Program Complot
(Version 2021-1)
by
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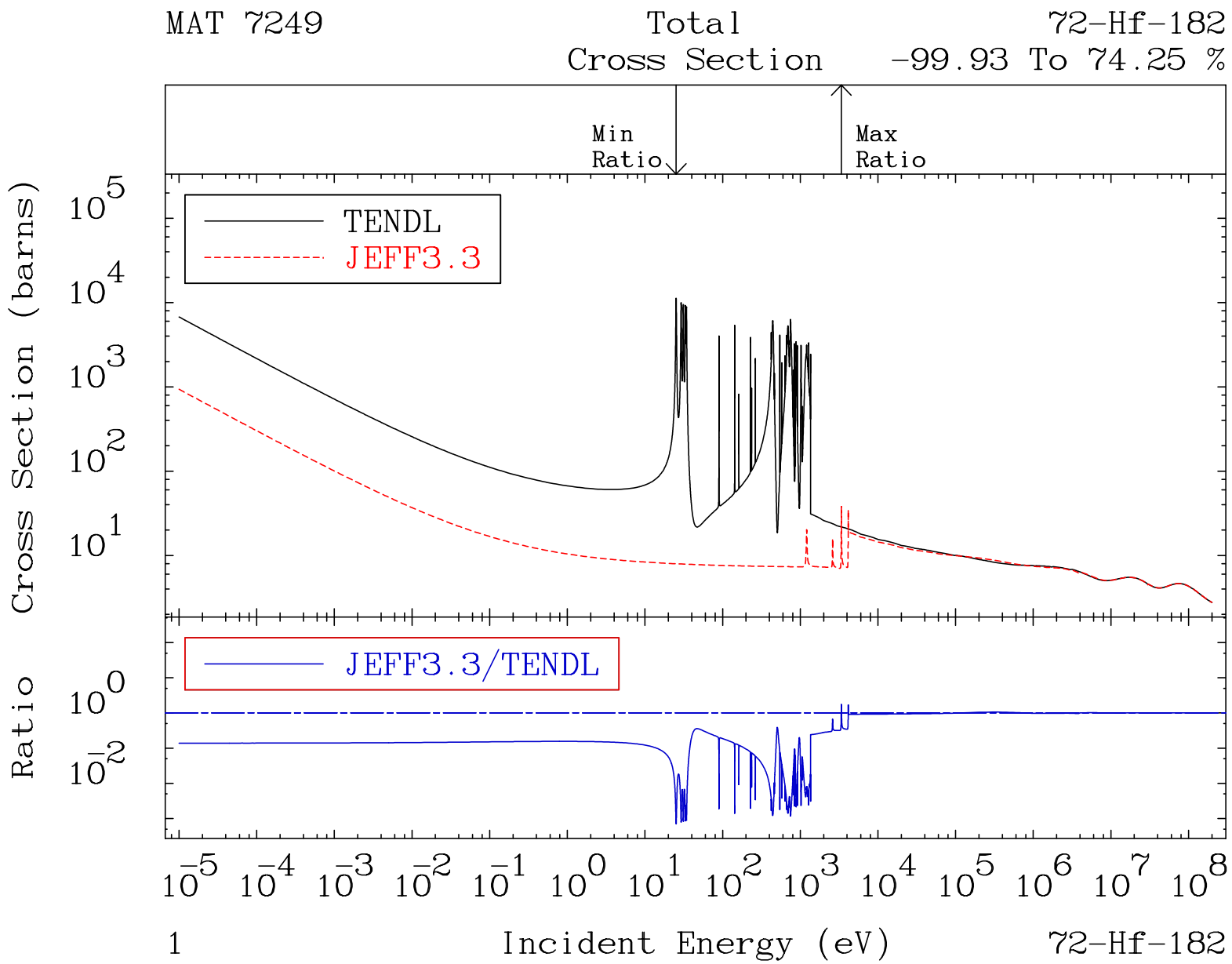
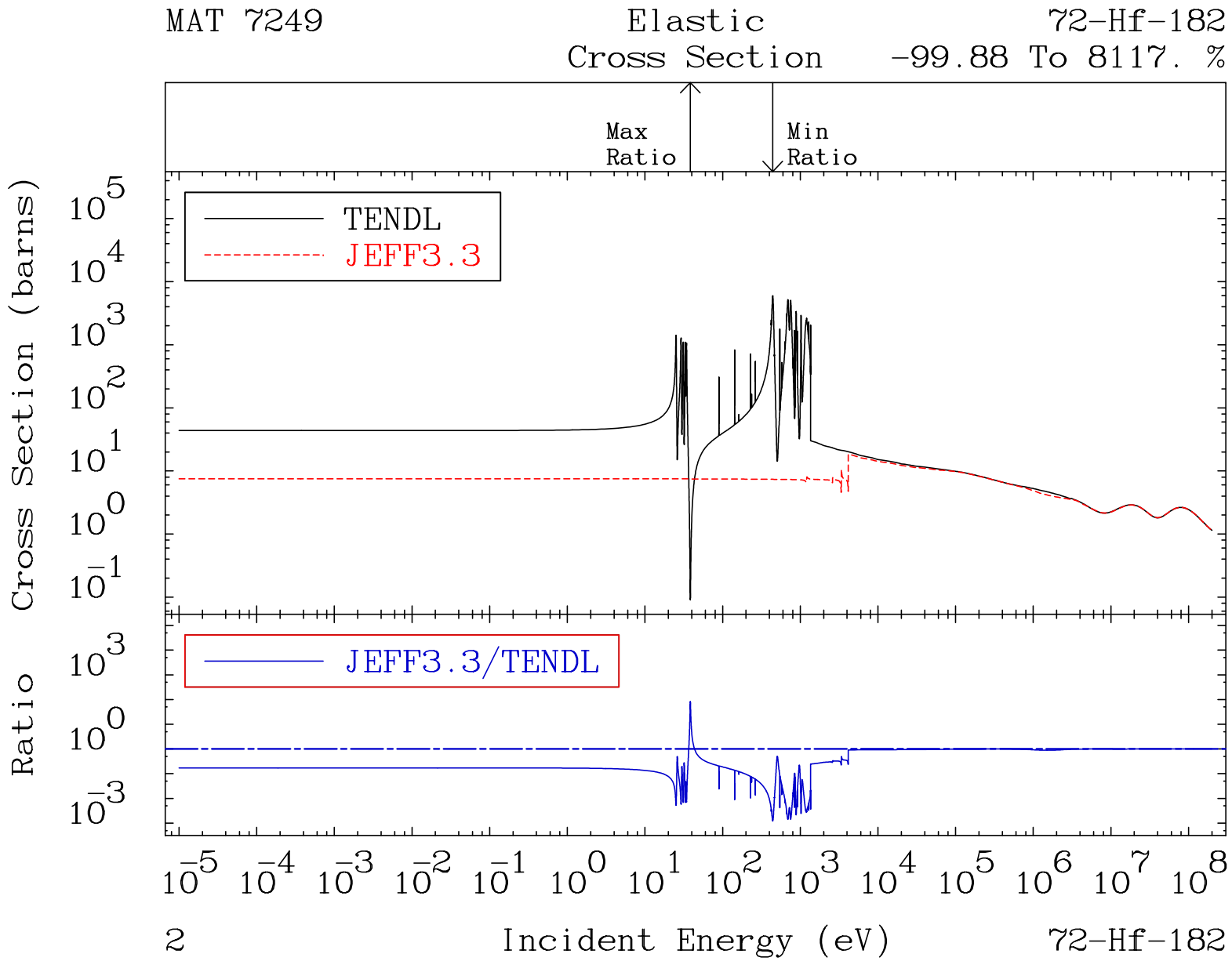
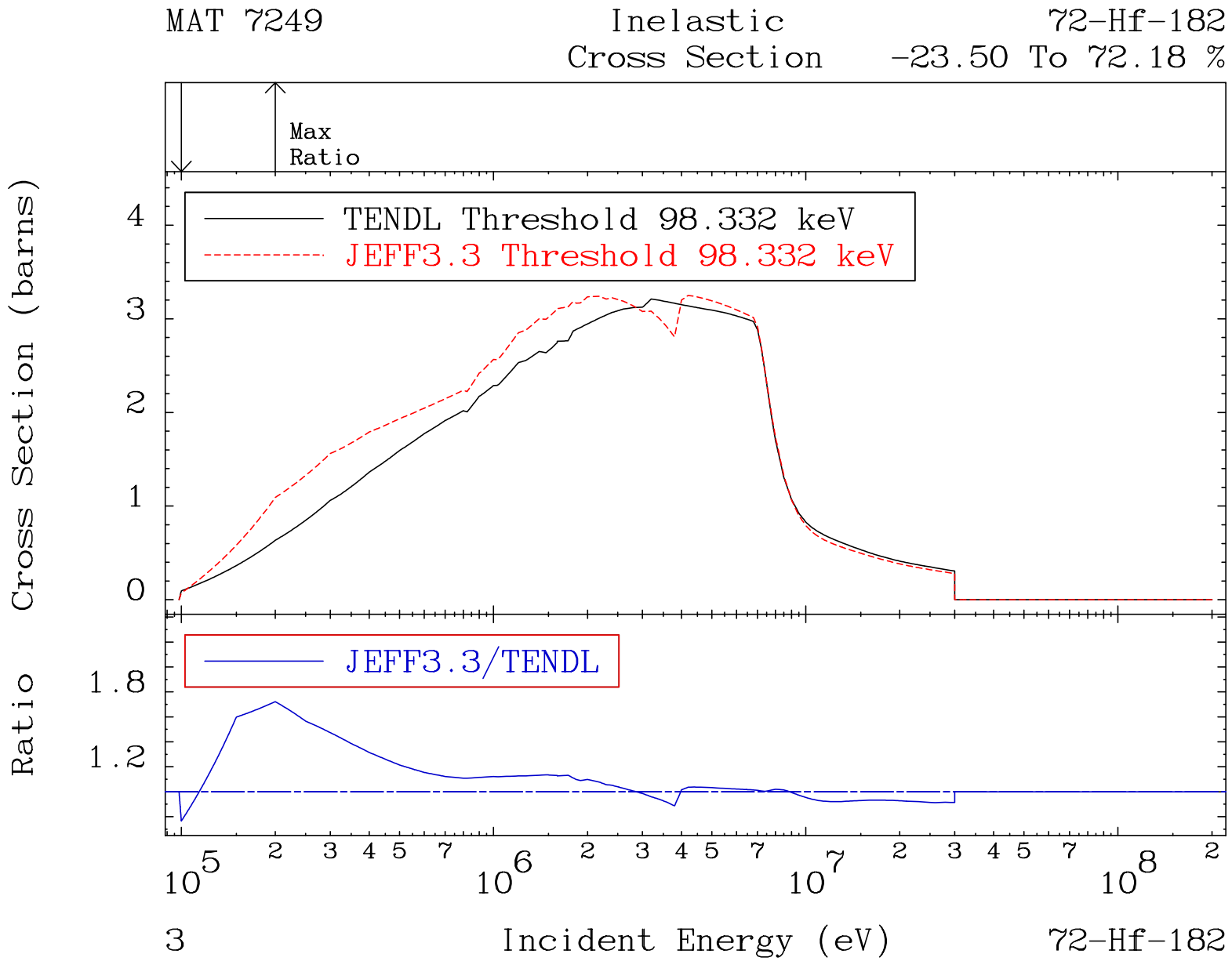
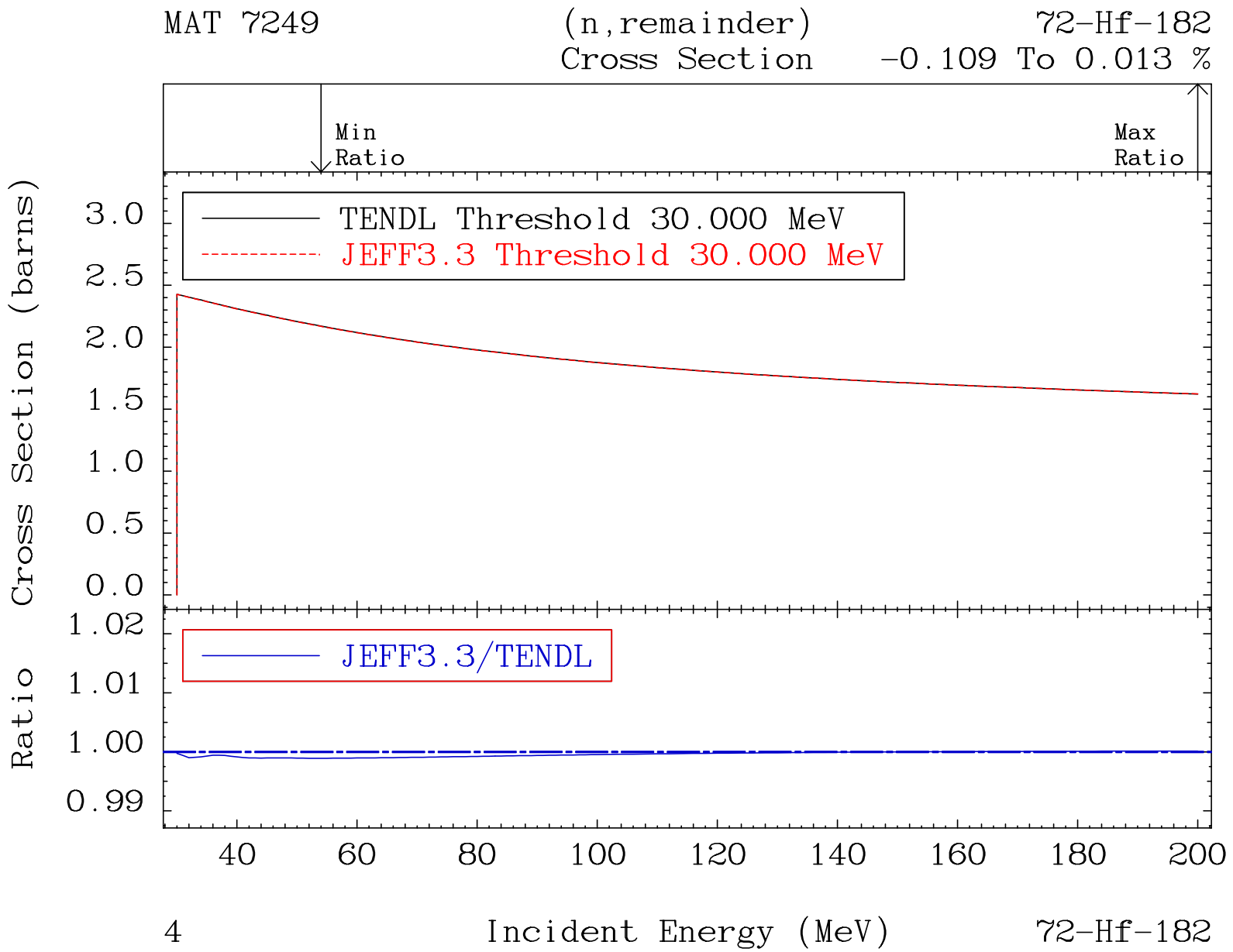
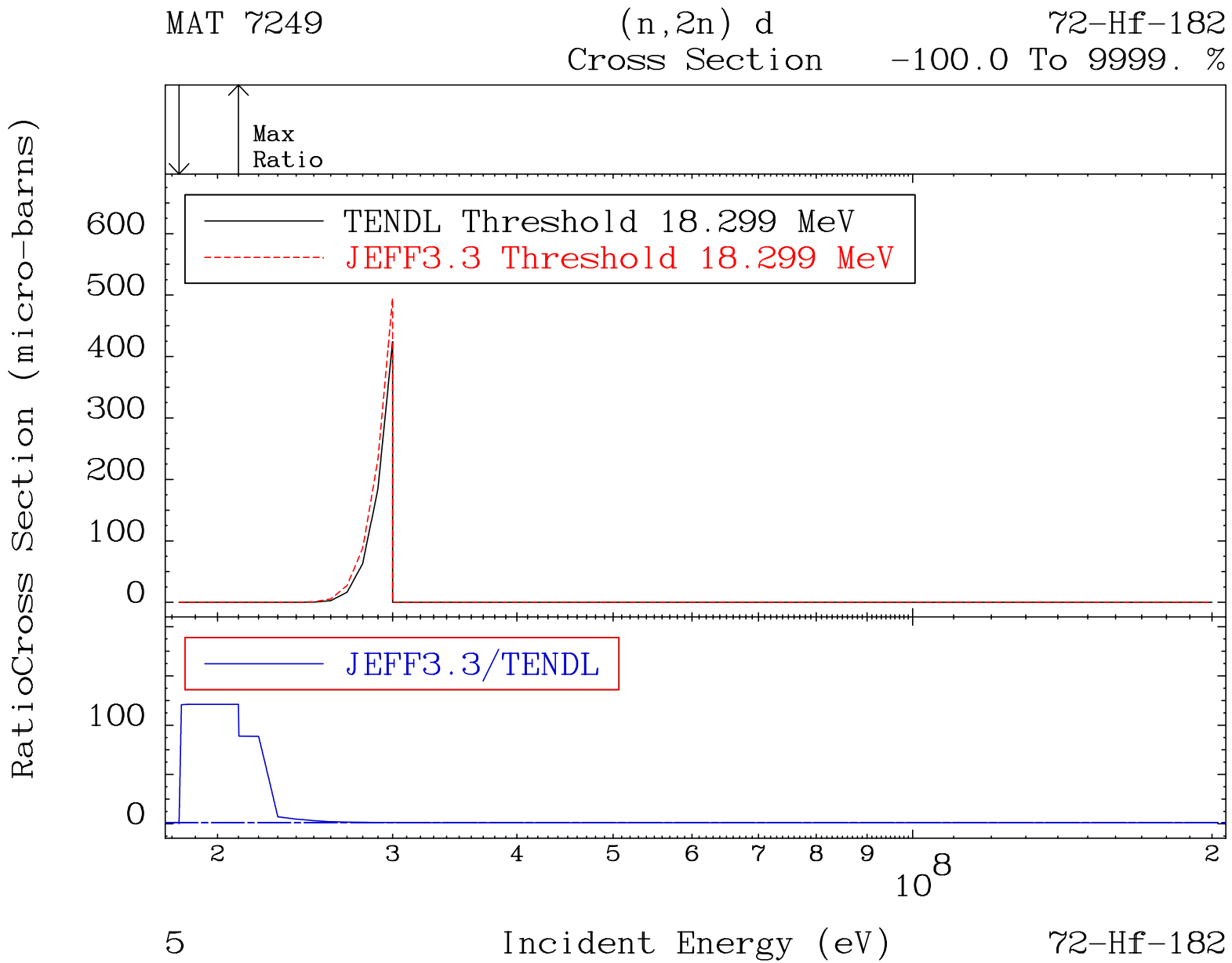
Press Mouse Button to Start

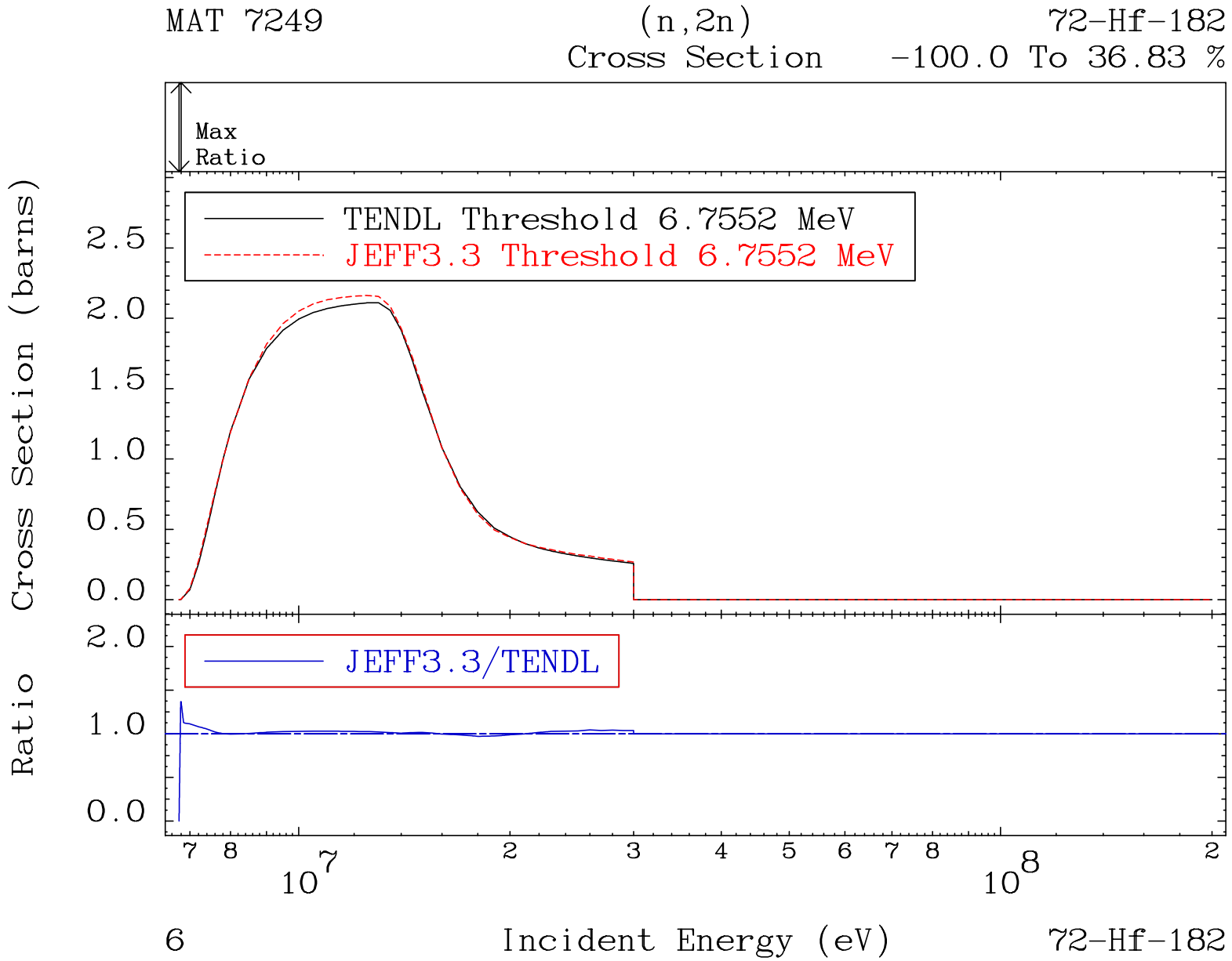

MAT 7249
Total
Cross Section
72-Hf-182
-99.93 To 74.25 %
Min
Ratio
Max
Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
1
72-Hf-182

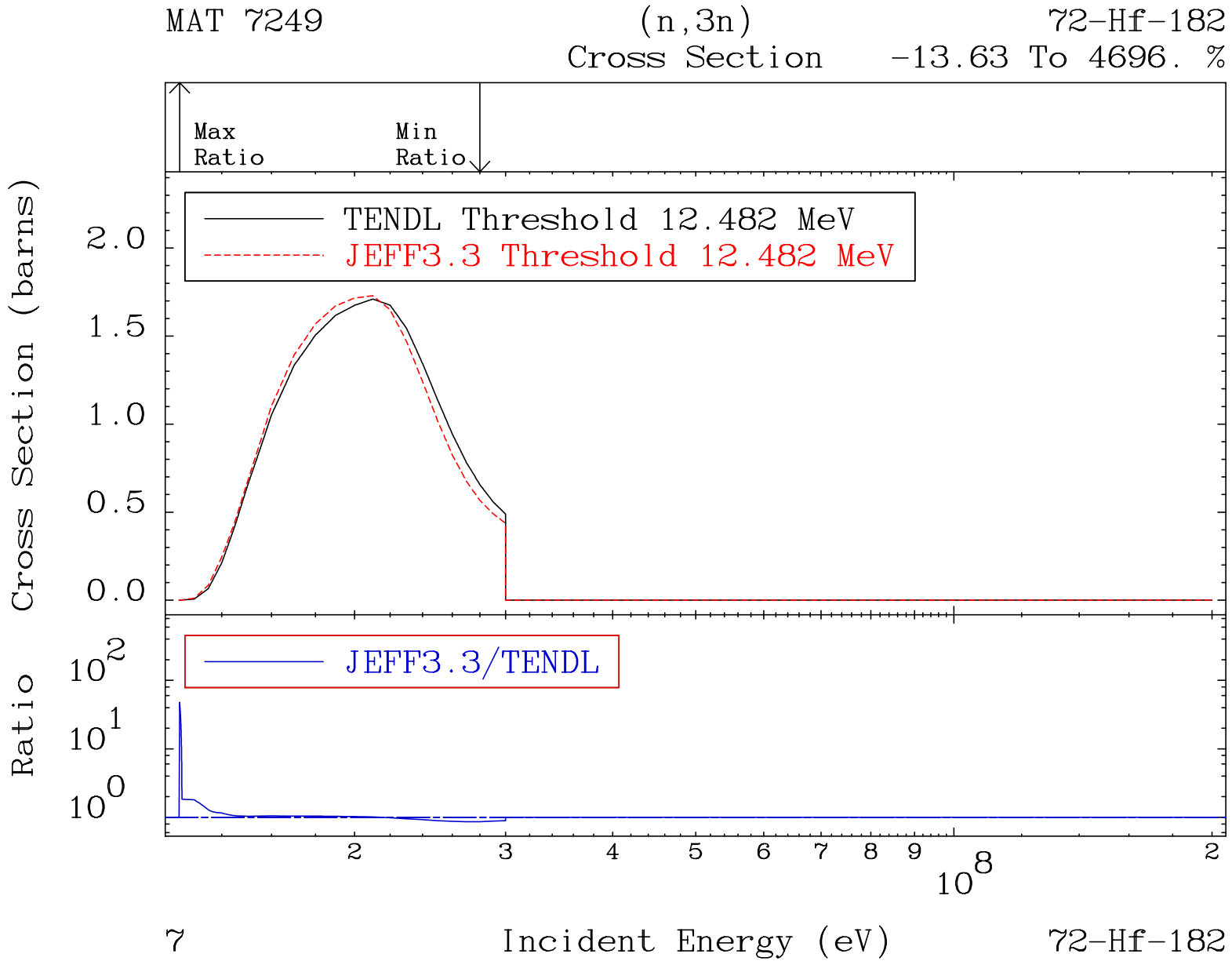

MAT 7249
Elastic
Cross Section
72-Hf-182
-99.88 To 8117. %
Max
Ratio
Min
Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
2
72-Hf-182

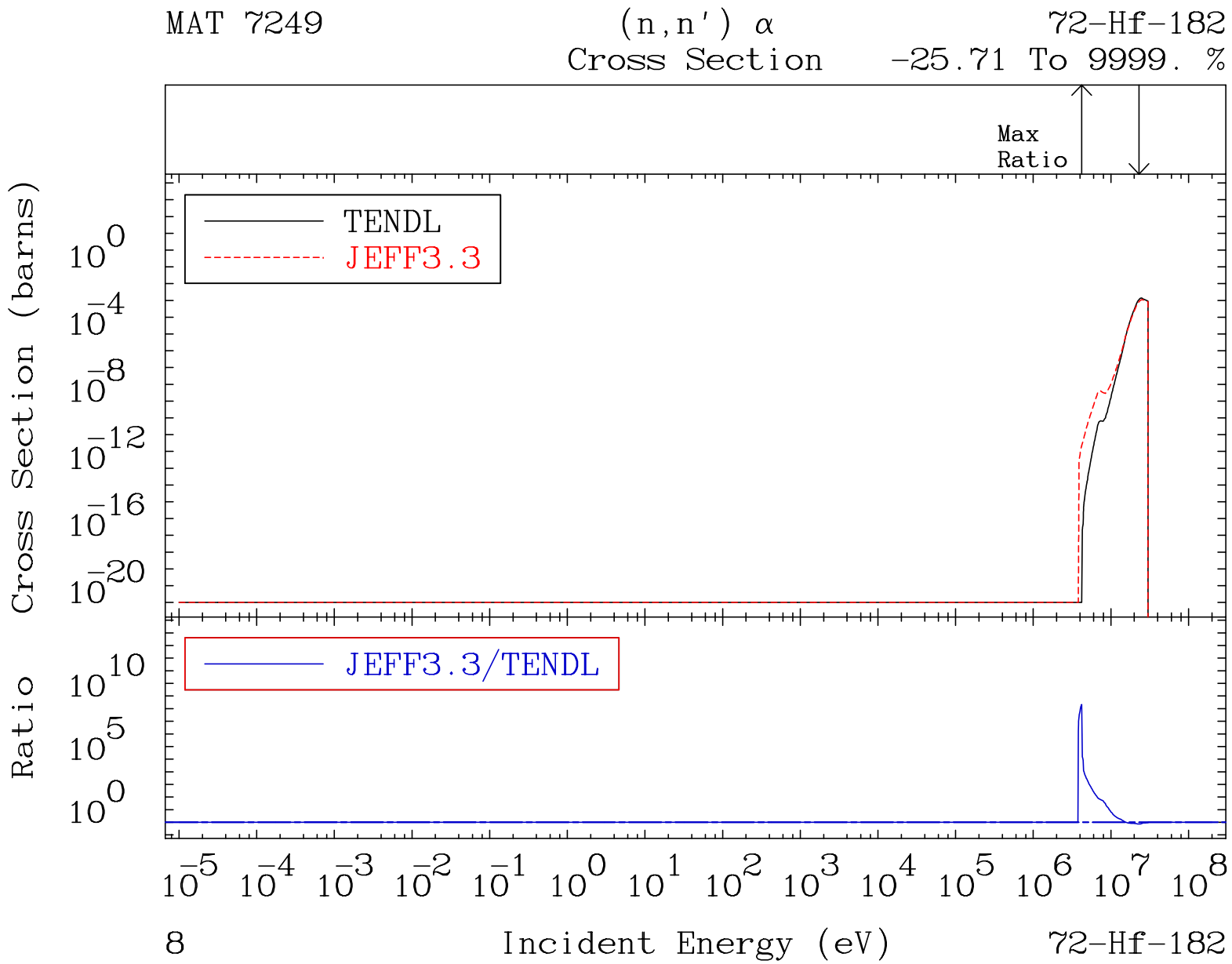

MAT 7249
Inelastic
Cross Section
72-Hf-182
-23.50 To 72.18 %
Max
Ratio
TENDL Threshold 98.332 keV
JEFF3.3 Threshold 98.332 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
3
72-Hf-182

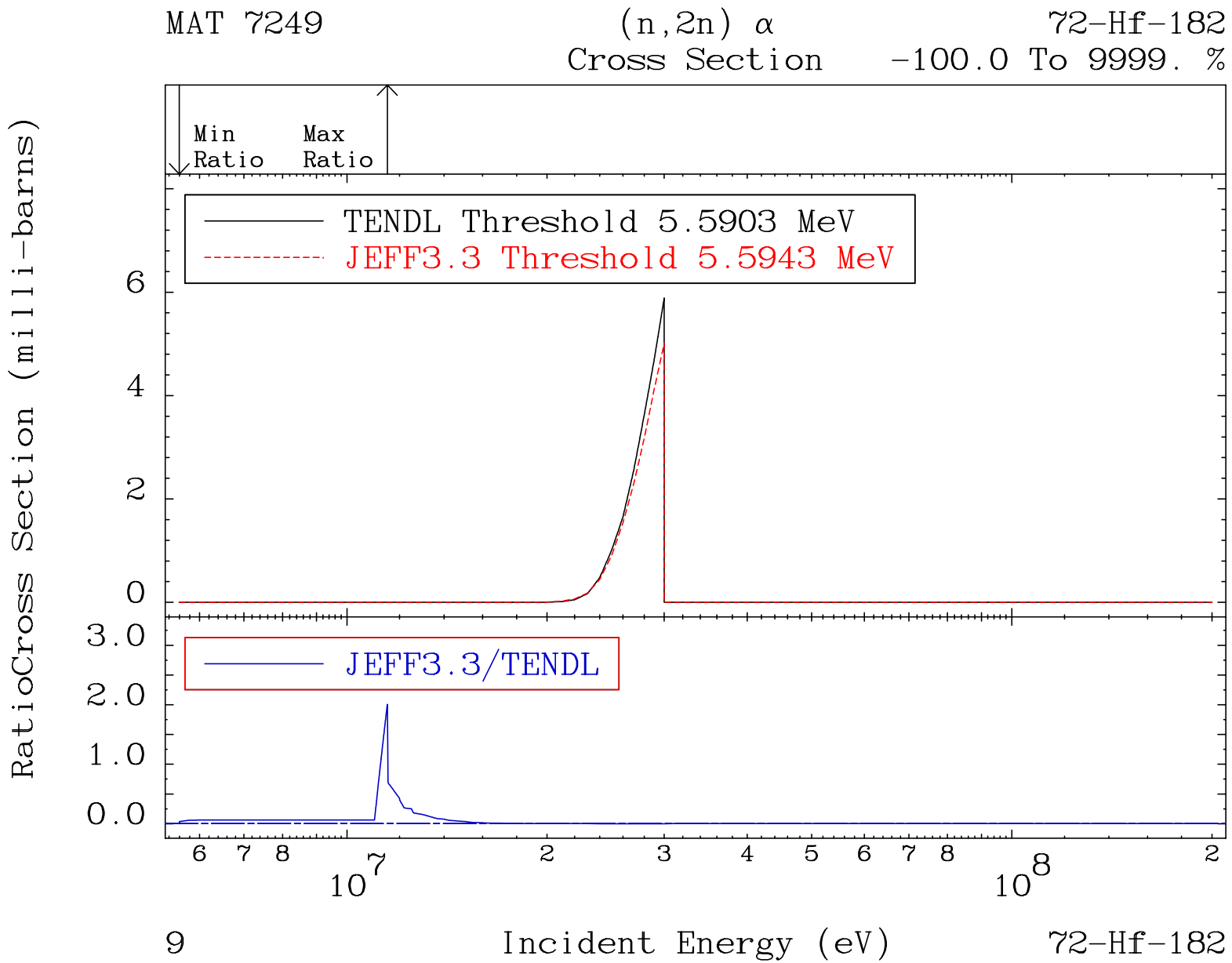

MAT 7249
(n,remainder)
Cross Section
72-Hf-182
-0.109 To 0.013 %
Min
Ratio
Max
Ratio
TENDL Threshold 30.000 MeV
JEFF3.3 Threshold 30.000 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.02
1.01
1.00
0.99
40
60
80
100
120
140
160
180
200
Incident Energy (MeV)
4
72-Hf-182

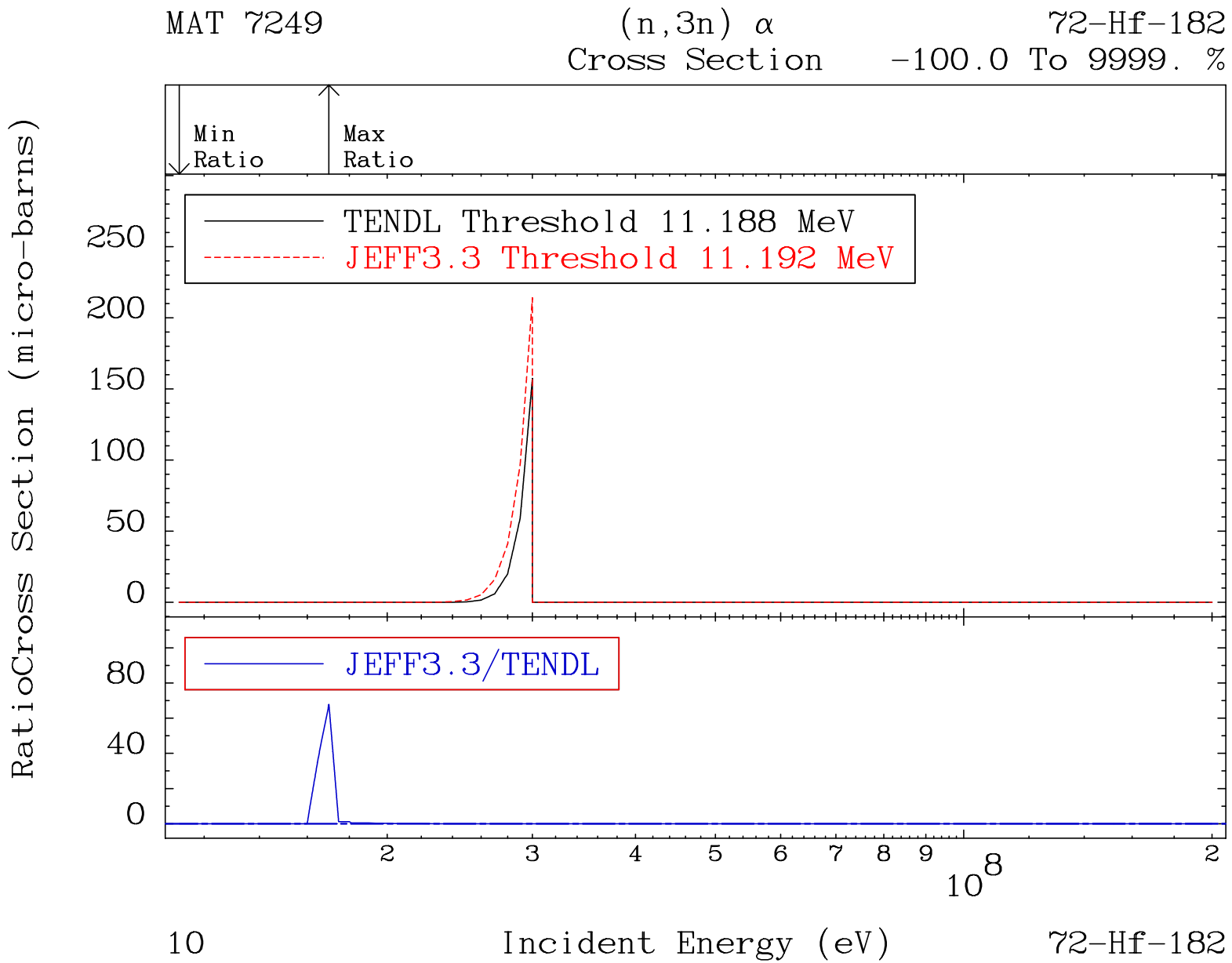

MAT 7249
(n,2n) d
Cross Section
72-Hf-182
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 18.299 MeV
JEFF3.3 Threshold 18.299 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
600
500
400
300
200
100
0
100
0
2
3
4
5
6
7
8
9
10^8
2
5
Incident Energy (eV)
72-Hf-182

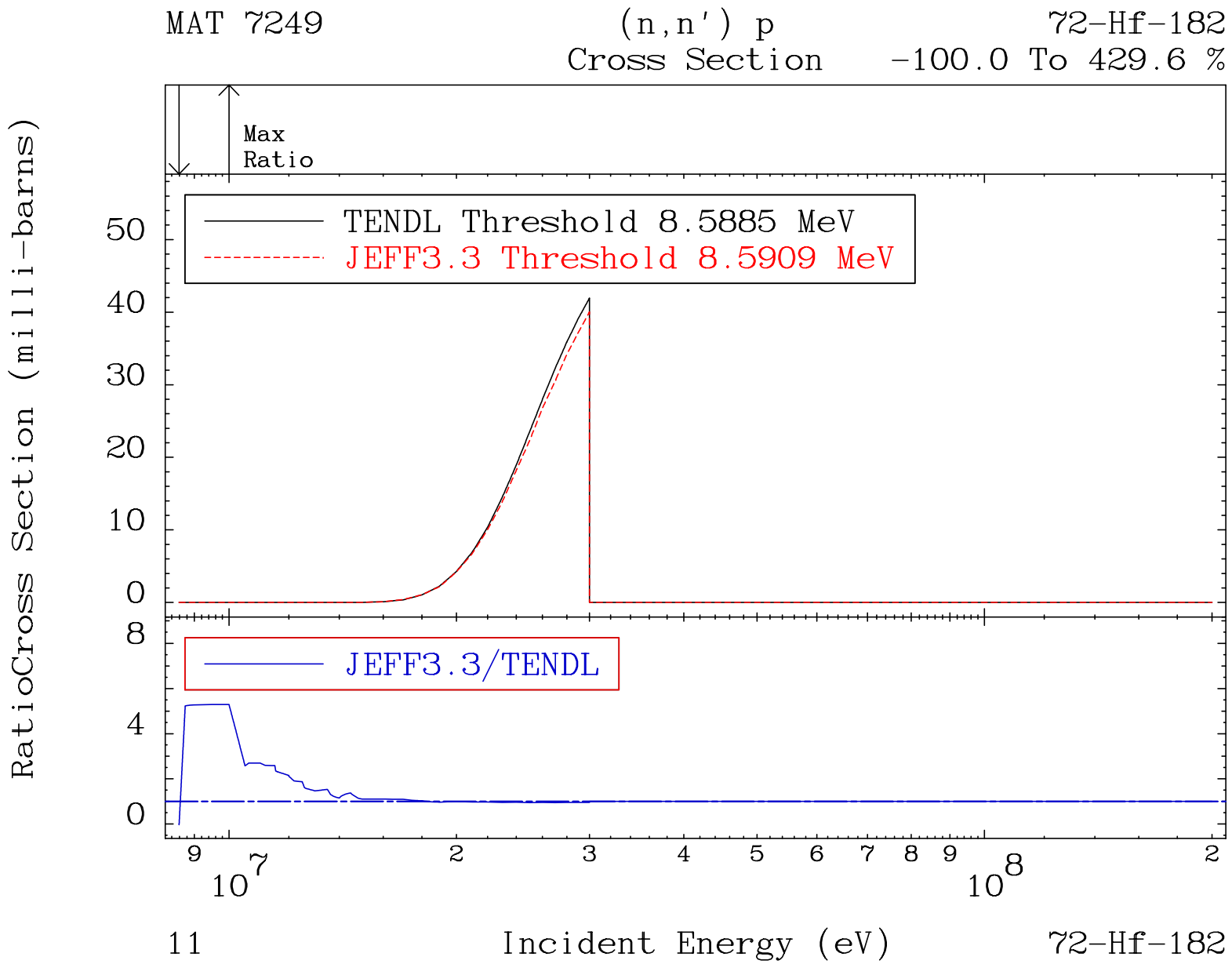

MAT 7249
(n,2n)
Cross Section
72-Hf-182
-100.0 To 36.83 %
Max
Ratio
TENDL Threshold 6.7552 MeV
JEFF3.3 Threshold 6.7552 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
2.5
2.0
1.5
1.0
0.5
0.0
2.0
1.0
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
Incident Energy (eV)
6
72-Hf-182

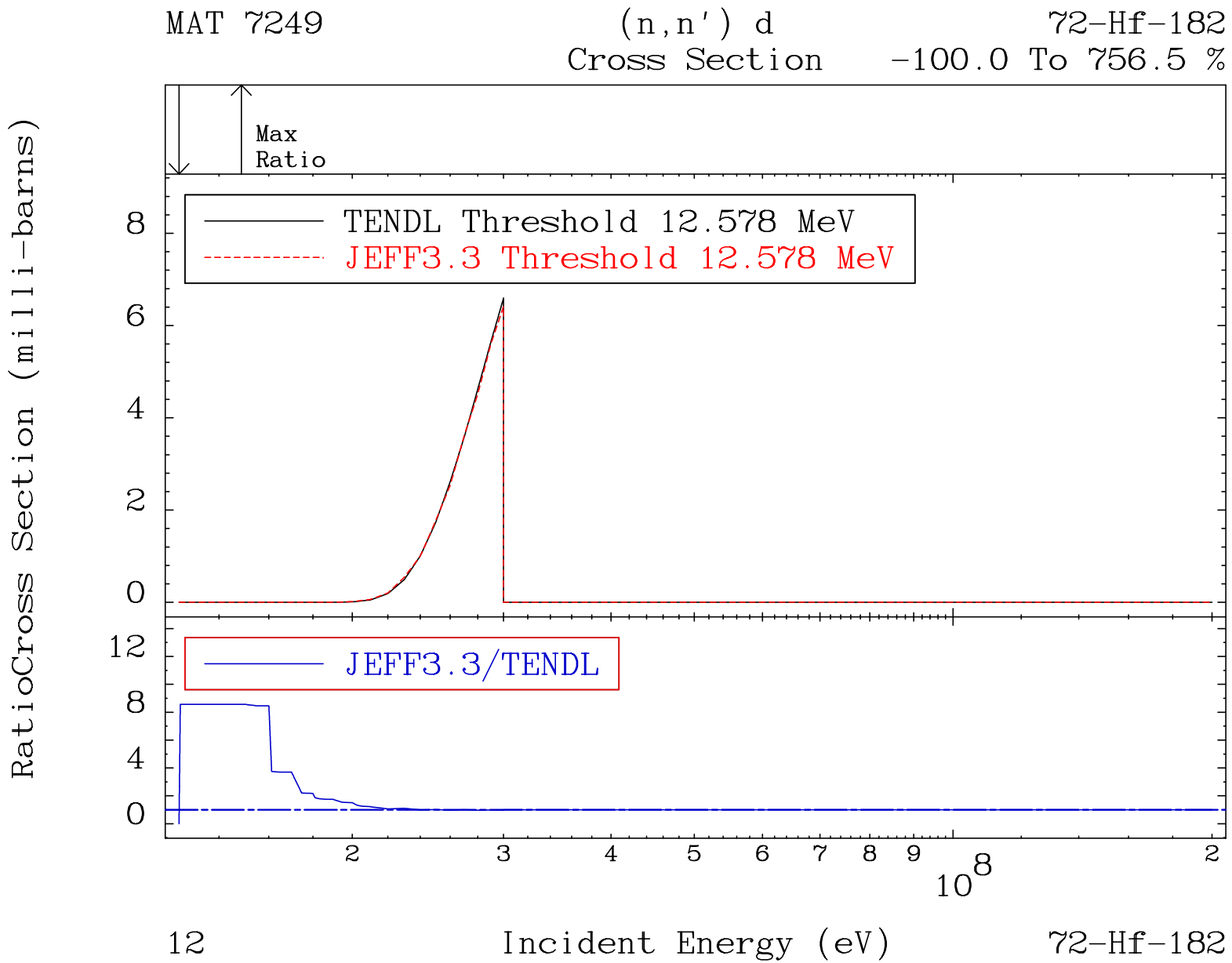

MAT 7249
(n,3n)
72-Hf-182
Cross Section
-13.63 To 4696. %
Max Ratio
Min Ratio
TENDL Threshold 12.482 MeV
JEFF3.3 Threshold 12.482 MeV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
JEFF3.3/TENDL
Ratio
10^2
10^1
10^0
2
3
4
5
6
7
8
9
10^8
2
7
Incident Energy (eV)
72-Hf-182

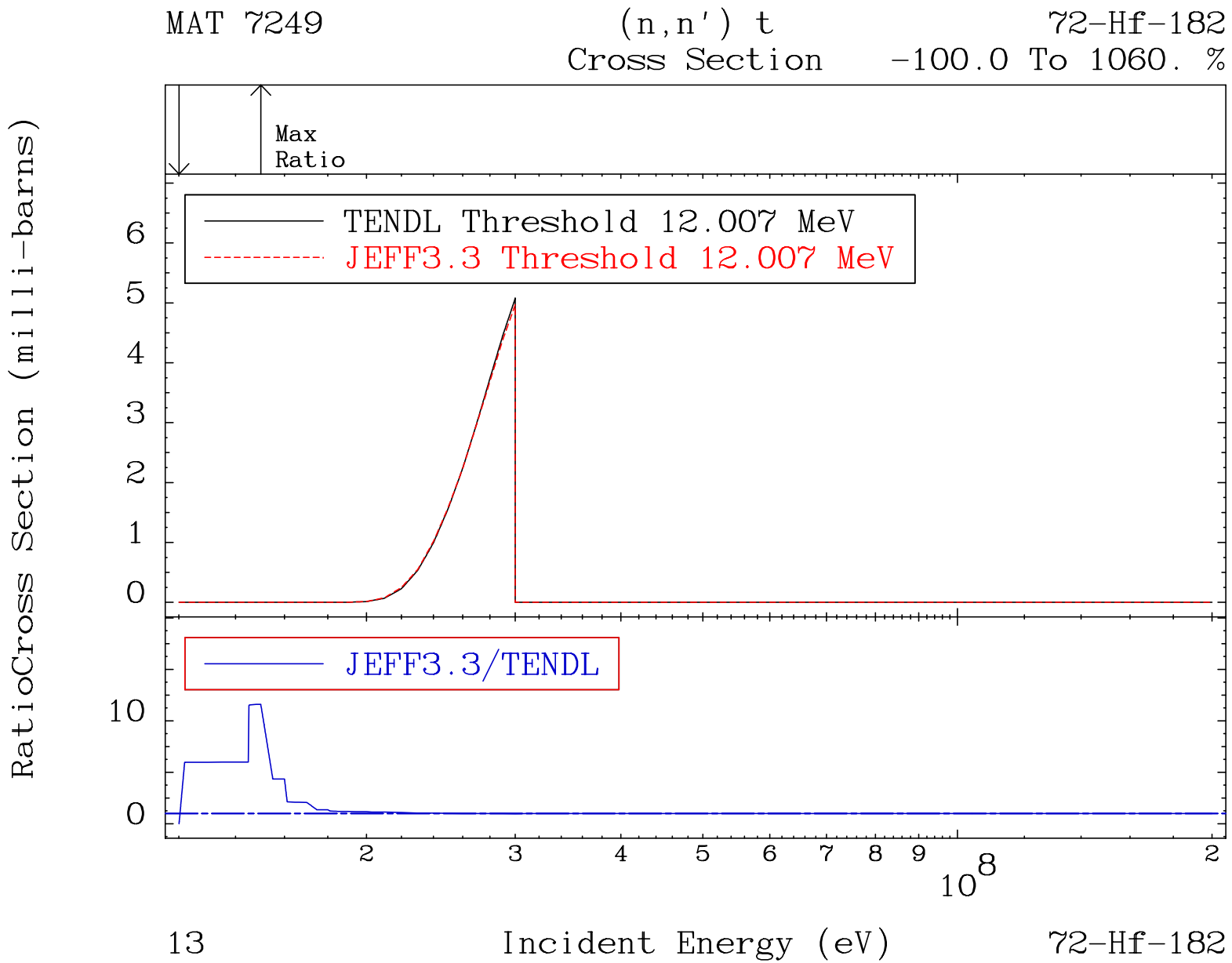

MAT 7249
(n,n') α
Cross Section
72-Hf-182
-25.71 To 9999. %
Max
Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
8
72-Hf-182

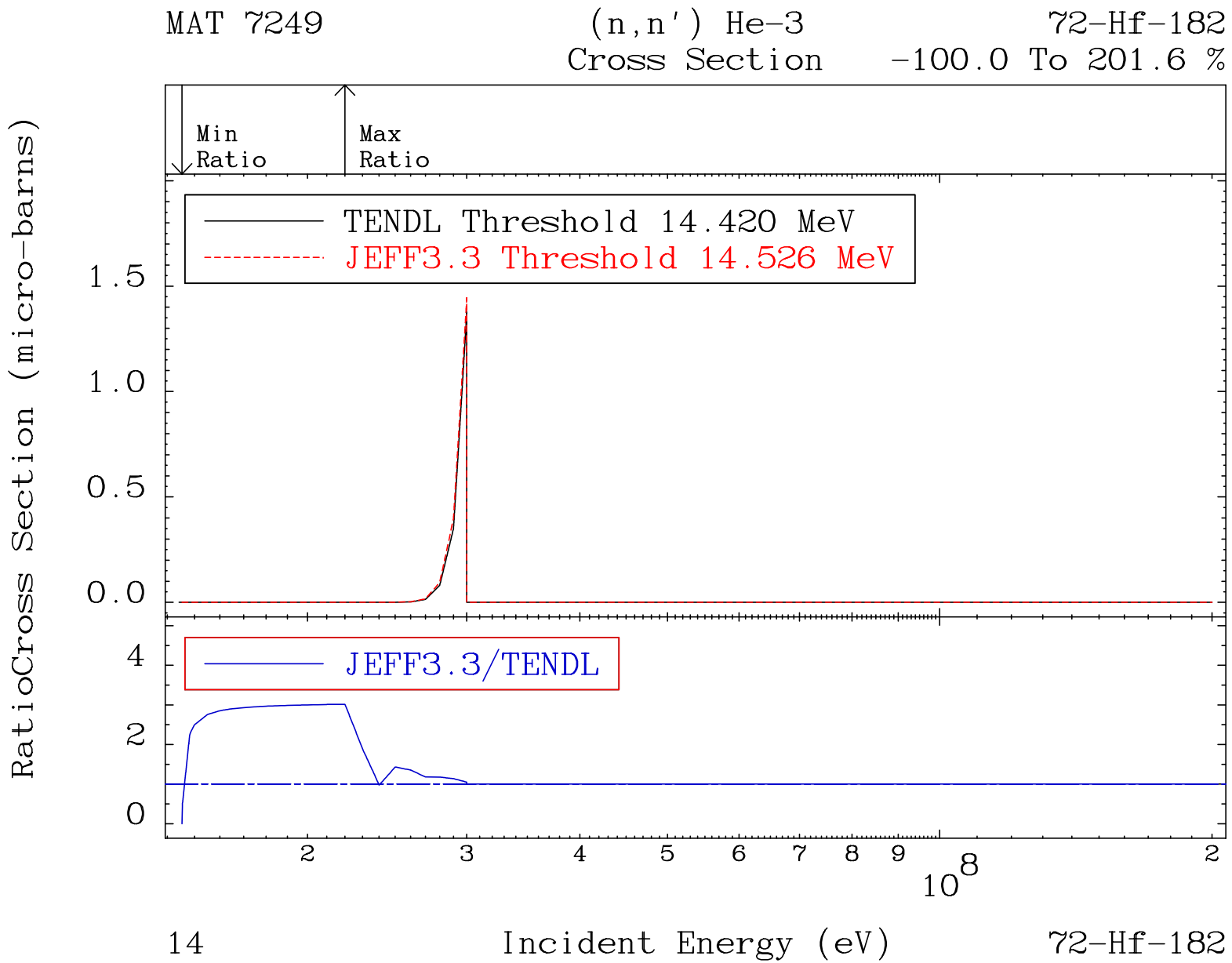

MAT 7249
(n,2n) α
72-Hf-182
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 5.5903 MeV
JEFF3.3 Threshold 5.5943 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
9
72-Hf-182

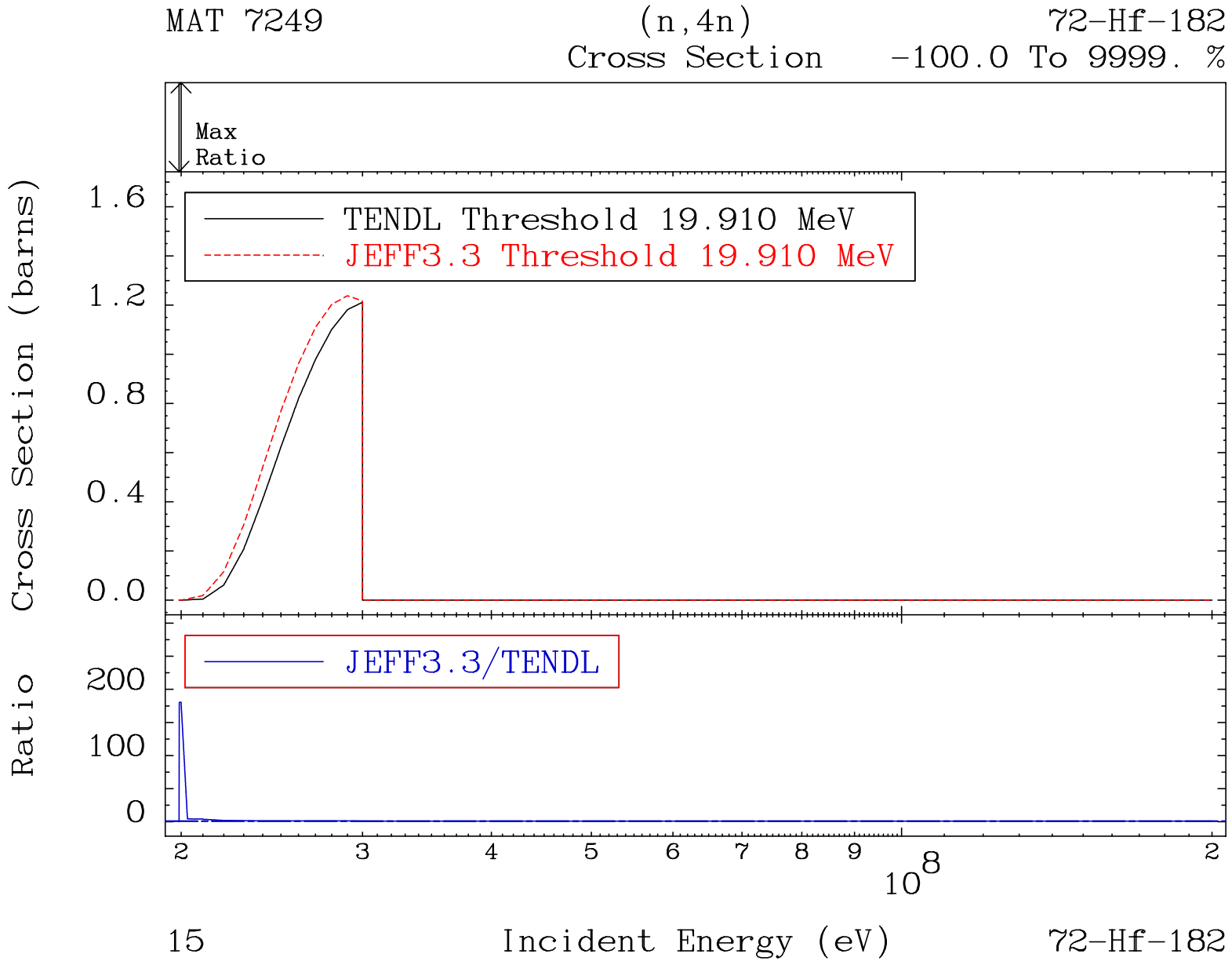

MAT 7249
(n,3n) α
72-Hf-182
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 11.188 MeV
JEFF3.3 Threshold 11.192 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
250
200
150
100
50
0
80
40
0
2
3
4
5
6
7
8
9
2
10^8
10
Incident Energy (eV)
72-Hf-182

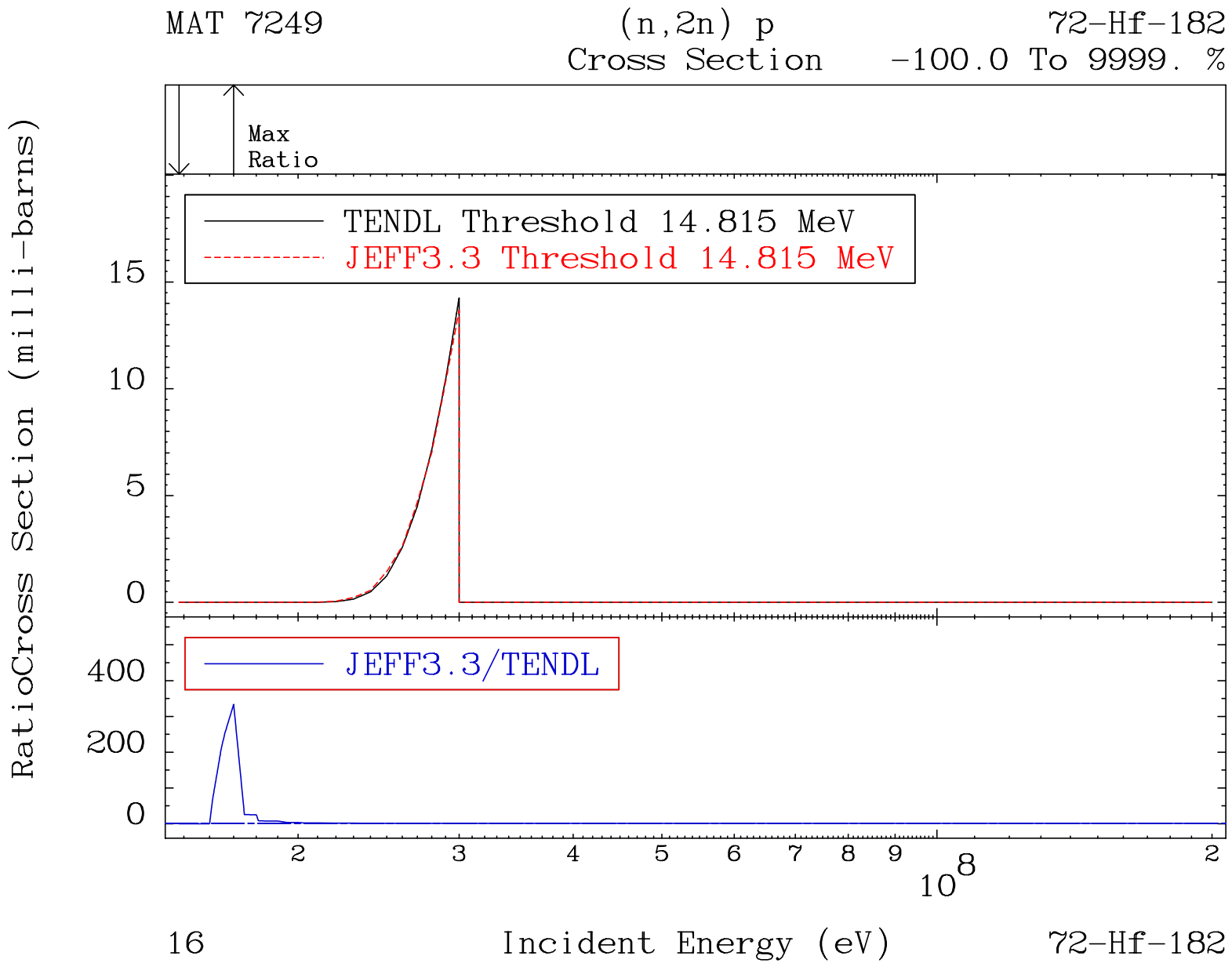

MAT 7249
(n,n') p
Cross Section
72-Hf-182
-100.0 To 429.6 %
Max
Ratio
TENDL Threshold 8.5885 MeV
JEFF3.3 Threshold 8.5909 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
8
4
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
11
Incident Energy (eV)
72-Hf-182

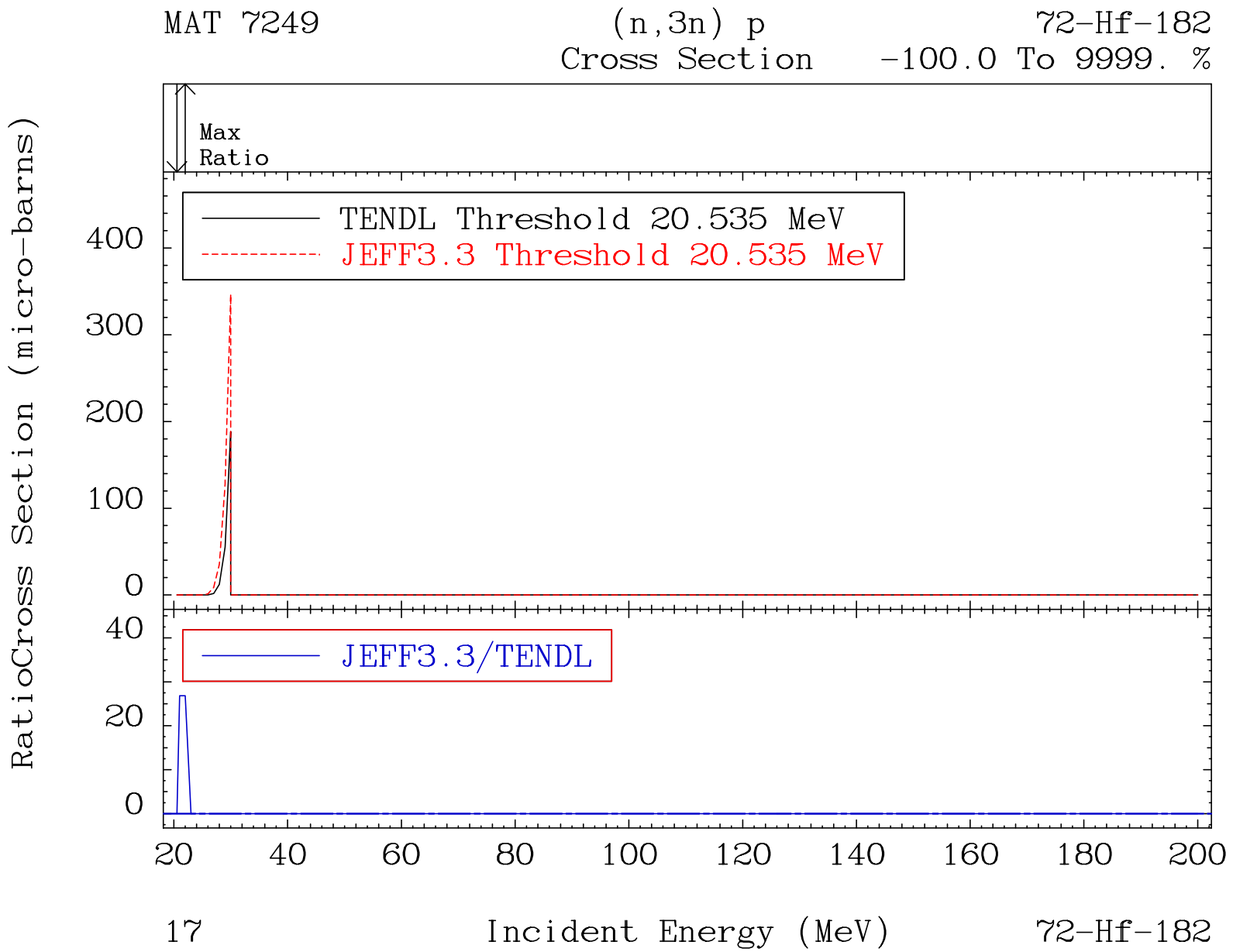

MAT 7249
(n,n') d
Cross Section
72-Hf-182
-100.0 To 756.5 %
Max
Ratio
TENDL Threshold 12.578 MeV
JEFF3.3 Threshold 12.578 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
12
72-Hf-182

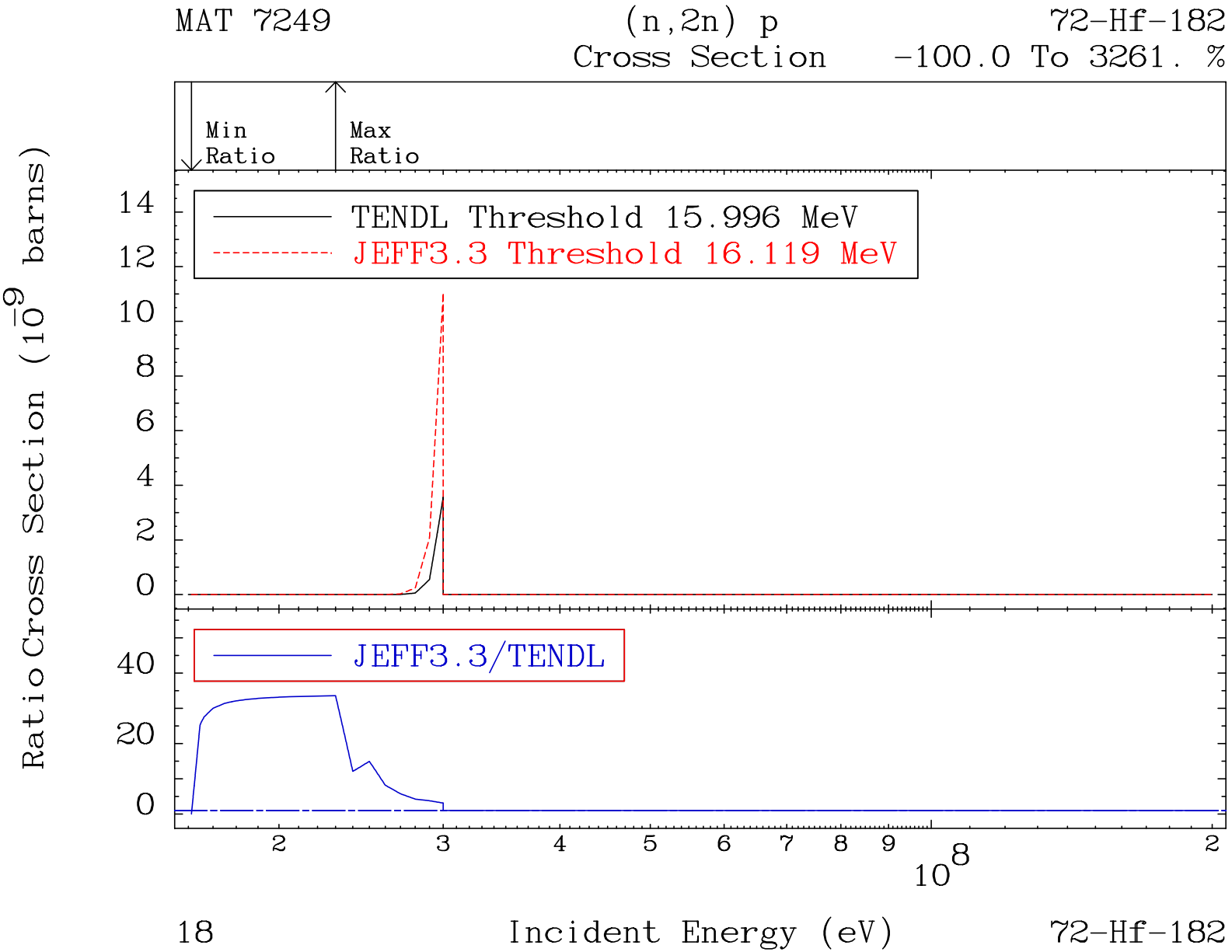

MAT 7249
(n,n') t
Cross Section
72-Hf-182
-100.0 To 1060. %
Max
Ratio
TENDL Threshold 12.007 MeV
JEFF3.3 Threshold 12.007 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
13
72-Hf-182

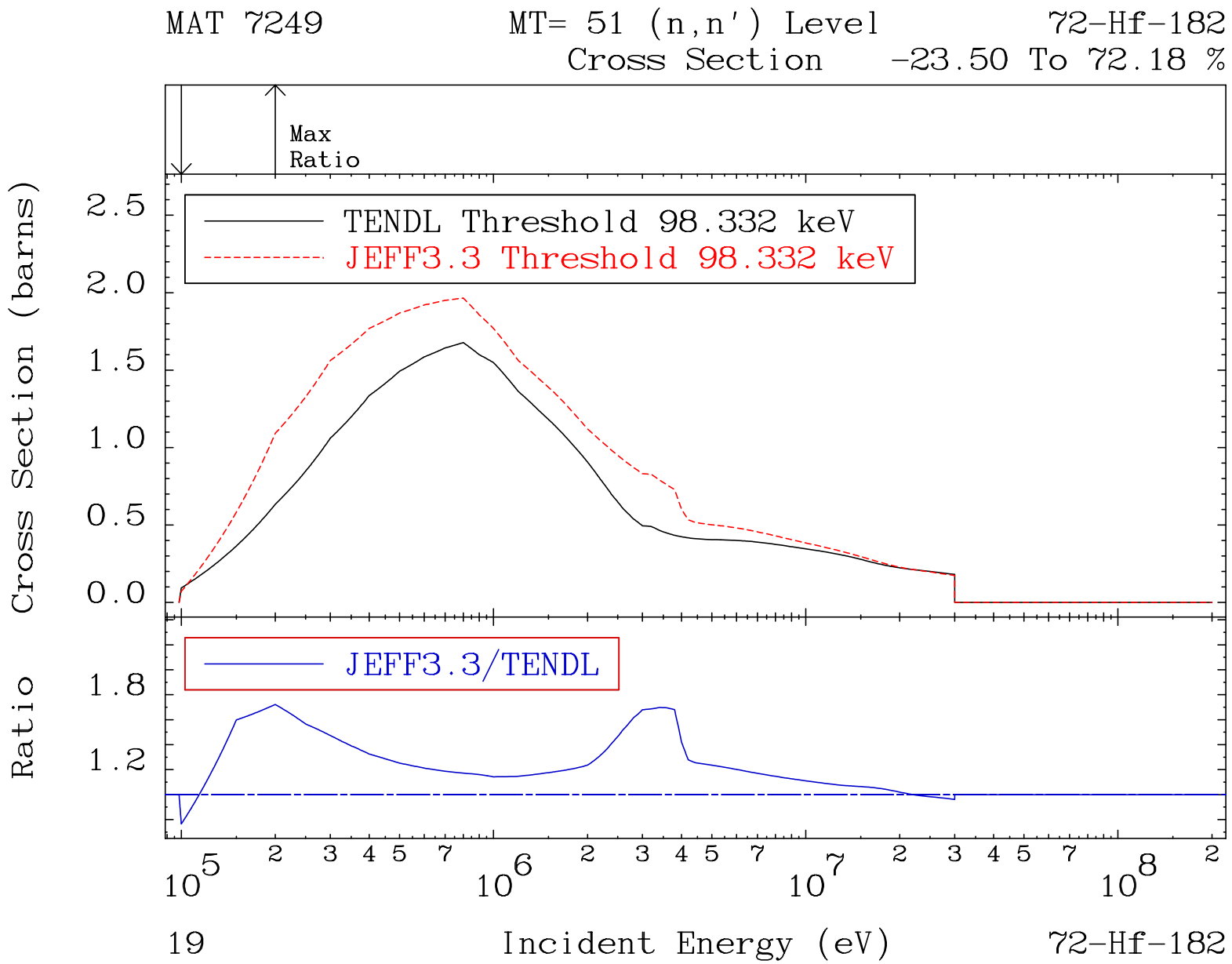

MAT 7249
(n,n') He-3
Cross Section
72-Hf-182
-100.0 To 201.6 %
Min Ratio
Max Ratio
TENDL Threshold 14.420 MeV
JEFF3.3 Threshold 14.526 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
1.5
1.0
0.5
0.0
4
2
0
2
3
4
5
6
7
8
9
10^8
2
14
Incident Energy (eV)
72-Hf-182

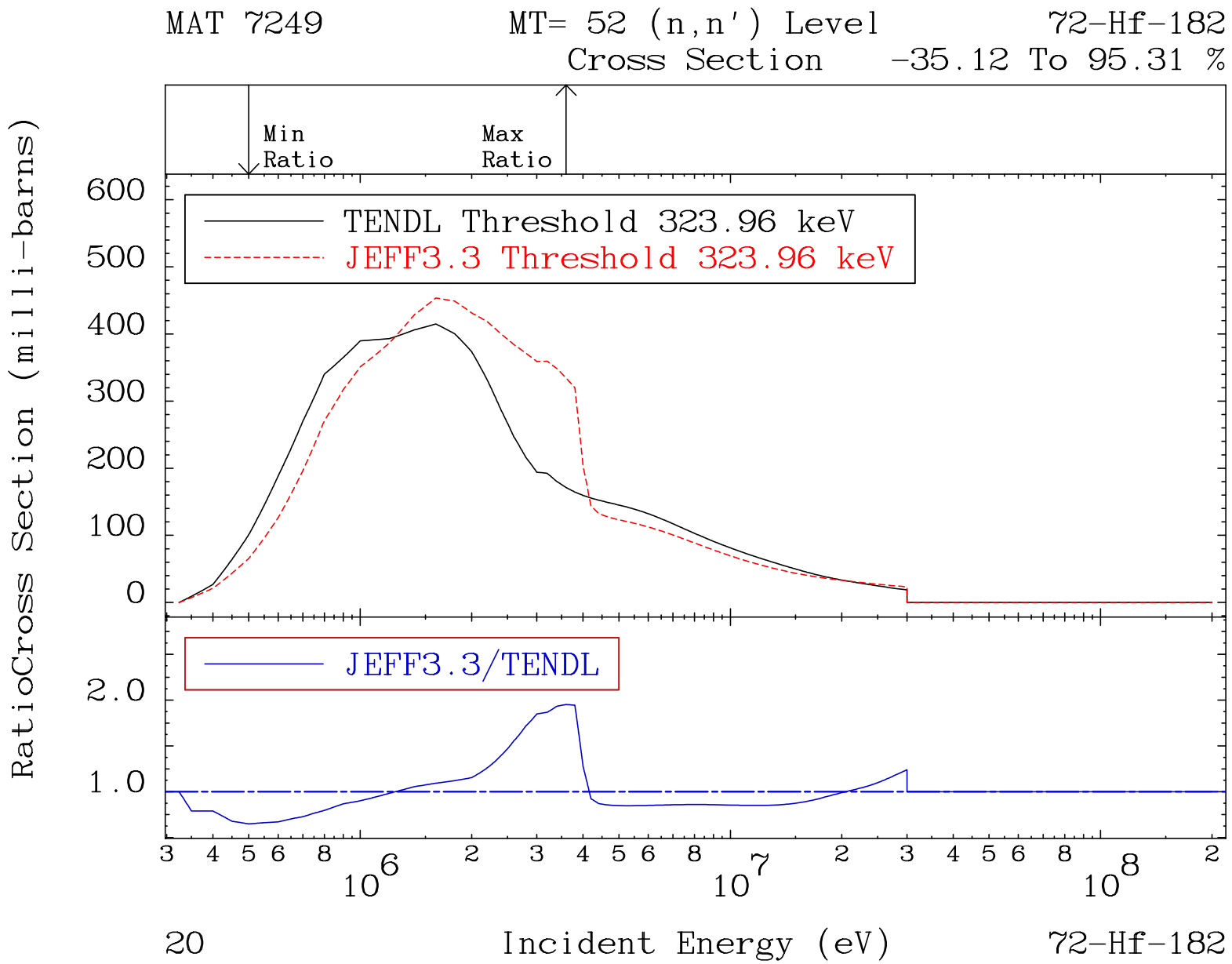

MAT 7249
(n,4n)
72-Hf-182
Cross Section
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 19.910 MeV
JEFF3.3 Threshold 19.910 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.6
1.2
0.8
0.4
0.0
200
100
0
2
3
4
5
6
7
8
9
10^8
2
15
Incident Energy (eV)
72-Hf-182

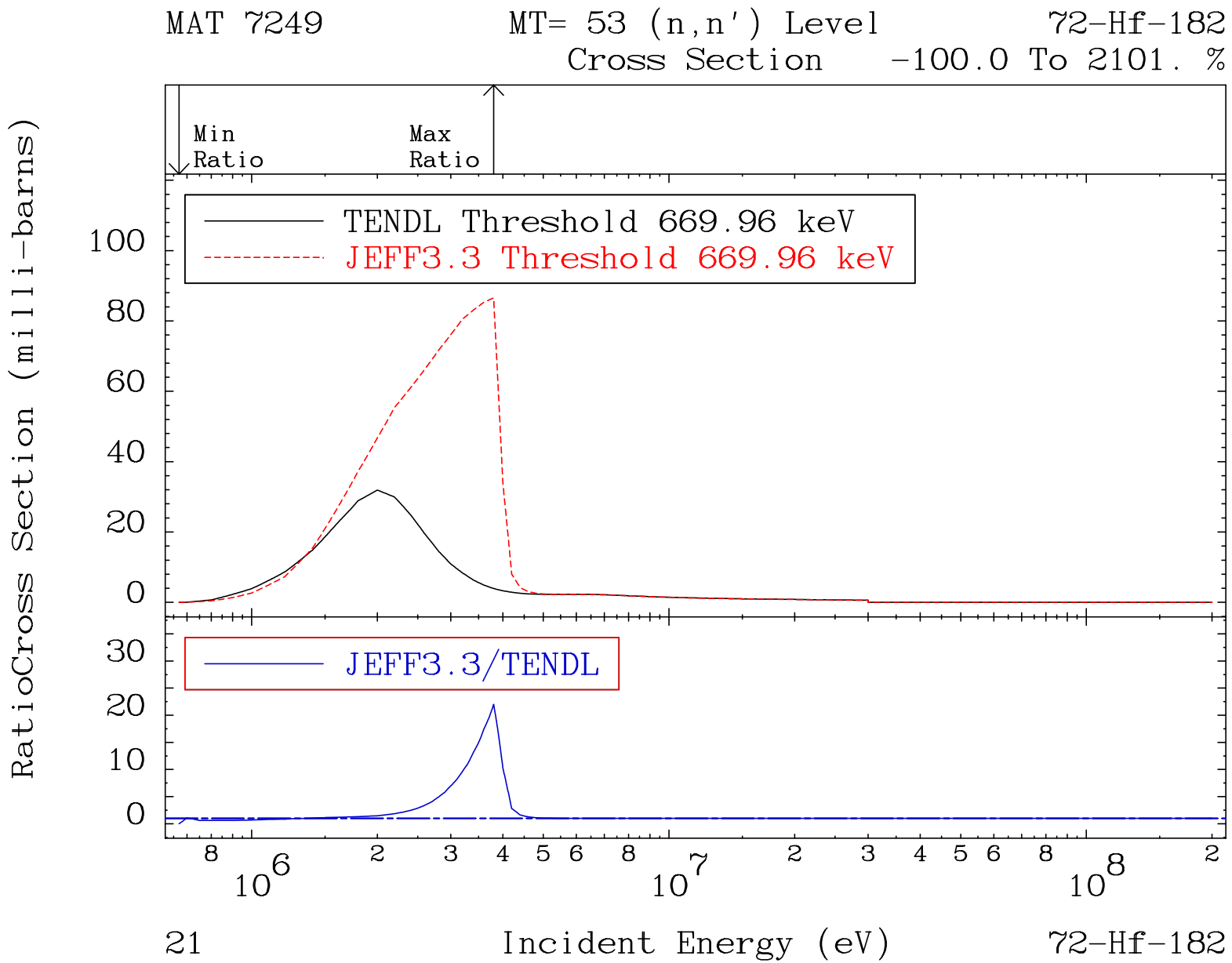

MAT 7249
(n,2n) p
Cross Section
72-Hf-182
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 14.815 MeV
JEFF3.3 Threshold 14.815 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
15
10
5
0
400
200
0
2
3
4
5
6
7
8
9
10^8
2
16
Incident Energy (eV)
72-Hf-182

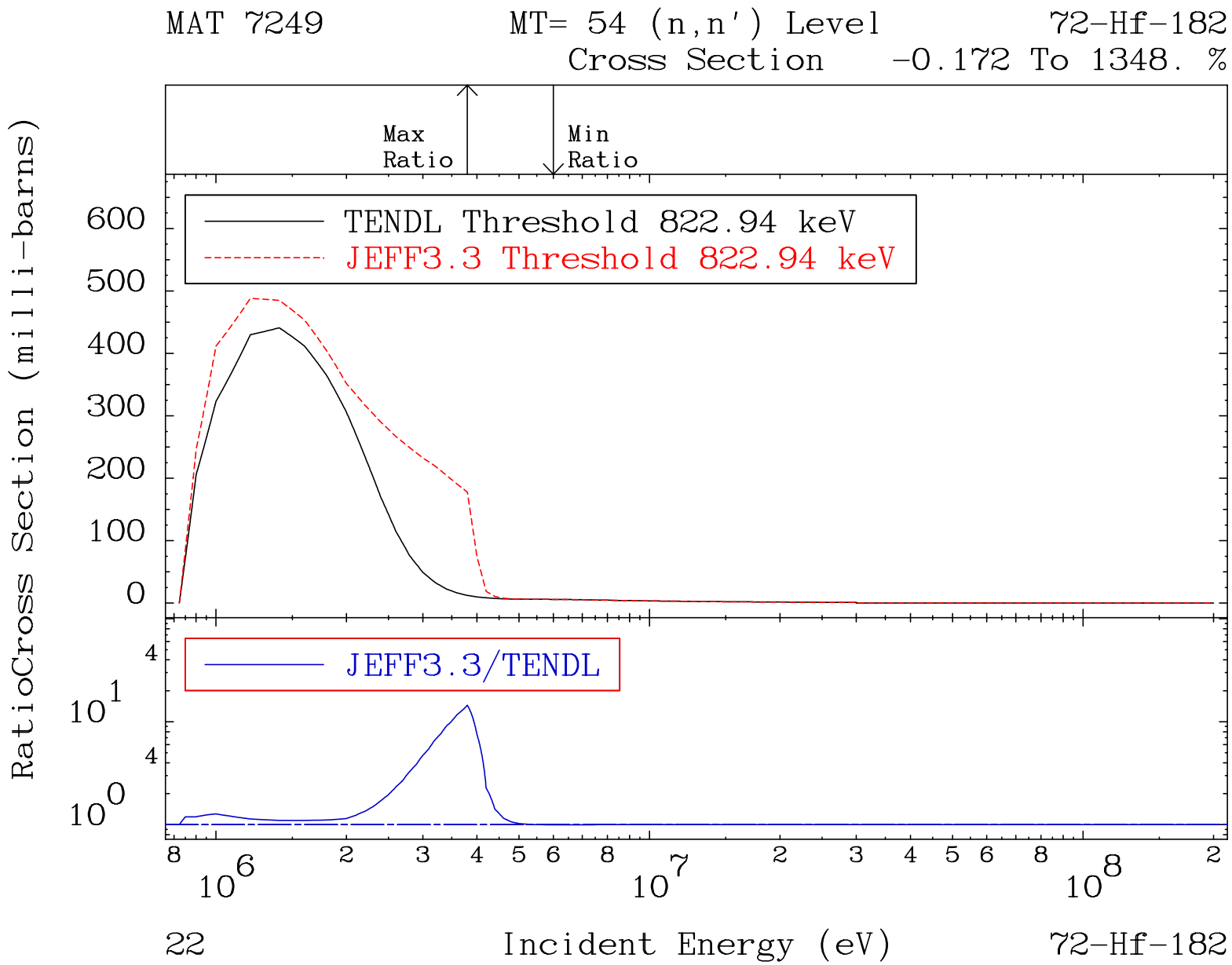

MAT 7249
(n,3n) p
Cross Section
72-Hf-182
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 20.535 MeV
JEFF3.3 Threshold 20.535 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
40
20
0
20
40
60
80
100
120
140
160
180
200
17
Incident Energy (MeV)
72-Hf-182

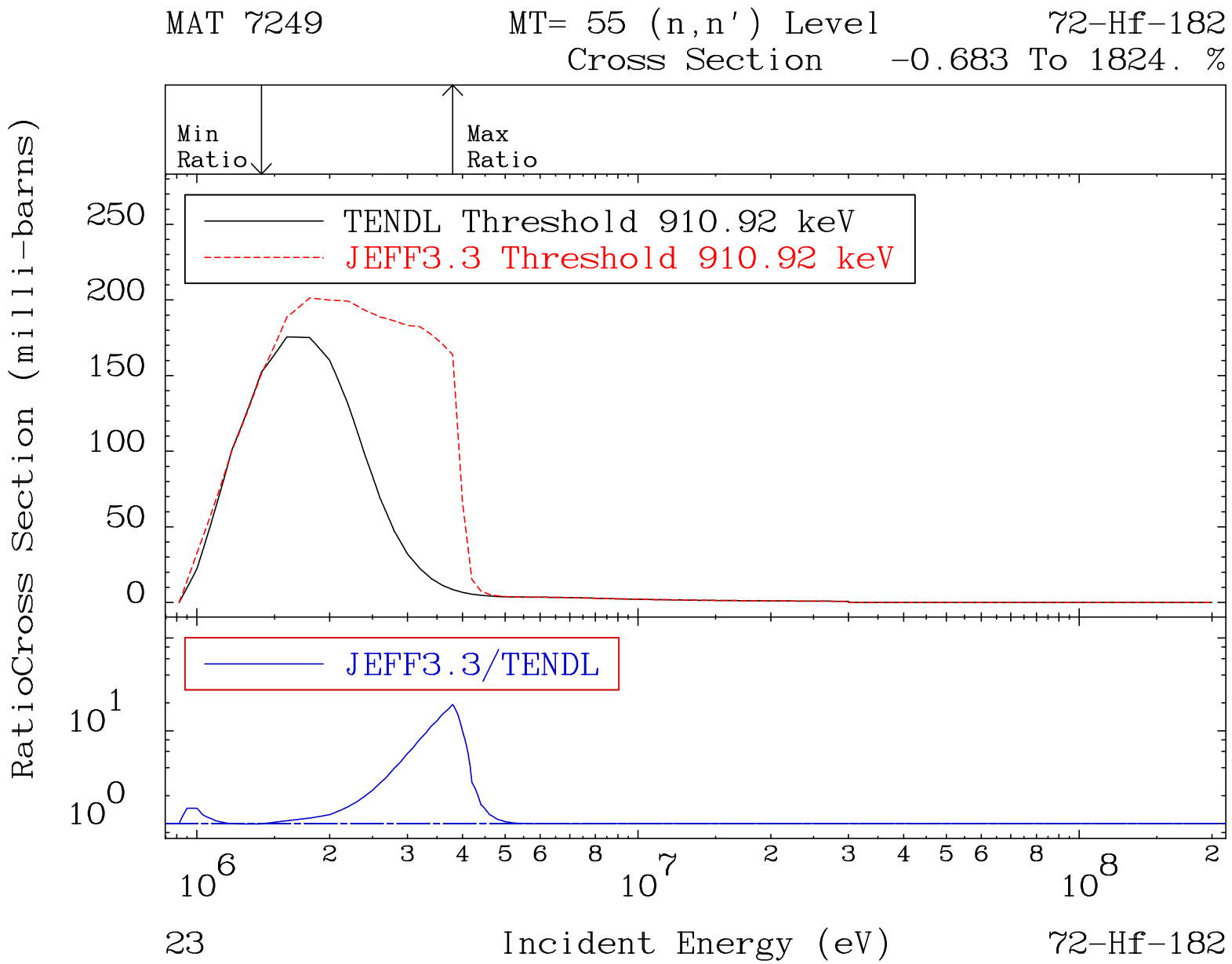

MAT 7249
(n,2n) p
72-Hf-182
Cross Section
-100.0 To 3261. %
Min Ratio
Max Ratio
TENDL Threshold 15.996 MeV
JEFF3.3 Threshold 16.119 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
14
12
10
8
6
4
2
0
40
20
0
2
3
4
5
6
7
8
9
10^{8}
2
18
Incident Energy (eV)
72-Hf-182

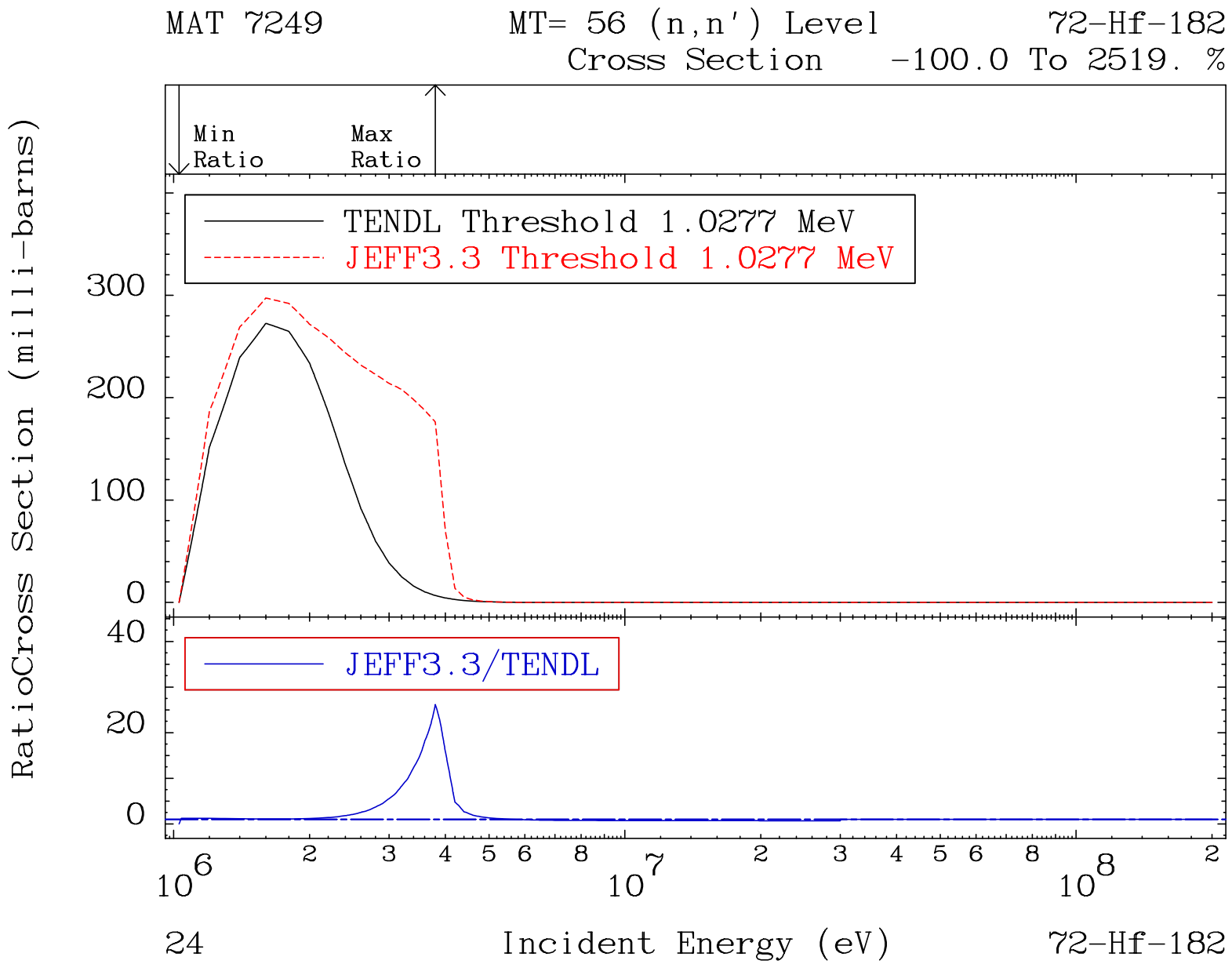

MAT 7249
MT= 51 (n,n') Level
72-Hf-182
Cross Section
-23.50 To 72.18 %
Max
Ratio
TENDL Threshold 98.332 keV
JEFF3.3 Threshold 98.332 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
2.5
2.0
1.5
1.0
0.5
0.0
1.8
1.2
10^5
10^6
10^7
10^8
Incident Energy (eV)
19
72-Hf-182

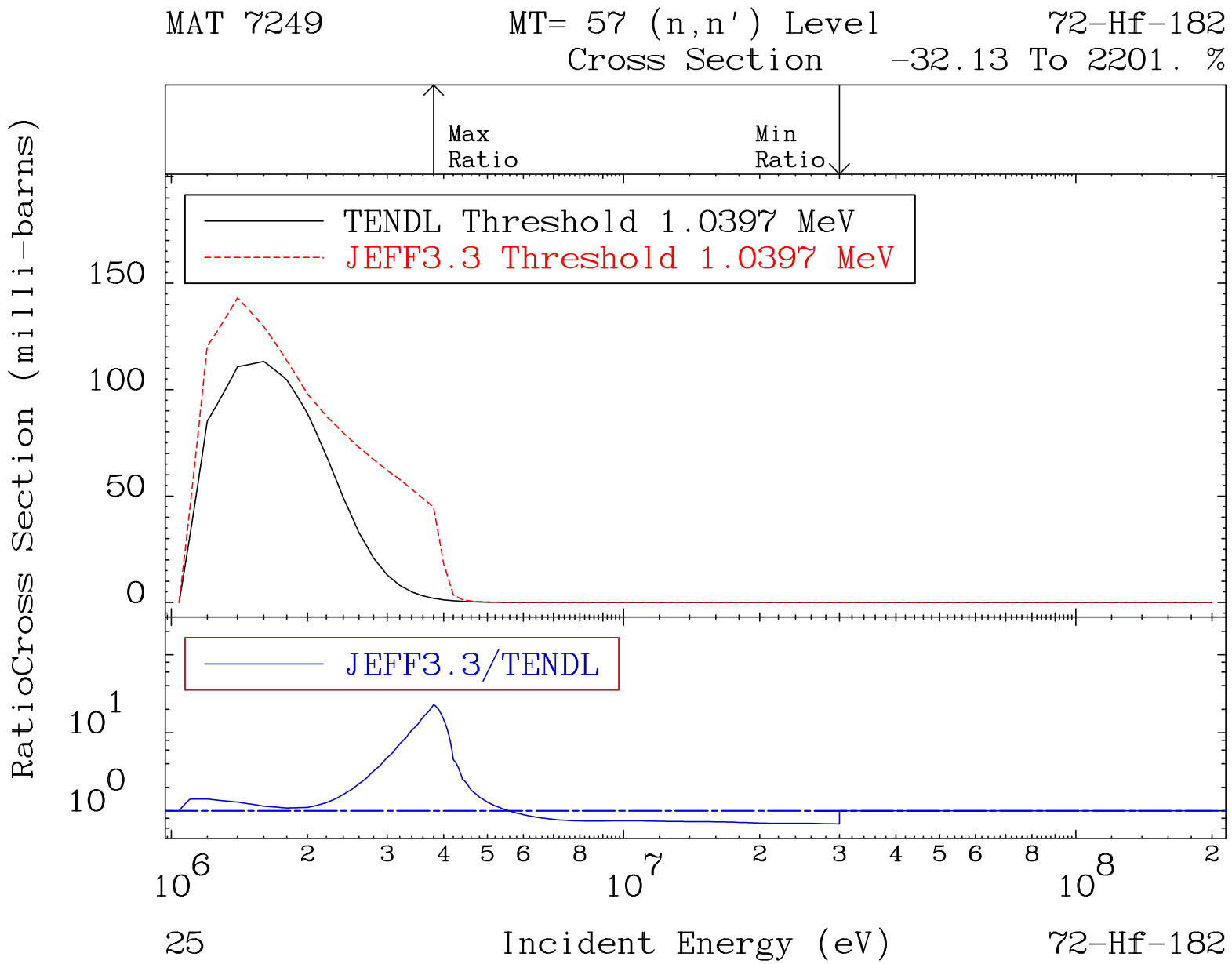

MAT 7249
MT= 52 (n,n') Level
72-Hf-182
Cross Section
-35.12 To 95.31 %
Min Ratio
Max Ratio
TENDL Threshold 323.96 keV
JEFF3.3 Threshold 323.96 keV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
600
500
400
300
200
100
0
2.0
1.0
3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
20
Incident Energy (eV)
72-Hf-182

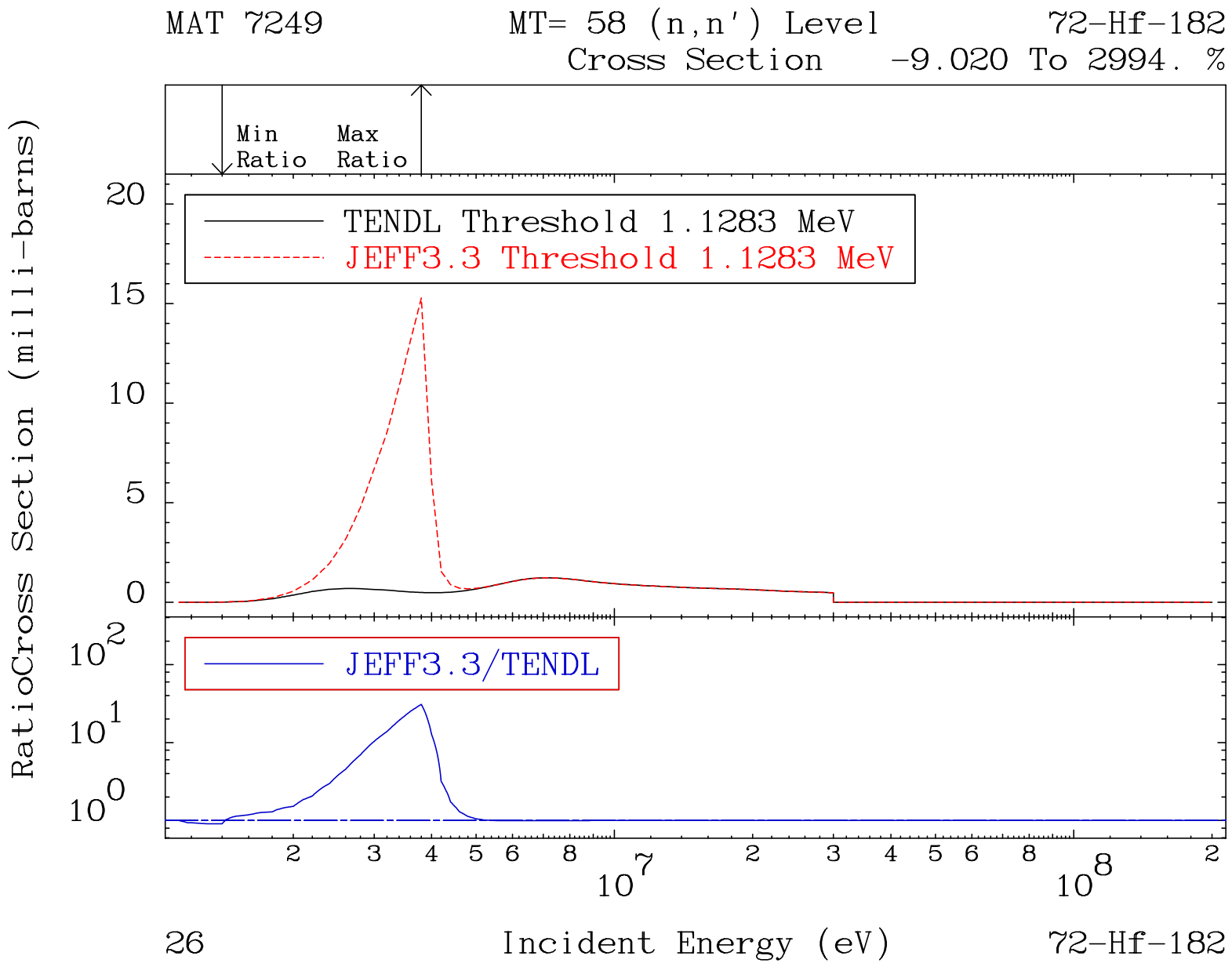

MAT 7249
MT= 53 (n,n') Level
72-Hf-182
Cross Section
-100.0 To 2101. %
Min Ratio
Max Ratio
TENDL Threshold 669.96 keV
JEFF3.3 Threshold 669.96 keV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
21
72-Hf-182

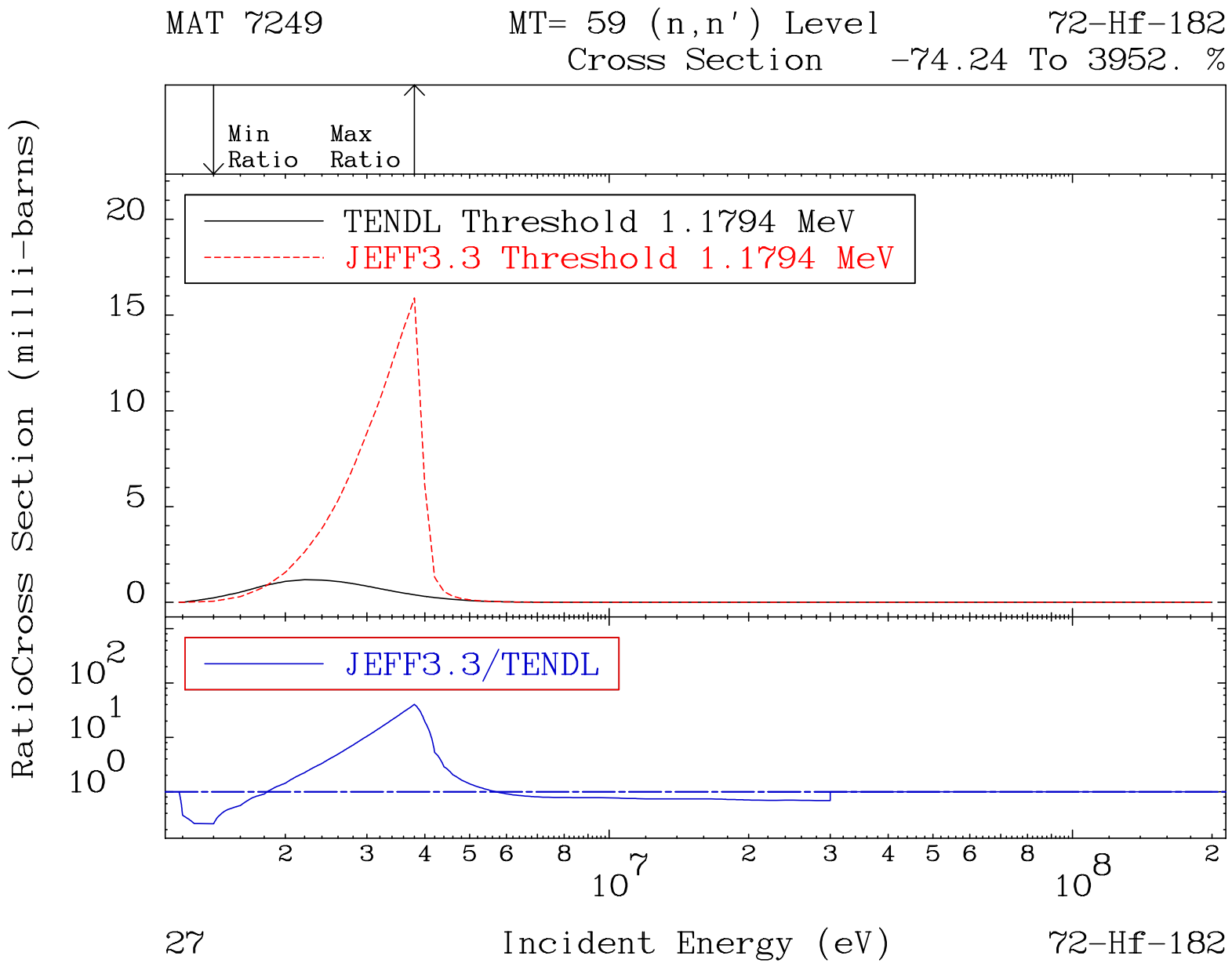

MAT 7249
MT= 54 (n,n') Level
72-Hf-182
Cross Section
-0.172 To 1348. %
Max Ratio
Min Ratio
TENDL Threshold 822.94 keV
JEFF3.3 Threshold 822.94 keV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
600
500
400
300
200
100
0
4
10^1
4
10^0
8
2
3
4
5
6
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
22
Incident Energy (eV)
72-Hf-182

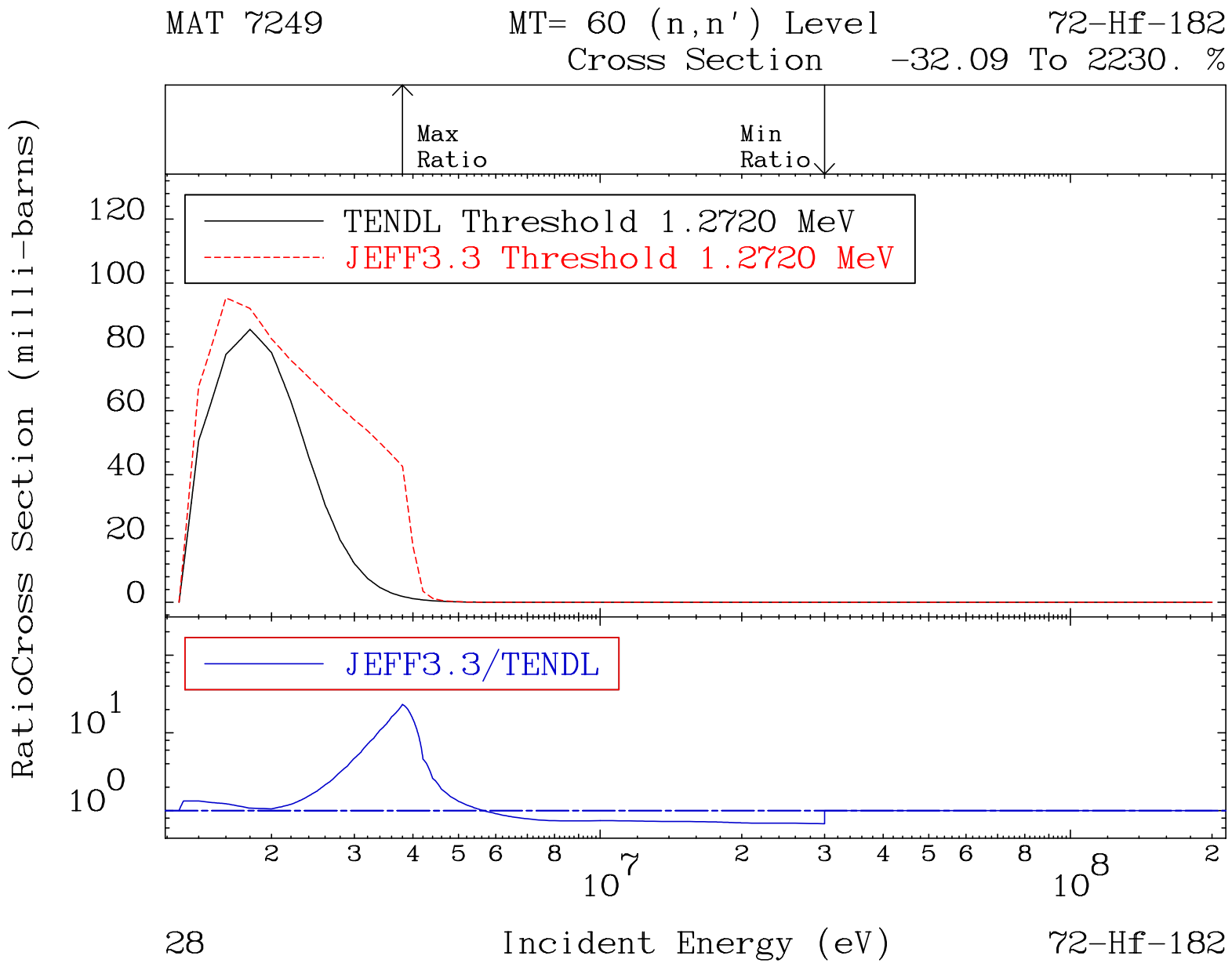

MAT 7249
MT= 55 (n,n') Level
72-Hf-182
Cross Section -0.683 To 1824. %
Min Ratio
Max Ratio
TENDL Threshold 910.92 keV
JEFF3.3 Threshold 910.92 keV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
10^1
10^0
10^6
10^7
10^8
2 3 4 5 6 8
23
Incident Energy (eV)
72-Hf-182

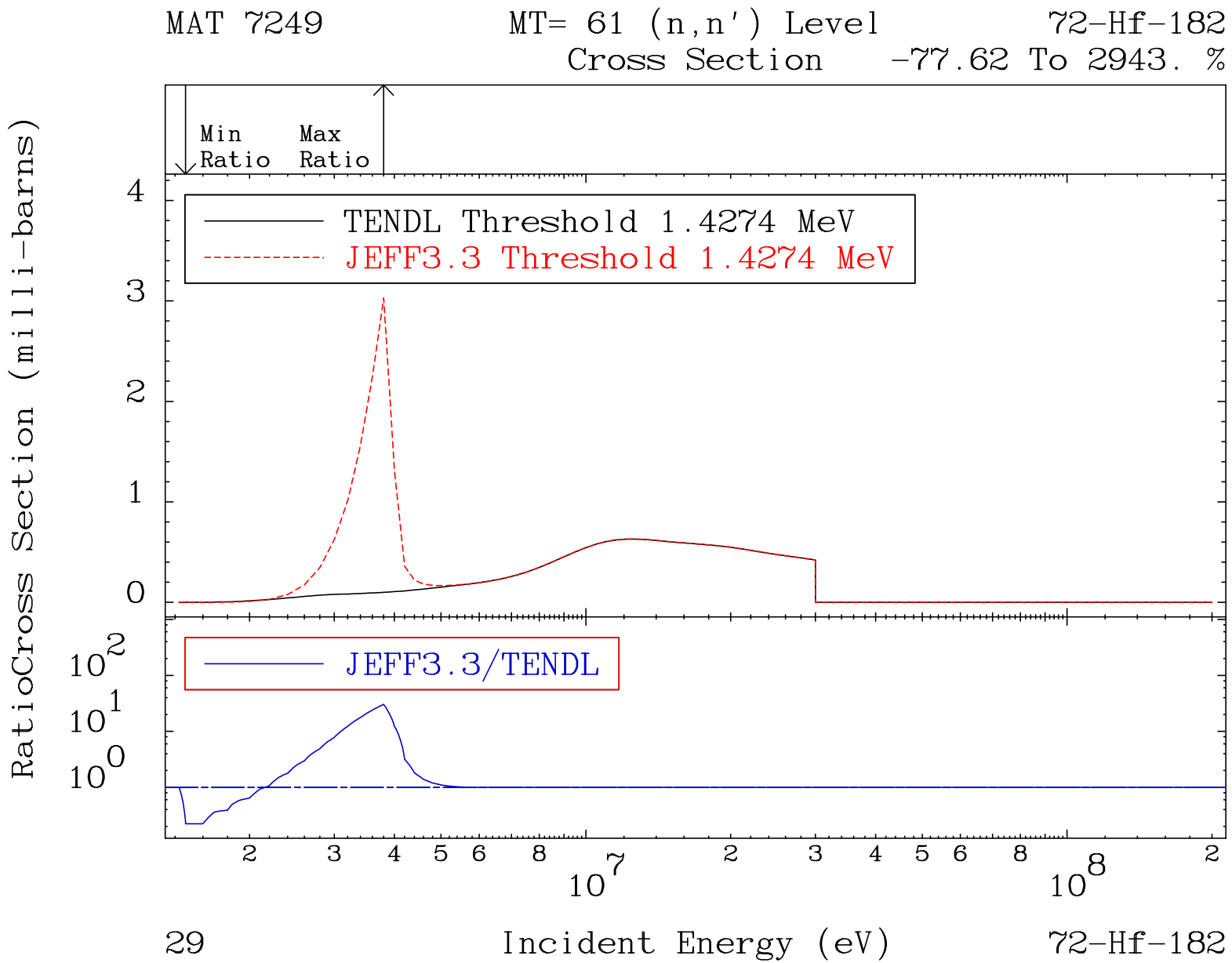

MAT 7249
MT= 56 (n,n') Level
72-Hf-182
Cross Section -100.0 To 2519. %
Min Ratio
Max Ratio
TENDL Threshold 1.0277 MeV
JEFF3.3 Threshold 1.0277 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
300
200
100
0
40
20
0
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
24
Incident Energy (eV)
72-Hf-182

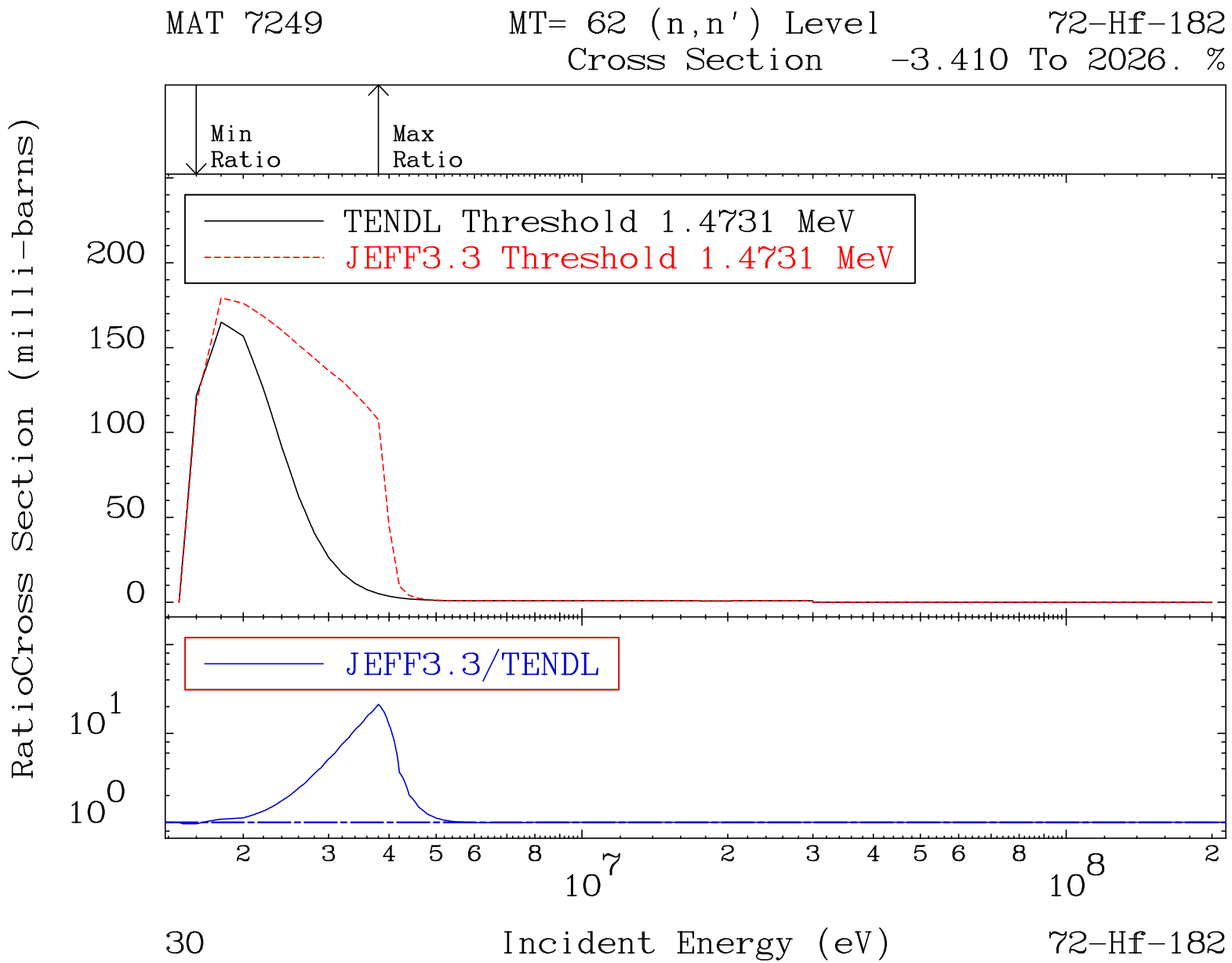

MAT 7249
MT= 57 (n,n') Level
72-Hf-182
Cross Section
-32.13 To 2201. %
Max Ratio
Min Ratio
TENDL Threshold 1.0397 MeV
JEFF3.3 Threshold 1.0397 MeV
150
100
50
0
JEFF3.3/TENDL
10^1
10^0
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
RatioCross Section (milli-barns)
25
Incident Energy (eV)
72-Hf-182

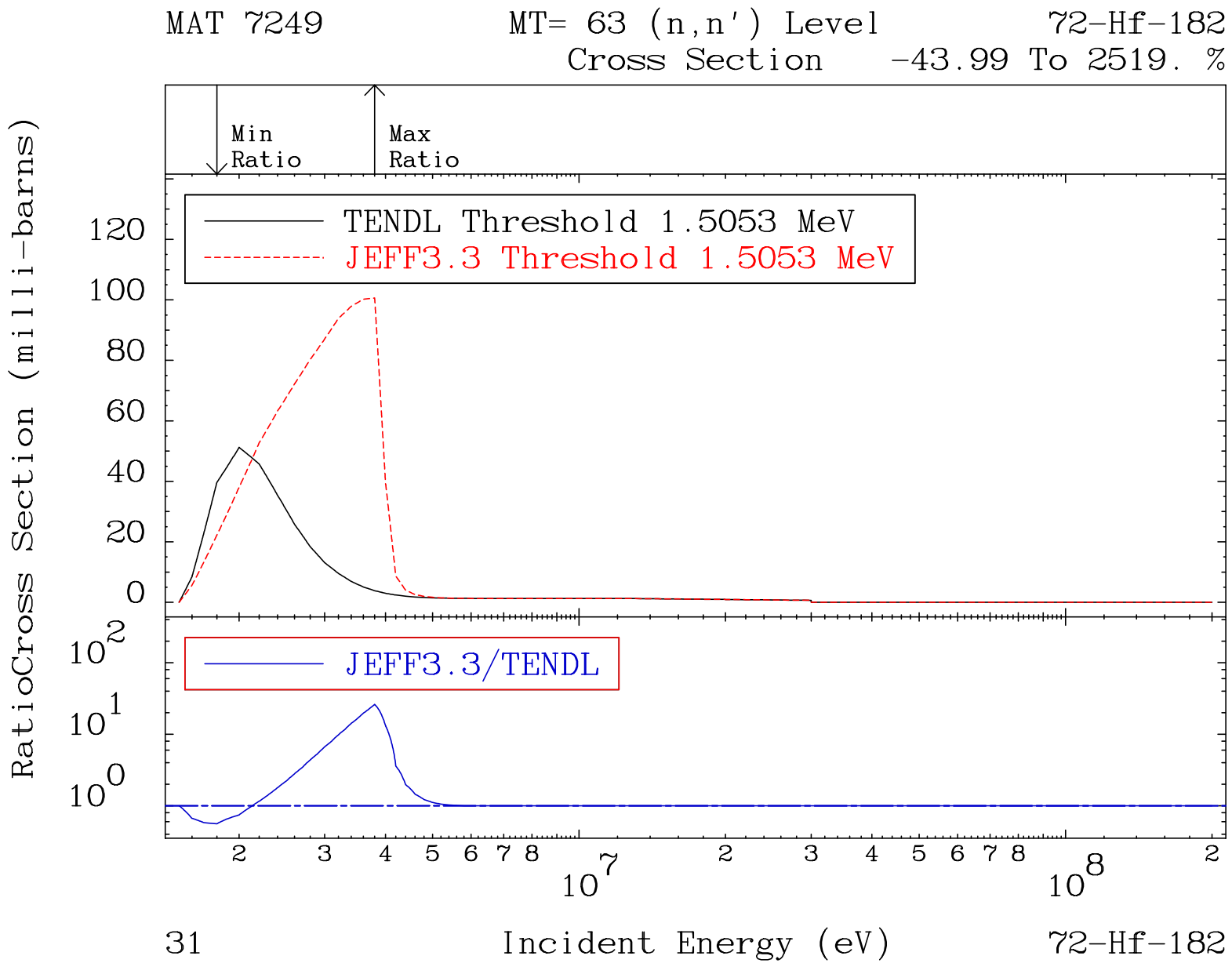

MAT 7249
MT= 58 (n,n') Level
72-Hf-182
Cross Section
-9.020 To 2994. %
Min Ratio
Max Ratio
TENDL Threshold 1.1283 MeV
JEFF3.3 Threshold 1.1283 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
26
72-Hf-182

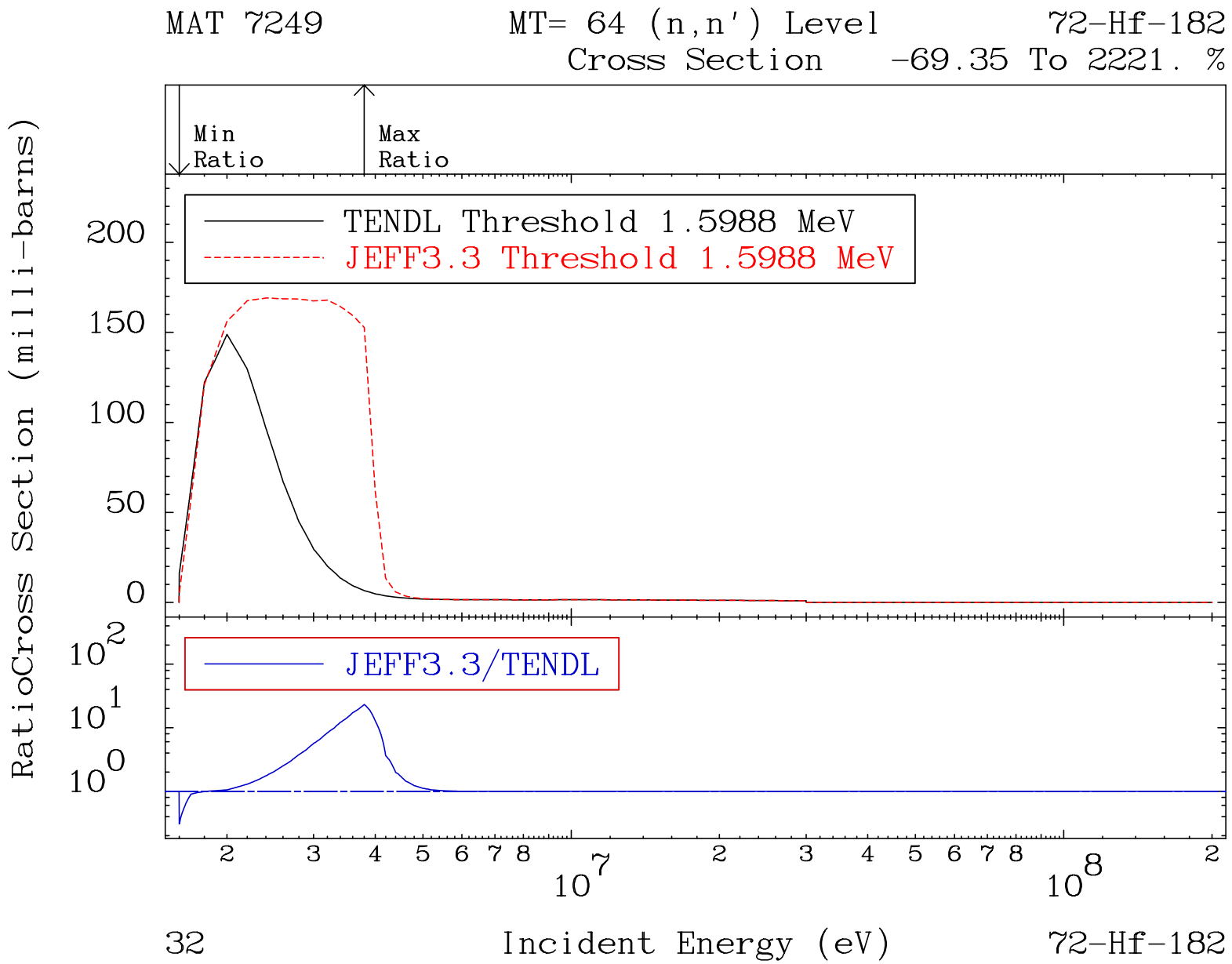

MAT 7249
MT= 59 (n,n') Level
72-Hf-182
Cross Section -74.24 To 3952. %
Min Ratio
Max Ratio
TENDL Threshold 1.1794 MeV
JEFF3.3 Threshold 1.1794 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
27
72-Hf-182

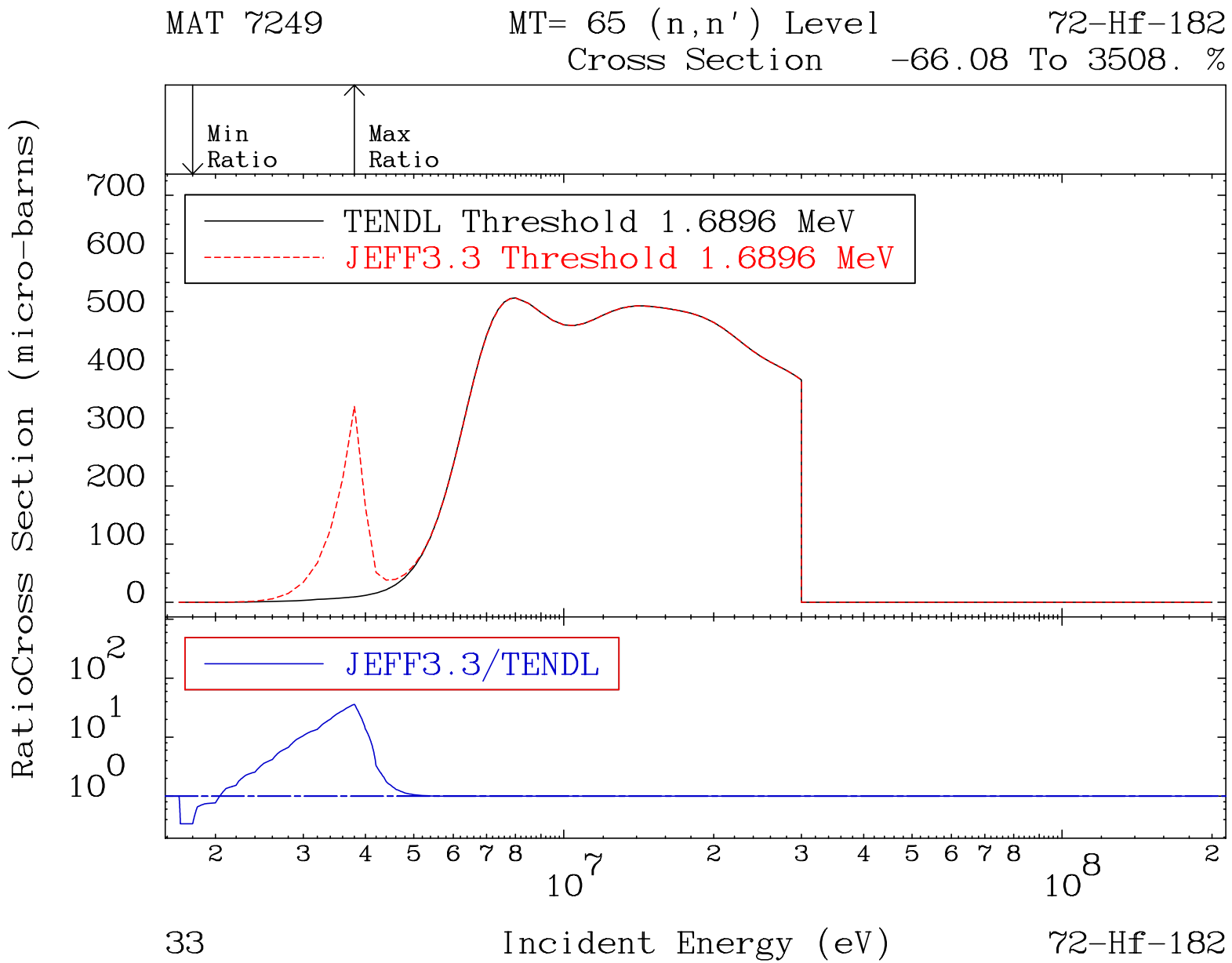

MAT 7249
MT= 60 (n,n') Level
72-Hf-182
Cross Section -32.09 To 2230. %
Max Ratio
Min Ratio
TENDL Threshold 1.2720 MeV
JEFF3.3 Threshold 1.2720 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
10^1
10^0
2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
28
Incident Energy (eV)
72-Hf-182

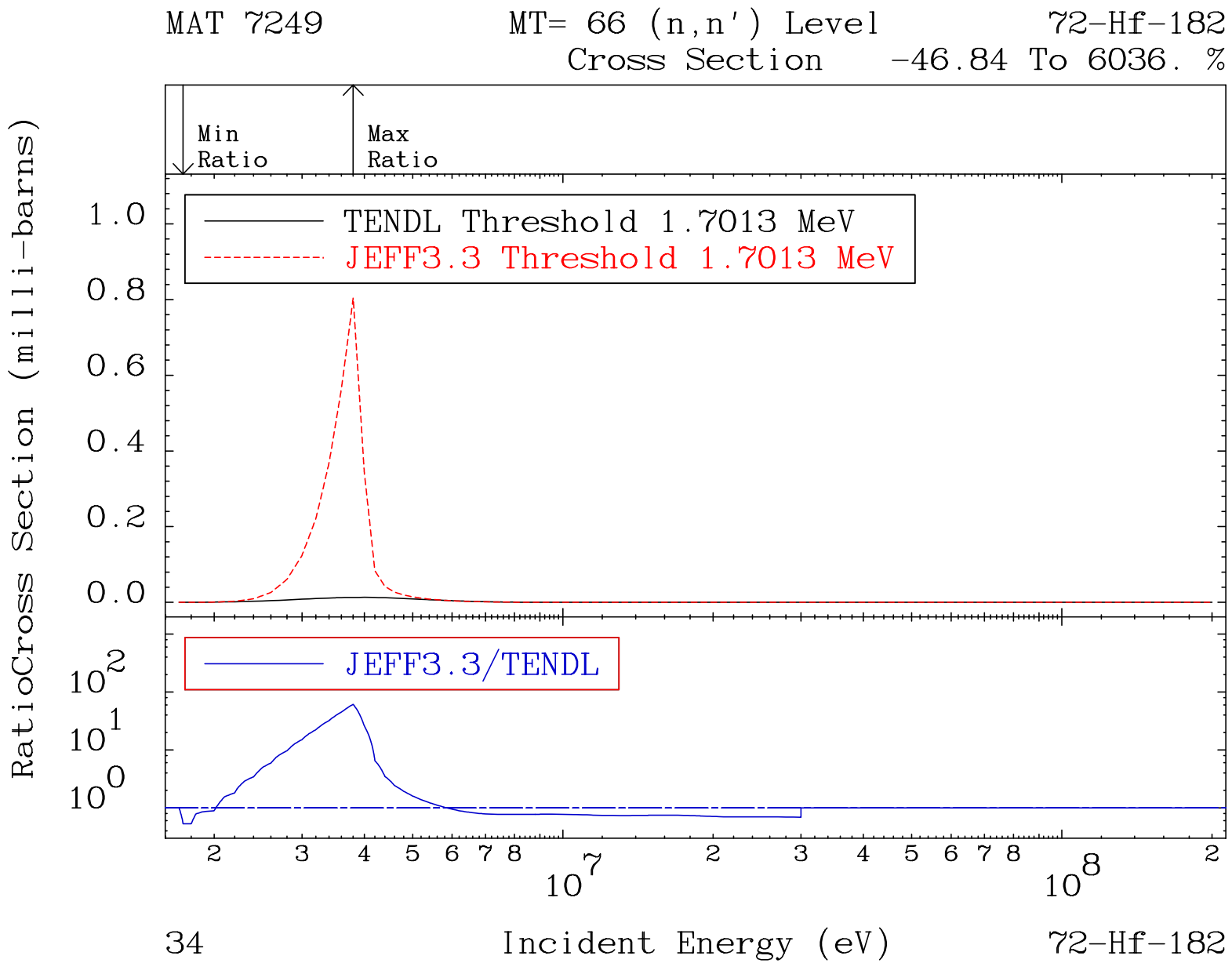

MAT 7249
MT= 61 (n,n') Level
72-Hf-182
Cross Section -77.62 To 2943. %
Min Ratio
Max Ratio
TENDL Threshold 1.4274 MeV
JEFF3.3 Threshold 1.4274 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
29
72-Hf-182

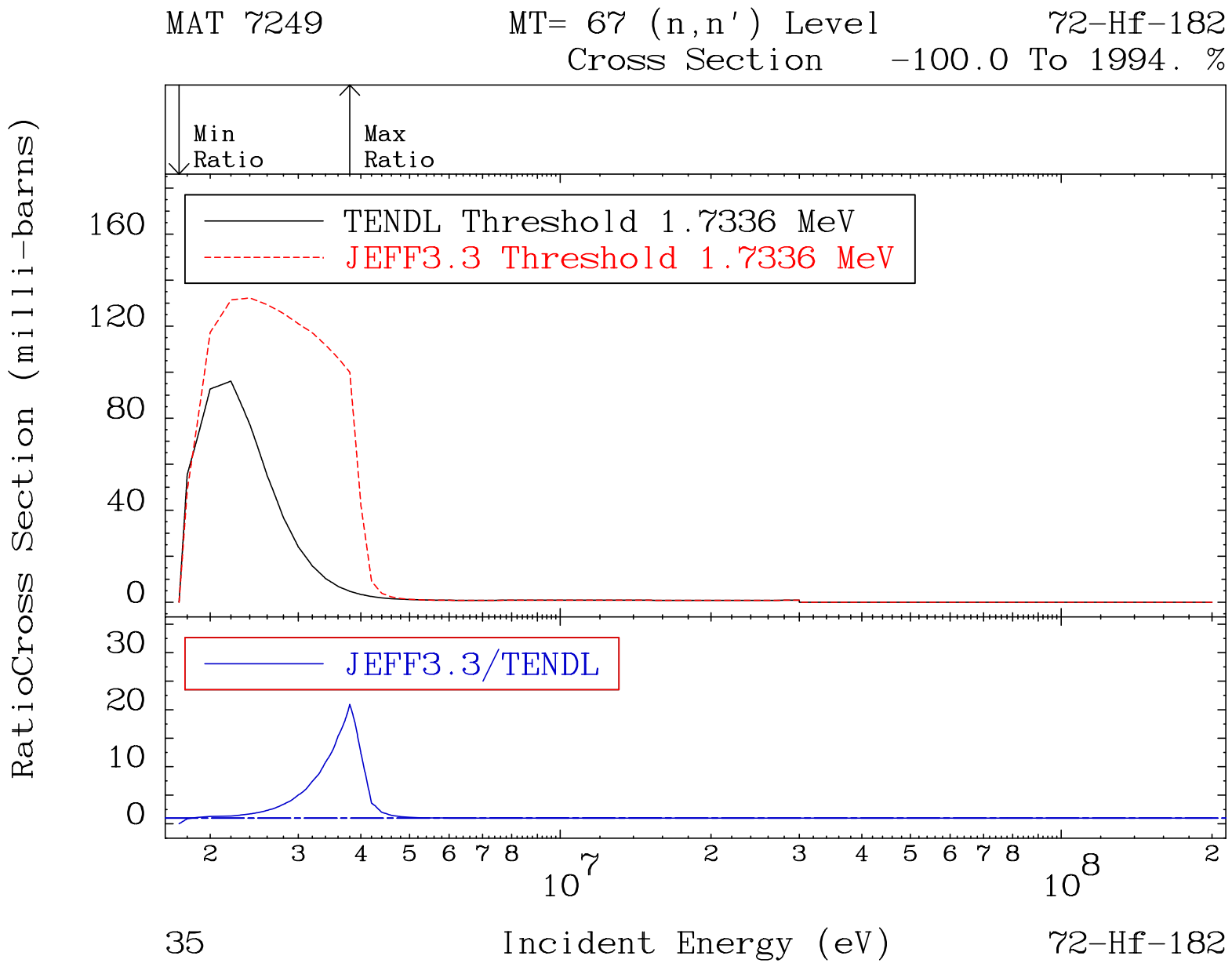

MAT 7249
MT= 62 (n,n') Level
72-Hf-182
Cross Section
-3.410 To 2026. %
Min Ratio
Max Ratio
TENDL Threshold 1.4731 MeV
JEFF3.3 Threshold 1.4731 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
10^1
10^0
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
30
Incident Energy (eV)
72-Hf-182

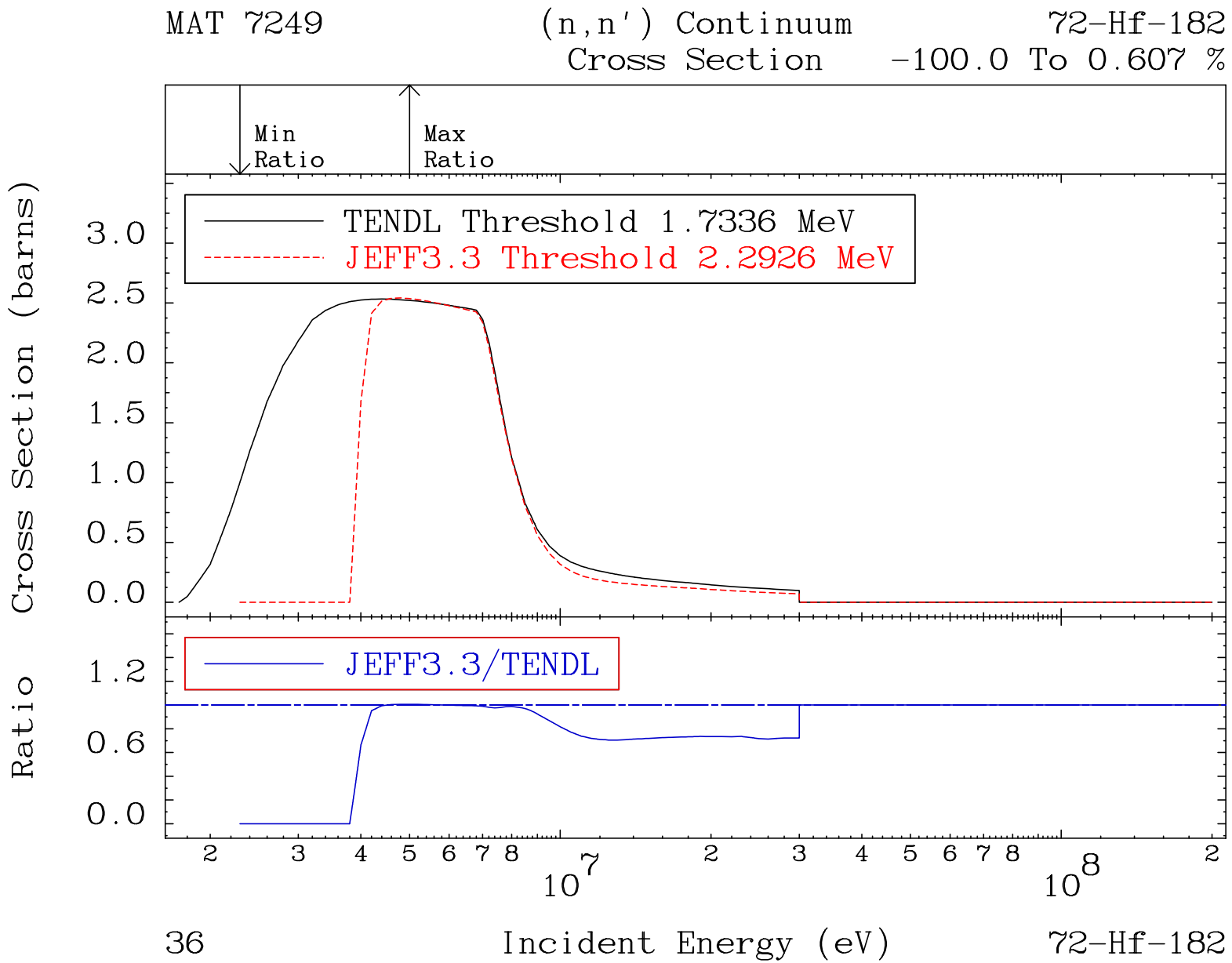

MAT 7249
MT= 63 (n,n') Level
72-Hf-182
Cross Section -43.99 To 2519. %
Min Ratio
Max Ratio
TENDL Threshold 1.5053 MeV
JEFF3.3 Threshold 1.5053 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
10^2
10^1
10^0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
31
Incident Energy (eV)
72-Hf-182

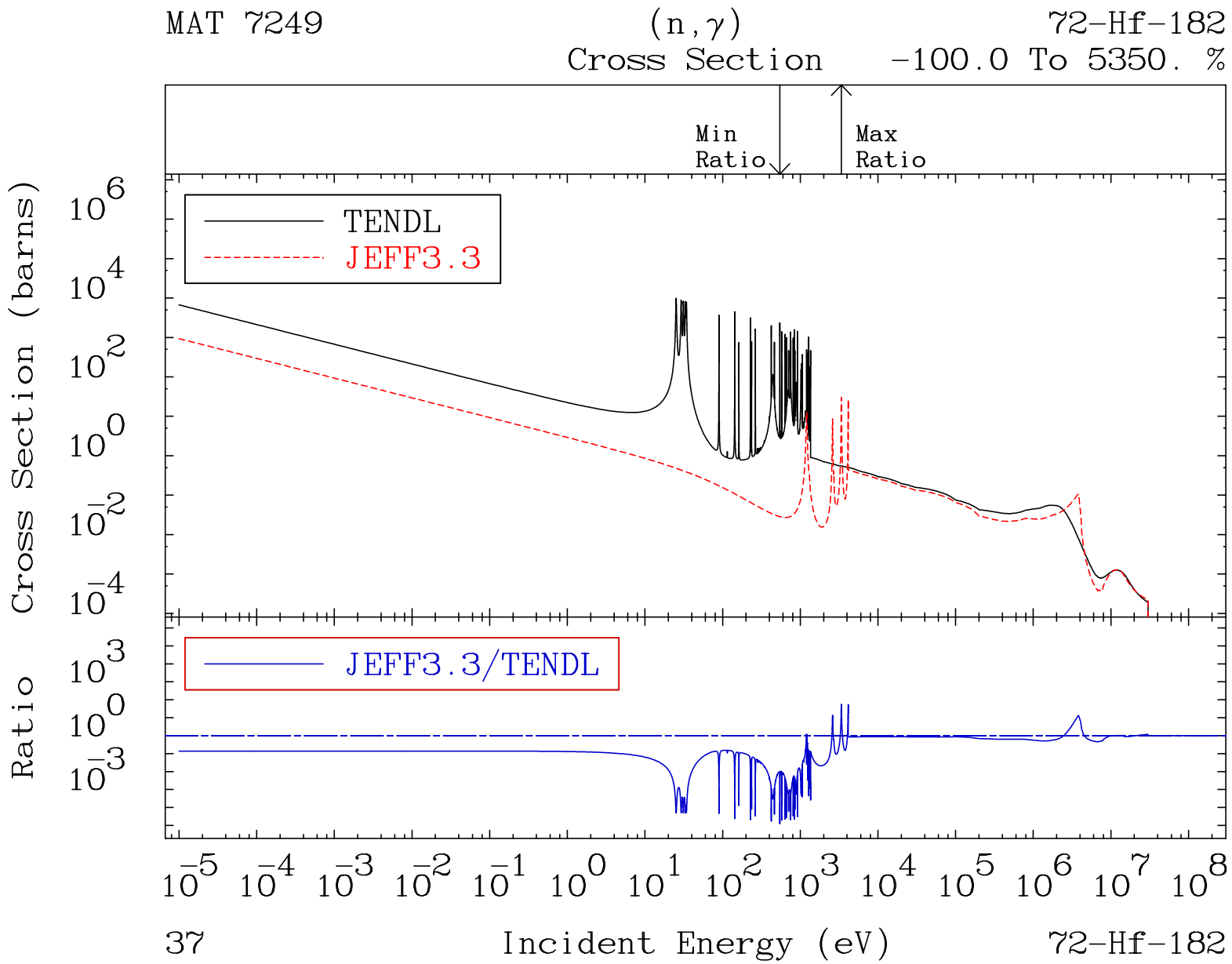

MAT 7249
MT= 64 (n,n') Level
72-Hf-182
Cross Section -69.35 To 2221. %
Min Ratio
Max Ratio
TENDL Threshold 1.5988 MeV
JEFF3.3 Threshold 1.5988 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
10^2
10^1
10^0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
32
Incident Energy (eV)
72-Hf-182

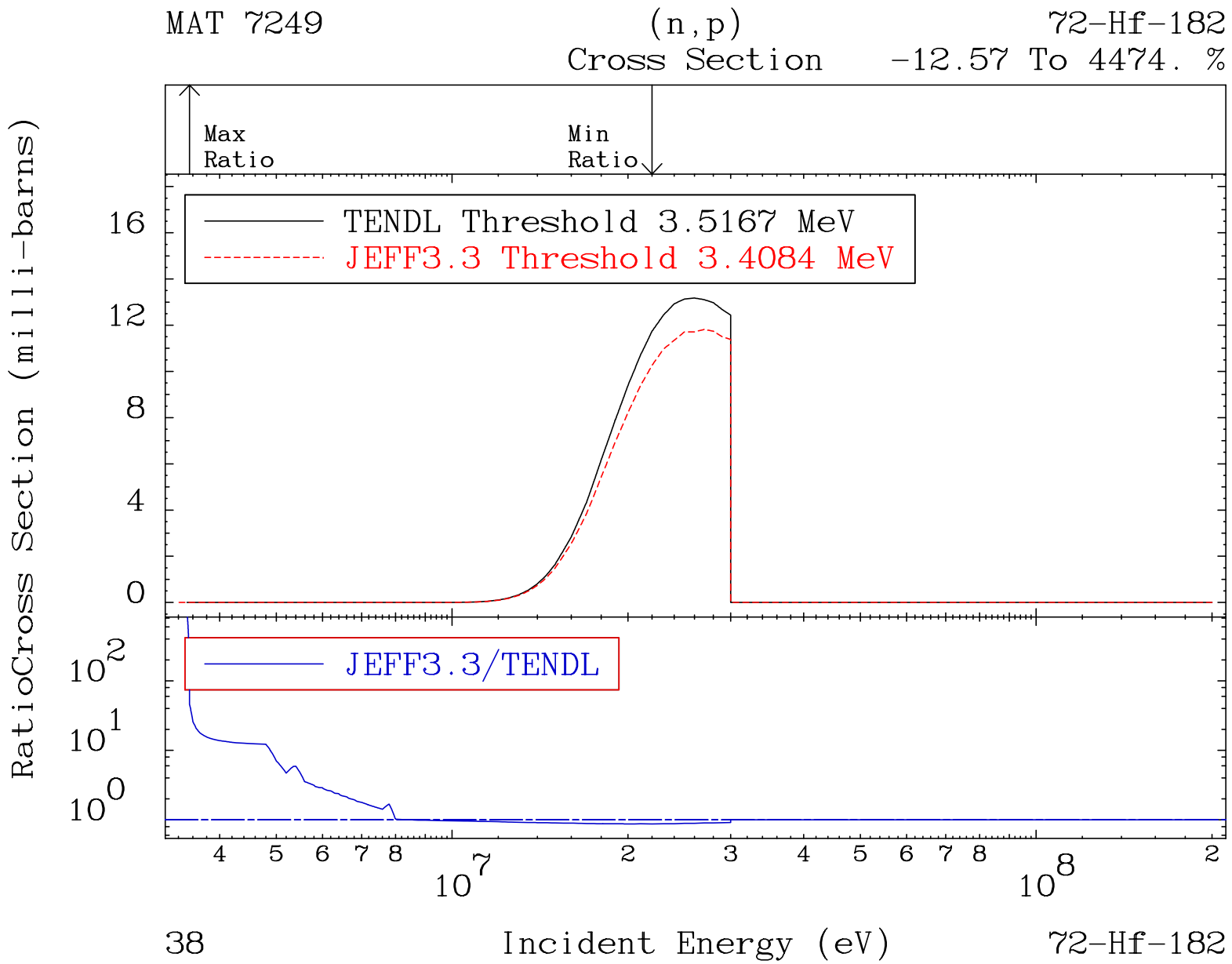

MAT 7249
MT= 65 (n,n') Level
72-Hf-182
Cross Section -66.08 To 3508. %
Min Ratio
Max Ratio
TENDL Threshold 1.6896 MeV
JEFF3.3 Threshold 1.6896 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
700
600
500
400
300
200
100
0
10^2
10^1
10^0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
33
Incident Energy (eV)
72-Hf-182

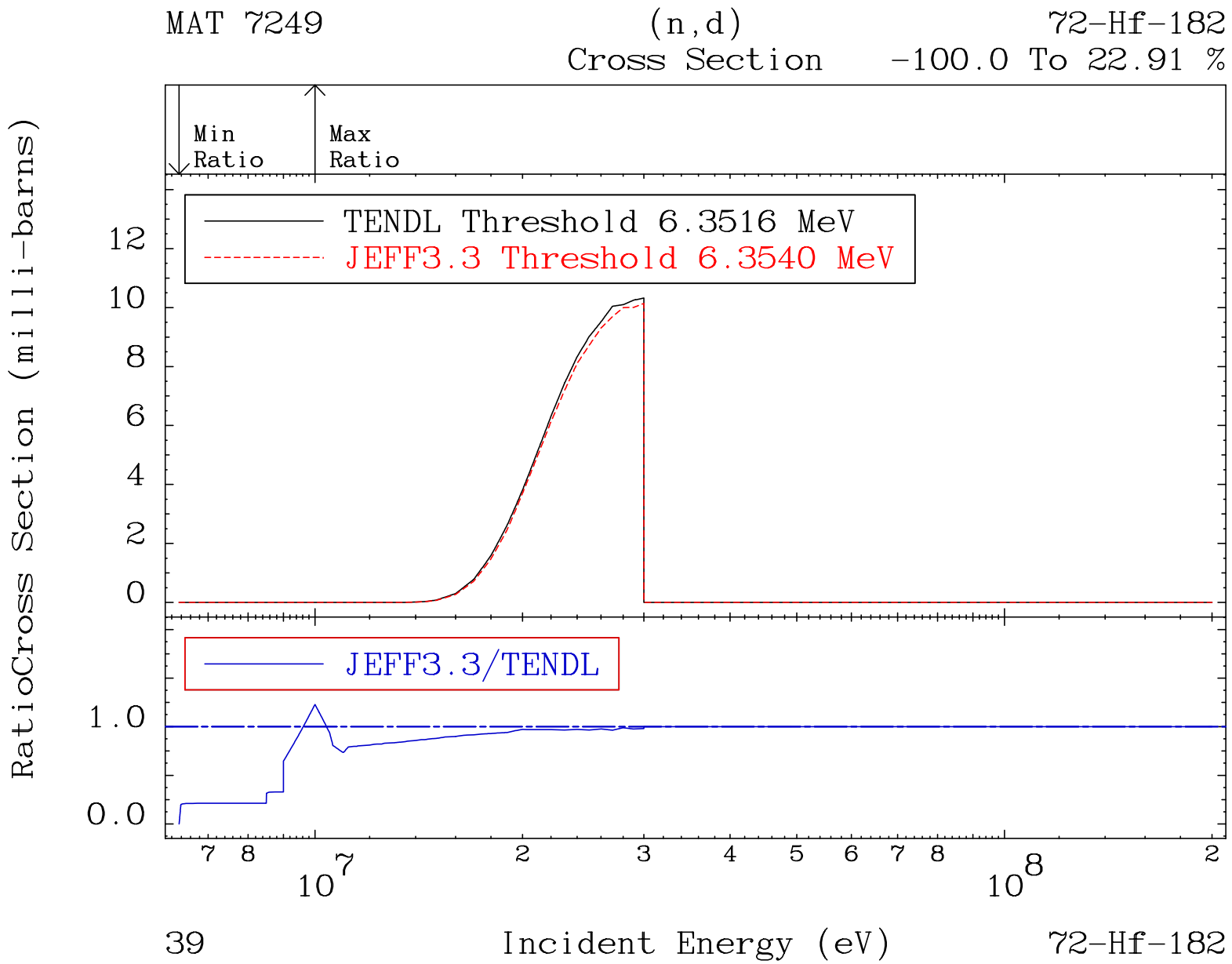

MAT 7249
MT= 66 (n,n') Level
72-Hf-182
Cross Section -46.84 To 6036. %
Min Ratio
Max Ratio
TENDL Threshold 1.7013 MeV
JEFF3.3 Threshold 1.7013 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
1.0
0.8
0.6
0.4
0.2
0.0
10^2
10^1
10^0
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
Incident Energy (eV)
34
72-Hf-182

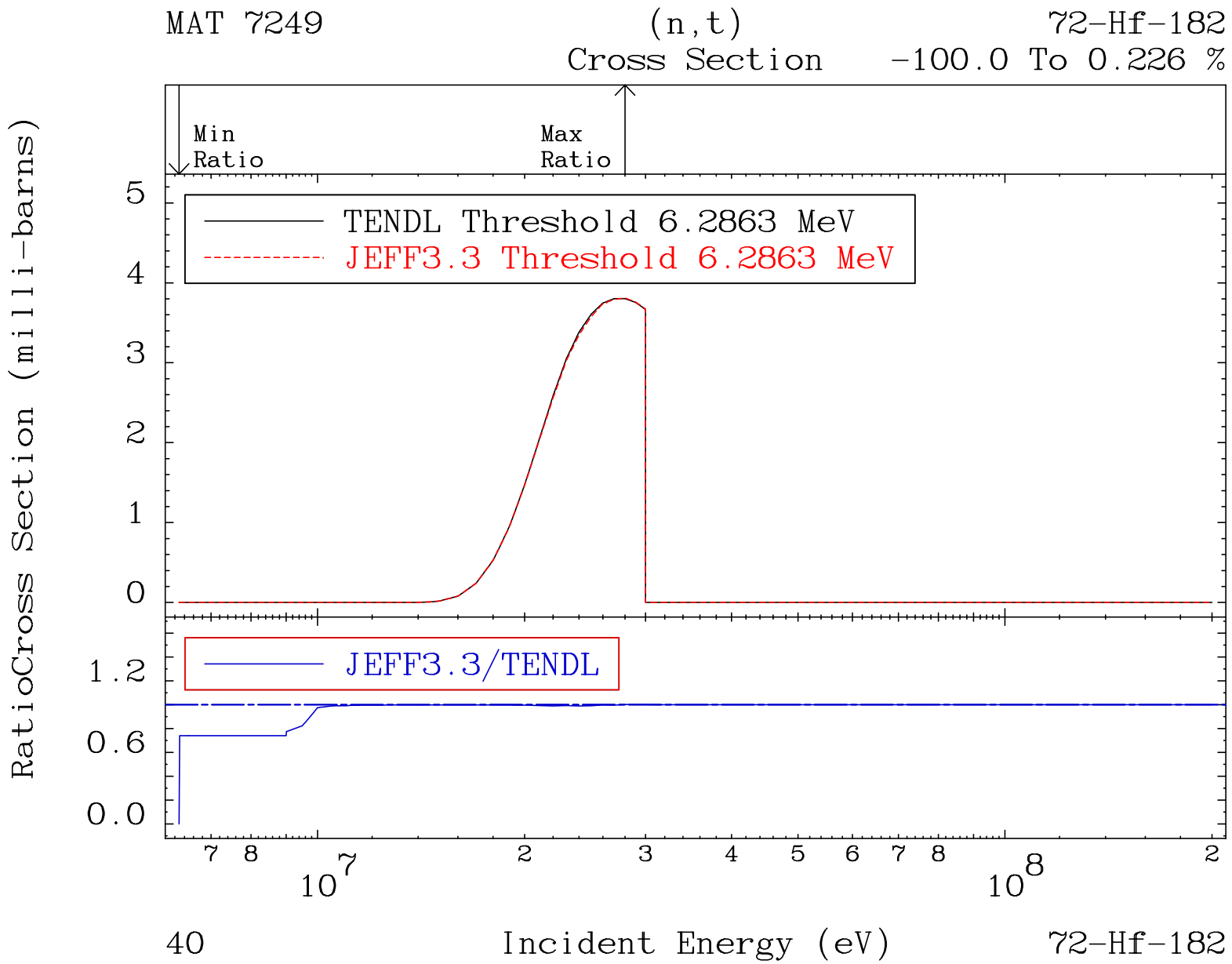

MAT 7249
MT= 67 (n,n') Level
72-Hf-182
Cross Section -100.0 To 1994. %
Min Ratio
Max Ratio
TENDL Threshold 1.7336 MeV
JEFF3.3 Threshold 1.7336 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
30
20
10
0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
35
Incident Energy (eV)
72-Hf-182

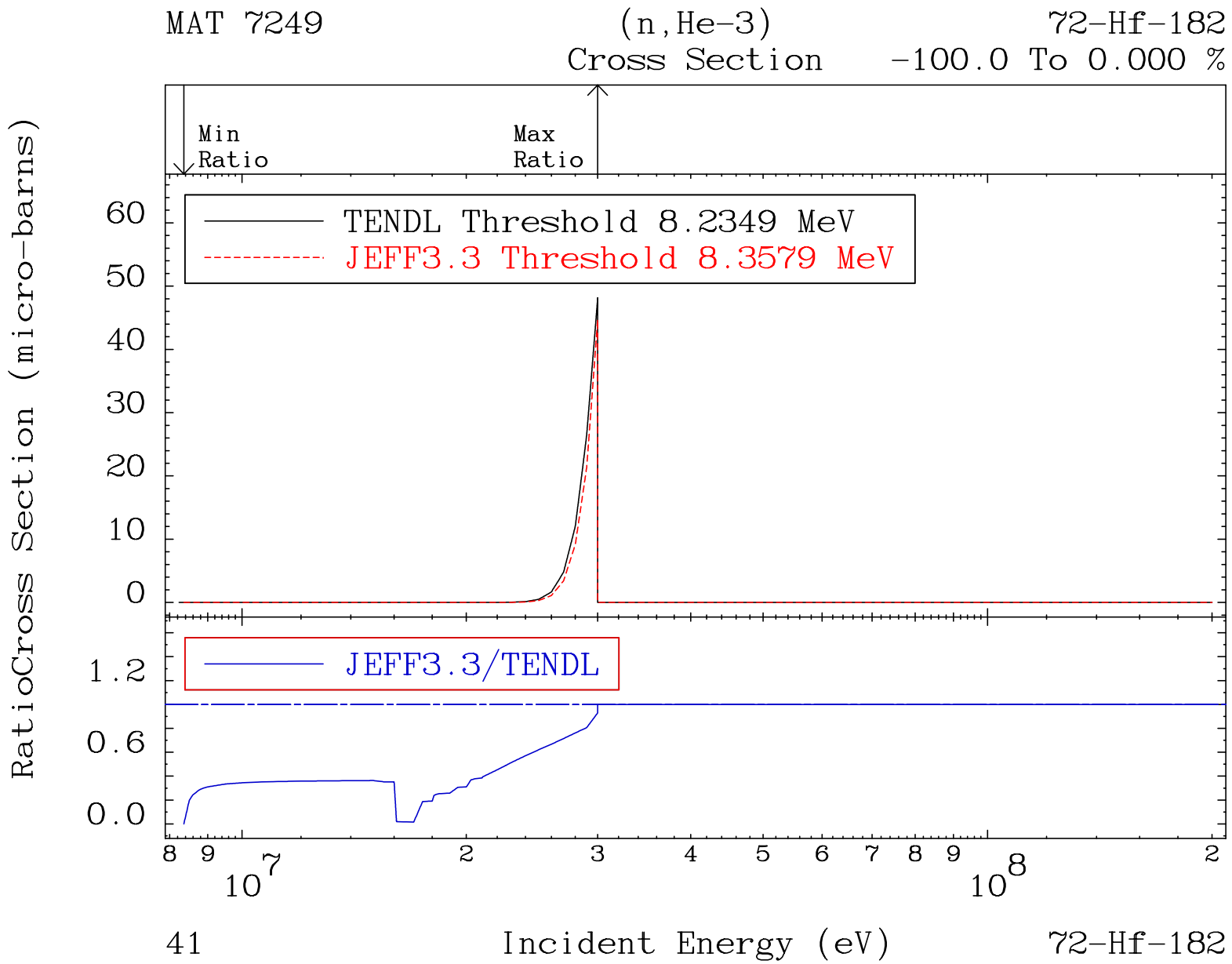

MAT 7249
(n,n') Continuum
Cross Section
72-Hf-182
-100.0 To 0.607 %
Min Ratio
Max Ratio
TENDL Threshold 1.7336 MeV
JEFF3.3 Threshold 2.2926 MeV
Cross Section (barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
JEFF3.3/TENDL
Ratio
1.2
0.6
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
36
Incident Energy (eV)
72-Hf-182

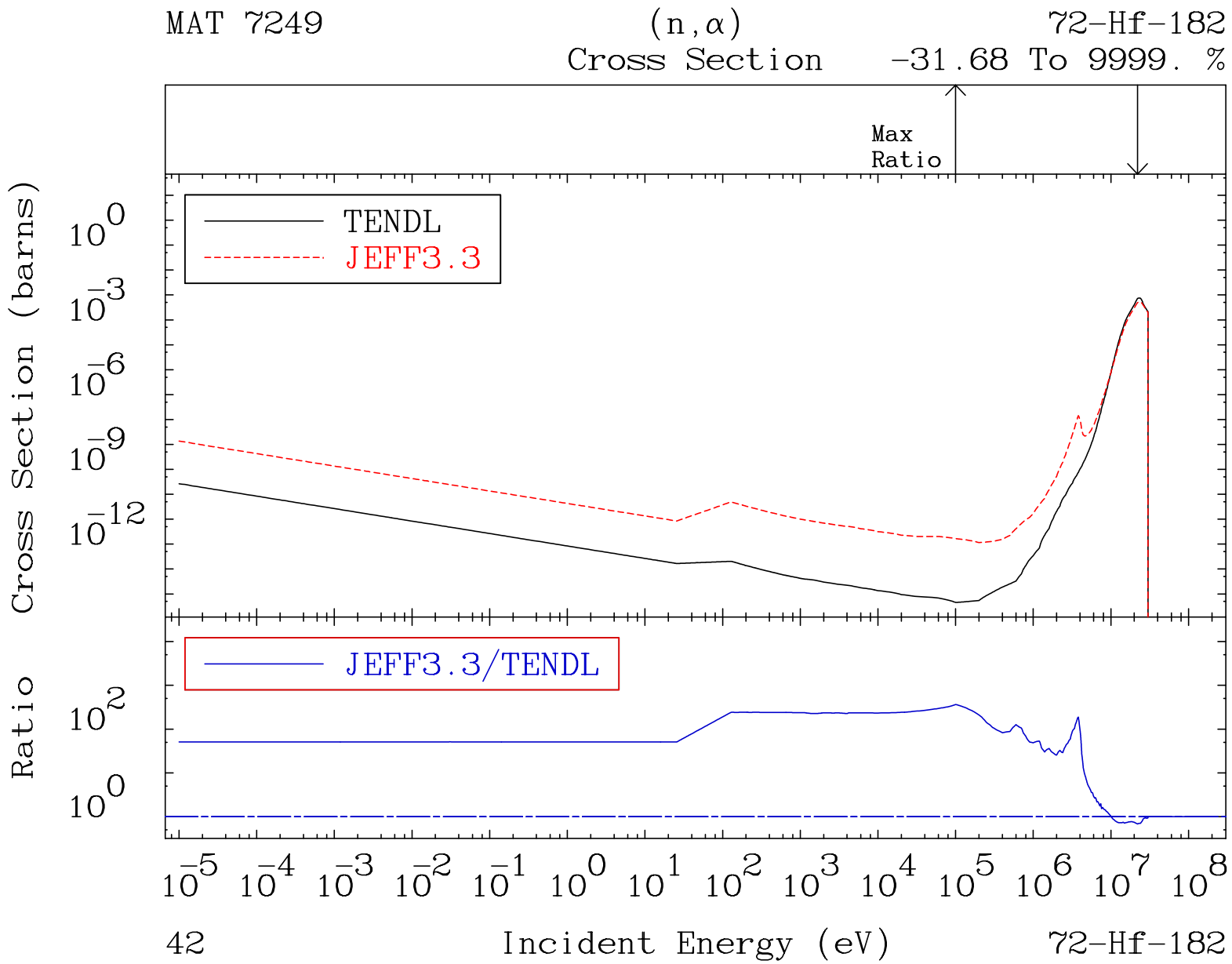

MAT 7249
(n,γ)
Cross Section
72-Hf-182
-100.0 To 5350. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
37
72-Hf-182

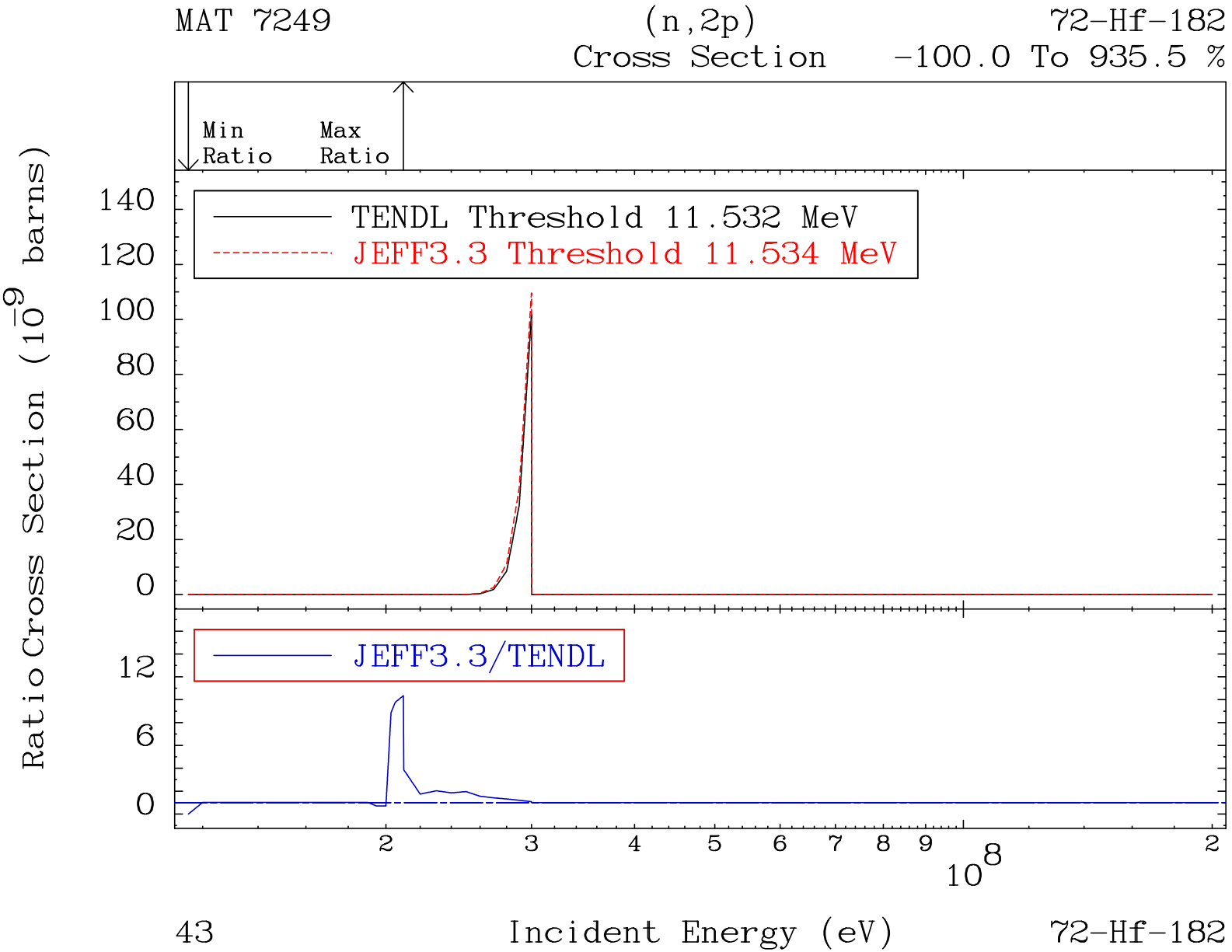

MAT 7249
(n,p)
72-Hf-182
Cross Section
-12.57 To 4474. %
Max Ratio
Min Ratio
TENDL Threshold 3.5167 MeV
JEFF3.3 Threshold 3.4084 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
16
12
8
4
0
10^2
10^1
10^0
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
38
Incident Energy (eV)
72-Hf-182

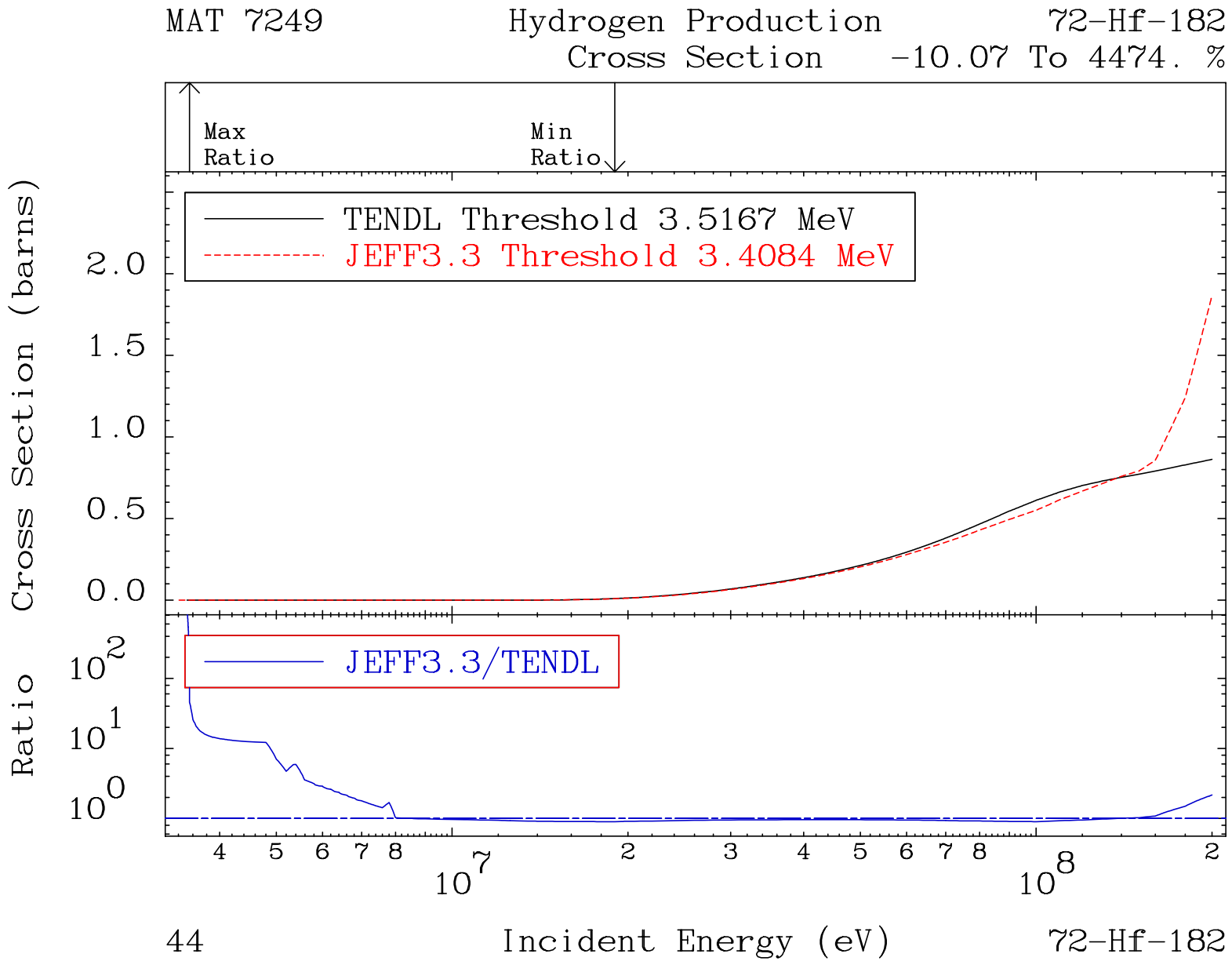

MAT 7249
(n,d)
72-Hf-182
Cross Section
-100.0 To 22.91 %
Min Ratio
Max Ratio
TENDL Threshold 6.3516 MeV
JEFF3.3 Threshold 6.3540 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
12
10
8
6
4
2
0
1.0
0.0
7 8
10^7
2
3
4
5
6
7
8
10^8
2
39
Incident Energy (eV)
72-Hf-182

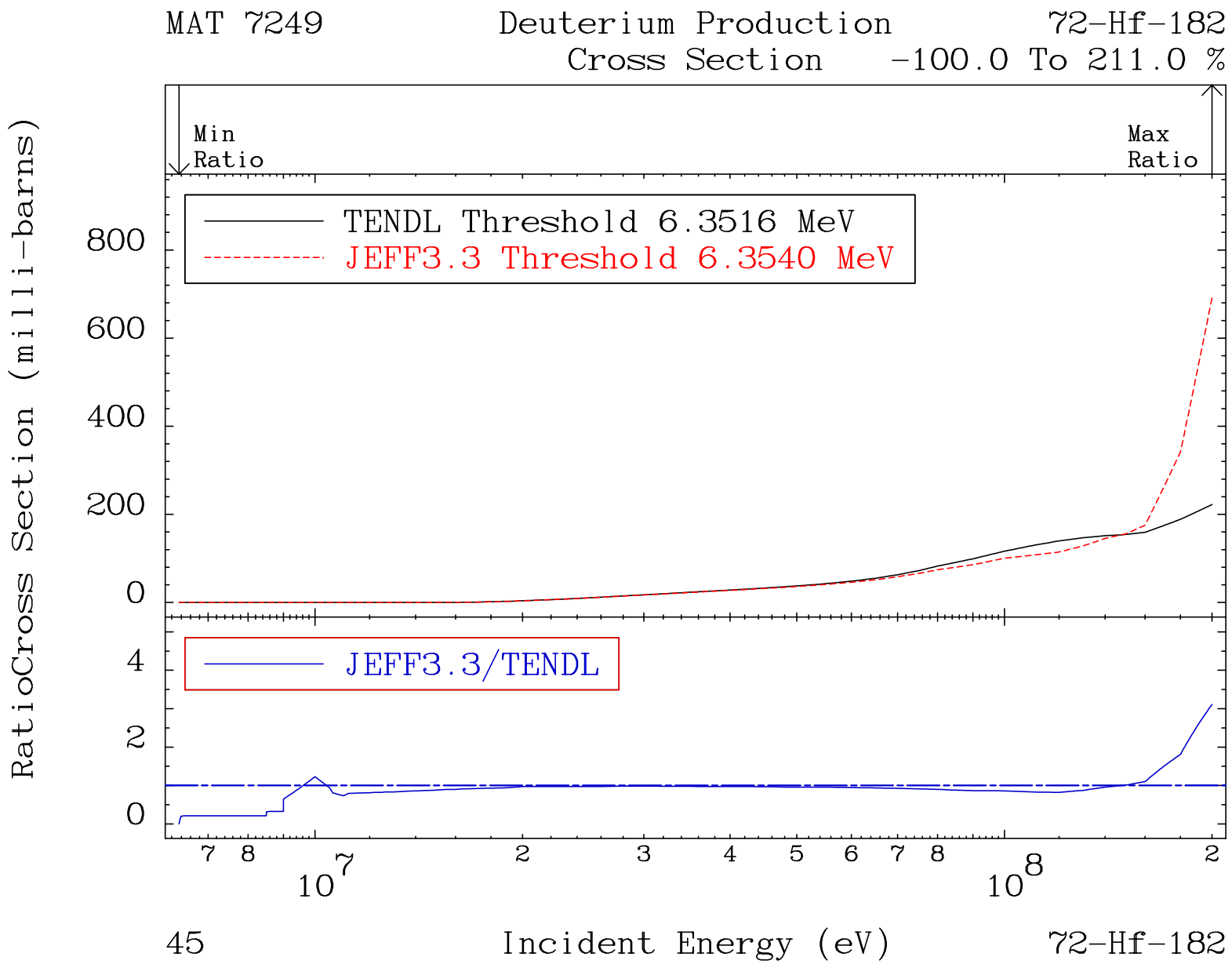

MAT 7249
(n,t)
72-Hf-182
Cross Section
-100.0 To 0.226 %
Min Ratio
Max Ratio
TENDL Threshold 6.2863 MeV
JEFF3.3 Threshold 6.2863 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
40
72-Hf-182

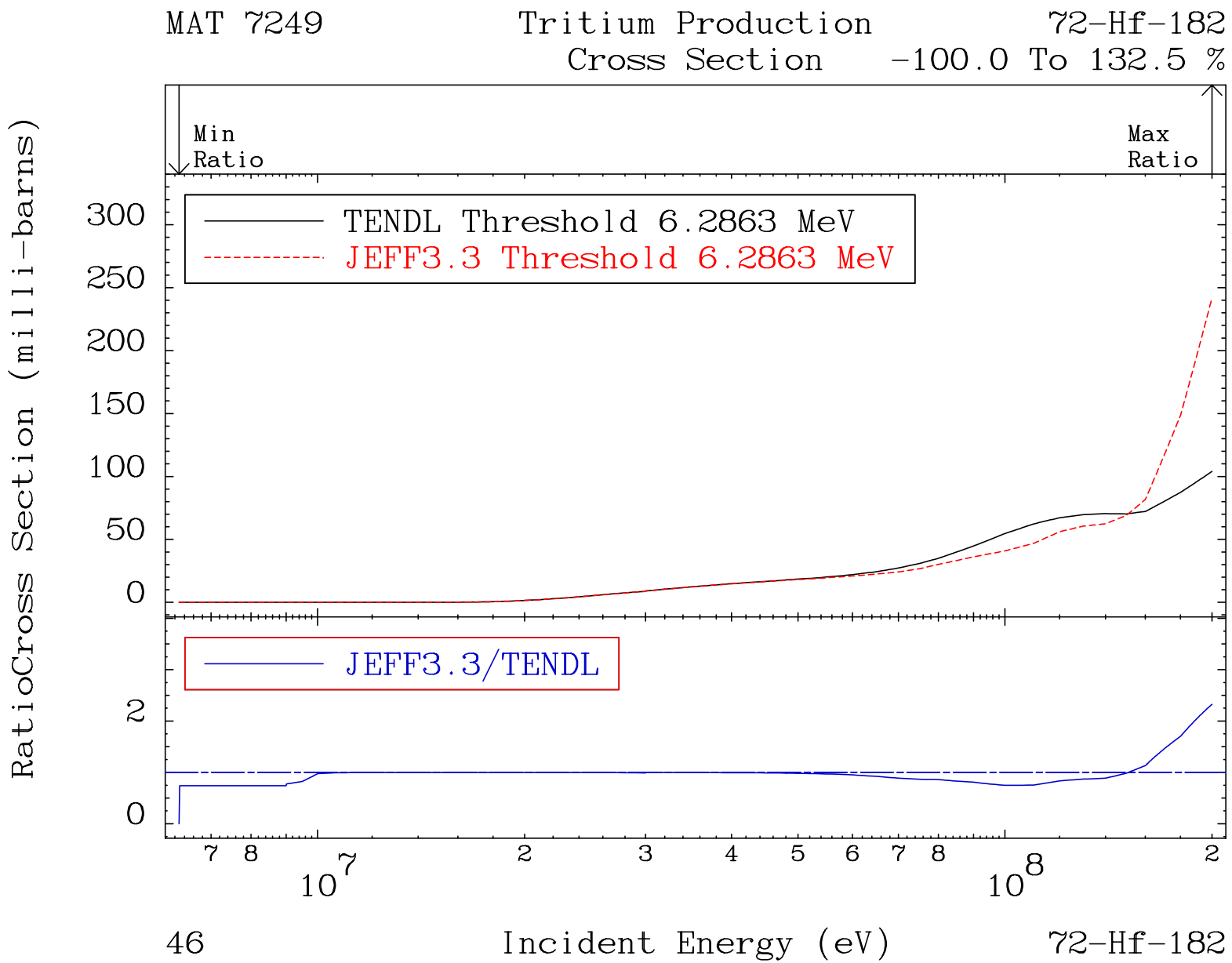

MAT 7249
(n,He-3)
Cross Section
72-Hf-182
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 8.2349 MeV
JEFF3.3 Threshold 8.3579 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
60
50
40
30
20
10
0
1.2
0.6
0.0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
41
Incident Energy (eV)
72-Hf-182

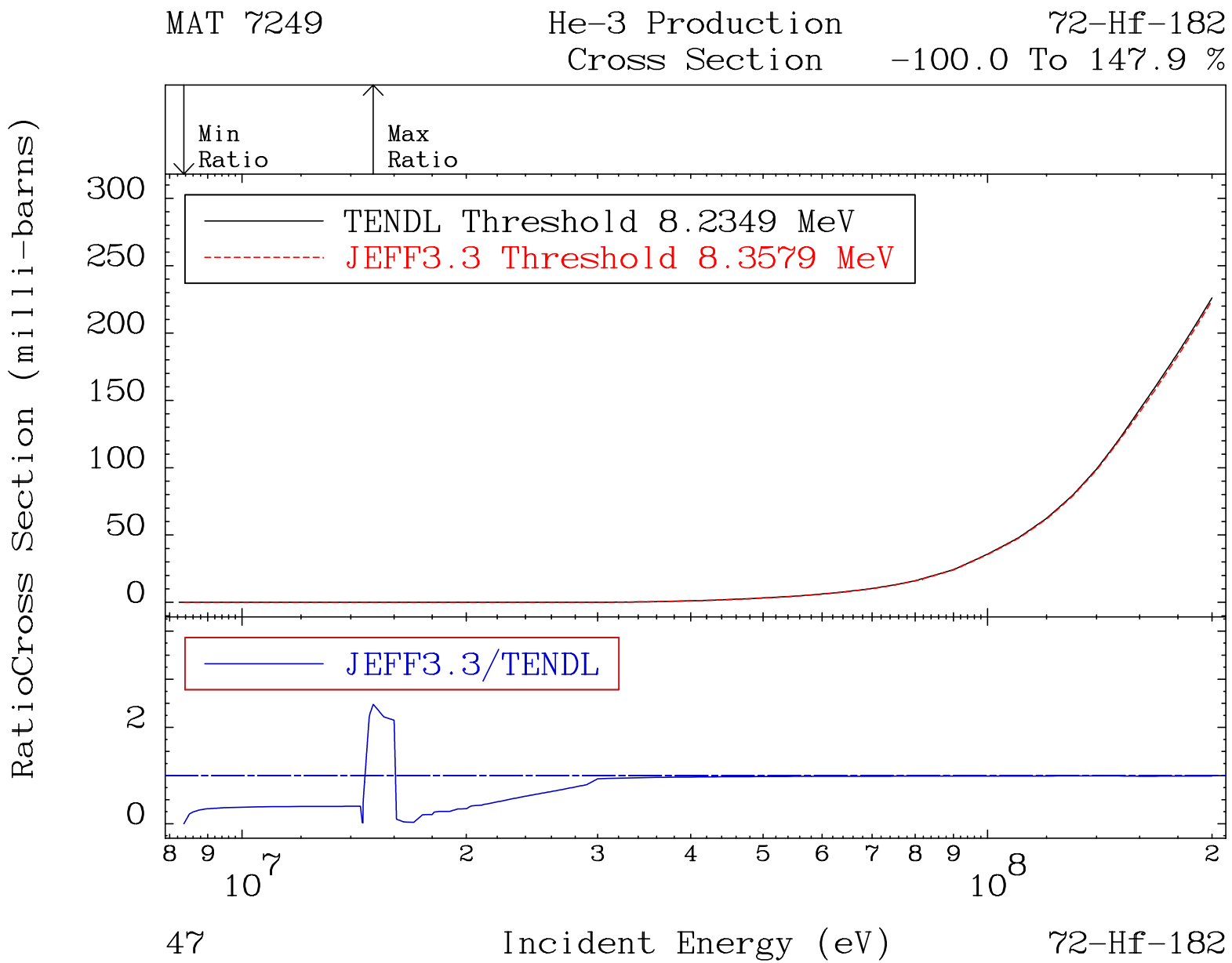

MAT 7249
(n,α)
Cross Section
72-Hf-182
-31.68 To 9999. %
Max
Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
42
72-Hf-182

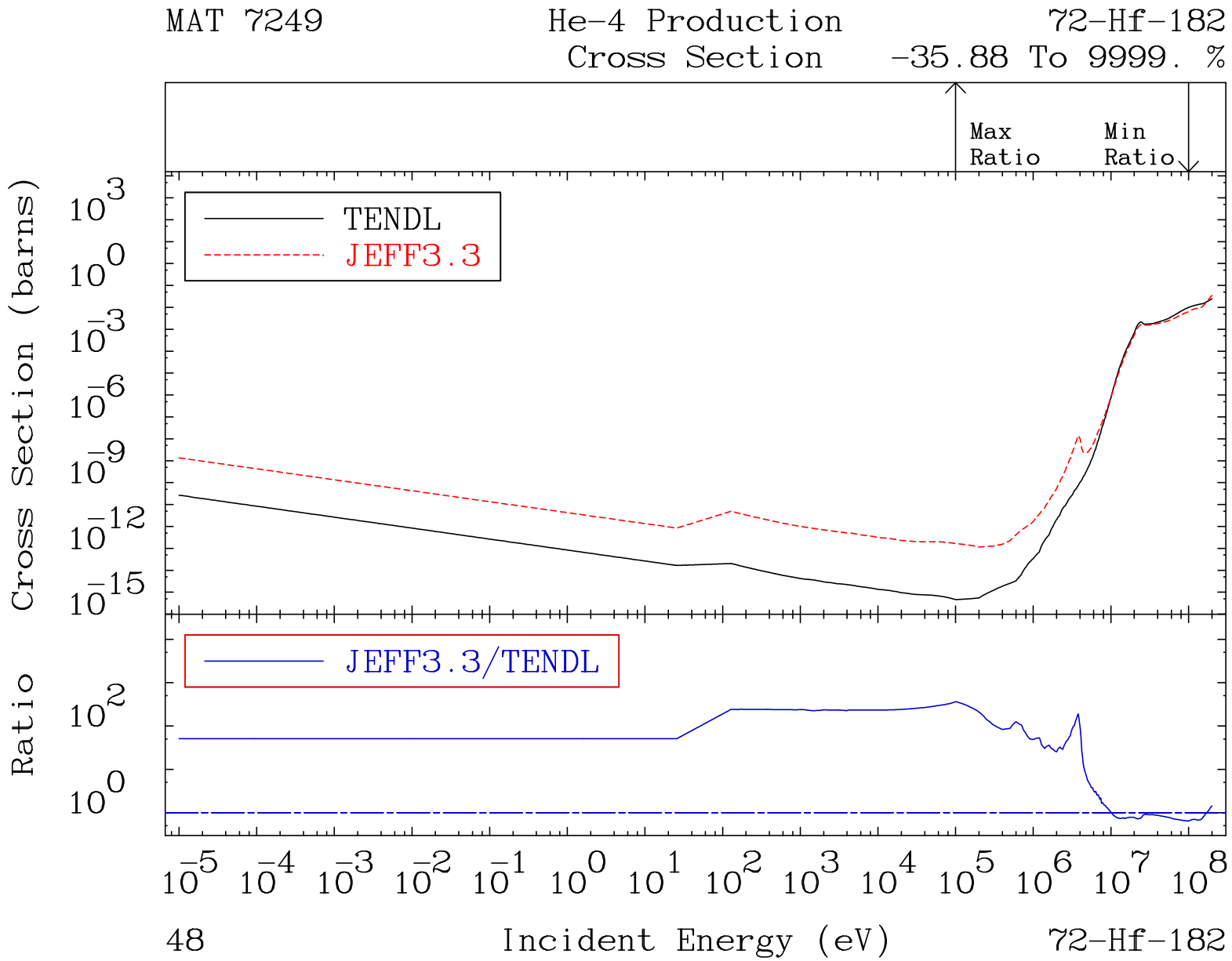

MAT 7249
(n,2p)
72-Hf-182
Cross Section
-100.0 To 935.5 %
Min Ratio
Max Ratio
TENDL Threshold 11.532 MeV
JEFF3.3 Threshold 11.534 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
140
120
100
80
60
40
20
0
12
6
0
2
3
4
5
6
7
8
9
2
10^{8}
43
Incident Energy (eV)
72-Hf-182

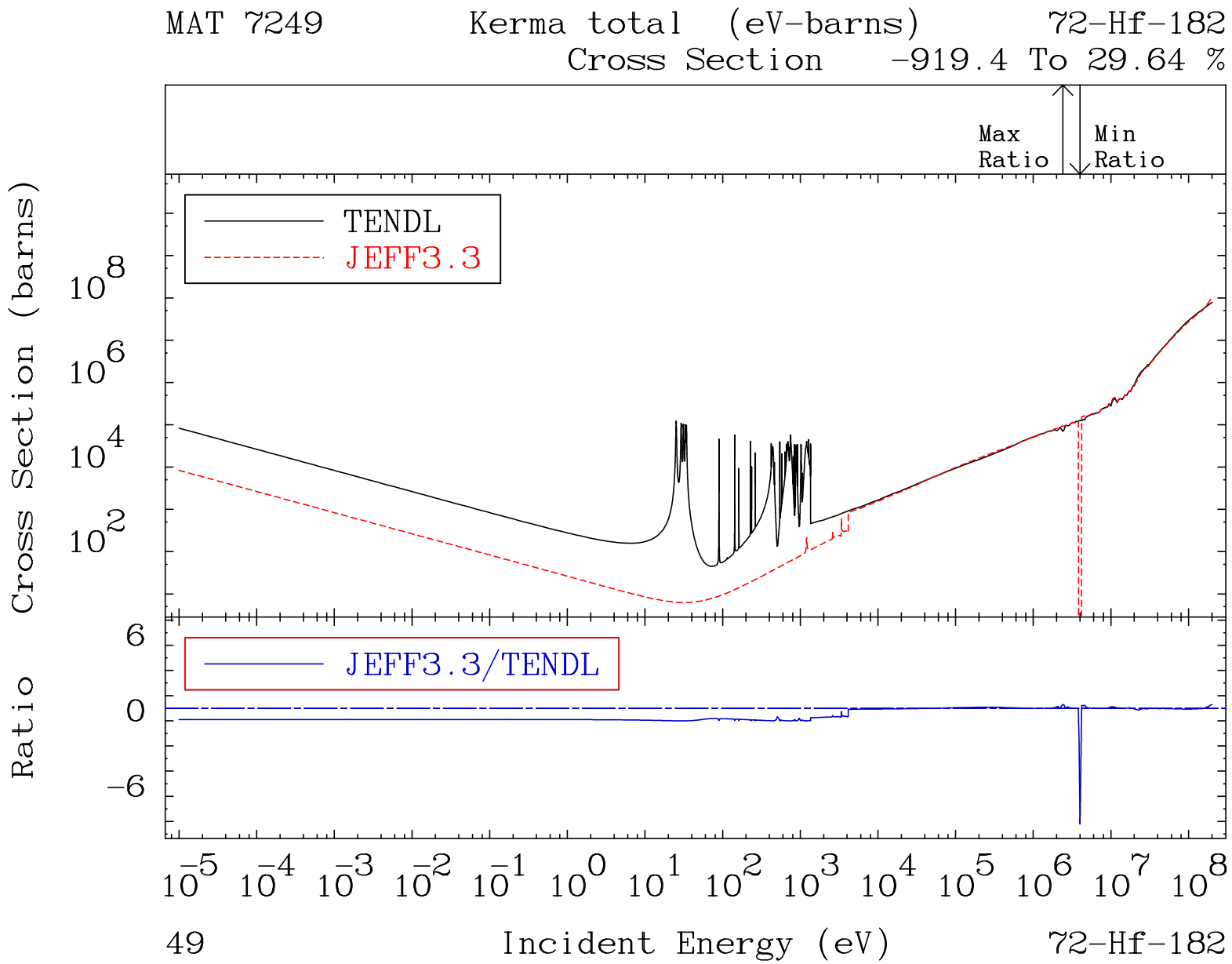

MAT 7249
Hydrogen Production
72-Hf-182
Cross Section -10.07 To 4474. %
Max Ratio
Min Ratio
TENDL Threshold 3.5167 MeV
JEFF3.3 Threshold 3.4084 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
44
72-Hf-182

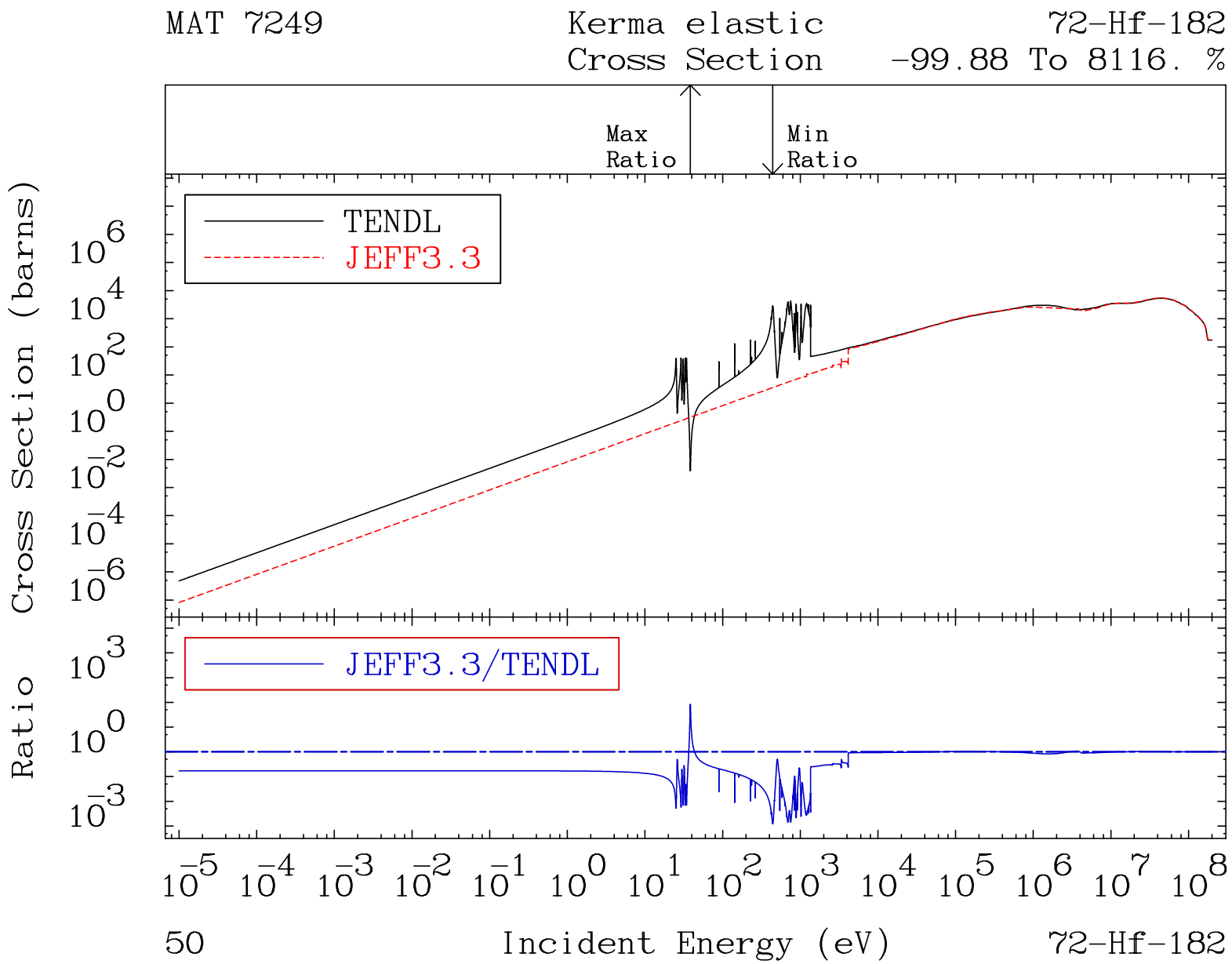

MAT 7249
Deuterium Production
72-Hf-182
Cross Section
-100.0 To 211.0 %
Min
Ratio
Max
Ratio
TENDL Threshold 6.3516 MeV
JEFF3.3 Threshold 6.3540 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
800
600
400
200
0
4
2
0
7 8
10^7
2 3 4 5 6 7 8
10^8
2
45
Incident Energy (eV)
72-Hf-182

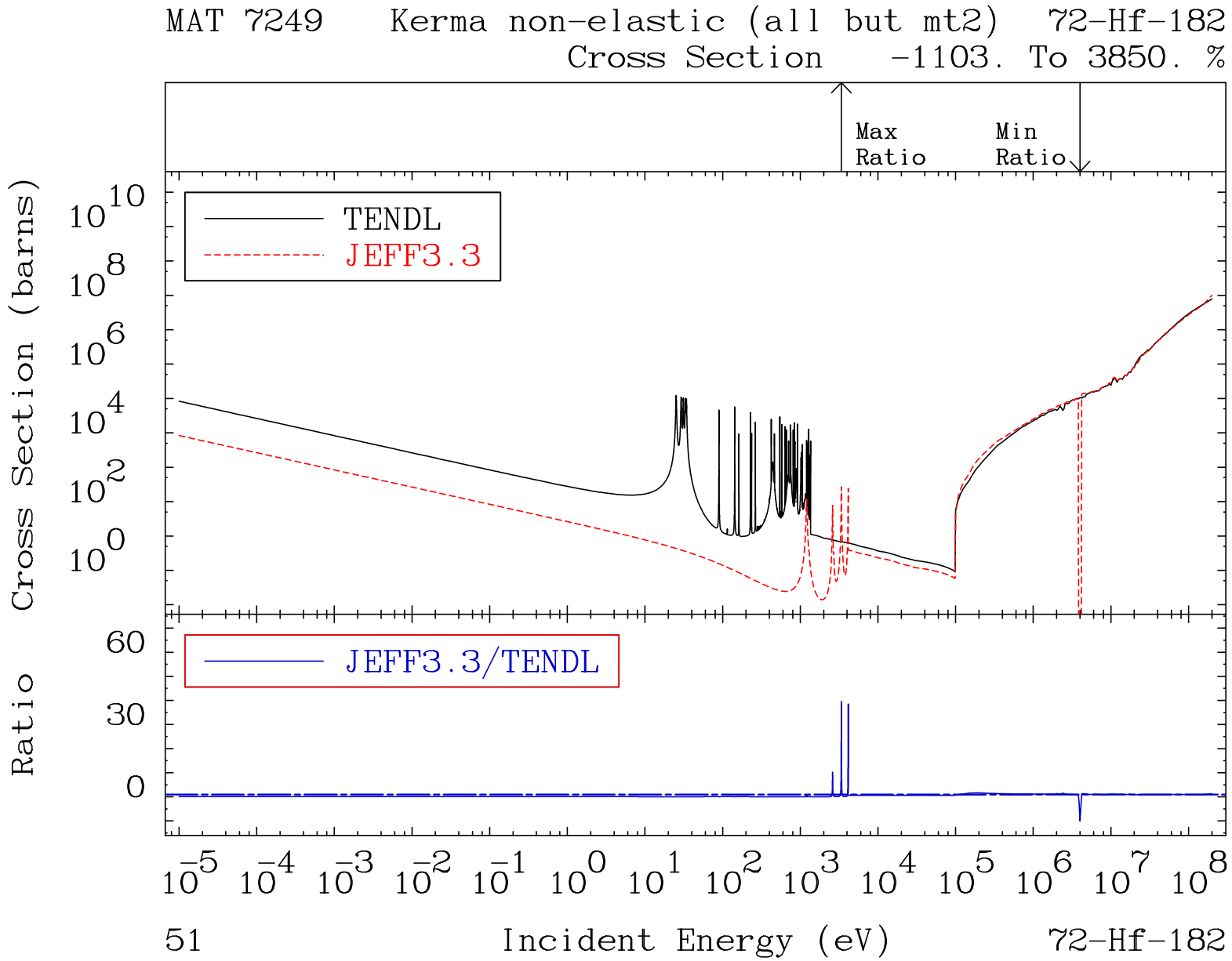

MAT 7249
Tritium Production
Cross Section
72-Hf-182
-100.0 To 132.5 %
Min Ratio
Max Ratio
TENDL Threshold 6.2863 MeV
JEFF3.3 Threshold 6.2863 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
300
250
200
150
100
50
0
2
0
7 8
10^7
2 3 4 5 6 7 8
10^8
2
46
Incident Energy (eV)
72-Hf-182

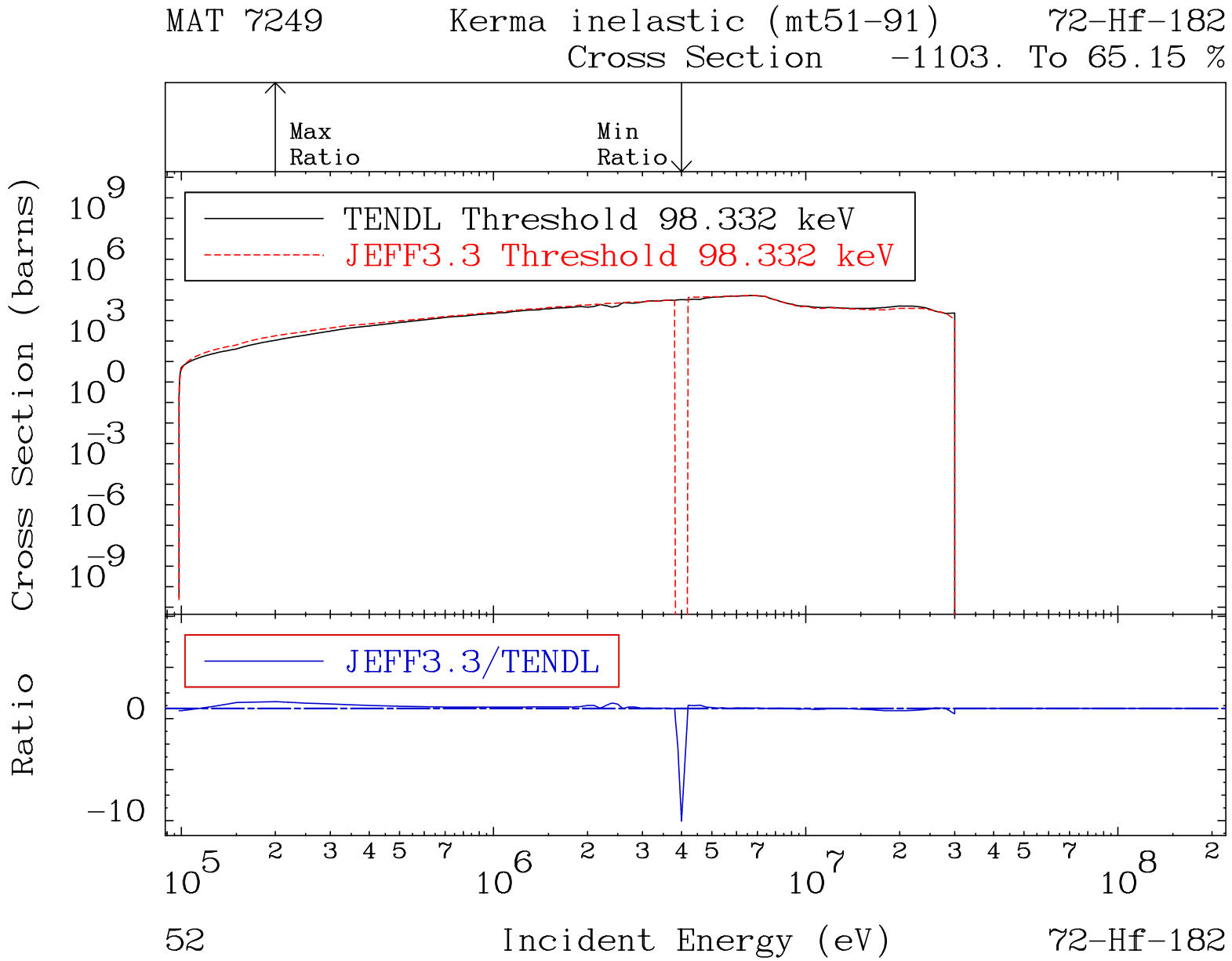

MAT 7249
He-3 Production
Cross Section
72-Hf-182
-100.0 To 147.9 %
Min Ratio
Max Ratio
TENDL Threshold 8.2349 MeV
JEFF3.3 Threshold 8.3579 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
47
72-Hf-182

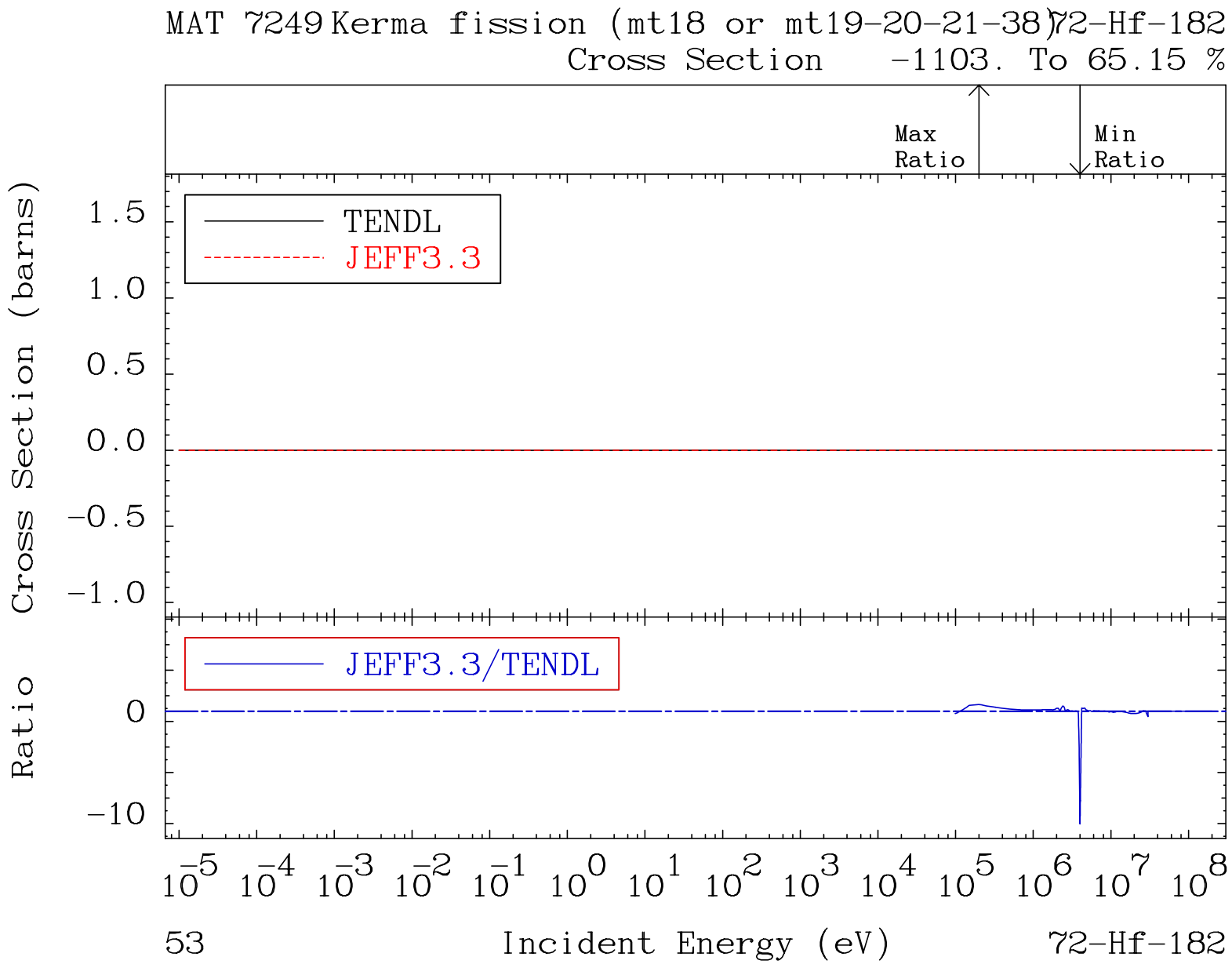

MAT 7249
He-4 Production
Cross Section
72-Hf-182
-35.88 To 9999. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
48
72-Hf-182

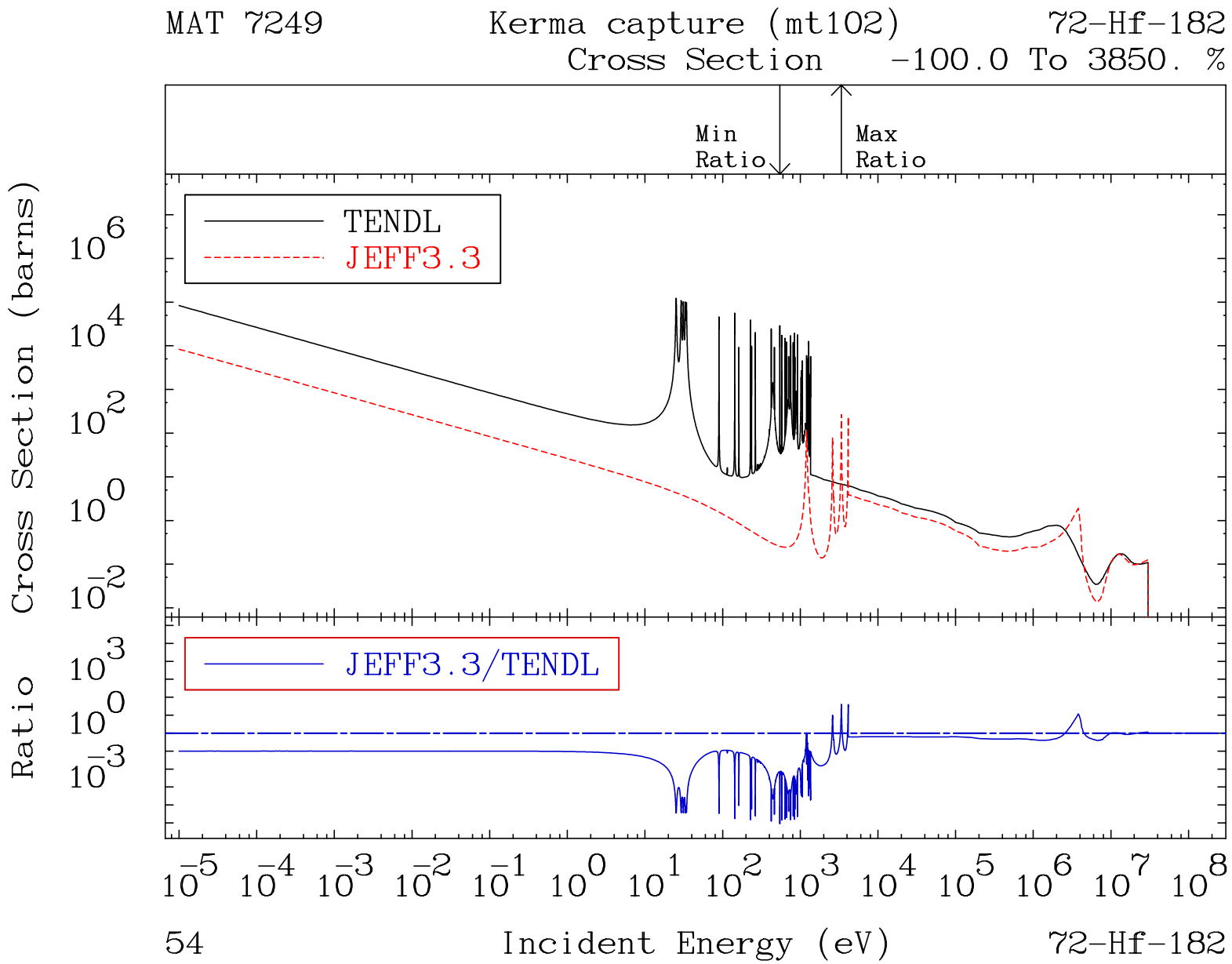

MAT 7249
Kerma total (eV-barns)
72-Hf-182
Cross Section -919.4 To 29.64 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
49
72-Hf-182

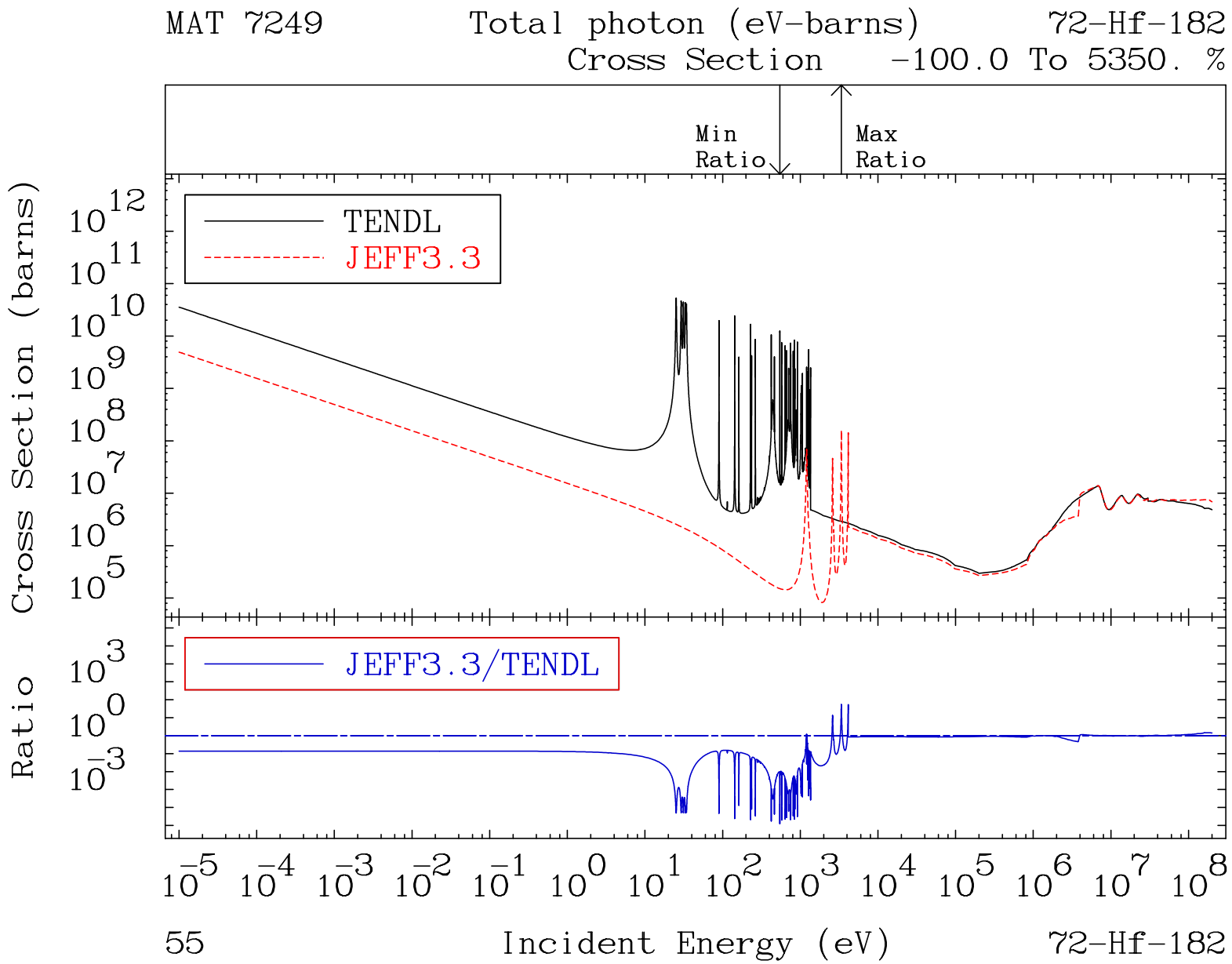

MAT 7249
Kerma elastic
Cross Section
72-Hf-182
-99.88 To 8116. %
Max
Ratio
Min
Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
50
72-Hf-182

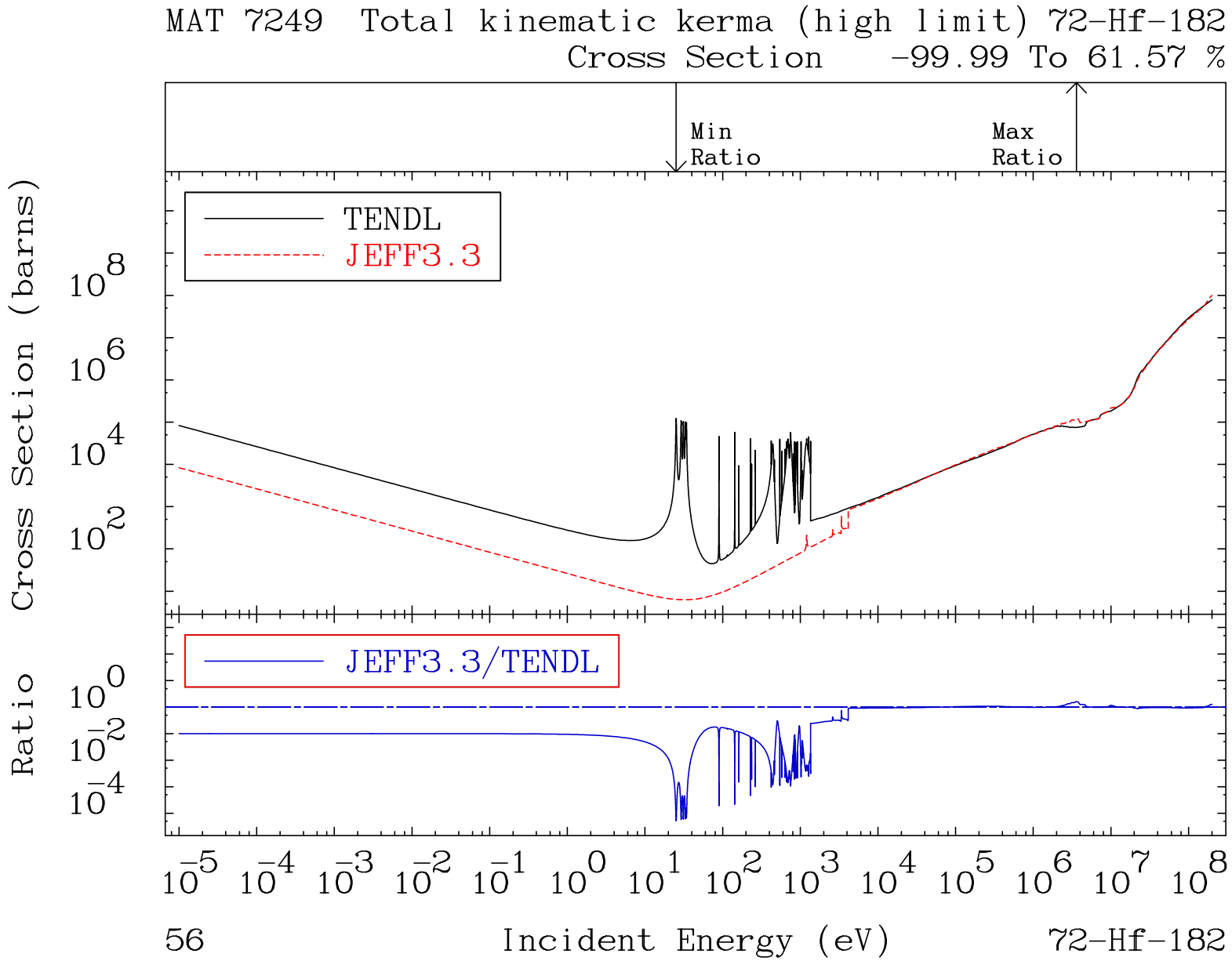

MAT 7249 Kerma non-elastic (all but mt2) 72-Hf-182
Cross Section -1103. To 3850. %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
51
72-Hf-182

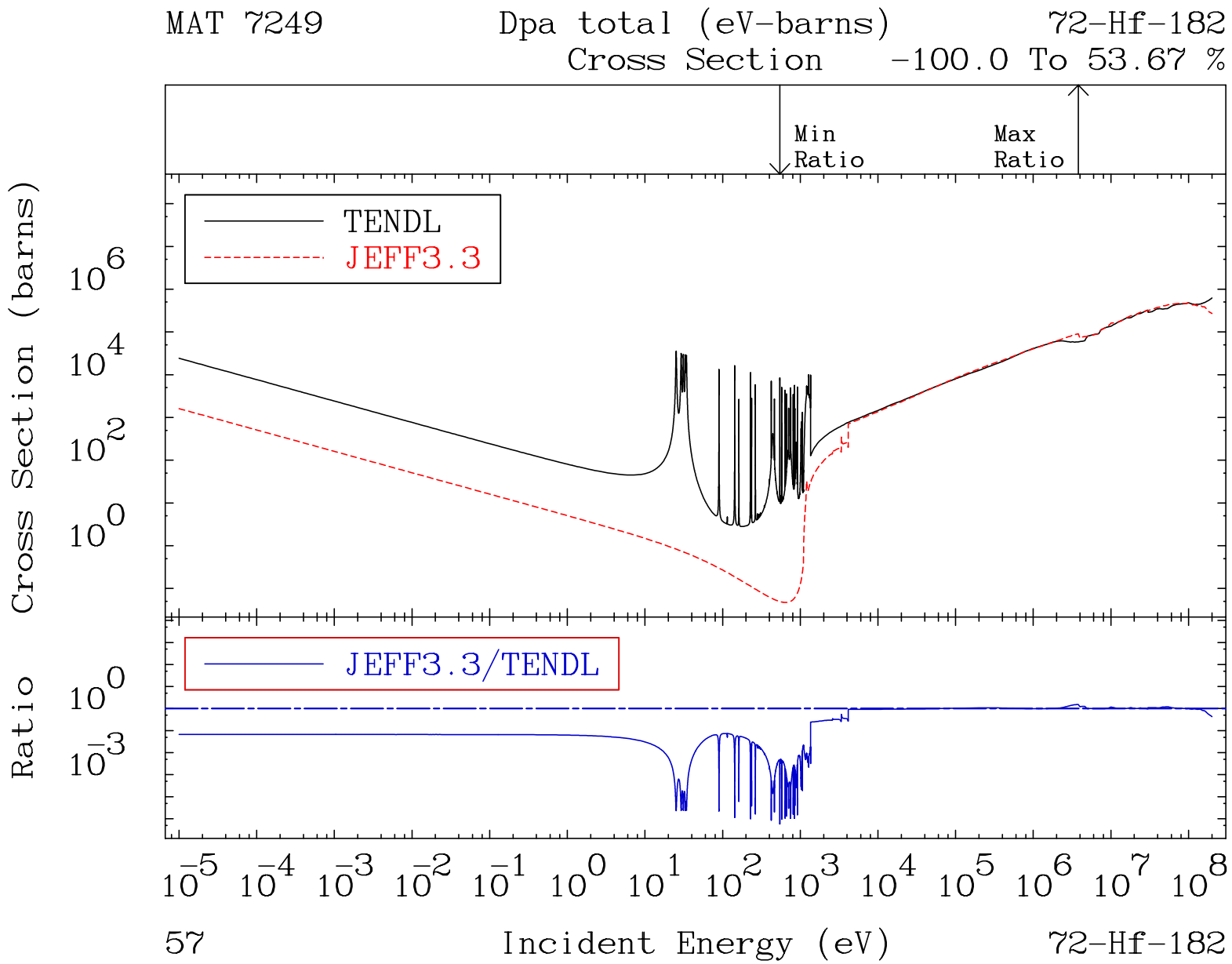

MAT 7249
Kerma inelastic (mt51-91)
72-Hf-182
Cross Section -1103. To 65.15 %
Max Ratio
Min Ratio
TENDL Threshold 98.332 keV
JEFF3.3 Threshold 98.332 keV
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
52
72-Hf-182

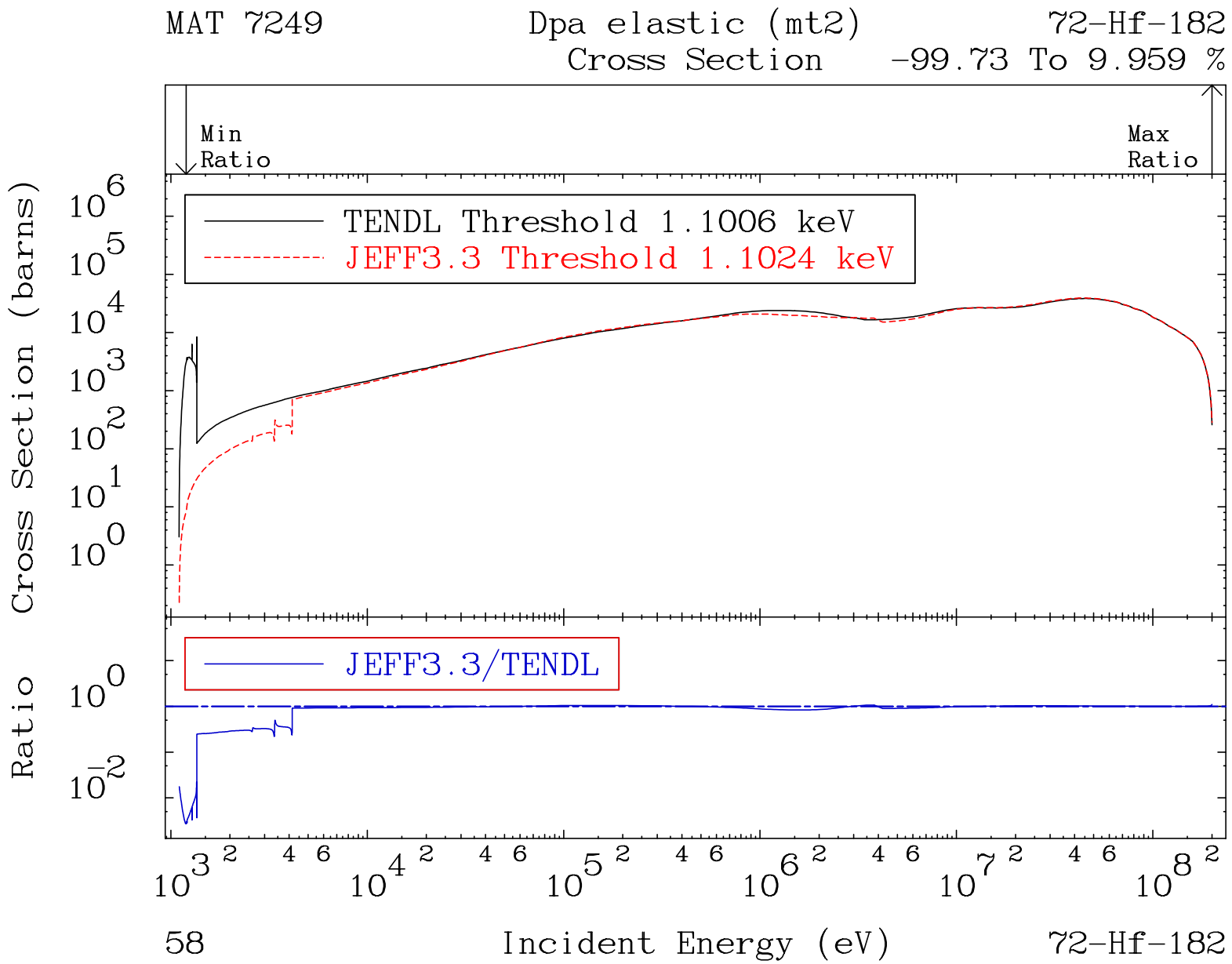

MAT 7249 Kerma fission (mt18 or mt19-20-21-38) 72-Hf-182
Cross Section -1103. To 65.15 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
0
-10
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
53
Incident Energy (eV)
72-Hf-182

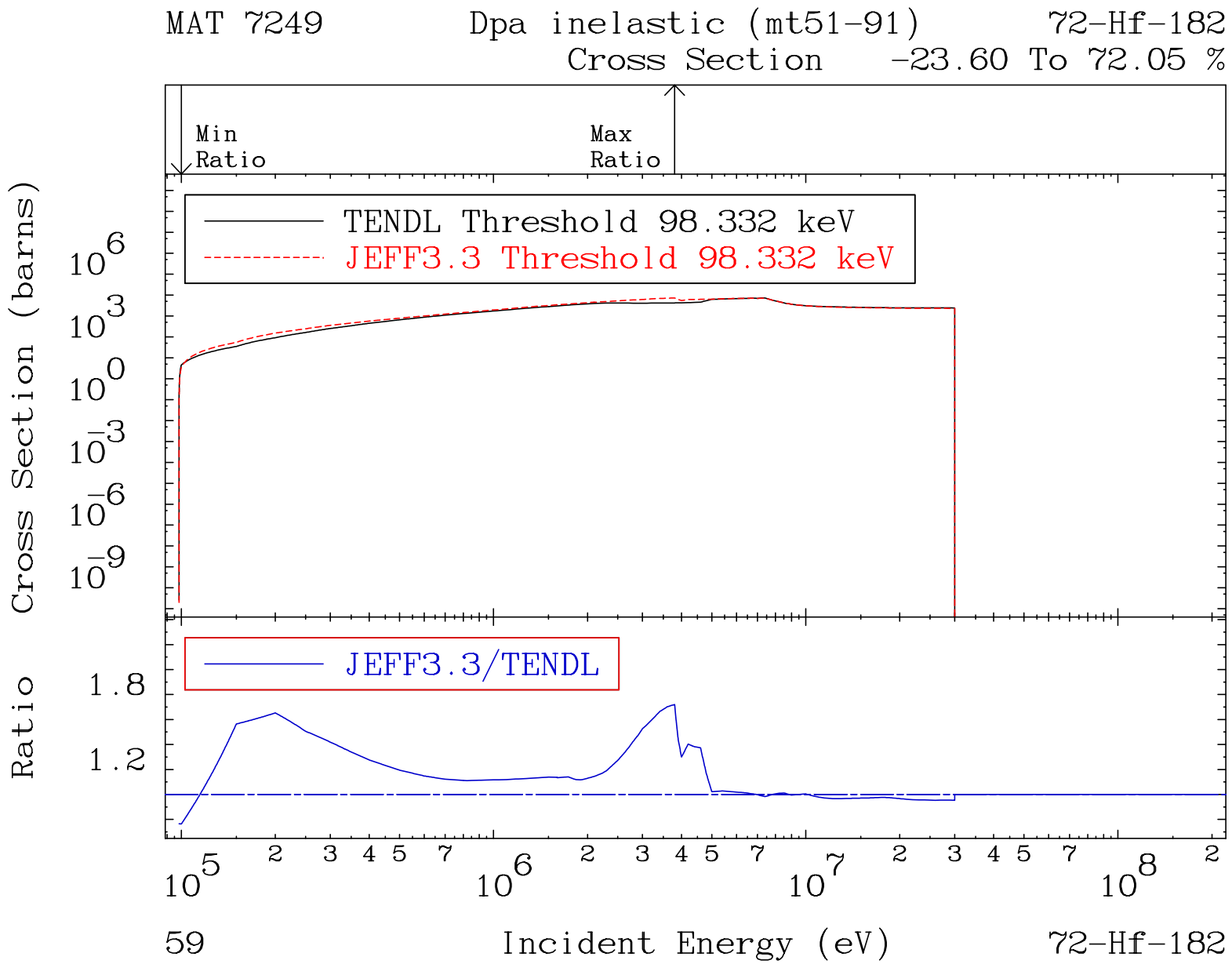

MAT 7249
Kerma capture (mt102)
72-Hf-182
Cross Section -100.0 To 3850. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
54
72-Hf-182

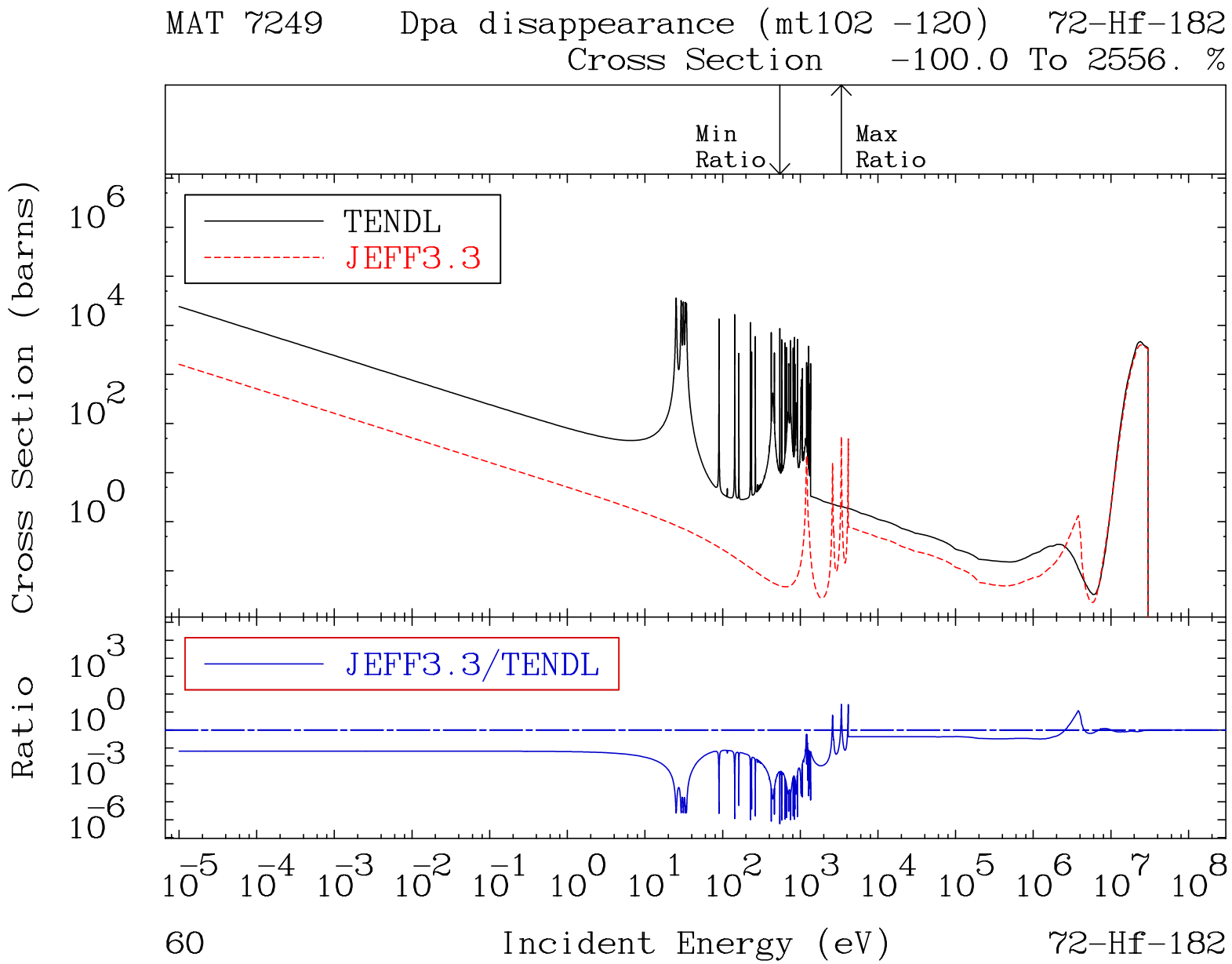

MAT 7249
Total photon (eV-barns)
72-Hf-182
Cross Section -100.0 To 5350. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
55
72-Hf-182

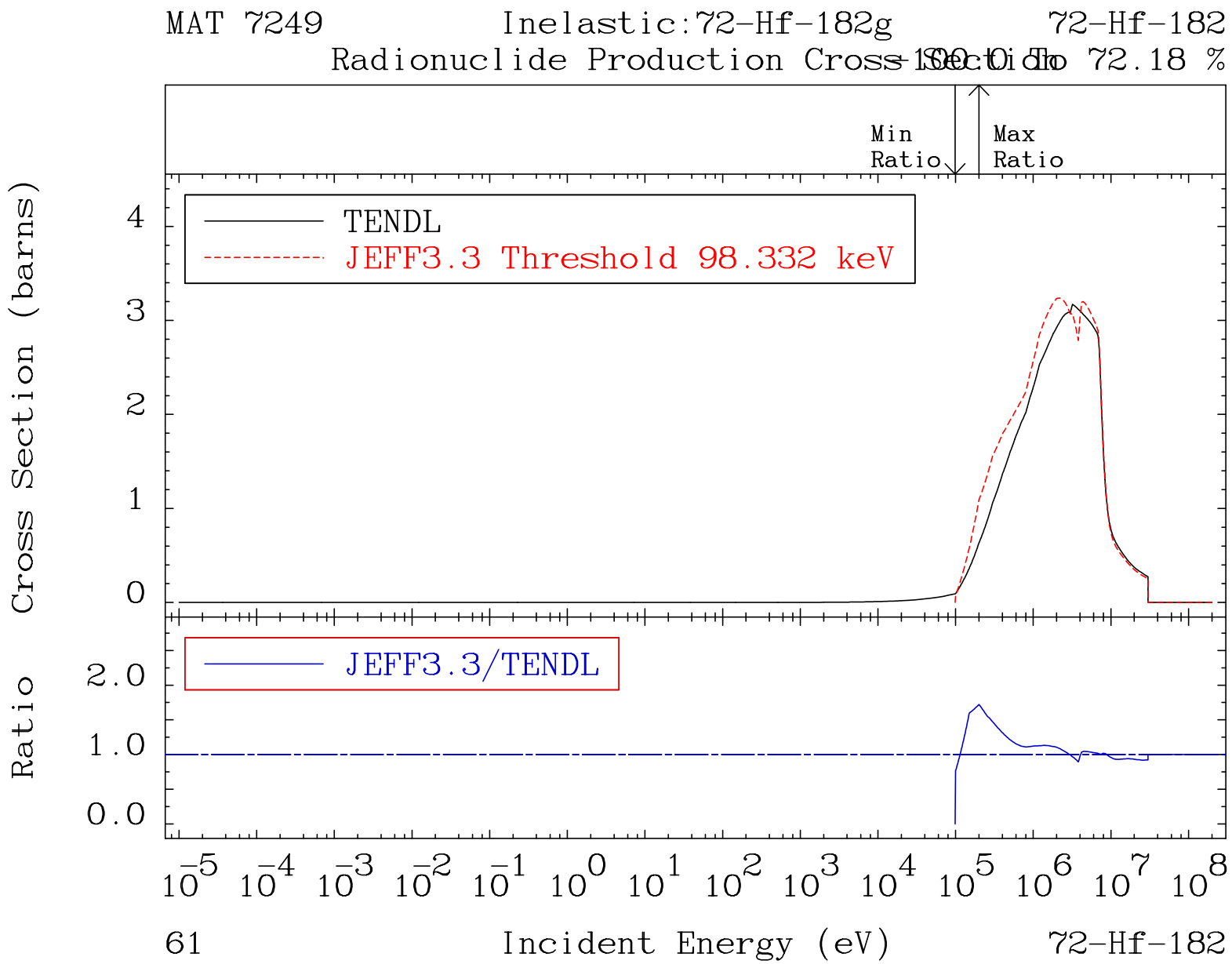

MAT 7249 Total kinematic kerma (high limit) 72-Hf-182
Cross Section -99.99 To 61.57 %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
56
72-Hf-182

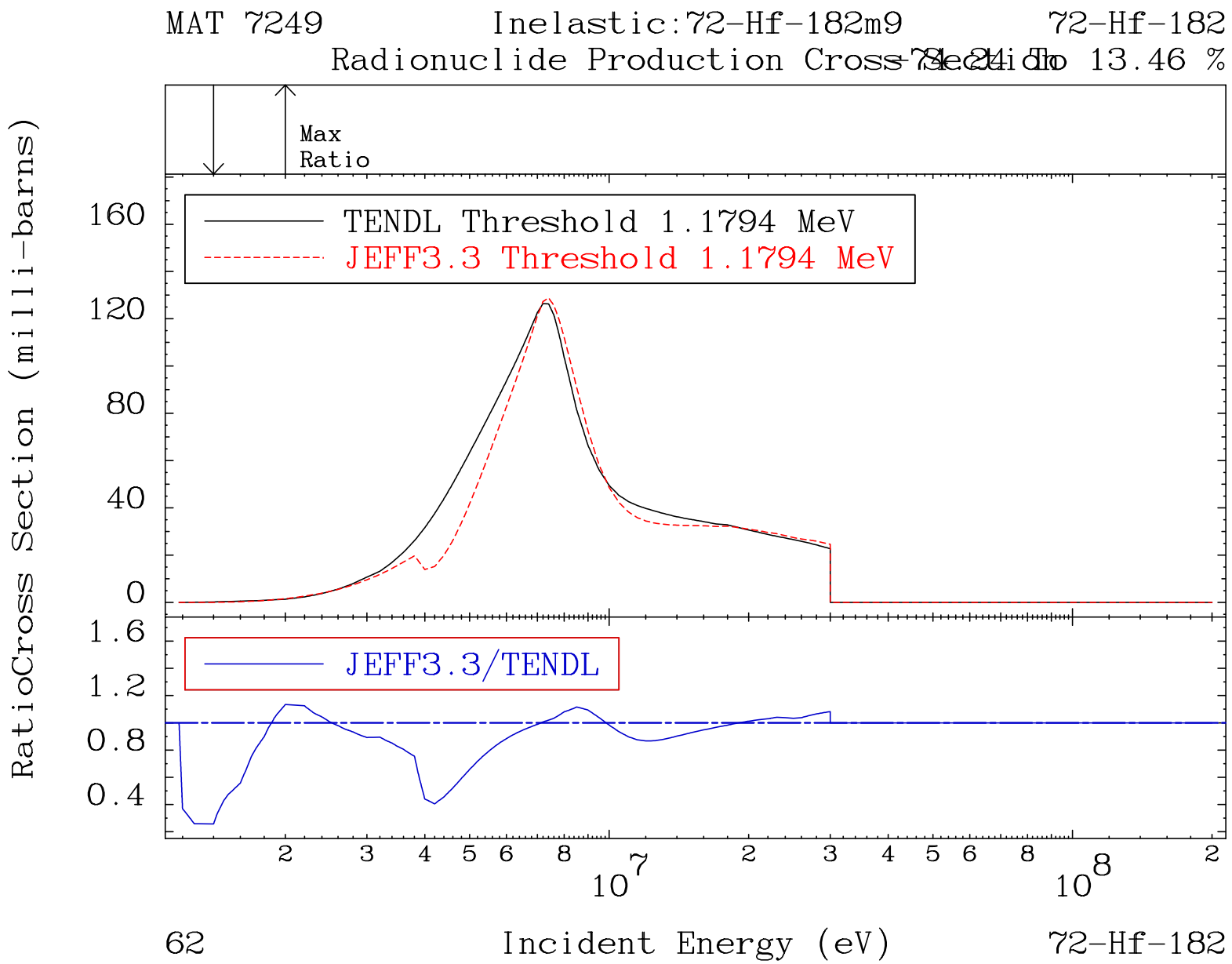

MAT 7249
Dpa total (eV-barns)
72-Hf-182
Cross Section -100.0 To 53.67 %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
57
72-Hf-182

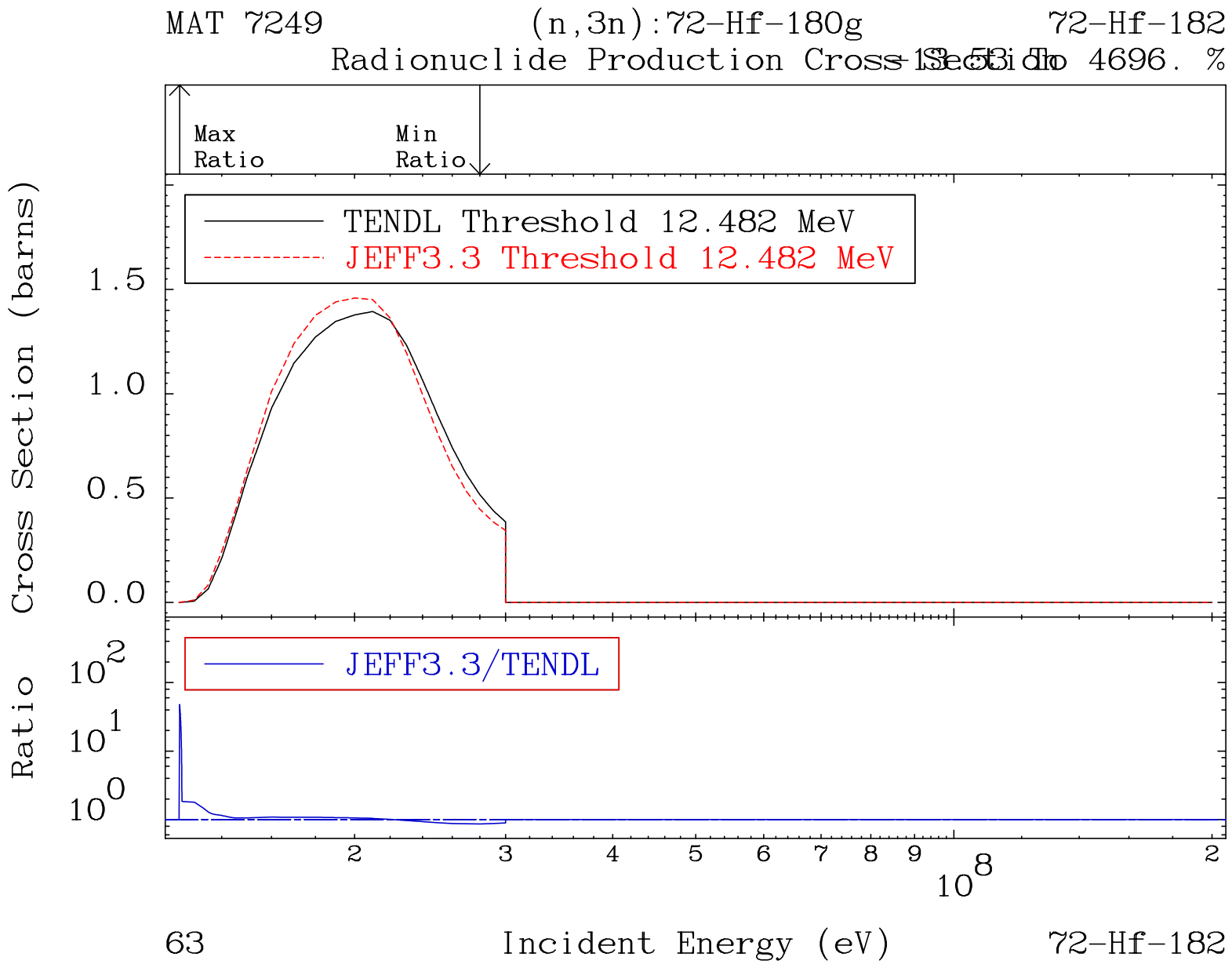

MAT 7249
Dpa elastic (mt2)
Cross Section
72-Hf-182
-99.73 To 9.959 %
Min
Ratio
Max
Ratio
TENDL Threshold 1.1006 keV
JEFF3.3 Threshold 1.1024 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
58
72-Hf-182

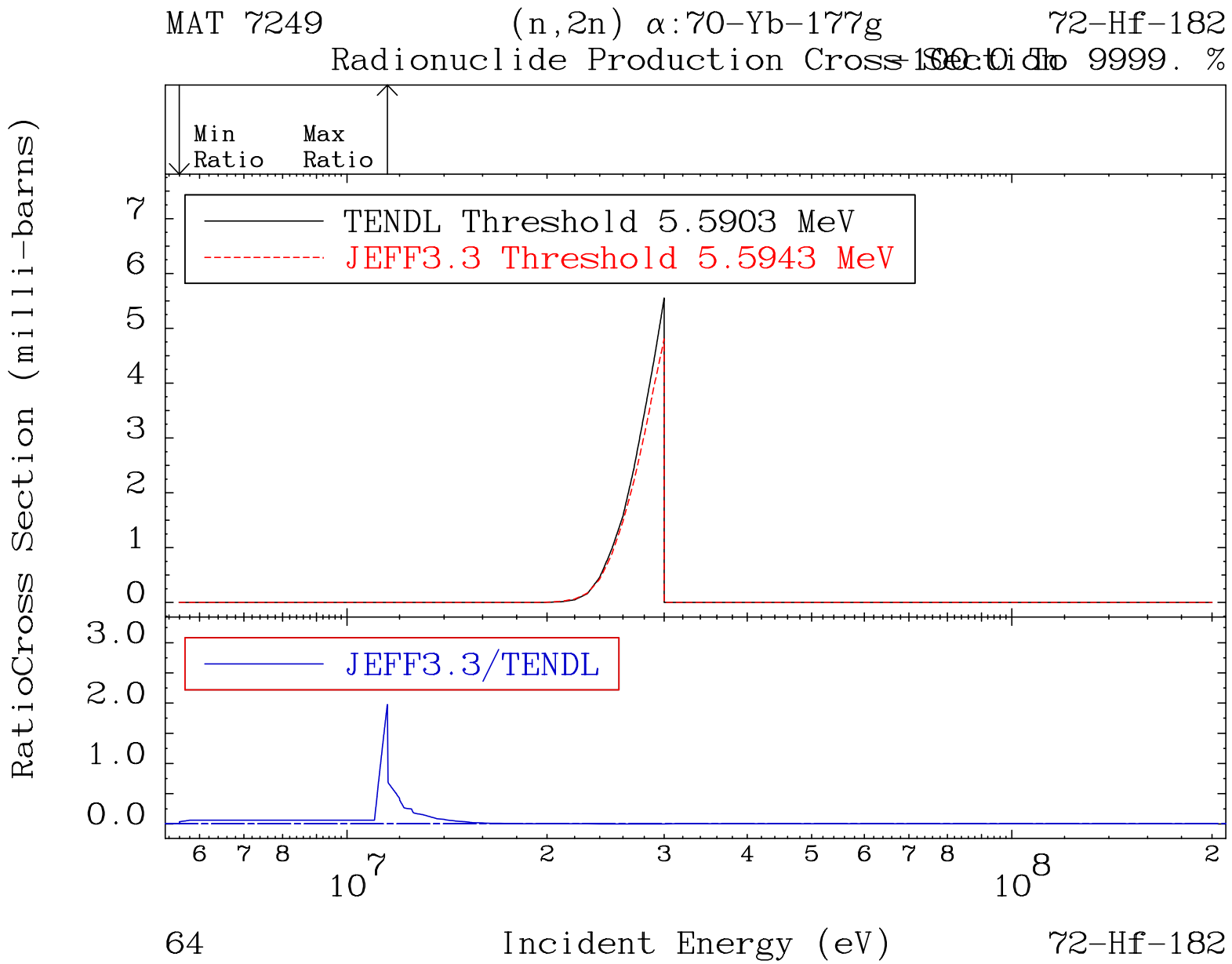

MAT 7249
Dpa inelastic (mt51-91)
72-Hf-182
Cross Section
-23.60 To 72.05 %
Min Ratio
Max Ratio
TENDL Threshold 98.332 keV
JEFF3.3 Threshold 98.332 keV
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
59
72-Hf-182

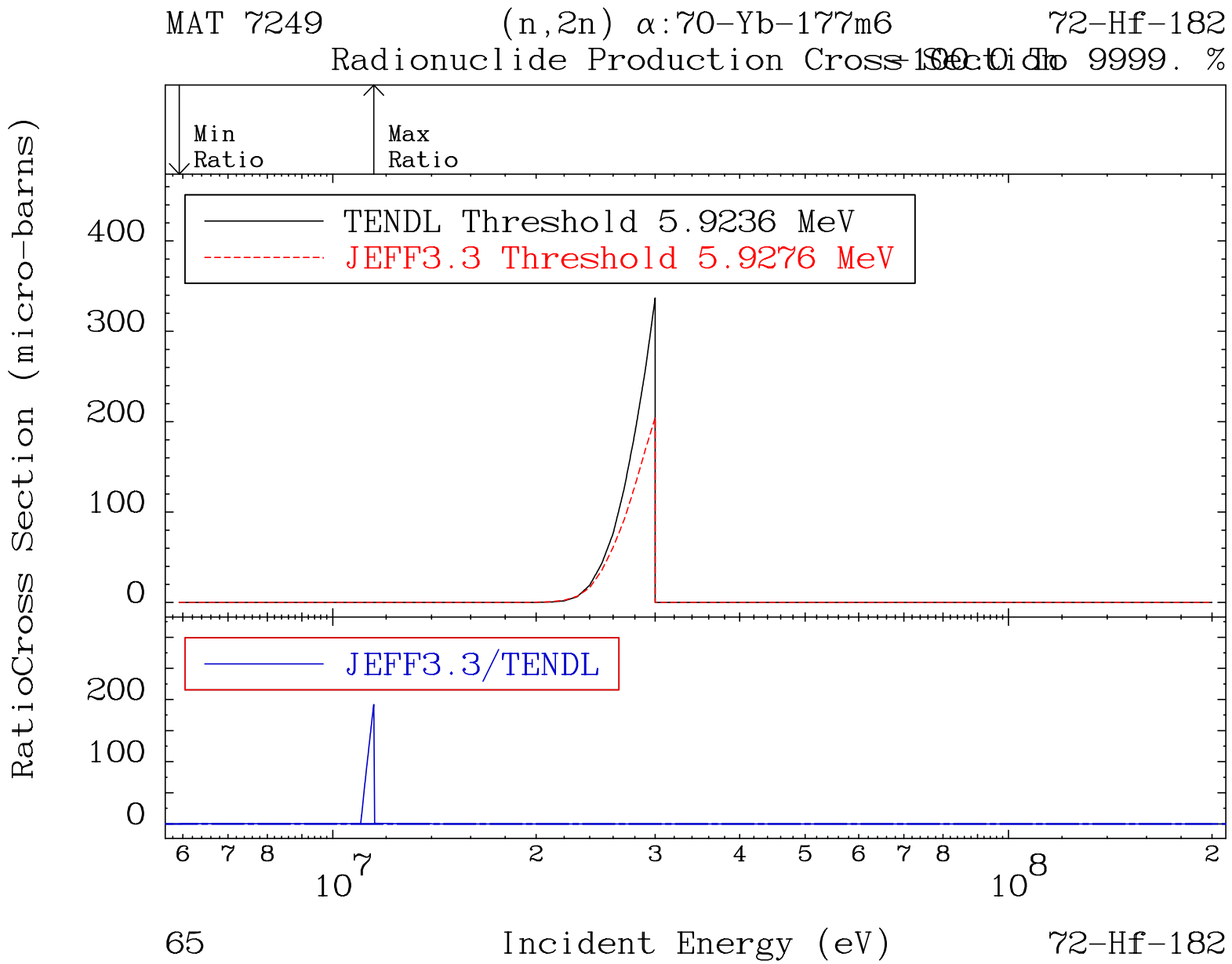

MAT 7249 Dpa disappearance (mt102 -120) 72-Hf-182
Cross Section -100.0 To 2556. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
60
72-Hf-182

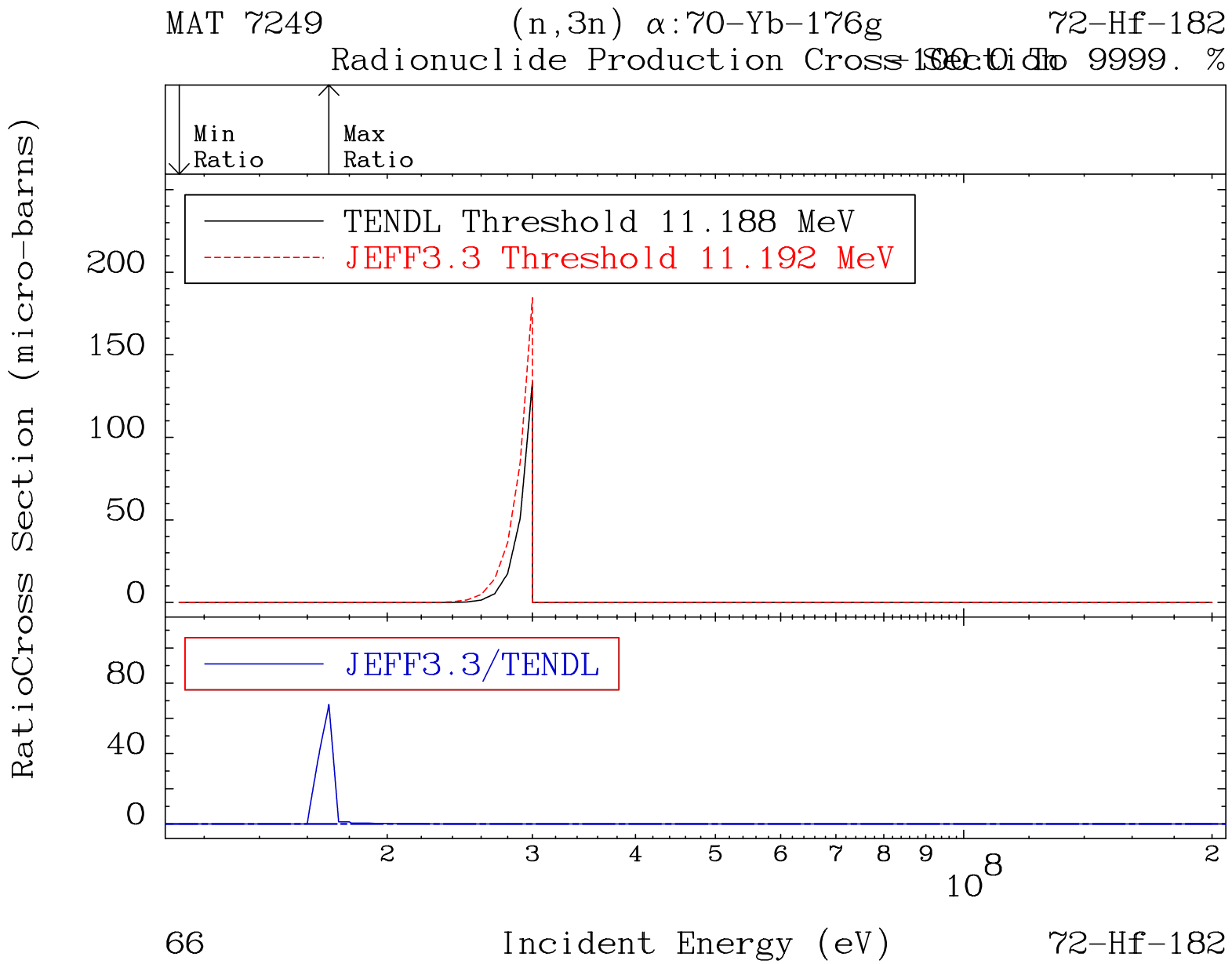

MAT 7249
Inelastic:72-Hf-182g
72-Hf-182
Radionuclide Production Cross Section To 72.18 %
Min Ratio
Max Ratio
TENDL
JEFF3.3 Threshold 98.332 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
61
72-Hf-182

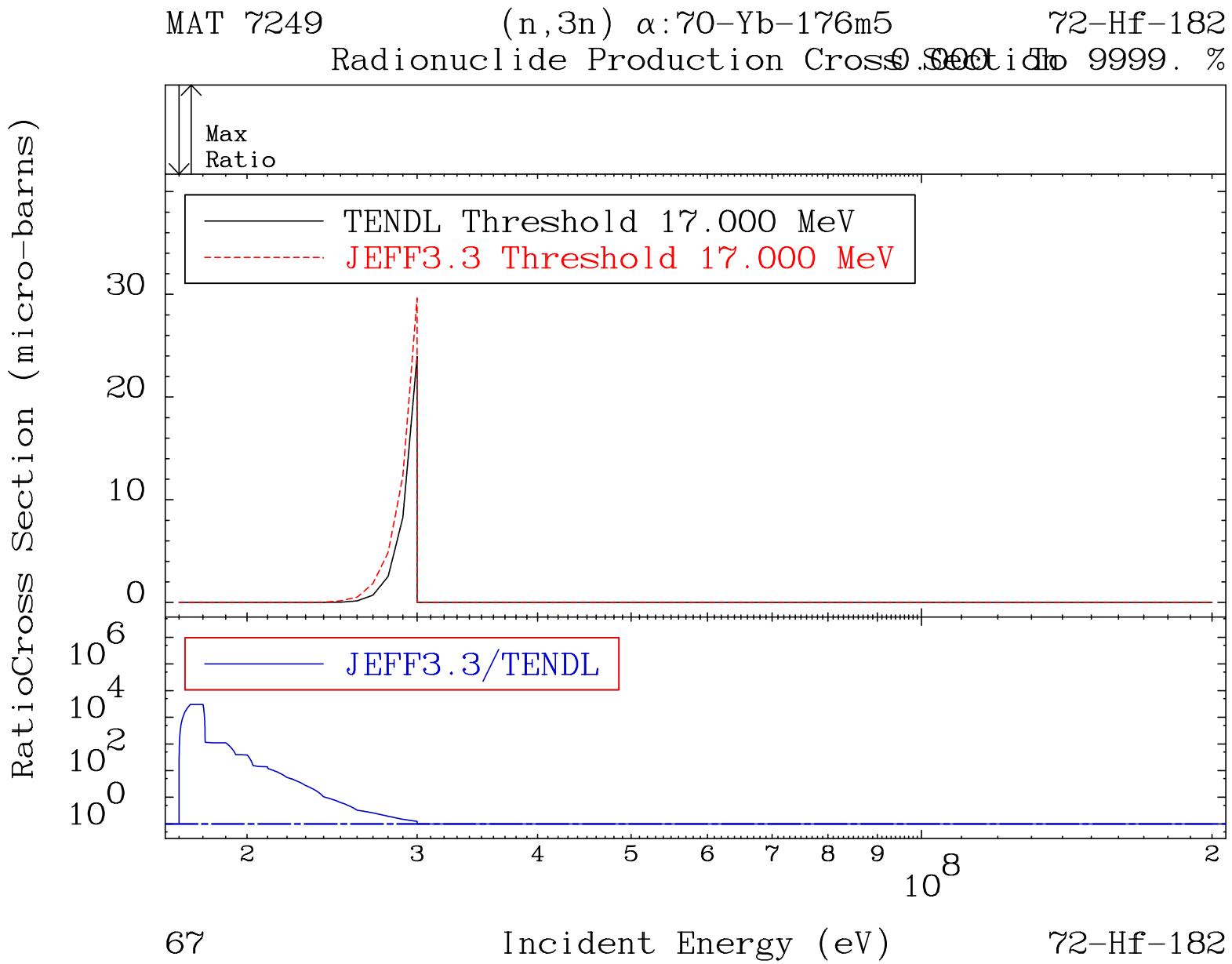

MAT 7249
Inelastic:72-Hf-182m9
72-Hf-182
Radionuclide Production Cross Section Ratio
Max
Ratio
TENDL Threshold 1.1794 MeV
JEFF3.3 Threshold 1.1794 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
1.6
1.2
0.8
0.4
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
62
Incident Energy (eV)
72-Hf-182

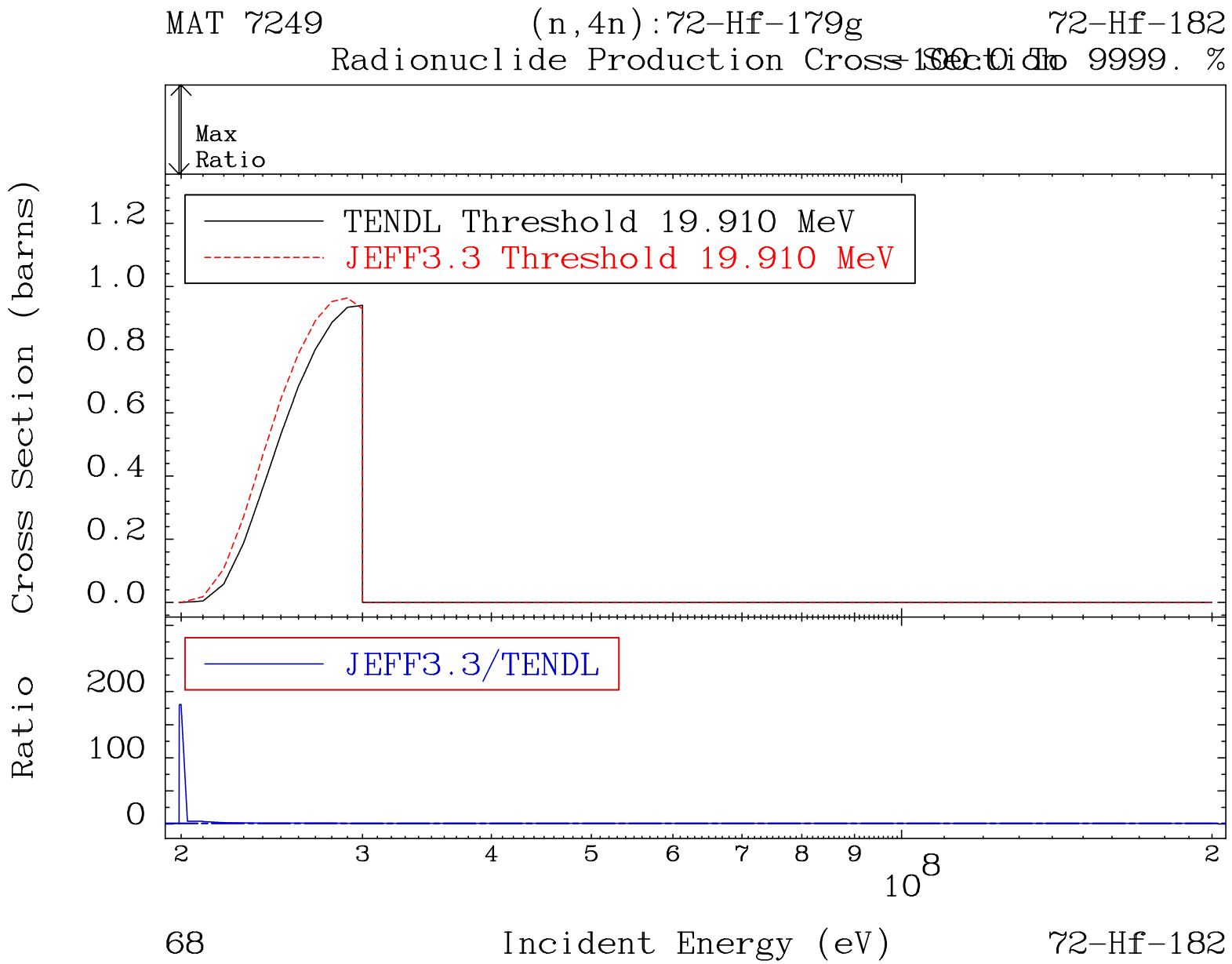

MAT 7249
(n,3n):72-Hf-180g
72-Hf-182
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 12.482 MeV
JEFF3.3 Threshold 12.482 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
10^2
10^1
10^0
2
3
4
5
6
7
8
9
10^8
63
Incident Energy (eV)
72-Hf-182

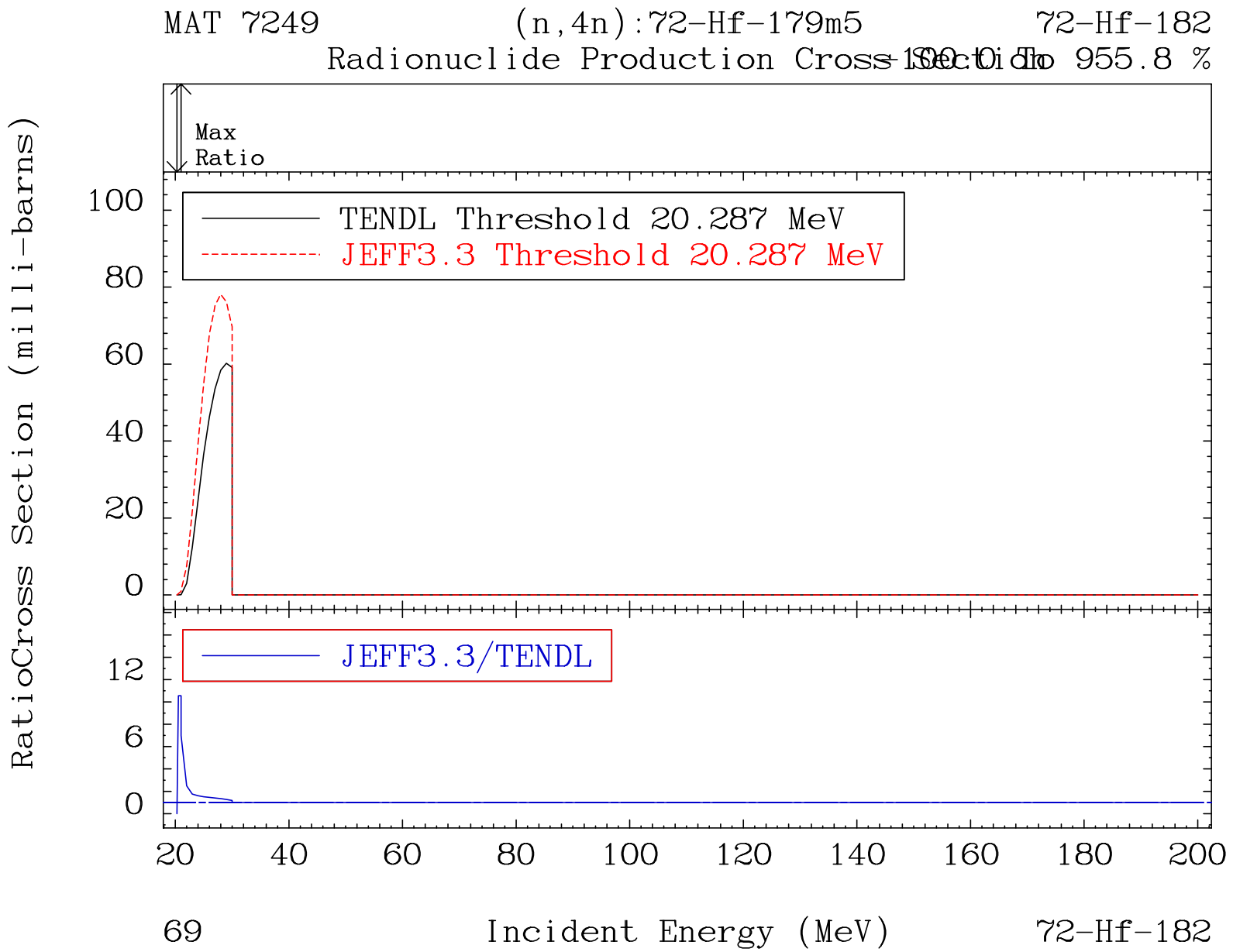

MAT 7249
(n,2n) α:70-Yb-177g
72-Hf-182
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 5.5903 MeV
JEFF3.3 Threshold 5.5943 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
64
72-Hf-182


MAT 7249
(n,2n) α:70-Yb-177m6
72-Hf-182
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 5.9236 MeV
JEFF3.3 Threshold 5.9276 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
200
100
0
6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
65
Incident Energy (eV)
72-Hf-182


MAT 7249
(n,3n) α:70-Yb-176g
72-Hf-182
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 11.188 MeV
JEFF3.3 Threshold 11.192 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
200
150
100
50
0
80
40
0
2
3
4
5
6
7
8
9
2
10^8
66
Incident Energy (eV)
72-Hf-182


MAT 7249
(n,3n) α:70-Yb-176m5
72-Hf-182
Radionuclide Production Cross Section
0.000 To 9999. %
Max
Ratio
TENDL Threshold 17.000 MeV
JEFF3.3 Threshold 17.000 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
30
20
10
0
10^6
10^4
10^2
10^0
2
3
4
5
6
7
8
9
10^8
2
67
Incident Energy (eV)
72-Hf-182


MAT 7249
(n,4n):72-Hf-179g
72-Hf-182
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 19.910 MeV
JEFF3.3 Threshold 19.910 MeV
Cross Section (barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
JEFF3.3/TENDL
Ratio
200
100
0
2
3
4
5
6
7
8
9
2
10^8
68
Incident Energy (eV)
72-Hf-182


MAT 7249
(n,4n):72-Hf-179m5
72-Hf-182
Radionuclide Production Cross Section To 955.8 %
Max
Ratio
TENDL Threshold 20.287 MeV
JEFF3.3 Threshold 20.287 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
12
6
0
20
40
60
80
100
120
140
160
180
200
69
Incident Energy (MeV)
72-Hf-182