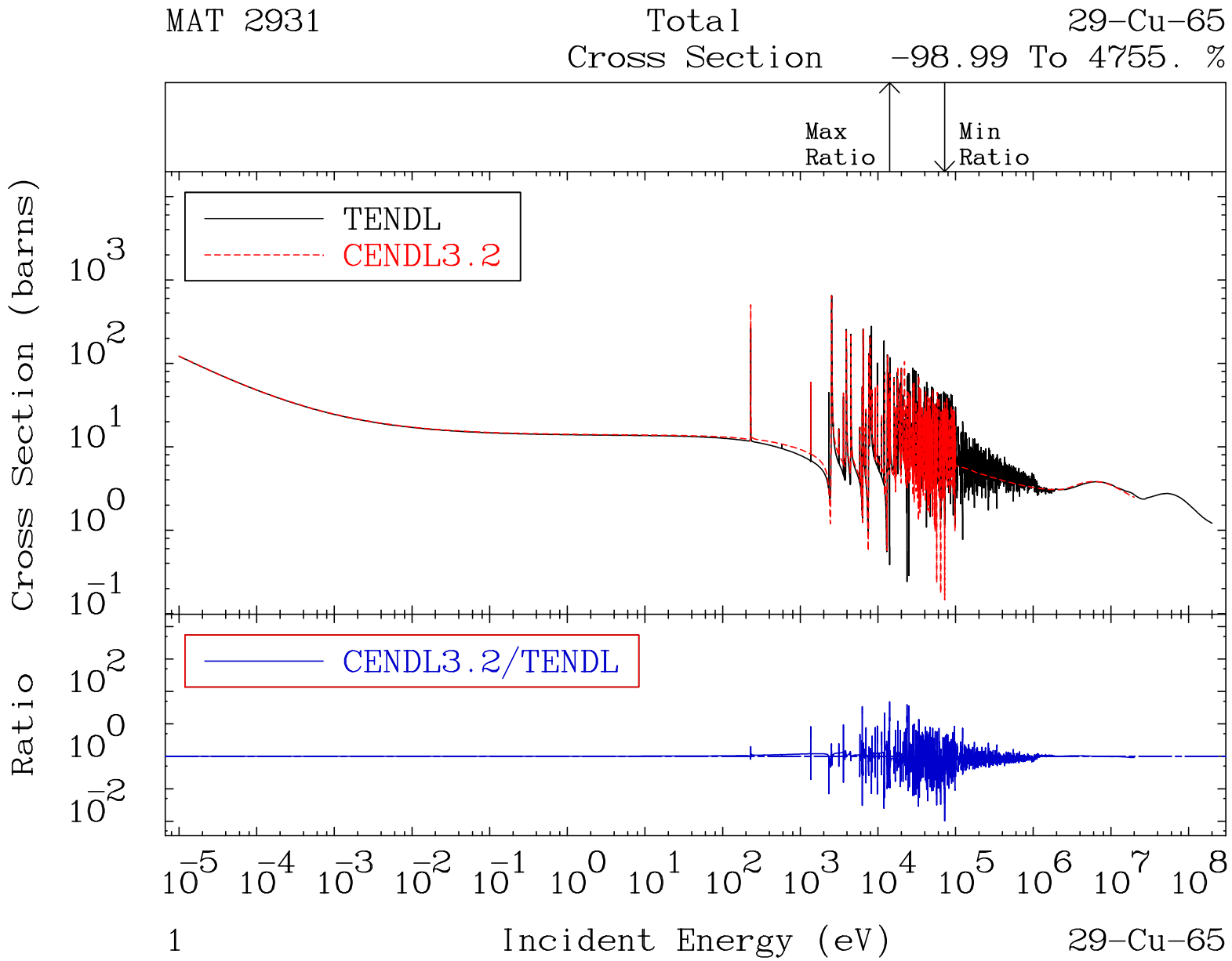
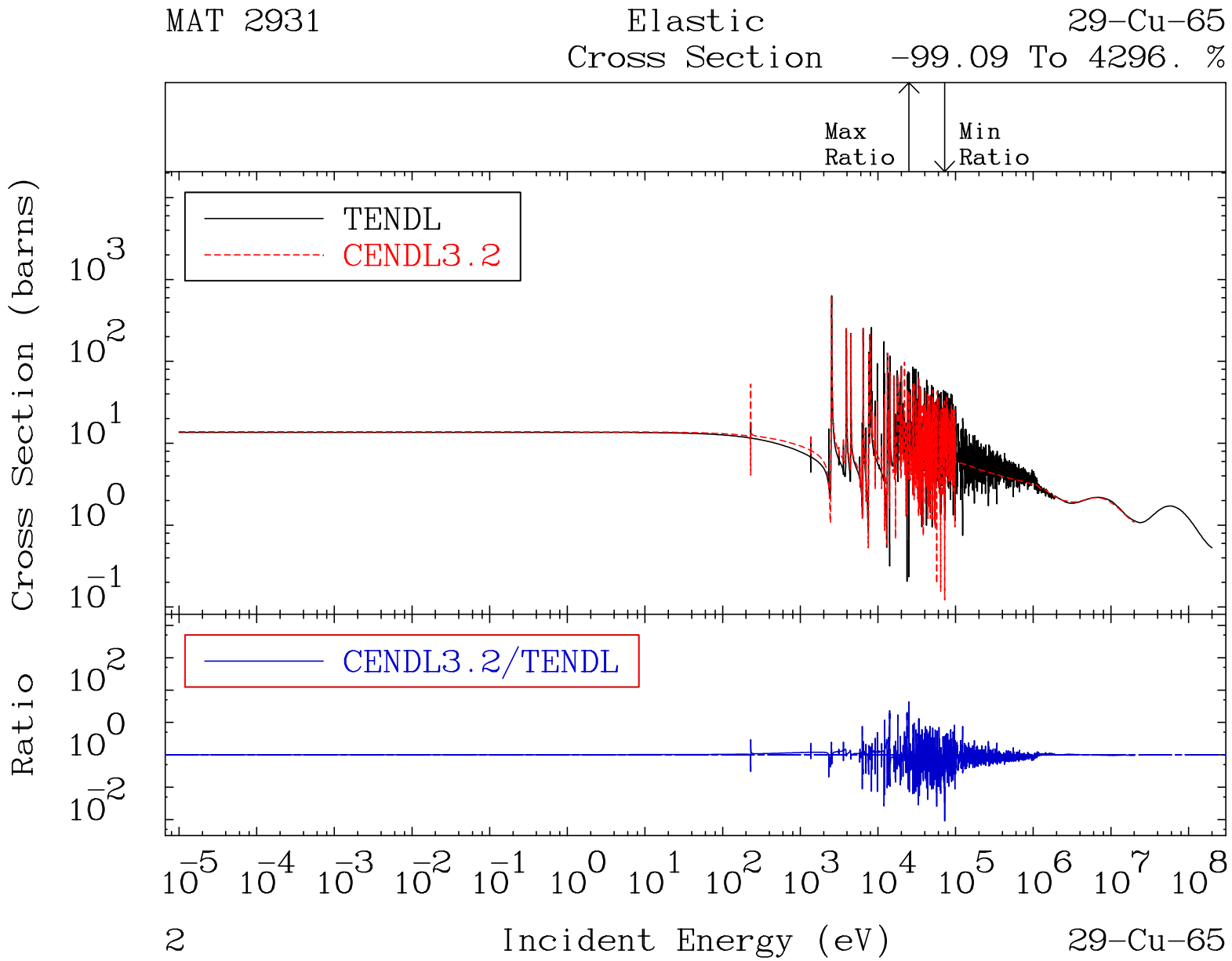
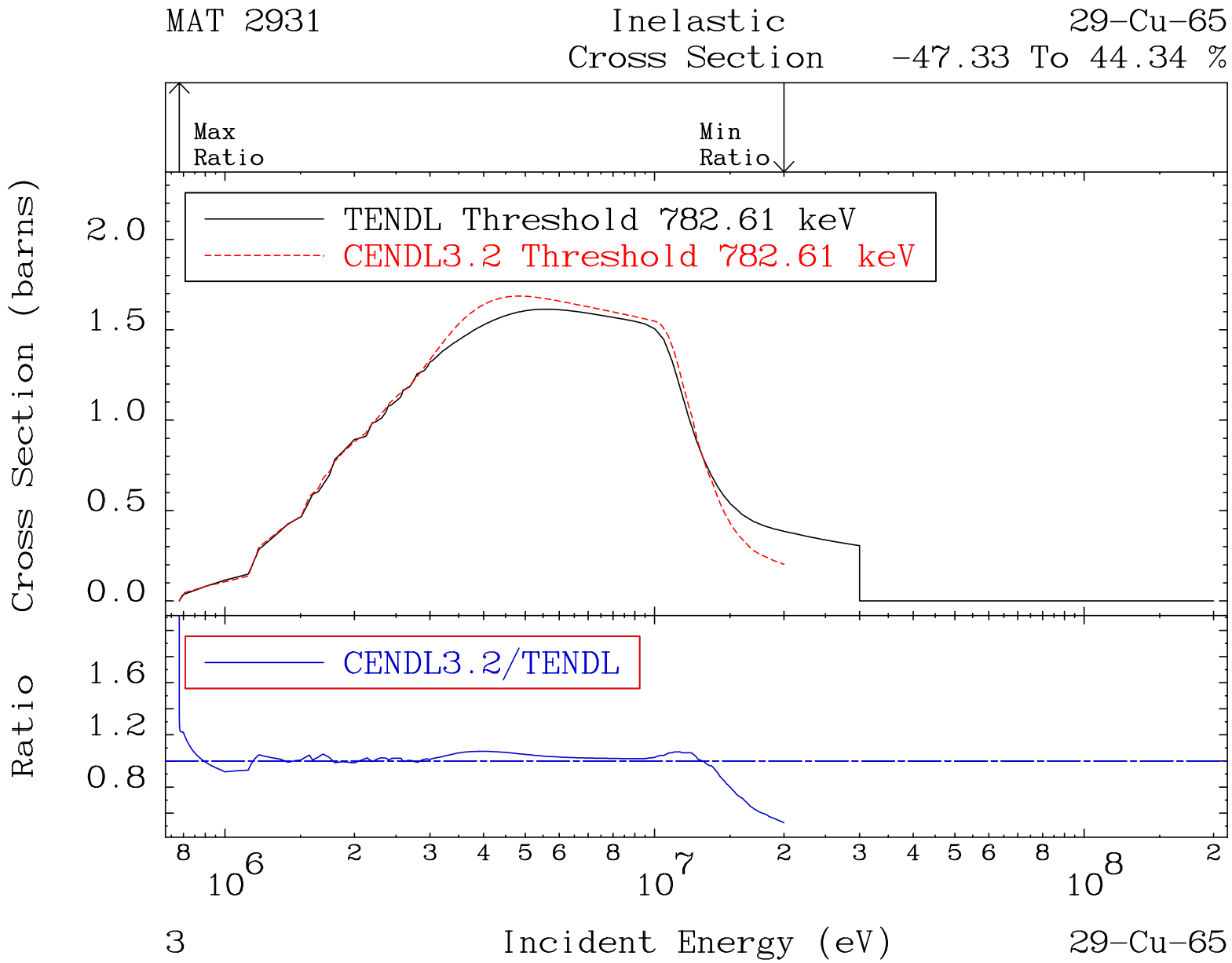
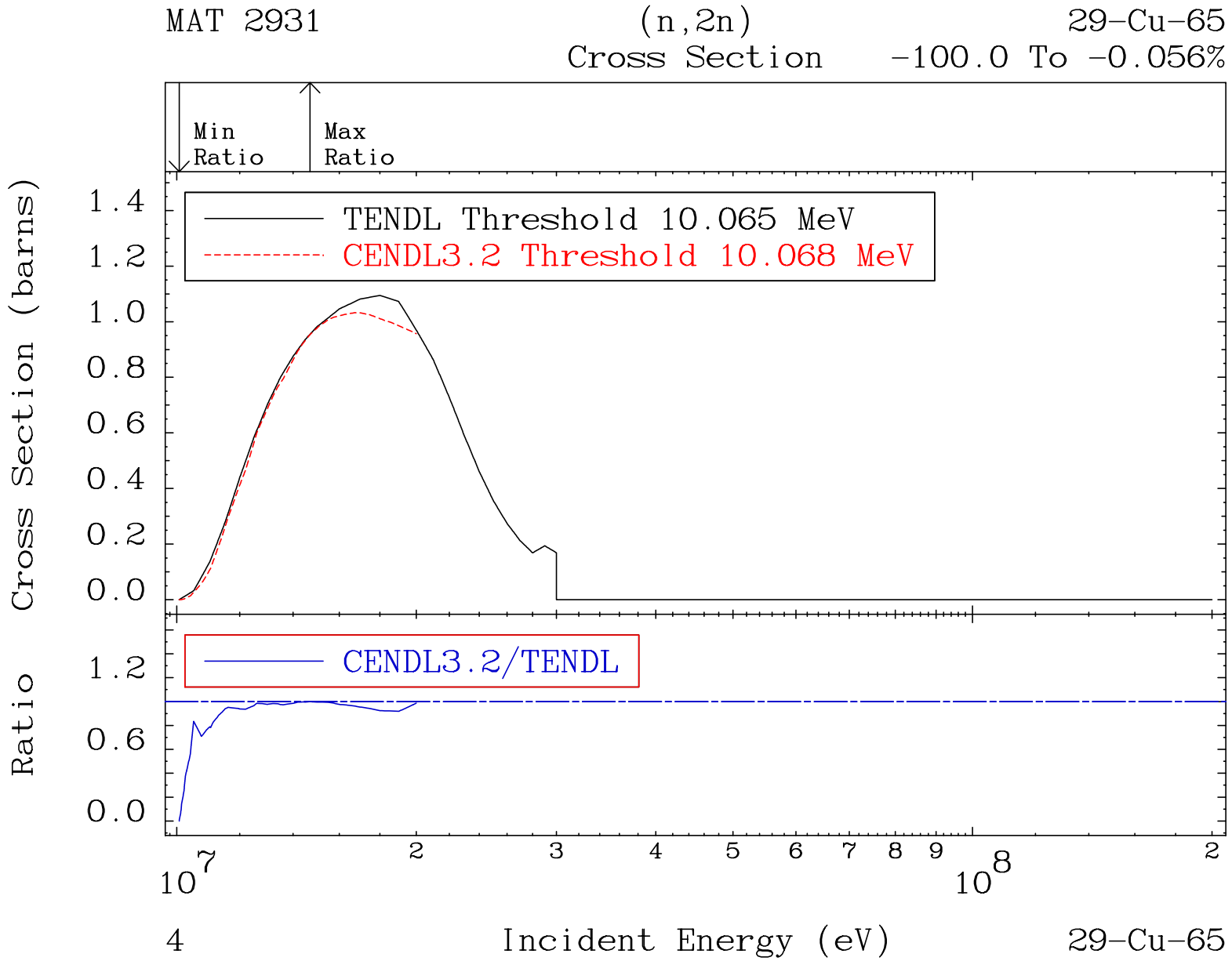
Program Complot
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

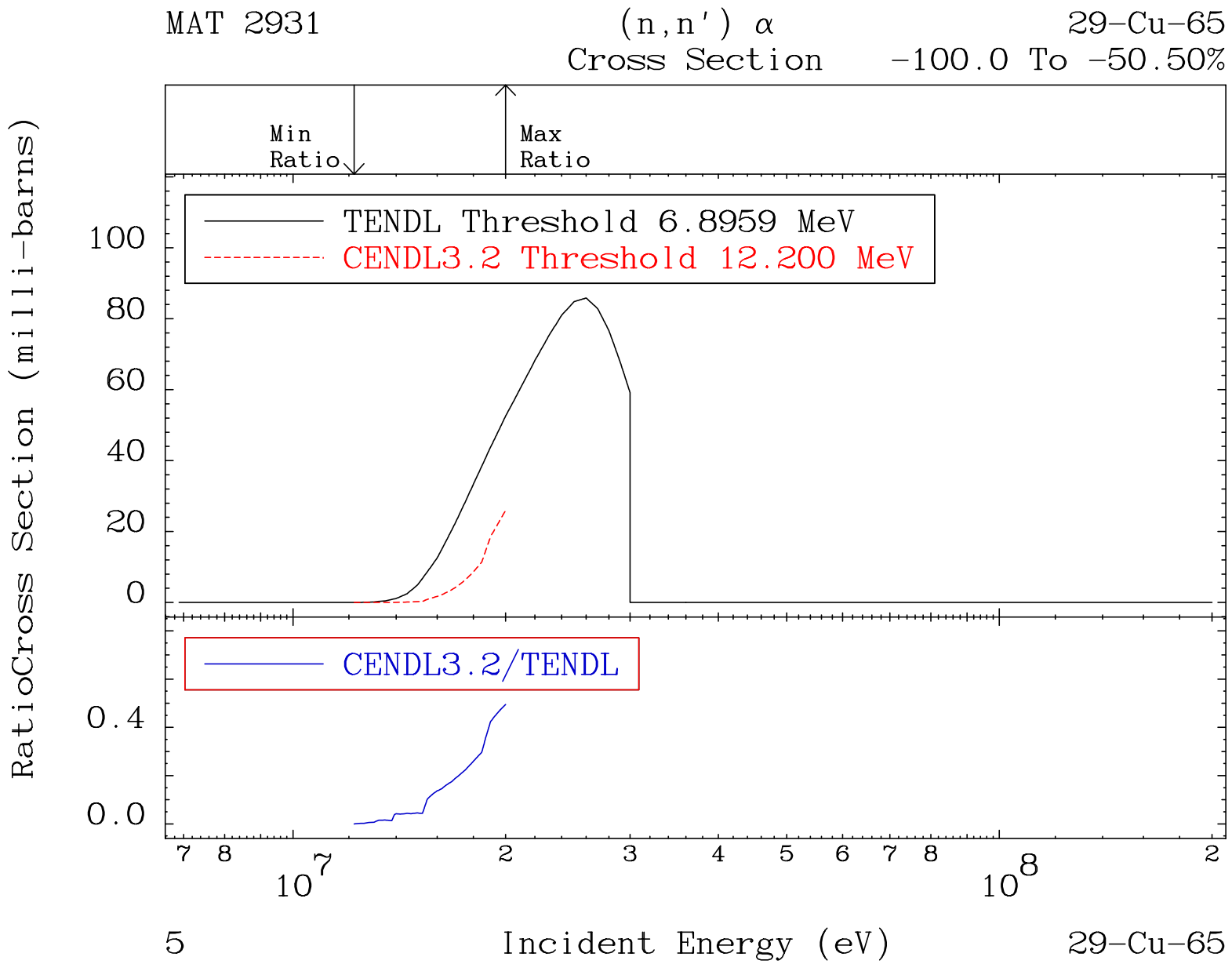
Press Mouse Button to Start

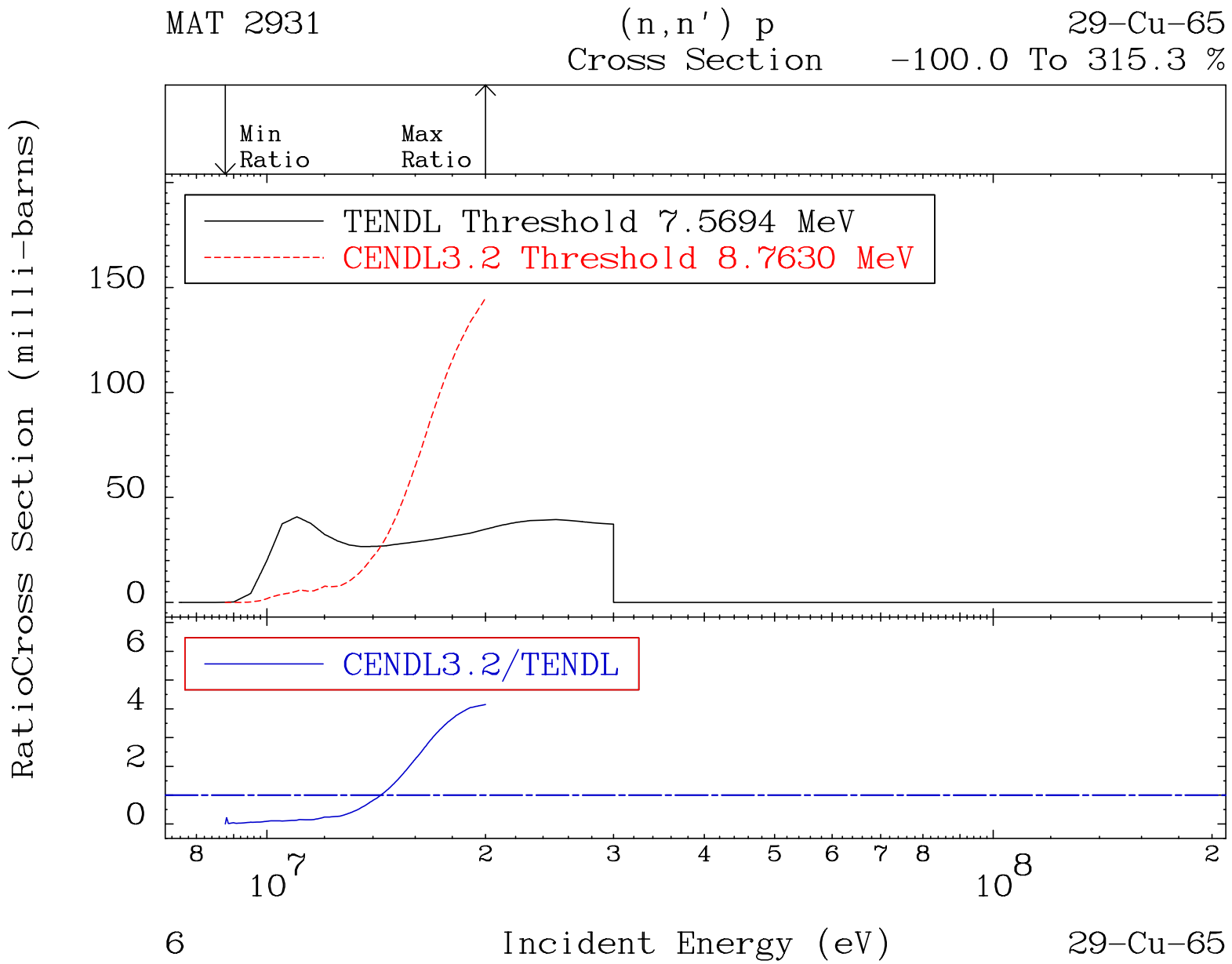

MAT 2931
Total
Cross Section
29-Cu-65
-98.99 To 4755. %
Max
Ratio
Min
Ratio
TENDL
CENDL3.2
Cross Section (barns)
CENDL3.2/TENDL
Ratio
Incident Energy (eV)
1
29-Cu-65

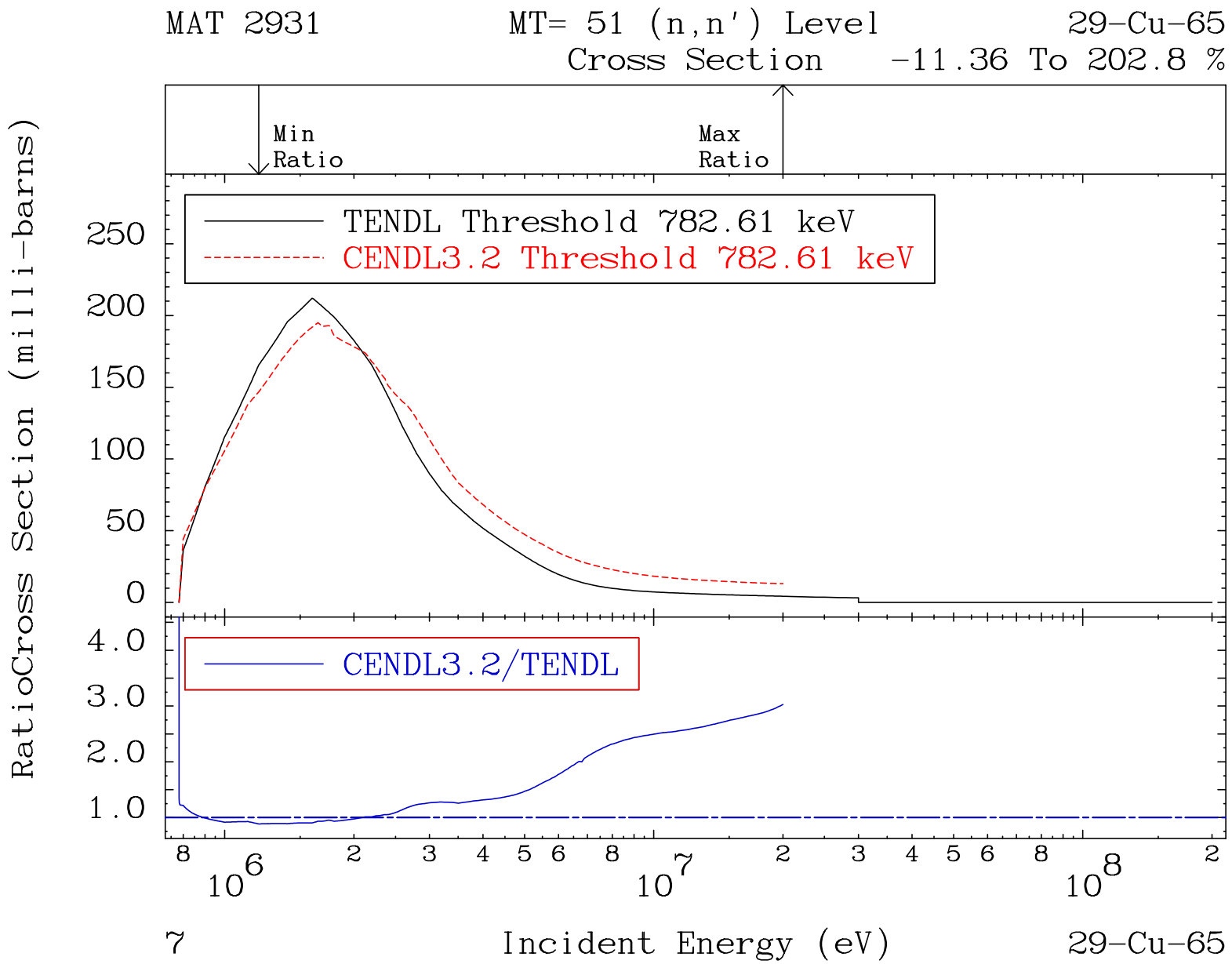

MAT 2931
Elastic
Cross Section
29-Cu-65
-99.09 To 4296. %
Max Ratio
Min Ratio
TENDL
CENDL3.2
Cross Section (barns)
CENDL3.2/TENDL
Ratio
Incident Energy (eV)
2
29-Cu-65

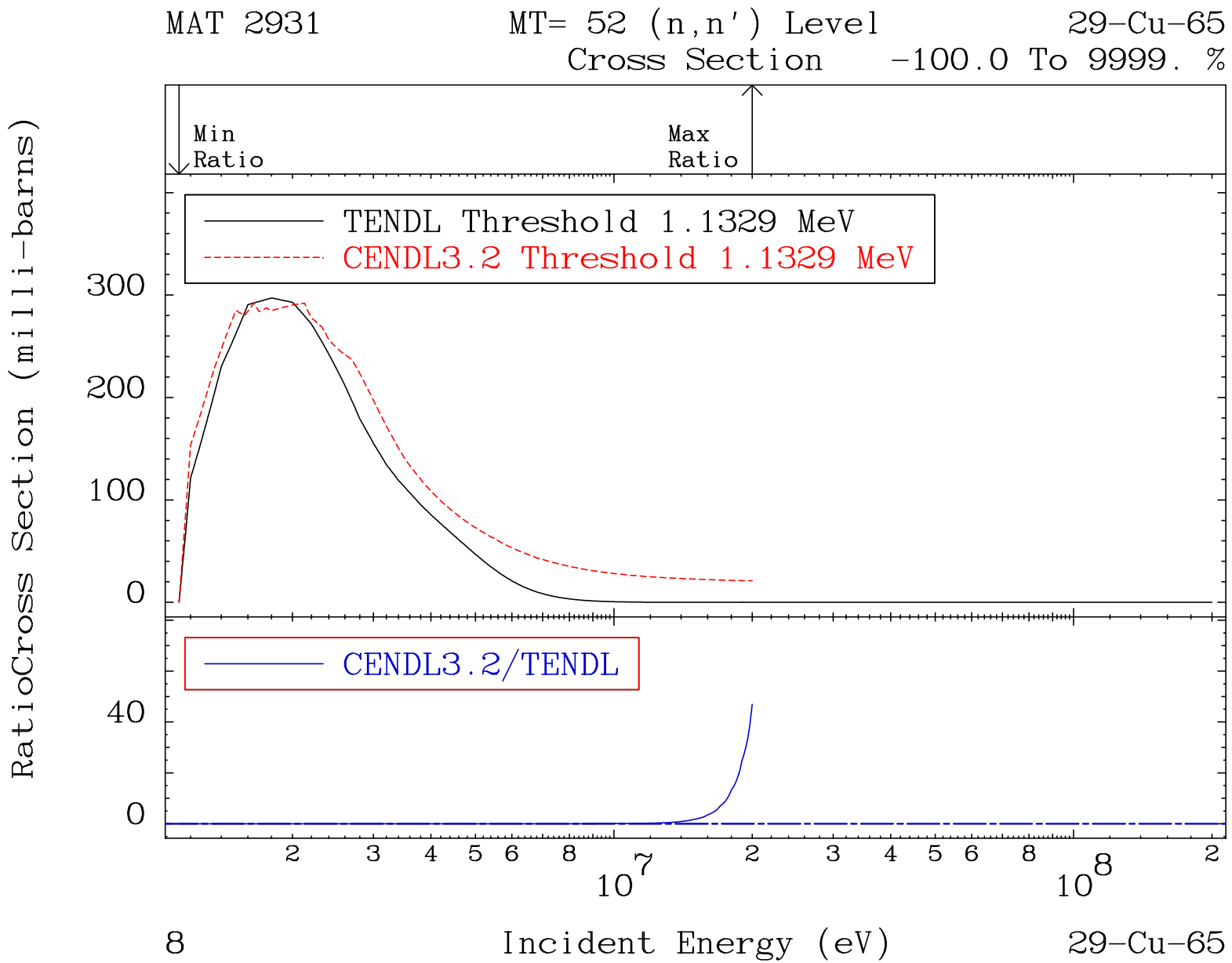

MAT 2931
Inelastic
Cross Section
29-Cu-65
-47.33 To 44.34 %
Max
Ratio
Min
Ratio
TENDL Threshold 782.61 keV
CENDL3.2 Threshold 782.61 keV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
CENDL3.2/TENDL
Ratio
1.6
1.2
0.8
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
3
Incident Energy (eV)
29-Cu-65

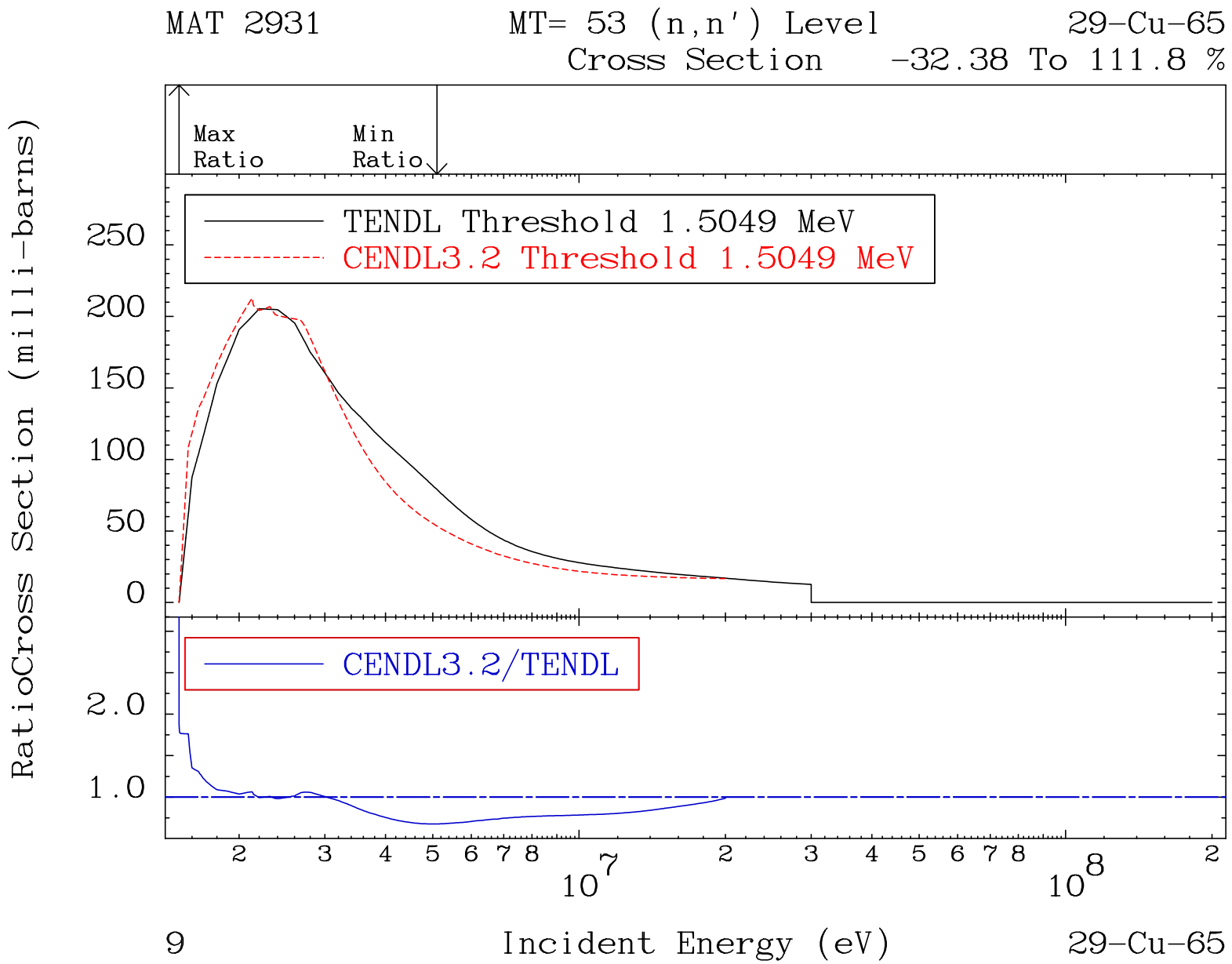

MAT 2931
(n,2n)
Cross Section
29-Cu-65
-100.0 To -0.056%
Min Ratio
Max Ratio
TENDL Threshold 10.065 MeV
CENDL3.2 Threshold 10.068 MeV
CENDL3.2/TENDL
Cross Section (barns)
Ratio
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.2
0.6
0.0
10^7
2
3
4
5
6
7
8
9
10^8
2
Incident Energy (eV)
4
29-Cu-65

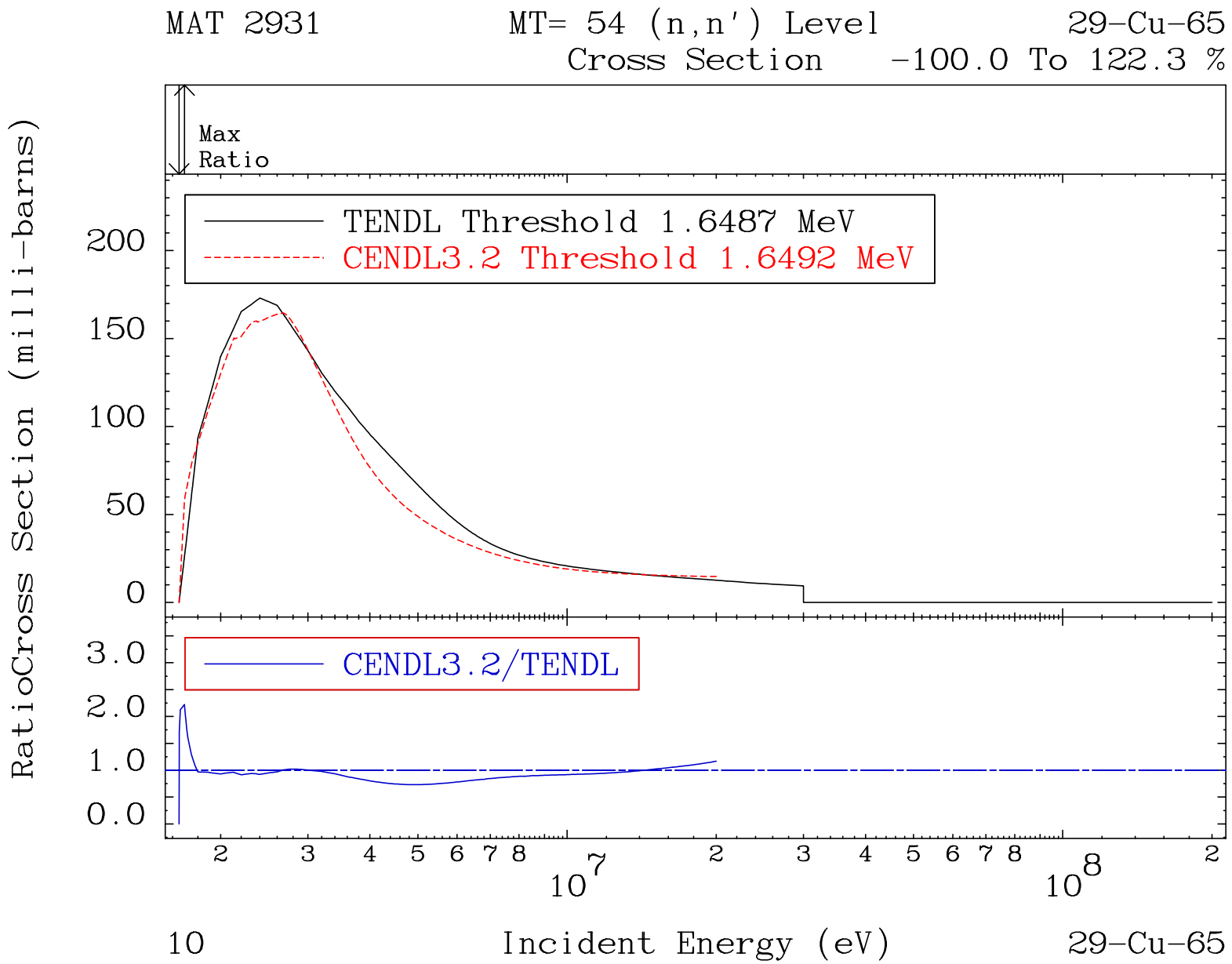

MAT 2931
(n,n') α
Cross Section
29-Cu-65
-100.0 To -50.50%
Min Ratio
Max Ratio
TENDL Threshold 6.8959 MeV
CENDL3.2 Threshold 12.200 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
0.4
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
5
Incident Energy (eV)
29-Cu-65

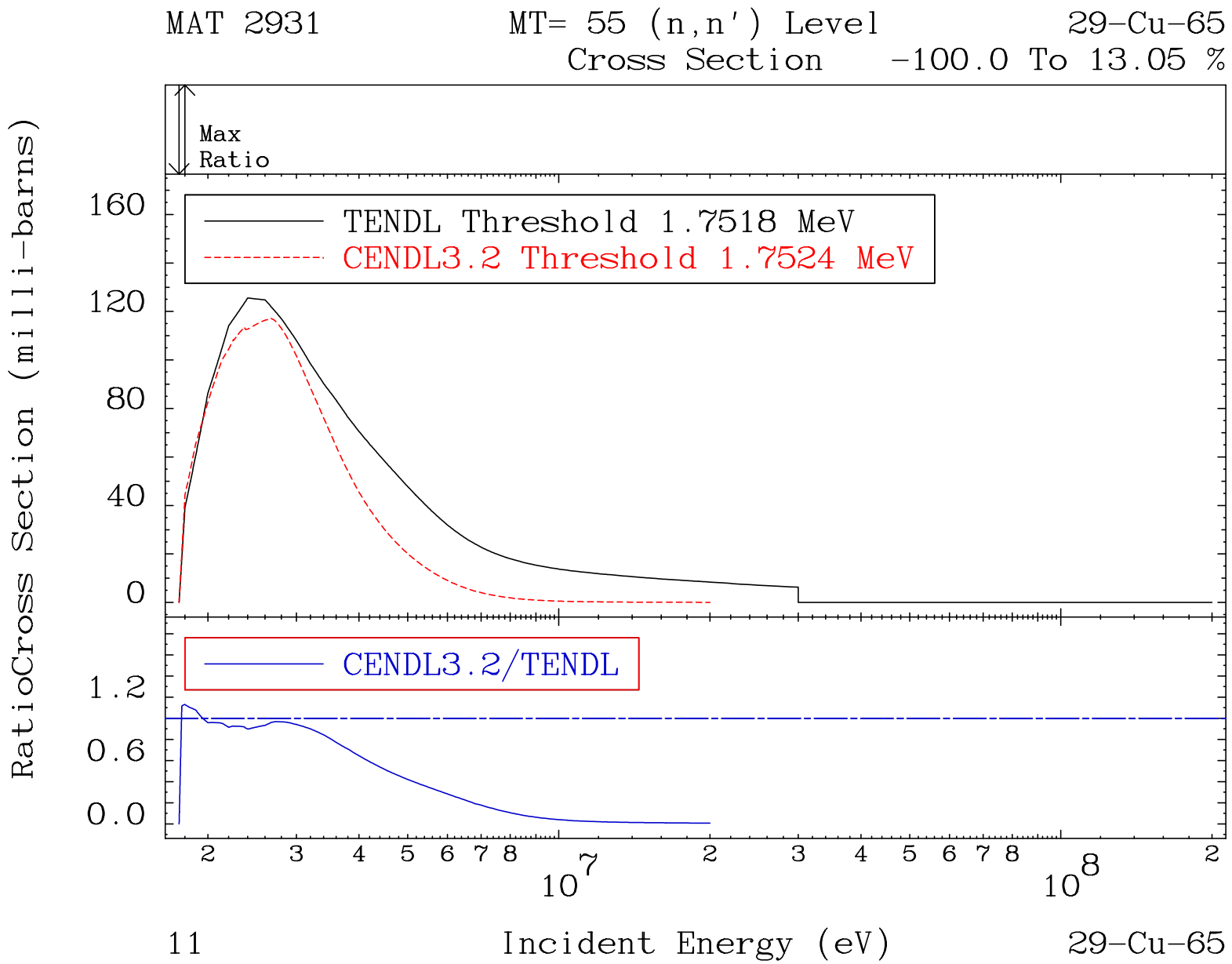

MAT 2931
(n,n') p
Cross Section
29-Cu-65
-100.0 To 315.3 %
Min Ratio
Max Ratio
TENDL Threshold 7.5694 MeV
CENDL3.2 Threshold 8.7630 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
150
100
50
0
6
4
2
0
8
2
3
4
5
6
7
8
2
10^7
10^8
6
Incident Energy (eV)
29-Cu-65

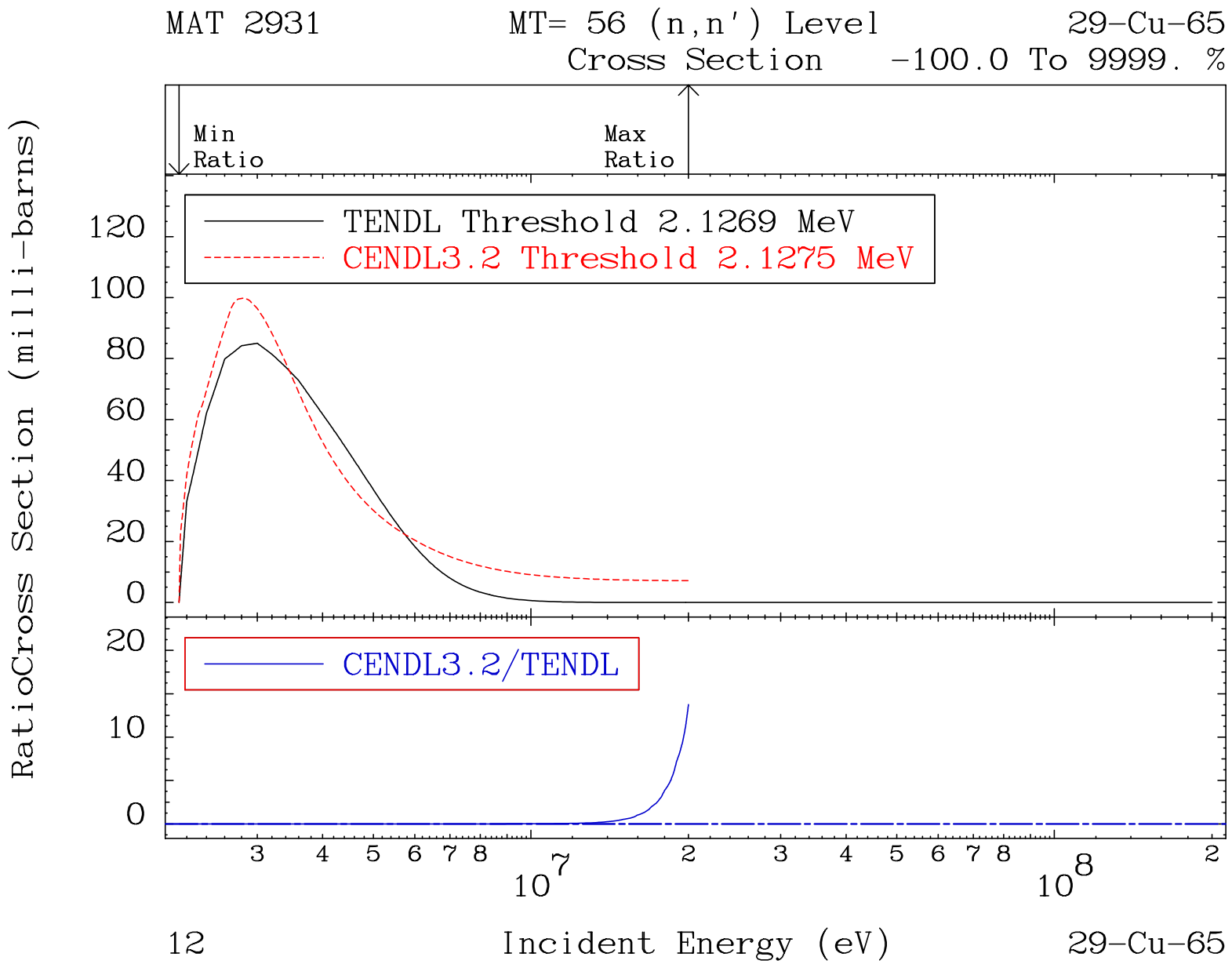

MAT 2931
MT= 51 (n,n') Level
29-Cu-65
Cross Section -11.36 To 202.8 %
Min Ratio
Max Ratio
TENDL Threshold 782.61 keV
CENDL3.2 Threshold 782.61 keV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
29-Cu-65

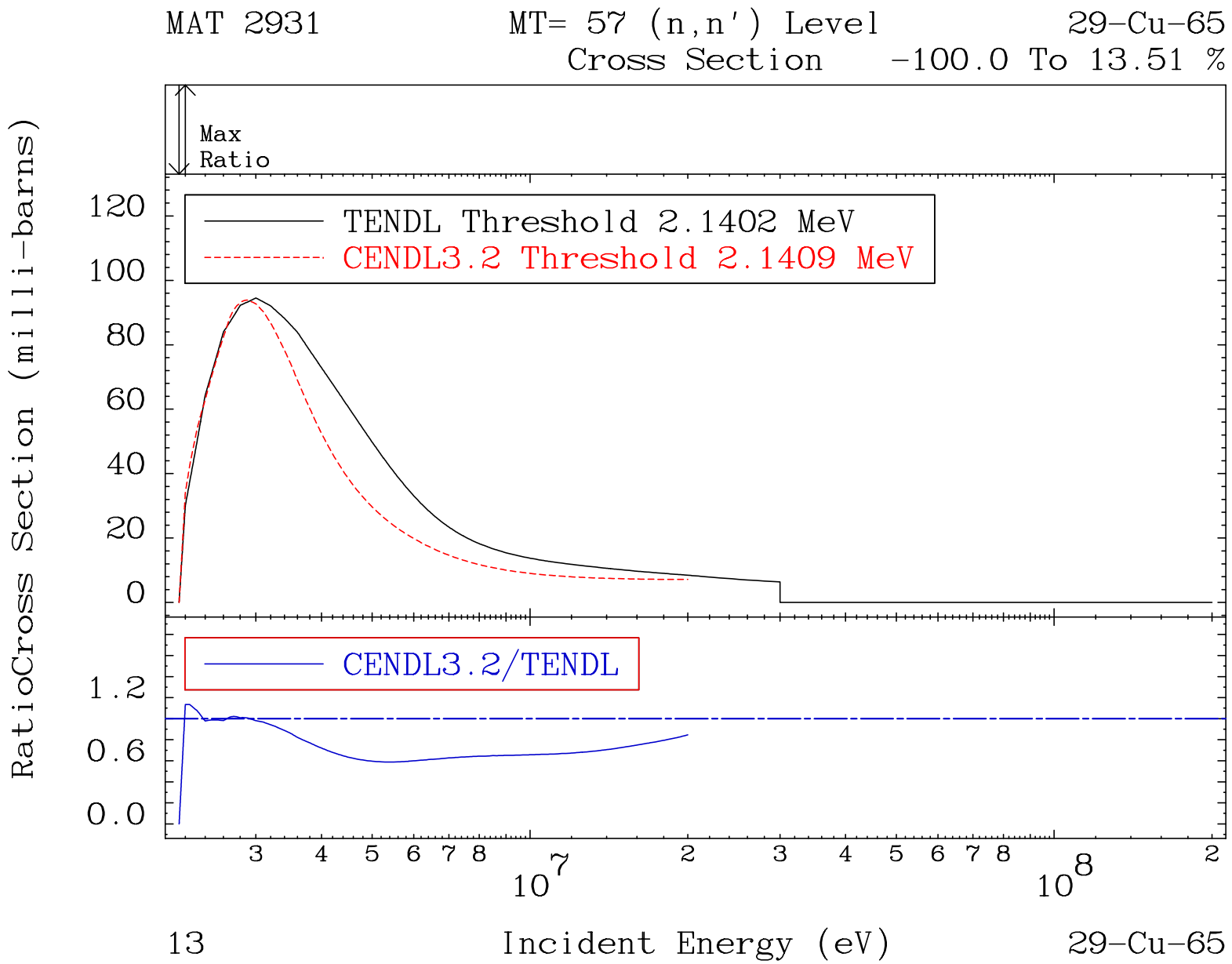

MAT 2931
MT= 52 (n,n') Level
29-Cu-65
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 1.1329 MeV
CENDL3.2 Threshold 1.1329 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
300
200
100
0
40
0
2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
8
Incident Energy (eV)
29-Cu-65

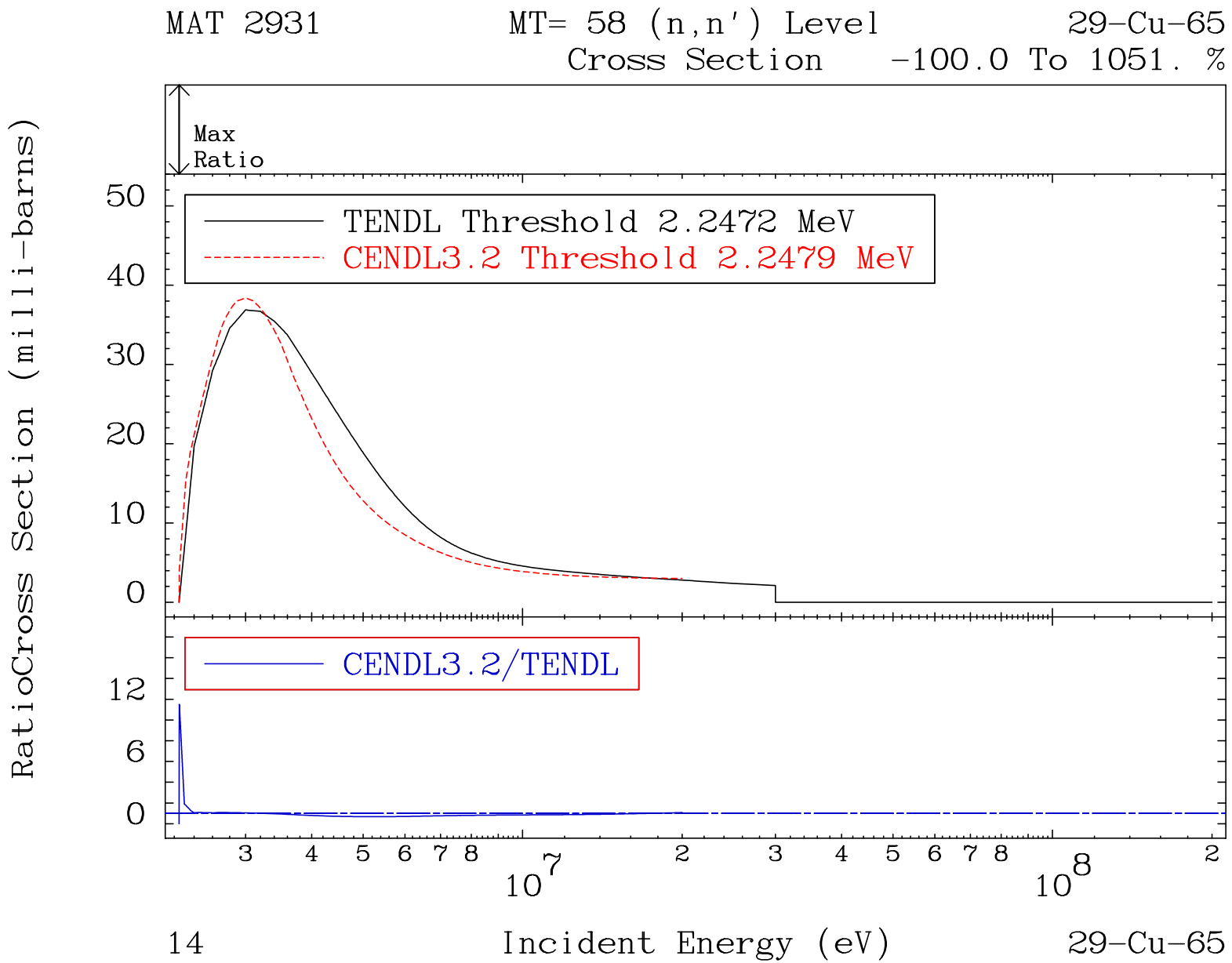

MAT 2931
MT= 53 (n,n') Level
29-Cu-65
Cross Section -32.38 To 111.8 %
Max Ratio
Min Ratio
TENDL Threshold 1.5049 MeV
CENDL3.2 Threshold 1.5049 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
2.0
1.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
9
Incident Energy (eV)
29-Cu-65

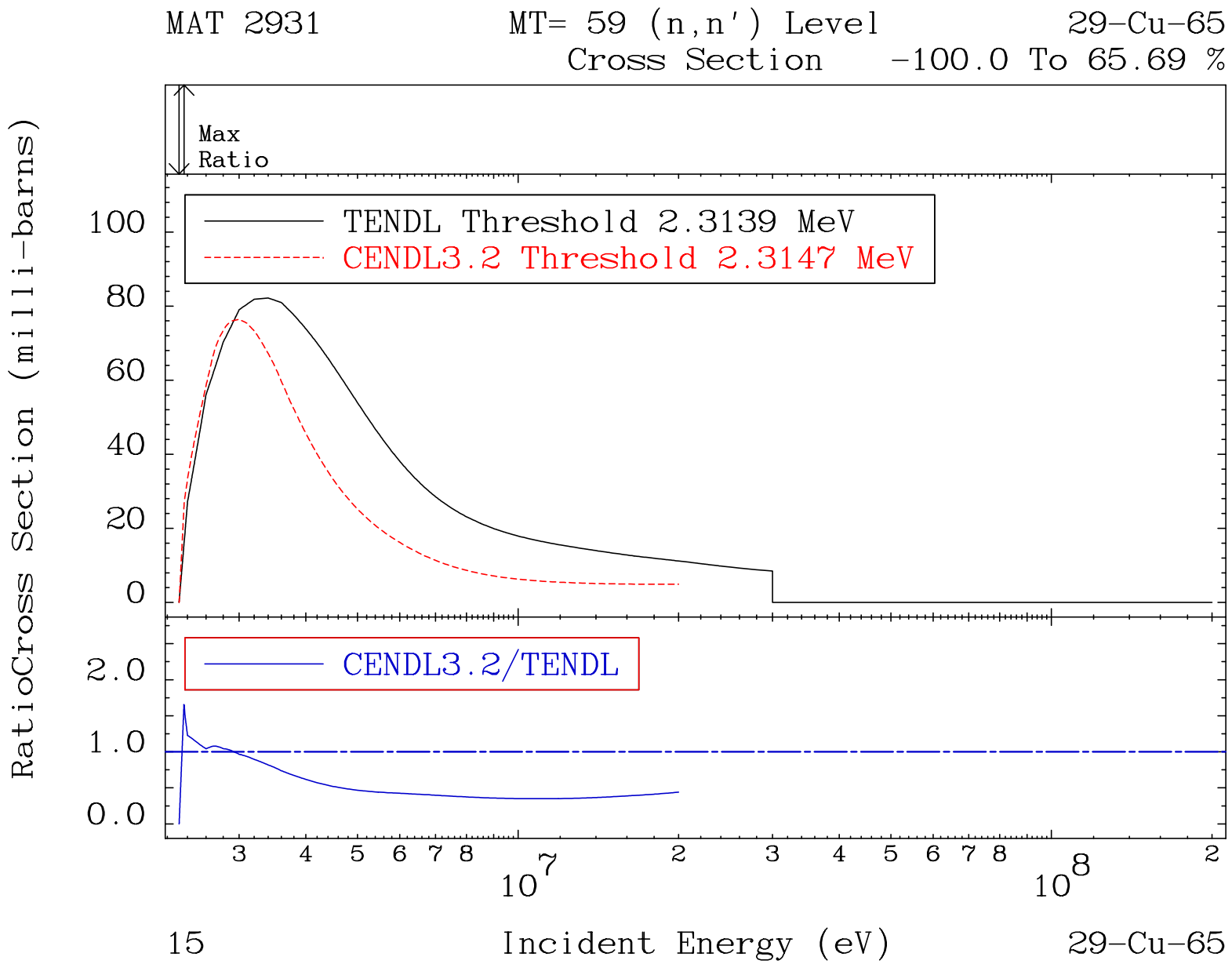

MAT 2931
MT= 54 (n,n') Level
29-Cu-65
Cross Section
-100.0 To 122.3 %
Max
Ratio
TENDL Threshold 1.6487 MeV
CENDL3.2 Threshold 1.6492 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
3.0
2.0
1.0
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
10
Incident Energy (eV)
29-Cu-65

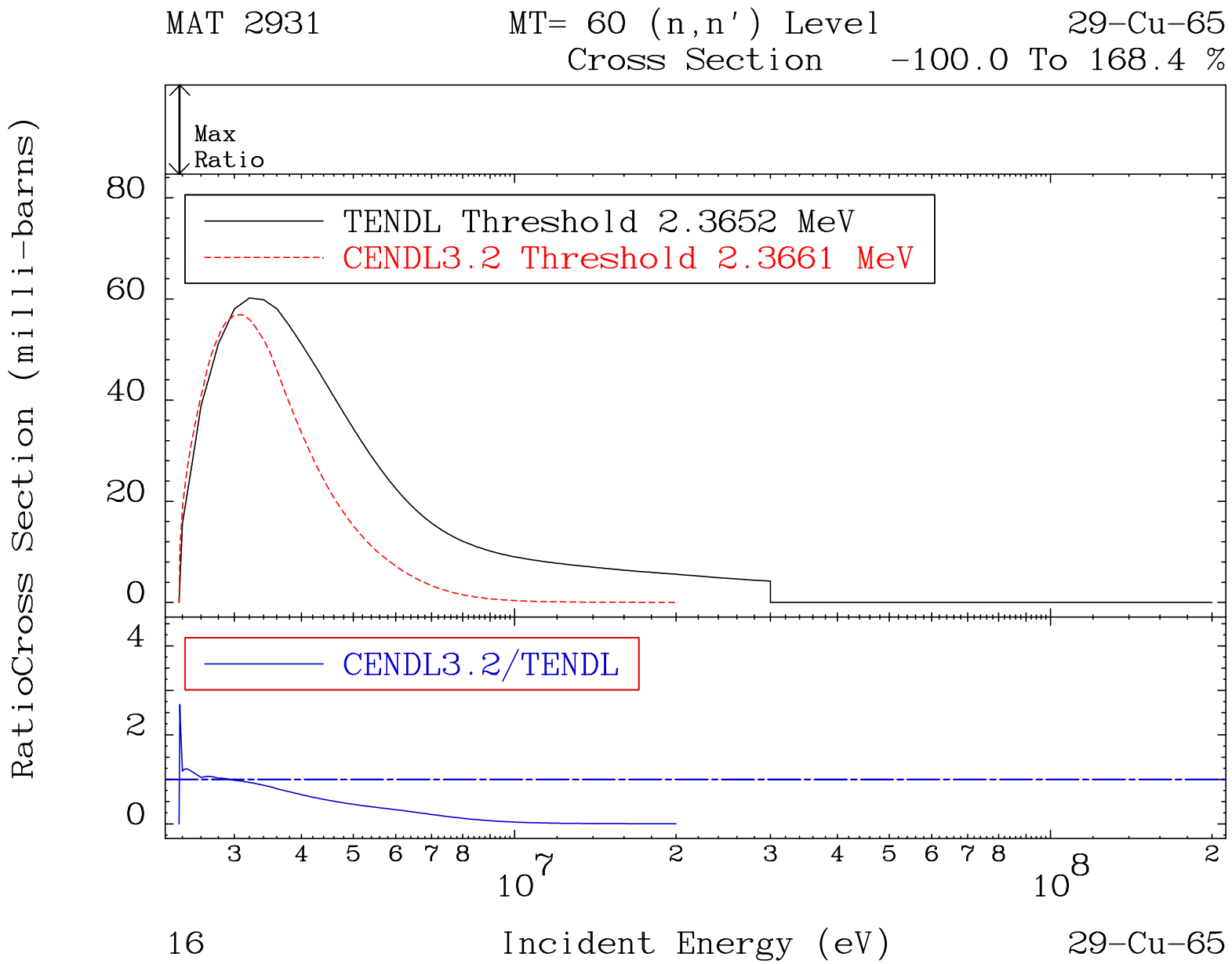

MAT 2931
MT= 55 (n,n') Level
29-Cu-65
Cross Section -100.0 To 13.05 %
Max
Ratio
TENDL Threshold 1.7518 MeV
CENDL3.2 Threshold 1.7524 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
1.2
0.6
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
11
Incident Energy (eV)
29-Cu-65

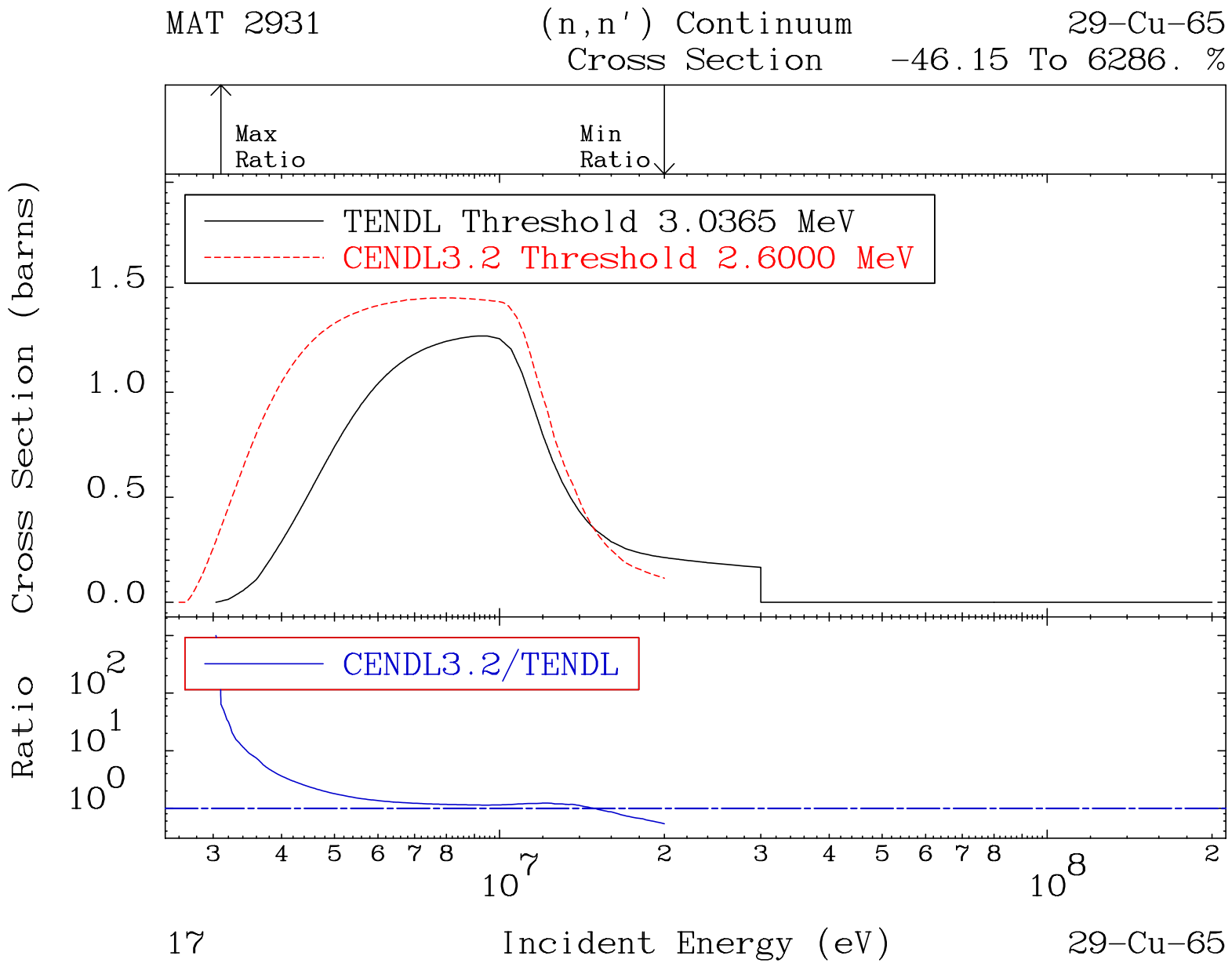

MAT 2931
MT= 56 (n,n') Level
29-Cu-65
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 2.1269 MeV
CENDL3.2 Threshold 2.1275 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
20
10
0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
12
Incident Energy (eV)
29-Cu-65

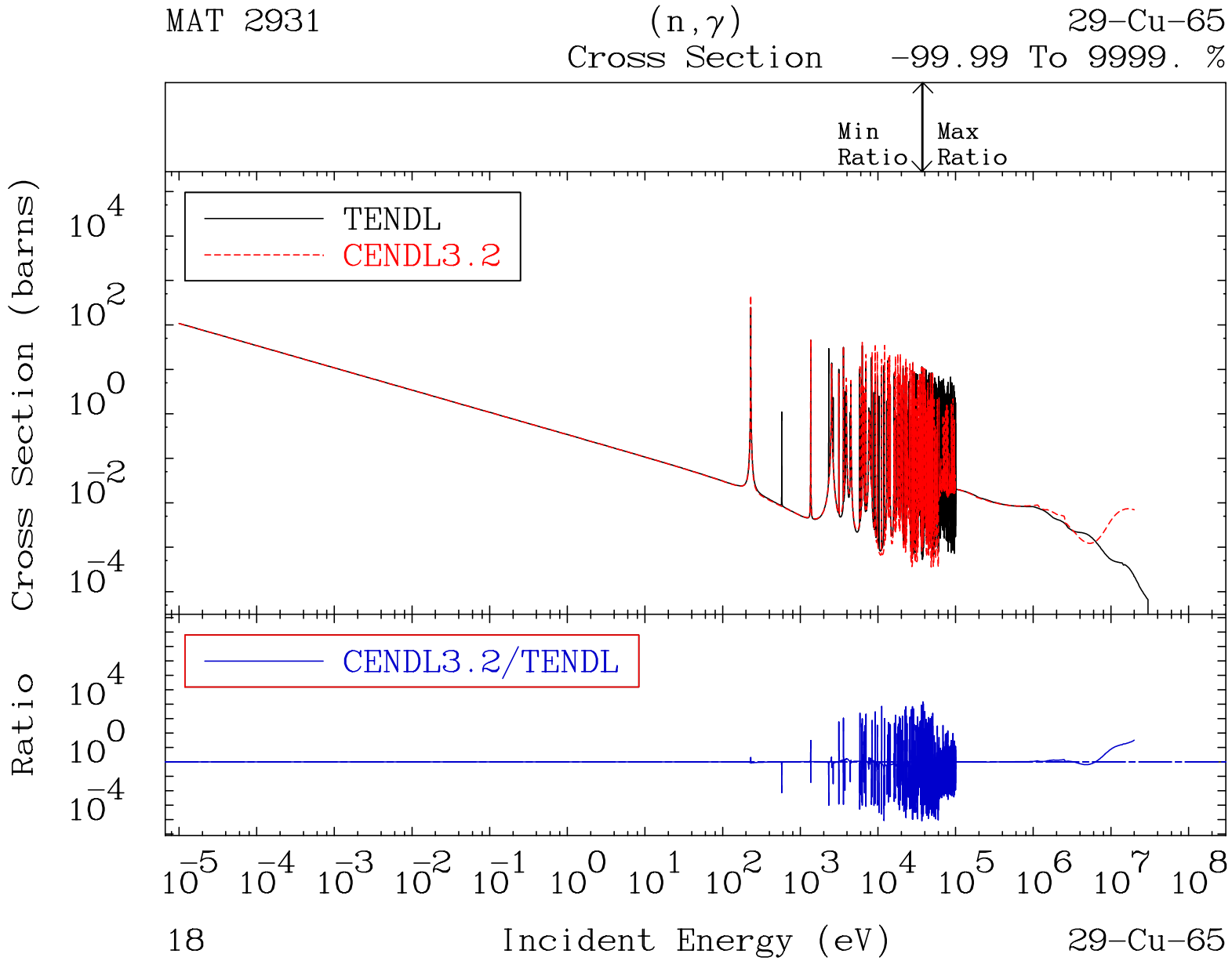

MAT 2931
MT= 57 (n,n') Level
29-Cu-65
Cross Section -100.0 To 13.51 %
Max
Ratio
TENDL Threshold 2.1402 MeV
CENDL3.2 Threshold 2.1409 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
1.2
0.6
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
13
Incident Energy (eV)
29-Cu-65

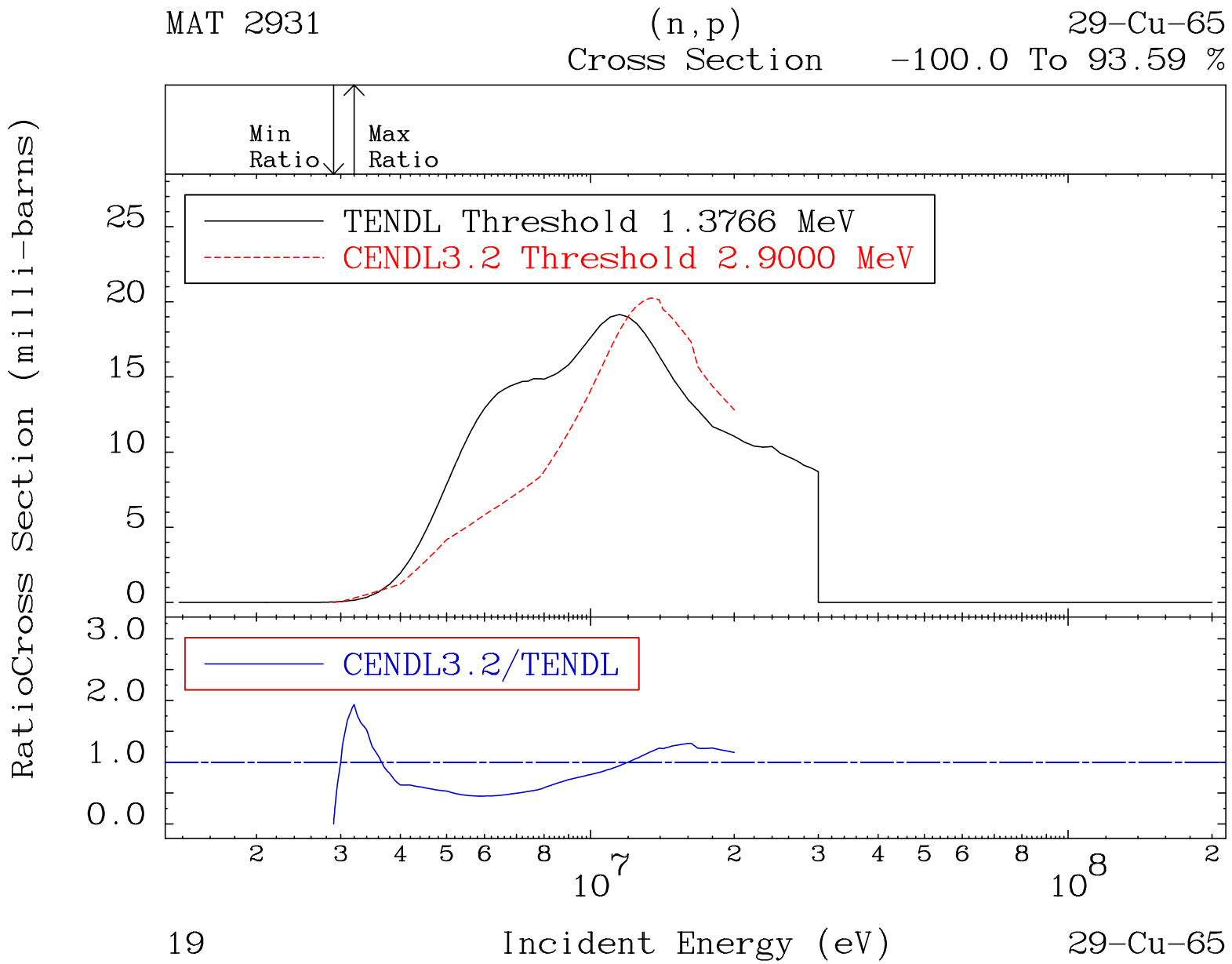

MAT 2931
MT= 58 (n,n') Level
29-Cu-65
Cross Section -100.0 To 1051. %
Max
Ratio
TENDL Threshold 2.2472 MeV
CENDL3.2 Threshold 2.2479 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
12
6
0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
14
Incident Energy (eV)
29-Cu-65

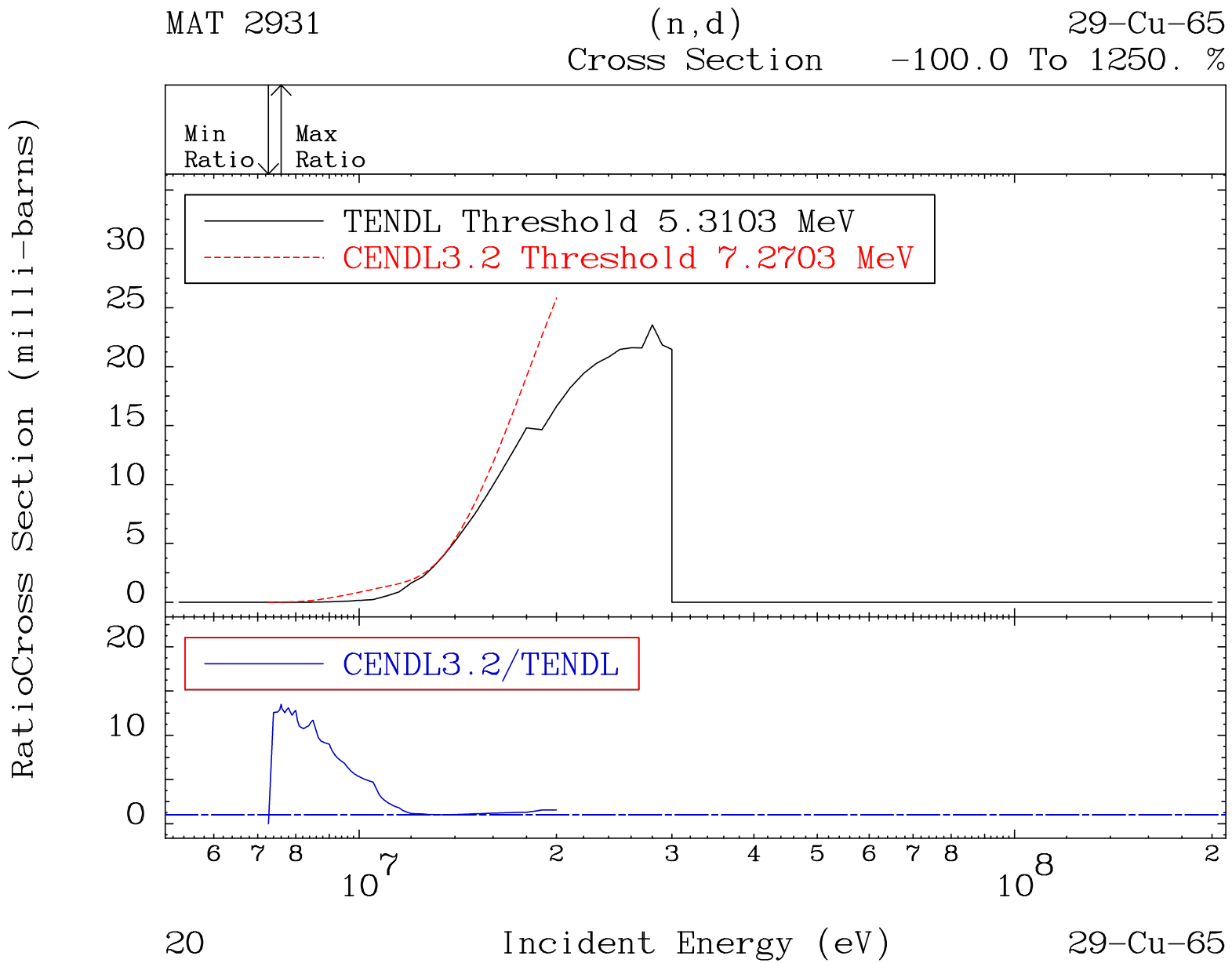

MAT 2931
MT= 59 (n,n') Level
29-Cu-65
Cross Section -100.0 To 65.69 %
Max
Ratio
TENDL Threshold 2.3139 MeV
CENDL3.2 Threshold 2.3147 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
2.0
1.0
0.0
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
15
Incident Energy (eV)
29-Cu-65

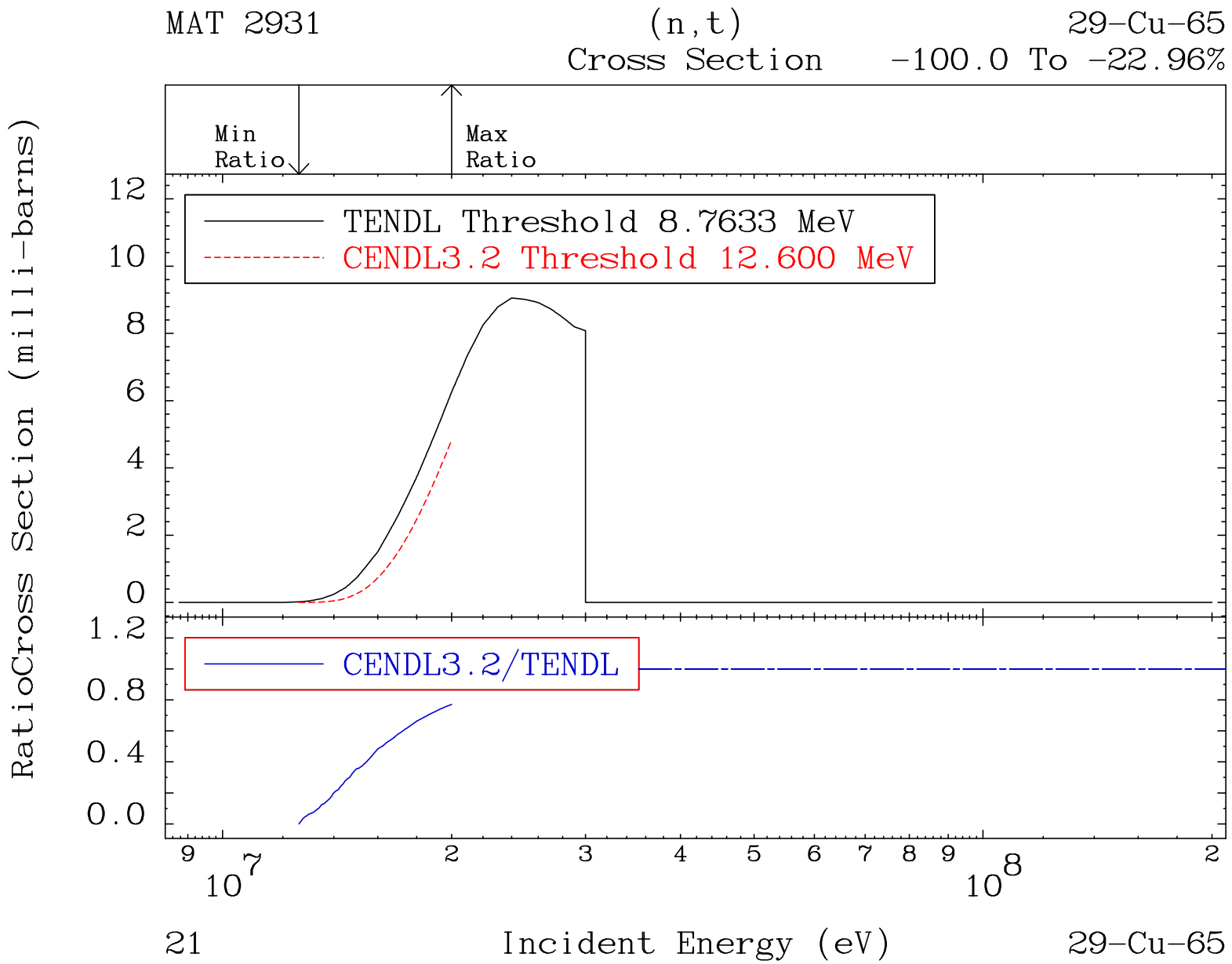

MAT 2931
MT= 60 (n,n') Level
29-Cu-65
Cross Section -100.0 To 168.4 %
Max
Ratio
80
60
40
20
0
TENDL Threshold 2.3652 MeV
CENDL3.2 Threshold 2.3661 MeV
4
2
0
CENDL3.2/TENDL
3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
RatioCross Section (milli-barns)
16
Incident Energy (eV)
29-Cu-65

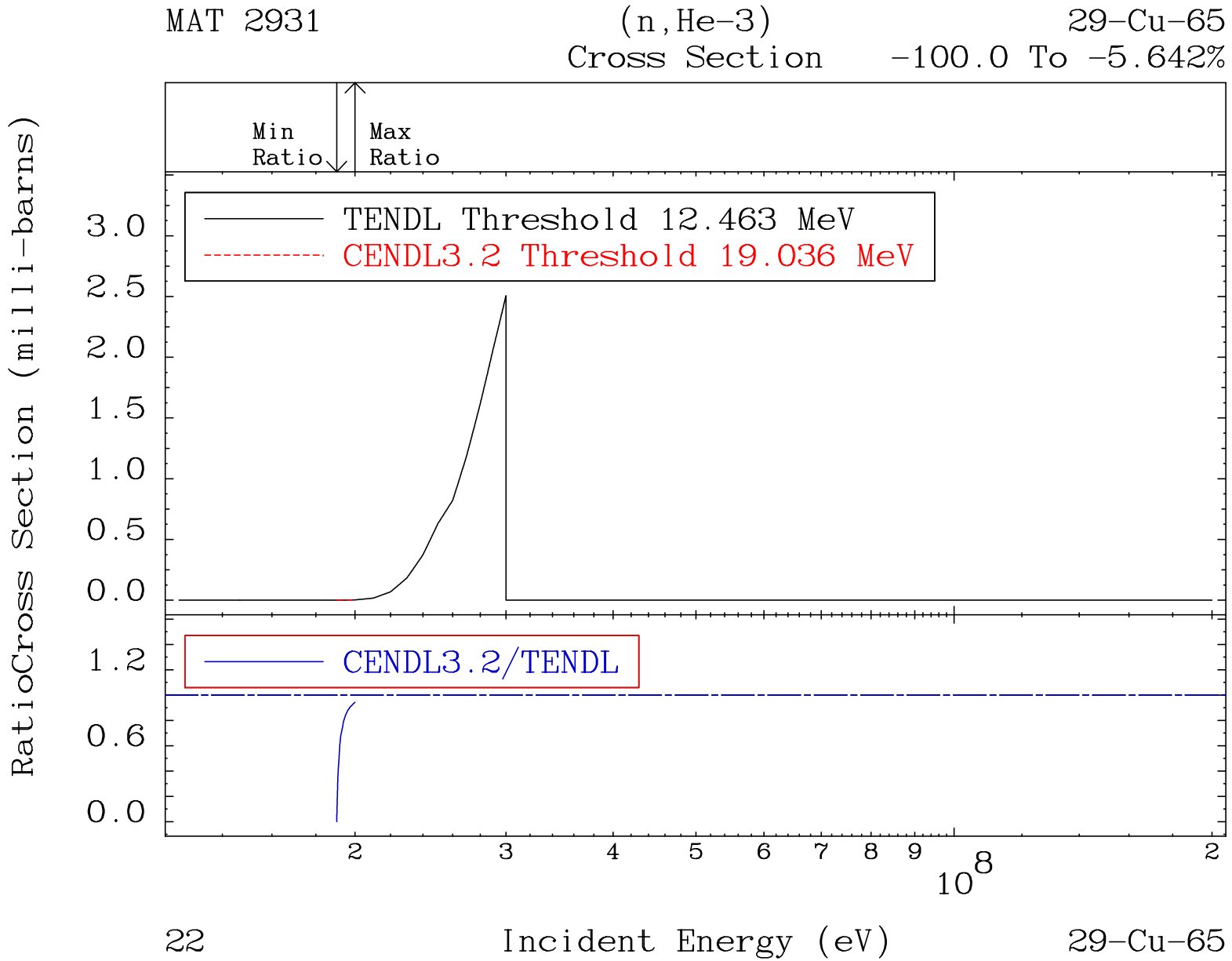

MAT 2931
(n,n') Continuum
Cross Section
29-Cu-65
-46.15 To 6286. %
Max Ratio
Min Ratio
TENDL Threshold 3.0365 MeV
CENDL3.2 Threshold 2.6000 MeV
Cross Section (barns)
1.5
1.0
0.5
0.0
CENDL3.2/TENDL
Ratio
10^2
10^1
10^0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
17
Incident Energy (eV)
29-Cu-65

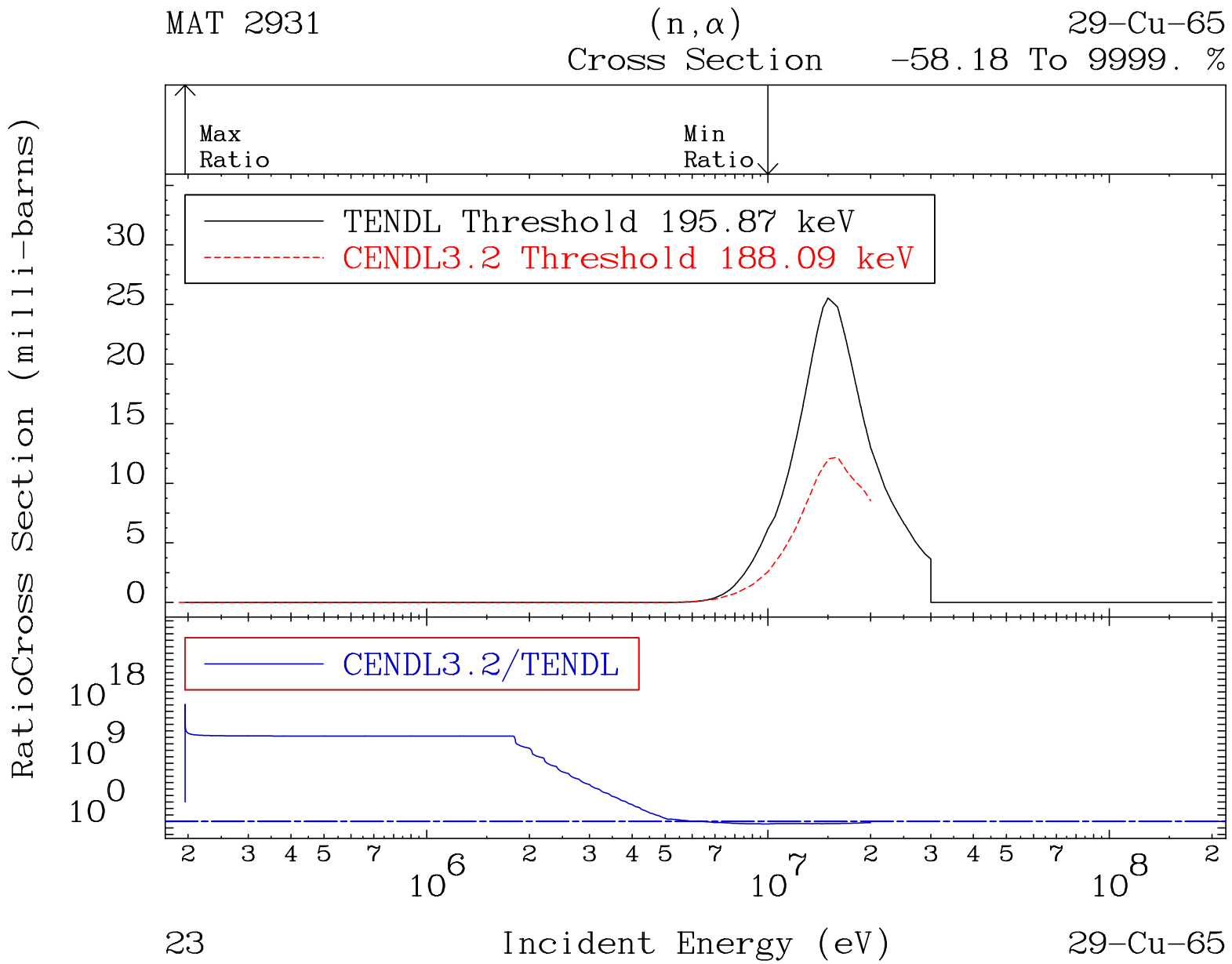

MAT 2931
(n,γ)
Cross Section
29-Cu-65
-99.99 To 9999. %
Min Ratio
Max Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
18
29-Cu-65

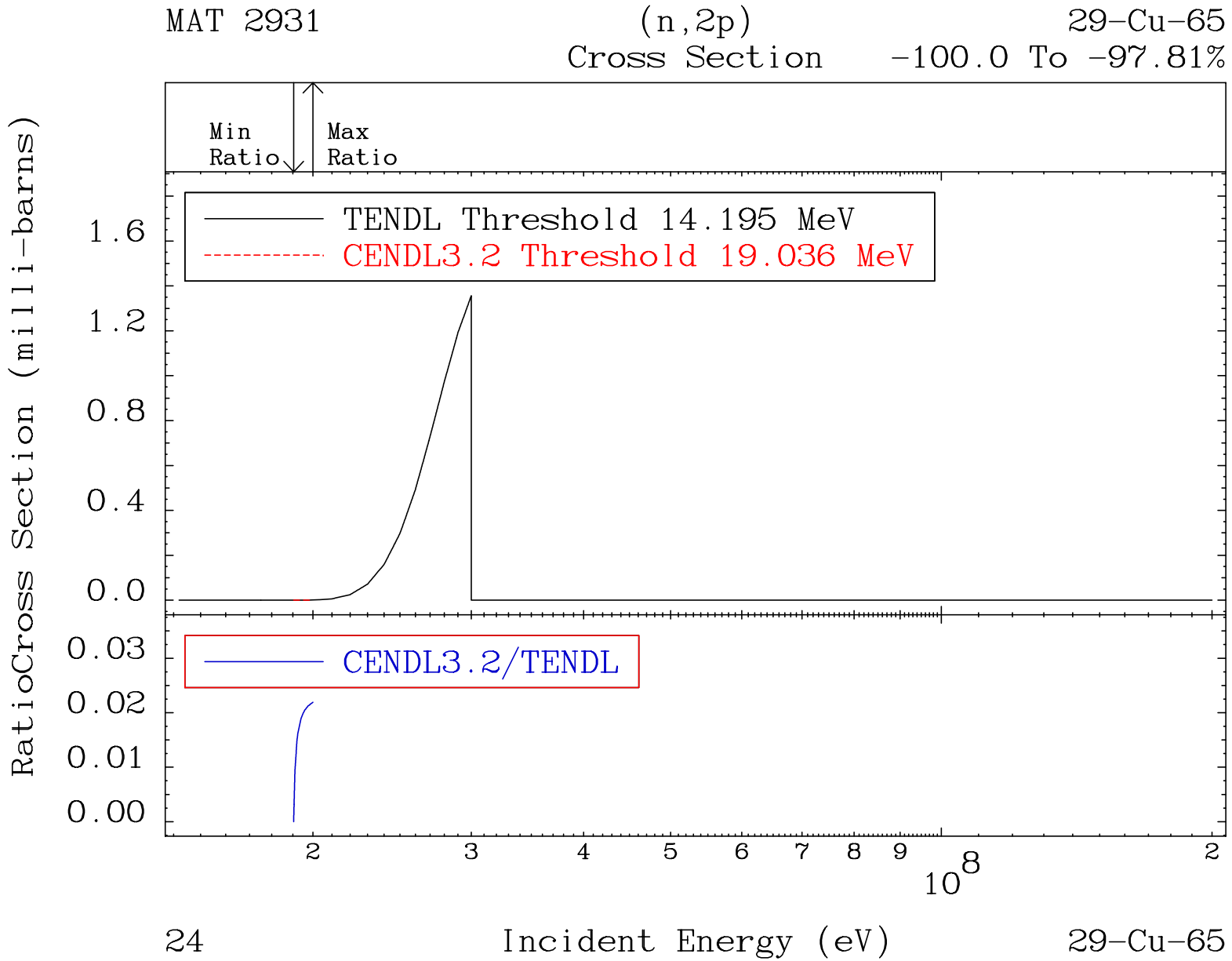

MAT 2931
(n,p)
29-Cu-65
Cross Section
-100.0 To 93.59 %
Min Ratio
Max Ratio
TENDL Threshold 1.3766 MeV
CENDL3.2 Threshold 2.9000 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
3.0
2.0
1.0
0.0
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
19
Incident Energy (eV)
29-Cu-65

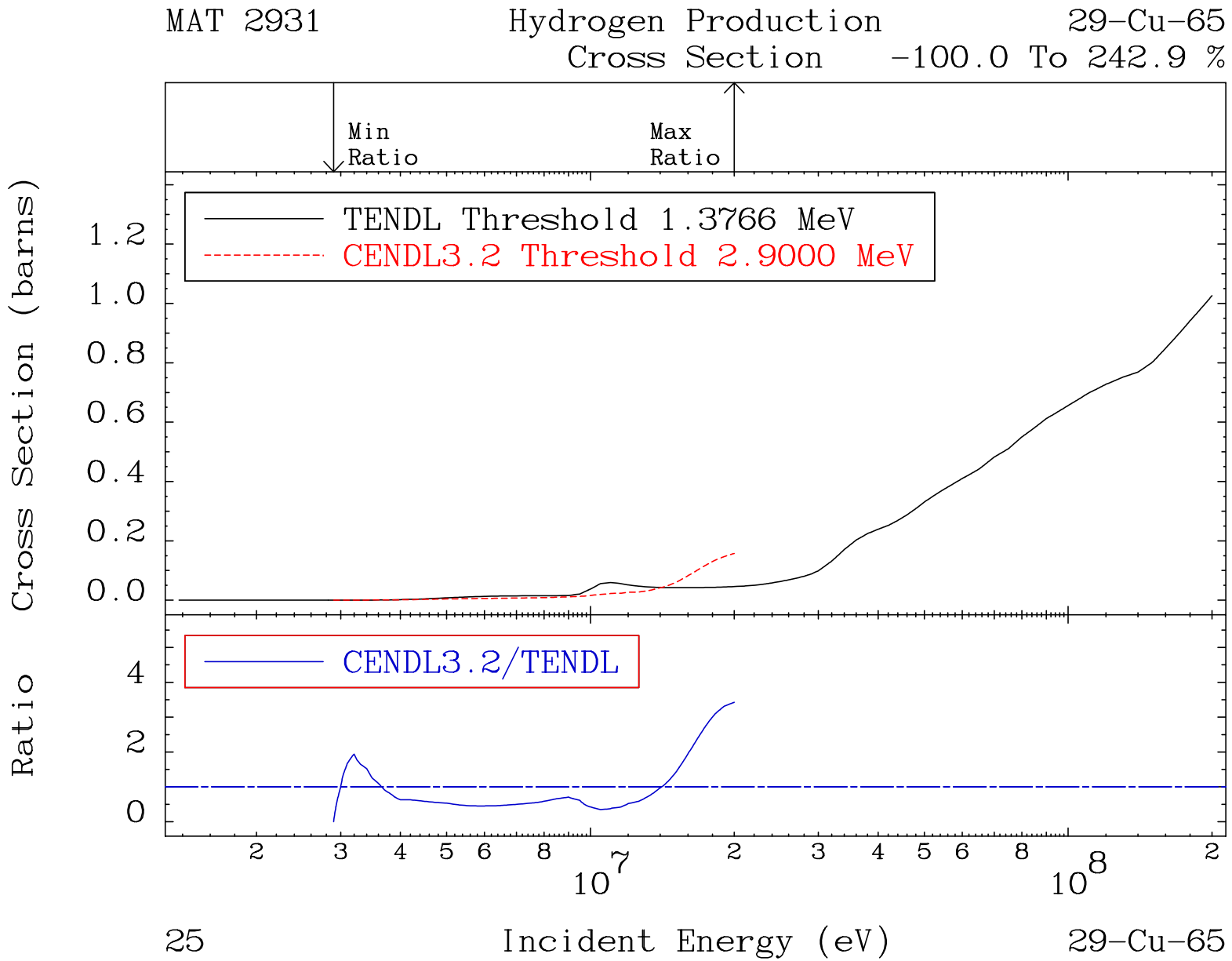

MAT 2931
(n,d)
29-Cu-65
Cross Section
-100.0 To 1250. %
Min Ratio
Max Ratio
TENDL Threshold 5.3103 MeV
CENDL3.2 Threshold 7.2703 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
30
25
20
15
10
5
0
20
10
0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
20
Incident Energy (eV)
29-Cu-65

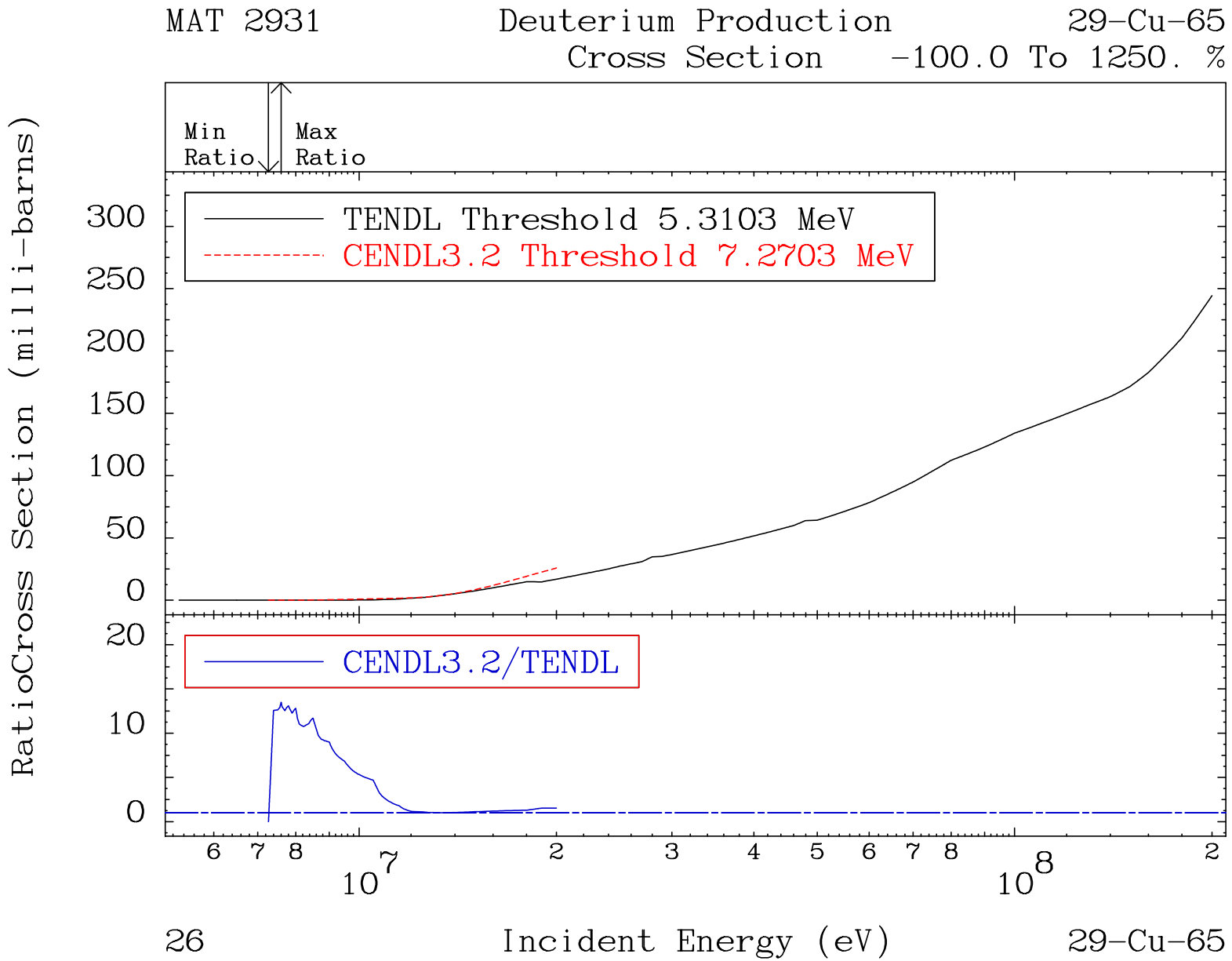

MAT 2931
(n,t)
29-Cu-65
Cross Section
-100.0 To -22.96%
Min Ratio
Max Ratio
TENDL Threshold 8.7633 MeV
CENDL3.2 Threshold 12.600 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
21
29-Cu-65

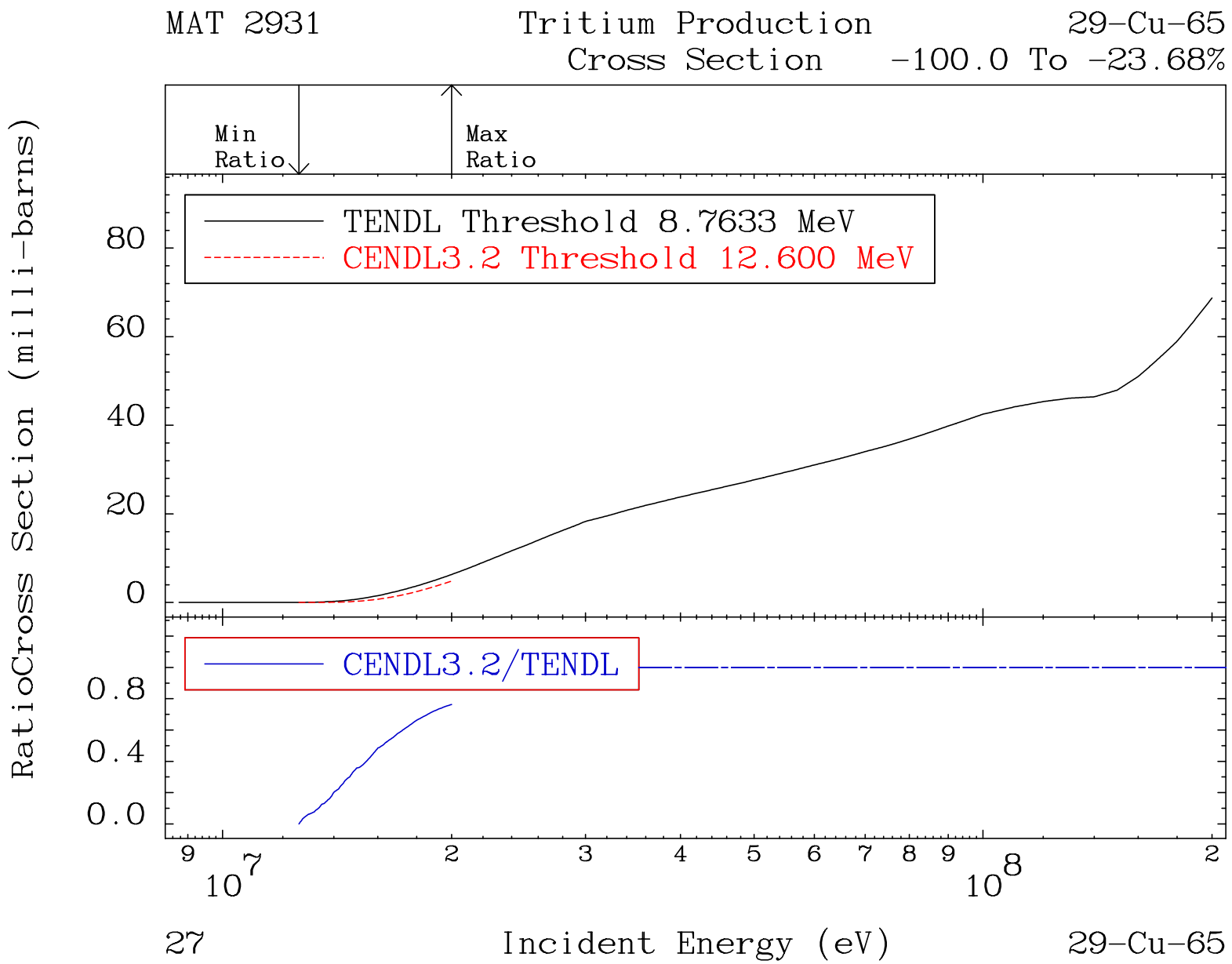

MAT 2931
(n,He-3)
Cross Section
29-Cu-65
-100.0 To -5.642%
Min Ratio
Max Ratio
TENDL Threshold 12.463 MeV
CENDL3.2 Threshold 19.036 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
22
Incident Energy (eV)
29-Cu-65

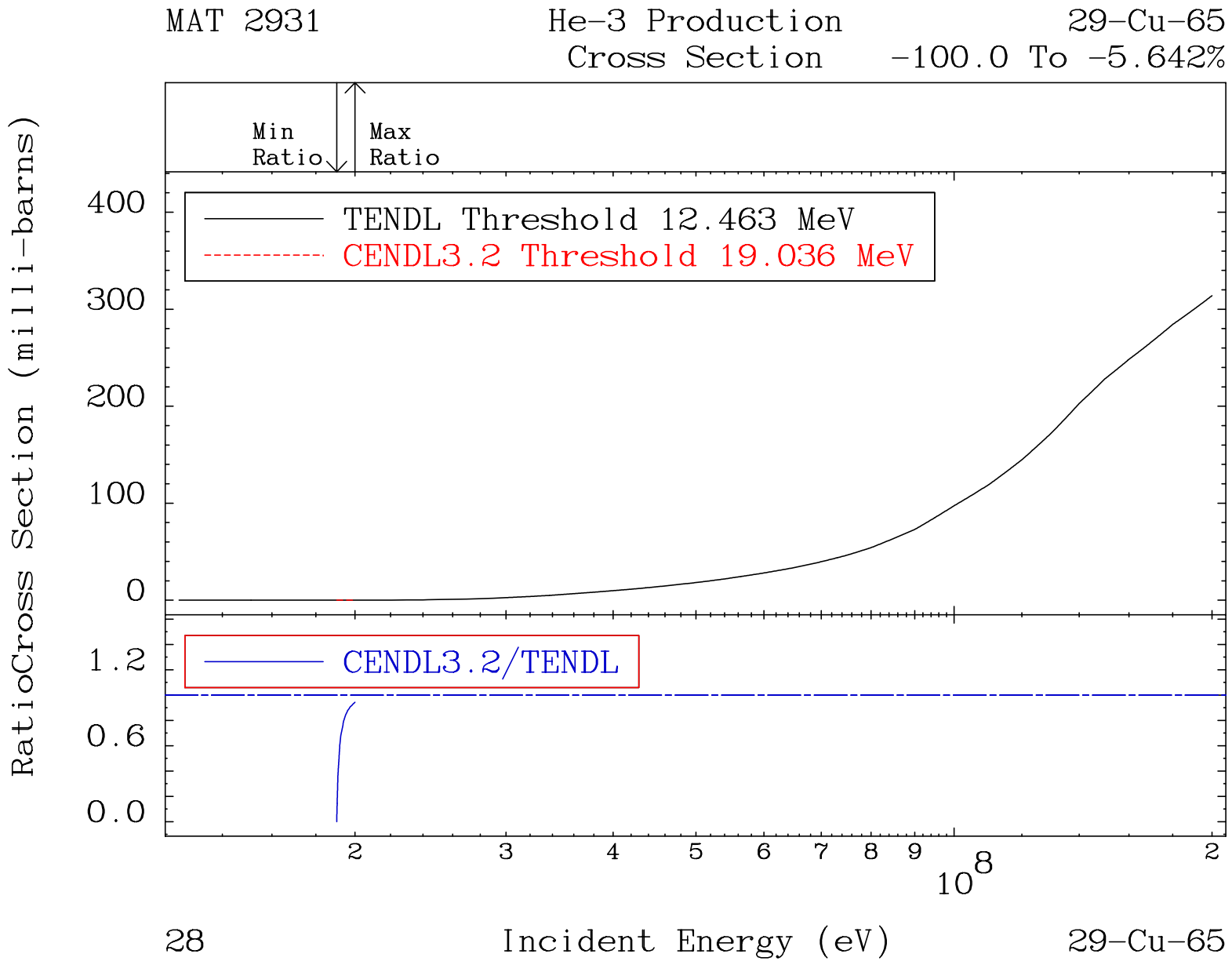

MAT 2931
(n,α)
Cross Section
29-Cu-65
-58.18 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 195.87 keV
CENDL3.2 Threshold 188.09 keV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
23
29-Cu-65

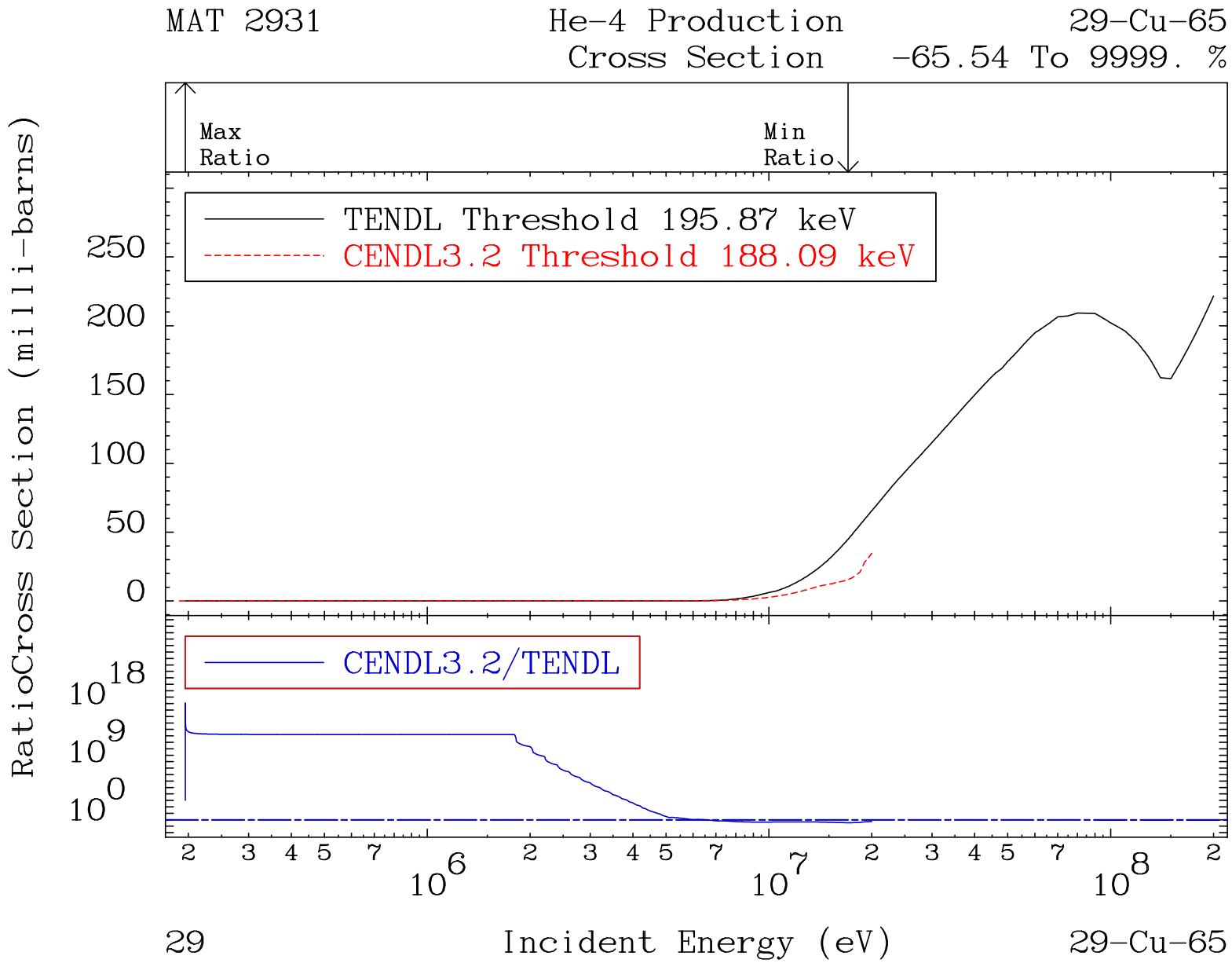

MAT 2931
(n,2p)
29-Cu-65
Cross Section
-100.0 To -97.81%
Min Ratio
Max Ratio
TENDL Threshold 14.195 MeV
CENDL3.2 Threshold 19.036 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
1.6
1.2
0.8
0.4
0.0
0.03
0.02
0.01
0.00
2
3
4
5
6
7
8
9
10^8
2
24
Incident Energy (eV)
29-Cu-65

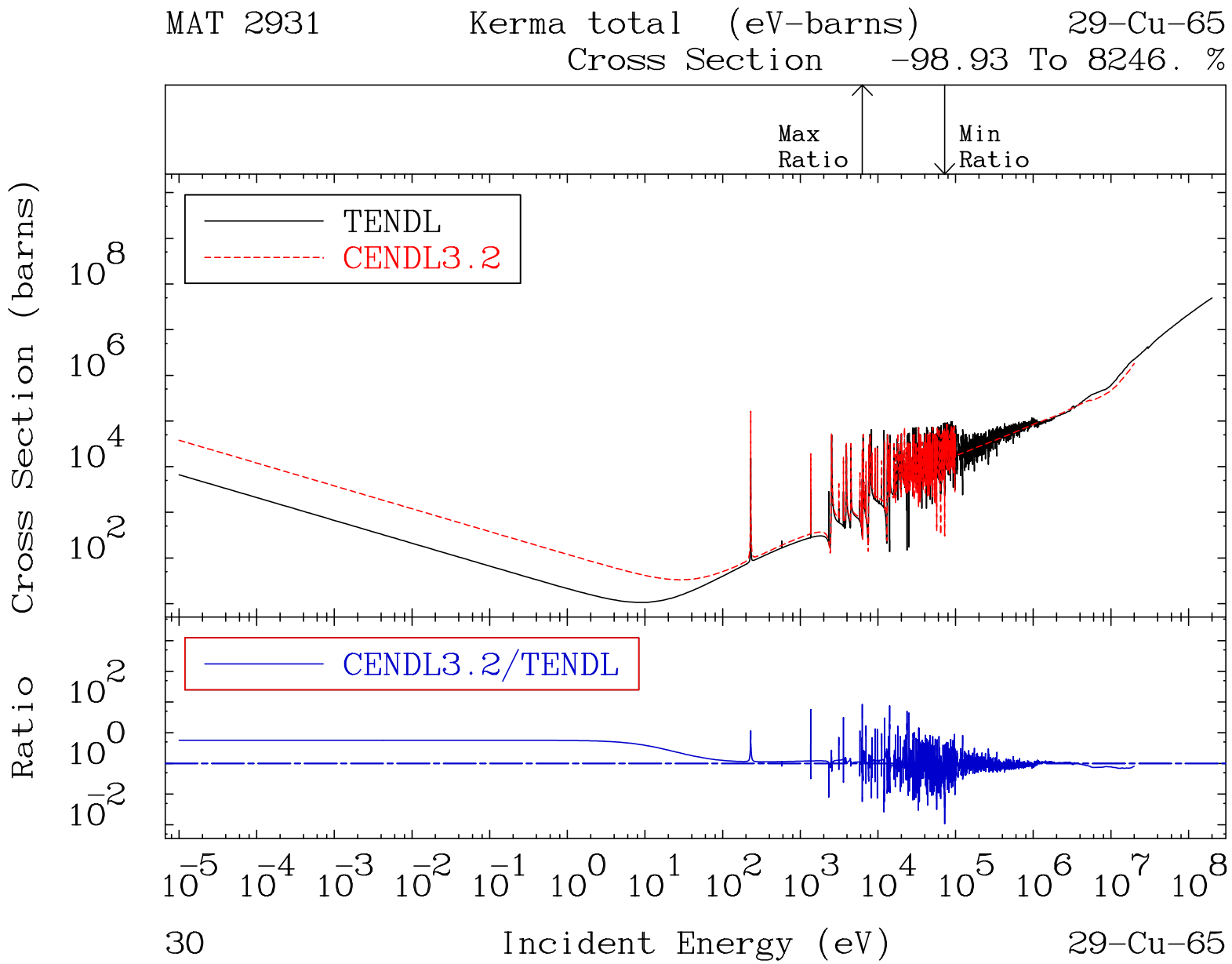

MAT 2931
Hydrogen Production
29-Cu-65
Cross Section -100.0 To 242.9 %
Min Ratio
Max Ratio
TENDL Threshold 1.3766 MeV
CENDL3.2 Threshold 2.9000 MeV
Cross Section (barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
CENDL3.2/TENDL
Ratio
4
2
0
2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
25
Incident Energy (eV)
29-Cu-65

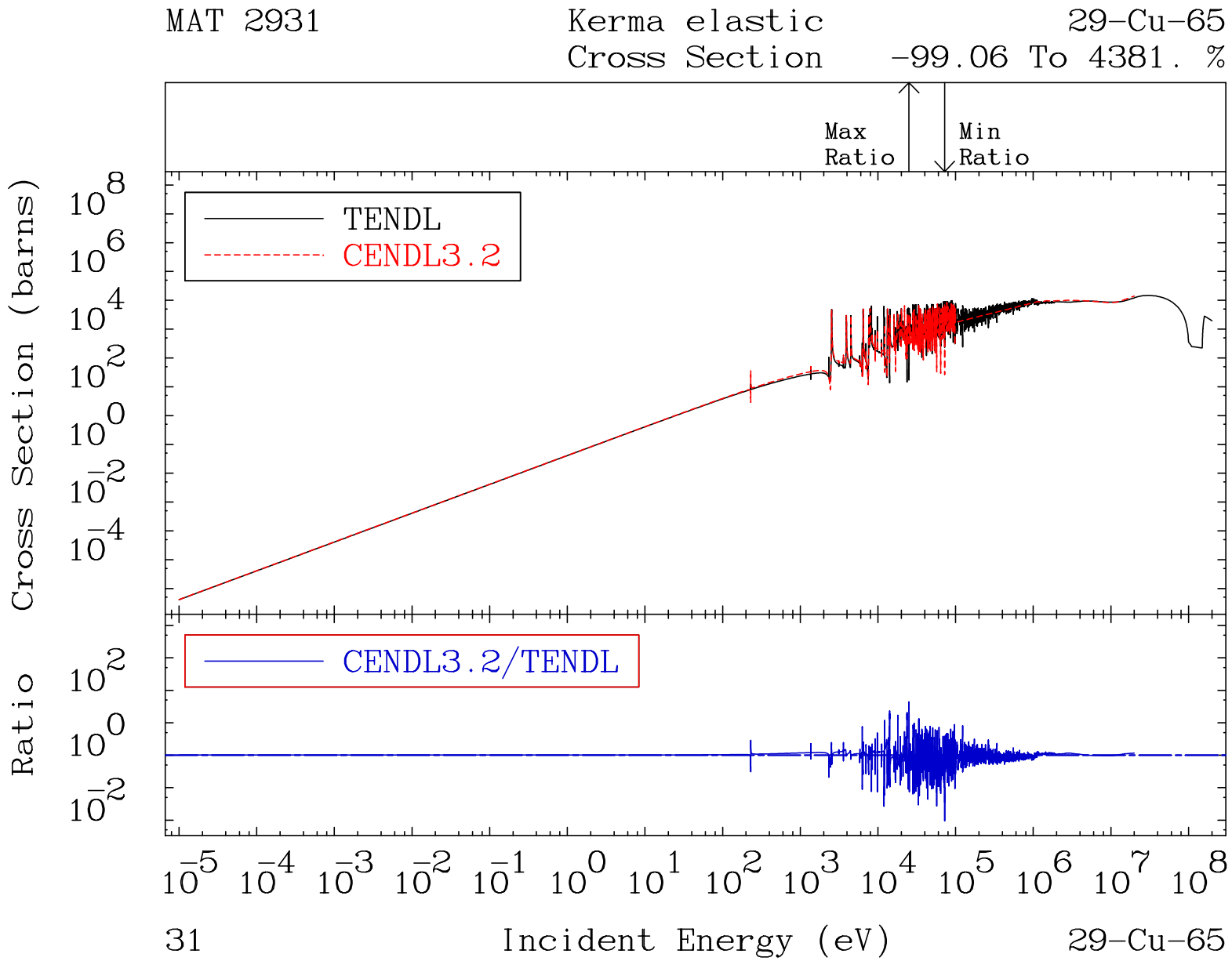

MAT 2931
Deuterium Production
29-Cu-65
Cross Section -100.0 To 1250. %
Min Ratio
Max Ratio
TENDL Threshold 5.3103 MeV
CENDL3.2 Threshold 7.2703 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
300
250
200
150
100
50
0
20
10
0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
26
Incident Energy (eV)
29-Cu-65

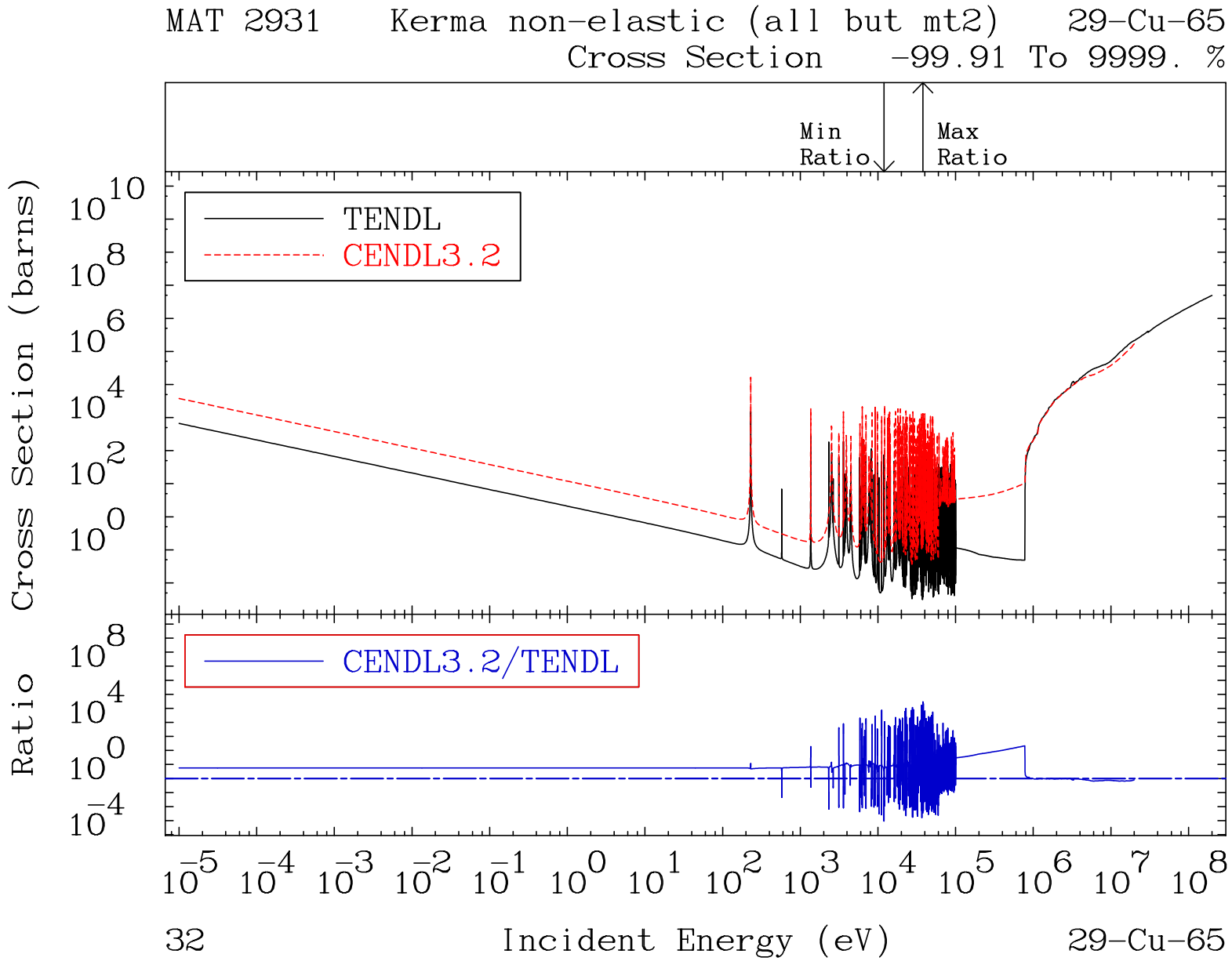

MAT 2931
Tritium Production
29-Cu-65
Cross Section
-100.0 To -23.68%
Min Ratio
Max Ratio
TENDL Threshold 8.7633 MeV
CENDL3.2 Threshold 12.600 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
0.8
0.4
0.0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
27
Incident Energy (eV)
29-Cu-65

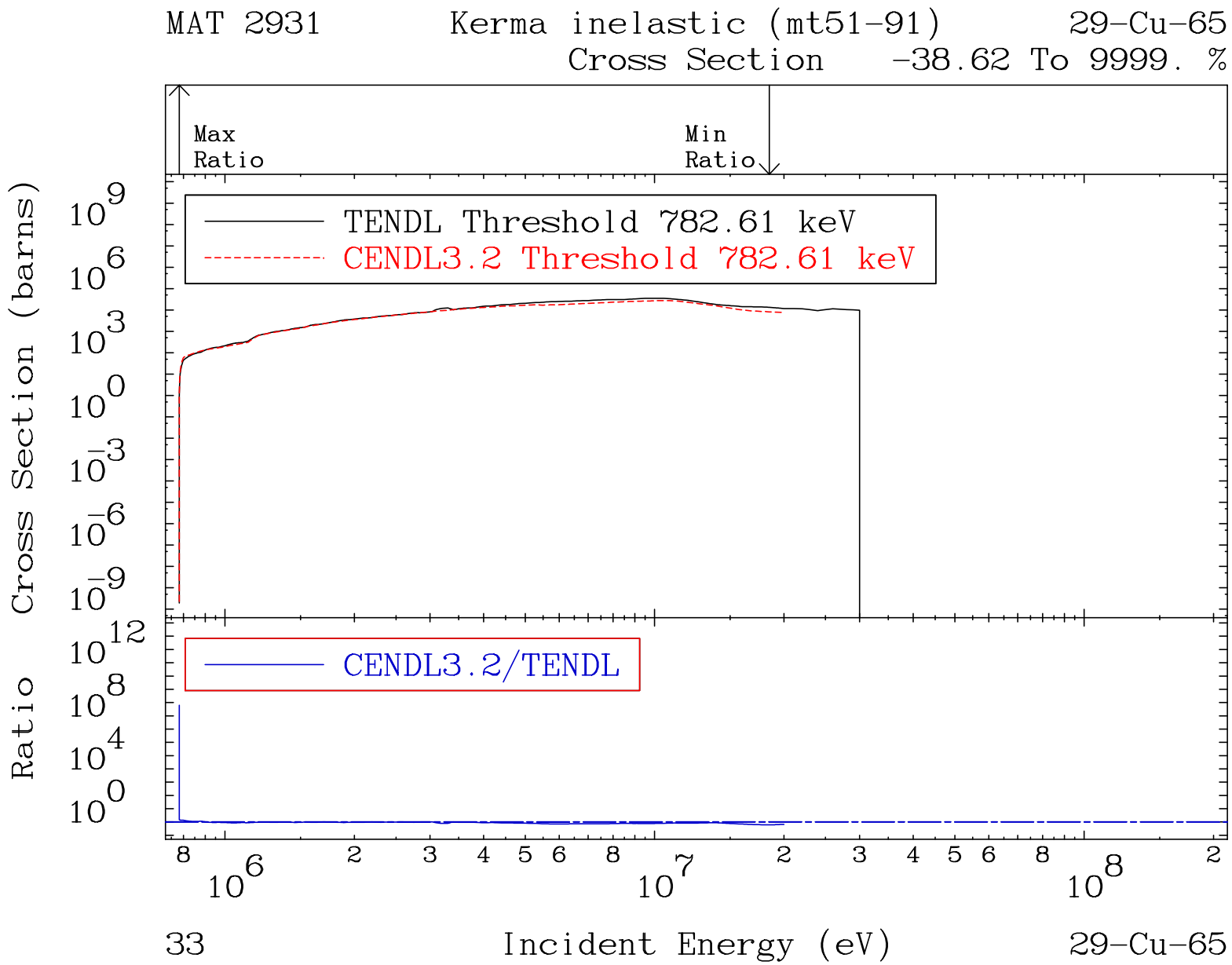

MAT 2931
He-3 Production
29-Cu-65
Cross Section
-100.0 To -5.642%
Min Ratio
Max Ratio
TENDL Threshold 12.463 MeV
CENDL3.2 Threshold 19.036 MeV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
28
Incident Energy (eV)
29-Cu-65

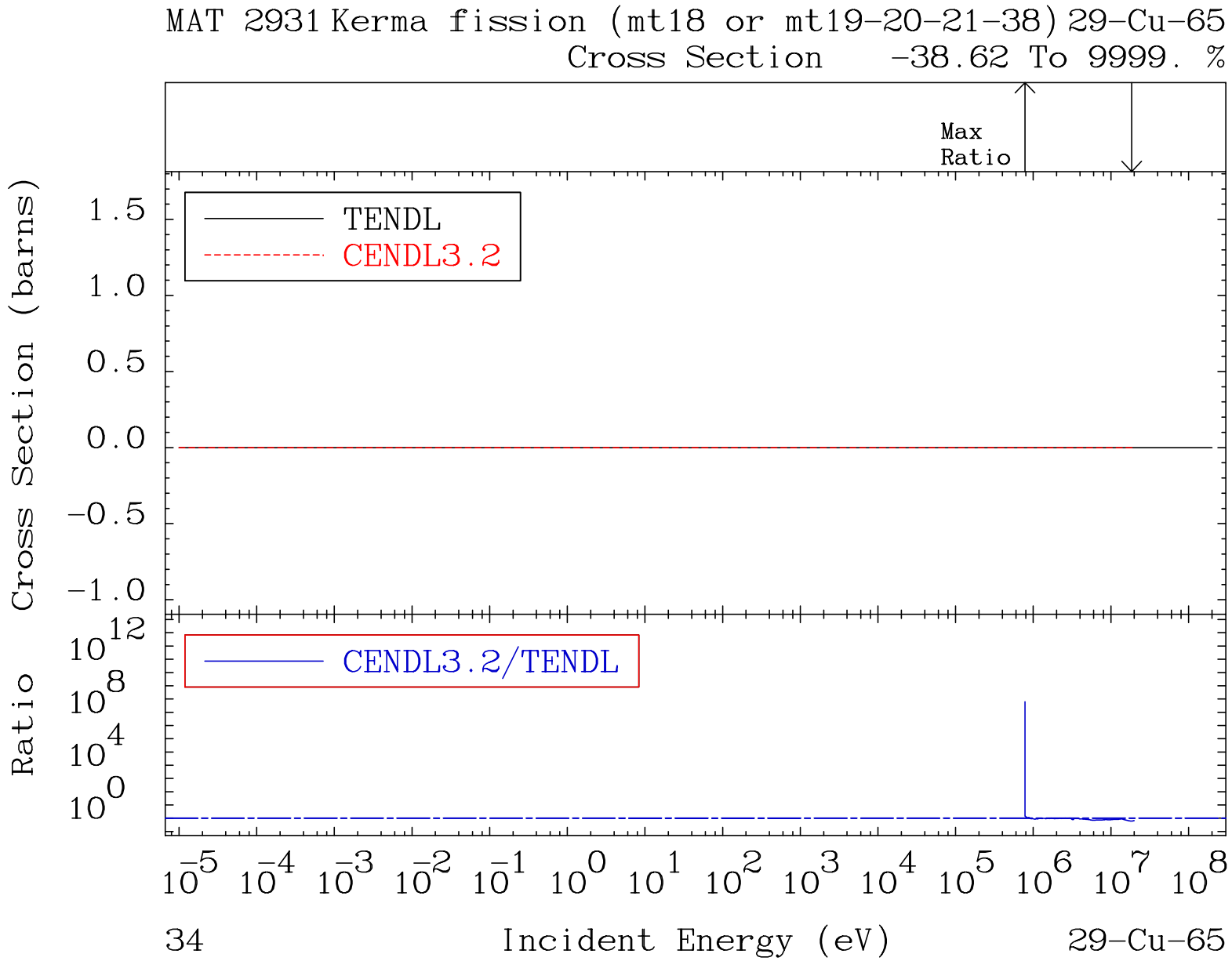

MAT 2931
He-4 Production
Cross Section
29-Cu-65
-65.54 To 9999. %
Max
Ratio
Min
Ratio
TENDL Threshold 195.87 keV
CENDL3.2 Threshold 188.09 keV
CENDL3.2/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
10^18
10^9
10^0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
29
Incident Energy (eV)
29-Cu-65

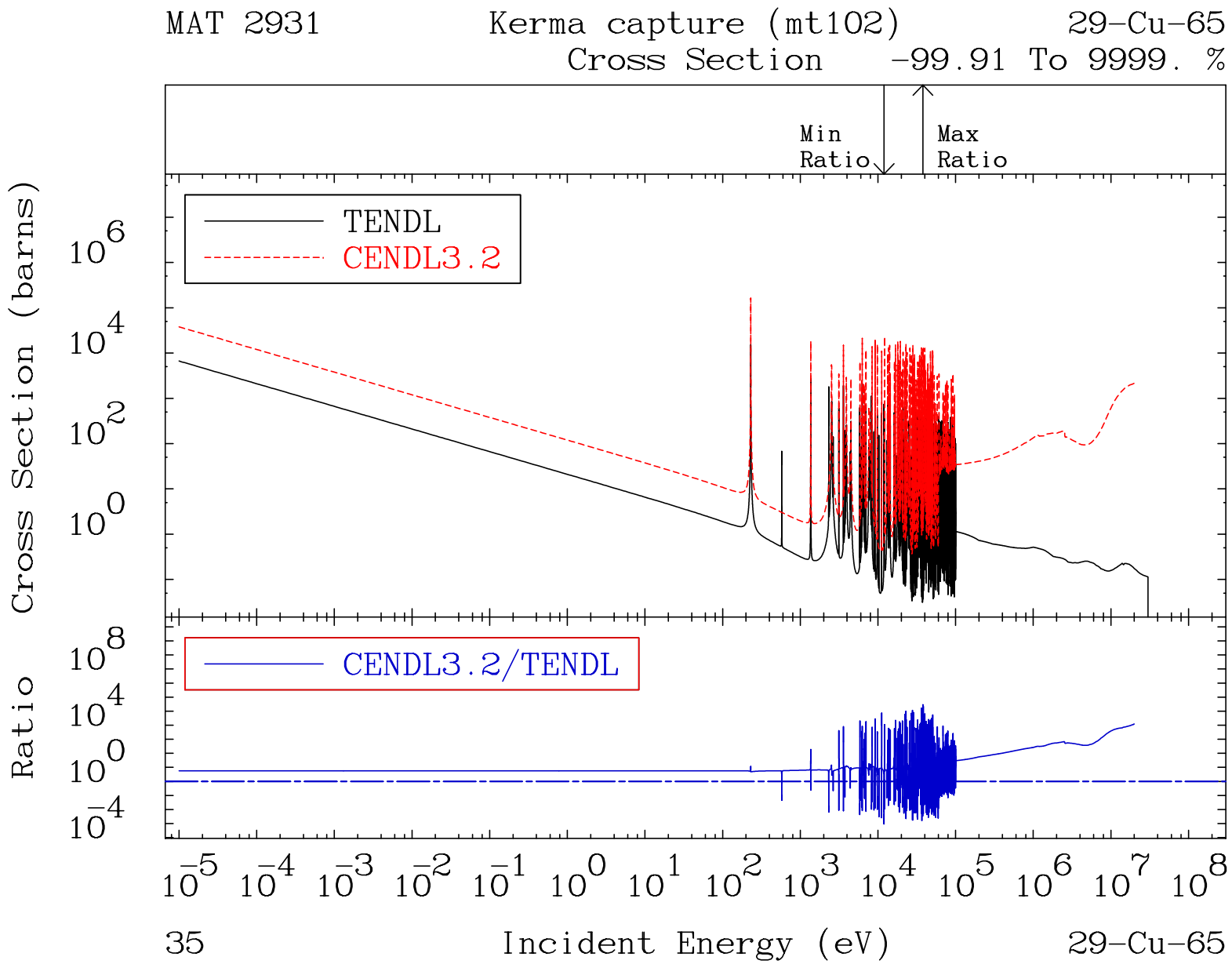

MAT 2931
Kerma total (eV-barns)
29-Cu-65
Cross Section -98.93 To 8246. %
Max Ratio
Min Ratio
TENDL
CENDL3.2
Cross Section (barns)
CENDL3.2/TENDL
Ratio
Incident Energy (eV)
30
29-Cu-65

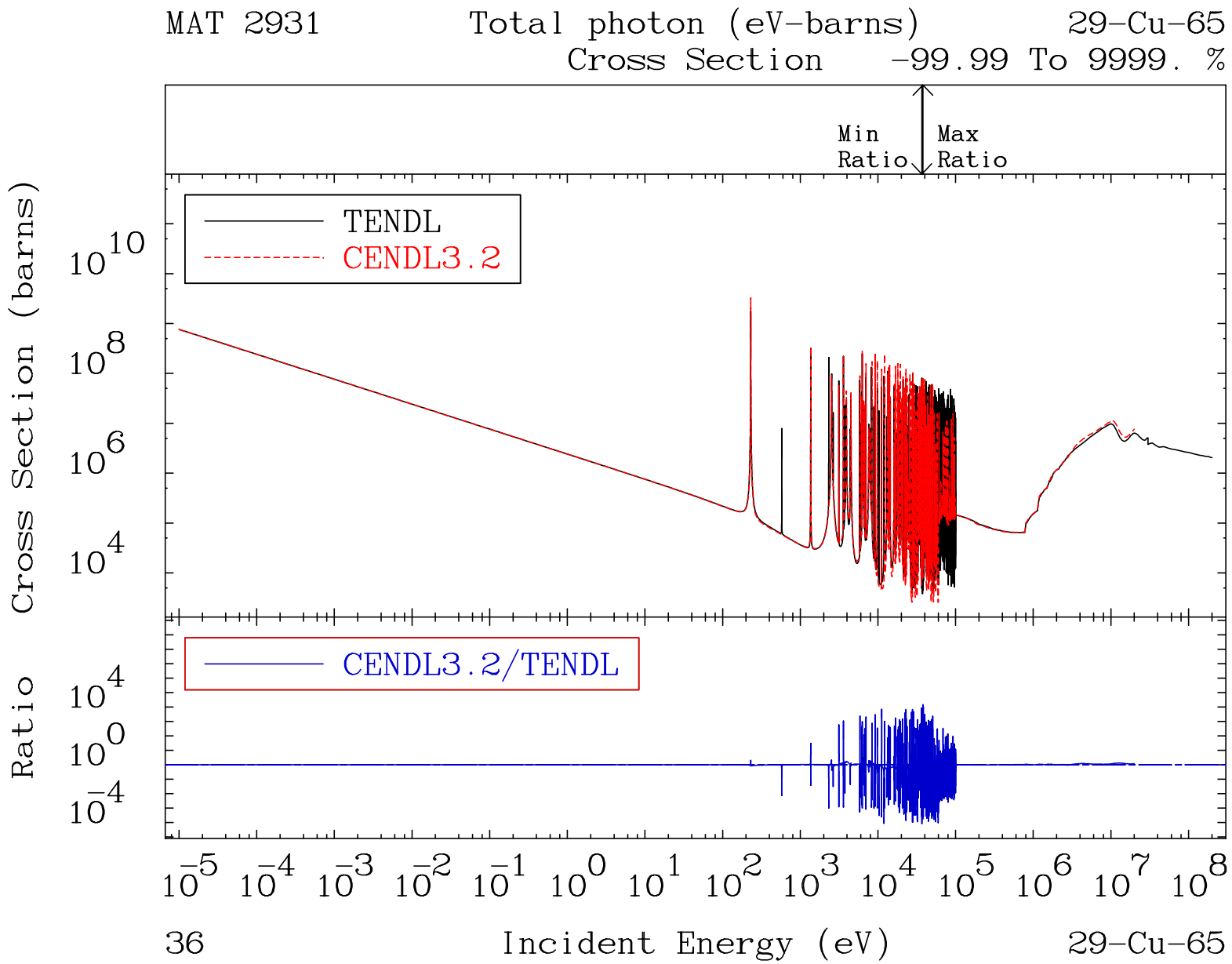

MAT 2931
Kerma elastic
Cross Section
29-Cu-65
-99.06 To 4381. %
Max Ratio
Min Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
31
29-Cu-65

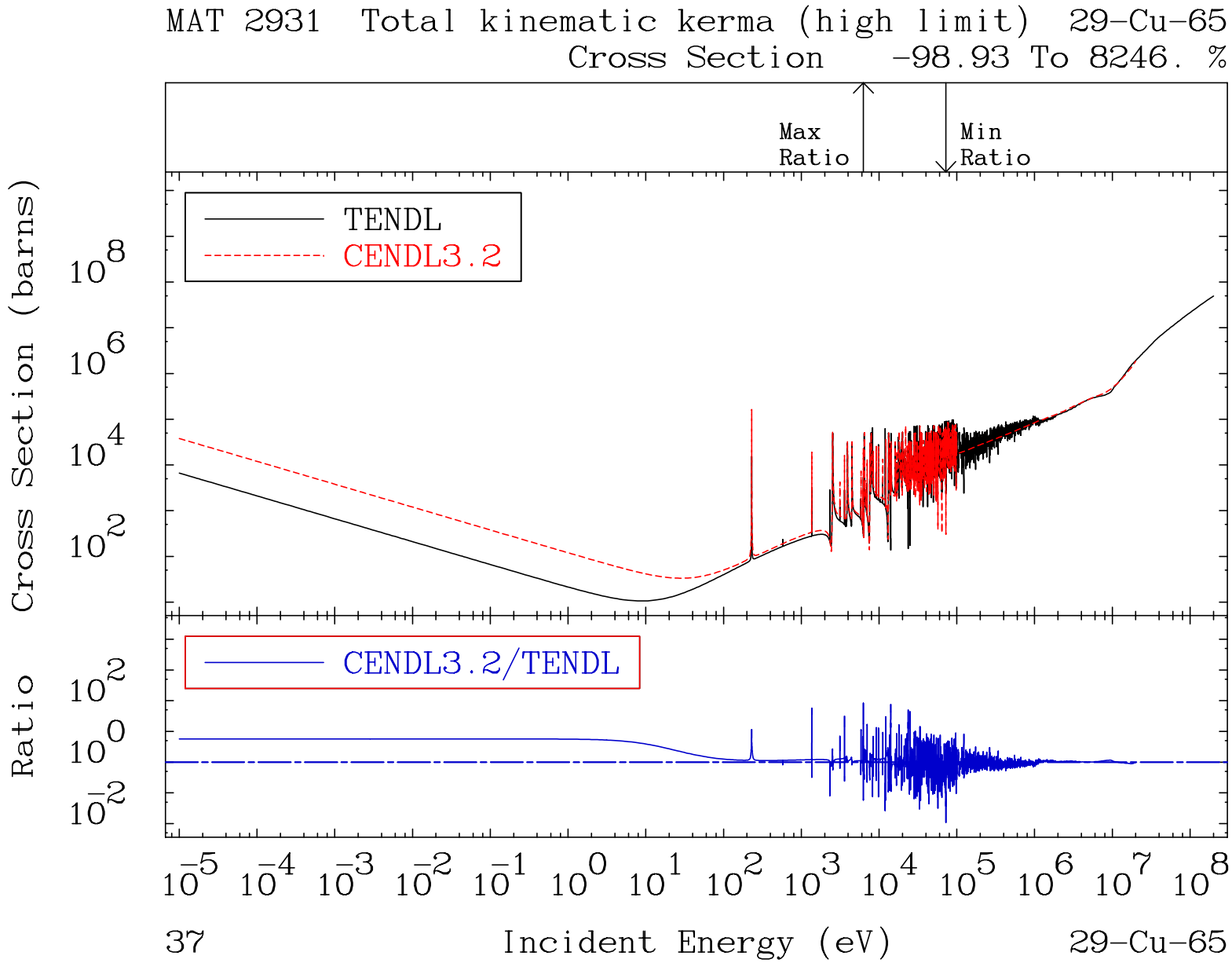

MAT 2931 Kerma non-elastic (all but mt2) 29-Cu-65
Cross Section -99.91 To 9999. %
Min Ratio
Max Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
32
29-Cu-65

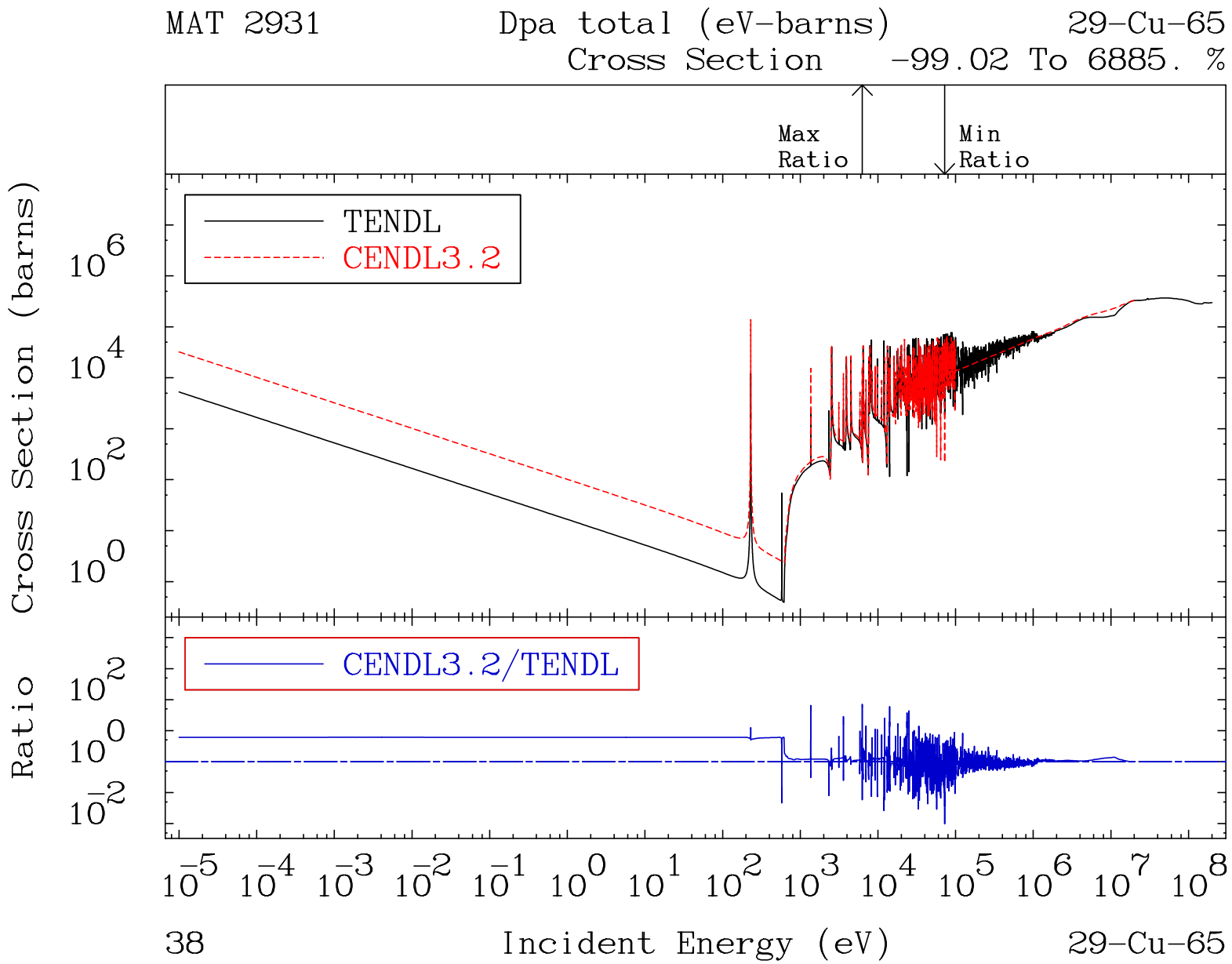

MAT 2931
Kerma inelastic (mt51-91)
29-Cu-65
Cross Section -38.62 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 782.61 keV
CENDL3.2 Threshold 782.61 keV
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
33
29-Cu-65

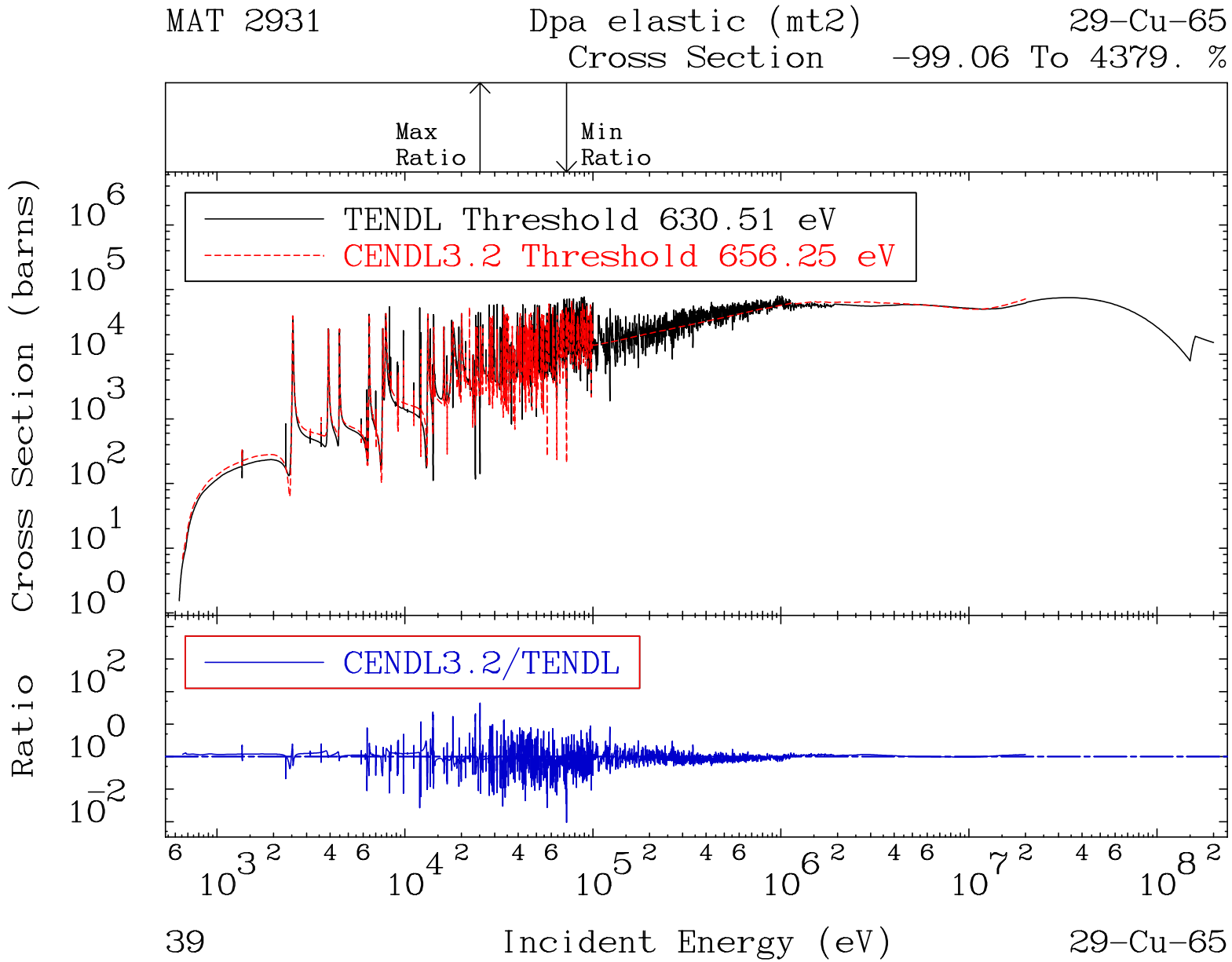

MAT 2931 Kerma fission (mt18 or mt19-20-21-38) 29-Cu-65
Cross Section -38.62 To 9999. %
Max
Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
10^{12}
10^{8}
10^{4}
10^{0}
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
34
Incident Energy (eV)
29-Cu-65

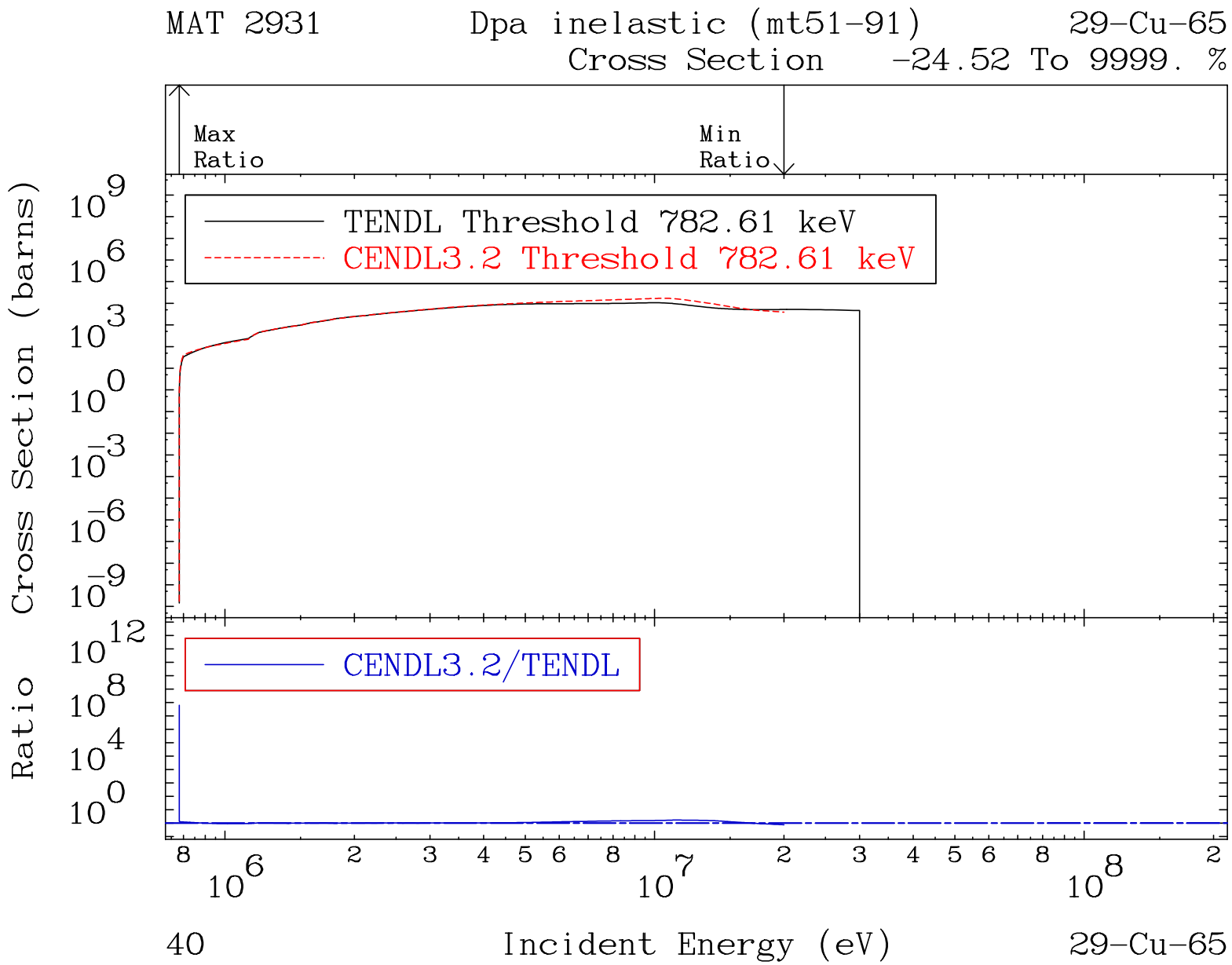

MAT 2931
Kerma capture (mt102)
29-Cu-65
Cross Section -99.91 To 9999. %
Min Ratio
Max Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
35
29-Cu-65

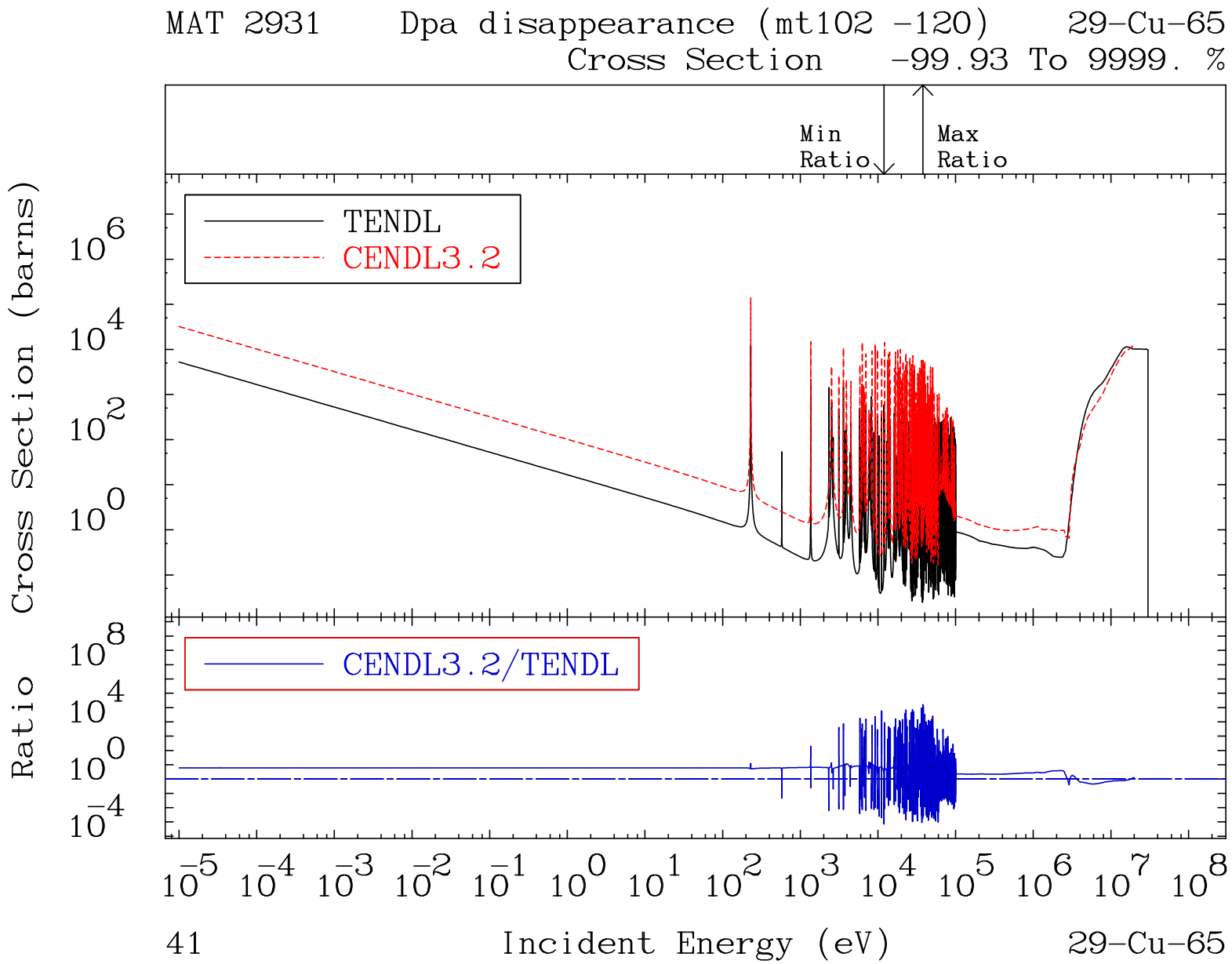

MAT 2931
Total photon (eV-barns)
29-Cu-65
Cross Section -99.99 To 9999. %
Min Ratio
Max Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
36
29-Cu-65

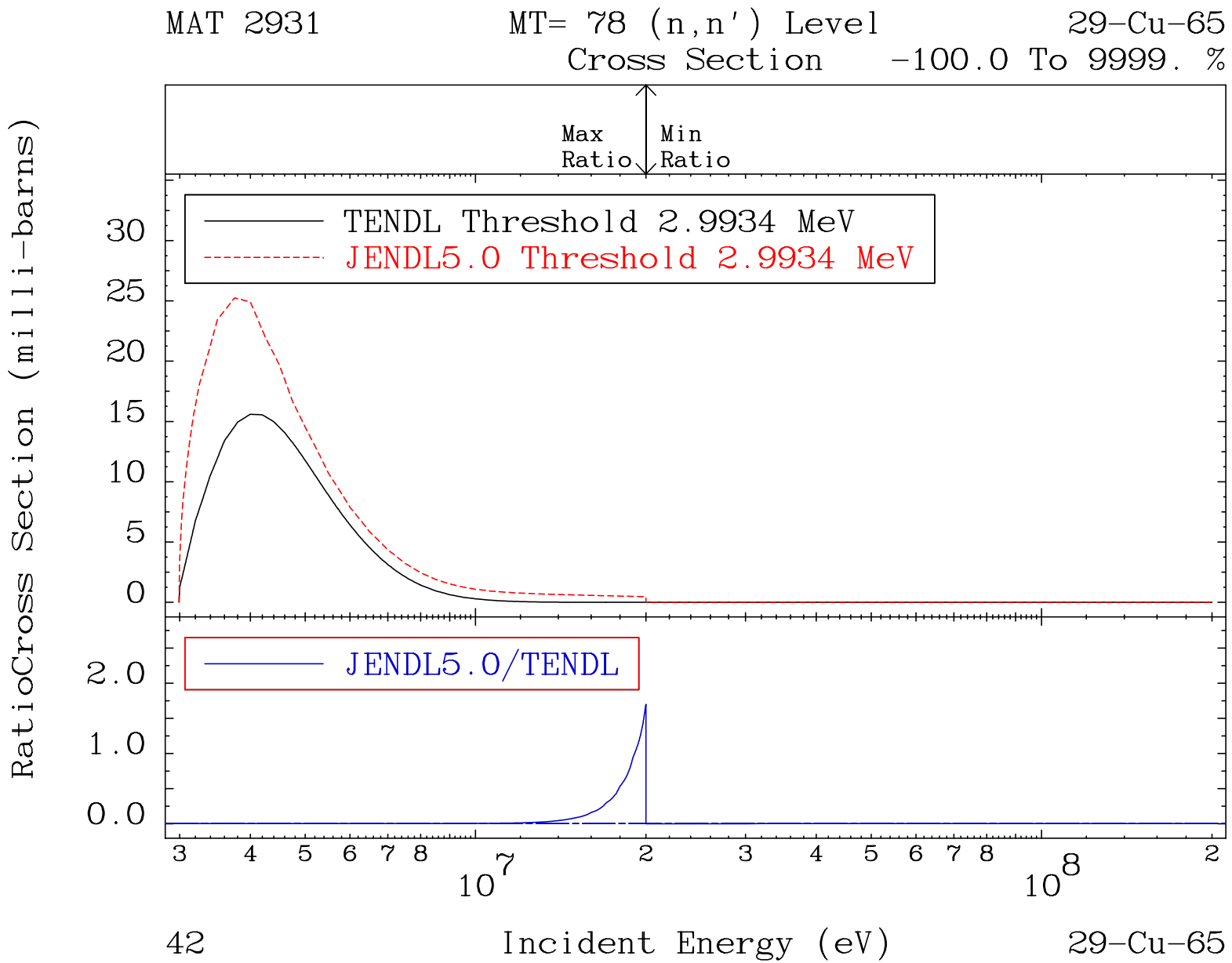

MAT 2931 Total kinematic kerma (high limit) 29-Cu-65
Cross Section -98.93 To 8246. %
Max Ratio
Min Ratio
TENDL
CENDL3.2
Cross Section (barns)
CENDL3.2/TENDL
Ratio
Incident Energy (eV)
37
29-Cu-65

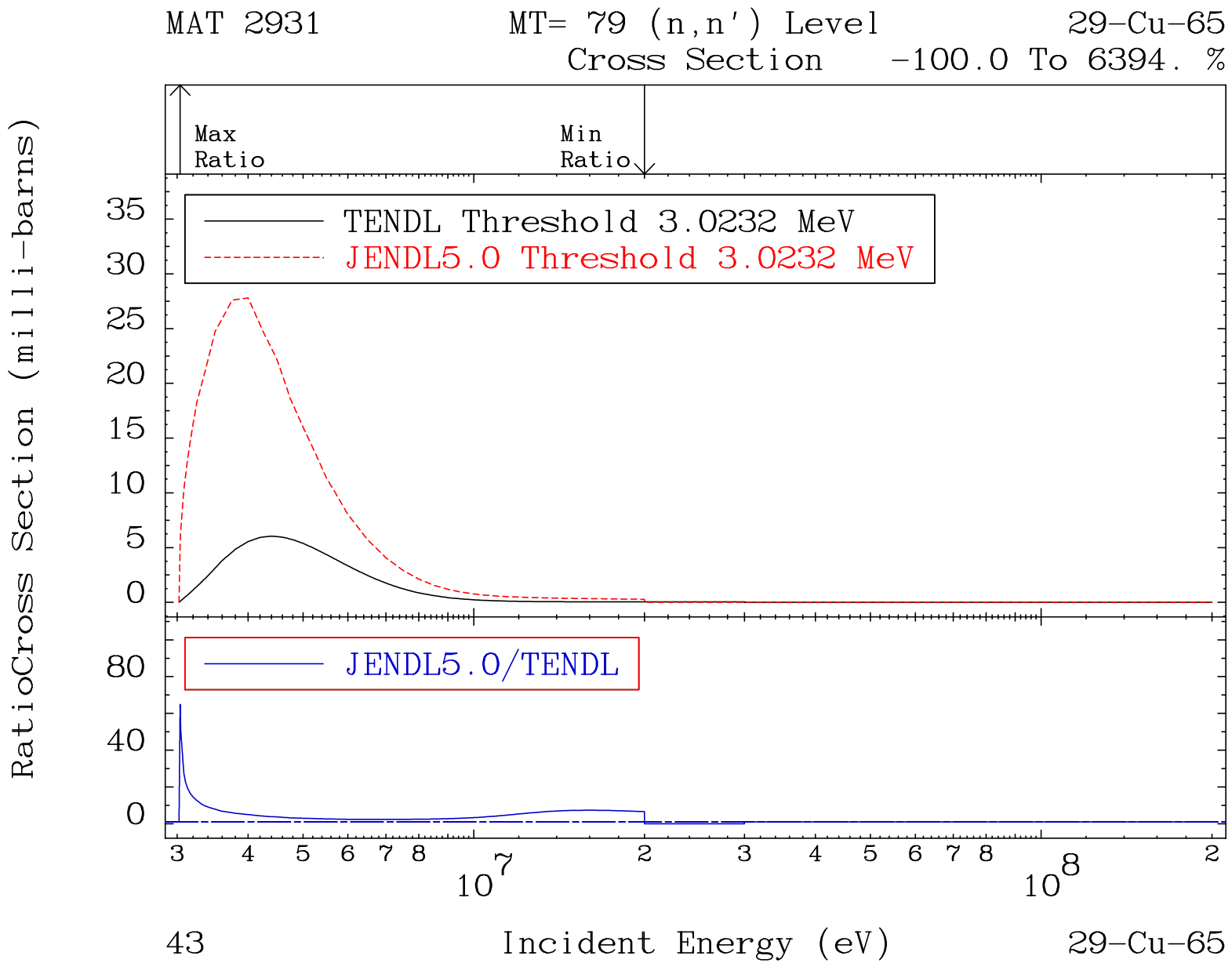

MAT 2931
Dpa total (eV-barns)
29-Cu-65
Cross Section -99.02 To 6885. %
Max Ratio
Min Ratio
TENDL
CENDL3.2
Cross Section (barns)
Ratio
CENDL3.2/TENDL
38
Incident Energy (eV)
29-Cu-65

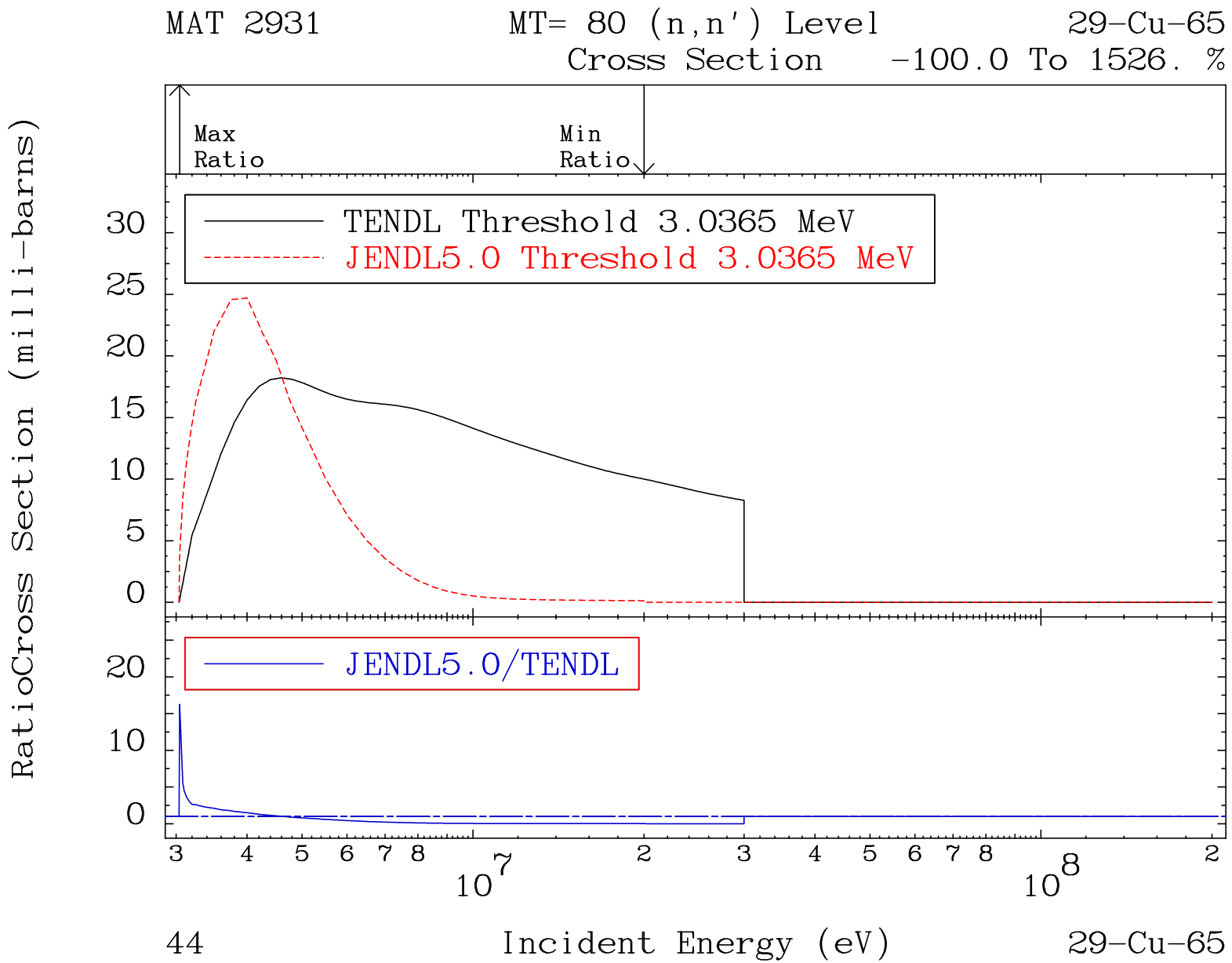

MAT 2931
Dpa elastic (mt2)
Cross Section
29-Cu-65
-99.06 To 4379. %
Max Ratio
Min Ratio
TENDL Threshold 630.51 eV
CENDL3.2 Threshold 656.25 eV
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
39
29-Cu-65

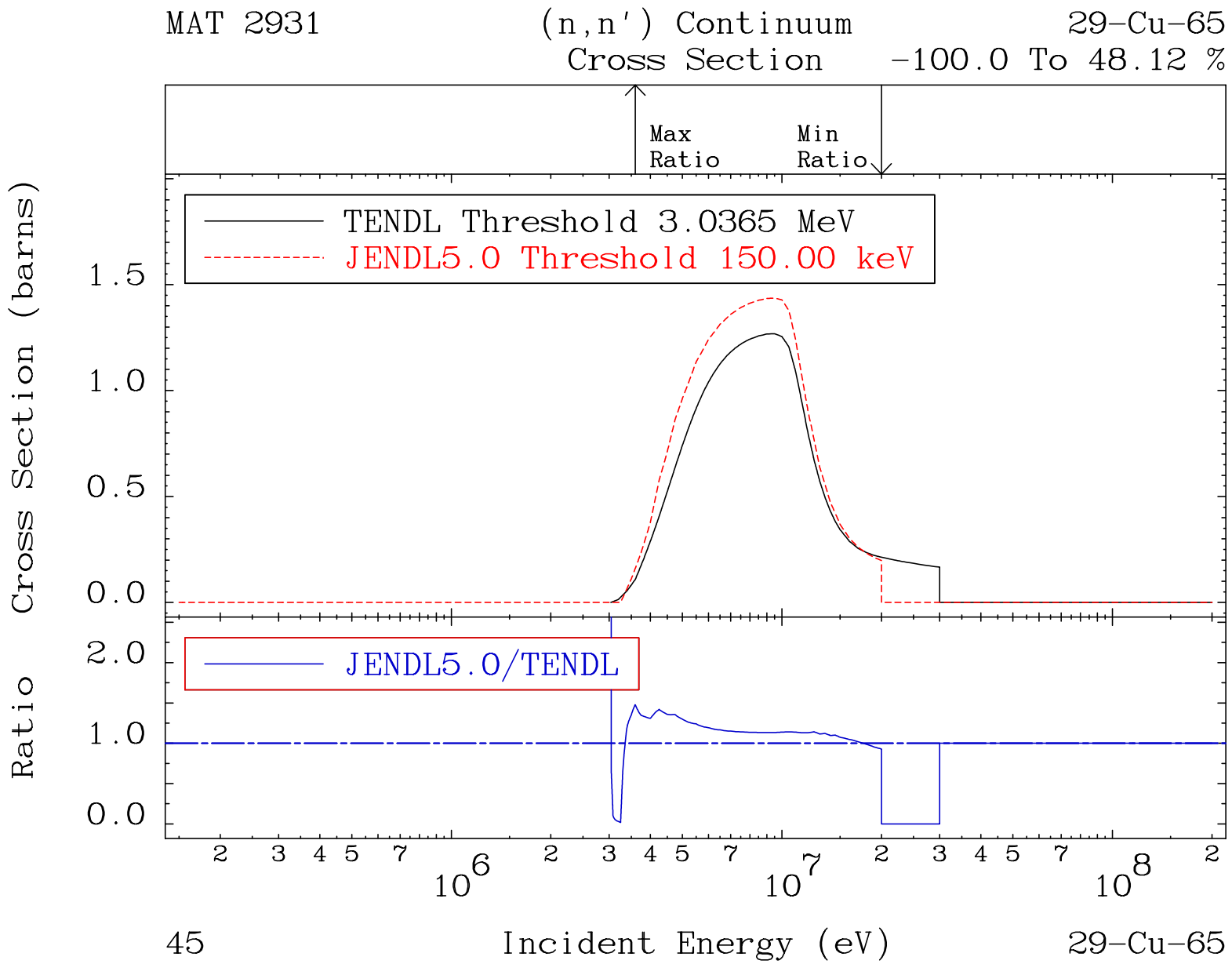

MAT 2931
Dpa inelastic (mt51-91)
29-Cu-65
Cross Section
-24.52 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 782.61 keV
CENDL3.2 Threshold 782.61 keV
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
40
29-Cu-65

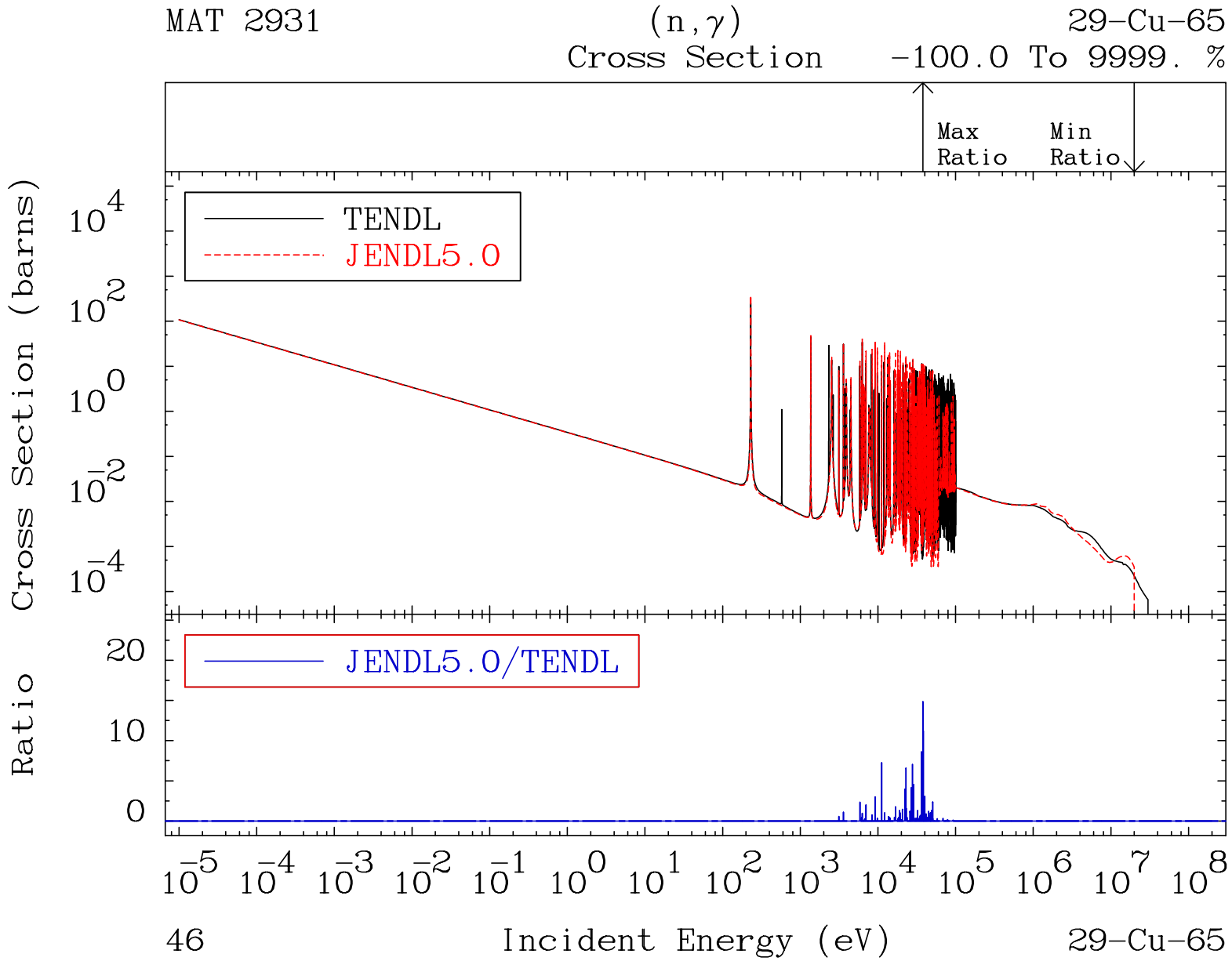

MAT 2931 Dpa disappearance (mt102 -120) 29-Cu-65
Cross Section -99.93 To 9999. %
Min Ratio
Max Ratio
TENDL
CENDL3.2
CENDL3.2/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
41
29-Cu-65

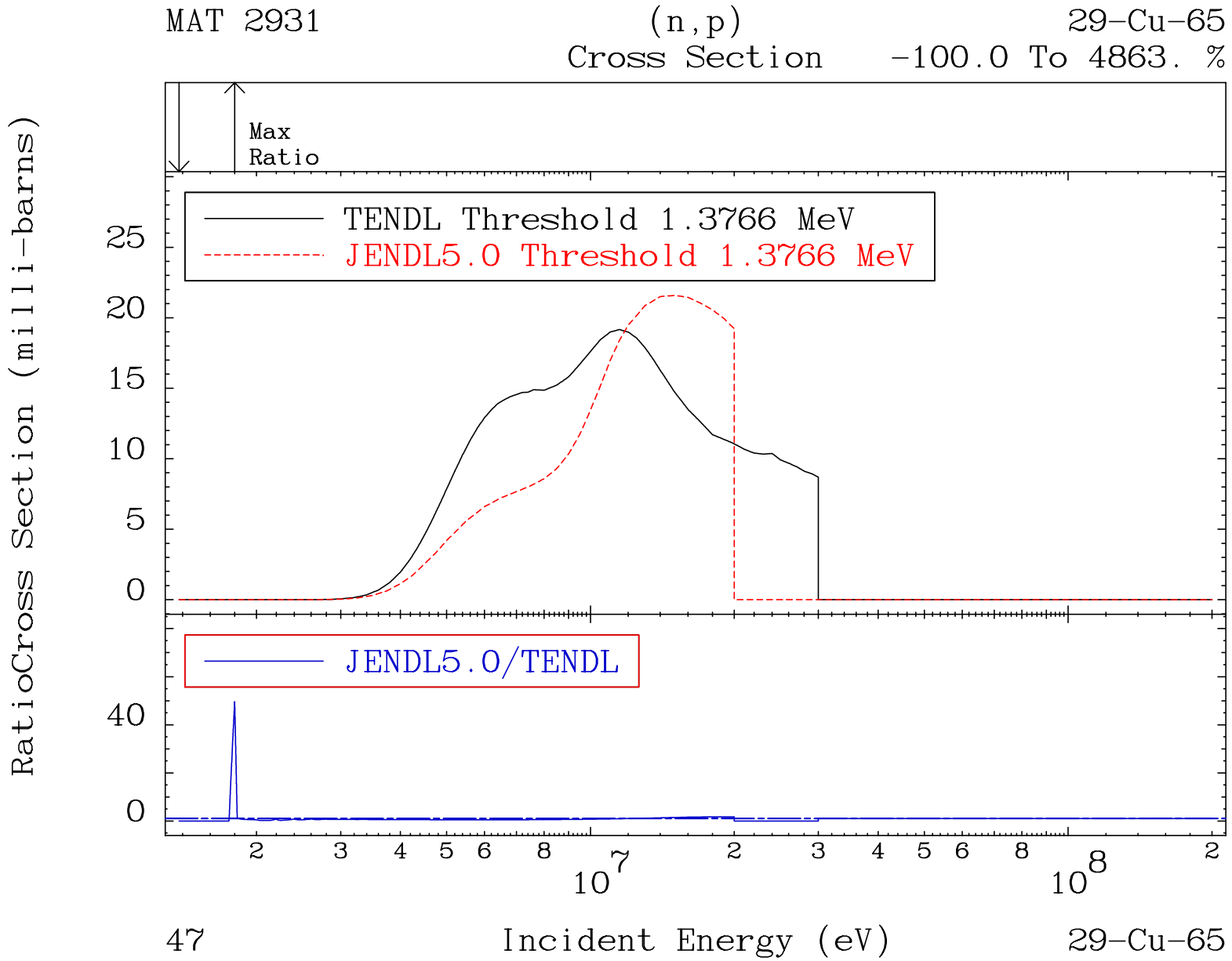

MAT 2931
MT= 78 (n,n') Level
29-Cu-65
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 2.9934 MeV
JENDL5.0 Threshold 2.9934 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
30
25
20
15
10
5
0
2.0
1.0
0.0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
42
Incident Energy (eV)
29-Cu-65

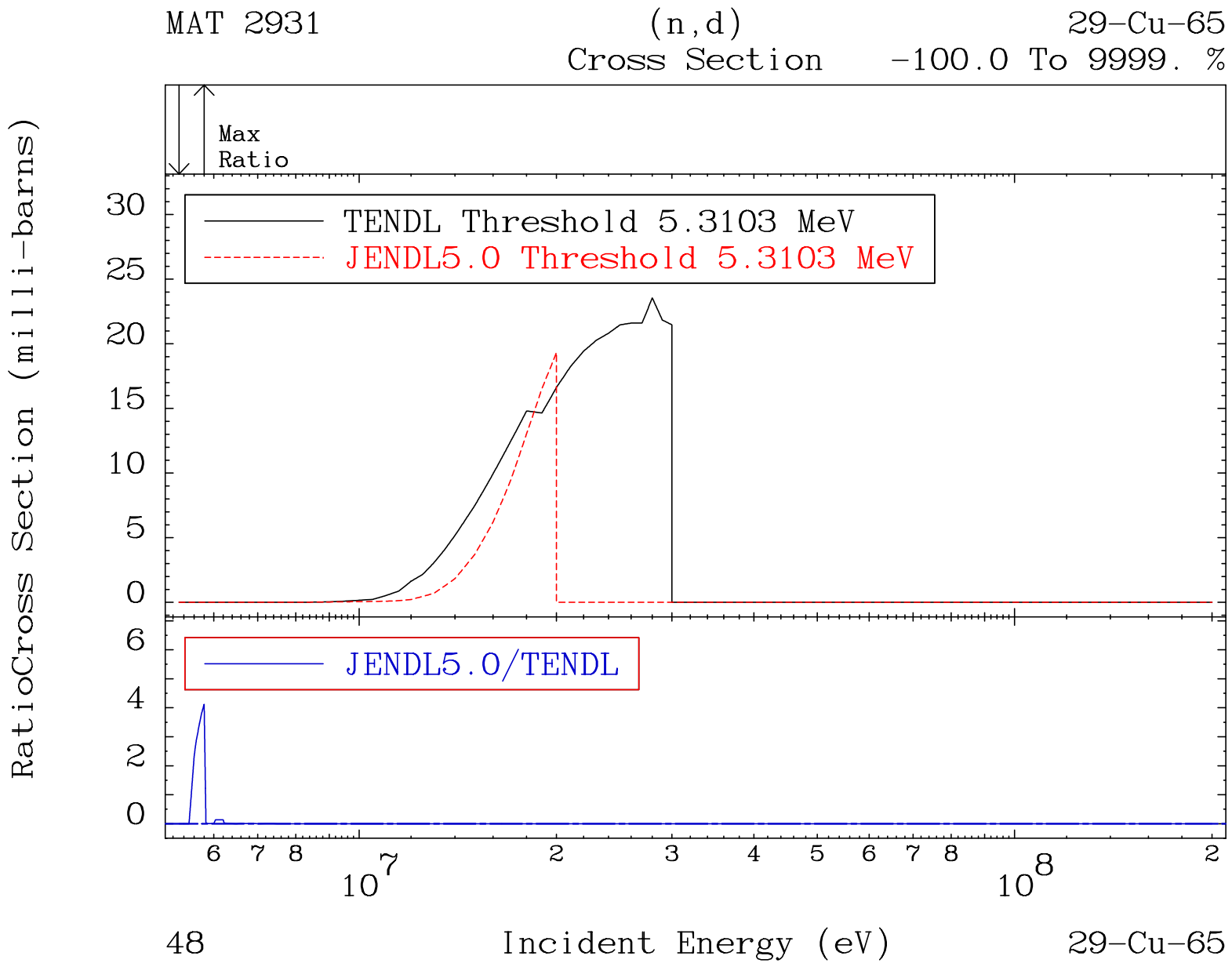

MAT 2931
MT= 79 (n,n') Level
29-Cu-65
Cross Section -100.0 To 6394. %
Max Ratio
Min Ratio
TENDL Threshold 3.0232 MeV
JENDL5.0 Threshold 3.0232 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
35
30
25
20
15
10
5
0
80
40
0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
43
Incident Energy (eV)
29-Cu-65

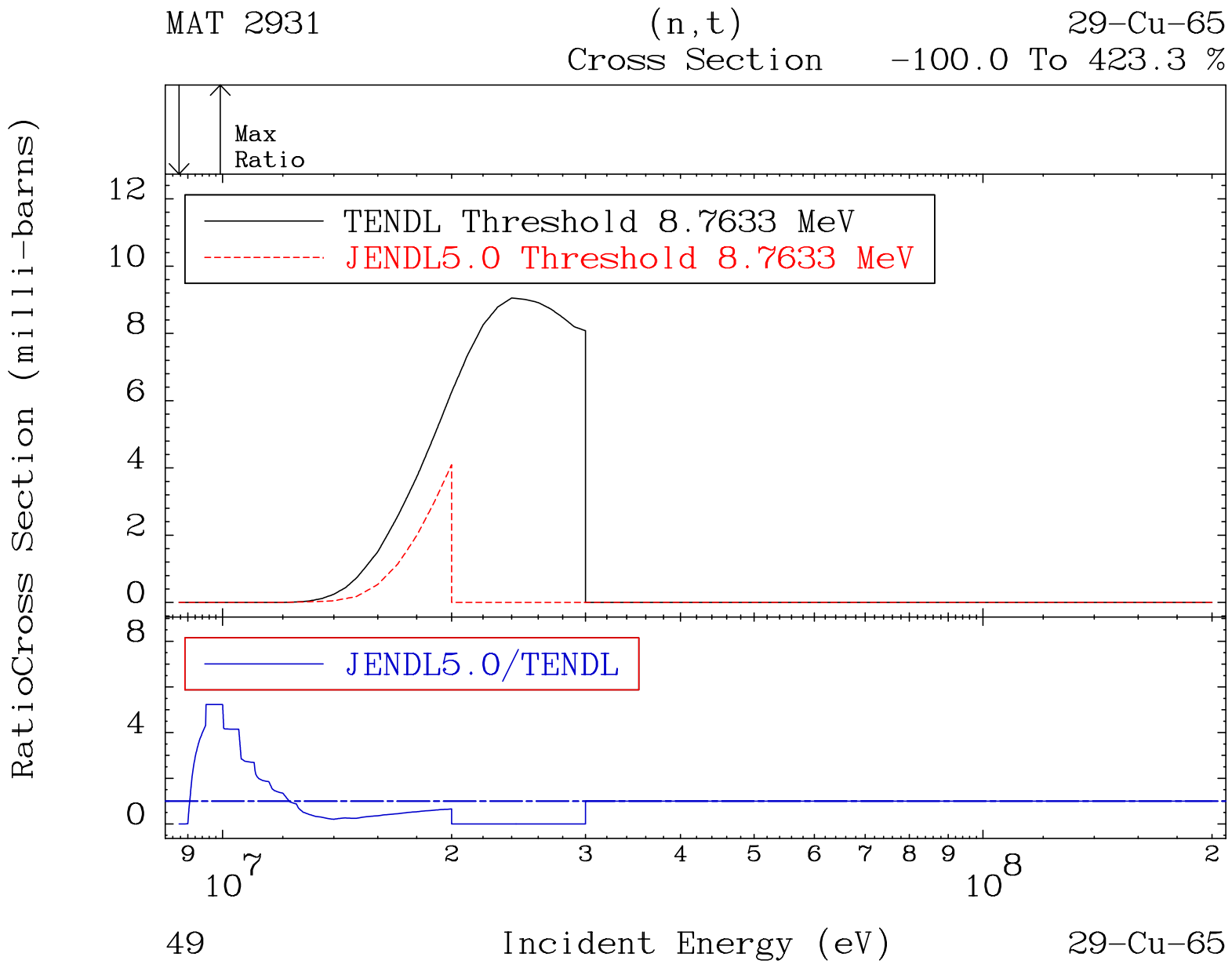

MAT 2931
MT= 80 (n,n') Level
29-Cu-65
Cross Section -100.0 To 1526. %
Max Ratio
Min Ratio
TENDL Threshold 3.0365 MeV
JENDL5.0 Threshold 3.0365 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
44
29-Cu-65

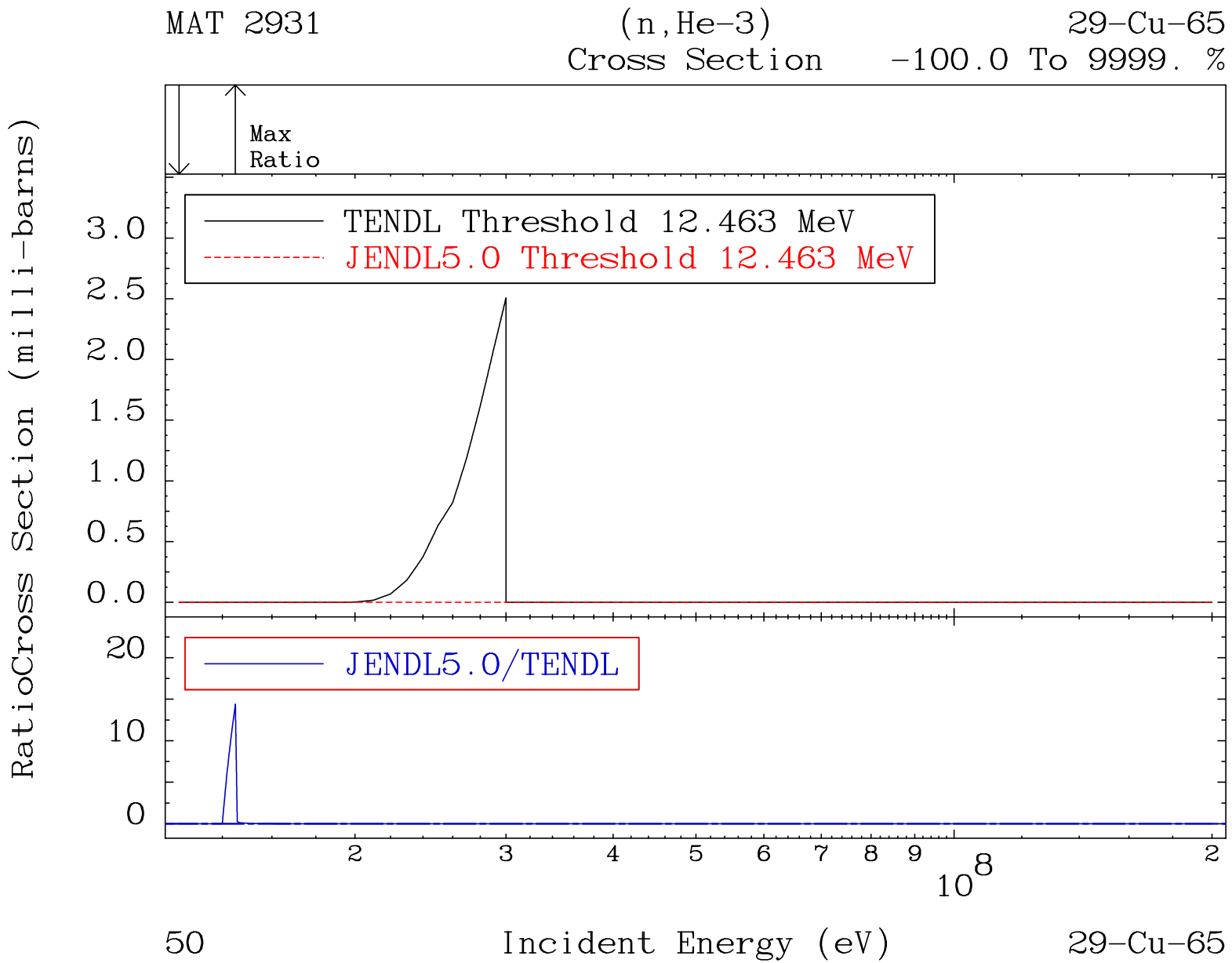

MAT 2931
(n,n') Continuum
Cross Section
29-Cu-65
-100.0 To 48.12 %
Max Ratio
Min Ratio
TENDL Threshold 3.0365 MeV
JENDL5.0 Threshold 150.00 keV
Cross Section (barns)
1.5
1.0
0.5
0.0
JENDL5.0/TENDL
Ratio
2.0
1.0
0.0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
45
Incident Energy (eV)
29-Cu-65

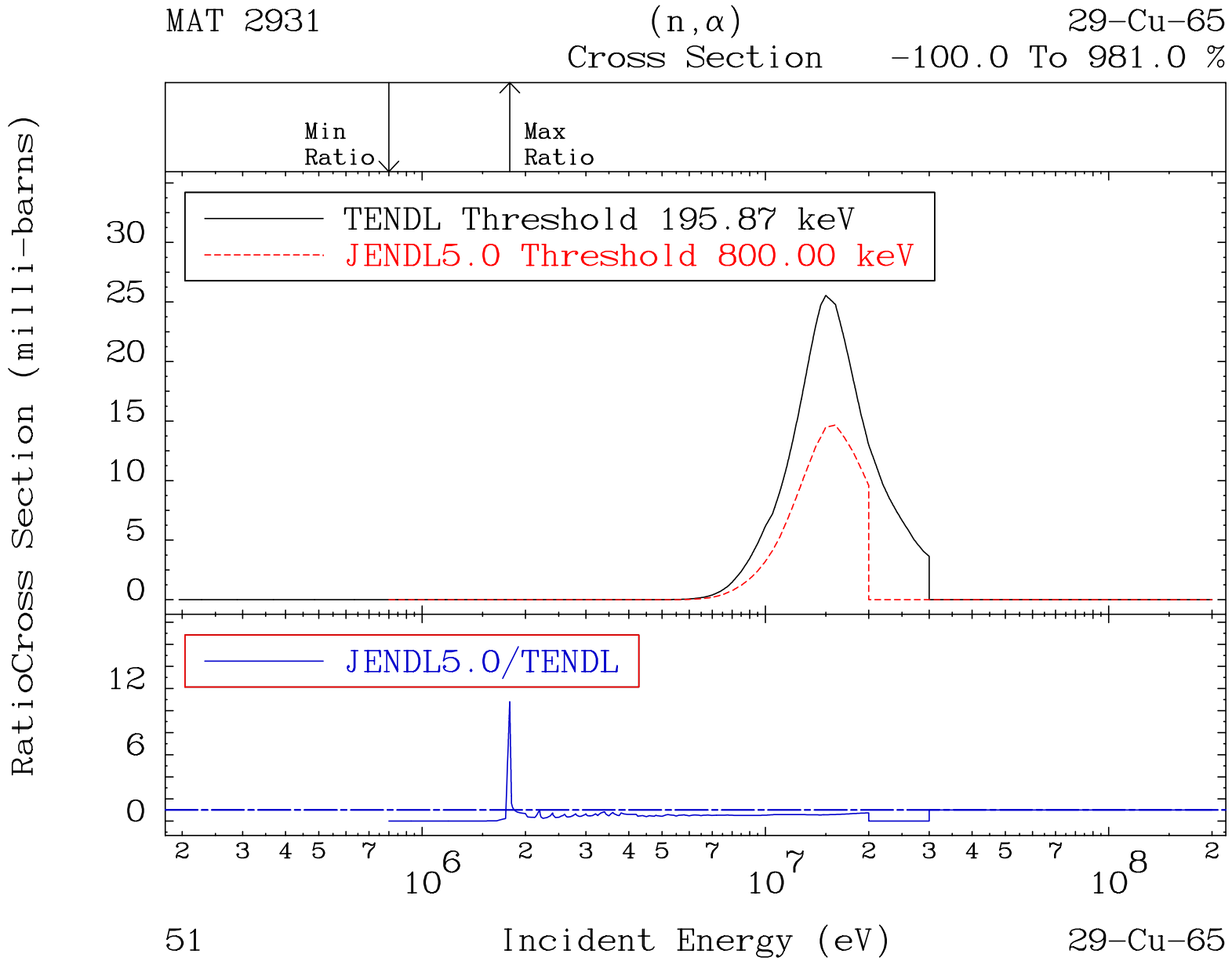

MAT 2931
(n,γ)
Cross Section
29-Cu-65
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
46
29-Cu-65

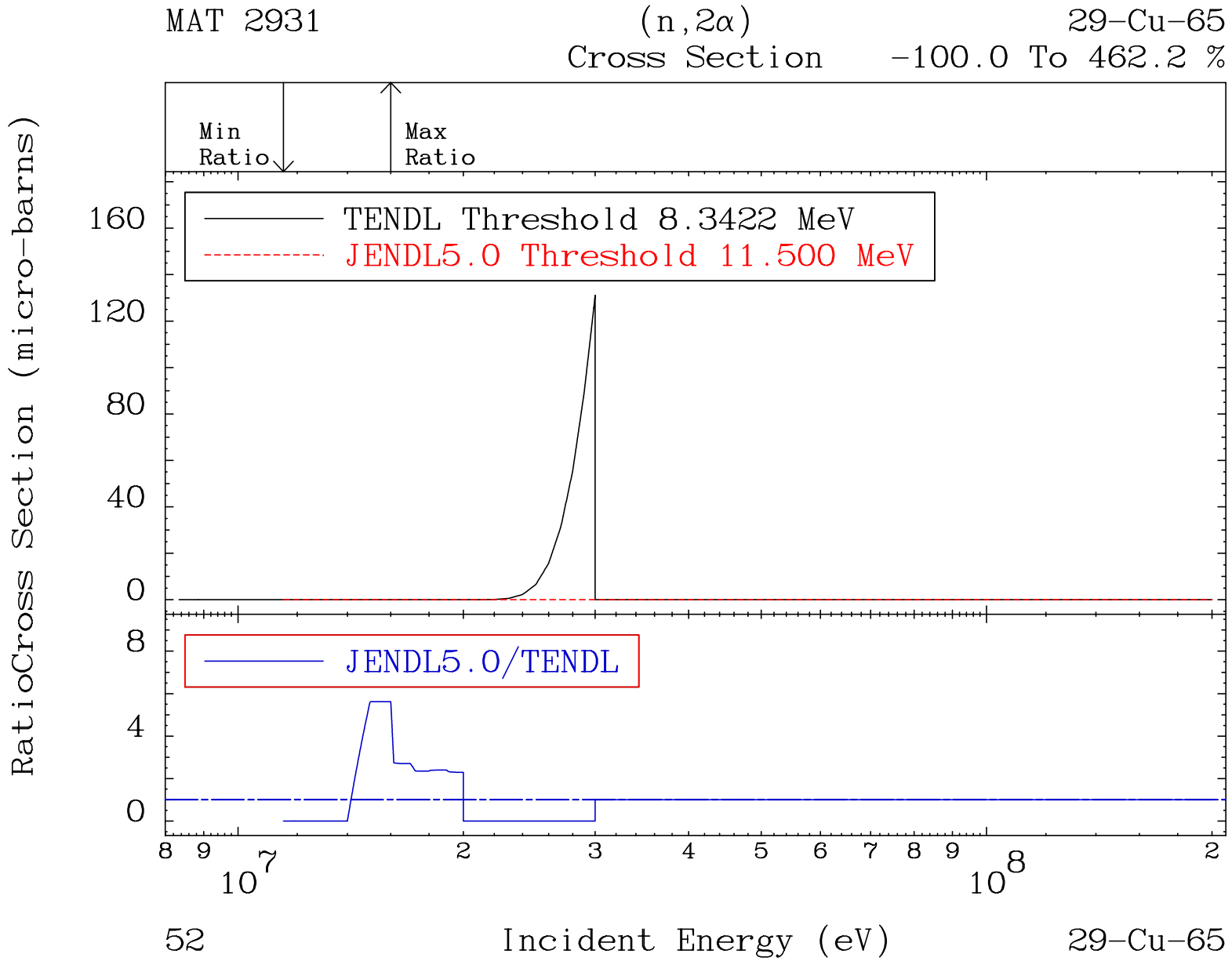

MAT 2931
(n,p)
29-Cu-65
Cross Section
-100.0 To 4863. %
Max
Ratio
TENDL Threshold 1.3766 MeV
JENDL5.0 Threshold 1.3766 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
40
0
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
47
Incident Energy (eV)
29-Cu-65

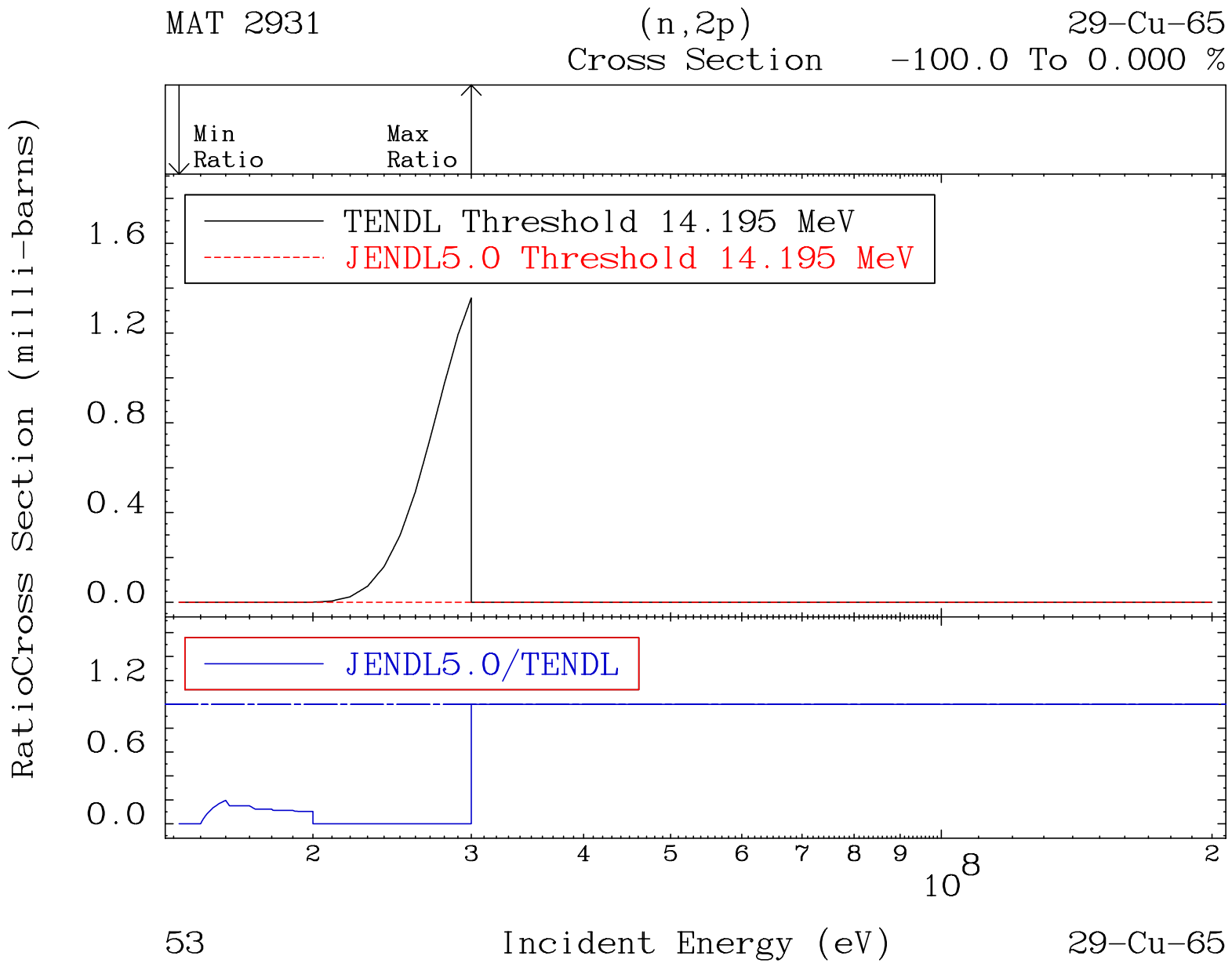

MAT 2931
(n,d)
29-Cu-65
Cross Section
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 5.3103 MeV
JENDL5.0 Threshold 5.3103 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
30
25
20
15
10
5
0
6
4
2
0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
48
Incident Energy (eV)
29-Cu-65

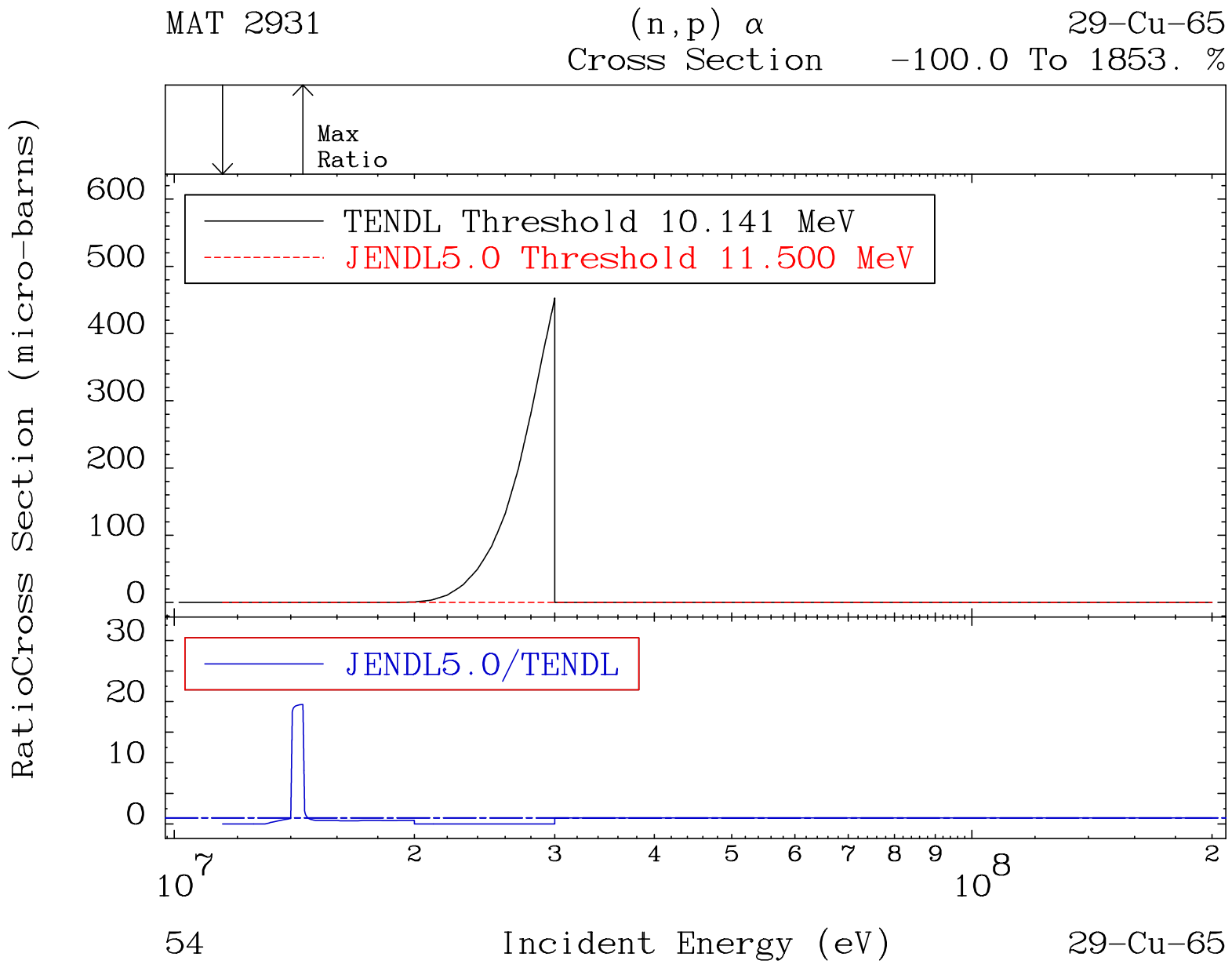

MAT 2931
(n,t)
Cross Section
29-Cu-65
-100.0 To 423.3 %
Max
Ratio
TENDL Threshold 8.7633 MeV
JENDL5.0 Threshold 8.7633 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
12
10
8
6
4
2
0
8
4
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
49
Incident Energy (eV)
29-Cu-65

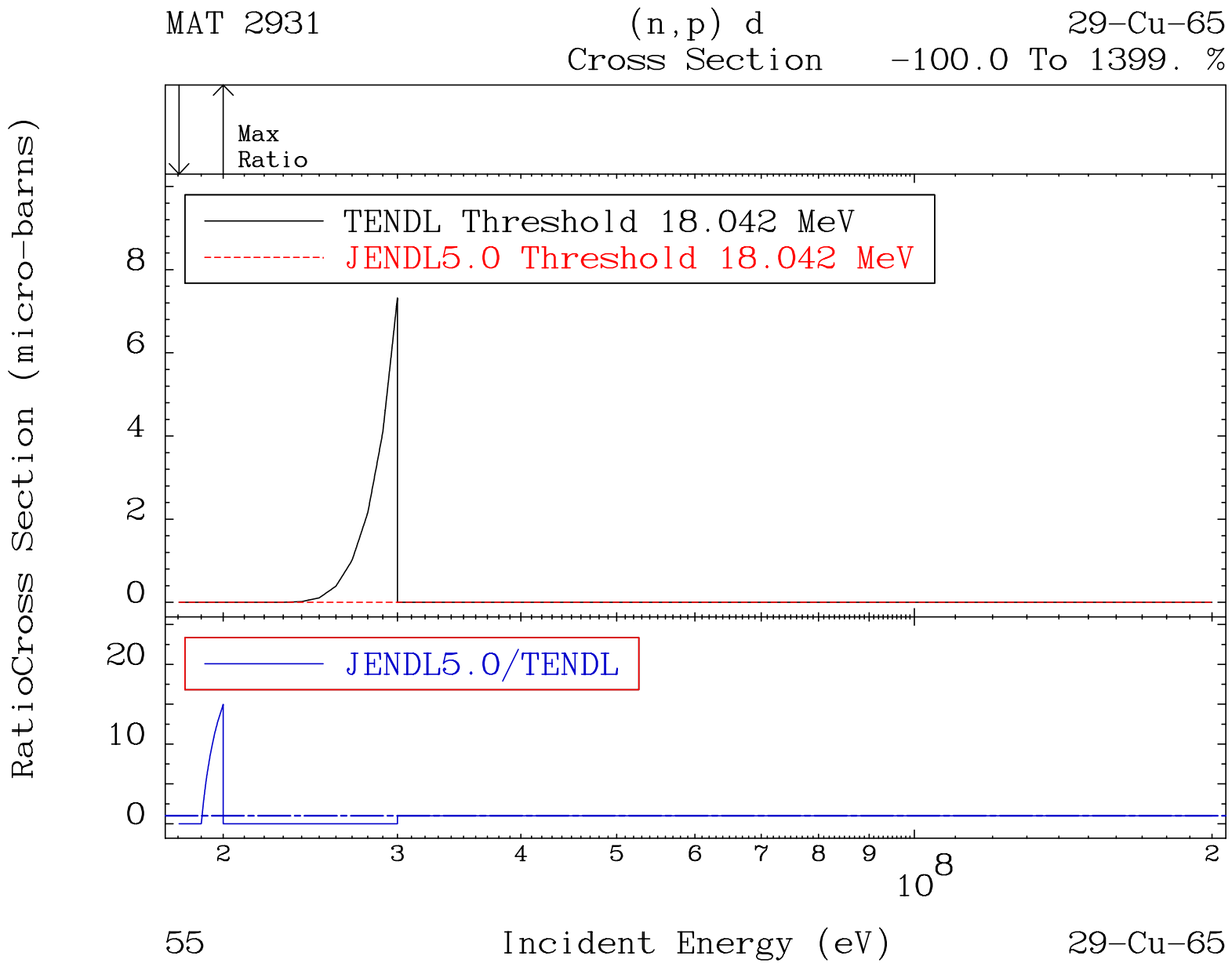

MAT 2931
(n,He-3)
29-Cu-65
Cross Section
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 12.463 MeV
JENDL5.0 Threshold 12.463 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
20
10
0
2
3
4
5
6
7
8
9
10^8
2
50
Incident Energy (eV)
29-Cu-65

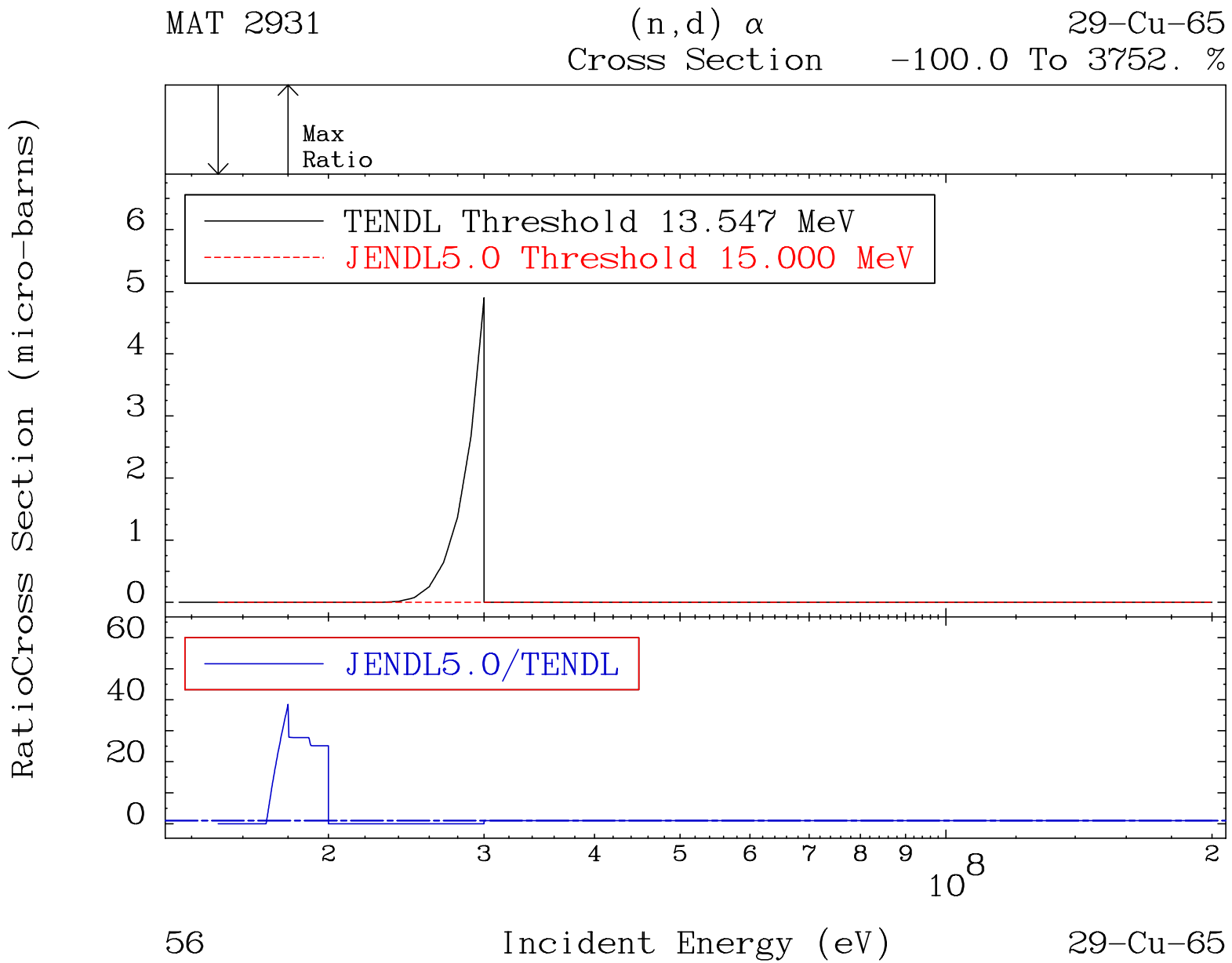

MAT 2931
(n,α)
29-Cu-65
Cross Section
-100.0 To 981.0 %
Min Ratio
Max Ratio
TENDL Threshold 195.87 keV
JENDL5.0 Threshold 800.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
30
25
20
15
10
5
0
12
6
0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
51
Incident Energy (eV)
29-Cu-65

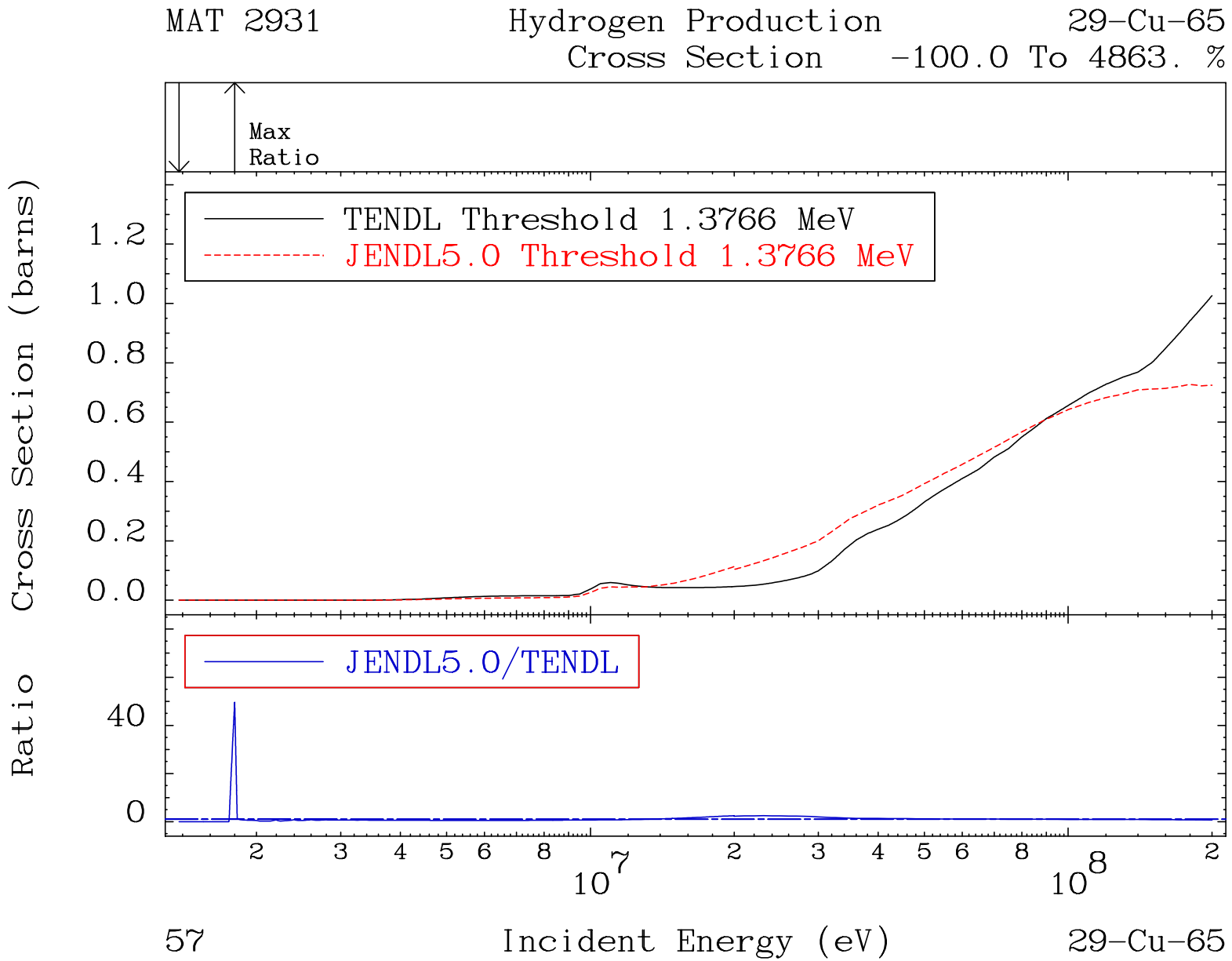

MAT 2931
(n,2α)
29-Cu-65
Cross Section
-100.0 To 462.2 %
Min Ratio
Max Ratio
TENDL Threshold 8.3422 MeV
JENDL5.0 Threshold 11.500 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
160
120
80
40
0
8
4
0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
52
Incident Energy (eV)
29-Cu-65

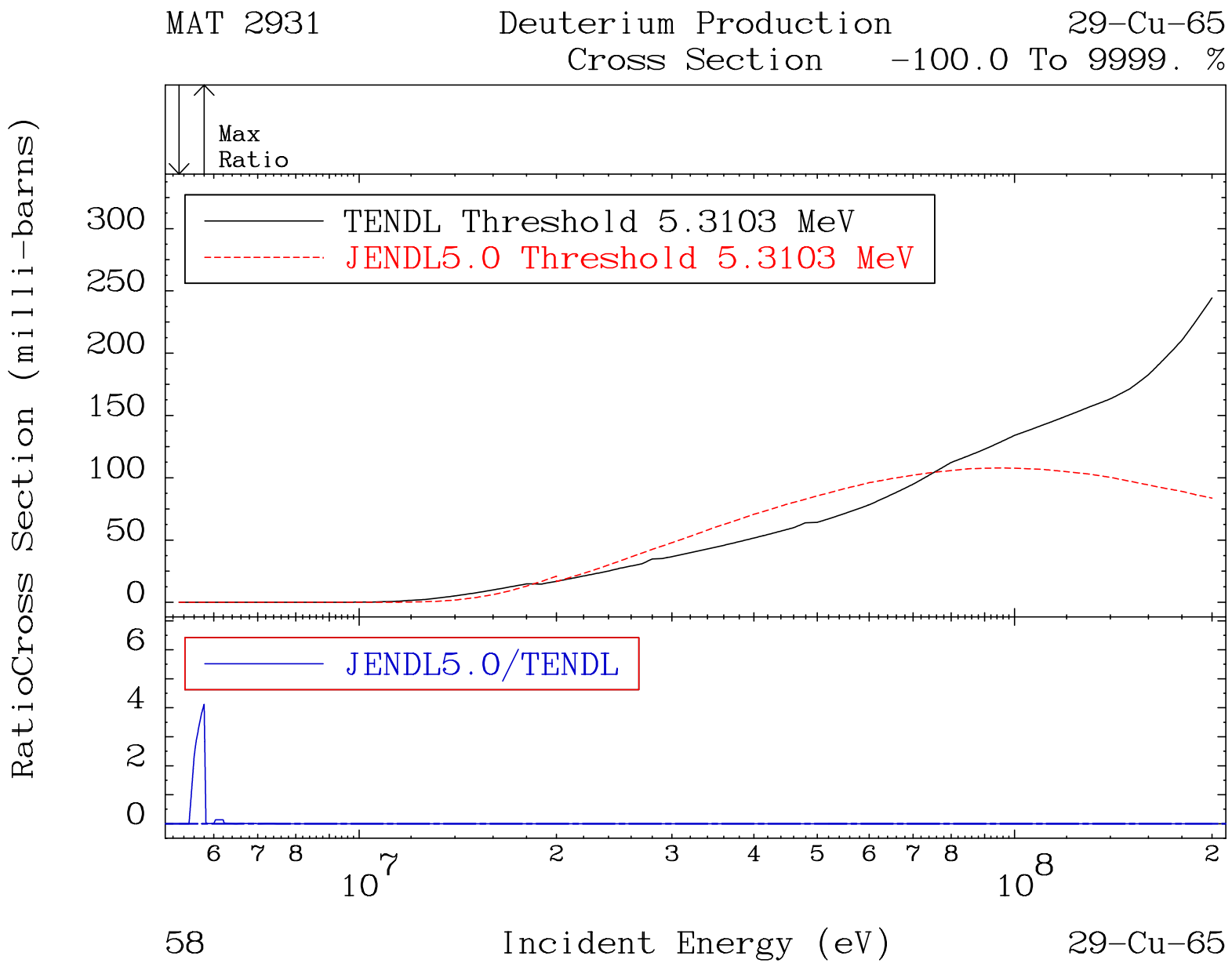

MAT 2931
(n,2p)
29-Cu-65
Cross Section
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 14.195 MeV
JENDL5.0 Threshold 14.195 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
1.6
1.2
0.8
0.4
0.0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
53
Incident Energy (eV)
29-Cu-65

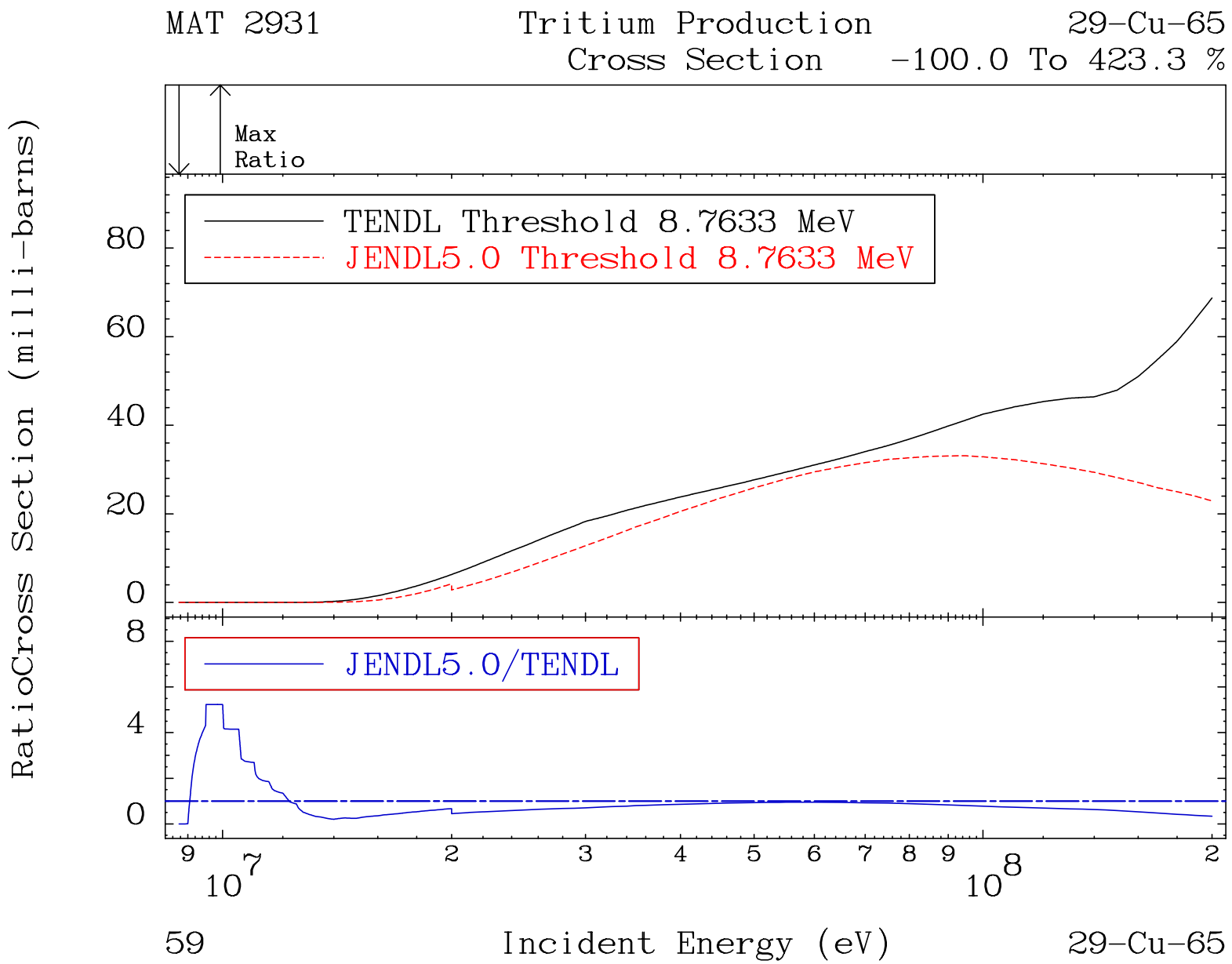

MAT 2931
(n,p) α
29-Cu-65
Cross Section
-100.0 To 1853. %
Max
Ratio
600
500
400
300
200
100
0
TENDL Threshold 10.141 MeV
JENDL5.0 Threshold 11.500 MeV
30
20
10
0
JENDL5.0/TENDL
RatioCross Section (micro-barns)
10^7
2
3
4
5
6
7
8
9
10^8
2
54
Incident Energy (eV)
29-Cu-65

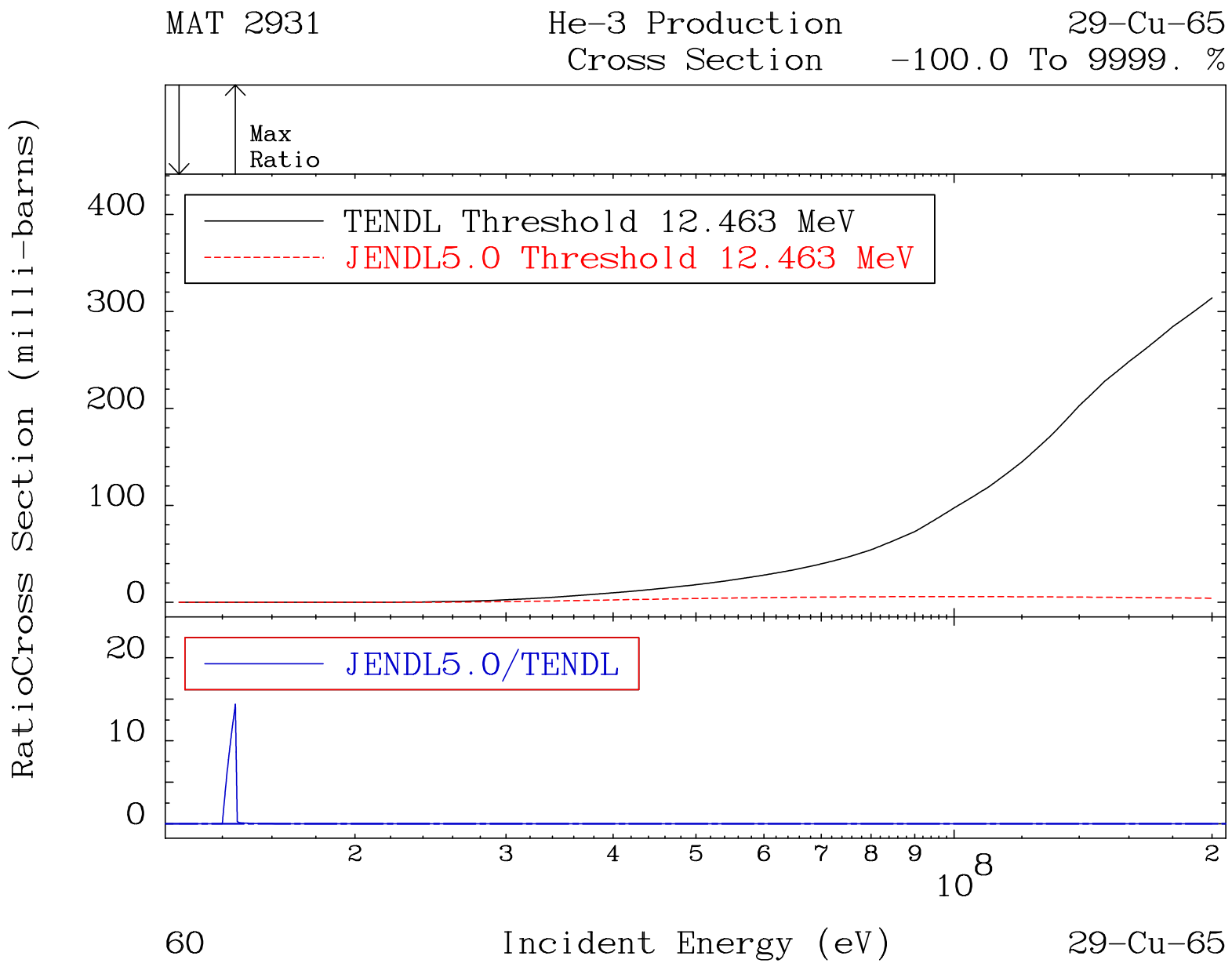

MAT 2931
(n,p) d
Cross Section
29-Cu-65
-100.0 To 1399. %
Max
Ratio
TENDL Threshold 18.042 MeV
JENDL5.0 Threshold 18.042 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
55
29-Cu-65

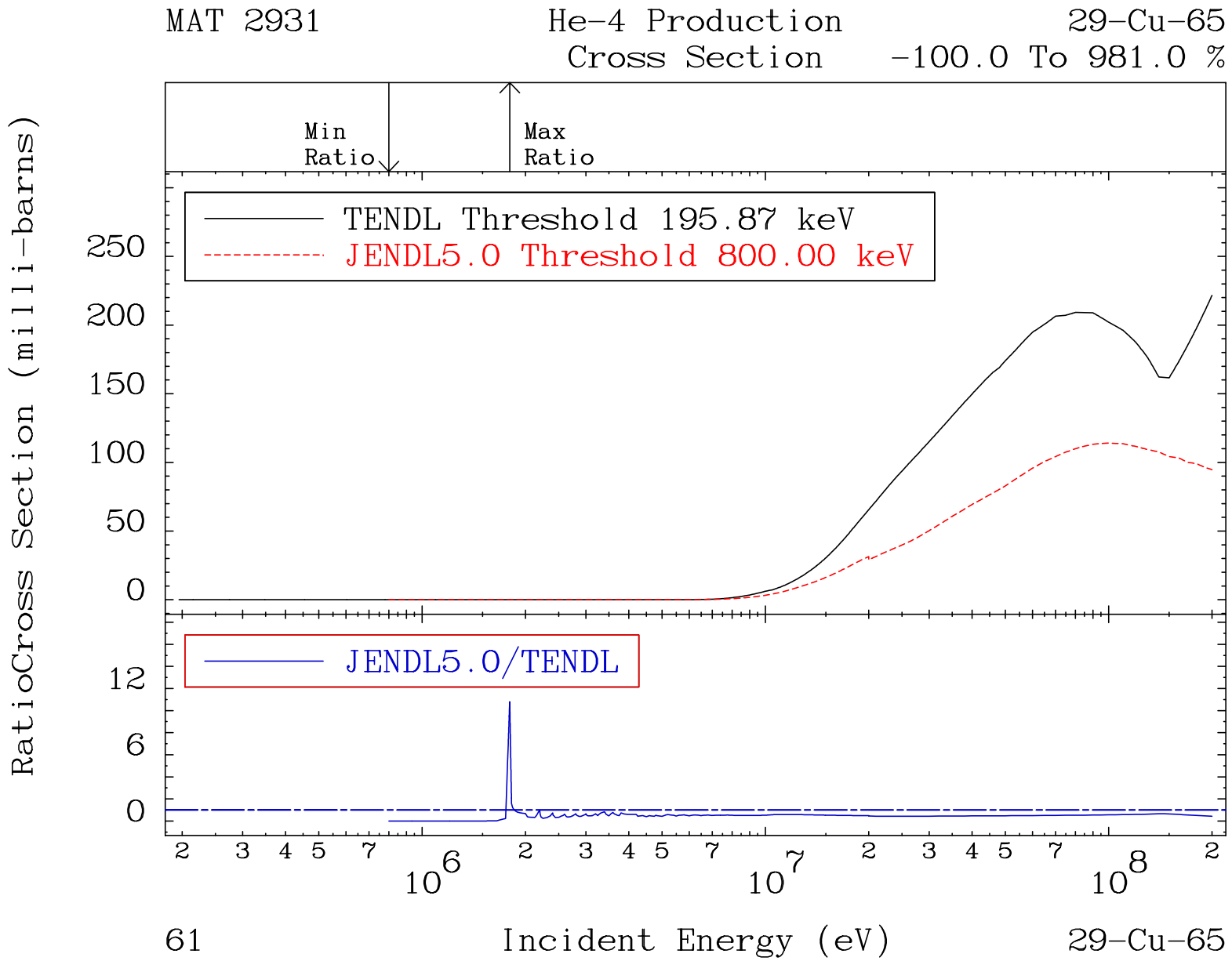

MAT 2931
(n,d) α
29-Cu-65
Cross Section
-100.0 To 3752. %
Max
Ratio
TENDL Threshold 13.547 MeV
JENDL5.0 Threshold 15.000 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
56
29-Cu-65

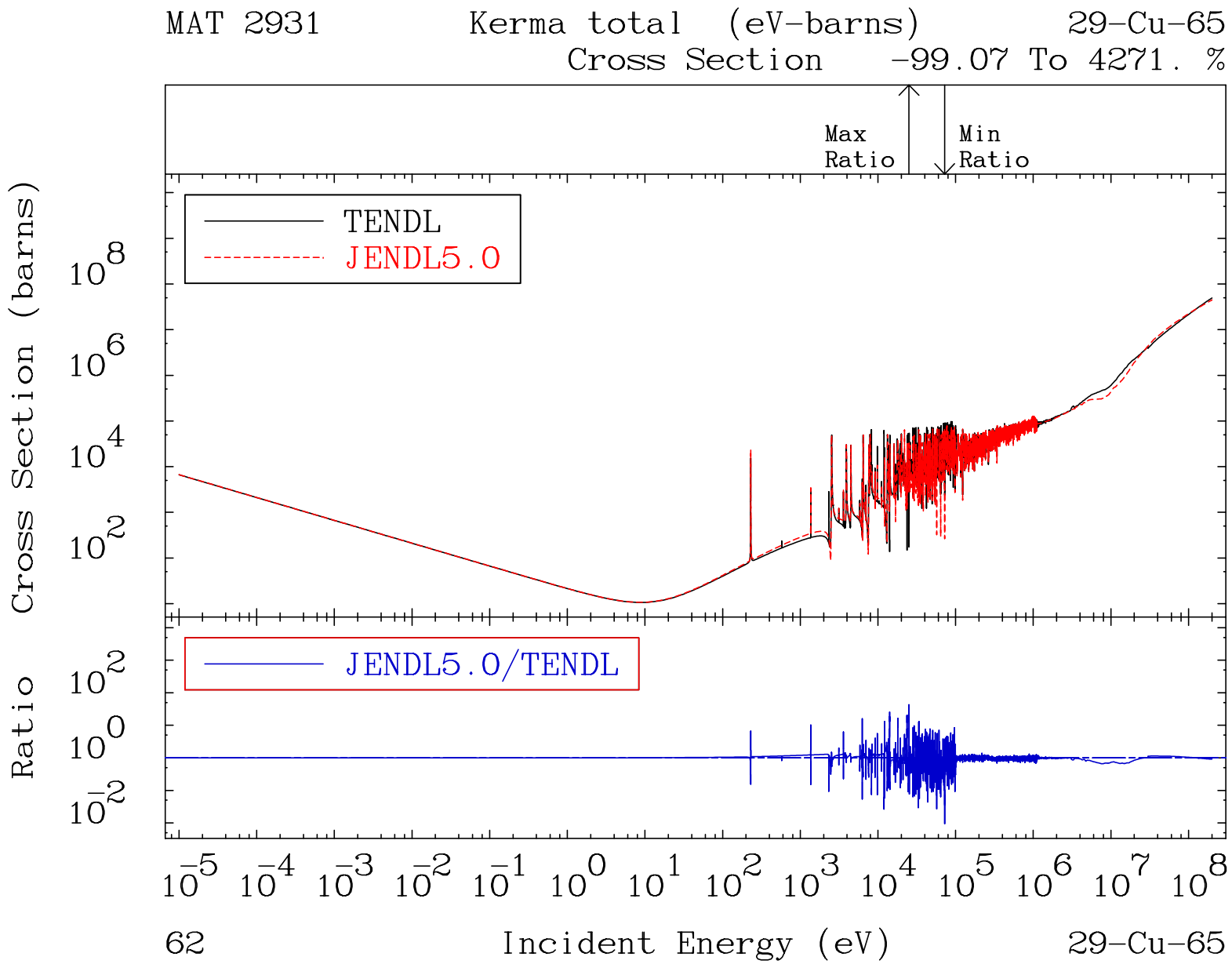

MAT 2931
Hydrogen Production
29-Cu-65
Cross Section
-100.0 To 4863. %
Max
Ratio
TENDL Threshold 1.3766 MeV
JENDL5.0 Threshold 1.3766 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.2
1.0
0.8
0.6
0.4
0.2
0.0
40
0
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
57
Incident Energy (eV)
29-Cu-65

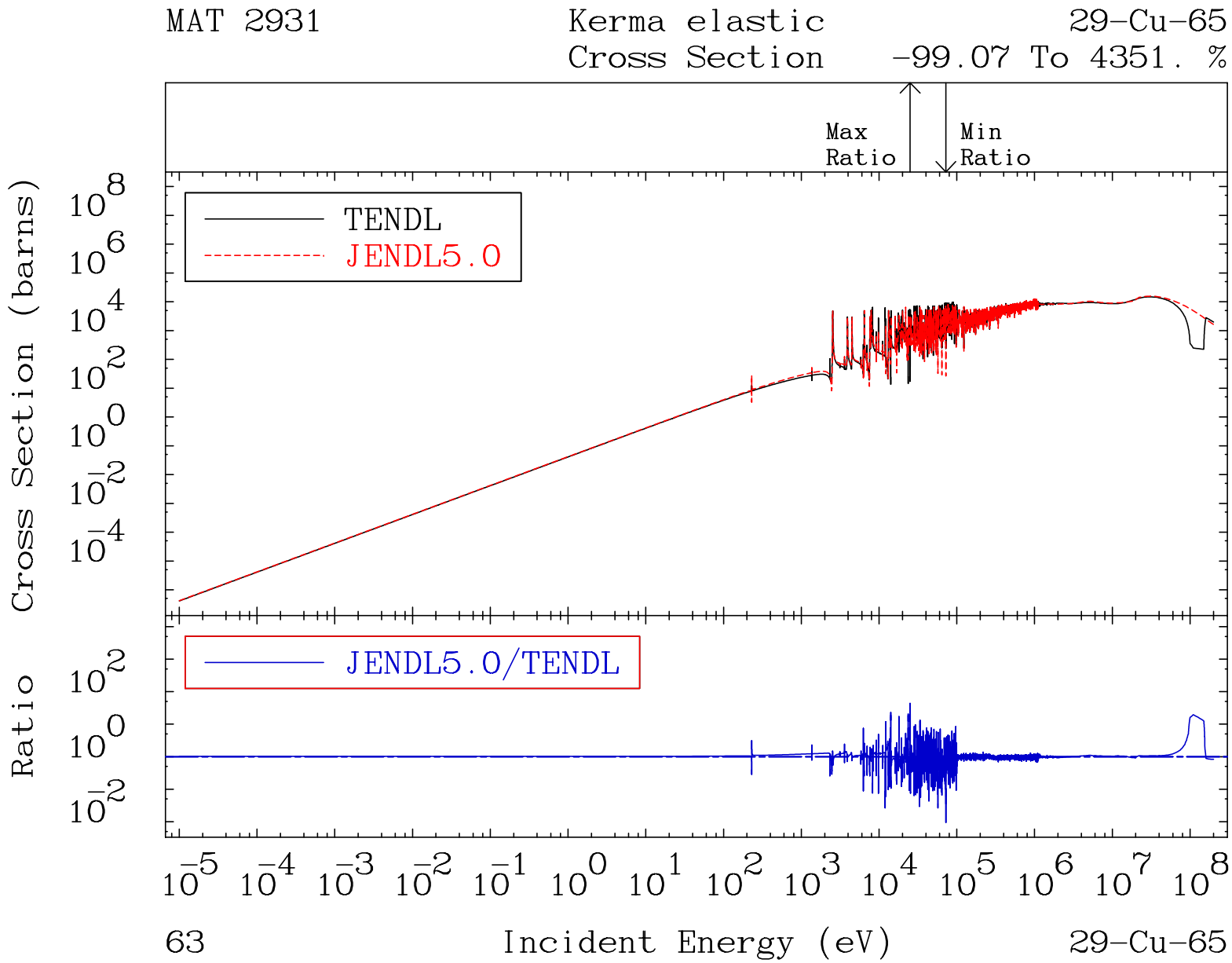

MAT 2931
Deuterium Production
29-Cu-65
Cross Section -100.0 To 9999. %
Max
Ratio
TENDL Threshold 5.3103 MeV
JENDL5.0 Threshold 5.3103 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
300
250
200
150
100
50
0
6
4
2
0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
58
Incident Energy (eV)
29-Cu-65

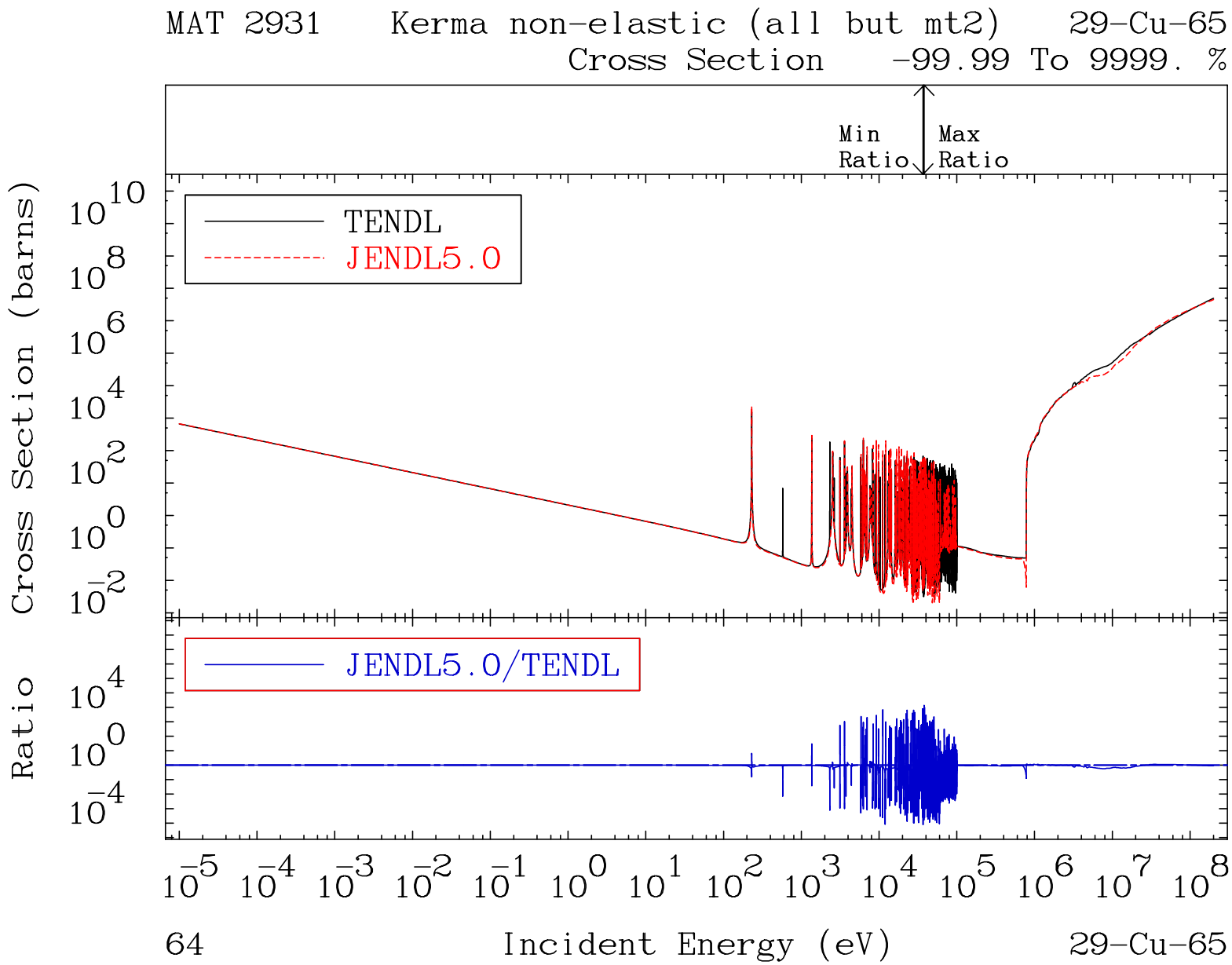

MAT 2931
Tritium Production
29-Cu-65
Cross Section
-100.0 To 423.3 %
Max
Ratio
TENDL Threshold 8.7633 MeV
JENDL5.0 Threshold 8.7633 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
8
4
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
59
Incident Energy (eV)
29-Cu-65

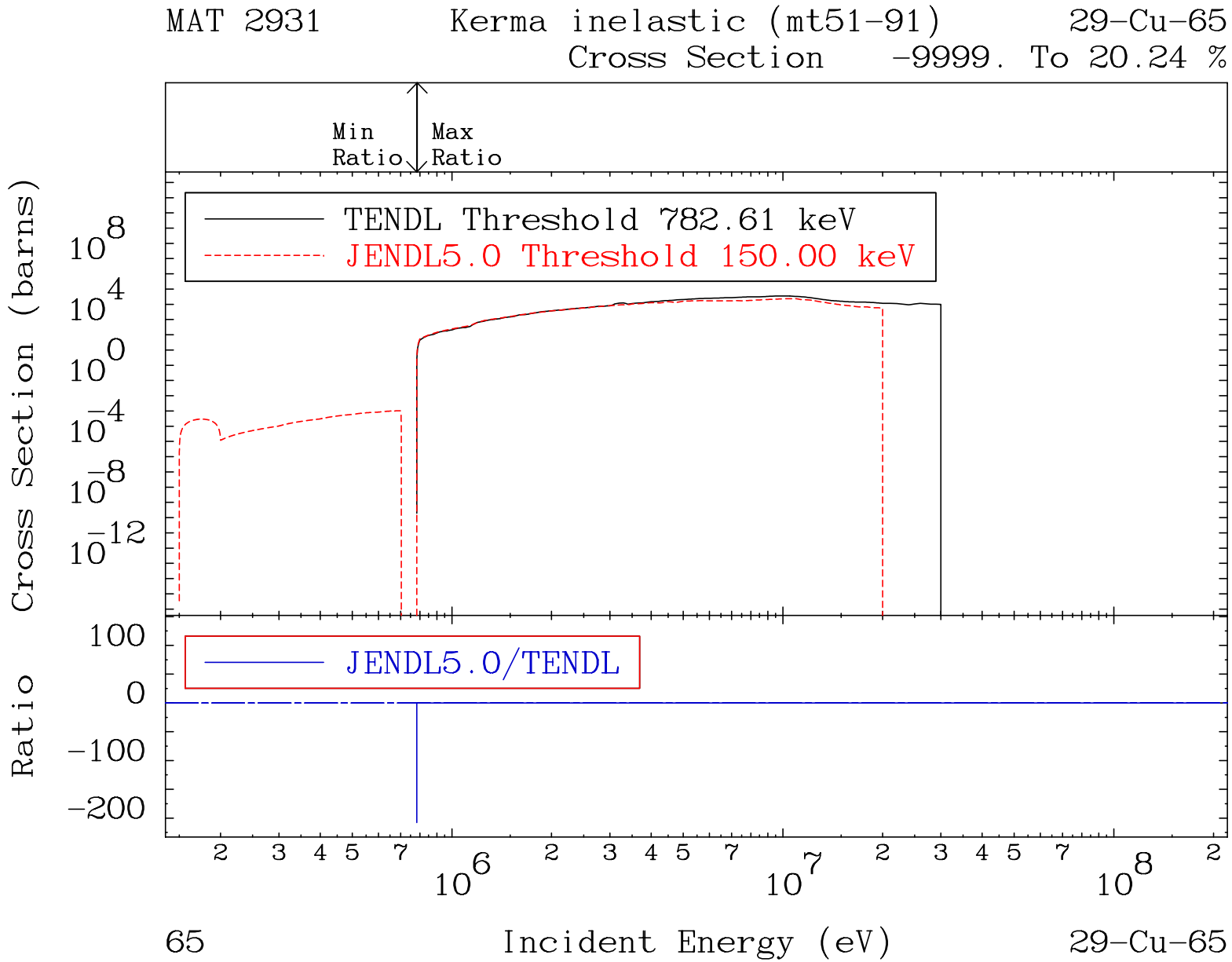

MAT 2931
He-3 Production
Cross Section
29-Cu-65
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 12.463 MeV
JENDL5.0 Threshold 12.463 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
20
10
0
2
3
4
5
6
7
8
9
2
10^8
60
Incident Energy (eV)
29-Cu-65

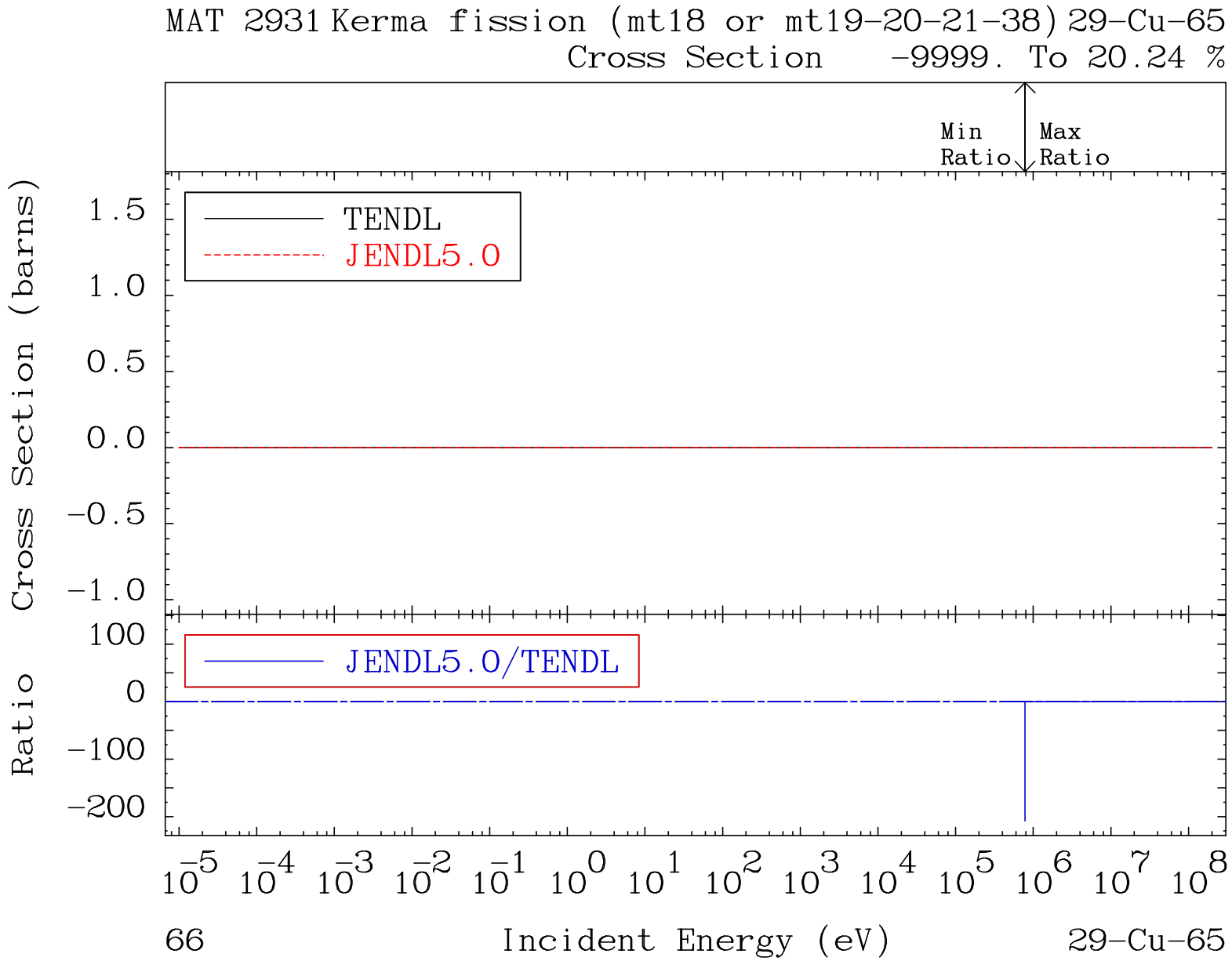

MAT 2931
He-4 Production
Cross Section
29-Cu-65
-100.0 To 981.0 %
Min Ratio
Max Ratio
TENDL Threshold 195.87 keV
JENDL5.0 Threshold 800.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
12
6
0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
61
Incident Energy (eV)
29-Cu-65

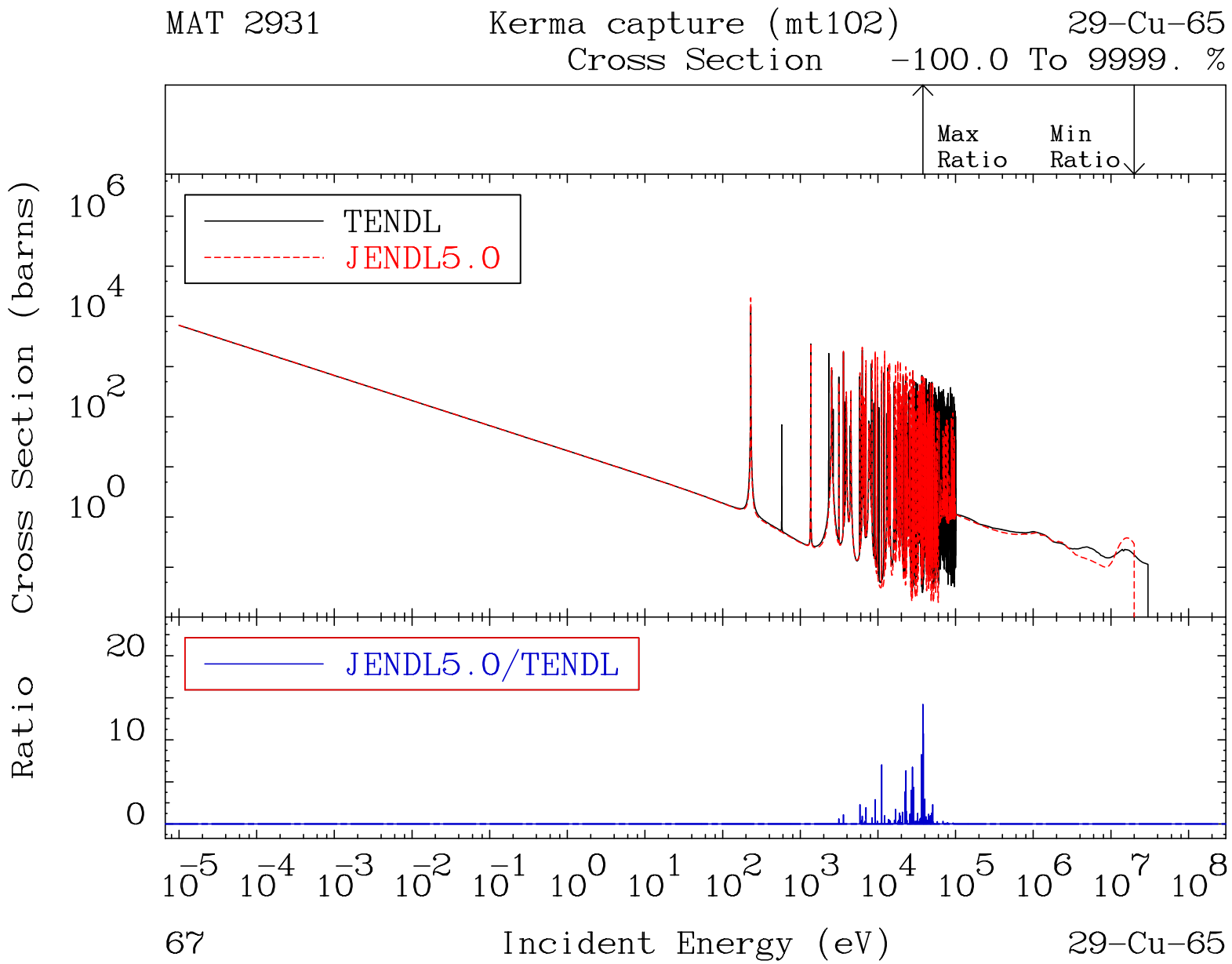

MAT 2931
Kerma total (eV-barns)
29-Cu-65
Cross Section -99.07 To 4271. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
Ratio
JENDL5.0/TENDL
Incident Energy (eV)
62
29-Cu-65

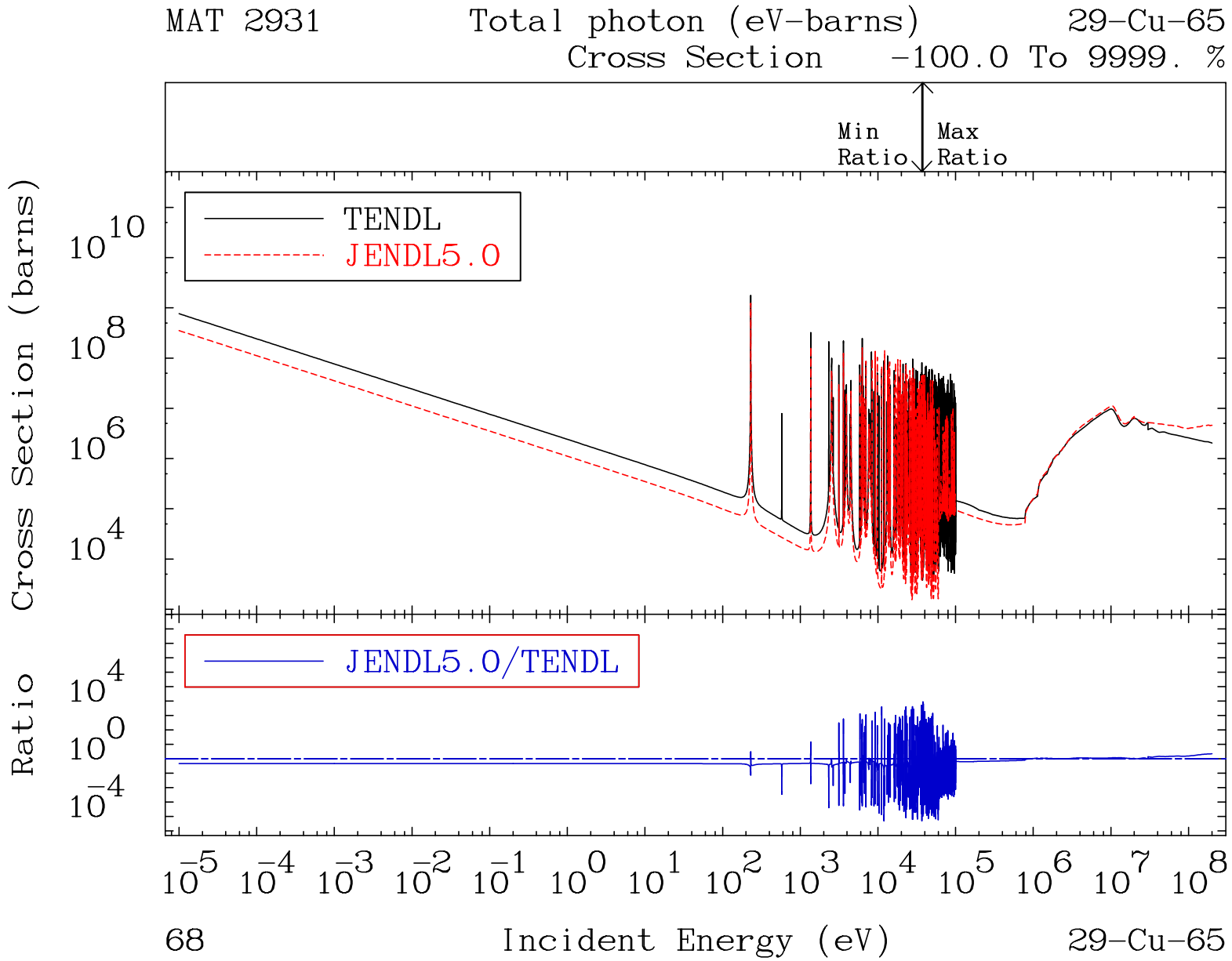

MAT 2931
Kerma elastic
Cross Section
29-Cu-65
-99.07 To 4351. %
Max
Ratio
Min
Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
63
29-Cu-65

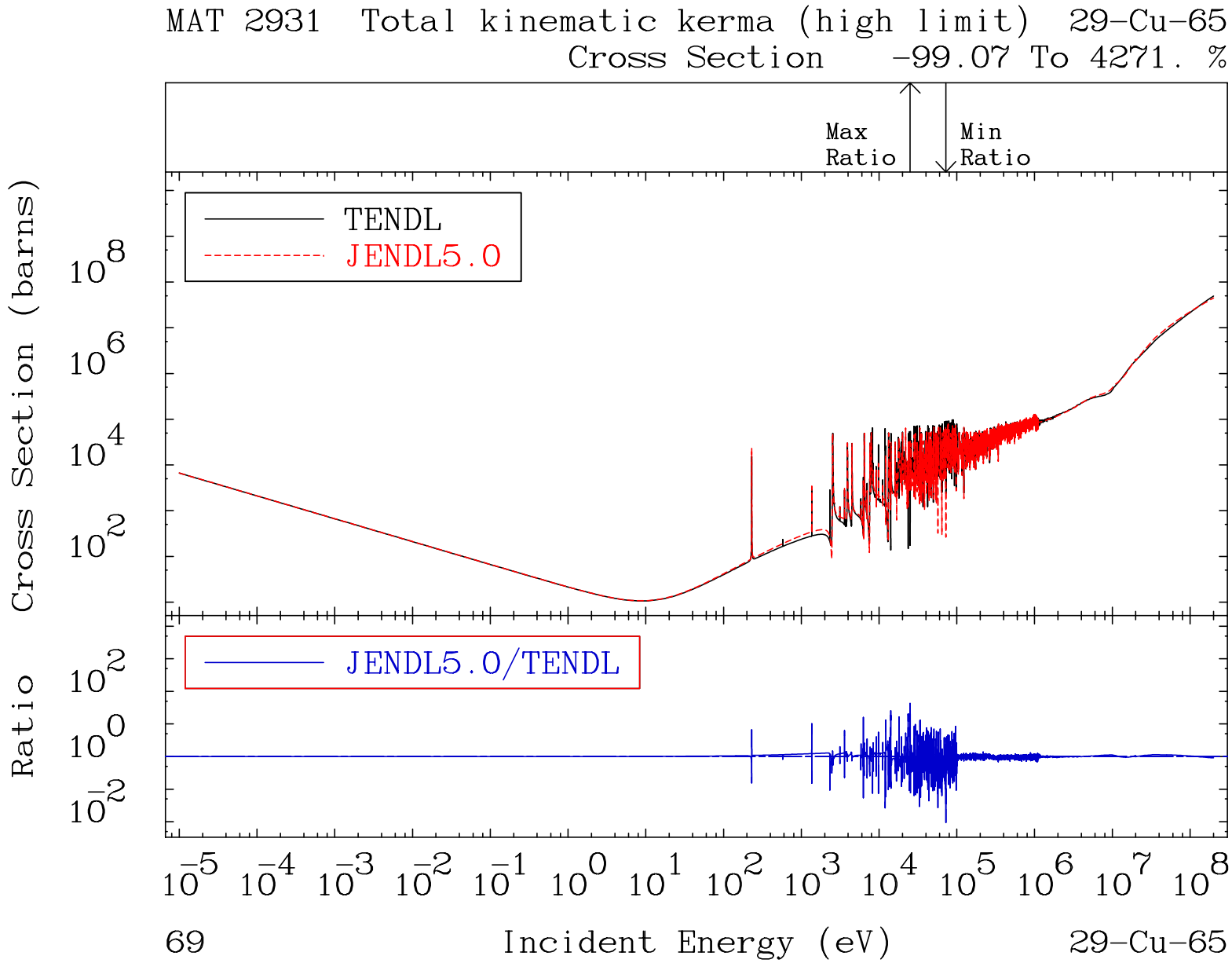

MAT 2931 Kerma non-elastic (all but mt2) 29-Cu-65
Cross Section -99.99 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
64
29-Cu-65

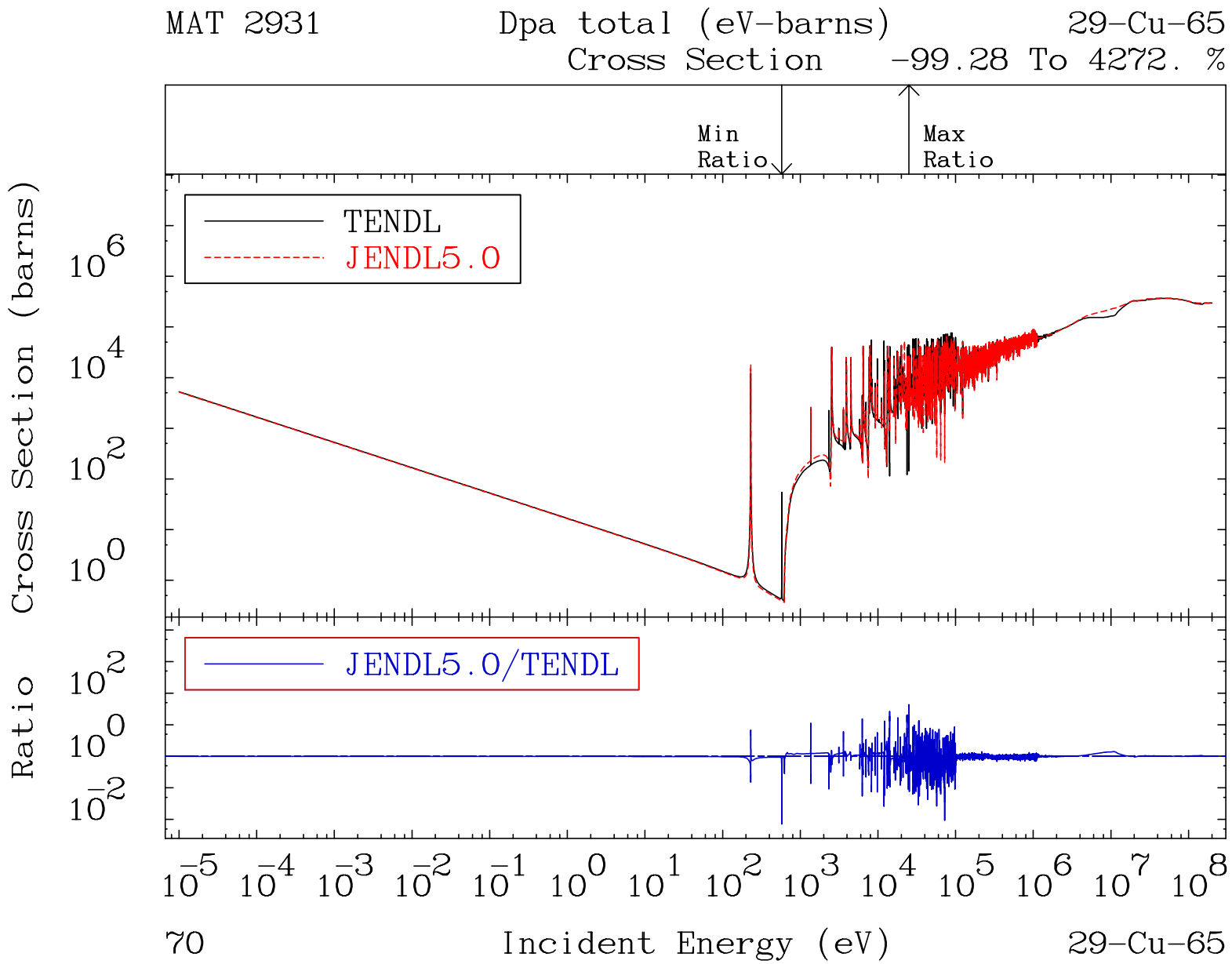

MAT 2931
Kerma inelastic (mt51-91)
29-Cu-65
Cross Section -9999. To 20.24 %
Min Ratio
Max Ratio
TENDL Threshold 782.61 keV
JENDL5.0 Threshold 150.00 keV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
65
29-Cu-65

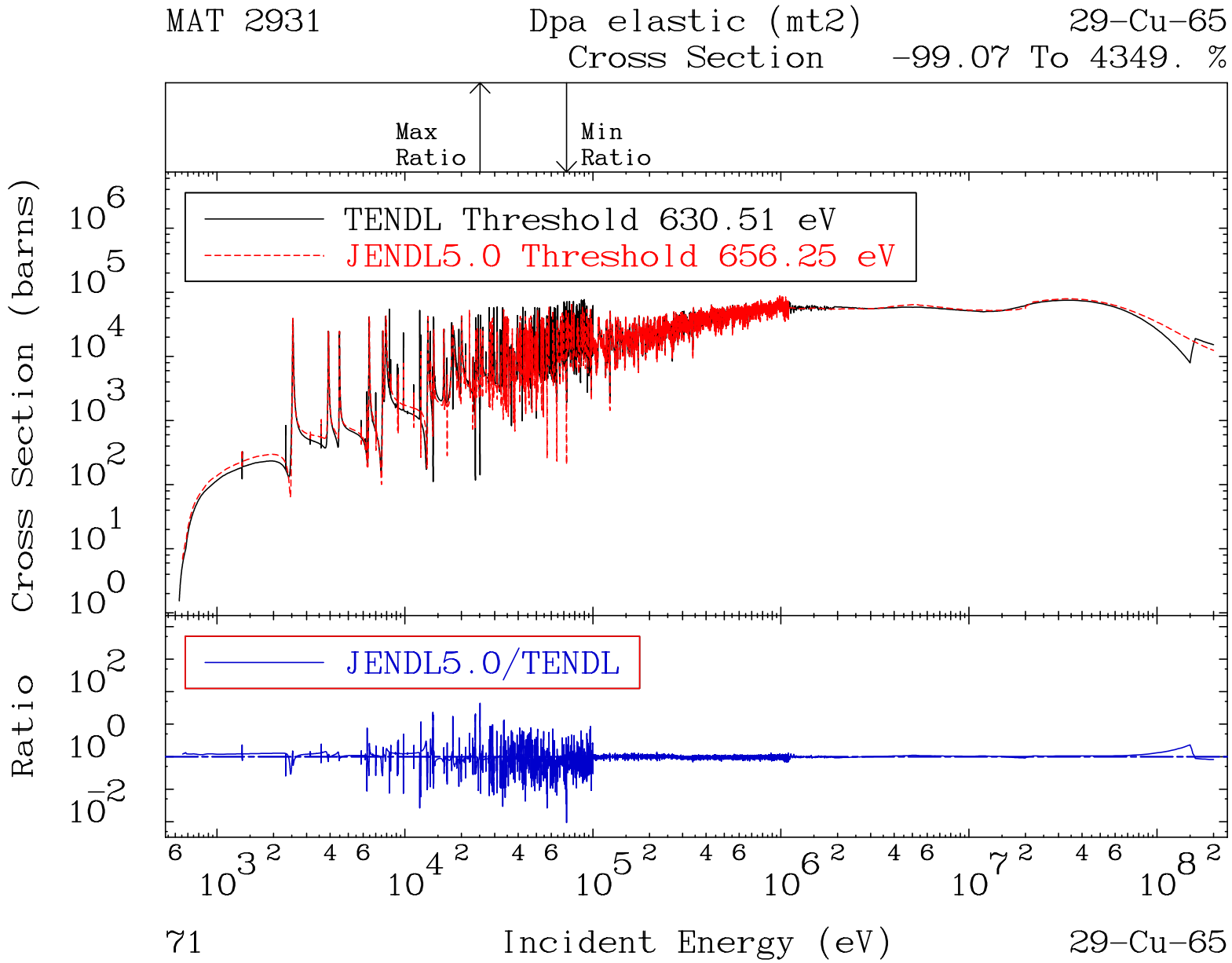

MAT 2931 Kerma fission (mt18 or mt19-20-21-38) 29-Cu-65
Cross Section -9999. To 20.24 %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
100
0
-100
-200
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
66
Incident Energy (eV)
29-Cu-65

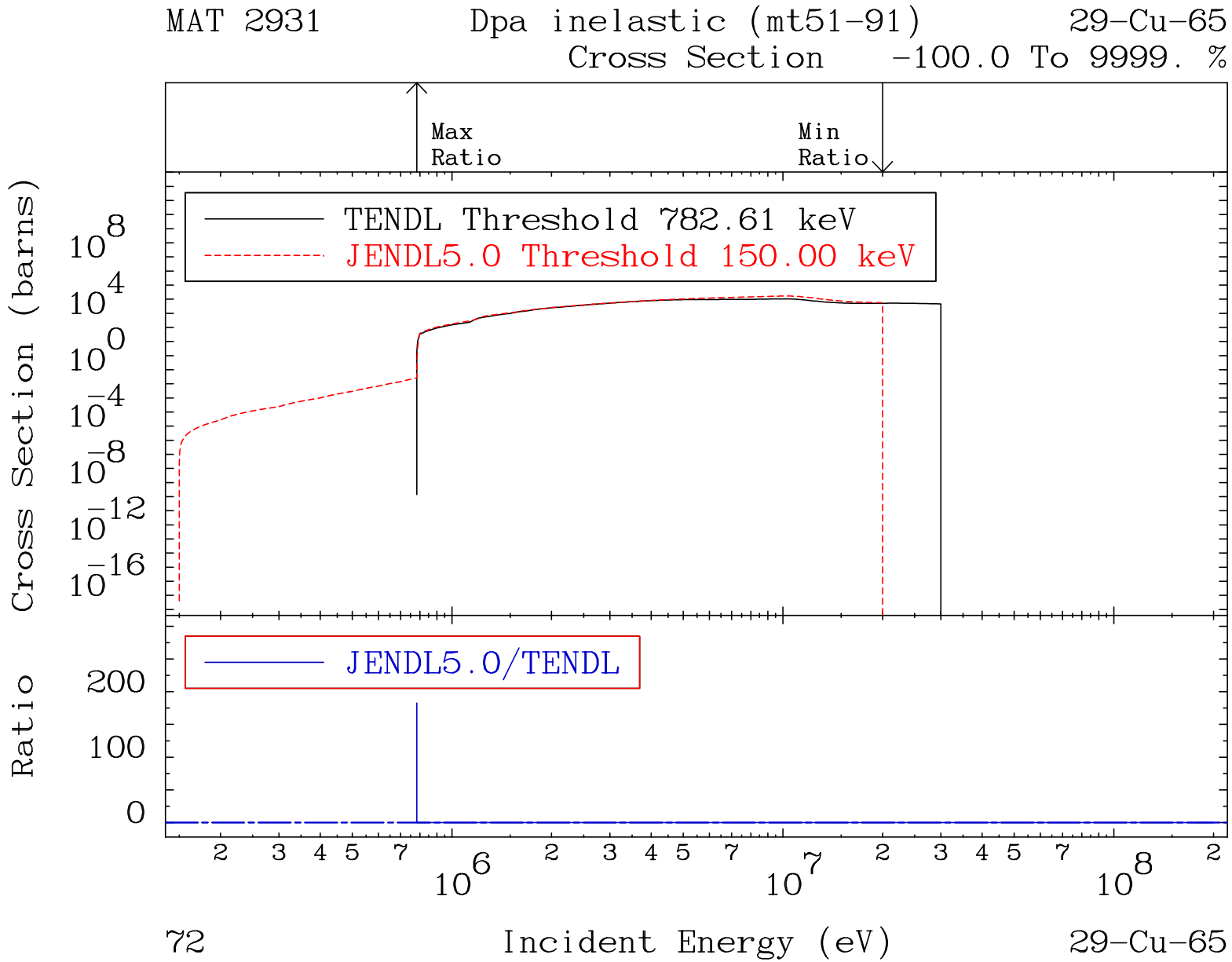

MAT 2931
Kerma capture (mt102)
29-Cu-65
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
67
29-Cu-65

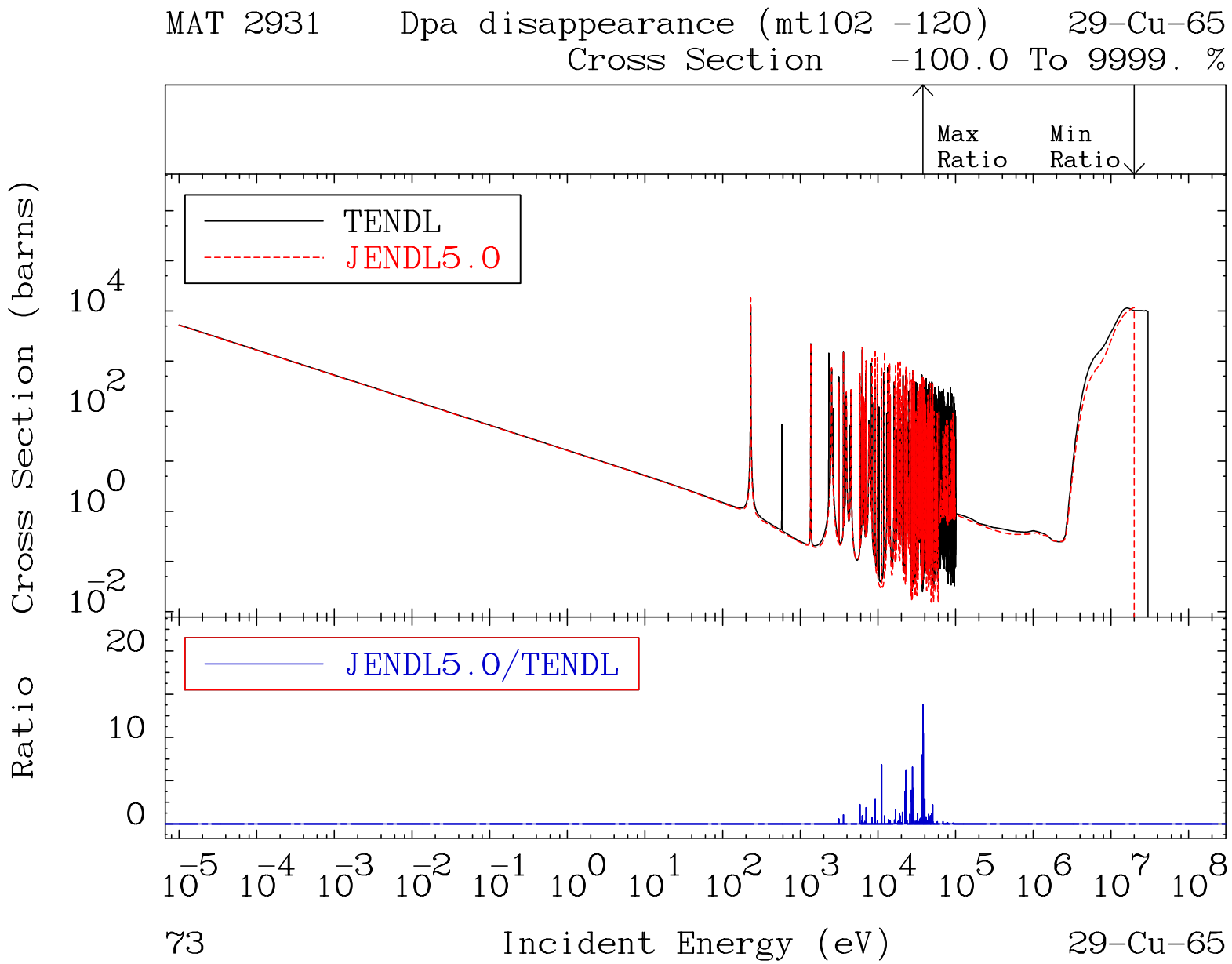

MAT 2931
Total photon (eV-barns)
29-Cu-65
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
68
29-Cu-65

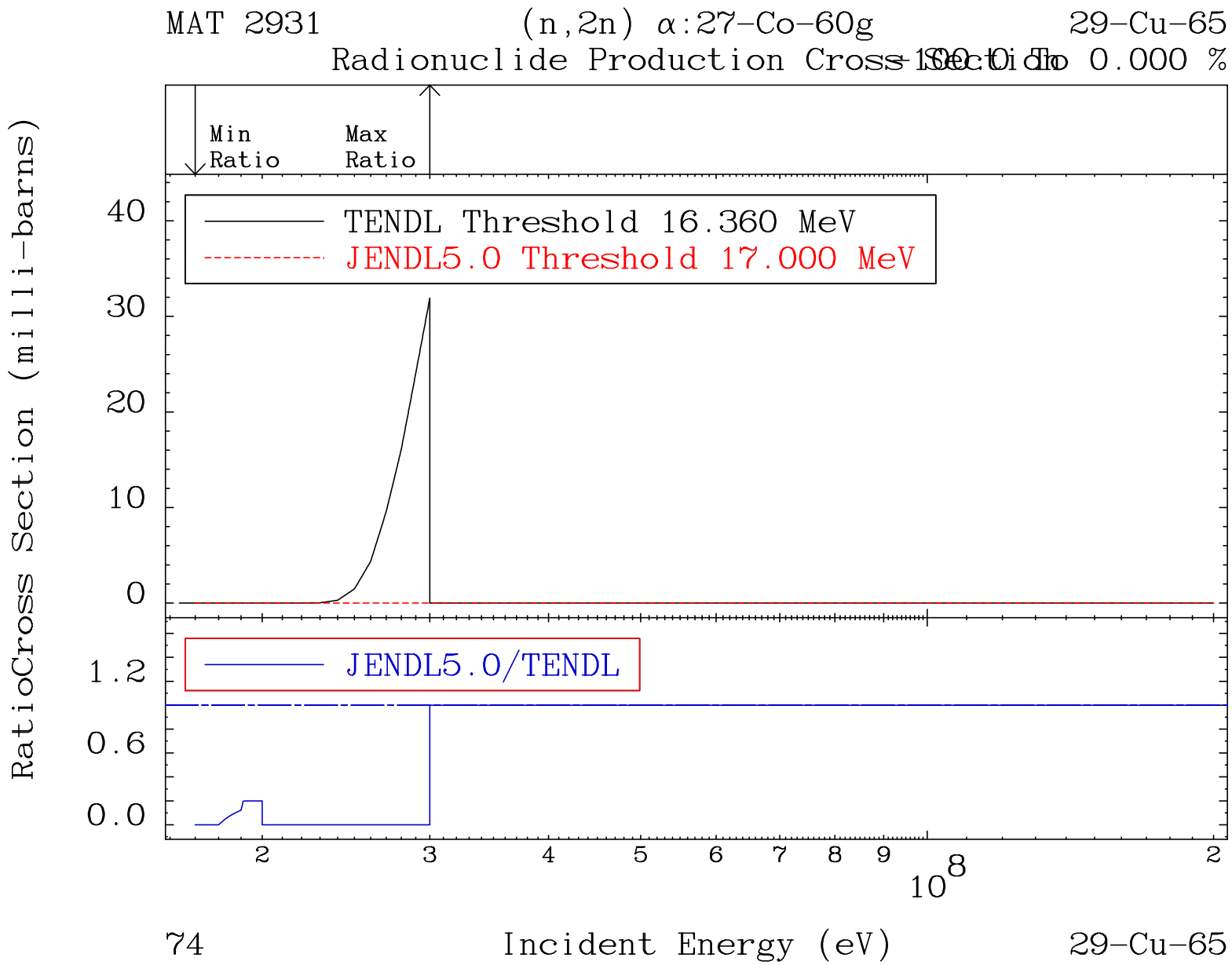

MAT 2931 Total kinematic kerma (high limit) 29-Cu-65
Cross Section -99.07 To 4271. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
Ratio
JENDL5.0/TENDL
Incident Energy (eV)
69
29-Cu-65

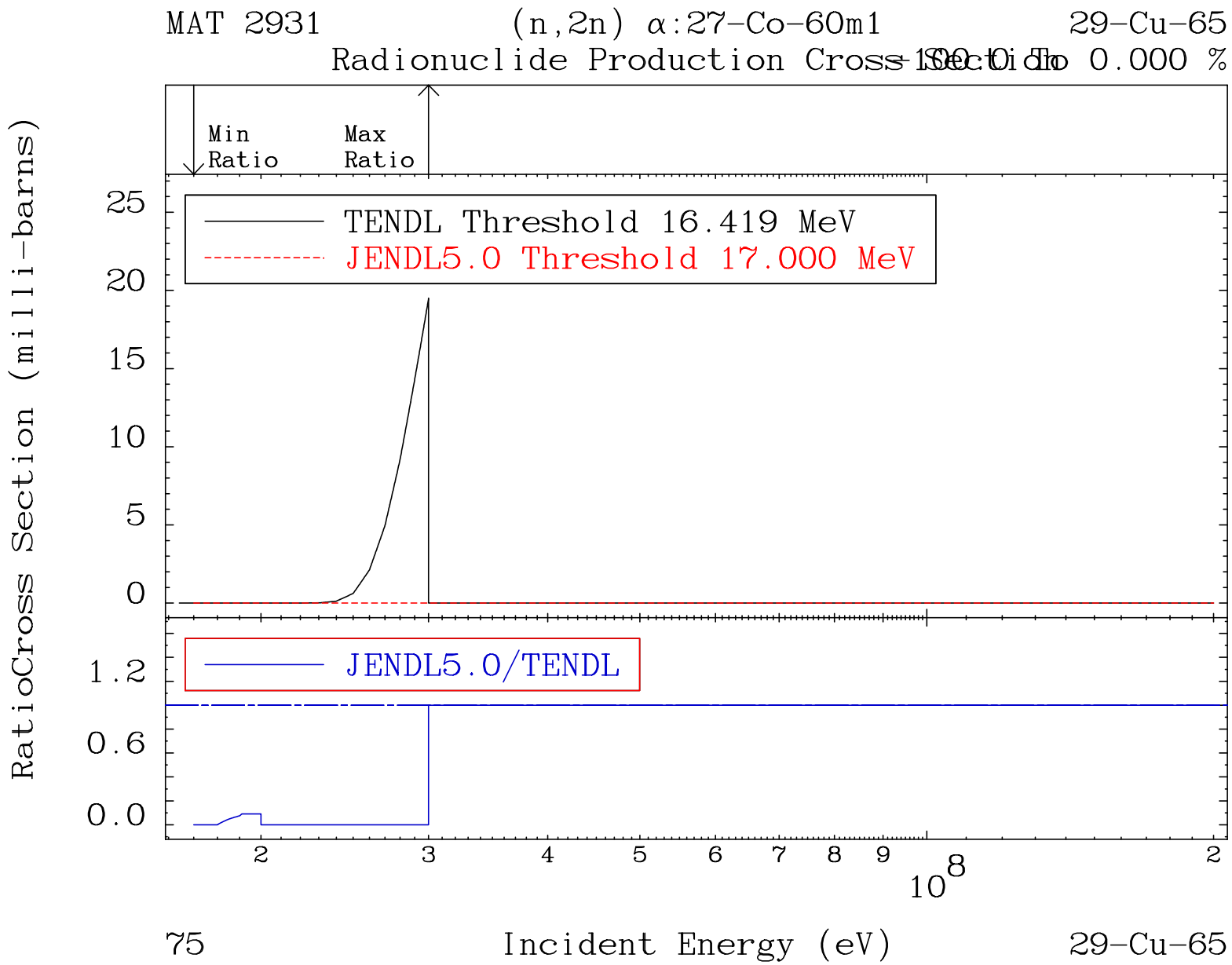

MAT 2931
Dpa total (eV-barns)
29-Cu-65
Cross Section -99.28 To 4272. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
70
29-Cu-65

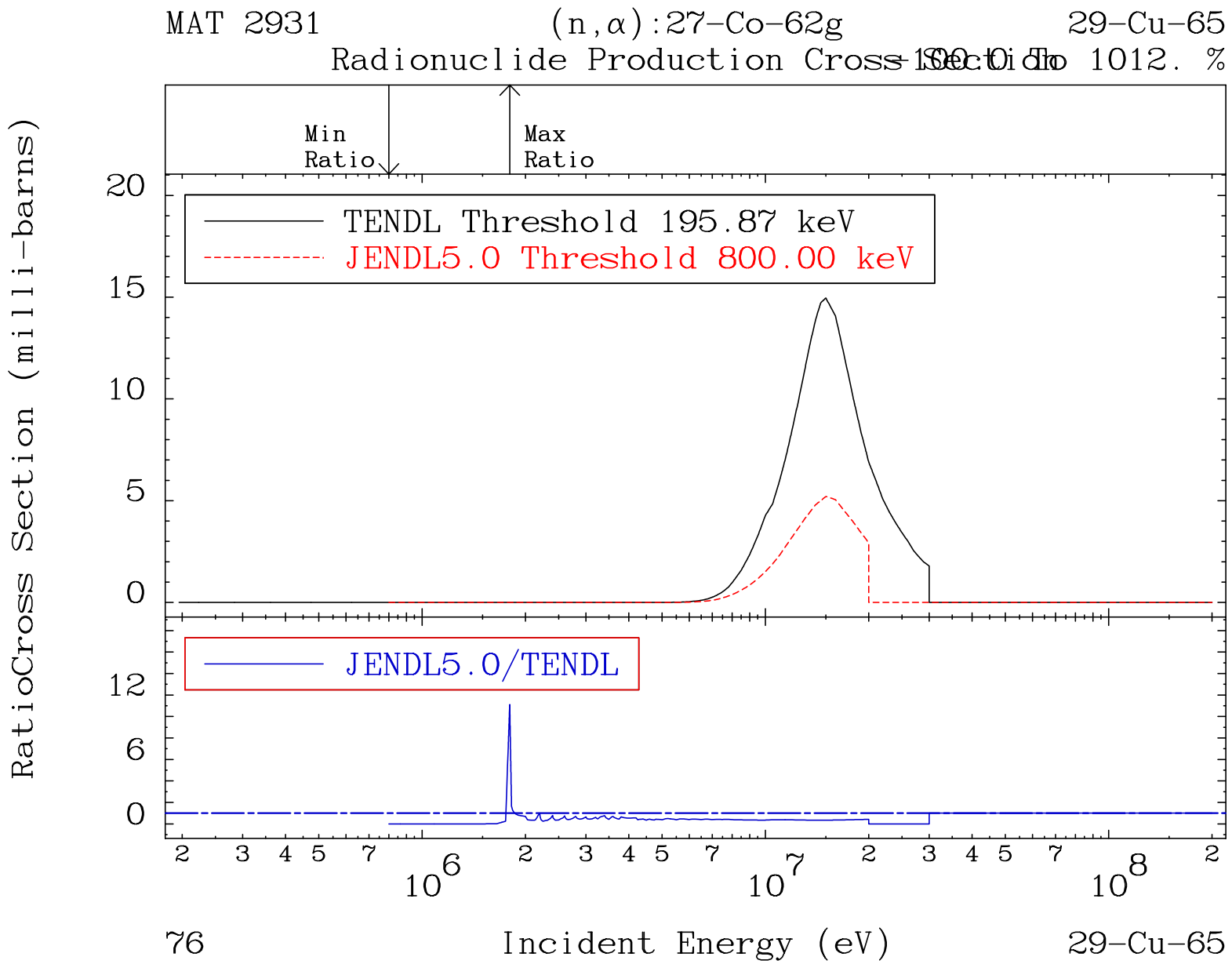

MAT 2931
Dpa elastic (mt2)
Cross Section
29-Cu-65
-99.07 To 4349. %
Max Ratio
Min Ratio
TENDL Threshold 630.51 eV
JENDL5.0 Threshold 656.25 eV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
71
29-Cu-65

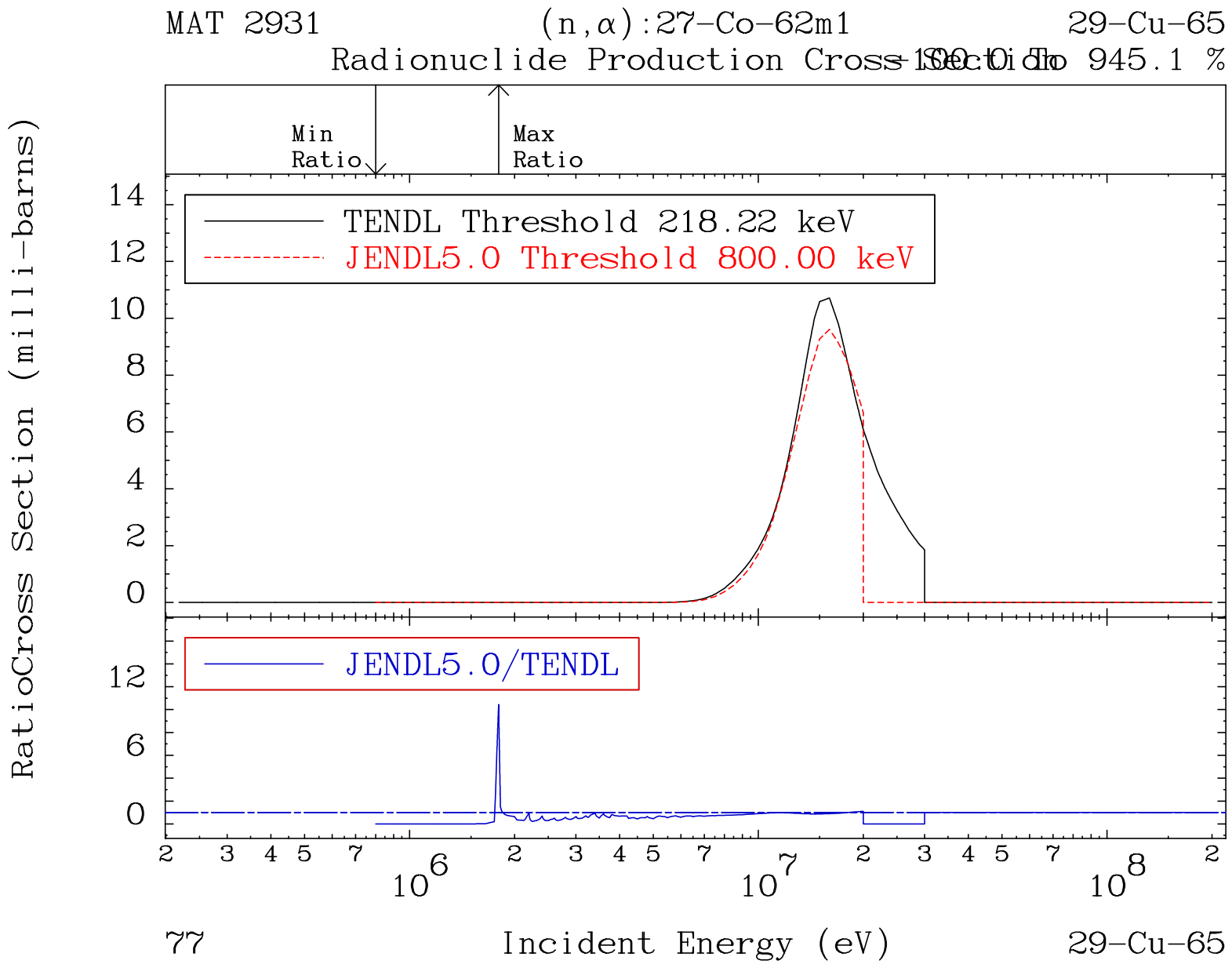

MAT 2931
Dpa inelastic (mt51-91)
29-Cu-65
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 782.61 keV
JENDL5.0 Threshold 150.00 keV
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
72
29-Cu-65

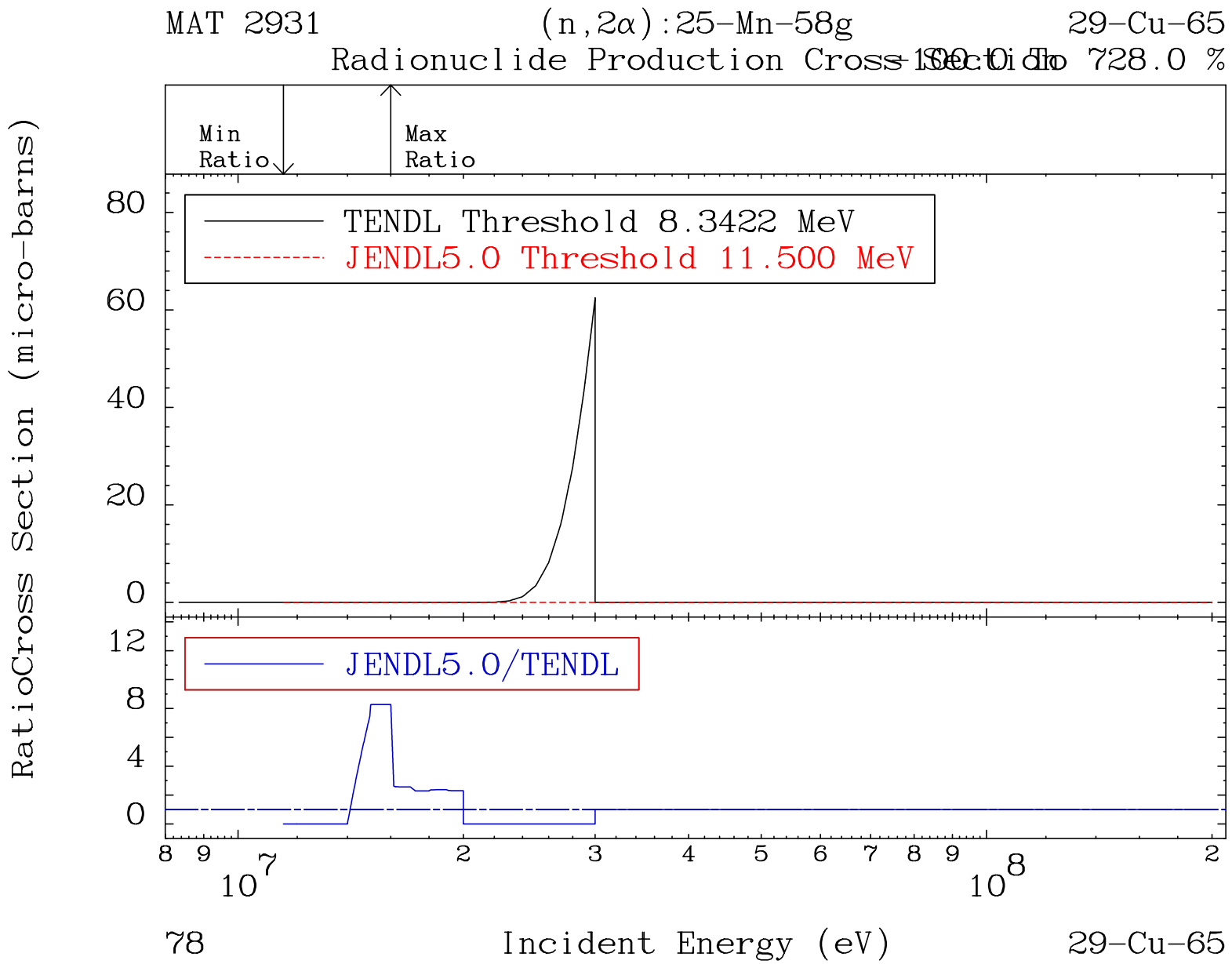

MAT 2931 Dpa disappearance (mt102 -120) 29-Cu-65
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
73
29-Cu-65

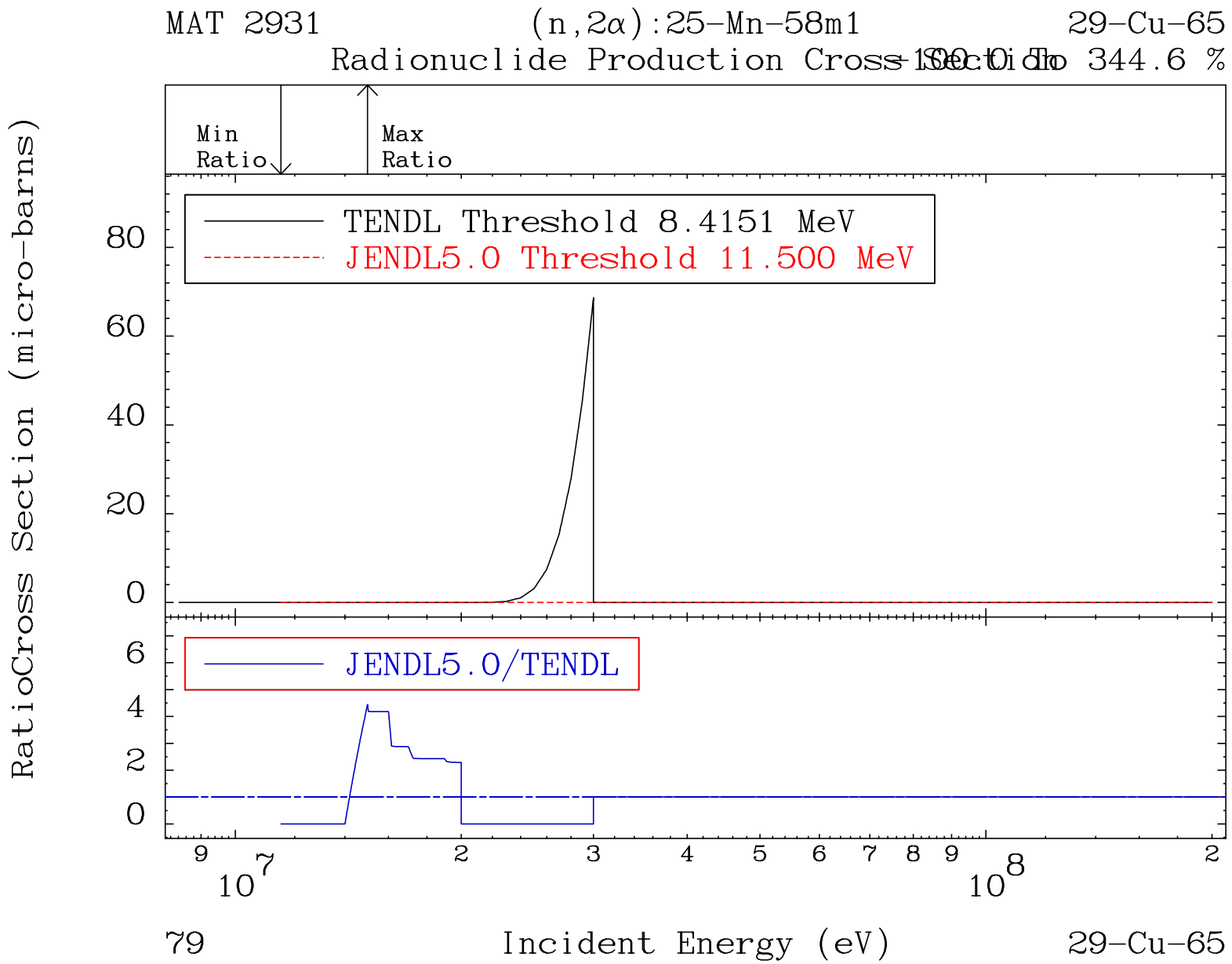

MAT 2931
(n,2n) α:27-Co-60g
29-Cu-65
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 16.360 MeV
JENDL5.0 Threshold 17.000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
40
30
20
10
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
74
Incident Energy (eV)
29-Cu-65


MAT 2931
(n,2n) α:27-Co-60m1
29-Cu-65
Radionuclide Production Cross Section To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 16.419 MeV
JENDL5.0 Threshold 17.000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
2
10^8
75
Incident Energy (eV)
29-Cu-65


MAT 2931
(n,α):27-Co-62g
29-Cu-65
Radionuclide Production Cross Section To 1012. %
Min Ratio
Max Ratio
TENDL Threshold 195.87 keV
JENDL5.0 Threshold 800.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
76
29-Cu-65


MAT 2931
(n,α):27-Co-62m1
29-Cu-65
Radionuclide Production Cross Section To 945.1 %
Min Ratio
Max Ratio
TENDL Threshold 218.22 keV
JENDL5.0 Threshold 800.00 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
77
29-Cu-65


MAT 2931
(n,2α):25-Mn-58g
29-Cu-65
Radionuclide Production Cross Section To 728.0 %
Min Ratio
Max Ratio
TENDL Threshold 8.3422 MeV
JENDL5.0 Threshold 11.500 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
78
29-Cu-65


MAT 2931
(n,2α):25-Mn-58m1
29-Cu-65
Radionuclide Production Cross Section To 344.6 %
Min Ratio
Max Ratio
TENDL Threshold 8.4151 MeV
JENDL5.0 Threshold 11.500 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
79
29-Cu-65