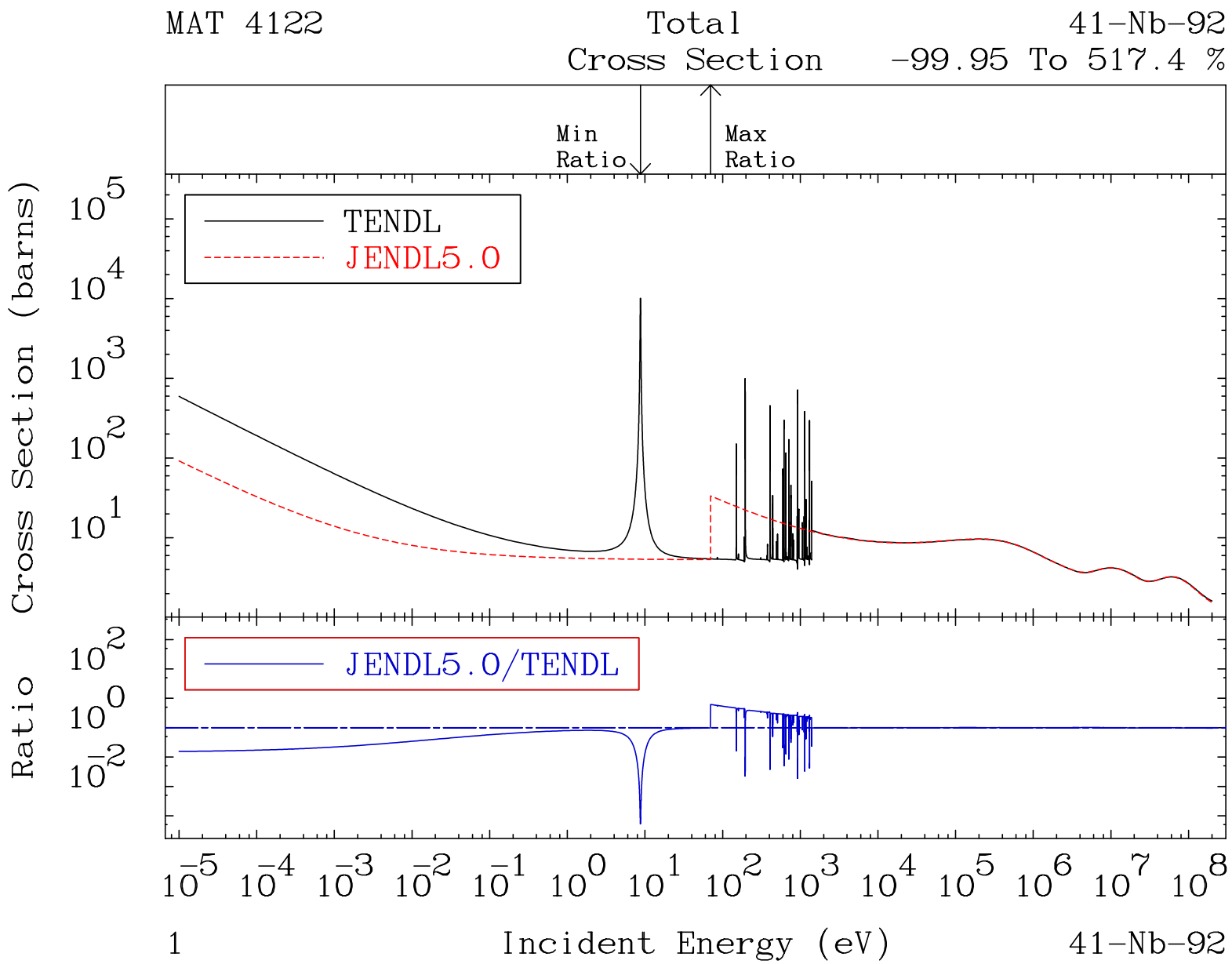
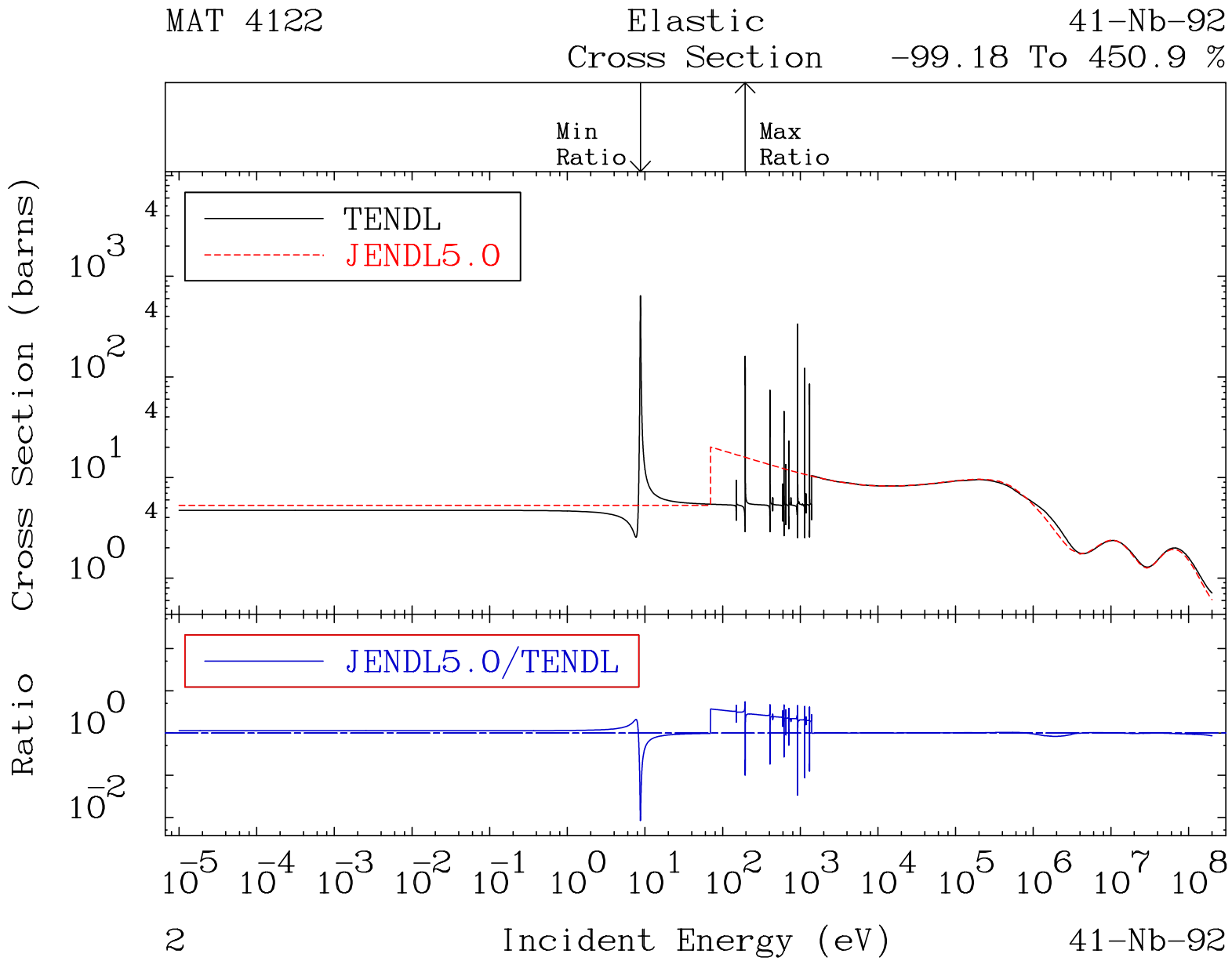
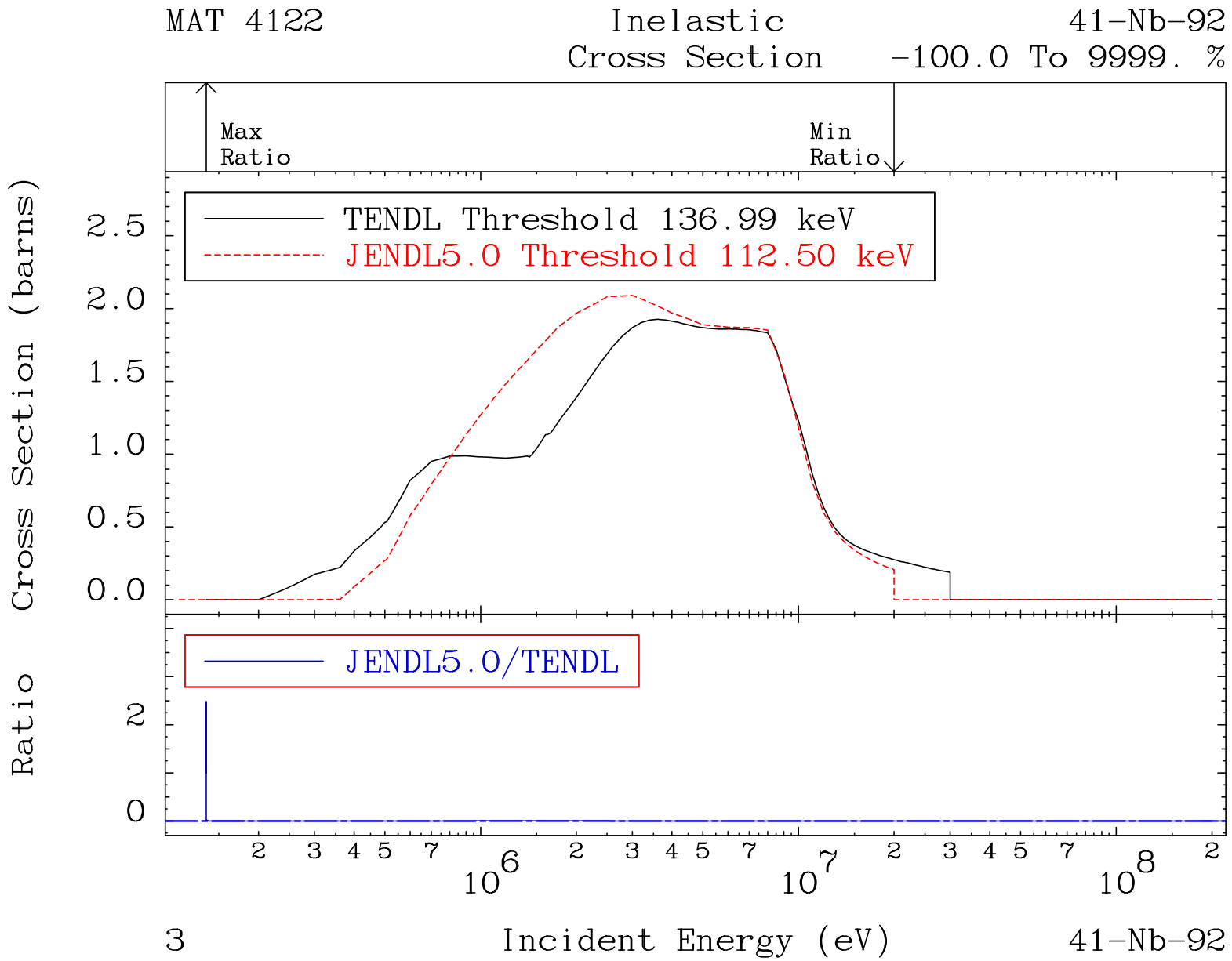
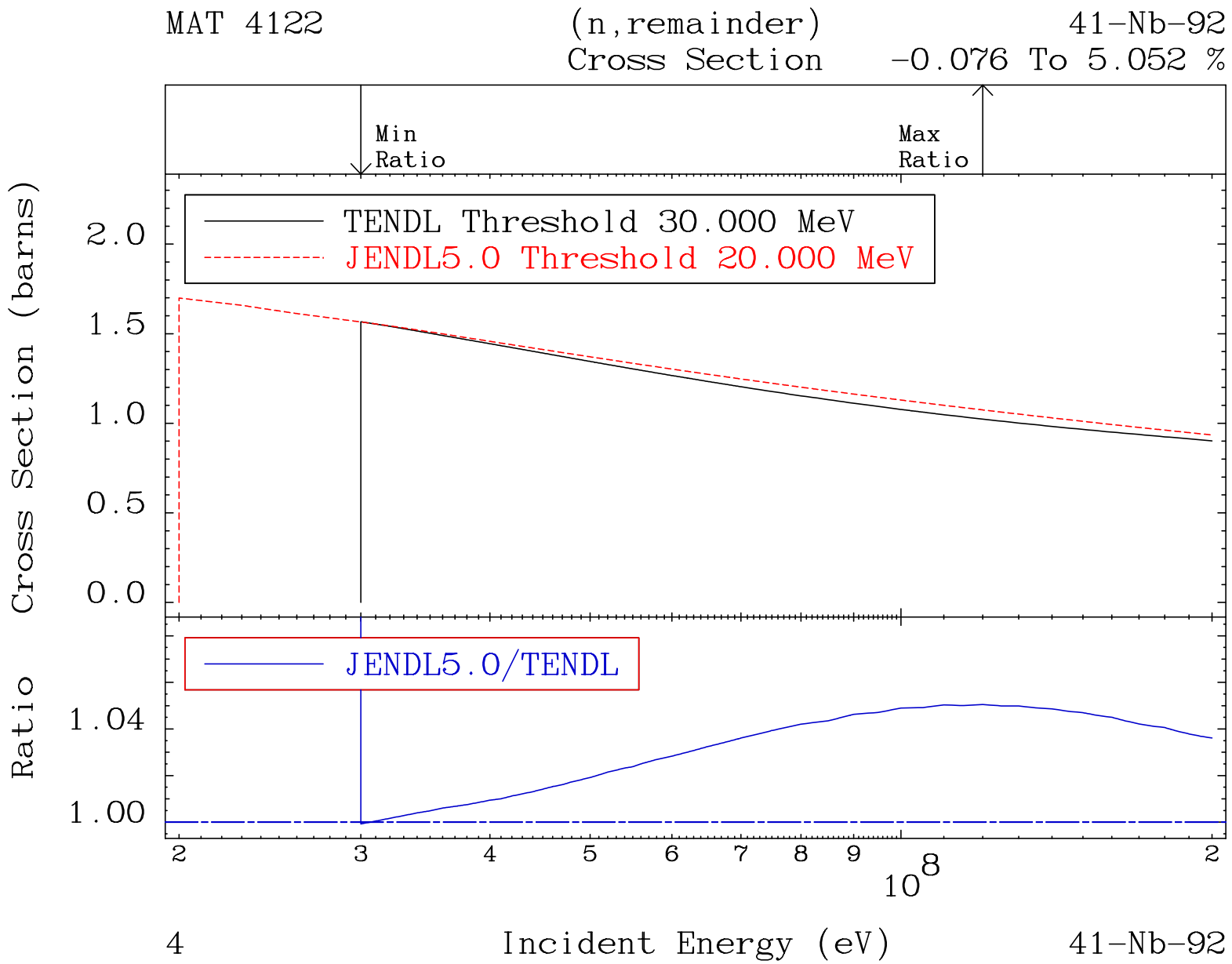
Program Complot
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

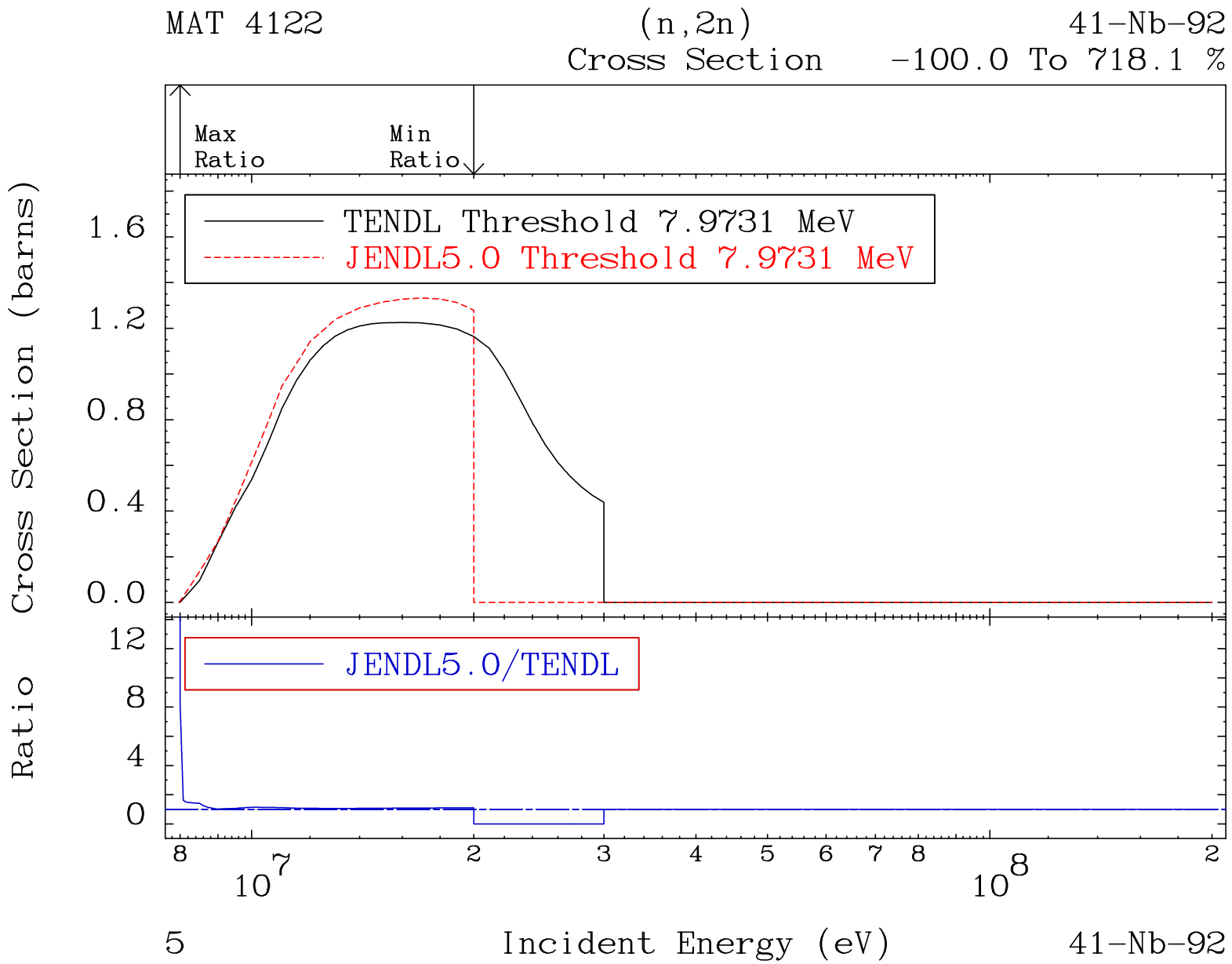
Press Mouse Button to Start

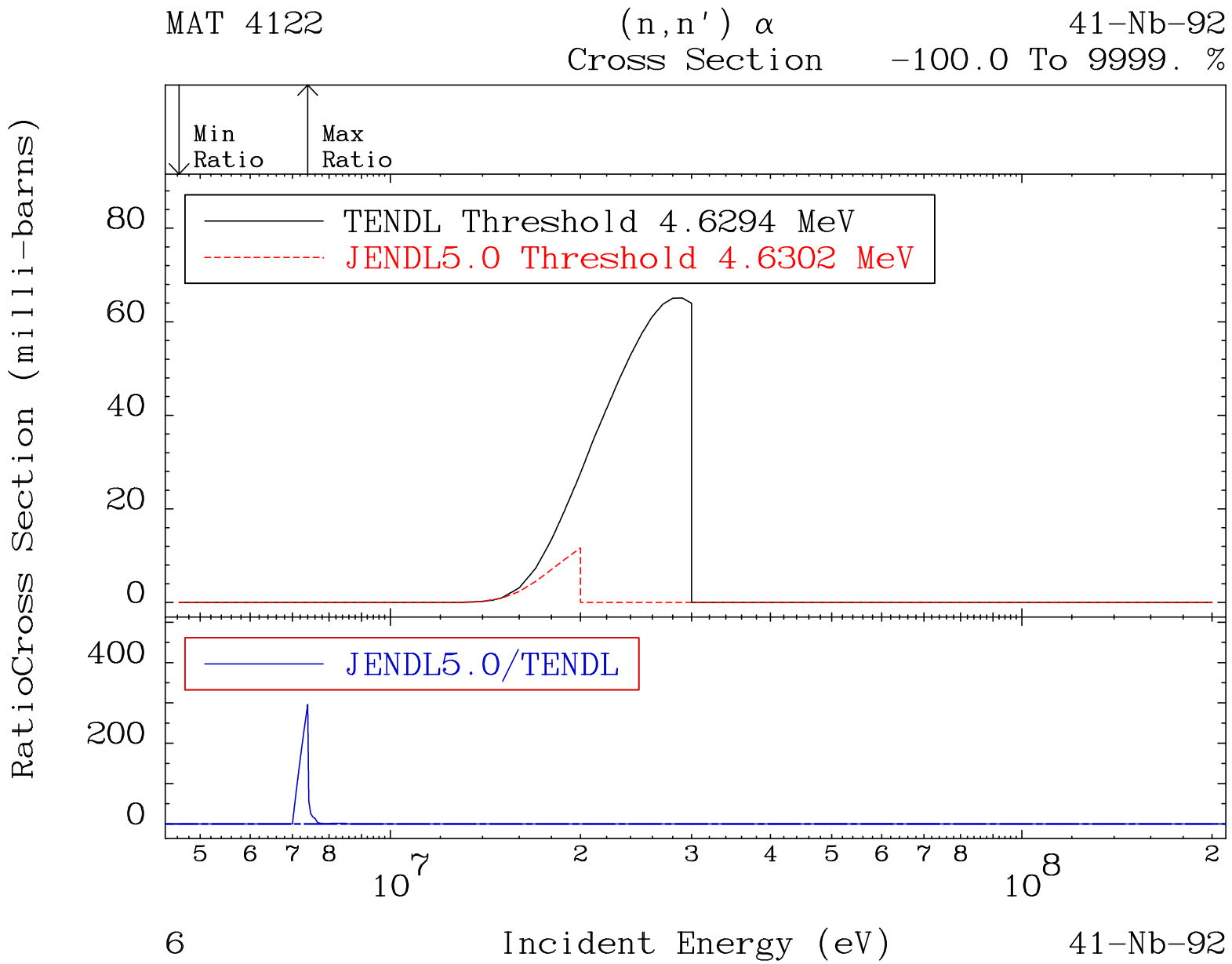

MAT 4122
Total
Cross Section
41-Nb-92
-99.95 To 517.4 %
Min
Ratio
Max
Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
1
41-Nb-92

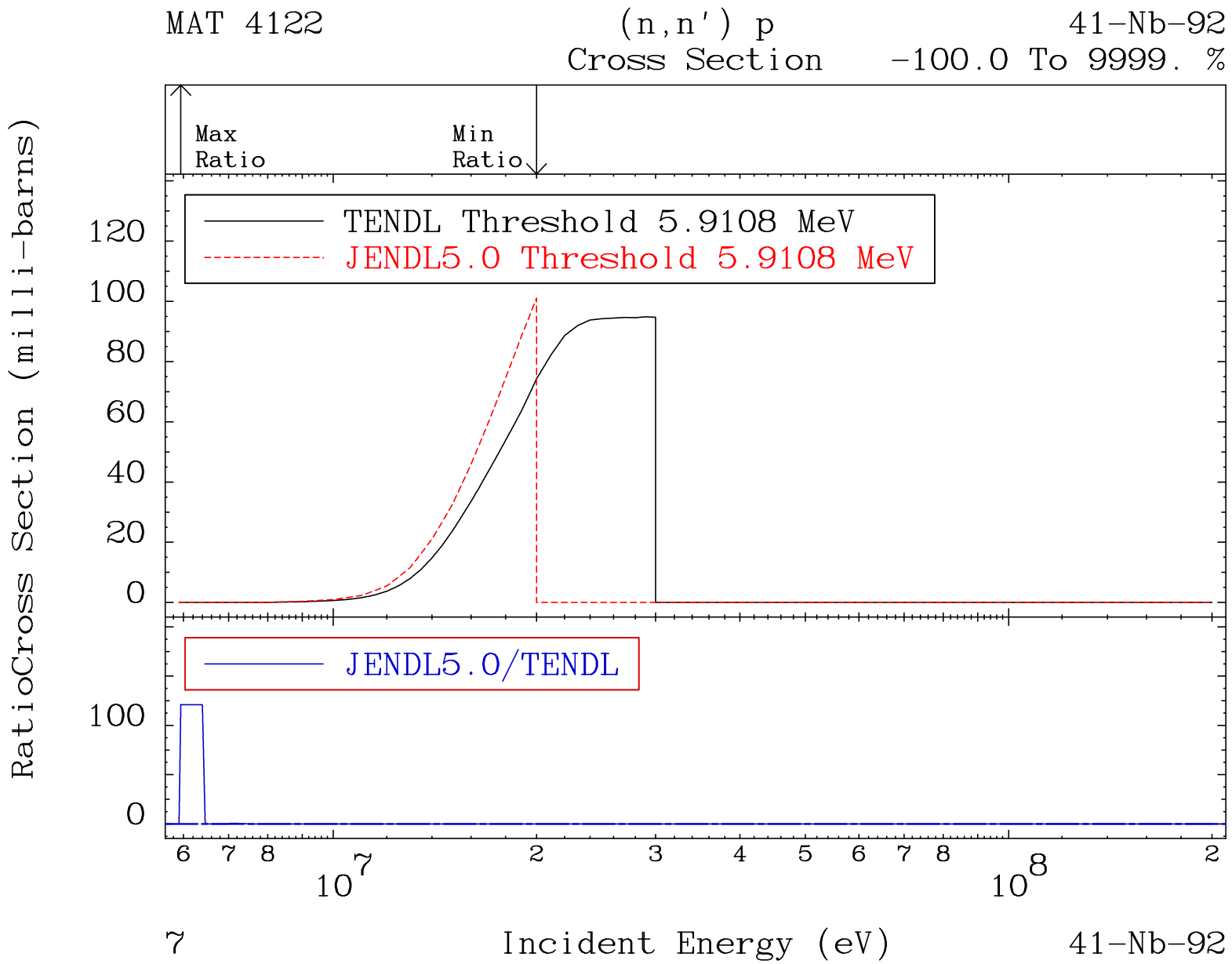

MAT 4122
Elastic
Cross Section
41-Nb-92
-99.18 To 450.9 %
Min
Ratio
Max
Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
2
41-Nb-92

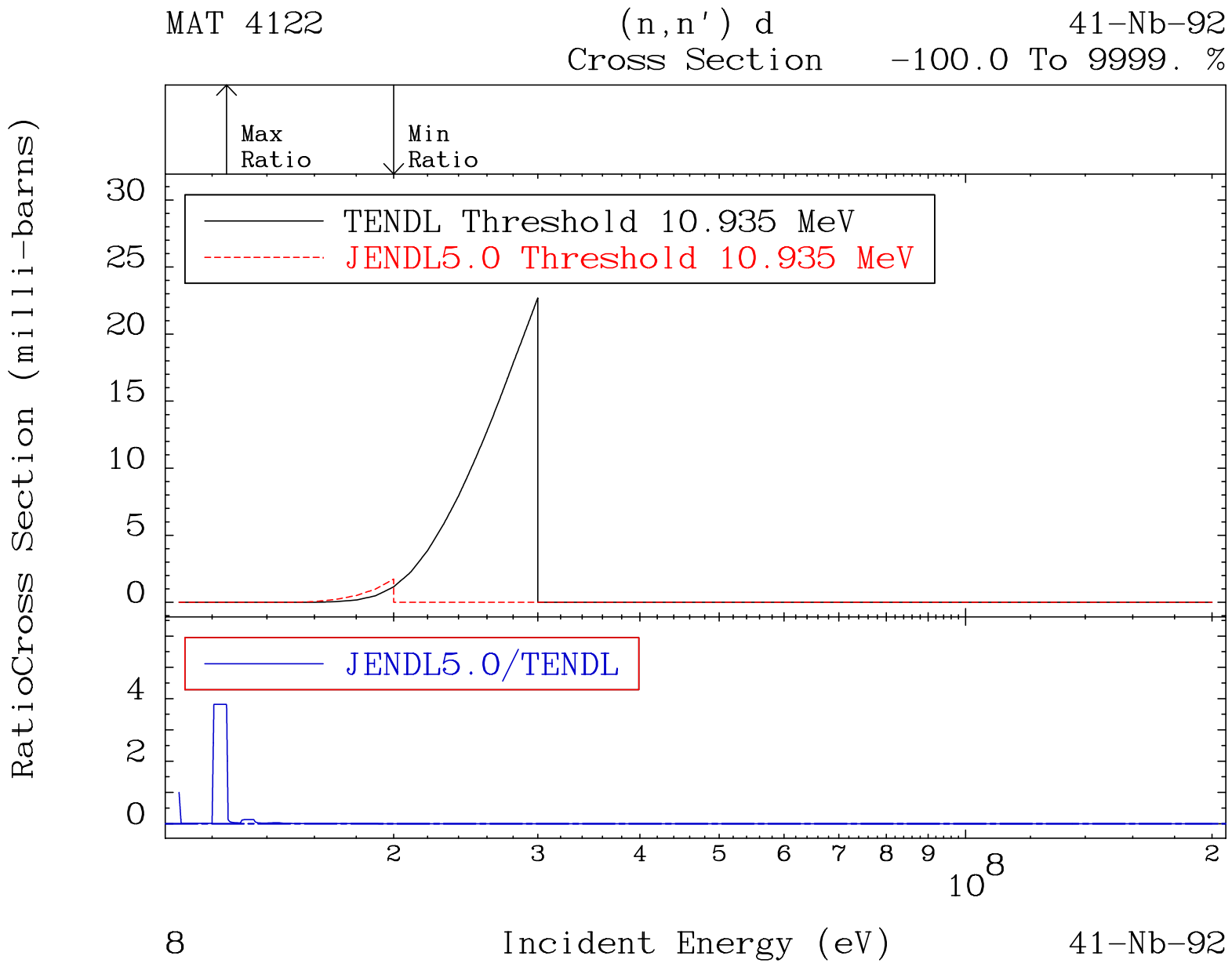

MAT 4122
Inelastic
Cross Section
41-Nb-92
-100.0 To 9999. %
Max
Ratio
Min
Ratio
TENDL Threshold 136.99 keV
JENDL5.0 Threshold 112.50 keV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
2.5
2.0
1.5
1.0
0.5
0.0
2
0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
Incident Energy (eV)
3
41-Nb-92

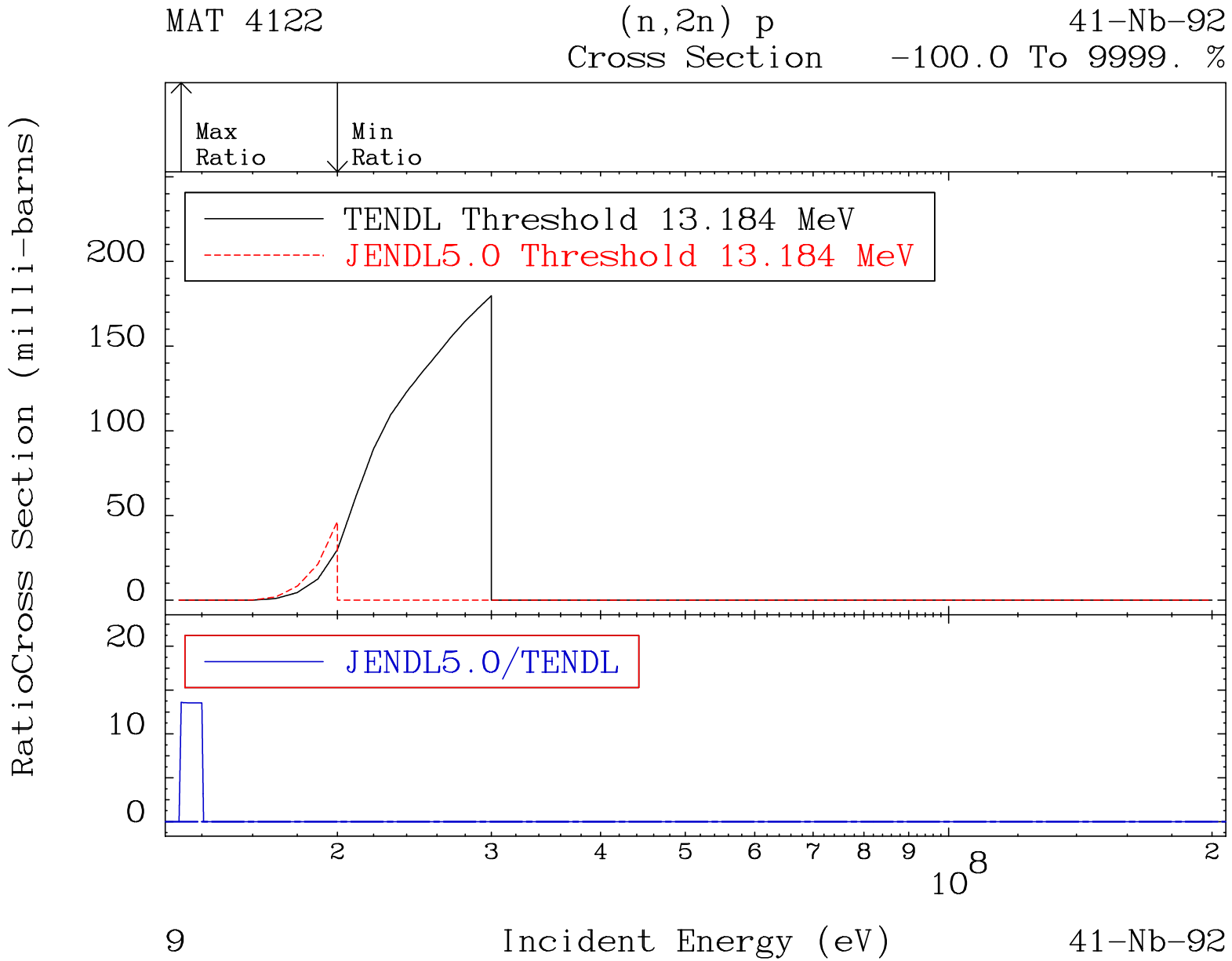

MAT 4122
(n,remainder)
Cross Section
41-Nb-92
-0.076 To 5.052 %
Min
Ratio
Max
Ratio
TENDL Threshold 30.000 MeV
JENDL5.0 Threshold 20.000 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
2.0
1.5
1.0
0.5
0.0
1.04
1.00
2
3
4
5
6
7
8
9
2
10^8
4
Incident Energy (eV)
41-Nb-92

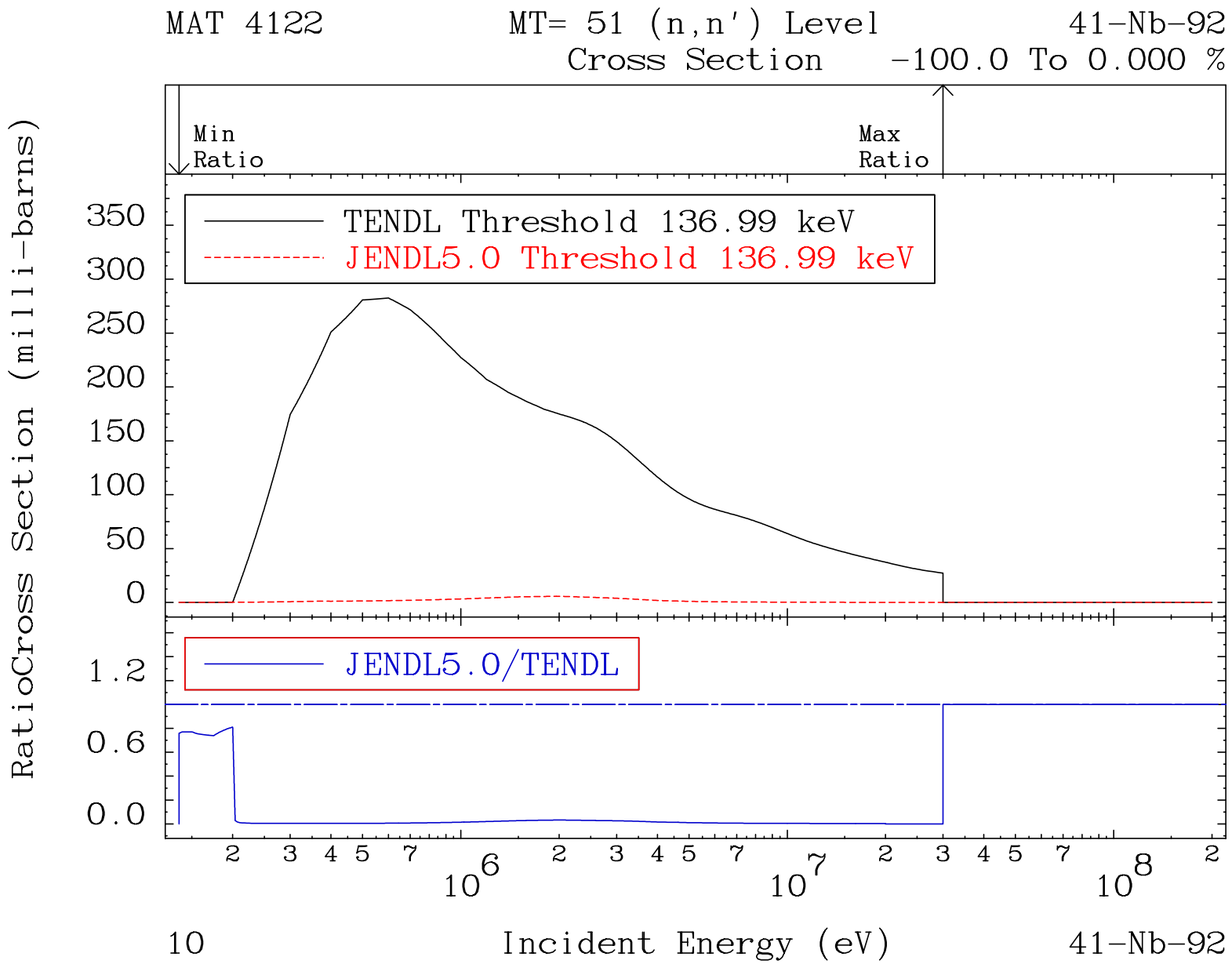

MAT 4122
(n,2n)
Cross Section
41-Nb-92
-100.0 To 718.1 %
Max Ratio
Min Ratio
TENDL Threshold 7.9731 MeV
JENDL5.0 Threshold 7.9731 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.6
1.2
0.8
0.4
0.0
12
8
4
0
8
2
3
4
5
6
7
8
2
10^7
10^8
Incident Energy (eV)
41-Nb-92
5

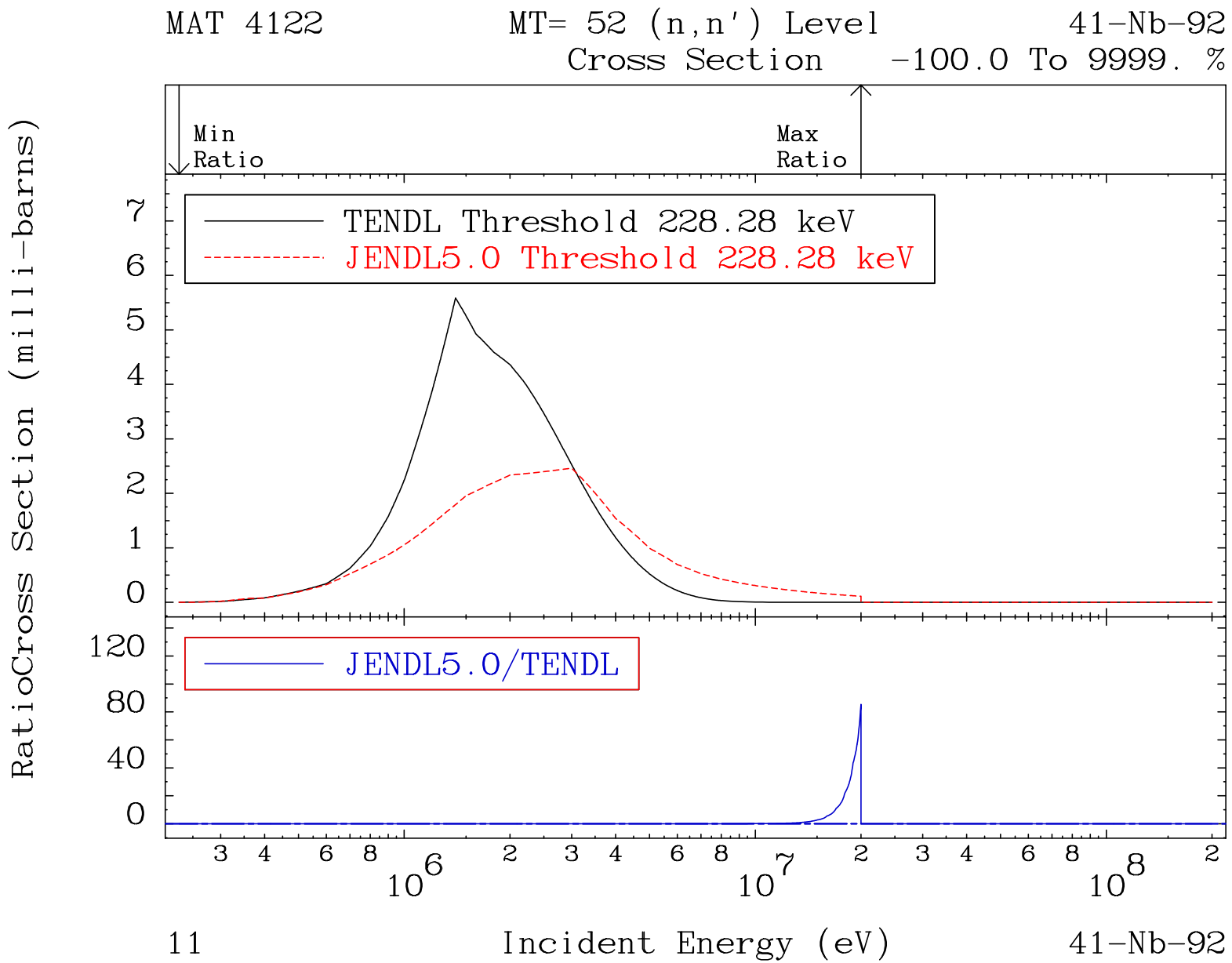

MAT 4122
(n,n') α
41-Nb-92
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 4.6294 MeV
JENDL5.0 Threshold 4.6302 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
400
200
0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
6
Incident Energy (eV)
41-Nb-92

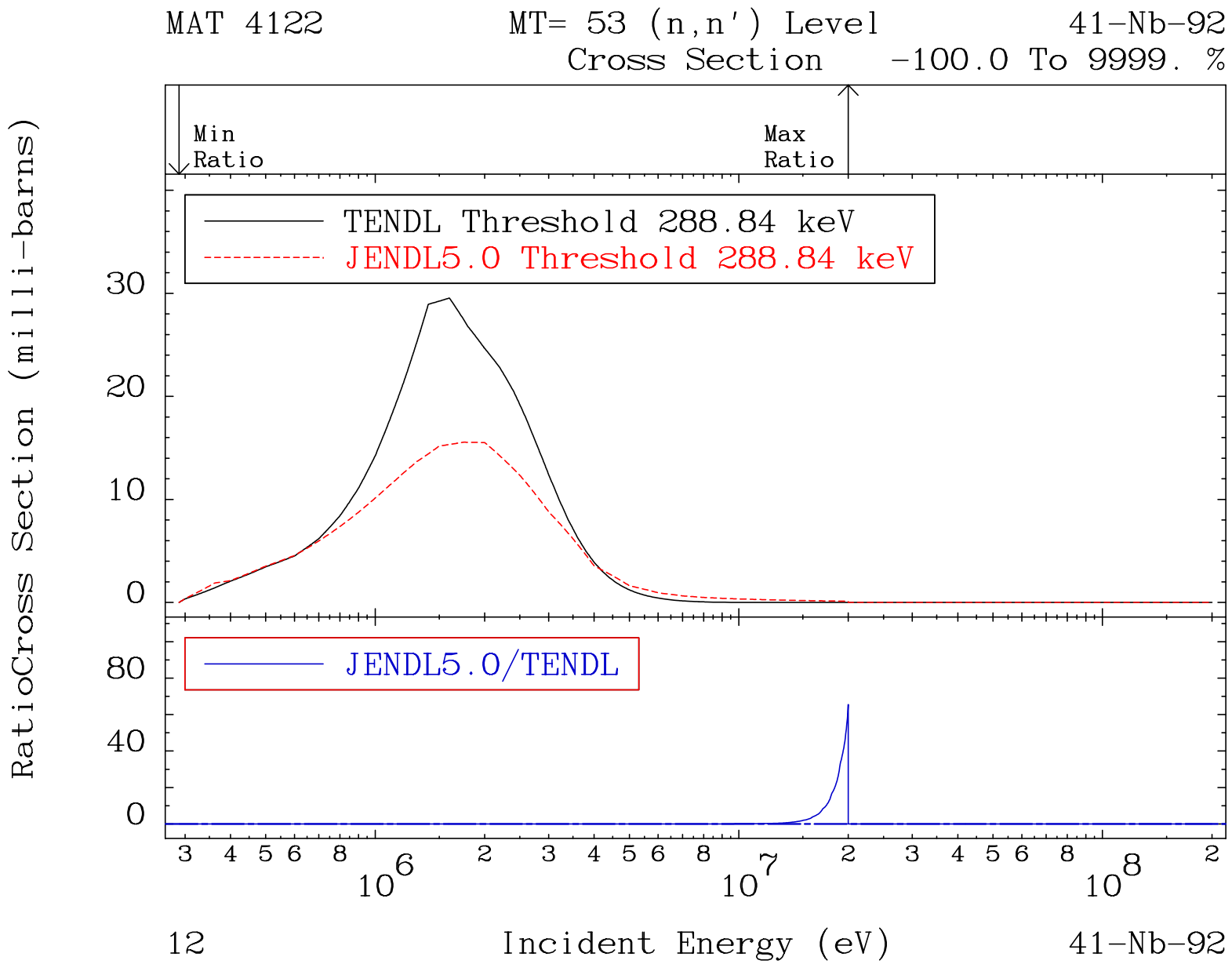

MAT 4122
(n,n') p
Cross Section
41-Nb-92
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 5.9108 MeV
JENDL5.0 Threshold 5.9108 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
100
0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
7
Incident Energy (eV)
41-Nb-92

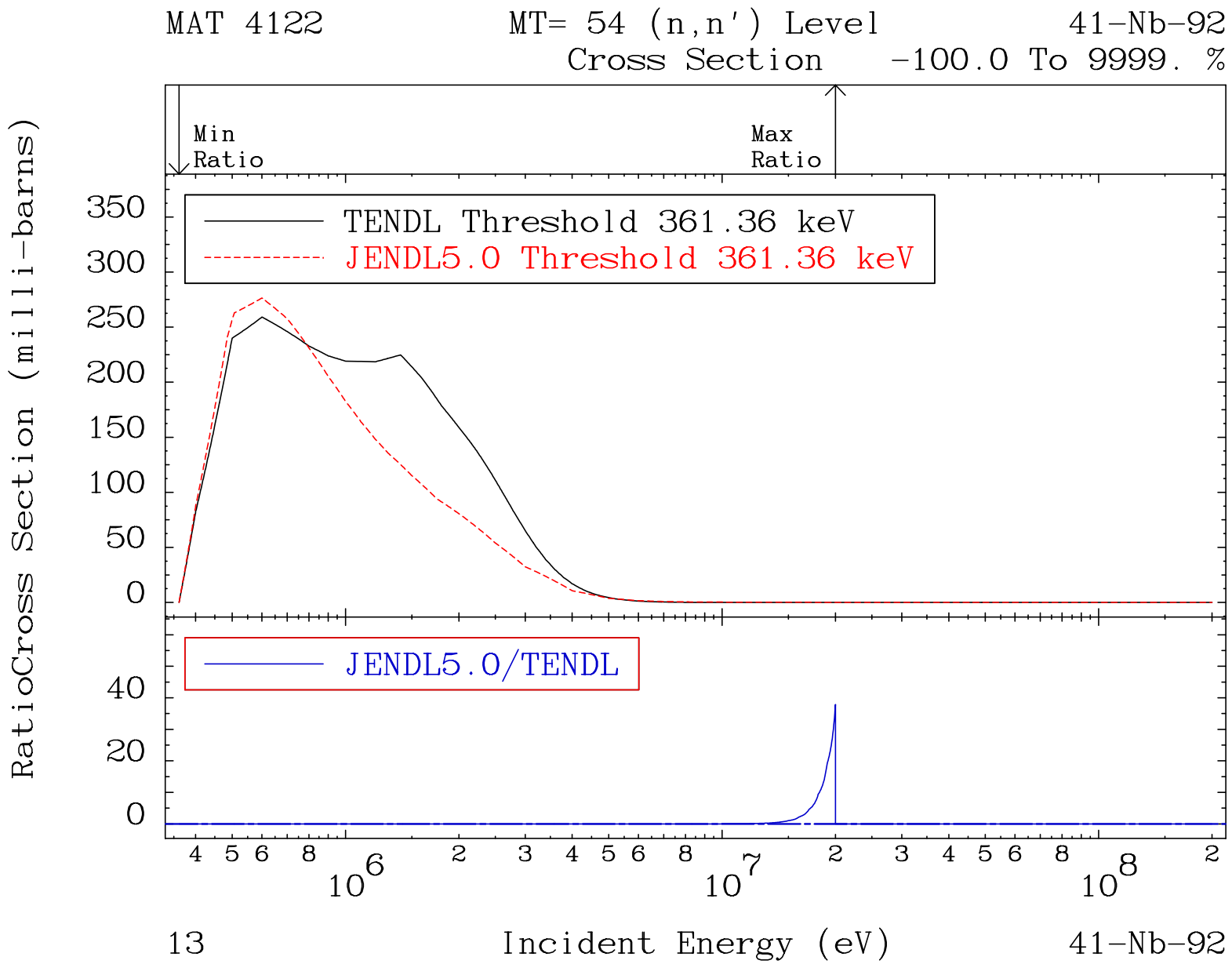

MAT 4122
(n,n') d
Cross Section
41-Nb-92
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 10.935 MeV
JENDL5.0 Threshold 10.935 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
30
25
20
15
10
5
0
4
2
0
2
3
4
5
6
7
8
9
2
10^8
8
Incident Energy (eV)
41-Nb-92

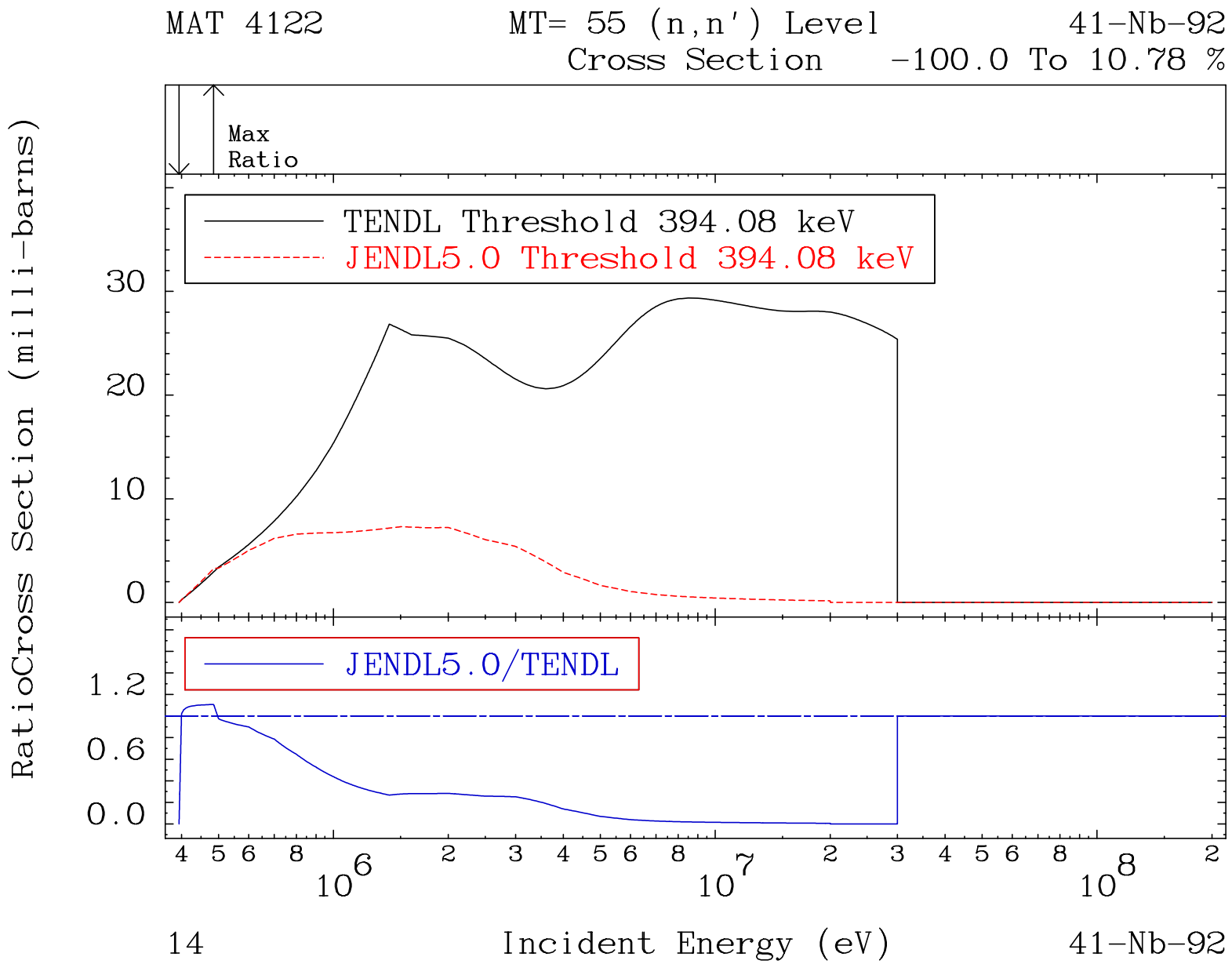

MAT 4122
(n,2n) p
41-Nb-92
Cross Section
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 13.184 MeV
JENDL5.0 Threshold 13.184 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
20
10
0
2
3
4
5
6
7
8
9
10^8
2
9
Incident Energy (eV)
41-Nb-92

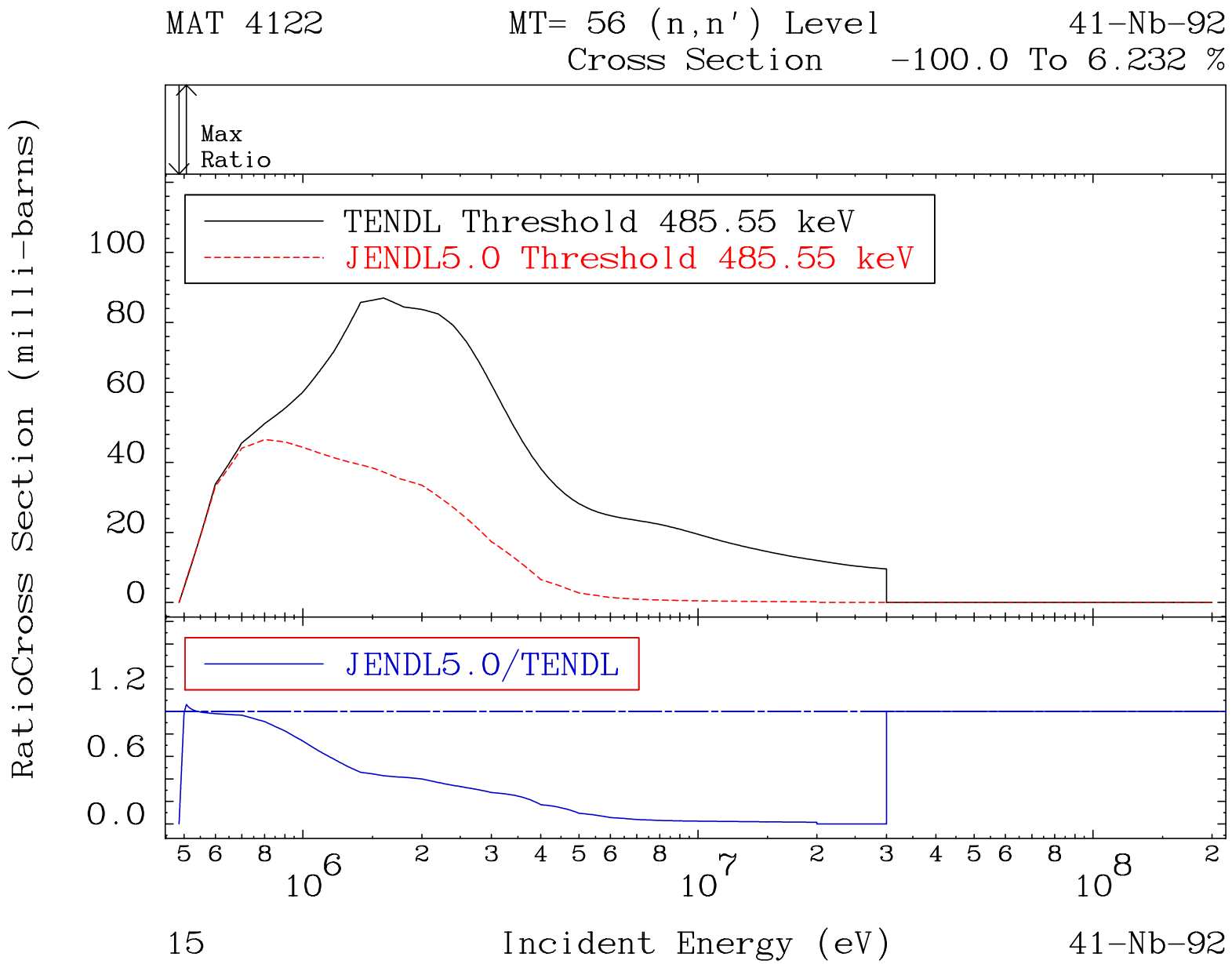

MAT 4122
MT= 51 (n,n') Level
41-Nb-92
Cross Section
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 136.99 keV
JENDL5.0 Threshold 136.99 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
350
300
250
200
150
100
50
0
1.2
0.6
0.0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
10
Incident Energy (eV)
41-Nb-92

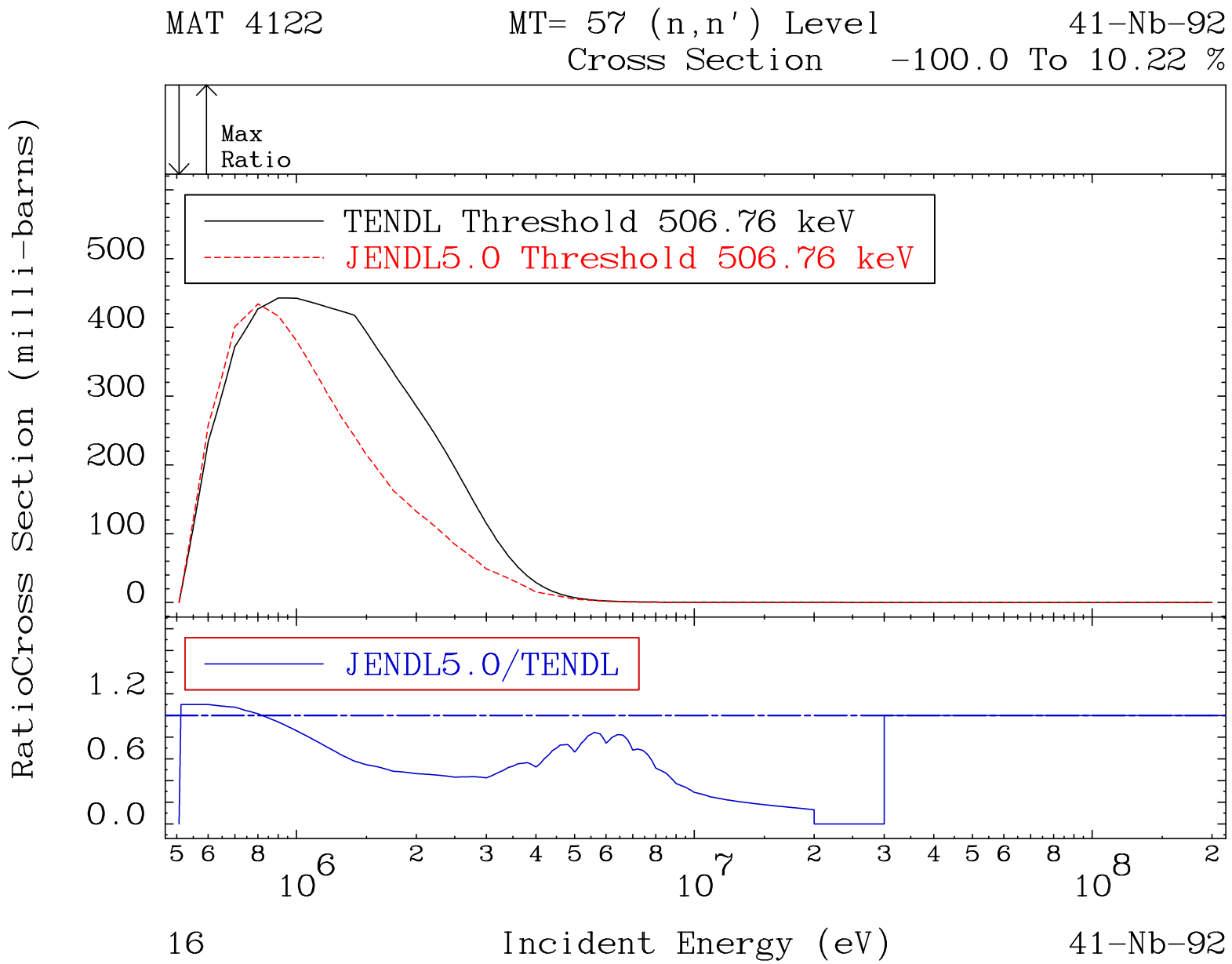

MAT 4122
MT= 52 (n,n') Level
Cross Section
41-Nb-92
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 228.28 keV
JENDL5.0 Threshold 228.28 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
11
41-Nb-92

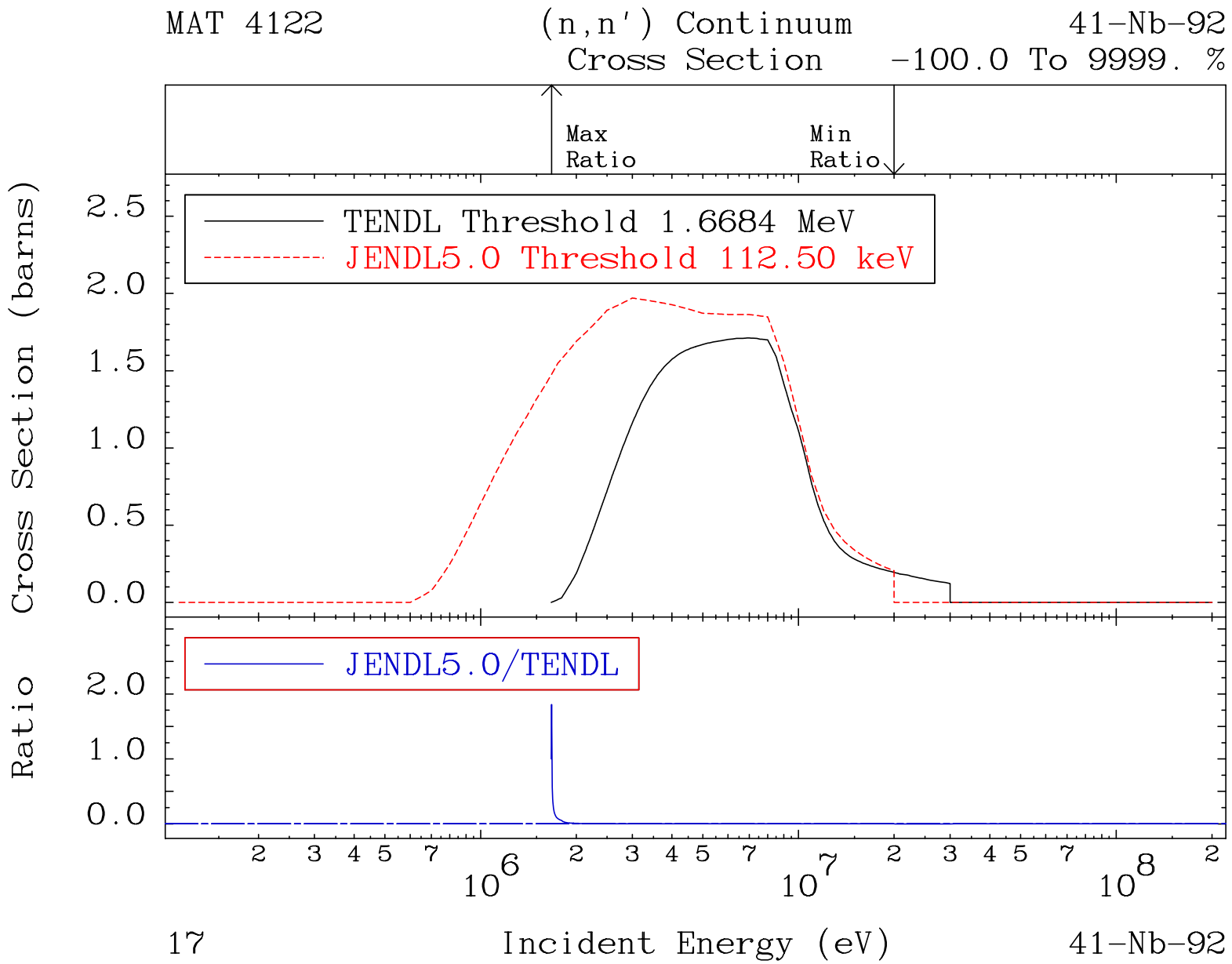

MAT 4122
MT= 53 (n,n') Level
41-Nb-92
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 288.84 keV
JENDL5.0 Threshold 288.84 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
30
20
10
0
80
40
0
3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
12
Incident Energy (eV)
41-Nb-92

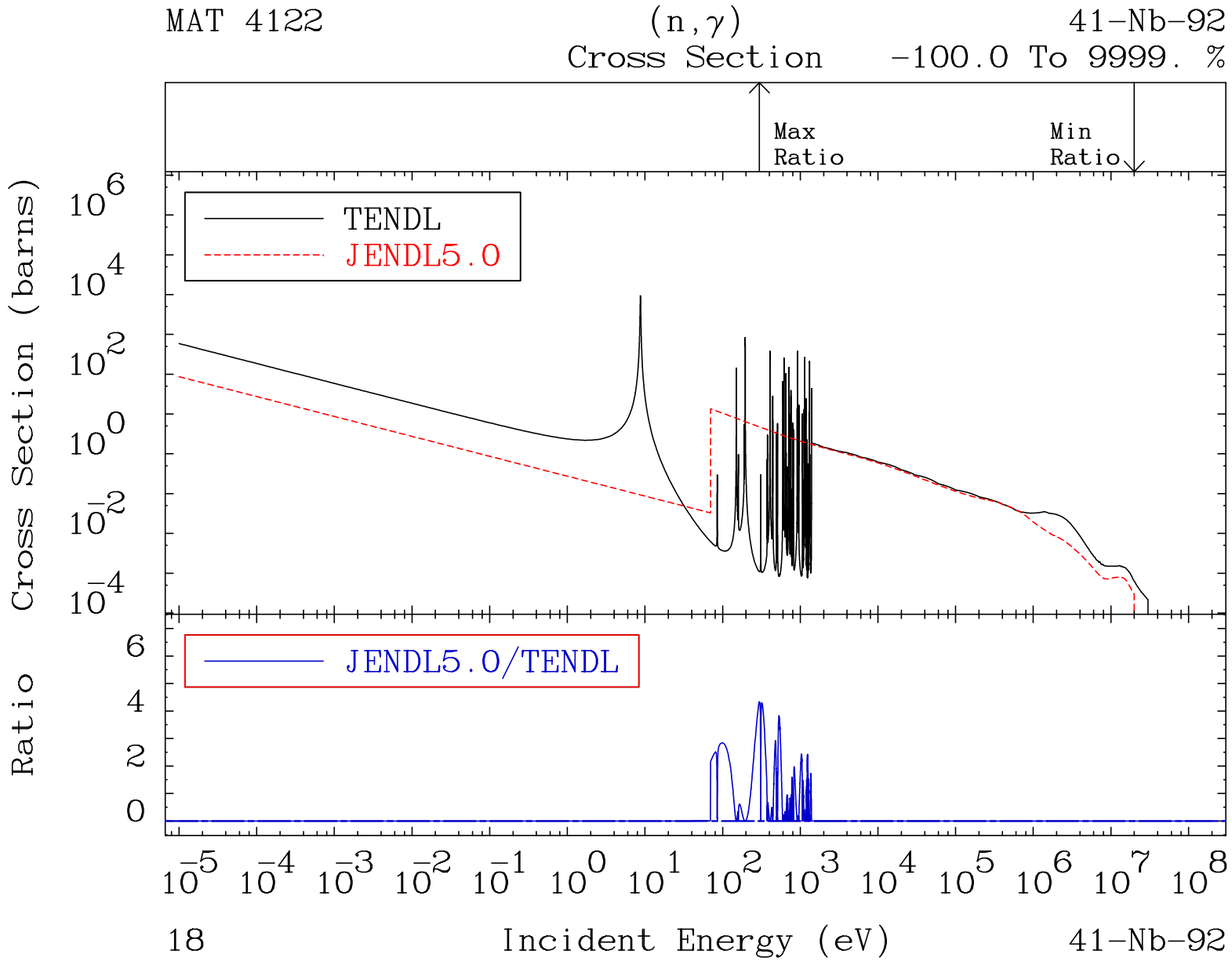

MAT 4122
MT= 54 (n,n') Level
41-Nb-92
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 361.36 keV
JENDL5.0 Threshold 361.36 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
350
300
250
200
150
100
50
0
40
20
0
4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
13
Incident Energy (eV)
41-Nb-92

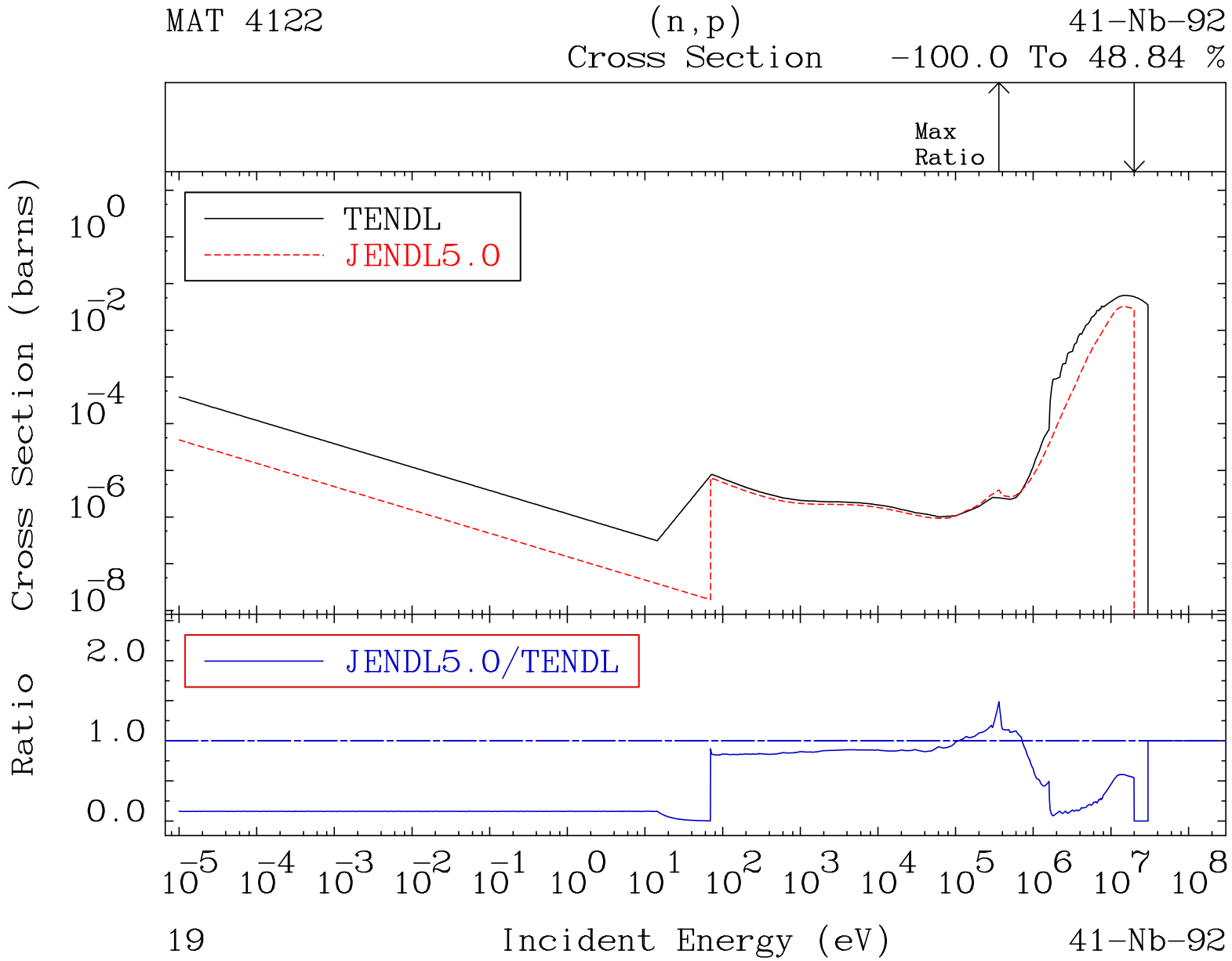

MAT 4122
MT= 55 (n,n') Level
Cross Section
41-Nb-92
-100.0 To 10.78 %
Max
Ratio
TENDL Threshold 394.08 keV
JENDL5.0 Threshold 394.08 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
30
20
10
0
1.2
0.6
0.0
4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
14
Incident Energy (eV)
41-Nb-92

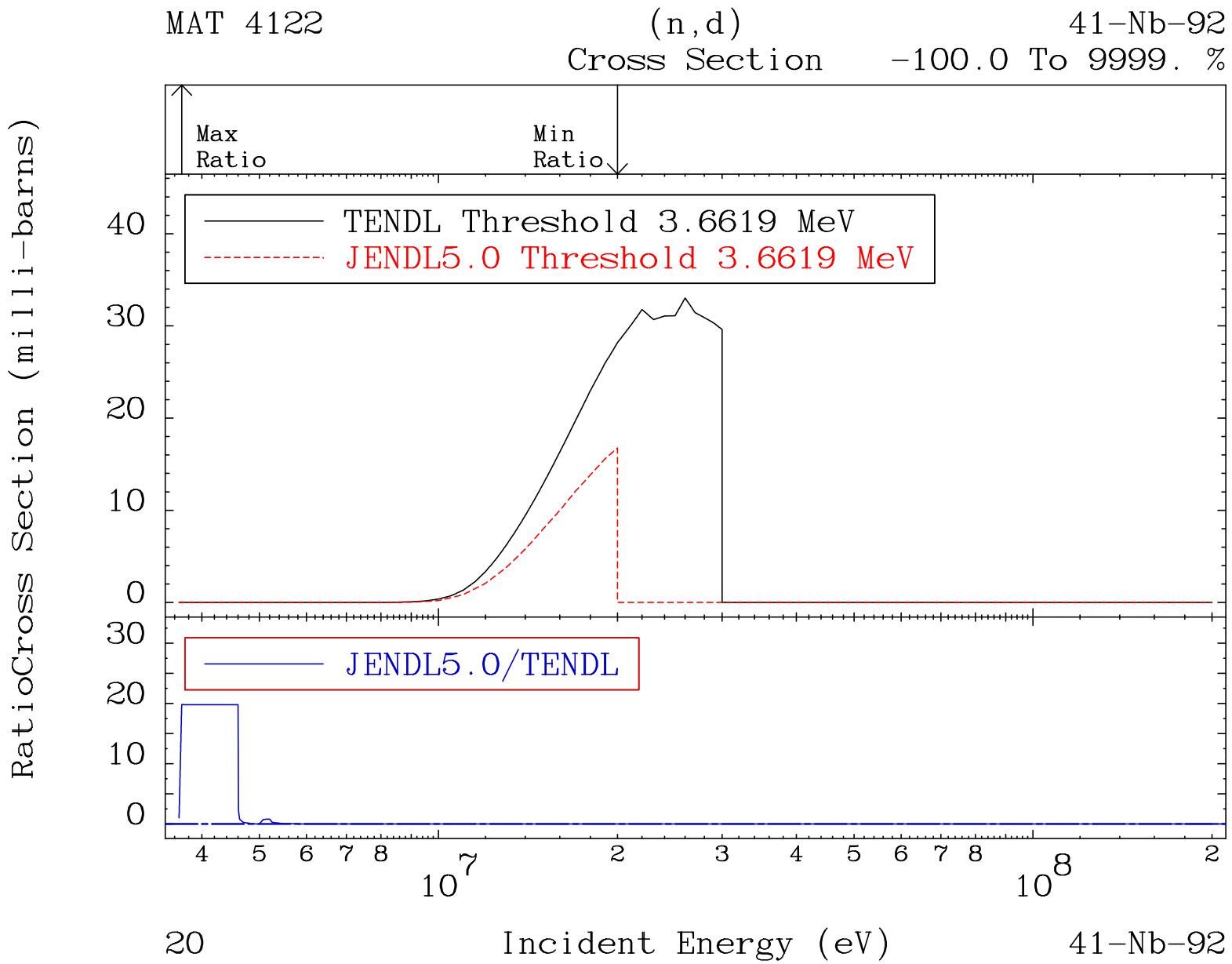

MAT 4122
MT= 56 (n,n') Level
41-Nb-92
Cross Section
-100.0 To 6.232 %
Max
Ratio
TENDL Threshold 485.55 keV
JENDL5.0 Threshold 485.55 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
1.2
0.6
0.0
5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
15
Incident Energy (eV)
41-Nb-92

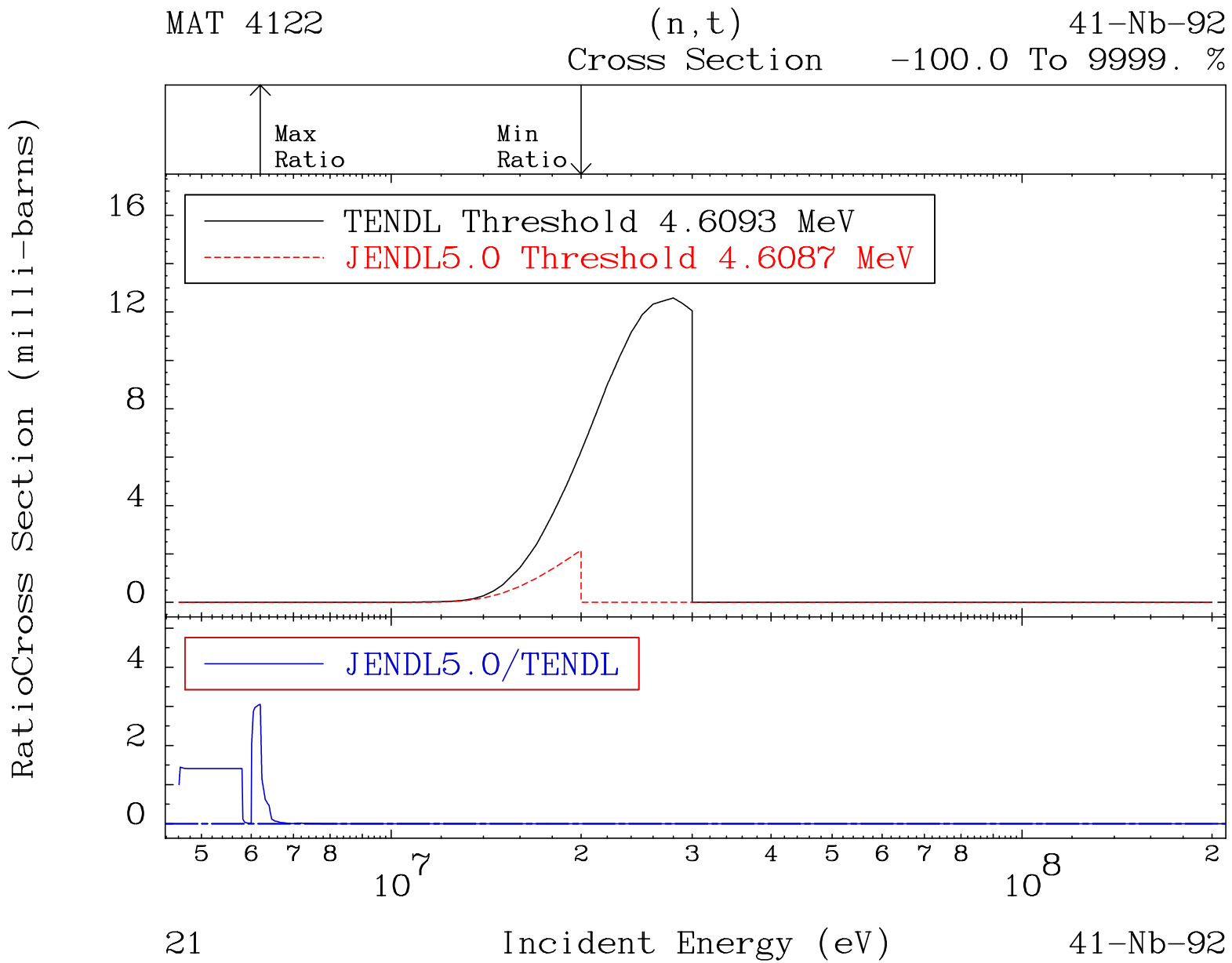

MAT 4122
MT= 57 (n,n') Level
41-Nb-92
Cross Section -100.0 To 10.22 %
Max
Ratio
TENDL Threshold 506.76 keV
JENDL5.0 Threshold 506.76 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
1.2
0.6
0.0
5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
16
Incident Energy (eV)
41-Nb-92

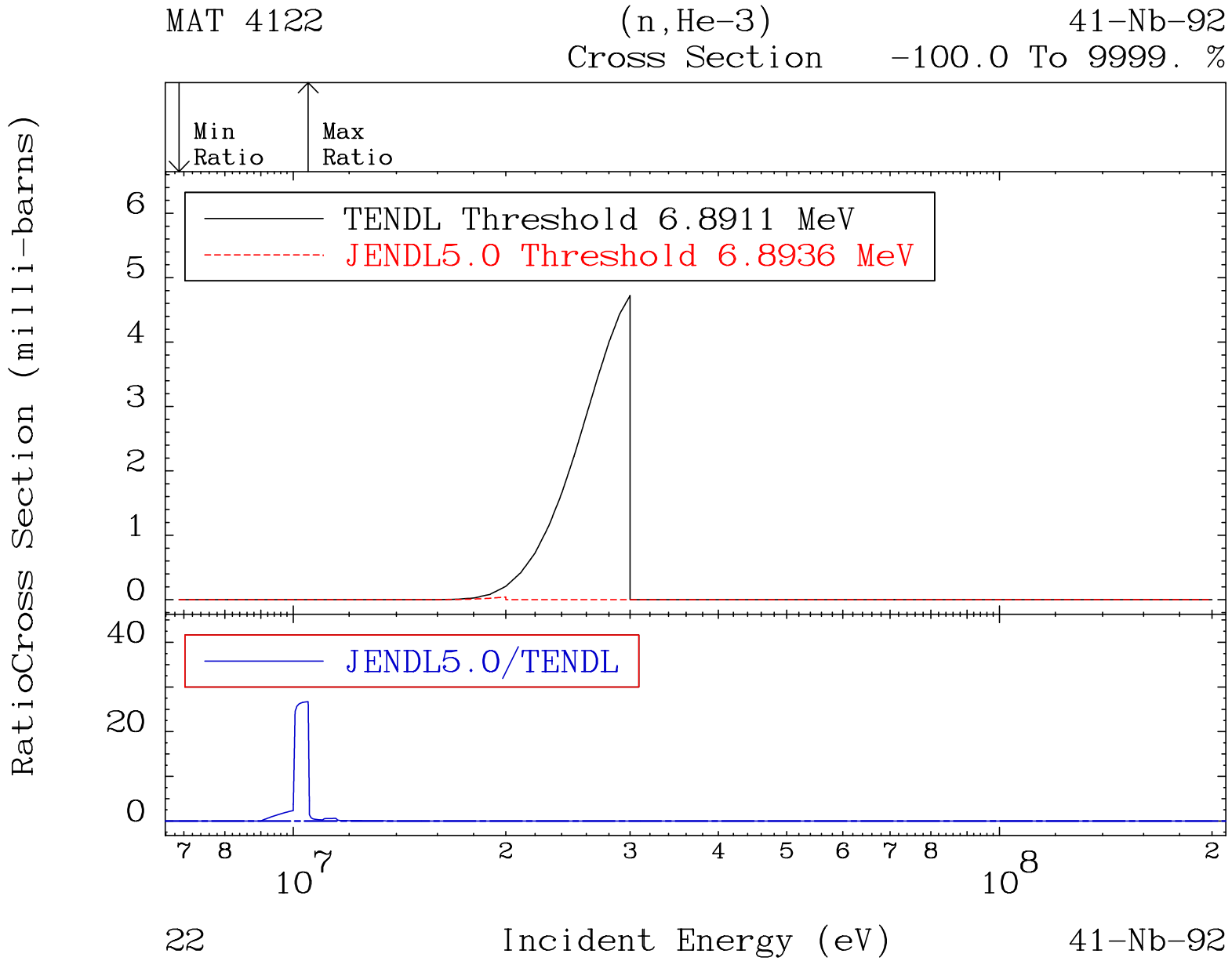

MAT 4122
(n,n') Continuum
Cross Section
41-Nb-92
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 1.6684 MeV
JENDL5.0 Threshold 112.50 keV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
JENDL5.0/TENDL
Ratio
2.0
1.0
0.0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
17
Incident Energy (eV)
41-Nb-92

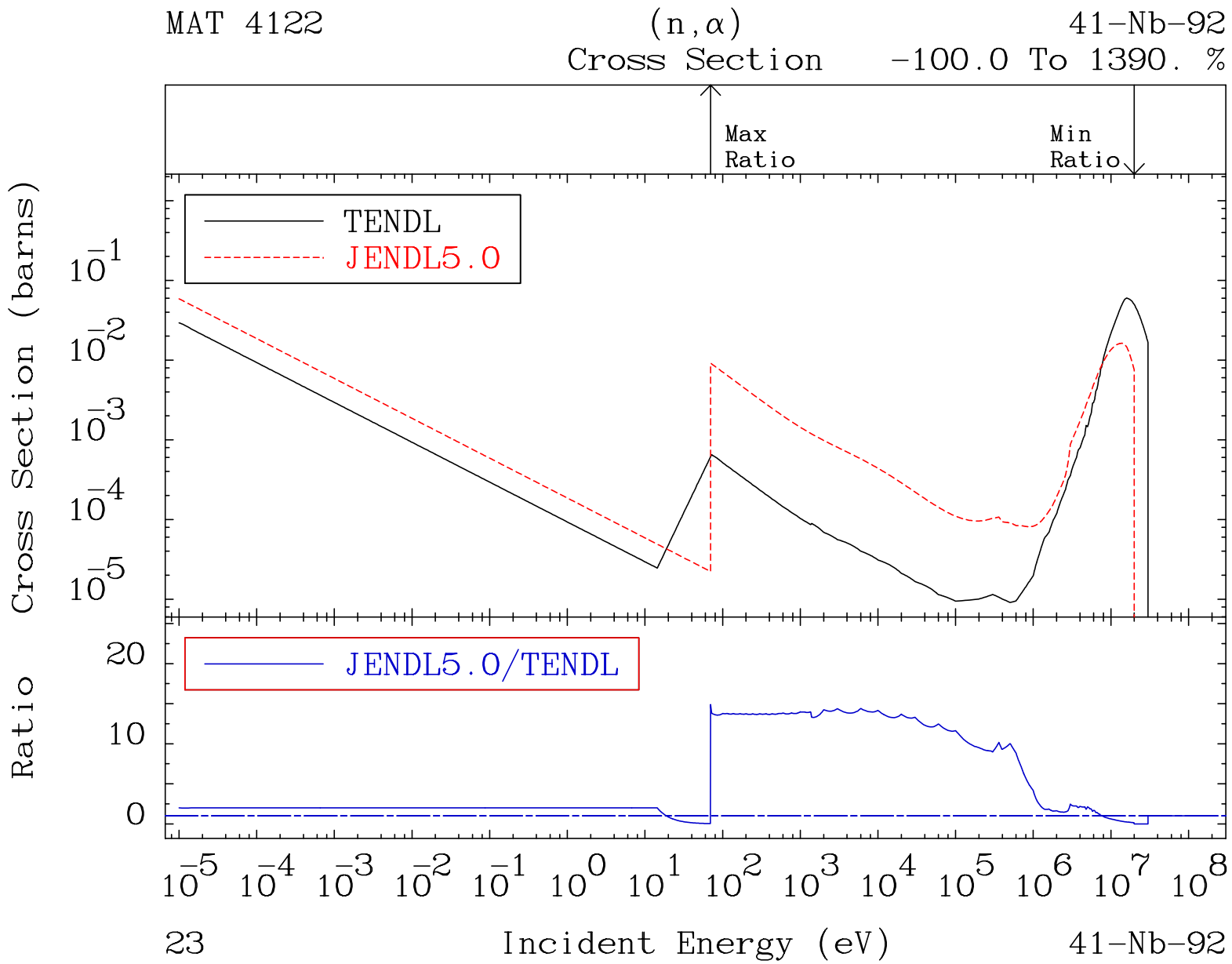

MAT 4122
(n,γ)
Cross Section
41-Nb-92
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
18
41-Nb-92

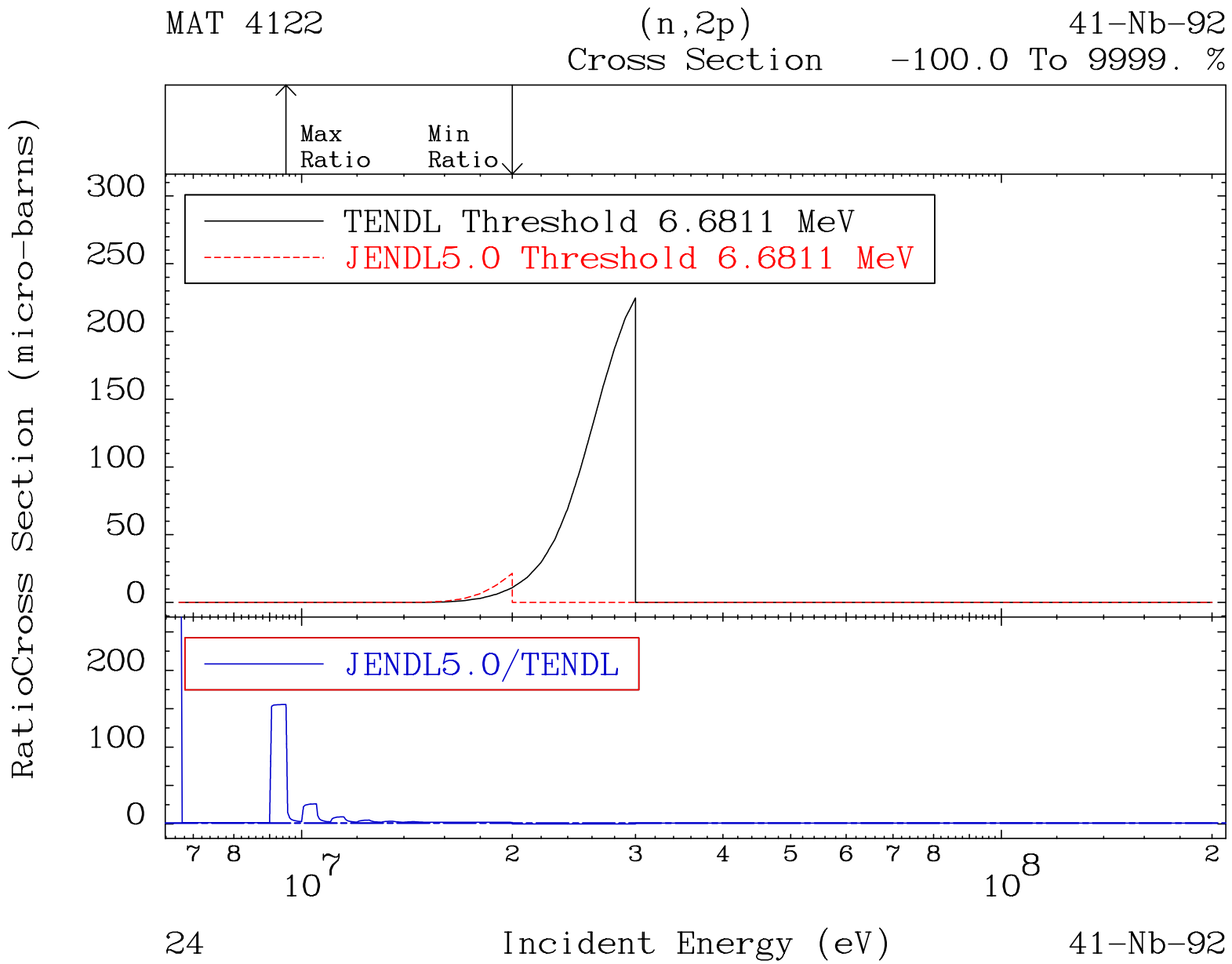

MAT 4122
(n,p)
Cross Section
41-Nb-92
-100.0 To 48.84 %
Max
Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
19
41-Nb-92

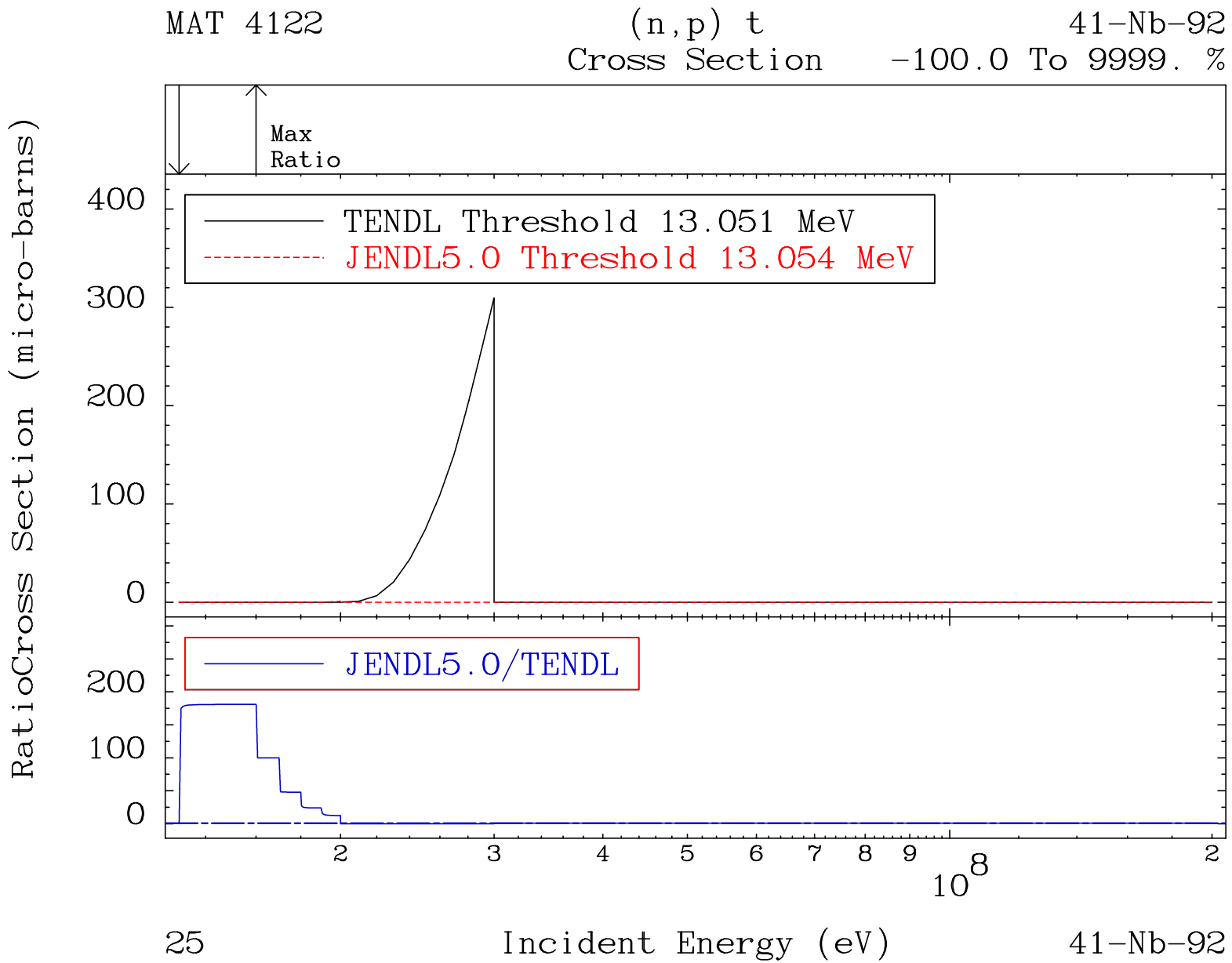

MAT 4122
(n,d)
Cross Section
41-Nb-92
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 3.6619 MeV
JENDL5.0 Threshold 3.6619 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
40
30
20
10
0
30
20
10
0
4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
20
Incident Energy (eV)
41-Nb-92

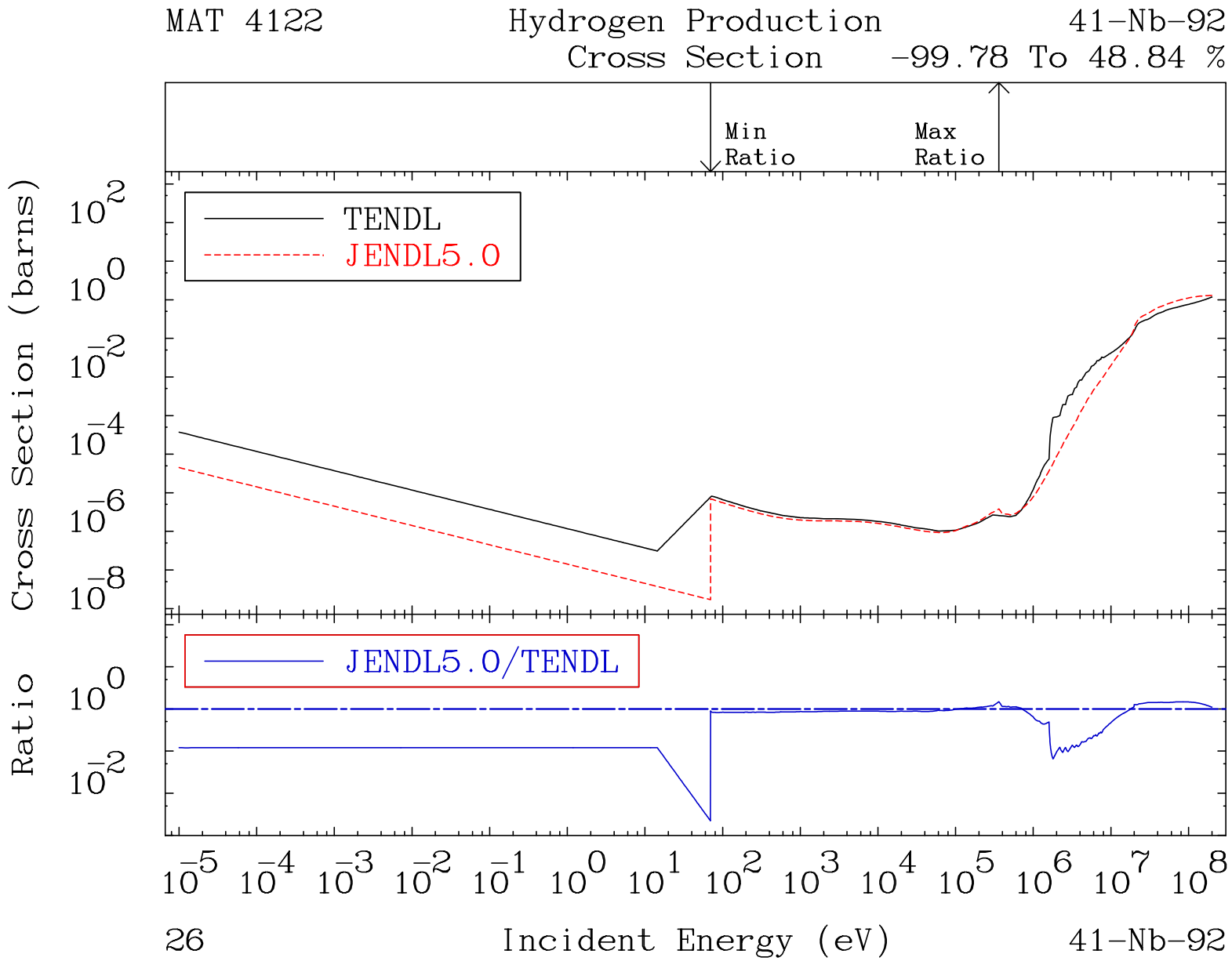

MAT 4122
(n,t)
Cross Section
41-Nb-92
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 4.6093 MeV
JENDL5.0 Threshold 4.6087 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
16
12
8
4
0
4
2
0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
21
Incident Energy (eV)
41-Nb-92

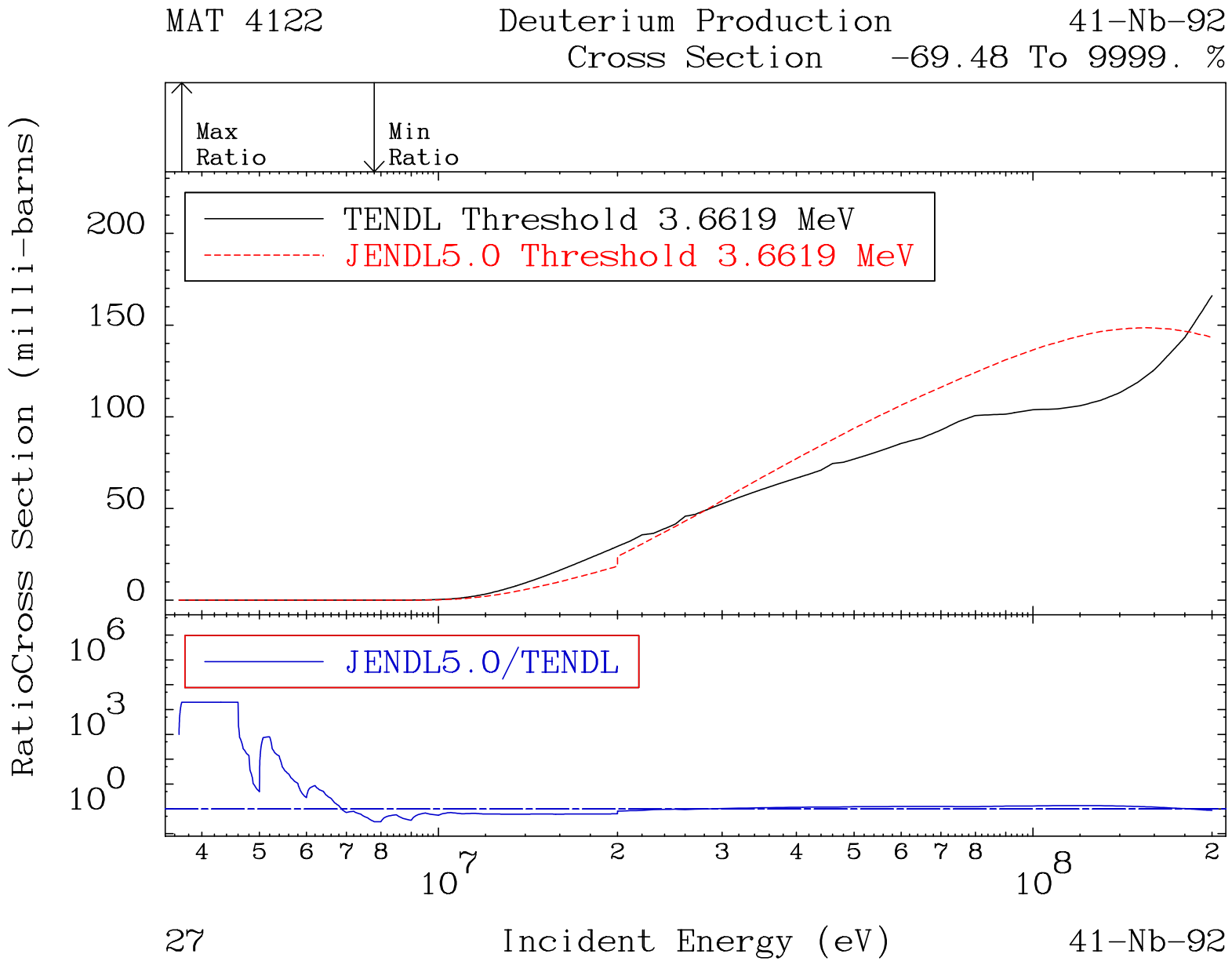

MAT 4122
(n,He-3)
Cross Section
41-Nb-92
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 6.8911 MeV
JENDL5.0 Threshold 6.8936 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
22
41-Nb-92

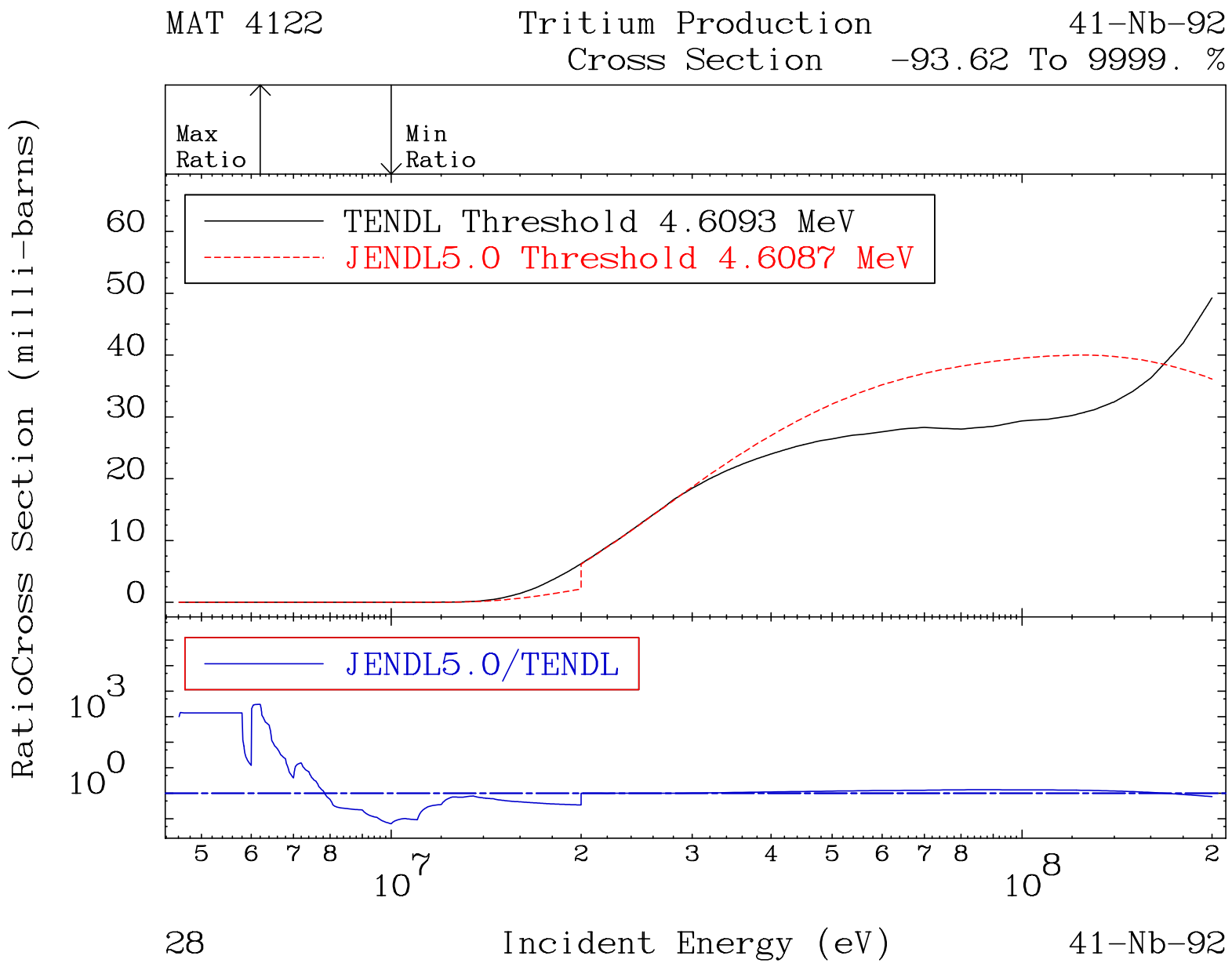

MAT 4122
(n,α)
Cross Section
41-Nb-92
-100.0 To 1390. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
23
41-Nb-92

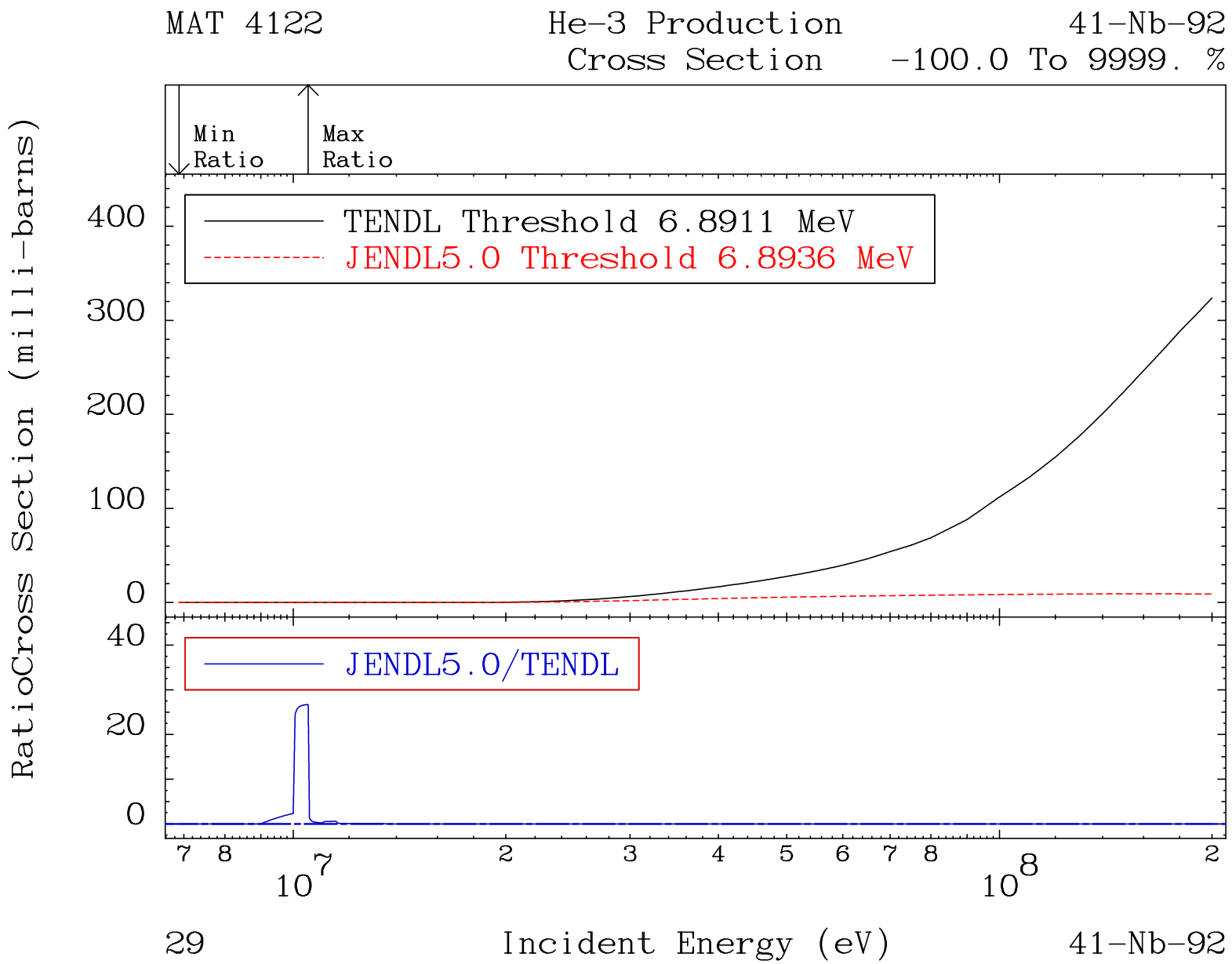

MAT 4122
(n,2p)
41-Nb-92
Cross Section
-100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 6.6811 MeV
JENDL5.0 Threshold 6.6811 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
300
250
200
150
100
50
0
200
100
0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
24
Incident Energy (eV)
41-Nb-92

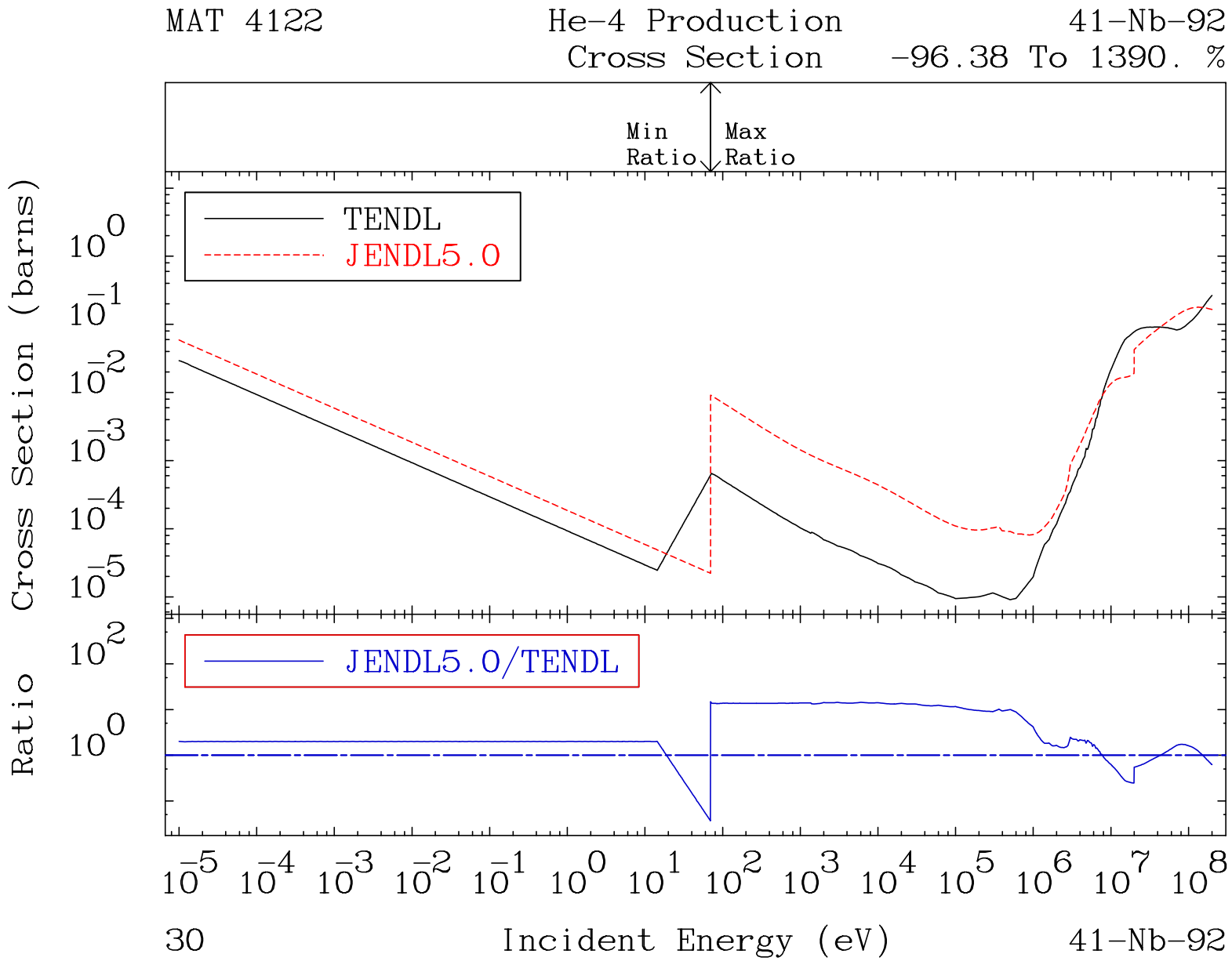

MAT 4122
(n,p) t
41-Nb-92
Cross Section
-100.0 To 9999. %
Max
Ratio
TENDL Threshold 13.051 MeV
JENDL5.0 Threshold 13.054 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
200
100
0
2
3
4
5
6
7
8
9
2
10^8
25
Incident Energy (eV)
41-Nb-92

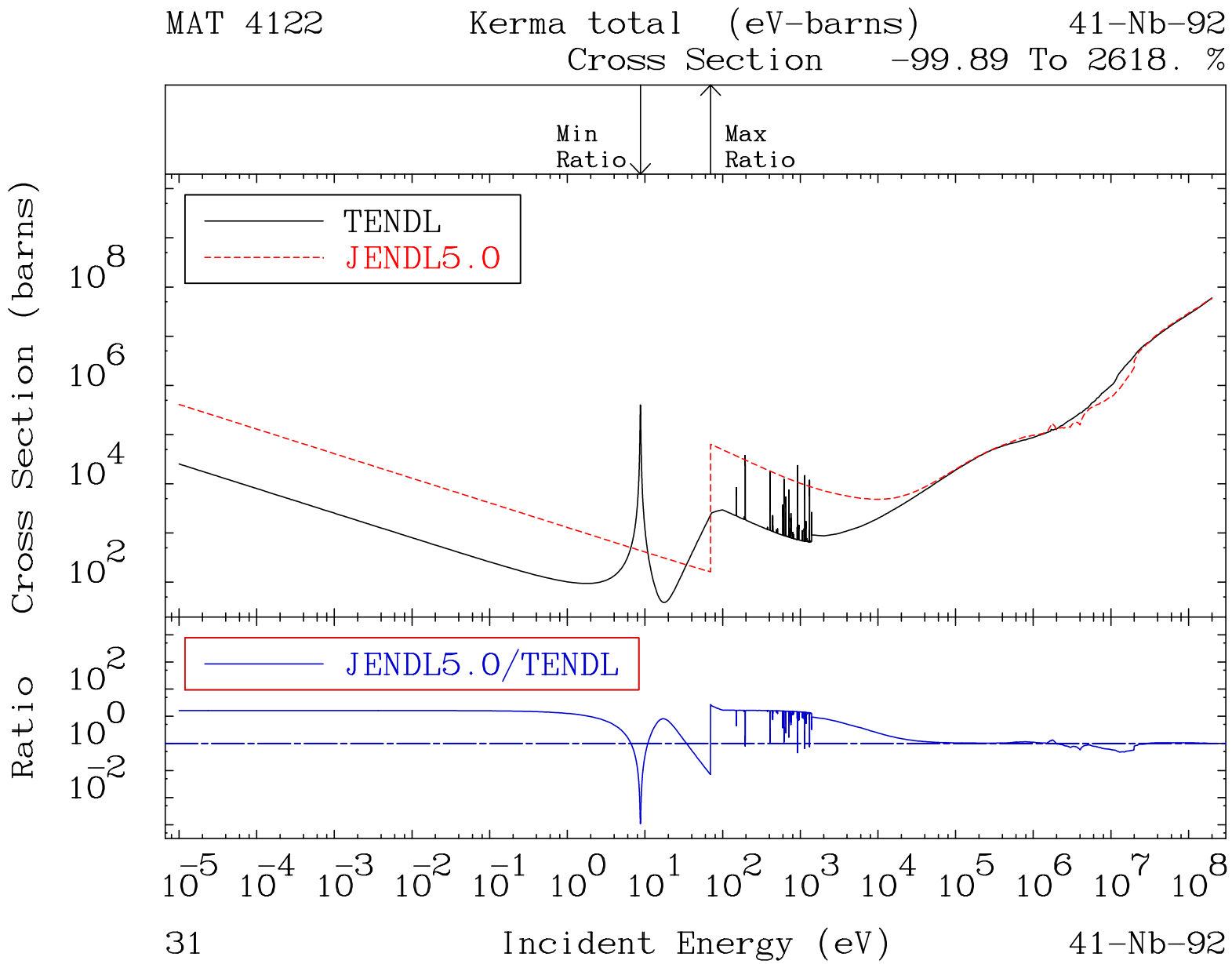

MAT 4122
Hydrogen Production
41-Nb-92
Cross Section
-99.78 To 48.84 %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
26
41-Nb-92

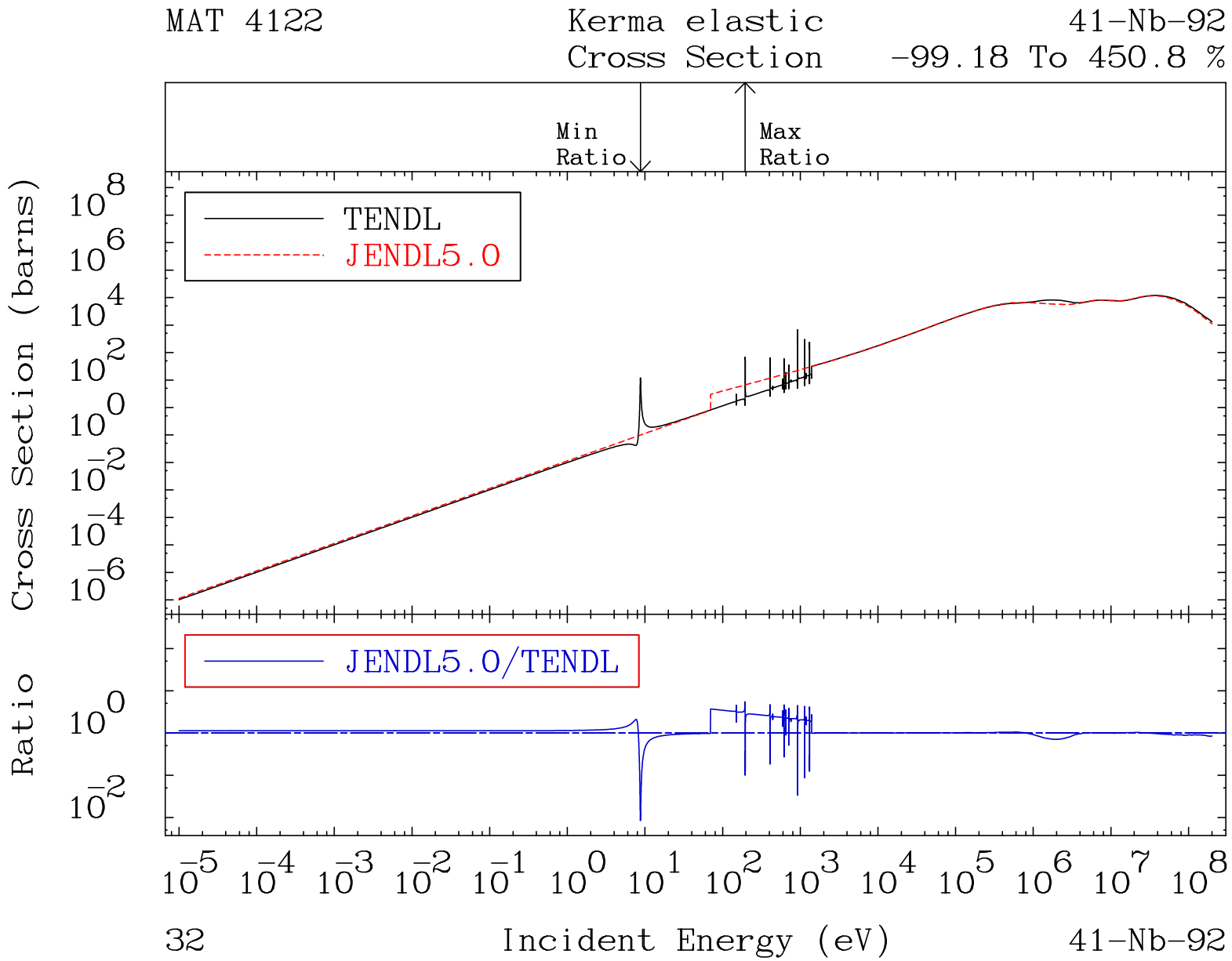

MAT 4122
Deuterium Production
41-Nb-92
Cross Section -69.48 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 3.6619 MeV
JENDL5.0 Threshold 3.6619 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
10^6
10^3
10^0
4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
27
Incident Energy (eV)
41-Nb-92

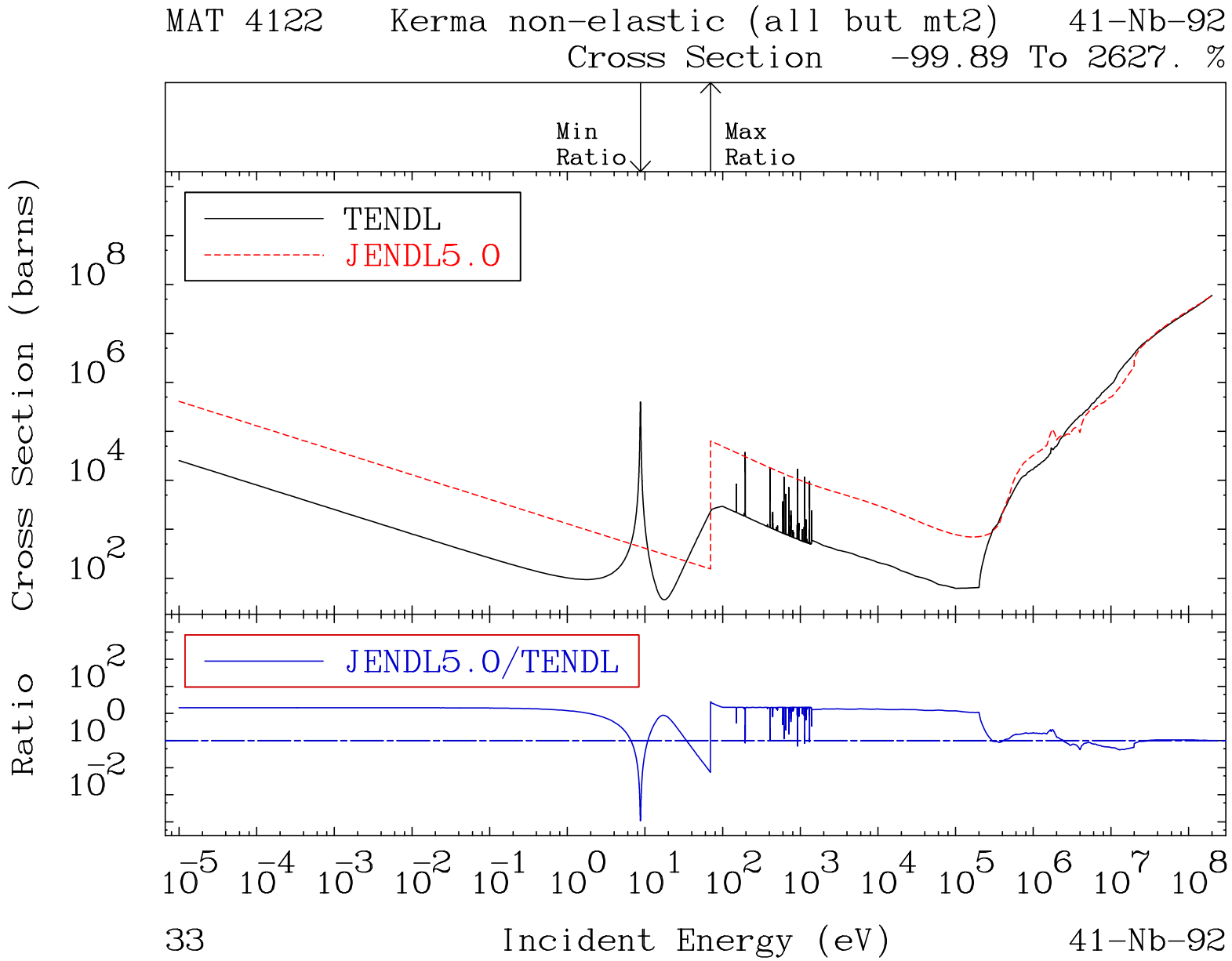

MAT 4122
Tritium Production
41-Nb-92
Cross Section
-93.62 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 4.6093 MeV
JENDL5.0 Threshold 4.6087 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
60
50
40
30
20
10
0
10^3
10^0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
28
Incident Energy (eV)
41-Nb-92

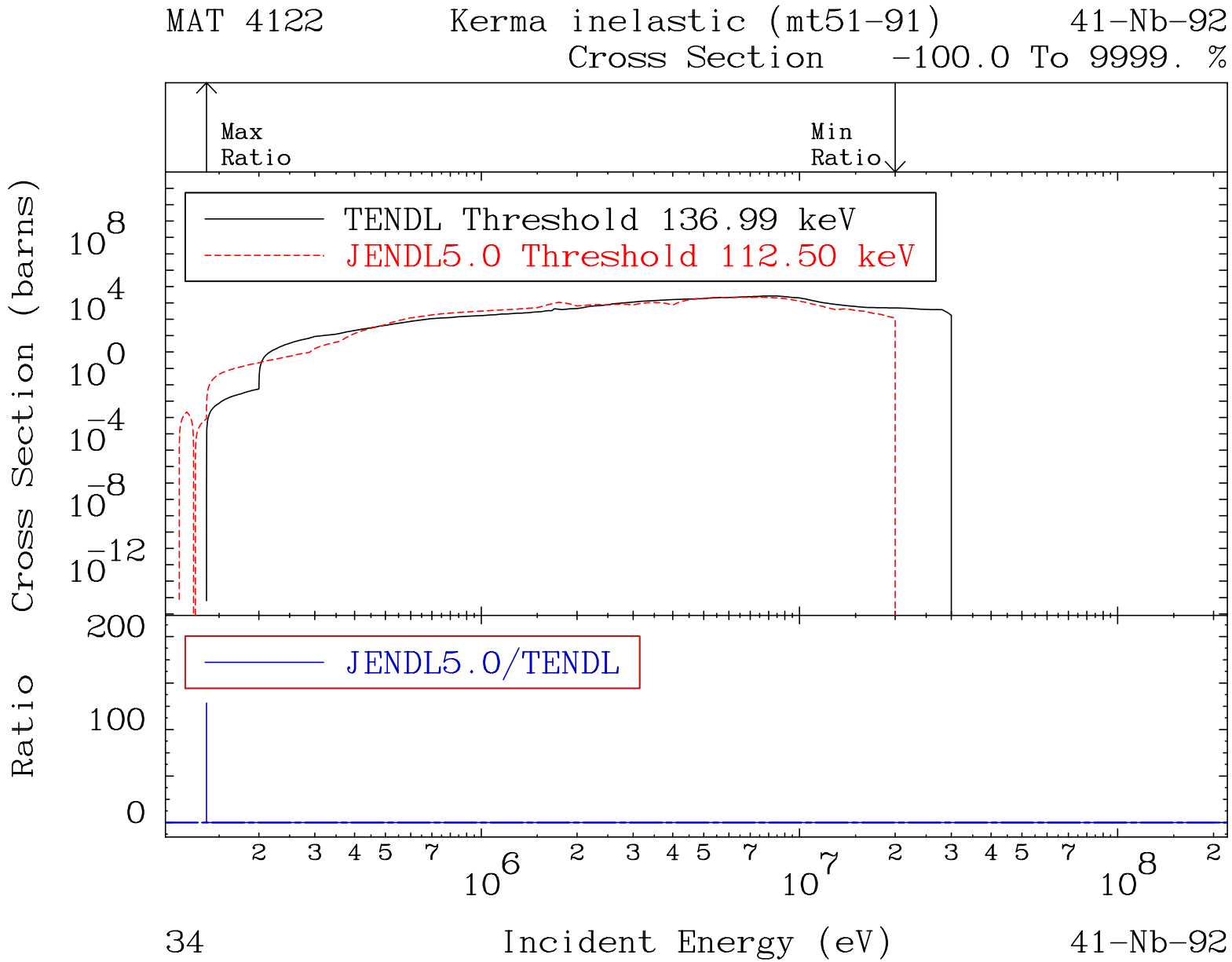

MAT 4122
He-3 Production
Cross Section
41-Nb-92
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 6.8911 MeV
JENDL5.0 Threshold 6.8936 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
40
20
0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
29
Incident Energy (eV)
41-Nb-92

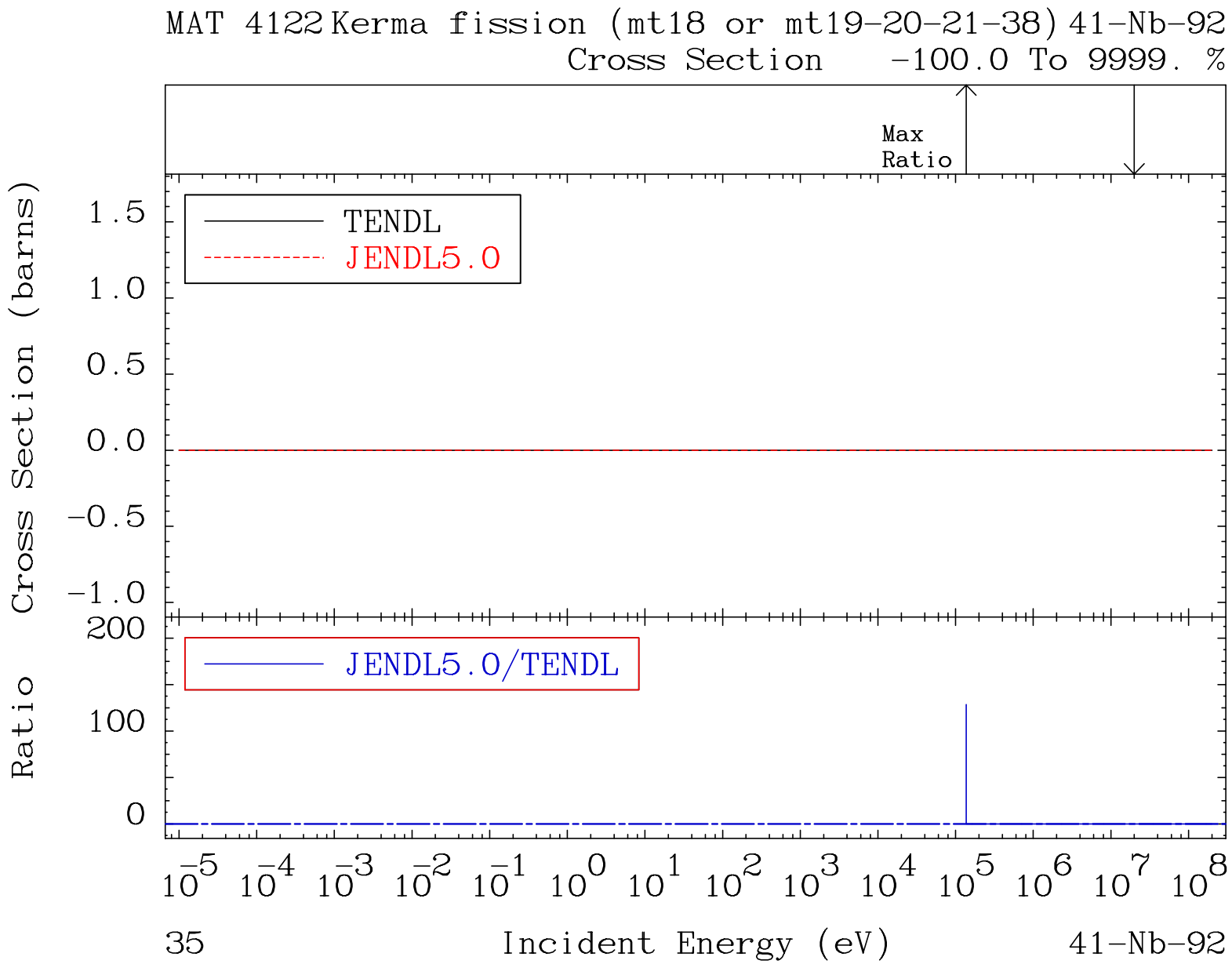

MAT 4122
He-4 Production
Cross Section
41-Nb-92
-96.38 To 1390. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
30
41-Nb-92

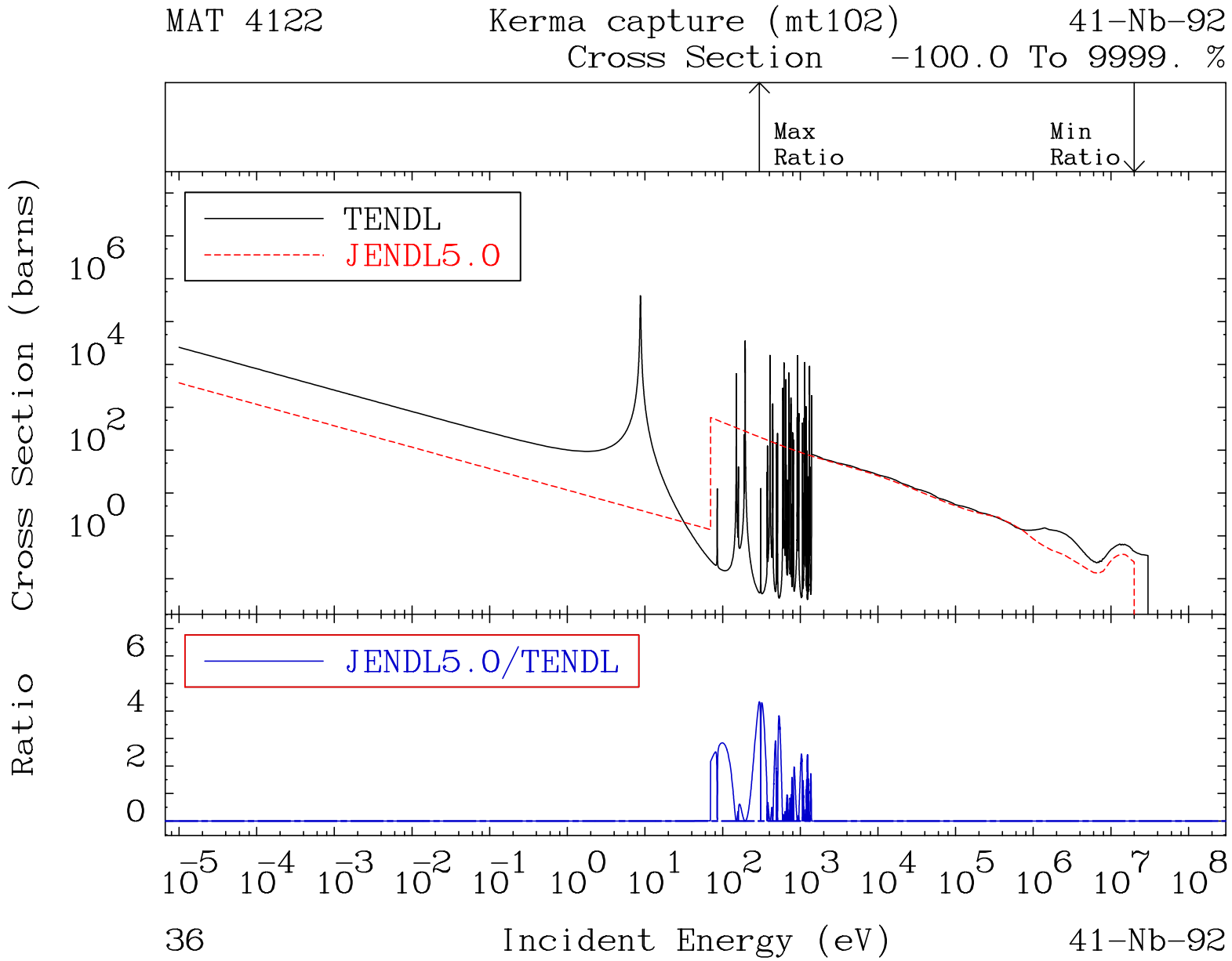

MAT 4122
Kerma total (eV-barns)
41-Nb-92
Cross Section -99.89 To 2618. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
31
41-Nb-92

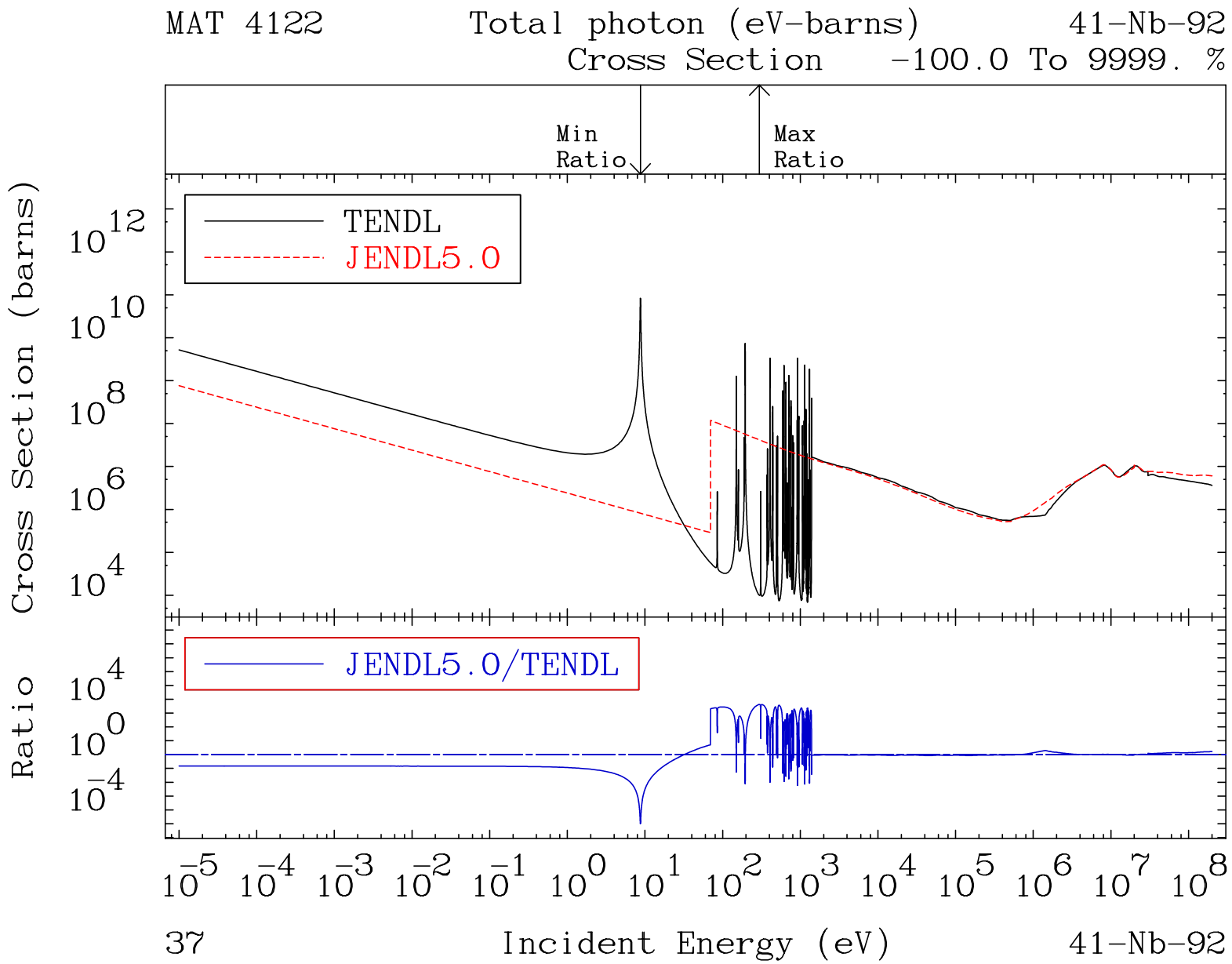

MAT 4122
Kerma elastic
Cross Section
41-Nb-92
-99.18 To 450.8 %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
32
41-Nb-92

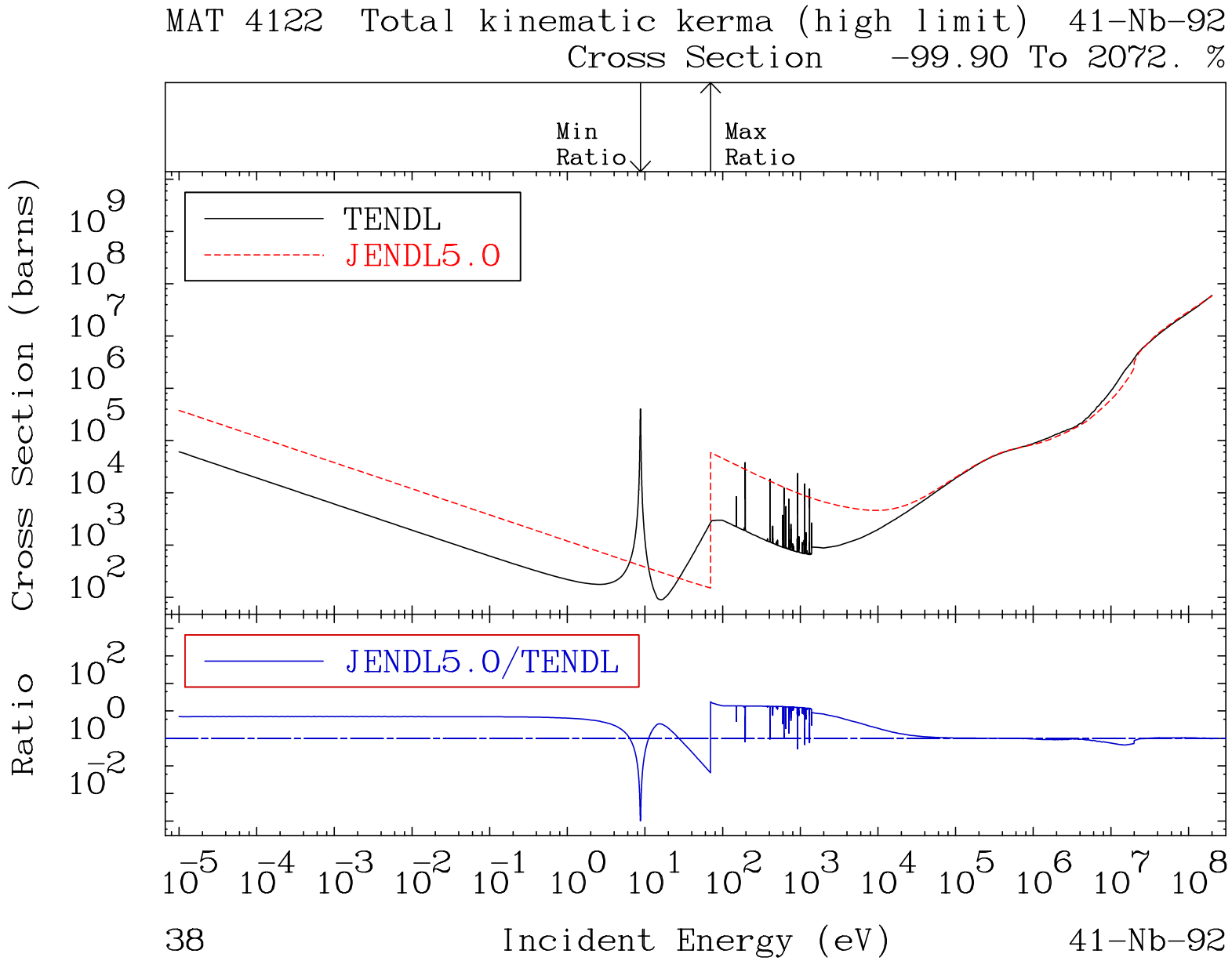

MAT 4122 Kerma non-elastic (all but mt2) 41-Nb-92
Cross Section -99.89 To 2627. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
33
41-Nb-92

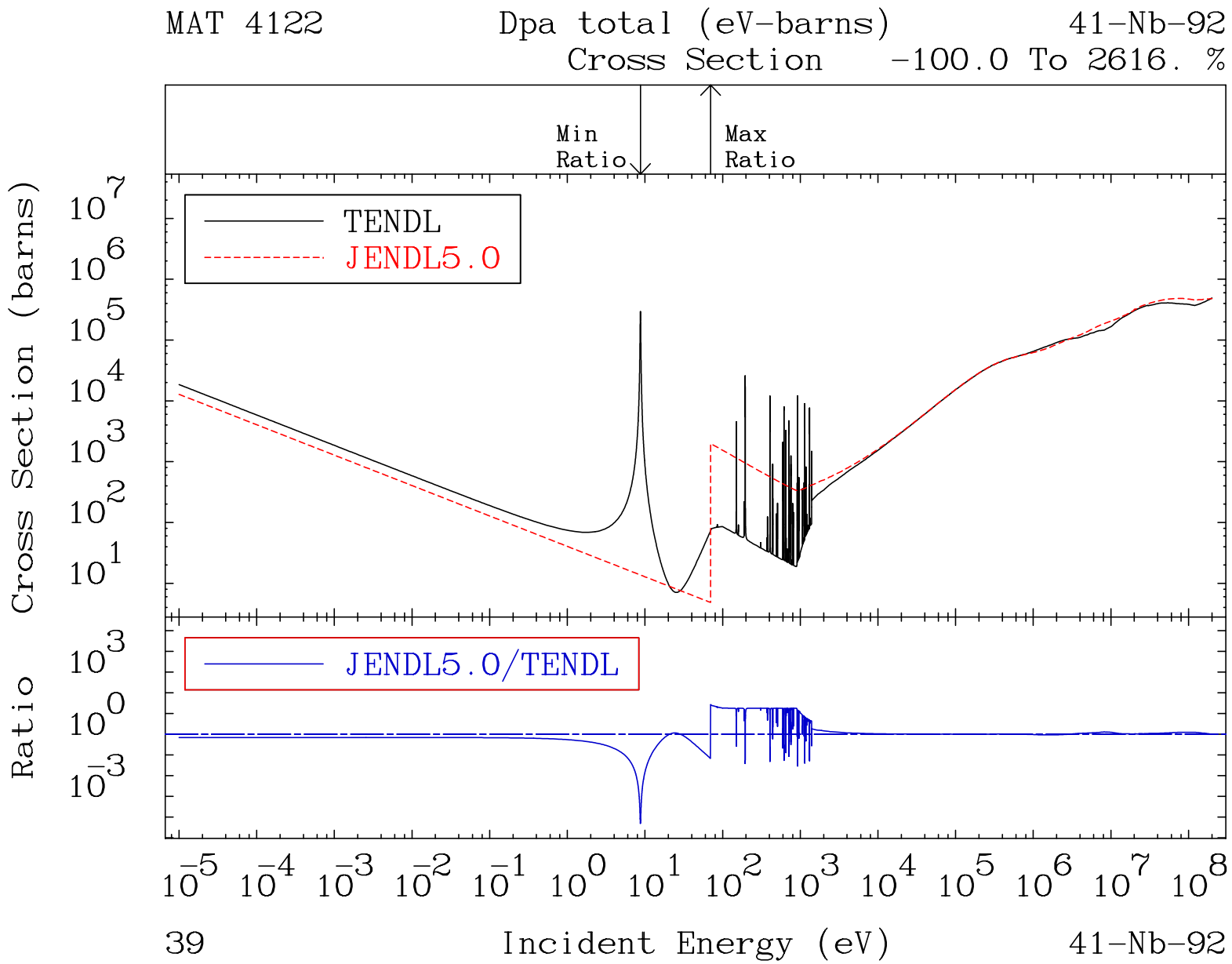

MAT 4122
Kerma inelastic (mt51-91)
41-Nb-92
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 136.99 keV
JENDL5.0 Threshold 112.50 keV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
34
41-Nb-92

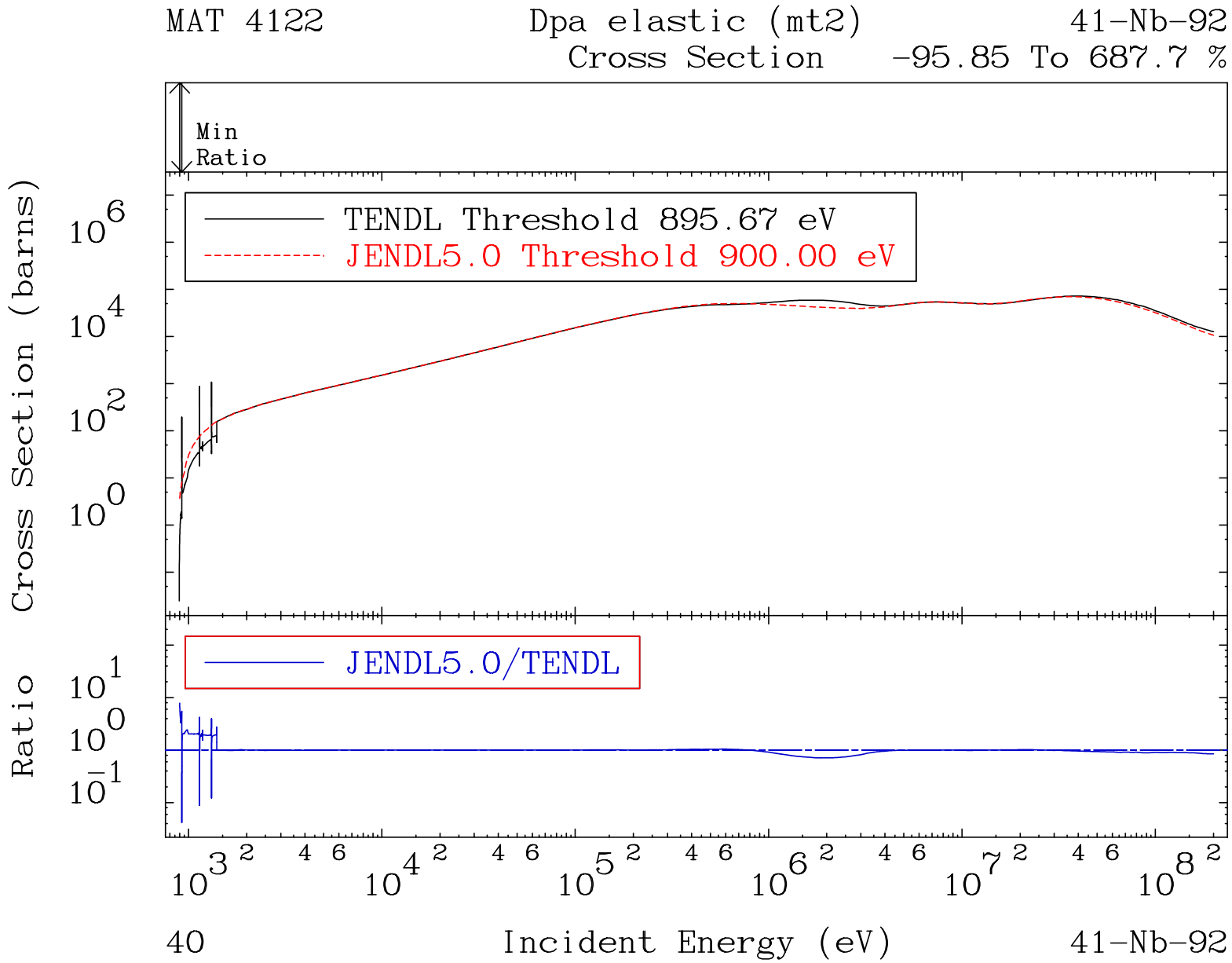

MAT 4122 Kerma fission (mt18 or mt19-20-21-38) 41-Nb-92
Cross Section -100.0 To 9999. %
Max
Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
200
100
0
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
35
Incident Energy (eV)
41-Nb-92

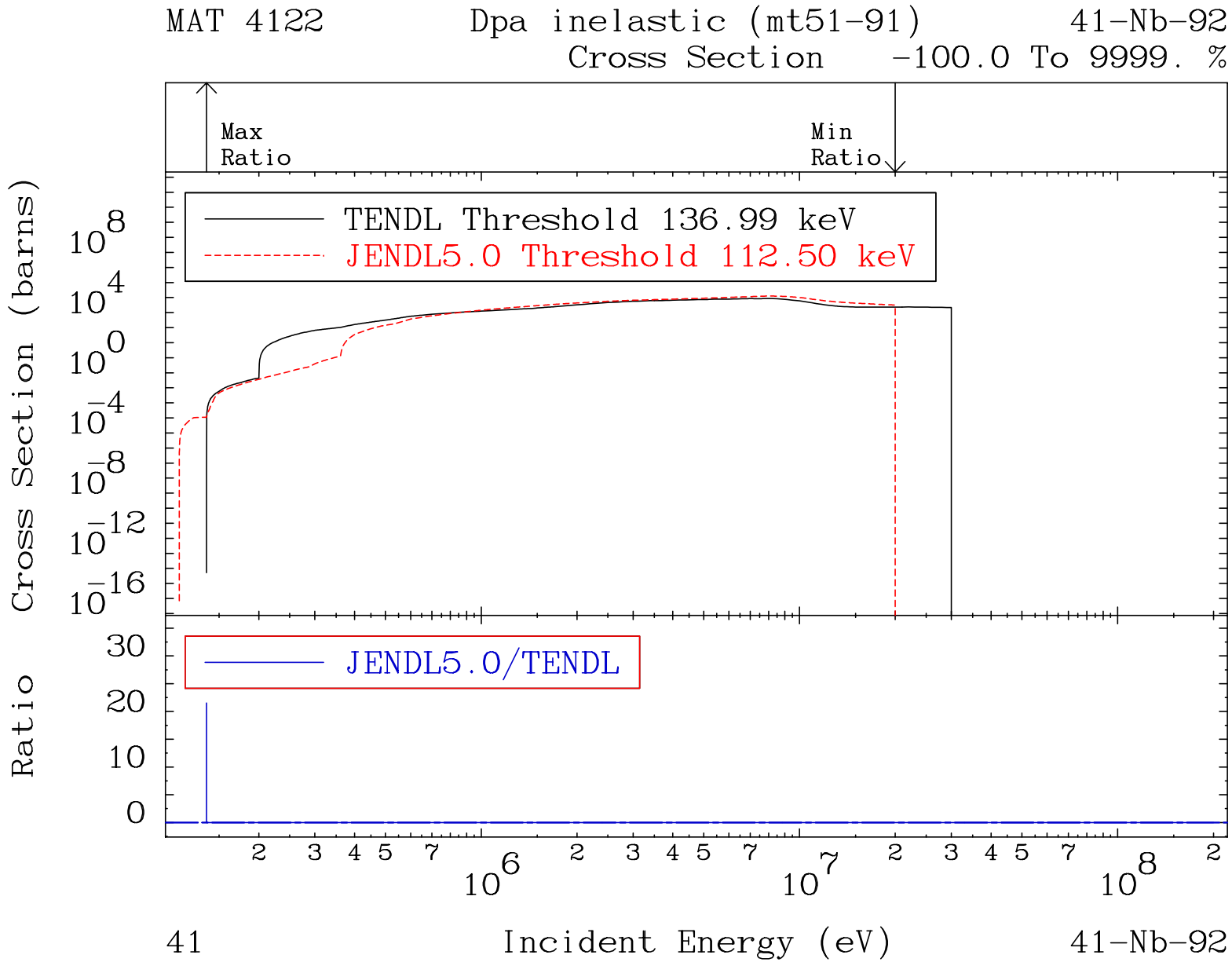

MAT 4122
Kerma capture (mt102)
41-Nb-92
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
36
41-Nb-92

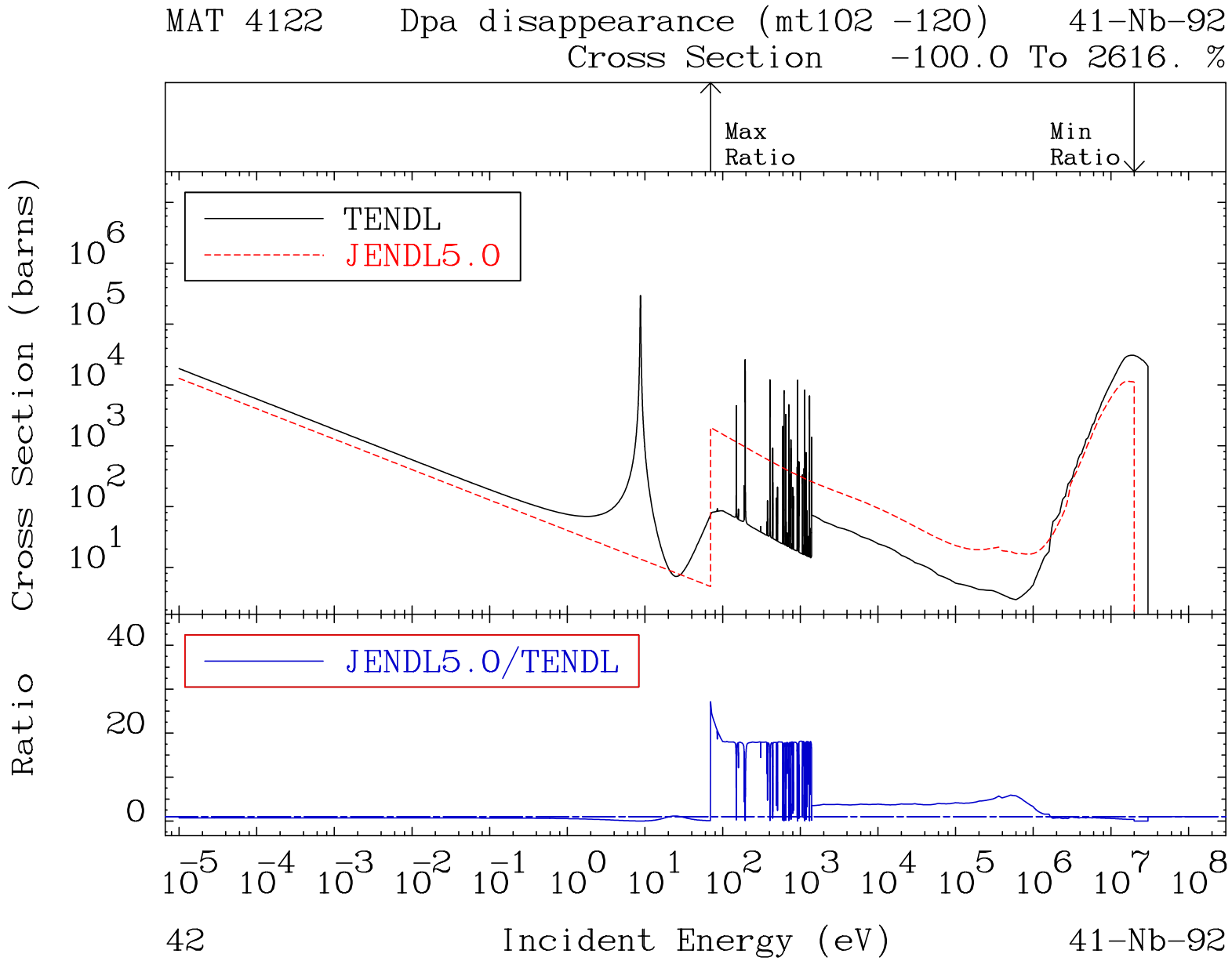

MAT 4122
Total photon (eV-barns)
41-Nb-92
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
37
41-Nb-92

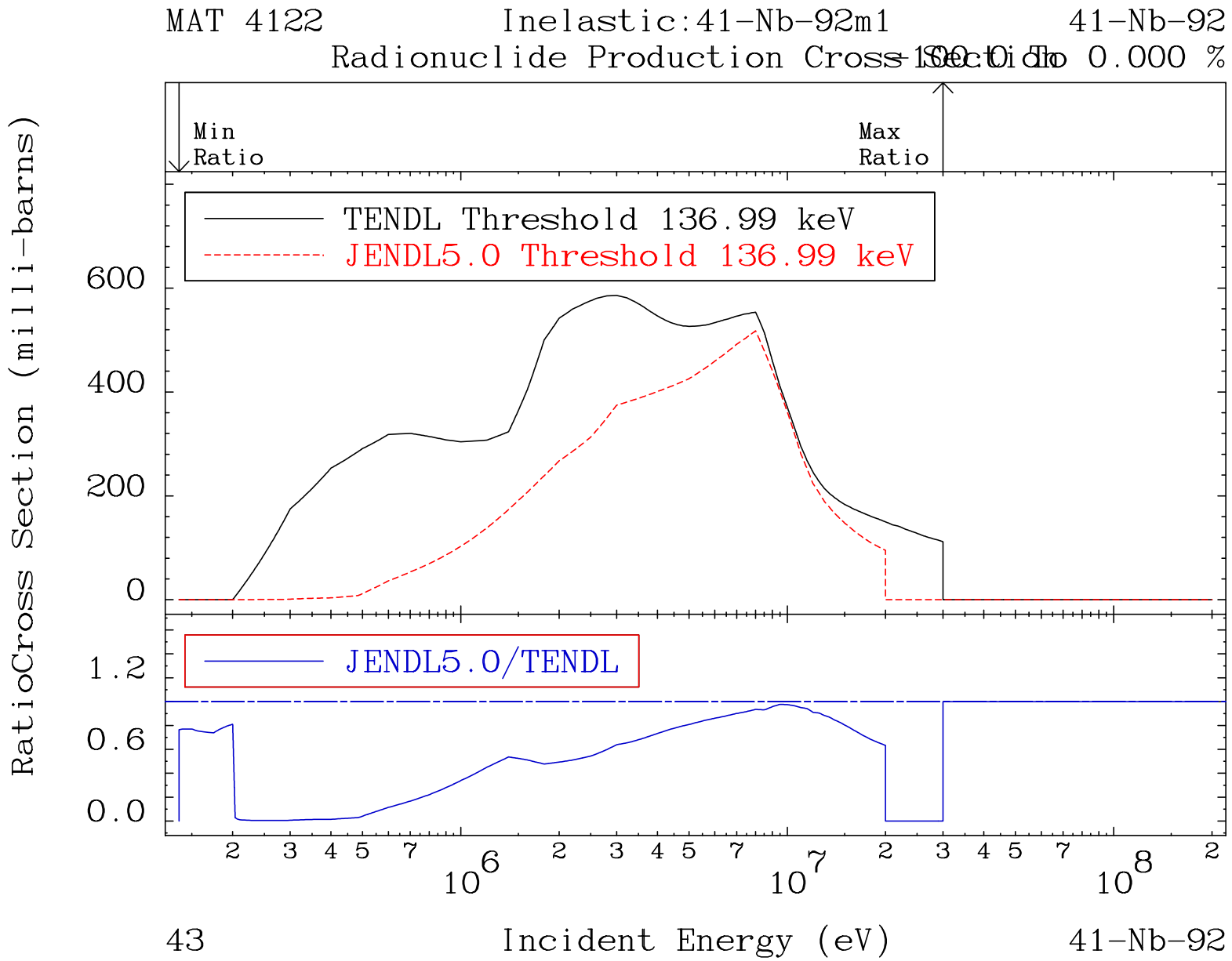

MAT 4122 Total kinematic kerma (high limit) 41-Nb-92
Cross Section -99.90 To 2072. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
38
41-Nb-92

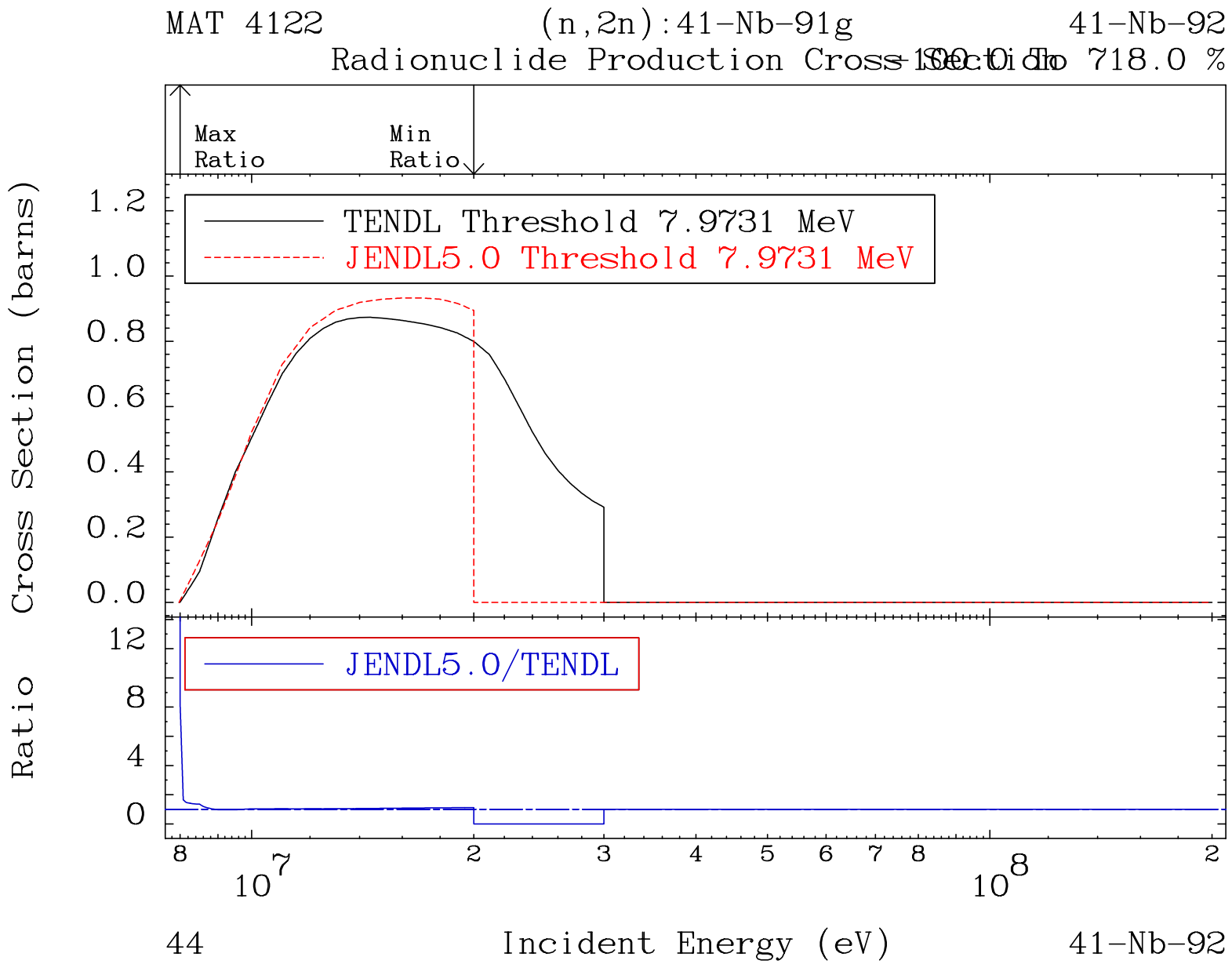

MAT 4122
Dpa total (eV-barns)
41-Nb-92
Cross Section -100.0 To 2616. %
Min Ratio
Max Ratio
TENDL
JENDL5.0
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
39
41-Nb-92

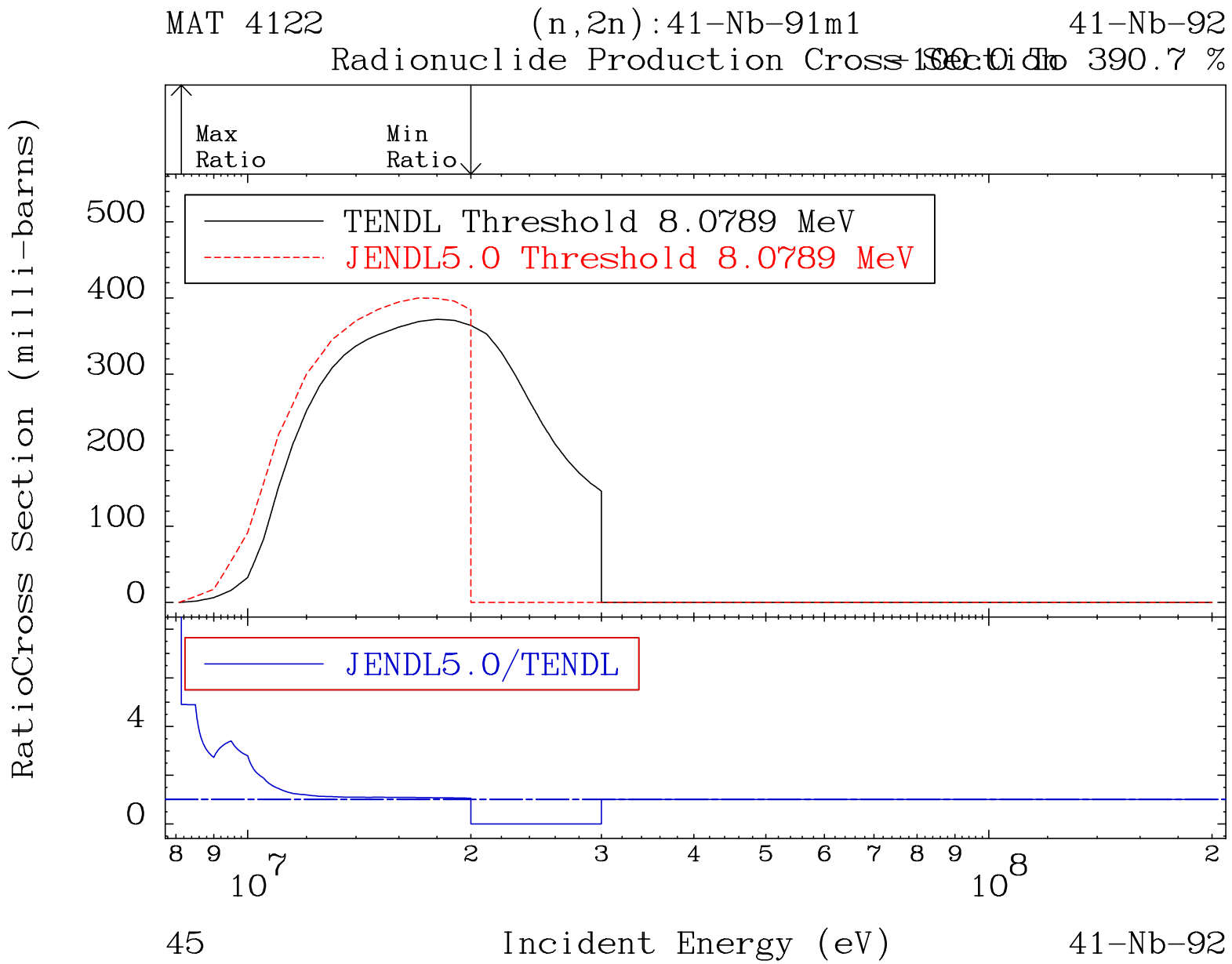

MAT 4122
Dpa elastic (mt2)
Cross Section
41-Nb-92
-95.85 To 687.7 %
Min
Ratio
TENDL Threshold 895.67 eV
JENDL5.0 Threshold 900.00 eV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
40
41-Nb-92

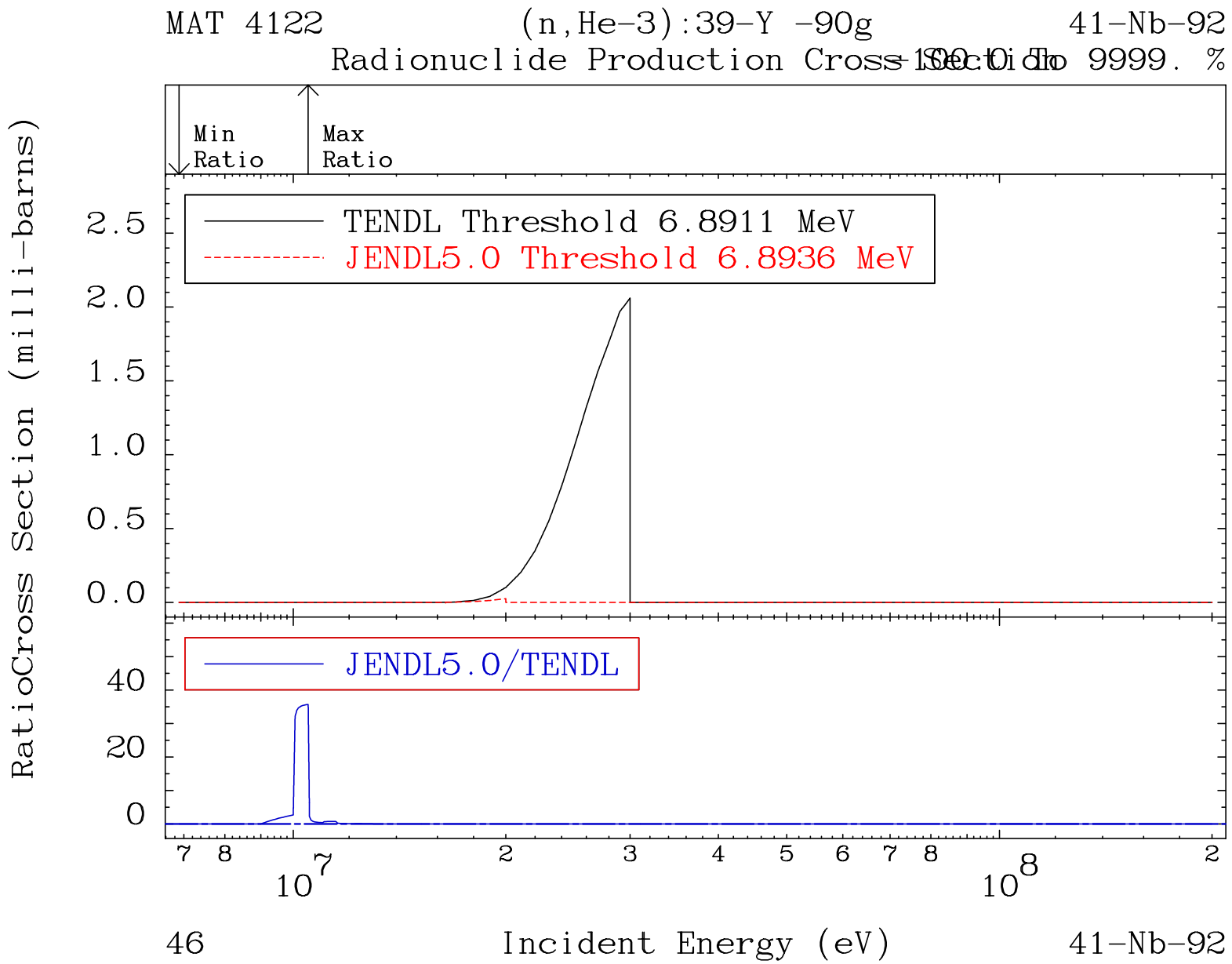

MAT 4122
Dpa inelastic (mt51-91)
41-Nb-92
Cross Section -100.0 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 136.99 keV
JENDL5.0 Threshold 112.50 keV
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
41
41-Nb-92

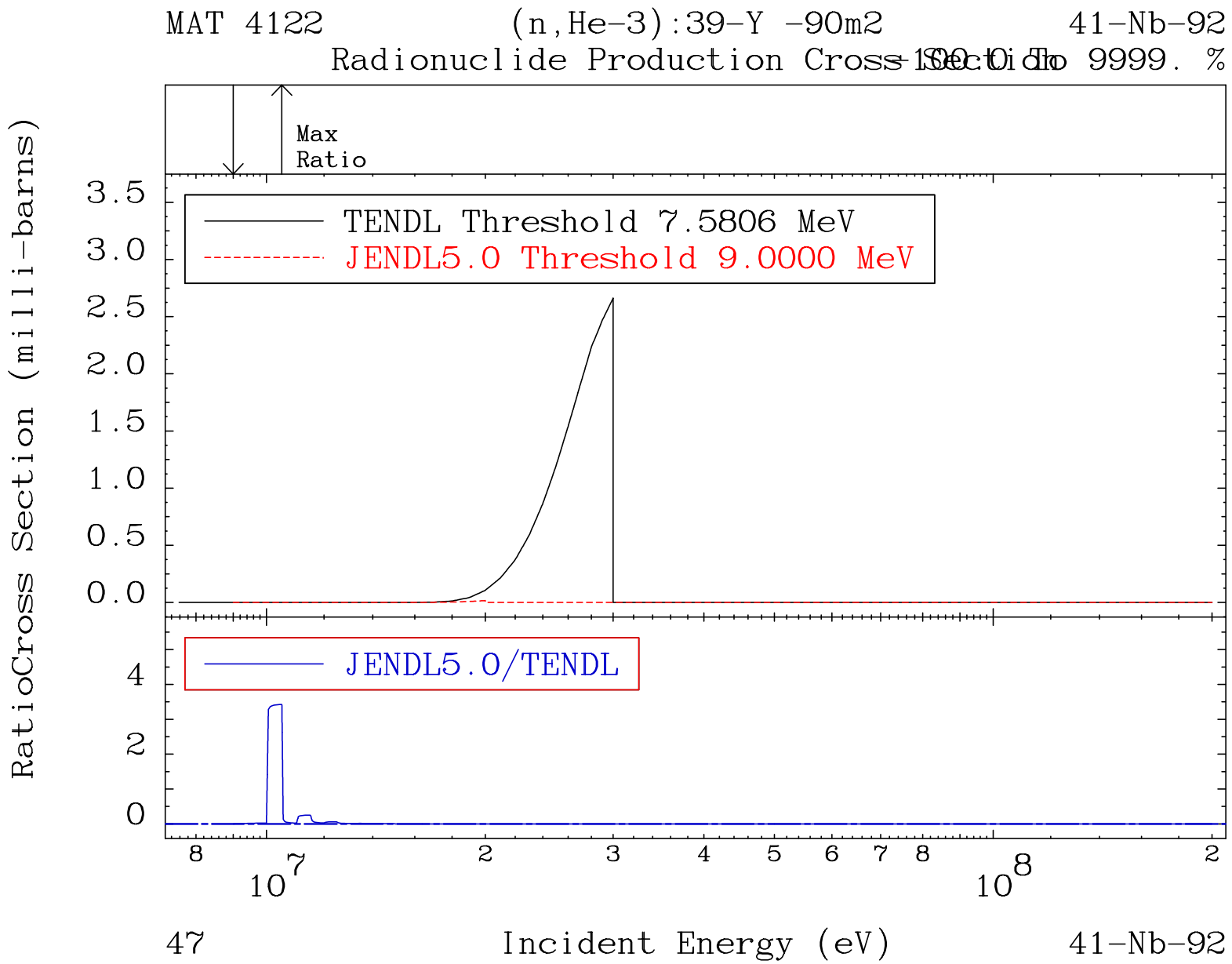

MAT 4122 Dpa disappearance (mt102 -120) 41-Nb-92
Cross Section -100.0 To 2616. %
Max Ratio
Min Ratio
TENDL
JENDL5.0
Cross Section (barns)
JENDL5.0/TENDL
Ratio
Incident Energy (eV)
42
41-Nb-92

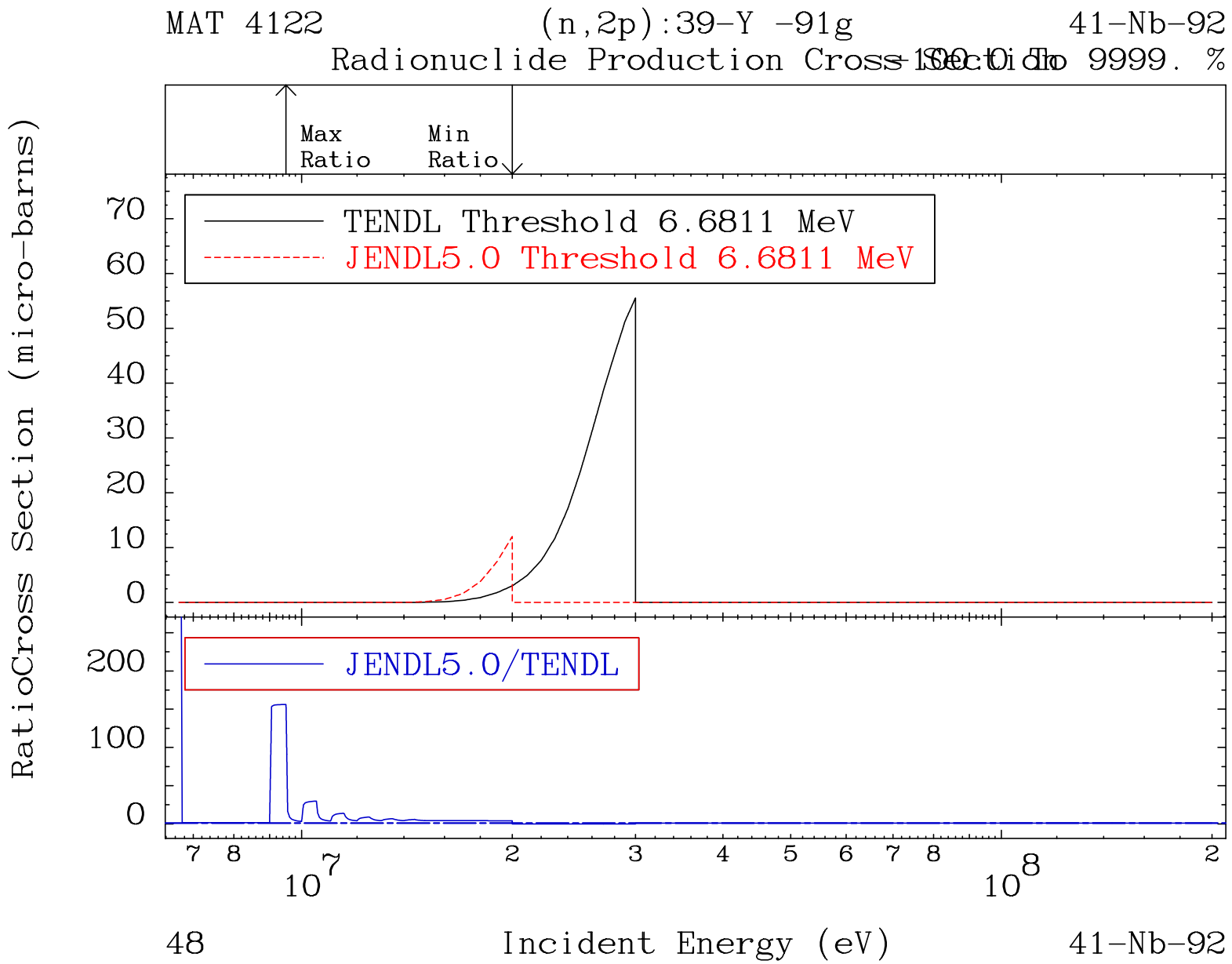

MAT 4122
Inelastic:41-Nb-92m1
41-Nb-92
Radionuclide Production Cross Section
Uncertainty 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 136.99 keV
JENDL5.0 Threshold 136.99 keV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
600
400
200
0
1.2
0.6
0.0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
43
Incident Energy (eV)
41-Nb-92

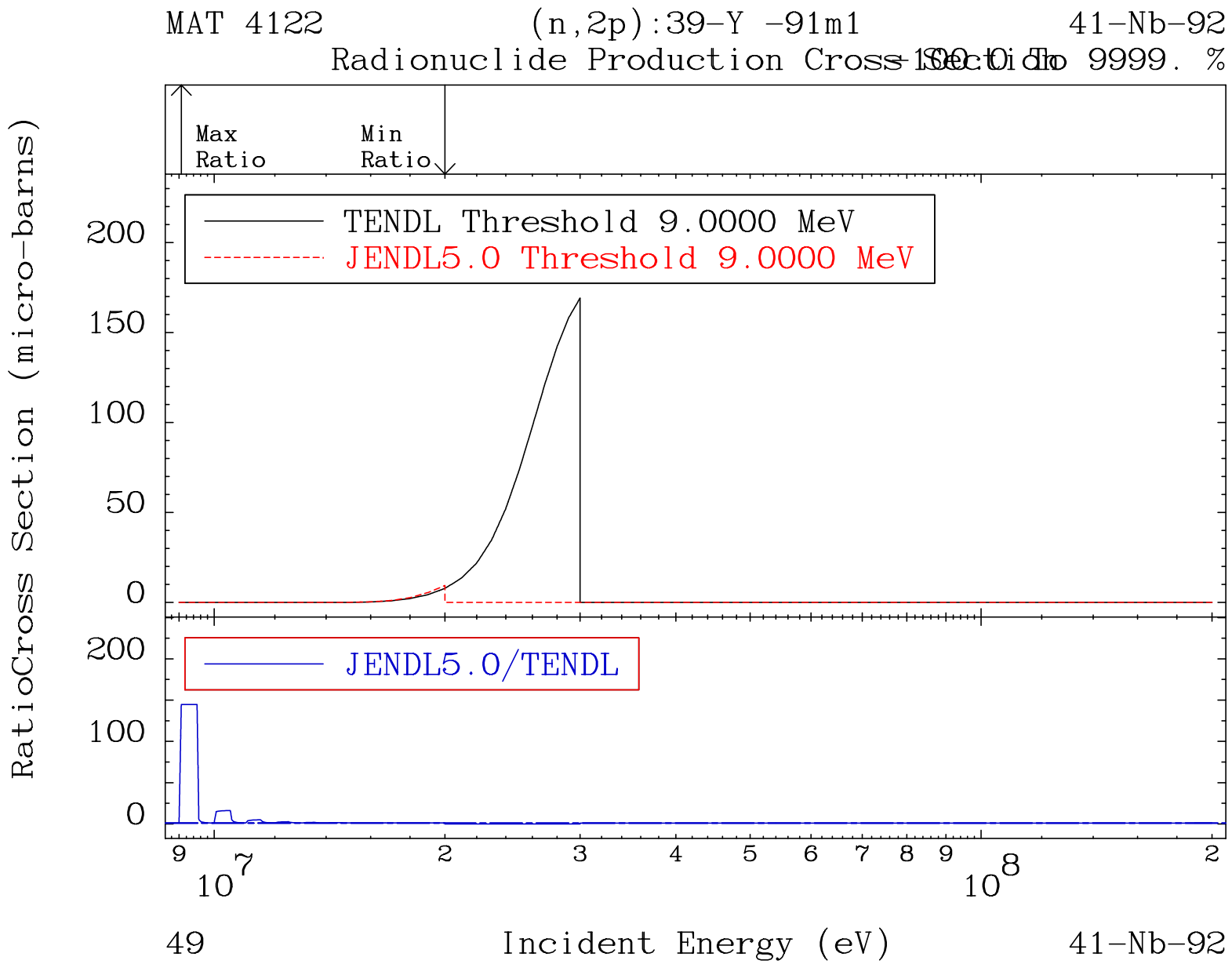

MAT 4122
(n,2n):41-Nb-91g
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 7.9731 MeV
JENDL5.0 Threshold 7.9731 MeV
JENDL5.0/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
44
41-Nb-92

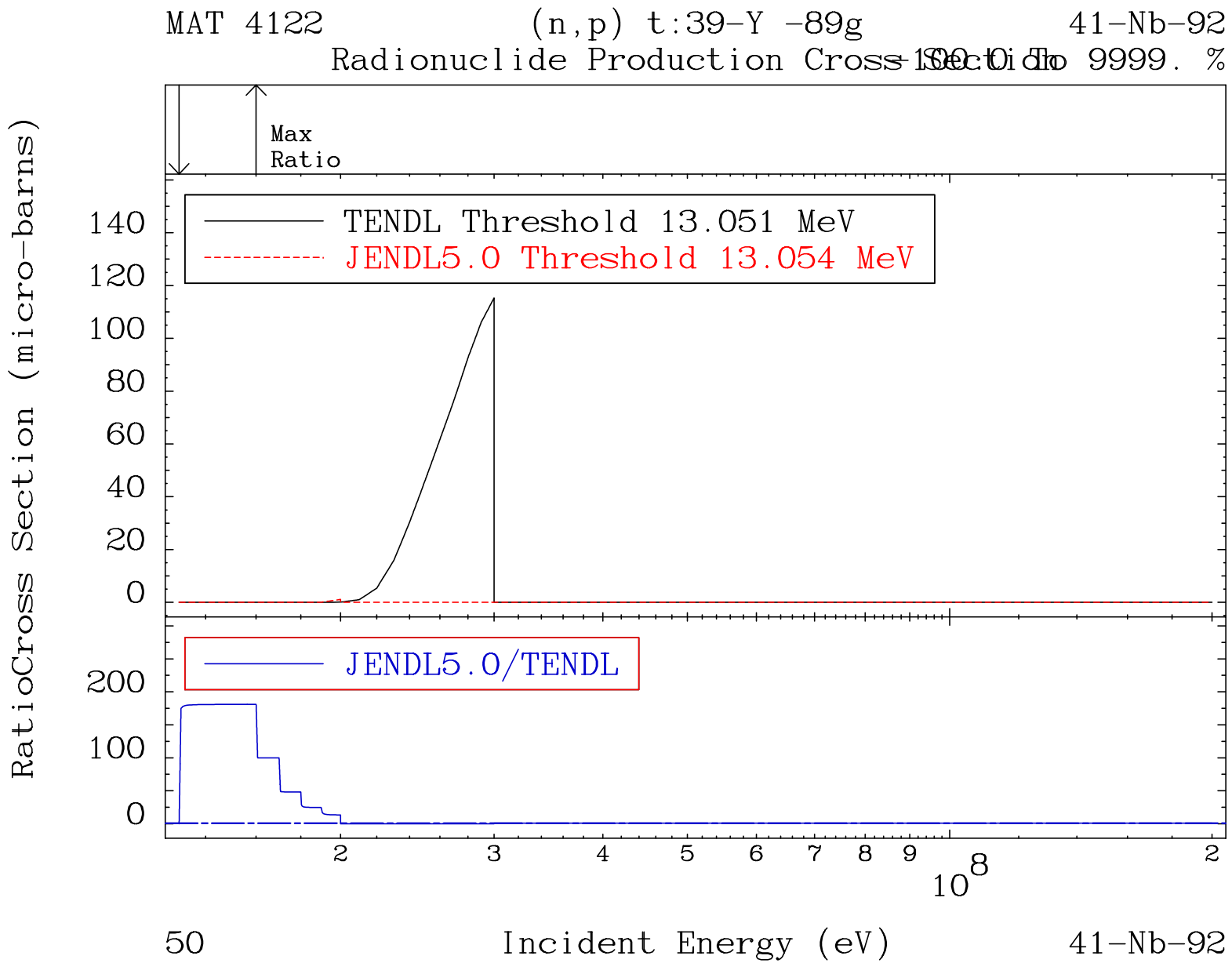

MAT 4122
(n,2n):41-Nb-91m1
41-Nb-92
Radionuclide Production Cross Section
+-90.0 To 390.7 %
Max Ratio
Min Ratio
TENDL Threshold 8.0789 MeV
JENDL5.0 Threshold 8.0789 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
4
0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
45
Incident Energy (eV)
41-Nb-92

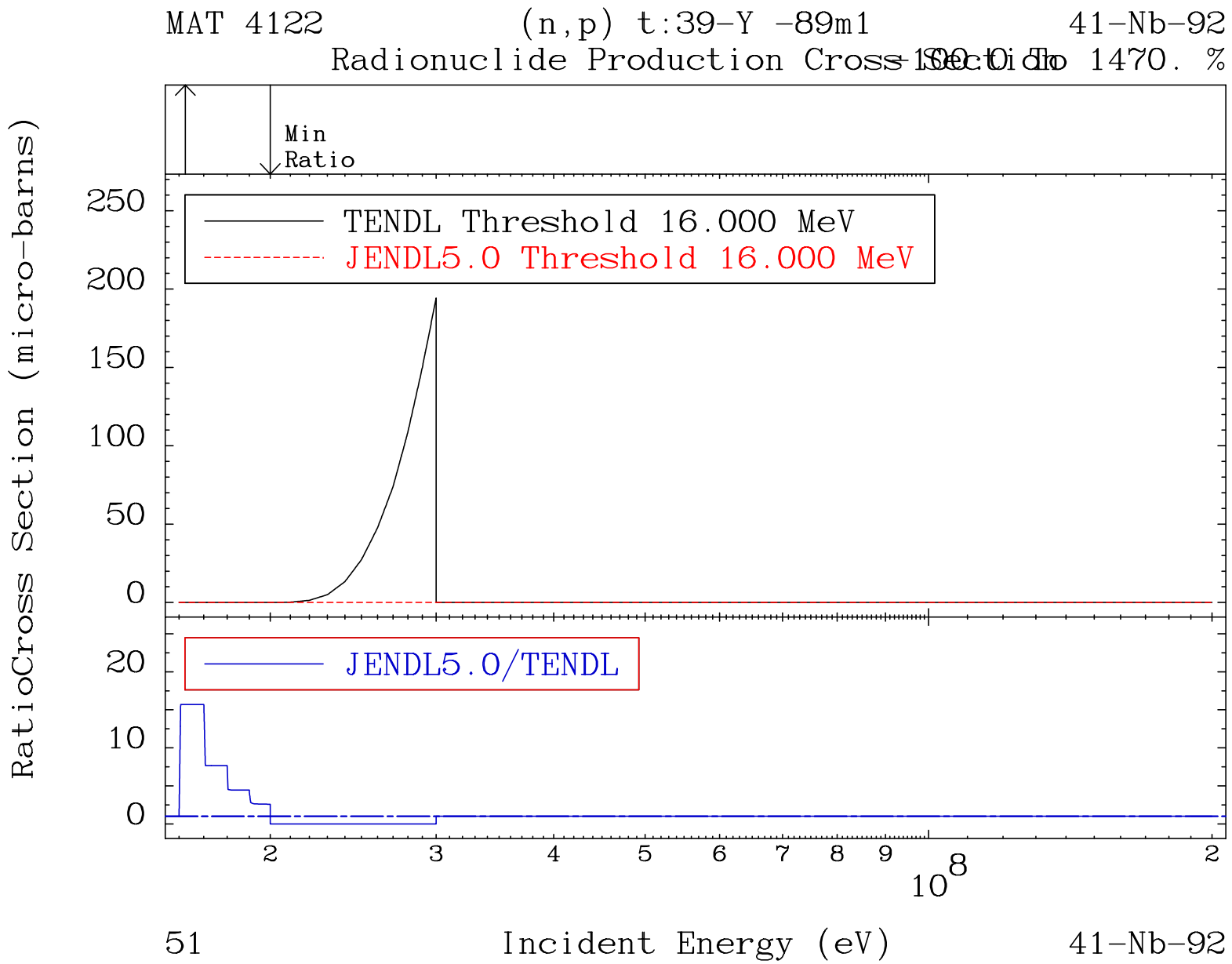

MAT 4122
(n,He-3):39-Y -90g
41-Nb-92
Radionuclide Production Cross Section To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 6.8911 MeV
JENDL5.0 Threshold 6.8936 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
2.5
2.0
1.5
1.0
0.5
0.0
40
20
0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
46
Incident Energy (eV)
41-Nb-92

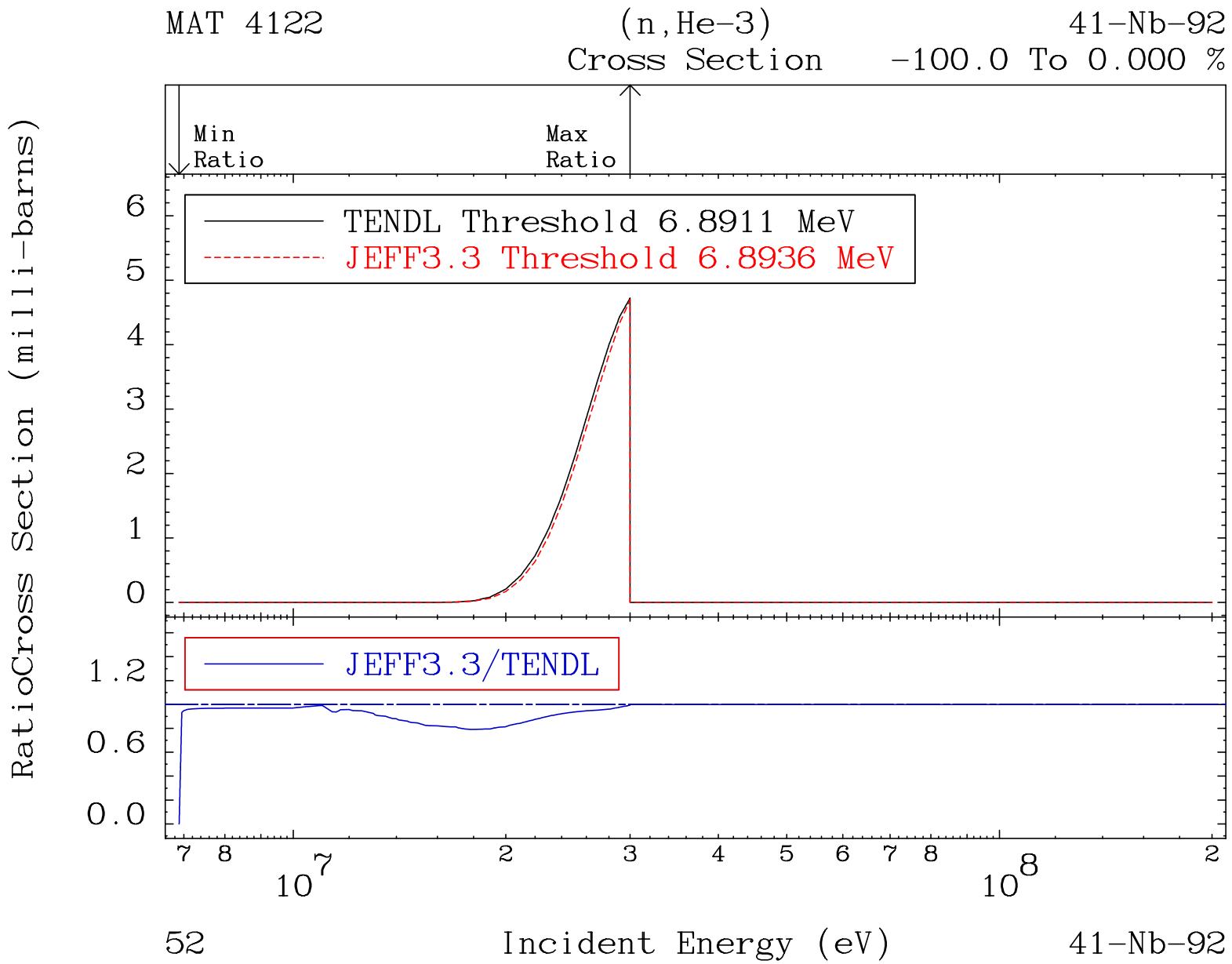

MAT 4122
(n,He-3):39-Y -90m2
41-Nb-92
Radionuclide Production Cross Section
Max
Ratio
TENDL Threshold 7.5806 MeV
JENDL5.0 Threshold 9.0000 MeV
JENDL5.0/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
47
41-Nb-92

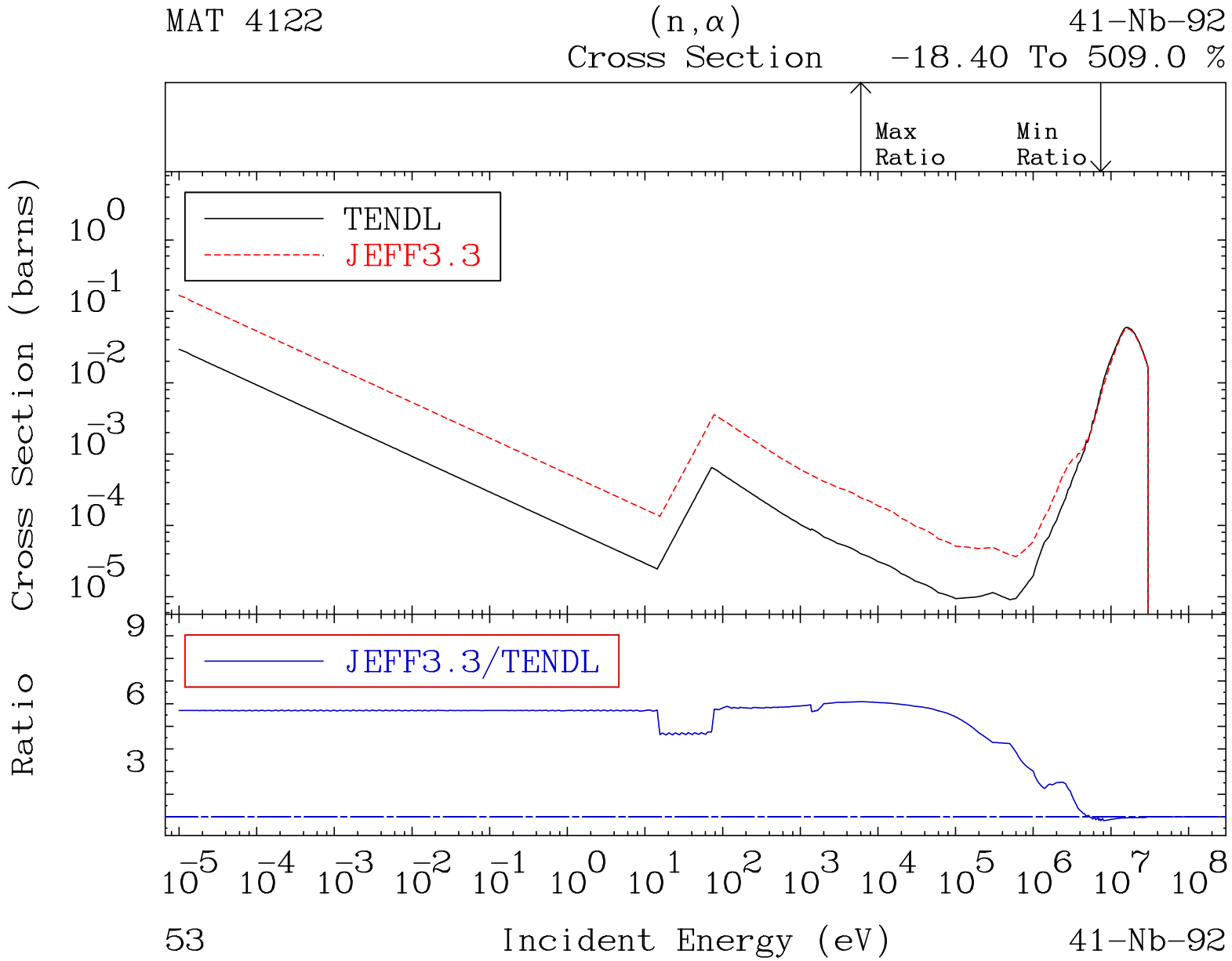

MAT 4122
(n,2p):39-Y -91g
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 6.6811 MeV
JENDL5.0 Threshold 6.6811 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
48
41-Nb-92

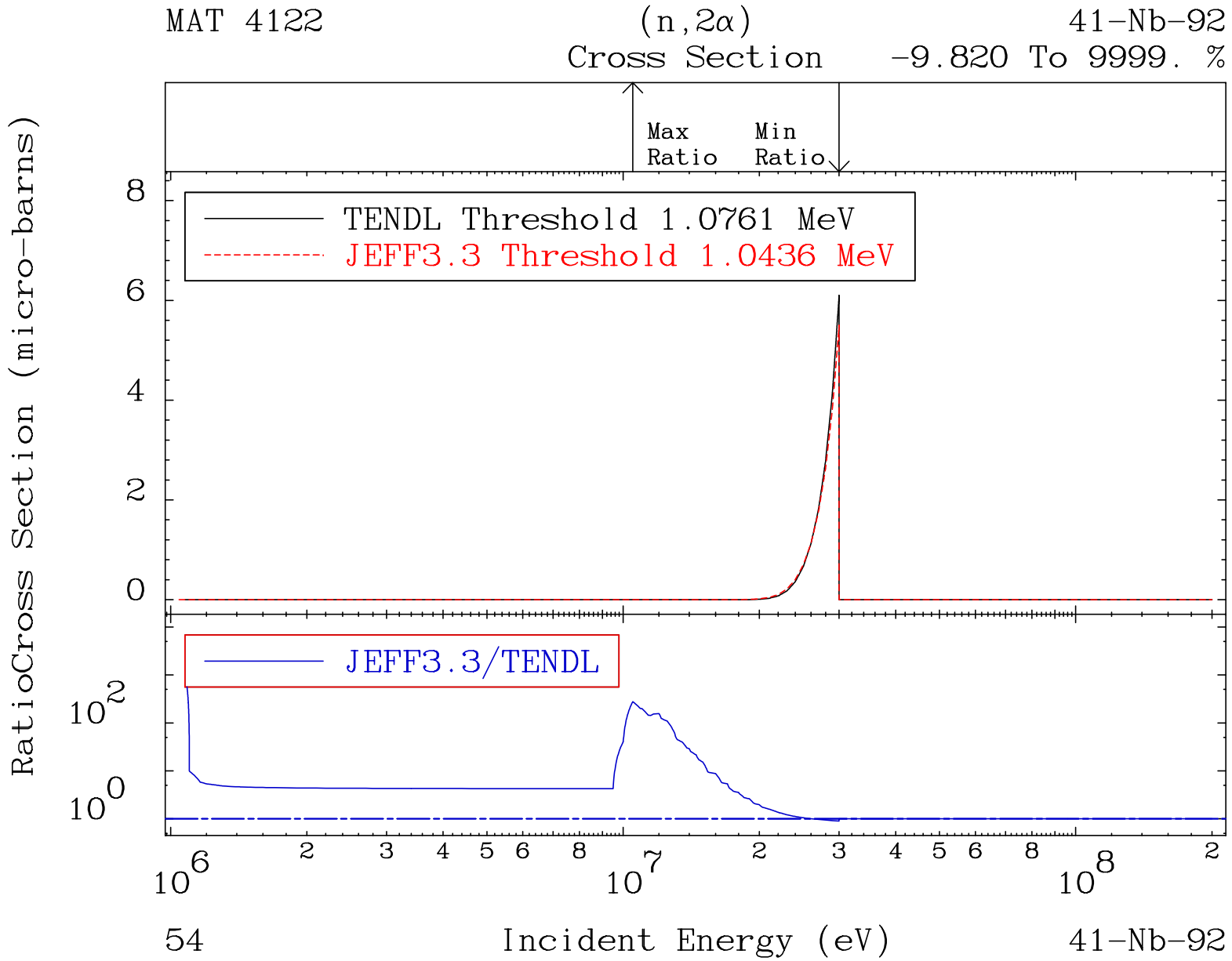

MAT 4122
(n,2p):39-Y -91m1
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 9.0000 MeV
JENDL5.0 Threshold 9.0000 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
200
150
100
50
0
200
100
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
49
Incident Energy (eV)
41-Nb-92

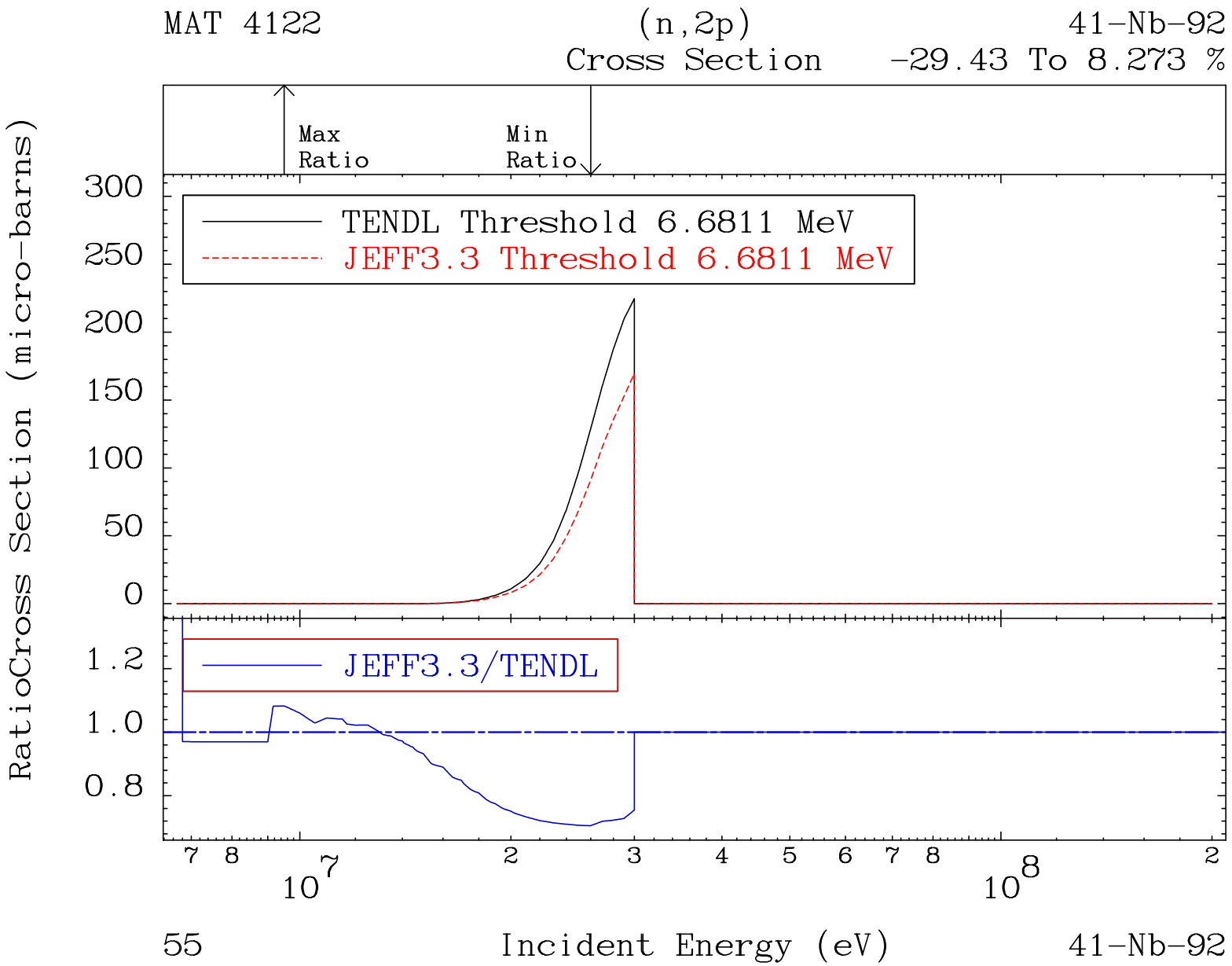

MAT 4122
(n,p) t:39-Y -89g
41-Nb-92
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 13.051 MeV
JENDL5.0 Threshold 13.054 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
140
120
100
80
60
40
20
0
200
100
0
2
3
4
5
6
7
8
9
2
10^8
50
Incident Energy (eV)
41-Nb-92

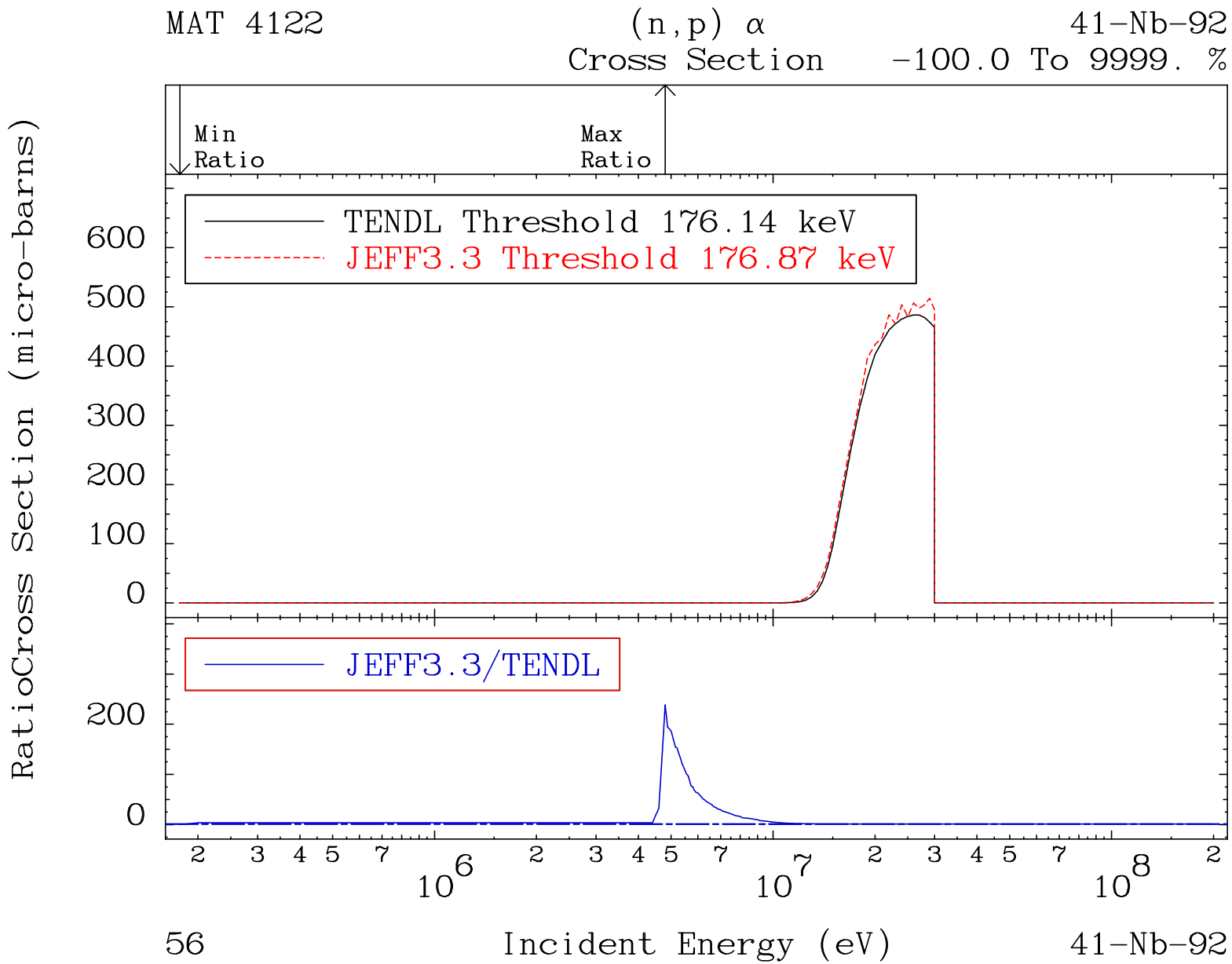

MAT 4122
(n,p) t:39-Y -89m1
41-Nb-92
Radionuclide Production Cross Section To 1470. %
Min
Ratio
TENDL Threshold 16.000 MeV
JENDL5.0 Threshold 16.000 MeV
JENDL5.0/TENDL
RatioCross Section (micro-barns)
250
200
150
100
50
0
20
10
0
2
3
4
5
6
7
8
9
2
10^8
51
Incident Energy (eV)
41-Nb-92

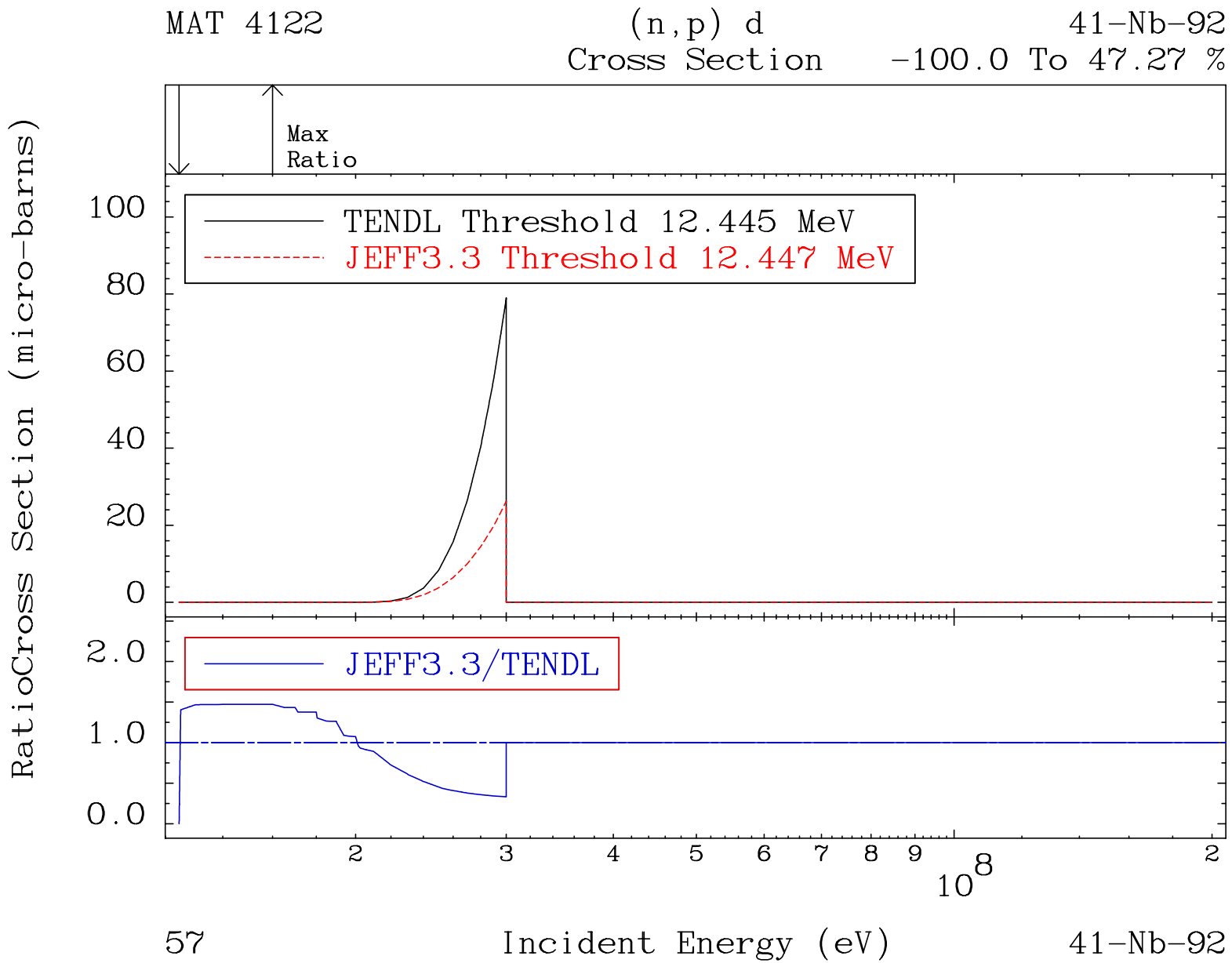

MAT 4122
(n,He-3)
Cross Section
41-Nb-92
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 6.8911 MeV
JEFF3.3 Threshold 6.8936 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
52
41-Nb-92

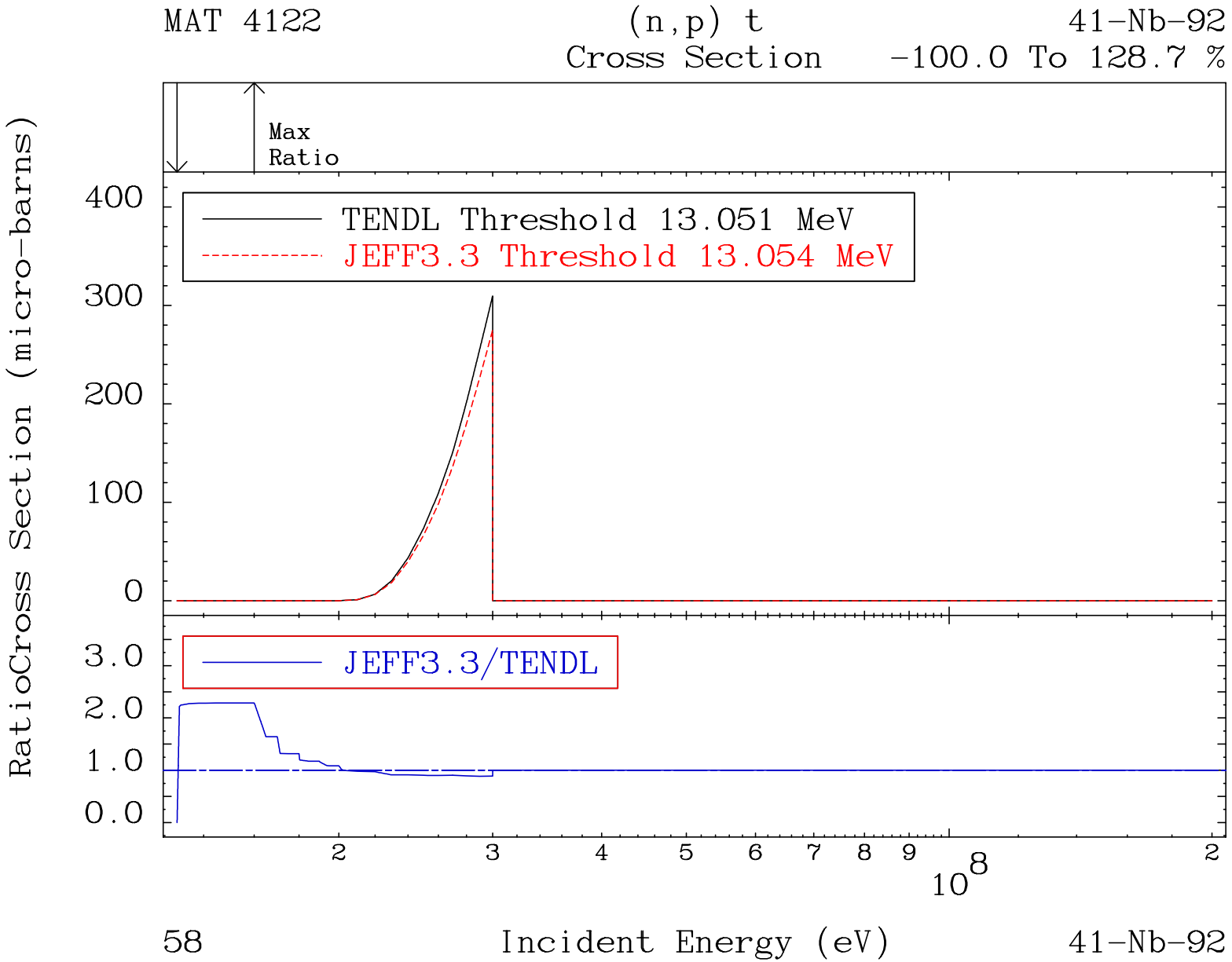

MAT 4122
(n,α)
Cross Section
41-Nb-92
-18.40 To 509.0 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
53
41-Nb-92

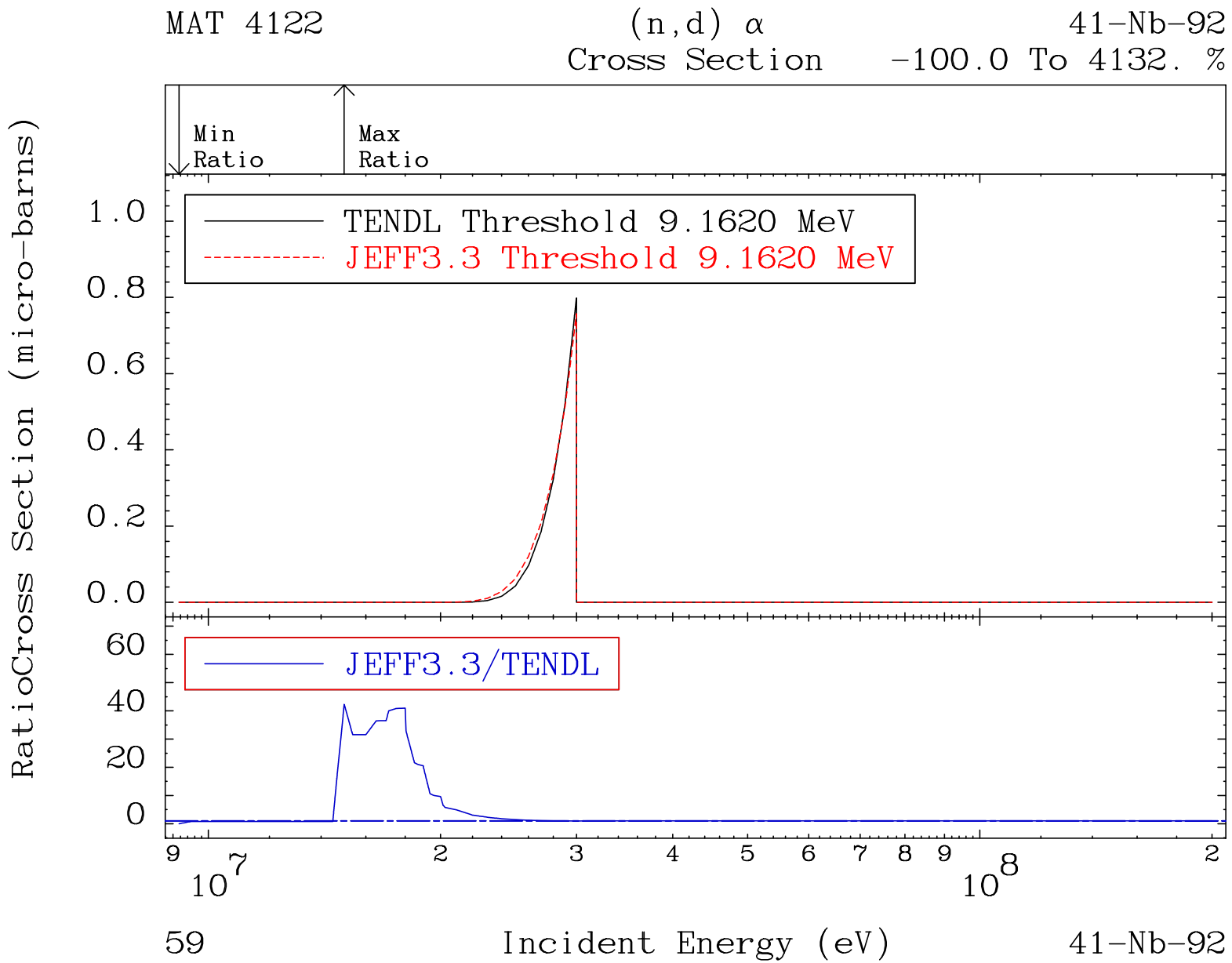

MAT 4122
(n,2α)
41-Nb-92
Cross Section
-9.820 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 1.0761 MeV
JEFF3.3 Threshold 1.0436 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
54
41-Nb-92

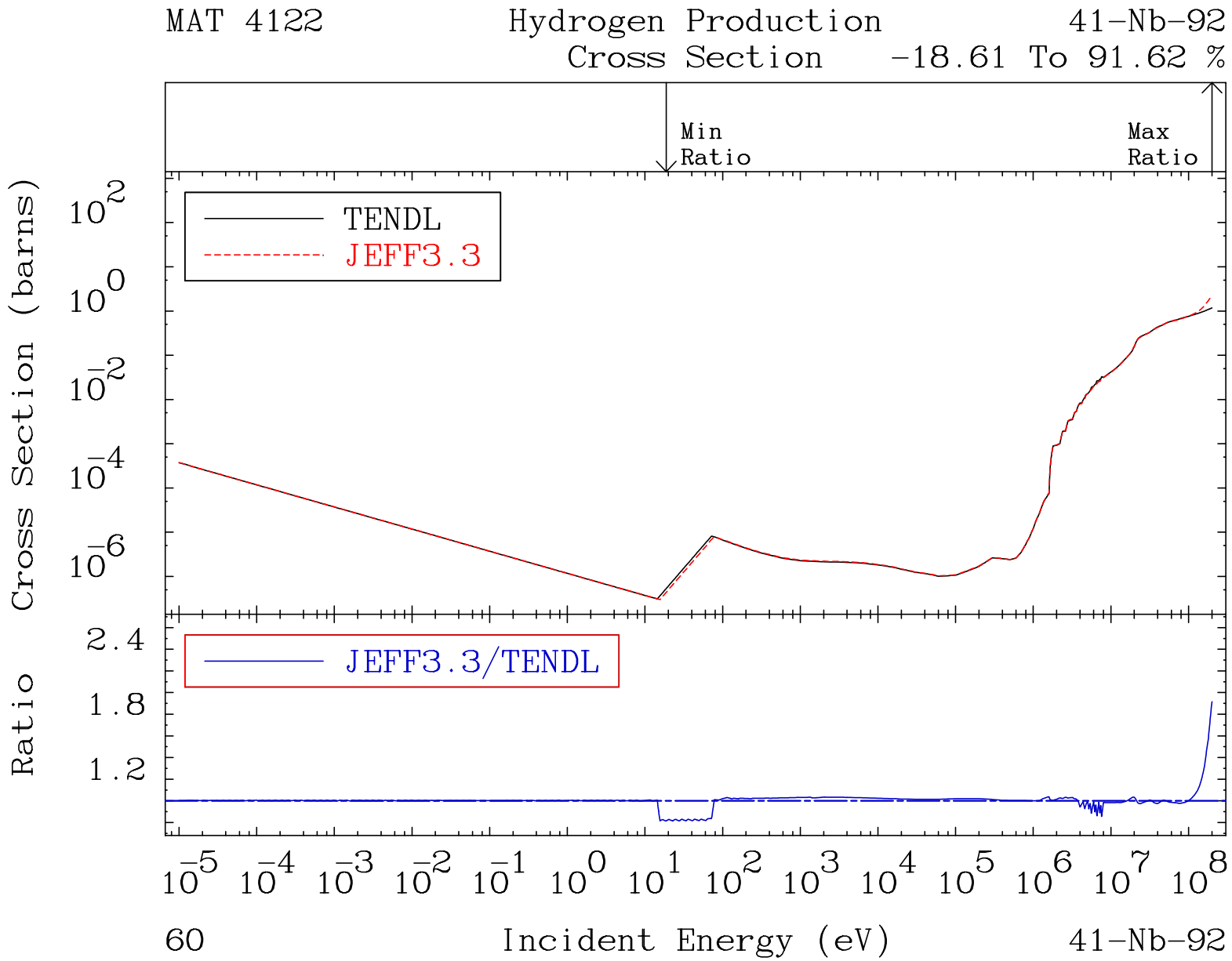

MAT 4122
(n,2p)
Cross Section
41-Nb-92
-29.43 To 8.273 %
Max Ratio
Min Ratio
TENDL Threshold 6.6811 MeV
JEFF3.3 Threshold 6.6811 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
300
250
200
150
100
50
0
1.2
1.0
0.8
7 8 10^7 2 3 4 5 6 7 8 10^8 2
55
Incident Energy (eV)
41-Nb-92

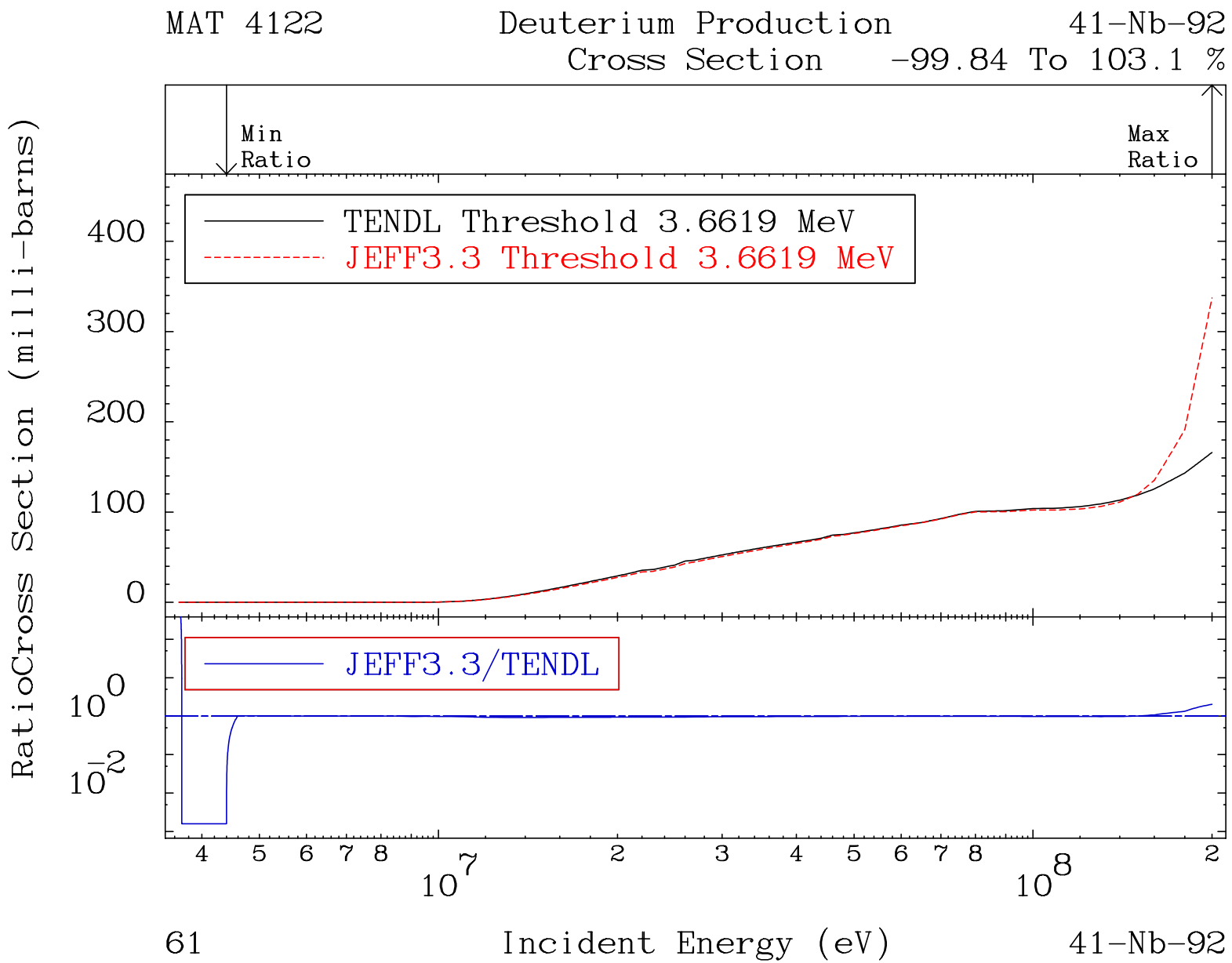

MAT 4122
(n,p) α
41-Nb-92
Cross Section
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 176.14 keV
JEFF3.3 Threshold 176.87 keV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
600
500
400
300
200
100
0
200
0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
56
Incident Energy (eV)
41-Nb-92

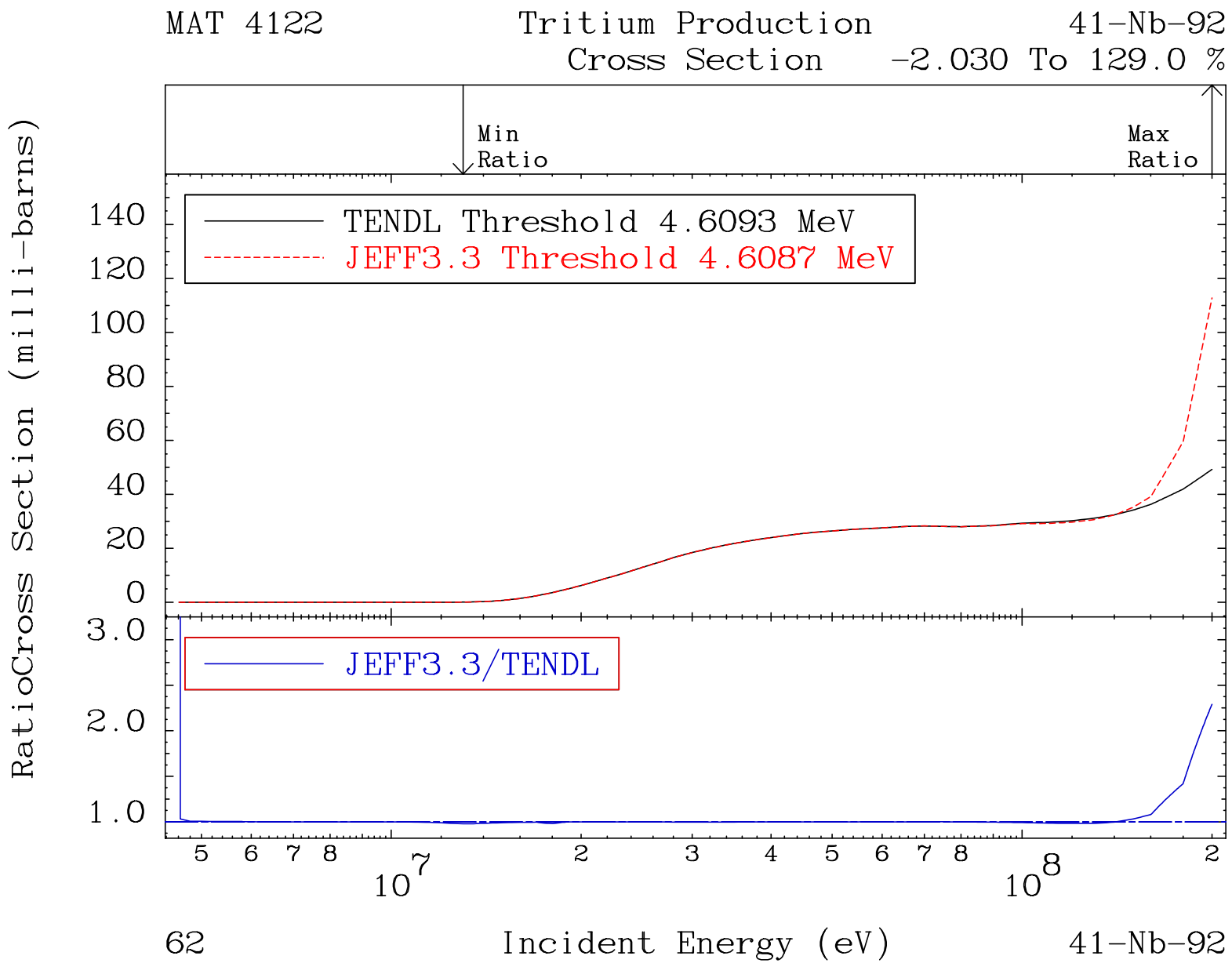

MAT 4122
(n,p) d
Cross Section
41-Nb-92
-100.0 To 47.27 %
Max
Ratio
TENDL Threshold 12.445 MeV
JEFF3.3 Threshold 12.447 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
100
80
60
40
20
0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
2
10^8
57
Incident Energy (eV)
41-Nb-92

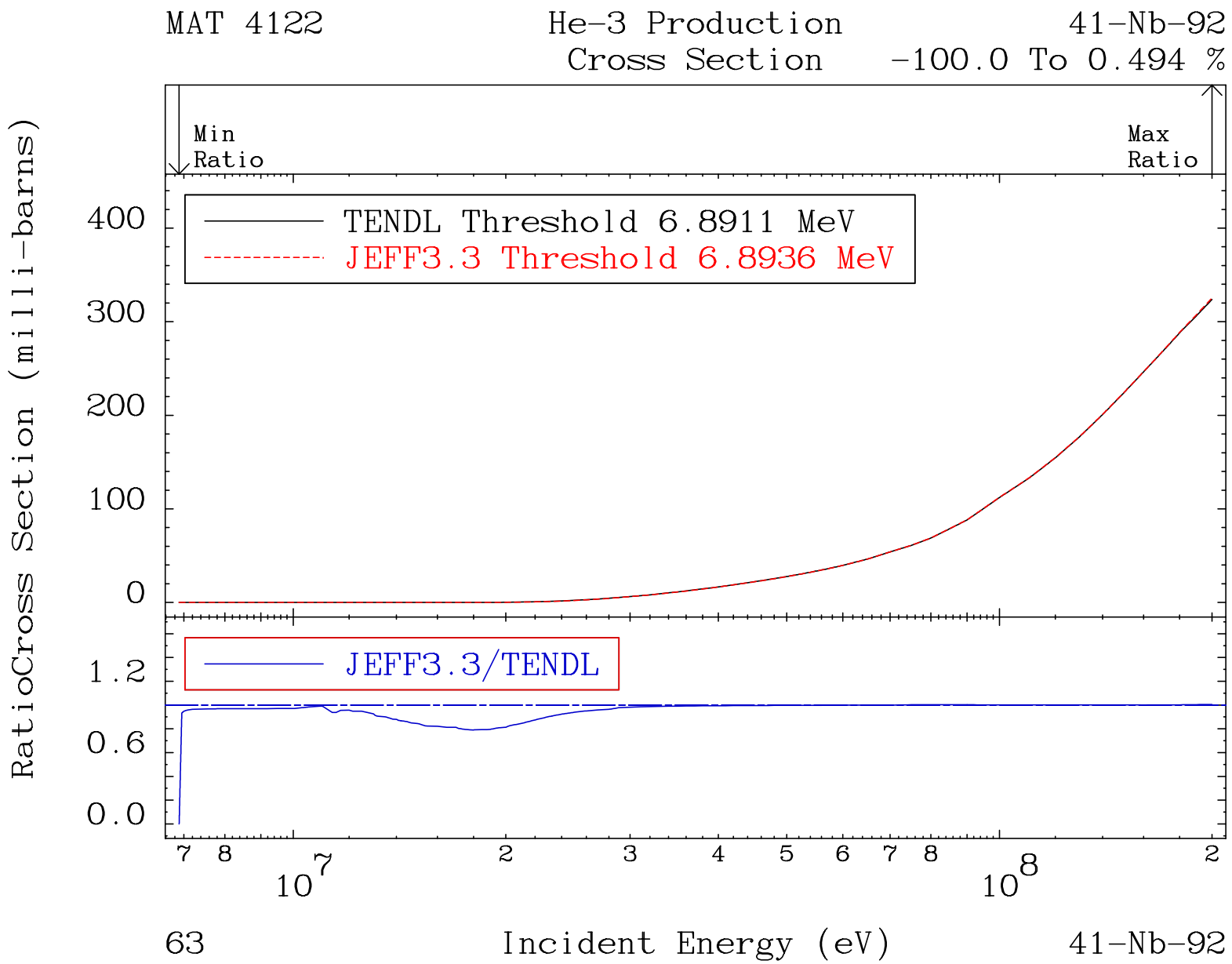

MAT 4122
(n,p) t
41-Nb-92
Cross Section
-100.0 To 128.7 %
Max
Ratio
TENDL Threshold 13.051 MeV
JEFF3.3 Threshold 13.054 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
3.0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
2
10^8
58
Incident Energy (eV)
41-Nb-92

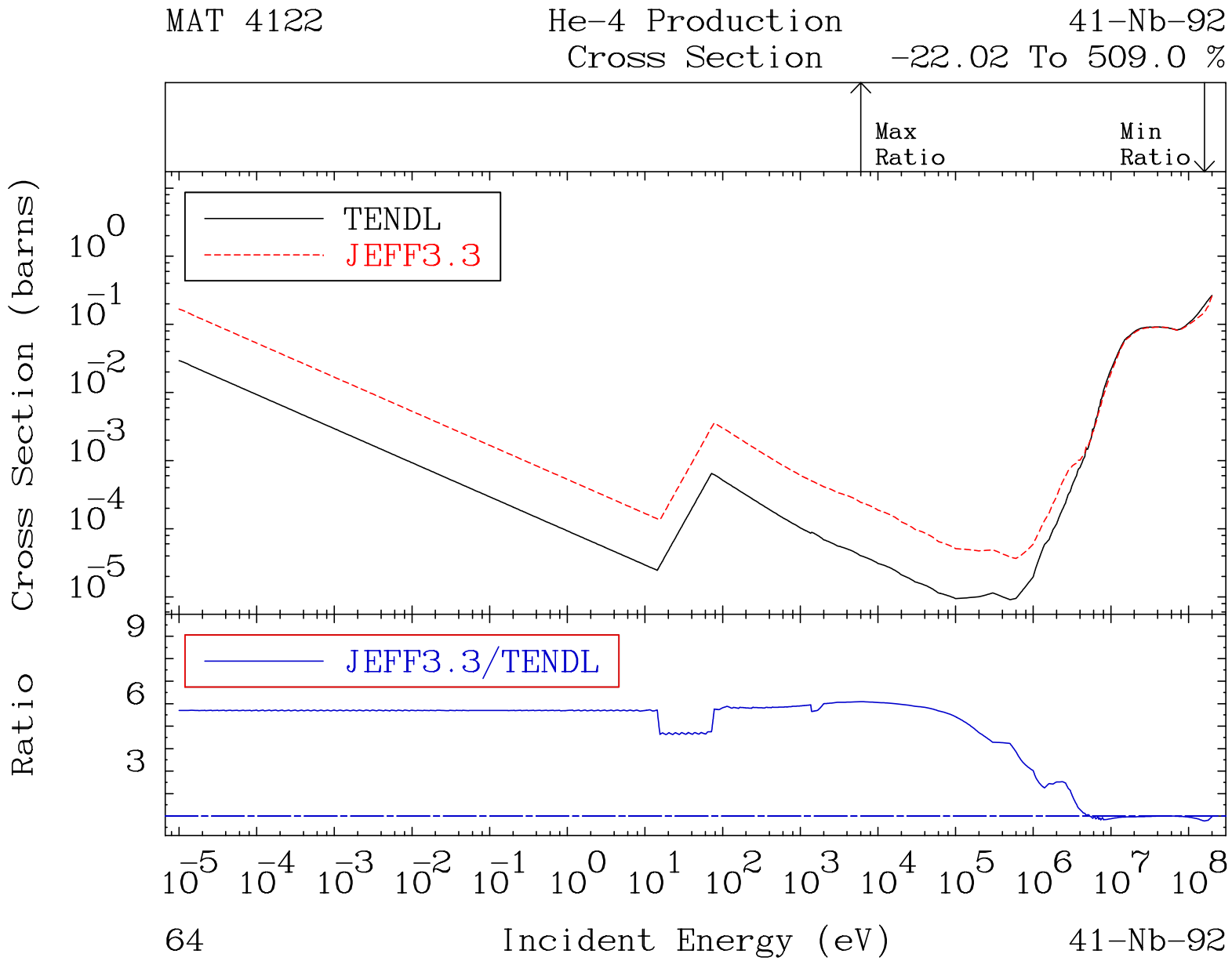

MAT 4122
(n,d) α
41-Nb-92
Cross Section
-100.0 To 4132. %
Min Ratio
Max Ratio
TENDL Threshold 9.1620 MeV
JEFF3.3 Threshold 9.1620 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
1.0
0.8
0.6
0.4
0.2
0.0
60
40
20
0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
59
Incident Energy (eV)
41-Nb-92

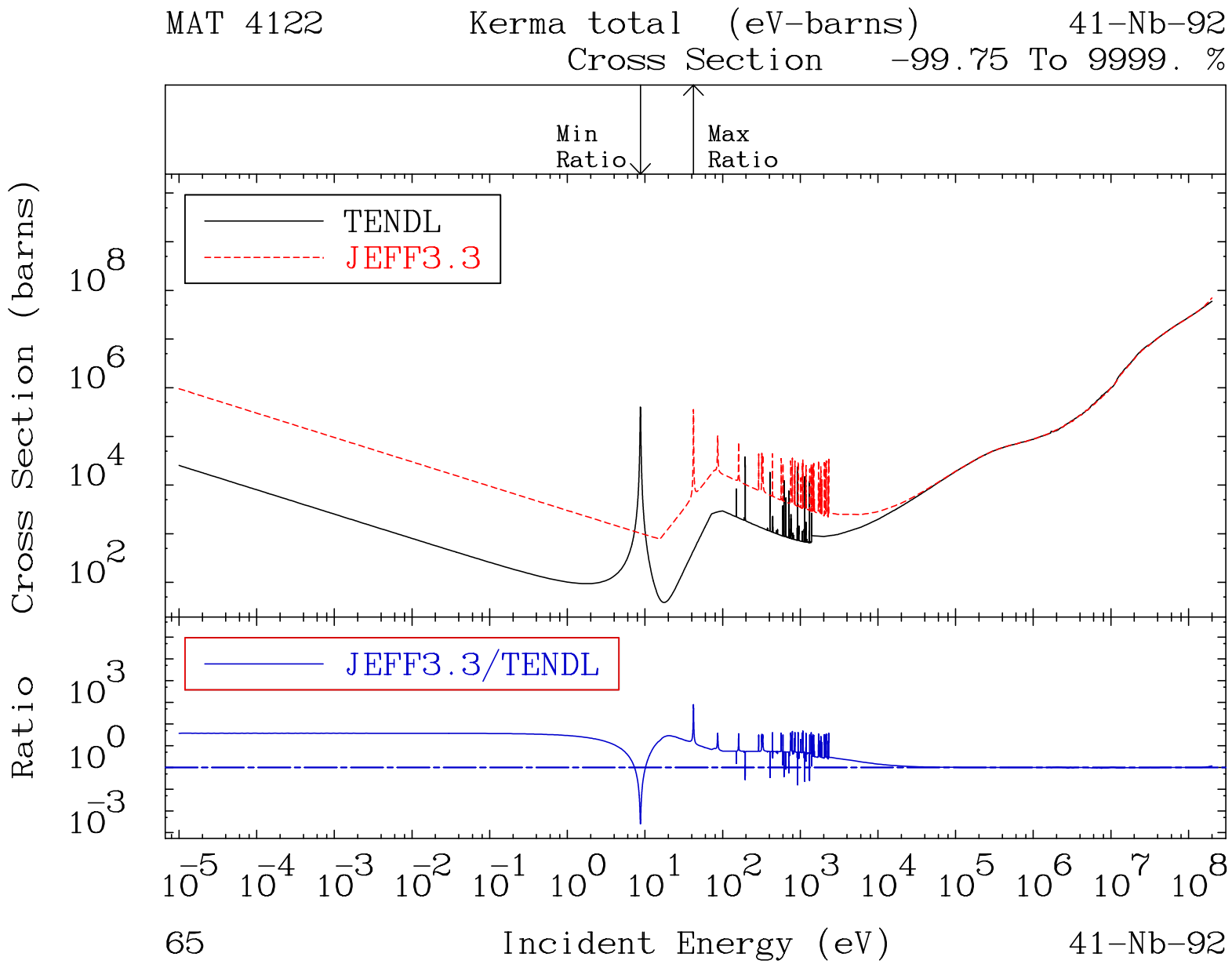

MAT 4122
Hydrogen Production
41-Nb-92
Cross Section
-18.61 To 91.62 %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
60
41-Nb-92

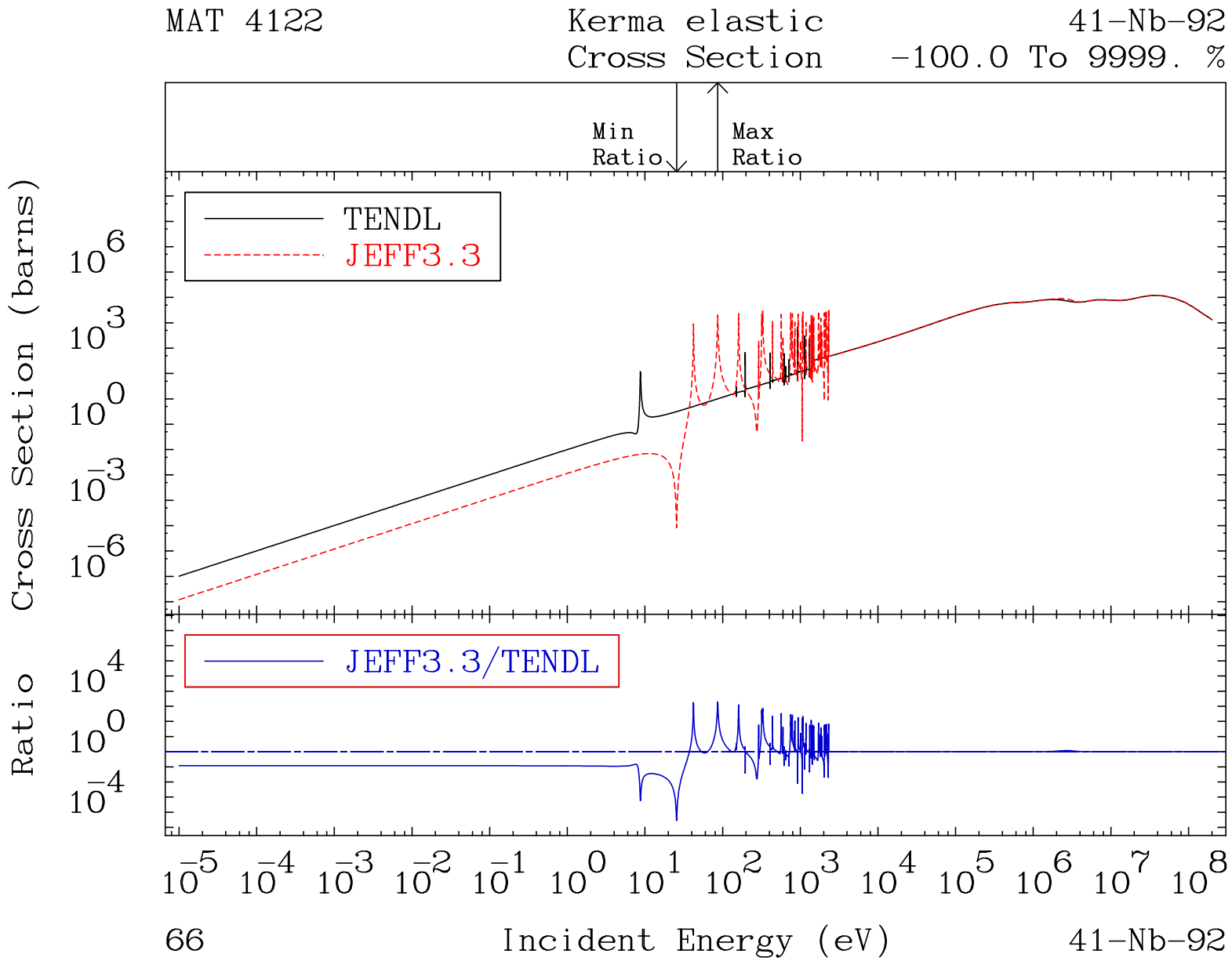

MAT 4122
Deuterium Production
41-Nb-92
Cross Section -99.84 To 103.1 %
Min Ratio
Max Ratio
TENDL Threshold 3.6619 MeV
JEFF3.3 Threshold 3.6619 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
10^0
10^-2
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
61
Incident Energy (eV)
41-Nb-92

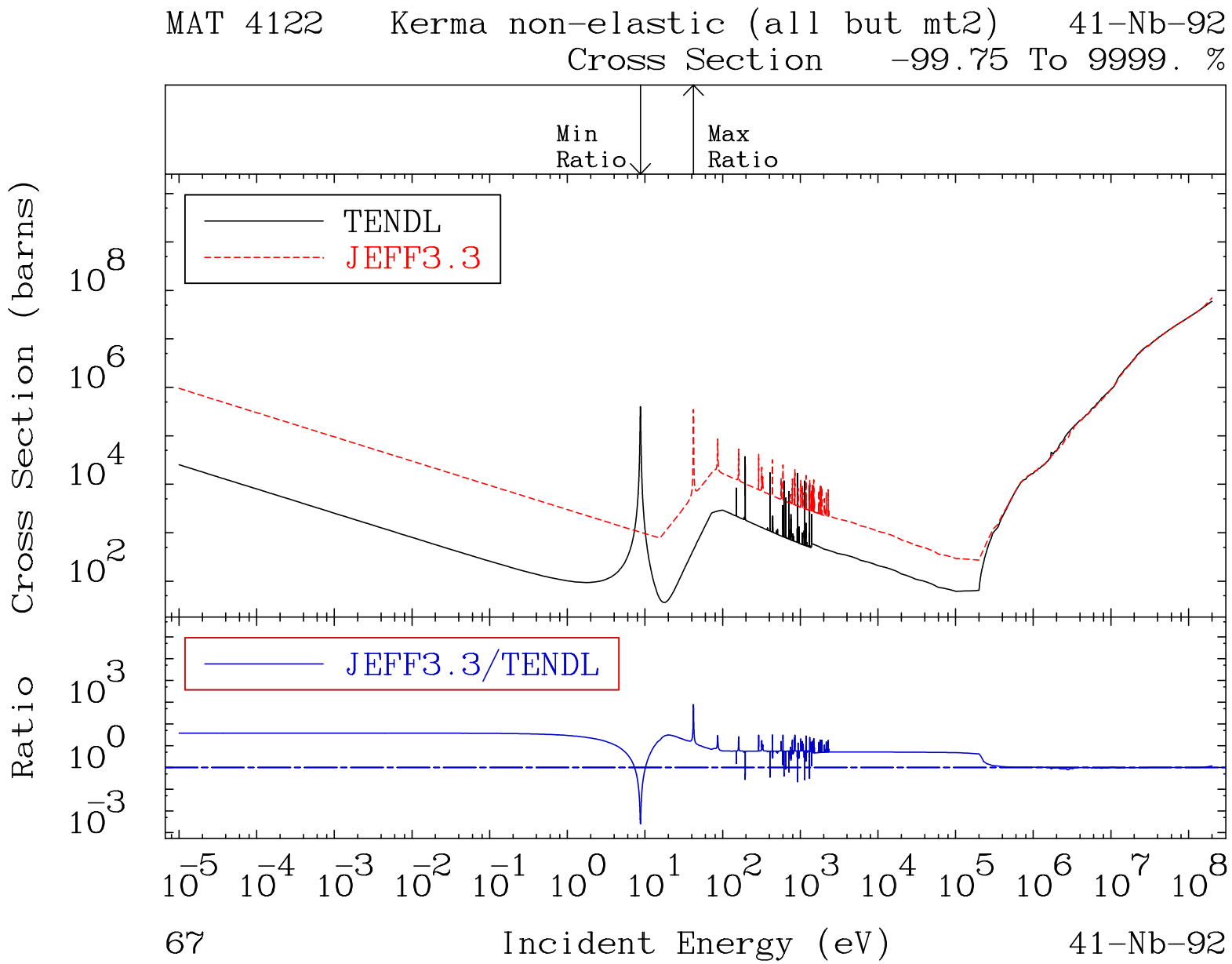

MAT 4122
Tritium Production
Cross Section
41-Nb-92
-2.030 To 129.0 %
Min Ratio
Max Ratio
TENDL Threshold 4.6093 MeV
JEFF3.3 Threshold 4.6087 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
140
120
100
80
60
40
20
0
3.0
2.0
1.0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
62
Incident Energy (eV)
41-Nb-92

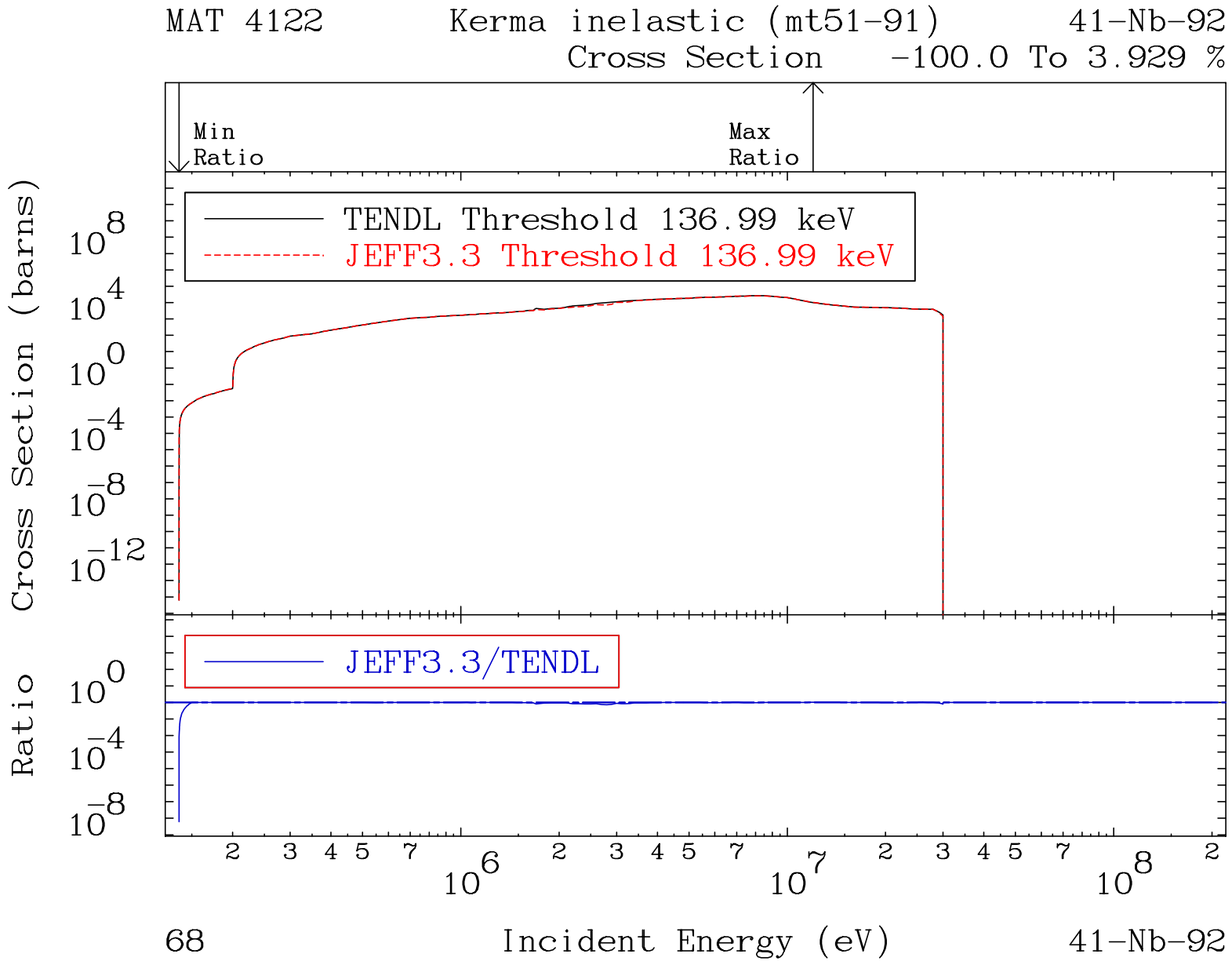

MAT 4122
He-3 Production
Cross Section
41-Nb-92
-100.0 To 0.494 %
Min Ratio
Max Ratio
TENDL Threshold 6.8911 MeV
JEFF3.3 Threshold 6.8936 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
400
300
200
100
0
1.2
0.6
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
63
Incident Energy (eV)
41-Nb-92

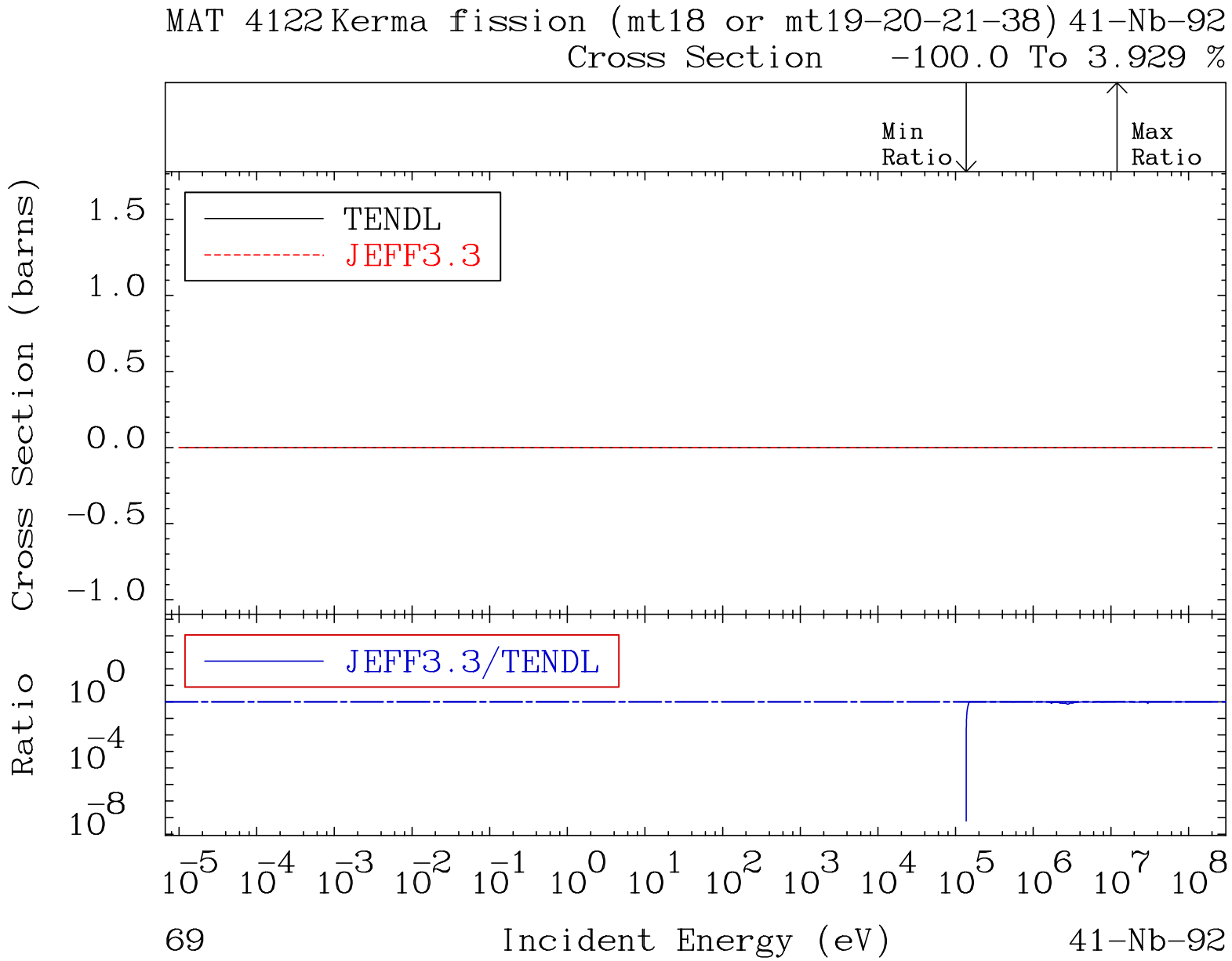

MAT 4122
He-4 Production
Cross Section
41-Nb-92
-22.02 To 509.0 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
Cross Section (barns)
JEFF3.3/TENDL
Ratio
Incident Energy (eV)
64
41-Nb-92

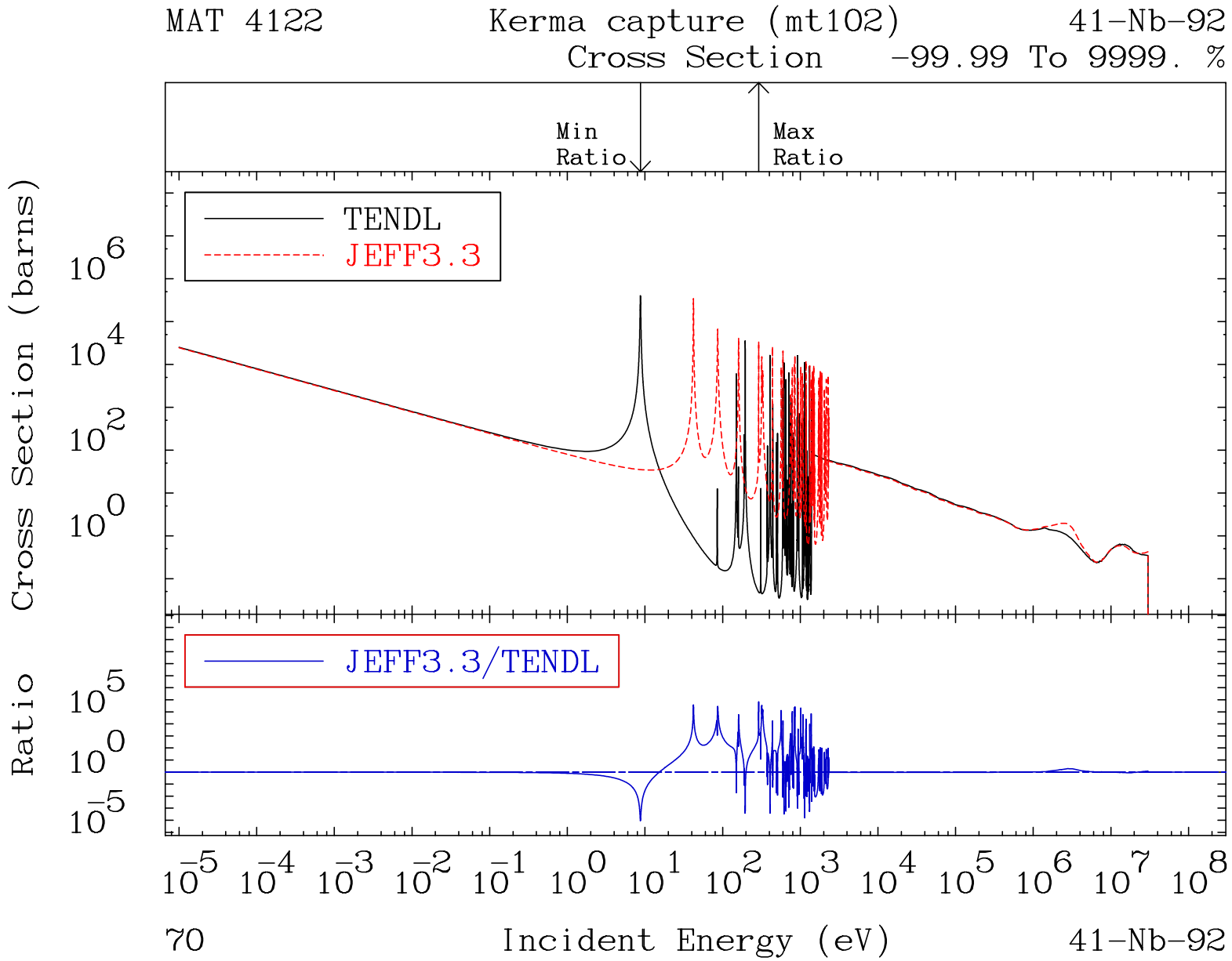

MAT 4122
Kerma total (eV-barns)
41-Nb-92
Cross Section -99.75 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
65
41-Nb-92

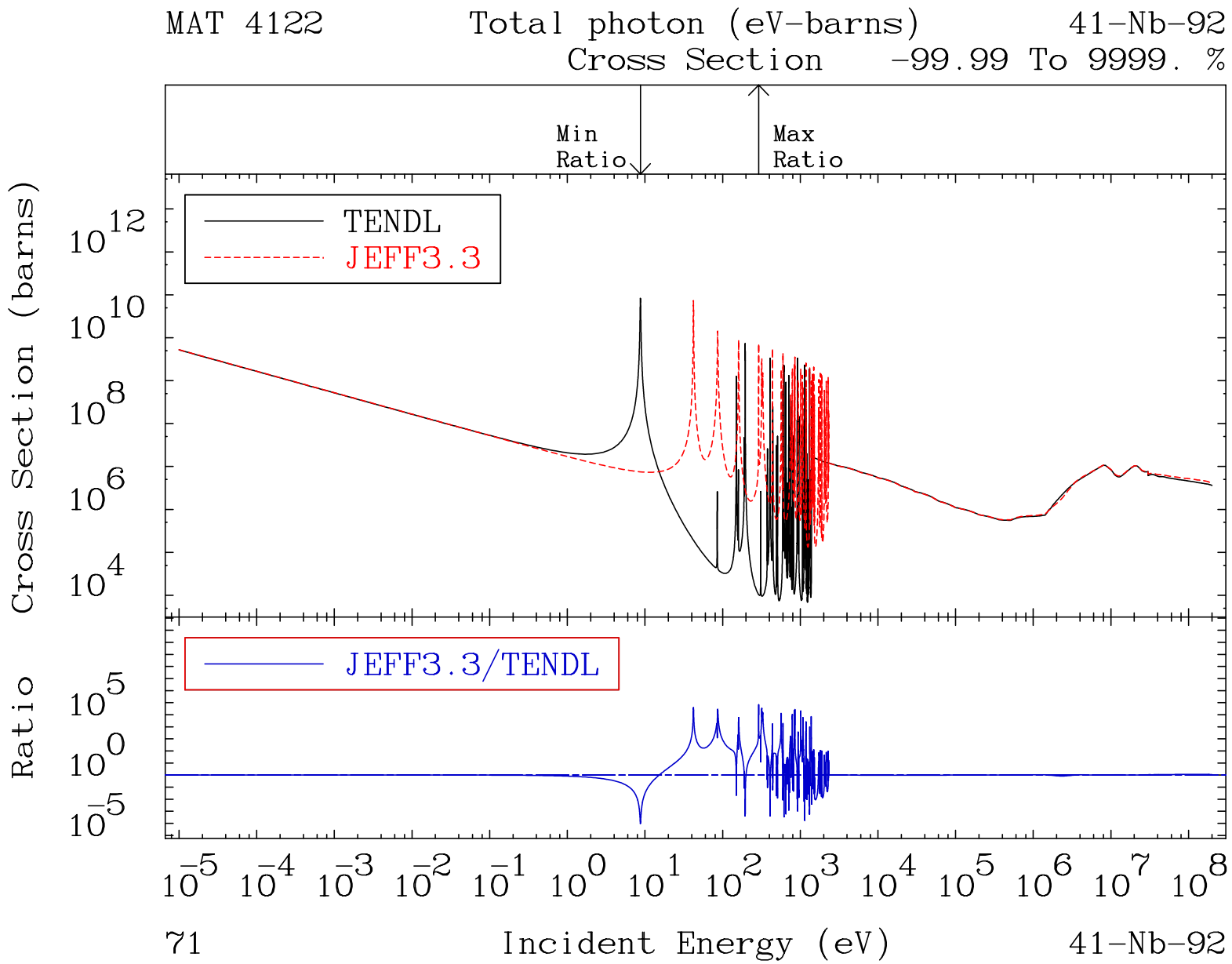

MAT 4122
Kerma elastic
Cross Section
41-Nb-92
-100.0 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
66
41-Nb-92

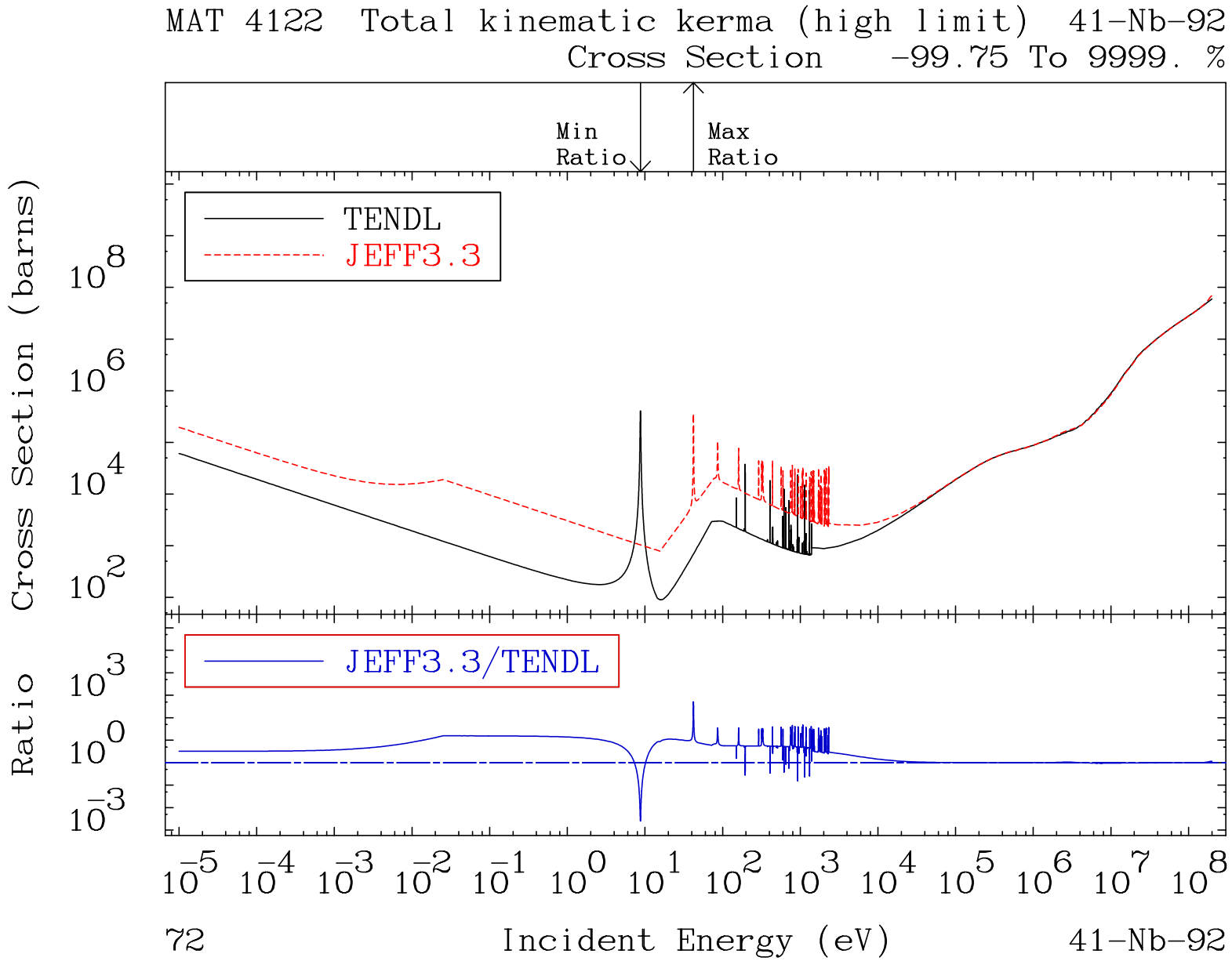

MAT 4122 Kerma non-elastic (all but mt2) 41-Nb-92
Cross Section -99.75 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
67
41-Nb-92

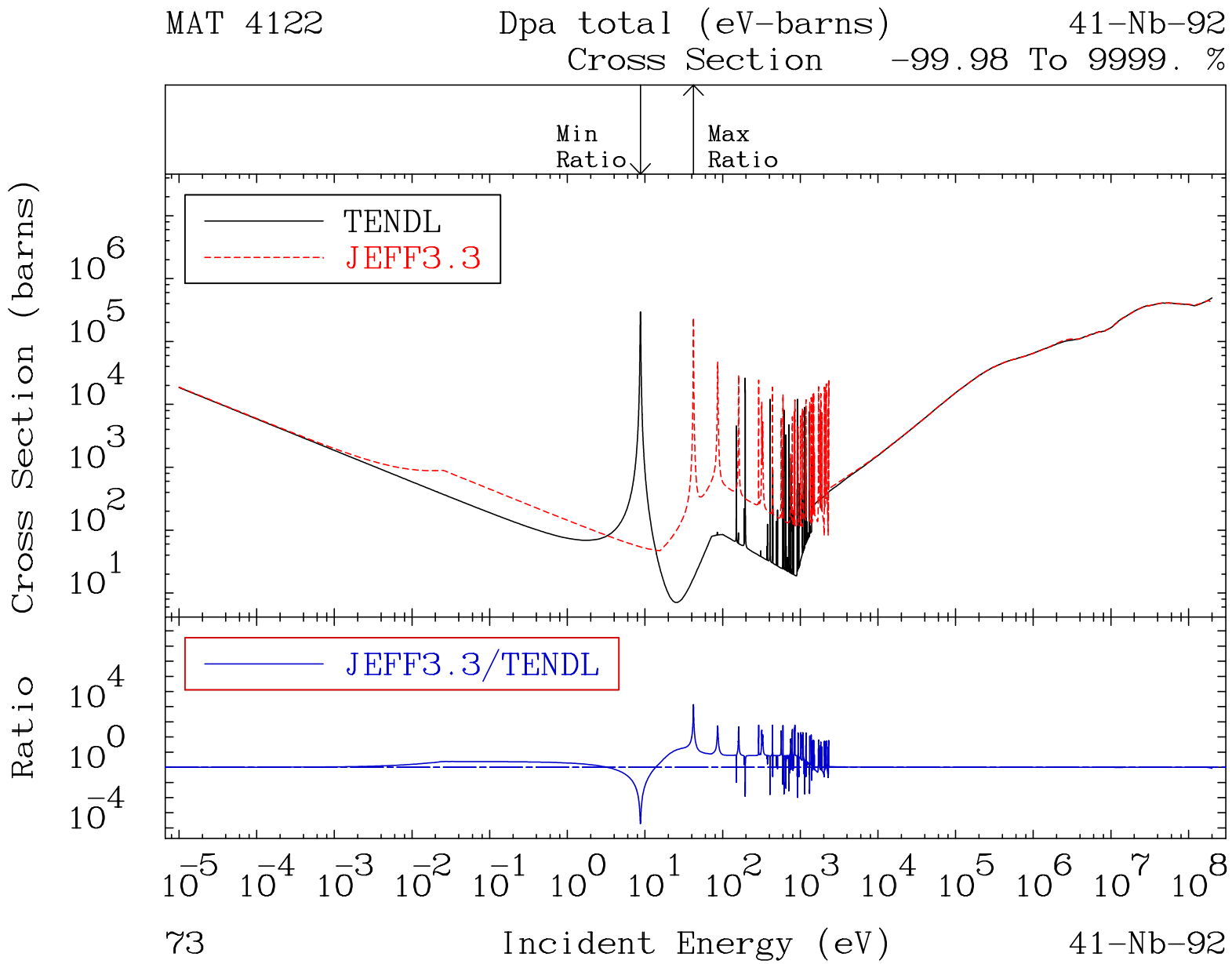

MAT 4122
Kerma inelastic (mt51-91)
41-Nb-92
Cross Section -100.0 To 3.929 %
Min Ratio
Max Ratio
TENDL Threshold 136.99 keV
JEFF3.3 Threshold 136.99 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
68
41-Nb-92

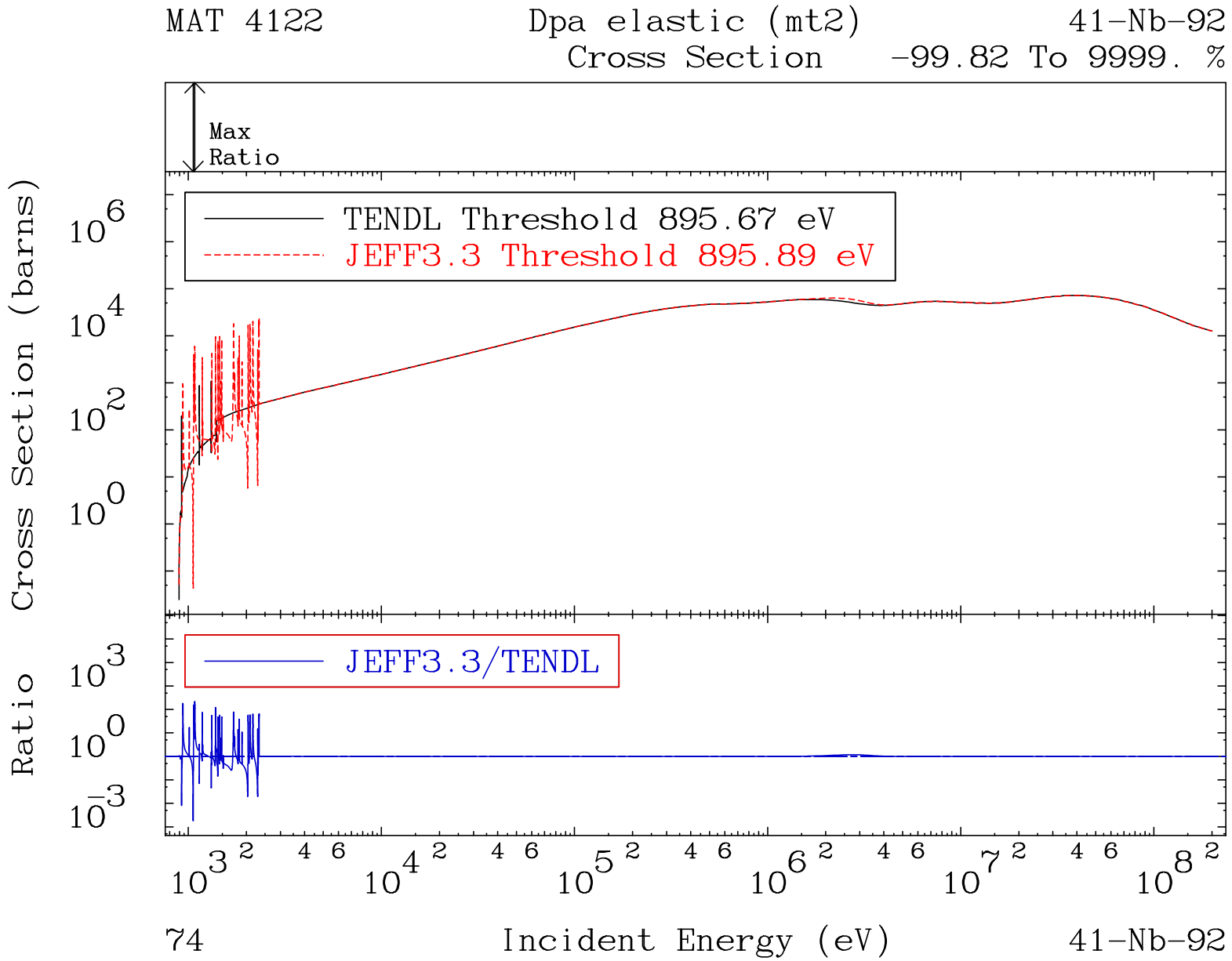

MAT 4122 Kerma fission (mt18 or mt19-20-21-38) 41-Nb-92
Cross Section -100.0 To 3.929 %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
10^{0}
10^{-4}
10^{-8}
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
69
Incident Energy (eV)
41-Nb-92

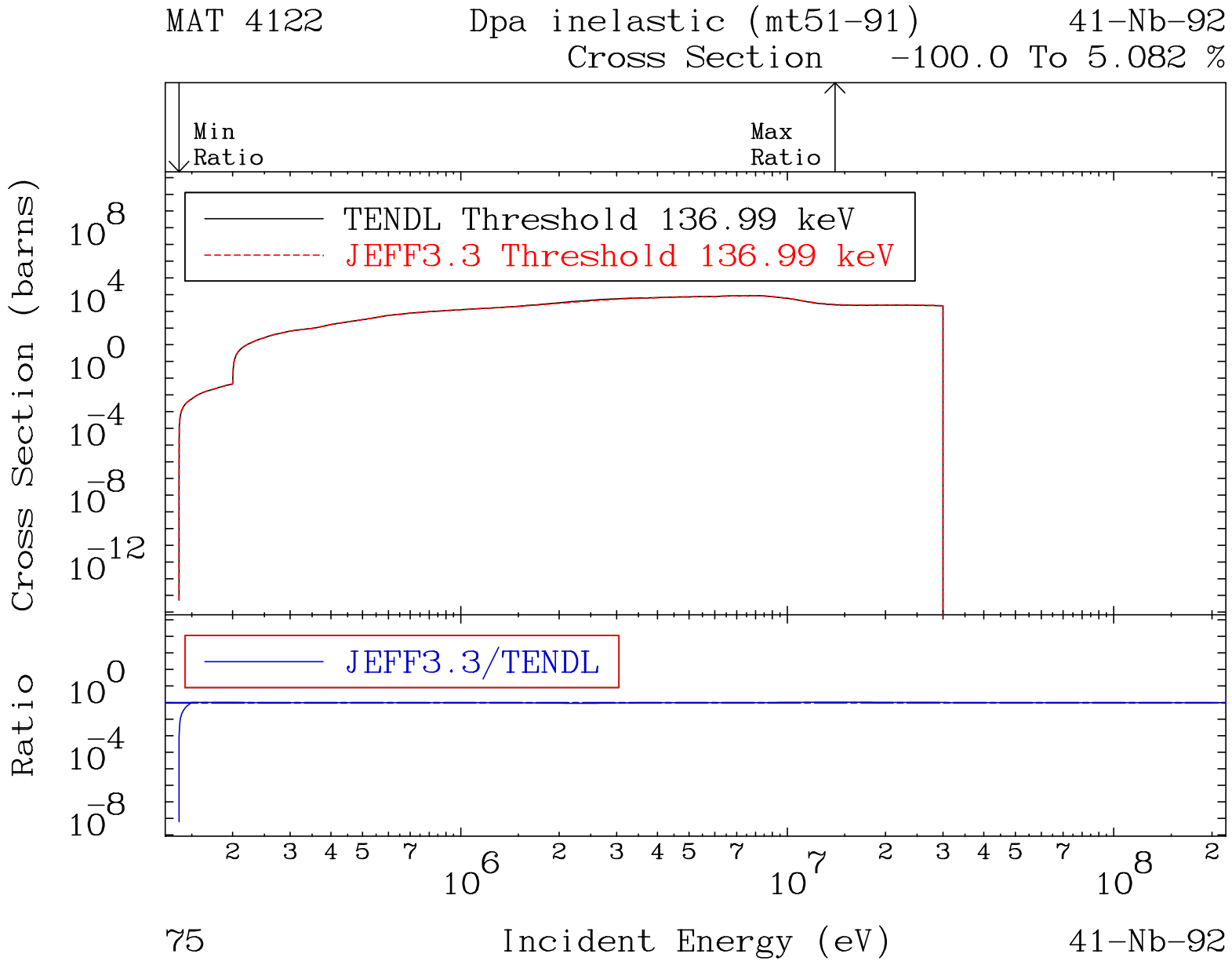

MAT 4122
Kerma capture (mt102)
41-Nb-92
Cross Section -99.99 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
70
41-Nb-92

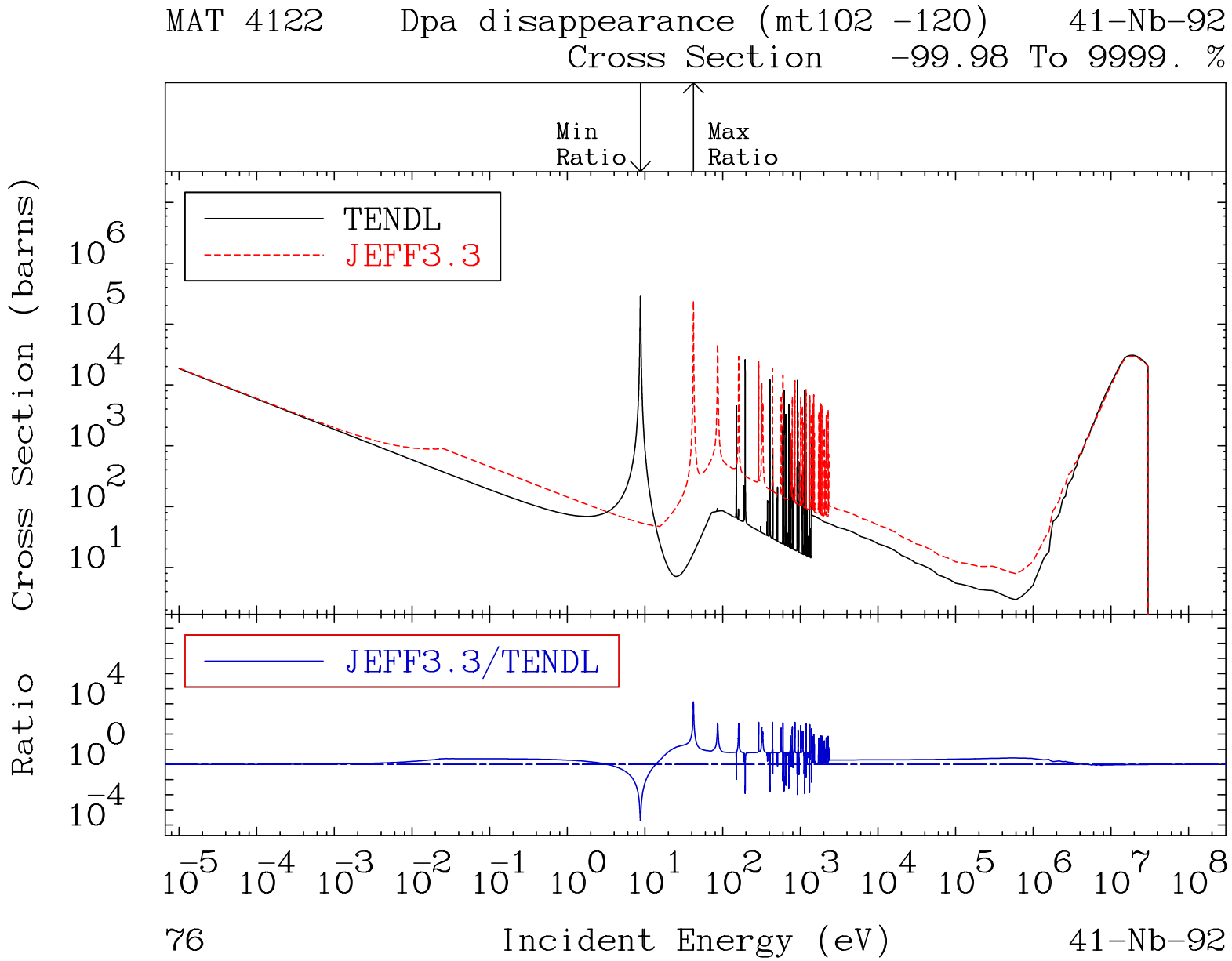

MAT 4122
Total photon (eV-barns)
41-Nb-92
Cross Section -99.99 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
71
41-Nb-92

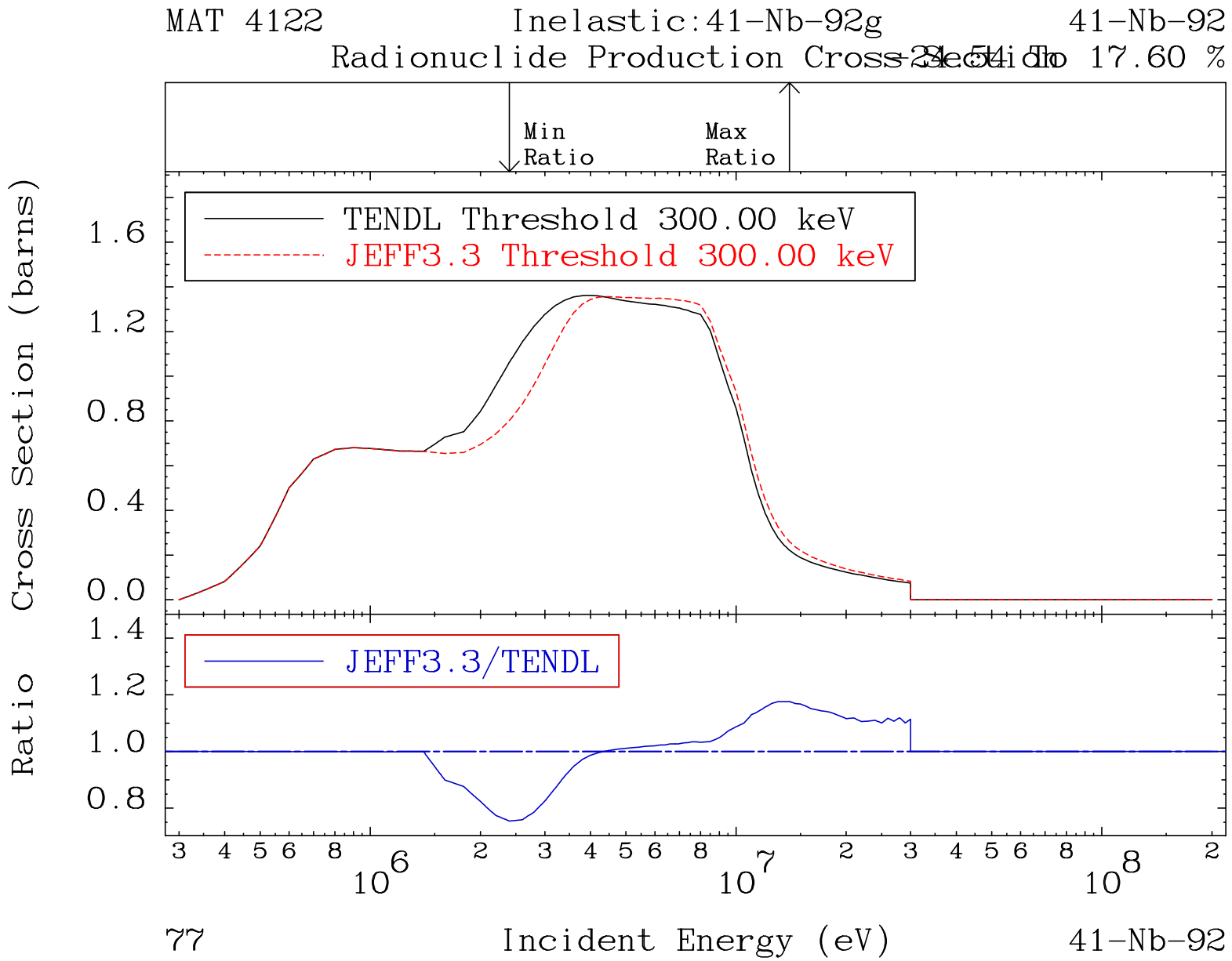

MAT 4122 Total kinematic kerma (high limit) 41-Nb-92
Cross Section -99.75 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
72
41-Nb-92

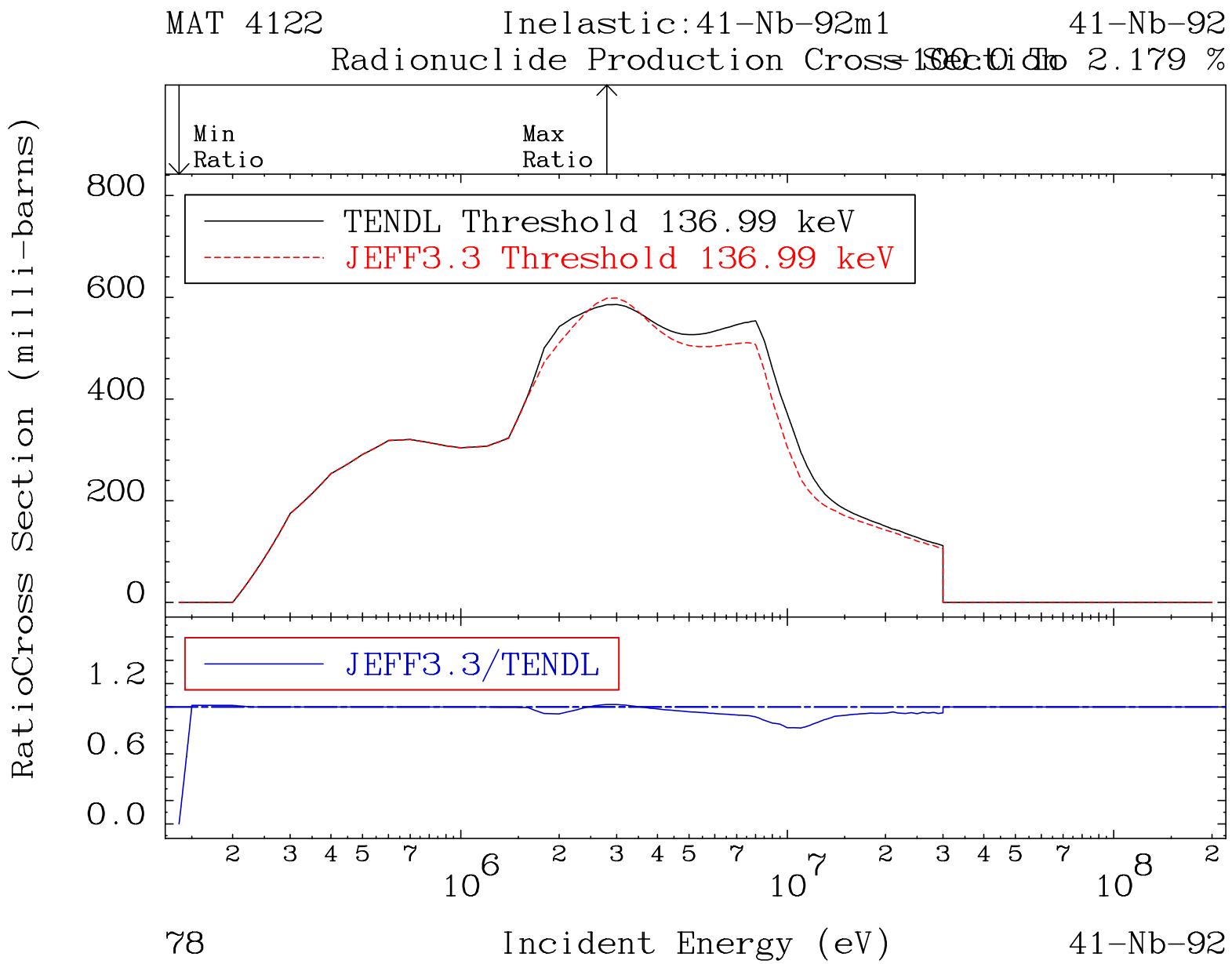

MAT 4122
Dpa total (eV-barns)
41-Nb-92
Cross Section -99.98 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
73
41-Nb-92

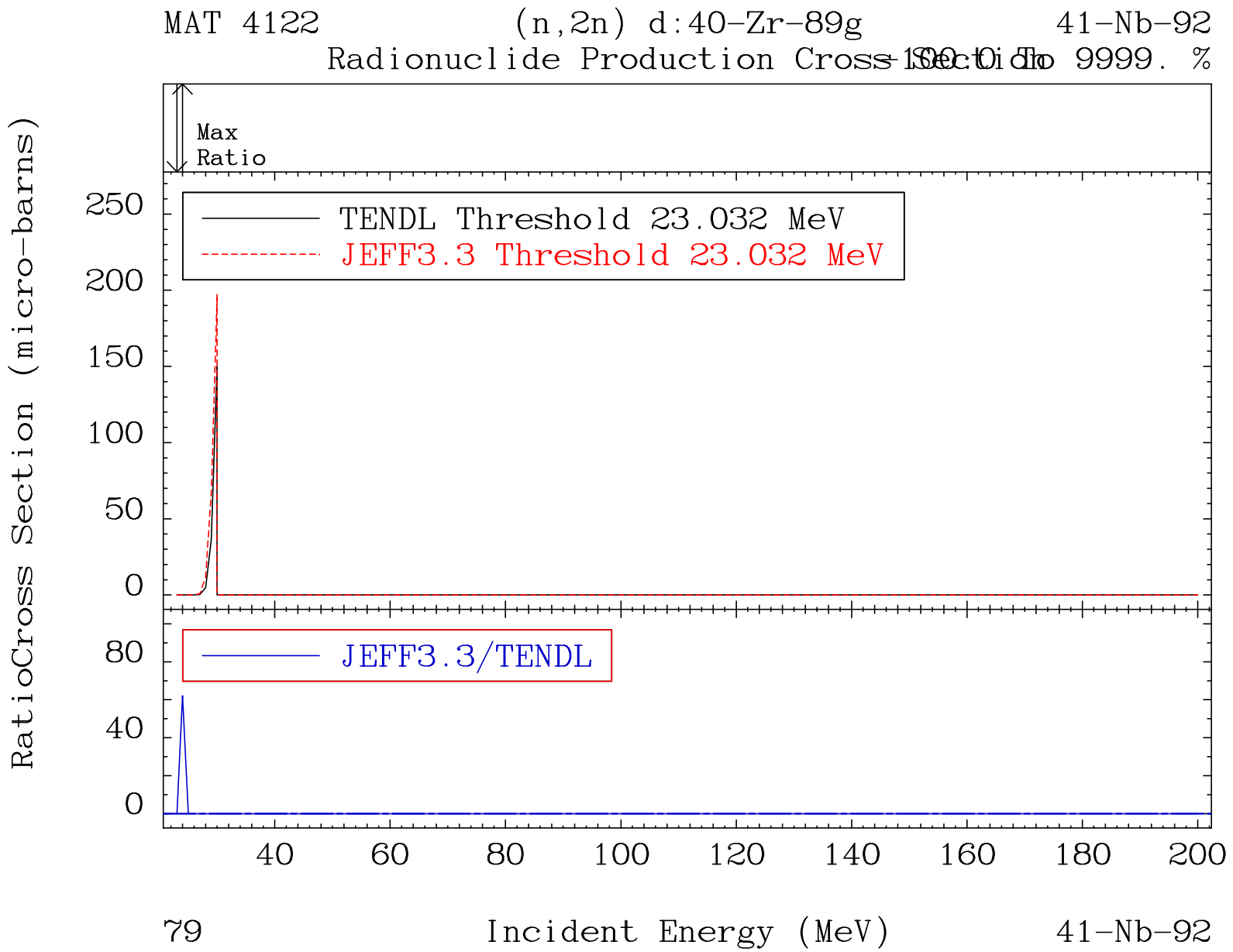

MAT 4122
Dpa elastic (mt2)
Cross Section
41-Nb-92
-99.82 To 9999. %
Max
Ratio
TENDL Threshold 895.67 eV
JEFF3.3 Threshold 895.89 eV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
74
41-Nb-92

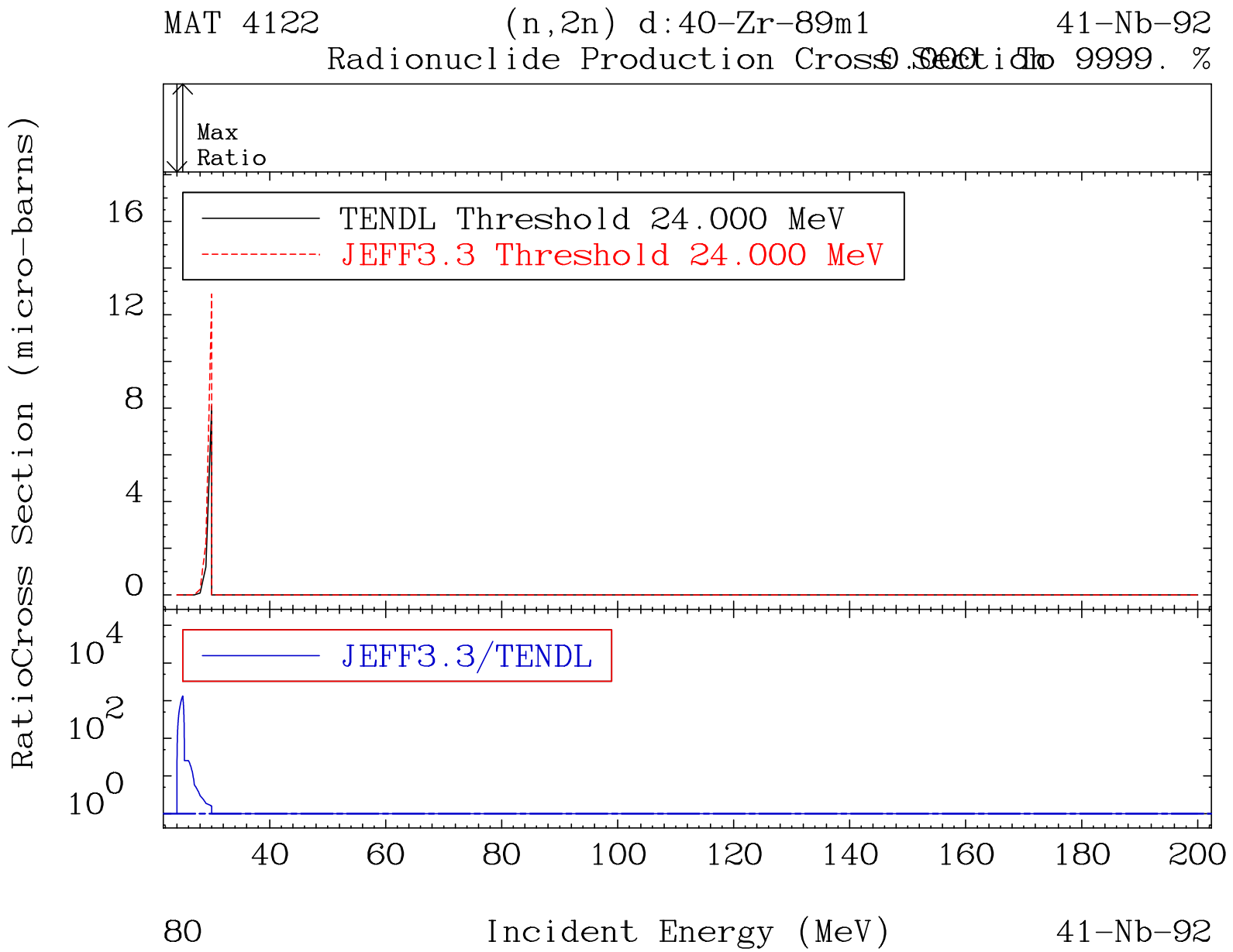

MAT 4122
Dpa inelastic (mt51-91)
41-Nb-92
Cross Section
-100.0 To 5.082 %
Min Ratio
Max Ratio
TENDL Threshold 136.99 keV
JEFF3.3 Threshold 136.99 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
75
41-Nb-92

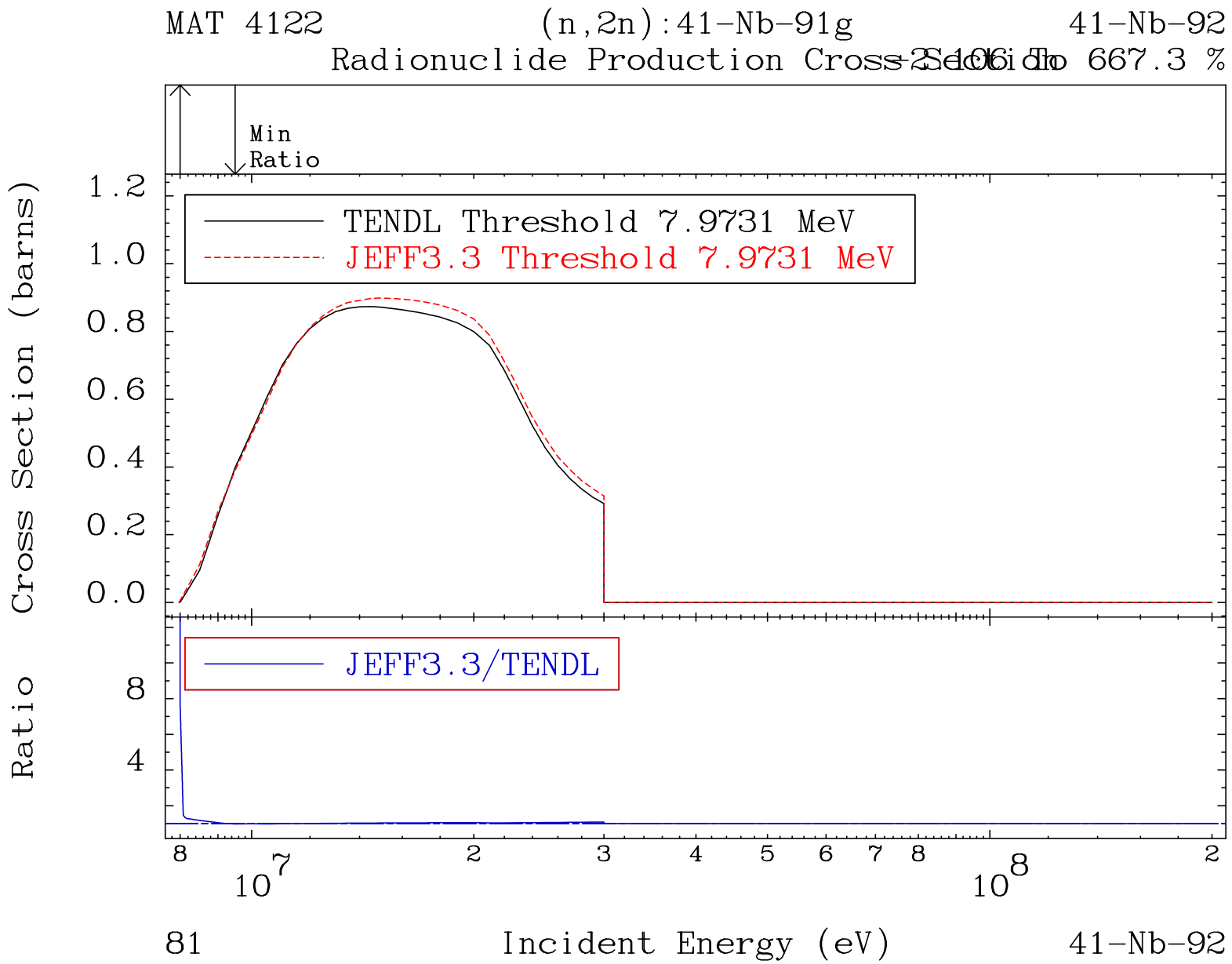

MAT 4122 Dpa disappearance (mt102 -120) 41-Nb-92
Cross Section -99.98 To 9999. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
76
41-Nb-92

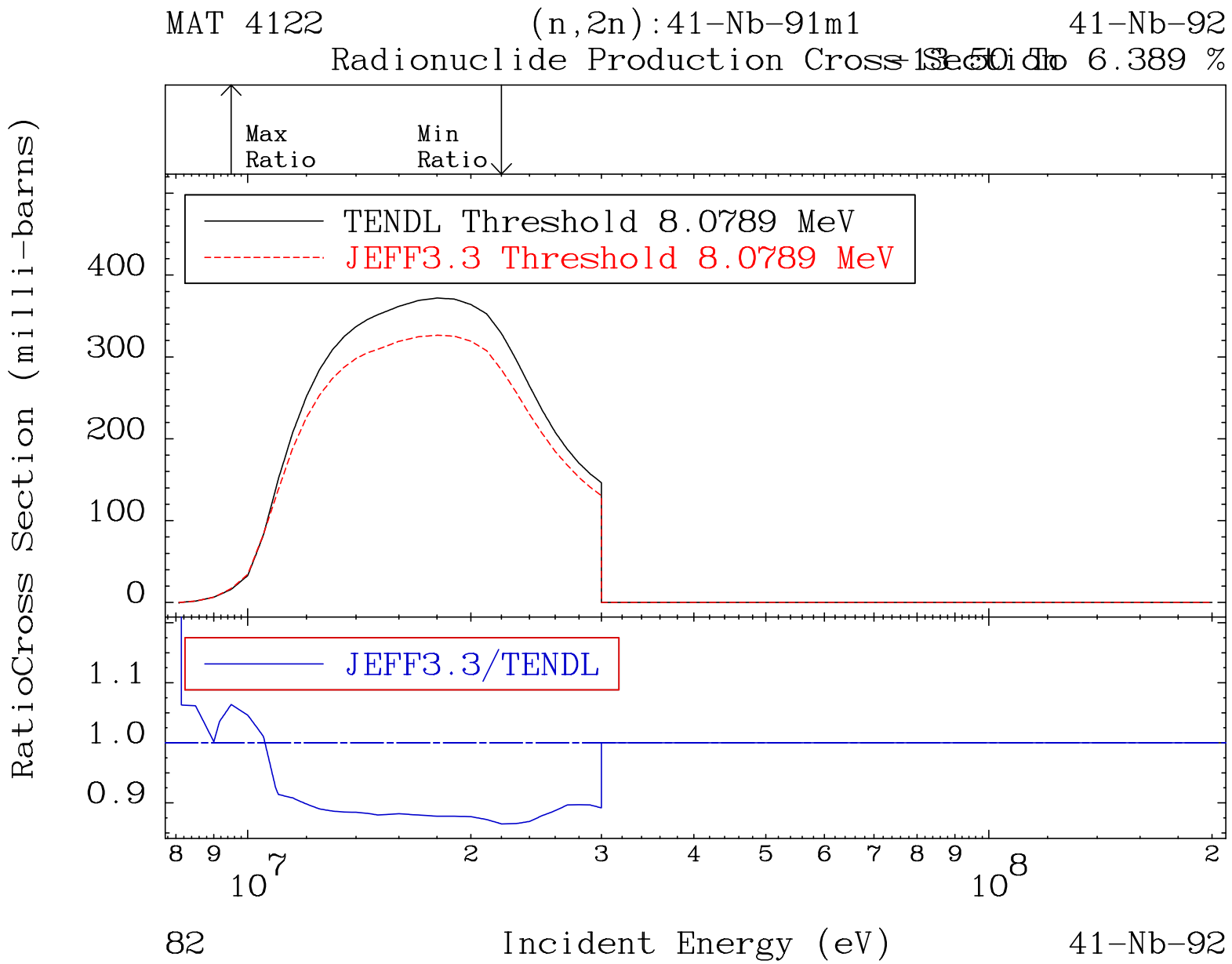

MAT 4122
Inelastic:41-Nb-92g
41-Nb-92
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 300.00 keV
JEFF3.3 Threshold 300.00 keV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
77
41-Nb-92

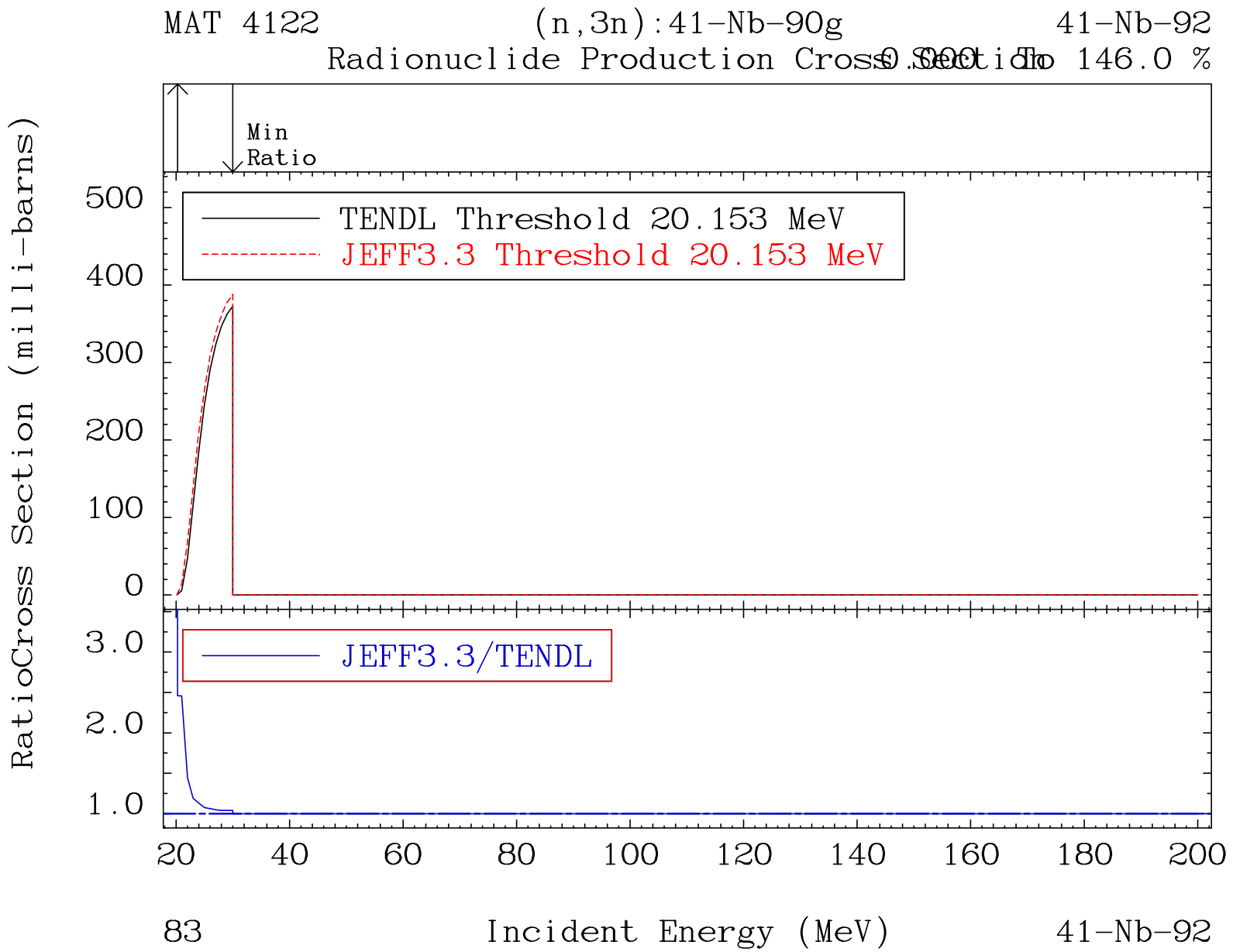

MAT 4122
Inelastic:41-Nb-92m1
41-Nb-92
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 136.99 keV
JEFF3.3 Threshold 136.99 keV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
800
600
400
200
0
1.2
0.6
0.0
2 3 4 5 7 10^6 2 3 4 5 7 10^7 2 3 4 5 7 10^8 2
78
Incident Energy (eV)
41-Nb-92

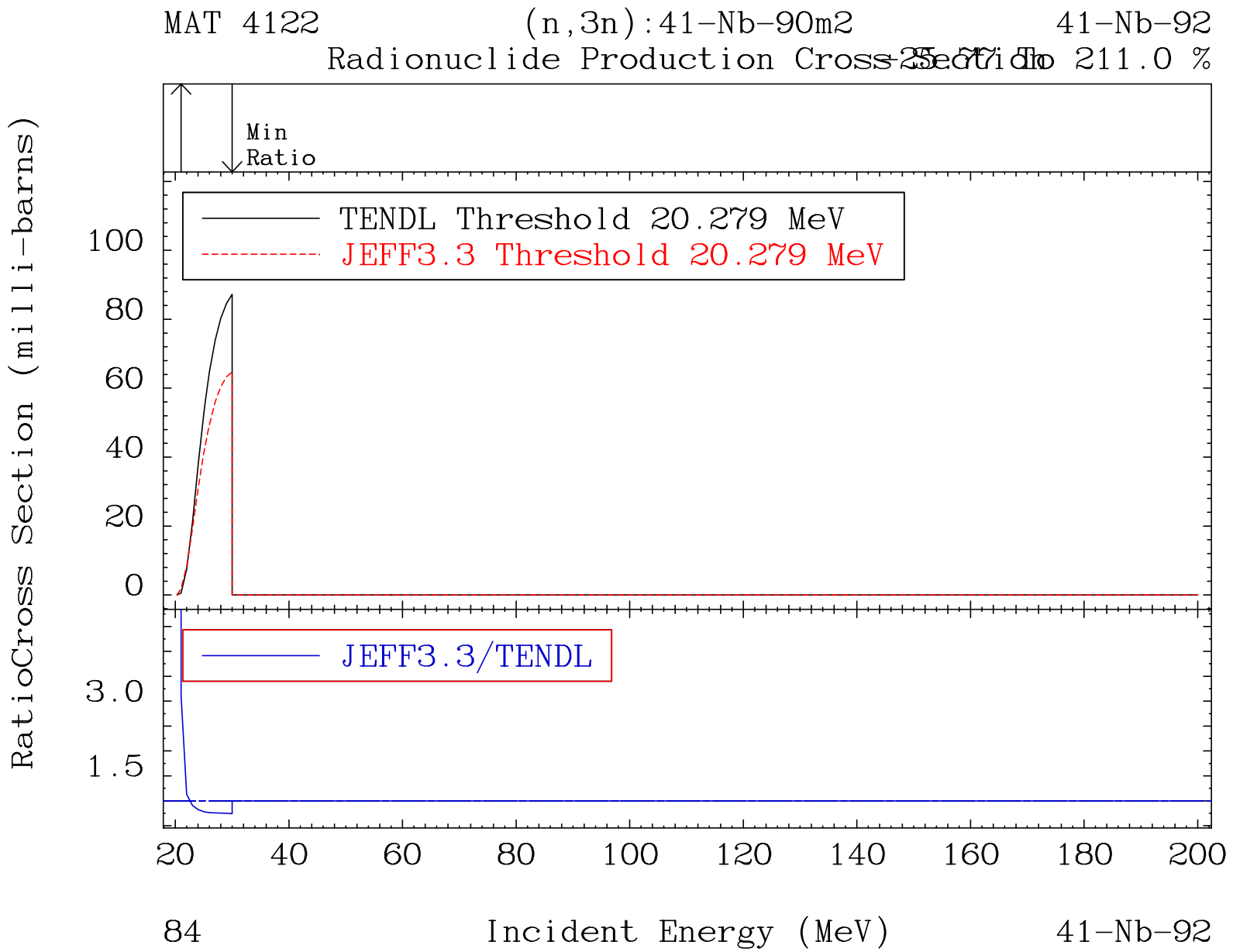

MAT 4122
(n,2n) d:40-Zr-89g
41-Nb-92
Radionuclide Production Cross Section
Max
Ratio
TENDL Threshold 23.032 MeV
JEFF3.3 Threshold 23.032 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
250
200
150
100
50
0
80
40
0
40
60
80
100
120
140
160
180
200
79
Incident Energy (MeV)
41-Nb-92

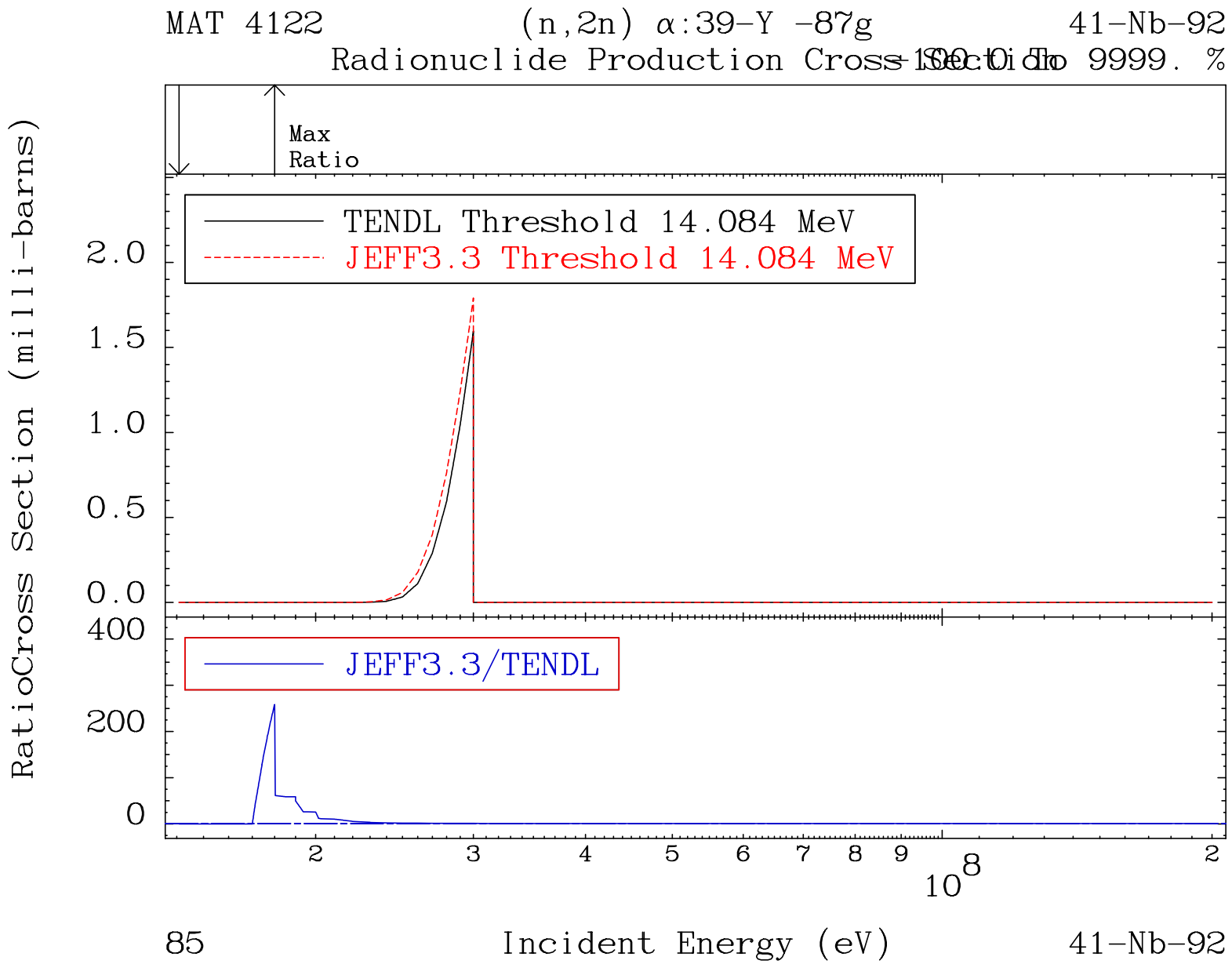

MAT 4122
(n,2n) d:40-Zr-89m1
41-Nb-92
Radionuclide Production Cross Section
0.000 To 9999. %
Max
Ratio
TENDL Threshold 24.000 MeV
JEFF3.3 Threshold 24.000 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
16
12
8
4
0
10^4
10^2
10^0
40
60
80
100
120
140
160
180
200
80
Incident Energy (MeV)
41-Nb-92

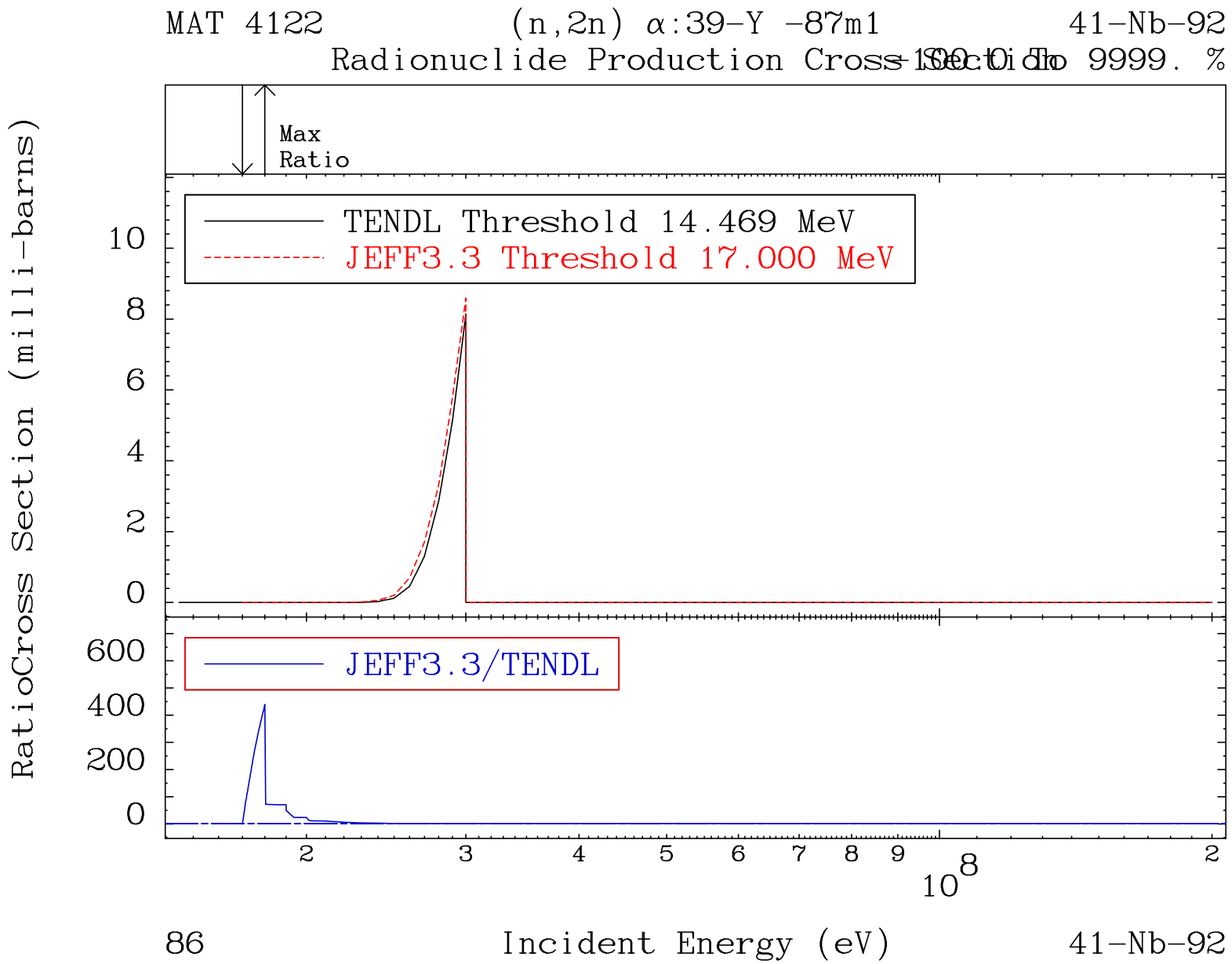

MAT 4122
(n,2n):41-Nb-91g
41-Nb-92
Radionuclide Production Cross Section
Min
Ratio
TENDL Threshold 7.9731 MeV
JEFF3.3 Threshold 7.9731 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
81
41-Nb-92

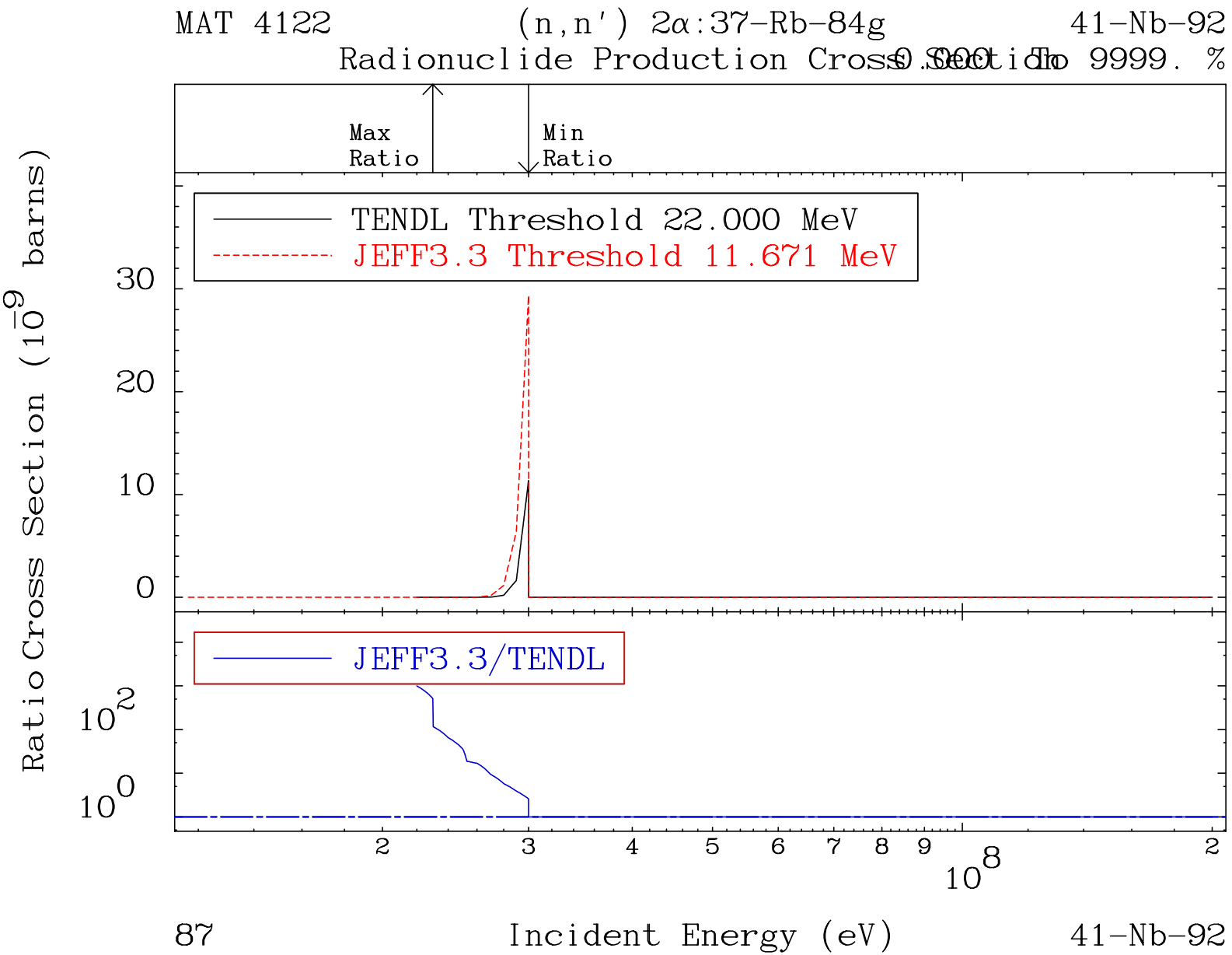

MAT 4122
(n,2n):41-Nb-91m1
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 8.0789 MeV
JEFF3.3 Threshold 8.0789 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
82
41-Nb-92

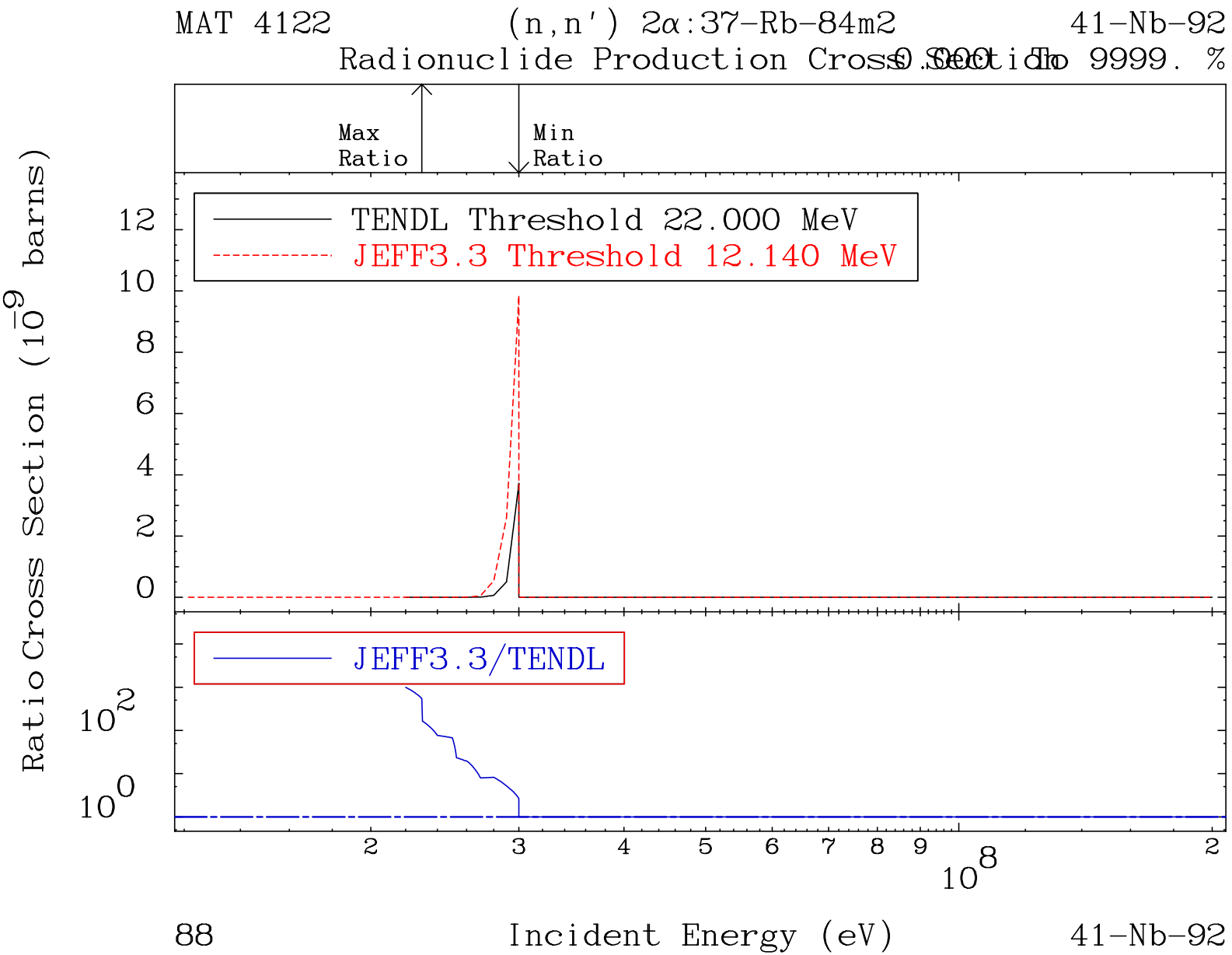

MAT 4122
(n,3n):41-Nb-90g
41-Nb-92
Radionuclide Production Cross Section
0.000 To 146.0 %
Min
Ratio
TENDL Threshold 20.153 MeV
JEFF3.3 Threshold 20.153 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
3.0
2.0
1.0
20
40
60
80
100
120
140
160
180
200
83
Incident Energy (MeV)
41-Nb-92

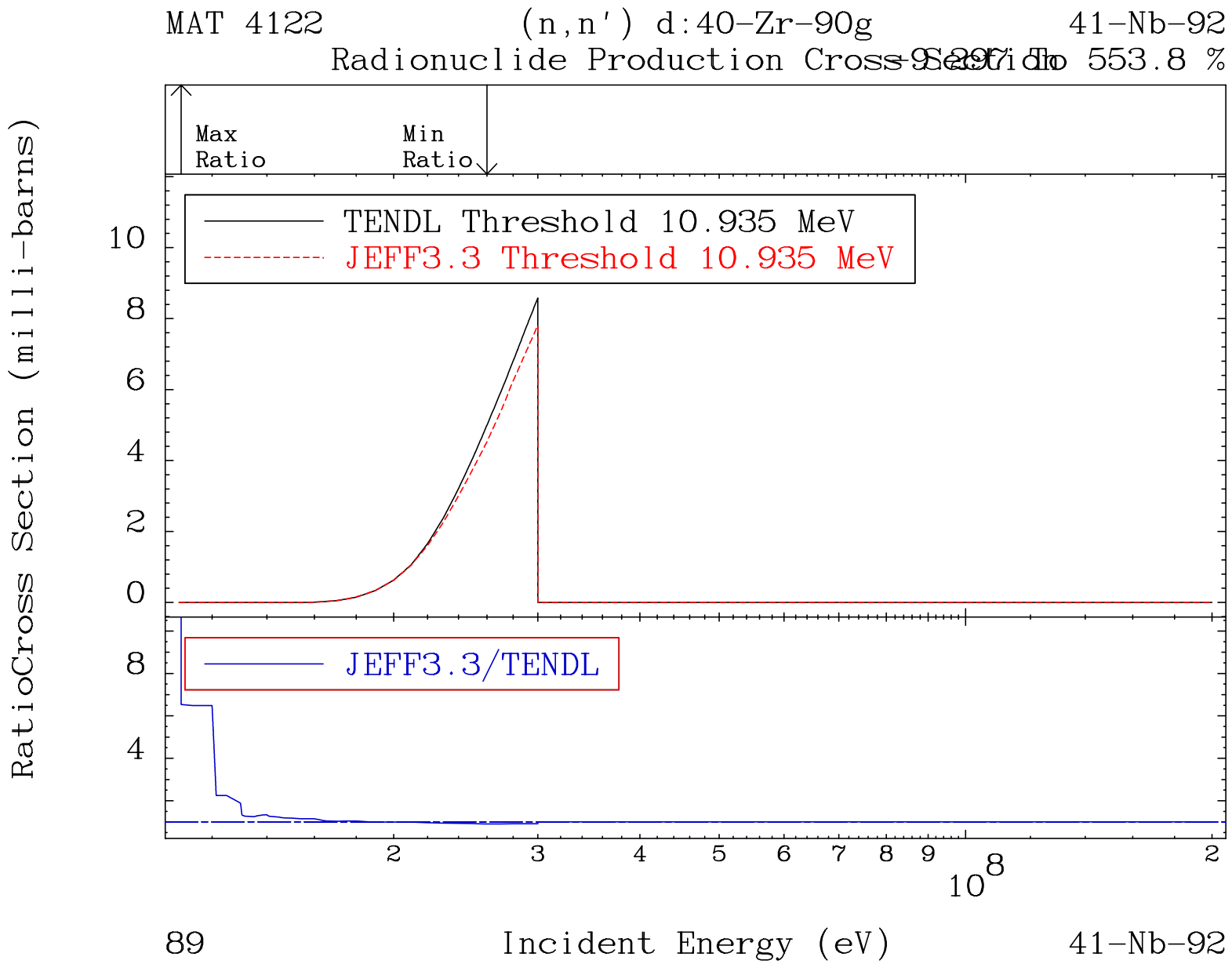

MAT 4122
(n,3n):41-Nb-90m2
41-Nb-92
Radionuclide Production Cross Section
Min
Ratio
TENDL Threshold 20.279 MeV
JEFF3.3 Threshold 20.279 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
3.0
1.5
20
40
60
80
100
120
140
160
180
200
84
Incident Energy (MeV)
41-Nb-92

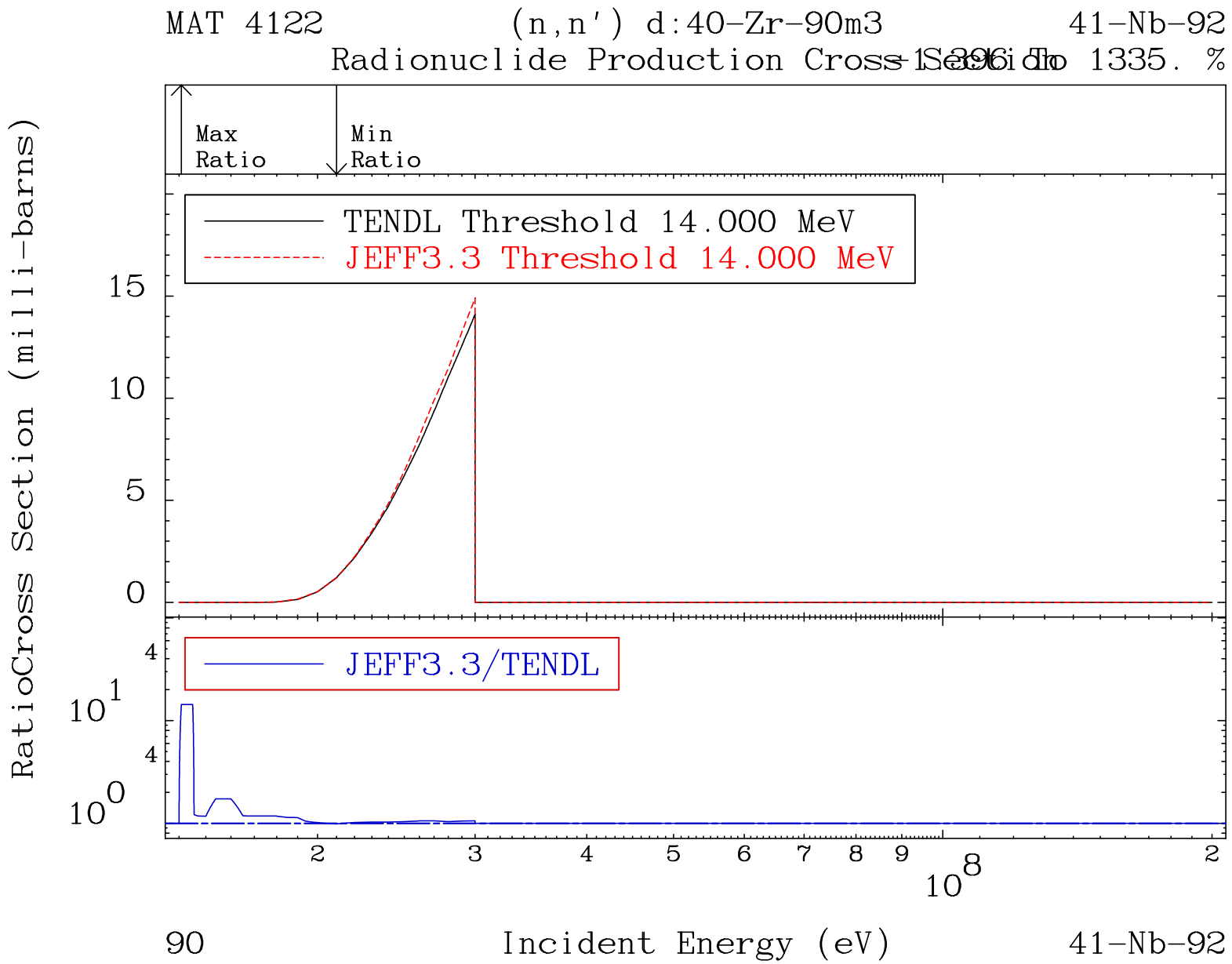

MAT 4122
(n,2n) α:39-Y -87g
41-Nb-92
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 14.084 MeV
JEFF3.3 Threshold 14.084 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
400
200
0
2
3
4
5
6
7
8
9
10^8
2
85
Incident Energy (eV)
41-Nb-92

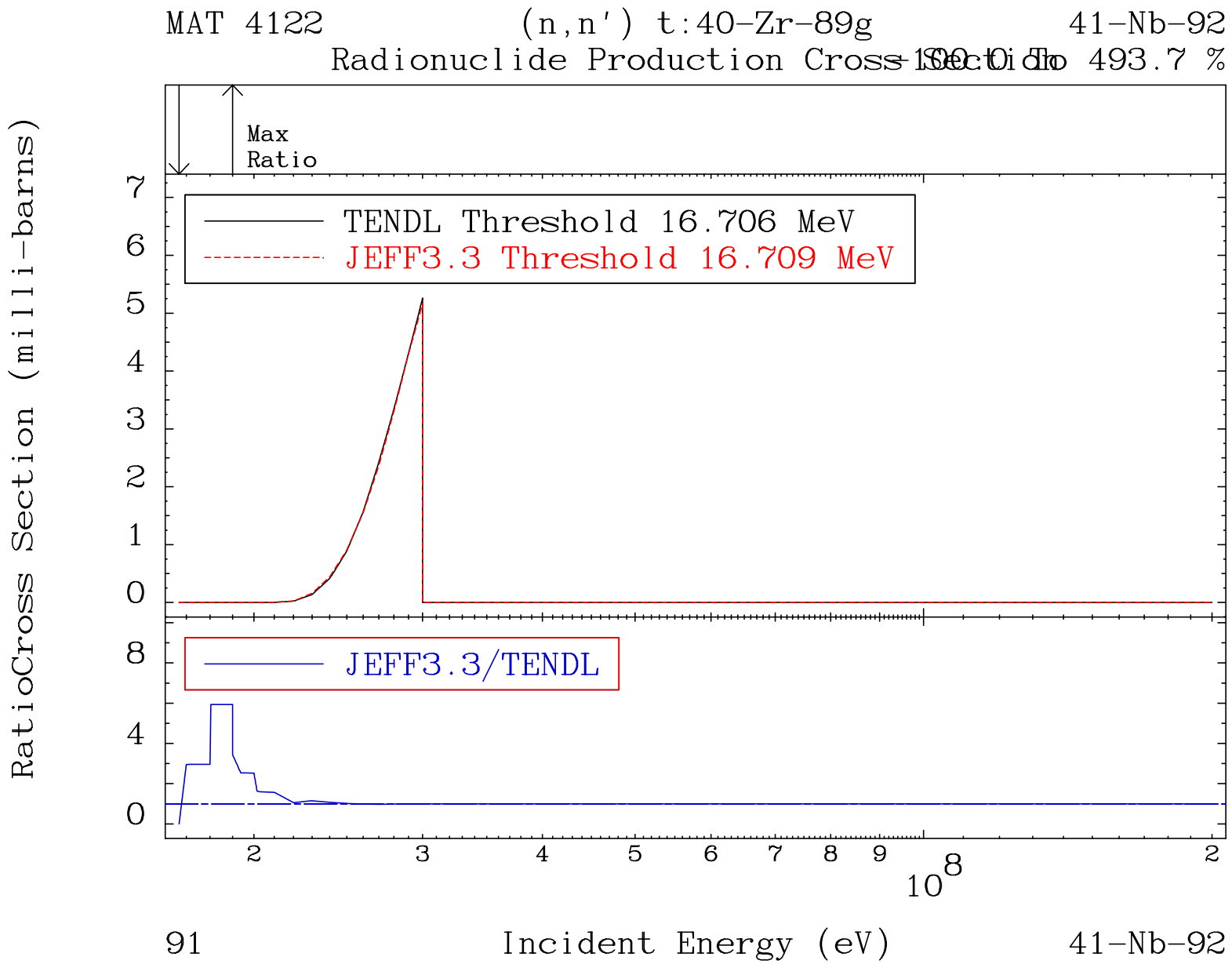

MAT 4122
(n,2n) α:39-Y -87m1
41-Nb-92
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 14.469 MeV
JEFF3.3 Threshold 17.000 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
10
8
6
4
2
0
600
400
200
0
2
3
4
5
6
7
8
9
10^8
2
86
Incident Energy (eV)
41-Nb-92

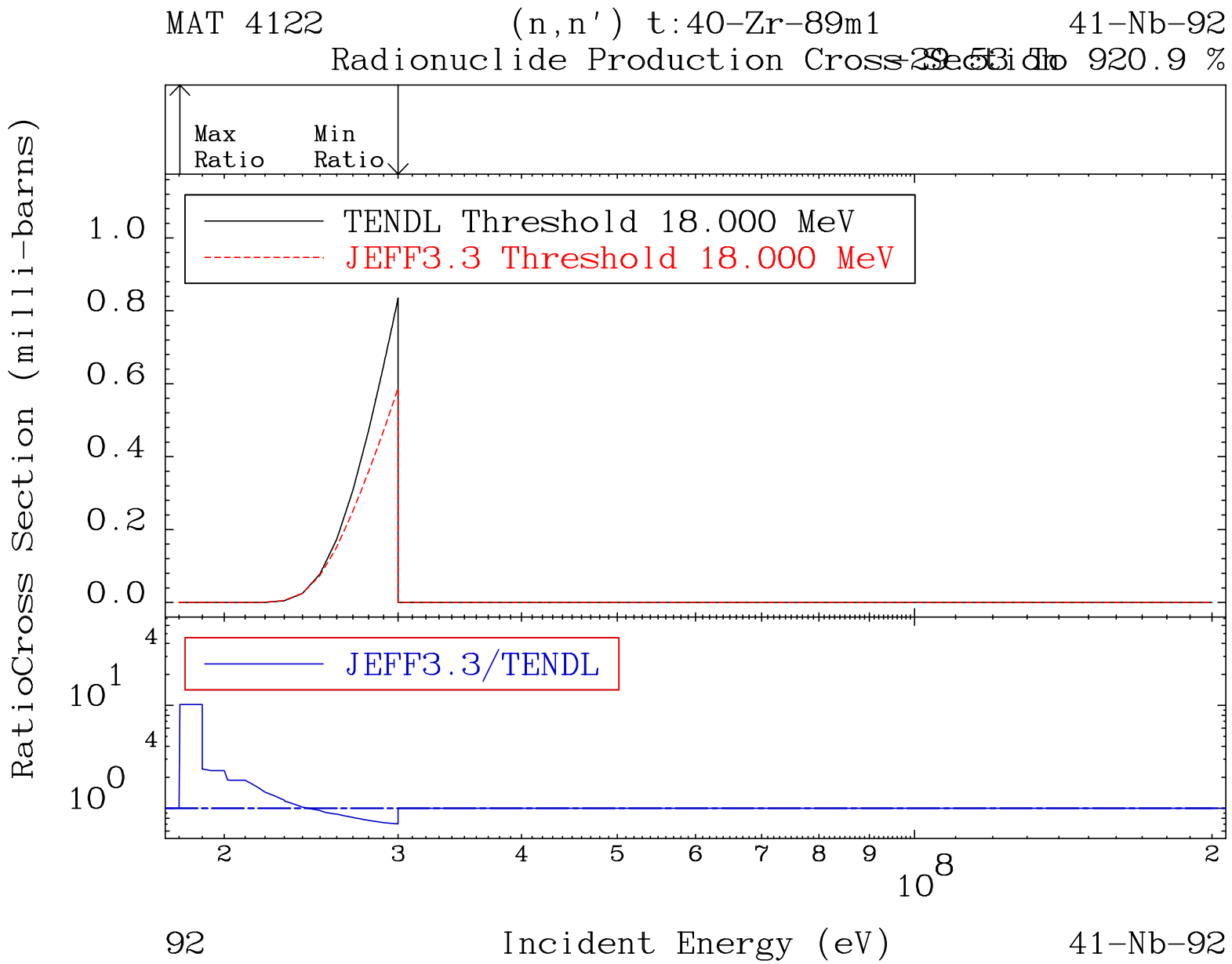

MAT 4122
(n,n') 2α:37-Rb-84g
41-Nb-92
Radionuclide Production Cross Section
0.000 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 22.000 MeV
JEFF3.3 Threshold 11.671 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
30
20
10
0
10^{2}
10^{0}
2
3
4
5
6
7
8
9
10^{8}
2
87
Incident Energy (eV)
41-Nb-92

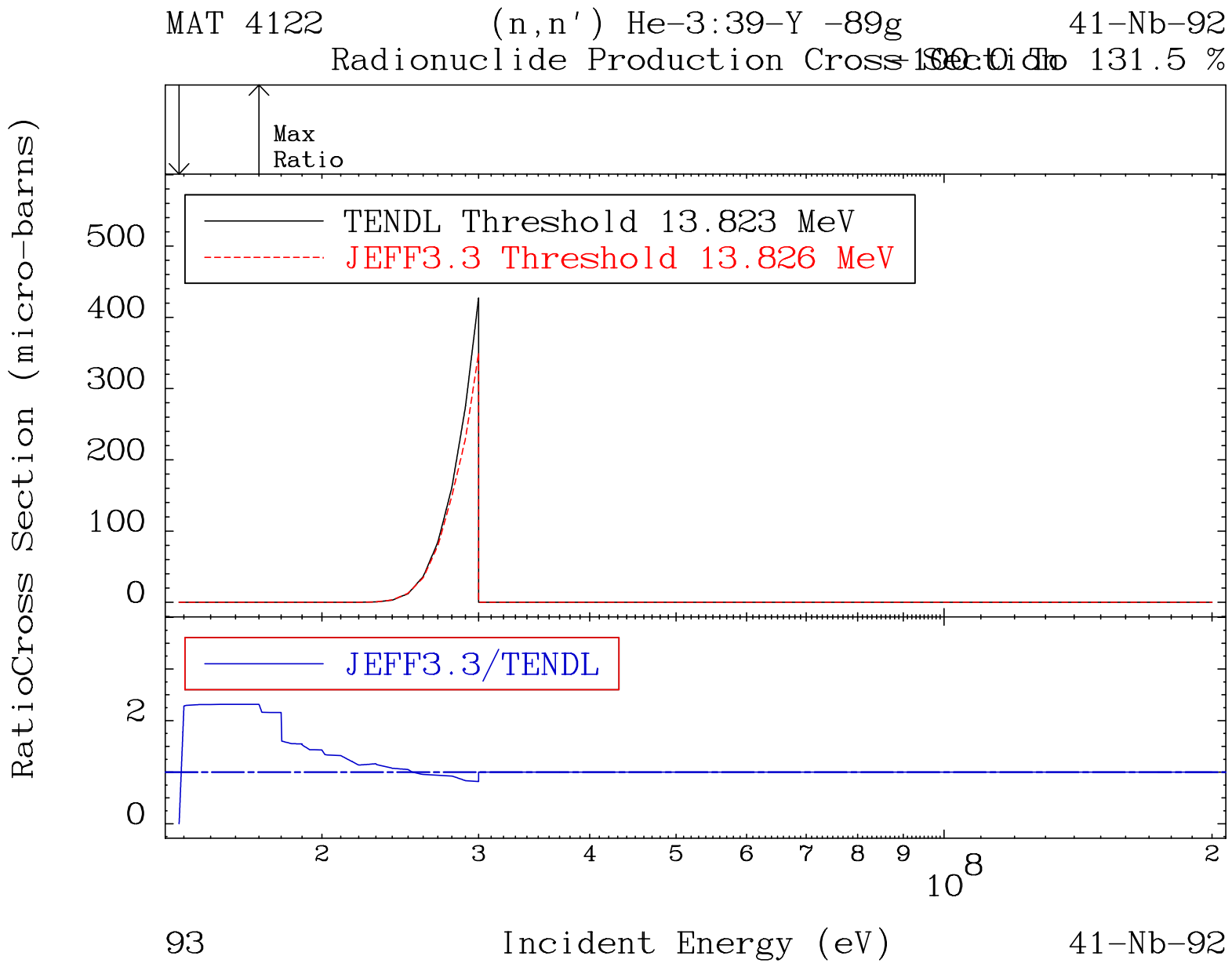

MAT 4122
(n,n') 2α:37-Rb-84m2
41-Nb-92
Radionuclide Production Cross Section
0.000 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 22.000 MeV
JEFF3.3 Threshold 12.140 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^{-9} barns)
12
10
8
6
4
2
0
10^{2}
10^{0}
2
3
4
5
6
7
8
9
10^{8}
2
88
Incident Energy (eV)
41-Nb-92

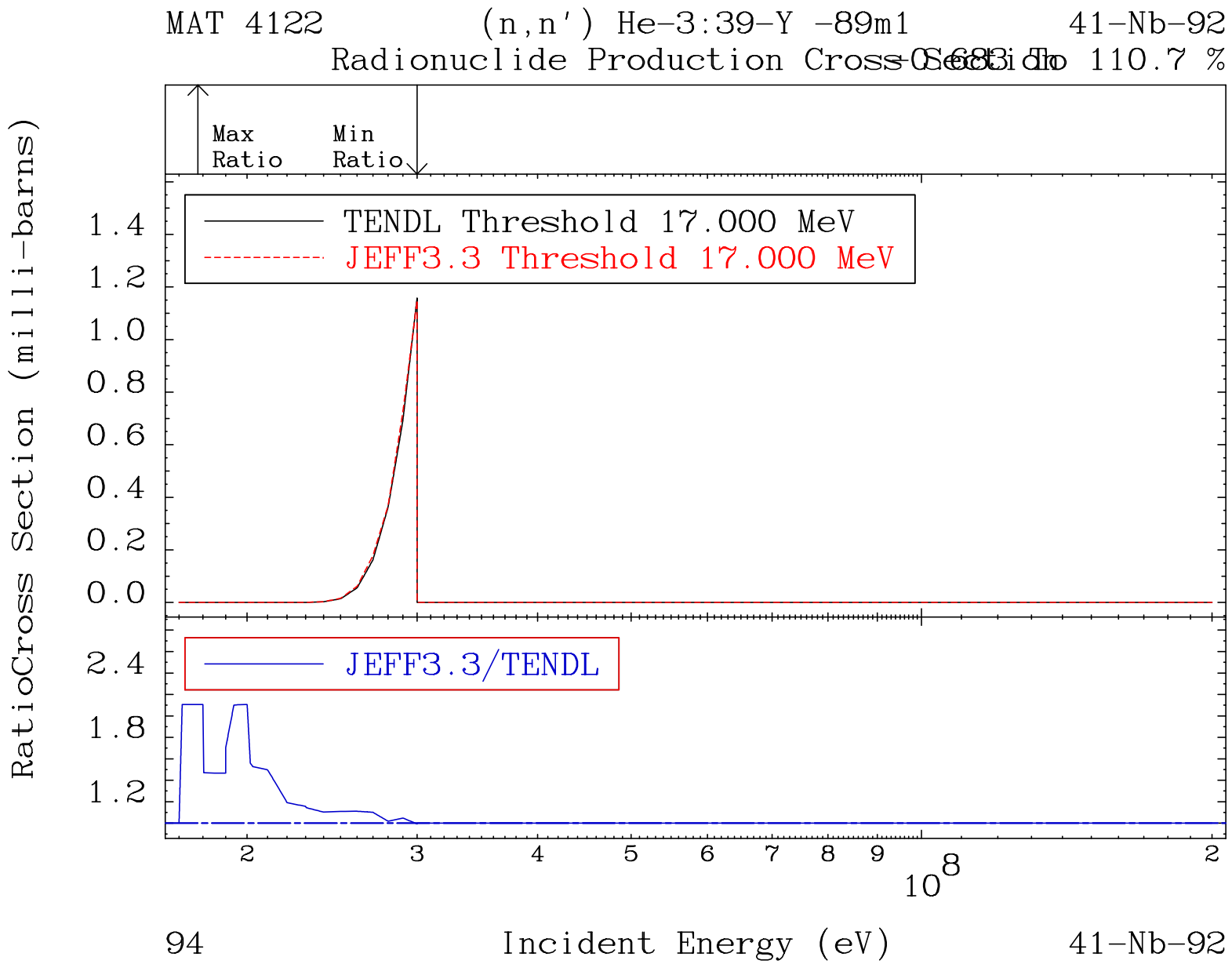

MAT 4122
(n,n') d:40-Zr-90g
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 10.935 MeV
JEFF3.3 Threshold 10.935 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
89
41-Nb-92

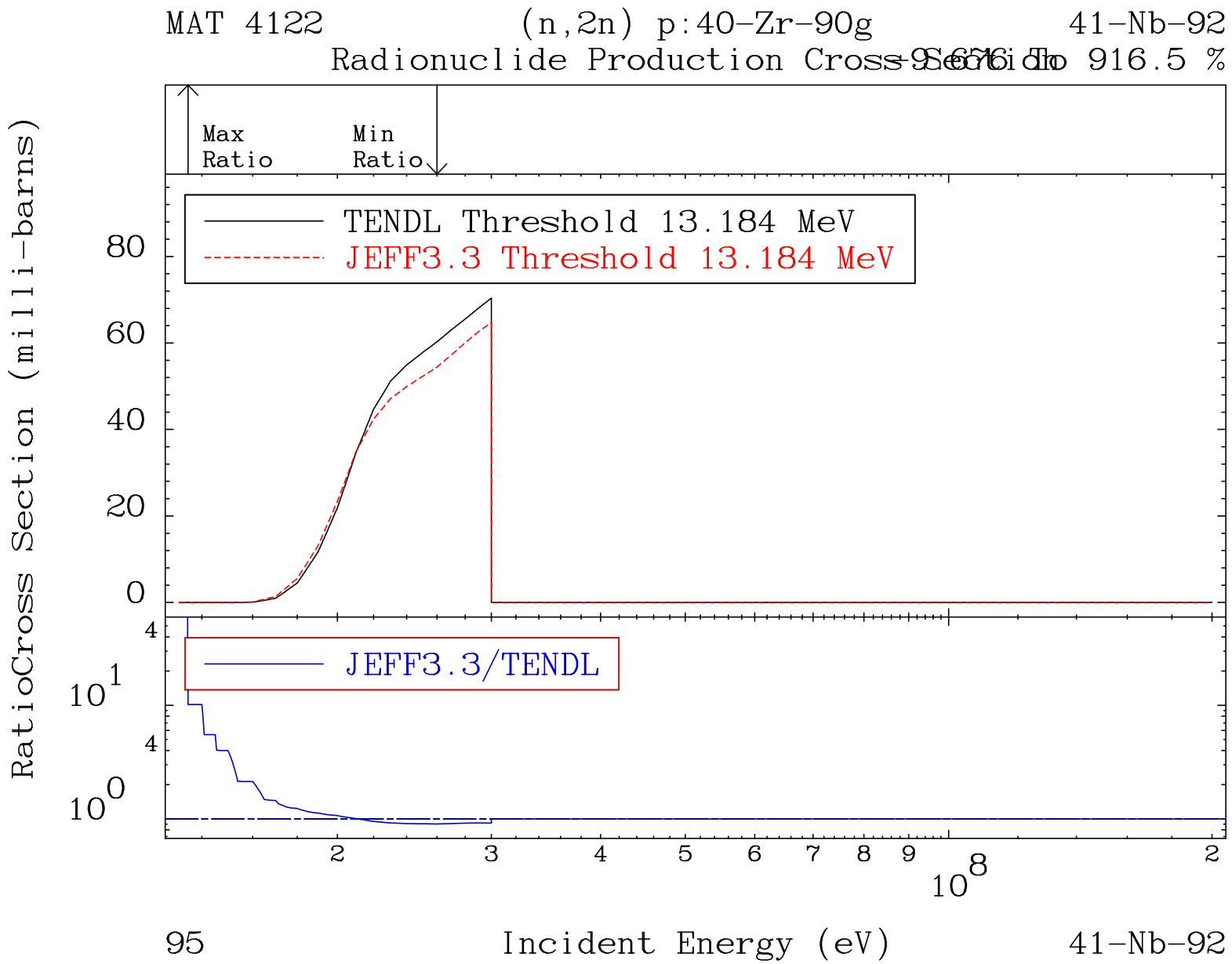

MAT 4122
(n,n') d:40-Zr-90m3
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 14.000 MeV
JEFF3.3 Threshold 14.000 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
90
41-Nb-92

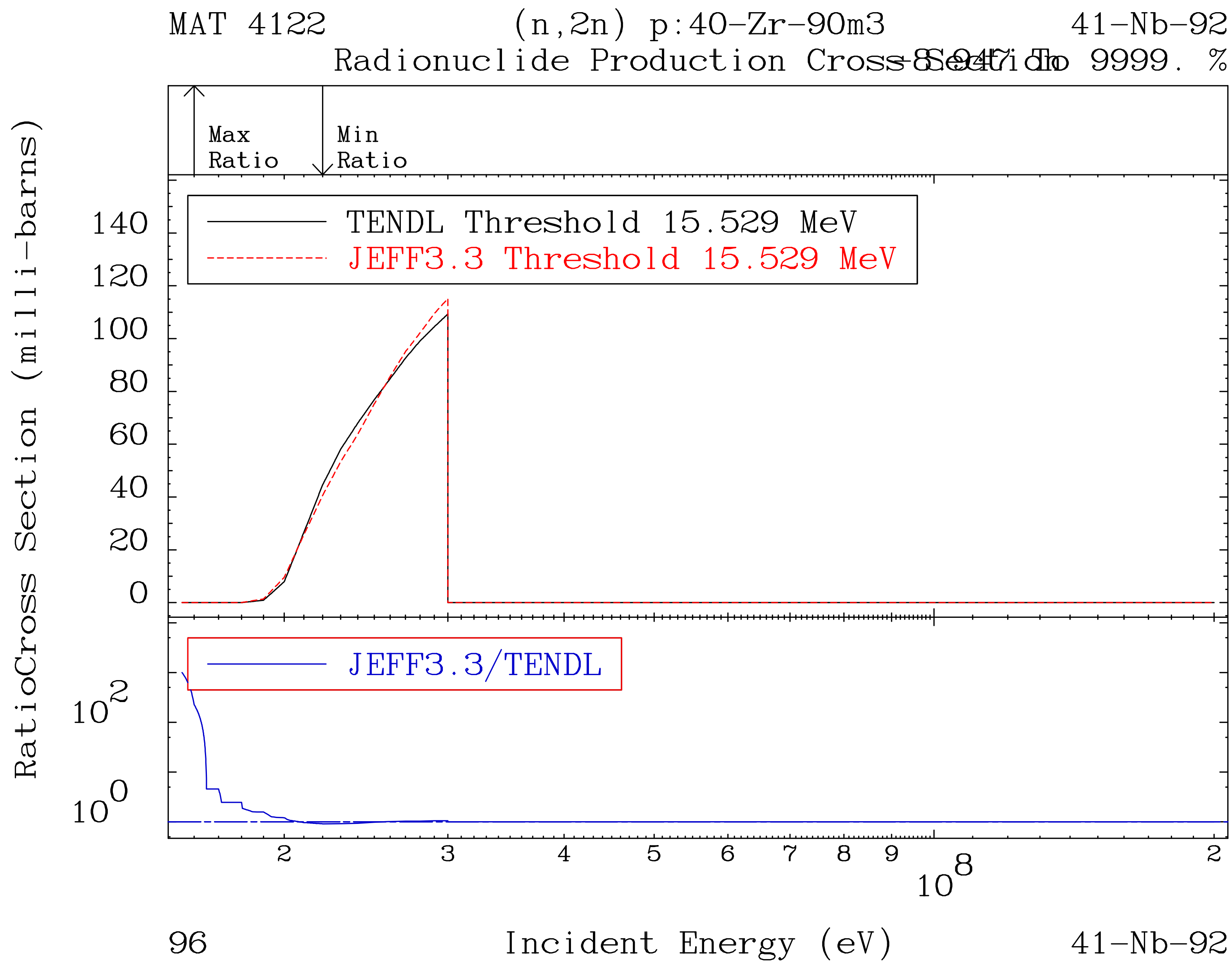

MAT 4122
(n,n') t:40-Zr-89g
41-Nb-92
Radionuclide Production Cross Section To 493.7 %
Max
Ratio
TENDL Threshold 16.706 MeV
JEFF3.3 Threshold 16.709 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
91
41-Nb-92


MAT 4122
(n,n') t:40-Zr-89m1
41-Nb-92
Radionuclide Production Cross Section To 920.9 %
Max Ratio
Min Ratio
TENDL Threshold 18.000 MeV
JEFF3.3 Threshold 18.000 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
1.0
0.8
0.6
0.4
0.2
0.0
10^1
10^0
4
4
2
3
4
5
6
7
8
9
10^8
2
92
Incident Energy (eV)
41-Nb-92

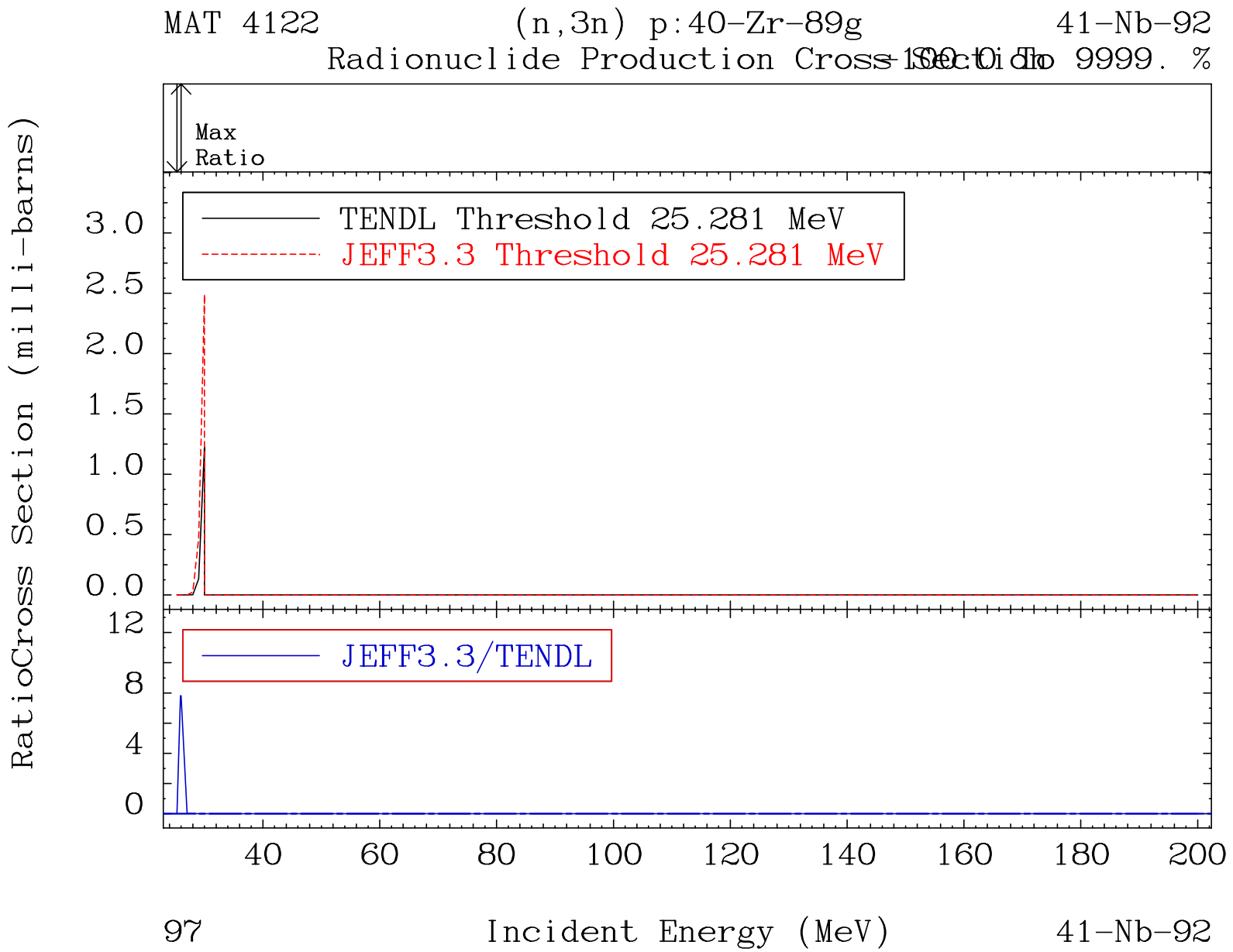

MAT 4122
(n,n') He-3:39-Y -89g
41-Nb-92
Radionuclide Production Cross Section To 131.5 %
Max
Ratio
TENDL Threshold 13.823 MeV
JEFF3.3 Threshold 13.826 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
500
400
300
200
100
0
2
0
2
3
4
5
6
7
8
9
10^8
2
93
Incident Energy (eV)
41-Nb-92

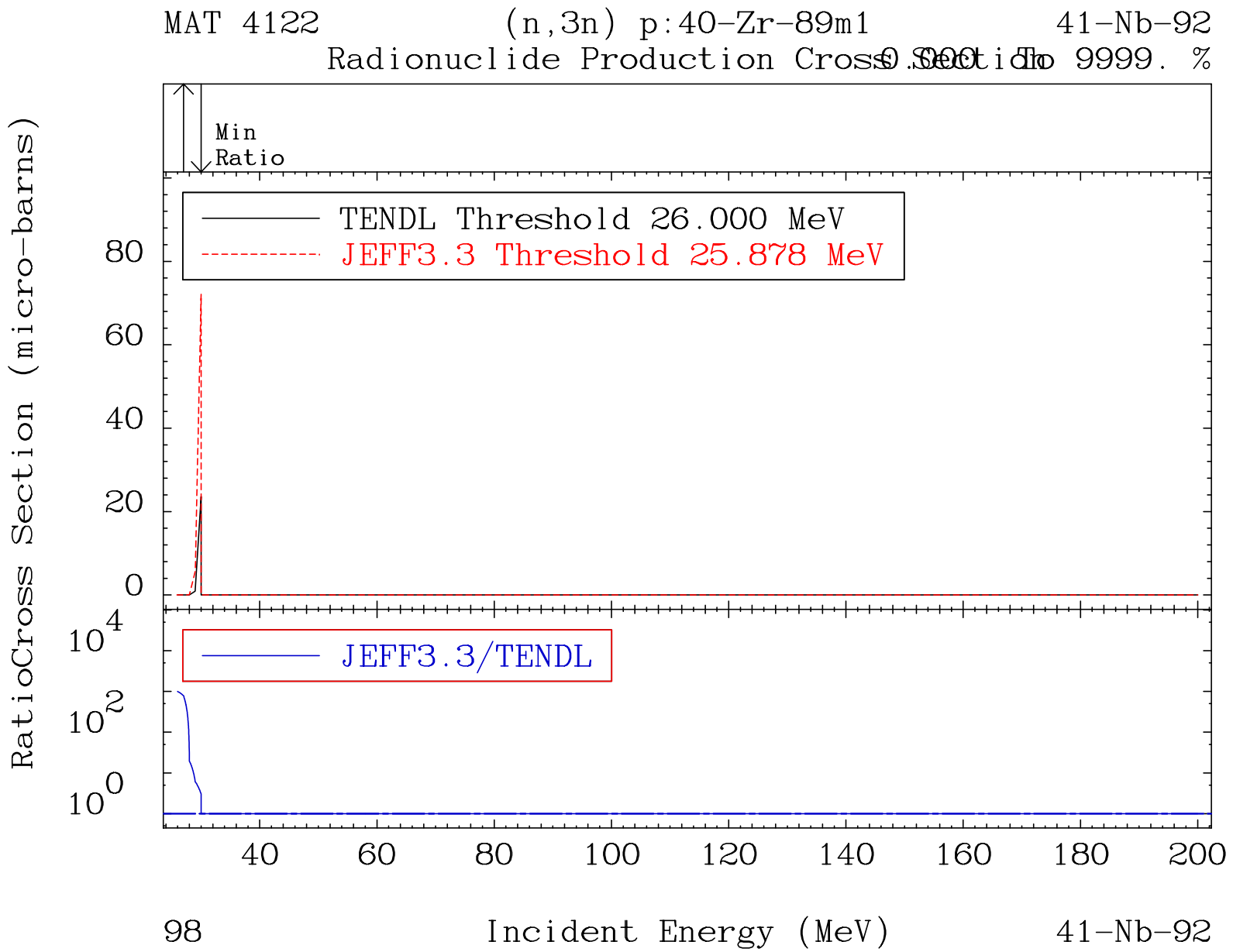

MAT 4122 (n,n') He-3:39-Y -89m1 41-Nb-92
Radionuclide Production Cross-Section To 110.7 %
Max Ratio
Min Ratio
TENDL Threshold 17.000 MeV
JEFF3.3 Threshold 17.000 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2.4
1.8
1.2
2
3
4
5
6
7
8
9
10^8
2
94
Incident Energy (eV)
41-Nb-92

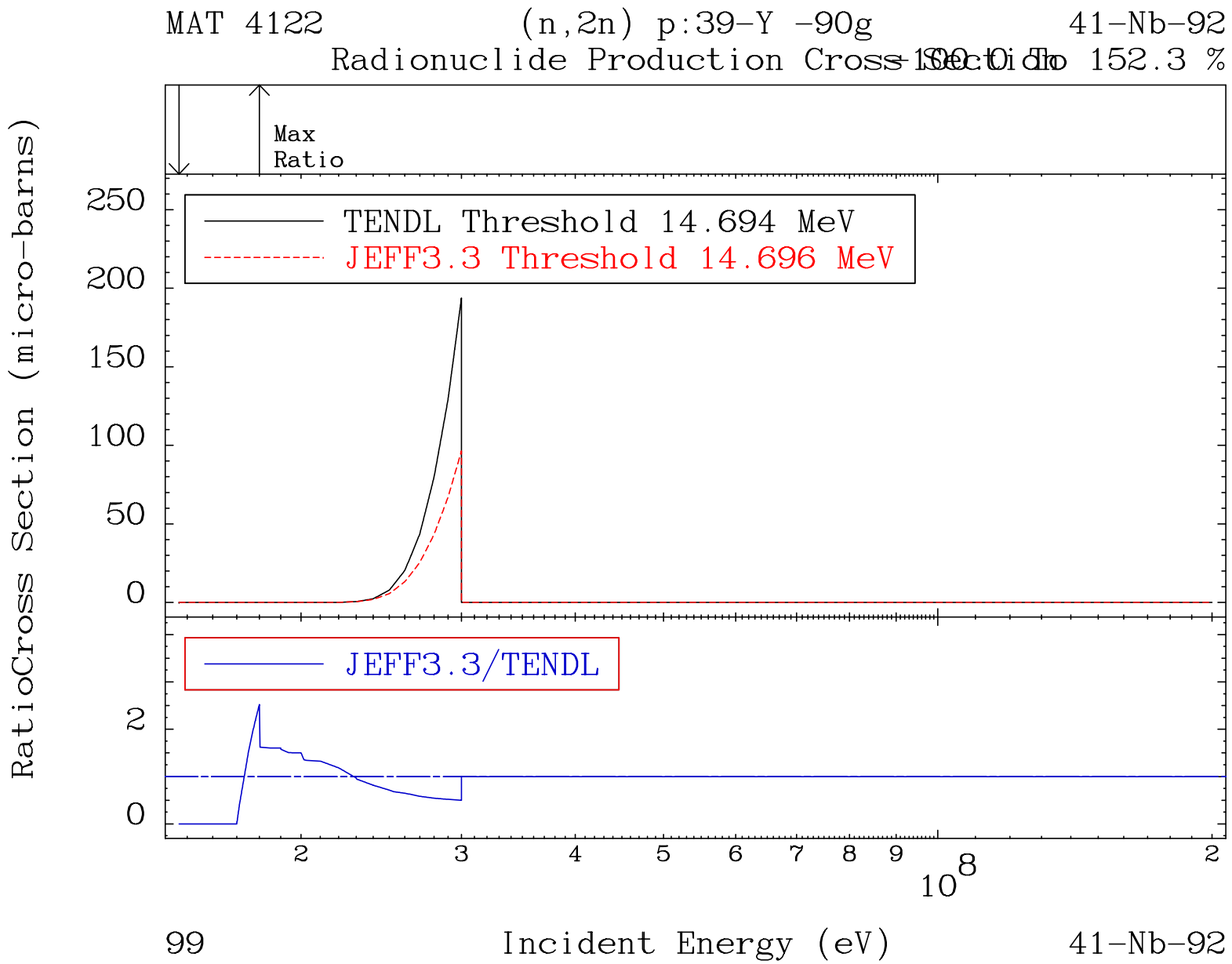

MAT 4122
(n,2n) p:40-Zr-90g
41-Nb-92
Radionuclide Production Cross Section To 916.5 %
Max Ratio
Min Ratio
TENDL Threshold 13.184 MeV
JEFF3.3 Threshold 13.184 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
4
10^1
4
10^0
2
3
4
5
6
7
8
9
10^8
2
95
Incident Energy (eV)
41-Nb-92

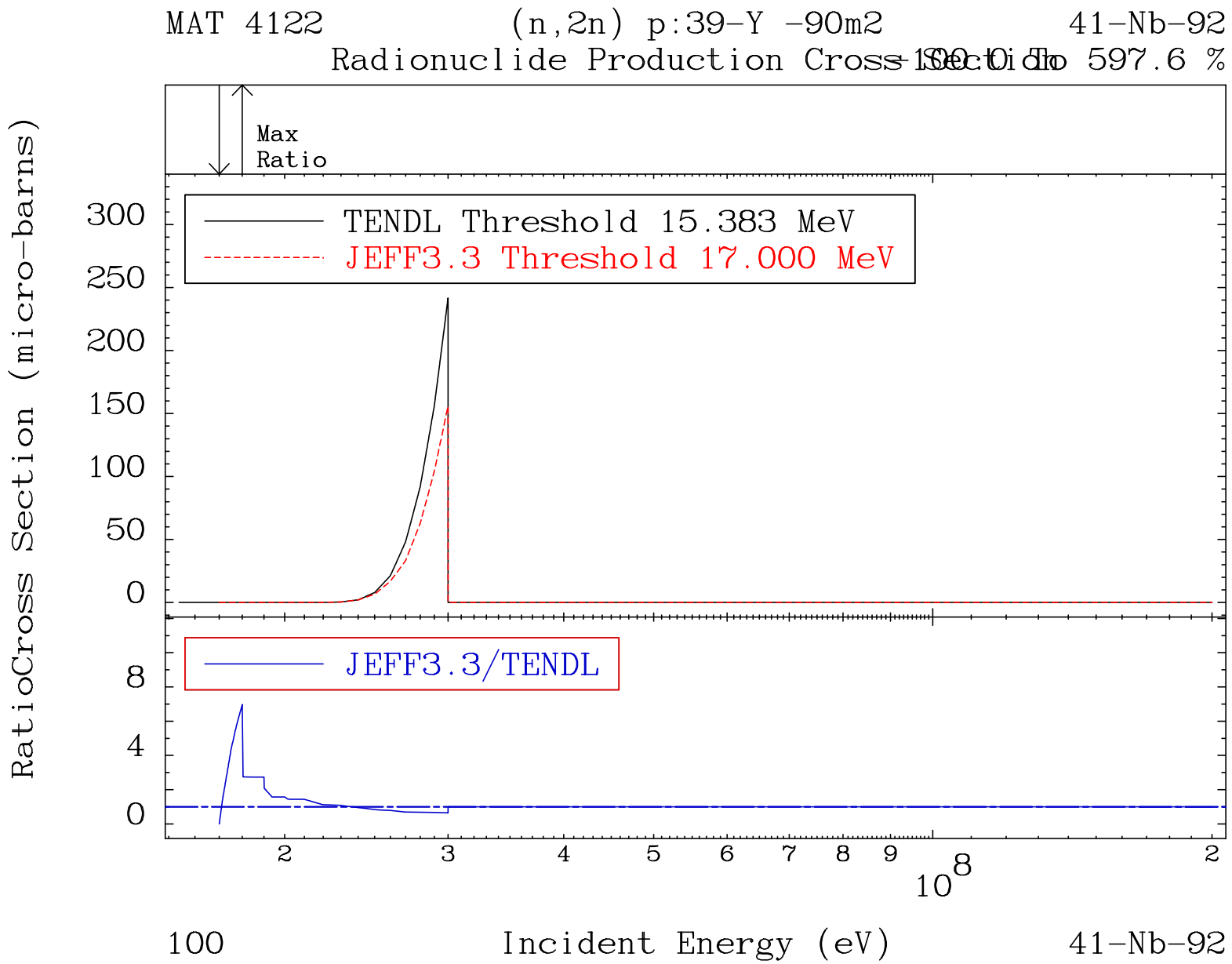


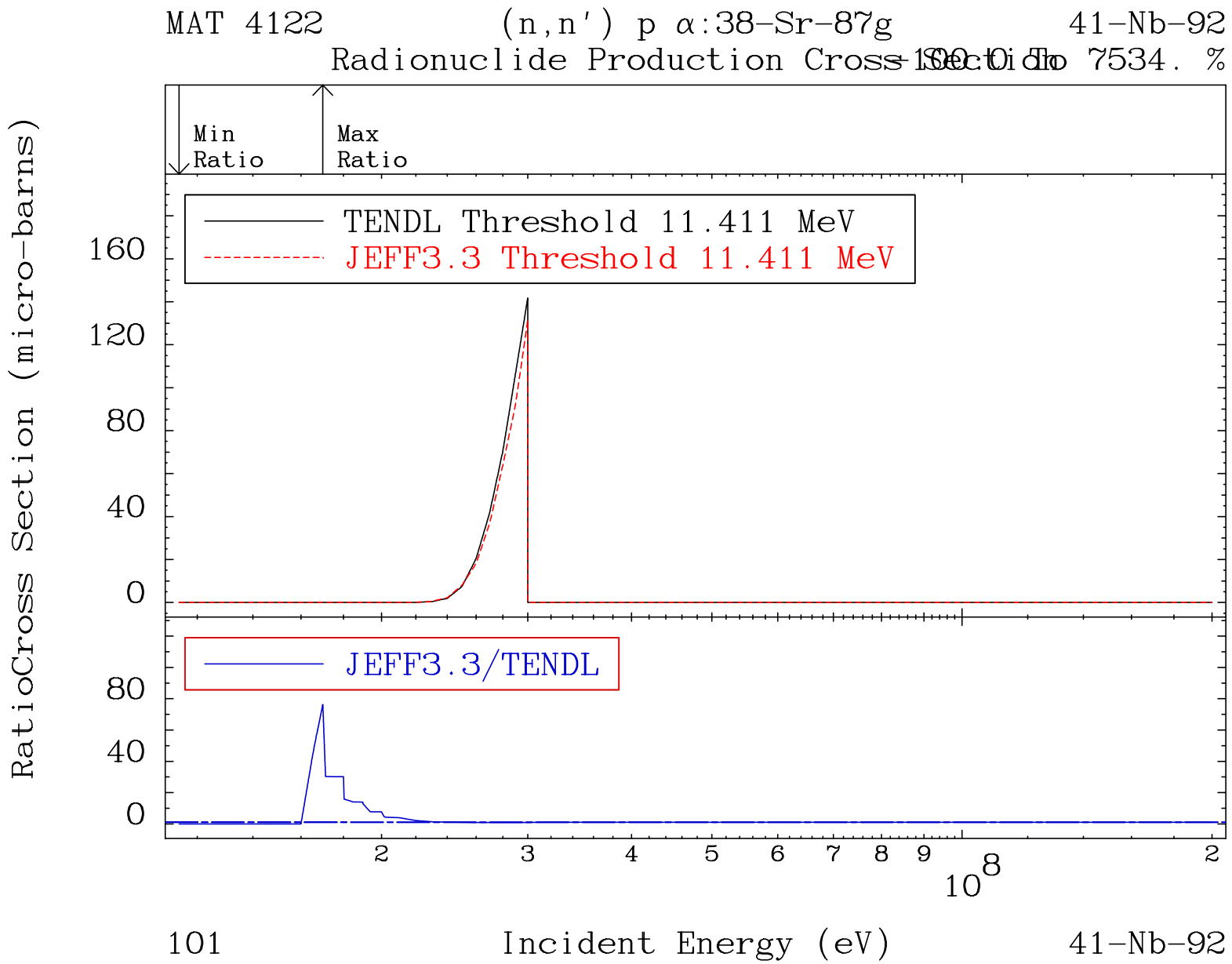
MAT 4122
(n,2n) p:40-Zr-90m3
41-Nb-92
Radionuclide Production Cross Section
-8.947 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 15.529 MeV
JEFF3.3 Threshold 15.529 MeV
JEFF3.3/TENDL
Cross Section (milli-barns)
Ratio
140
120
100
80
60
40
20
0
10^2
10^0
2
3
4
5
6
7
8
9
10^8
2
96
Incident Energy (eV)
41-Nb-92

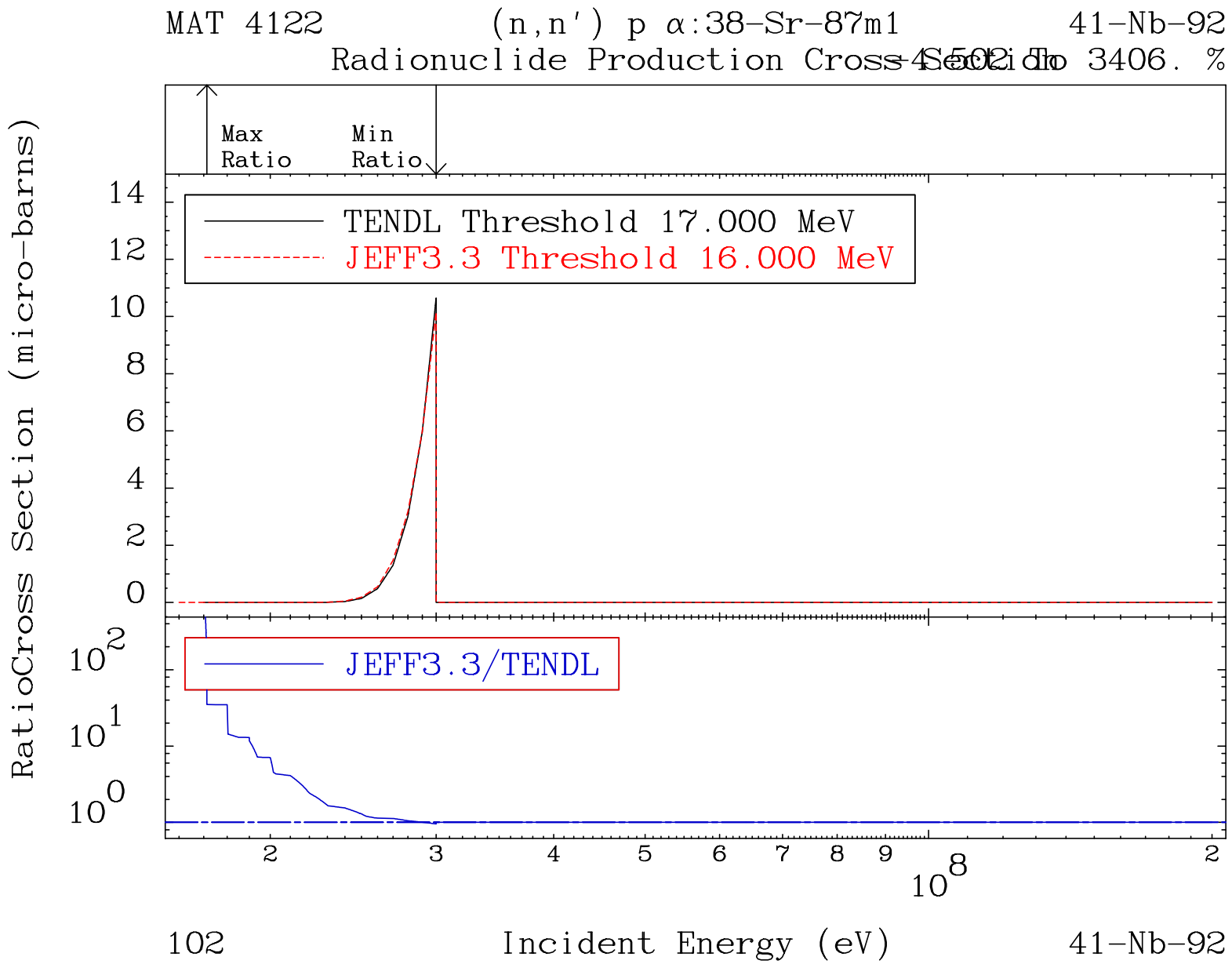

MAT 4122
(n,3n) p:40-Zr-89g
41-Nb-92
Radionuclide Production Cross Section
Max
Ratio
TENDL Threshold 25.281 MeV
JEFF3.3 Threshold 25.281 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
12
8
4
0
40
60
80
100
120
140
160
180
200
97
Incident Energy (MeV)
41-Nb-92

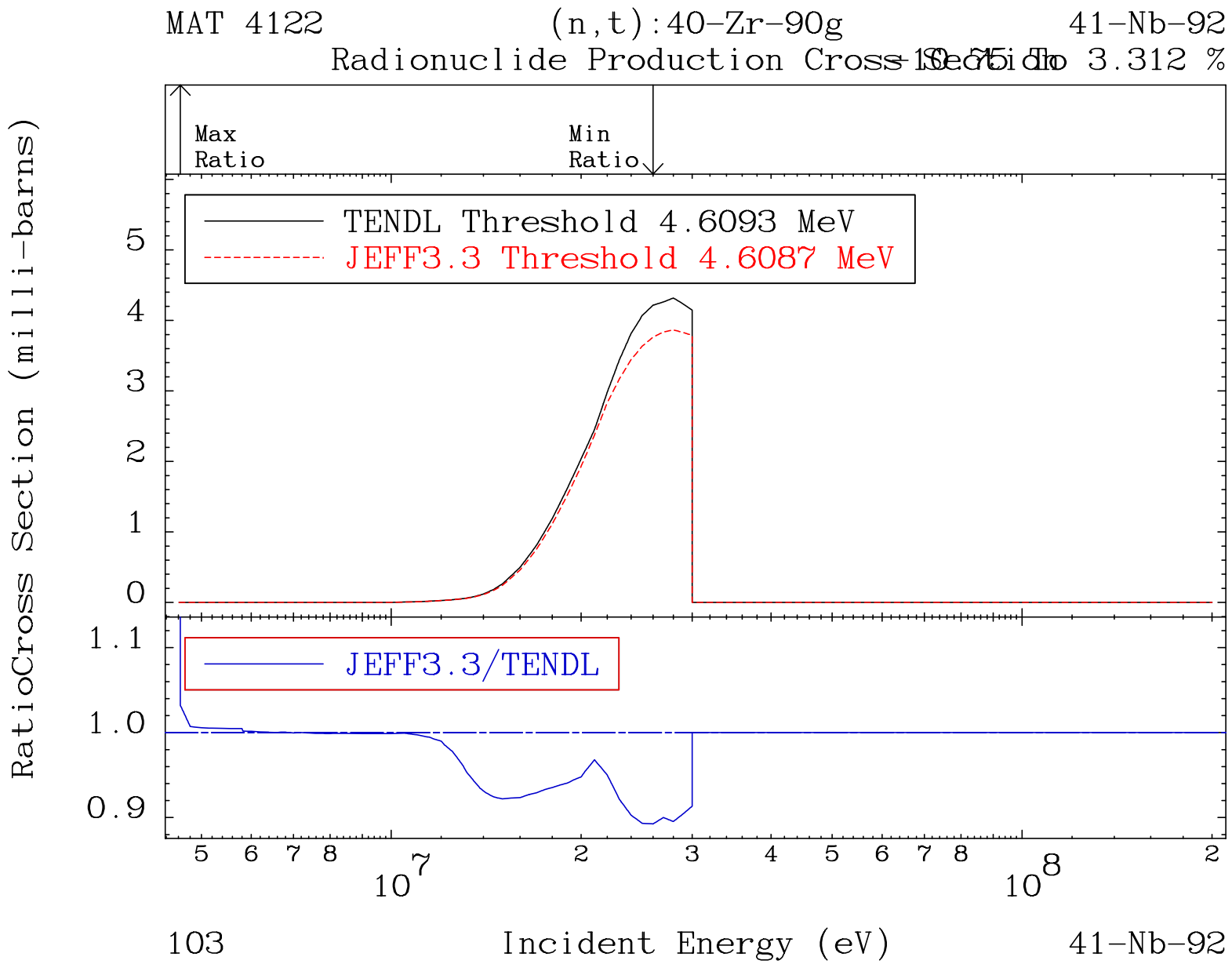

MAT 4122
(n,3n) p:40-Zr-89m1
41-Nb-92
Radionuclide Production Cross Section
0.000 To 9999. %
Min
Ratio
TENDL Threshold 26.000 MeV
JEFF3.3 Threshold 25.878 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
80
60
40
20
0
10^4
10^2
10^0
40
60
80
100
120
140
160
180
200
98
Incident Energy (MeV)
41-Nb-92

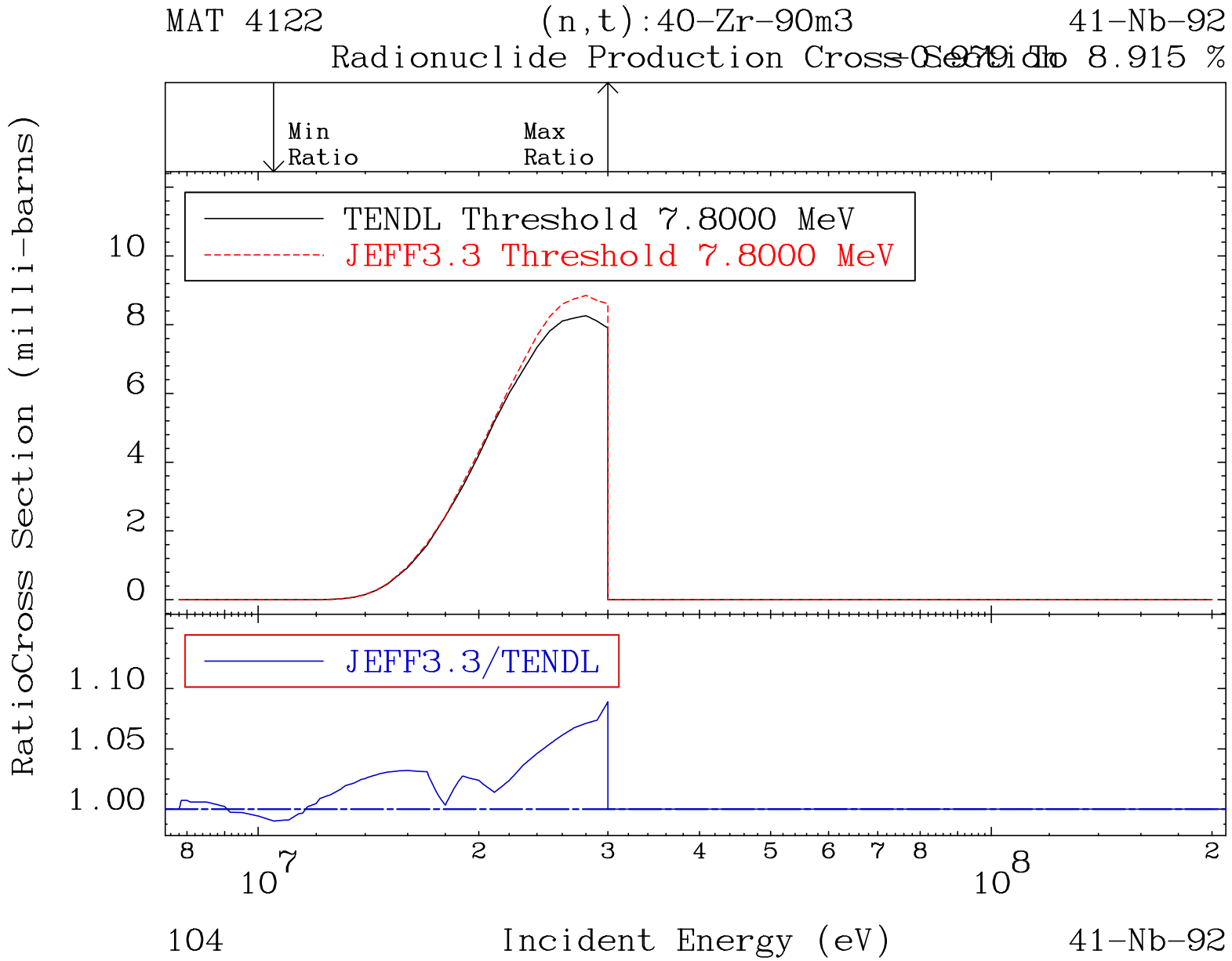

MAT 4122
(n,2n) p:39-Y -90g
41-Nb-92
Radionuclide Production Cross Section To 152.3 %
Max
Ratio
250
200
150
100
50
0
TENDL Threshold 14.694 MeV
JEFF3.3 Threshold 14.696 MeV
JEFF3.3/TENDL
2
0
2
3
4
5
6
7
8
9
10^8
2
RatioCross Section (micro-barns)
99
Incident Energy (eV)
41-Nb-92

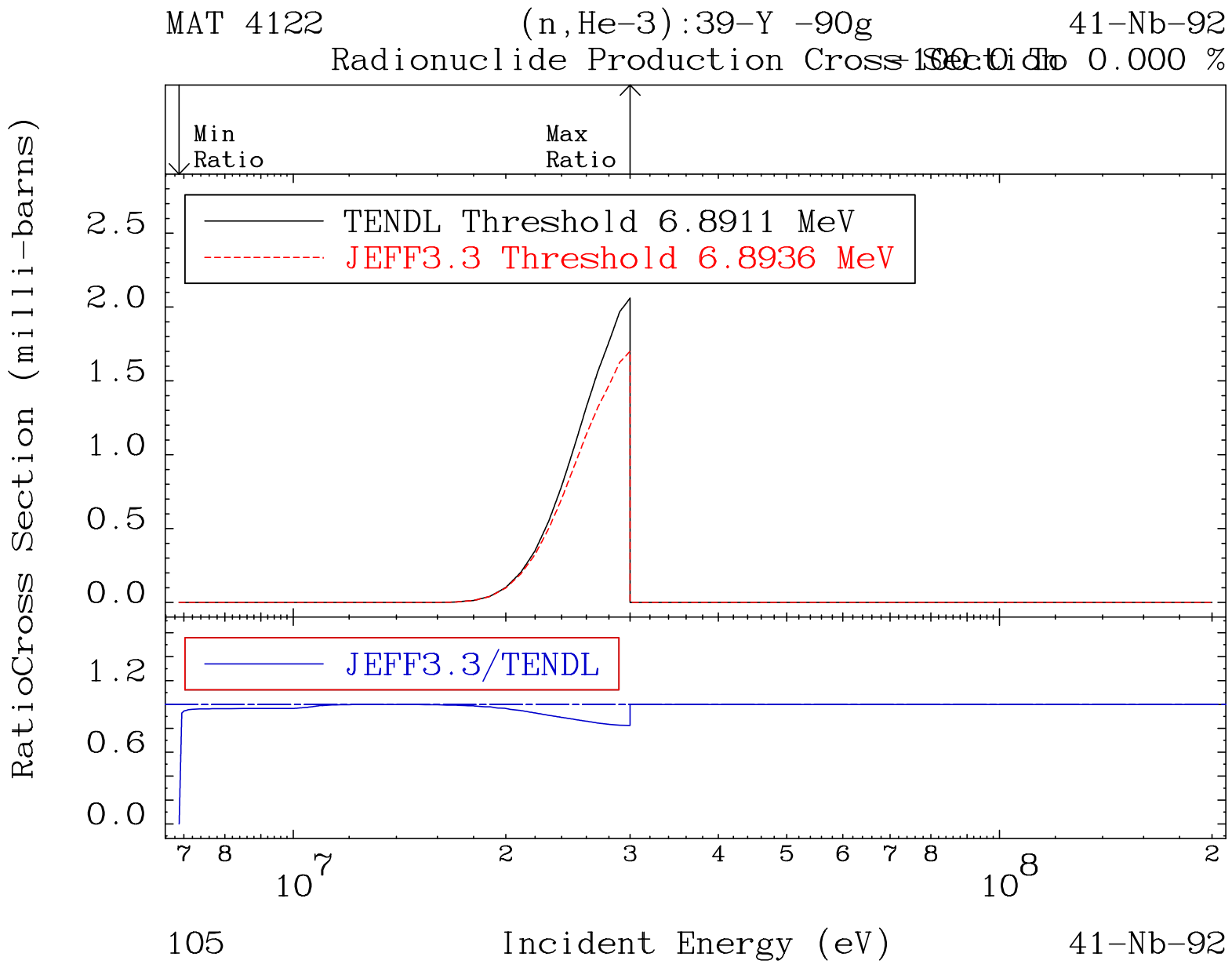

MAT 4122
(n,2n) p:39-Y -90m2
41-Nb-92
Radionuclide Production Cross Section To 597.6 %
Max
Ratio
TENDL Threshold 15.383 MeV
JEFF3.3 Threshold 17.000 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
300
250
200
150
100
50
0
8
4
0
2
3
4
5
6
7
8
9
10^8
2
100
Incident Energy (eV)
41-Nb-92

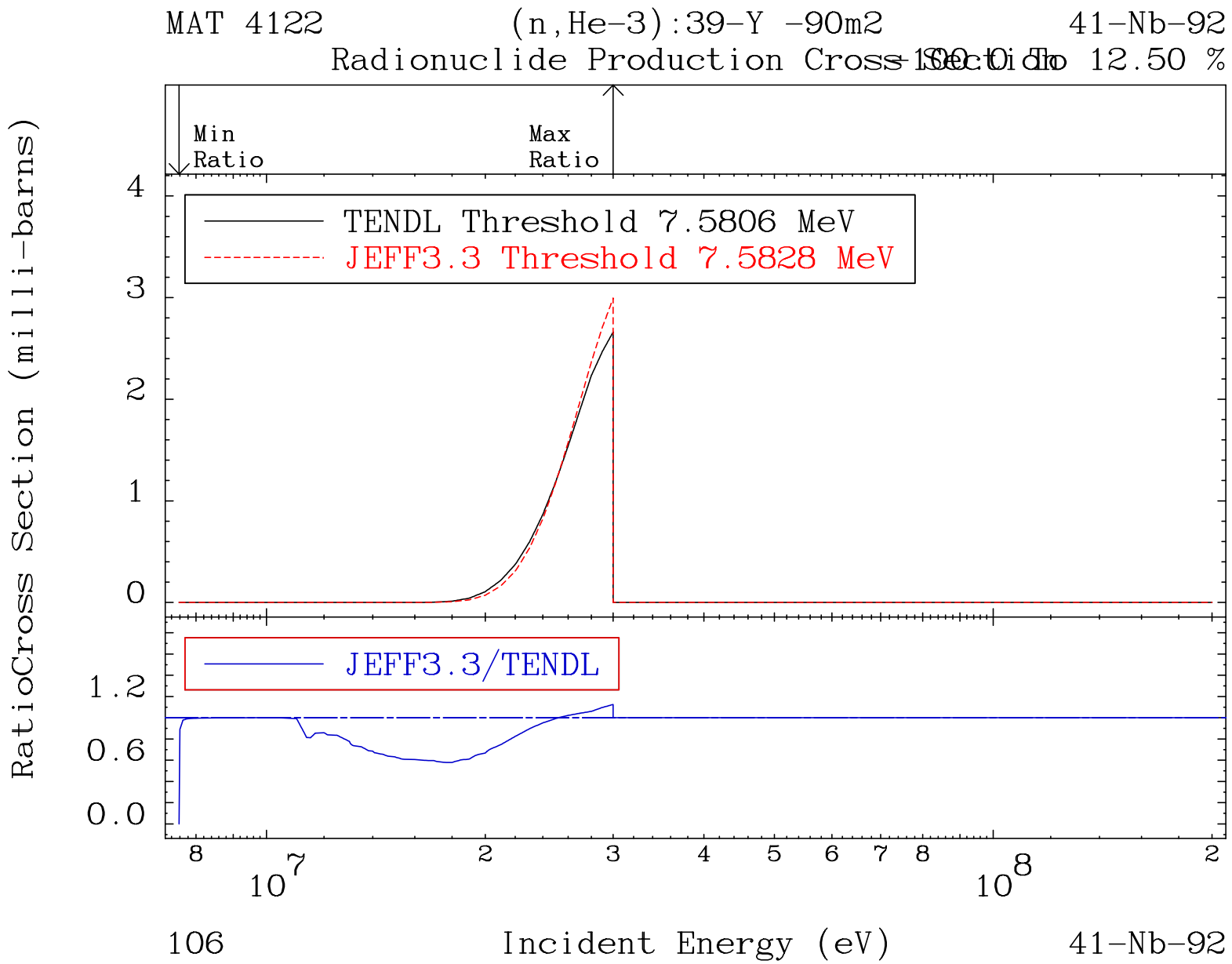

MAT 4122
(n,n') p α:38-Sr-87g
41-Nb-92
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 11.411 MeV
JEFF3.3 Threshold 11.411 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
160
120
80
40
0
80
40
0
2
3
4
5
6
7
8
9
2
10^8
101
Incident Energy (eV)
41-Nb-92

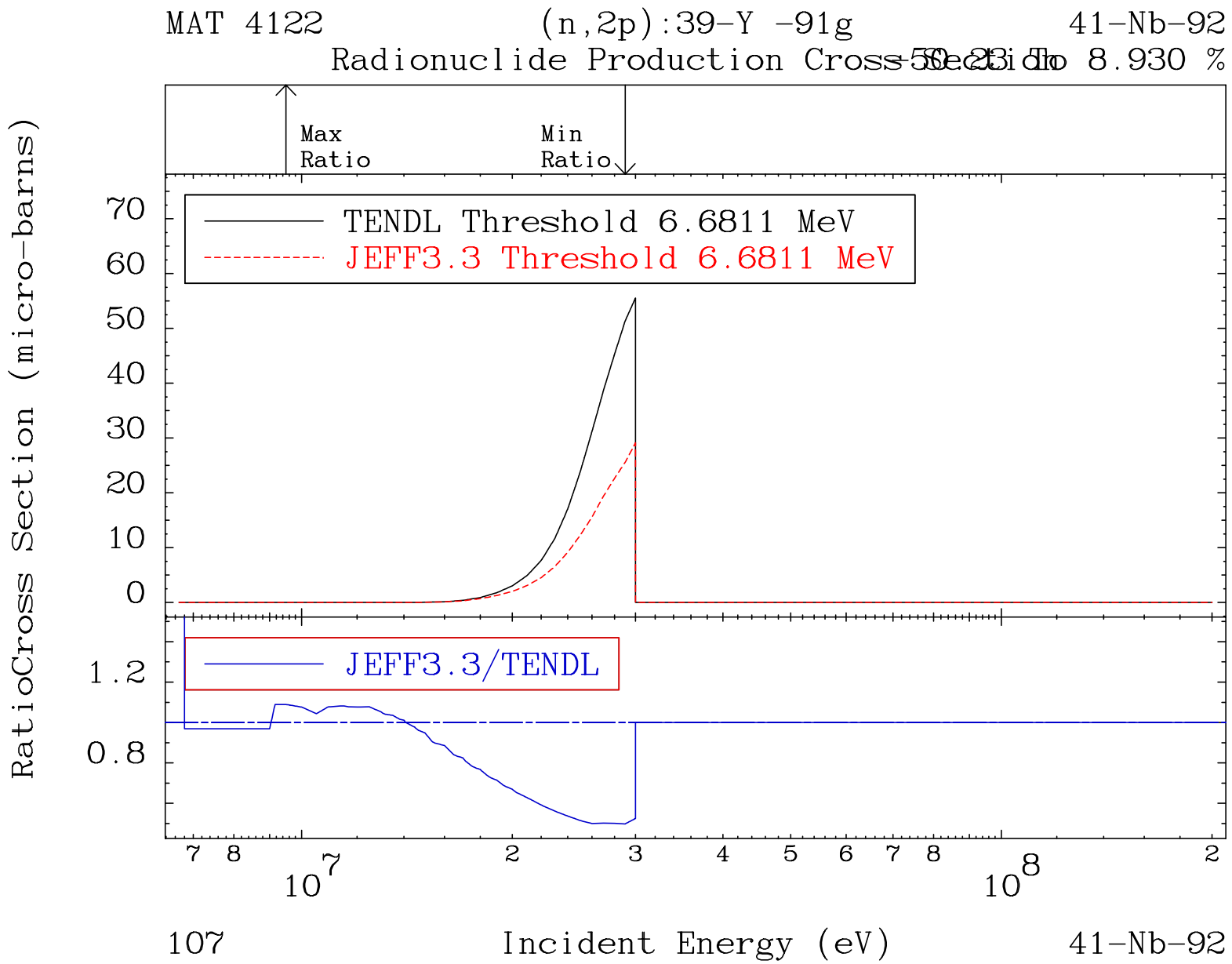

MAT 4122 (n,n') p α:38-Sr-87m1 41-Nb-92
Radionuclide Production Cross-Section To 3406. %
Max Ratio
Min Ratio
TENDL Threshold 17.000 MeV
JEFF3.3 Threshold 16.000 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
Incident Energy (eV)
102
41-Nb-92

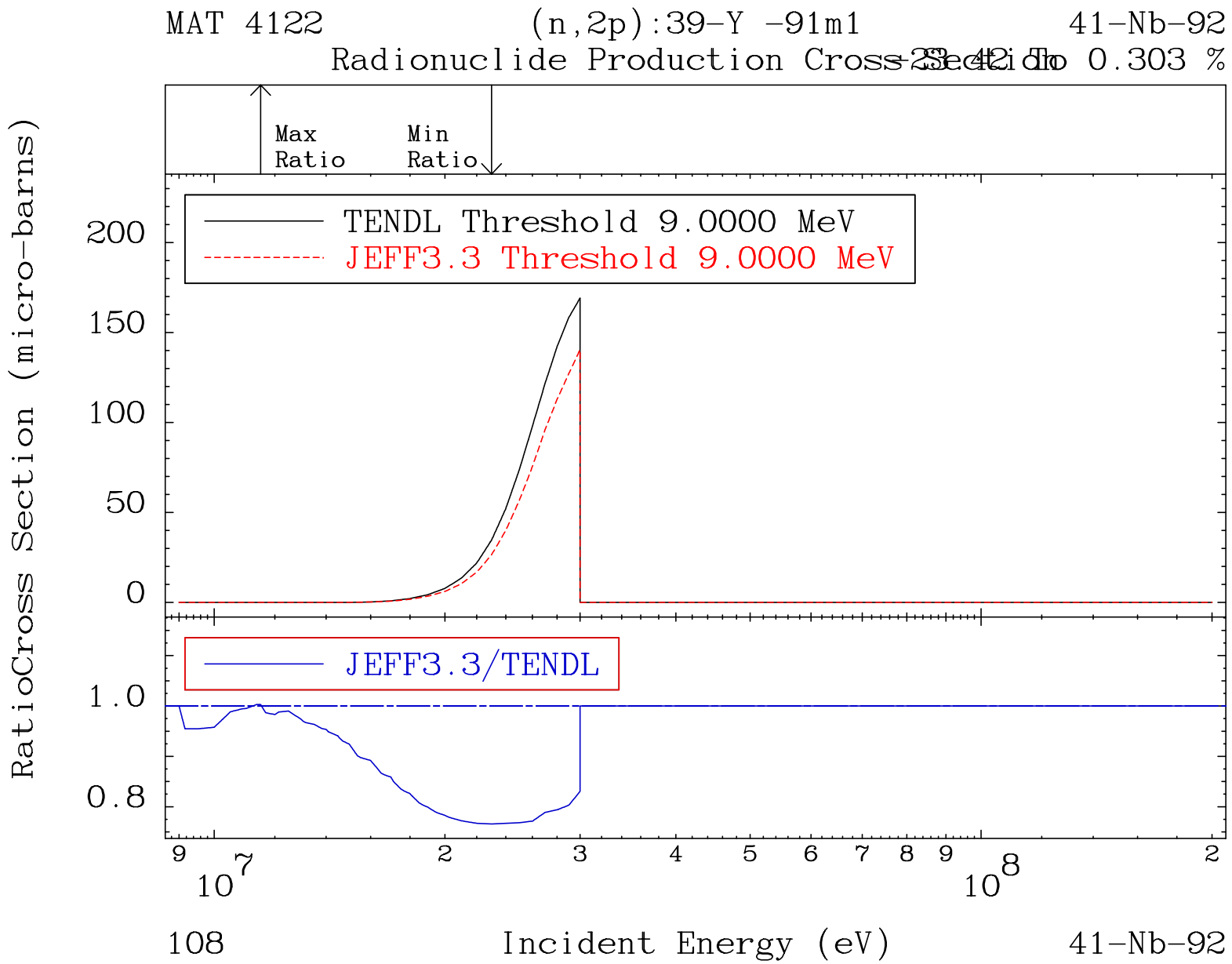

MAT 4122
(n,t):40-Zr-90g
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 4.6093 MeV
JEFF3.3 Threshold 4.6087 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
103
41-Nb-92

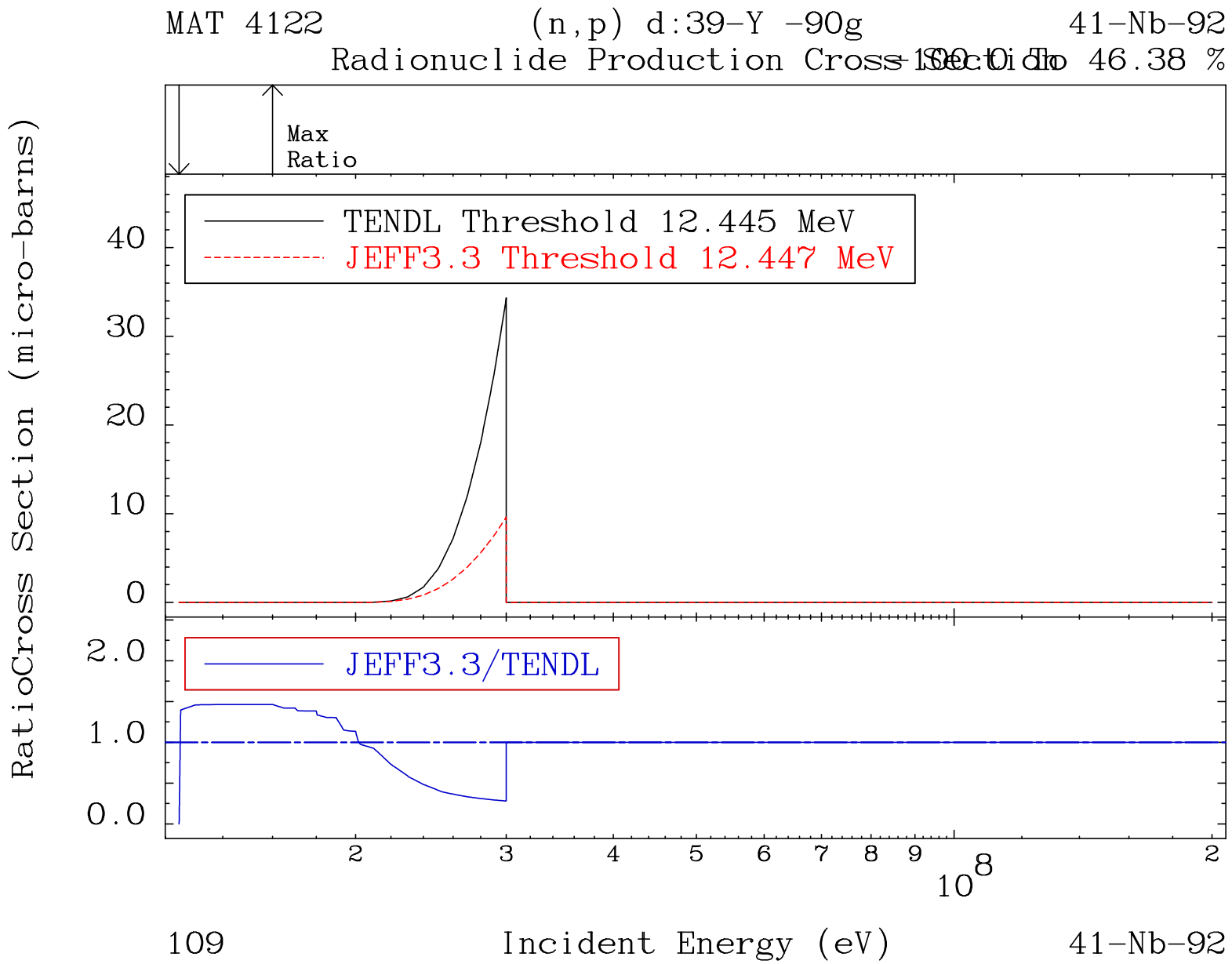

MAT 4122
(n,t):40-Zr-90m3
41-Nb-92
Radionuclide Production Cross-Section
Min Ratio
Max Ratio
TENDL Threshold 7.8000 MeV
JEFF3.3 Threshold 7.8000 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
104
41-Nb-92

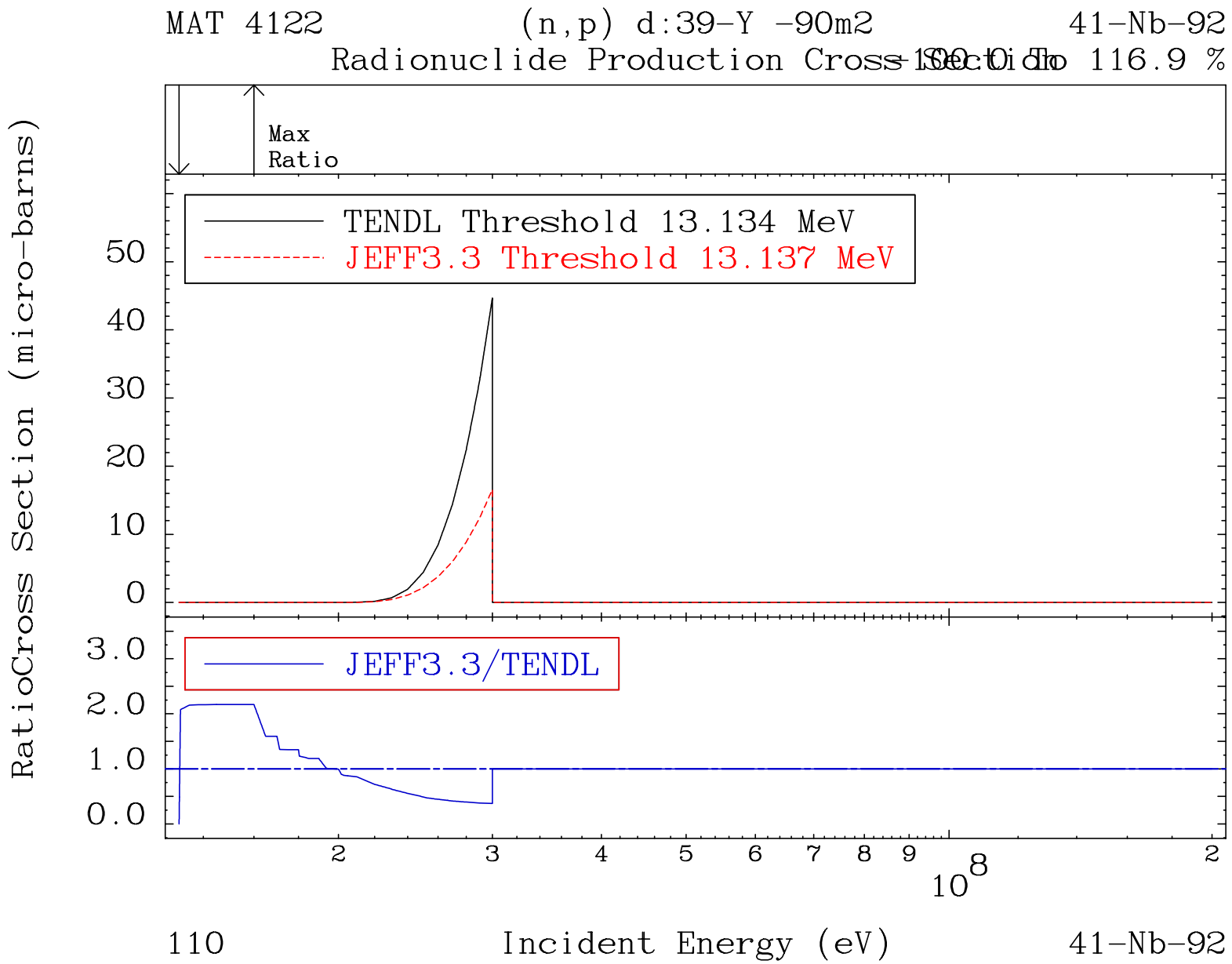

MAT 4122
(n,He-3):39-Y -90g
41-Nb-92
Radionuclide Production Cross Section
Uncertainty 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 6.8911 MeV
JEFF3.3 Threshold 6.8936 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
2.5
2.0
1.5
1.0
0.5
0.0
1.2
0.6
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
105
Incident Energy (eV)
41-Nb-92

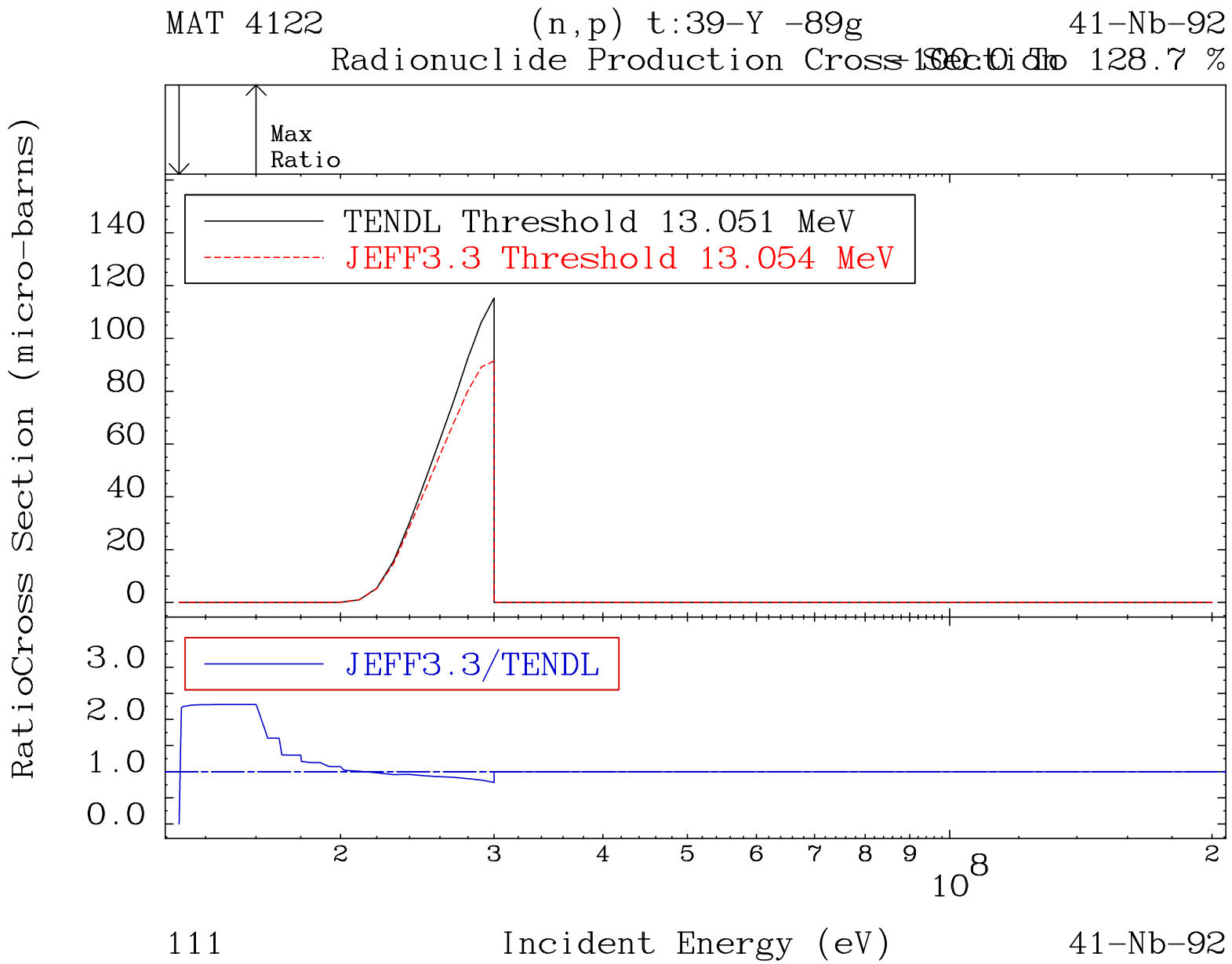

MAT 4122
(n,He-3):39-Y -90m2
41-Nb-92
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 7.5806 MeV
JEFF3.3 Threshold 7.5828 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
106
41-Nb-92

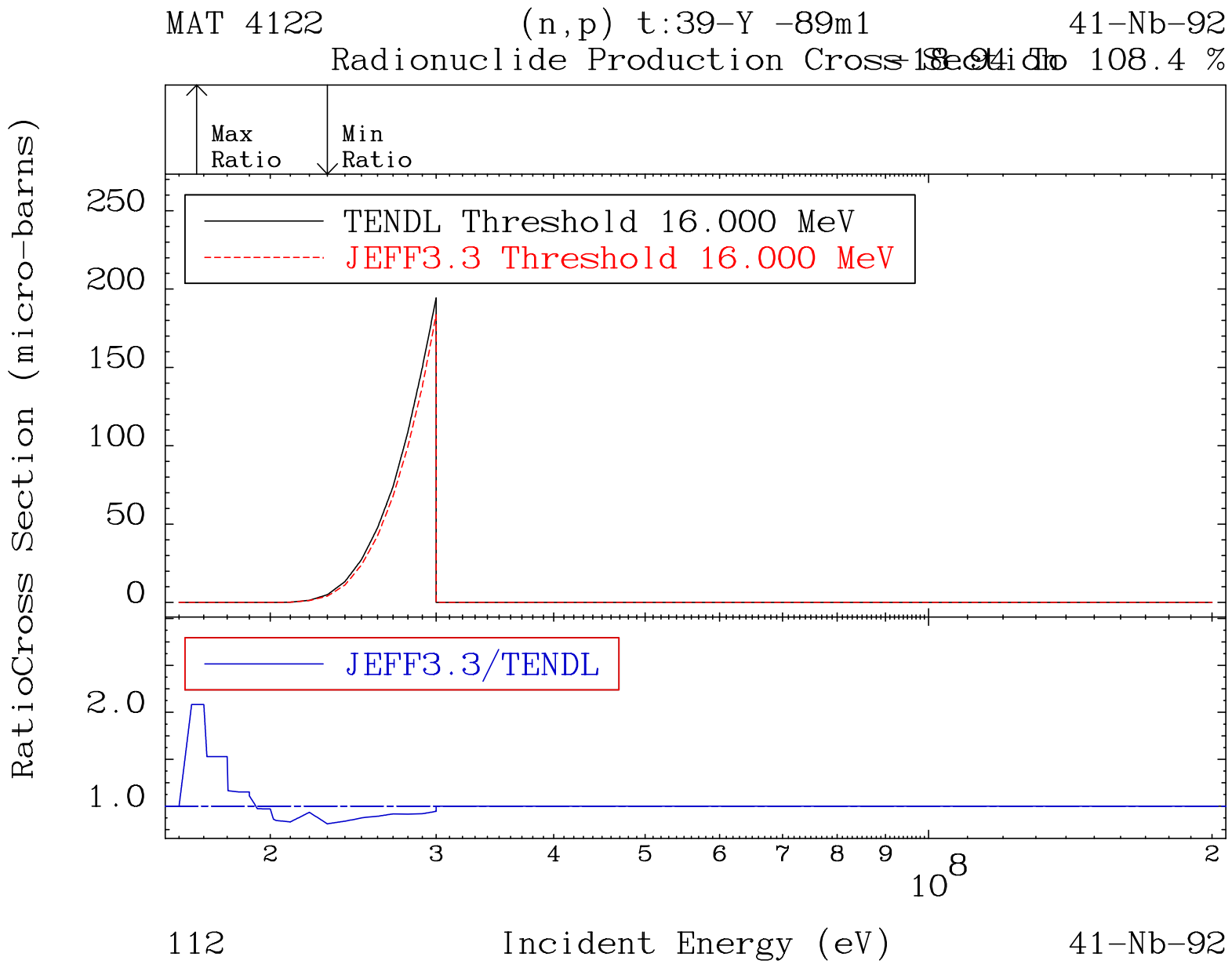

MAT 4122
(n,2p):39-Y -91g
41-Nb-92
Radionuclide Production Cross-Section To 8.930 %
Max Ratio
Min Ratio
TENDL Threshold 6.6811 MeV
JEFF3.3 Threshold 6.6811 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
70
60
50
40
30
20
10
0
1.2
0.8
7 8
10^7
2
3
4
5
6
7
8
10^8
2
107
Incident Energy (eV)
41-Nb-92

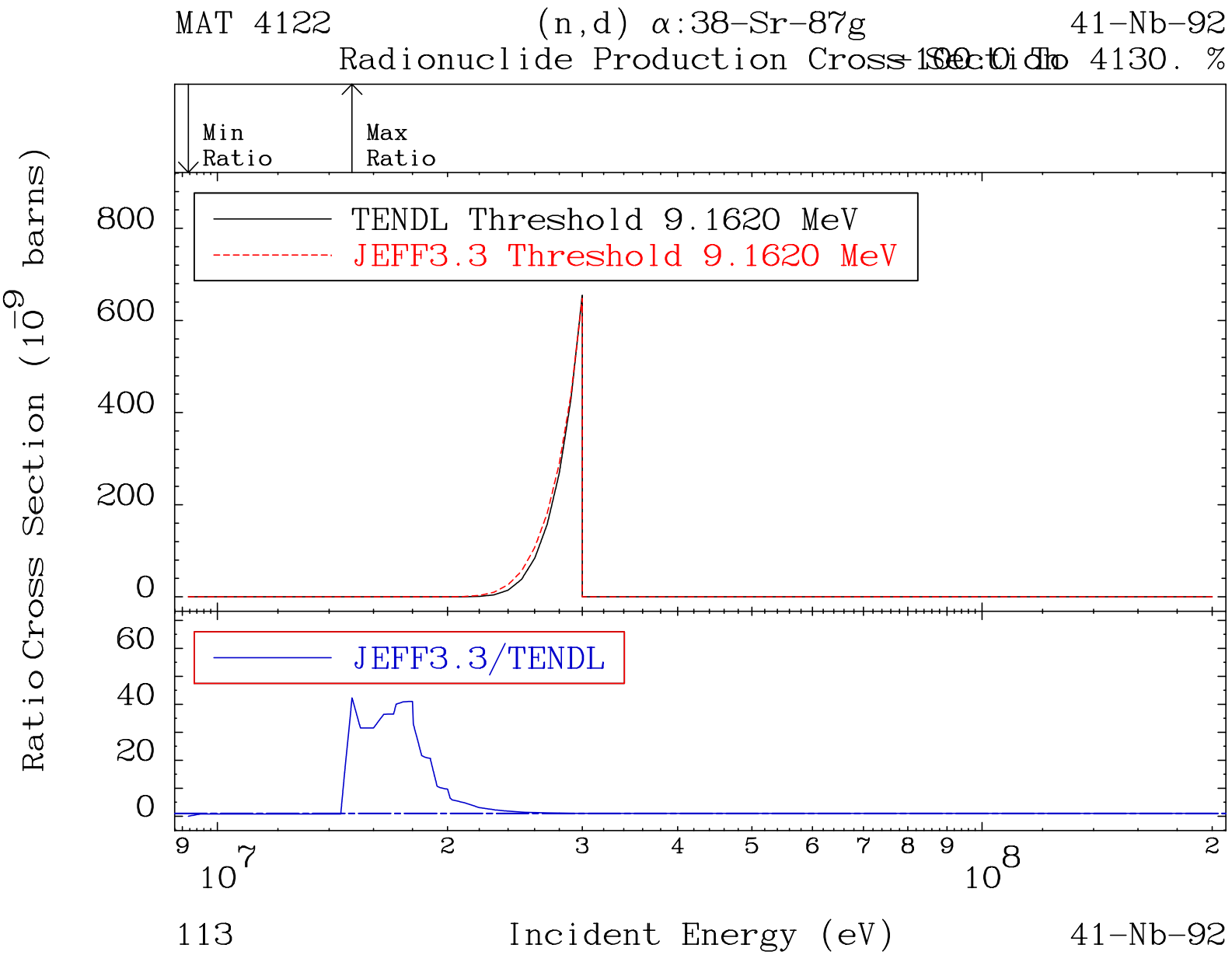

MAT 4122
(n,2p):39-Y -91m1
41-Nb-92
Radionuclide Production Cross Section
Max Ratio
Min Ratio
TENDL Threshold 9.0000 MeV
JEFF3.3 Threshold 9.0000 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
200
150
100
50
0
1.0
0.8
9
10^7
2
3
4
5
6
7
8
9
10^8
2
108
Incident Energy (eV)
41-Nb-92

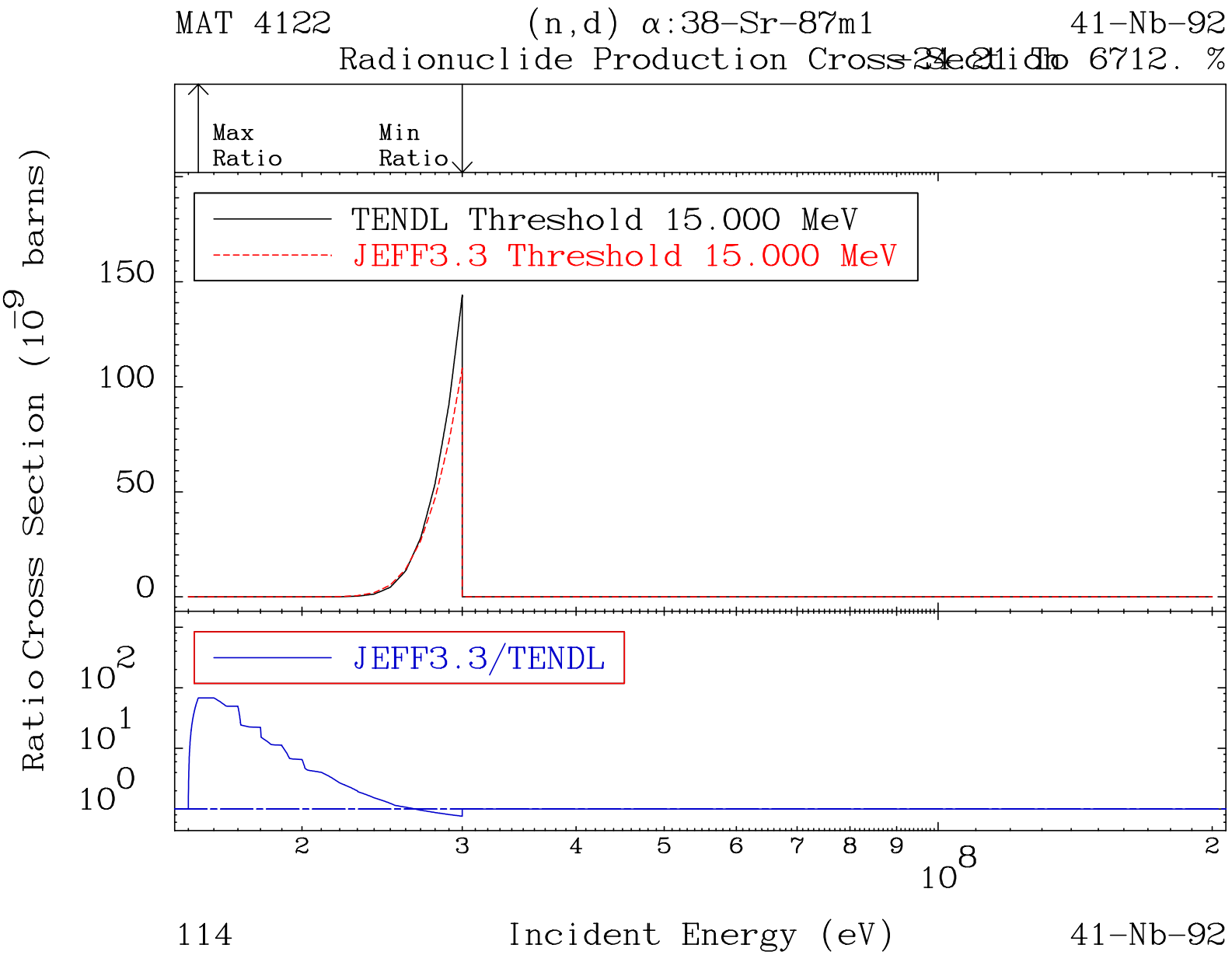

MAT 4122
(n,p) d:39-Y -90g
41-Nb-92
Radionuclide Production Cross Section To 46.38 %
Max
Ratio
TENDL Threshold 12.445 MeV
JEFF3.3 Threshold 12.447 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
40
30
20
10
0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
2
10^8
109
Incident Energy (eV)
41-Nb-92


MAT 4122
(n,p) d:39-Y -90m2
41-Nb-92
Radionuclide Production Cross Section To 116.9 %
Max
Ratio
TENDL Threshold 13.134 MeV
JEFF3.3 Threshold 13.137 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
50
40
30
20
10
0
3.0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
2
10^8
110
Incident Energy (eV)
41-Nb-92


MAT 4122
(n,p) t:39-Y -89g
41-Nb-92
Radionuclide Production Cross Section To 128.7 %
Max
Ratio
TENDL Threshold 13.051 MeV
JEFF3.3 Threshold 13.054 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
140
120
100
80
60
40
20
0
3.0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
2
10^8
111
Incident Energy (eV)
41-Nb-92


MAT 4122
(n,p) t:39-Y -89m1
41-Nb-92
Radionuclide Production Cross Section
Max Ratio = 108.4 %
Min Ratio
TENDL Threshold 16.000 MeV
JEFF3.3 Threshold 16.000 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
250
200
150
100
50
0
2.0
1.0
2
3
4
5
6
7
8
9
2
10^8
112
Incident Energy (eV)
41-Nb-92


MAT 4122
(n,d) α:38-Sr-87g
41-Nb-92
Radionuclide Production Cross Section
Min Ratio
Max Ratio
TENDL Threshold 9.1620 MeV
JEFF3.3 Threshold 9.1620 MeV
JEFF3.3/TENDL
Ratio Cross Section (10^-9 barns)
Incident Energy (eV)
113
41-Nb-92


MAT 4122
(n,d) α:38-Sr-87m1
41-Nb-92
Radionuclide Production Cross Section To 6712. %
Max Ratio
Min Ratio
TENDL Threshold 15.000 MeV
JEFF3.3 Threshold 15.000 MeV
150
100
50
0
Ratio Cross Section (10^-9 barns)
JEFF3.3/TENDL
10^2
10^1
10^0
2
3
4
5
6
7
8
9
10^8
2
114
Incident Energy (eV)
41-Nb-92