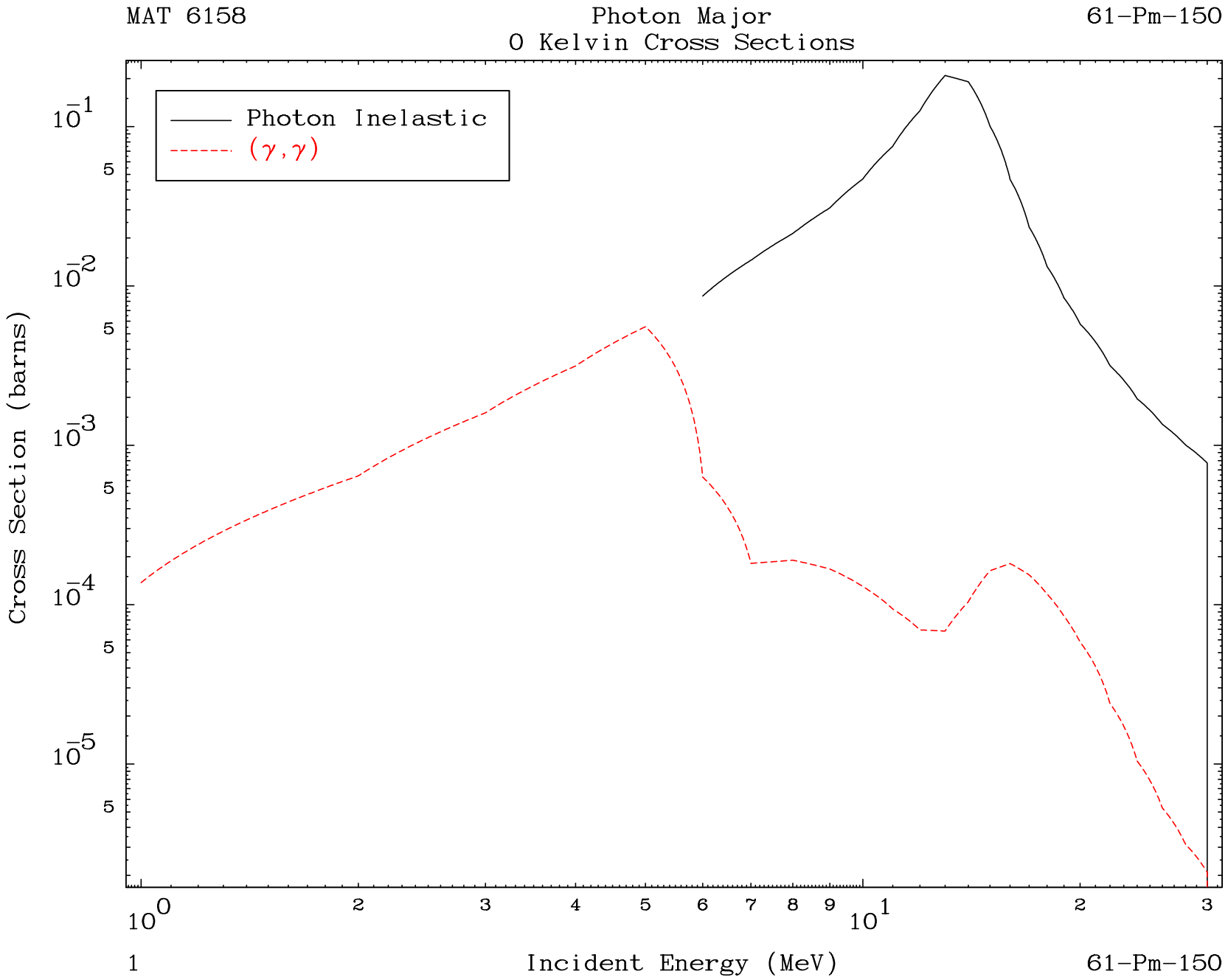
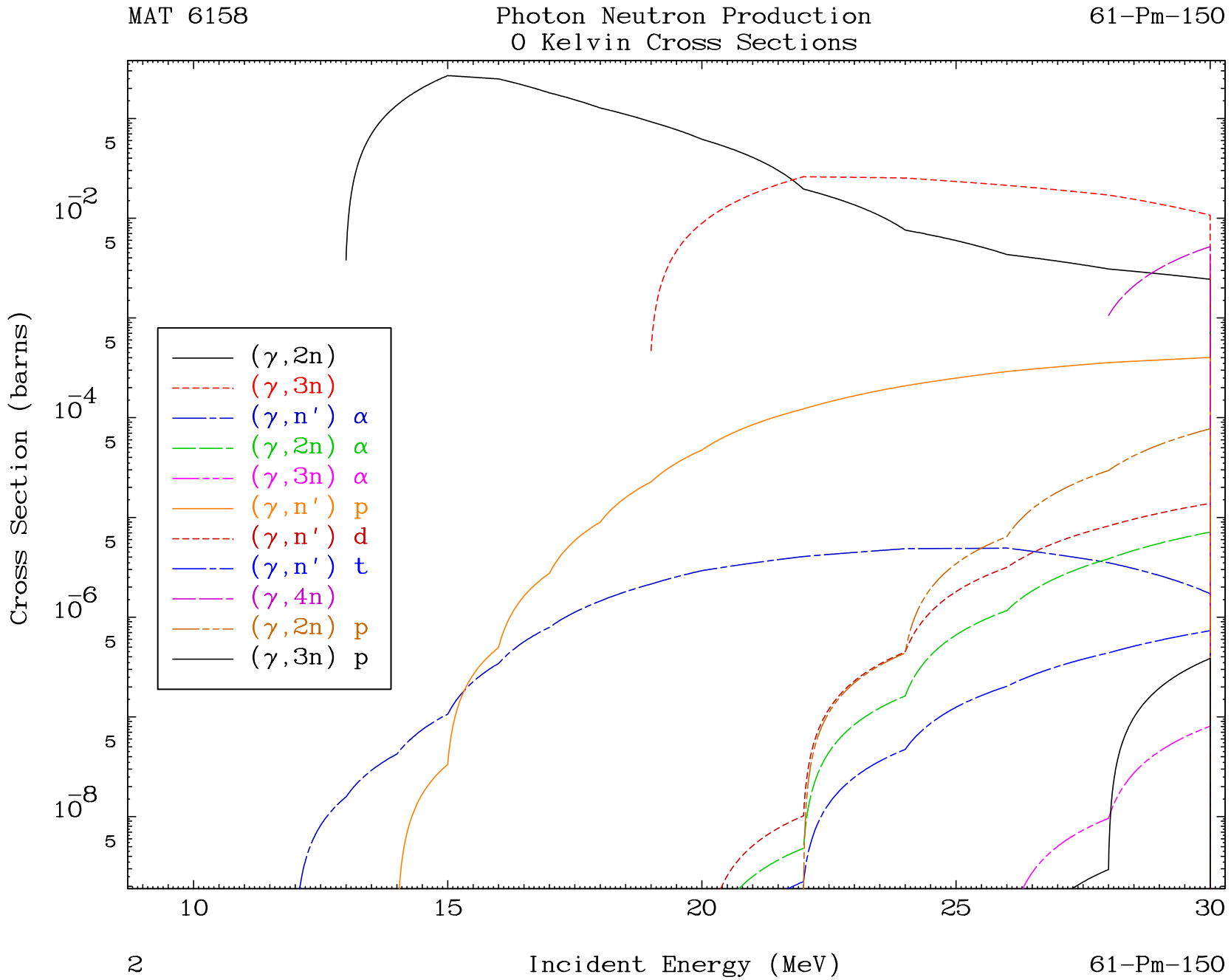
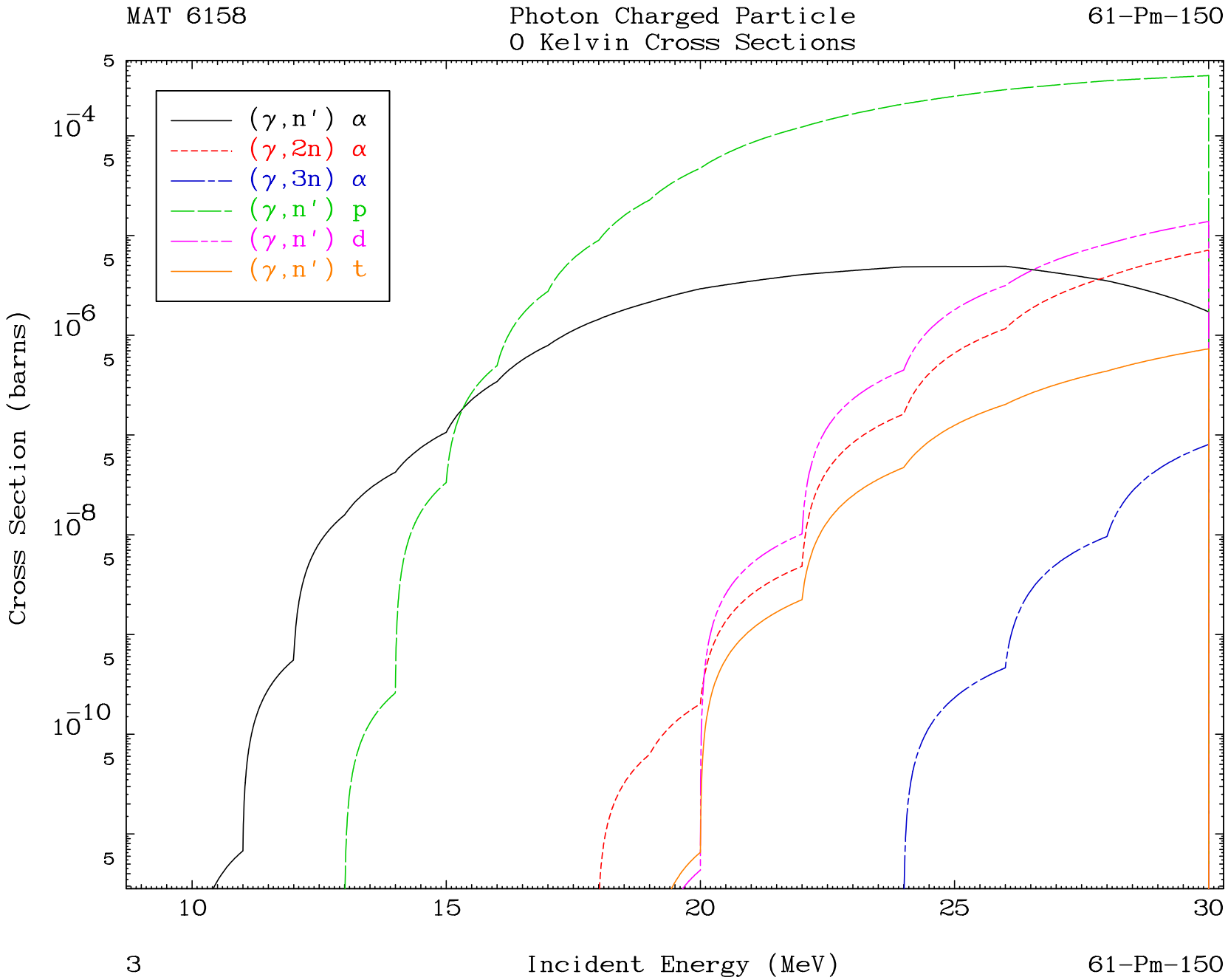
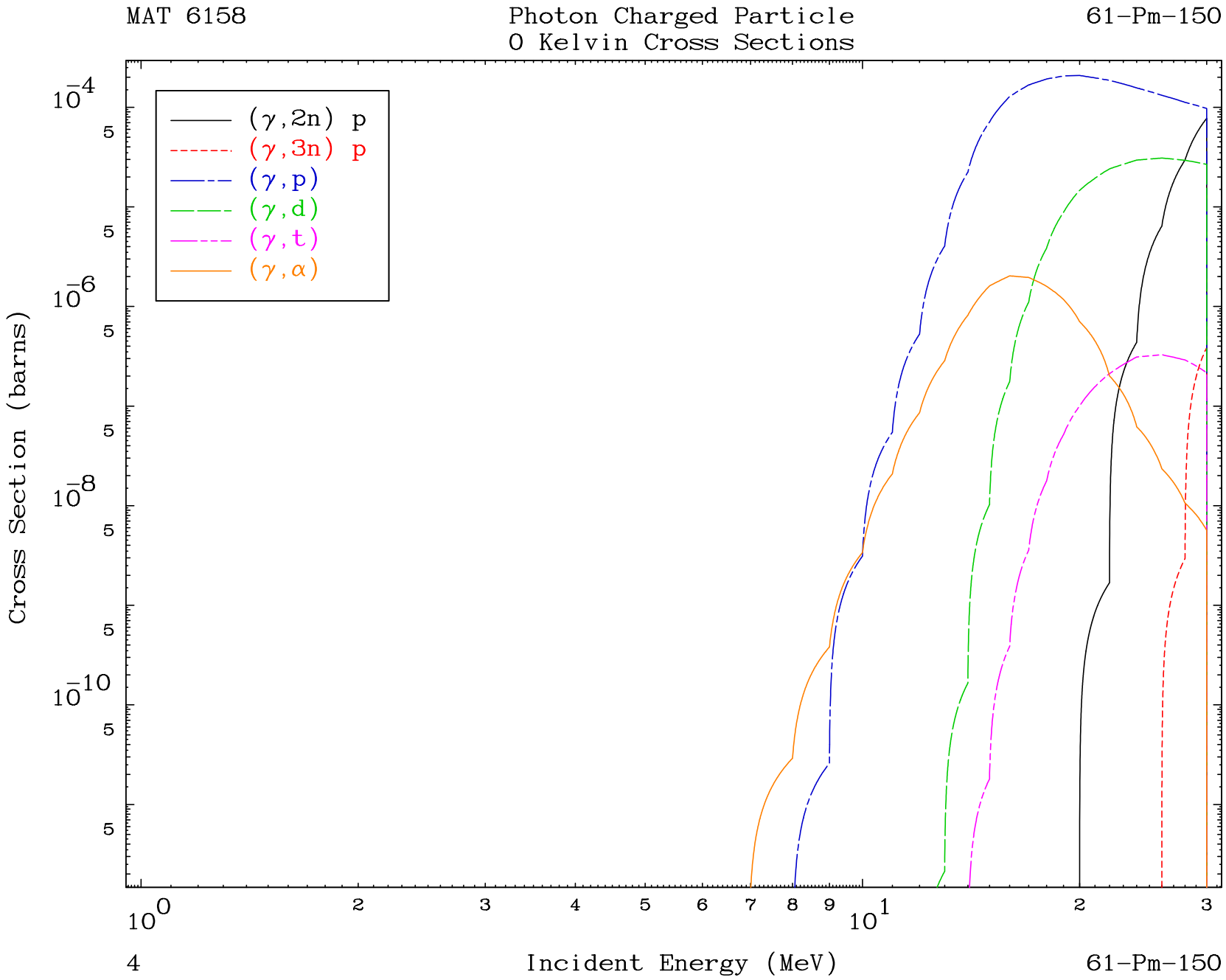
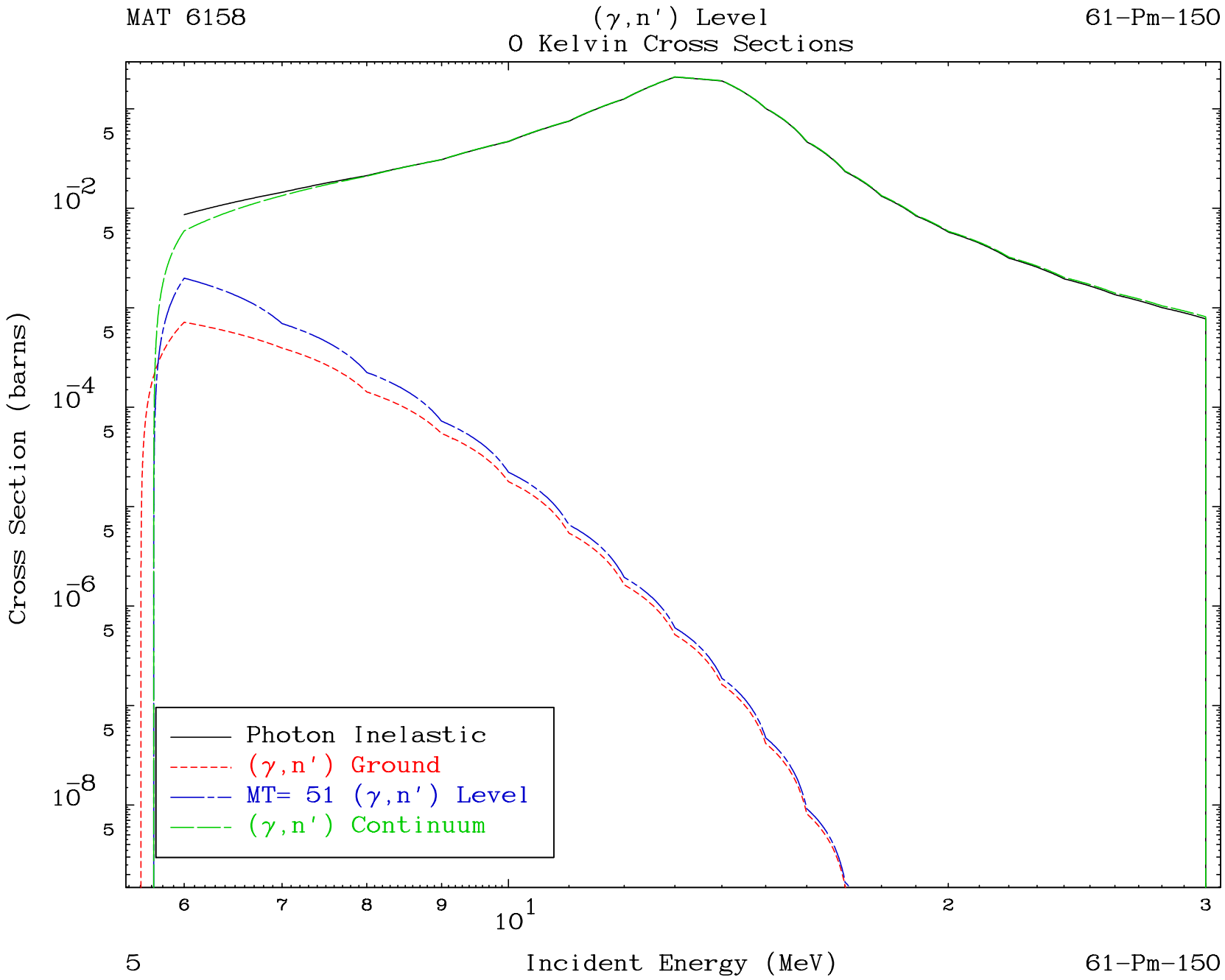
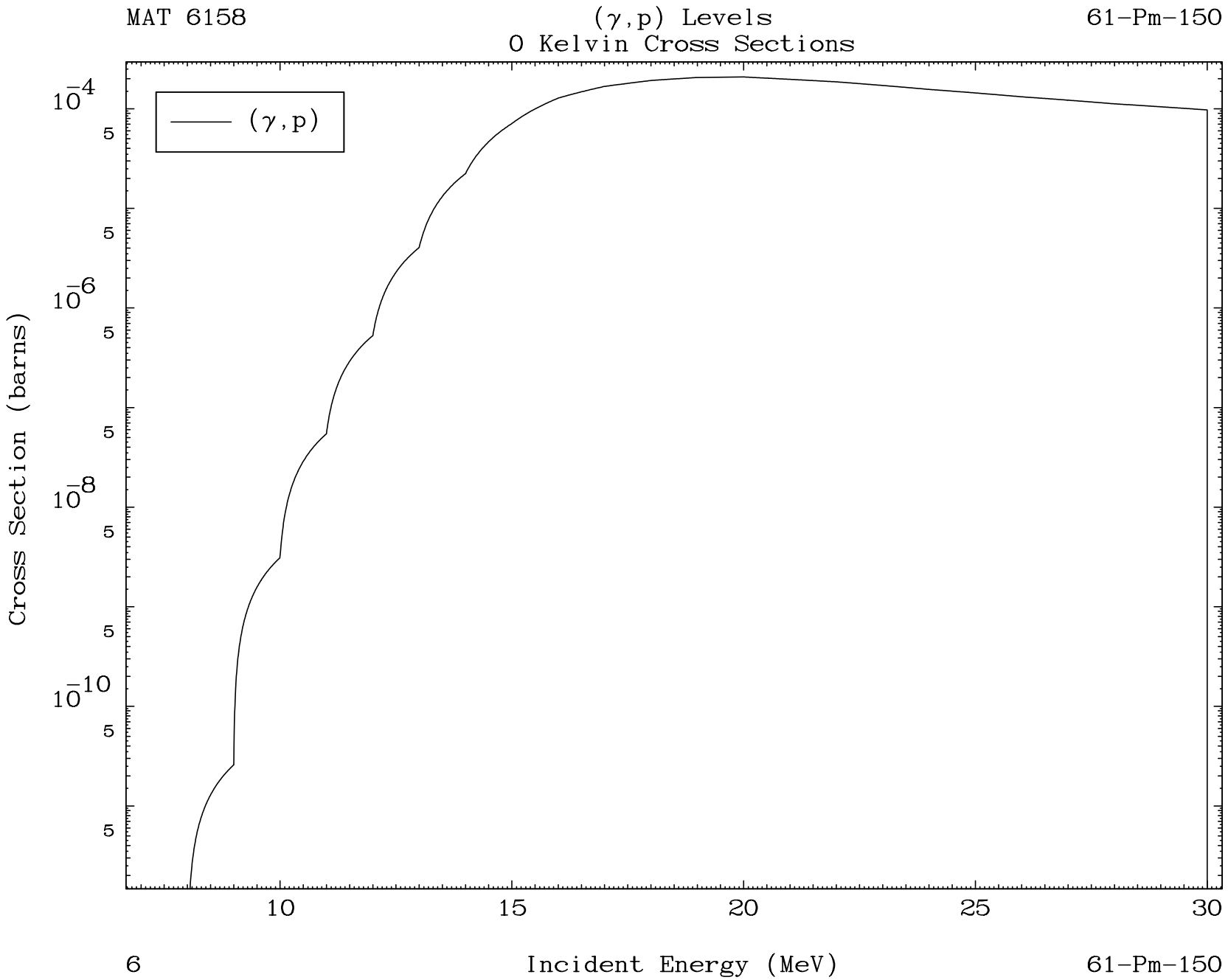

MAT 6158
Photon Major
61-Pm-150
0 Kelvin Cross Sections
Photon Inelastic
(γ,γ)
Cross Section (barns)
10-1
5
10-2
5
10-3
5
10-4
5
10-5
5
100
2
3
4
5
6
7
8
9
101
2
3
1
Incident Energy (MeV)
61-Pm-150

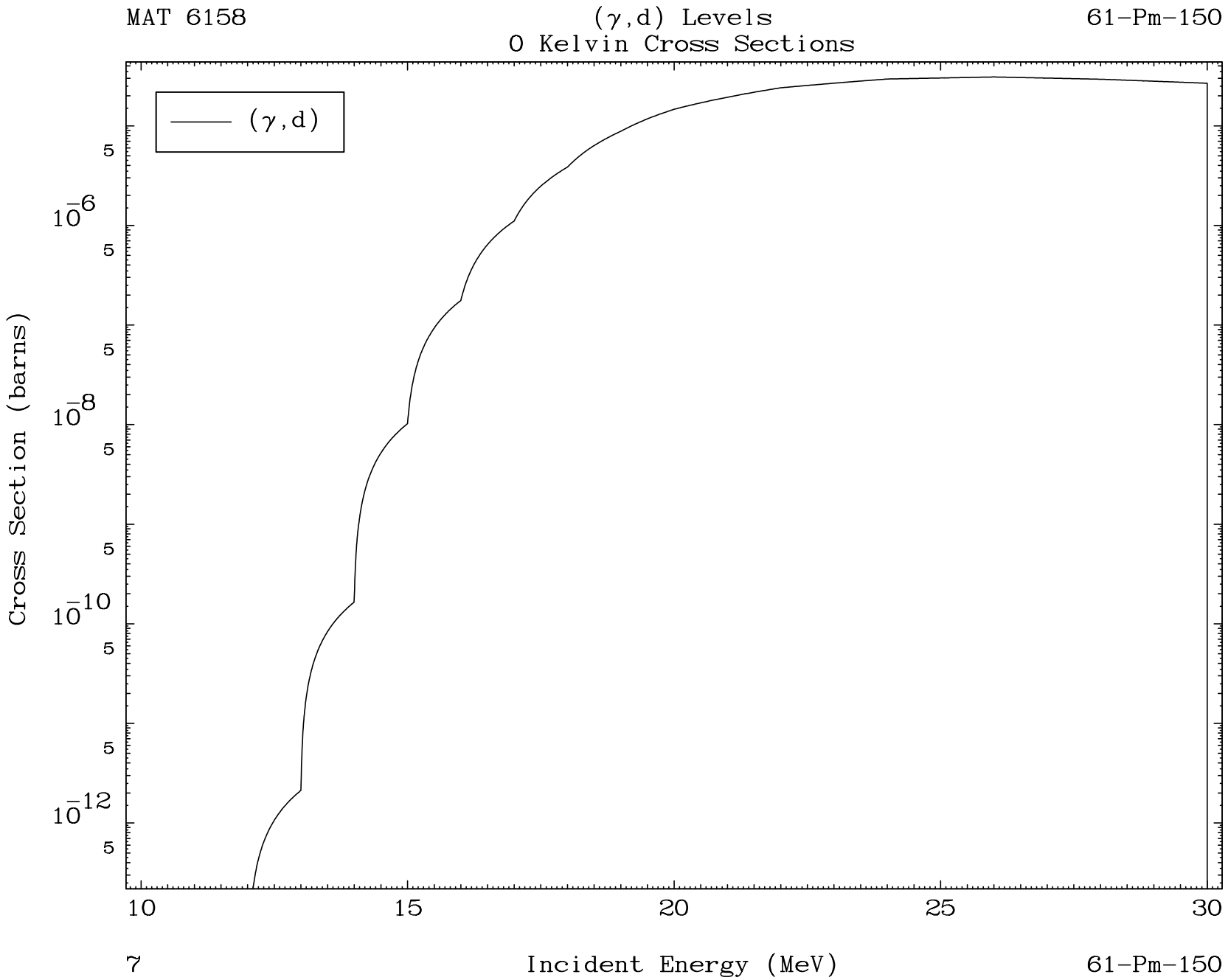

MAT 6158
Photon Neutron Production
0 Kelvin Cross Sections
61-Pm-150
Cross Section (barns)
10^-2
10^-4
10^-6
10^-8
5
10
15
20
25
30
Incident Energy (MeV)
2
61-Pm-150
(γ,2n)
(γ,3n)
(γ,n') α
(γ,2n) α
(γ,3n) α
(γ,n') p
(γ,n') d
(γ,n') t
(γ,4n)
(γ,2n) p
(γ,3n) p

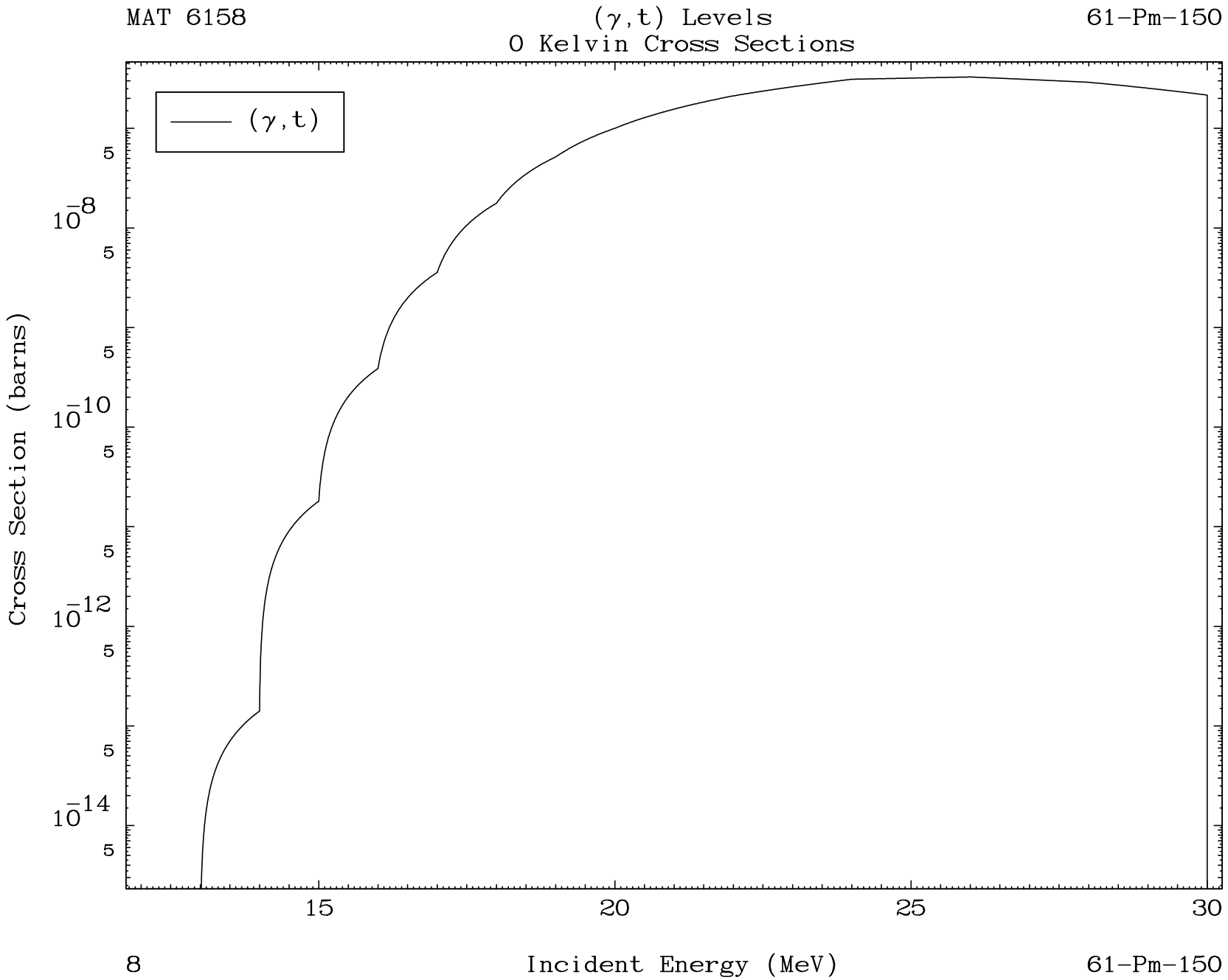

MAT 6158
Photon Charged Particle
0 Kelvin Cross Sections
61-Pm-150
(γ,n') α
(γ,2n) α
(γ,3n) α
(γ,n') p
(γ,n') d
(γ,n') t
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
10
15
20
25
30
Incident Energy (MeV)
3
61-Pm-150

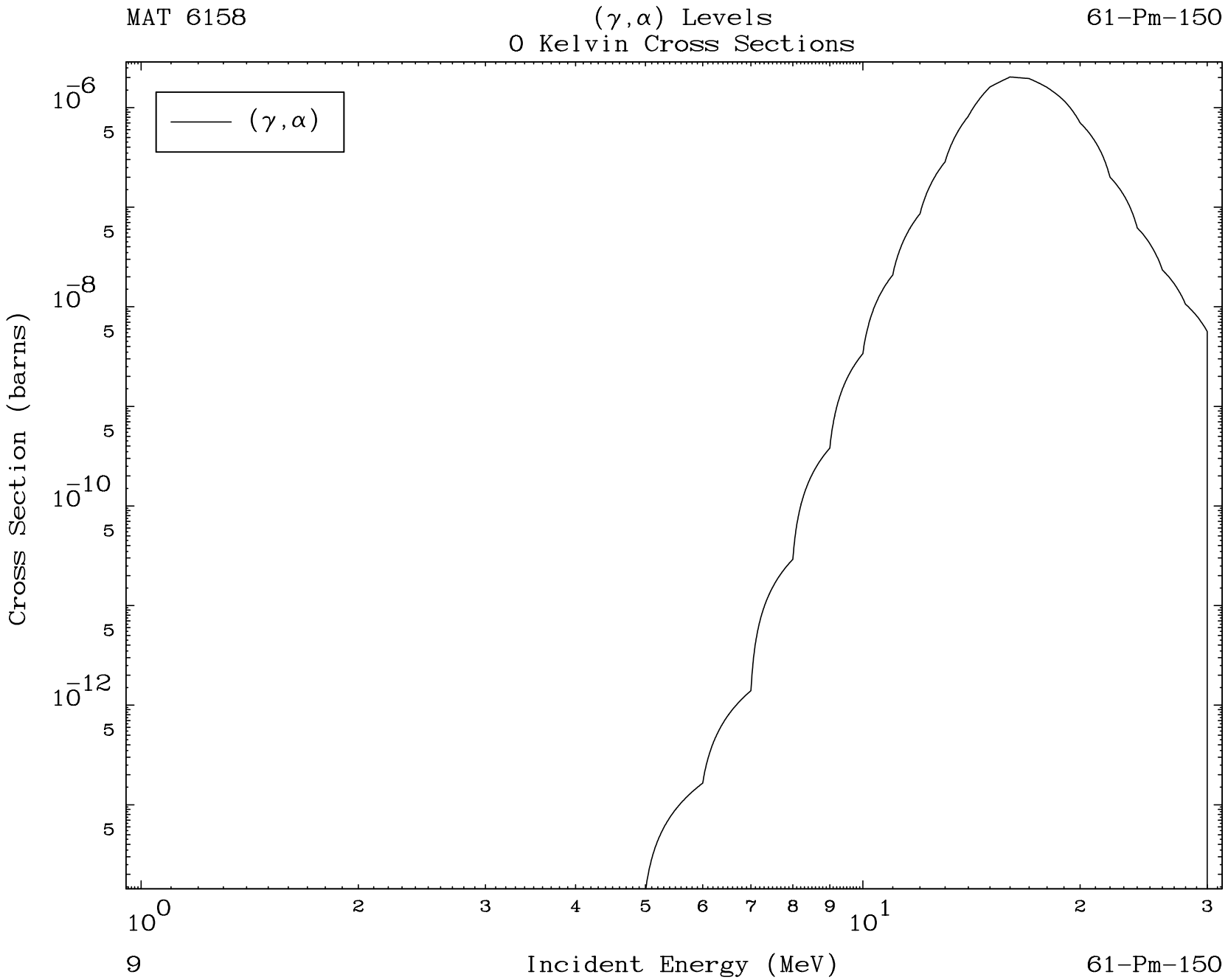

MAT 6158
Photon Charged Particle
0 Kelvin Cross Sections
61-Pm-150
(γ,2n) p
(γ,3n) p
(γ,p)
(γ,d)
(γ,t)
(γ,α)
Cross Section (barns)
Incident Energy (MeV)
61-Pm-150
4

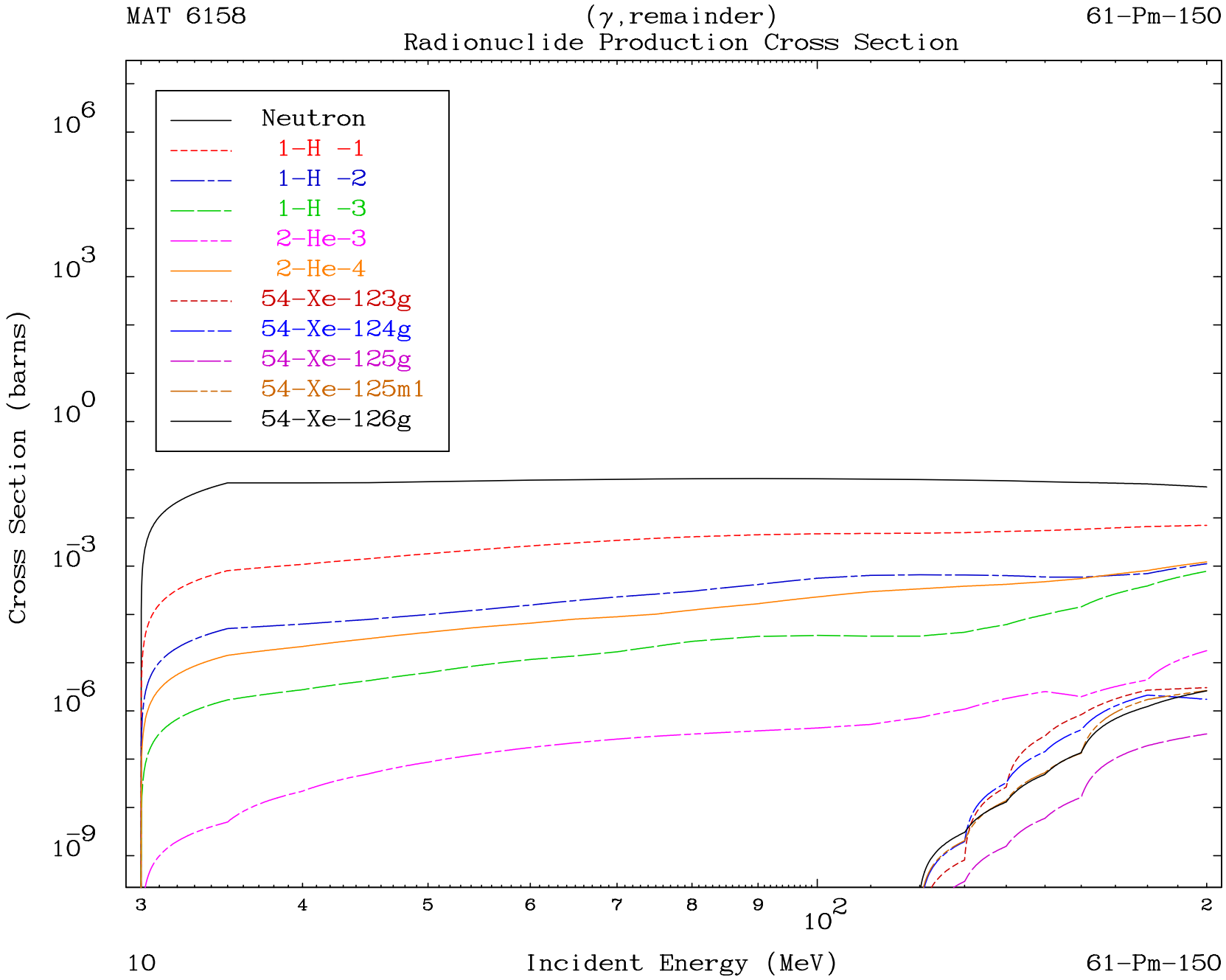

MAT 6158
(γ,n') Level
61-Pm-150
0 Kelvin Cross Sections
Cross Section (barns)
10-2
10-4
10-6
10-8
5
Photon Inelastic
(γ,n') Ground
MT= 51 (γ,n') Level
(γ,n') Continuum
6
7
8
9
10 1
2
3
Incident Energy (MeV)
61-Pm-150

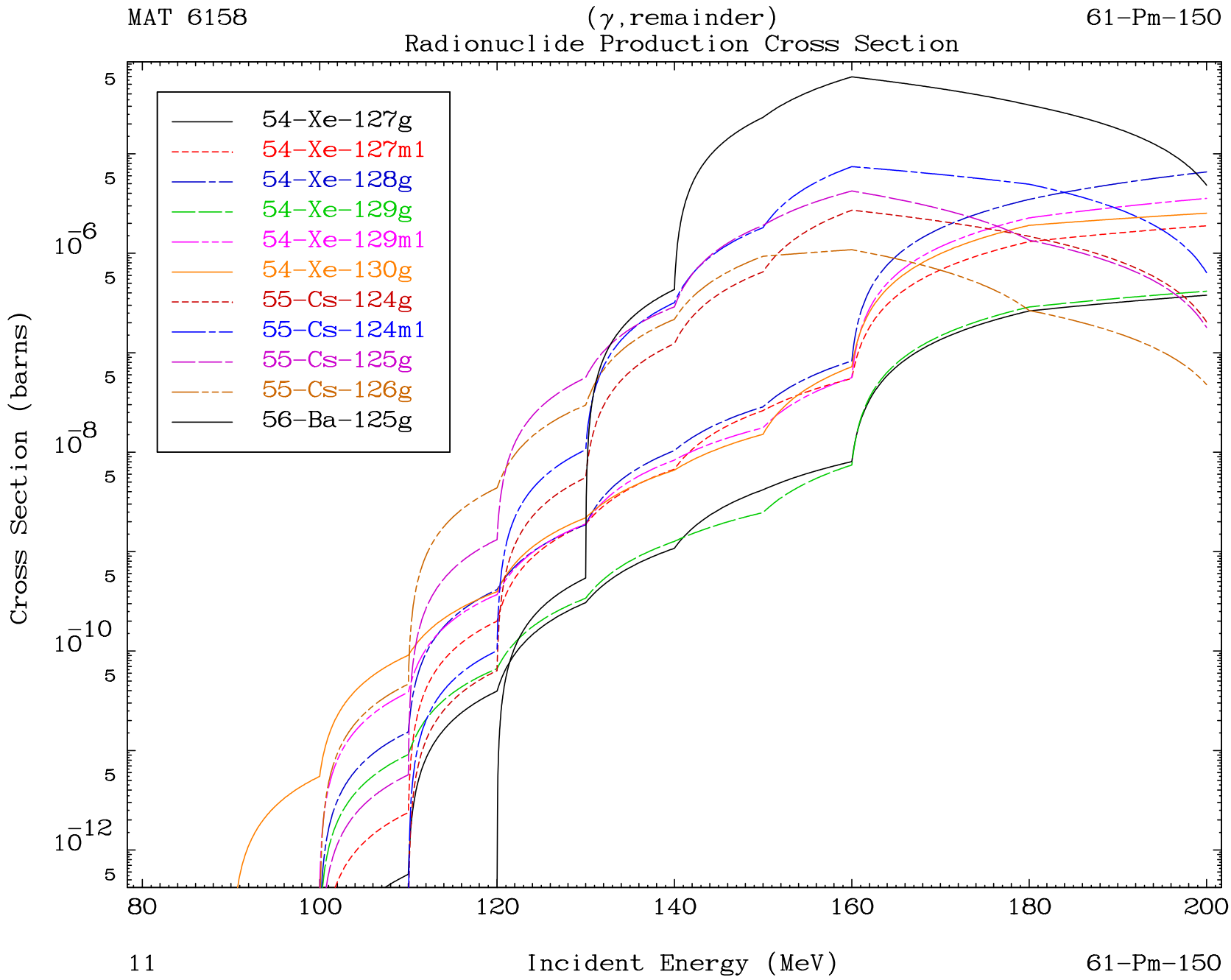

MAT 6158
(γ,p) Levels
61-Pm-150
0 Kelvin Cross Sections
(γ,p)
Cross Section (barns)
10^-4
5
10^-6
5
10^-8
5
10^-10
5
5
10
15
20
25
30
6
Incident Energy (MeV)
61-Pm-150

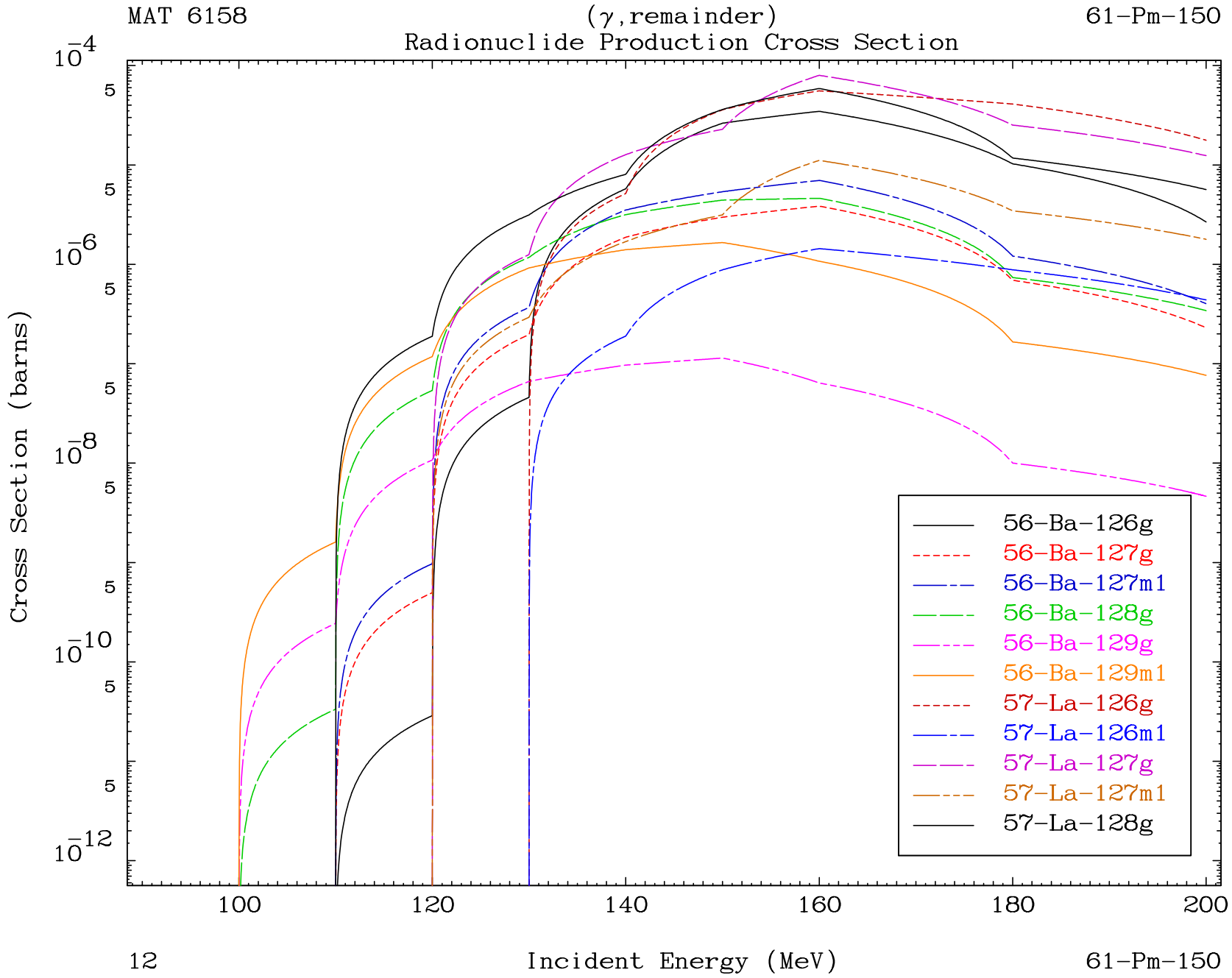

MAT 6158
(γ,d) Levels
61-Pm-150
0 Kelvin Cross Sections
(γ,d)
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
5
10
15
20
25
30
Incident Energy (MeV)
7
61-Pm-150

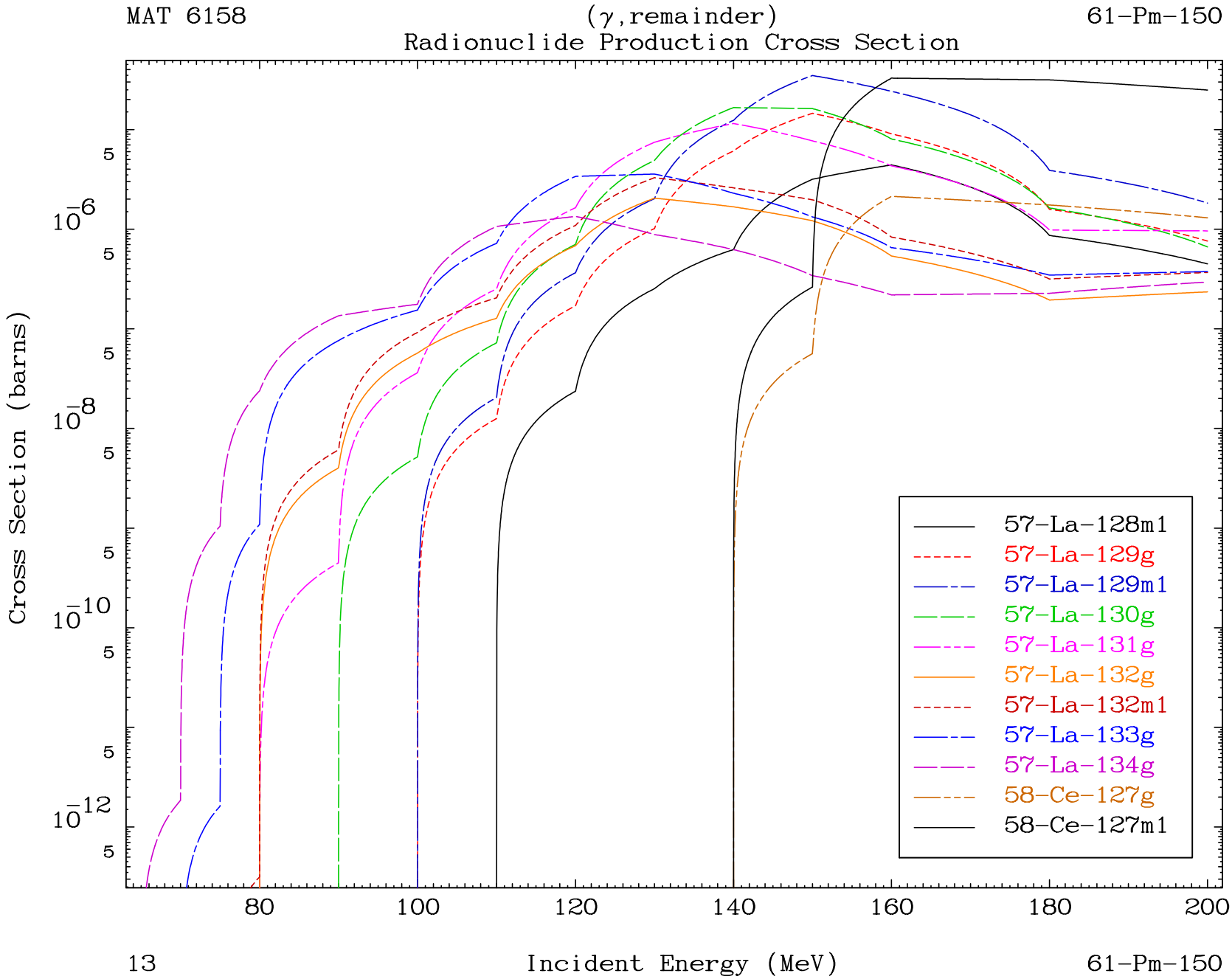

MAT 6158
(γ,t) Levels
61-Pm-150
0 Kelvin Cross Sections
(γ,t)
Cross Section (barns)
10^-8
10^-10
10^-12
10^-14
5
15
20
25
30
Incident Energy (MeV)
8
61-Pm-150


MAT 6158
(γ,α) Levels
61-Pm-150
0 Kelvin Cross Sections
(γ,α)
Cross Section (barns)
10-6
10-8
10-10
10-12
5
100
2
3
4
5
6
7
8
9
101
2
3
Incident Energy (MeV)
9
61-Pm-150

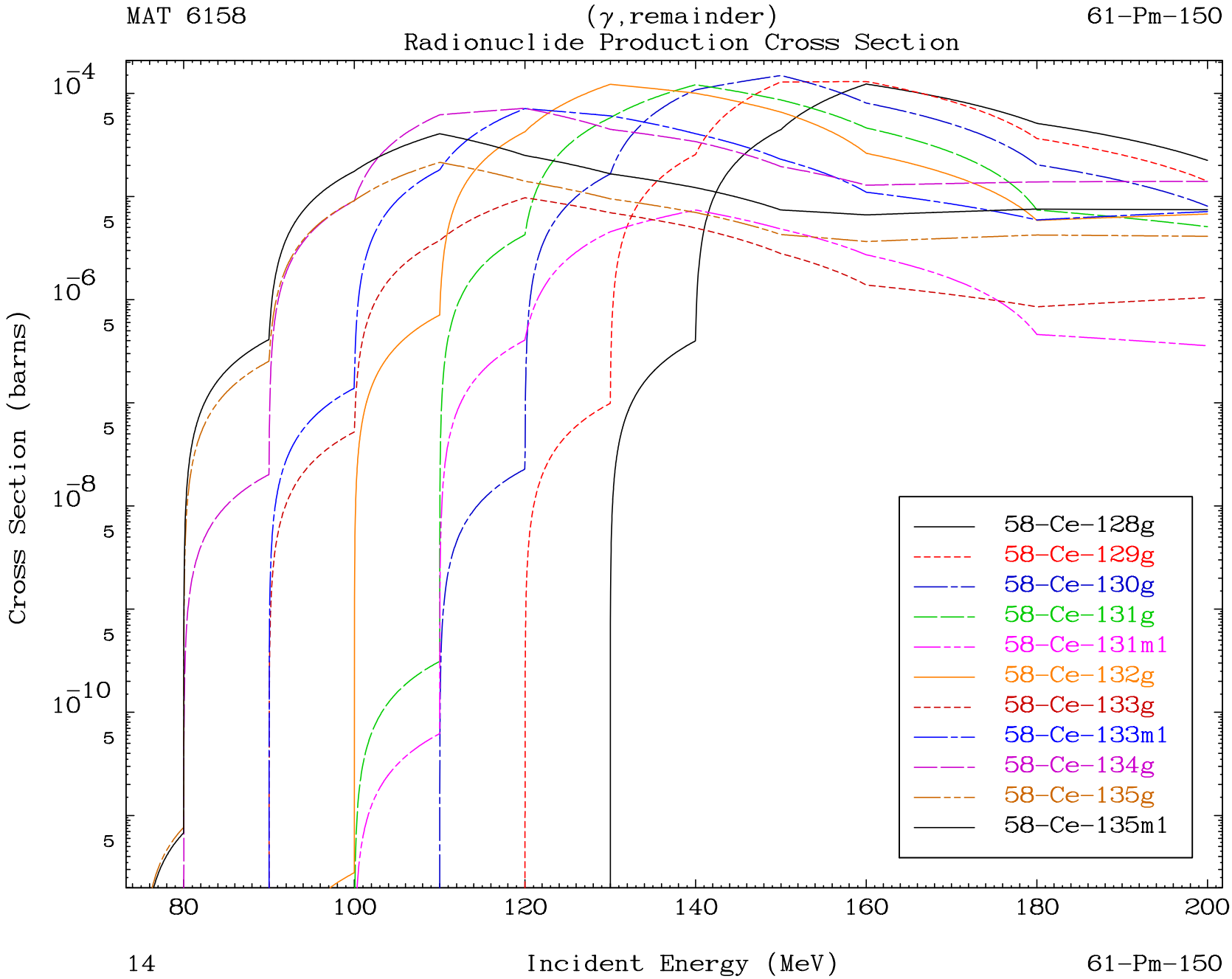

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Neutron
1-H -1
1-H -2
1-H -3
2-He-3
2-He-4
54-Xe-123g
54-Xe-124g
54-Xe-125g
54-Xe-125m1
54-Xe-126g
Cross Section (barns)
10^6
10^3
10^0
10^-3
10^-6
10^-9
3
4
5
6
7
8
9
10^2
2
10
Incident Energy (MeV)
61-Pm-150


MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
54-Xe-127g
54-Xe-127m1
54-Xe-128g
54-Xe-129g
54-Xe-129m1
54-Xe-130g
55-Cs-124g
55-Cs-124m1
55-Cs-125g
55-Cs-126g
56-Ba-125g
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
5
80
100
120
140
160
180
200
11
Incident Energy (MeV)
61-Pm-150

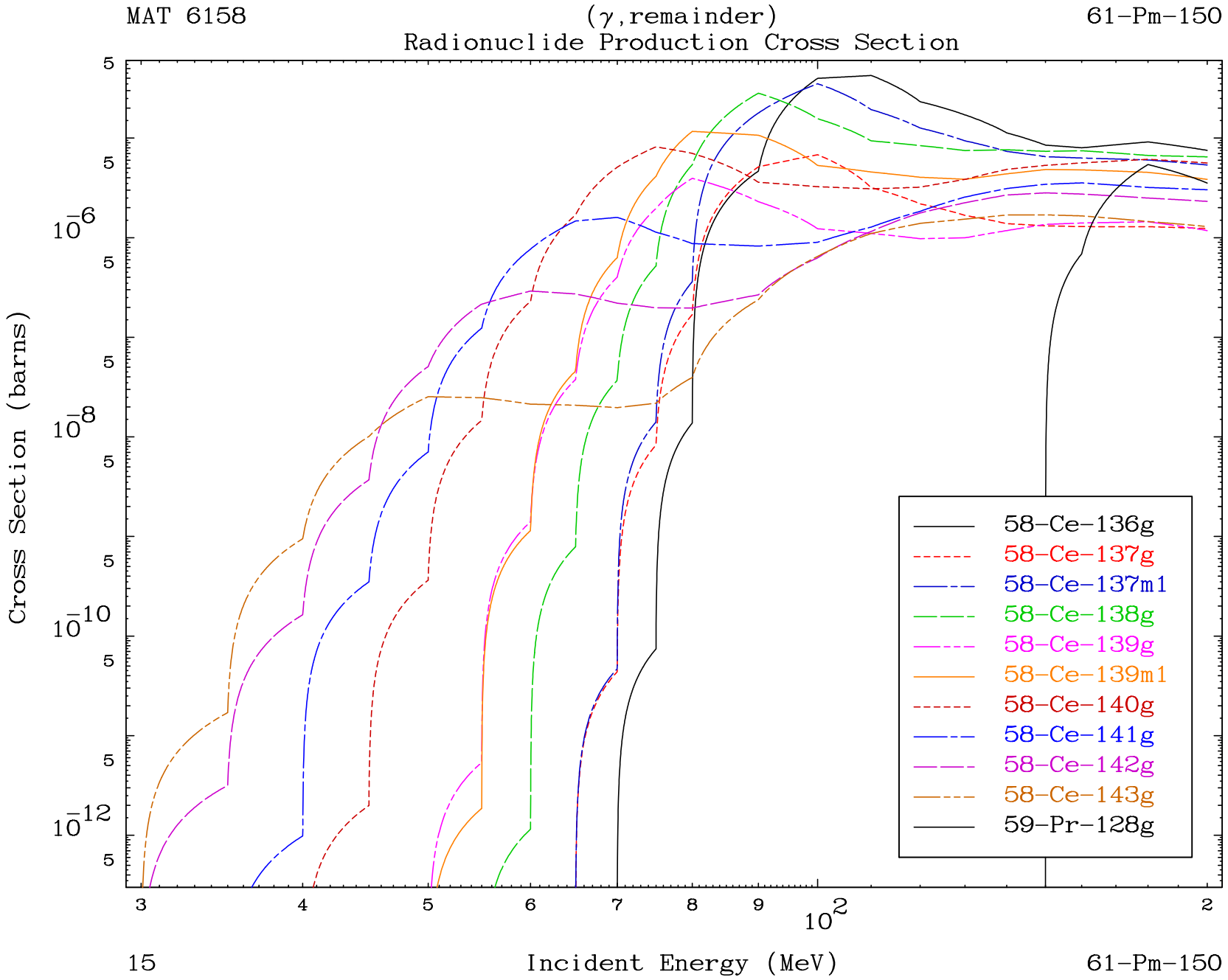

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10-4
5
10-6
5
10-8
5
10-10
5
10-12
5
100
120
140
160
180
200
Incident Energy (MeV)
12
61-Pm-150
56-Ba-126g
56-Ba-127g
56-Ba-127m1
56-Ba-128g
56-Ba-129g
56-Ba-129m1
57-La-126g
57-La-126m1
57-La-127g
57-La-127m1
57-La-128g

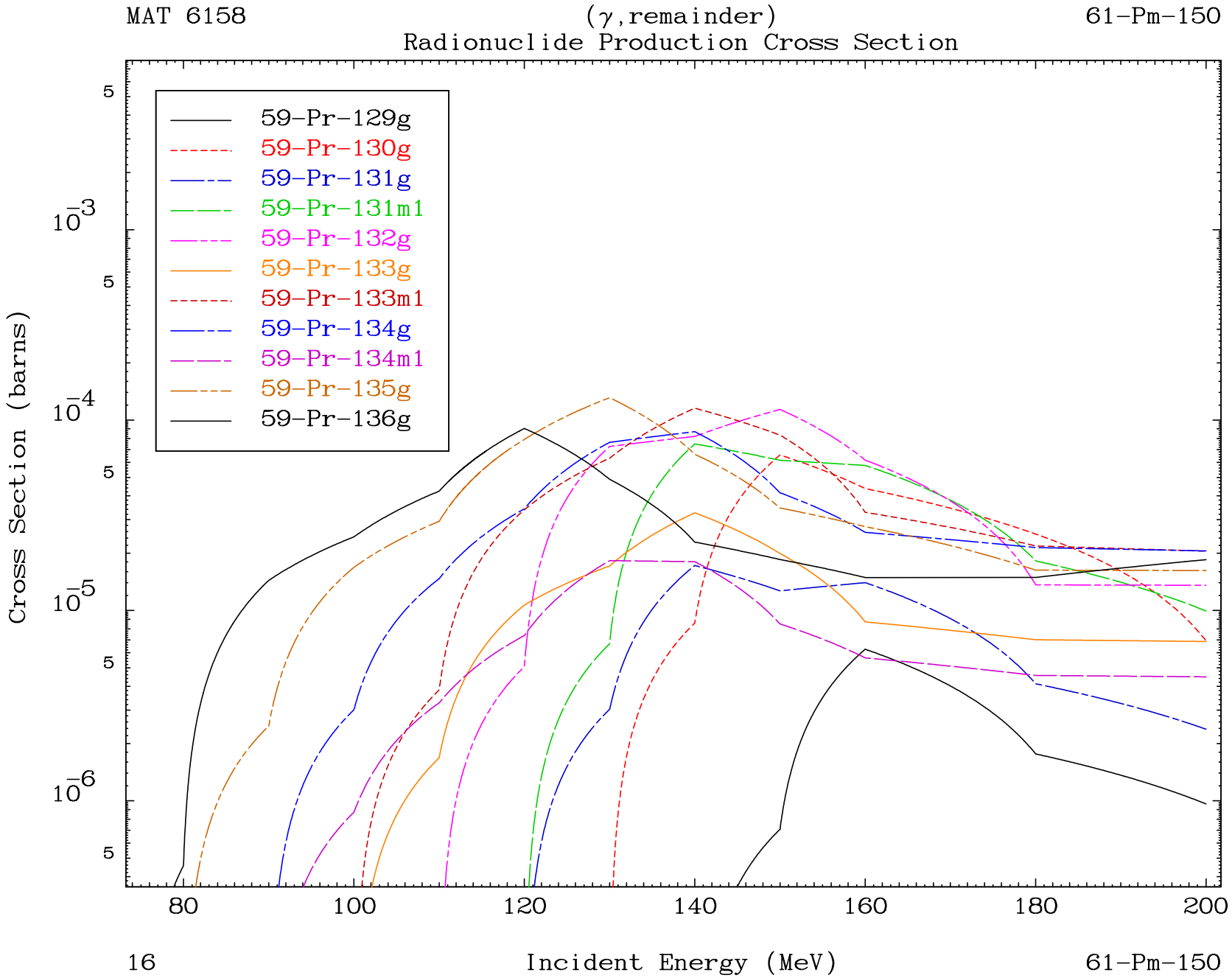

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10-6
10-8
10-10
10-12
5
80
100
120
140
160
180
200
Incident Energy (MeV)
57-La-128m1
57-La-129g
57-La-129m1
57-La-130g
57-La-131g
57-La-132g
57-La-132m1
57-La-133g
57-La-134g
58-Ce-127g
58-Ce-127m1

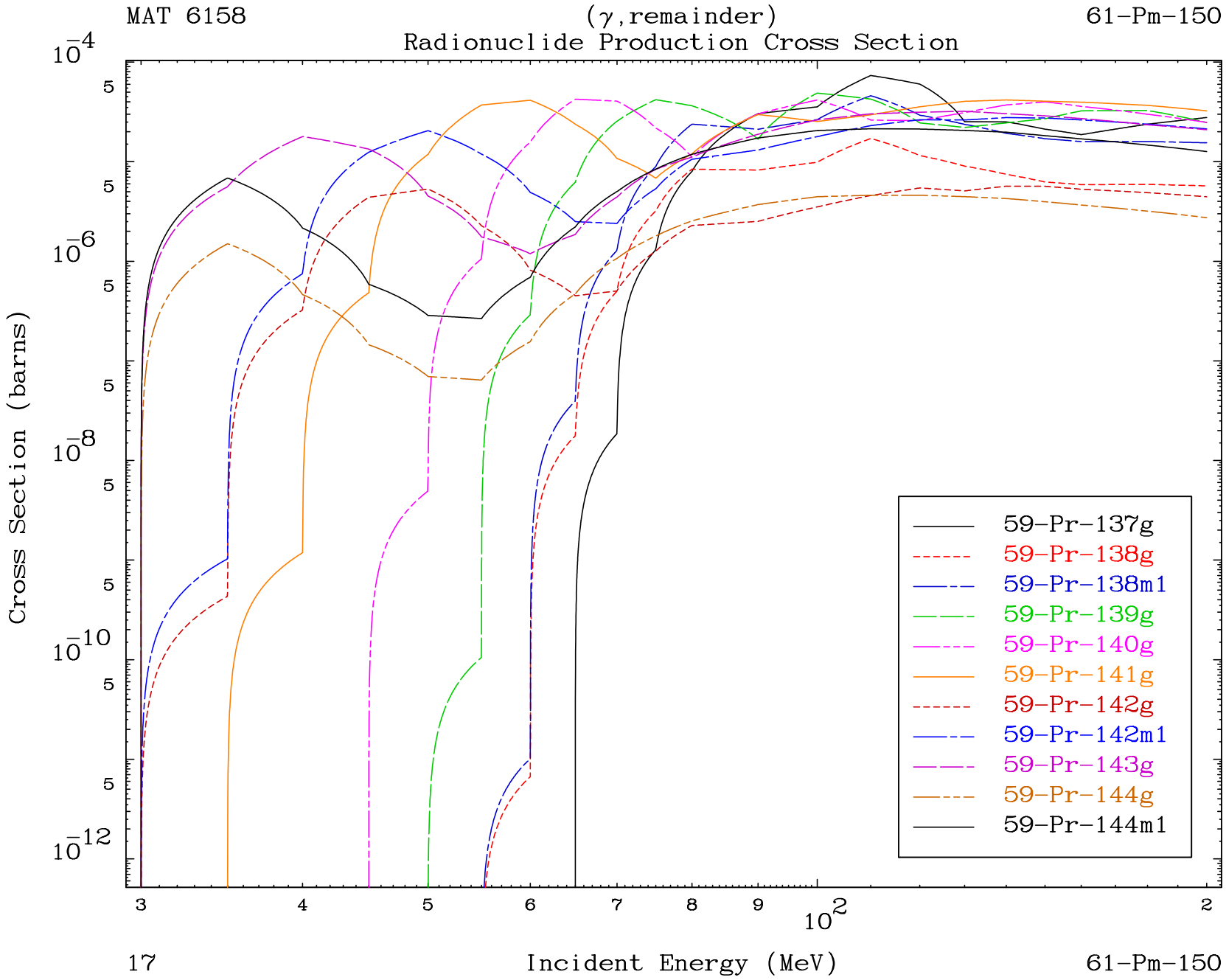
61-Pm-150

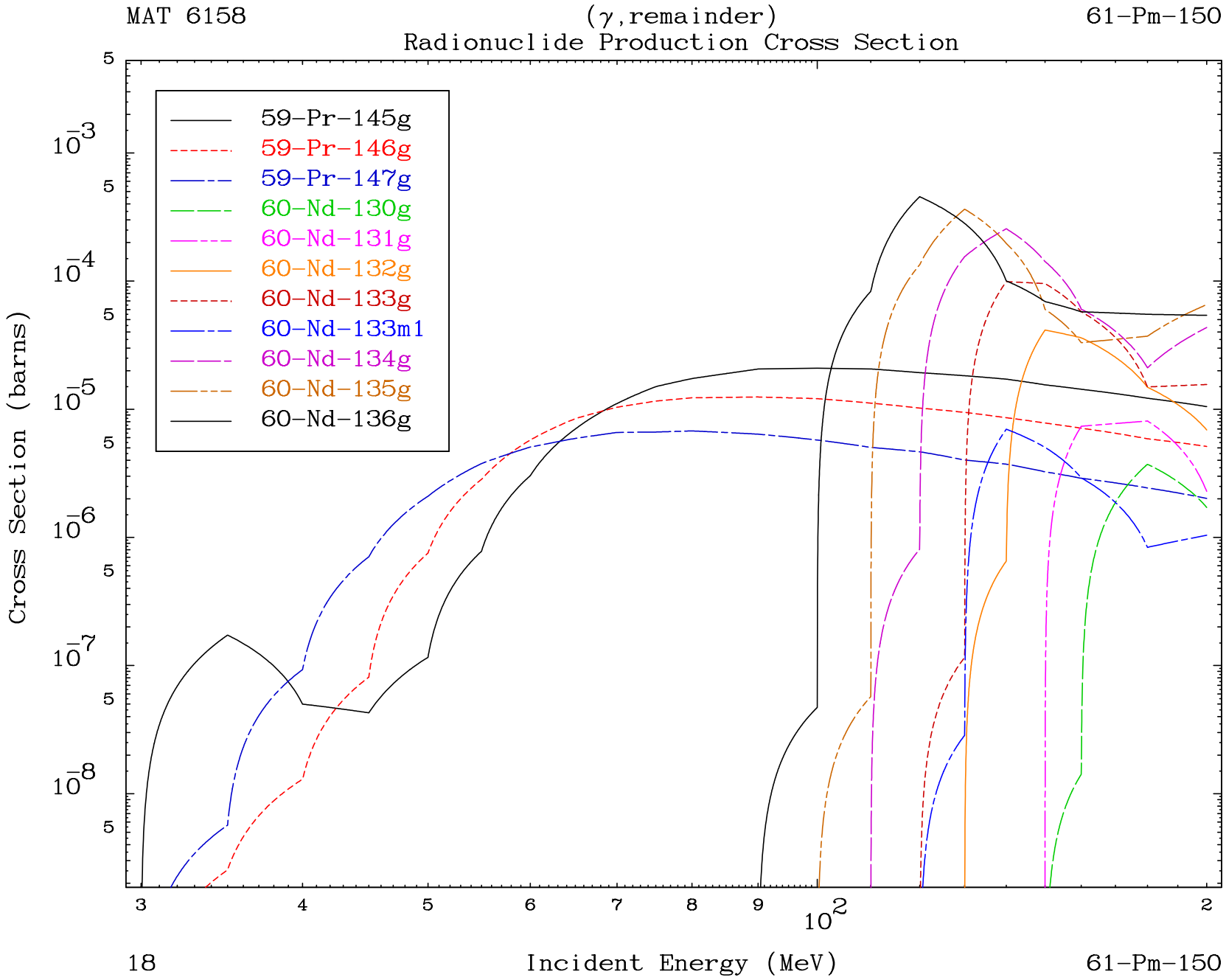

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10-4
5
10-6
5
10-8
5
10-10
5
80
100
120
140
160
180
200
Incident Energy (MeV)
58-Ce-128g
58-Ce-129g
58-Ce-130g
58-Ce-131g
58-Ce-131m1
58-Ce-132g
58-Ce-133g
58-Ce-133m1
58-Ce-134g
58-Ce-135g
58-Ce-135m1

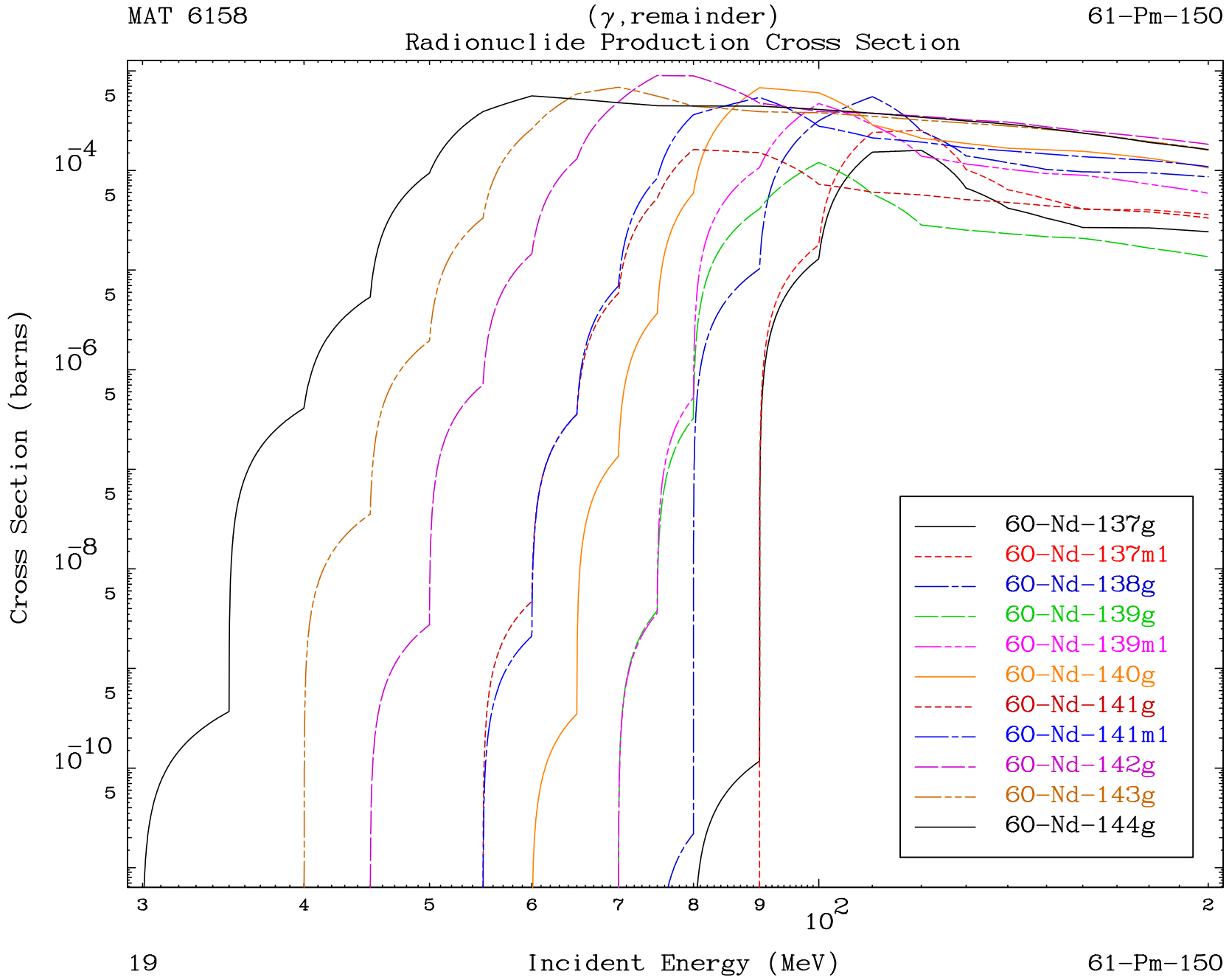
61-Pm-150


MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10-6
10-8
10-10
10-12
3
4
5
6
7
8
9
10 2
2
Incident Energy (MeV)
15
61-Pm-150
58-Ce-136g
58-Ce-137g
58-Ce-137m1
58-Ce-138g
58-Ce-139g
58-Ce-139m1
58-Ce-140g
58-Ce-141g
58-Ce-142g
58-Ce-143g
59-Pr-128g

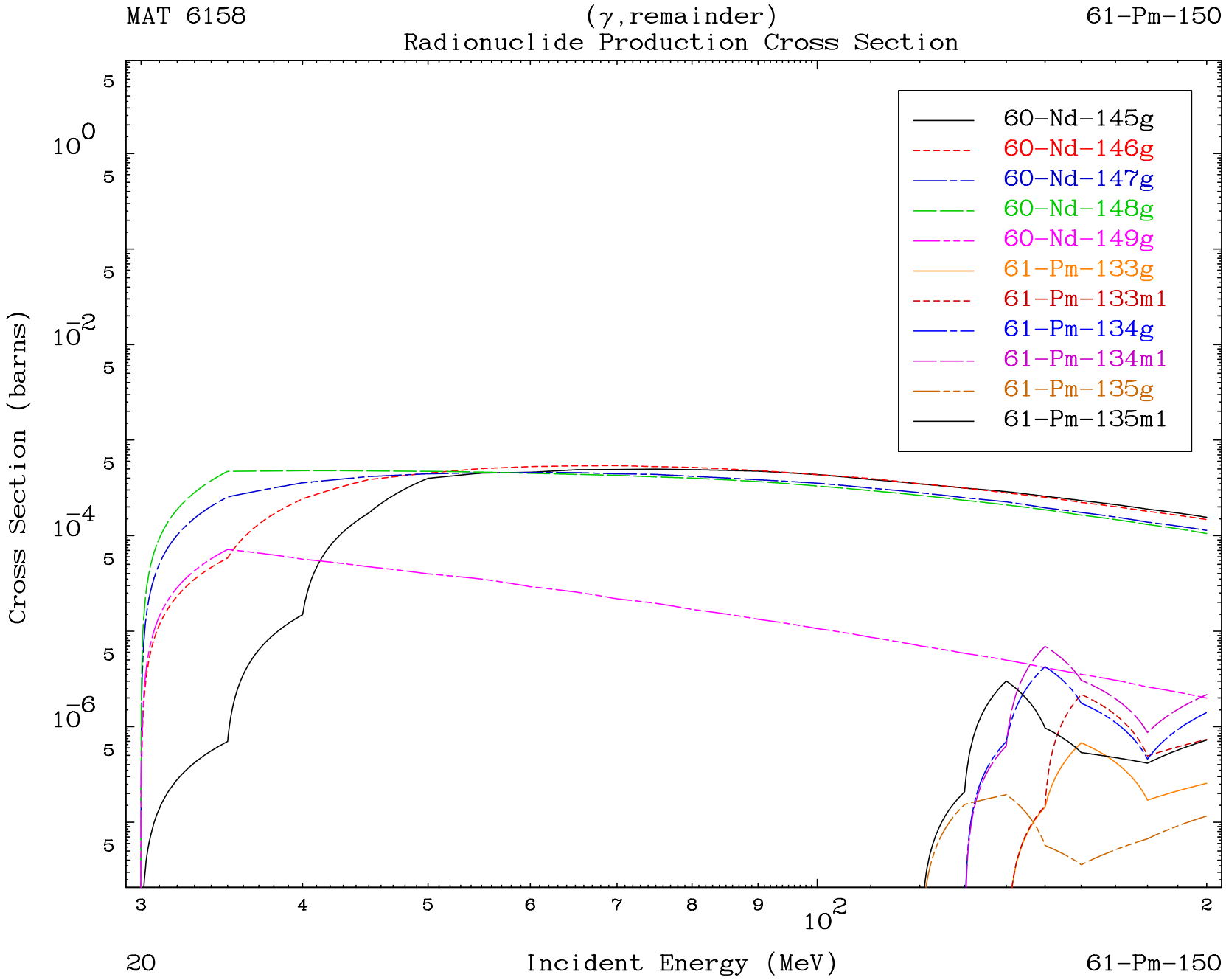

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
59-Pr-129g
59-Pr-130g
59-Pr-131g
59-Pr-131m1
59-Pr-132g
59-Pr-133g
59-Pr-133m1
59-Pr-134g
59-Pr-134m1
59-Pr-135g
59-Pr-136g
Cross Section (barns)
10-3
10-4
10-5
10-6
5
80
100
120
140
160
180
200
Incident Energy (MeV)
16
61-Pm-150

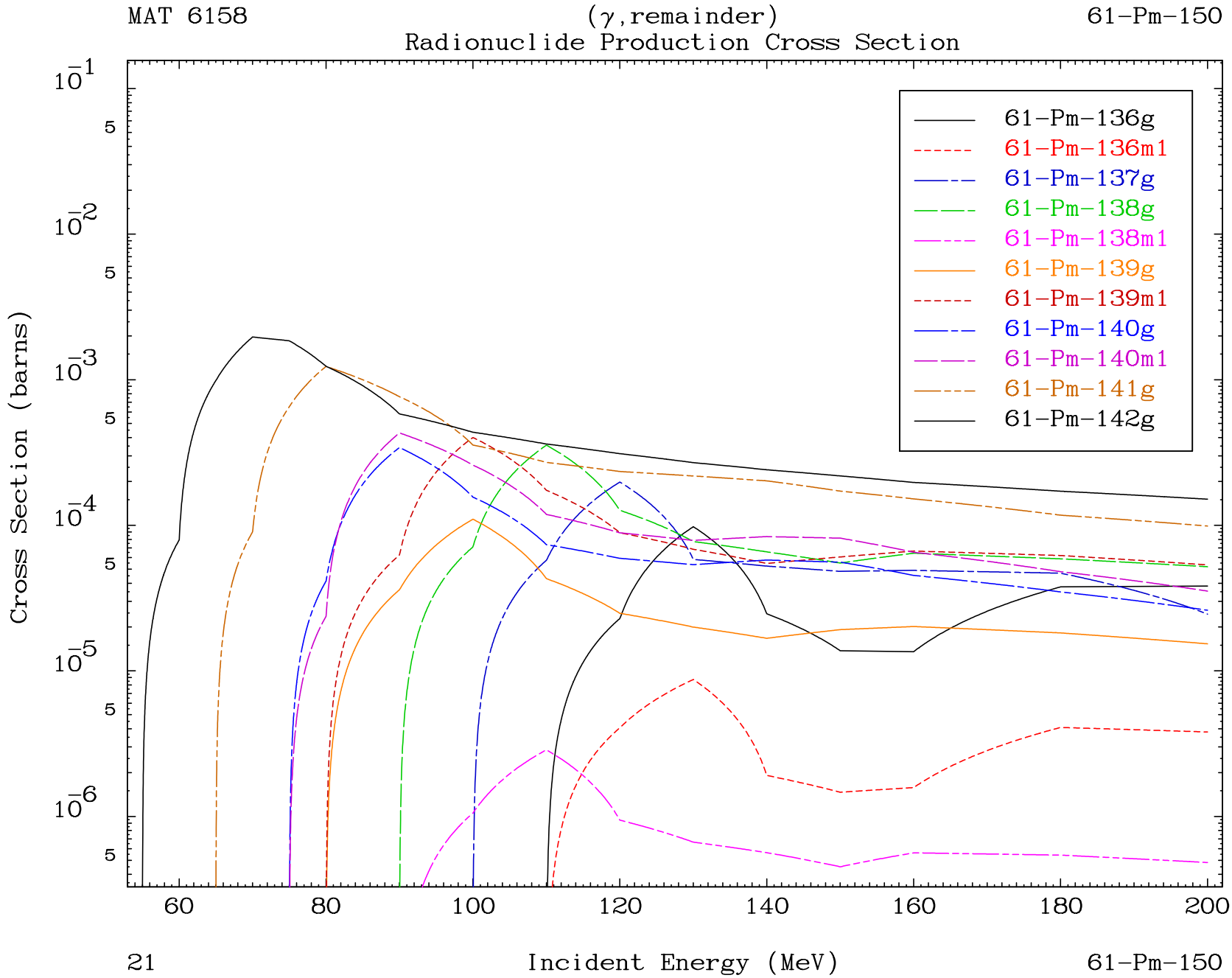

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
Incident Energy (MeV)
17
61-Pm-150
59-Pr-137g
59-Pr-138g
59-Pr-138m1
59-Pr-139g
59-Pr-140g
59-Pr-141g
59-Pr-142g
59-Pr-142m1
59-Pr-143g
59-Pr-144g
59-Pr-144m1


MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
59-Pr-145g
59-Pr-146g
59-Pr-147g
60-Nd-130g
60-Nd-131g
60-Nd-132g
60-Nd-133g
60-Nd-133m1
60-Nd-134g
60-Nd-135g
60-Nd-136g
Cross Section (barns)
Incident Energy (MeV)
18
61-Pm-150

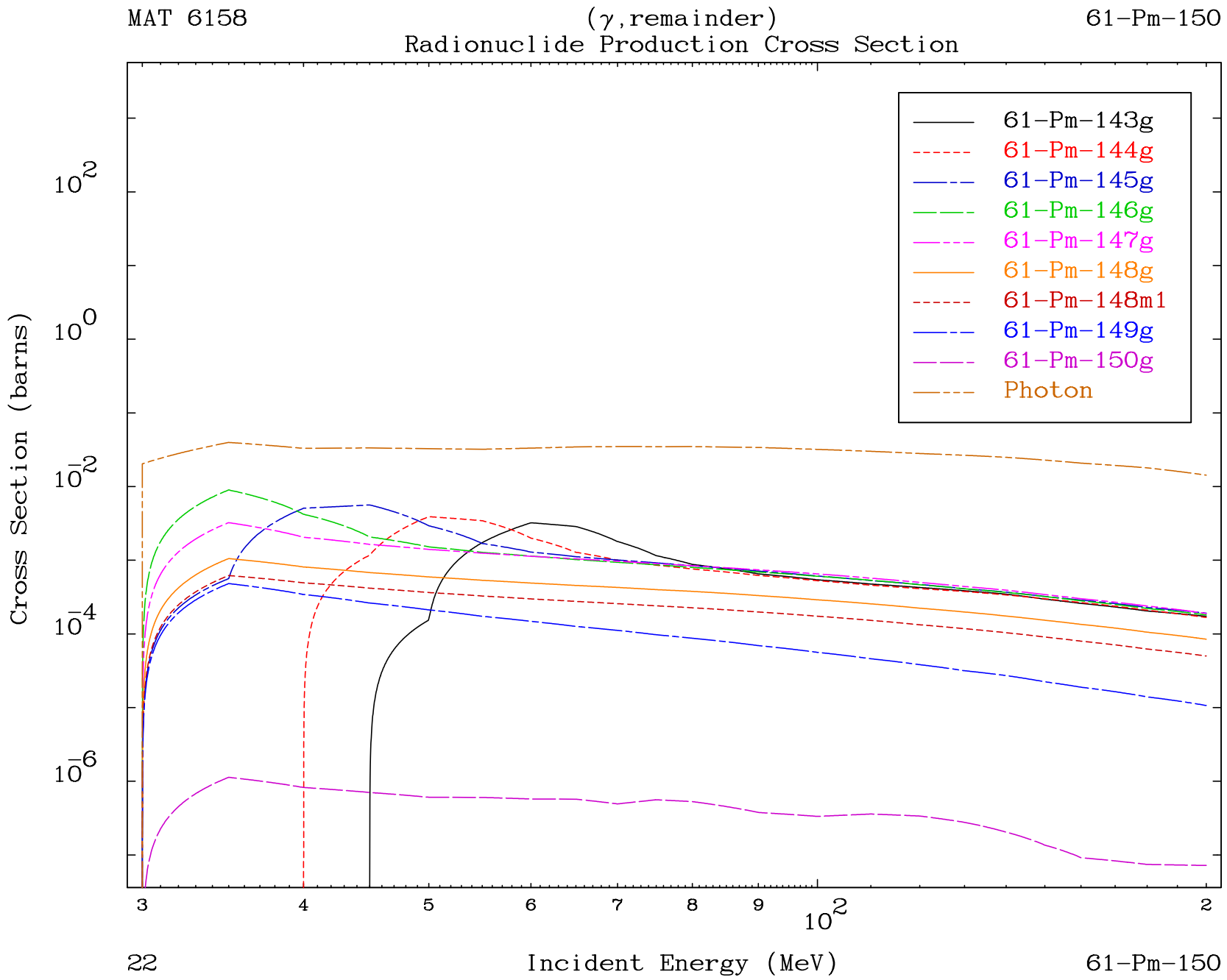

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10-4
10-6
10-8
10-10
3
4
5
6
7
8
9
10 2
2
Incident Energy (MeV)
60-Nd-137g
60-Nd-137m1
60-Nd-138g
60-Nd-139g
60-Nd-139m1
60-Nd-140g
60-Nd-141g
60-Nd-141m1
60-Nd-142g
60-Nd-143g
60-Nd-144g

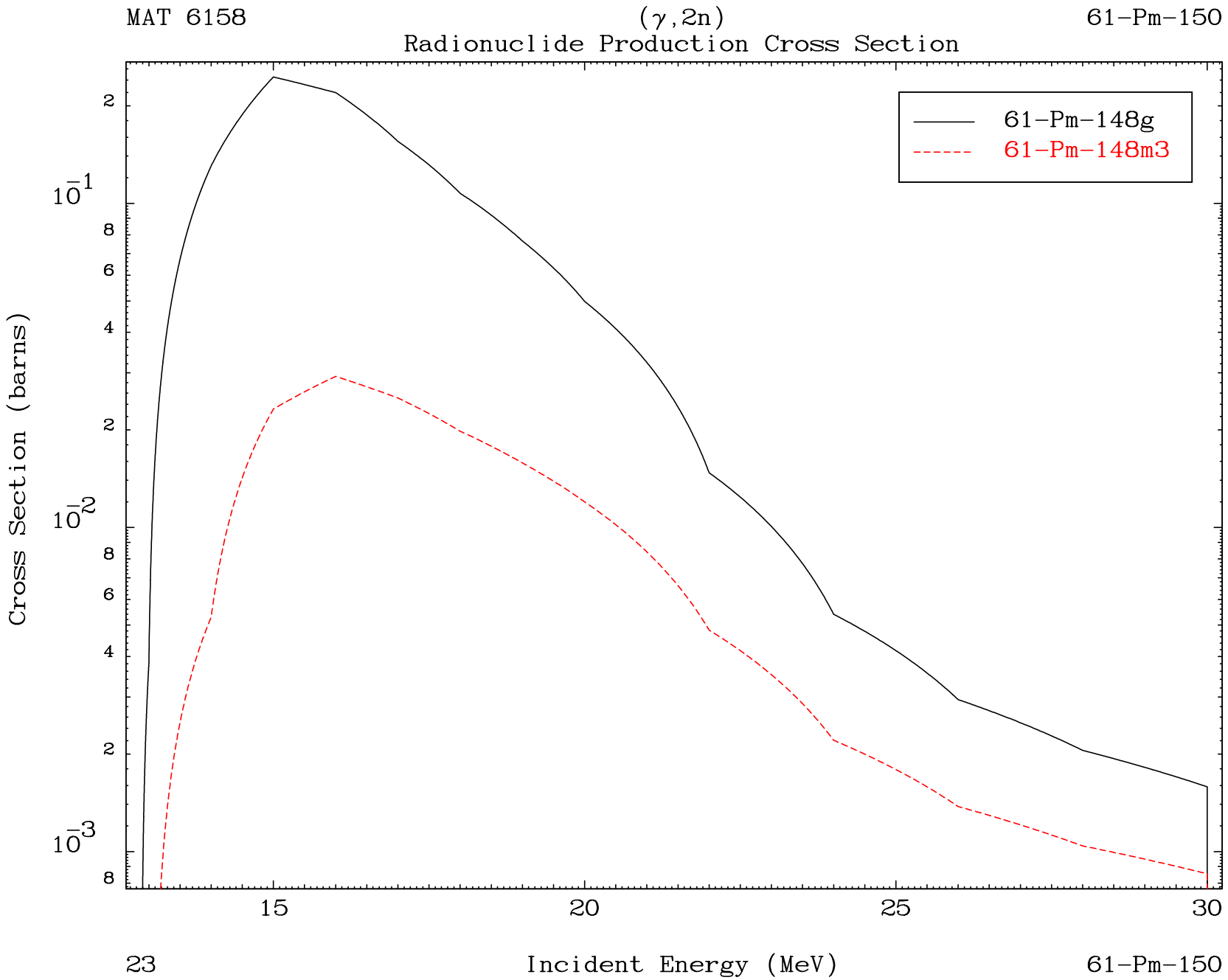
61-Pm-150

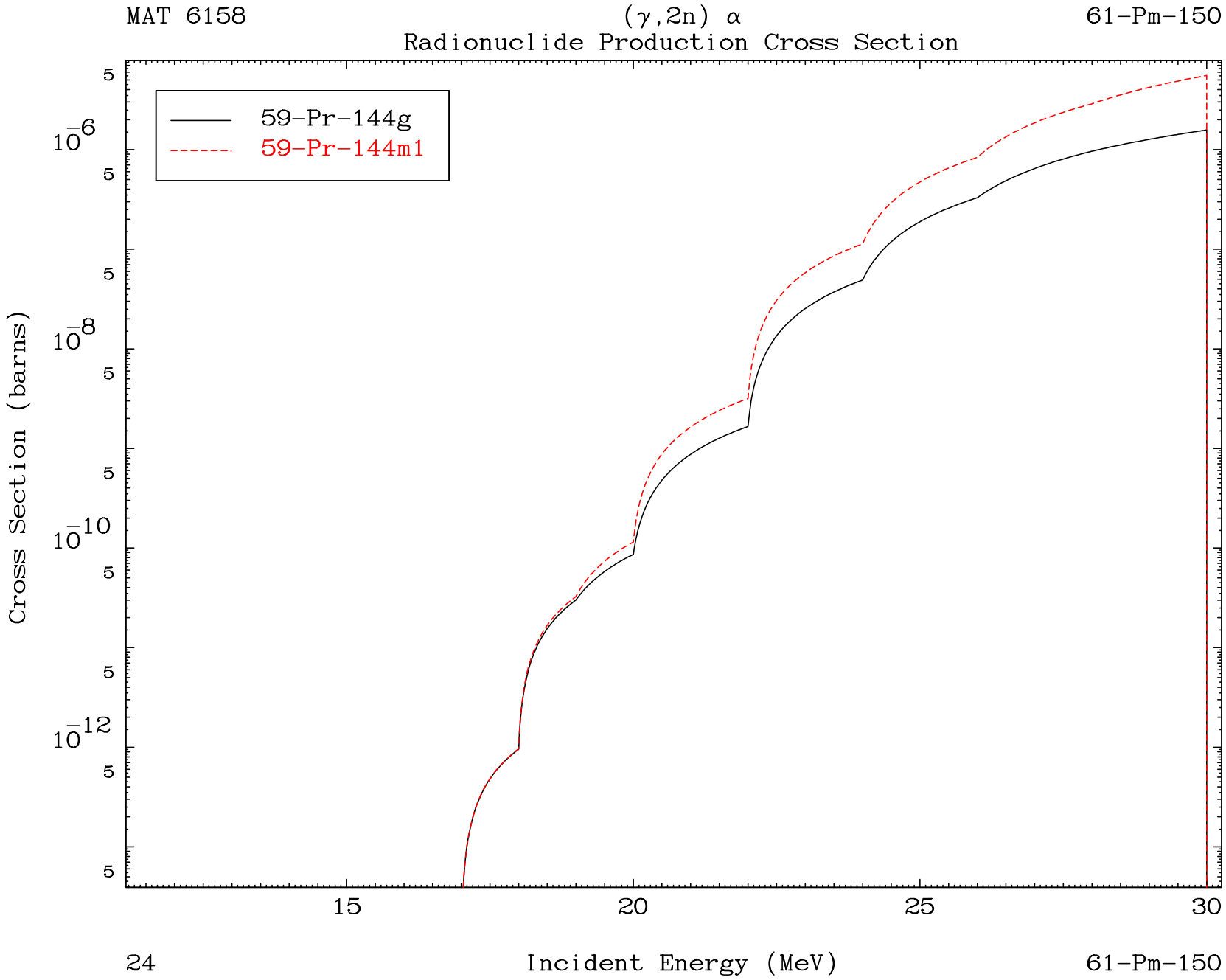

MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
5
3
4
5
6
7
8
9
10^2
2
60-Nd-145g
60-Nd-146g
60-Nd-147g
60-Nd-148g
60-Nd-149g
61-Pm-133g
61-Pm-133m1
61-Pm-134g
61-Pm-134m1
61-Pm-135g
61-Pm-135m1
20
Incident Energy (MeV)
61-Pm-150


MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
Cross Section (barns)
10-1
10-2
10-3
10-4
10-5
10-6
5
60
80
100
120
140
160
180
200
Incident Energy (MeV)
61-Pm-136g
61-Pm-136m1
61-Pm-137g
61-Pm-138g
61-Pm-138m1
61-Pm-139g
61-Pm-139m1
61-Pm-140g
61-Pm-140m1
61-Pm-141g
61-Pm-142g

61-Pm-150


MAT 6158
(γ,remainder)
61-Pm-150
Radionuclide Production Cross Section
61-Pm-143g
61-Pm-144g
61-Pm-145g
61-Pm-146g
61-Pm-147g
61-Pm-148g
61-Pm-148m1
61-Pm-149g
61-Pm-150g
Photon
Cross Section (barns)
10^2
10^0
10^-2
10^-4
10^-6
3
4
5
6
7
8
9
10^2
2
22
Incident Energy (MeV)
61-Pm-150


MAT 6158
(γ,2n)
61-Pm-150
Radionuclide Production Cross Section
61-Pm-148g
61-Pm-148m3
Cross Section (barns)
10-1
10-2
10-3
2
8
6
4
2
8
6
4
2
8
15
20
25
30
23
Incident Energy (MeV)
61-Pm-150


MAT 6158
(γ,2n) α
61-Pm-150
Radionuclide Production Cross Section
59-Pr-144g
59-Pr-144m1
Cross Section (barns)
10-6
10-8
10-10
10-12
5
15
20
25
30
24
Incident Energy (MeV)
61-Pm-150