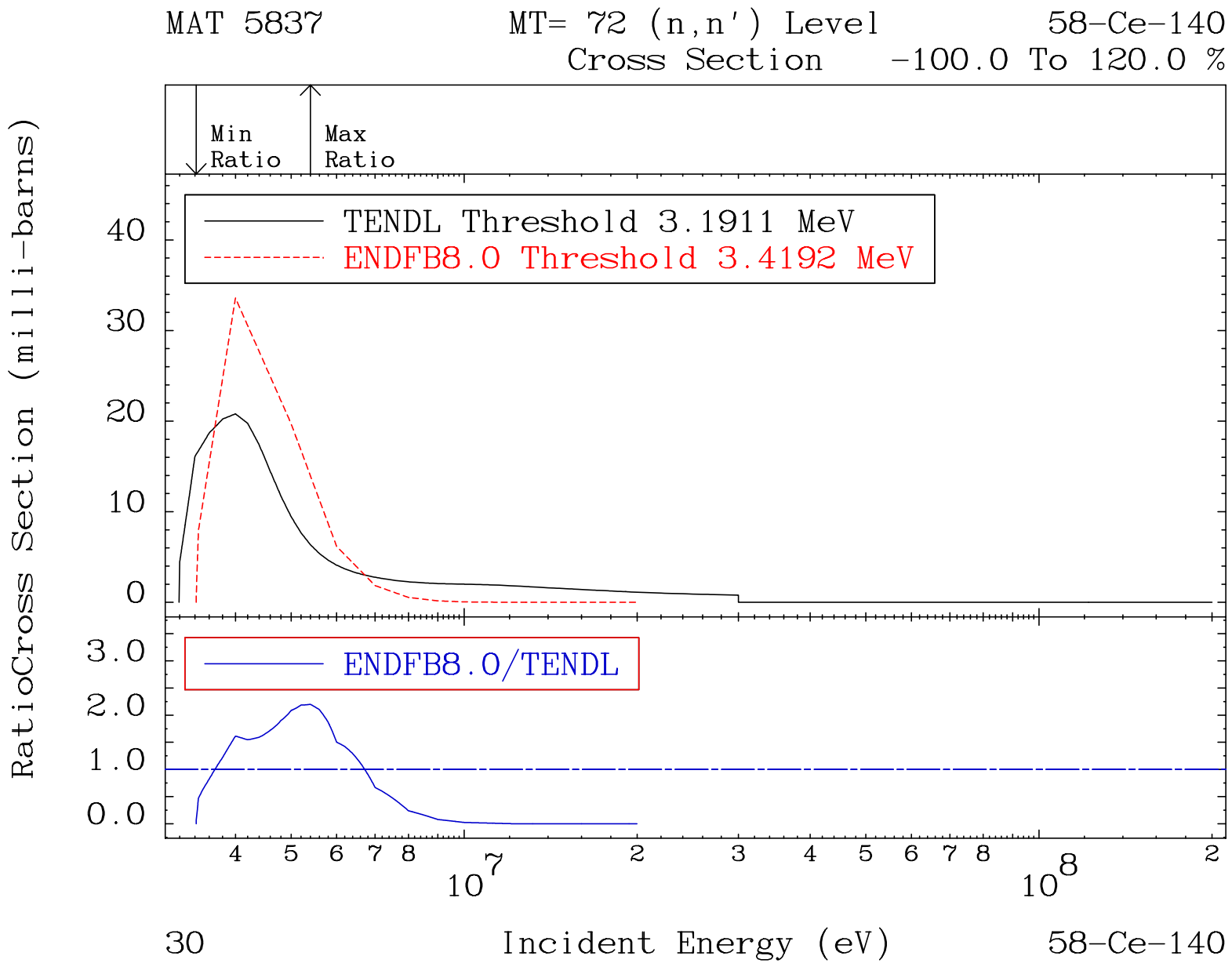

MAT 5837
MT= 67 (n,n') Level
58-Ce-140
Cross Section -100.0 To 1571. %
Min Ratio
Max Ratio
TENDL Threshold 3.0387 MeV
ENDFB8.0 Threshold 3.0619 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
20
10
0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
25
Incident Energy (eV)
58-Ce-140

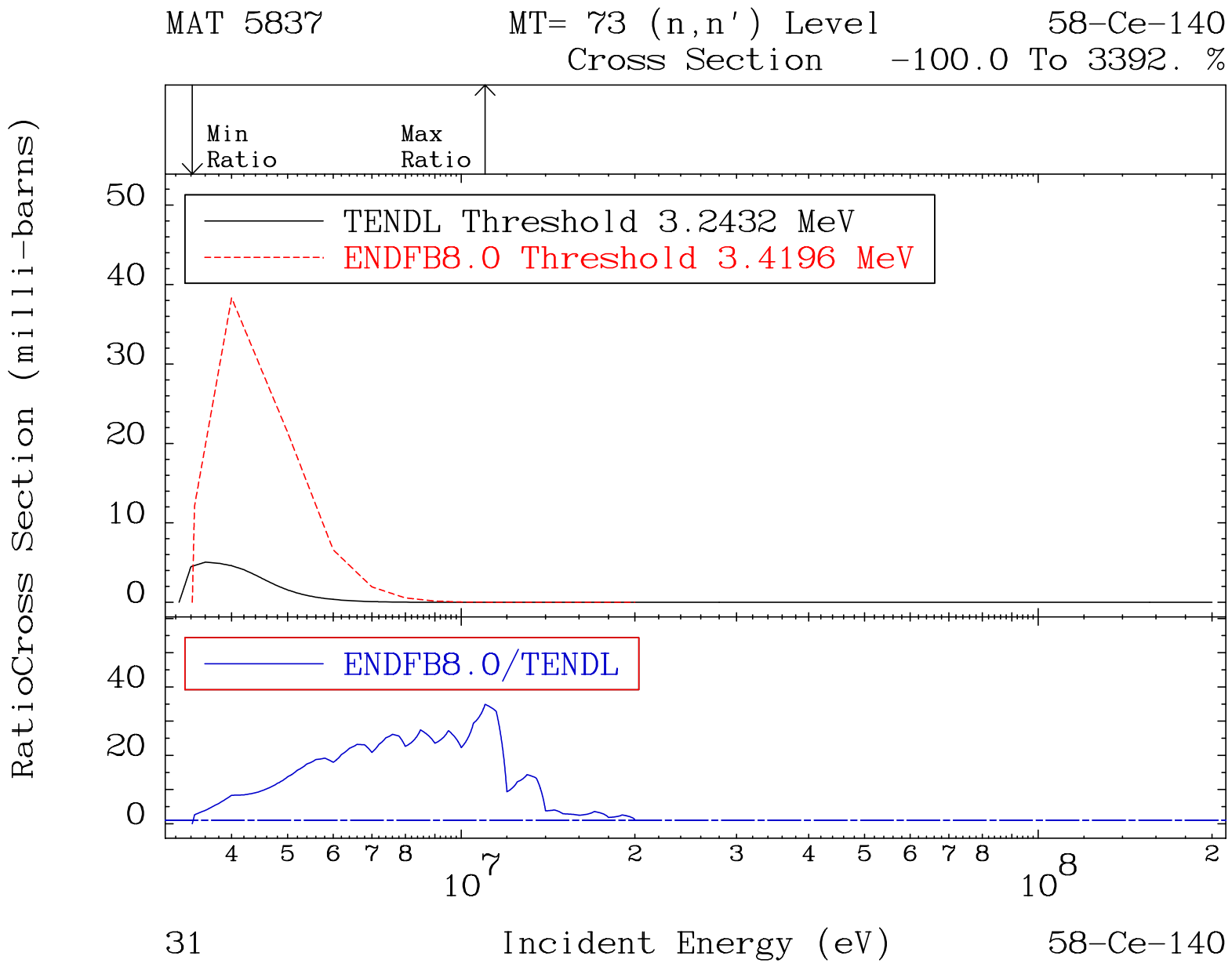

MAT 5837
MT= 68 (n,n') Level
58-Ce-140
Cross Section -100.0 To 161.1 %
Min Ratio
Max Ratio
TENDL Threshold 3.0609 MeV
ENDFB8.0 Threshold 3.1411 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
26
58-Ce-140

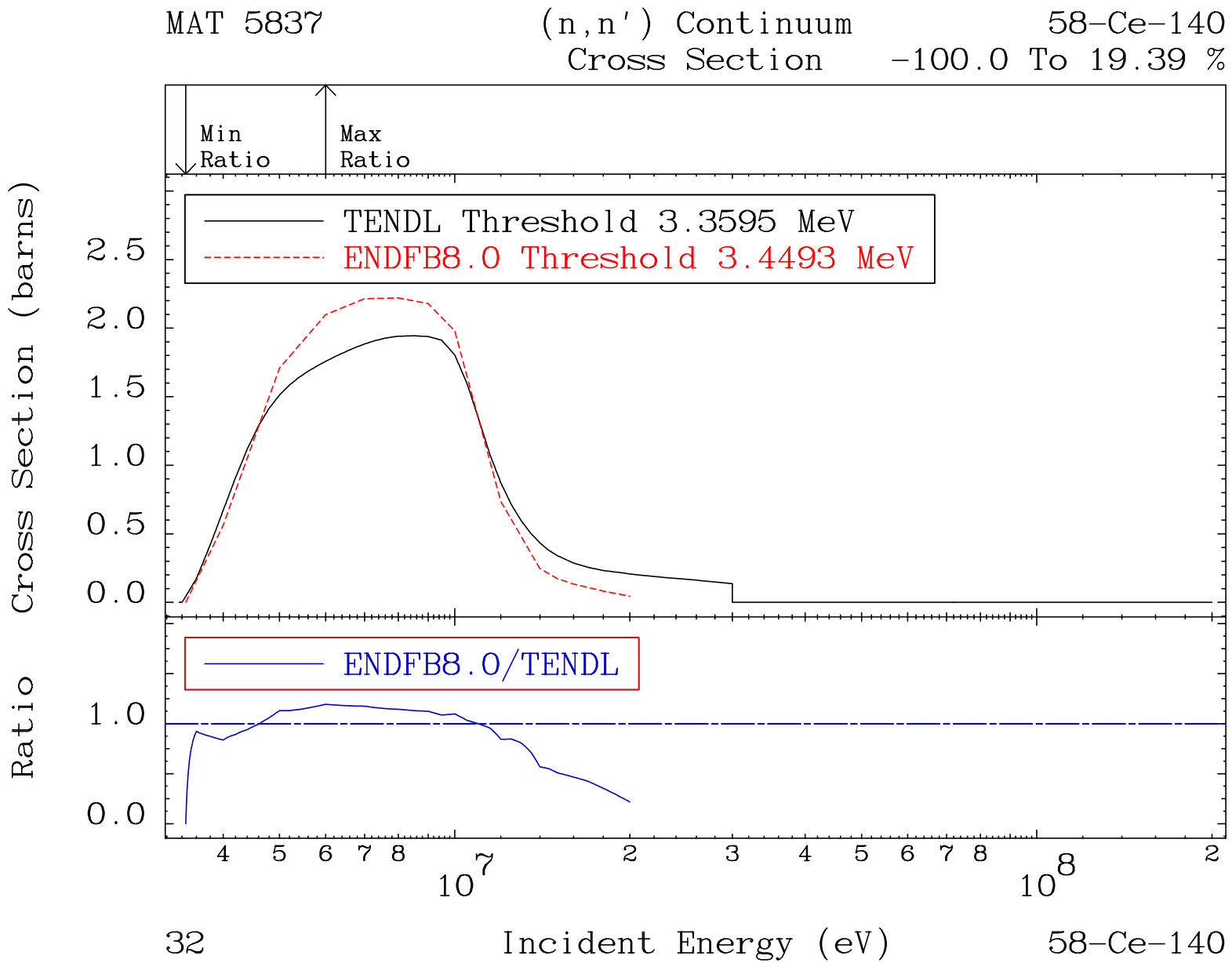

MAT 5837
MT= 69 (n,n') Level
58-Ce-140
Cross Section
-100.0 To -49.45%
Min Ratio
Max Ratio
TENDL Threshold 3.1410 MeV
ENDFB8.0 Threshold 3.2493 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
0.4
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
27
Incident Energy (eV)
58-Ce-140

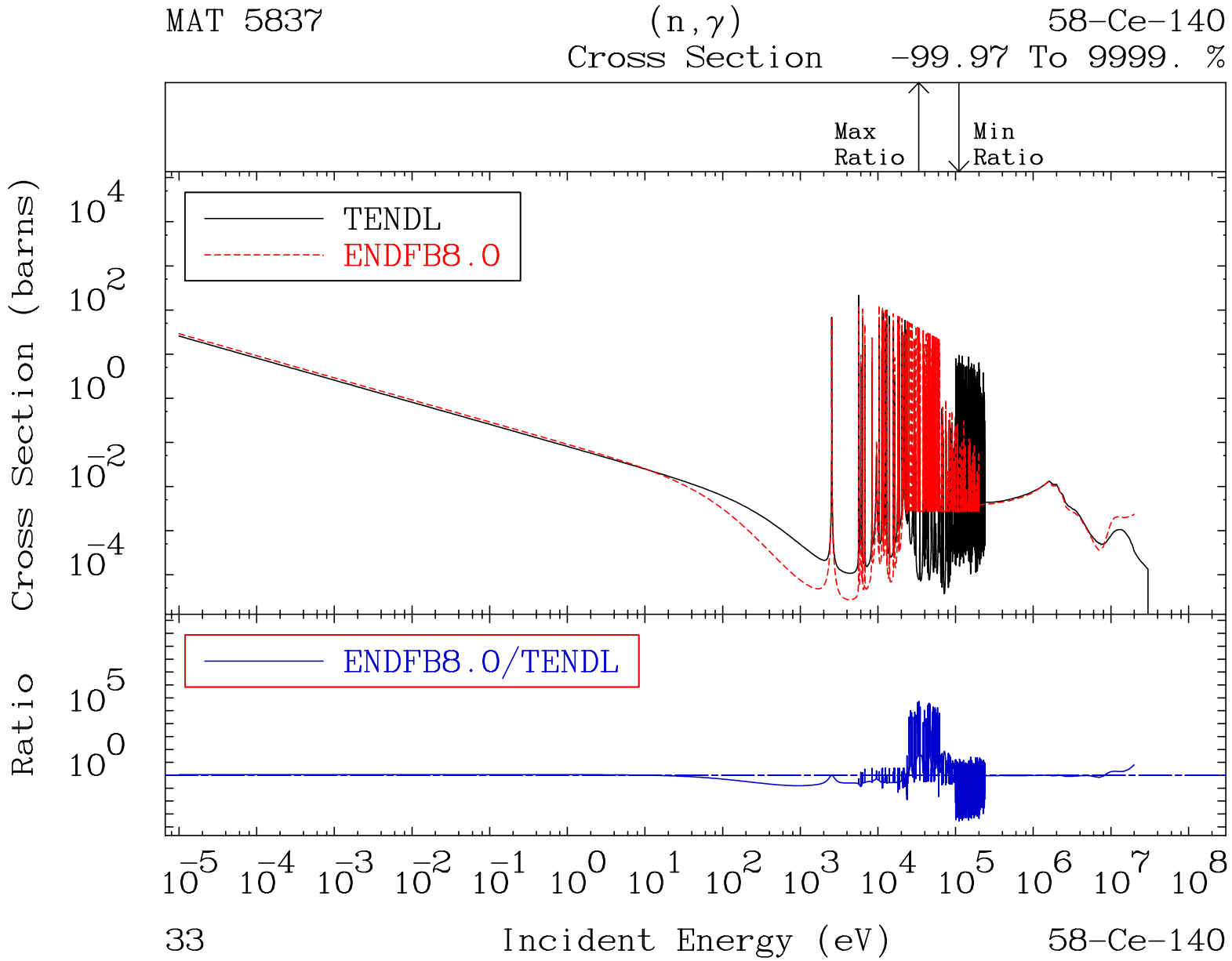

MAT 5837
MT= 70 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 78.07 %
Min Ratio
Max Ratio
TENDL Threshold 3.1428 MeV
ENDFB8.0 Threshold 3.3443 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
70
60
50
40
30
20
10
0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
28
Incident Energy (eV)
58-Ce-140

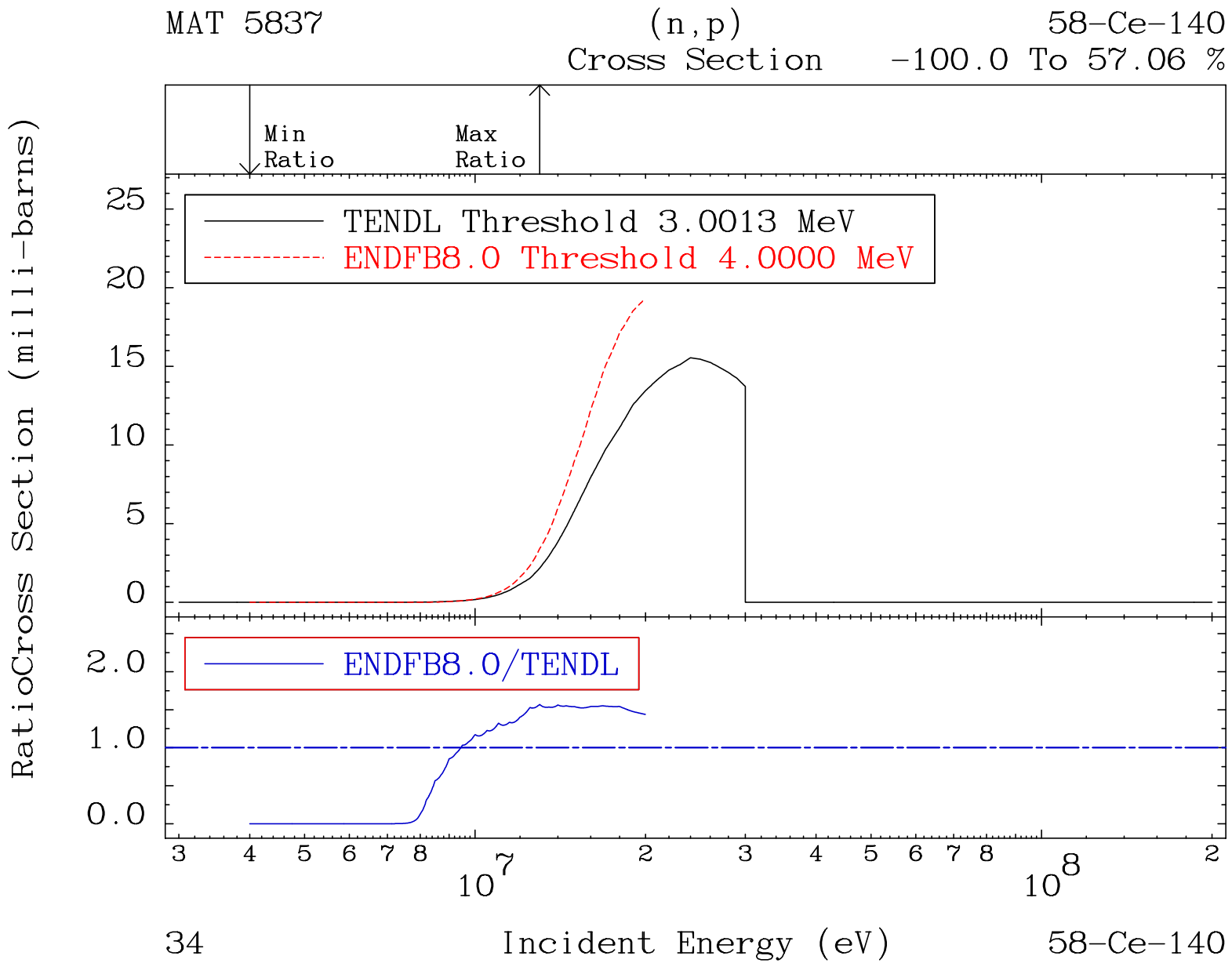

MAT 5837
MT= 71 (n,n') Level
58-Ce-140
Cross Section -100.0 To 83.74 %
Min Ratio
Max Ratio
TENDL Threshold 3.1446 MeV
ENDFB8.0 Threshold 3.3550 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
29
Incident Energy (eV)
58-Ce-140

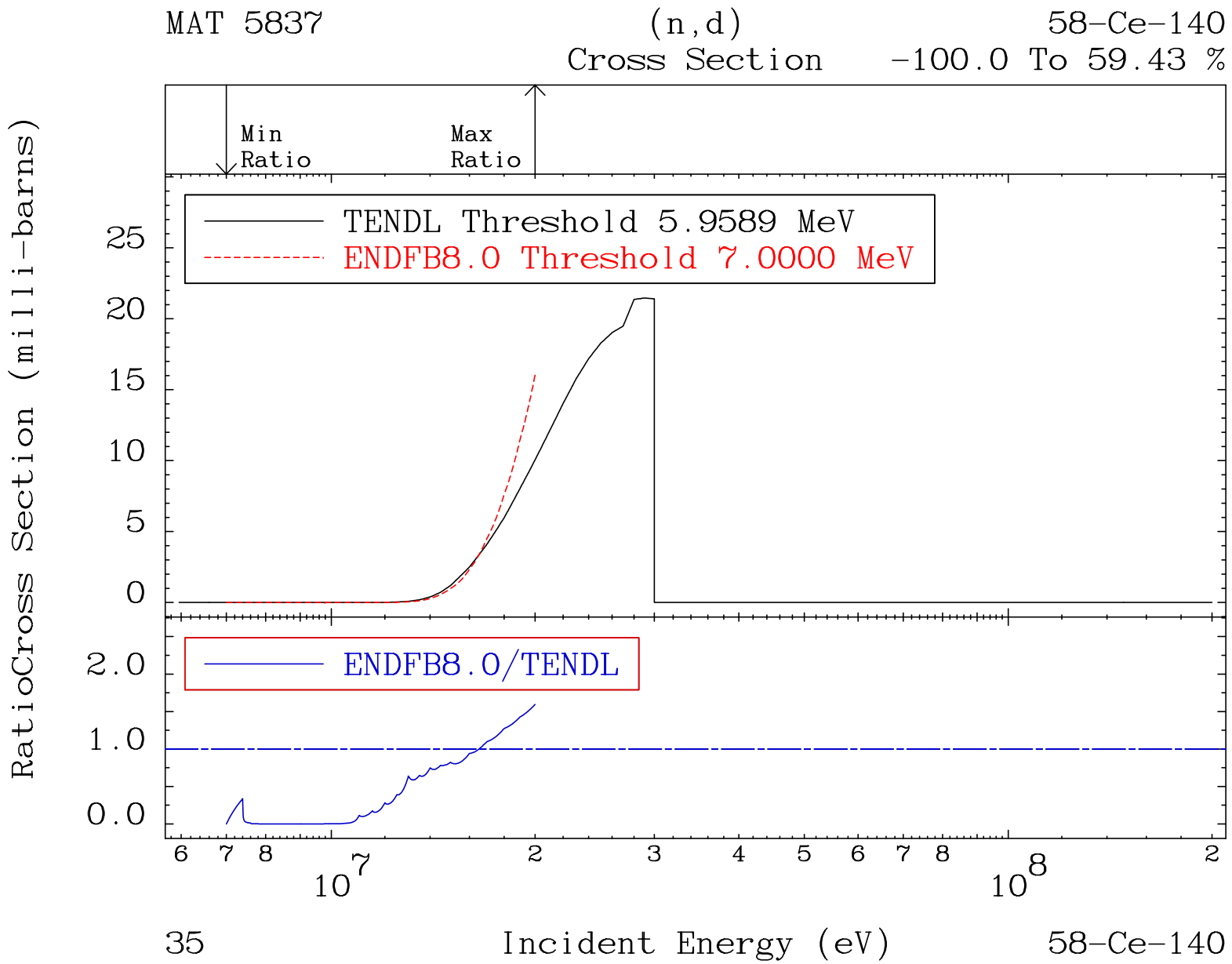

MAT 5837
MT= 72 (n,n') Level
58-Ce-140
Cross Section
-100.0 To 120.0 %
Min Ratio
Max Ratio
TENDL Threshold 3.1911 MeV
ENDFB8.0 Threshold 3.4192 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
40
30
20
10
0
3.0
2.0
1.0
0.0
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
30
Incident Energy (eV)
58-Ce-140

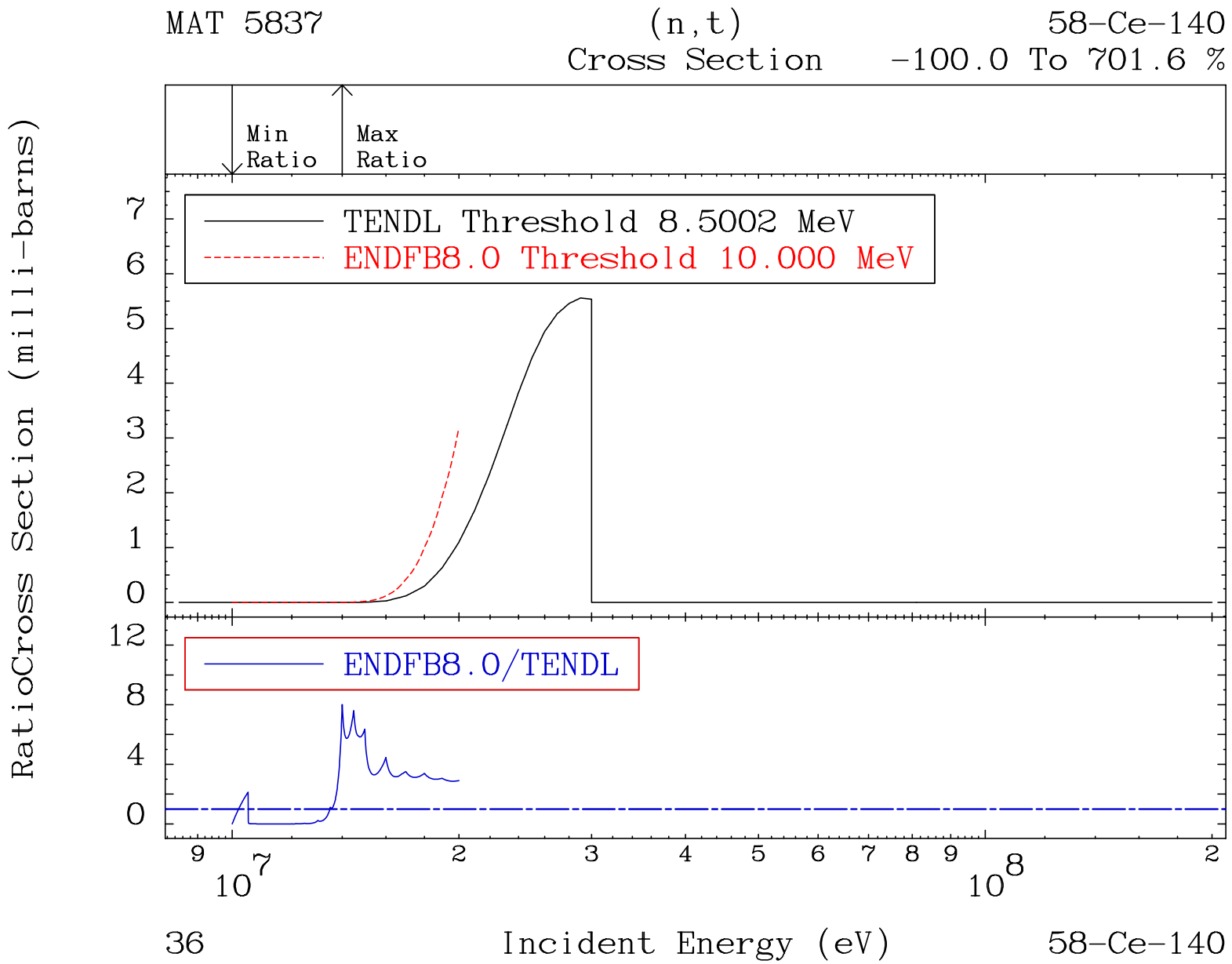

MAT 5837
MT= 73 (n,n') Level
58-Ce-140
Cross Section -100.0 To 3392. %
Min Ratio
Max Ratio
TENDL Threshold 3.2432 MeV
ENDFB8.0 Threshold 3.4196 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
40
20
0
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
31
Incident Energy (eV)
58-Ce-140

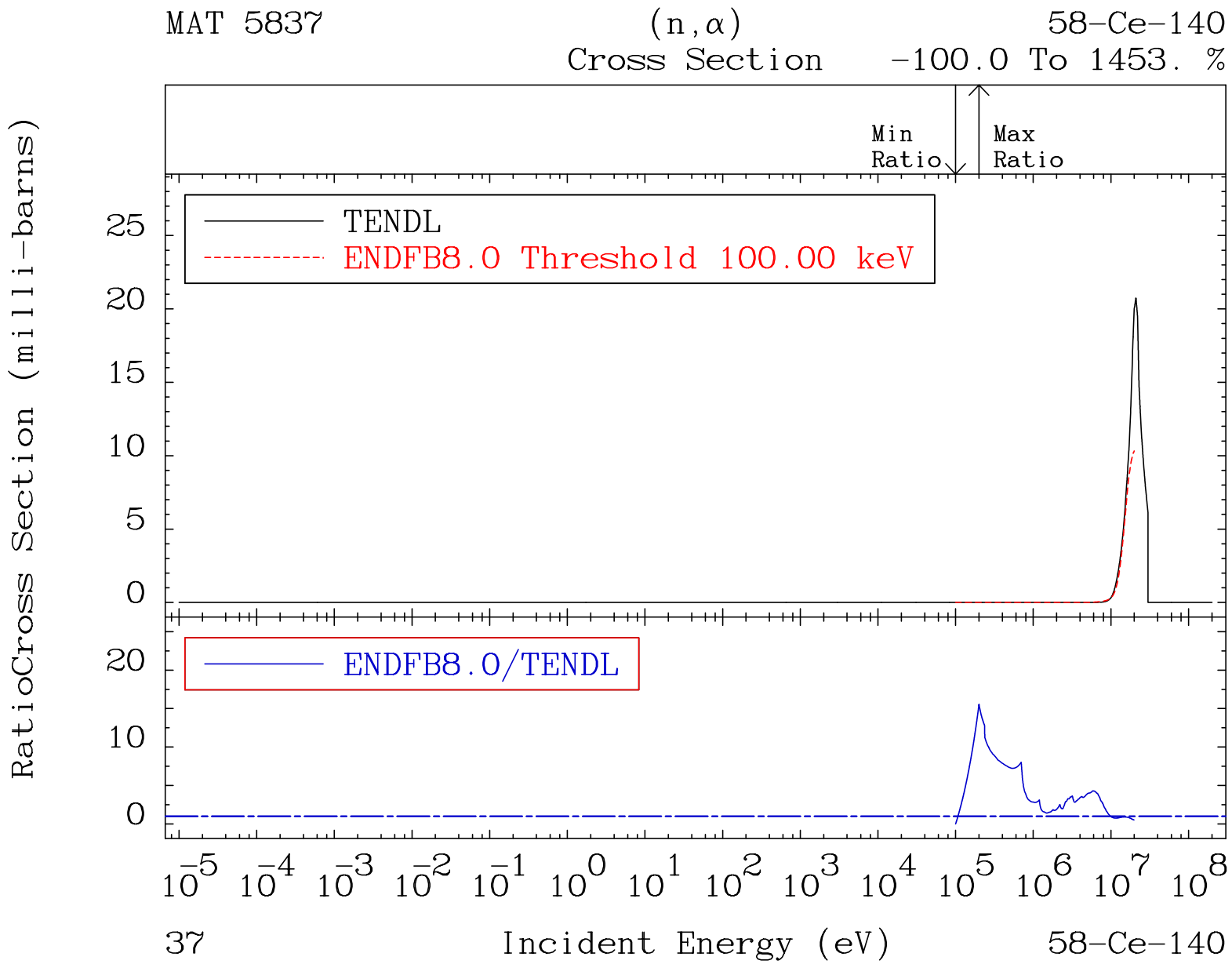

MAT 5837
(n,n') Continuum
Cross Section
58-Ce-140
-100.0 To 19.39 %
Min Ratio
Max Ratio
TENDL Threshold 3.3595 MeV
ENDFB8.0 Threshold 3.4493 MeV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
ENDFB8.0/TENDL
Ratio
1.0
0.0
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
32
Incident Energy (eV)
58-Ce-140

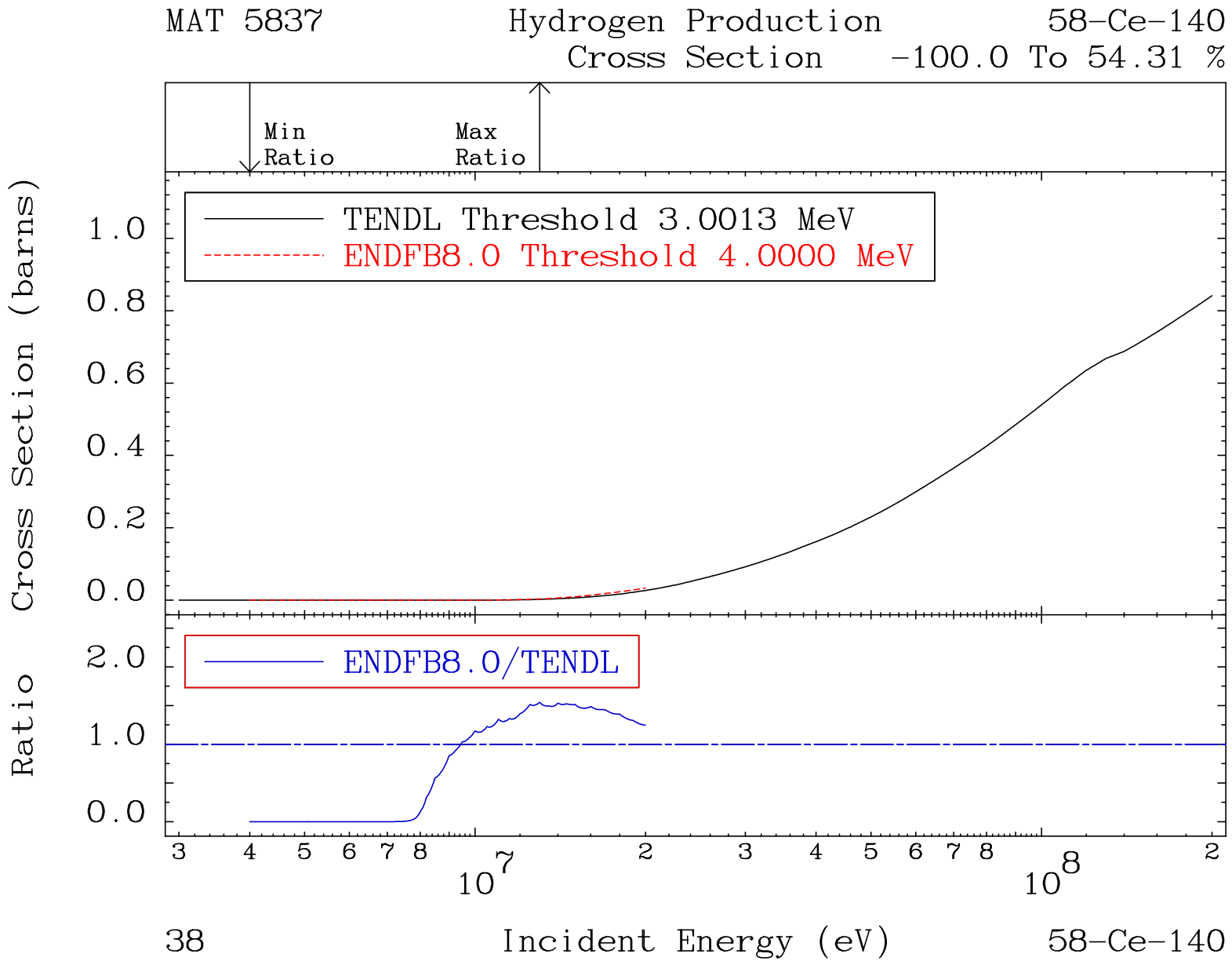

MAT 5837
(n,γ)
Cross Section
58-Ce-140
-99.97 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
33
58-Ce-140

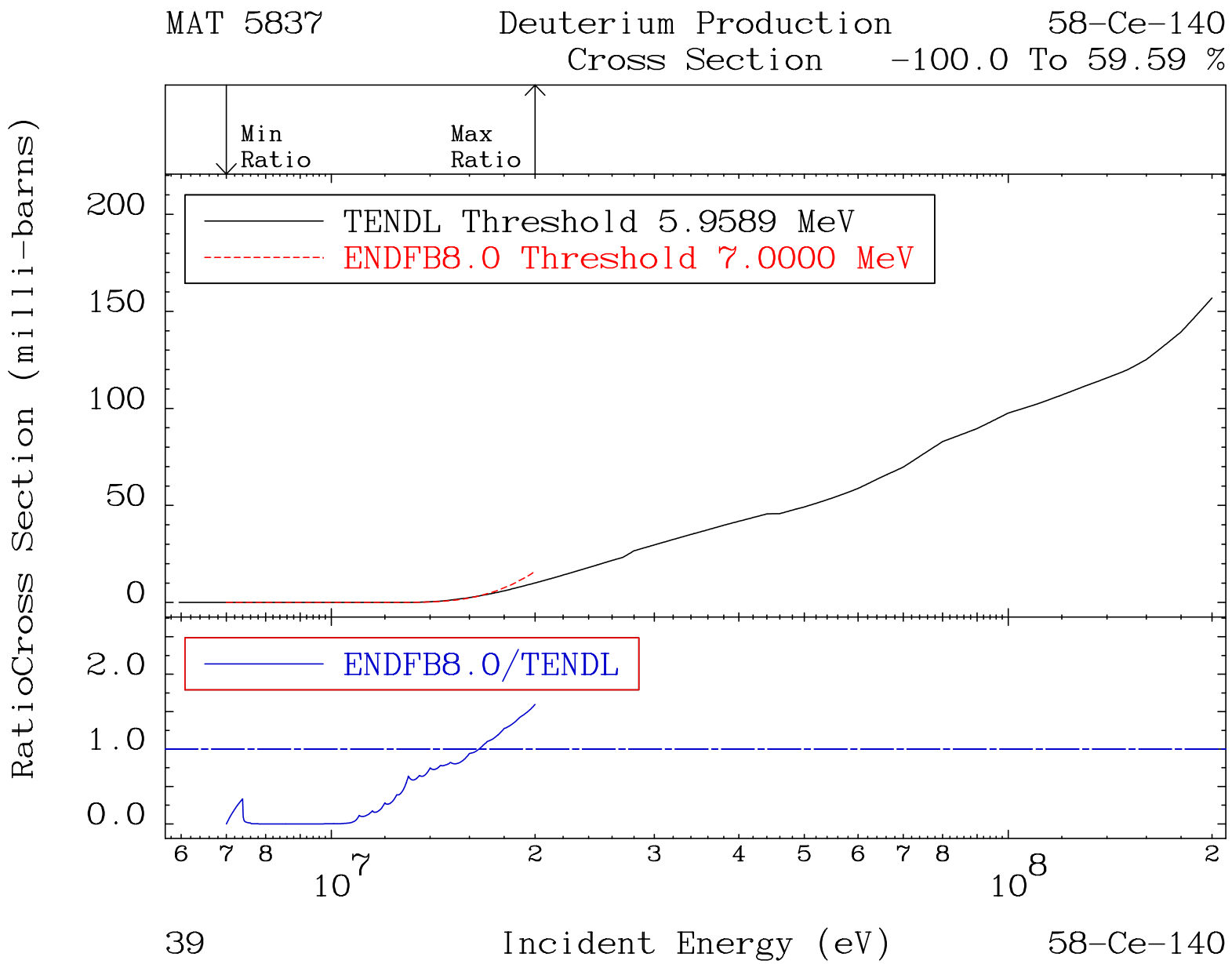

MAT 5837
(n,p)
58-Ce-140
Cross Section
-100.0 To 57.06 %
Min Ratio
Max Ratio
TENDL Threshold 3.0013 MeV
ENDFB8.0 Threshold 4.0000 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
34
Incident Energy (eV)
58-Ce-140

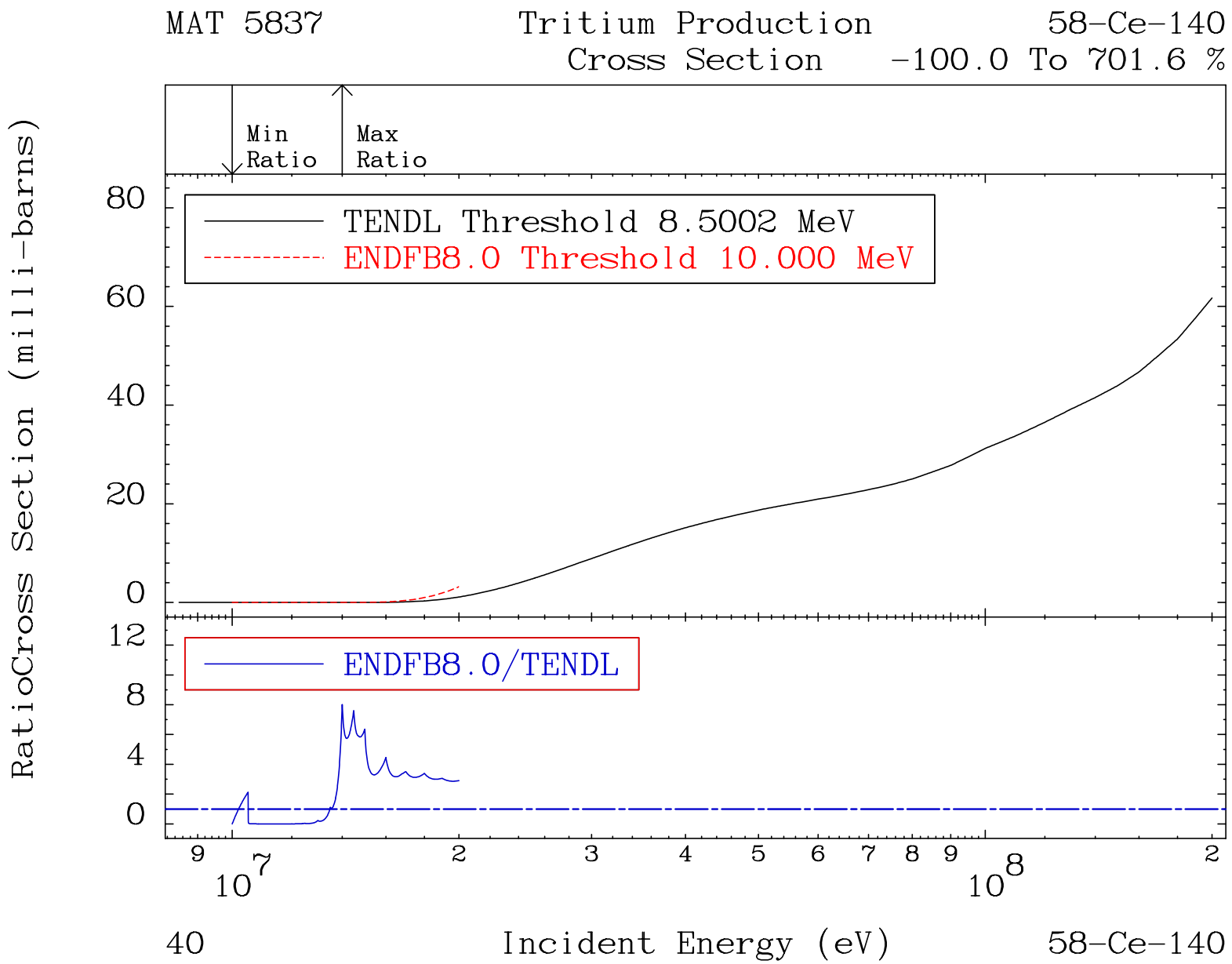

MAT 5837
(n,d)
58-Ce-140
Cross Section
-100.0 To 59.43 %
Min Ratio
Max Ratio
TENDL Threshold 5.9589 MeV
ENDFB8.0 Threshold 7.0000 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
2.0
1.0
0.0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
35
Incident Energy (eV)
58-Ce-140

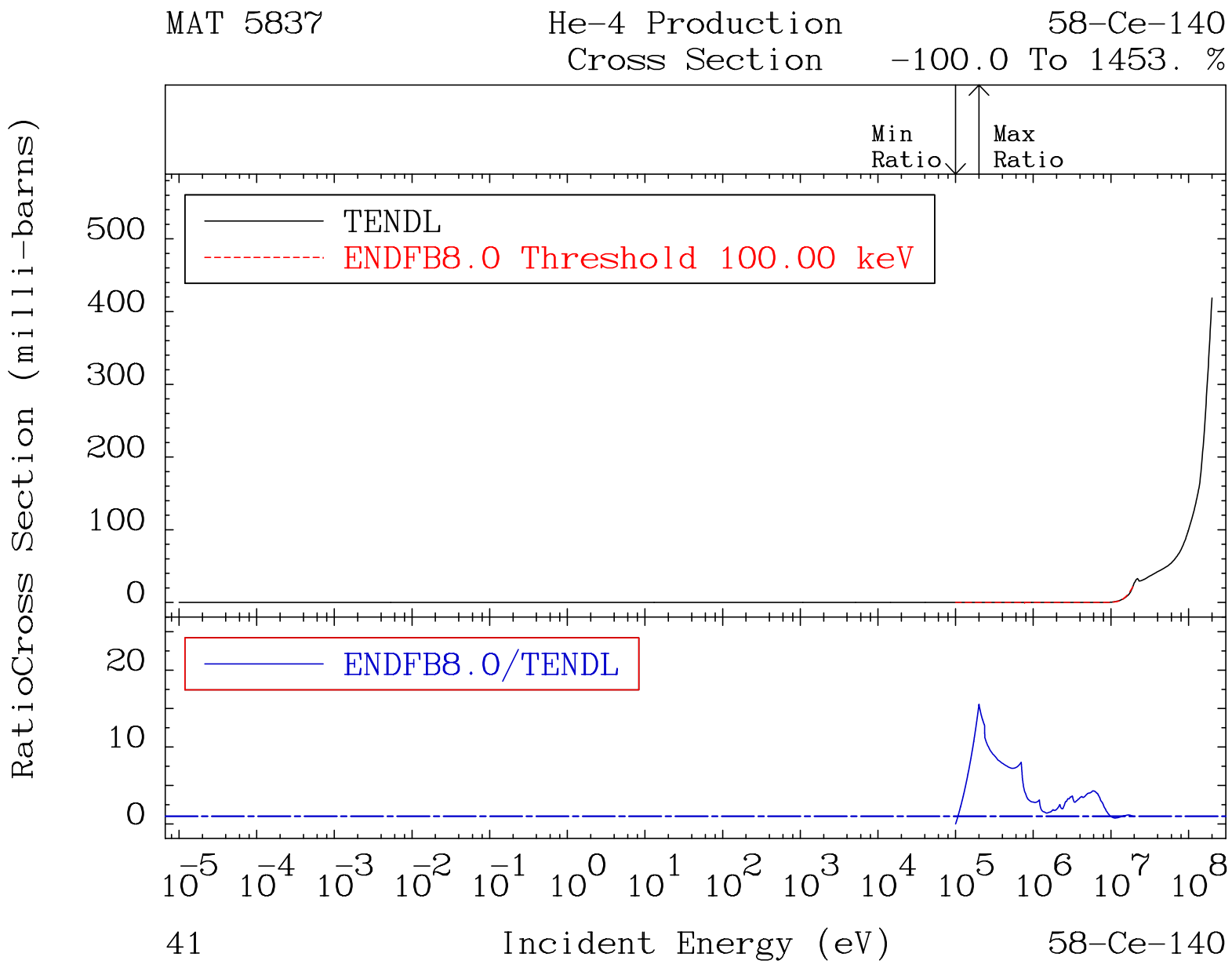

MAT 5837
(n,t)
Cross Section
58-Ce-140
-100.0 To 701.6 %
Min Ratio
Max Ratio
TENDL Threshold 8.5002 MeV
ENDFB8.0 Threshold 10.000 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
36
58-Ce-140

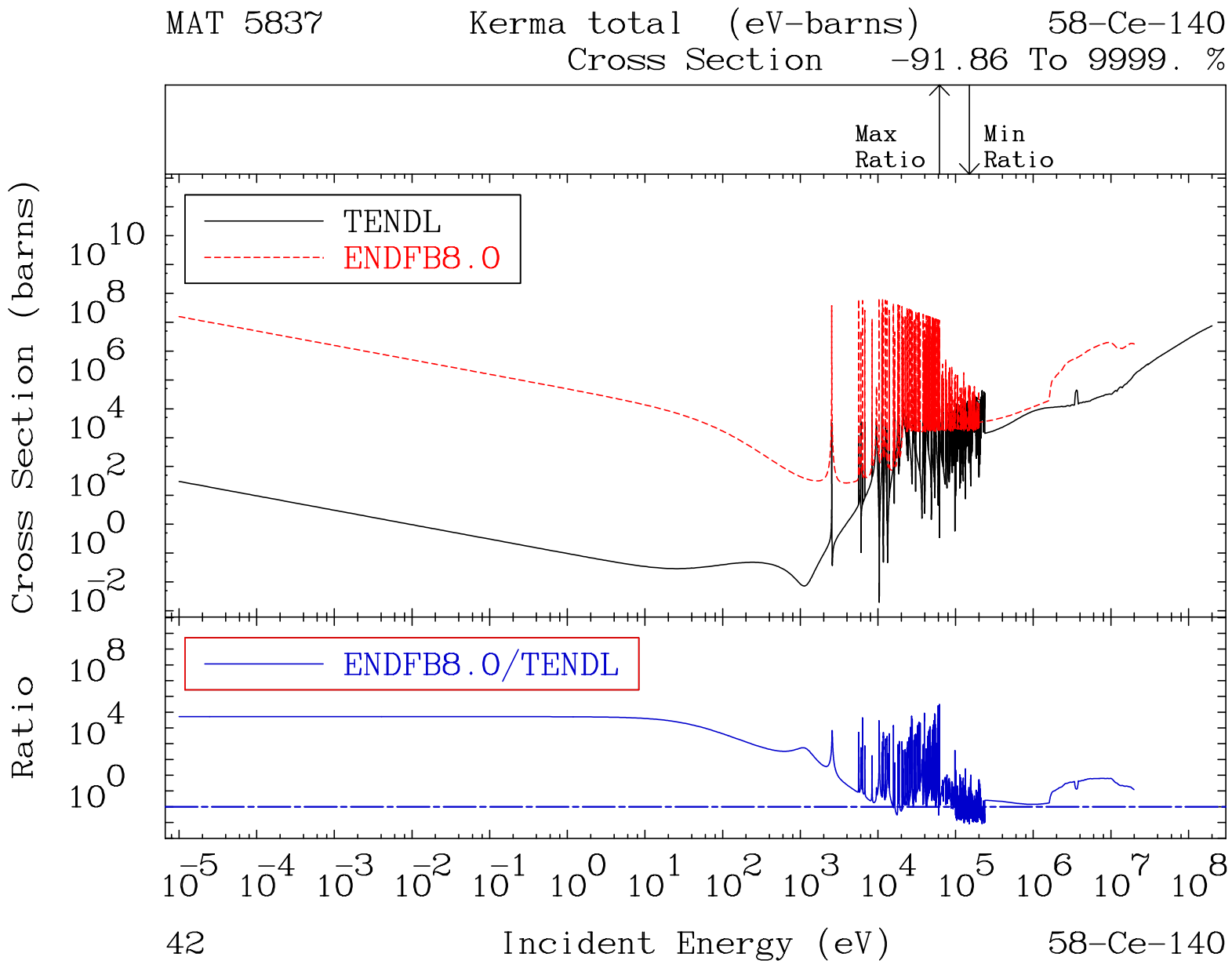

MAT 5837
(n,α)
58-Ce-140
Cross Section
-100.0 To 1453. %
Min Ratio
Max Ratio
TENDL
ENDFB8.0 Threshold 100.00 keV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
20
10
0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
37
Incident Energy (eV)
58-Ce-140

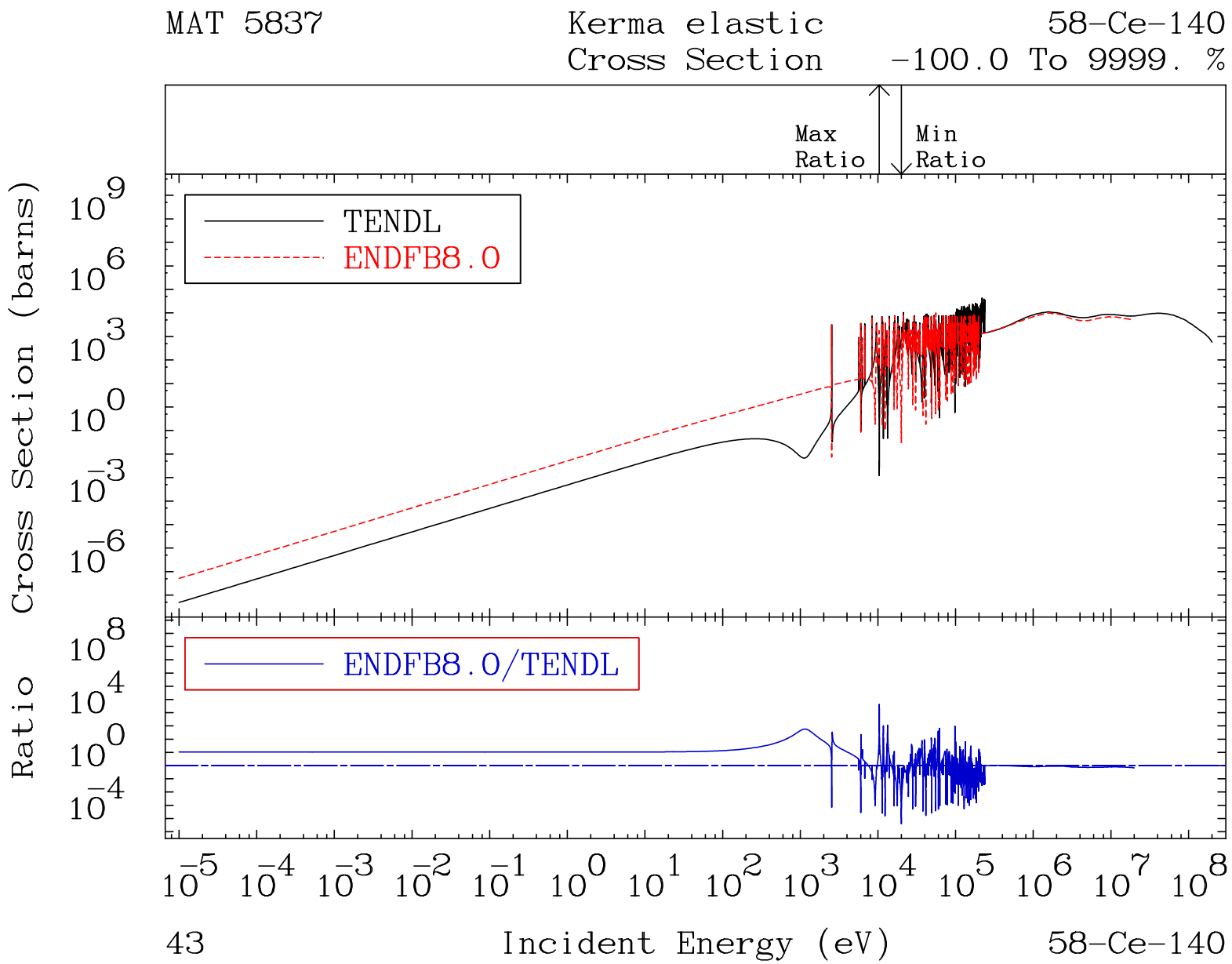

MAT 5837
Hydrogen Production
58-Ce-140
Cross Section
-100.0 To 54.31 %
Min Ratio
Max Ratio
TENDL Threshold 3.0013 MeV
ENDFB8.0 Threshold 4.0000 MeV
Cross Section (barns)
1.0
0.8
0.6
0.4
0.2
0.0
ENDFB8.0/TENDL
Ratio
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
38
Incident Energy (eV)
58-Ce-140

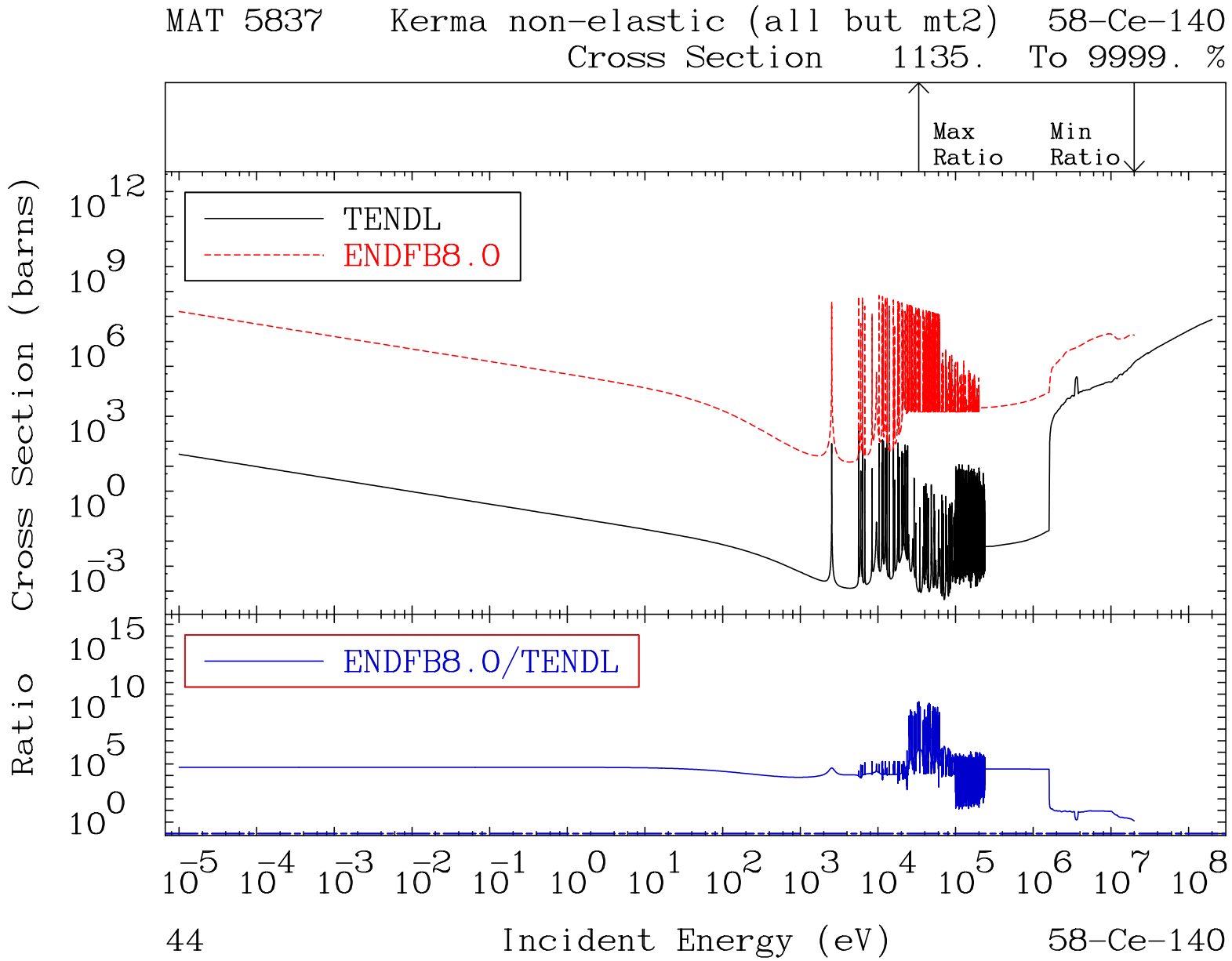

MAT 5837
Deuterium Production
58-Ce-140
Cross Section -100.0 To 59.59 %
Min Ratio
Max Ratio
TENDL Threshold 5.9589 MeV
ENDFB8.0 Threshold 7.0000 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
2.0
1.0
0.0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
39
Incident Energy (eV)
58-Ce-140

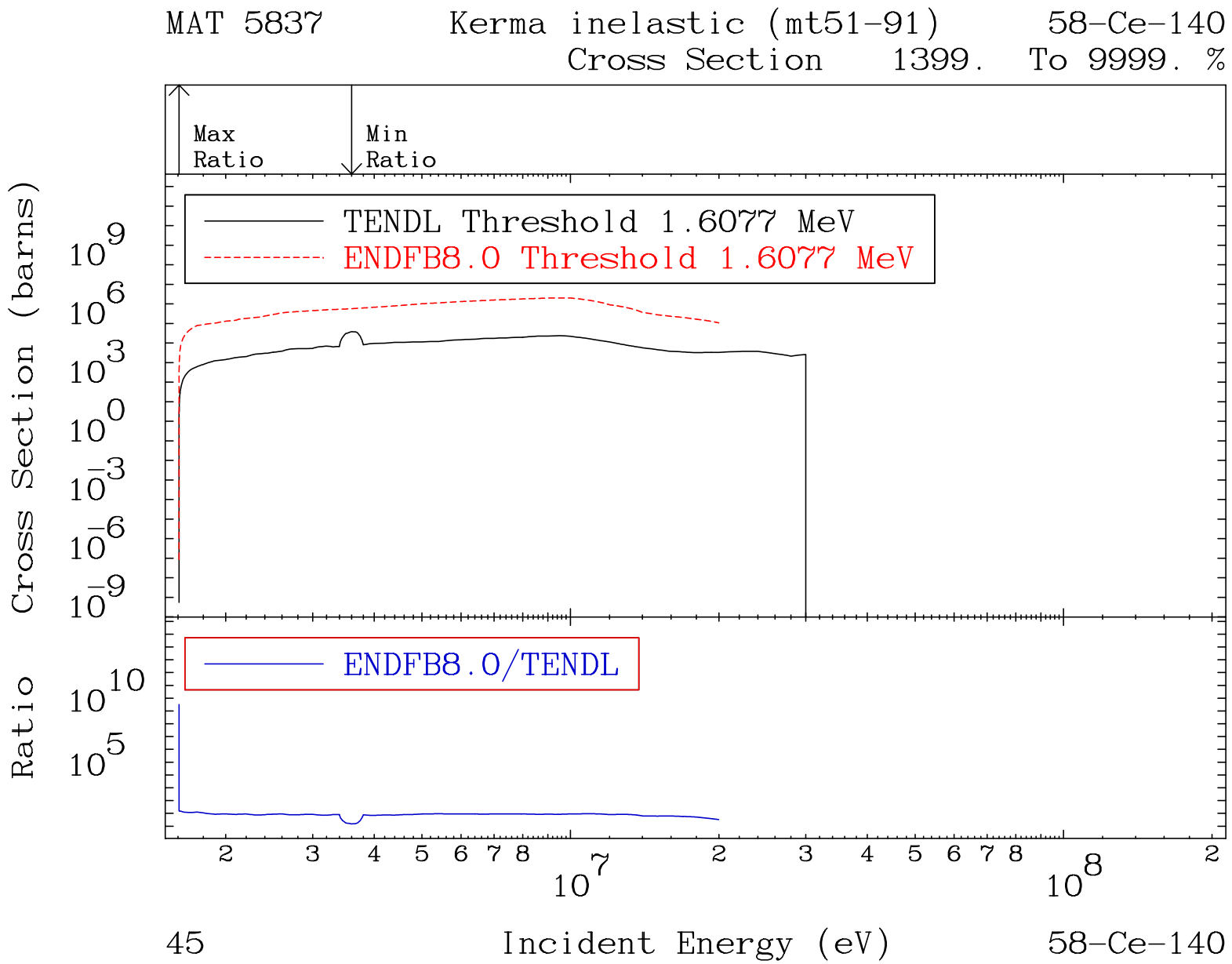

MAT 5837
Tritium Production
58-Ce-140
Cross Section
-100.0 To 701.6 %
Min Ratio
Max Ratio
TENDL Threshold 8.5002 MeV
ENDFB8.0 Threshold 10.000 MeV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
12
8
4
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
40
Incident Energy (eV)
58-Ce-140

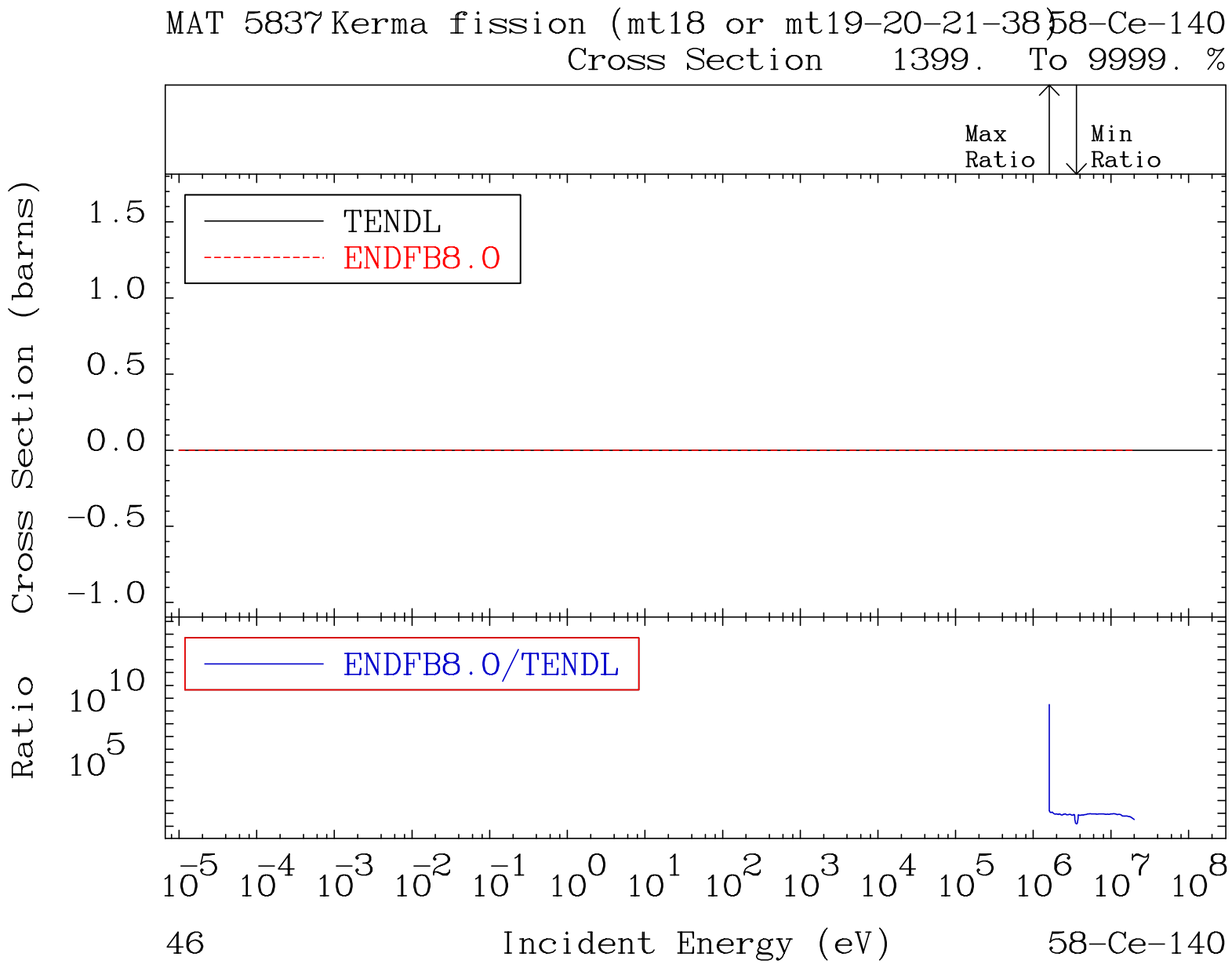

MAT 5837
He-4 Production
Cross Section
58-Ce-140
-100.0 To 1453. %
Min Ratio
Max Ratio
TENDL
ENDFB8.0 Threshold 100.00 keV
ENDFB8.0/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
20
10
0
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
41
Incident Energy (eV)
58-Ce-140

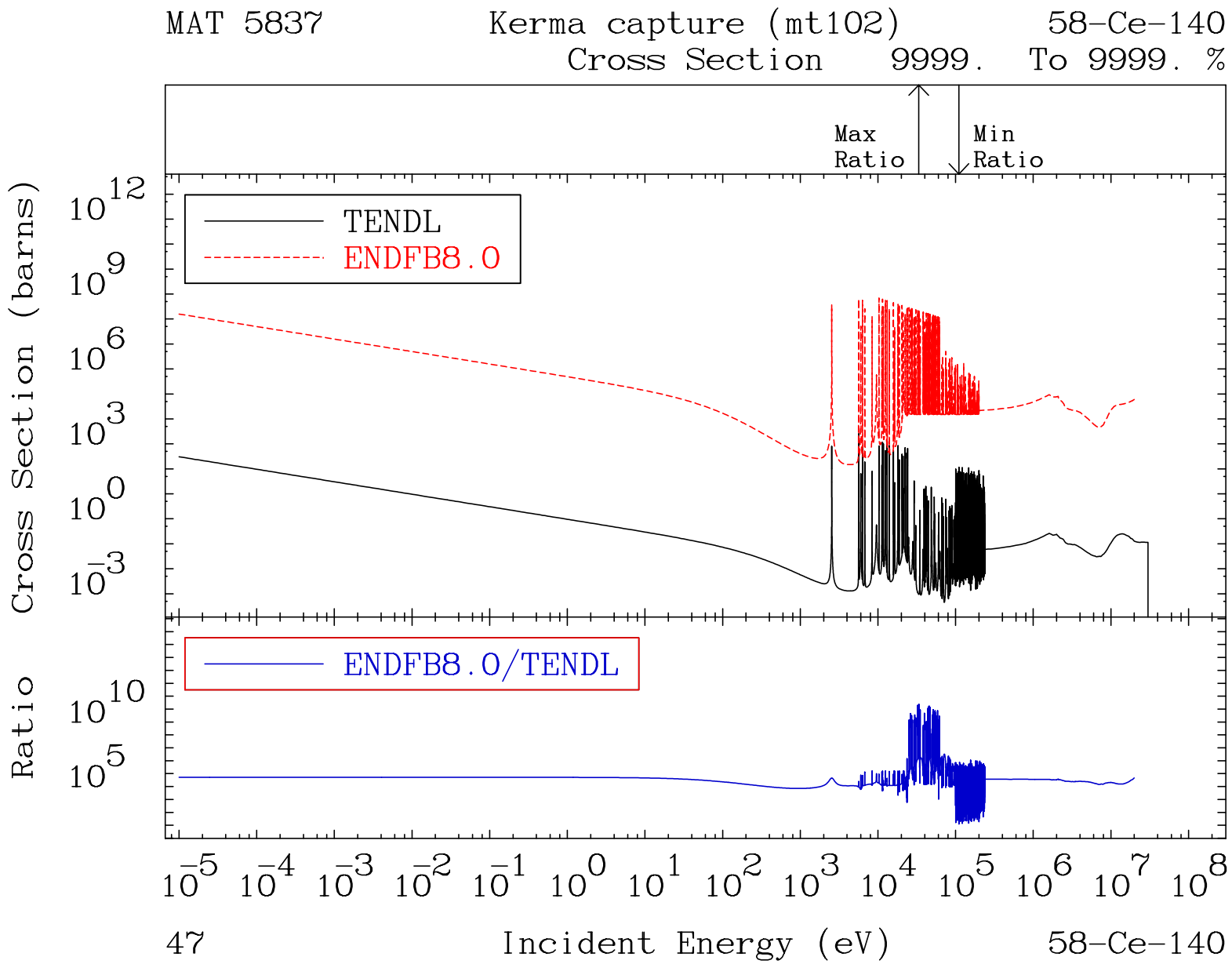

MAT 5837
Kerma total (eV-barns)
58-Ce-140
Cross Section -91.86 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
Cross Section (barns)
ENDFB8.0/TENDL
Ratio
Incident Energy (eV)
42
58-Ce-140

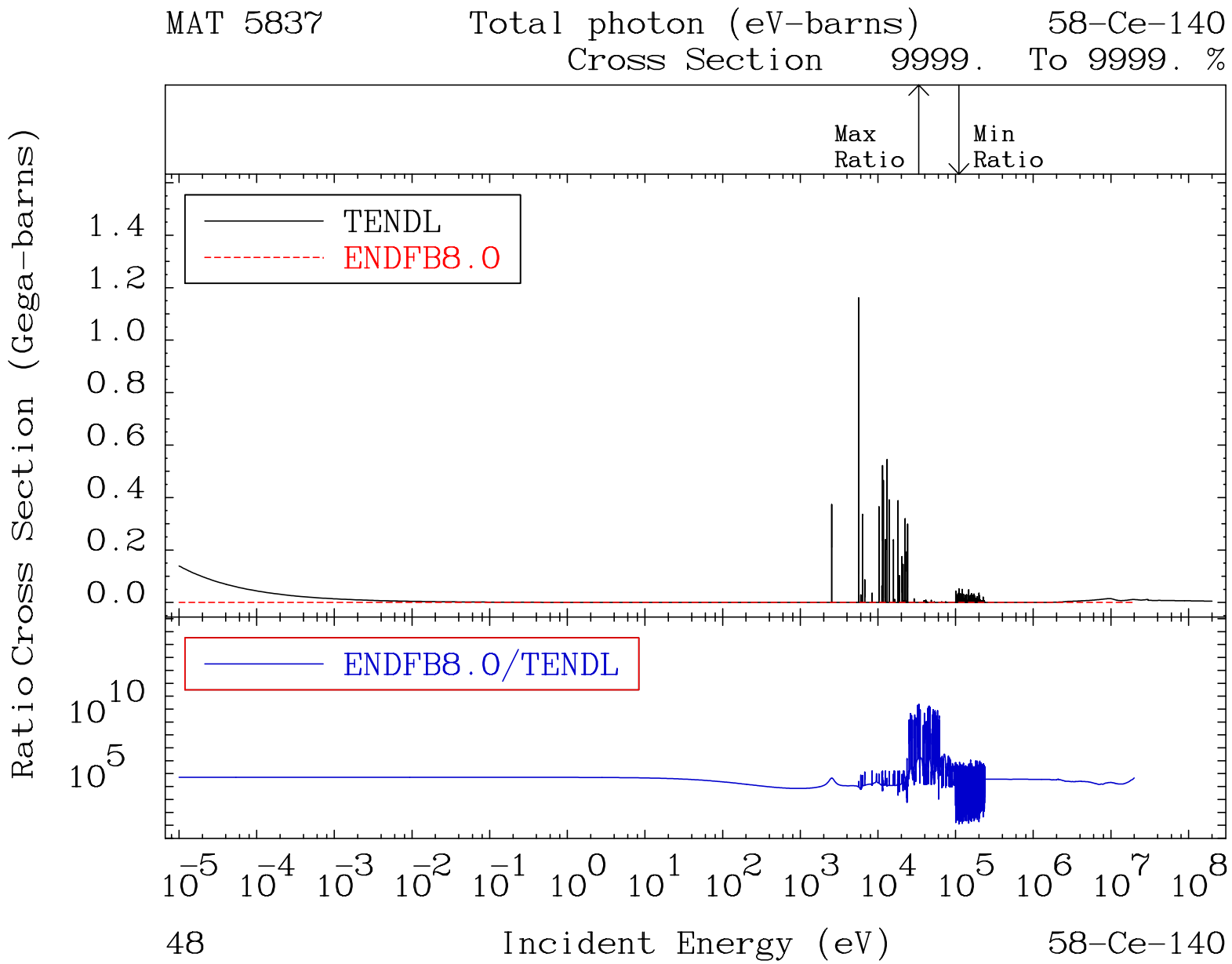

MAT 5837
Kerma elastic
Cross Section
58-Ce-140
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
43
58-Ce-140

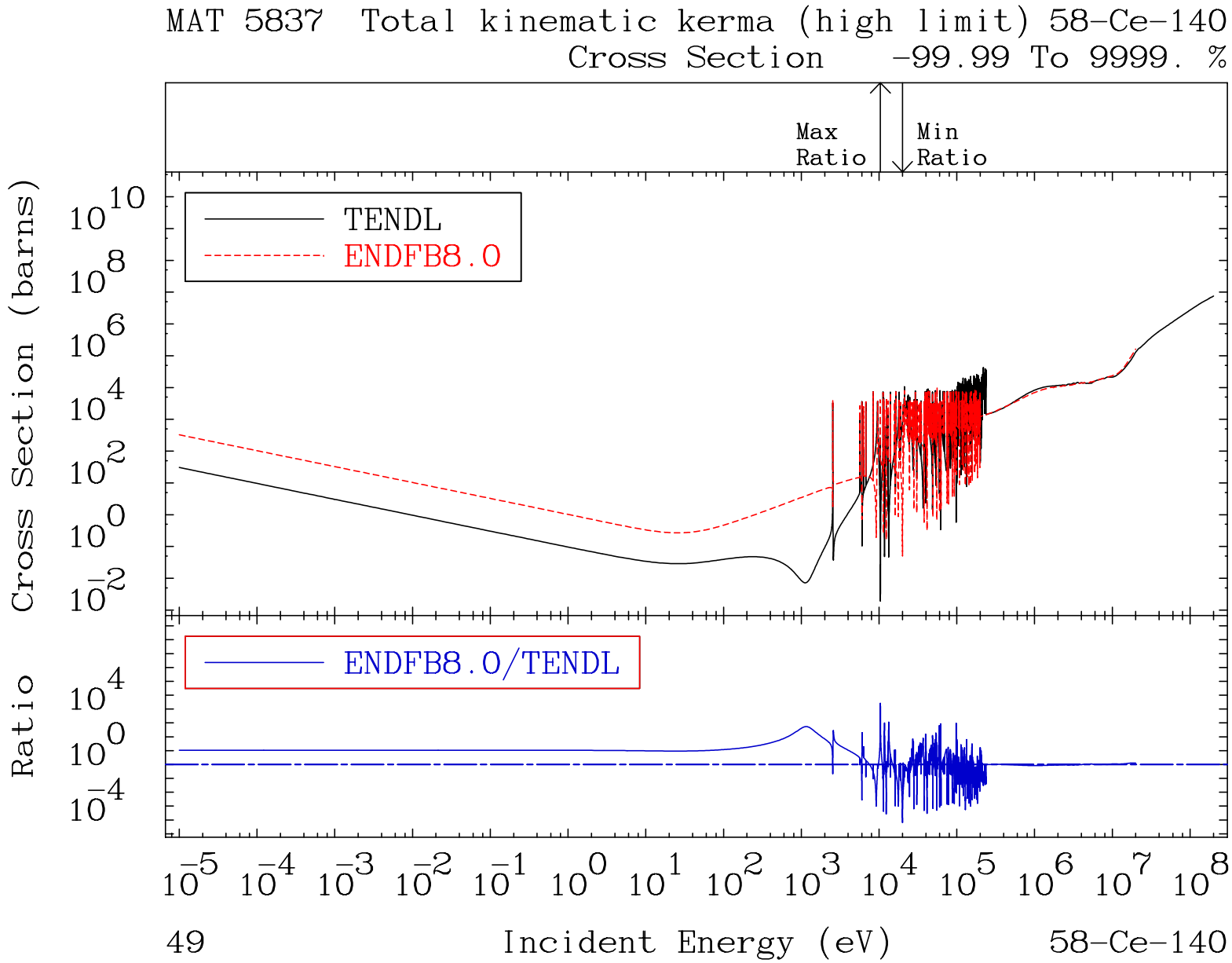

MAT 5837 Kerma non-elastic (all but mt2) 58-Ce-140
Cross Section 1135. To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
44
58-Ce-140

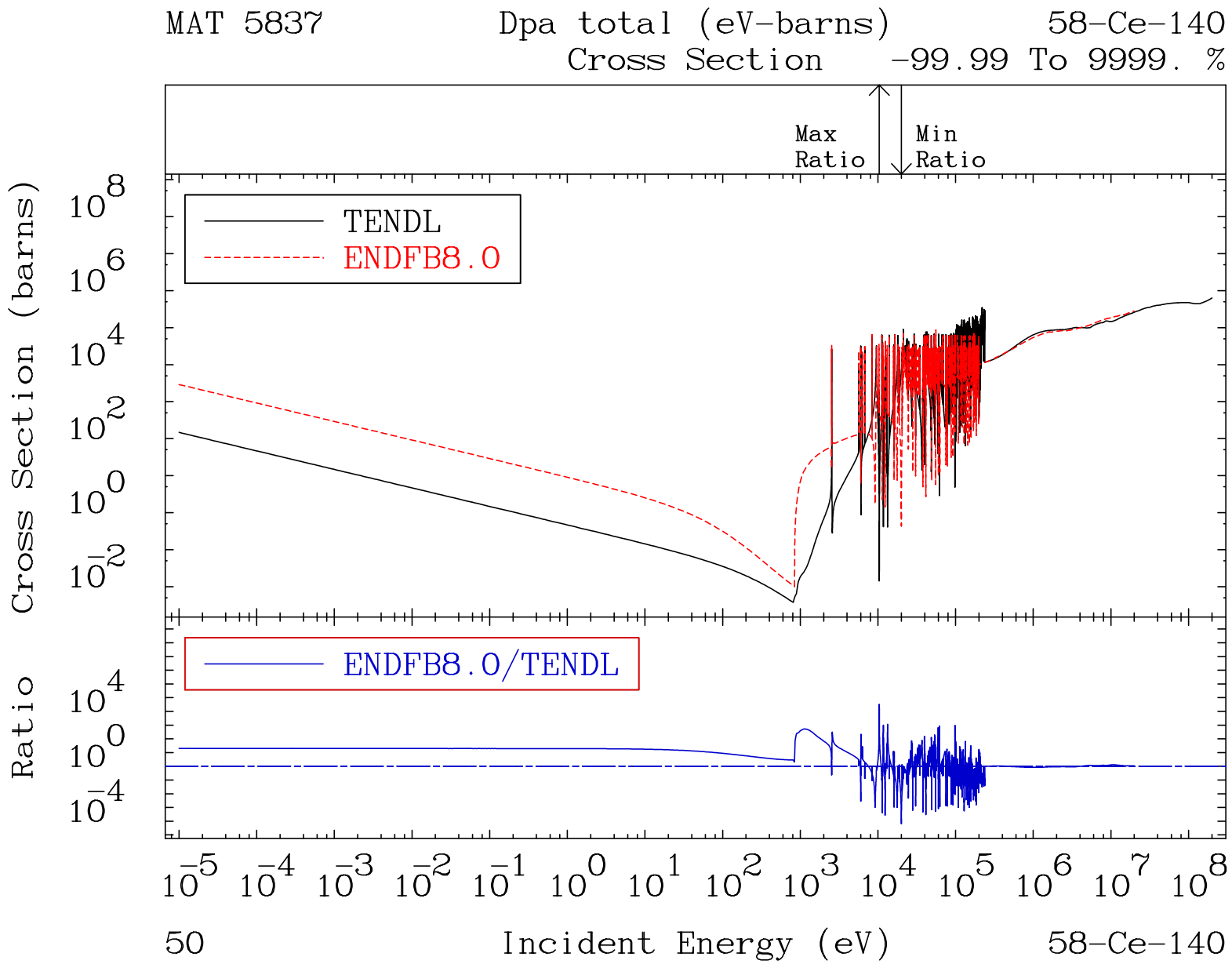

MAT 5837 Kerma inelastic (mt51-91) 58-Ce-140
Cross Section 1399. To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 1.6077 MeV
ENDFB8.0 Threshold 1.6077 MeV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
45
58-Ce-140

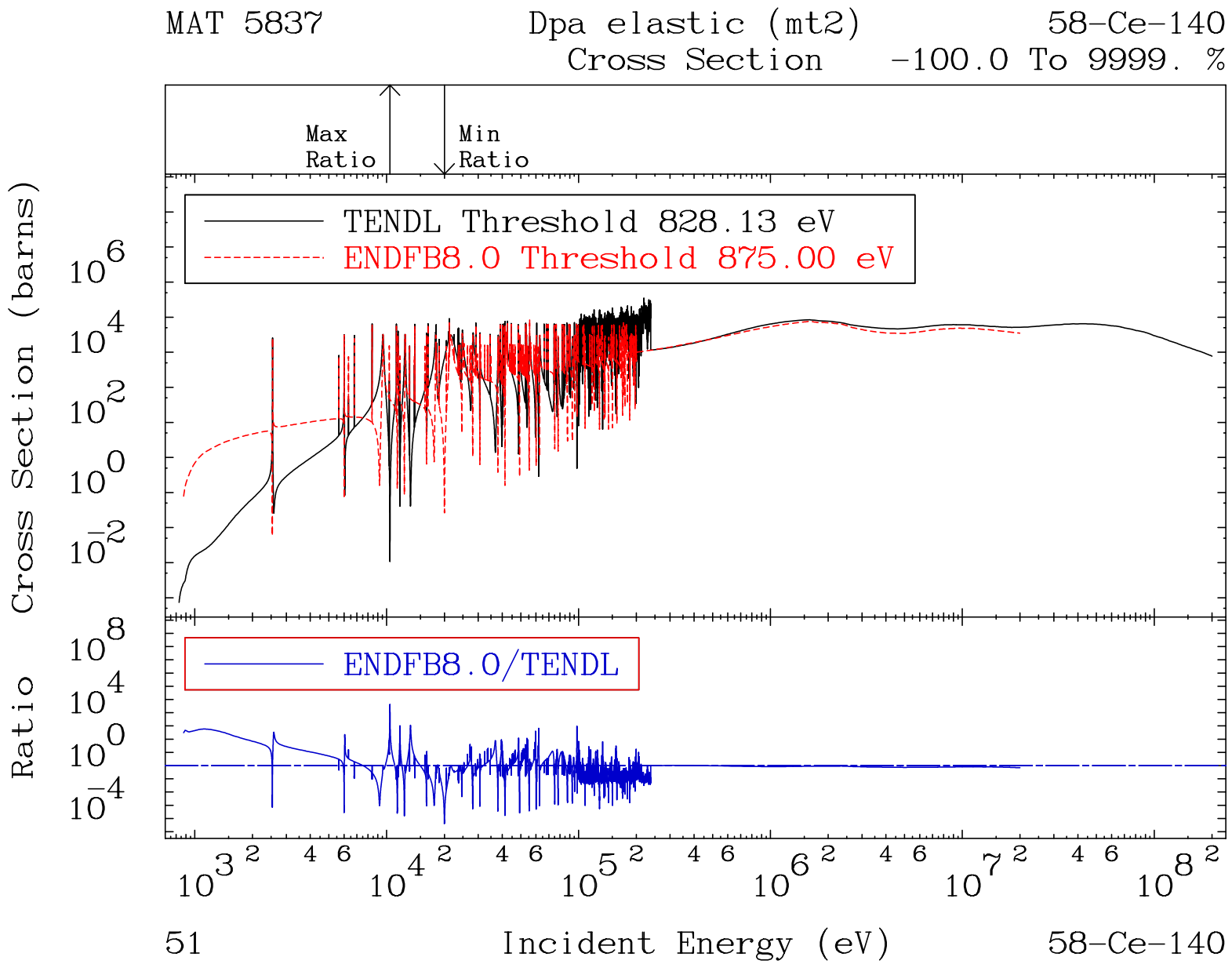

MAT 5837 Kerma fission (mt18 or mt19-20-21-38) 58-Ce-140
Cross Section 1399. To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
10^{10}
10^{5}
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
46
Incident Energy (eV)
58-Ce-140

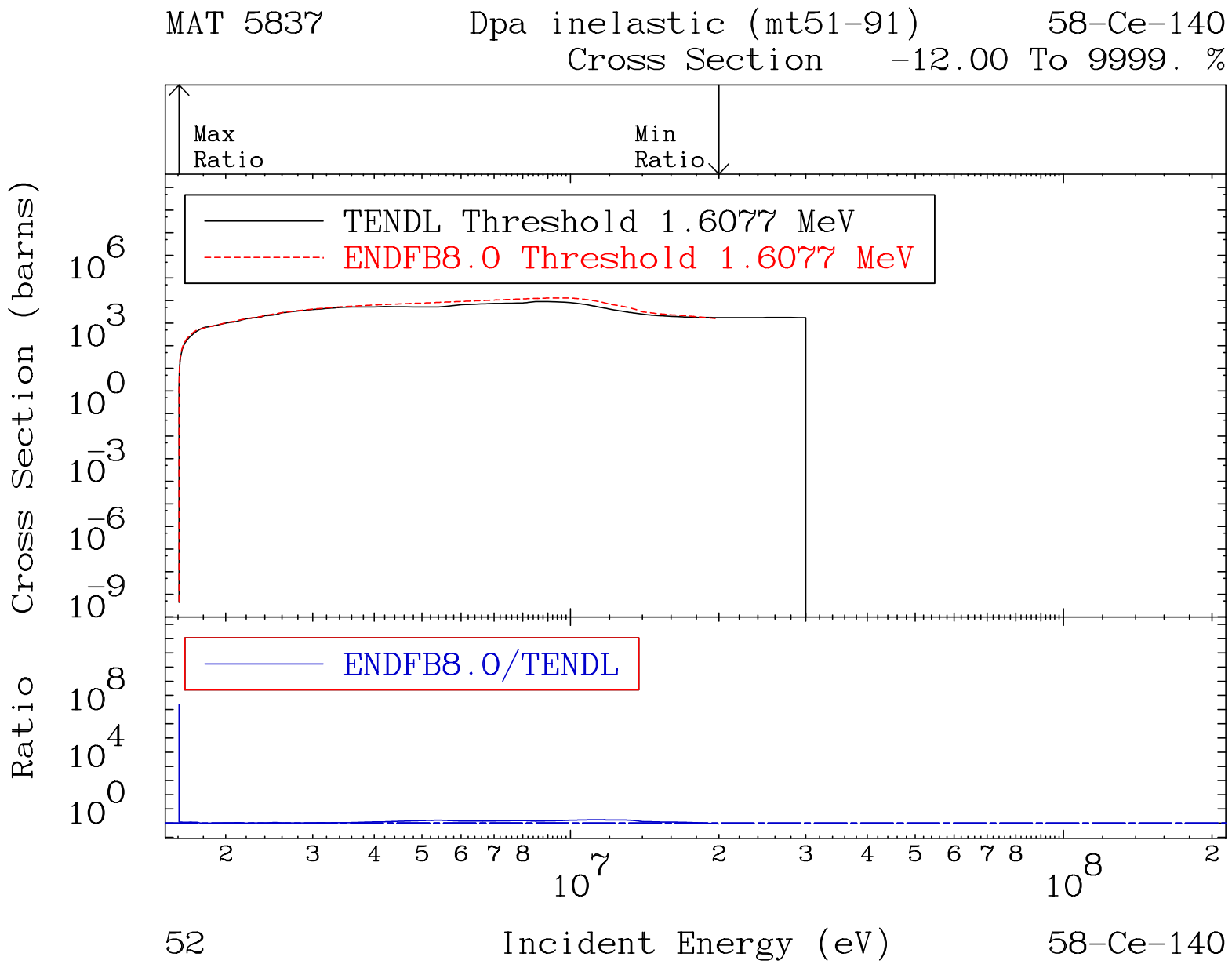

MAT 5837
Kerma capture (mt102)
58-Ce-140
Cross Section 9999. To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
47
58-Ce-140

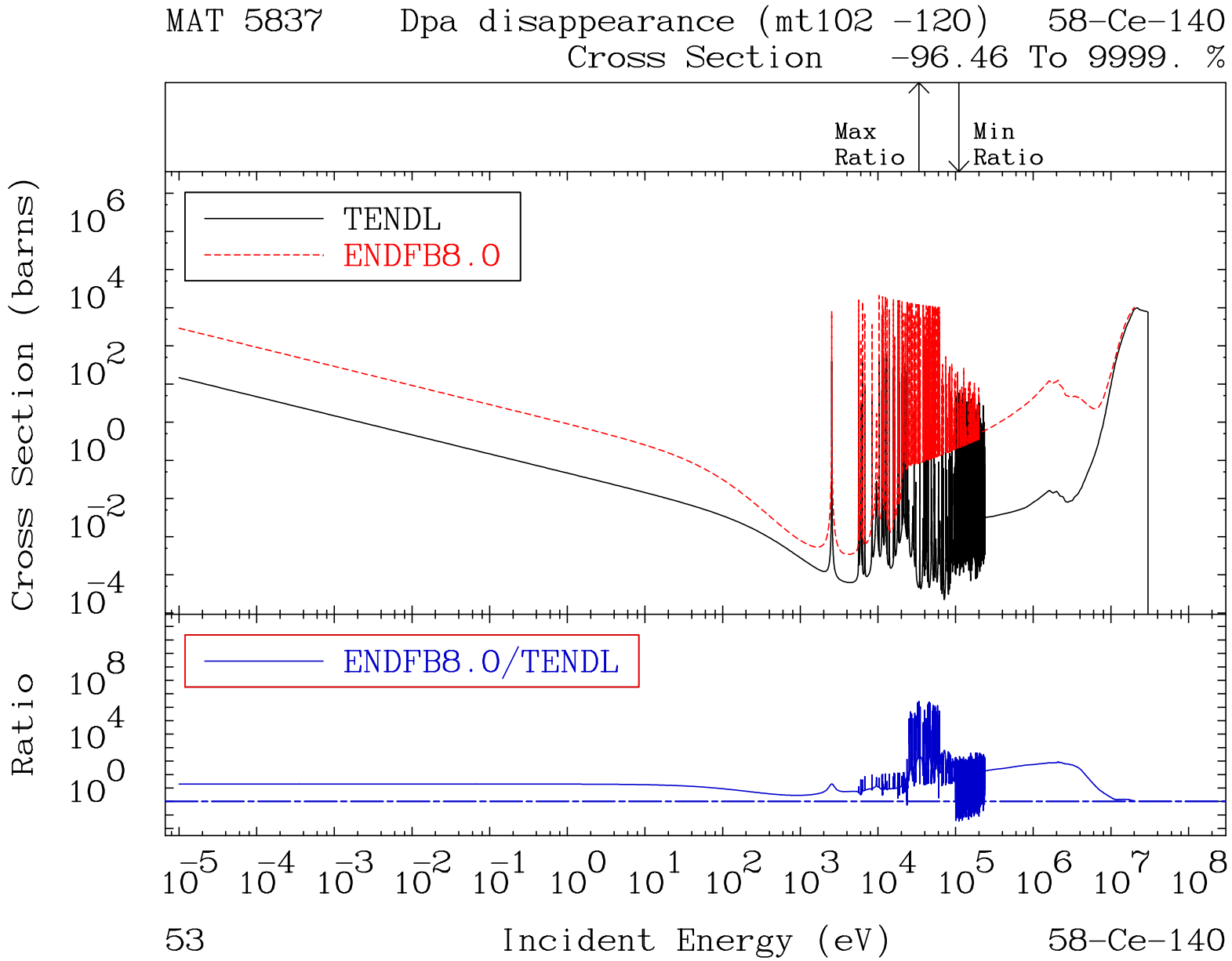

MAT 5837
Total photon (eV-barns)
58-Ce-140
Cross Section 9999. To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Ratio Cross Section (Giga-barns)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
10^{10}
10^{5}
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
48
Incident Energy (eV)
58-Ce-140


MAT 5837 Total kinematic kerma (high limit) 58-Ce-140
Cross Section -99.99 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
Cross Section (barns)
ENDFB8.0/TENDL
Ratio
Incident Energy (eV)
49
58-Ce-140


MAT 5837
Dpa total (eV-barns)
58-Ce-140
Cross Section
-99.99 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
50
58-Ce-140


MAT 5837
Dpa elastic (mt2)
Cross Section
58-Ce-140
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 828.13 eV
ENDFB8.0 Threshold 875.00 eV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
51
58-Ce-140


MAT 5837
Dpa inelastic (mt51-91)
58-Ce-140
Cross Section
-12.00 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 1.6077 MeV
ENDFB8.0 Threshold 1.6077 MeV
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
52
58-Ce-140


MAT 5837 Dpa disappearance (mt102 -120) 58-Ce-140
Cross Section -96.46 To 9999. %
Max Ratio
Min Ratio
TENDL
ENDFB8.0
ENDFB8.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
53
58-Ce-140