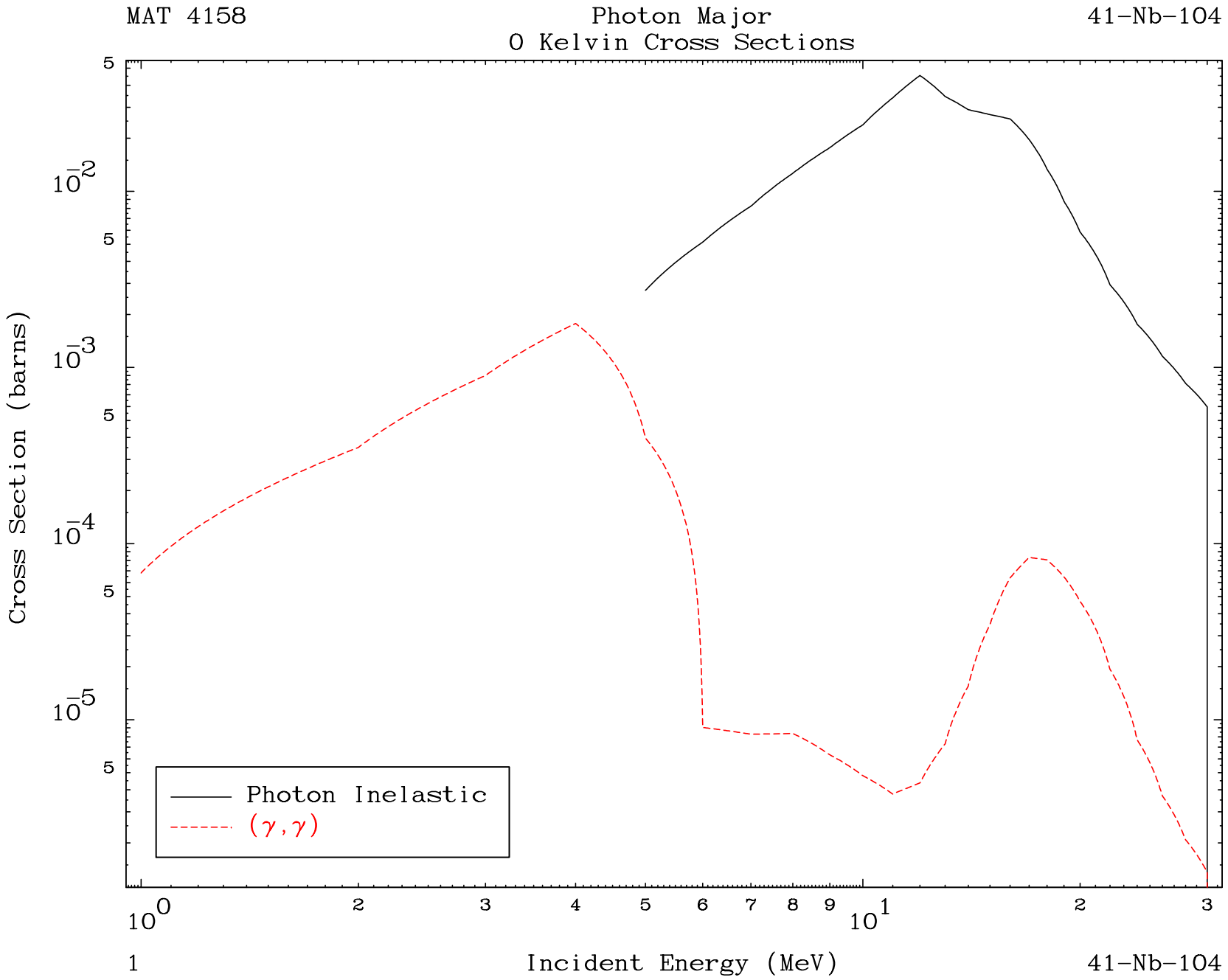
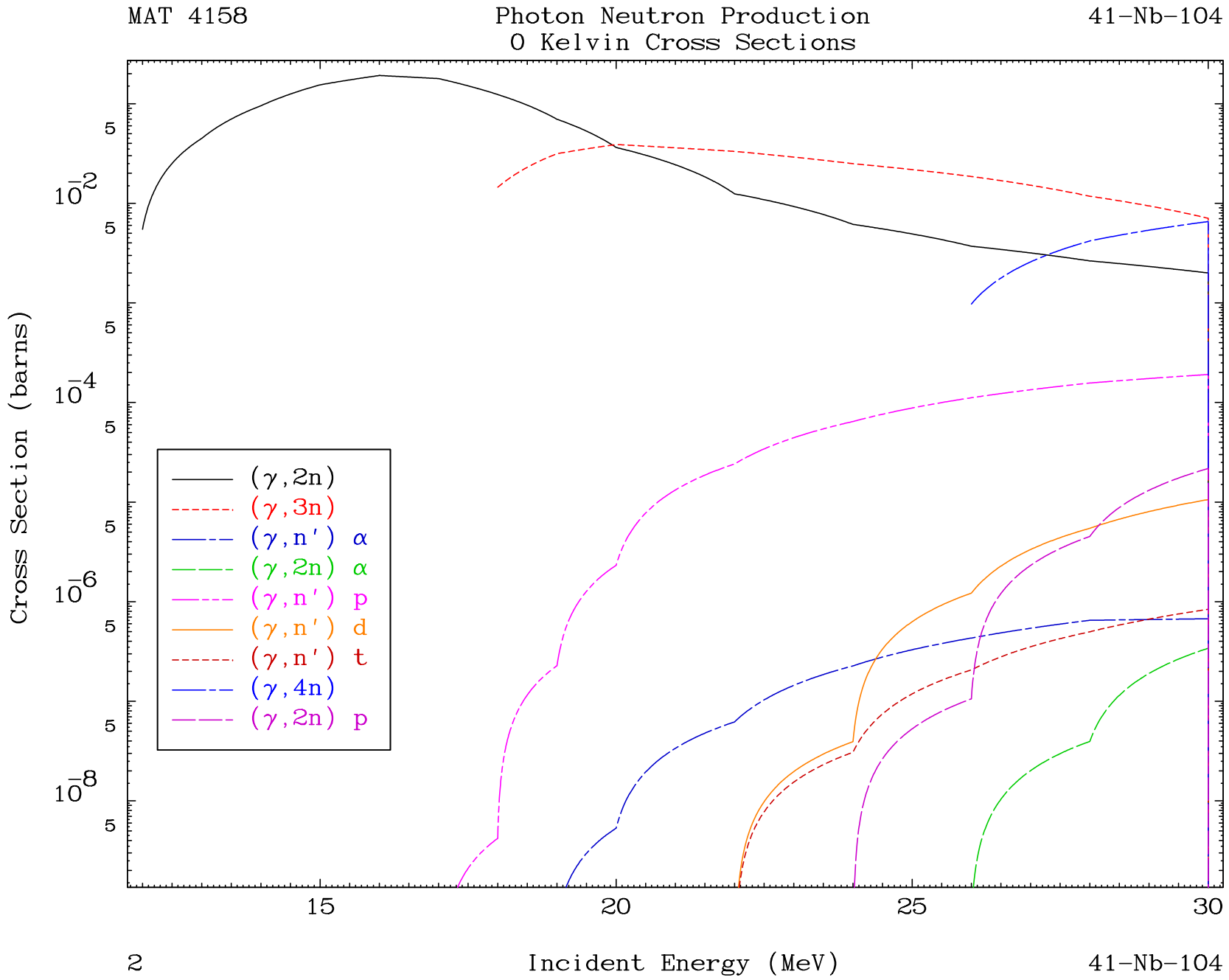
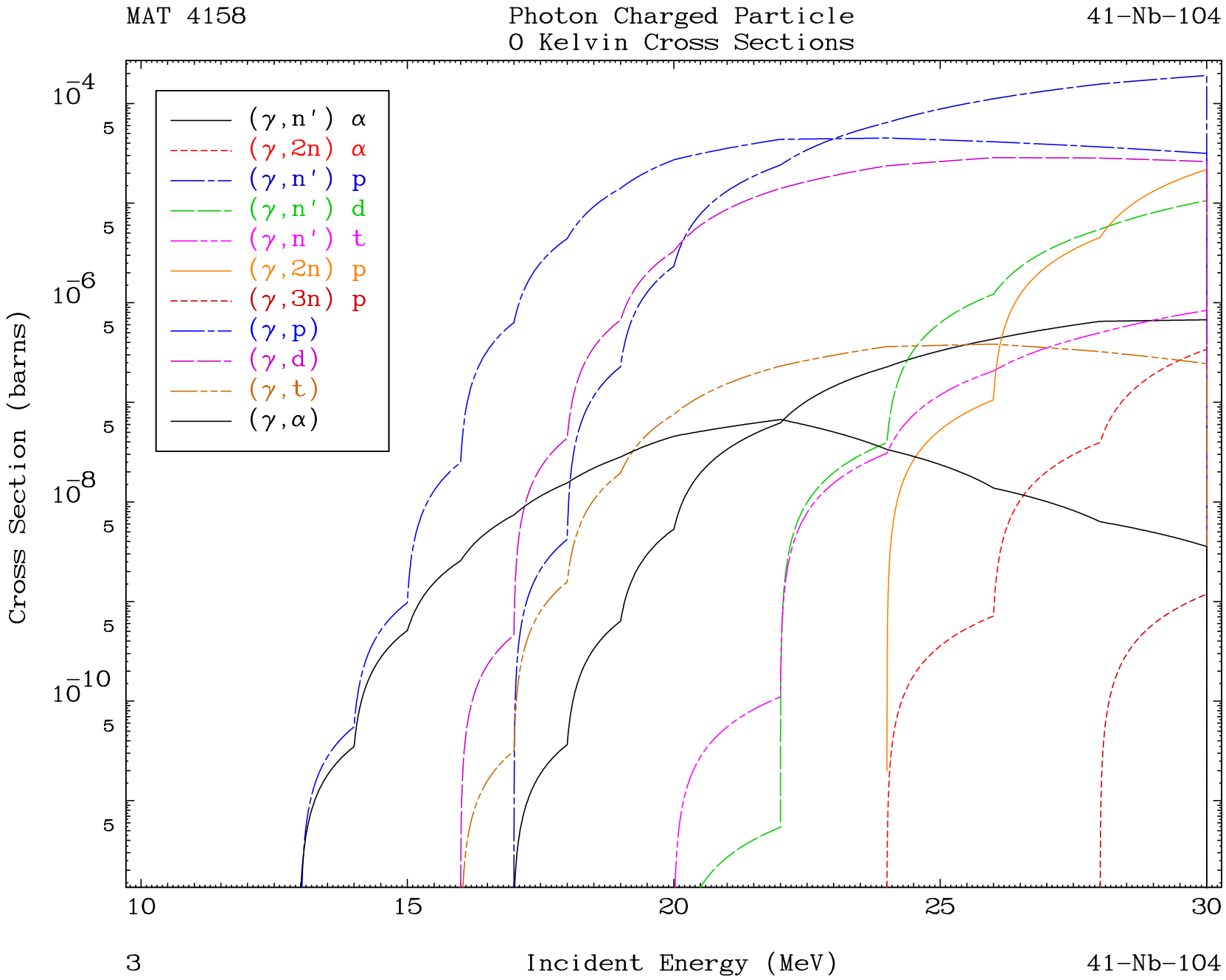
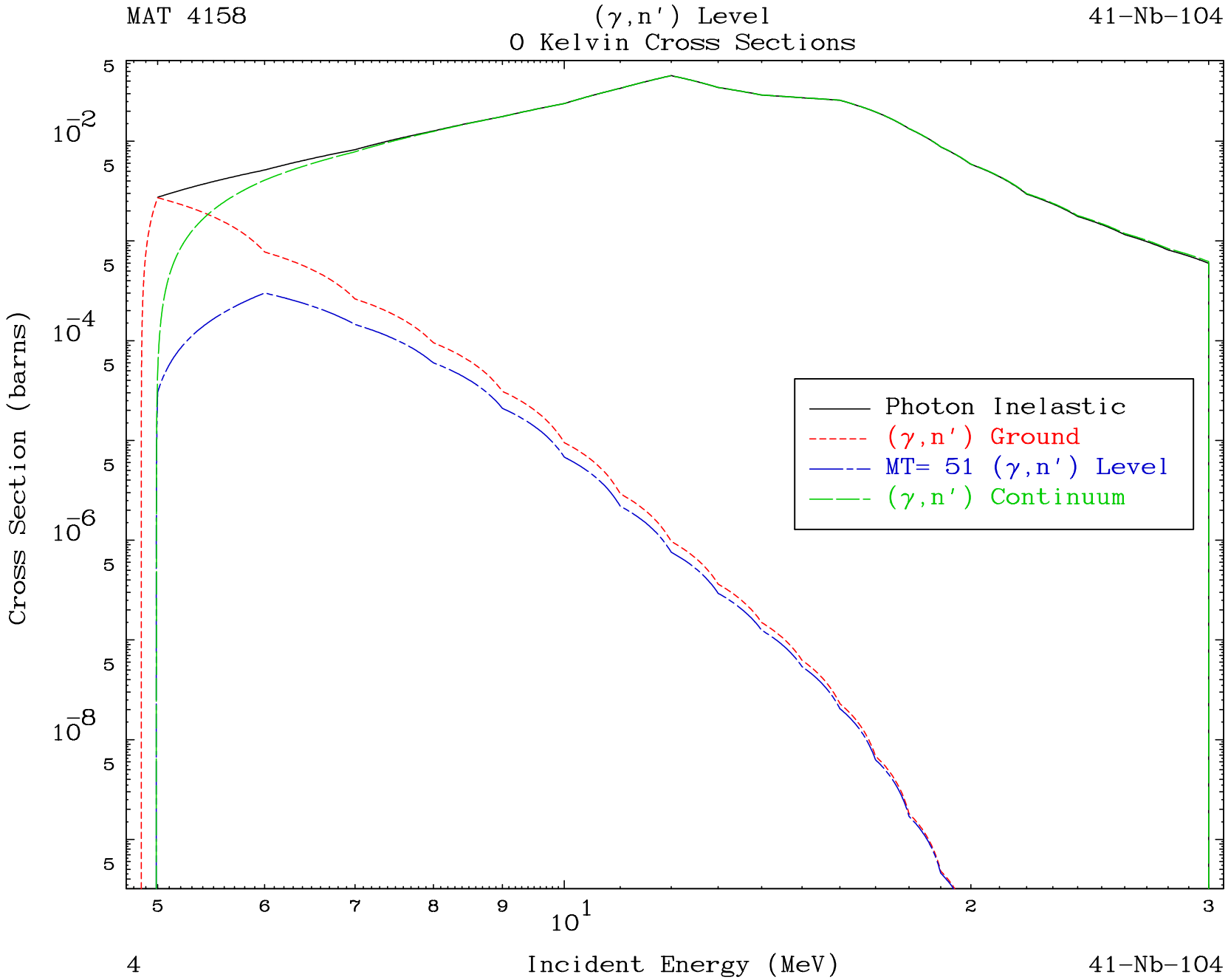
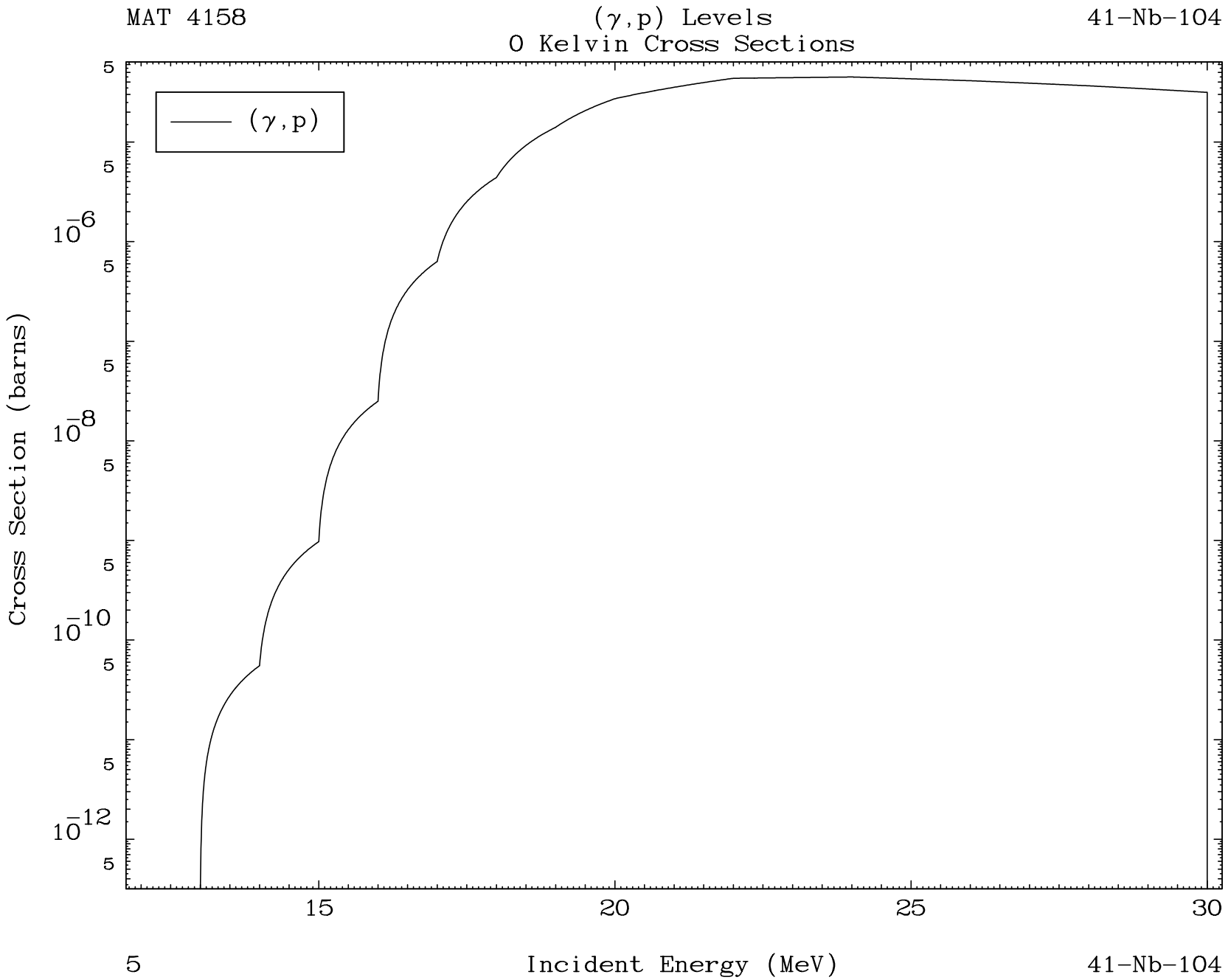
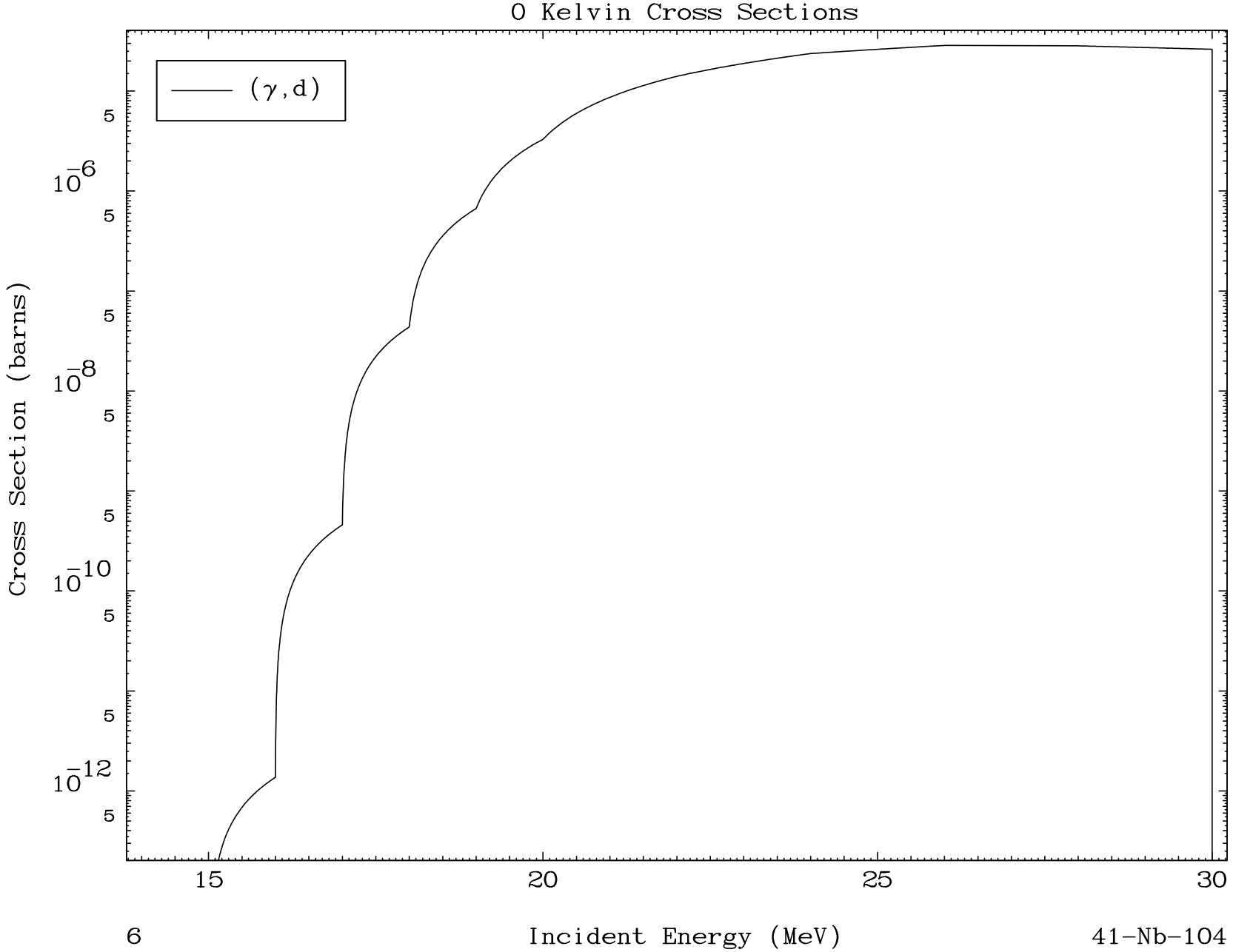

MAT 4158
Photon Major
41-Nb-104
0 Kelvin Cross Sections
Cross Section (barns)
Photon Inelastic
(γ,γ)
Incident Energy (MeV)
41-Nb-104

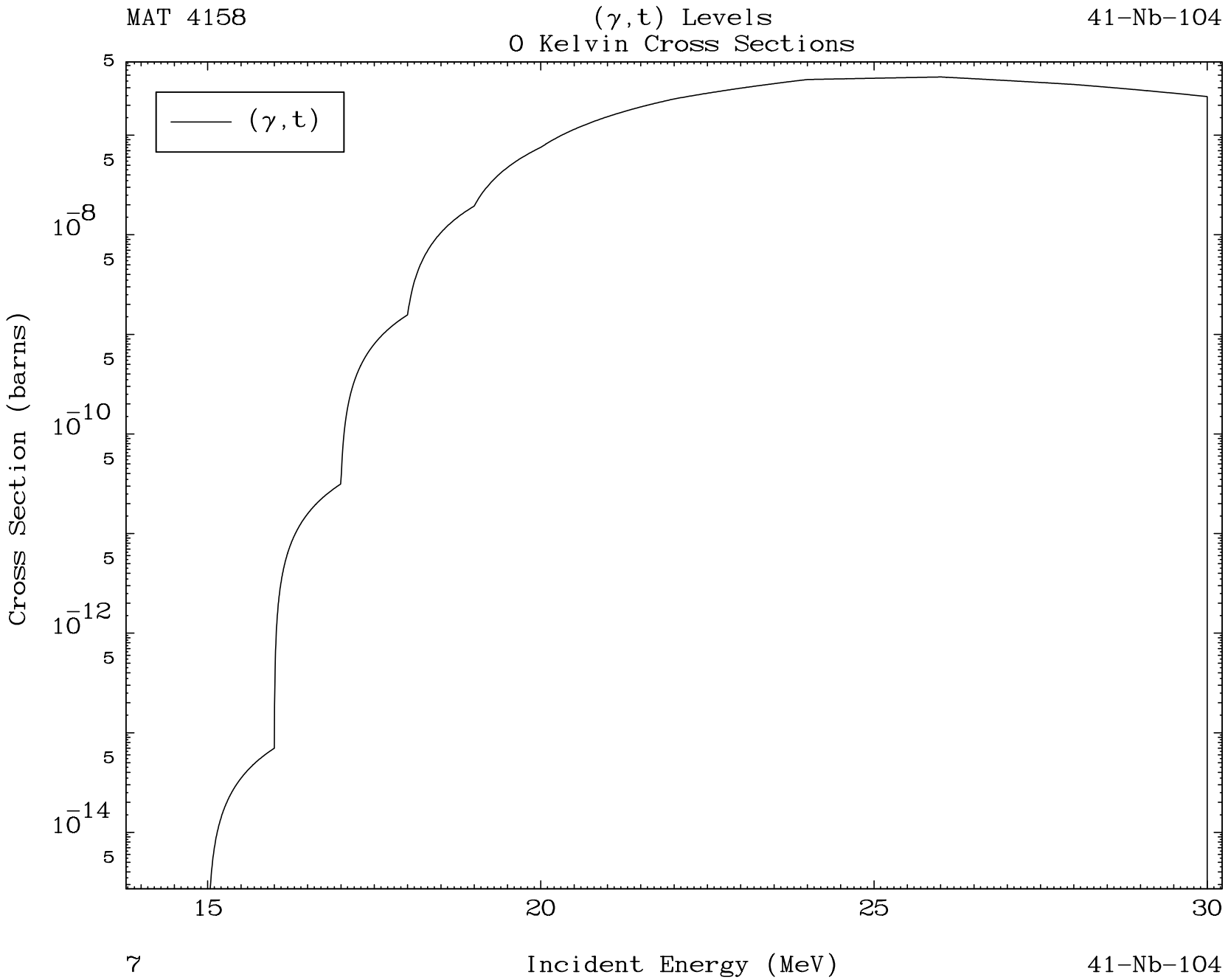

MAT 4158
Photon Neutron Production
0 Kelvin Cross Sections
41-Nb-104
Cross Section (barns)
10-2
10-4
10-6
10-8
5
15
20
25
30
Incident Energy (MeV)
2
41-Nb-104
(γ,2n)
(γ,3n)
(γ,n') α
(γ,2n) α
(γ,n') p
(γ,n') d
(γ,n') t
(γ,4n)
(γ,2n) p

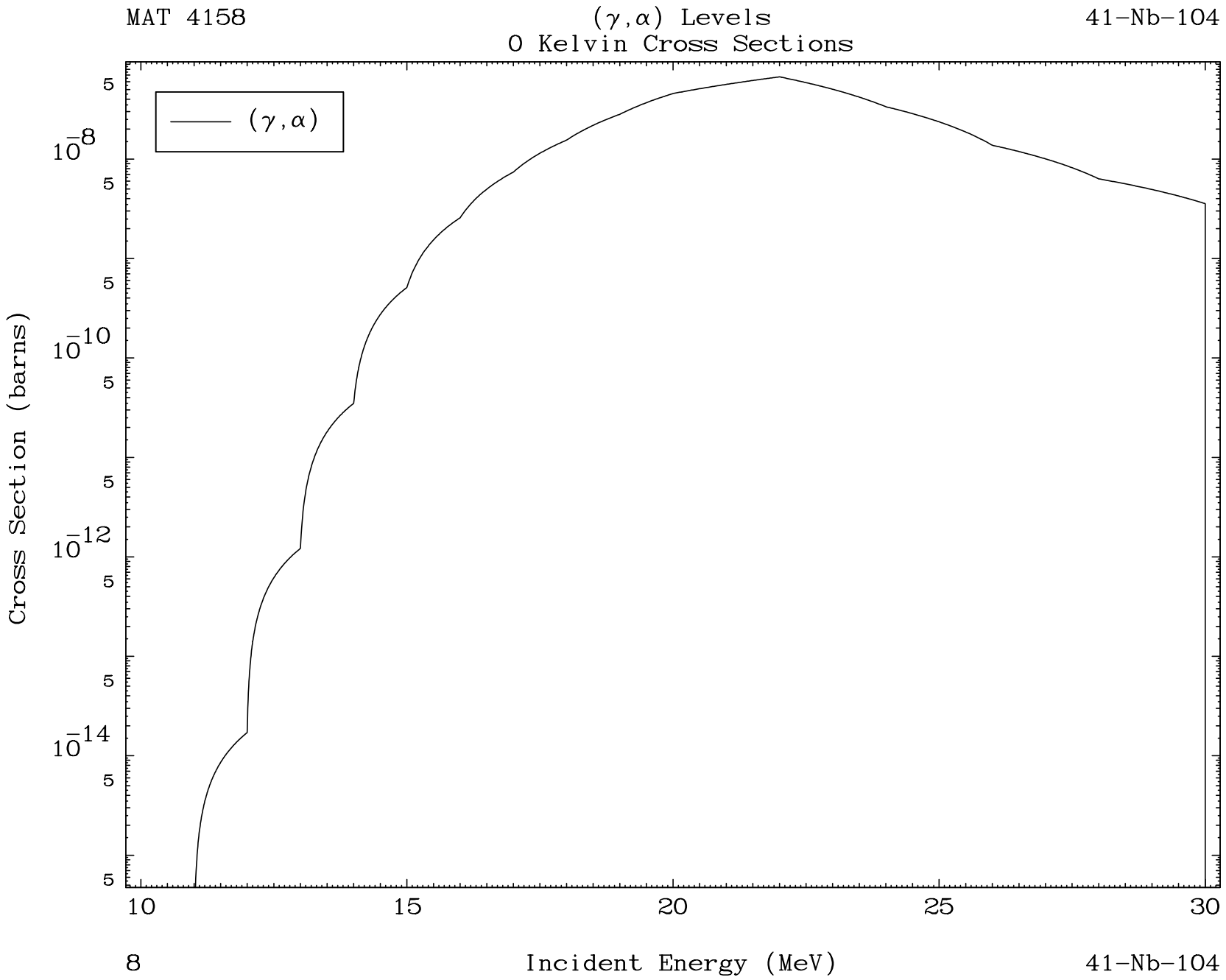

MAT 4158
Photon Charged Particle
0 Kelvin Cross Sections
41-Nb-104
(γ,n') α
(γ,2n) α
(γ,n') p
(γ,n') d
(γ,n') t
(γ,2n) p
(γ,3n) p
(γ,p)
(γ,d)
(γ,t)
(γ,α)
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
10
15
20
25
30
Incident Energy (MeV)
3
41-Nb-104

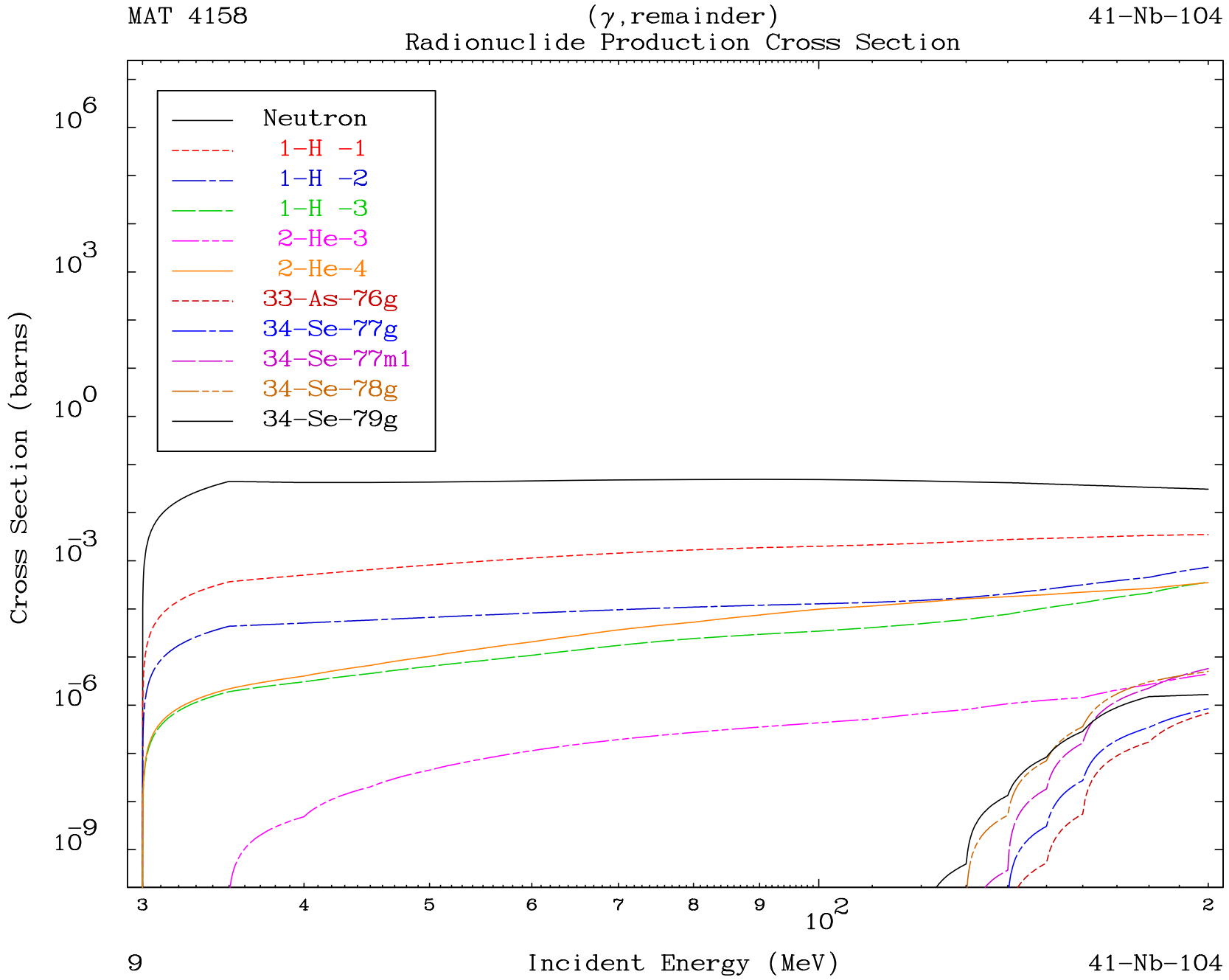

MAT 4158
(γ,n') Level
41-Nb-104
0 Kelvin Cross Sections
Cross Section (barns)
10-2
10-4
10-6
10-8
Photon Inelastic
(γ,n') Ground
MT= 51 (γ,n') Level
(γ,n') Continuum
4
5
6
7
8
9
101
2
3
Incident Energy (MeV)
41-Nb-104

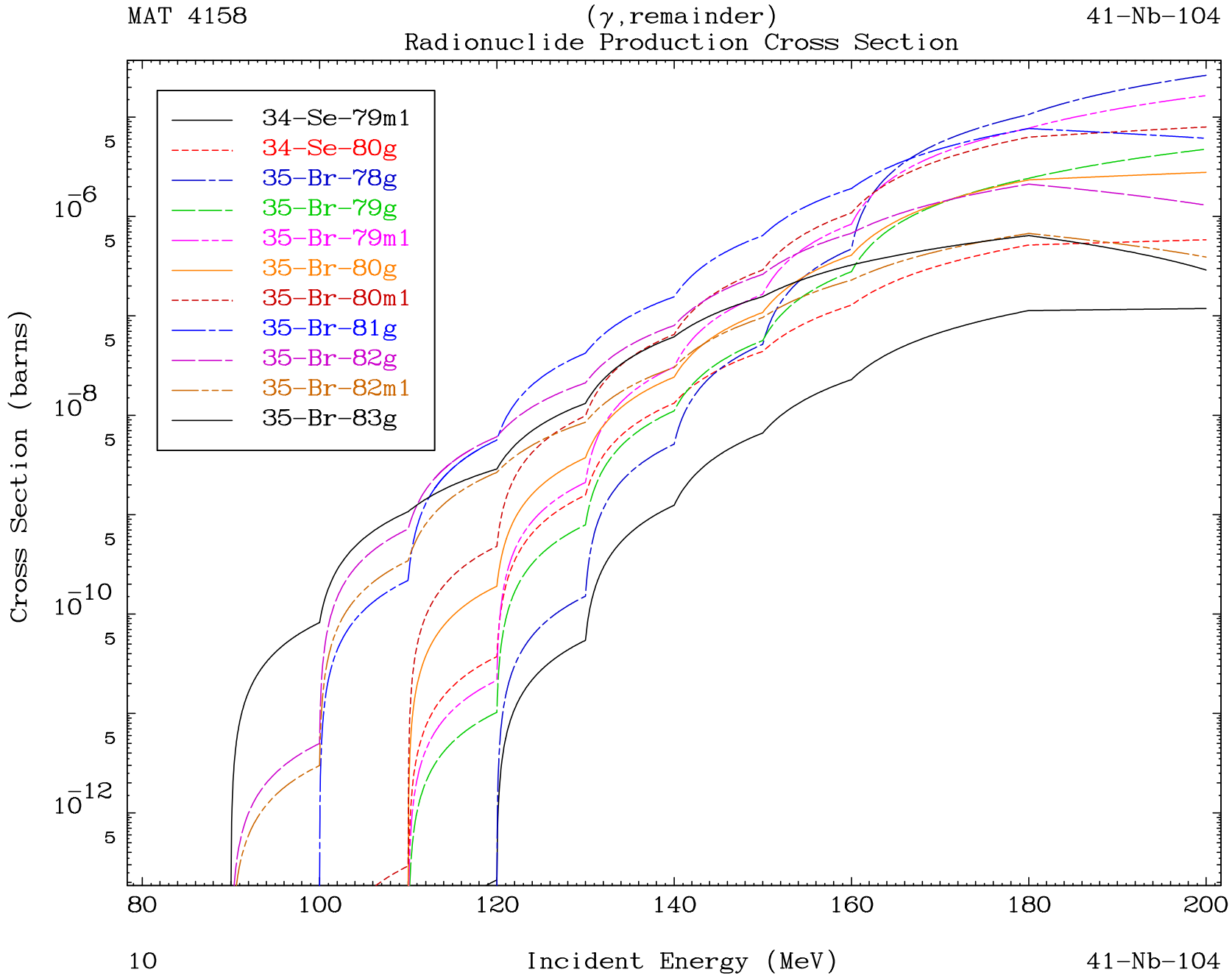

MAT 4158
(γ,p) Levels
41-Nb-104
0 Kelvin Cross Sections
(γ,p)
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
15
20
25
30
Incident Energy (MeV)
41-Nb-104

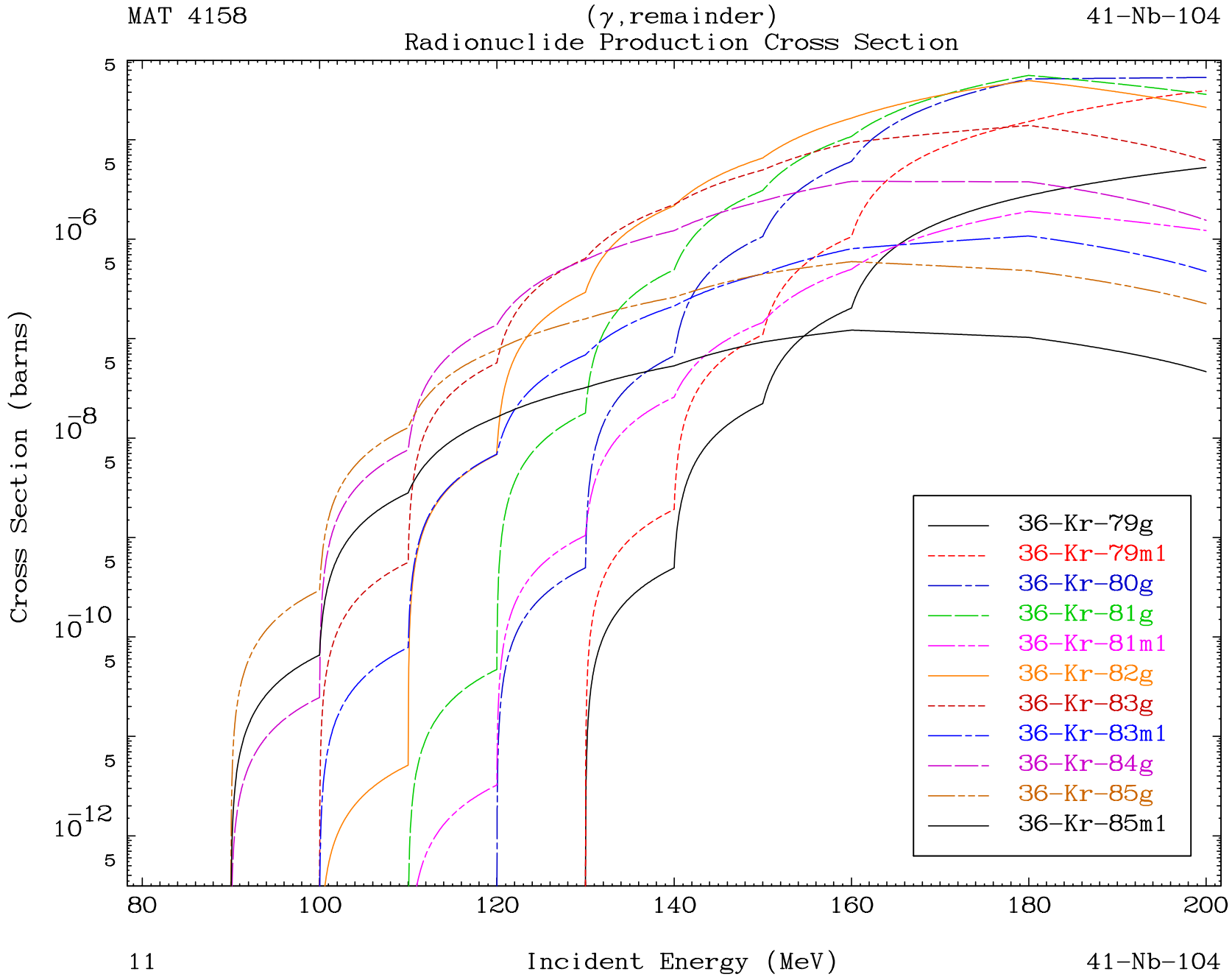

0 Kelvin Cross Sections
(γ,d)
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
5
15
20
25
30
Incident Energy (MeV)

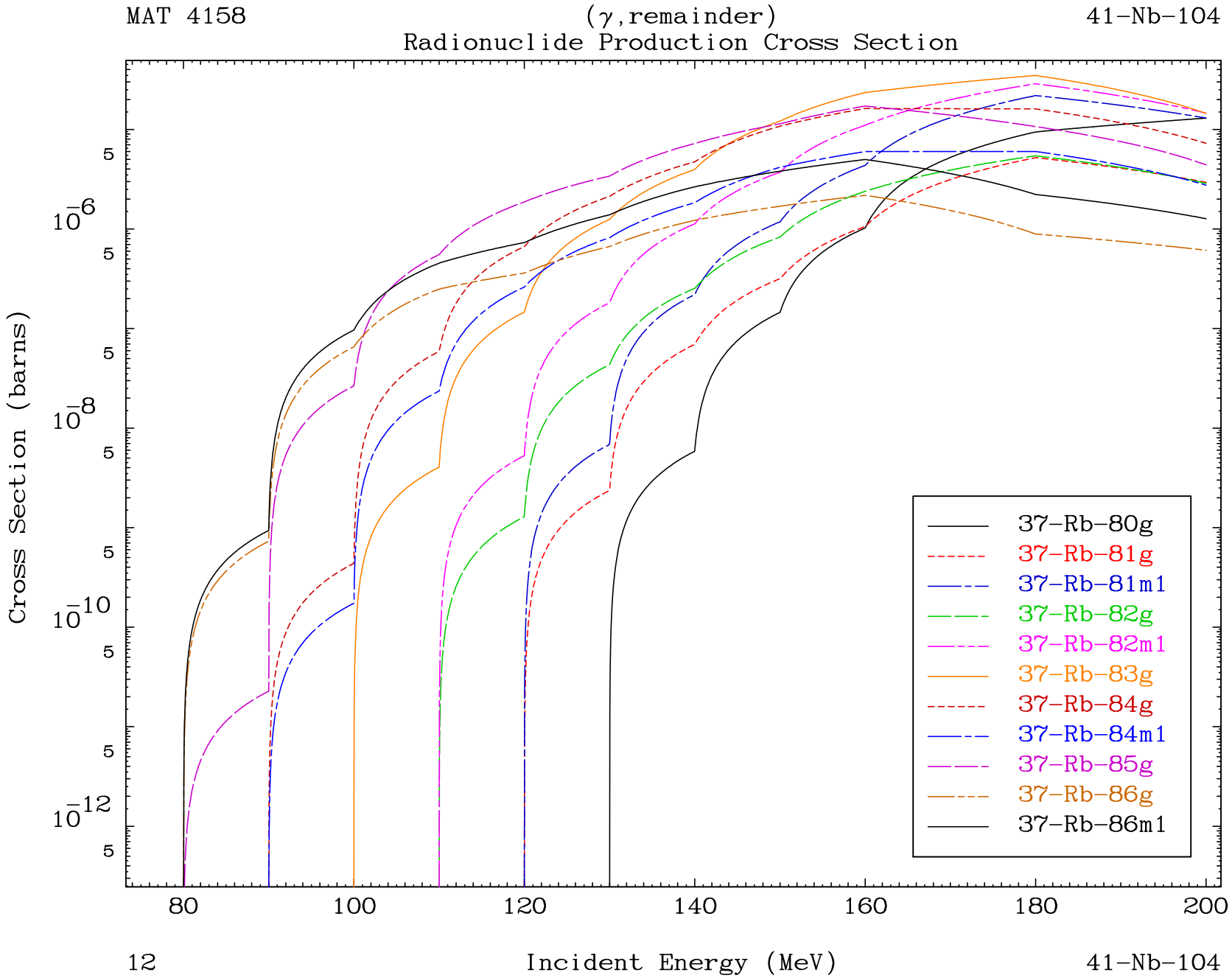

MAT 4158
(γ,t) Levels
41-Nb-104
0 Kelvin Cross Sections
(γ,t)
Cross Section (barns)
10-8
10-10
10-12
10-14
5
15
20
25
30
7
Incident Energy (MeV)
41-Nb-104

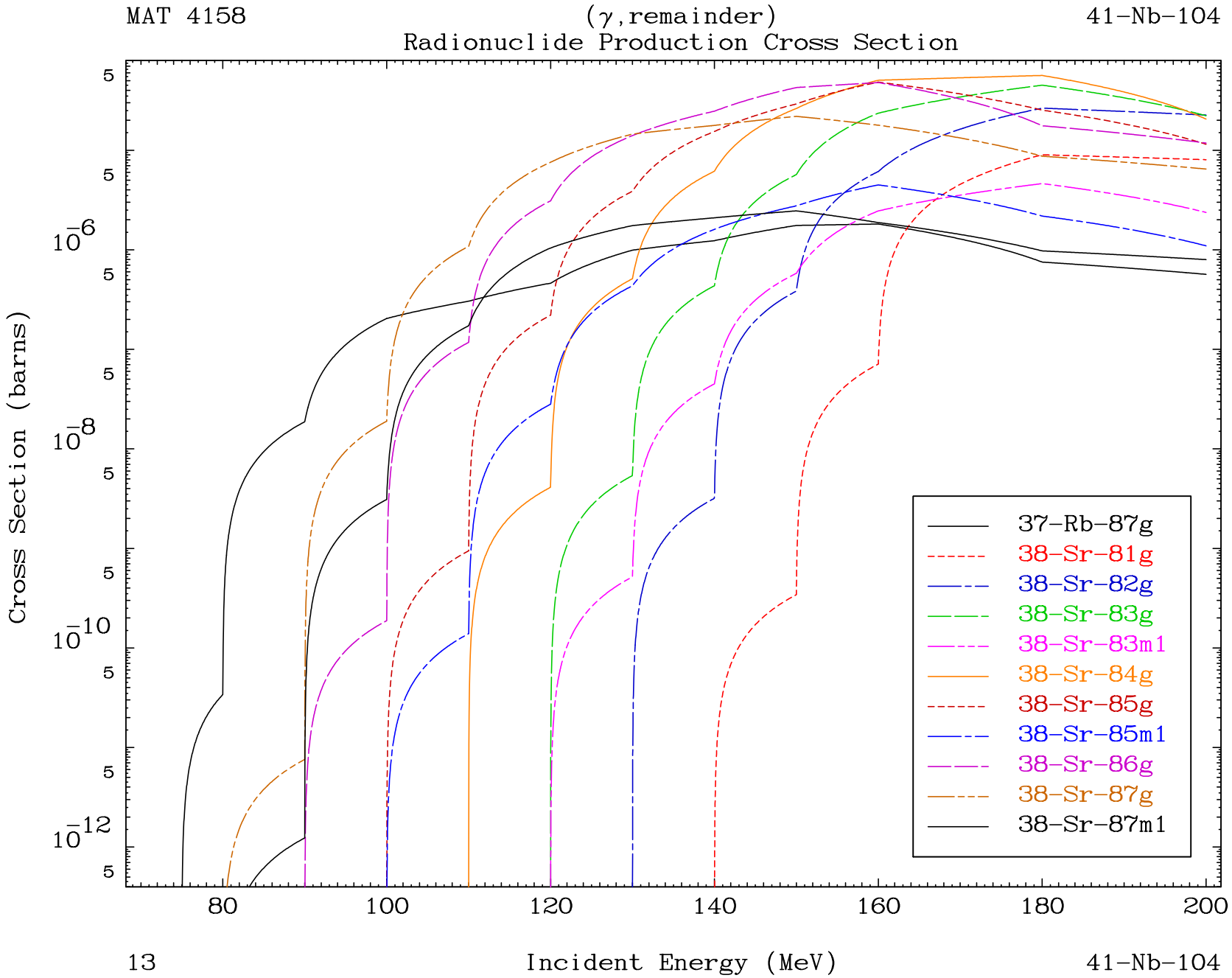

MAT 4158
(γ,α) Levels
41-Nb-104
0 Kelvin Cross Sections
(γ,α)
Cross Section (barns)
10^-8
10^-10
10^-12
10^-14
5
10
15
20
25
30
8
Incident Energy (MeV)
41-Nb-104


MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Neutron
1-H -1
1-H -2
1-H -3
2-He-3
2-He-4
33-As-76g
34-Se-77g
34-Se-77m1
34-Se-78g
34-Se-79g
Cross Section (barns)
10^6
10^3
10^0
10^-3
10^-6
10^-9
3
4
5
6
7
8
9
10^2
2
9
Incident Energy (MeV)
41-Nb-104

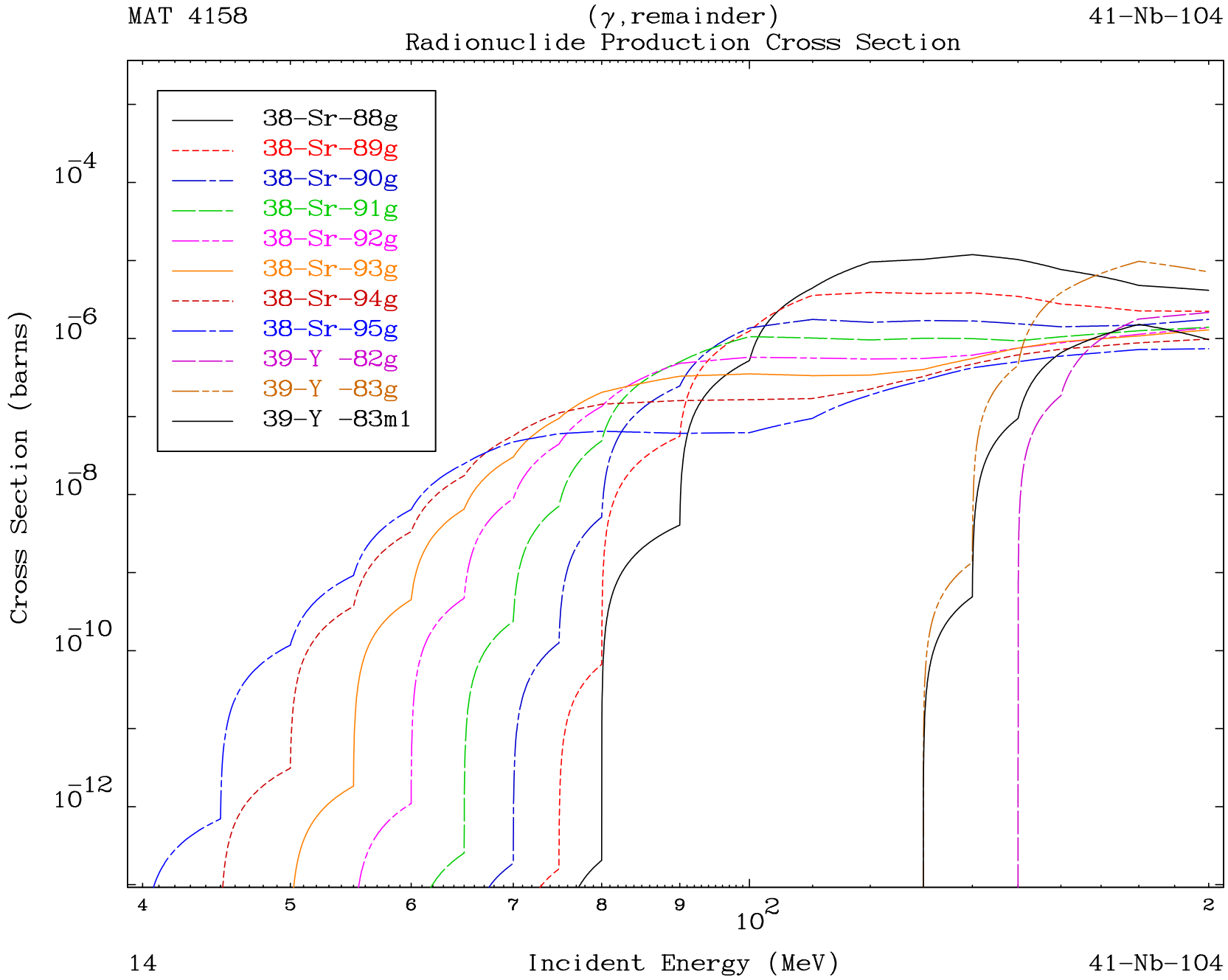

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
34-Se-79m1
34-Se-80g
35-Br-78g
35-Br-79g
35-Br-79m1
35-Br-80g
35-Br-80m1
35-Br-81g
35-Br-82g
35-Br-82m1
35-Br-83g
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
5
80
100
120
140
160
180
200
10
Incident Energy (MeV)
41-Nb-104

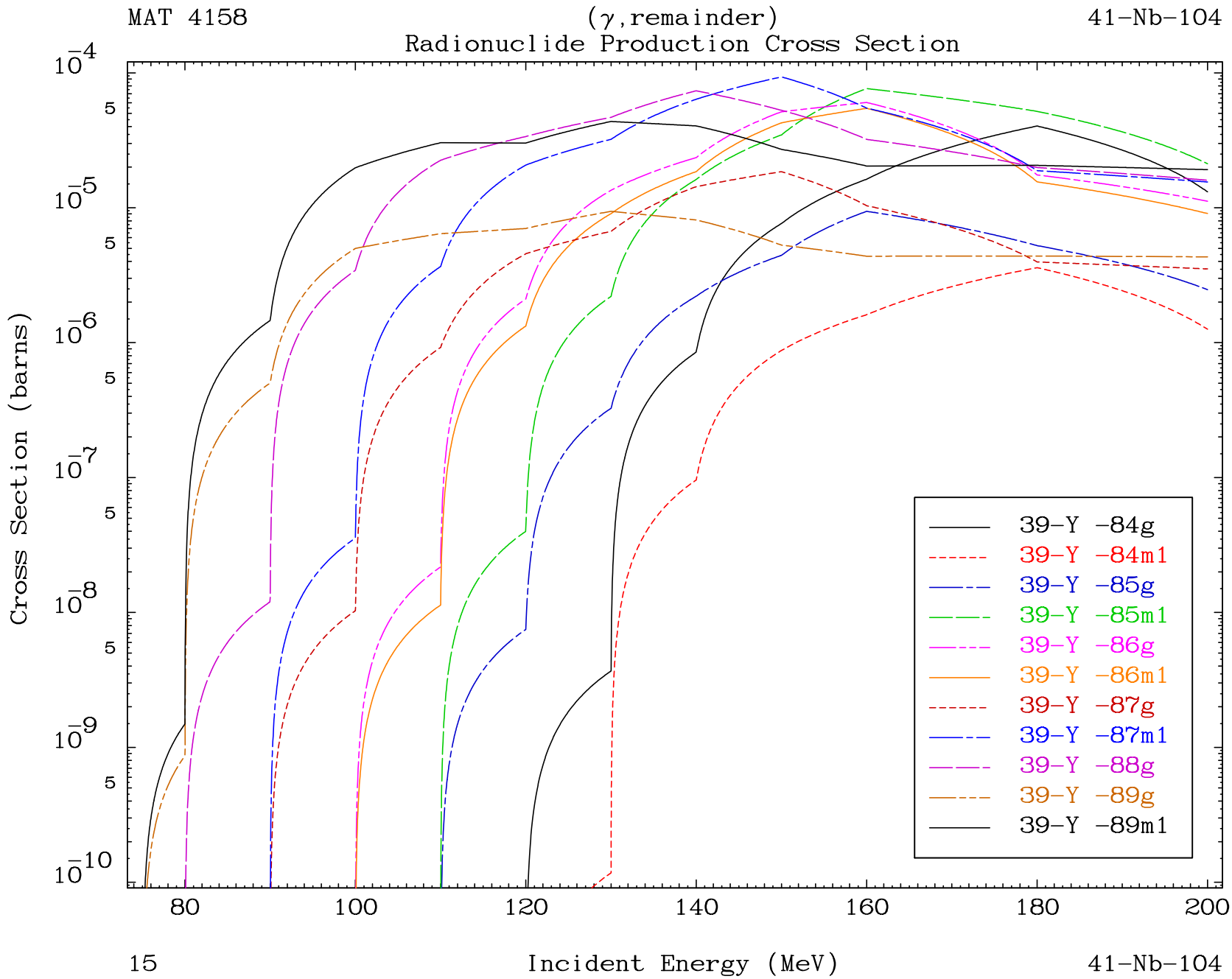

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-6
10-8
10-10
10-12
80
100
120
140
160
180
200
11
Incident Energy (MeV)
41-Nb-104
36-Kr-79g
36-Kr-79m1
36-Kr-80g
36-Kr-81g
36-Kr-81m1
36-Kr-82g
36-Kr-83g
36-Kr-83m1
36-Kr-84g
36-Kr-85g
36-Kr-85m1

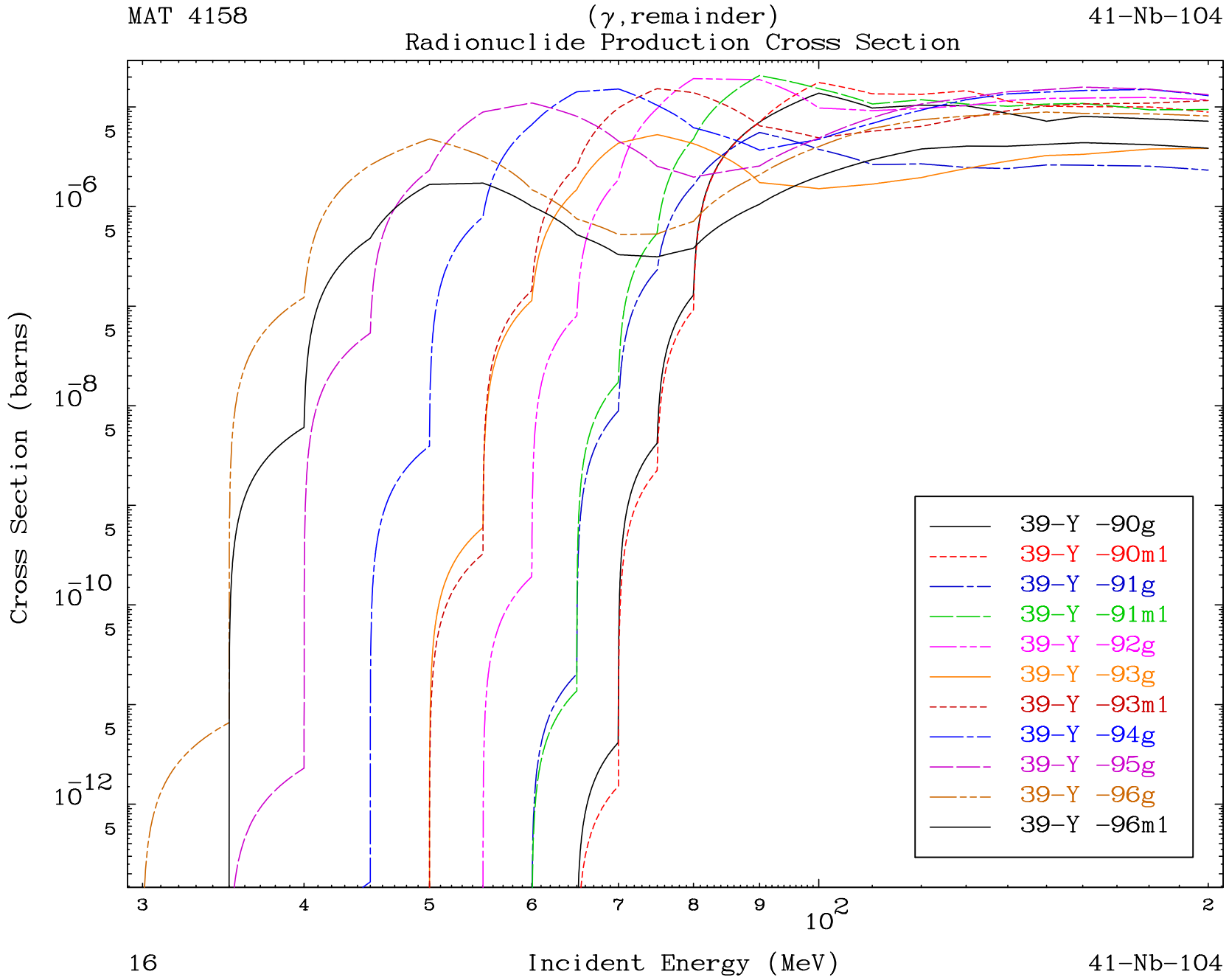

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-6
10-8
10-10
10-12
5
80
100
120
140
160
180
200
Incident Energy (MeV)
12
41-Nb-104
37-Rb-80g
37-Rb-81g
37-Rb-81m1
37-Rb-82g
37-Rb-82m1
37-Rb-83g
37-Rb-84g
37-Rb-84m1
37-Rb-85g
37-Rb-86g
37-Rb-86m1


MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-6
10-8
10-10
10-12
5
80
100
120
140
160
180
200
Incident Energy (MeV)
37-Rb-87g
38-Sr-81g
38-Sr-82g
38-Sr-83g
38-Sr-83m1
38-Sr-84g
38-Sr-85g
38-Sr-85m1
38-Sr-86g
38-Sr-87g
38-Sr-87m1

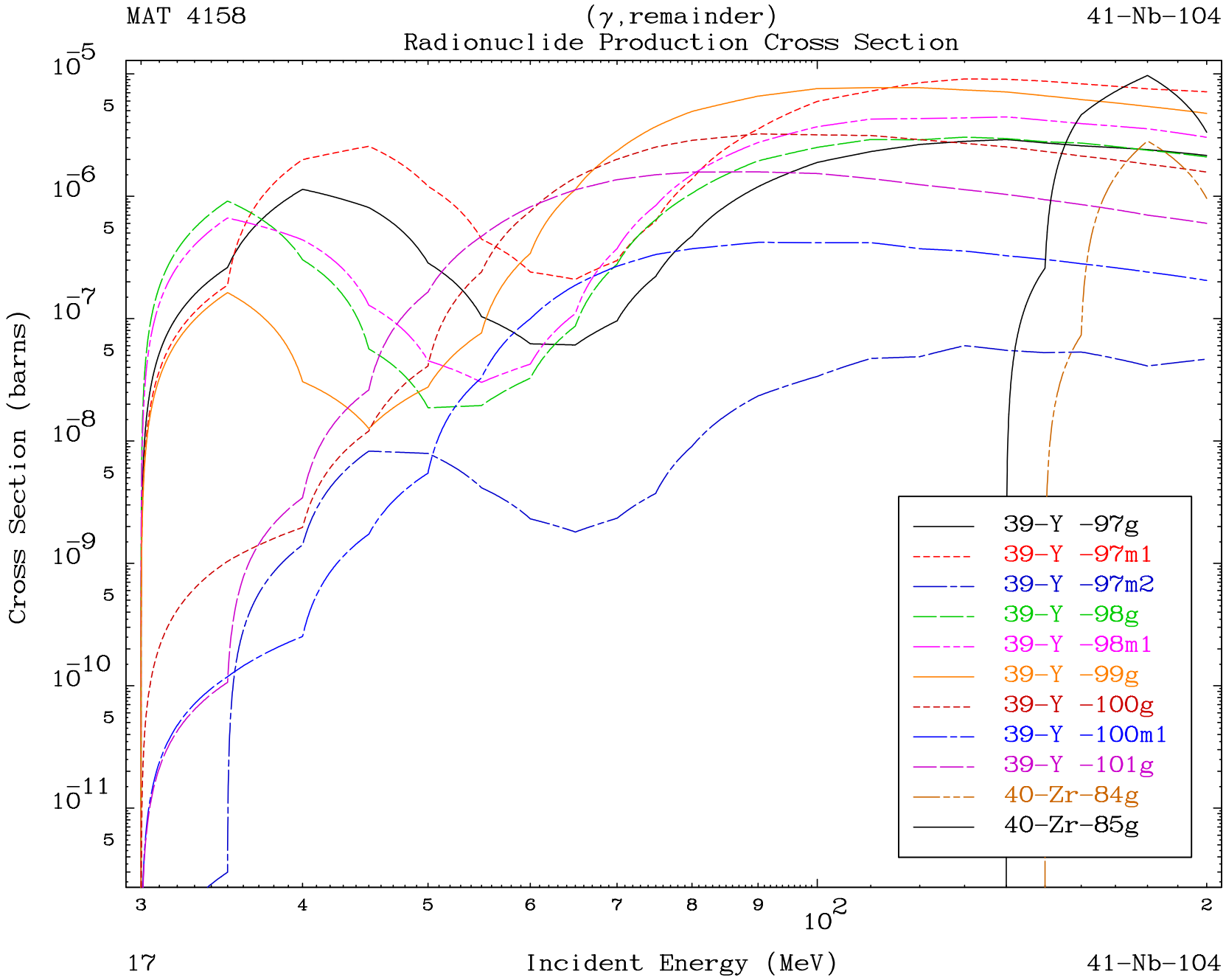
41-Nb-104

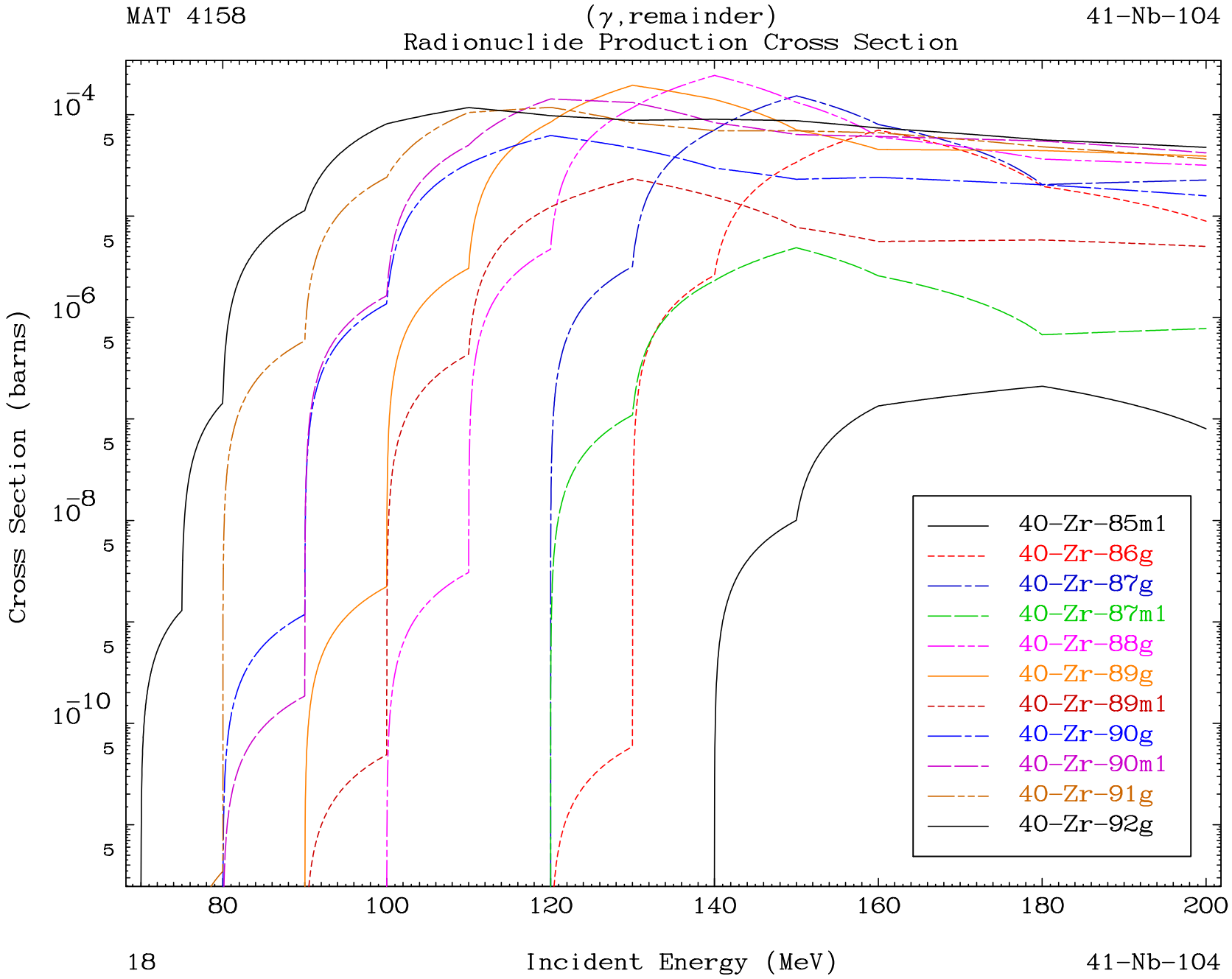

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
38-Sr-88g
38-Sr-89g
38-Sr-90g
38-Sr-91g
38-Sr-92g
38-Sr-93g
38-Sr-94g
38-Sr-95g
39-Y -82g
39-Y -83g
39-Y -83m1
Cross Section (barns)
10-4
10-6
10-8
10-10
10-12
4
5
6
7
8
9
10^2
2
14
Incident Energy (MeV)
41-Nb-104


MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-4
5
10-5
5
10-6
5
10-7
5
10-8
5
10-9
5
10-10
80
100
120
140
160
180
200
Incident Energy (MeV)
15
41-Nb-104
39-Y -84g
39-Y -84m1
39-Y -85g
39-Y -85m1
39-Y -86g
39-Y -86m1
39-Y -87g
39-Y -87m1
39-Y -88g
39-Y -89g
39-Y -89m1

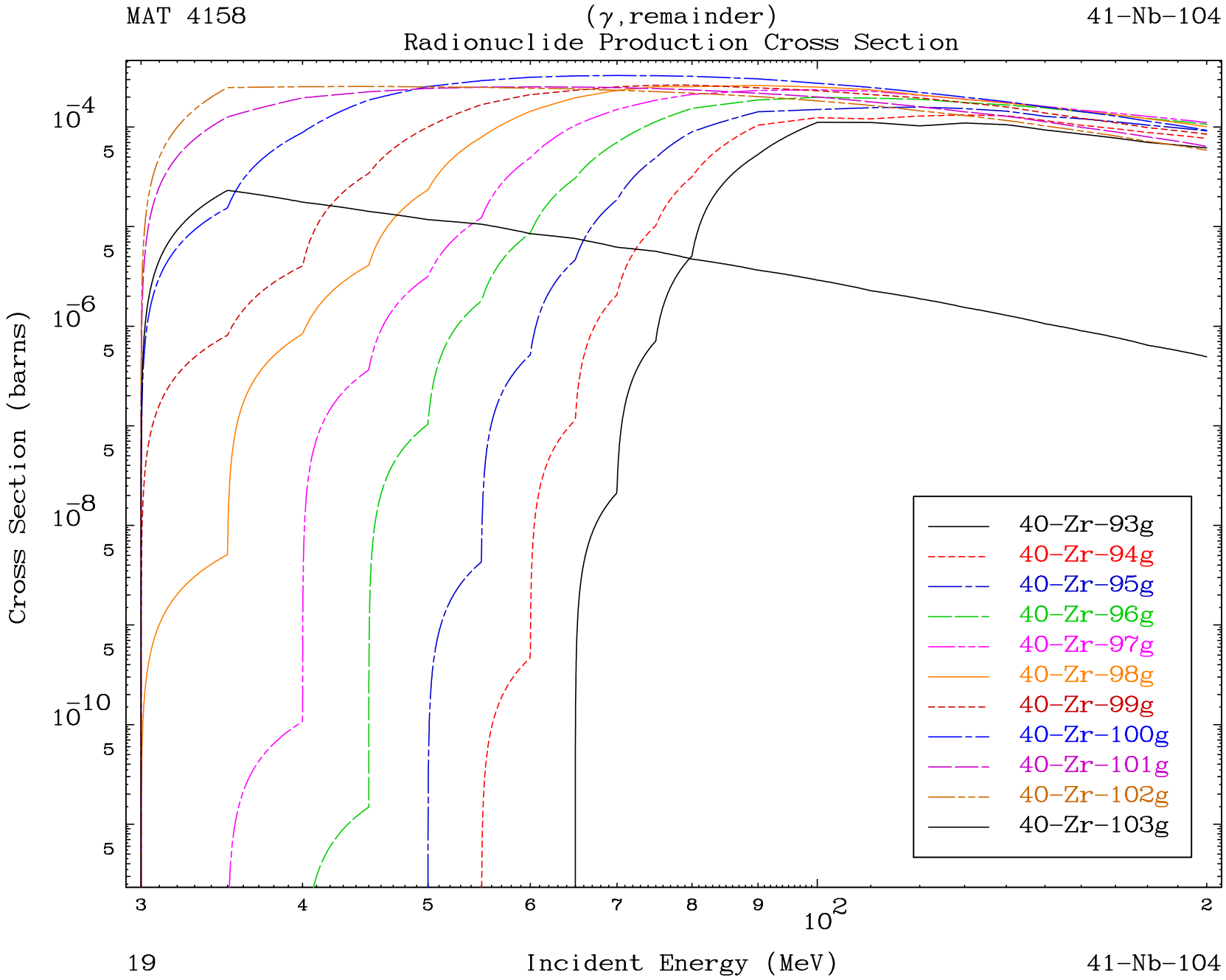

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-6
10-8
10-10
10-12
5
3
4
5
6
7
8
9
10^2
2
Incident Energy (MeV)
39-Y -90g
39-Y -90m1
39-Y -91g
39-Y -91m1
39-Y -92g
39-Y -93g
39-Y -93m1
39-Y -94g
39-Y -95g
39-Y -96g
39-Y -96m1

41-Nb-104

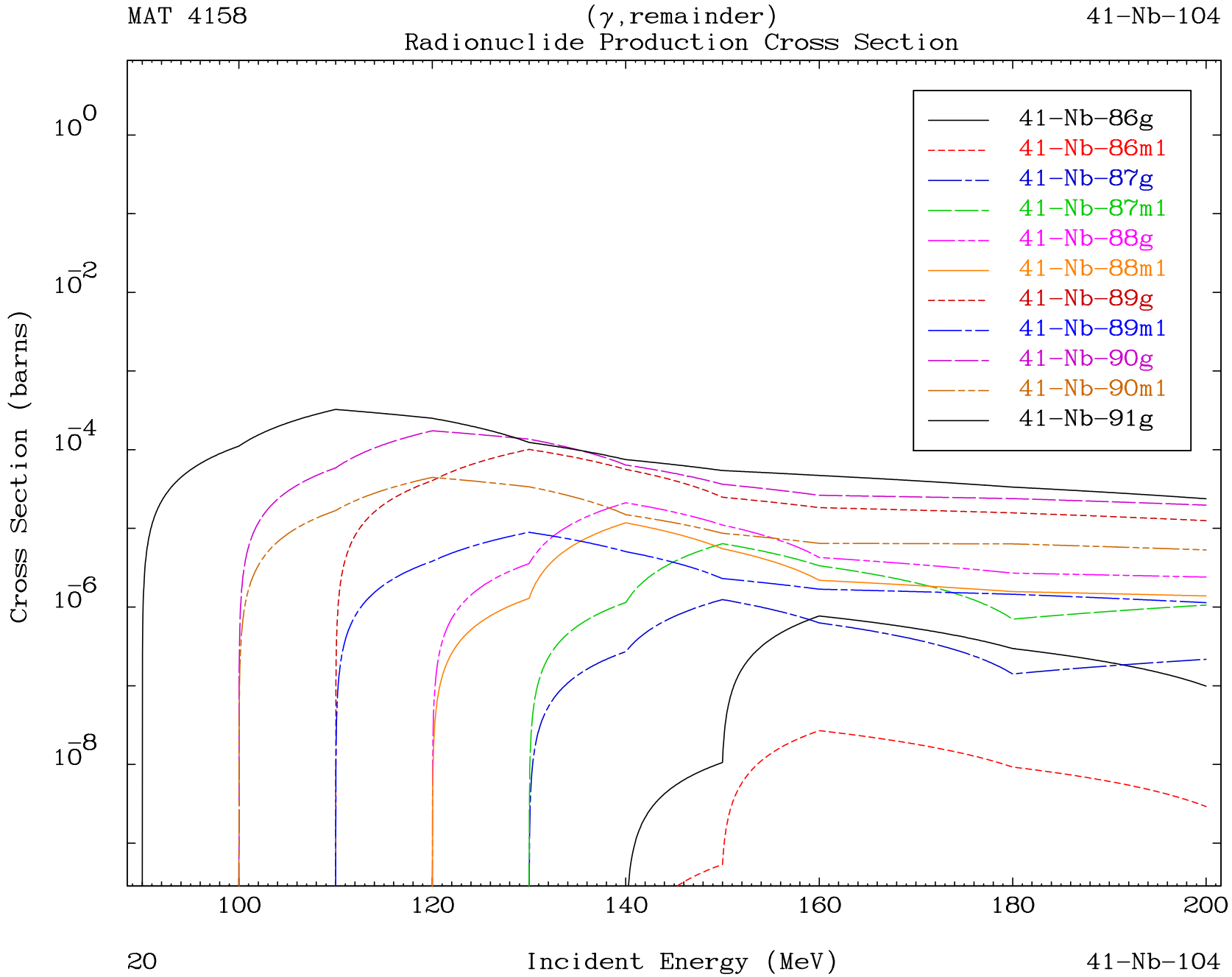

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
Incident Energy (MeV)
39-Y -97g
39-Y -97m1
39-Y -97m2
39-Y -98g
39-Y -98m1
39-Y -99g
39-Y -100g
39-Y -100m1
39-Y -101g
40-Zr-84g
40-Zr-85g
17
41-Nb-104

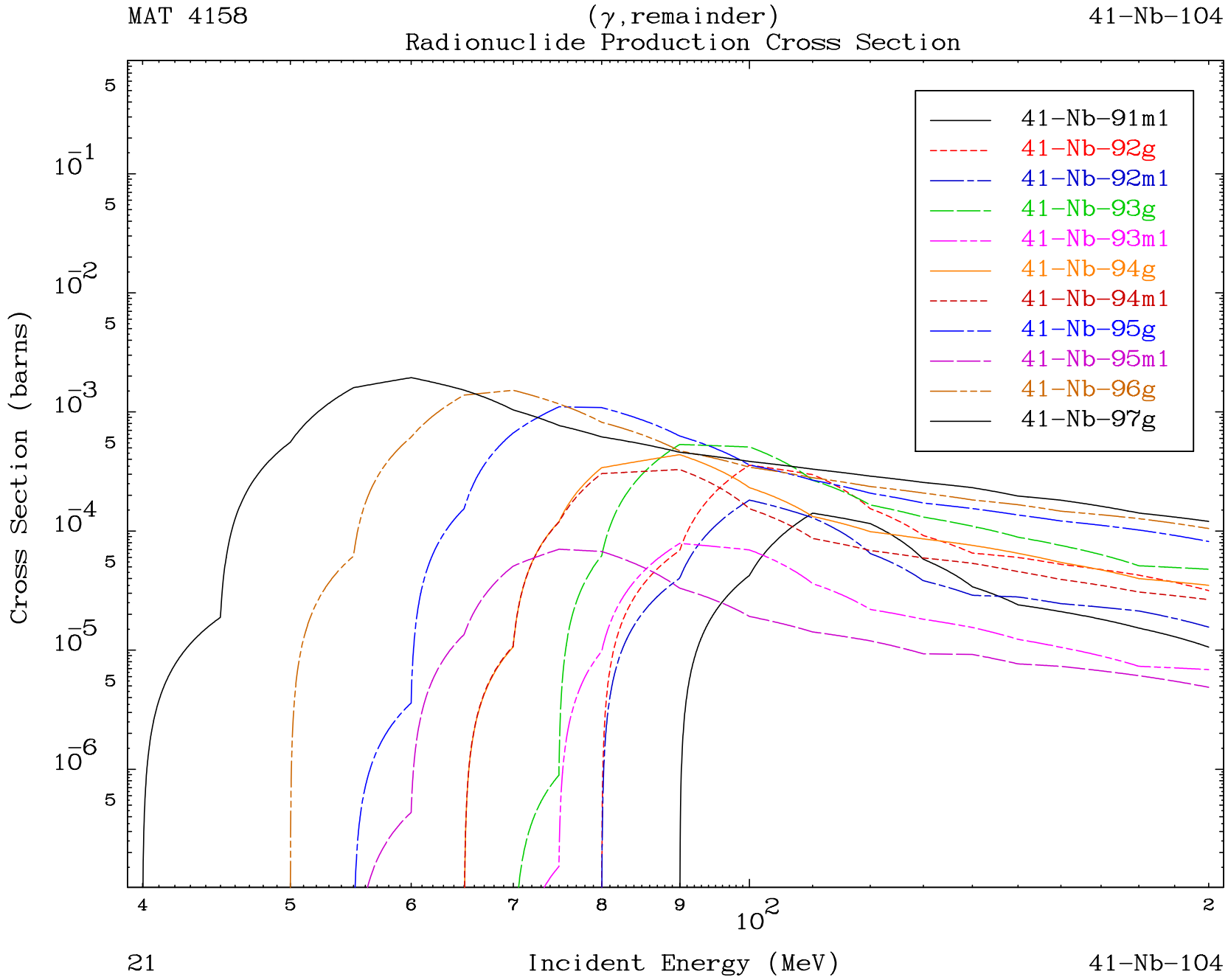

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-4
5
10-6
5
10-8
5
10-10
5
5
80
100
120
140
160
180
200
Incident Energy (MeV)
40-Zr-85m1
40-Zr-86g
40-Zr-87g
40-Zr-87m1
40-Zr-88g
40-Zr-89g
40-Zr-89m1
40-Zr-90g
40-Zr-90m1
40-Zr-91g
40-Zr-92g

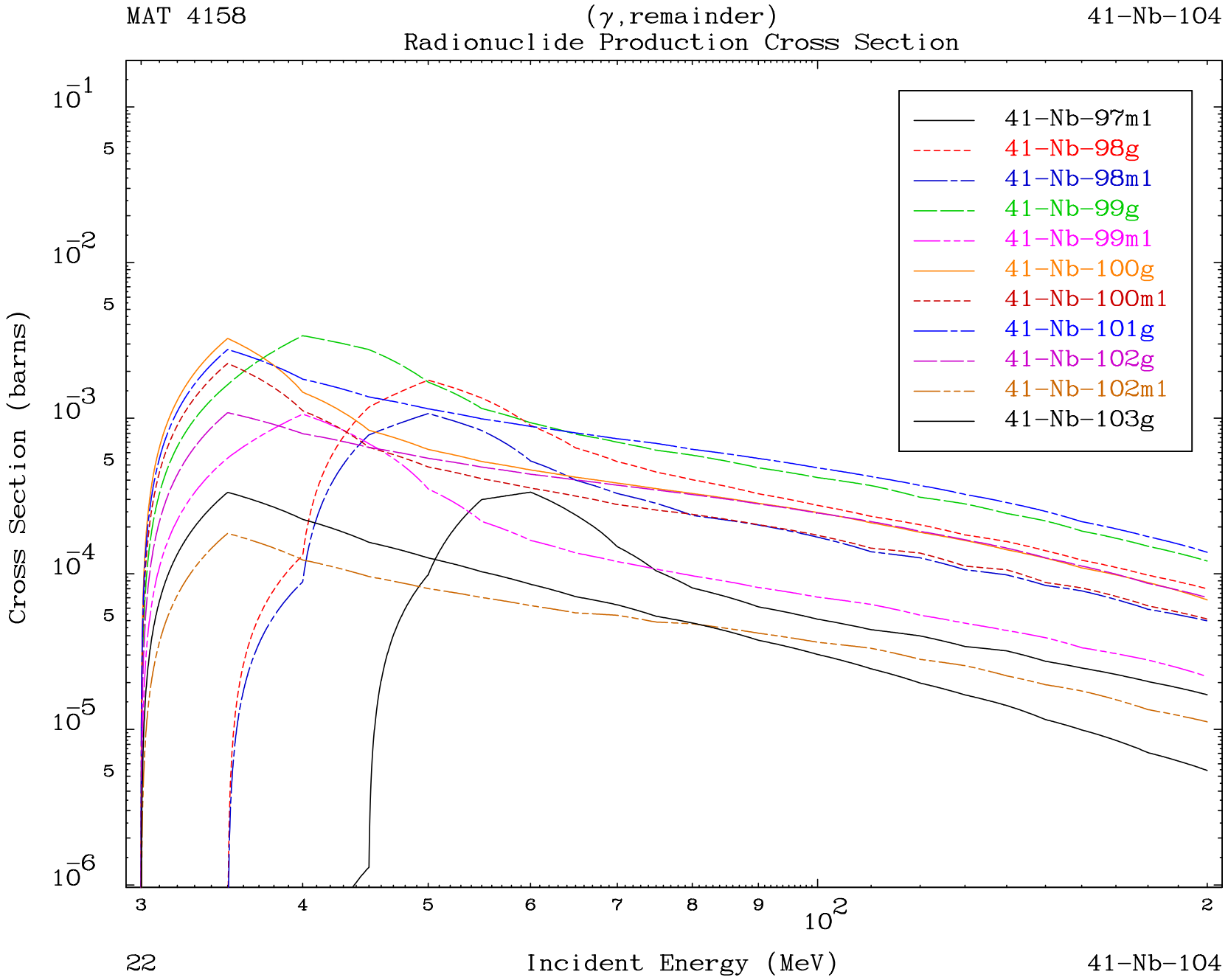
41-Nb-104

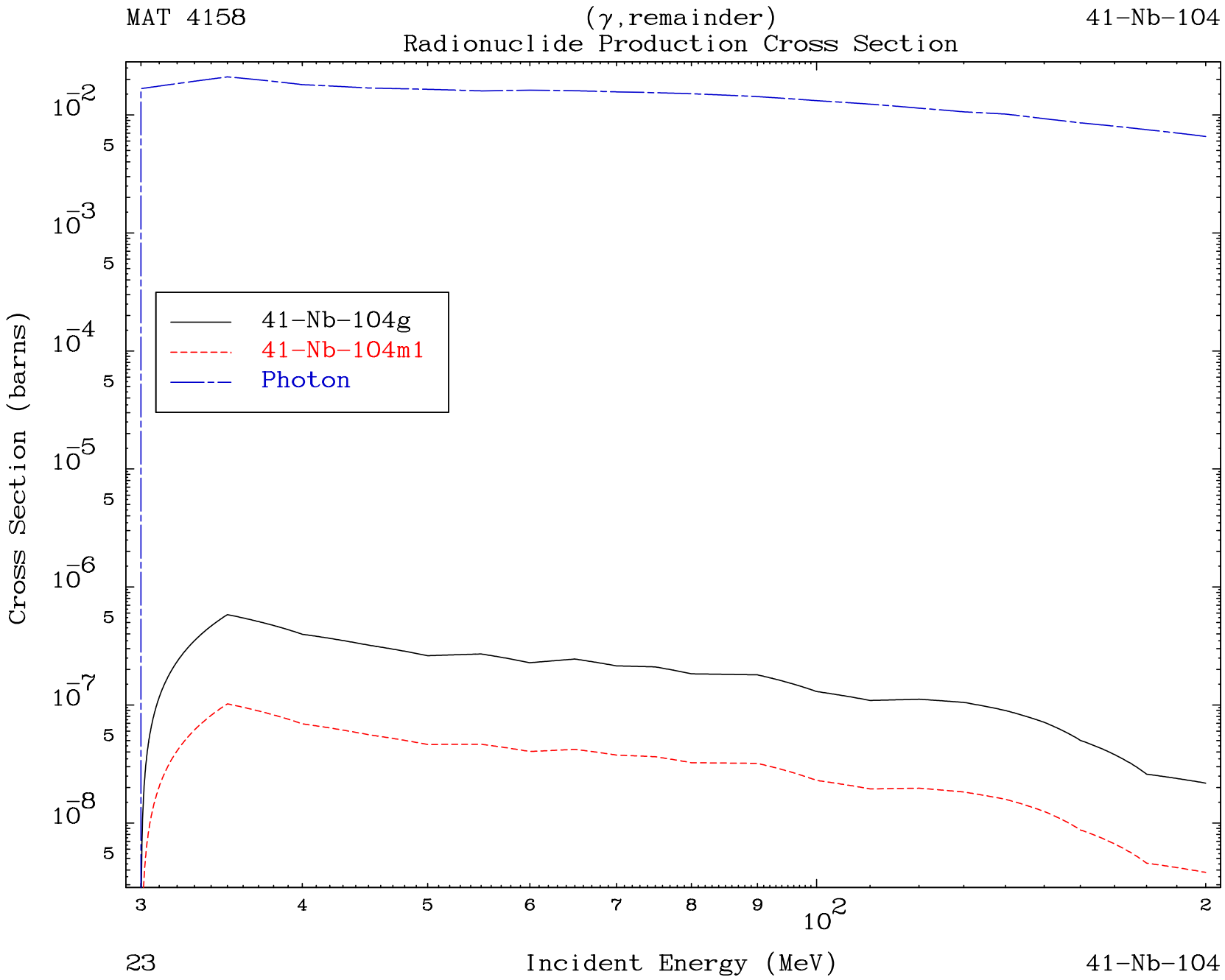

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-4
10-6
10-8
10-10
5
3
4
5
6
7
8
9
10 2
2
Incident Energy (MeV)
40-Zr-93g
40-Zr-94g
40-Zr-95g
40-Zr-96g
40-Zr-97g
40-Zr-98g
40-Zr-99g
40-Zr-100g
40-Zr-101g
40-Zr-102g
40-Zr-103g

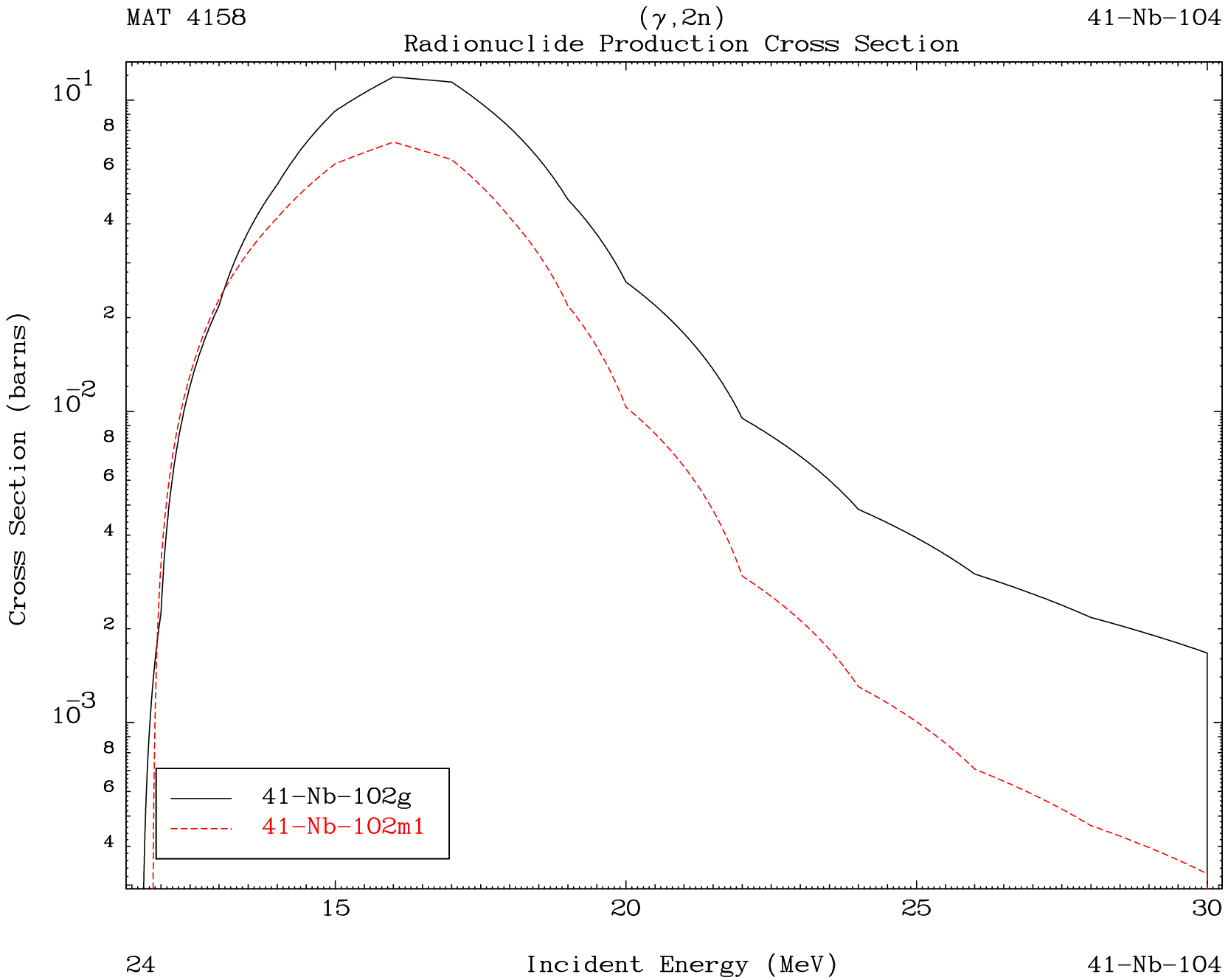
41-Nb-104

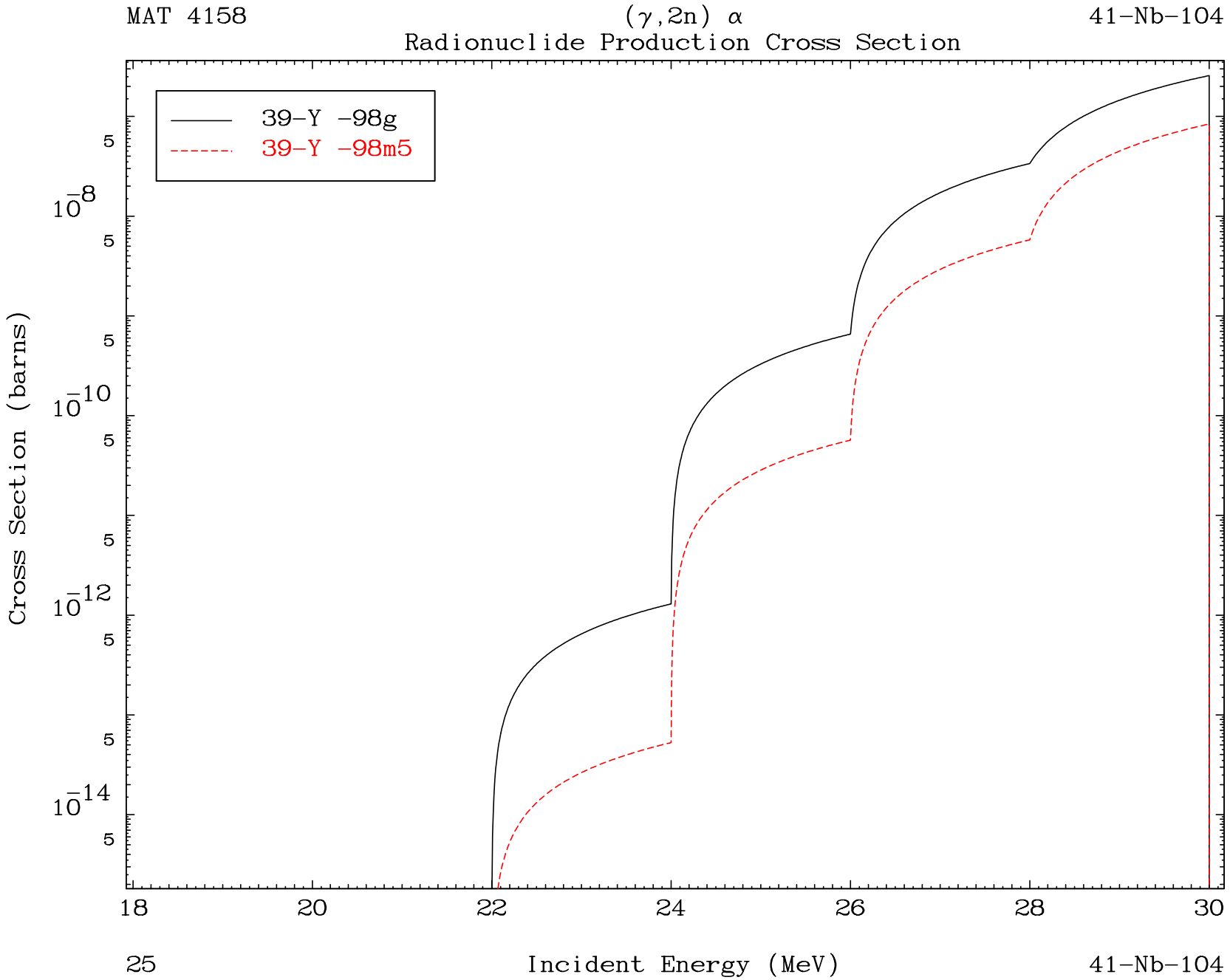

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
10^-8
100
120
140
160
180
200
20
Incident Energy (MeV)
41-Nb-104
41-Nb-86g
41-Nb-86m1
41-Nb-87g
41-Nb-87m1
41-Nb-88g
41-Nb-88m1
41-Nb-89g
41-Nb-89m1
41-Nb-90g
41-Nb-90m1
41-Nb-91g

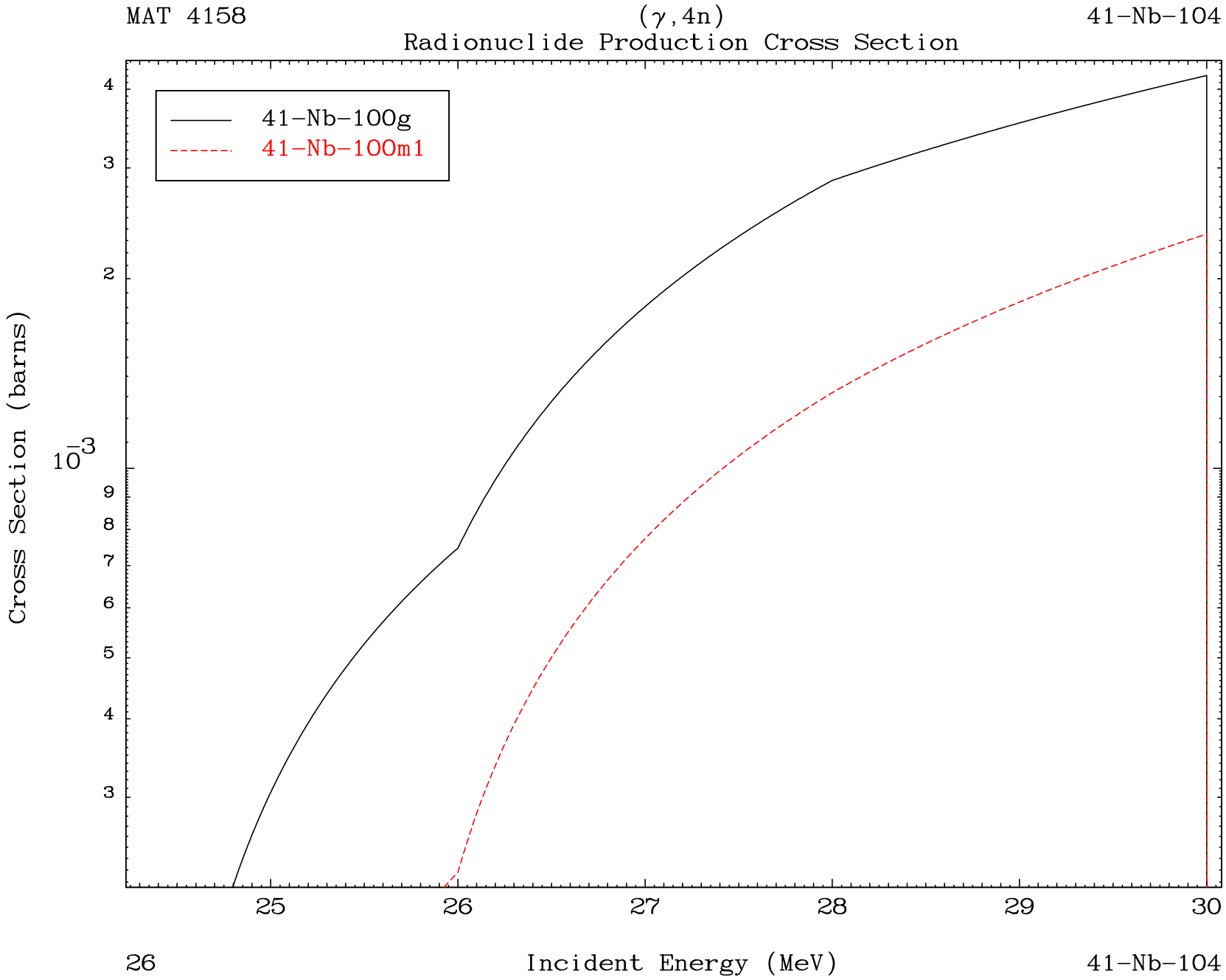

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-1
10-2
10-3
10-4
10-5
10-6
41-Nb-91m1
41-Nb-92g
41-Nb-92m1
41-Nb-93g
41-Nb-93m1
41-Nb-94g
41-Nb-94m1
41-Nb-95g
41-Nb-95m1
41-Nb-96g
41-Nb-97g
4
5
6
7
8
9
10^2
2
21
Incident Energy (MeV)
41-Nb-104

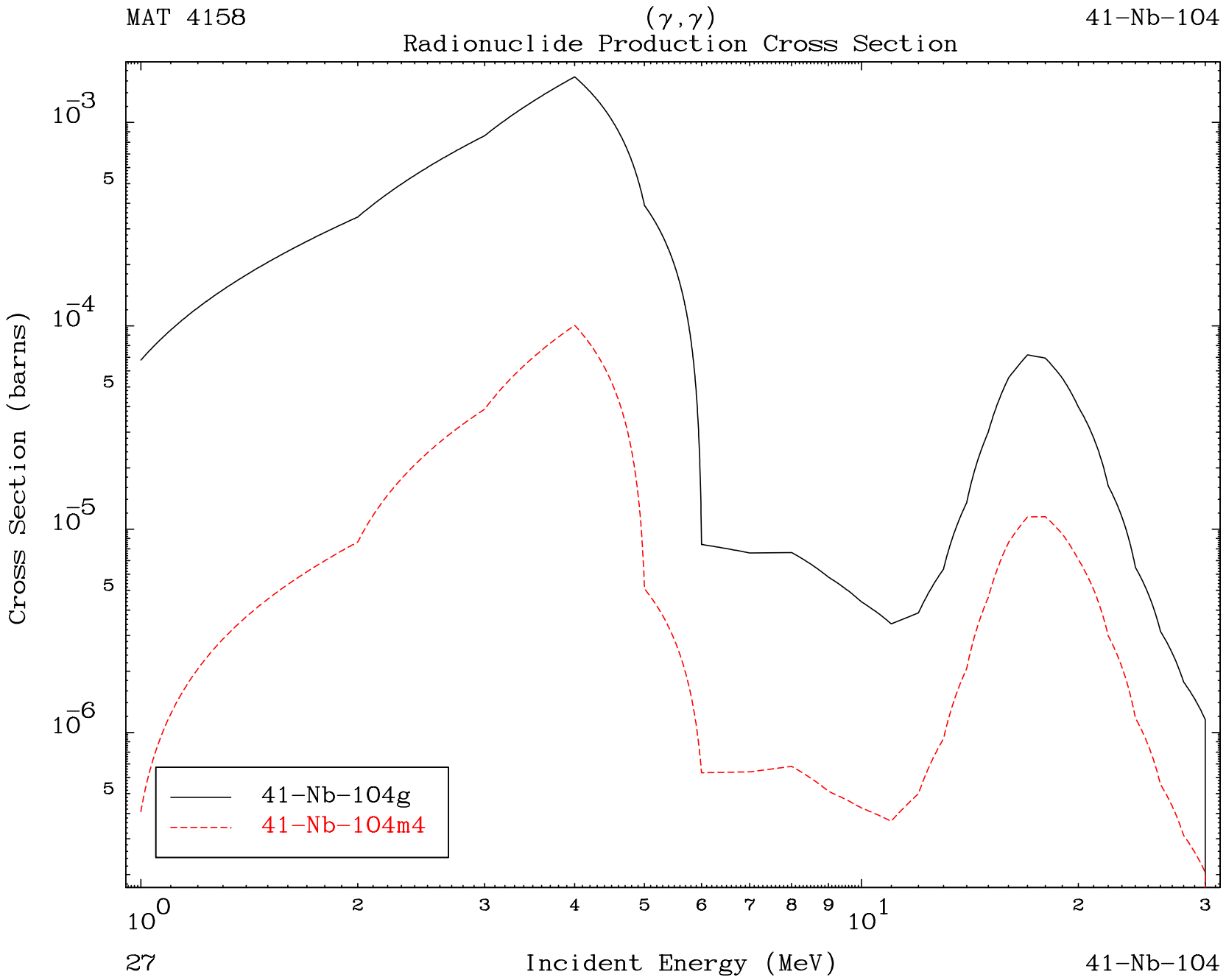

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
Incident Energy (MeV)
22
41-Nb-104
41-Nb-97m1
41-Nb-98g
41-Nb-98m1
41-Nb-99g
41-Nb-99m1
41-Nb-100g
41-Nb-100m1
41-Nb-101g
41-Nb-102g
41-Nb-102m1
41-Nb-103g

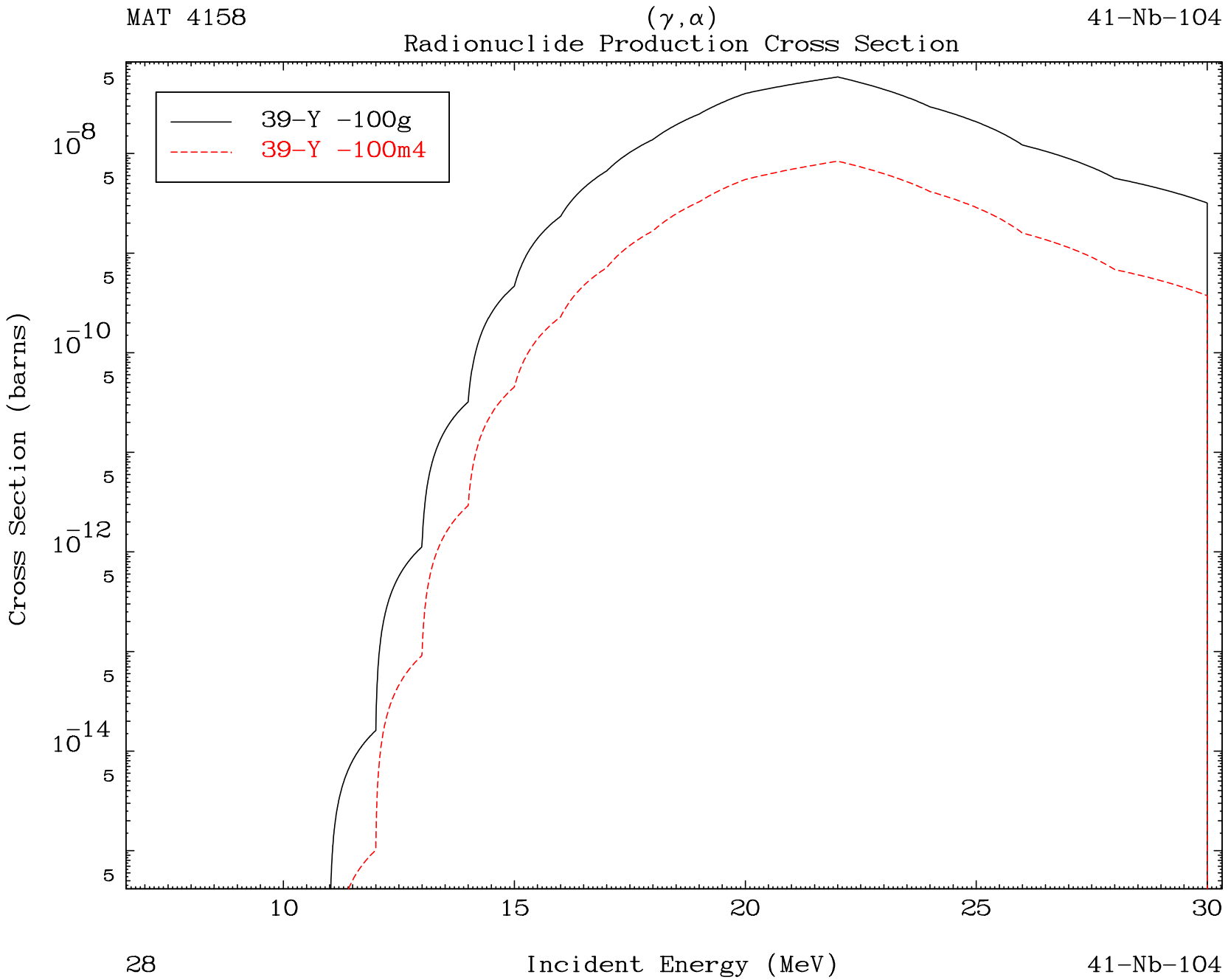

MAT 4158
(γ,remainder)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
41-Nb-104g
41-Nb-104m1
Photon
Incident Energy (MeV)
23
41-Nb-104


MAT 4158
(γ,2n)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-1
8
6
4
2
10-2
8
6
4
2
10-3
8
6
4
15
20
25
30
41-Nb-102g
41-Nb-102m1
24
Incident Energy (MeV)
41-Nb-104


MAT 4158
(γ,2n) α
41-Nb-104
Radionuclide Production Cross Section
39-Y -98g
39-Y -98m5
Cross Section (barns)
10-8
10-10
10-12
10-14
5
18
20
22
24
26
28
30
25
Incident Energy (MeV)
41-Nb-104


MAT 4158
(γ,4n)
41-Nb-104
Radionuclide Production Cross Section
41-Nb-100g
41-Nb-100m1
Cross Section (barns)
10^-3
4
3
2
9
8
7
6
5
4
3
25
26
27
28
29
30
26
Incident Energy (MeV)
41-Nb-104


MAT 4158
(γ,γ)
41-Nb-104
Radionuclide Production Cross Section
Cross Section (barns)
10-3
5
10-4
5
10-5
5
10-6
5
41-Nb-104g
41-Nb-104m4
100
2
3
4
5
6
7
8
9
101
2
3
27
Incident Energy (MeV)
41-Nb-104


MAT 4158
(γ,α)
41-Nb-104
Radionuclide Production Cross Section
39-Y -100g
39-Y -100m4
Cross Section (barns)
10^-8
10^-10
10^-12
10^-14
5
10
15
20
25
30
28
Incident Energy (MeV)
41-Nb-104