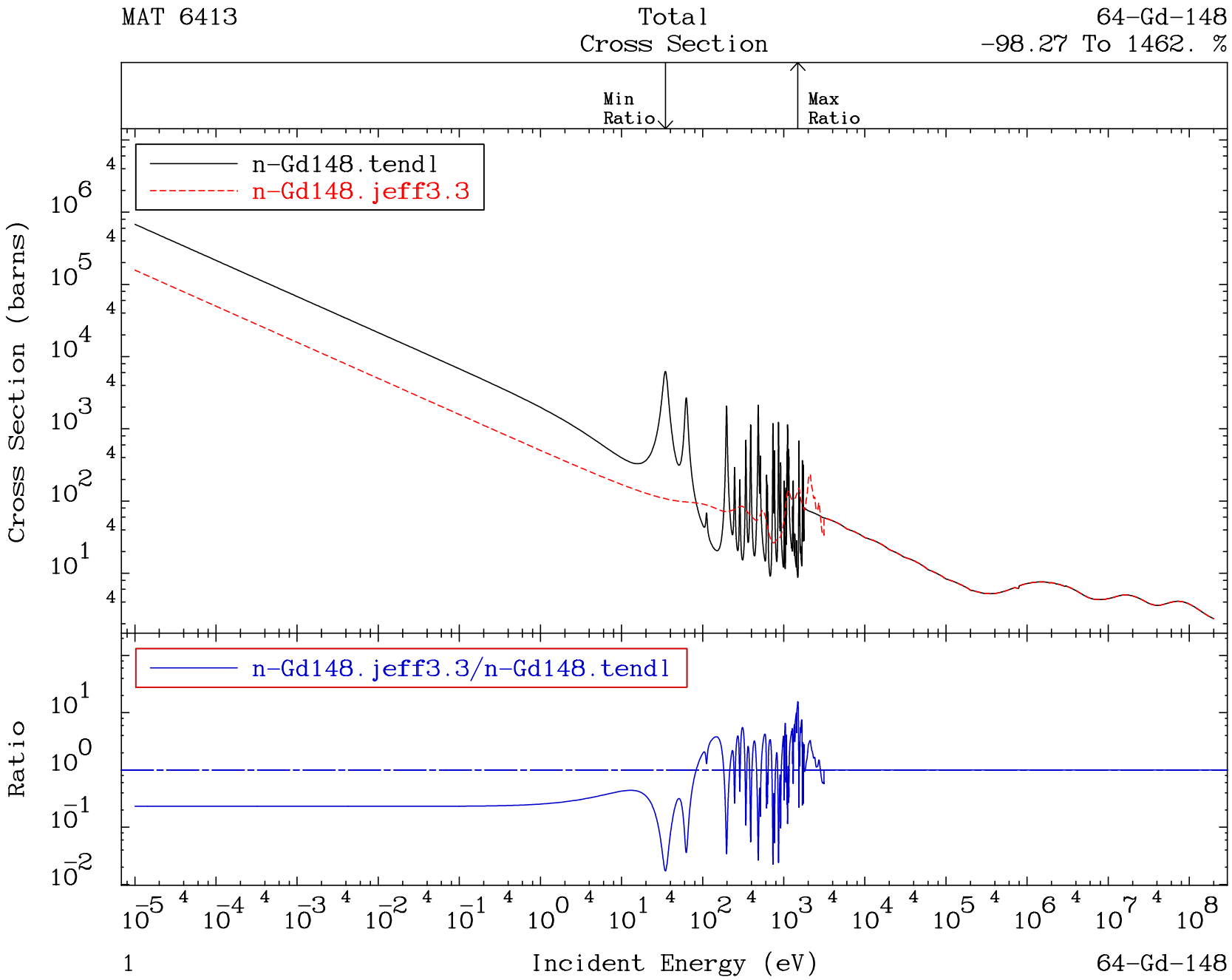
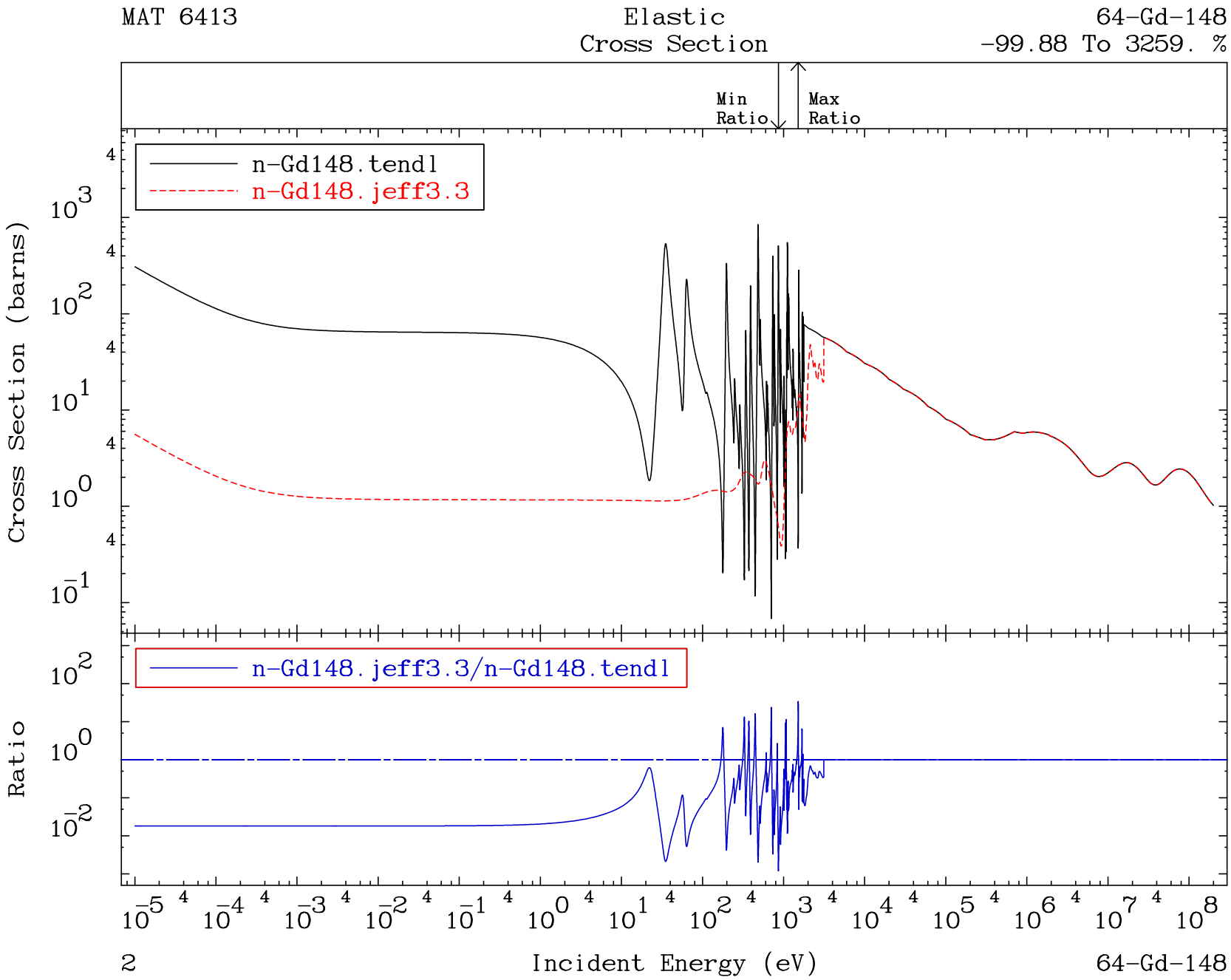
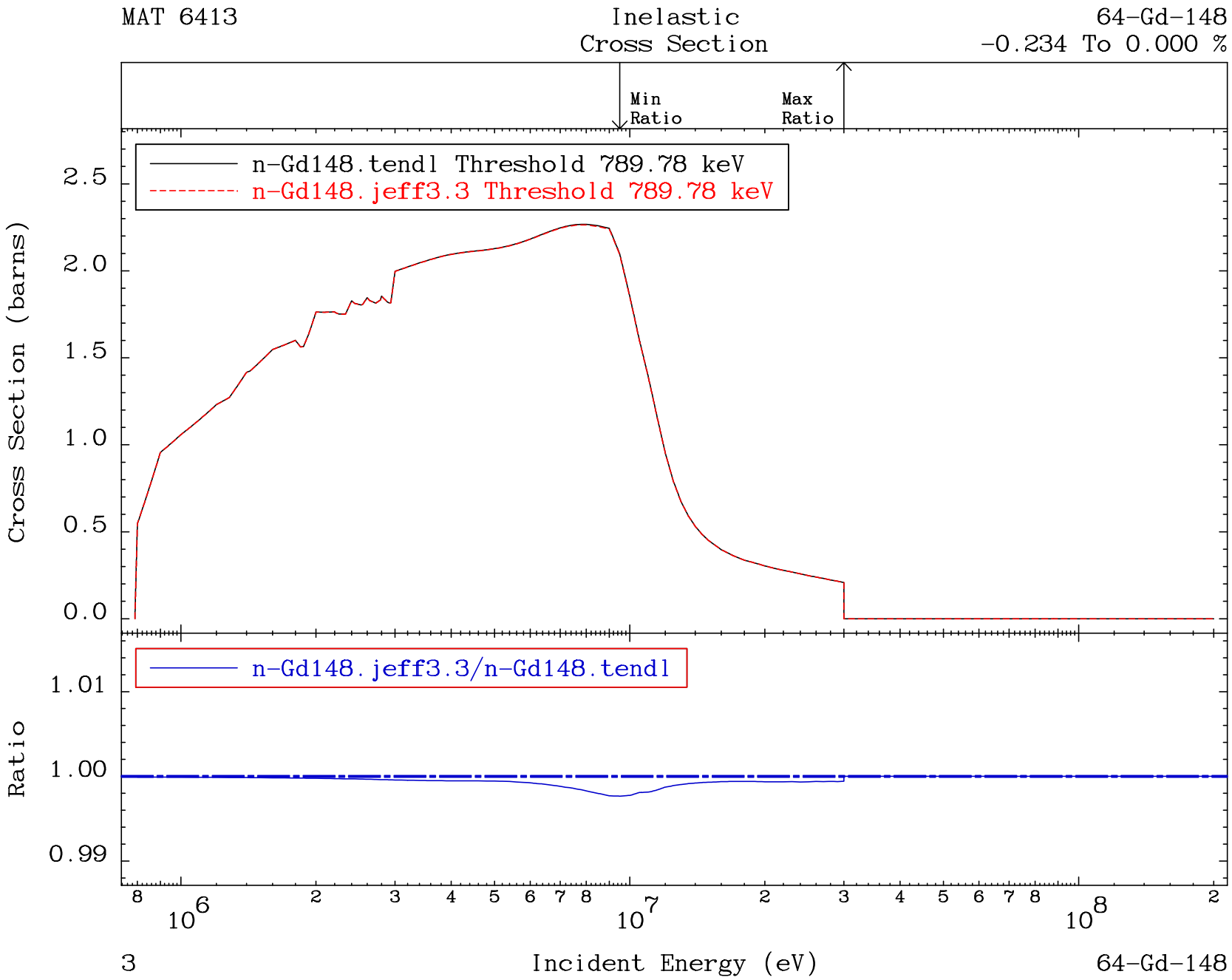
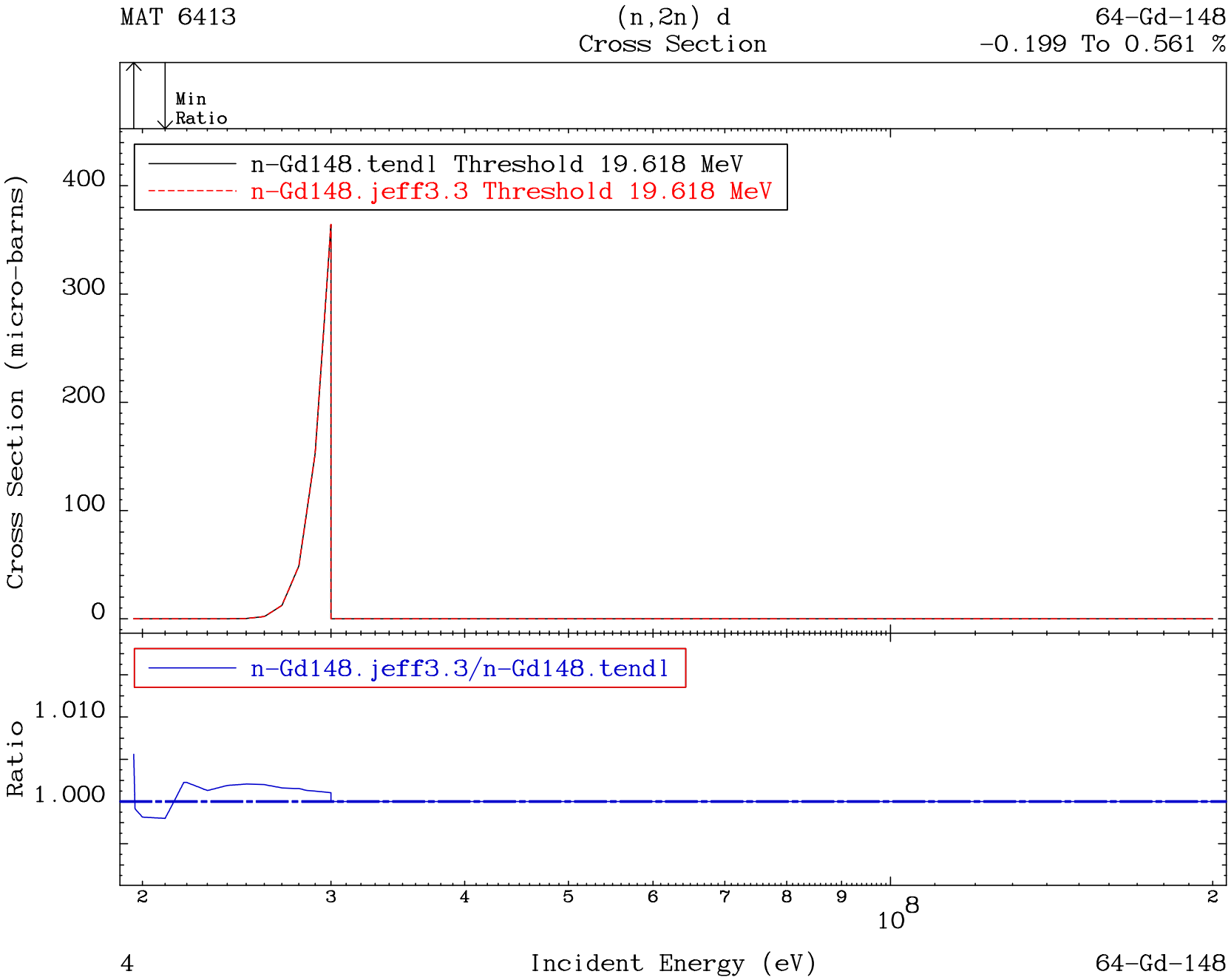
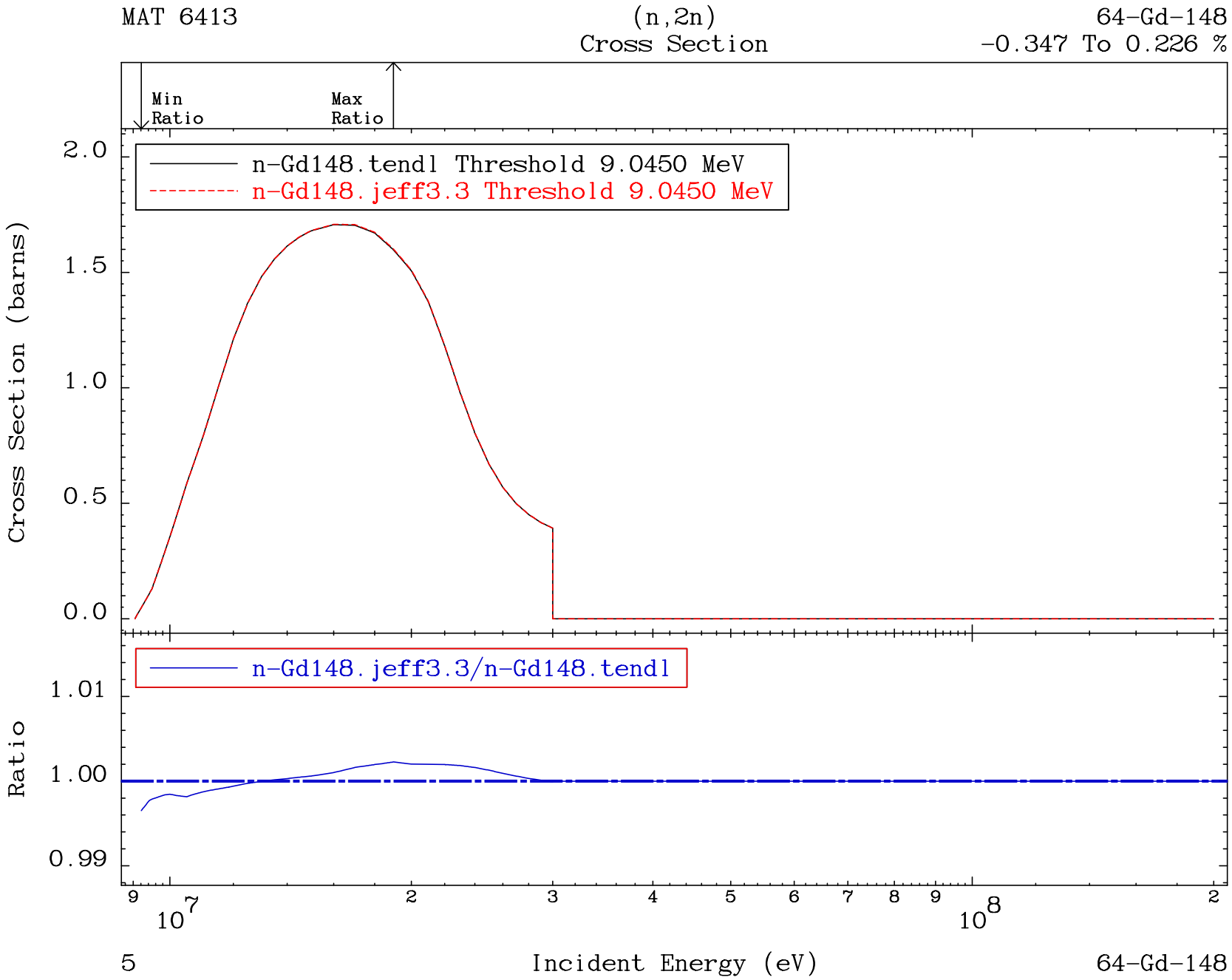
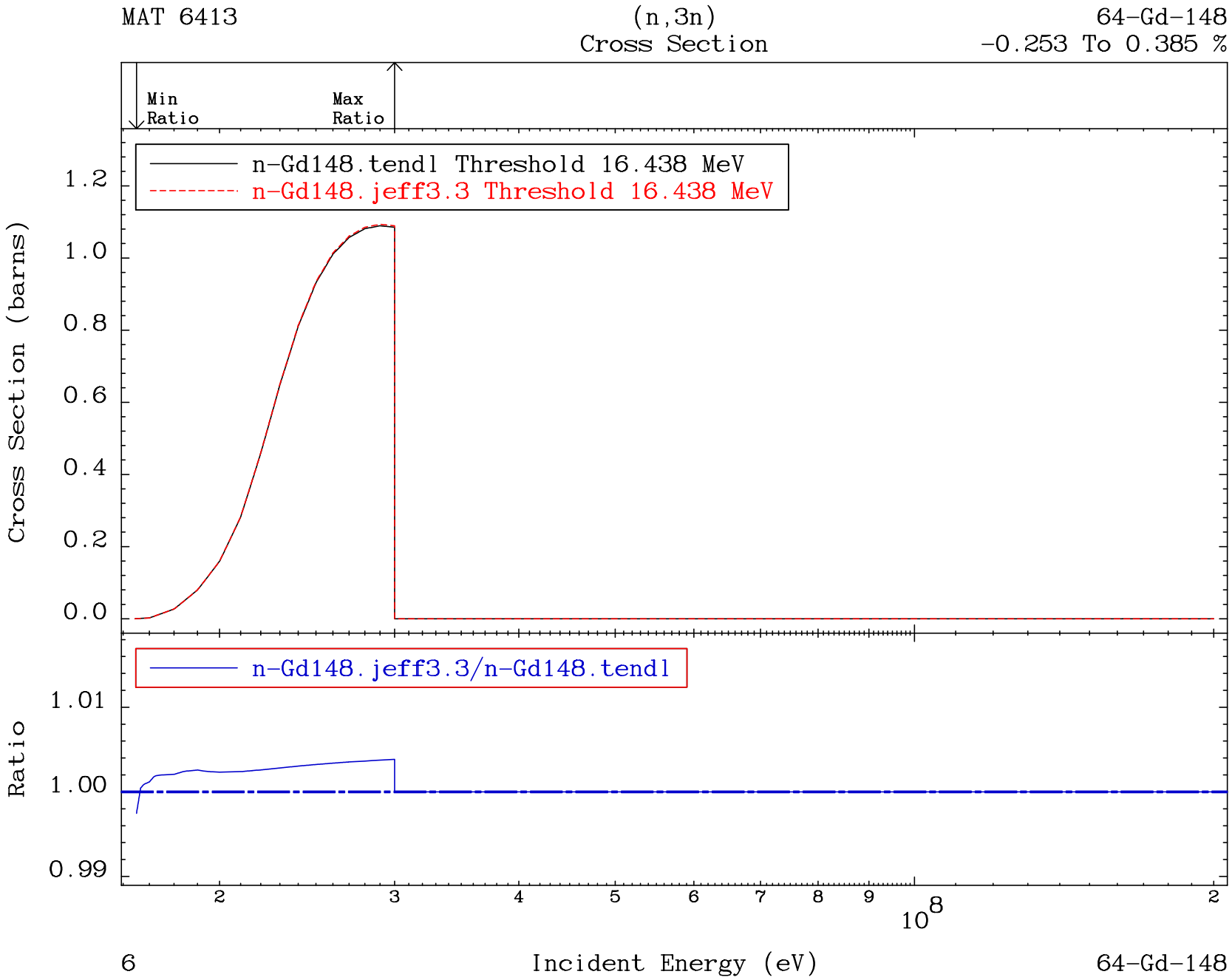

MAT 6413
Total
Cross Section
64-Gd-148
-98.27 To 1462. %
Min
Ratio
Max
Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
1
64-Gd-148

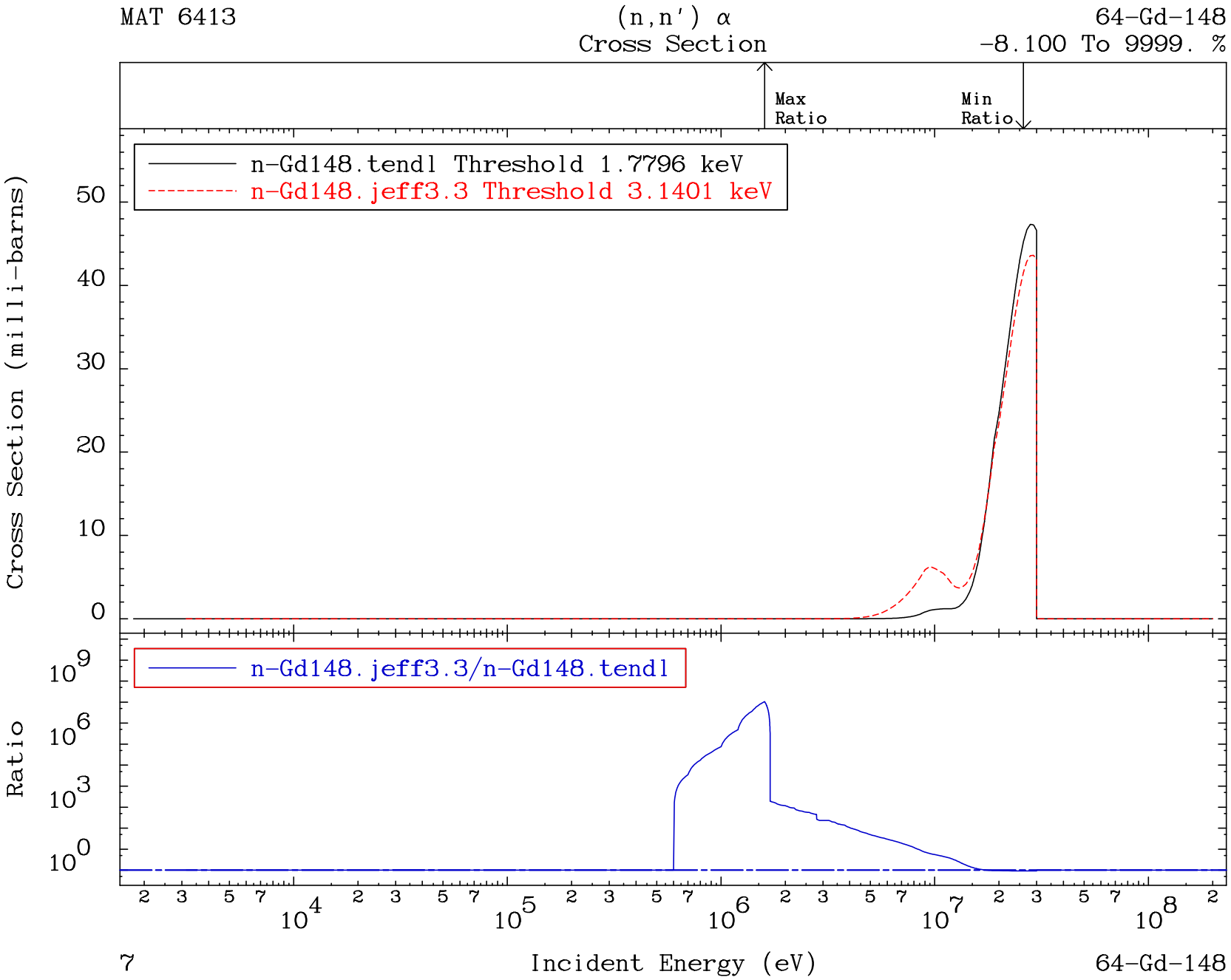

MAT 6413
Elastic
Cross Section
64-Gd-148
-99.88 To 3259. %
Min
Ratio
Max
Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
2
64-Gd-148

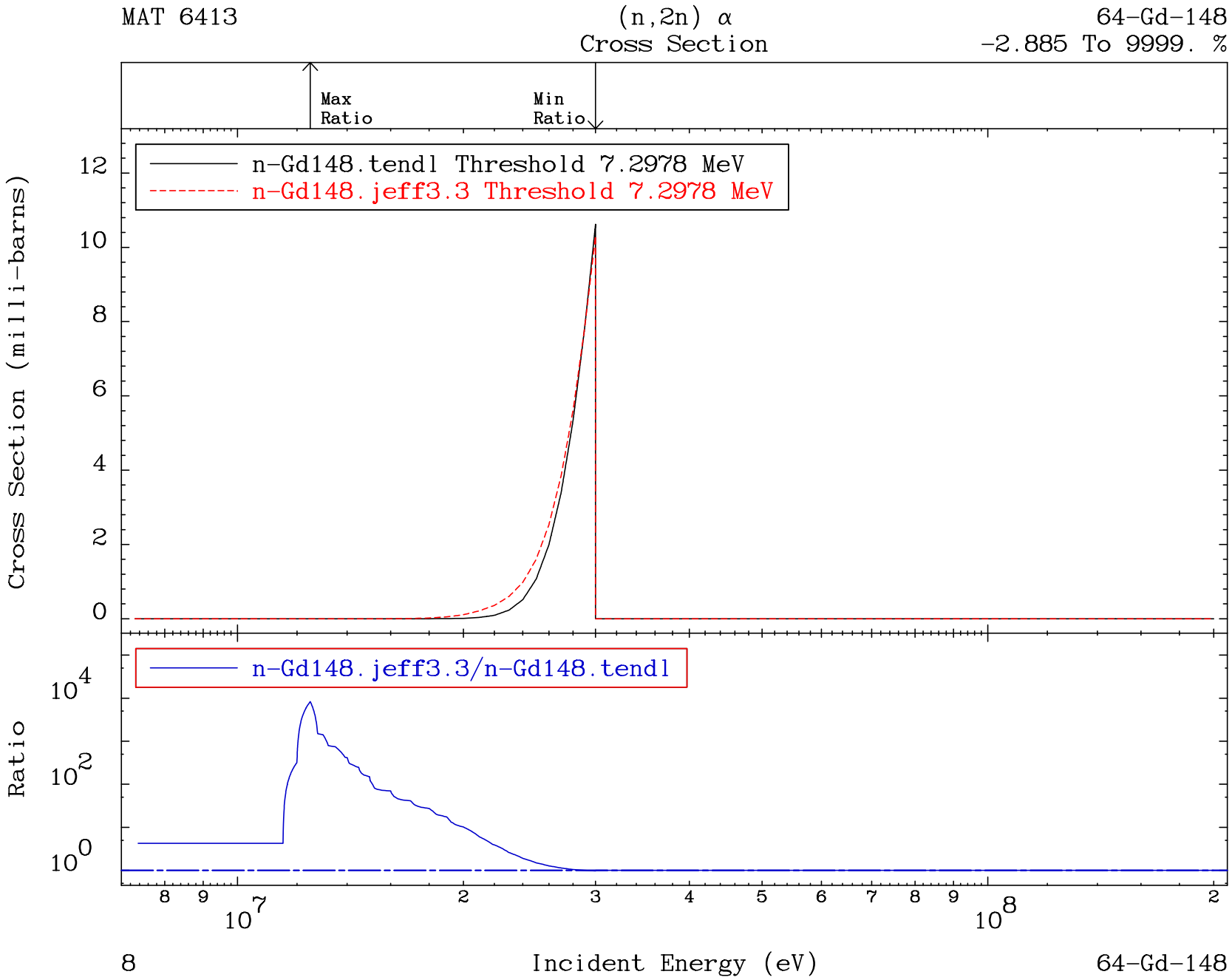

MAT 6413
Inelastic
Cross Section
64-Gd-148
-0.234 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 789.78 keV
n-Gd148.jeff3.3 Threshold 789.78 keV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
8
2
3
4
5
6
7
8
10^6
10^7
10^8
3
Incident Energy (eV)
64-Gd-148

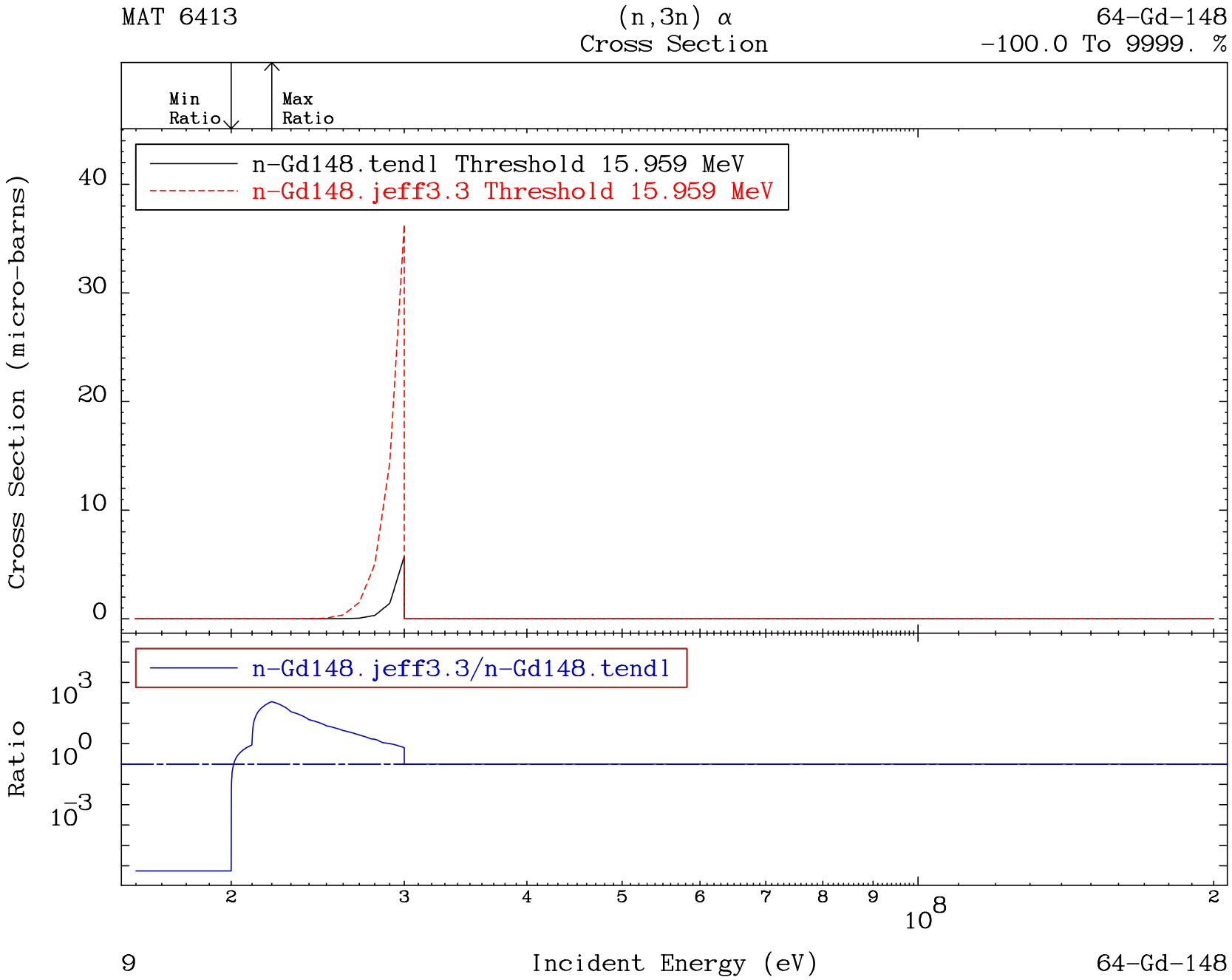

MAT 6413
(n,2n) d
Cross Section
64-Gd-148
-0.199 To 0.561 %
Min
Ratio
n-Gd148.tendl Threshold 19.618 MeV
n-Gd148.jeff3.3 Threshold 19.618 MeV
Cross Section (micro-barns)
400
300
200
100
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.010
1.000
2
3
4
5
6
7
8
9
10^8
2
4
Incident Energy (eV)
64-Gd-148

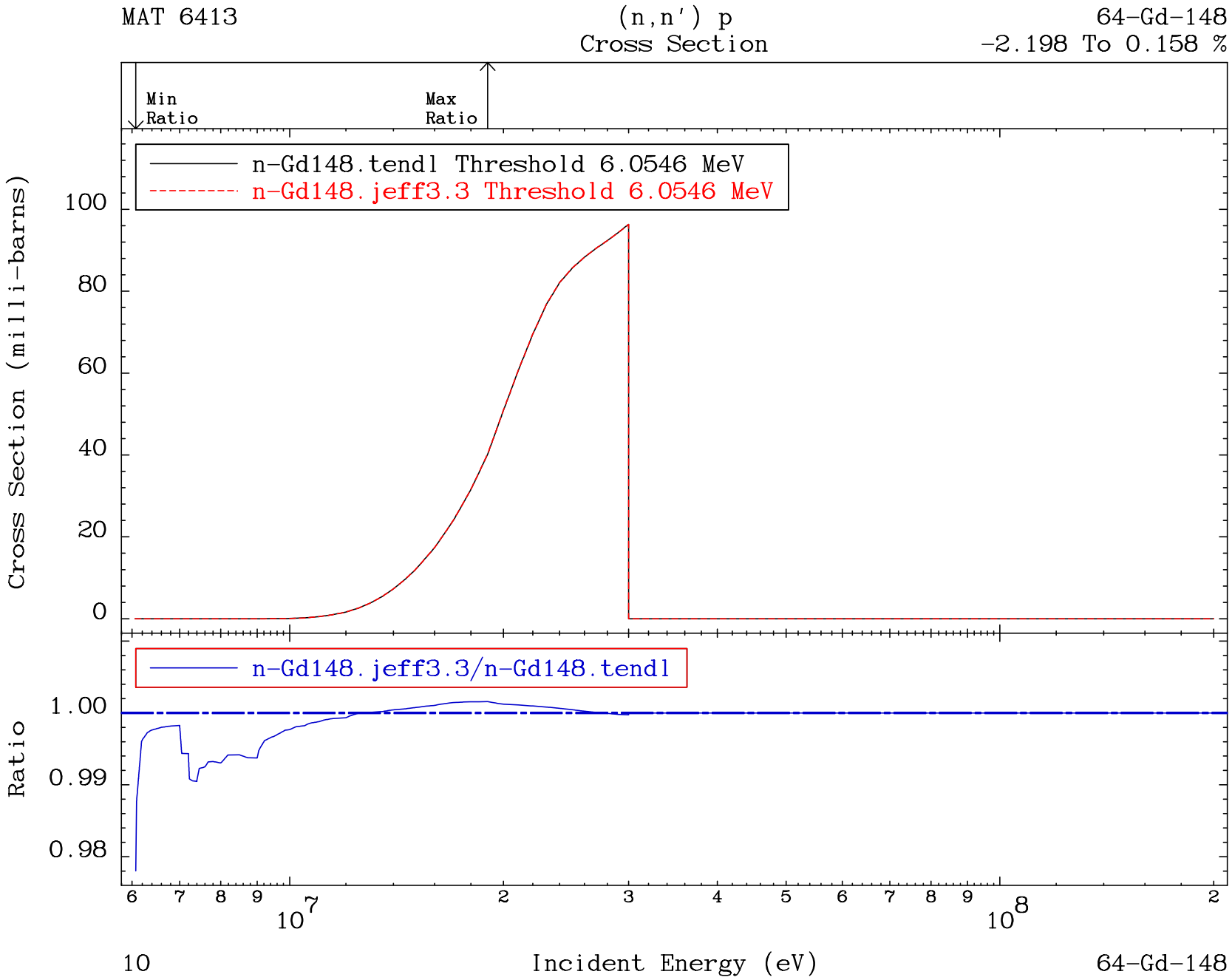

MAT 6413
(n,2n)
Cross Section
64-Gd-148
-0.347 To 0.226 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 9.0450 MeV
n-Gd148.jeff3.3 Threshold 9.0450 MeV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
9
10^7
2
3
4
5
6
7
8
9
10^8
2
5
Incident Energy (eV)
64-Gd-148

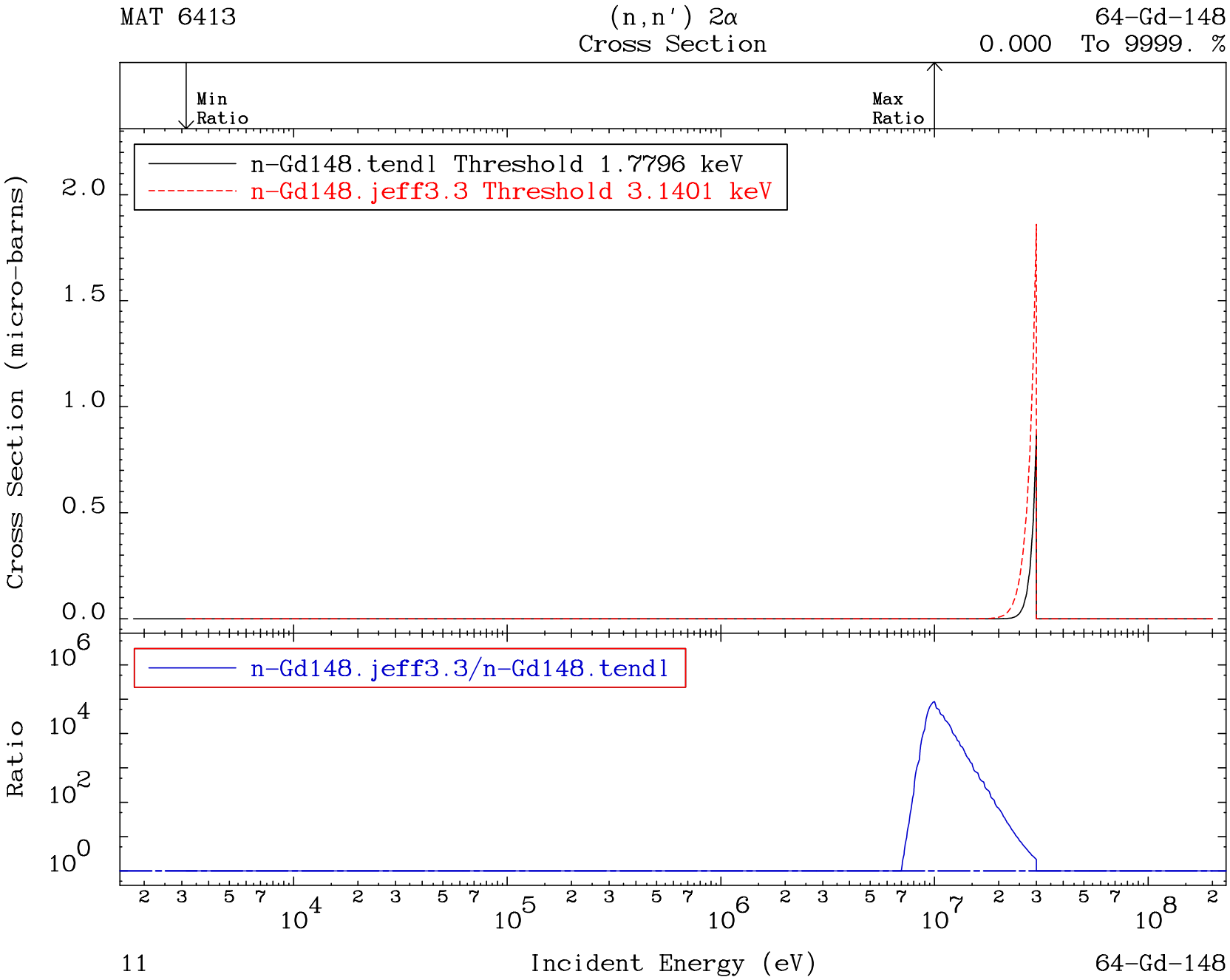

MAT 6413
(n,3n)
Cross Section
64-Gd-148
-0.253 To 0.385 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 16.438 MeV
n-Gd148.jeff3.3 Threshold 16.438 MeV
Cross Section (barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
10^8
2
6
Incident Energy (eV)
64-Gd-148

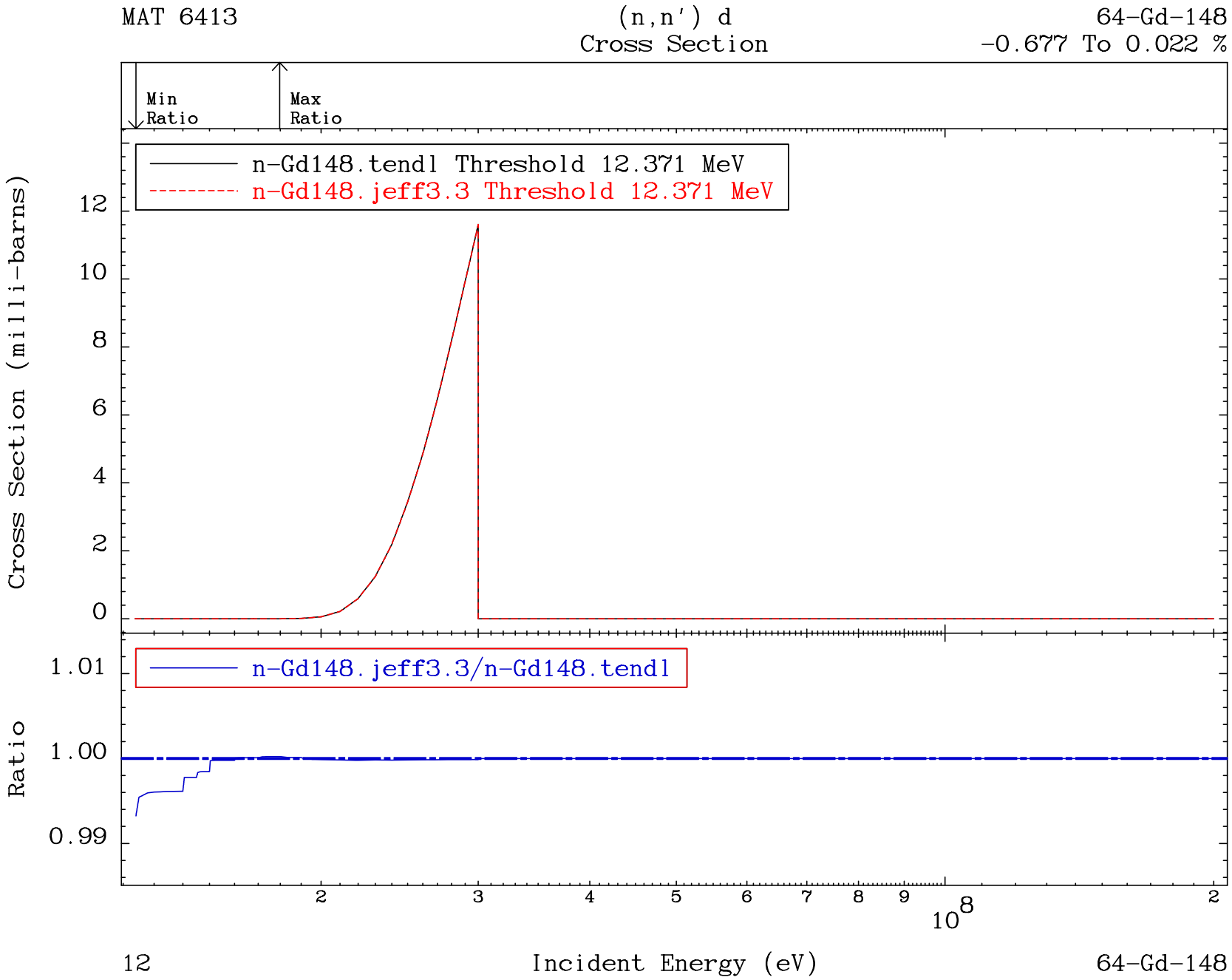

MAT 6413
(n,n') α
Cross Section
64-Gd-148
-8.100 To 9999. %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 1.7796 keV
n-Gd148.jeff3.3 Threshold 3.1401 keV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^9
10^6
10^3
10^0
2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
7
Incident Energy (eV)
64-Gd-148

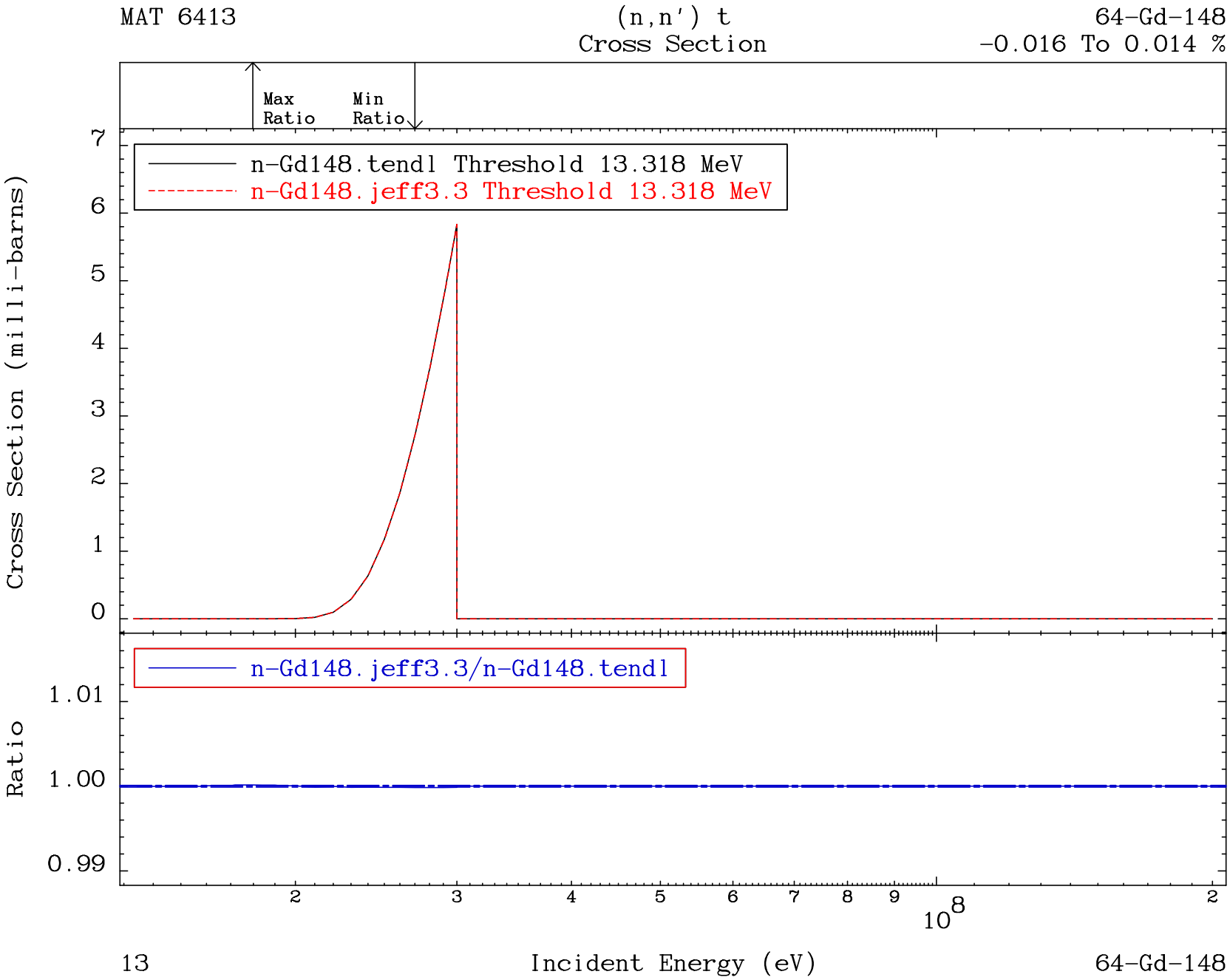

MAT 6413
(n,2n) α
Cross Section
64-Gd-148
-2.885 To 9999. %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 7.2978 MeV
n-Gd148.jeff3.3 Threshold 7.2978 MeV
Cross Section (milli-barns)
12
10
8
6
4
2
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^4
10^2
10^0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
8
Incident Energy (eV)
64-Gd-148

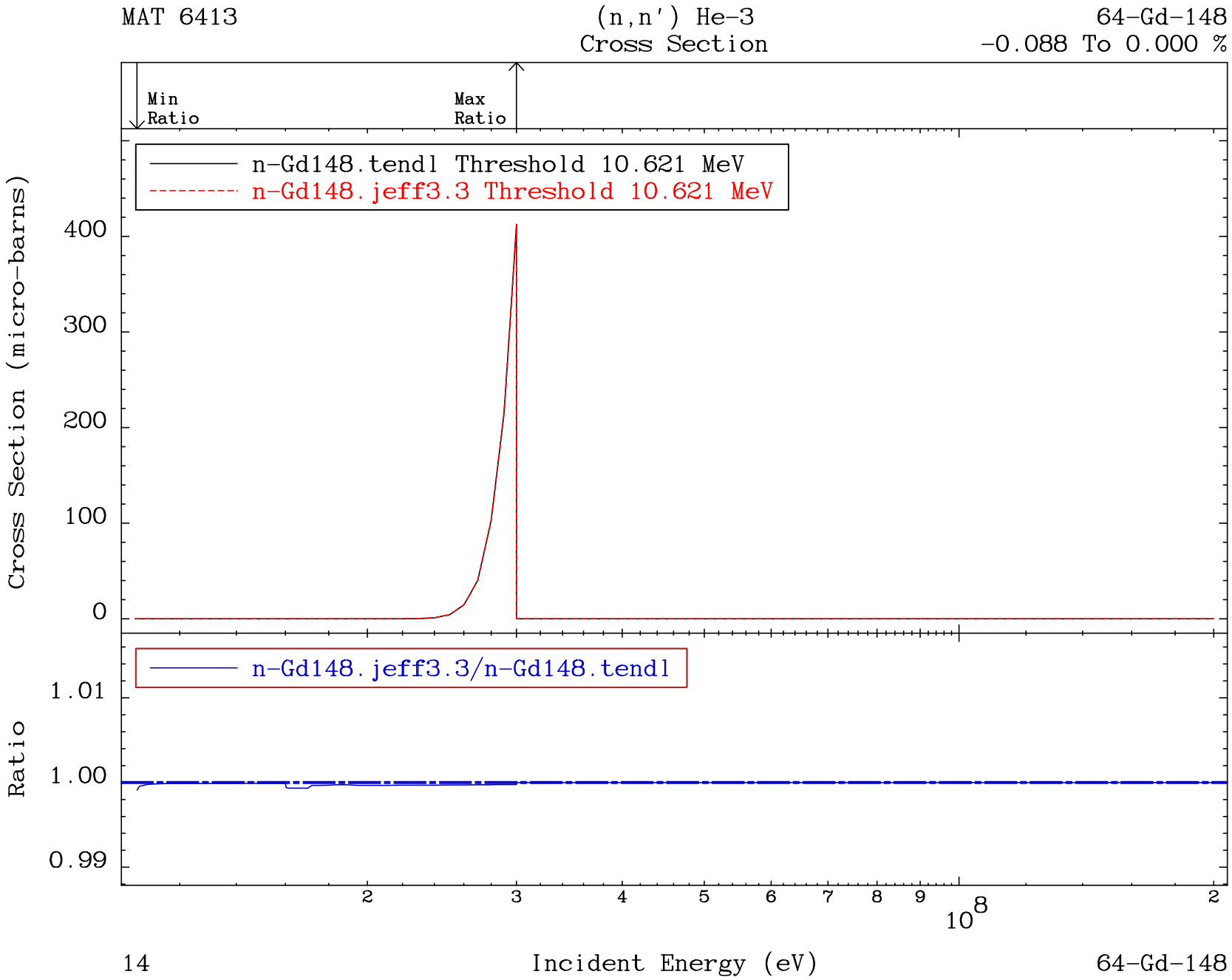

MAT 6413
(n,3n) α
Cross Section
64-Gd-148
-100.0 To 9999. %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 15.959 MeV
n-Gd148.jeff3.3 Threshold 15.959 MeV
Cross Section (micro-barns)
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^3
10^0
10^-3
2
3
4
5
6
7
8
9
10^8
2
9
Incident Energy (eV)
64-Gd-148

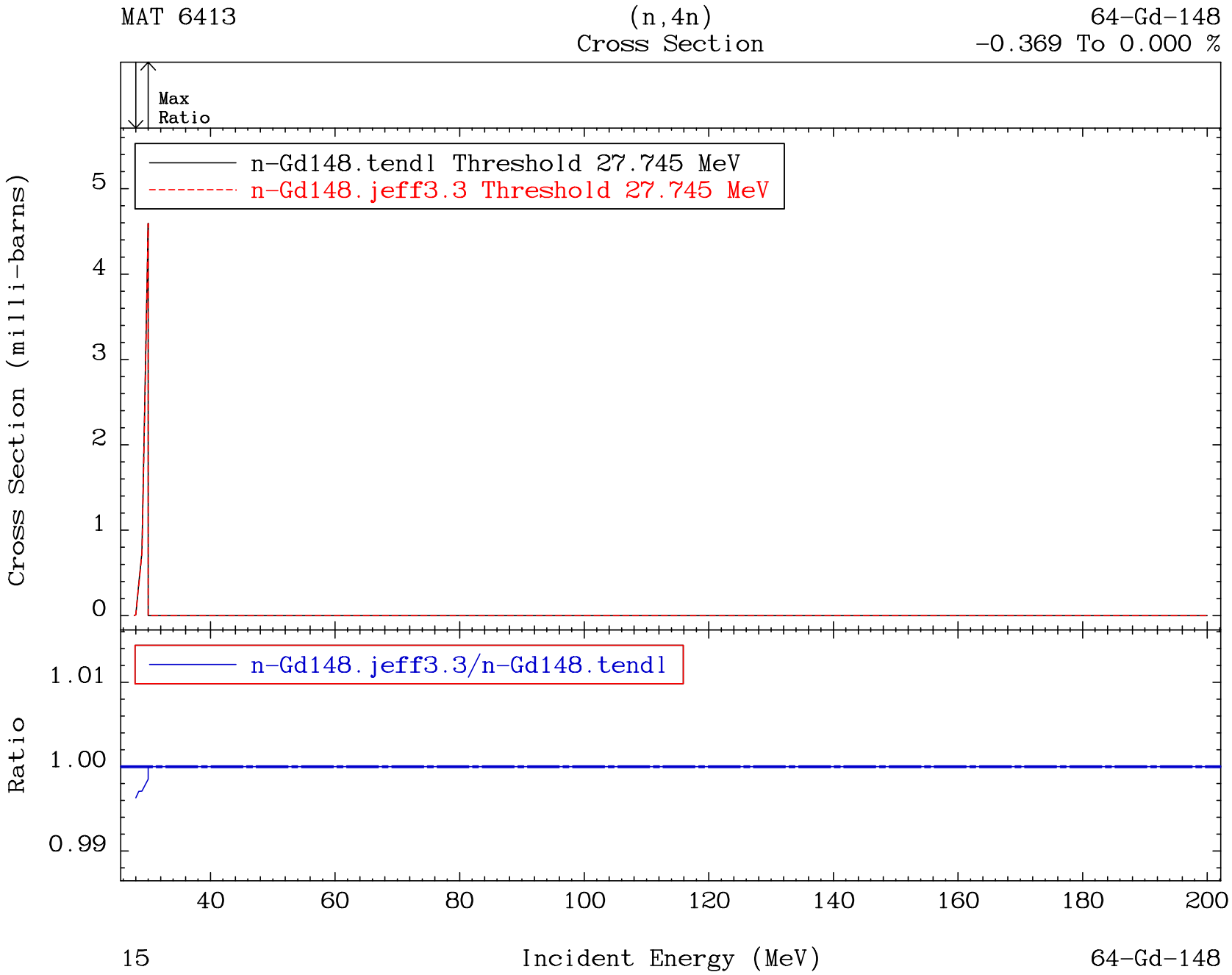

MAT 6413
(n,n') p
Cross Section
64-Gd-148
-2.198 To 0.158 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 6.0546 MeV
n-Gd148.jeff3.3 Threshold 6.0546 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.00
0.99
0.98
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
10
Incident Energy (eV)
64-Gd-148

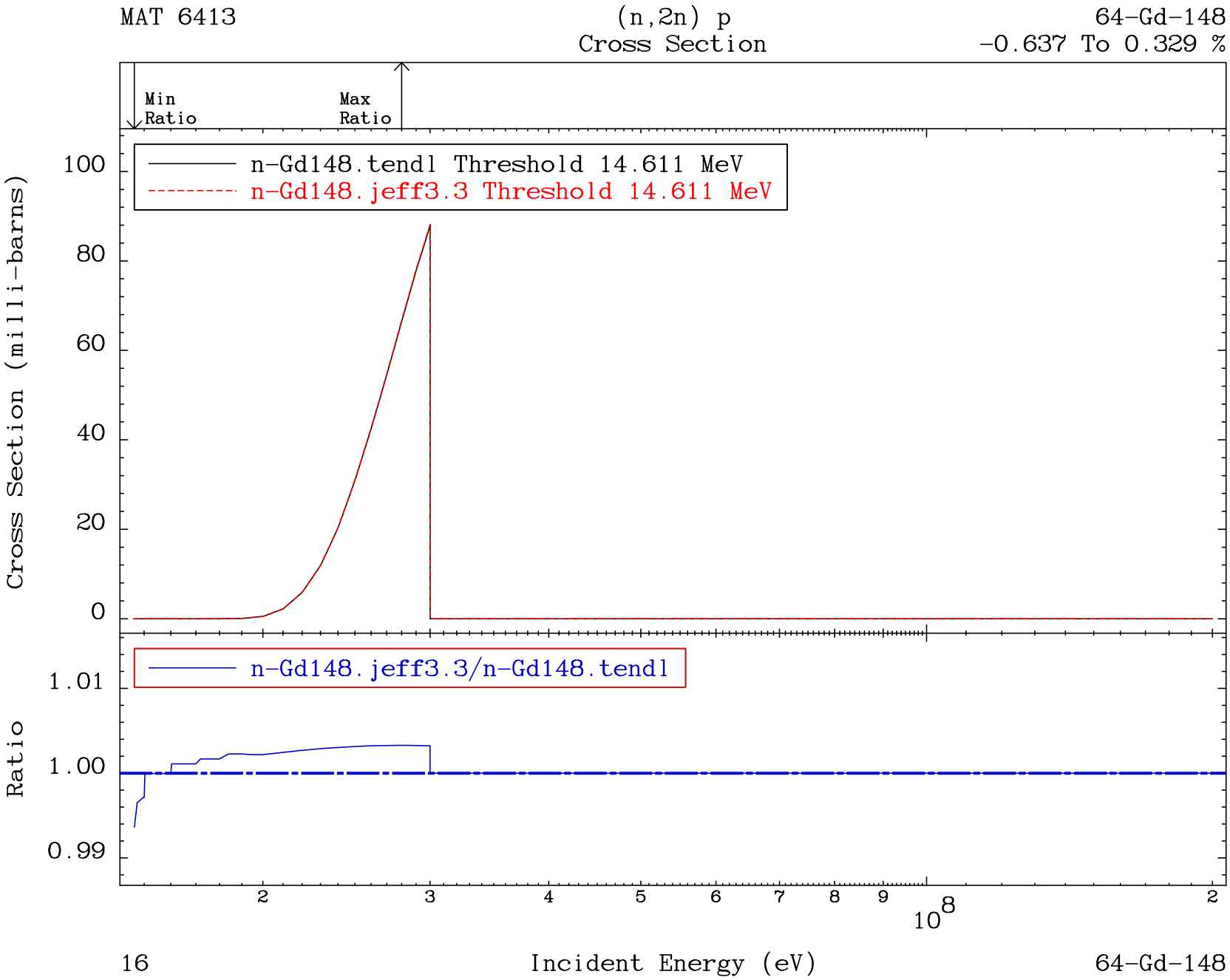

MAT 6413
(n,n') 2α
Cross Section
64-Gd-148
0.000 To 9999. %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 1.7796 keV
n-Gd148.jeff3.3 Threshold 3.1401 keV
Cross Section (micro-barns)
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^6
10^4
10^2
10^0
2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
11
Incident Energy (eV)
64-Gd-148

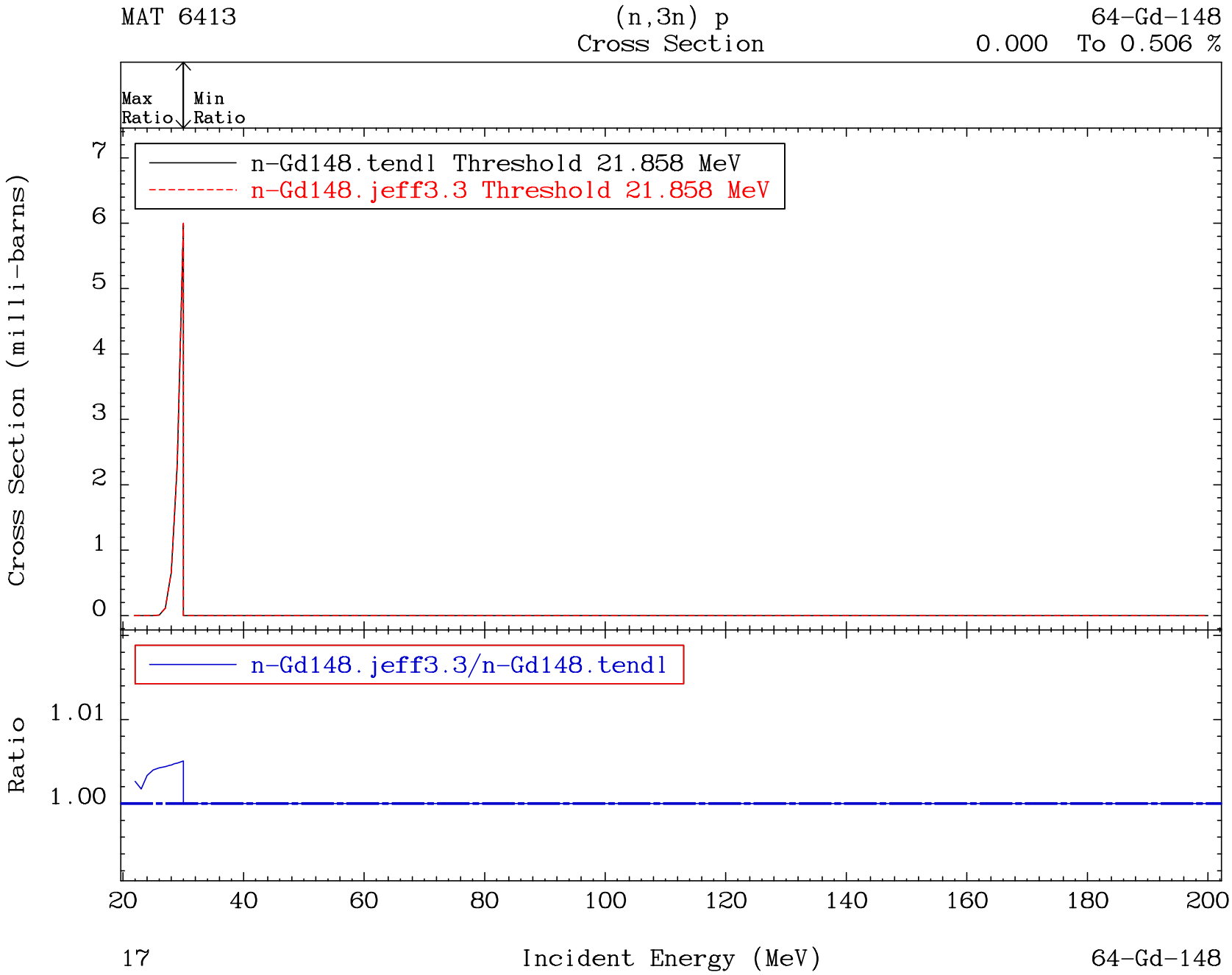

MAT 6413
(n,n') d
Cross Section
64-Gd-148
-0.677 To 0.022 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 12.371 MeV
n-Gd148.jeff3.3 Threshold 12.371 MeV
Cross Section (milli-barns)
12
10
8
6
4
2
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
10^8
2
12
Incident Energy (eV)
64-Gd-148

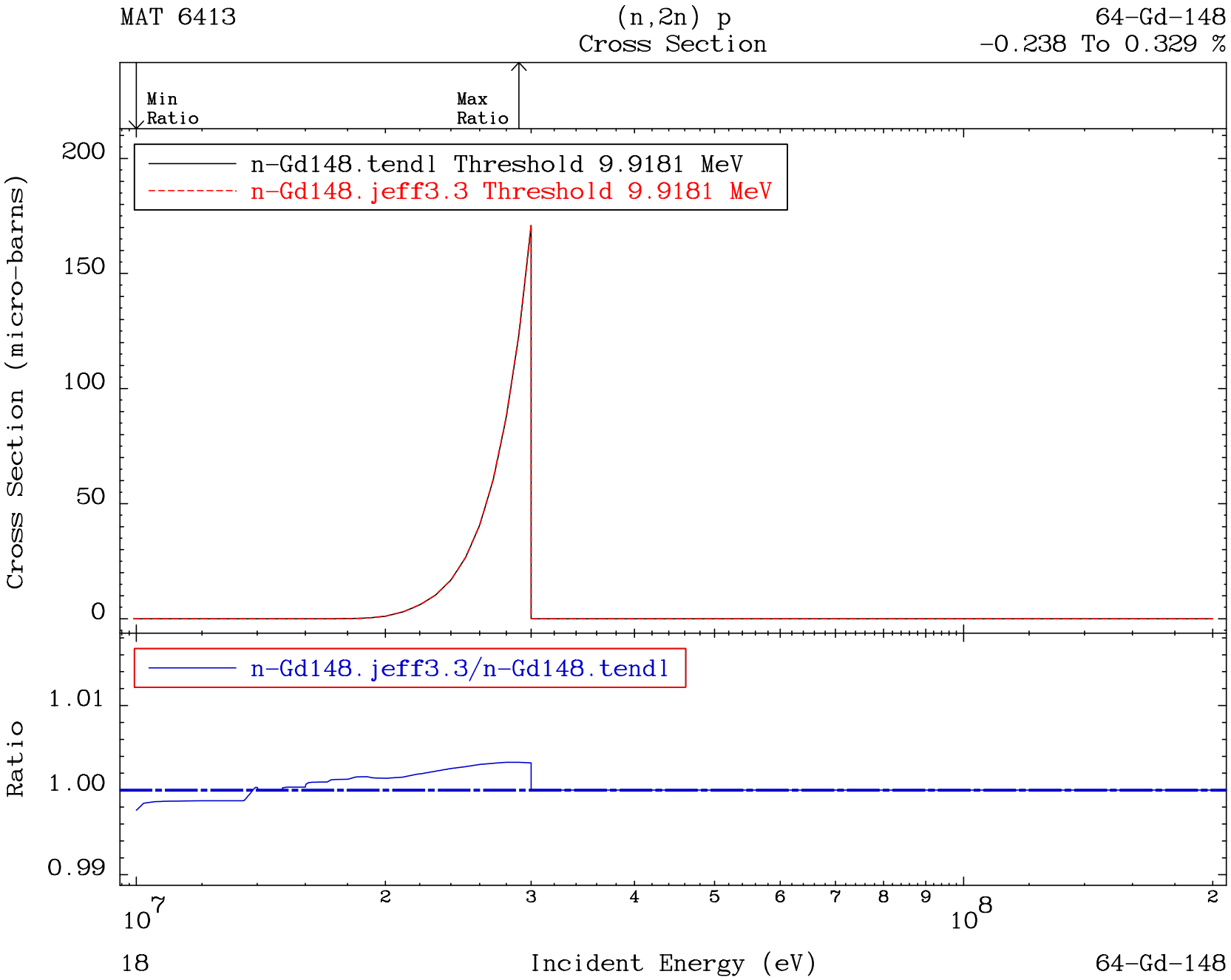

MAT 6413
(n,n') t
Cross Section
64-Gd-148
-0.016 To 0.014 %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 13.318 MeV
n-Gd148.jeff3.3 Threshold 13.318 MeV
Cross Section (milli-barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
13
64-Gd-148

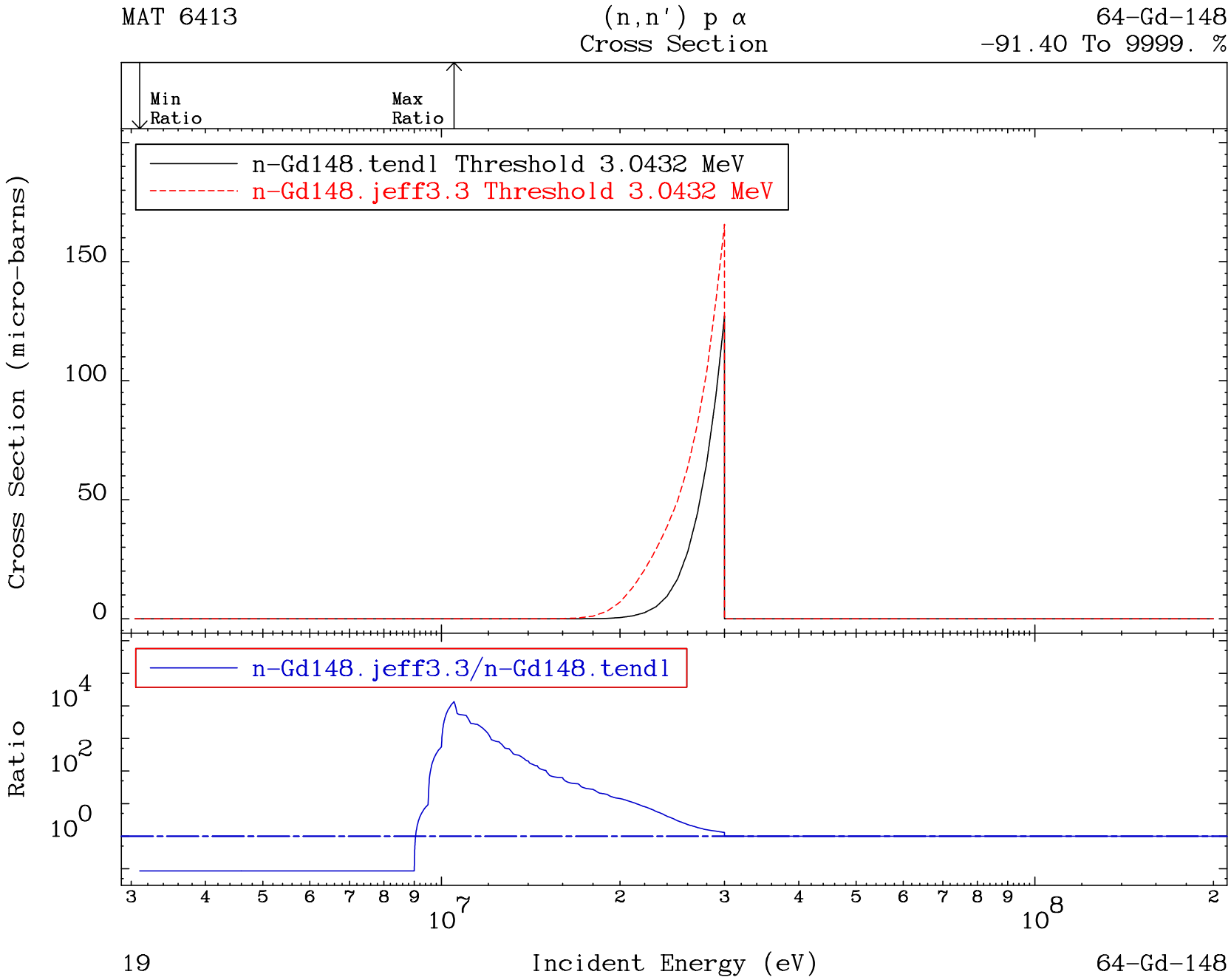

MAT 6413
(n,n') He-3
Cross Section
64-Gd-148
-0.088 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 10.621 MeV
n-Gd148.jeff3.3 Threshold 10.621 MeV
Cross Section (micro-barns)
400
300
200
100
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
10^8
2
14
Incident Energy (eV)
64-Gd-148

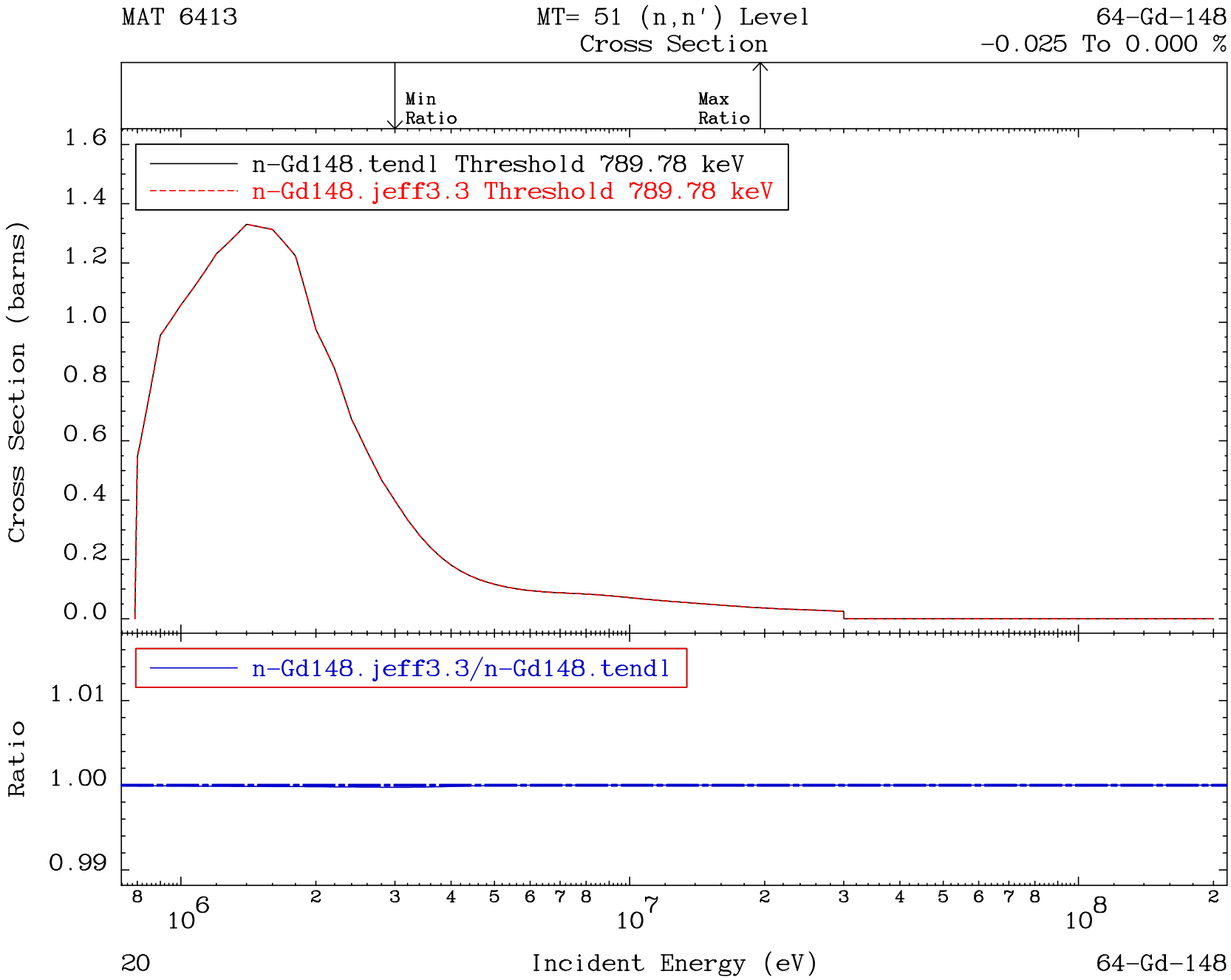

MAT 6413
(n,4n)
Cross Section
64-Gd-148
-0.369 To 0.000 %
Max
Ratio
n-Gd148.tendl Threshold 27.745 MeV
n-Gd148.jeff3.3 Threshold 27.745 MeV
Cross Section (milli-barns)
0
1
2
3
4
5
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
0.99
1.00
1.01
40
60
80
100
120
140
160
180
200
15
Incident Energy (MeV)
64-Gd-148

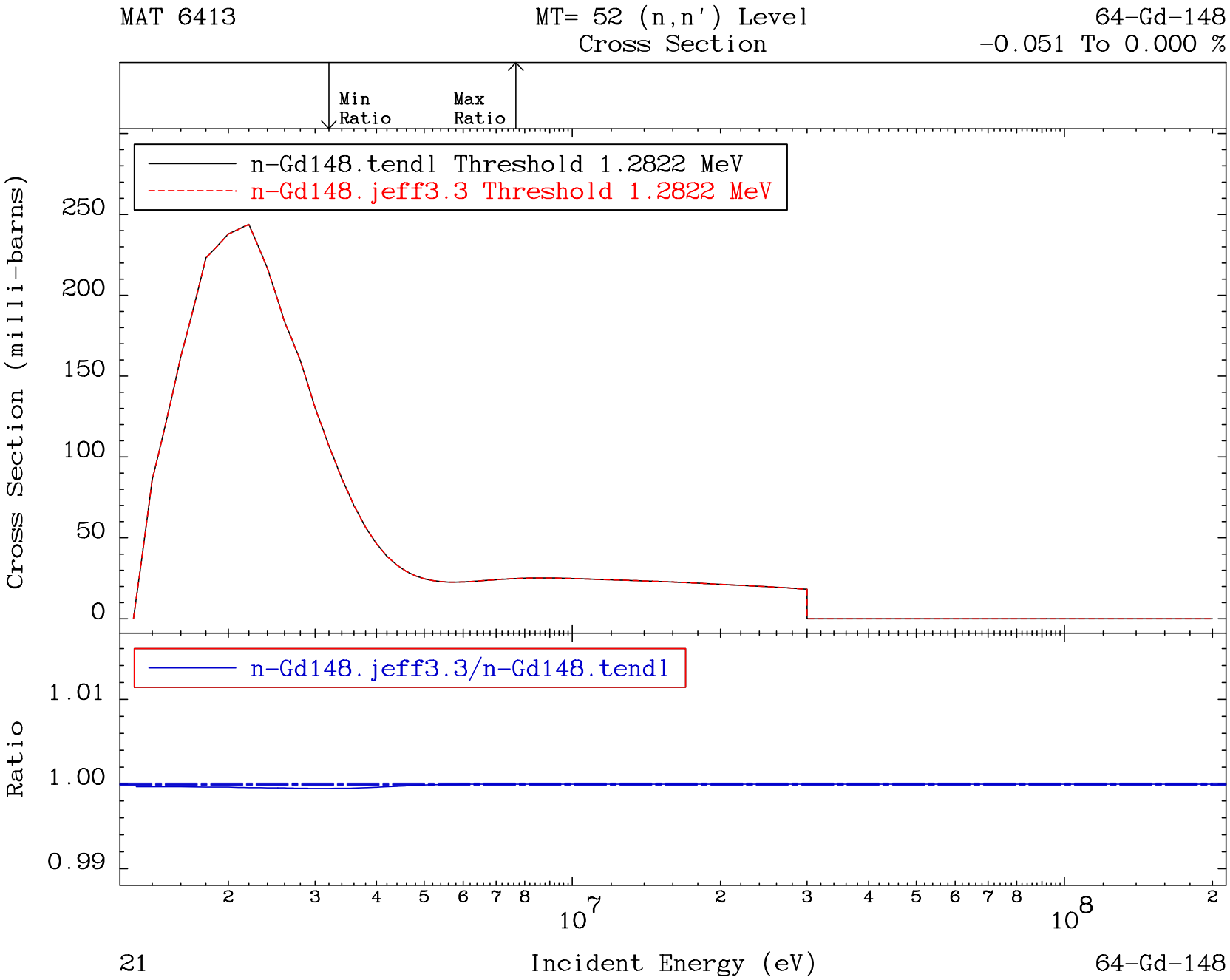

MAT 6413
(n,2n) p
Cross Section
64-Gd-148
-0.637 To 0.329 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 14.611 MeV
n-Gd148.jeff3.3 Threshold 14.611 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
10^8
2
16
Incident Energy (eV)
64-Gd-148

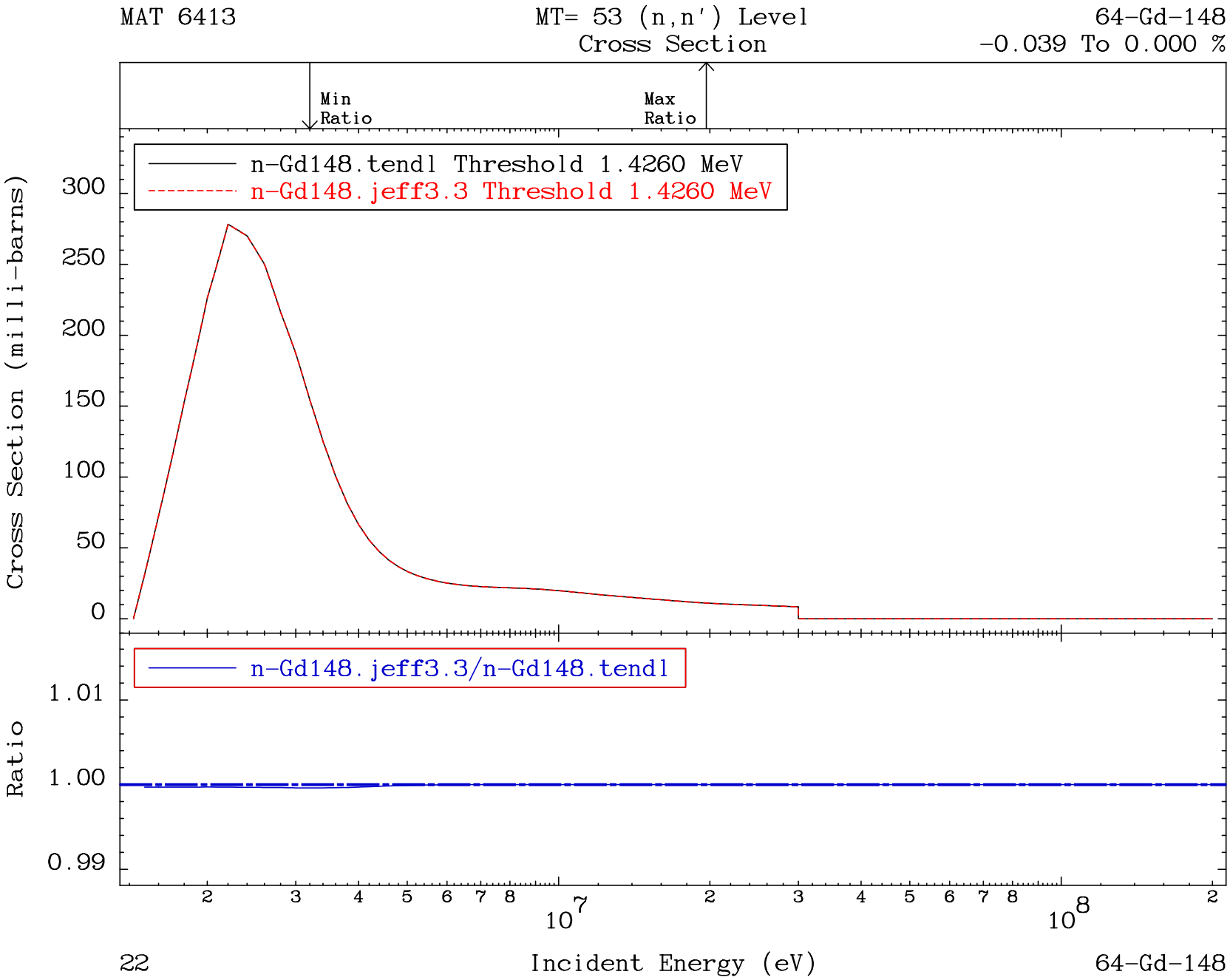

MAT 6413
(n,3n) p
Cross Section
64-Gd-148
0.000 To 0.506 %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 21.858 MeV
n-Gd148.jeff3.3 Threshold 21.858 MeV
Cross Section (milli-barns)
0
1
2
3
4
5
6
7
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.00
1.01
20
40
60
80
100
120
140
160
180
200
17
Incident Energy (MeV)
64-Gd-148

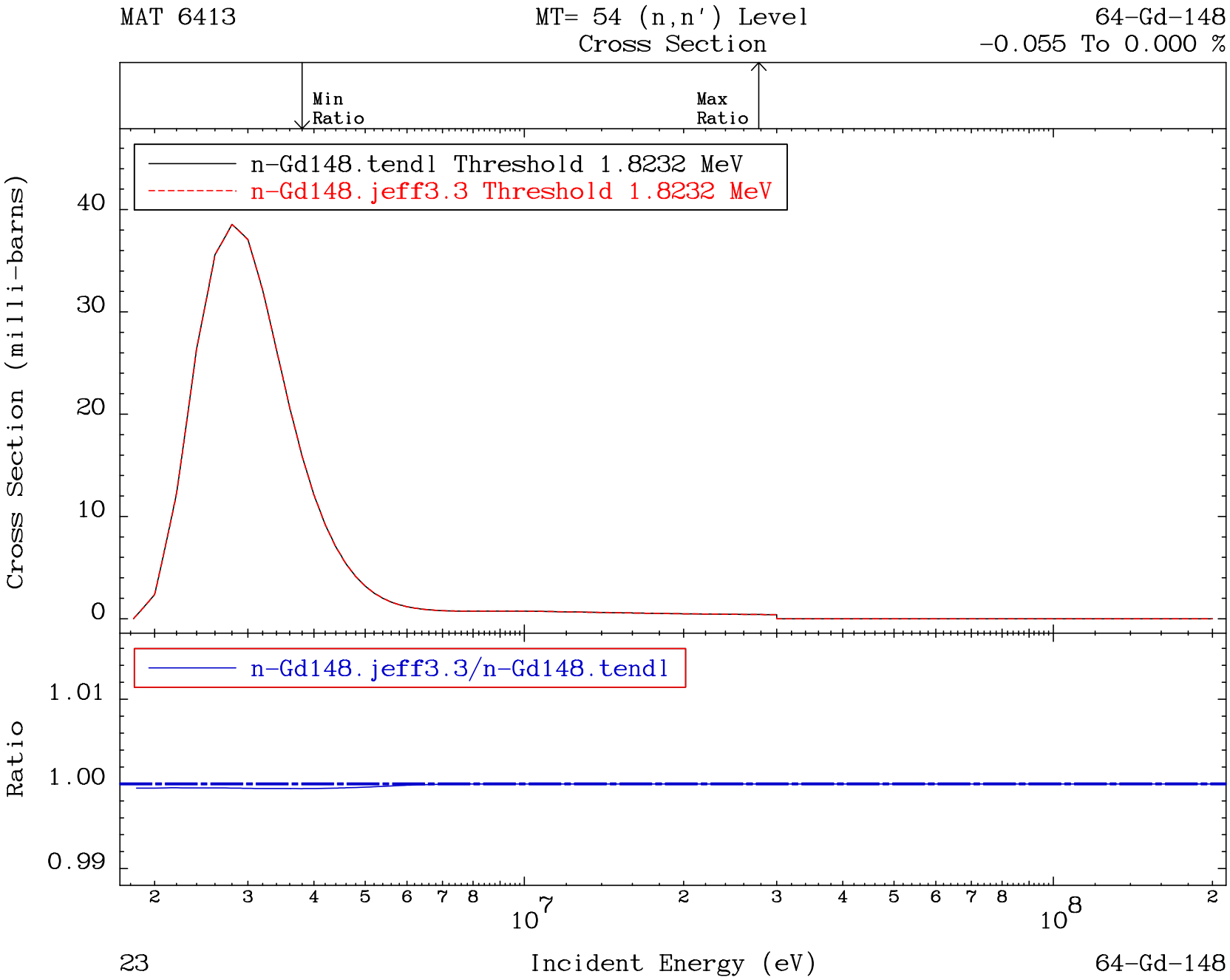

MAT 6413
(n,2n) p
Cross Section
64-Gd-148
-0.238 To 0.329 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 9.9181 MeV
n-Gd148.jeff3.3 Threshold 9.9181 MeV
Cross Section (micro-barns)
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
10^7
2
3
4
5
6
7
8
9
10^8
2
18
Incident Energy (eV)
64-Gd-148

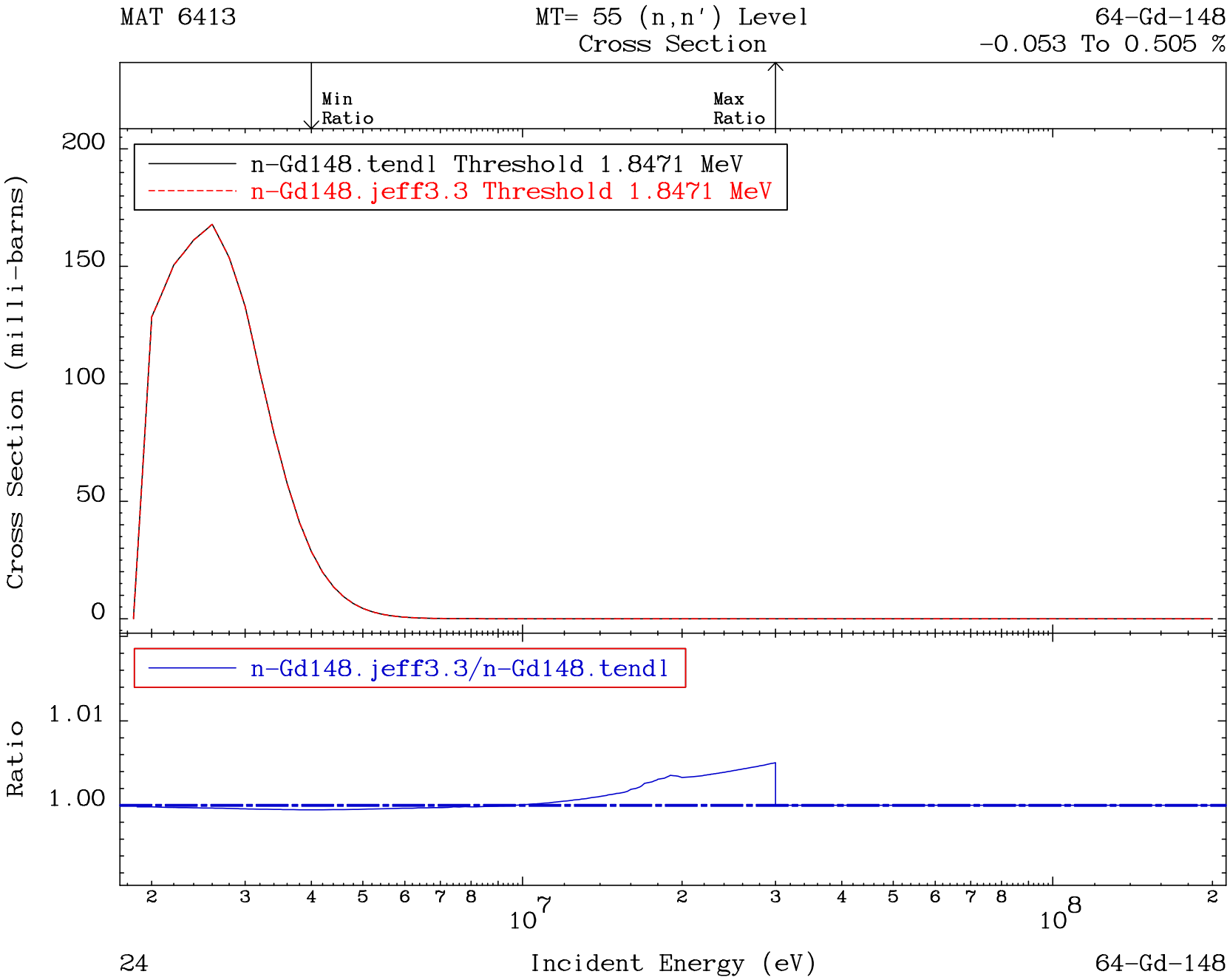

MAT 6413
(n,n') p α
Cross Section
64-Gd-148
-91.40 To 9999. %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 3.0432 MeV
n-Gd148.jeff3.3 Threshold 3.0432 MeV
Cross Section (micro-barns)
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^4
10^2
10^0
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
19
Incident Energy (eV)
64-Gd-148

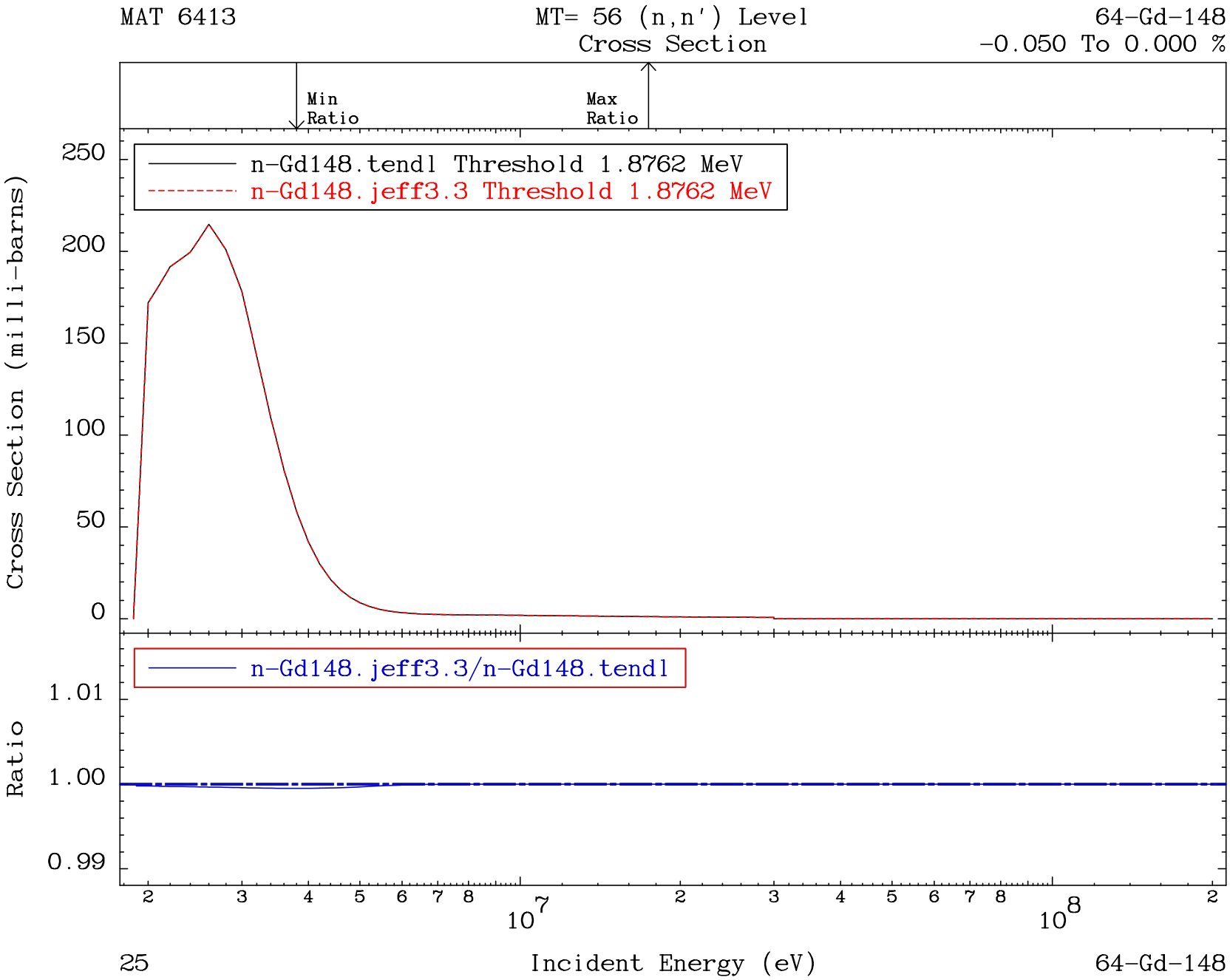

MAT 6413
MT= 51 (n,n') Level
Cross Section
64-Gd-148
-0.025 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 789.78 keV
n-Gd148.jeff3.3 Threshold 789.78 keV
Cross Section (barns)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
8
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
20
Incident Energy (eV)
64-Gd-148

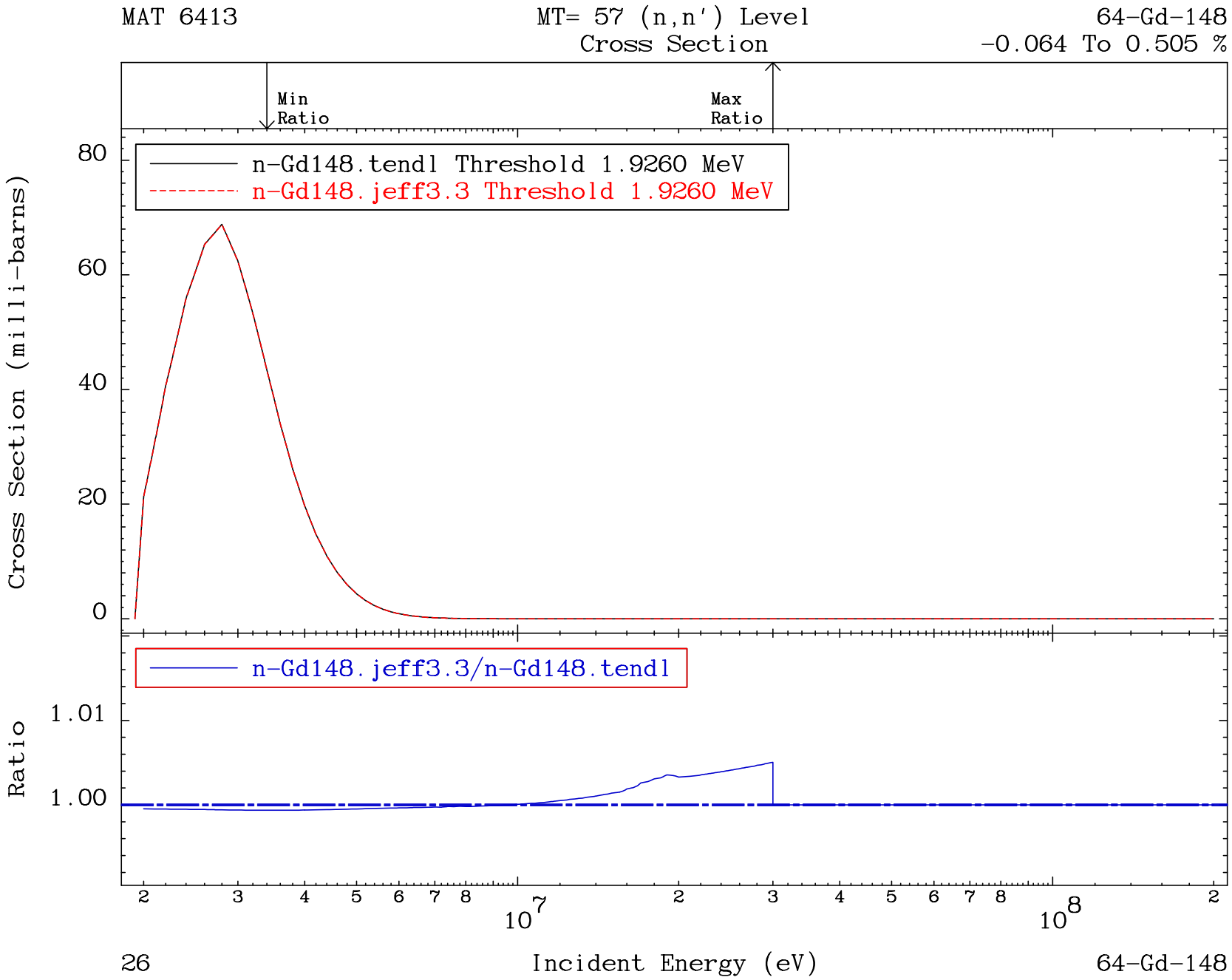

MAT 6413
MT= 52 (n,n') Level
Cross Section
64-Gd-148
-0.051 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 1.2822 MeV
n-Gd148.jeff3.3 Threshold 1.2822 MeV
Cross Section (milli-barns)
250
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
21
Incident Energy (eV)
64-Gd-148

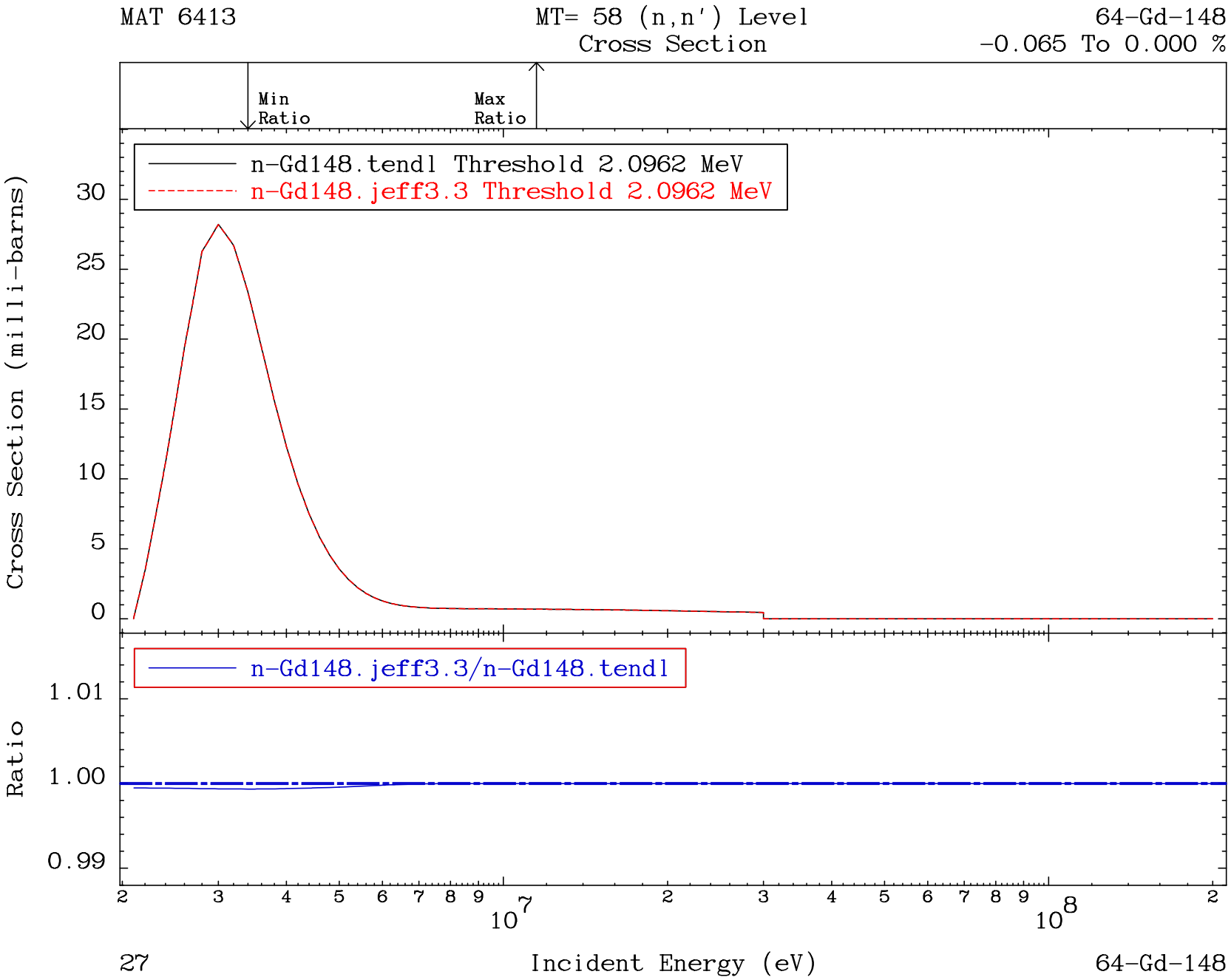

MAT 6413
MT= 53 (n,n') Level
Cross Section
64-Gd-148
-0.039 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 1.4260 MeV
n-Gd148.jeff3.3 Threshold 1.4260 MeV
Cross Section (milli-barns)
300
250
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
22
Incident Energy (eV)
64-Gd-148

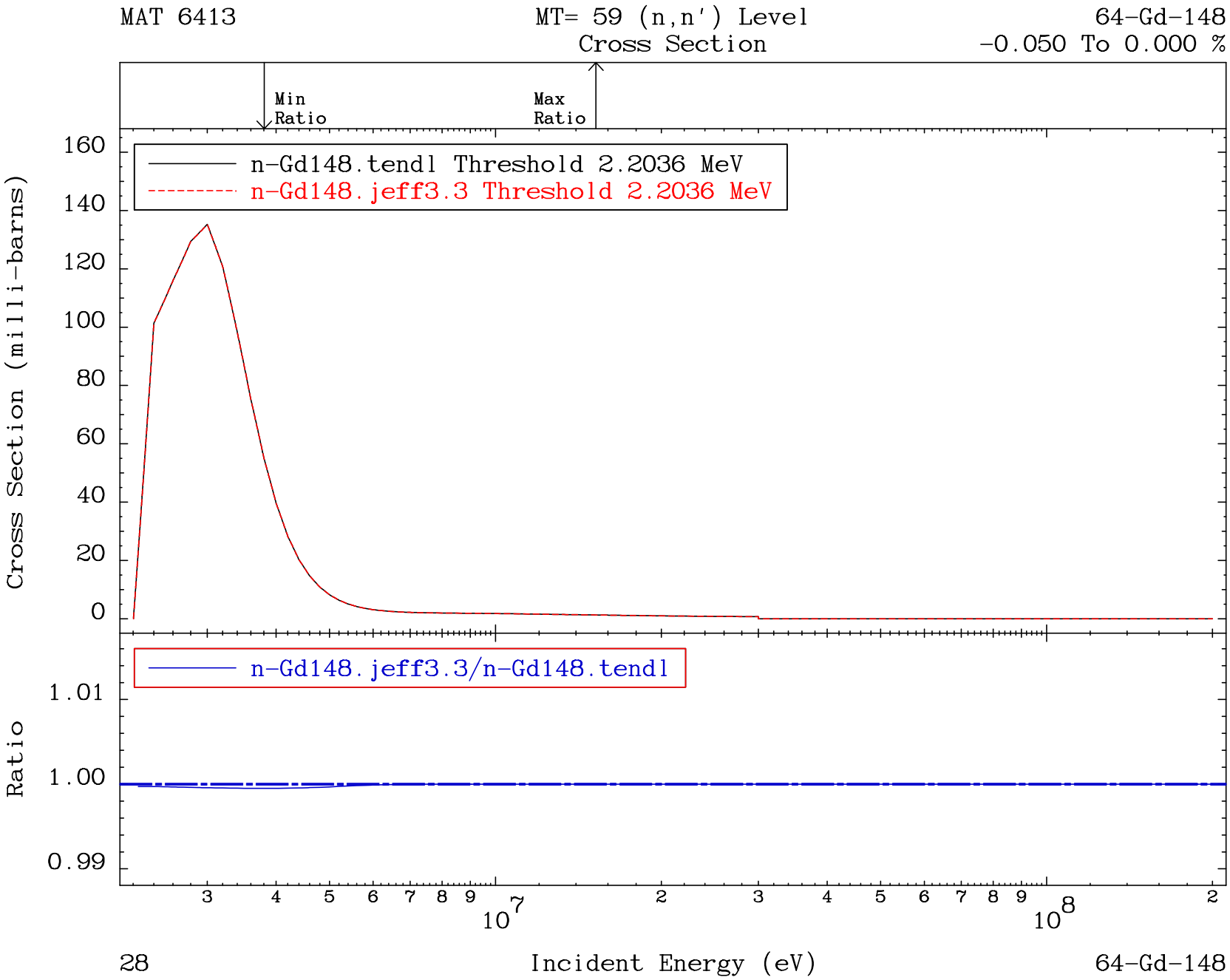

MAT 6413
MT= 54 (n,n') Level
Cross Section
64-Gd-148
-0.055 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 1.8232 MeV
n-Gd148.jeff3.3 Threshold 1.8232 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
23
Incident Energy (eV)
64-Gd-148

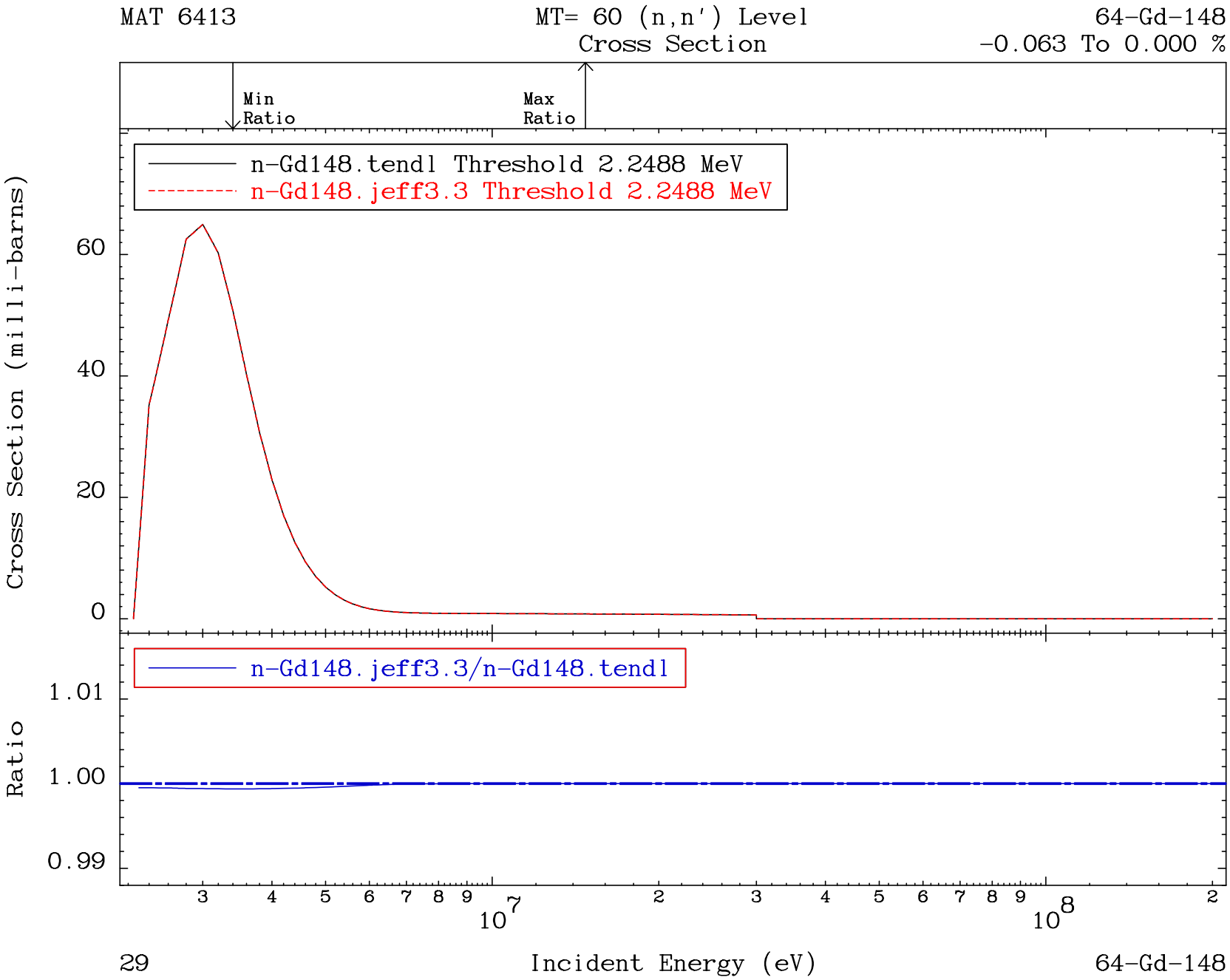

MAT 6413
MT= 55 (n,n') Level
Cross Section
64-Gd-148
-0.053 To 0.505 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 1.8471 MeV
n-Gd148.jeff3.3 Threshold 1.8471 MeV
Cross Section (milli-barns)
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
24
Incident Energy (eV)
64-Gd-148

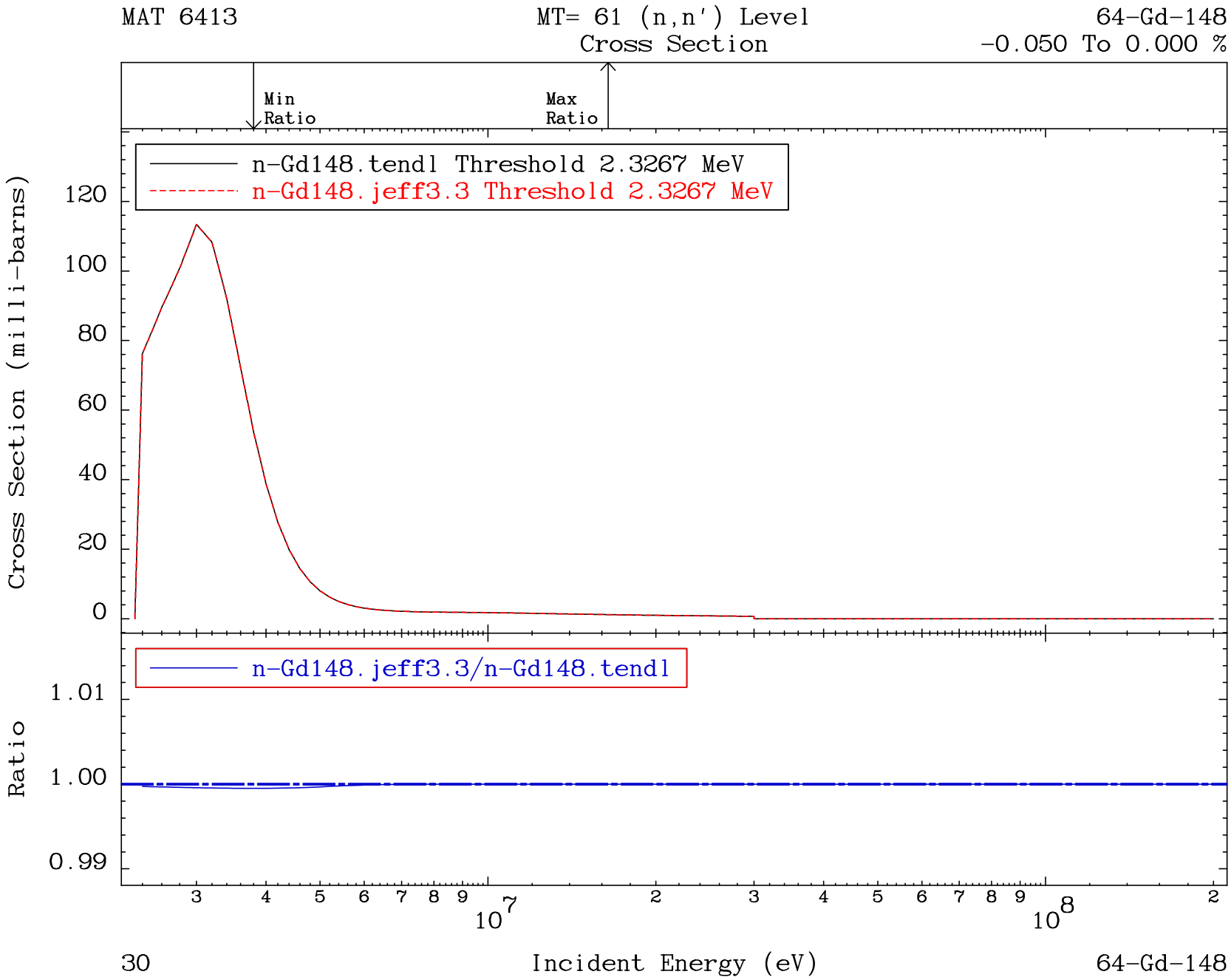

MAT 6413
MT= 56 (n,n') Level
Cross Section
64-Gd-148
-0.050 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 1.8762 MeV
n-Gd148.jeff3.3 Threshold 1.8762 MeV
Cross Section (milli-barns)
250
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
25
Incident Energy (eV)
64-Gd-148

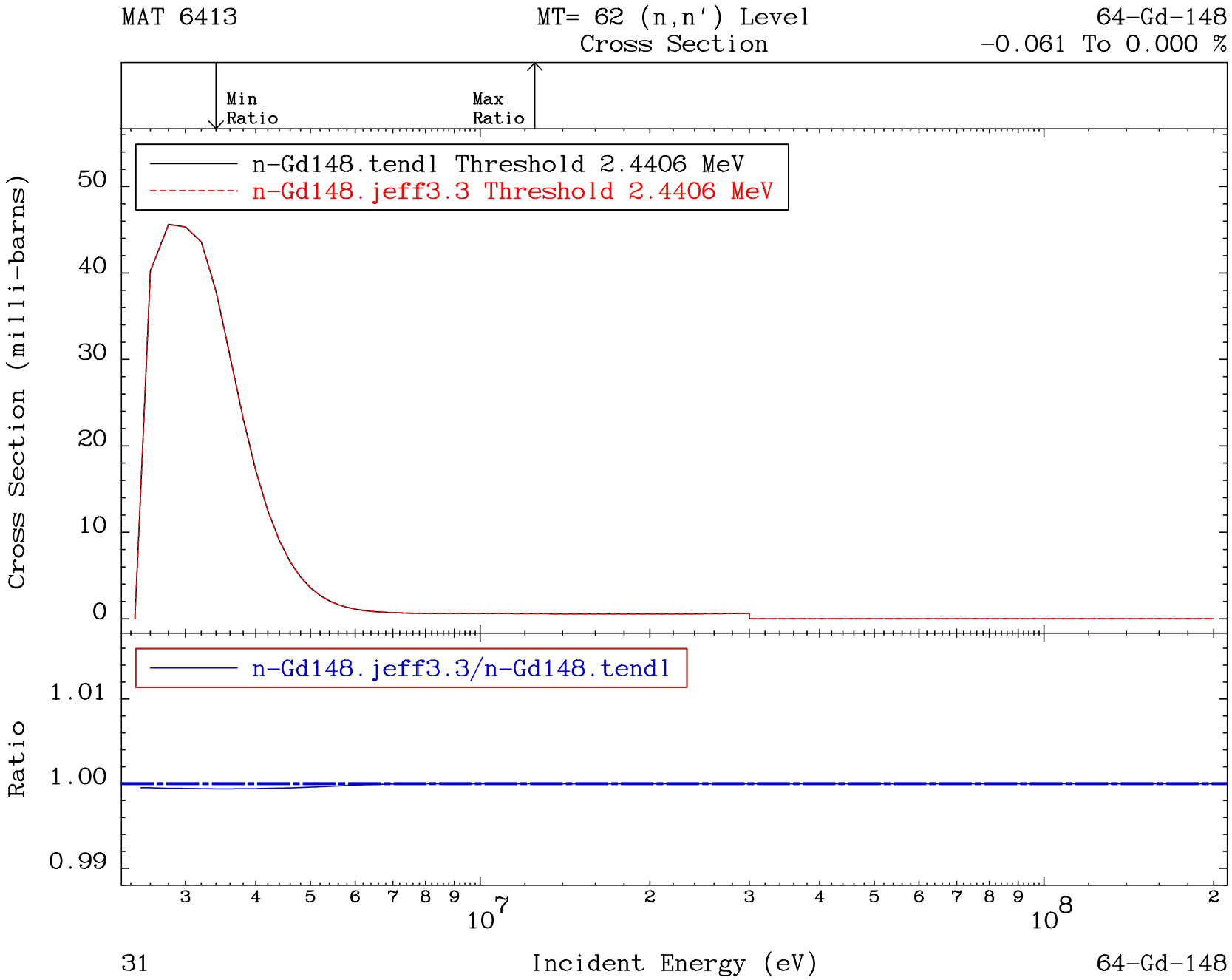

MAT 6413
MT= 57 (n,n') Level
Cross Section
64-Gd-148
-0.064 To 0.505 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 1.9260 MeV
n-Gd148.jeff3.3 Threshold 1.9260 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
26
Incident Energy (eV)
64-Gd-148

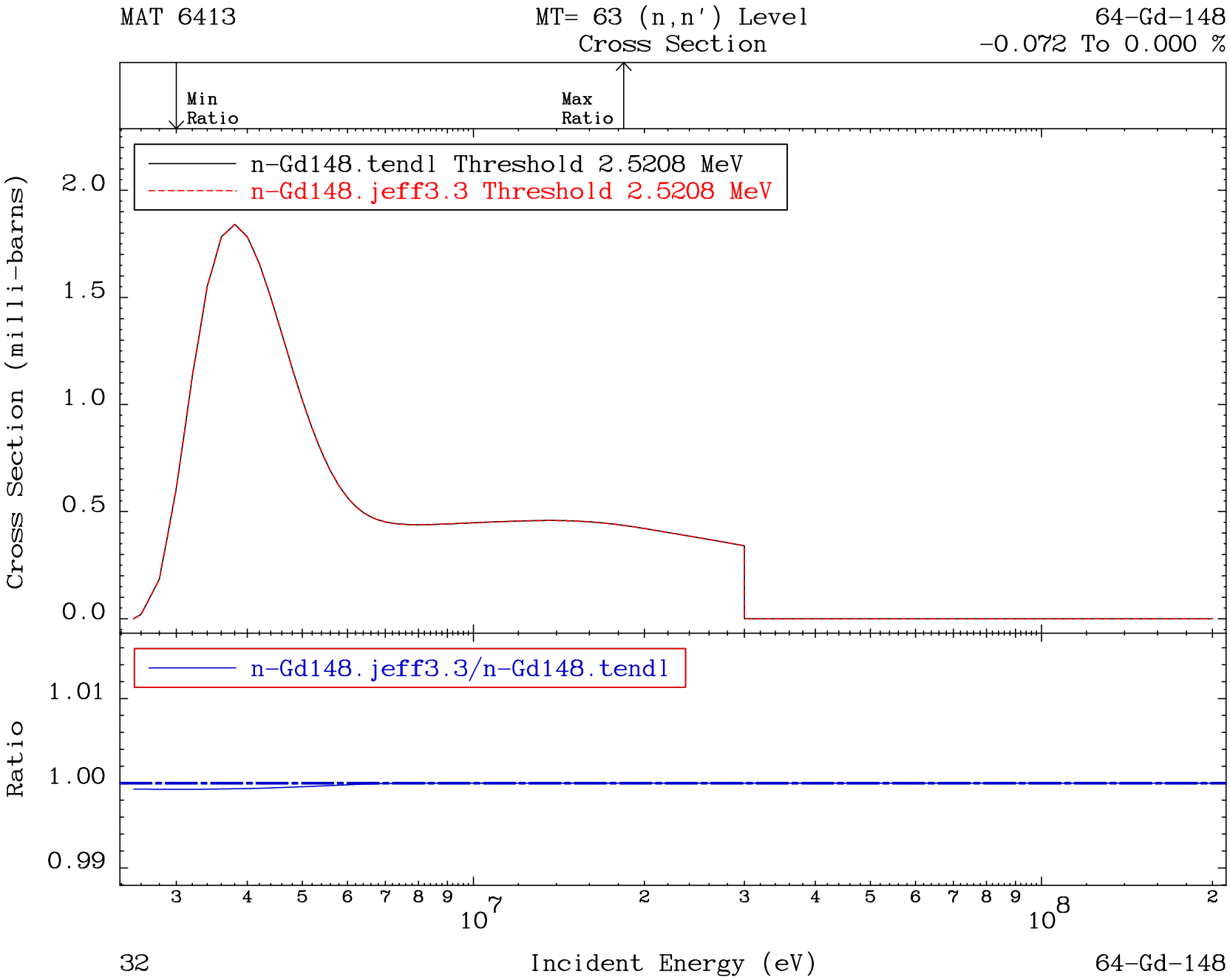

MAT 6413
MT= 58 (n,n') Level
Cross Section
64-Gd-148
-0.065 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 2.0962 MeV
n-Gd148.jeff3.3 Threshold 2.0962 MeV
Cross Section (milli-barns)
30
25
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2
3
4
5
6
7
8
9
10^7
2
3
4
5
6
7
8
9
10^8
2
27
Incident Energy (eV)
64-Gd-148

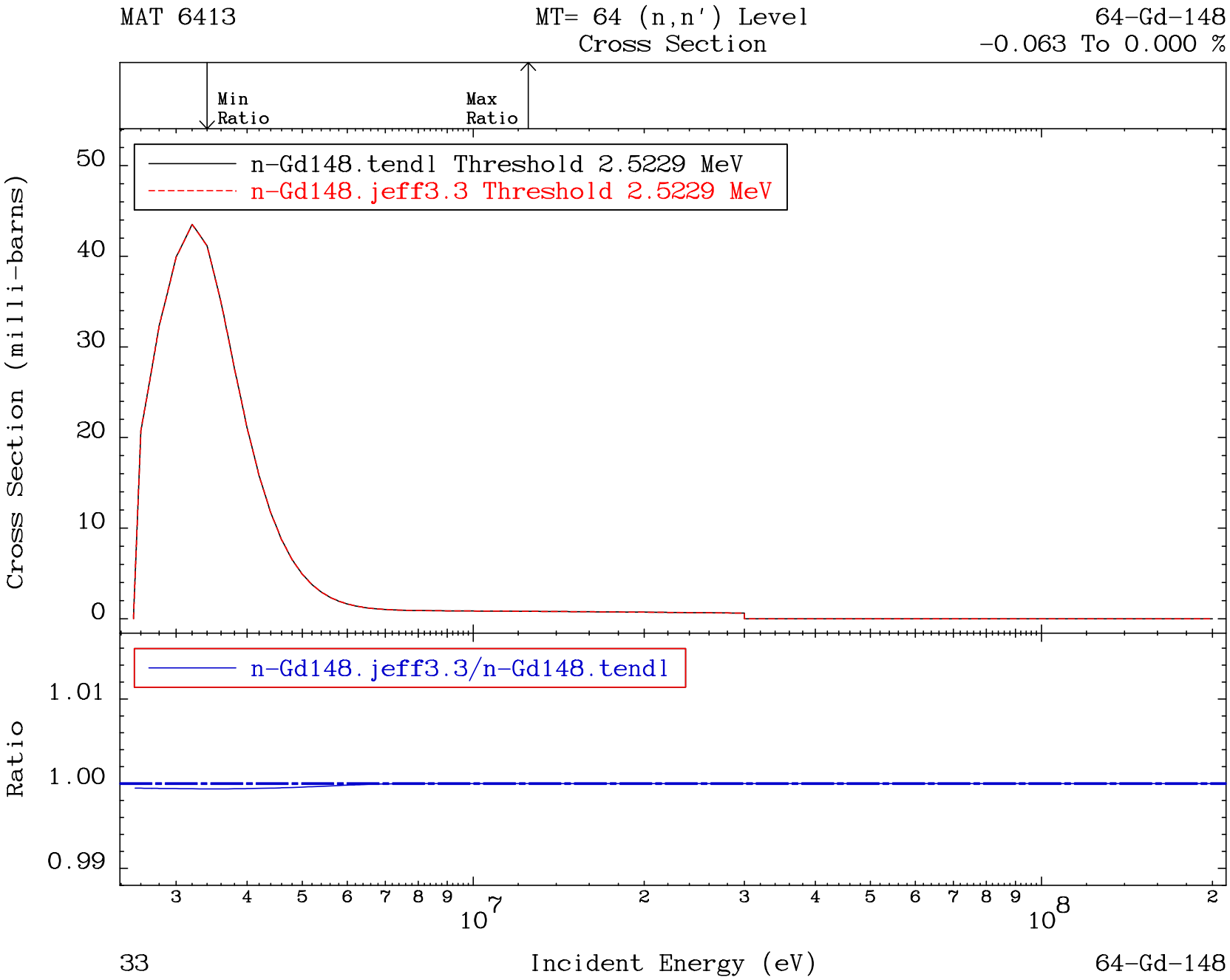

MAT 6413
MT= 59 (n,n') Level
Cross Section
64-Gd-148
-0.050 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.2036 MeV
n-Gd148.jeff3.3 Threshold 2.2036 MeV
Cross Section (milli-barns)
160
140
120
100
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
28
Incident Energy (eV)
64-Gd-148

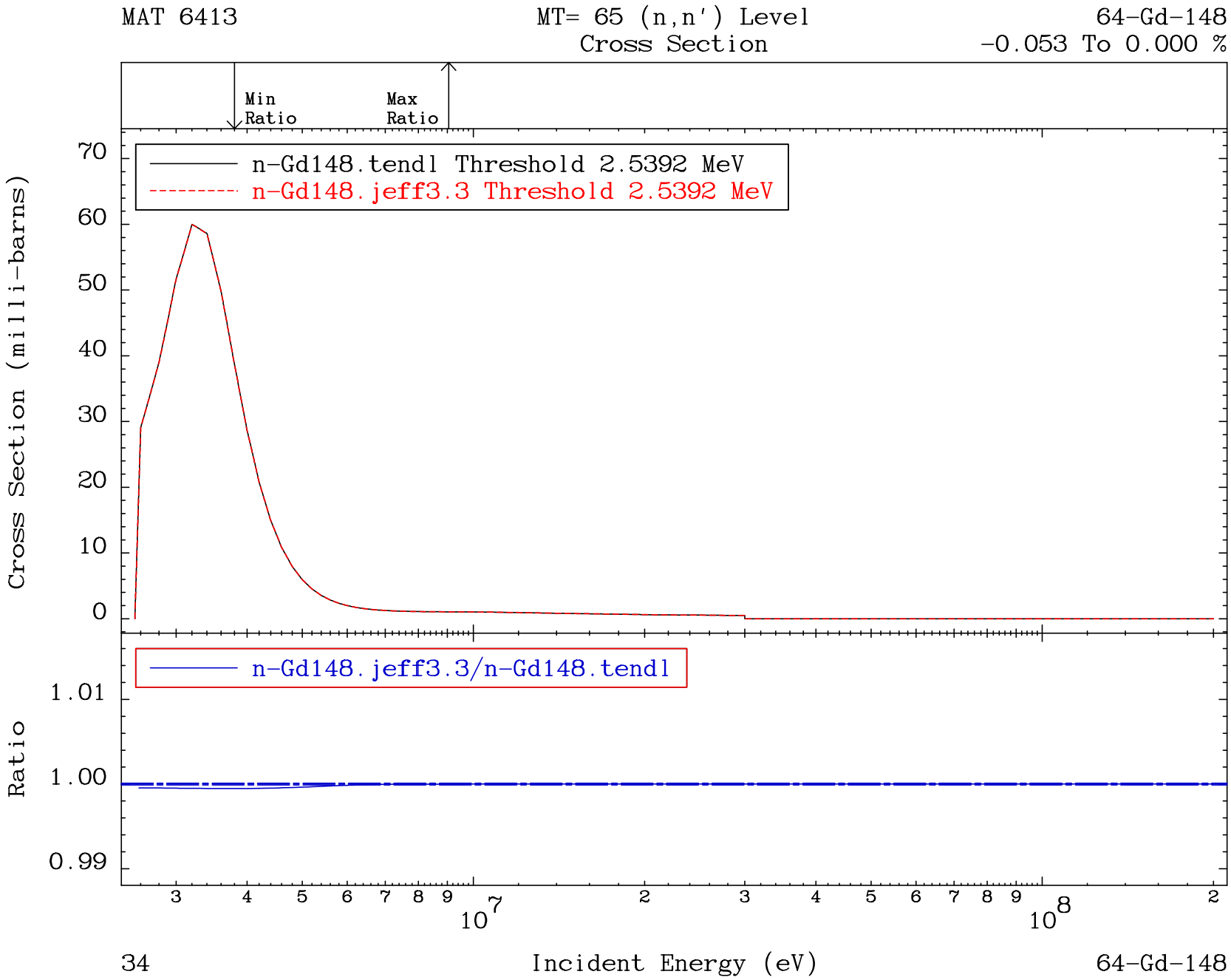

MAT 6413
MT= 60 (n,n') Level
Cross Section
64-Gd-148
-0.063 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.2488 MeV
n-Gd148.jeff3.3 Threshold 2.2488 MeV
Cross Section (milli-barns)
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
29
Incident Energy (eV)
64-Gd-148

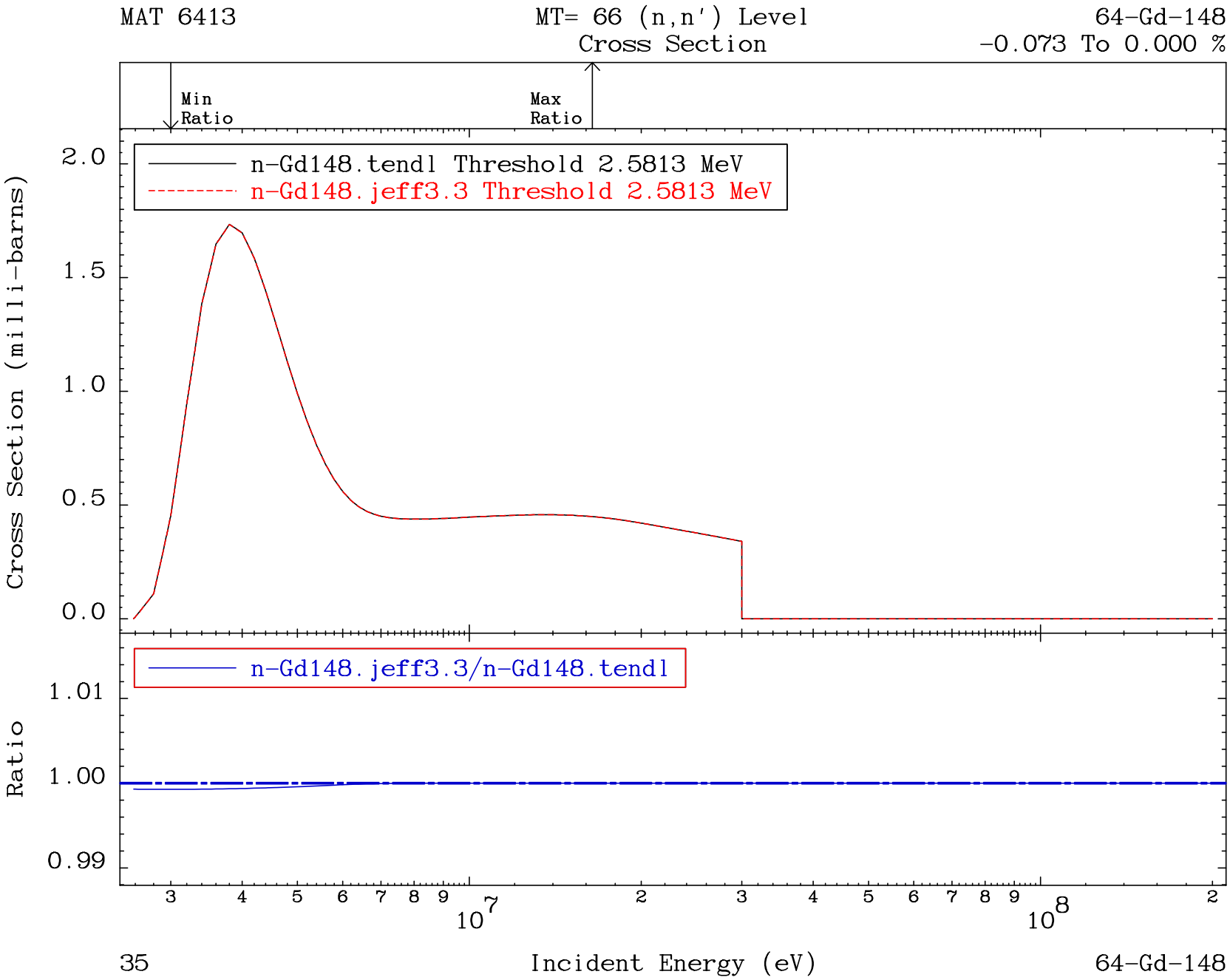

MAT 6413
MT= 61 (n,n') Level
Cross Section
64-Gd-148
-0.050 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.3267 MeV
n-Gd148.jeff3.3 Threshold 2.3267 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
30
Incident Energy (eV)
64-Gd-148

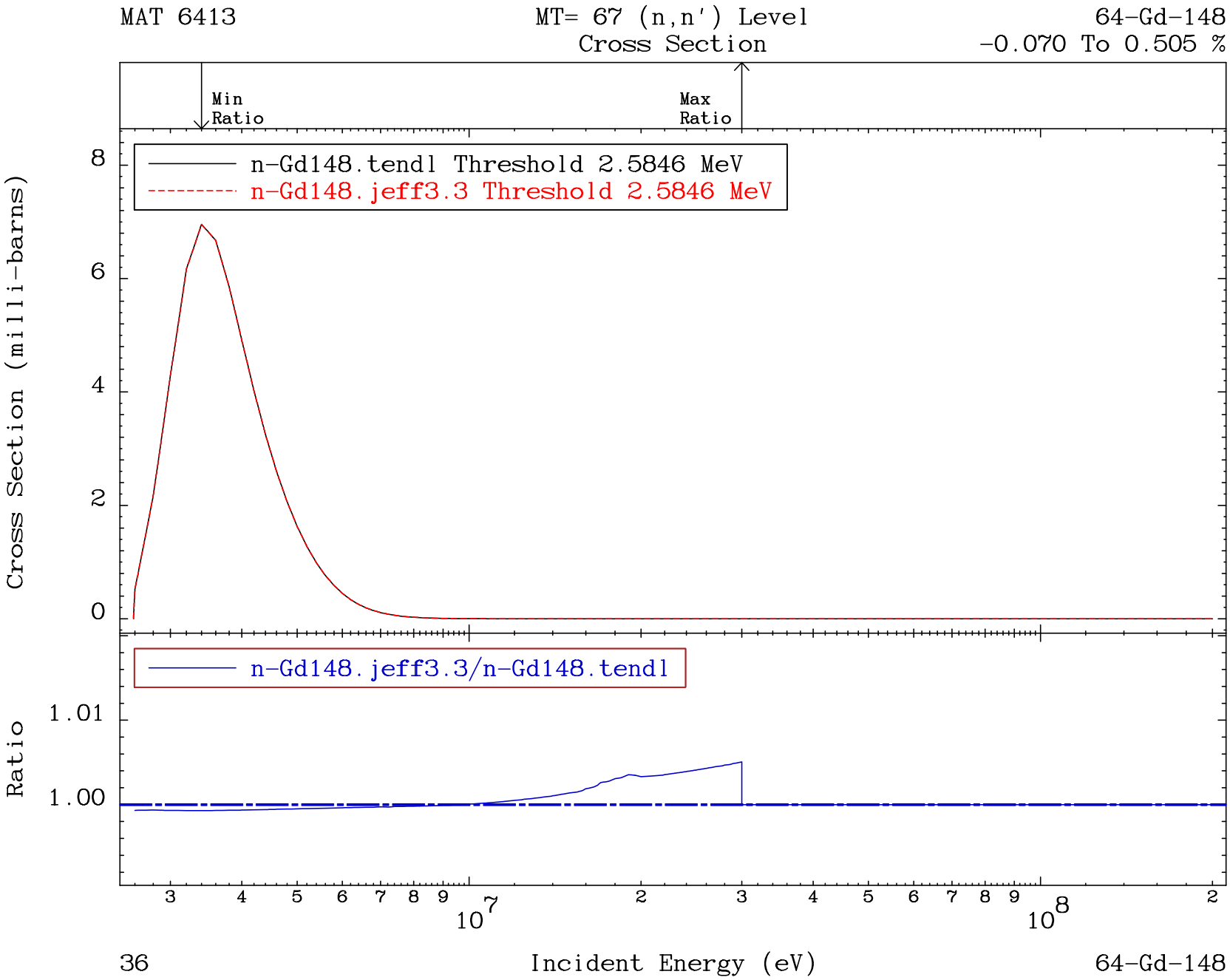

MAT 6413
MT= 62 (n,n') Level
Cross Section
64-Gd-148
-0.061 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.4406 MeV
n-Gd148.jeff3.3 Threshold 2.4406 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
31
Incident Energy (eV)
64-Gd-148

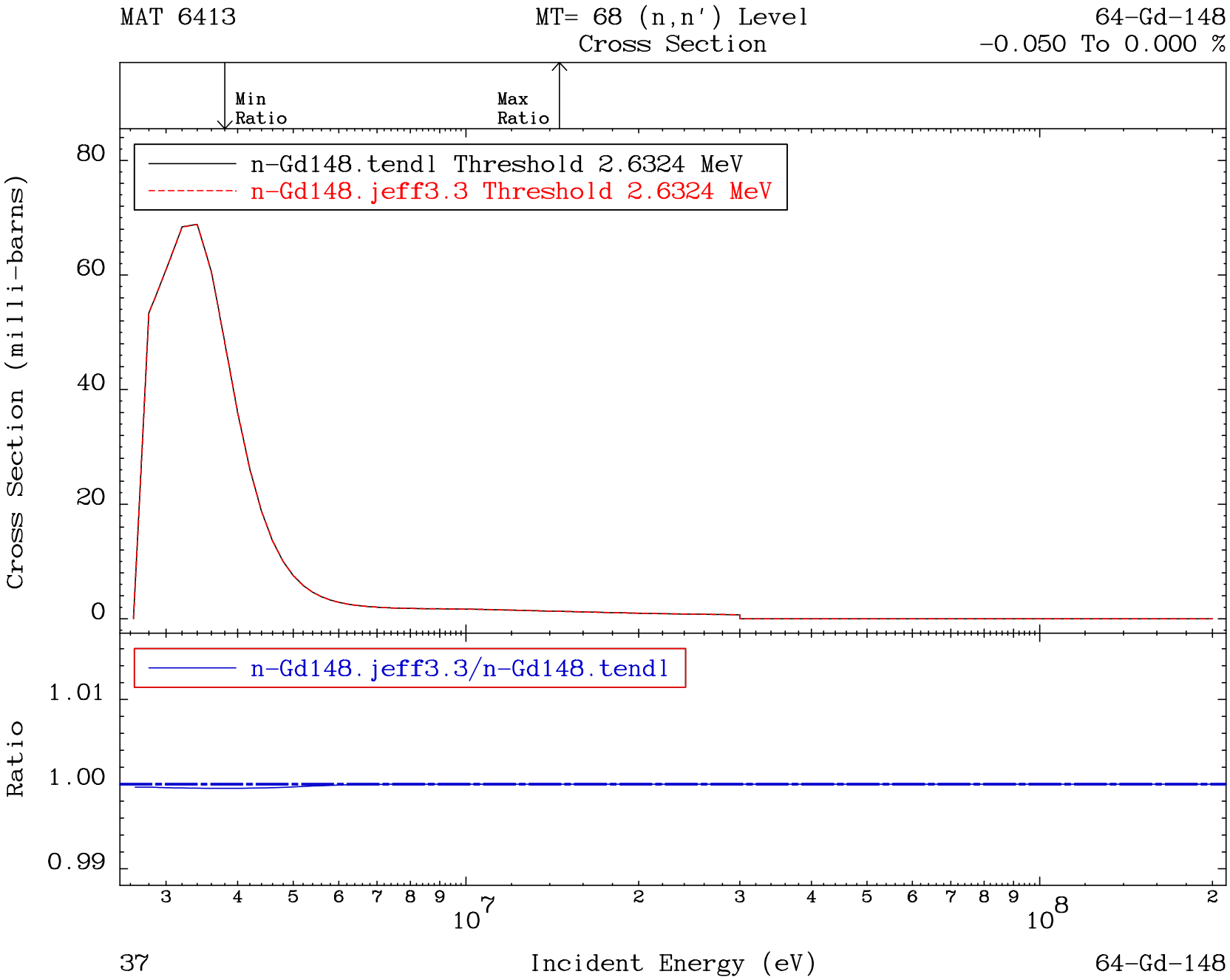

MAT 6413
MT= 63 (n,n') Level
Cross Section
64-Gd-148
-0.072 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.5208 MeV
n-Gd148.jeff3.3 Threshold 2.5208 MeV
Cross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
32
Incident Energy (eV)
64-Gd-148

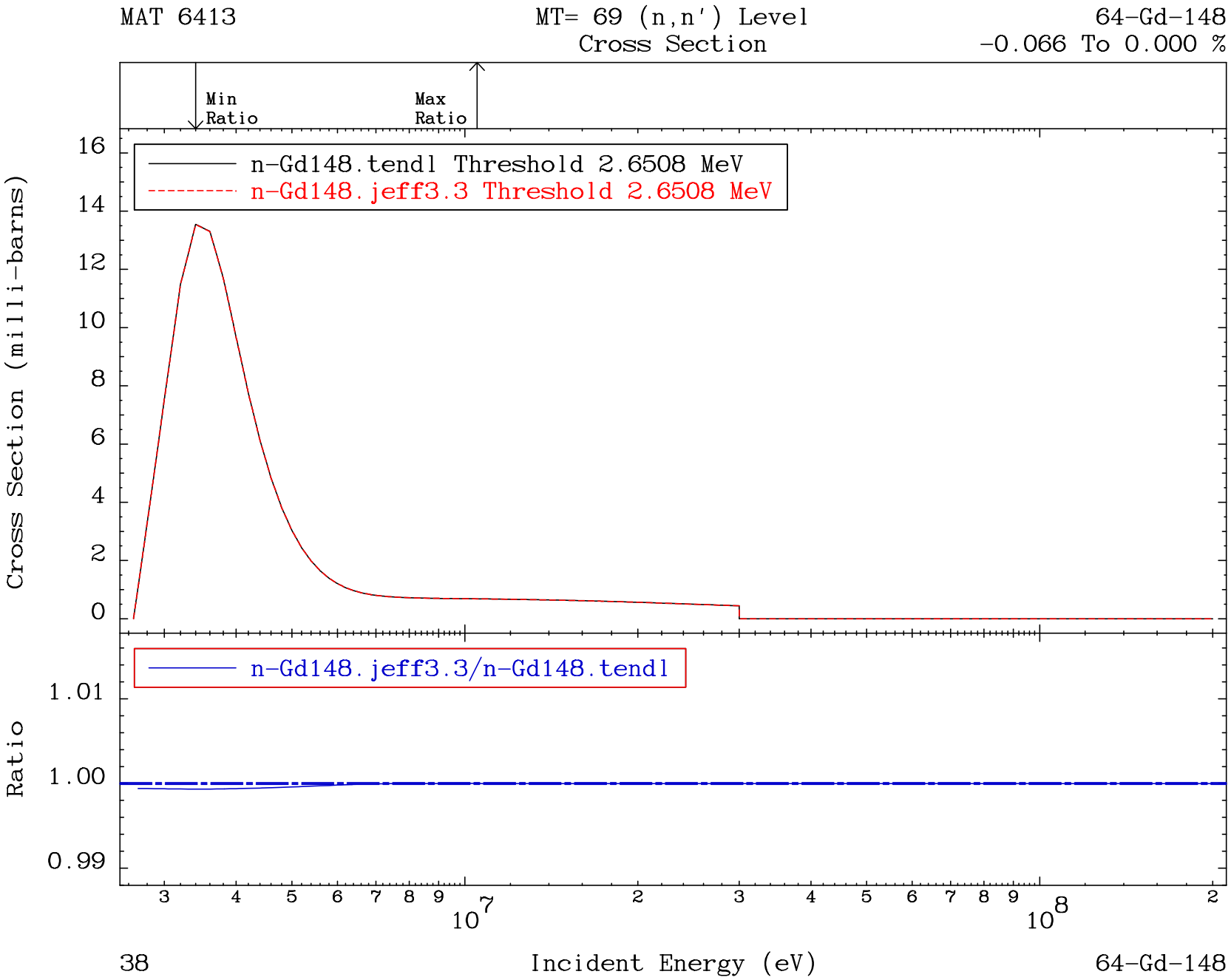

MAT 6413
MT= 64 (n,n') Level
Cross Section
64-Gd-148
-0.063 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.5229 MeV
n-Gd148.jeff3.3 Threshold 2.5229 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
33
Incident Energy (eV)
64-Gd-148

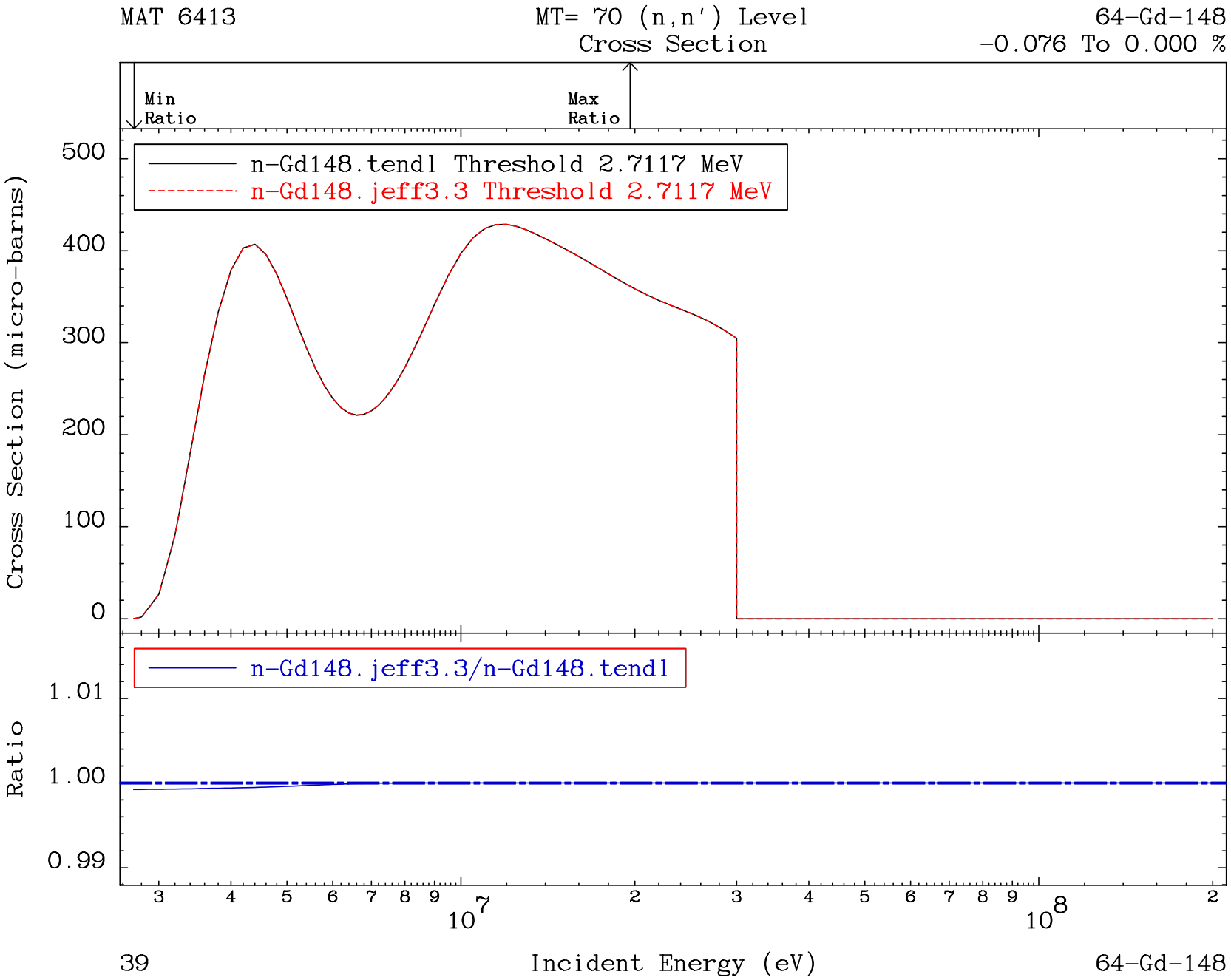

MAT 6413
MT= 65 (n,n') Level
Cross Section
64-Gd-148
-0.053 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.5392 MeV
n-Gd148.jeff3.3 Threshold 2.5392 MeV
Cross Section (milli-barns)
70
60
50
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
34
Incident Energy (eV)
64-Gd-148

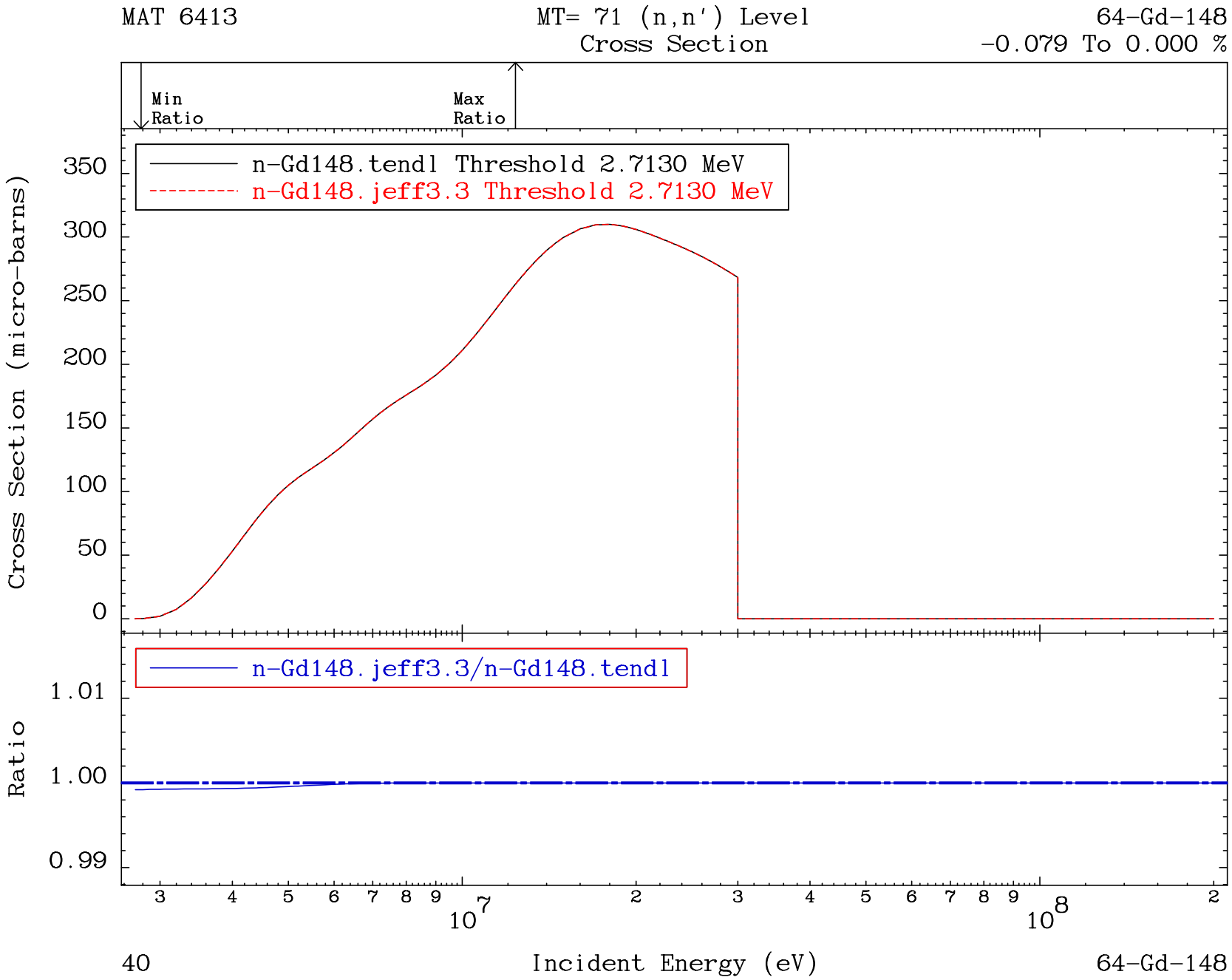

MAT 6413
MT= 66 (n,n') Level
Cross Section
64-Gd-148
-0.073 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.5813 MeV
n-Gd148.jeff3.3 Threshold 2.5813 MeV
Cross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
35
Incident Energy (eV)
64-Gd-148

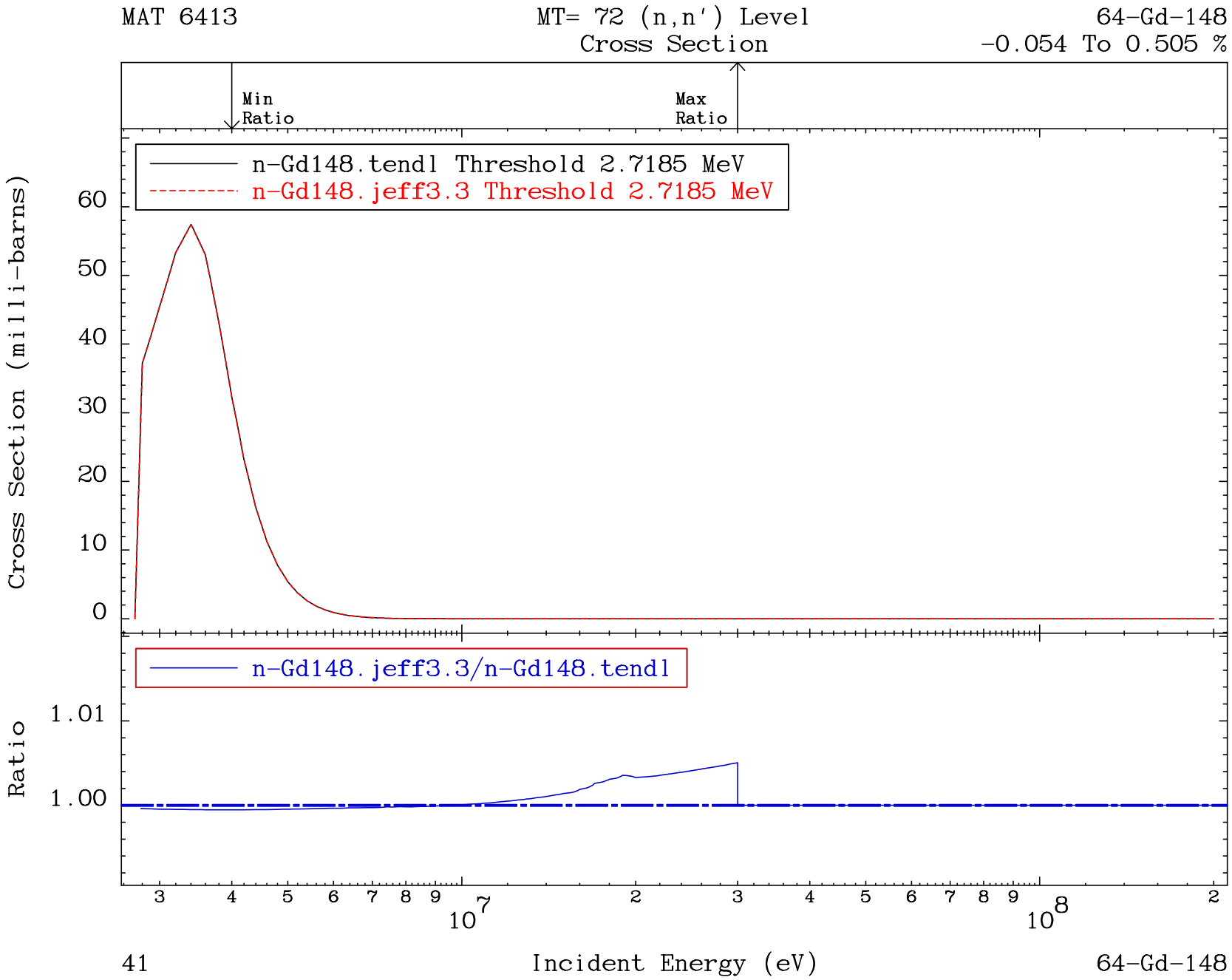

MAT 6413
MT= 67 (n,n') Level
Cross Section
64-Gd-148
-0.070 To 0.505 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.5846 MeV
n-Gd148.jeff3.3 Threshold 2.5846 MeV
Cross Section (milli-barns)
0
2
4
6
8
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.00
1.01
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
Incident Energy (eV)
36
64-Gd-148

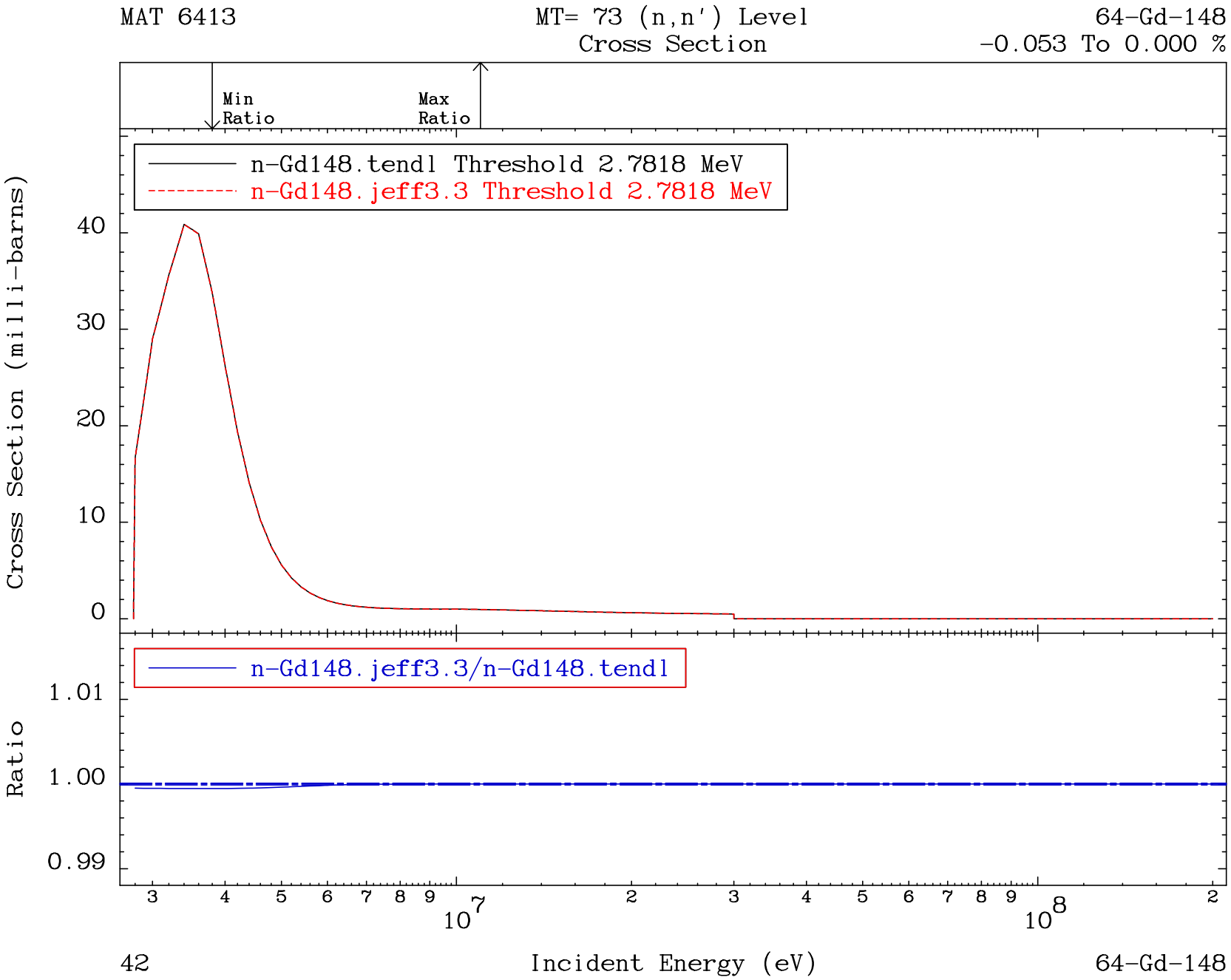

MAT 6413
MT= 68 (n,n') Level
Cross Section
64-Gd-148
-0.050 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.6324 MeV
n-Gd148.jeff3.3 Threshold 2.6324 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
37
Incident Energy (eV)
64-Gd-148

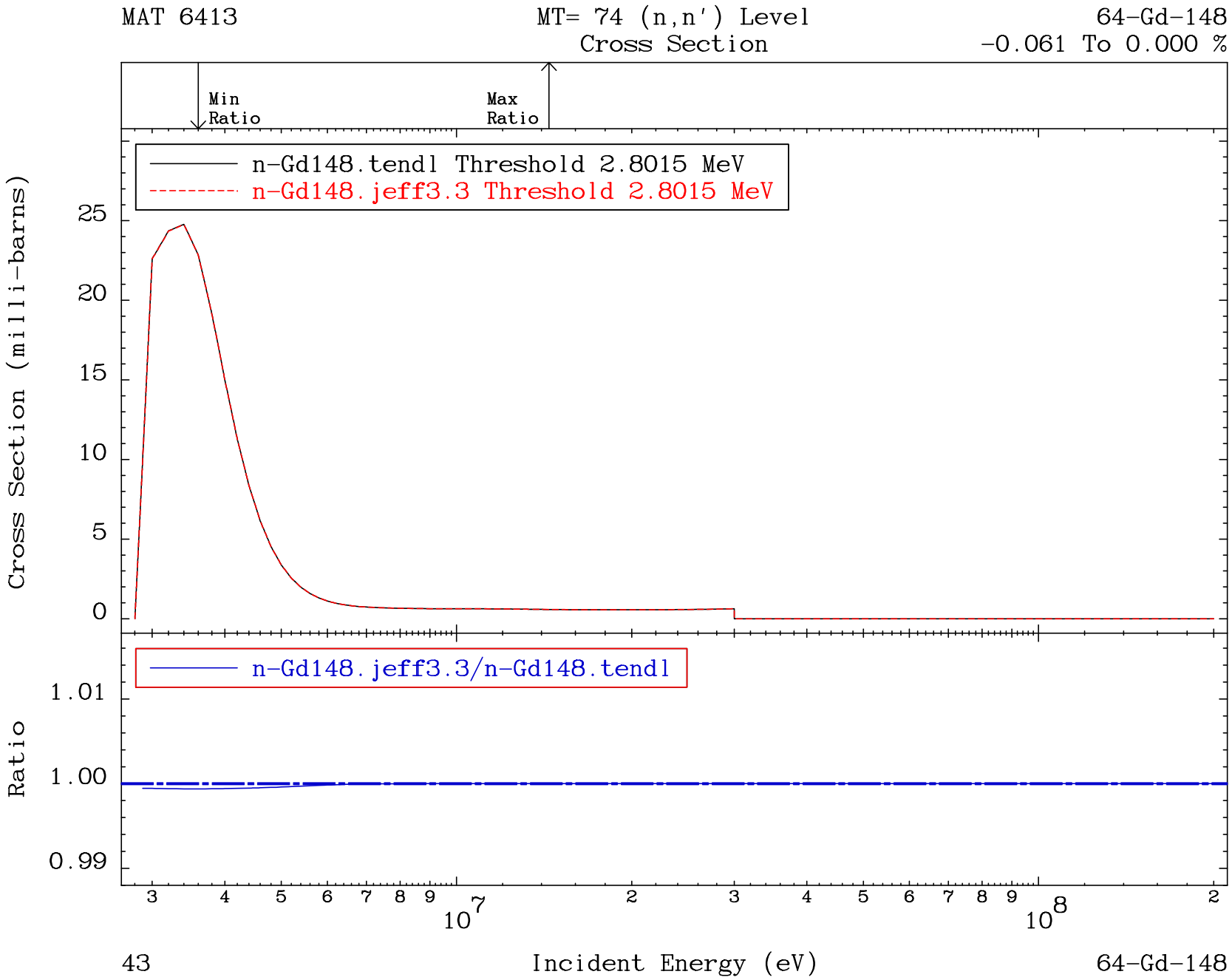

MAT 6413
MT= 69 (n,n') Level
Cross Section
64-Gd-148
-0.066 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.6508 MeV
n-Gd148.jeff3.3 Threshold 2.6508 MeV
Cross Section (milli-barns)
16
14
12
10
8
6
4
2
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
38
Incident Energy (eV)
64-Gd-148

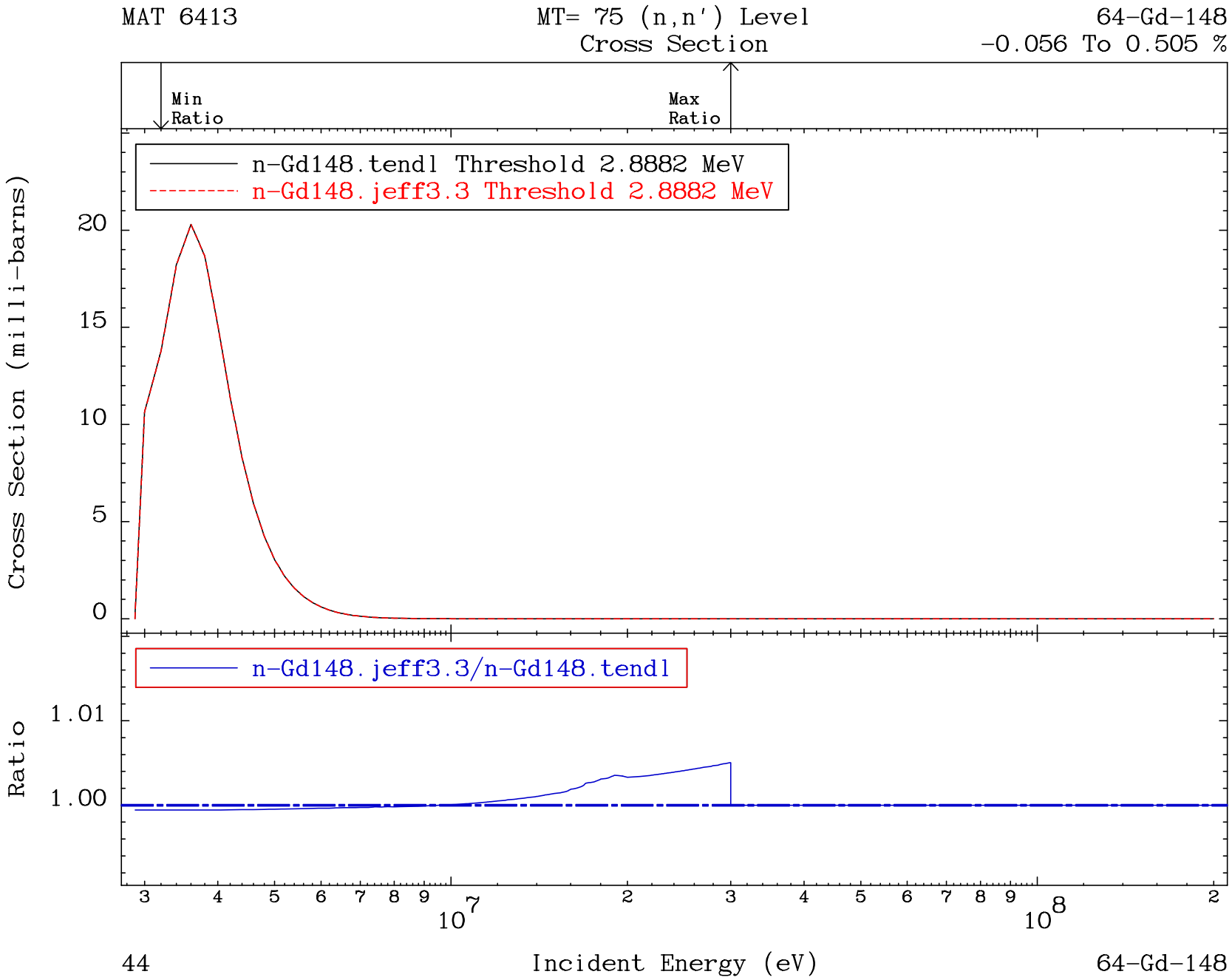

MAT 6413
MT= 70 (n,n') Level
Cross Section
64-Gd-148
-0.076 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.7117 MeV
n-Gd148.jeff3.3 Threshold 2.7117 MeV
Cross Section (micro-barns)
500
400
300
200
100
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
39
Incident Energy (eV)
64-Gd-148

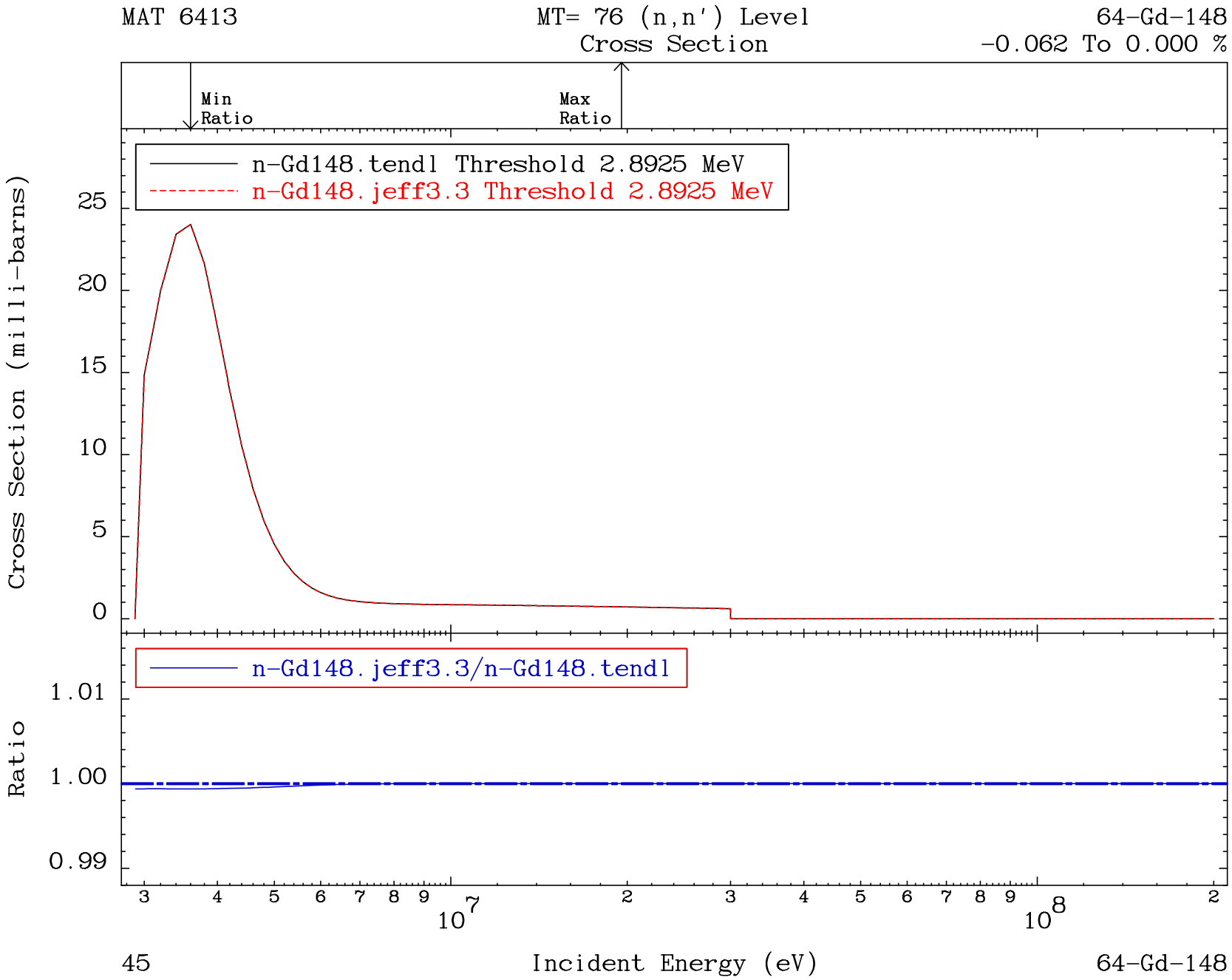

MAT 6413
MT= 71 (n,n') Level
Cross Section
64-Gd-148
-0.079 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.7130 MeV
n-Gd148.jeff3.3 Threshold 2.7130 MeV
Cross Section (micro-barns)
350
300
250
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
40
Incident Energy (eV)
64-Gd-148

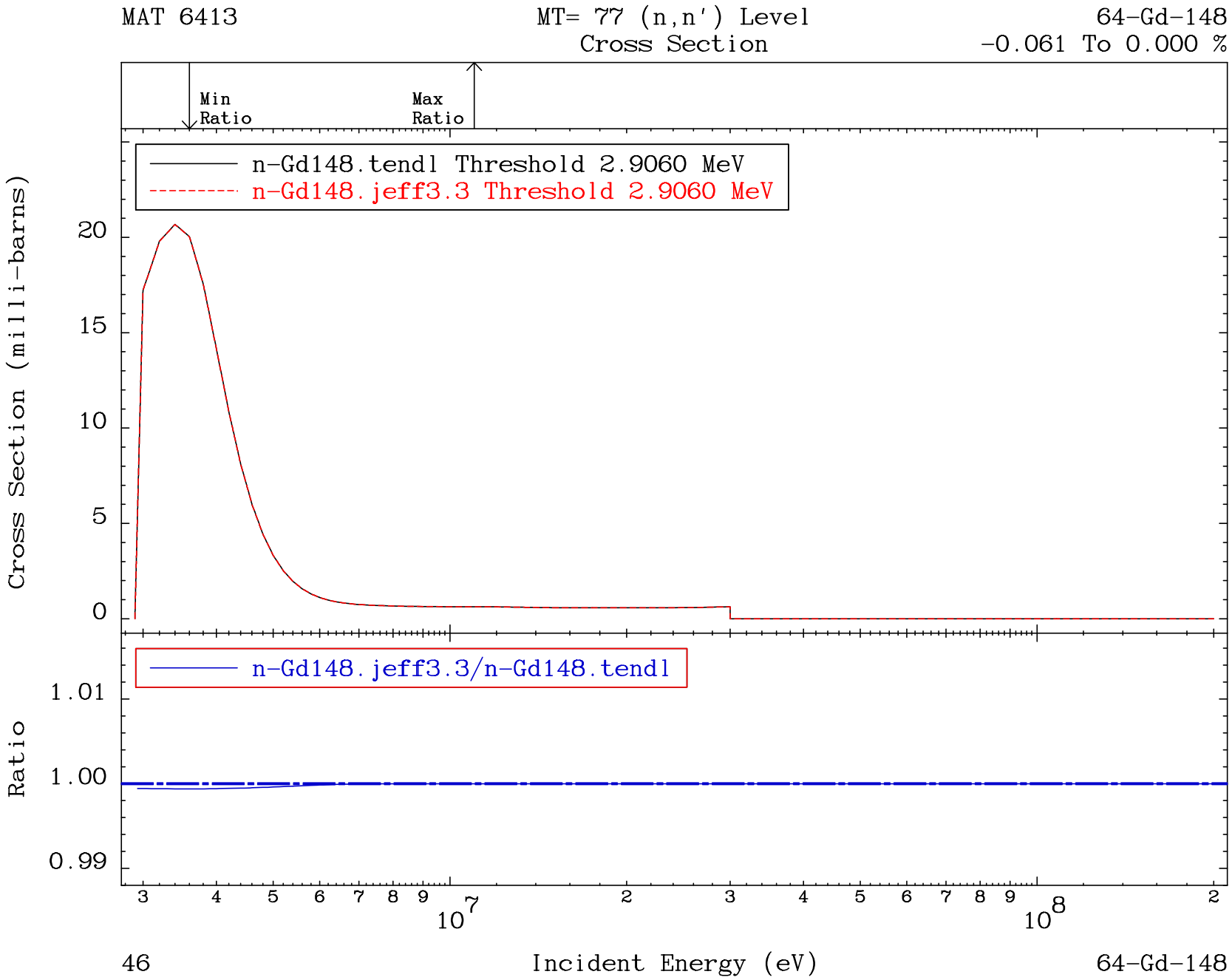

MAT 6413
MT= 72 (n,n') Level
Cross Section
64-Gd-148
-0.054 To 0.505 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 2.7185 MeV
n-Gd148.jeff3.3 Threshold 2.7185 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
41
Incident Energy (eV)
64-Gd-148

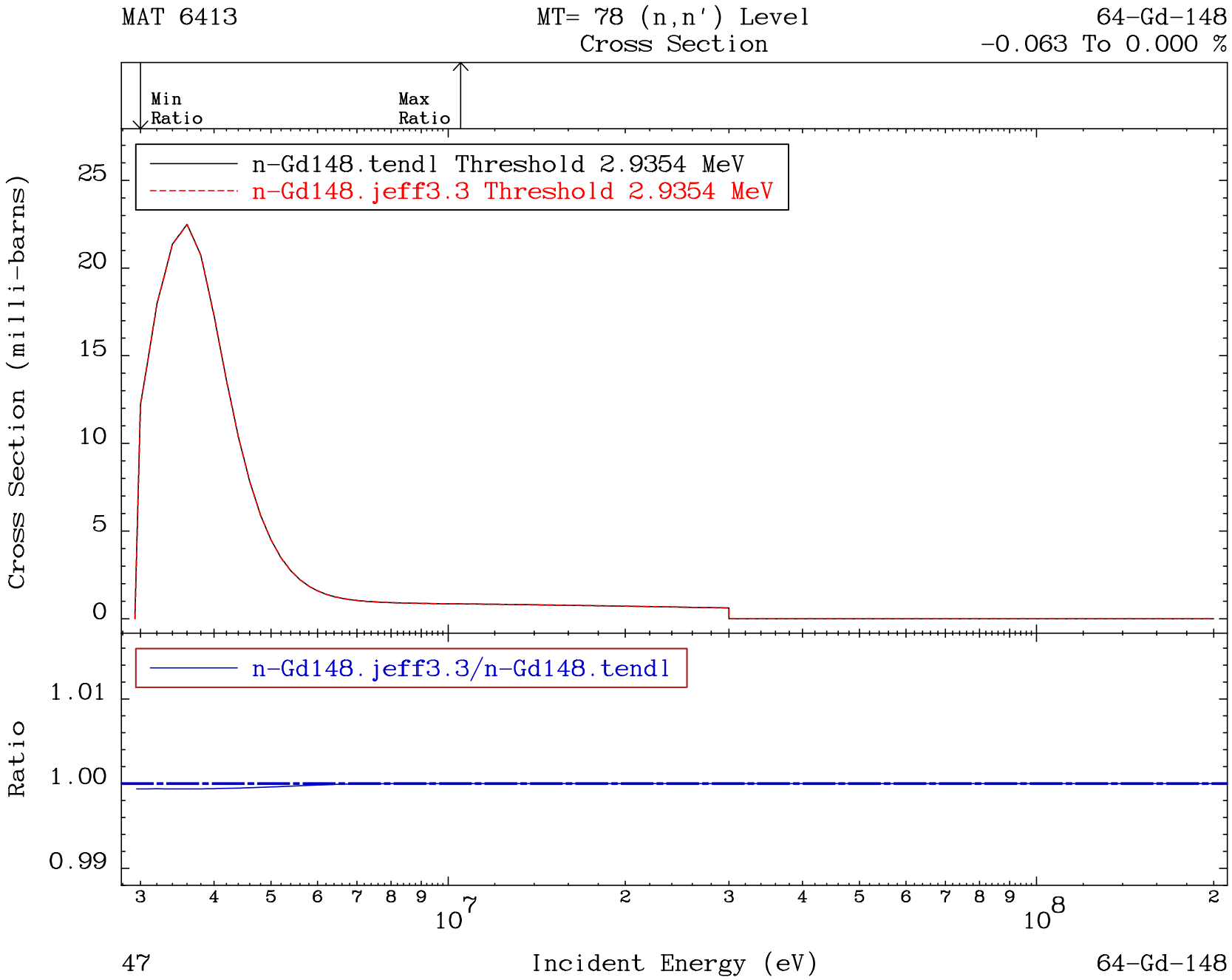

MAT 6413
MT= 73 (n,n') Level
Cross Section
64-Gd-148
-0.053 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.7818 MeV
n-Gd148.jeff3.3 Threshold 2.7818 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
42
Incident Energy (eV)
64-Gd-148

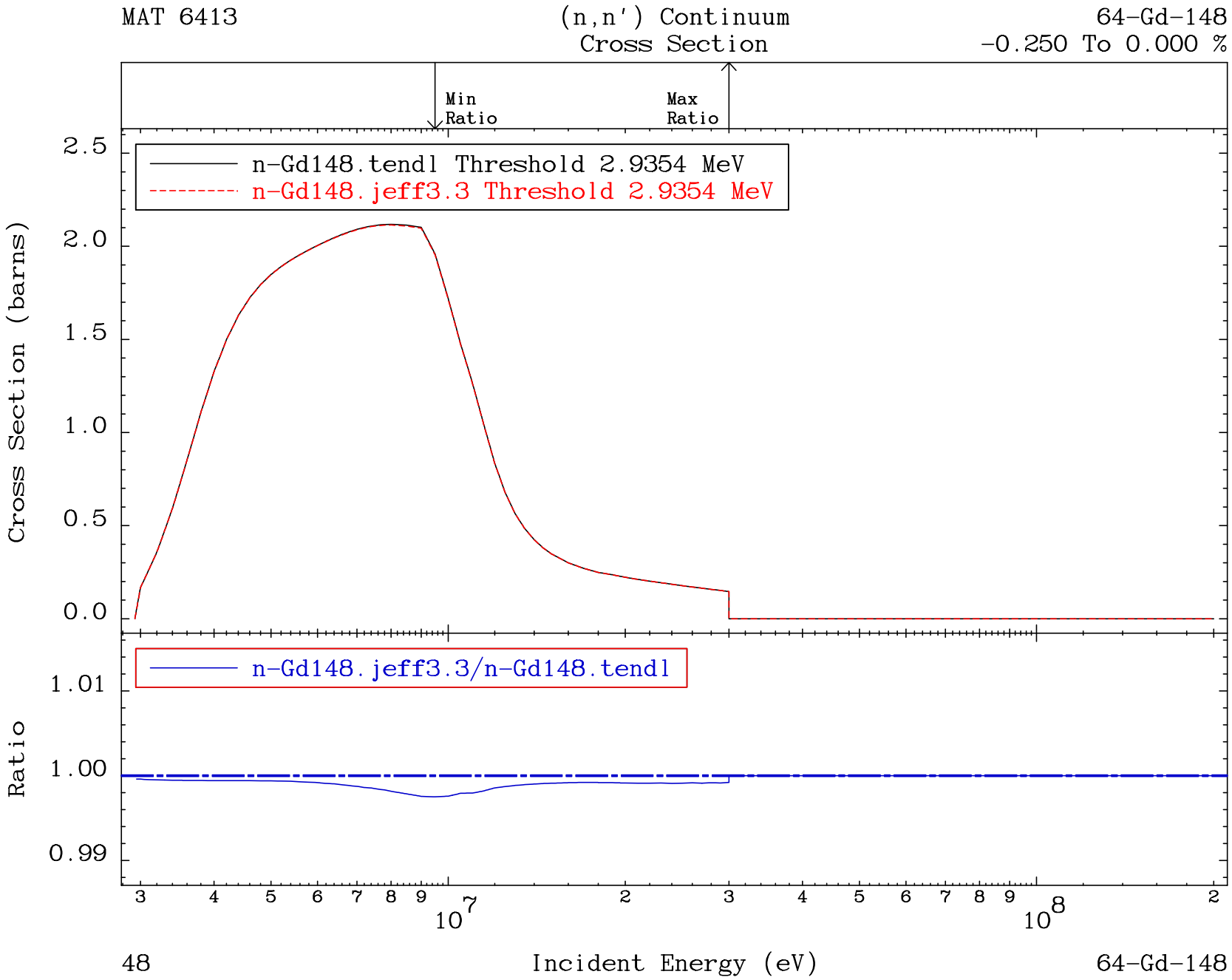

MAT 6413
MT= 74 (n,n') Level
Cross Section
64-Gd-148
-0.061 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.8015 MeV
n-Gd148.jeff3.3 Threshold 2.8015 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
43
Incident Energy (eV)
64-Gd-148

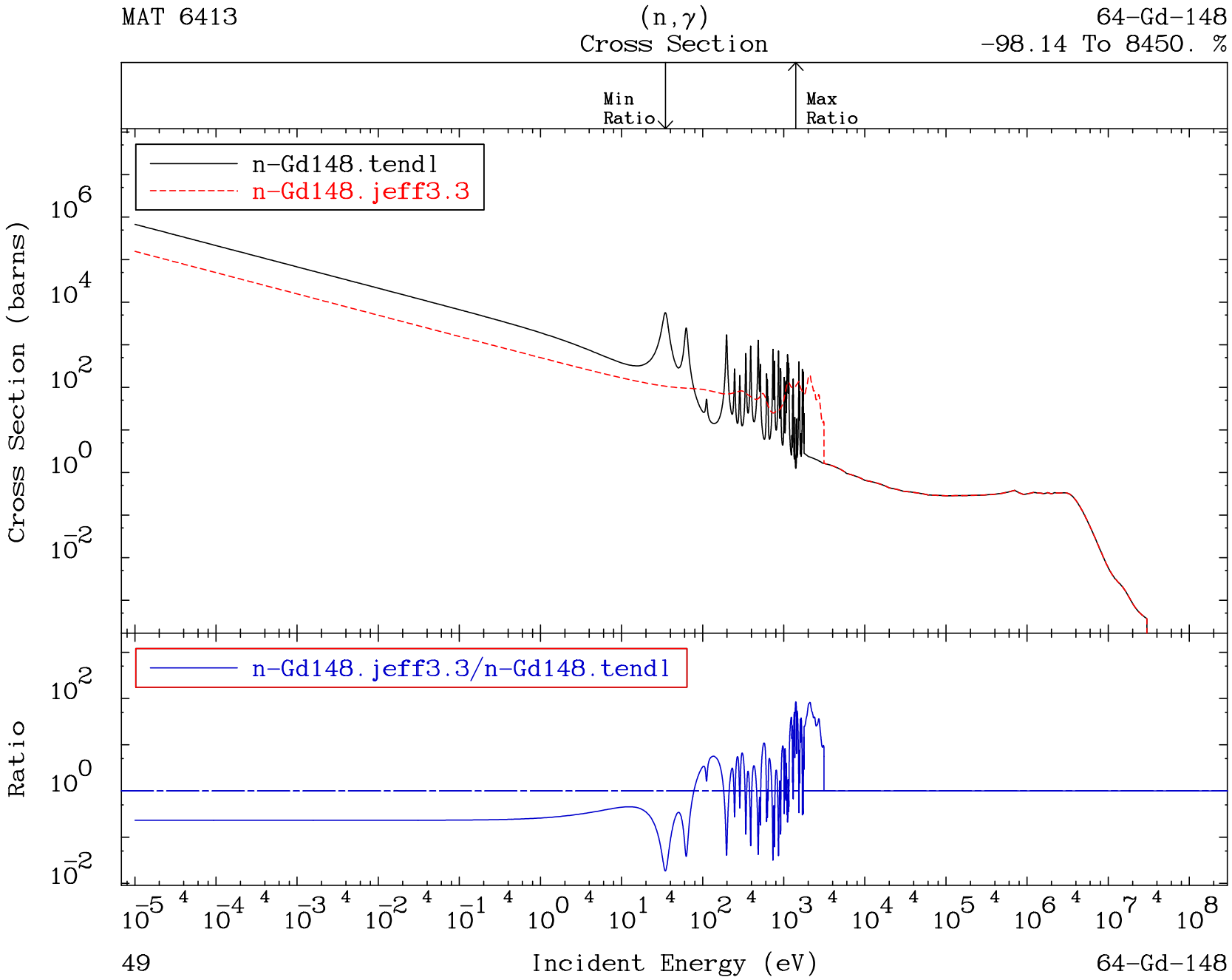

MAT 6413
MT= 75 (n,n') Level
Cross Section
64-Gd-148
-0.056 To 0.505 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.8882 MeV
n-Gd148.jeff3.3 Threshold 2.8882 MeV
Cross Section (milli-barns)
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
44
Incident Energy (eV)
64-Gd-148

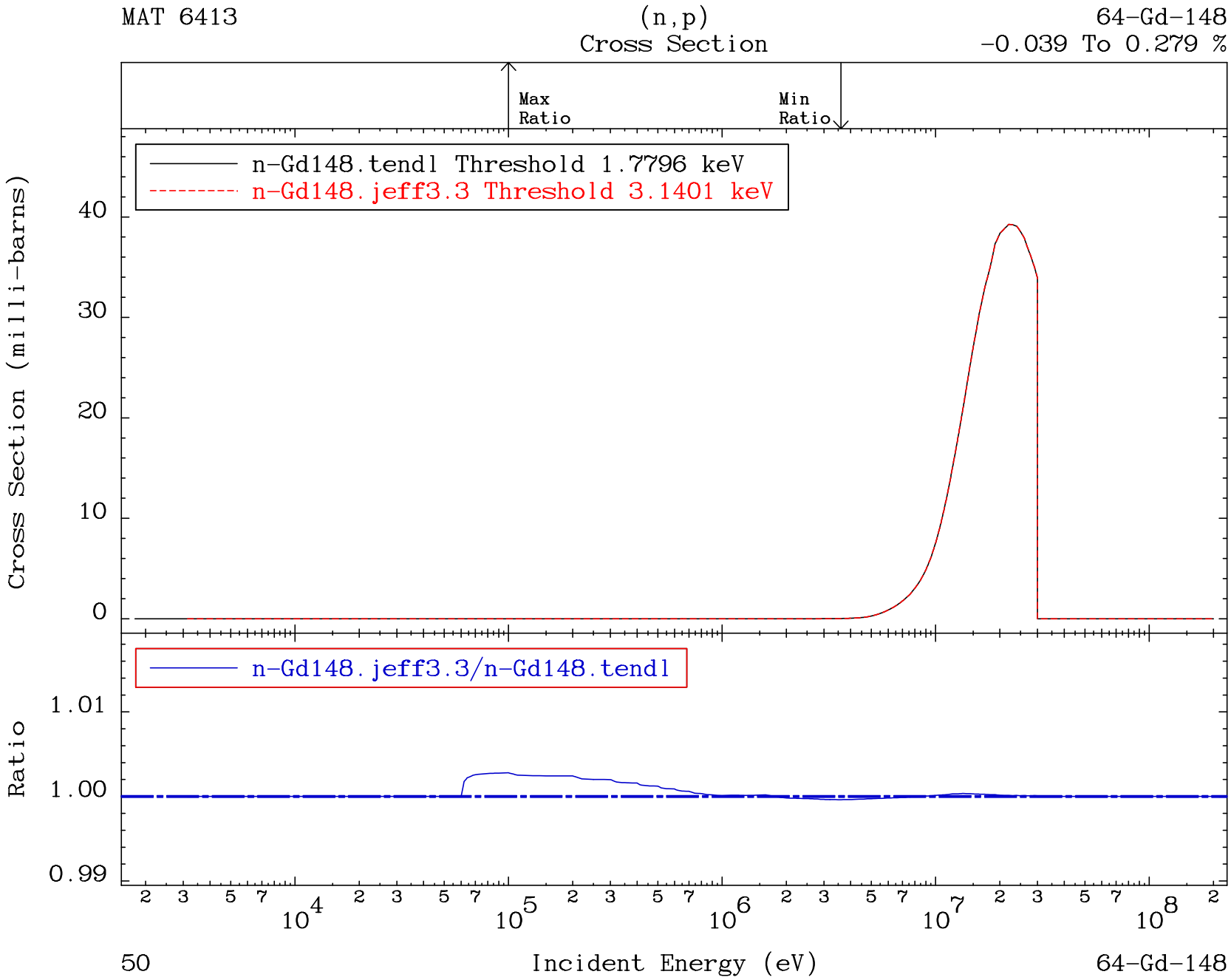

MAT 6413
MT= 76 (n,n') Level
Cross Section
64-Gd-148
-0.062 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.8925 MeV
n-Gd148.jeff3.3 Threshold 2.8925 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
45
Incident Energy (eV)
64-Gd-148

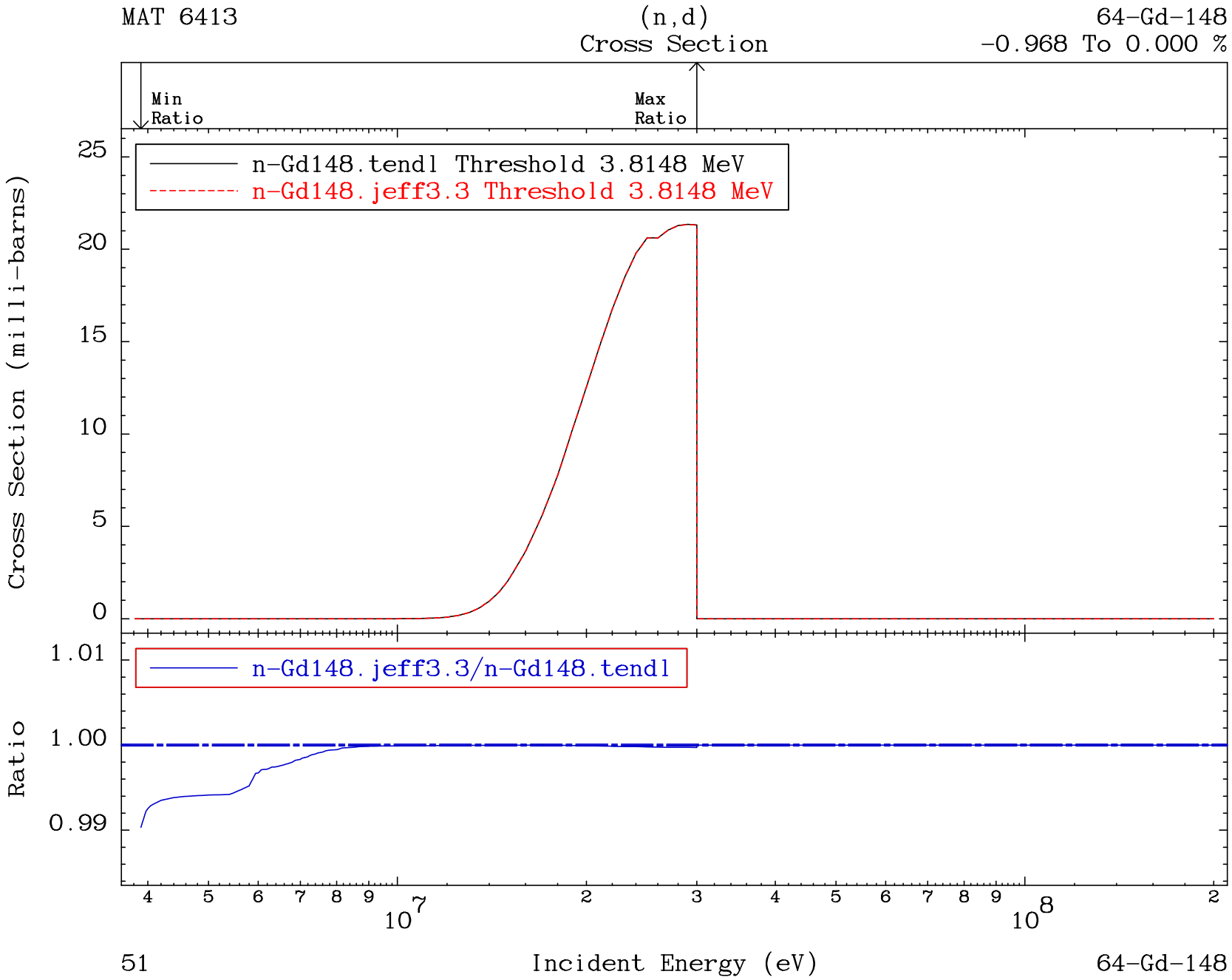

MAT 6413
MT= 77 (n,n') Level
Cross Section
64-Gd-148
-0.061 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.9060 MeV
n-Gd148.jeff3.3 Threshold 2.9060 MeV
Cross Section (milli-barns)
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
46
Incident Energy (eV)
64-Gd-148

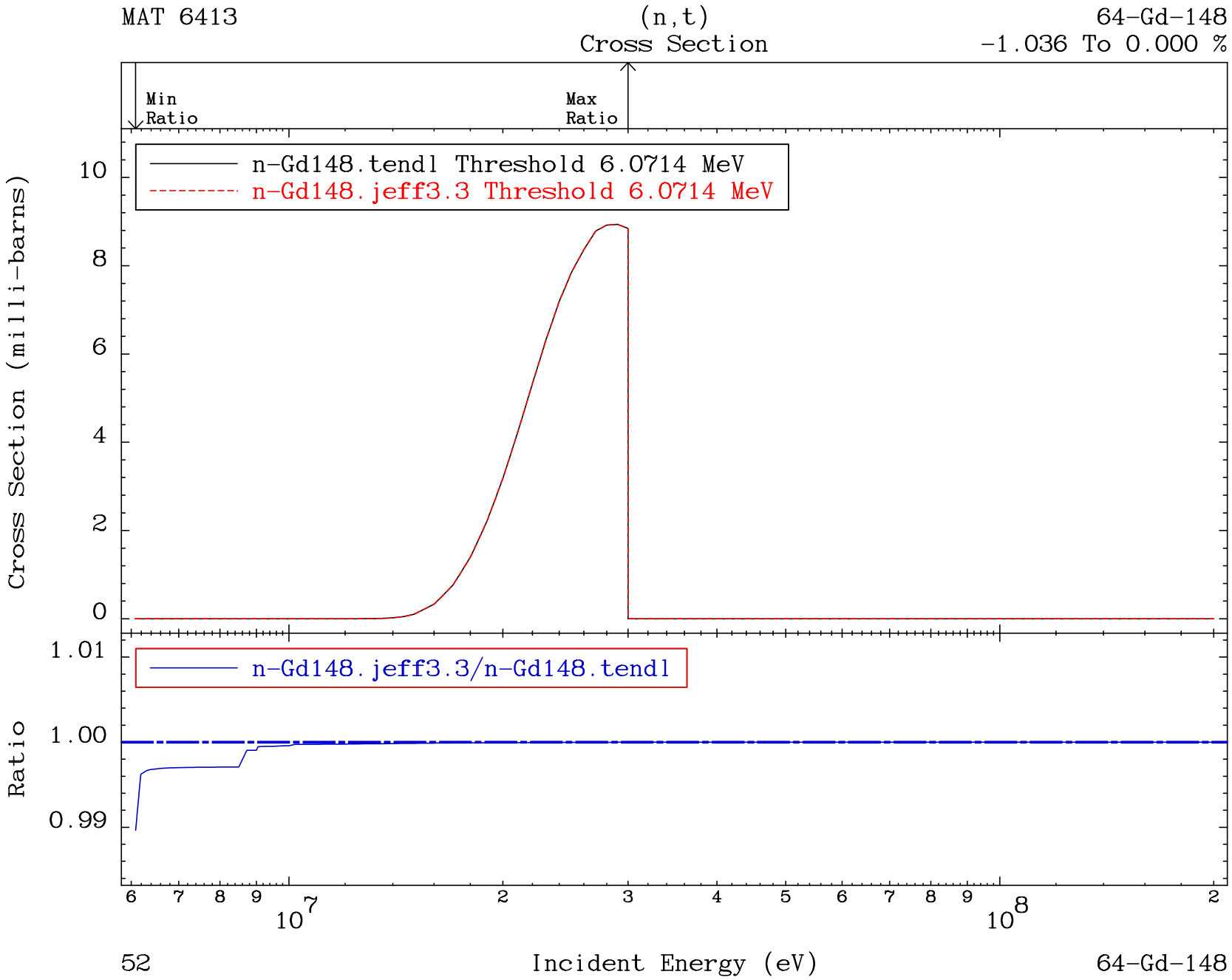

MAT 6413
MT= 78 (n,n') Level
Cross Section
64-Gd-148
-0.063 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.9354 MeV
n-Gd148.jeff3.3 Threshold 2.9354 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
47
Incident Energy (eV)
64-Gd-148

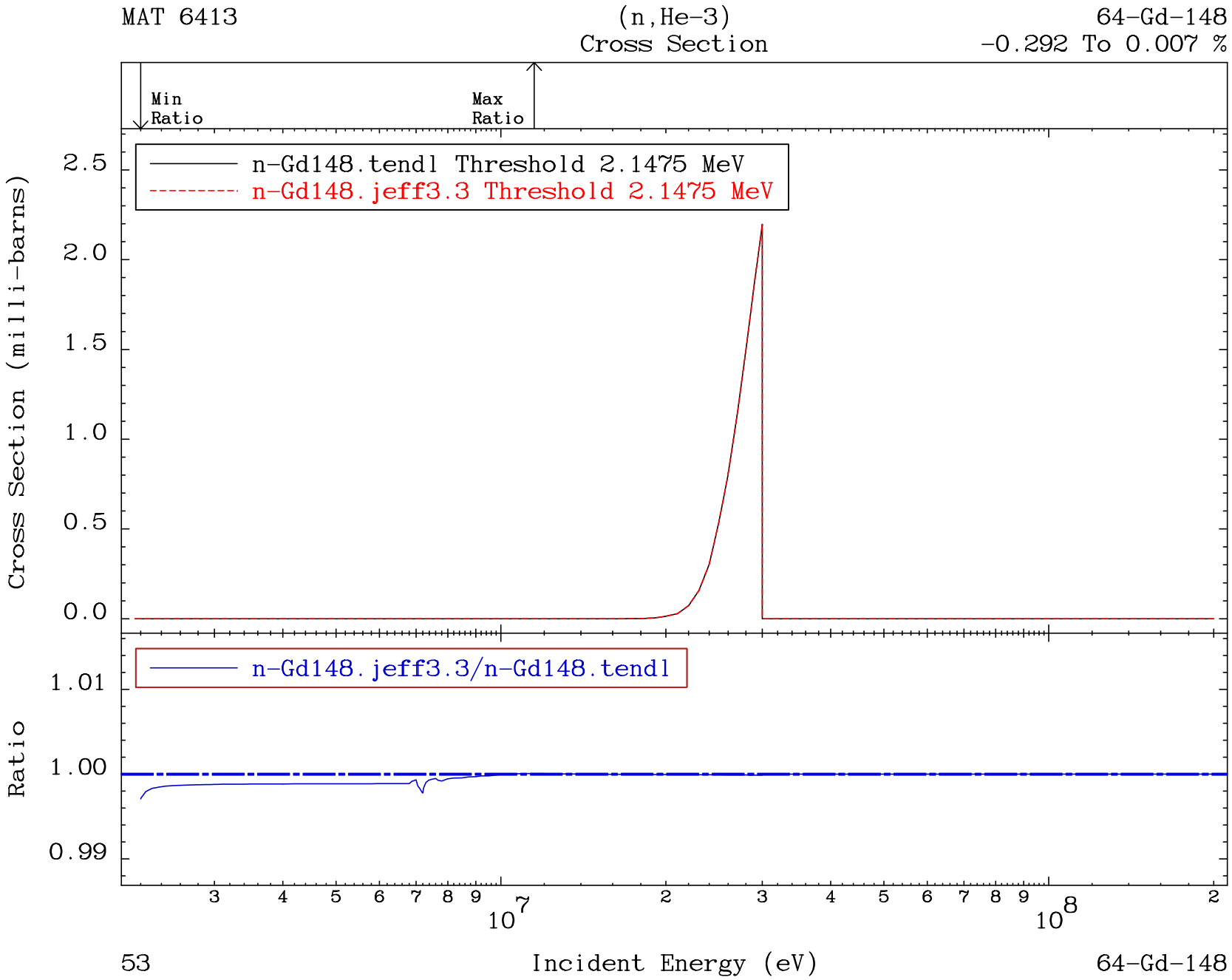

MAT 6413
(n,n') Continuum
Cross Section
64-Gd-148
-0.250 To 0.000 %
Min
Ratio
Max
Ratio
n-Gd148.tendl Threshold 2.9354 MeV
n-Gd148.jeff3.3 Threshold 2.9354 MeV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
48
Incident Energy (eV)
64-Gd-148

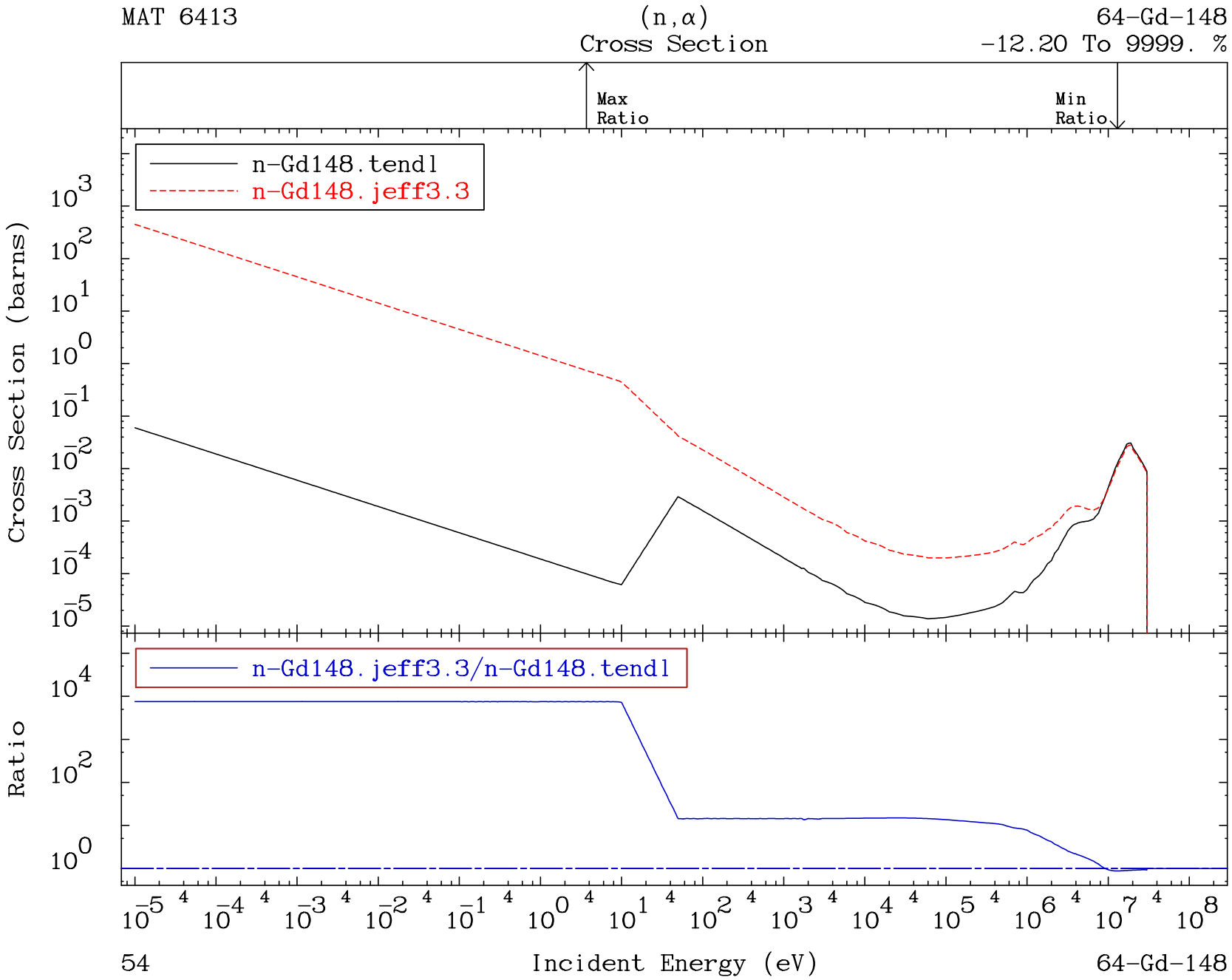

MAT 6413
(n,γ)
Cross Section
64-Gd-148
-98.14 To 8450. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
49
64-Gd-148

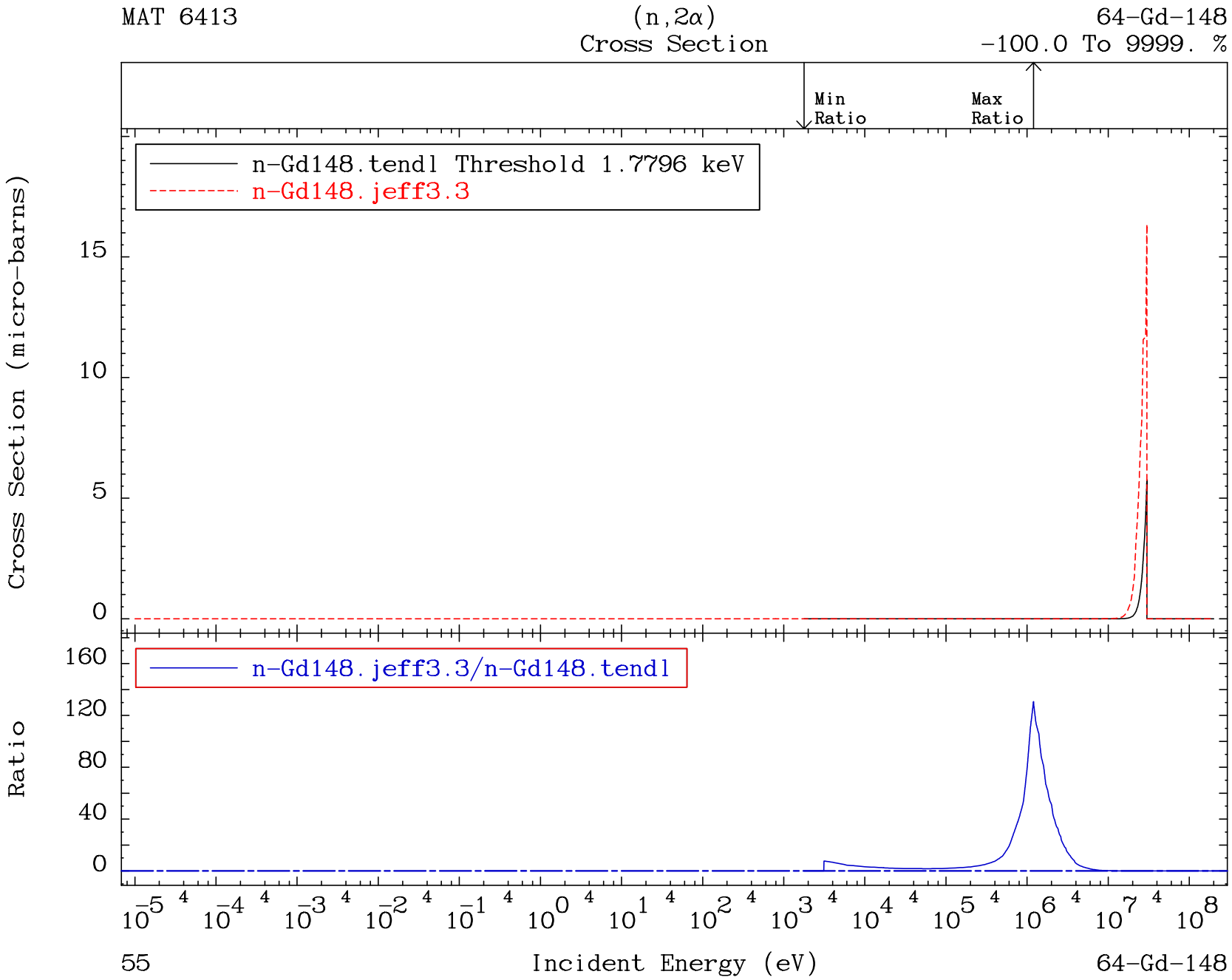

MAT 6413
(n,p)
Cross Section
64-Gd-148
-0.039 To 0.279 %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 1.7796 keV
n-Gd148.jeff3.3 Threshold 3.1401 keV
Cross Section (milli-barns)
40
30
20
10
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
50
Incident Energy (eV)
64-Gd-148

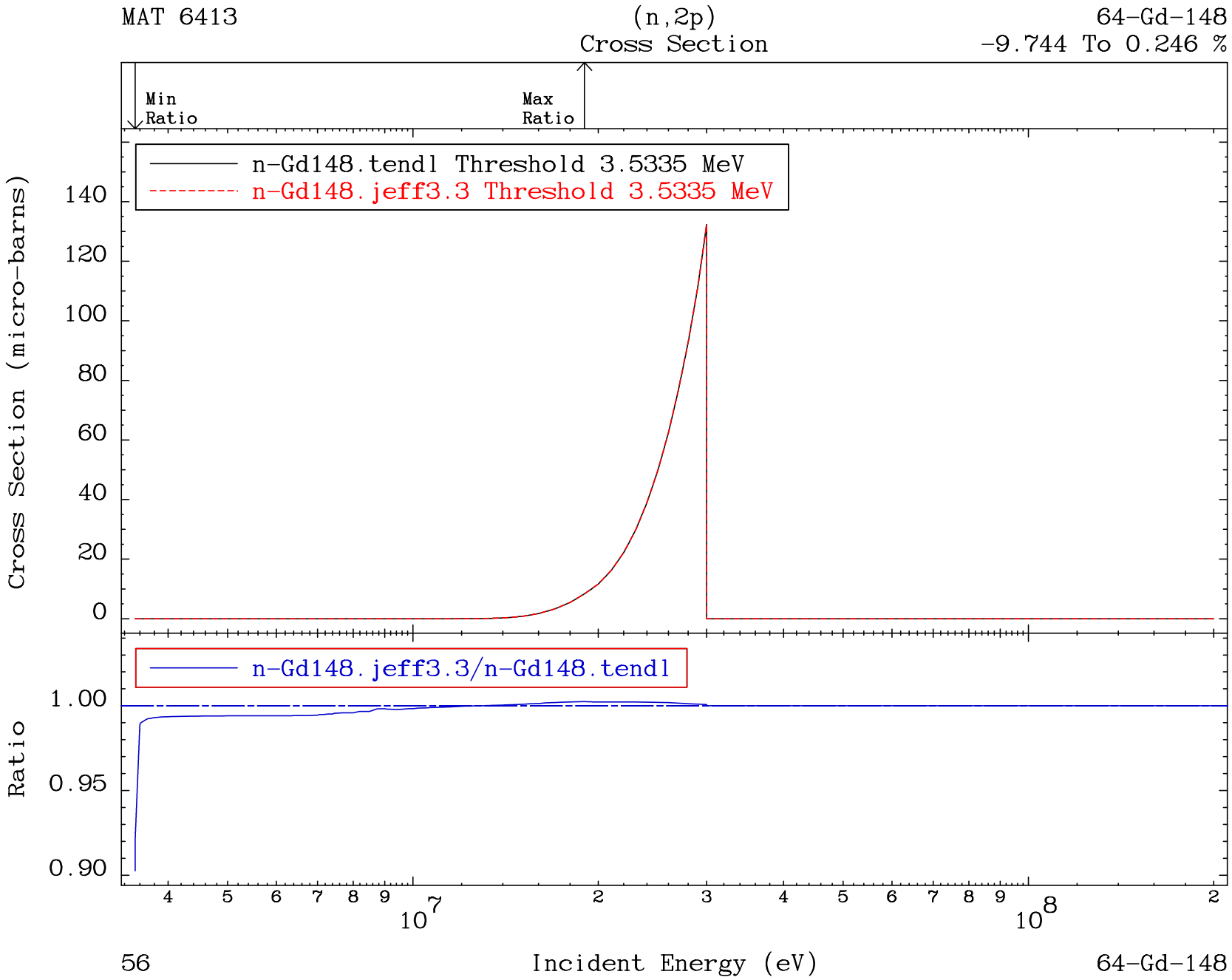

MAT 6413
(n,d)
Cross Section
64-Gd-148
-0.968 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 3.8148 MeV
n-Gd148.jeff3.3 Threshold 3.8148 MeV
Cross Section (milli-barns)
25
20
15
10
5
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
51
Incident Energy (eV)
64-Gd-148

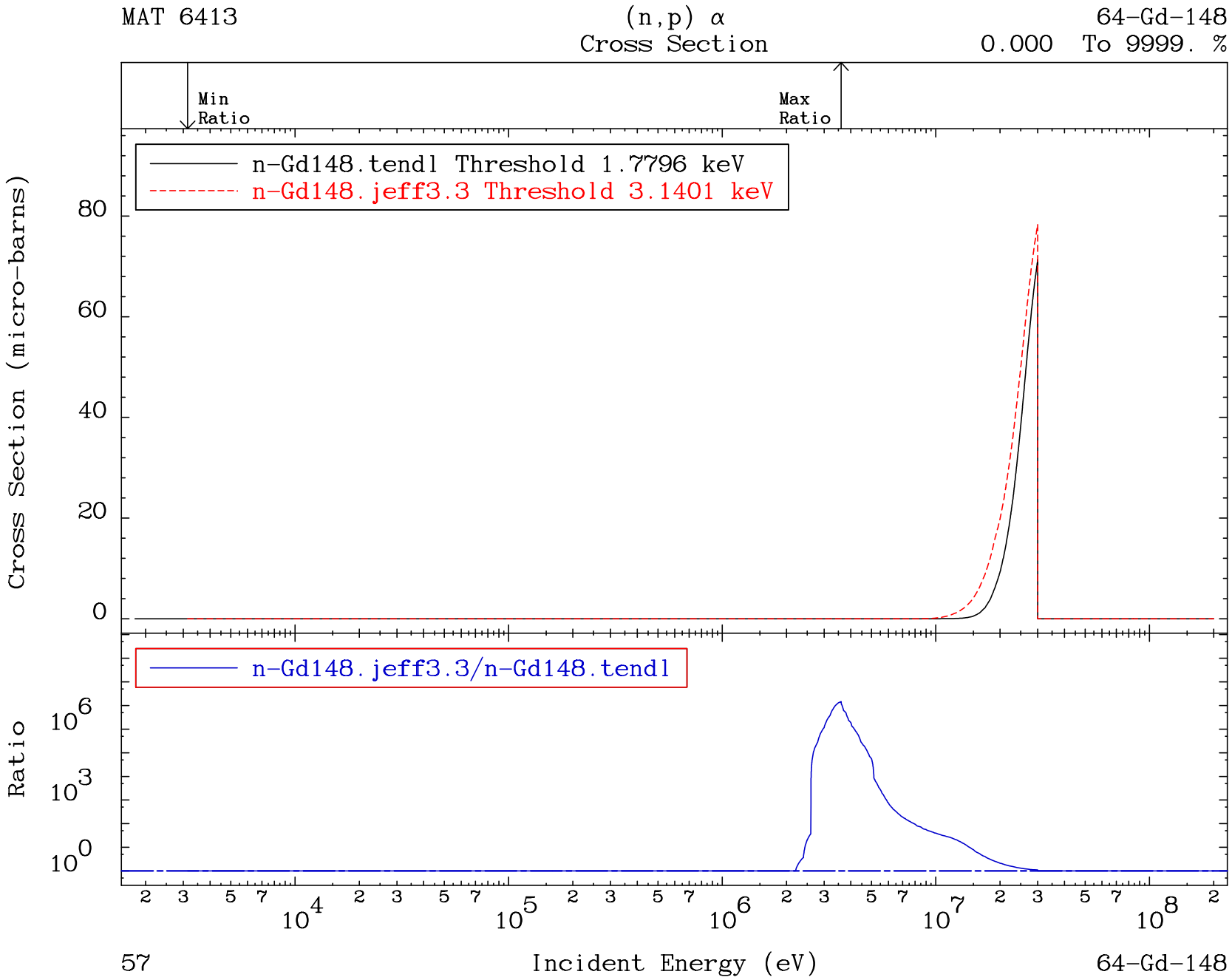

MAT 6413
(n,t)
Cross Section
64-Gd-148
-1.036 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 6.0714 MeV
n-Gd148.jeff3.3 Threshold 6.0714 MeV
Cross Section (milli-barns)
10
8
6
4
2
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
52
Incident Energy (eV)
64-Gd-148

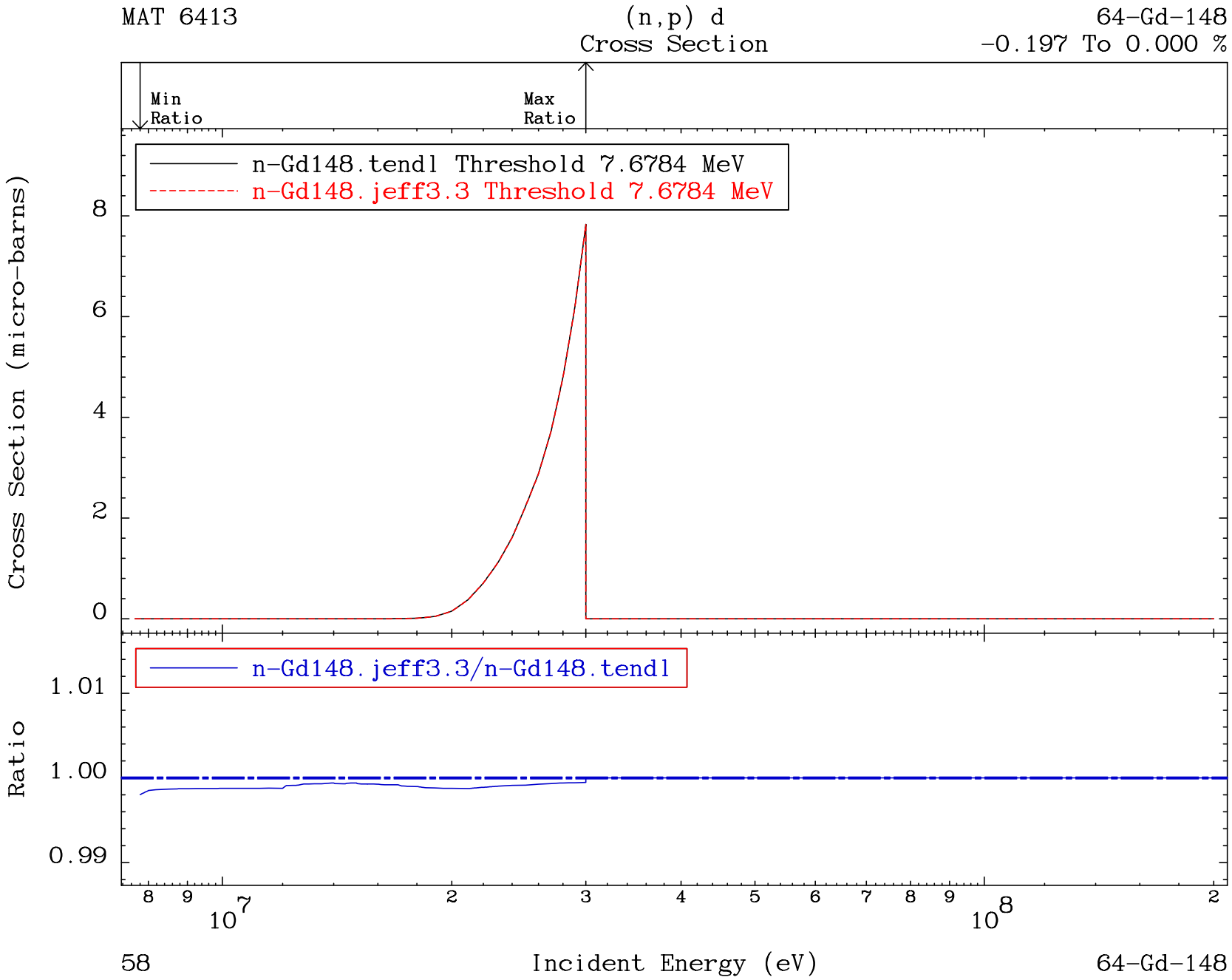

MAT 6413
(n,He-3)
Cross Section
64-Gd-148
-0.292 To 0.007 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.1475 MeV
n-Gd148.jeff3.3 Threshold 2.1475 MeV
Cross Section (milli-barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
53
Incident Energy (eV)
64-Gd-148

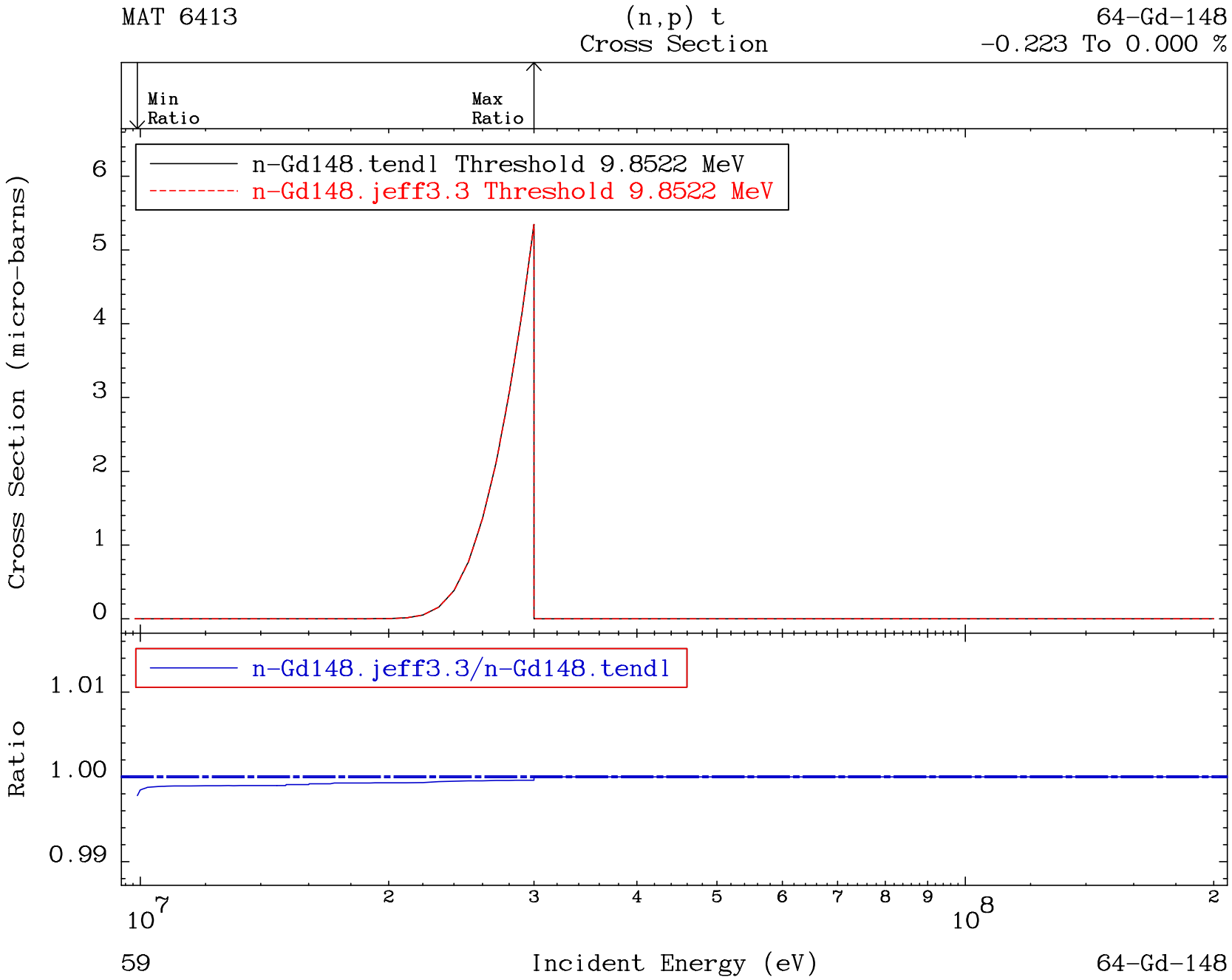

MAT 6413
(n,α)
Cross Section
64-Gd-148
-12.20 To 9999. %
Max Ratio
Min Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
54
64-Gd-148

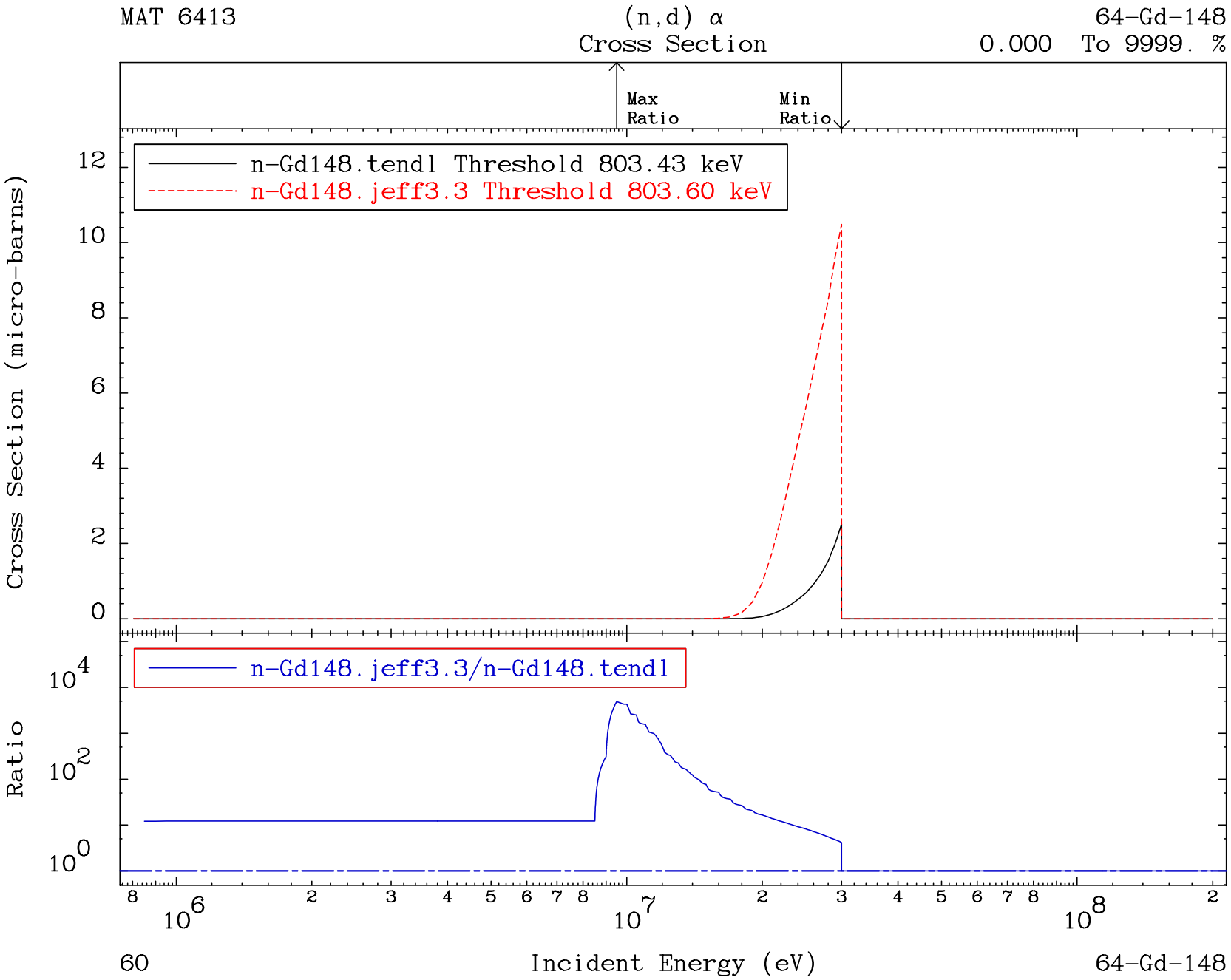

MAT 6413
(n,2α)
Cross Section
64-Gd-148
-100.0 To 9999. %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 1.7796 keV
n-Gd148.jeff3.3
Cross Section (micro-barns)
0
5
10
15
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
0
40
80
120
160
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
Incident Energy (eV)
55
64-Gd-148

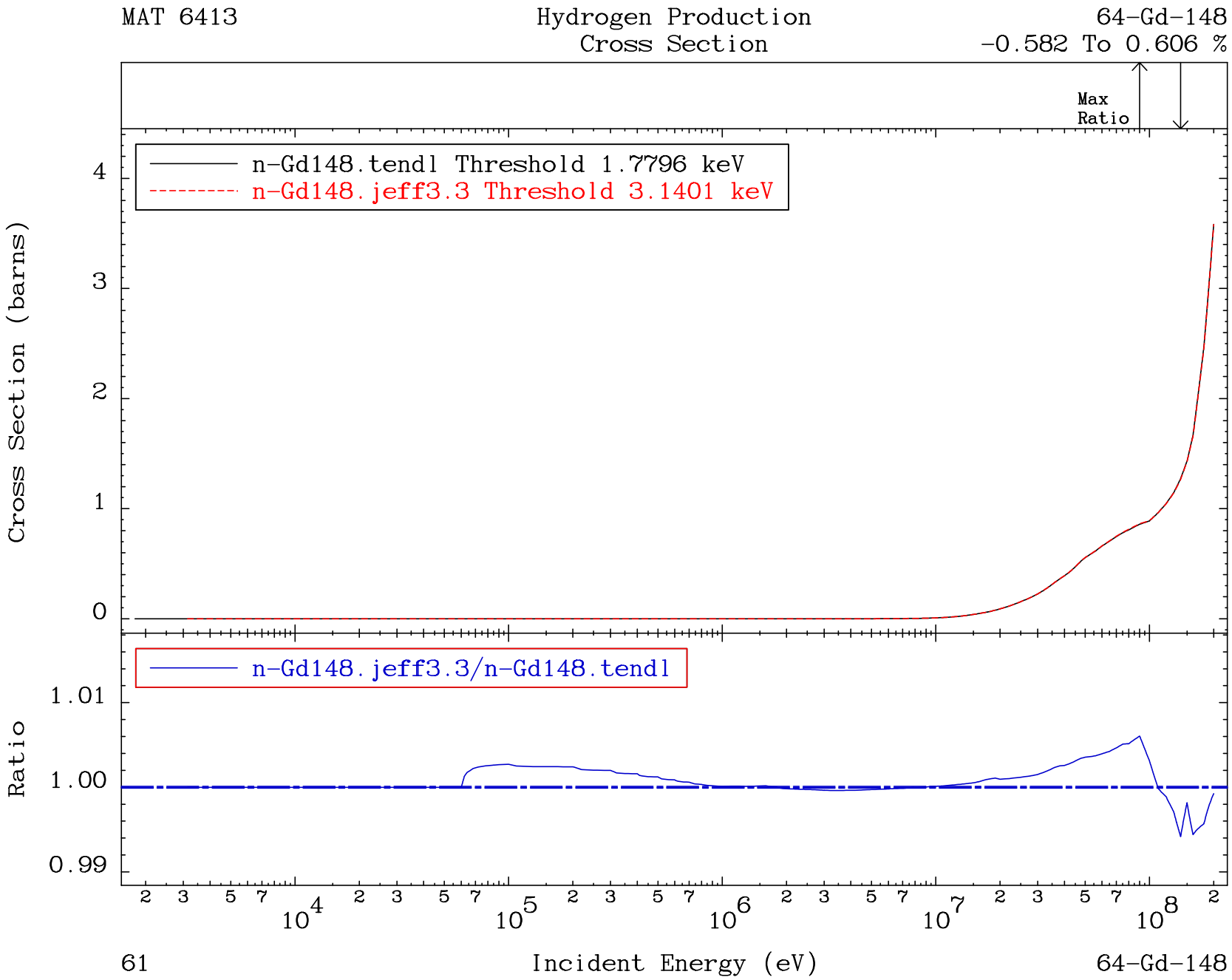

MAT 6413
(n,2p)
Cross Section
64-Gd-148
-9.744 To 0.246 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 3.5335 MeV
n-Gd148.jeff3.3 Threshold 3.5335 MeV
Cross Section (micro-barns)
140
120
100
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.00
0.95
0.90
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
56
Incident Energy (eV)
64-Gd-148

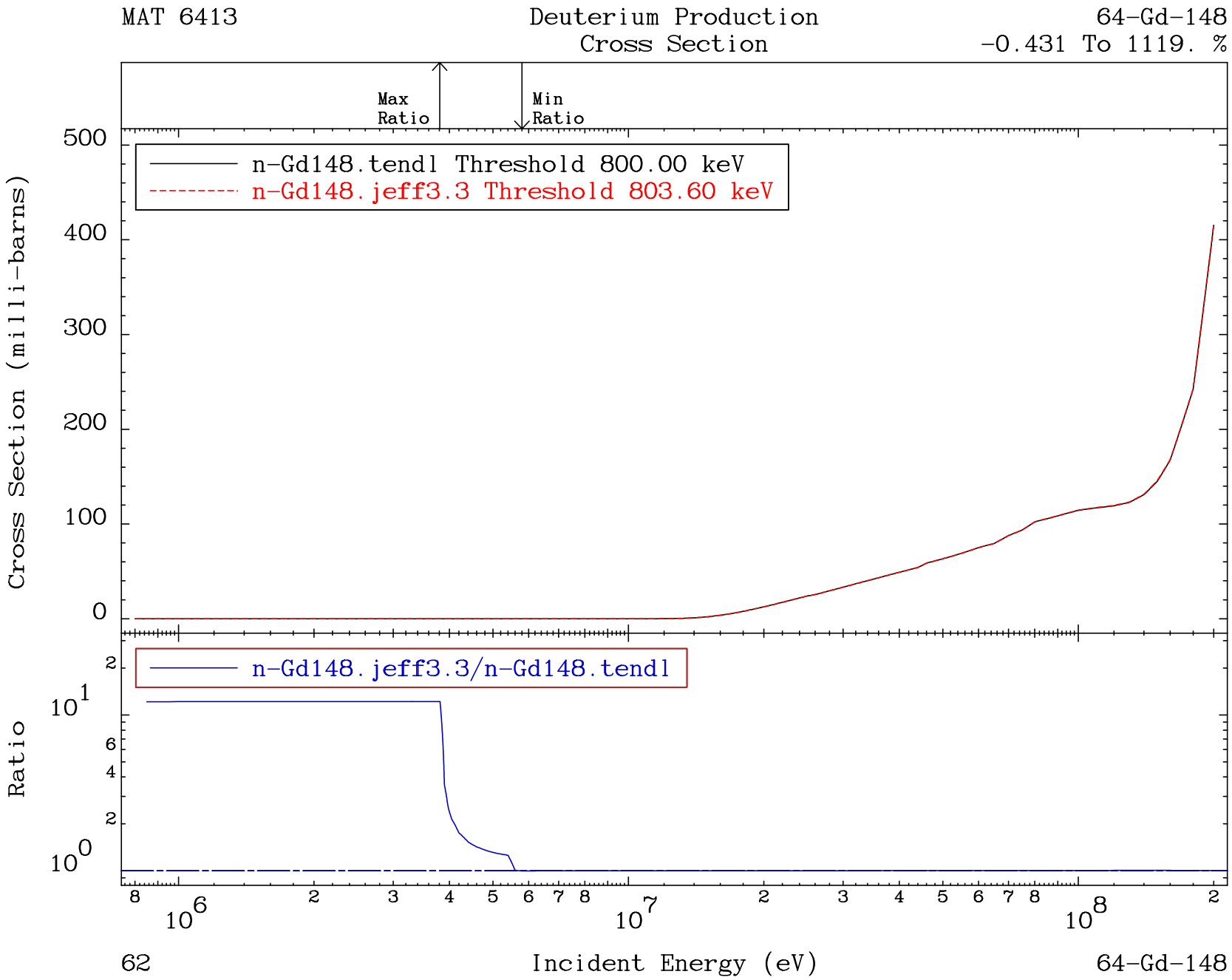

MAT 6413
(n,p) α
Cross Section
64-Gd-148
0.000 To 9999. %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 1.7796 keV
n-Gd148.jeff3.3 Threshold 3.1401 keV
Cross Section (micro-barns)
80
60
40
20
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^6
10^3
10^0
2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
57
Incident Energy (eV)
64-Gd-148

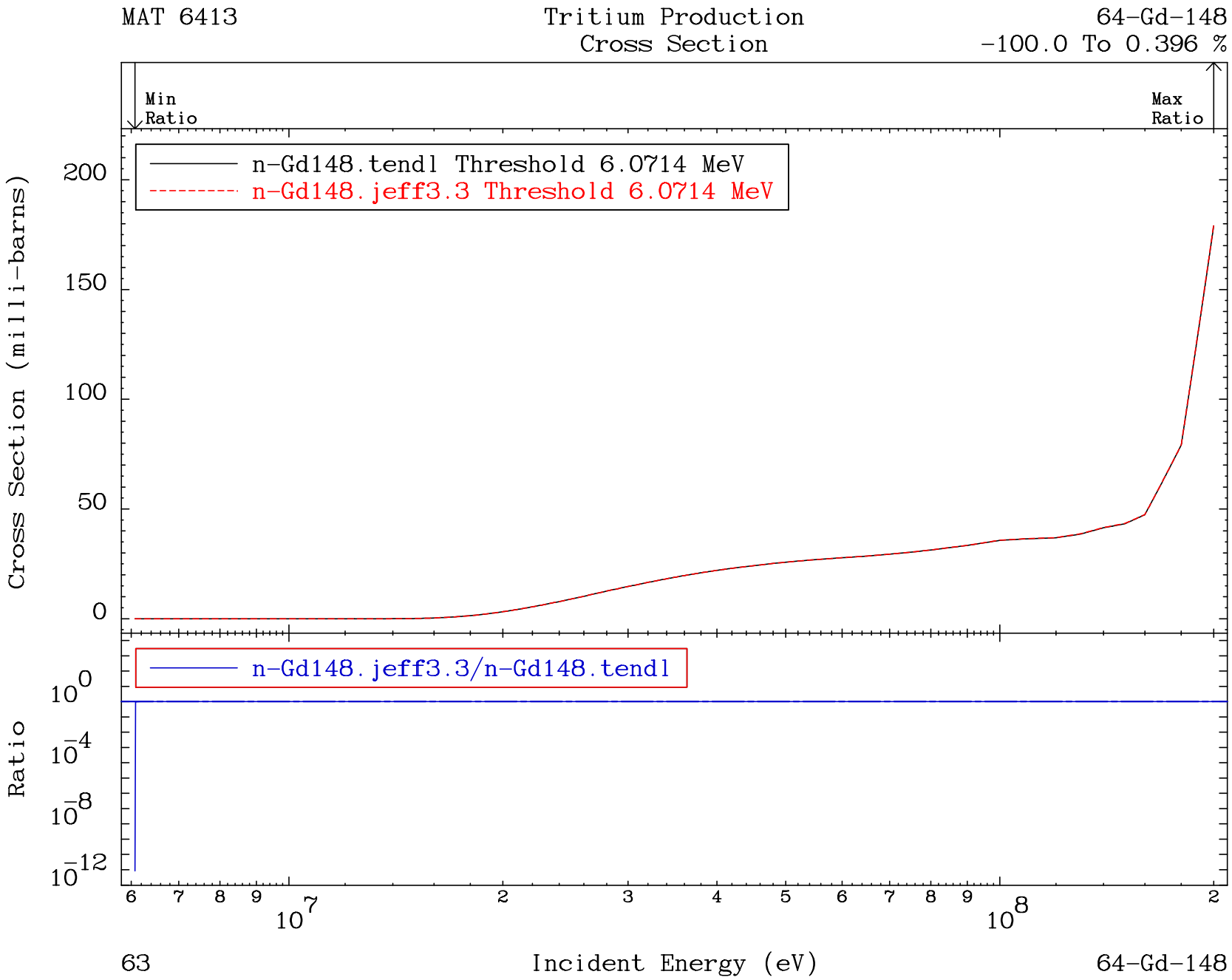

MAT 6413
(n,p) d
Cross Section
64-Gd-148
-0.197 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 7.6784 MeV
n-Gd148.jeff3.3 Threshold 7.6784 MeV
Cross Section (micro-barns)
0
2
4
6
8
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
0.99
1.00
1.01
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
58
Incident Energy (eV)
64-Gd-148

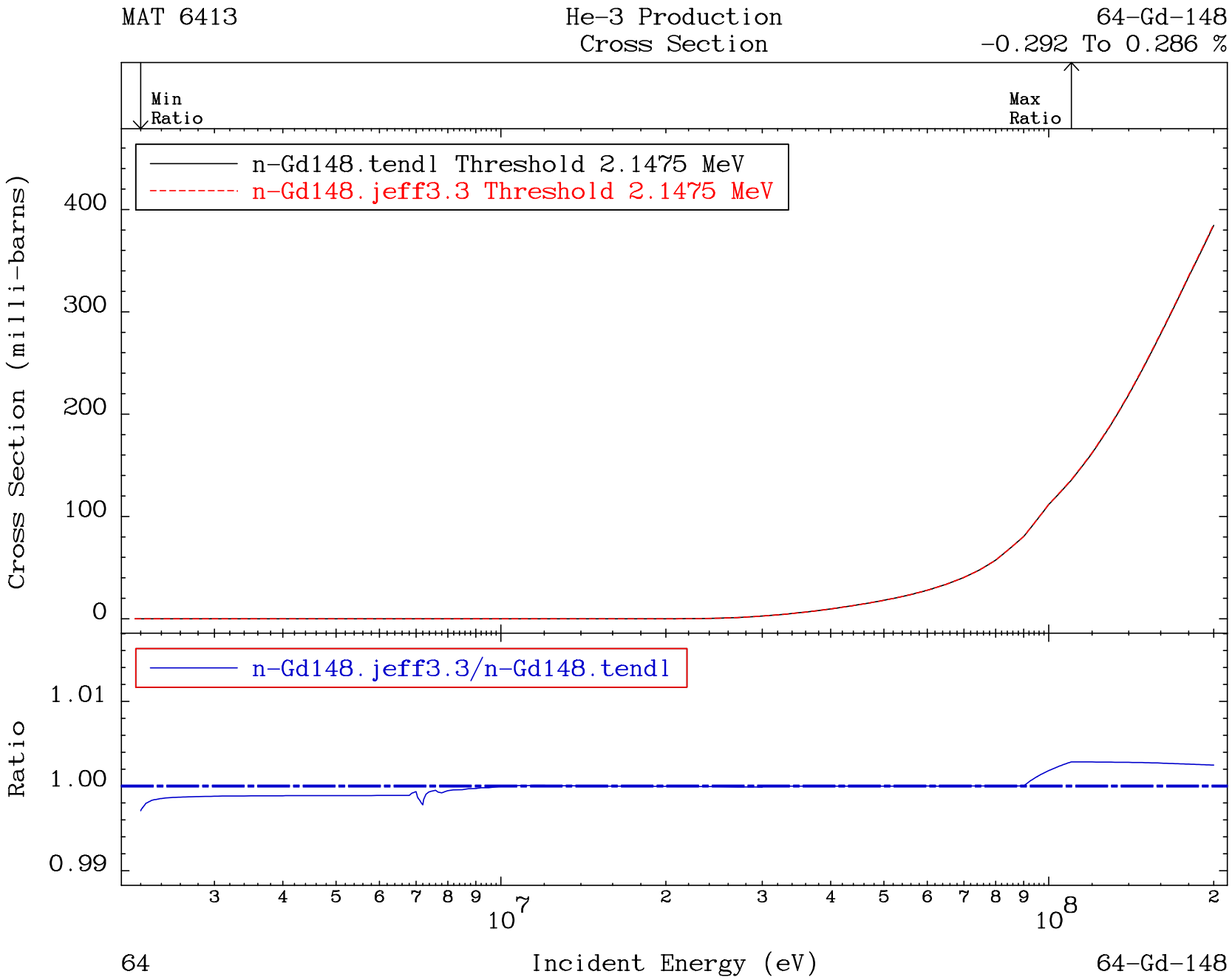

MAT 6413
(n,p) t
Cross Section
64-Gd-148
-0.223 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 9.8522 MeV
n-Gd148.jeff3.3 Threshold 9.8522 MeV
Cross Section (micro-barns)
0
1
2
3
4
5
6
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
0.99
1.00
1.01
10^7
2
3
4
5
6
7
8
9
10^8
2
59
Incident Energy (eV)
64-Gd-148

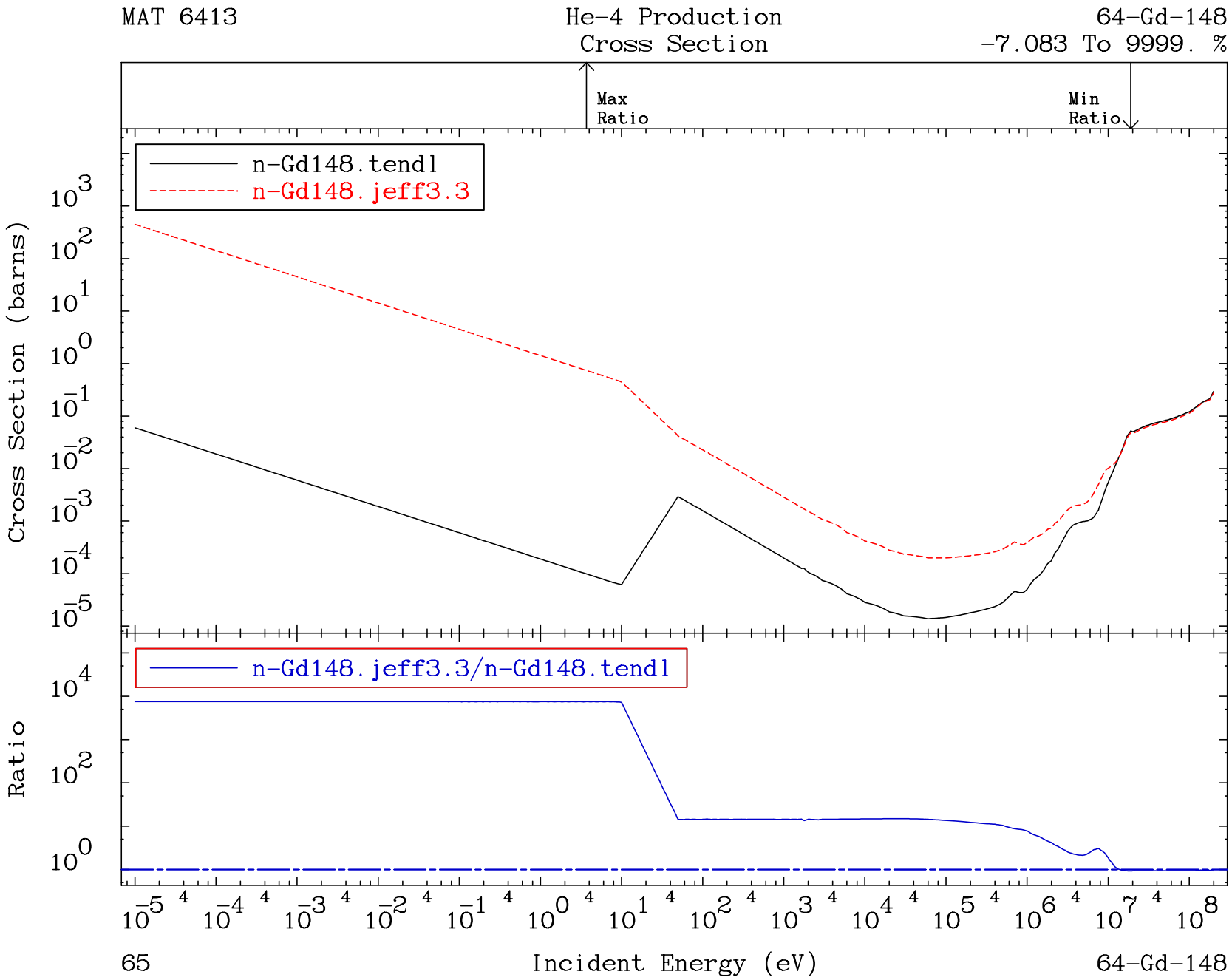

MAT 6413
(n,d) α
Cross Section
64-Gd-148
0.000 To 9999. %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 803.43 keV
n-Gd148.jeff3.3 Threshold 803.60 keV
Cross Section (micro-barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
60
64-Gd-148

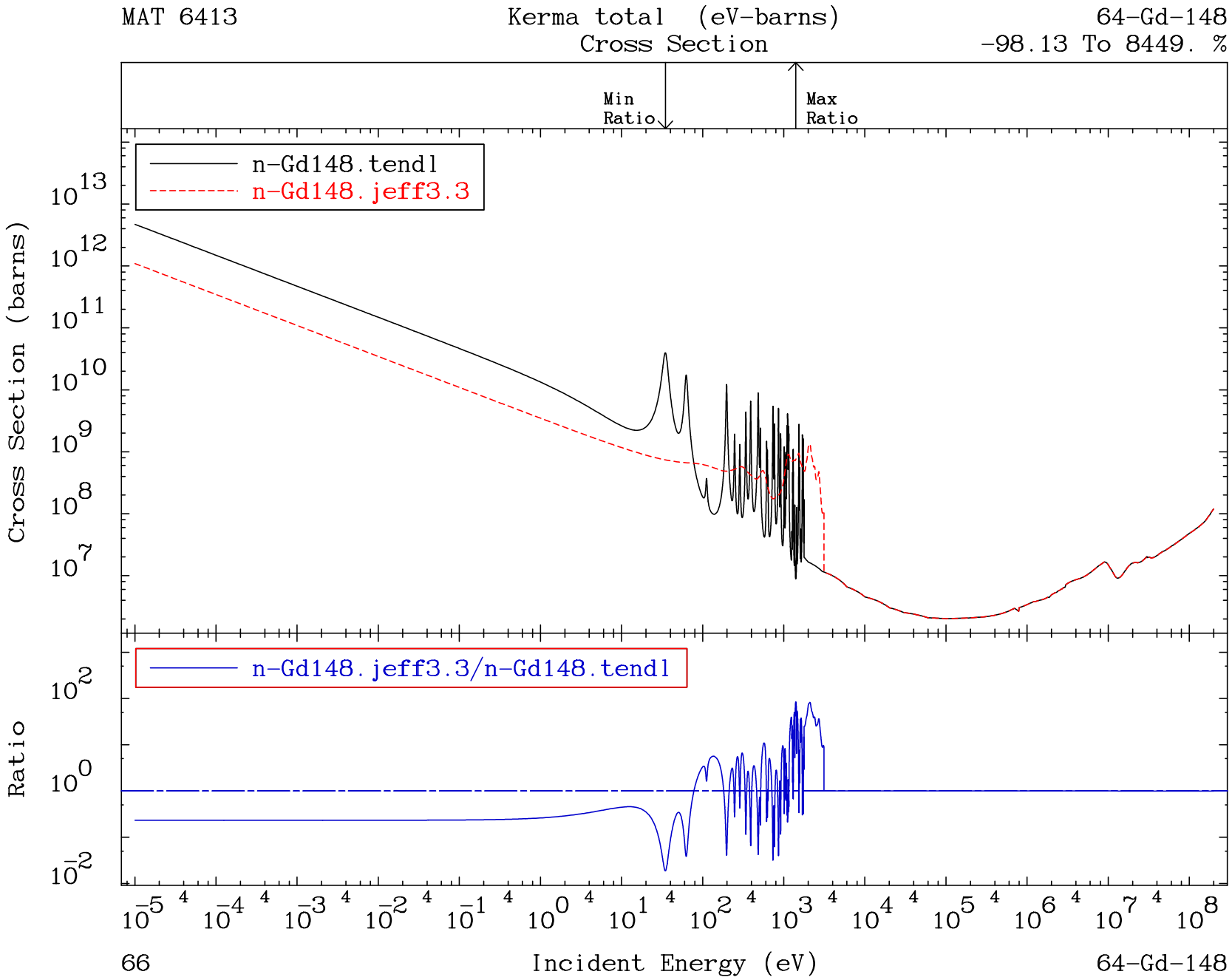

MAT 6413
Hydrogen Production
Cross Section
64-Gd-148
-0.582 To 0.606 %
Max
Ratio
n-Gd148.tendl Threshold 1.7796 keV
n-Gd148.jeff3.3 Threshold 3.1401 keV
Cross Section (barns)
0
1
2
3
4
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
0.99
1.00
1.01
2 3 5 7 10^4 2 3 5 7 10^5 2 3 5 7 10^6 2 3 5 7 10^7 2 3 5 7 10^8 2
61
Incident Energy (eV)
64-Gd-148

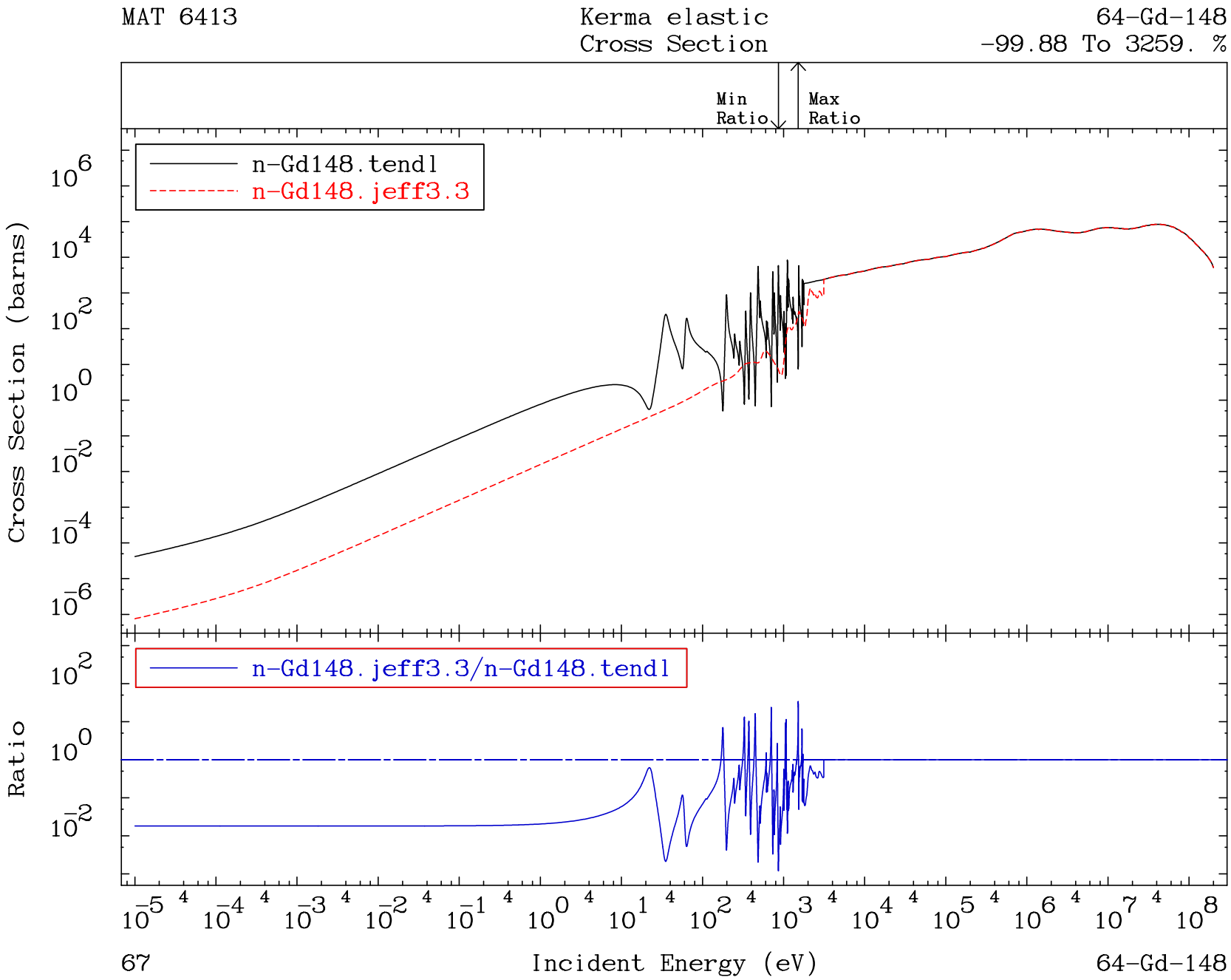

MAT 6413
Deuterium Production
Cross Section
64-Gd-148
-0.431 To 1119. %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 800.00 keV
n-Gd148.jeff3.3 Threshold 803.60 keV
Cross Section (milli-barns)
500
400
300
200
100
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
2
10^1
6
4
2
10^0
8
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
62
Incident Energy (eV)
64-Gd-148

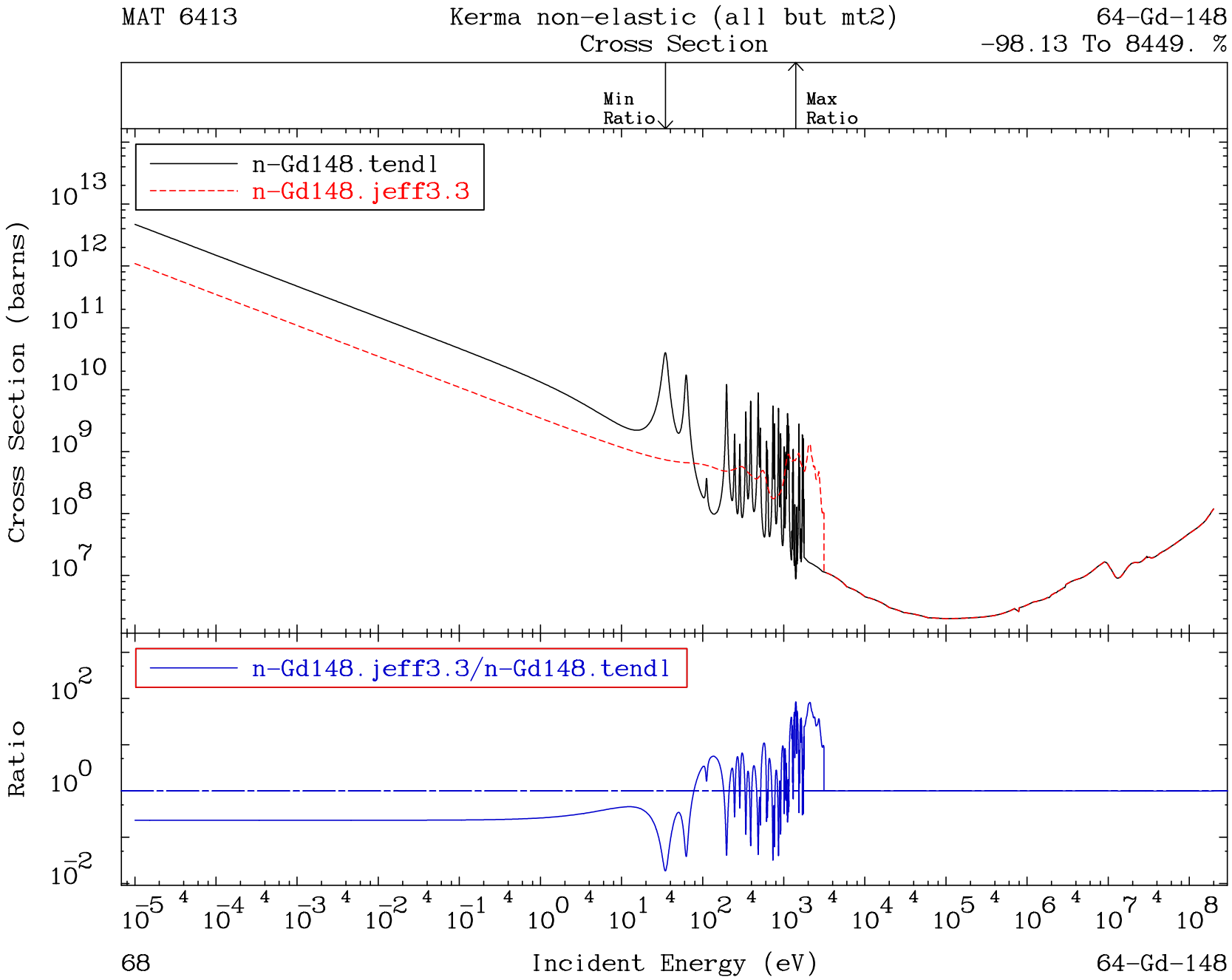

MAT 6413
Tritium Production
Cross Section
64-Gd-148
-100.0 To 0.396 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 6.0714 MeV
n-Gd148.jeff3.3 Threshold 6.0714 MeV
Cross Section (milli-barns)
200
150
100
50
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^0
10^-4
10^-8
10^-12
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
63
Incident Energy (eV)
64-Gd-148

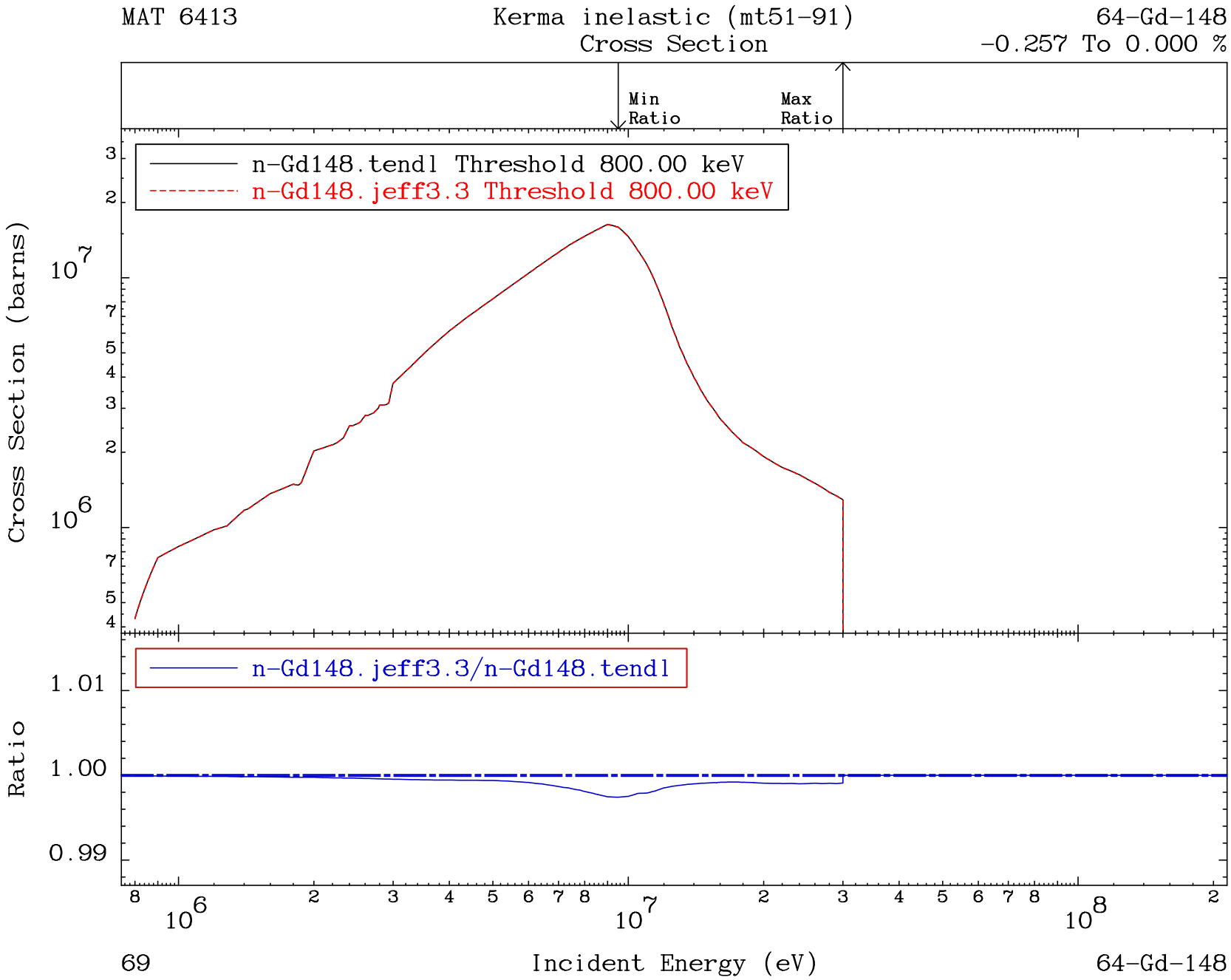

MAT 6413
He-3 Production
Cross Section
64-Gd-148
-0.292 To 0.286 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 2.1475 MeV
n-Gd148.jeff3.3 Threshold 2.1475 MeV
Cross Section (milli-barns)
400
300
200
100
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
64
Incident Energy (eV)
64-Gd-148

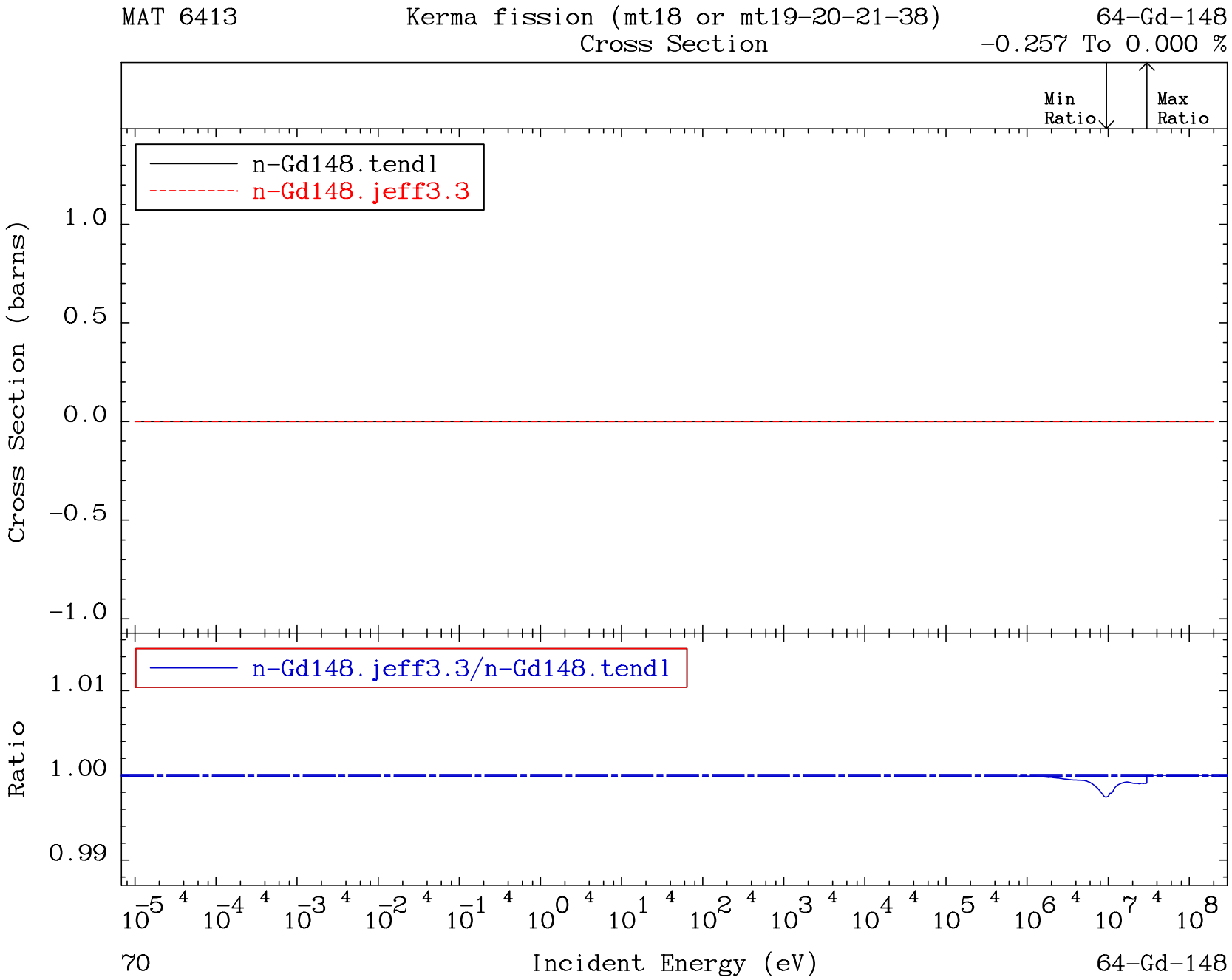

MAT 6413
He-4 Production
Cross Section
64-Gd-148
-7.083 To 9999. %
Max
Ratio
Min
Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
65
64-Gd-148

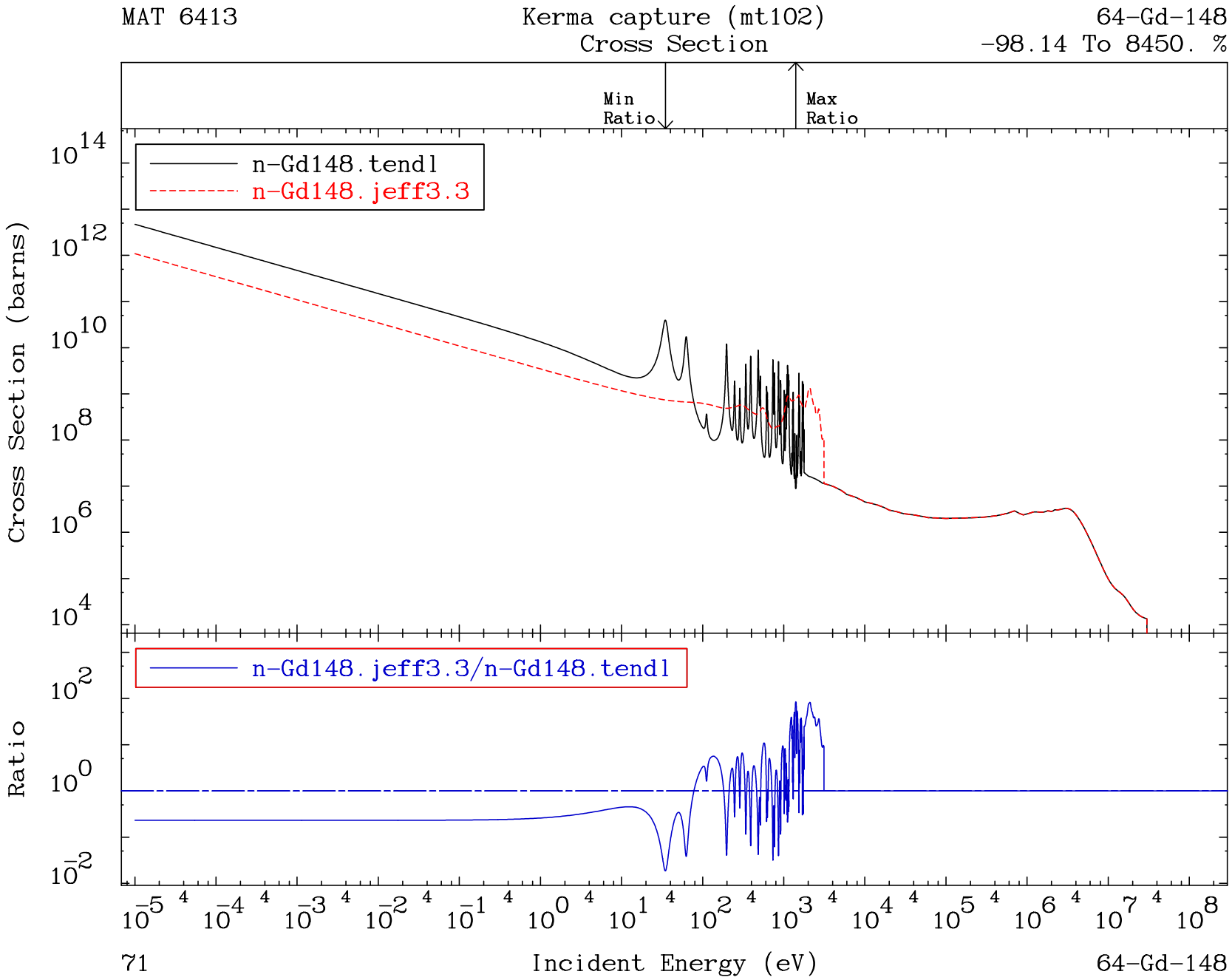

MAT 6413
Kerma total (eV-barns)
Cross Section
64-Gd-148
-98.13 To 8449. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
66
64-Gd-148

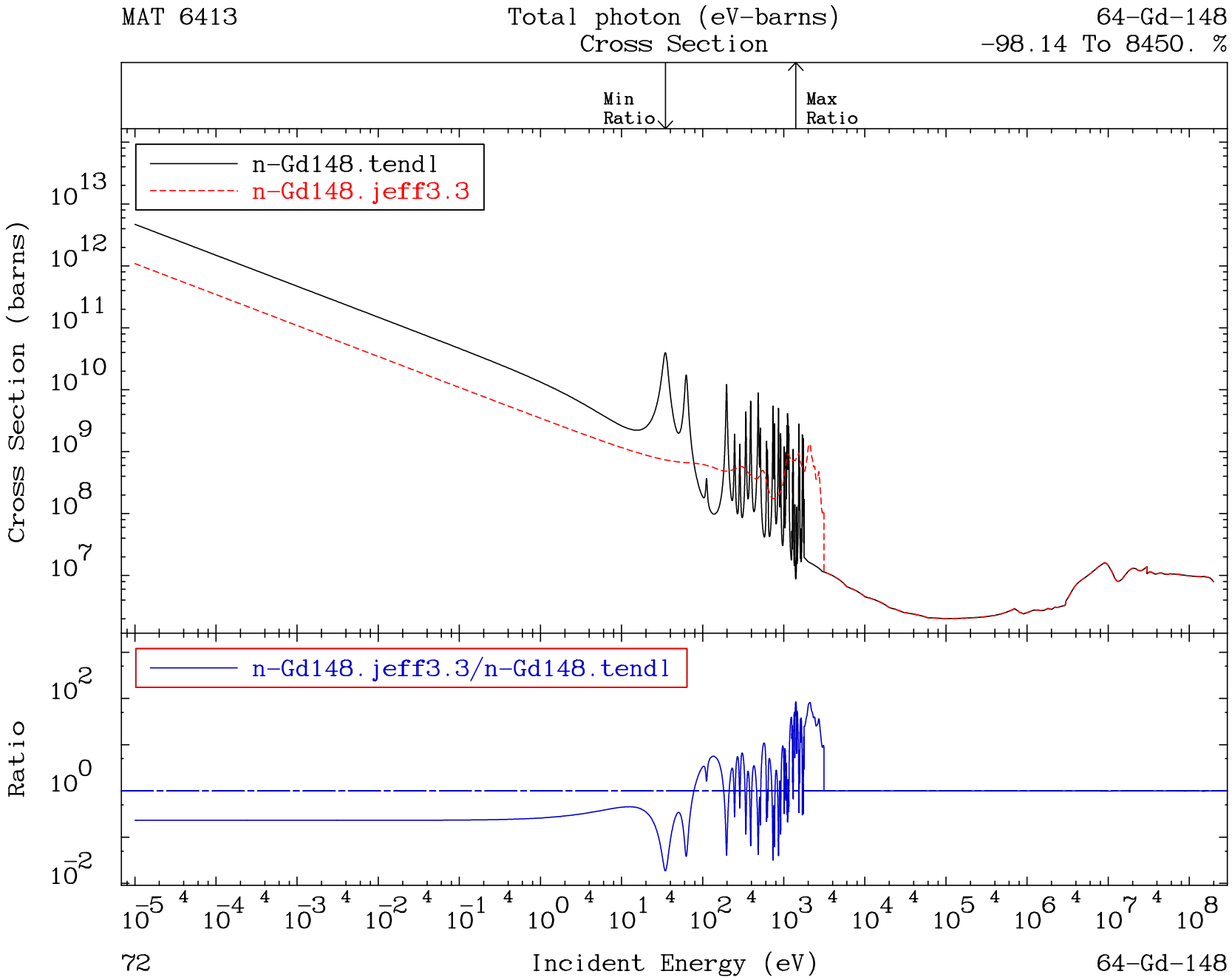

MAT 6413
Kerma elastic
Cross Section
64-Gd-148
-99.88 To 3259. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
67
64-Gd-148

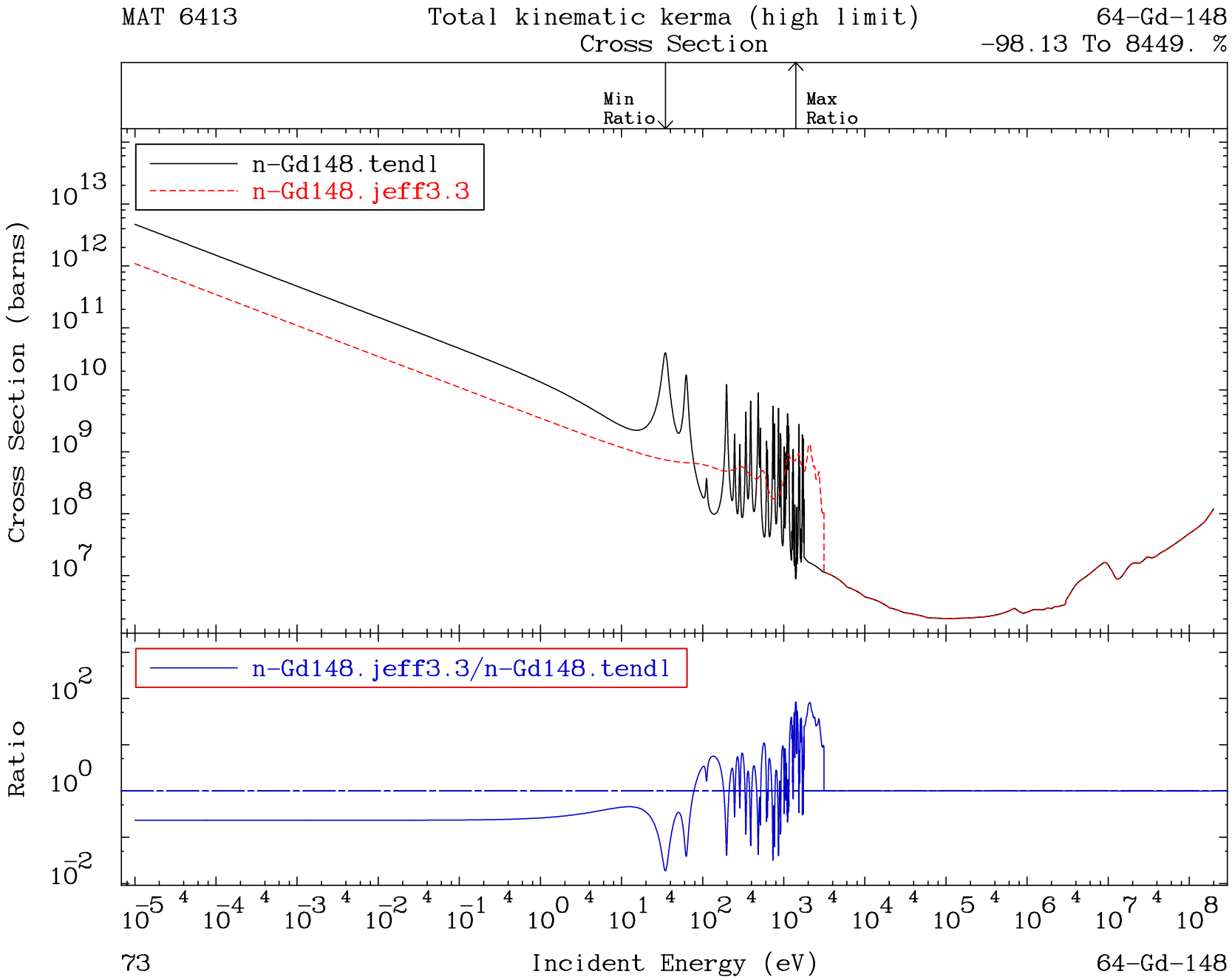

MAT 6413
Kerma non-elastic (all but mt2)
Cross Section
64-Gd-148
-98.13 To 8449. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
68
64-Gd-148

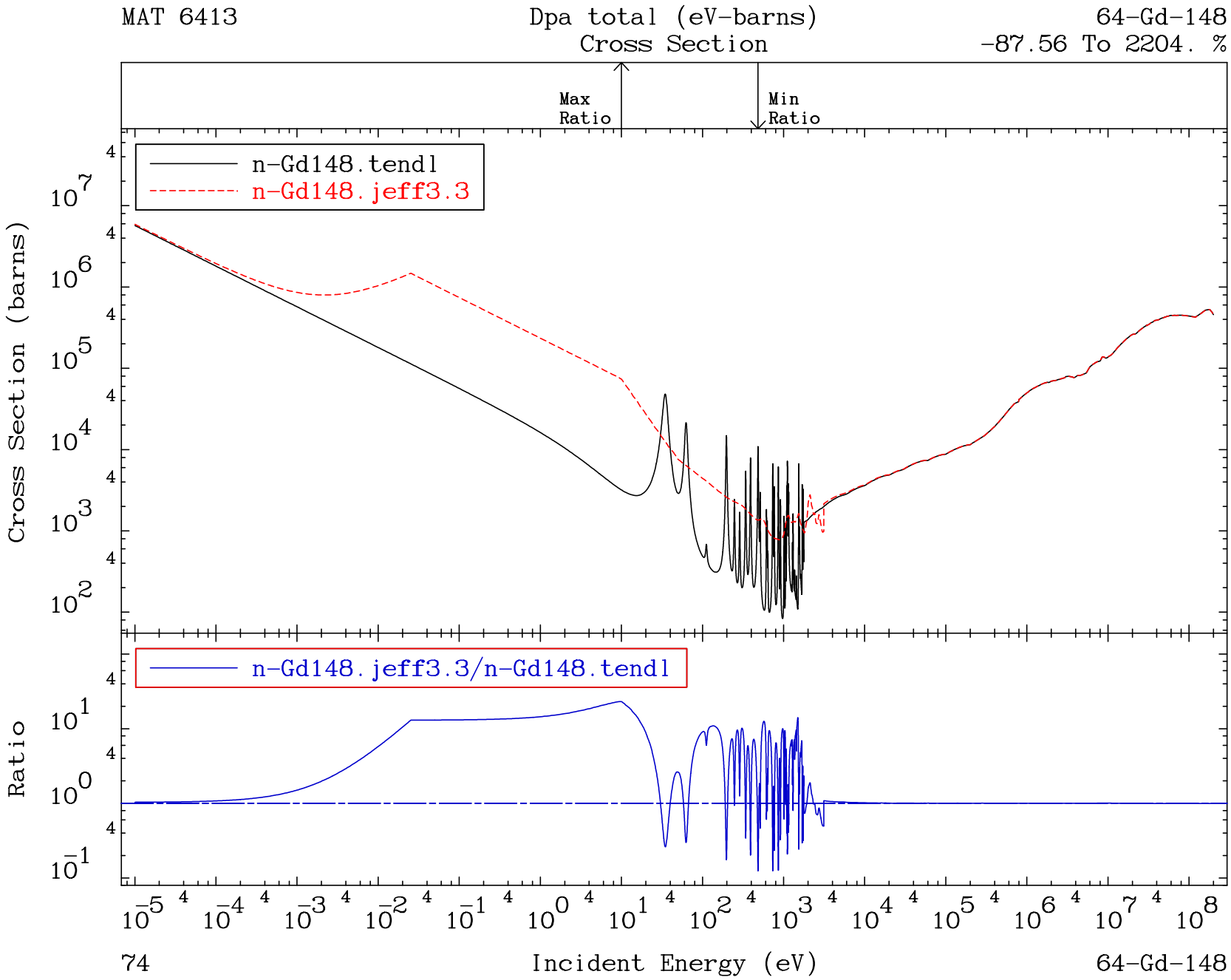

MAT 6413
Kerma inelastic (mt51-91)
Cross Section
64-Gd-148
-0.257 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 800.00 keV
n-Gd148.jeff3.3 Threshold 800.00 keV
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
69
64-Gd-148

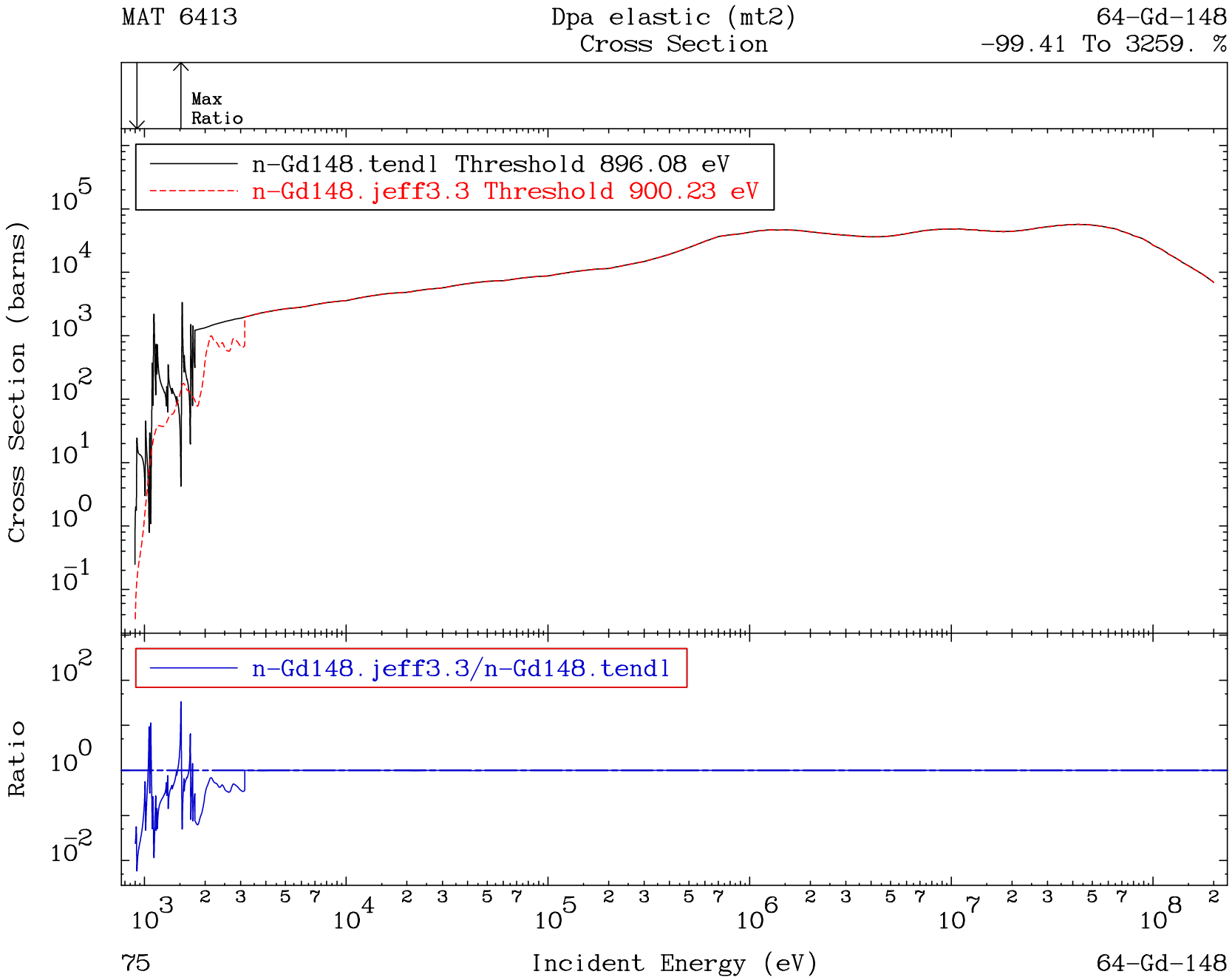

MAT 6413
Kerma fission (mt18 or mt19-20-21-38)
Cross Section
64-Gd-148
-0.257 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
1.0
0.5
0.0
-0.5
-1.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
70
Incident Energy (eV)
64-Gd-148

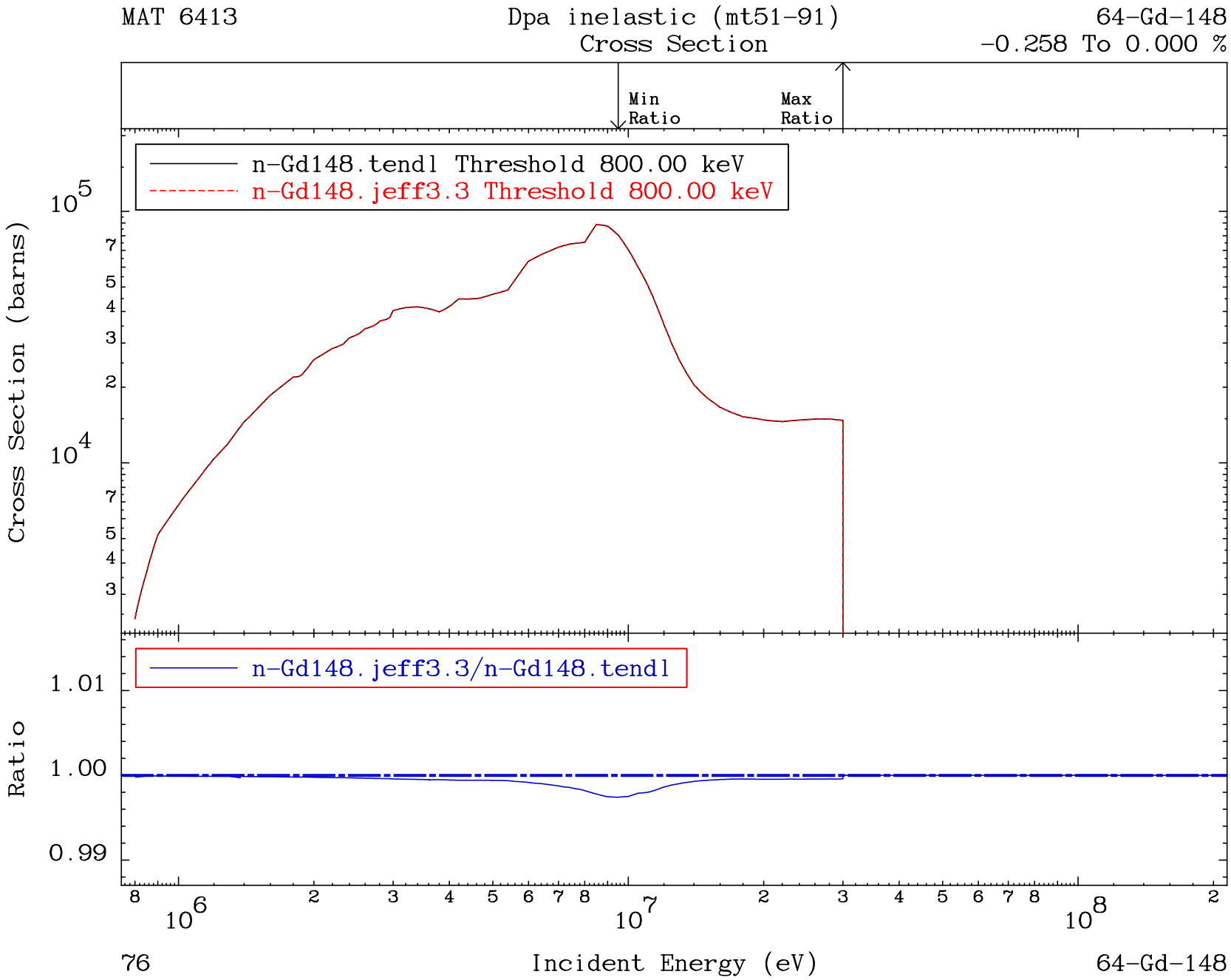

MAT 6413
Kerma capture (mt102)
Cross Section
64-Gd-148
-98.14 To 8450. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
71
64-Gd-148

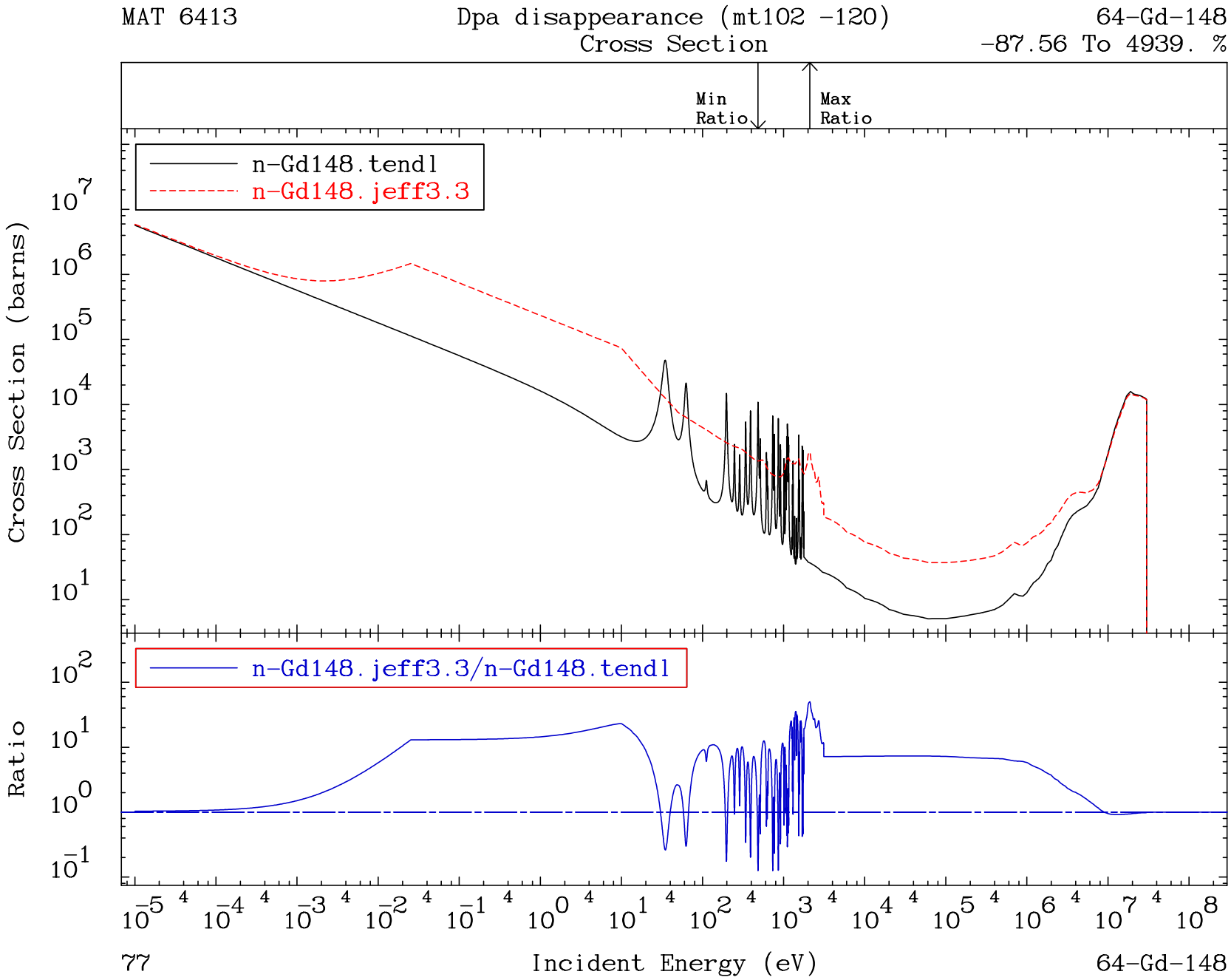

MAT 6413
Total photon (eV-barns)
Cross Section
64-Gd-148
-98.14 To 8450. %
Min
Ratio
Max
Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
72
64-Gd-148

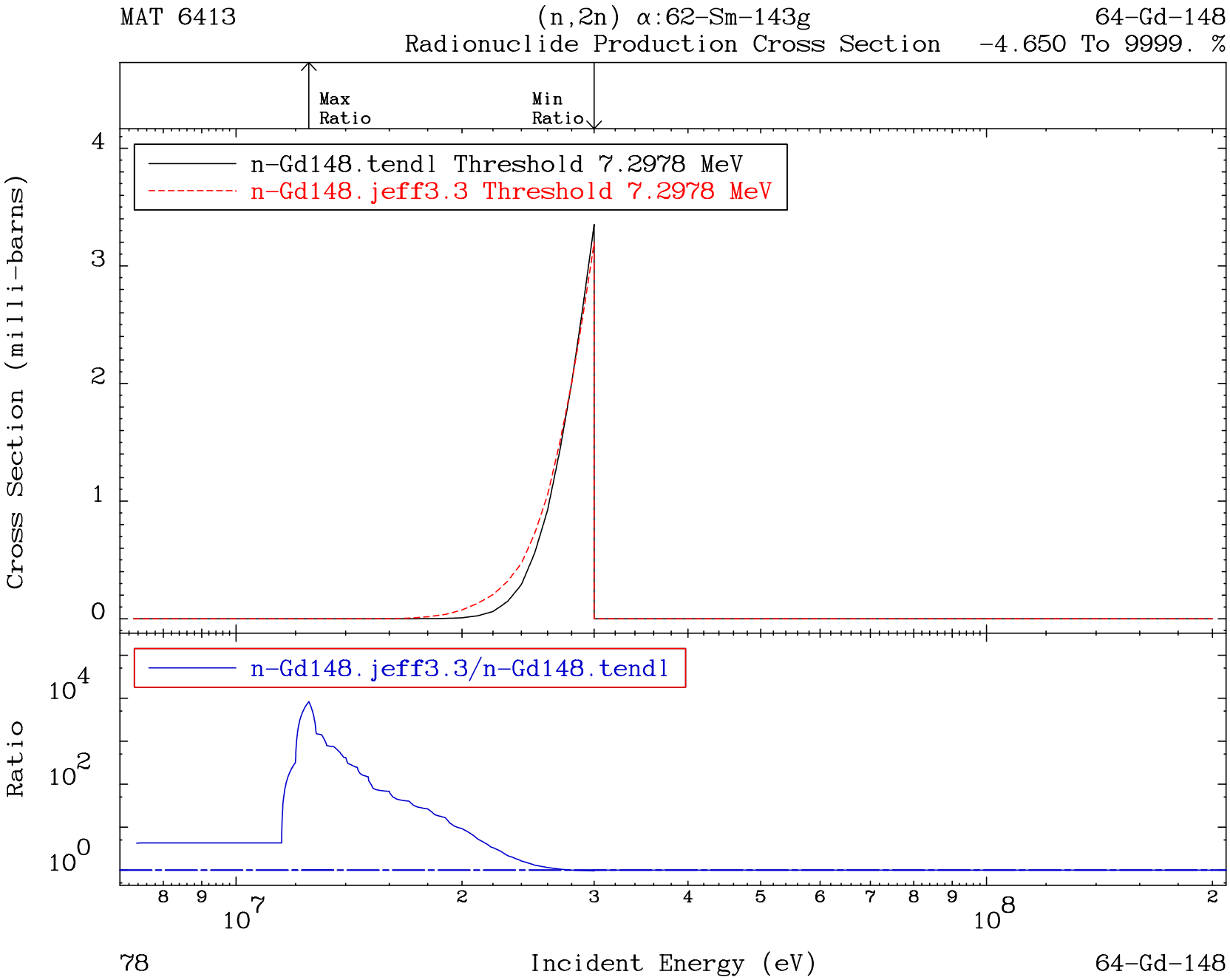

MAT 6413
Total kinematic kerma (high limit)
Cross Section
64-Gd-148
-98.13 To 8449. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
73
64-Gd-148

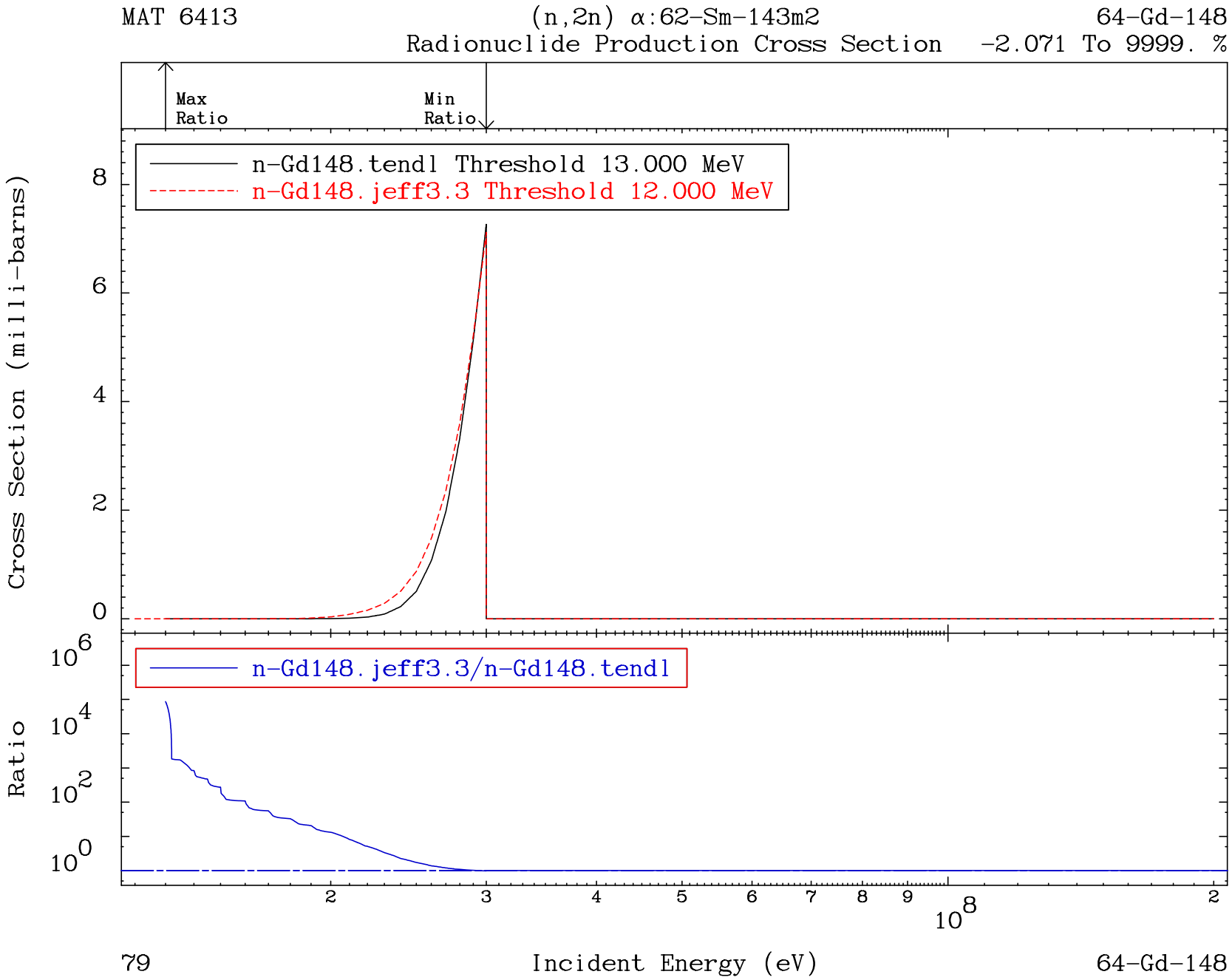

MAT 6413
Dpa total (eV-barns)
Cross Section
64-Gd-148
-87.56 To 2204. %
Max Ratio
Min Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
74
Incident Energy (eV)
64-Gd-148

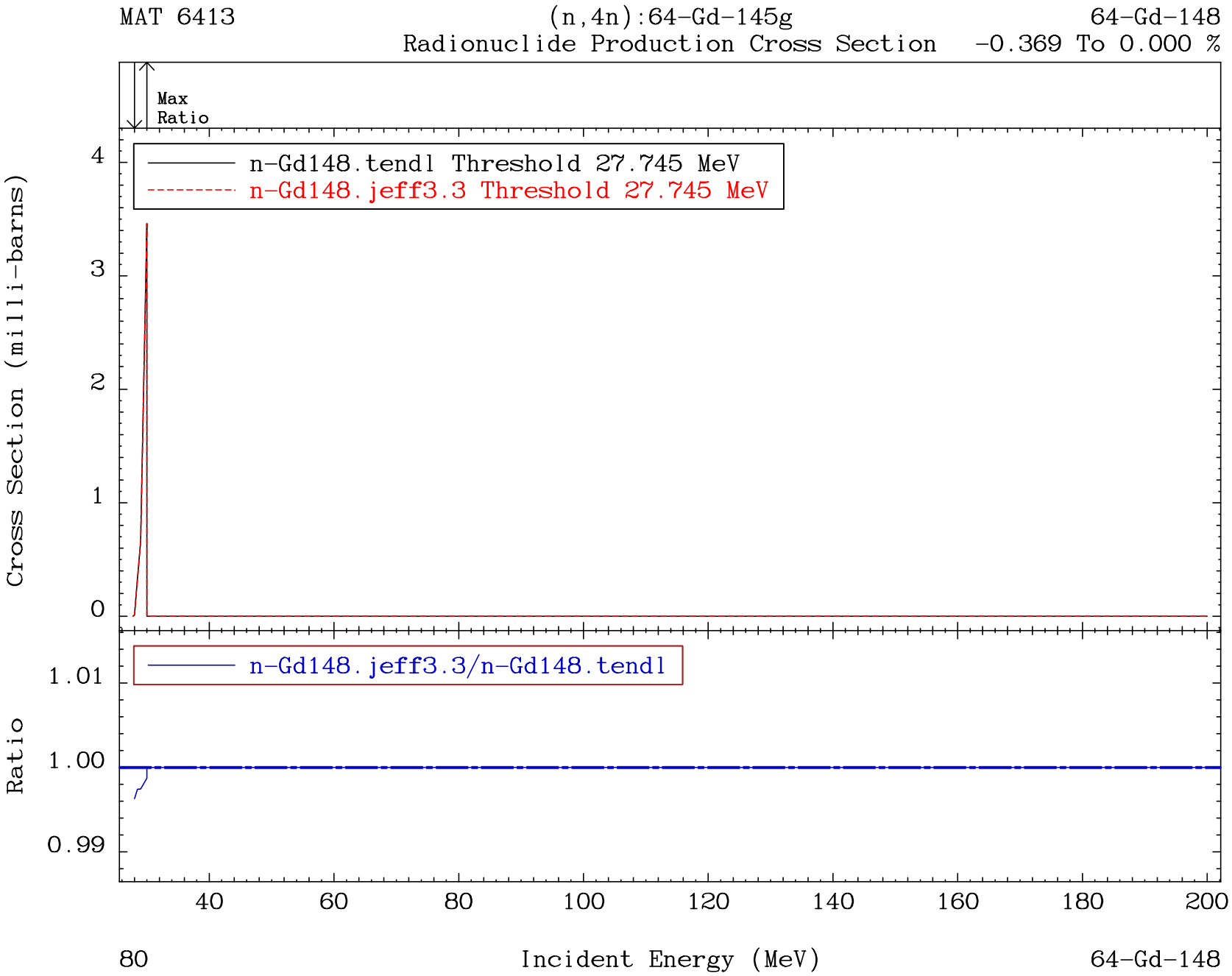

MAT 6413
Dpa elastic (mt2)
Cross Section
64-Gd-148
-99.41 To 3259. %
Max
Ratio
n-Gd148.tendl Threshold 896.08 eV
n-Gd148.jeff3.3 Threshold 900.23 eV
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
75
64-Gd-148

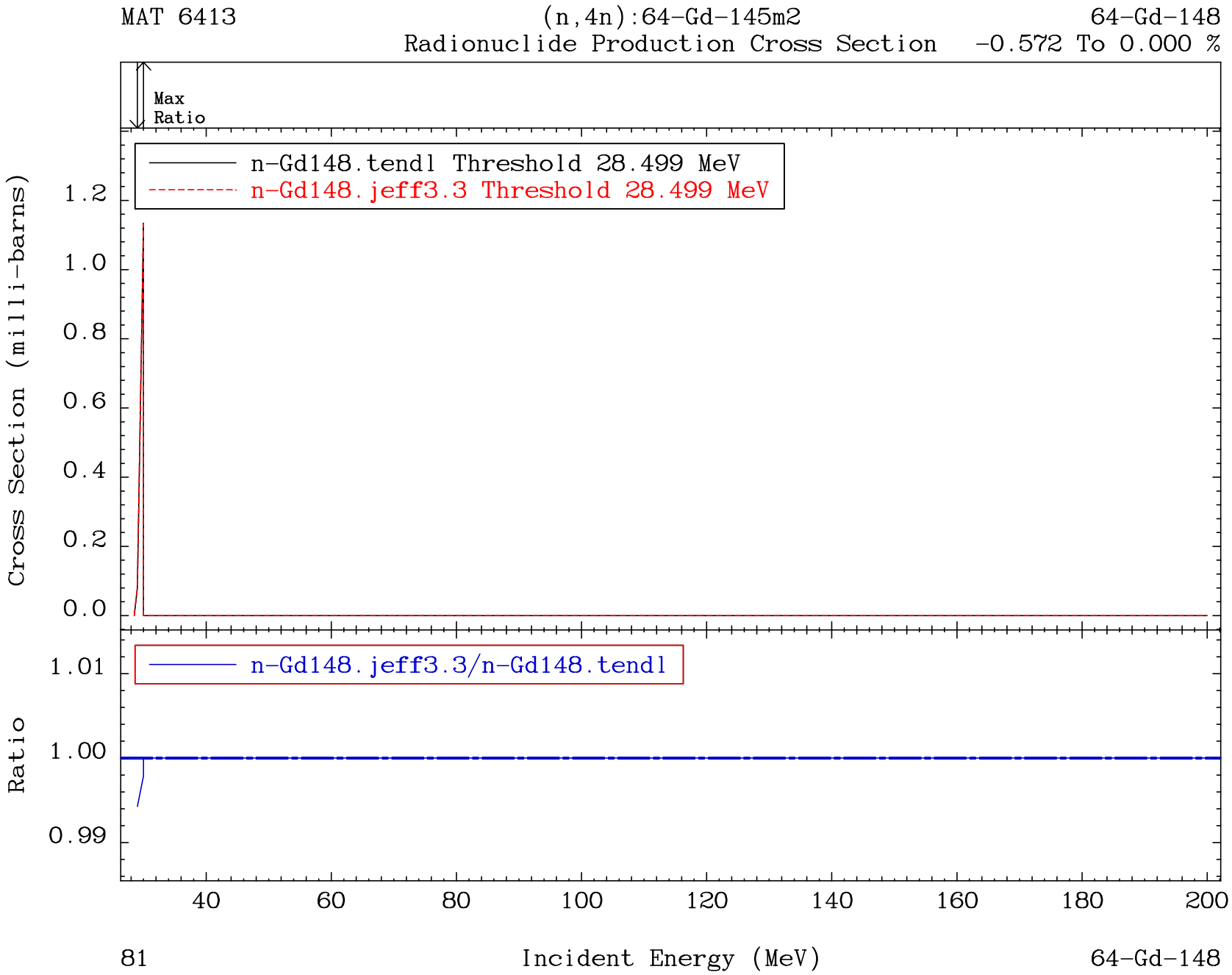

MAT 6413
Dpa inelastic (mt51-91)
Cross Section
64-Gd-148
-0.258 To 0.000 %
Min Ratio
Max Ratio
n-Gd148.tendl Threshold 800.00 keV
n-Gd148.jeff3.3 Threshold 800.00 keV
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
76
64-Gd-148


MAT 6413
Dpa disappearance (mt102 -120)
Cross Section
64-Gd-148
-87.56 To 4939. %
Min Ratio
Max Ratio
n-Gd148.tendl
n-Gd148.jeff3.3
Cross Section (barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
77
64-Gd-148


MAT 6413
(n,2n) α:62-Sm-143g
64-Gd-148
Radionuclide Production Cross Section -4.650 To 9999. %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 7.2978 MeV
n-Gd148.jeff3.3 Threshold 7.2978 MeV
Cross Section (milli-barns)
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
Incident Energy (eV)
78
64-Gd-148


MAT 6413
(n,2n) α:62-Sm-143m2
64-Gd-148
Radionuclide Production Cross Section -2.071 To 9999. %
Max Ratio
Min Ratio
n-Gd148.tendl Threshold 13.000 MeV
n-Gd148.jeff3.3 Threshold 12.000 MeV
Cross Section (milli-barns)
0
2
4
6
8
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
10^0
10^2
10^4
10^6
2
3
4
5
6
7
8
9
10^8
2
79
Incident Energy (eV)
64-Gd-148


MAT 6413
(n,4n):64-Gd-145g
64-Gd-148
Radionuclide Production Cross Section
-0.369 To 0.000 %
Max
Ratio
n-Gd148.tendl Threshold 27.745 MeV
n-Gd148.jeff3.3 Threshold 27.745 MeV
Cross Section (milli-barns)
4
3
2
1
0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
40
60
80
100
120
140
160
180
200
80
Incident Energy (MeV)
64-Gd-148


MAT 6413
(n,4n):64-Gd-145m2
64-Gd-148
Radionuclide Production Cross Section -0.572 To 0.000 %
Max
Ratio
n-Gd148.tendl Threshold 28.499 MeV
n-Gd148.jeff3.3 Threshold 28.499 MeV
Cross Section (milli-barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Gd148.jeff3.3/n-Gd148.tendl
Ratio
1.01
1.00
0.99
40
60
80
100
120
140
160
180
200
81
Incident Energy (MeV)
64-Gd-148