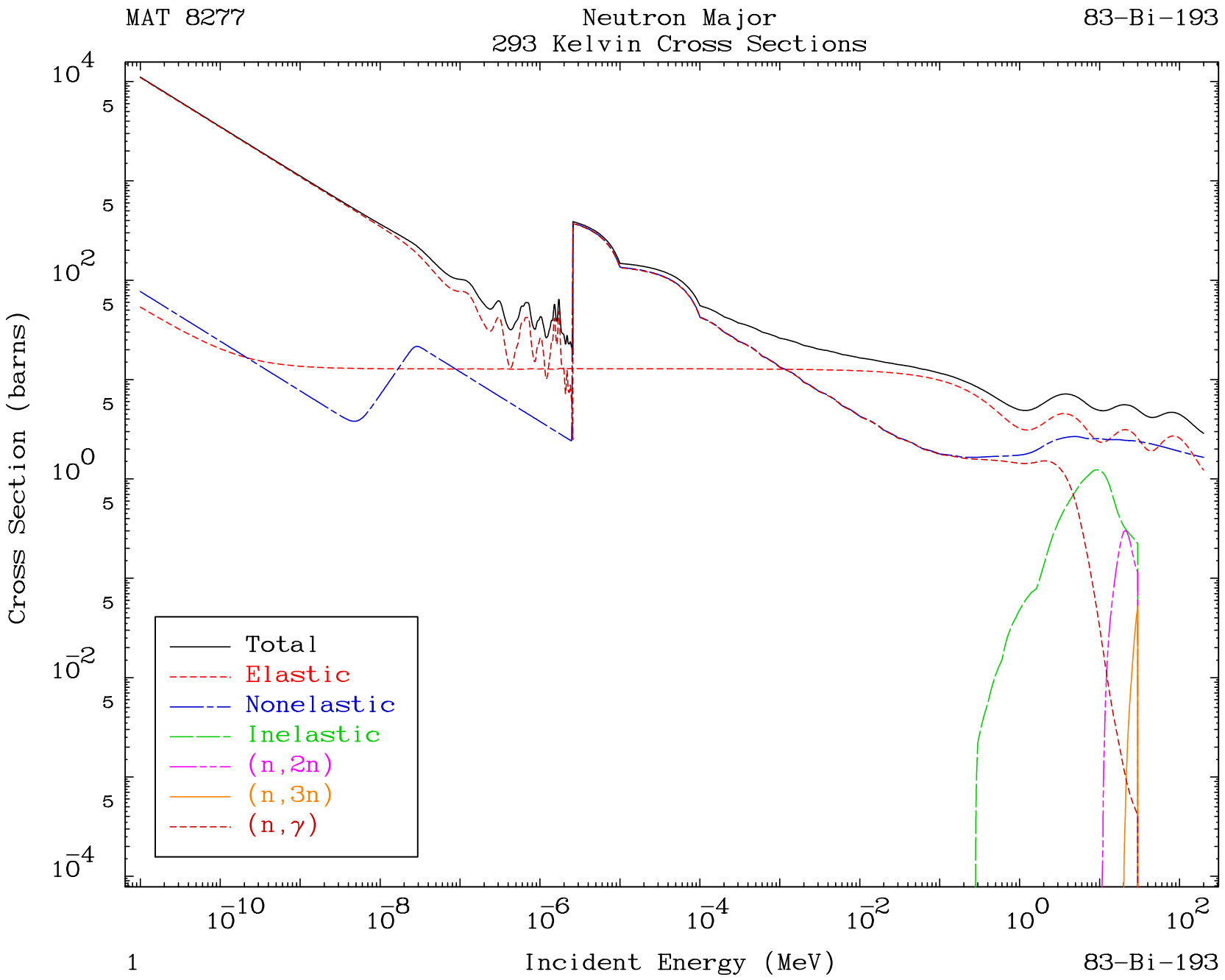
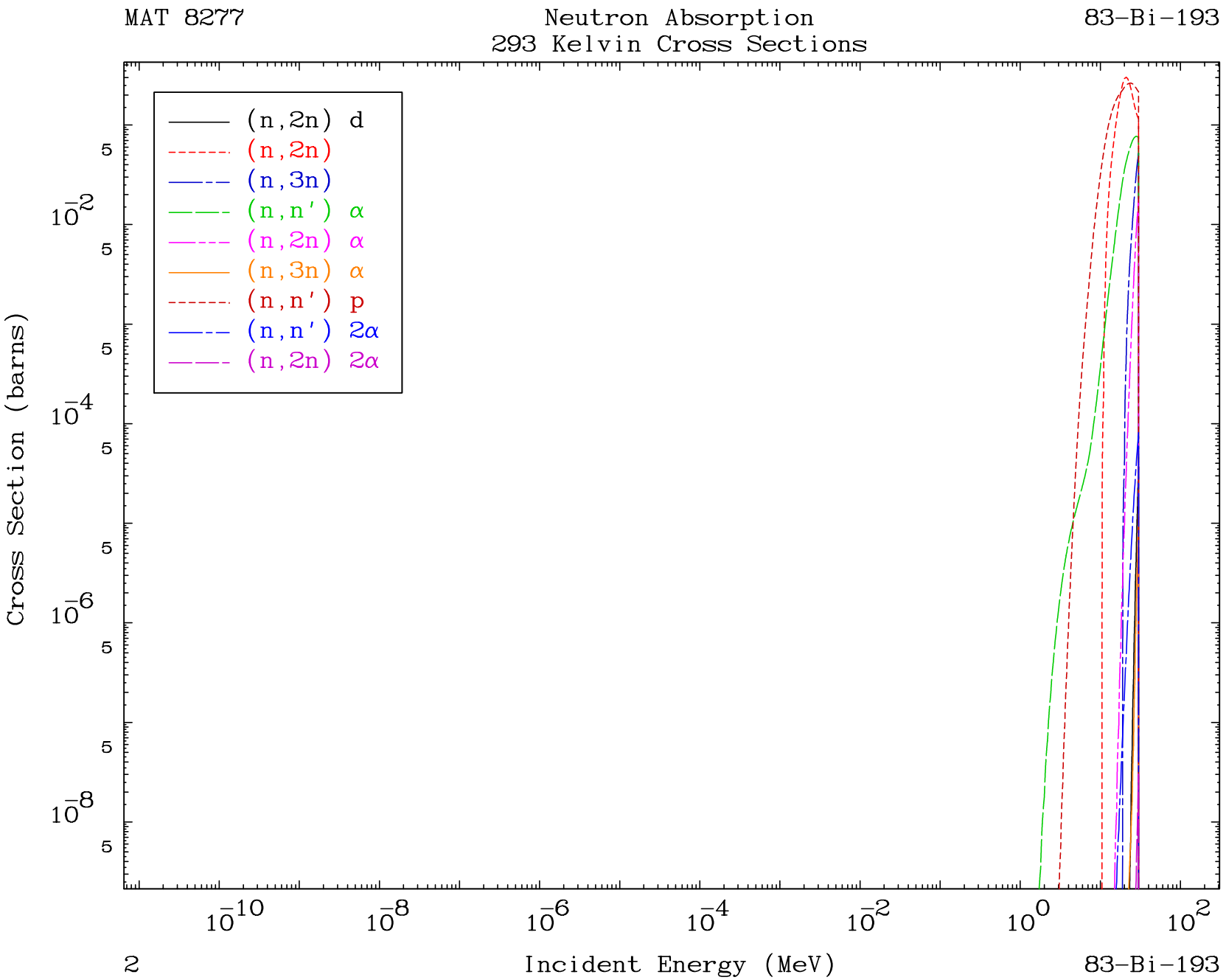
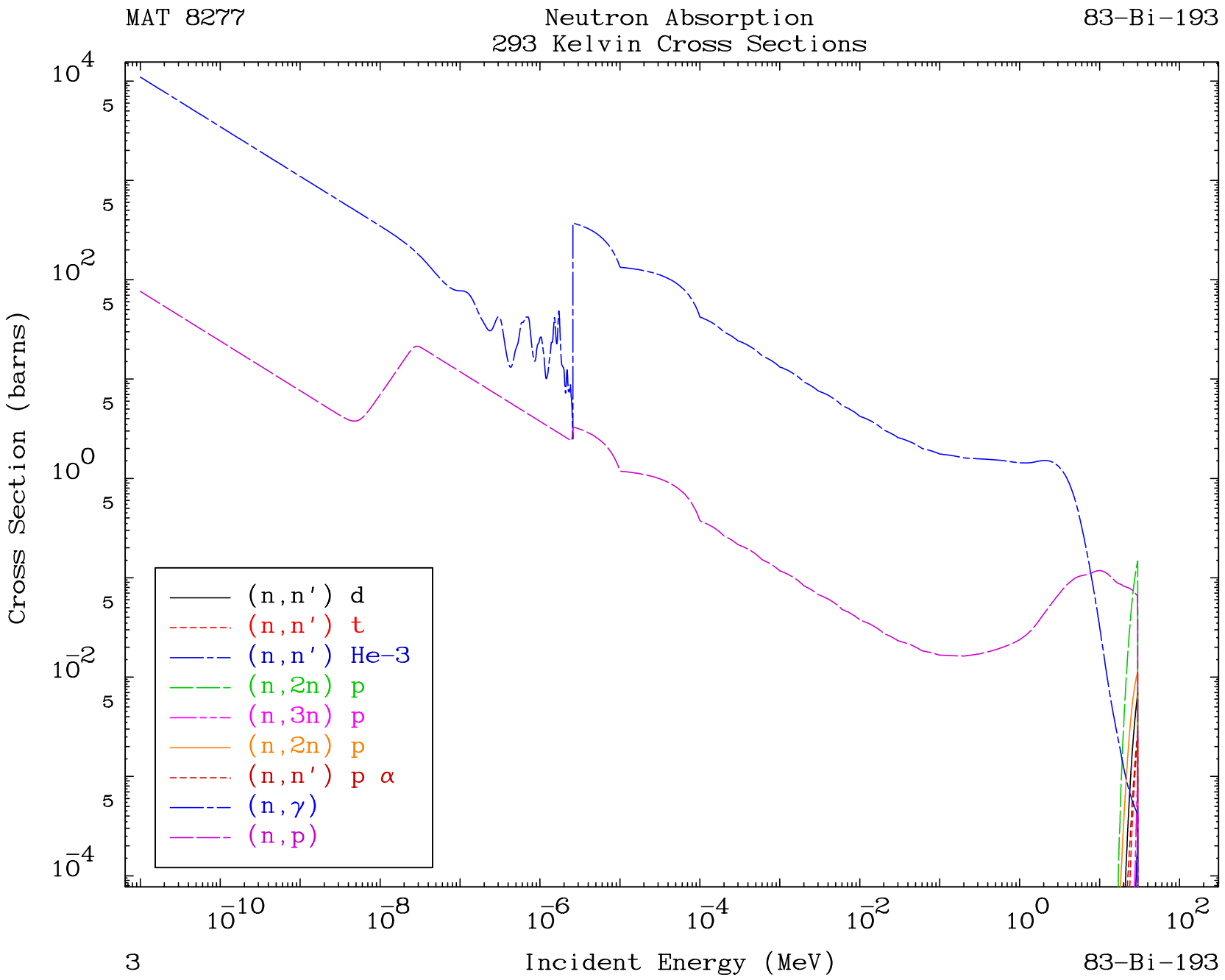
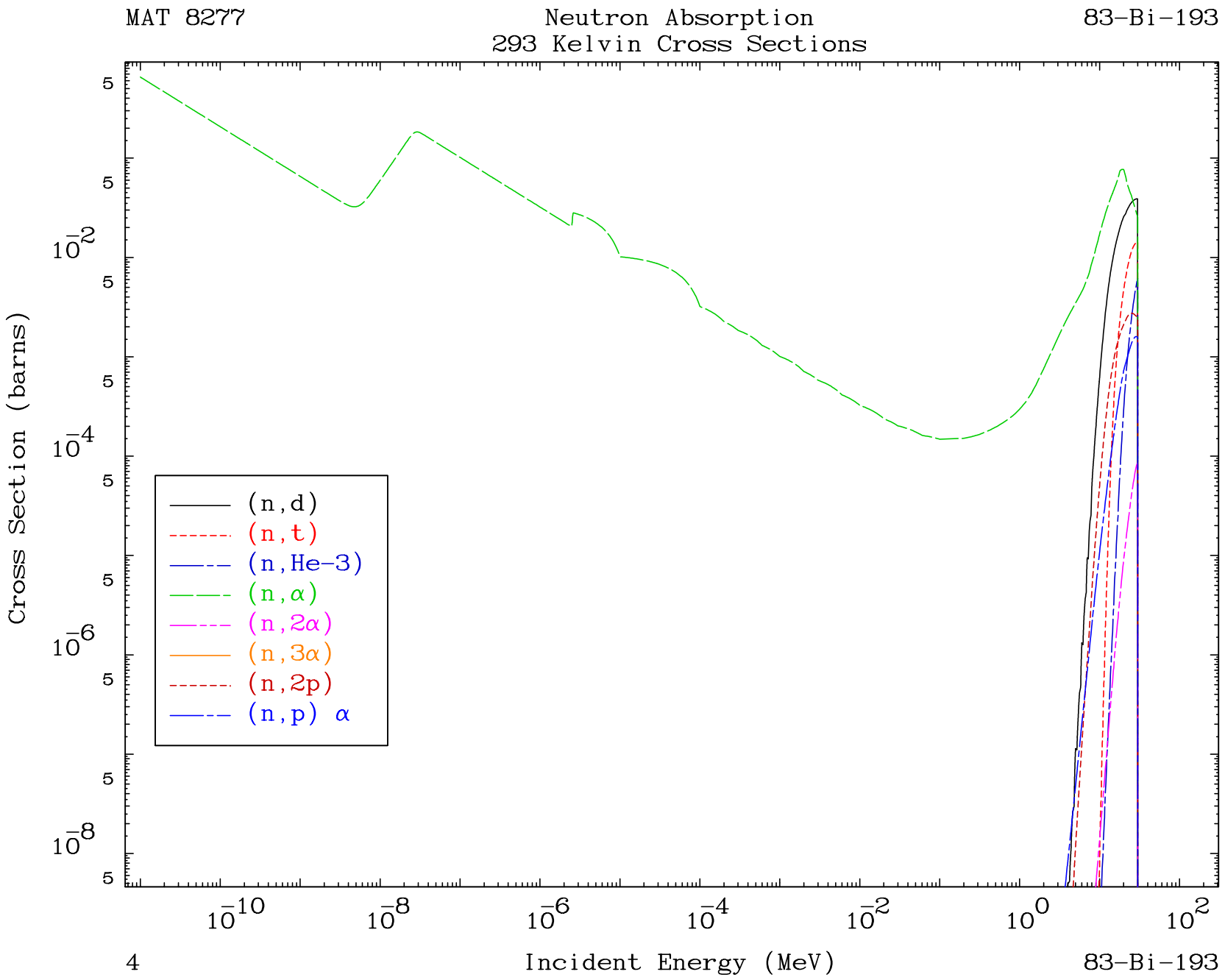
Program EVALPLOT
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

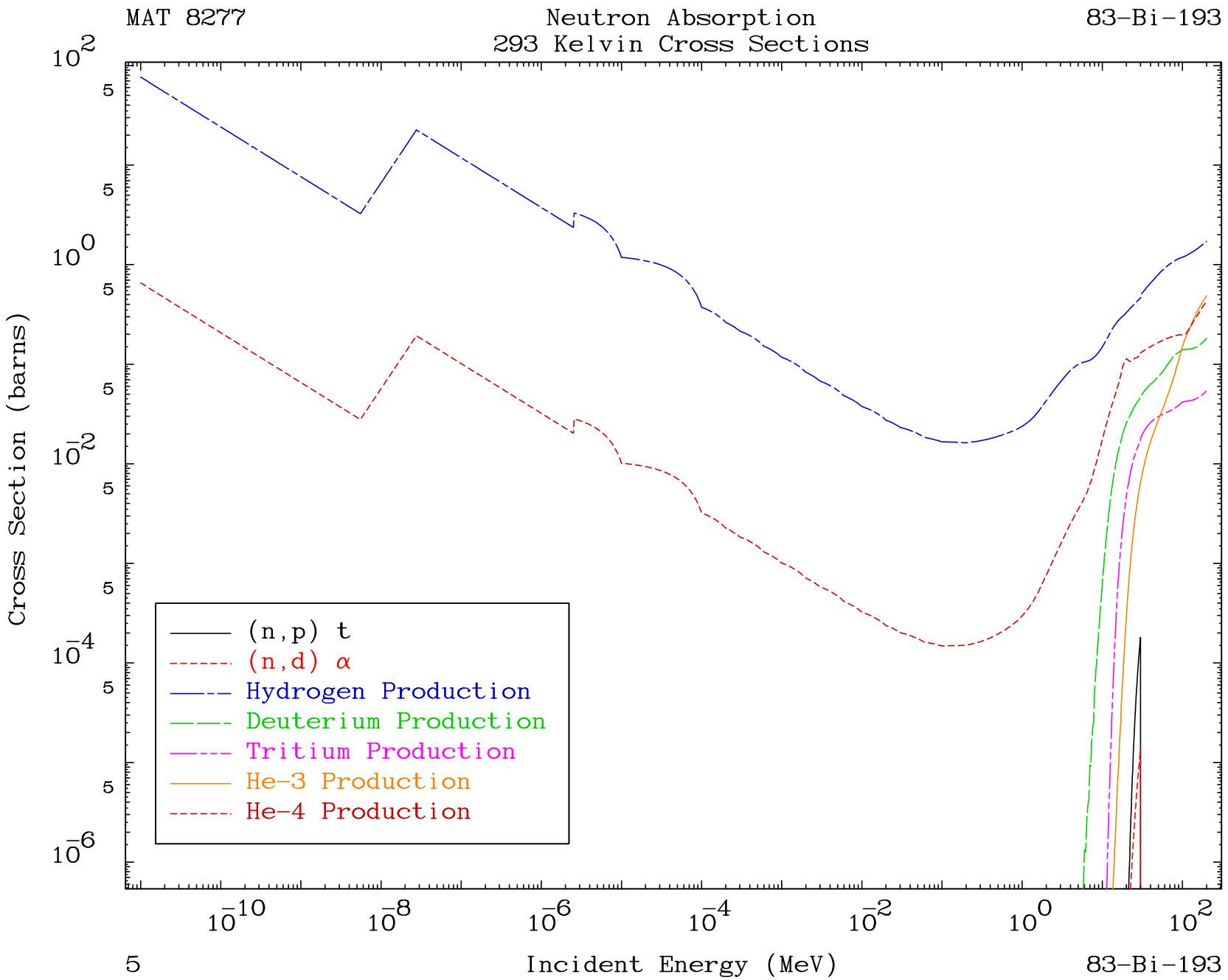
Press Mouse Button to Start

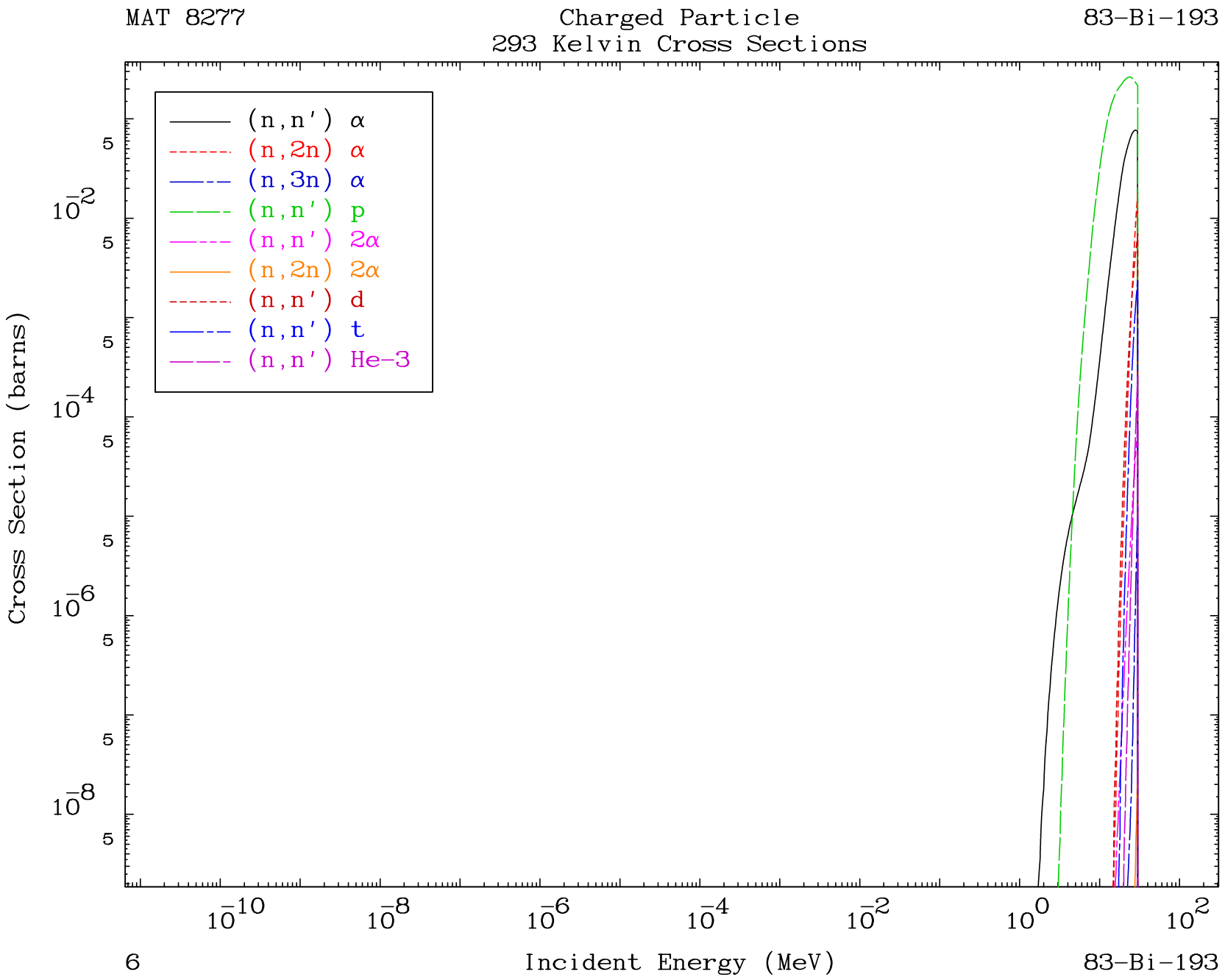

MAT 8277
Neutron Major
293 Kelvin Cross Sections
83-Bi-193
Cross Section (barns)
Incident Energy (MeV)
Total
Elastic
Nonelastic
Inelastic
(n,2n)
(n,3n)
(n,γ)
1
83-Bi-193

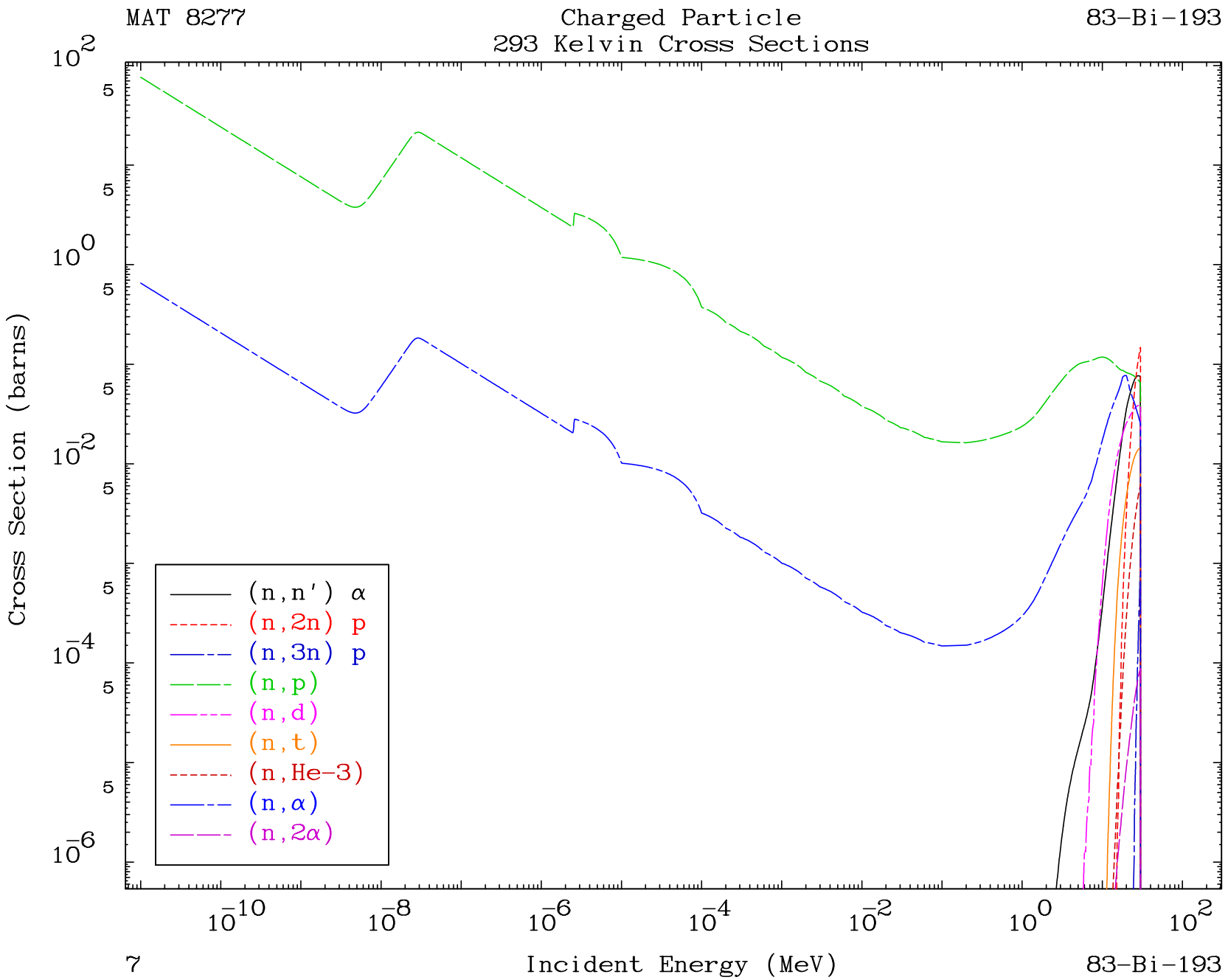

MAT 8277
Neutron Absorption
293 Kelvin Cross Sections
83-Bi-193
(n,2n) d
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,2n) 2α
Cross Section (barns)
Incident Energy (MeV)
2
83-Bi-193

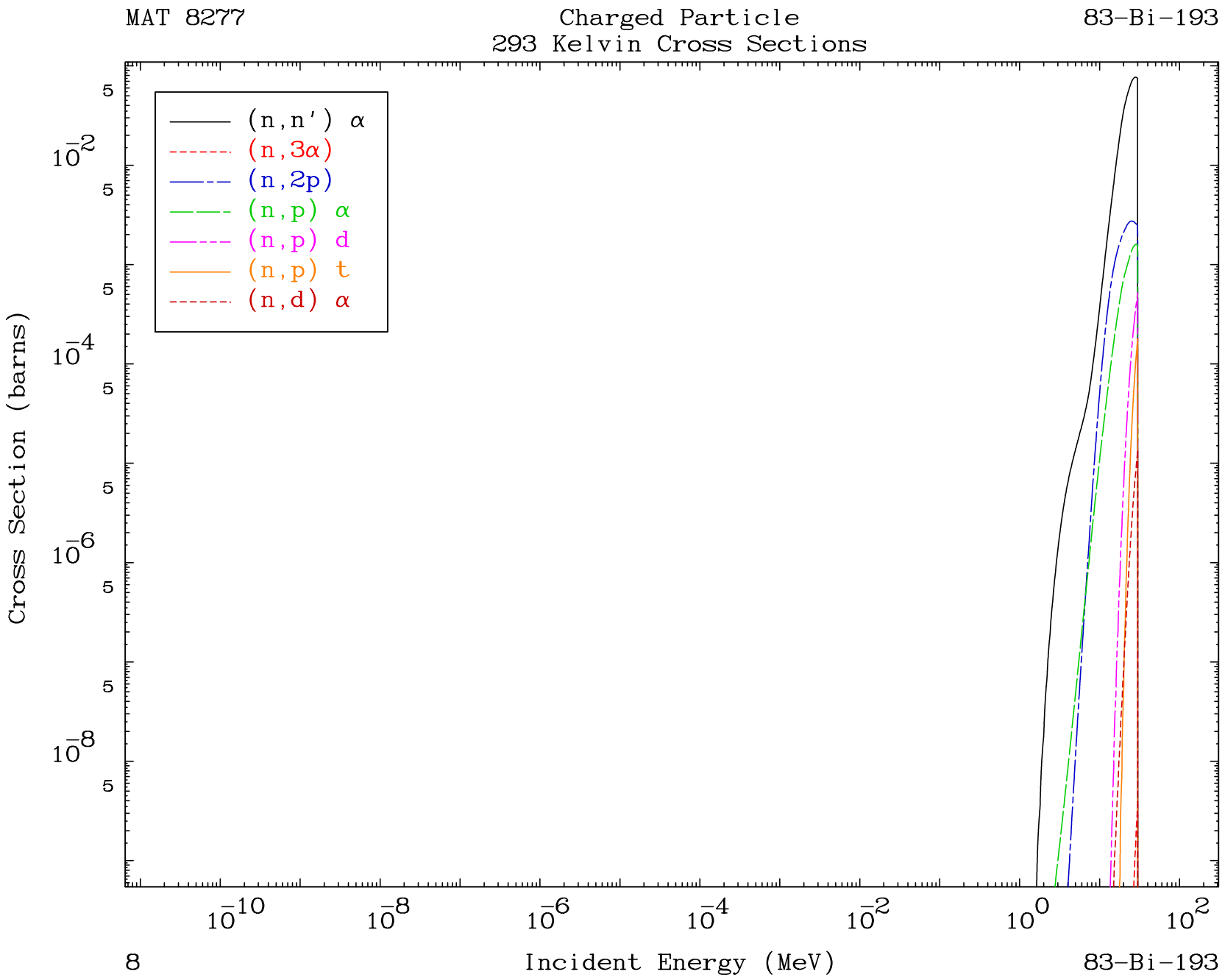

MAT 8277
Neutron Absorption
293 Kelvin Cross Sections
83-Bi-193
Cross Section (barns)
Incident Energy (MeV)
3
83-Bi-193
(n,n') d
(n,n') t
(n,n') He-3
(n,2n) p
(n,3n) p
(n,2n) p
(n,n') p α
(n,γ)
(n,p)

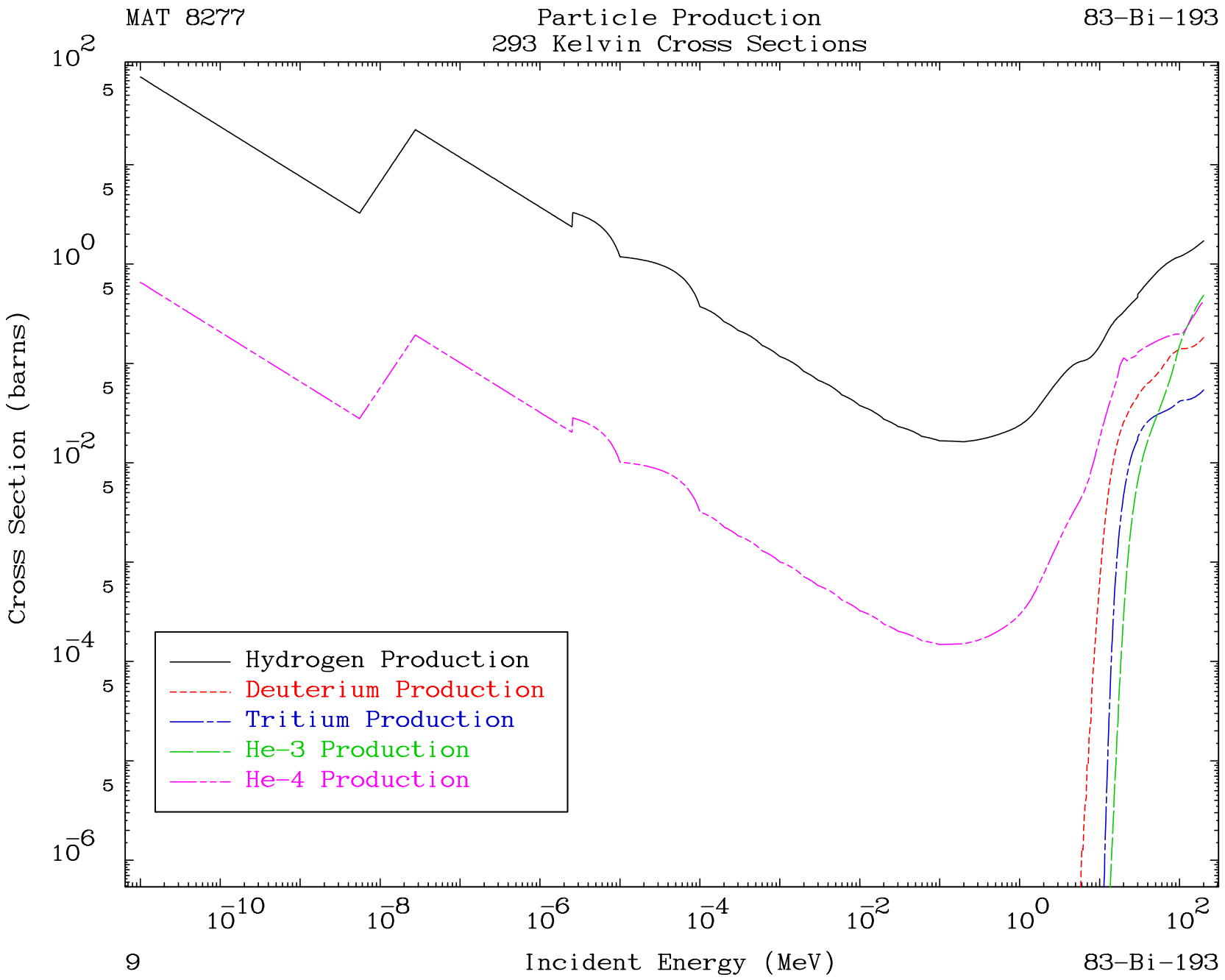

MAT 8277
Neutron Absorption
293 Kelvin Cross Sections
83-Bi-193
Cross Section (barns)
Incident Energy (MeV)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,3α)
(n,2p)
(n,p) α
4
83-Bi-193

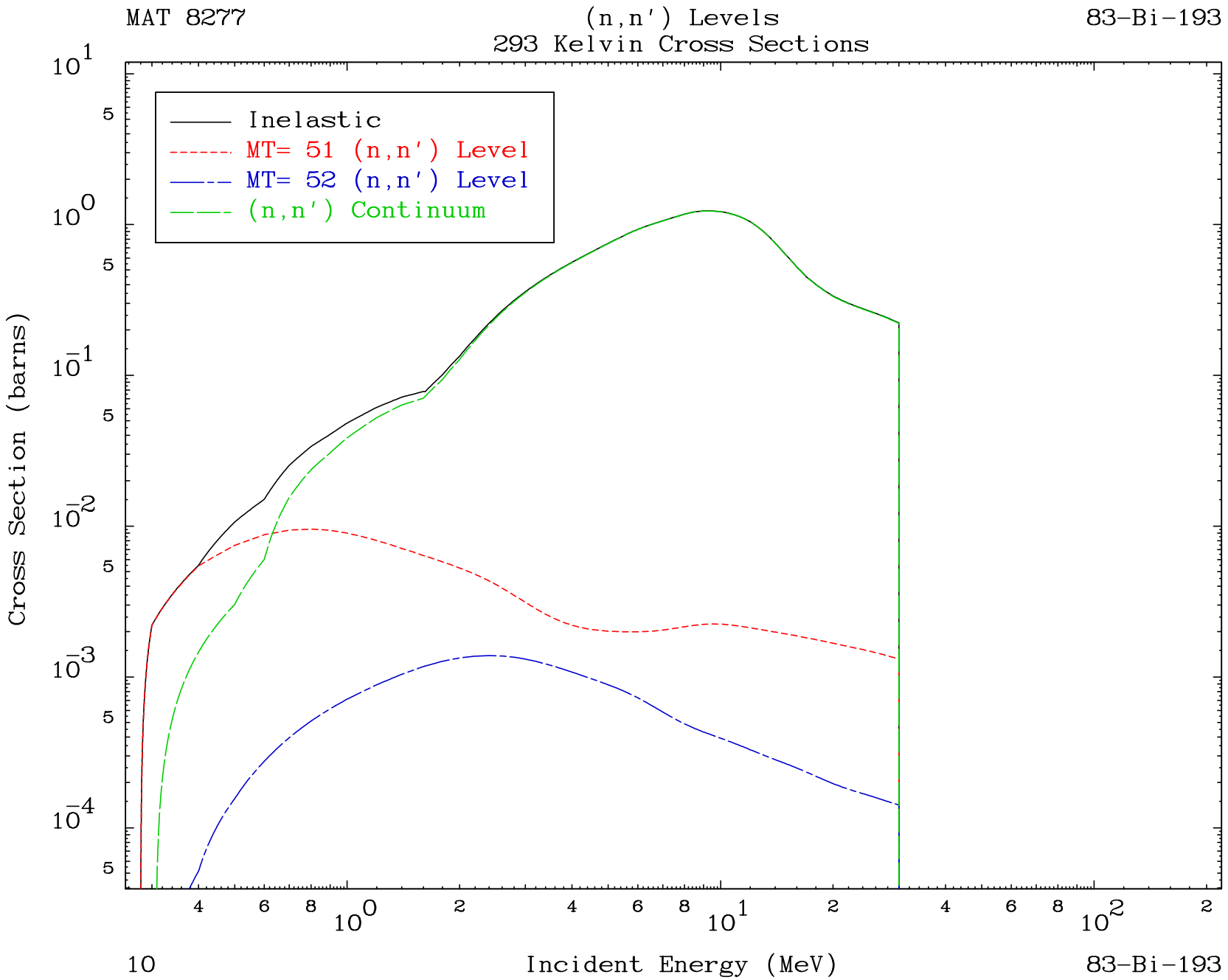

MAT 8277
Neutron Absorption
293 Kelvin Cross Sections
83-Bi-193
Cross Section (barns)
Incident Energy (MeV)
83-Bi-193
(n,p) t
(n,d) α
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production

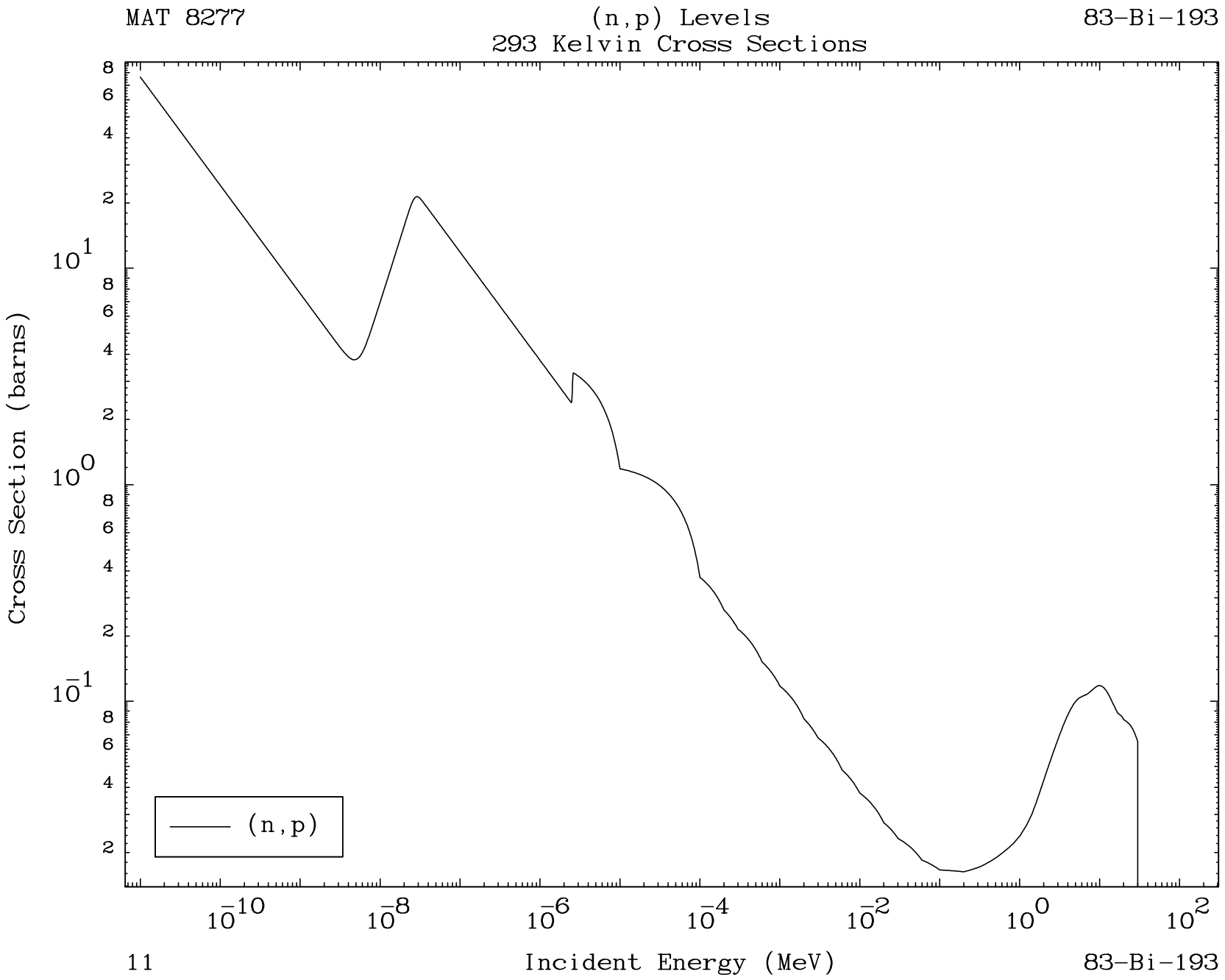

MAT 8277
Charged Particle
293 Kelvin Cross Sections
83-Bi-193
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,2n) 2α
(n,n') d
(n,n') t
(n,n') He-3
Cross Section (barns)
Incident Energy (MeV)
6
83-Bi-193

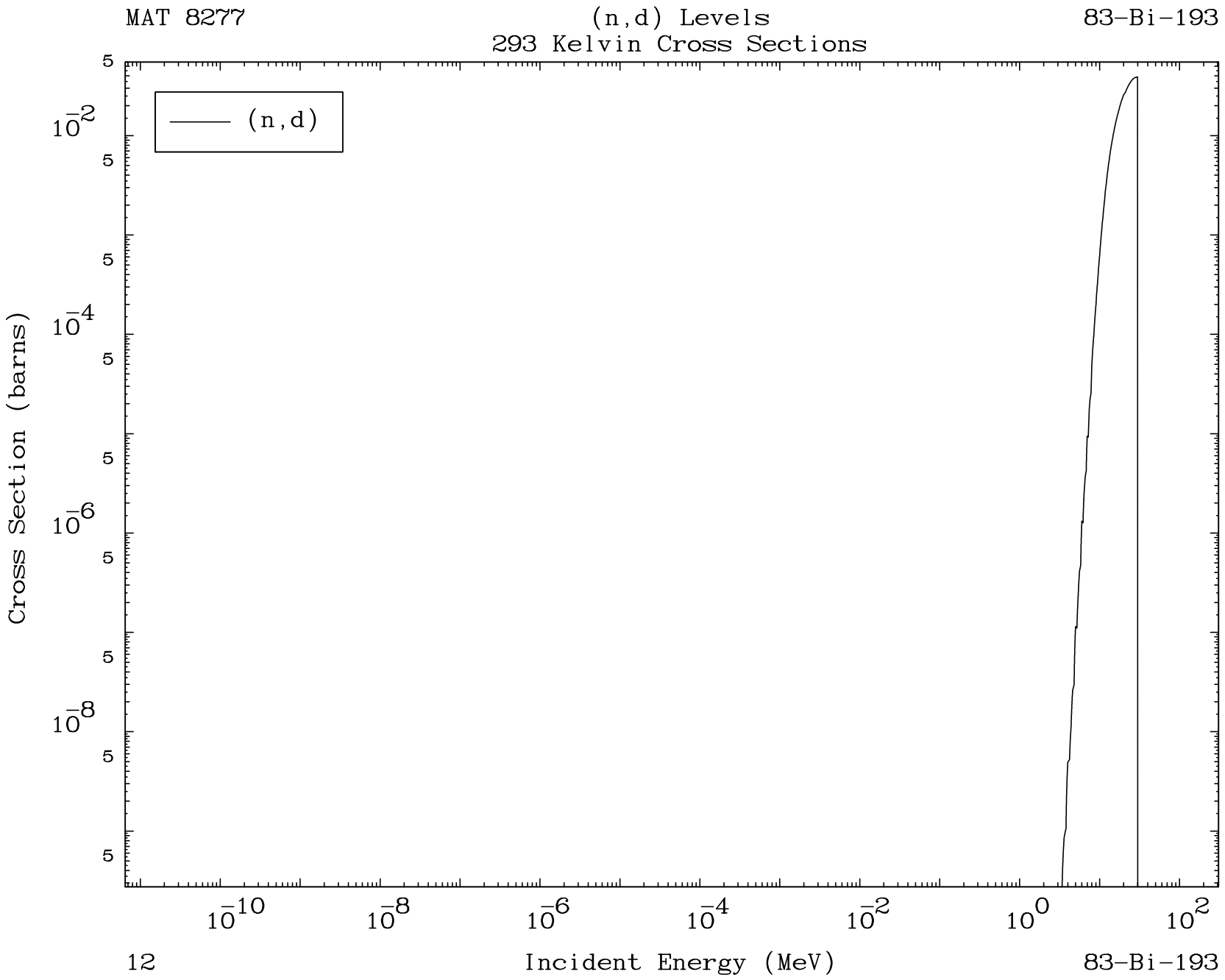

MAT 8277
Charged Particle
293 Kelvin Cross Sections
83-Bi-193
Cross Section (barns)
Incident Energy (MeV)
(n,n') α
(n,2n) p
(n,3n) p
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
7
83-Bi-193

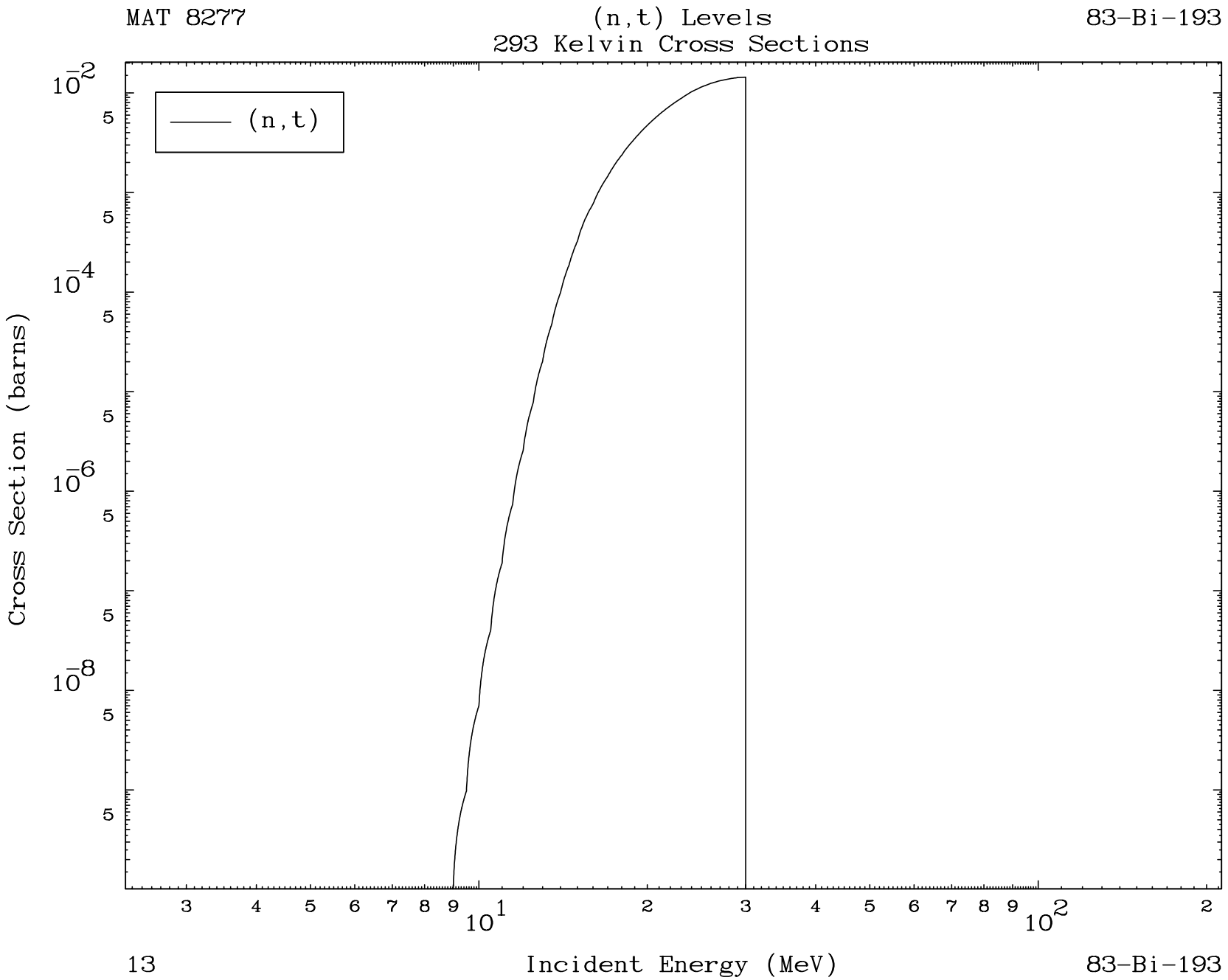

MAT 8277
Charged Particle
83-Bi-193
293 Kelvin Cross Sections
(n,n') α
(n,3α)
(n,2p)
(n,p) α
(n,p) d
(n,p) t
(n,d) α
Cross Section (barns)
Incident Energy (MeV)
8
83-Bi-193

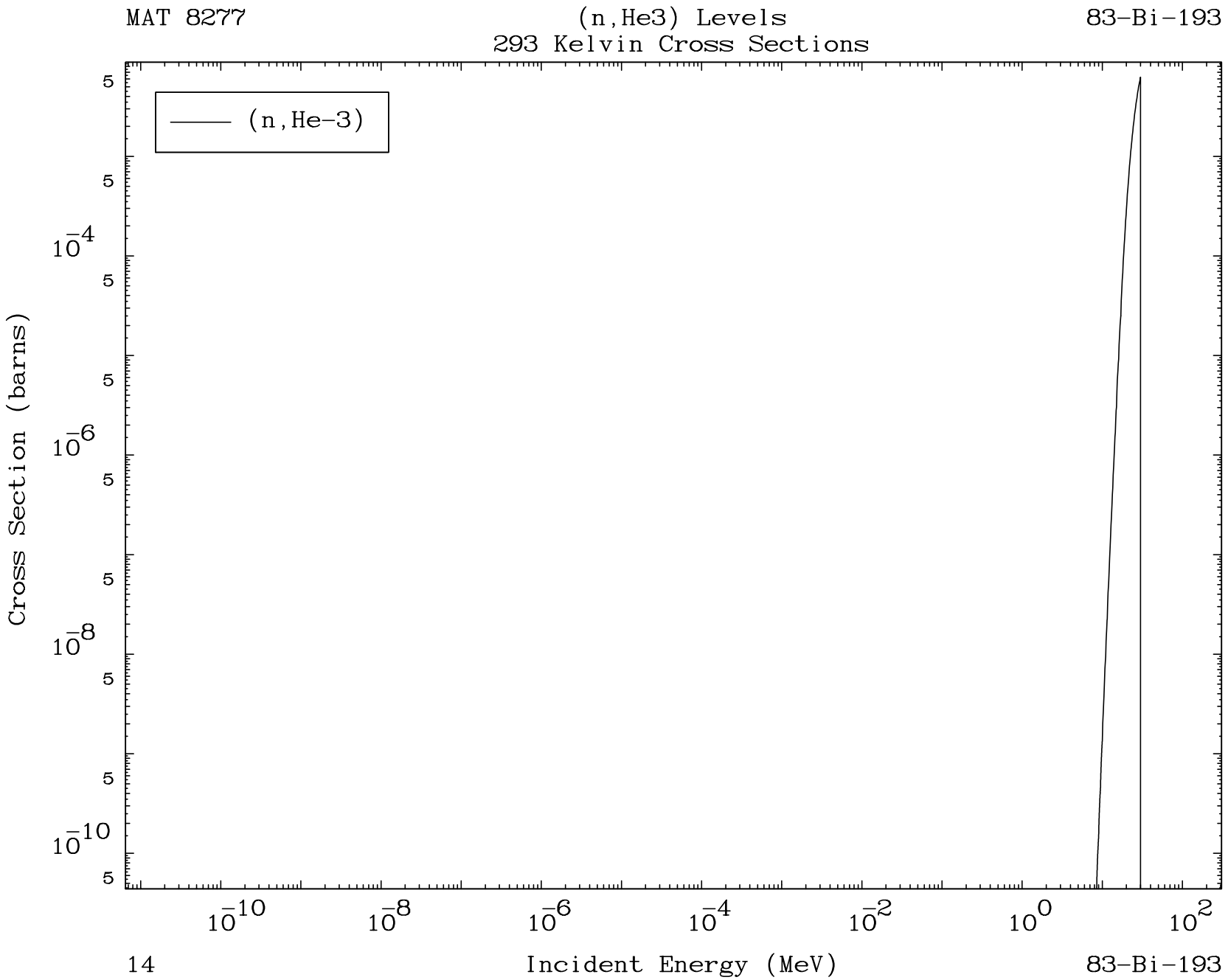

MAT 8277
Particle Production
293 Kelvin Cross Sections
83-Bi-193
Cross Section (barns)
Incident Energy (MeV)
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
9
83-Bi-193

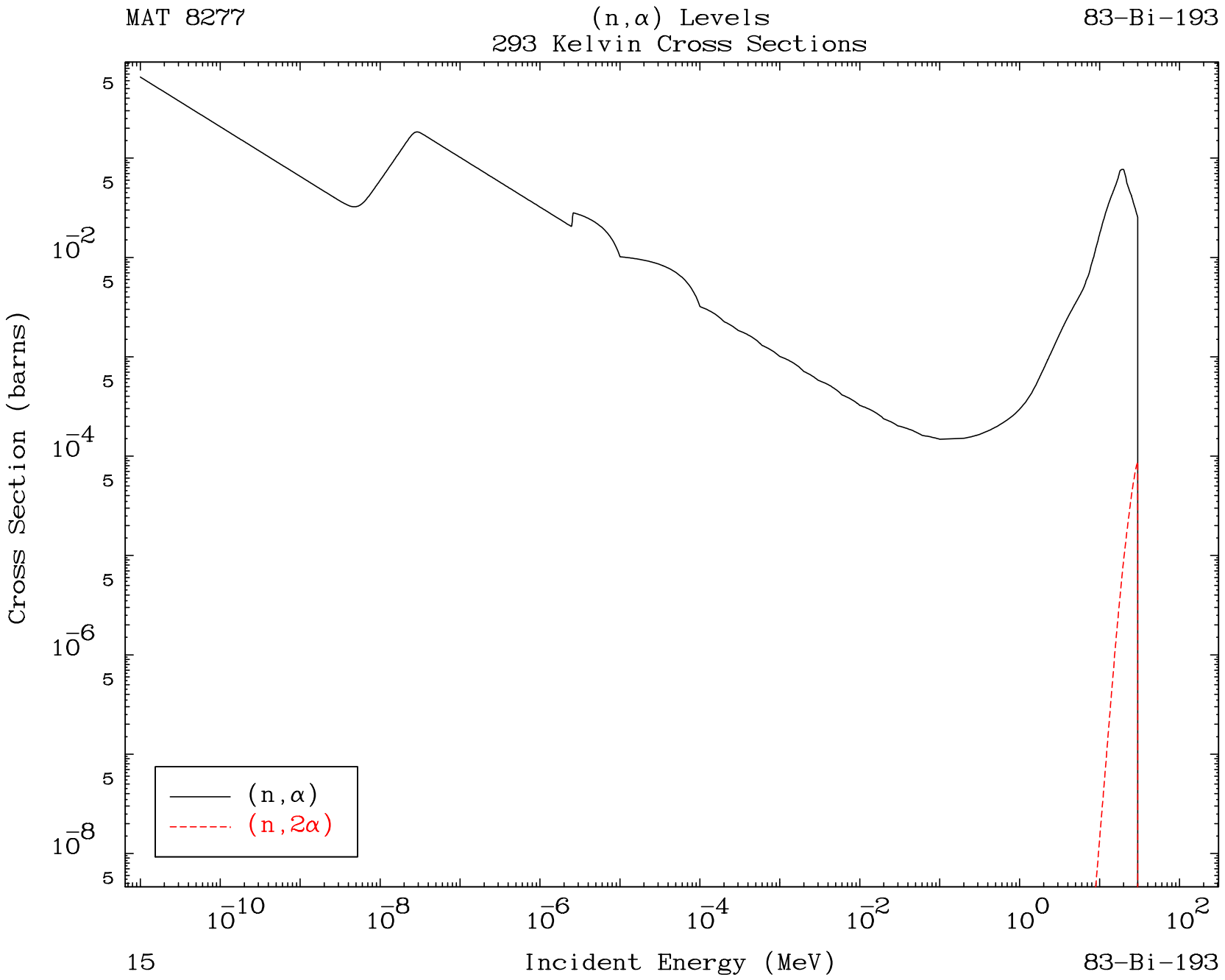

MAT 8277
(n,n') Levels
293 Kelvin Cross Sections
83-Bi-193
Inelastic
MT= 51 (n,n') Level
MT= 52 (n,n') Level
(n,n') Continuum
Cross Section (barns)
Incident Energy (MeV)
83-Bi-193

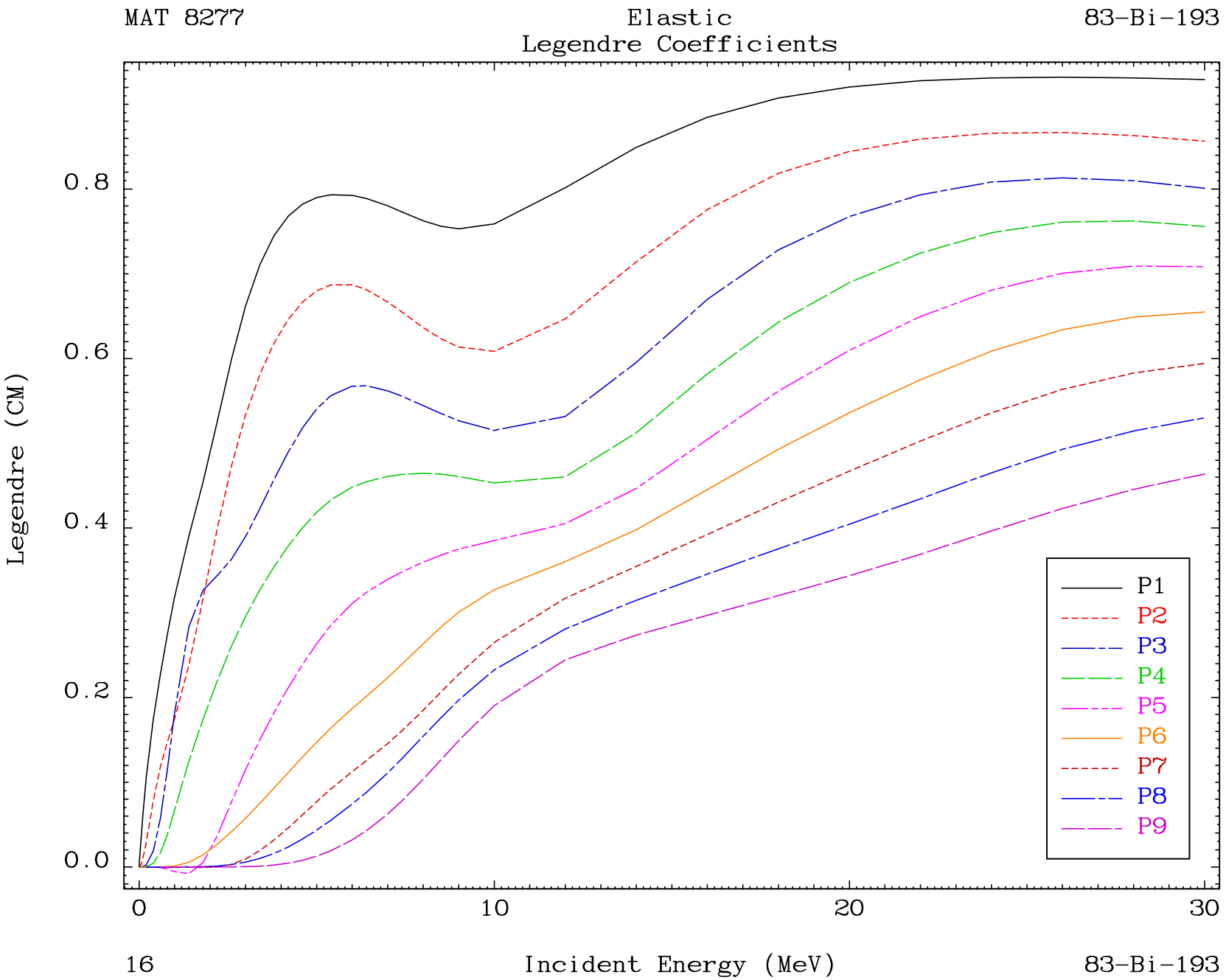

MAT 8277
(n,p) Levels
83-Bi-193
293 Kelvin Cross Sections
Cross Section (barns)
(n,p)
11
Incident Energy (MeV)
83-Bi-193

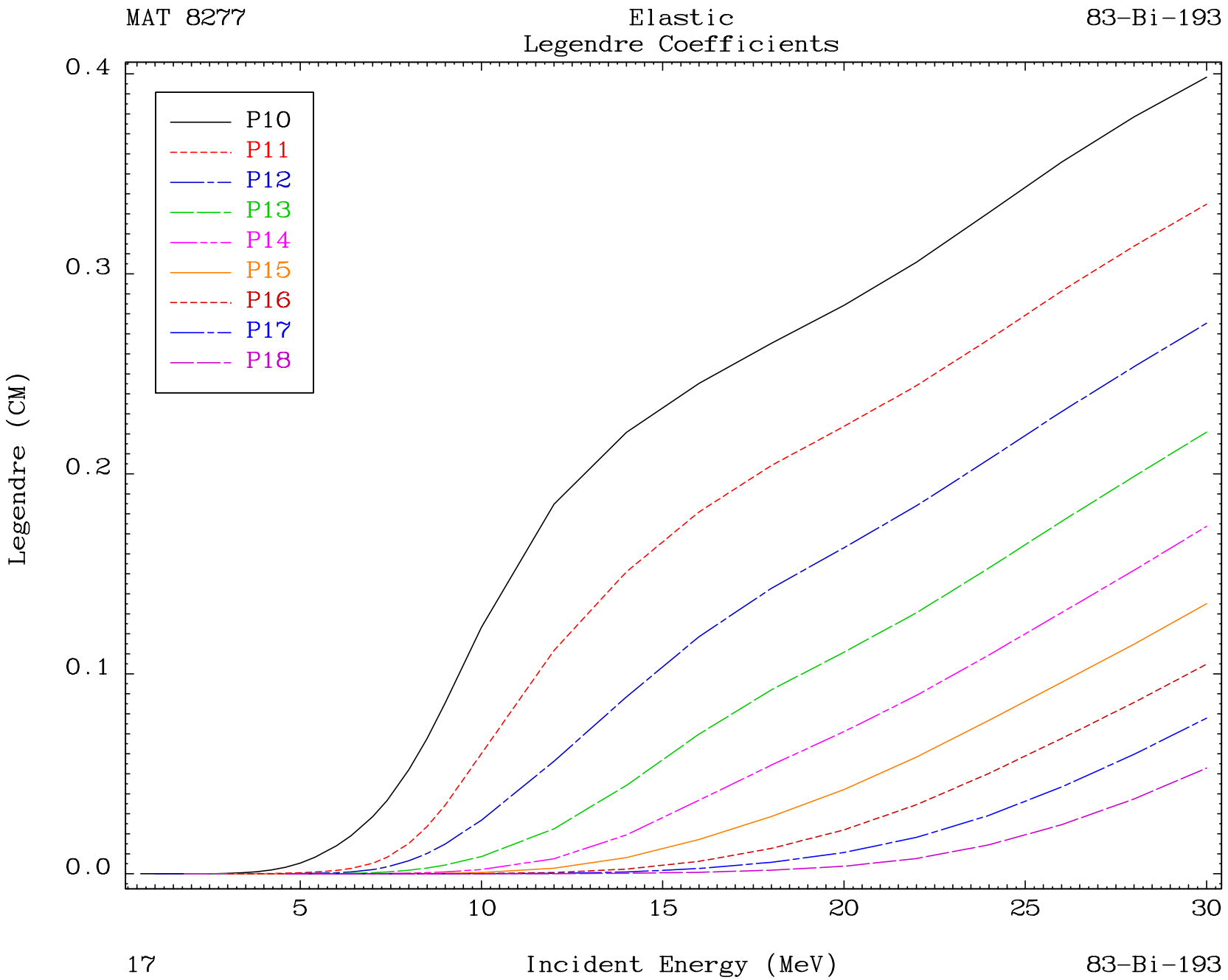

MAT 8277
(n,d) Levels
83-Bi-193
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
Incident Energy (MeV)
12
83-Bi-193

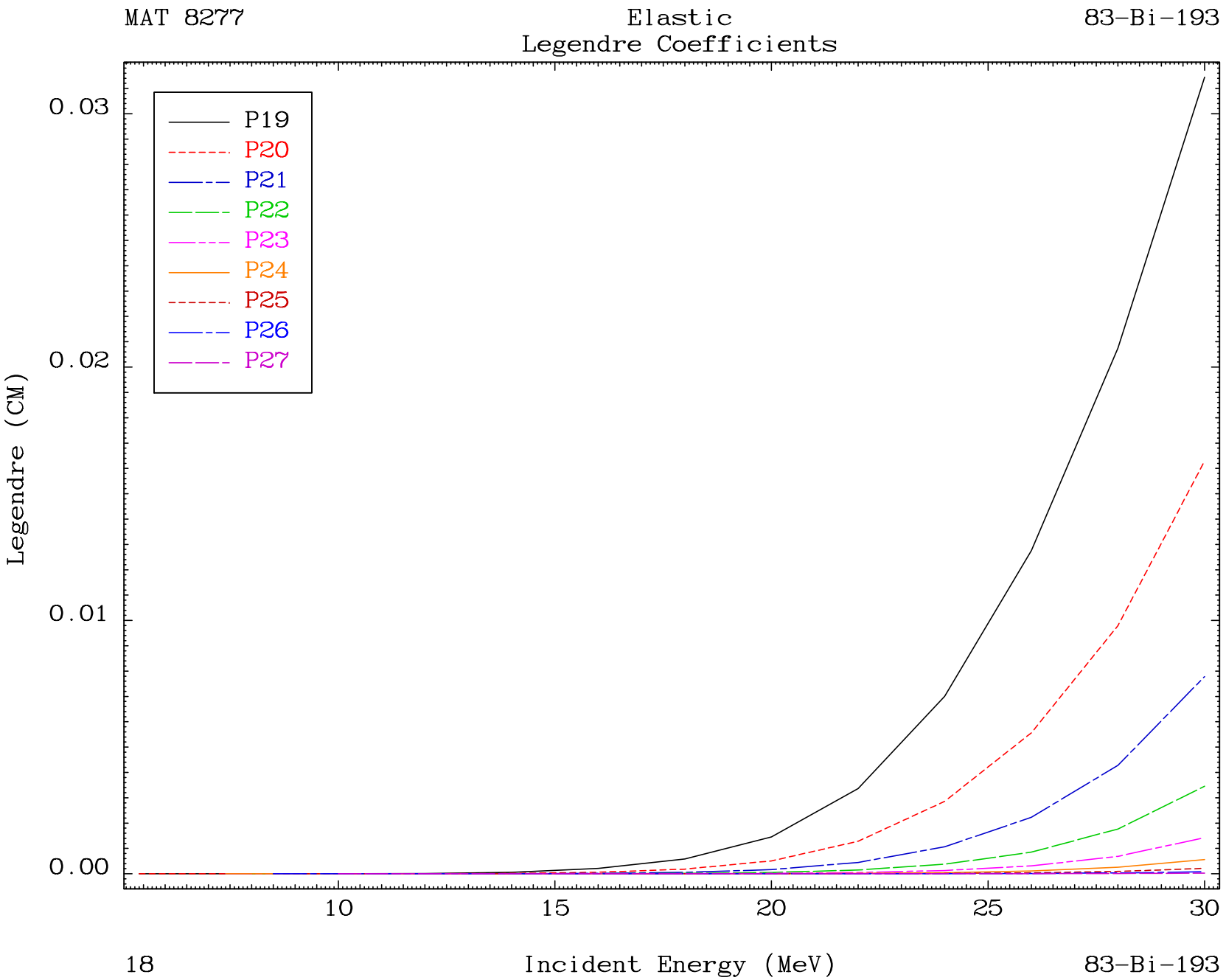

MAT 8277
(n,t) Levels
83-Bi-193
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
Incident Energy (MeV)
13
83-Bi-193

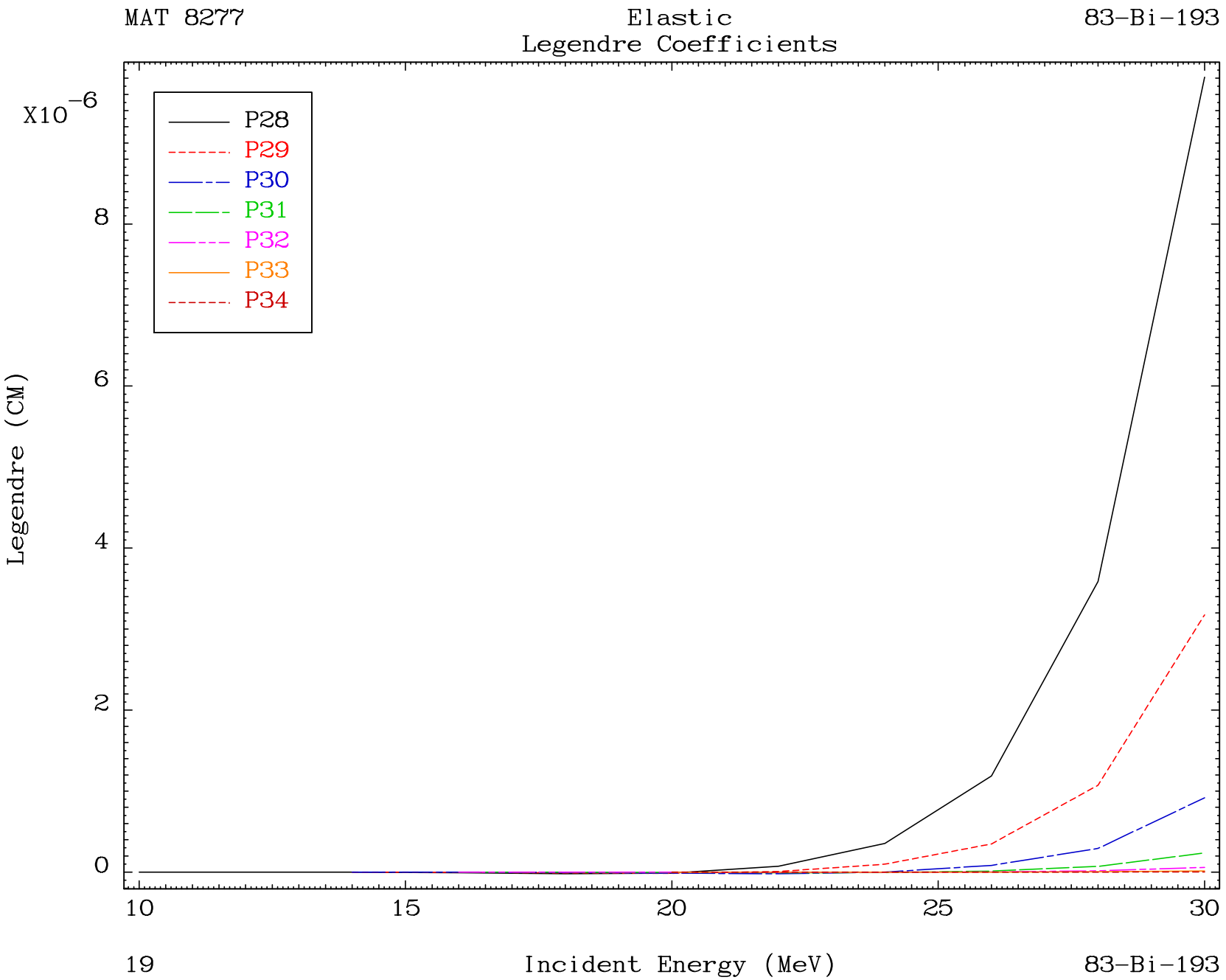

MAT 8277
(n,He3) Levels
83-Bi-193
293 Kelvin Cross Sections
(n,He-3)
Cross Section (barns)
Incident Energy (MeV)
14
83-Bi-193

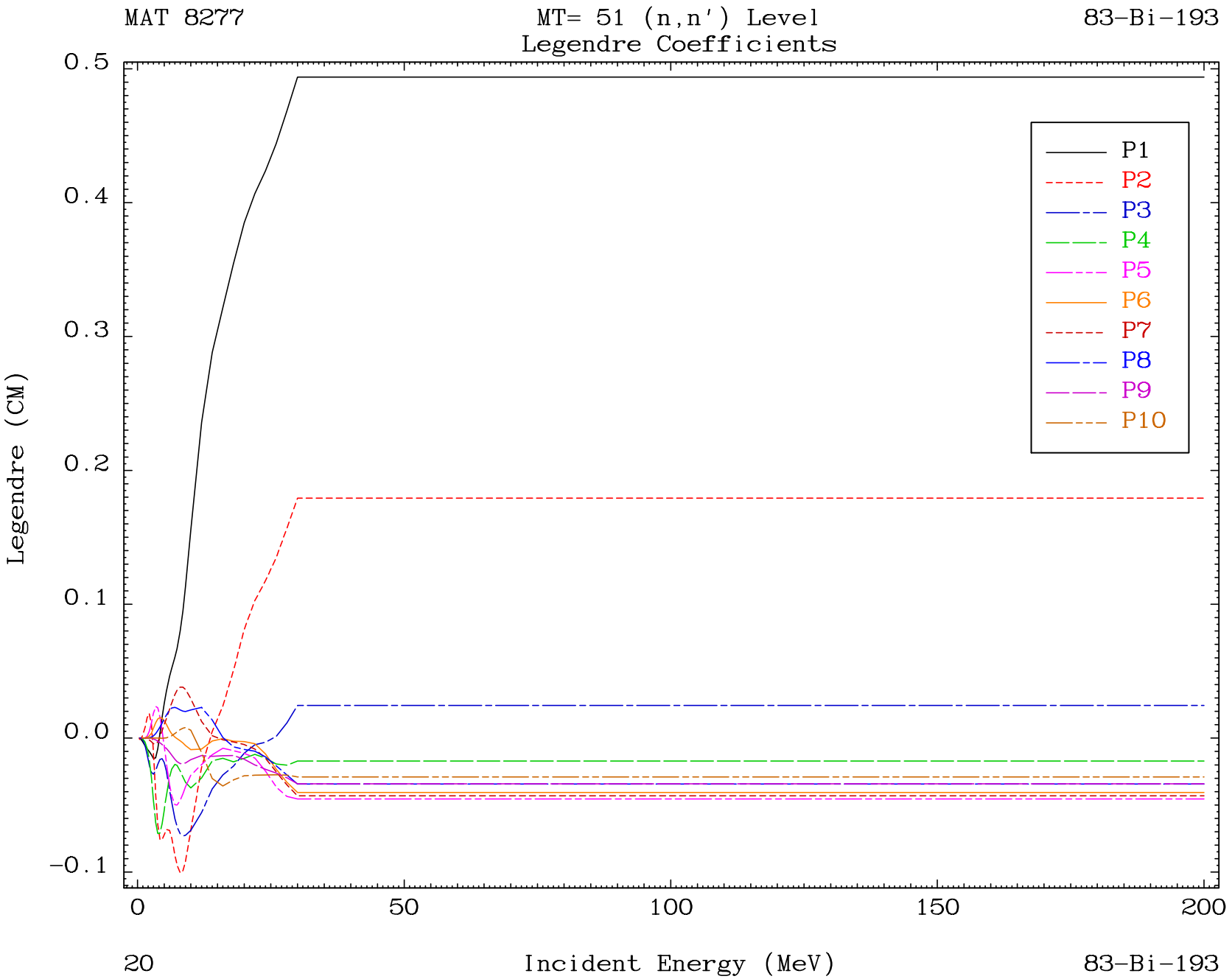

MAT 8277
(n,α) Levels
83-Bi-193
293 Kelvin Cross Sections
Cross Section (barns)
10^-2
10^-4
10^-6
10^-8
10^-10
10^0
10^2
(n,α)
(n,2α)
Incident Energy (MeV)
15
83-Bi-193

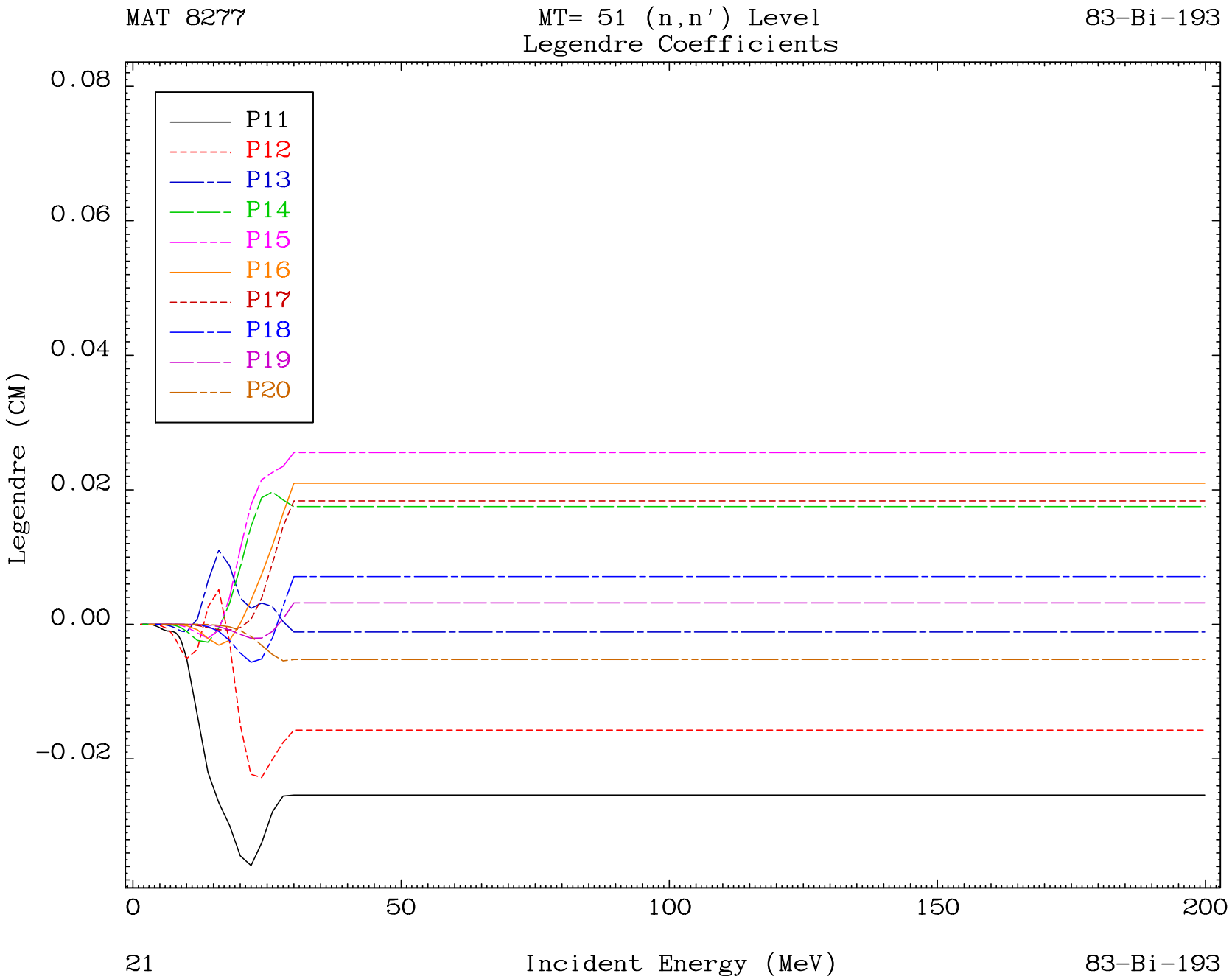

MAT 8277
Elastic
Legendre Coefficients
83-Bi-193
Legendre (CM)
0.0
0.2
0.4
0.6
0.8
0
10
20
30
16
Incident Energy (MeV)
83-Bi-193
P1
P2
P3
P4
P5
P6
P7
P8
P9

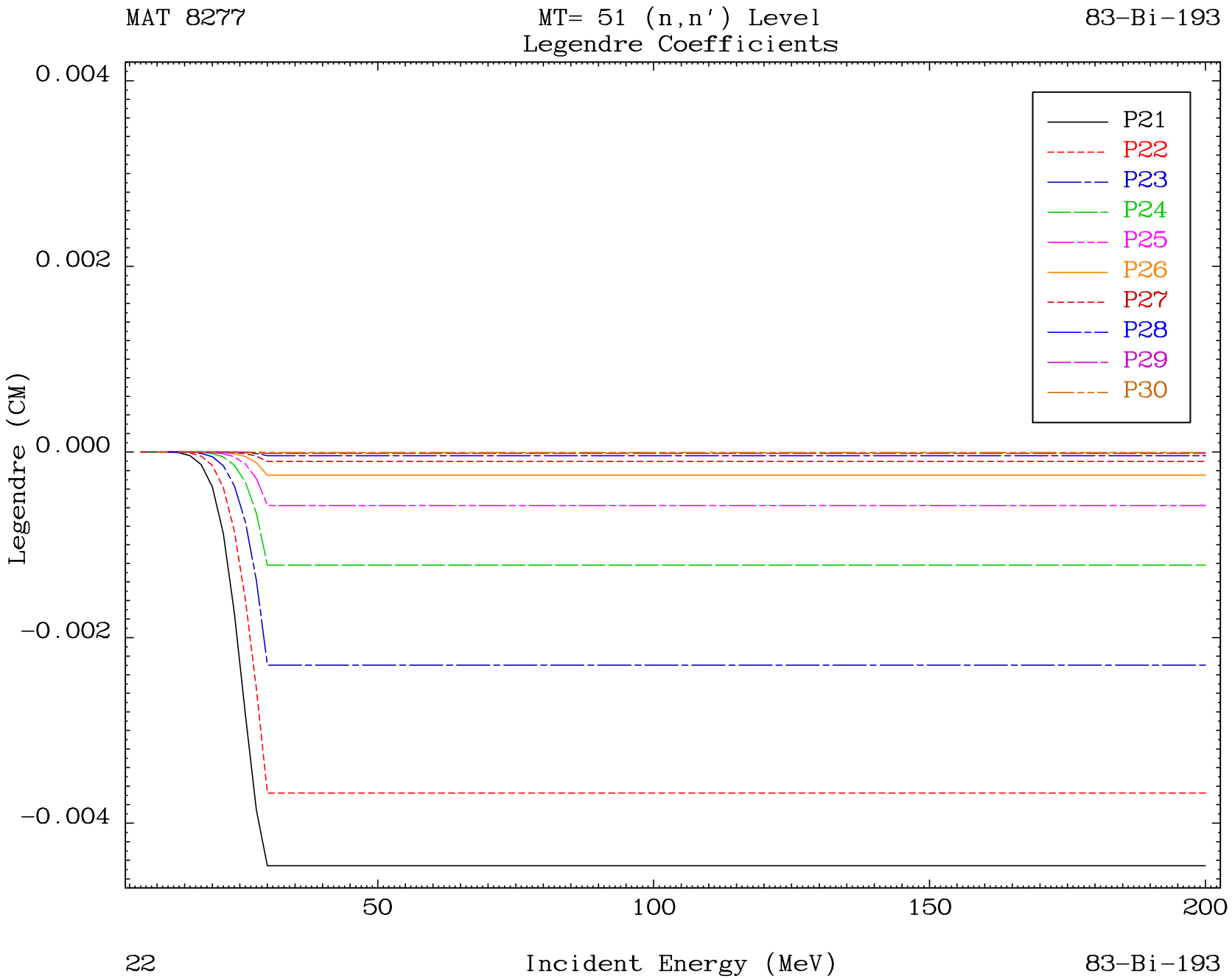

MAT 8277
Elastic
Legendre Coefficients
83-Bi-193
P10
P11
P12
P13
P14
P15
P16
P17
P18
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
5
10
15
20
25
30
17
Incident Energy (MeV)
83-Bi-193

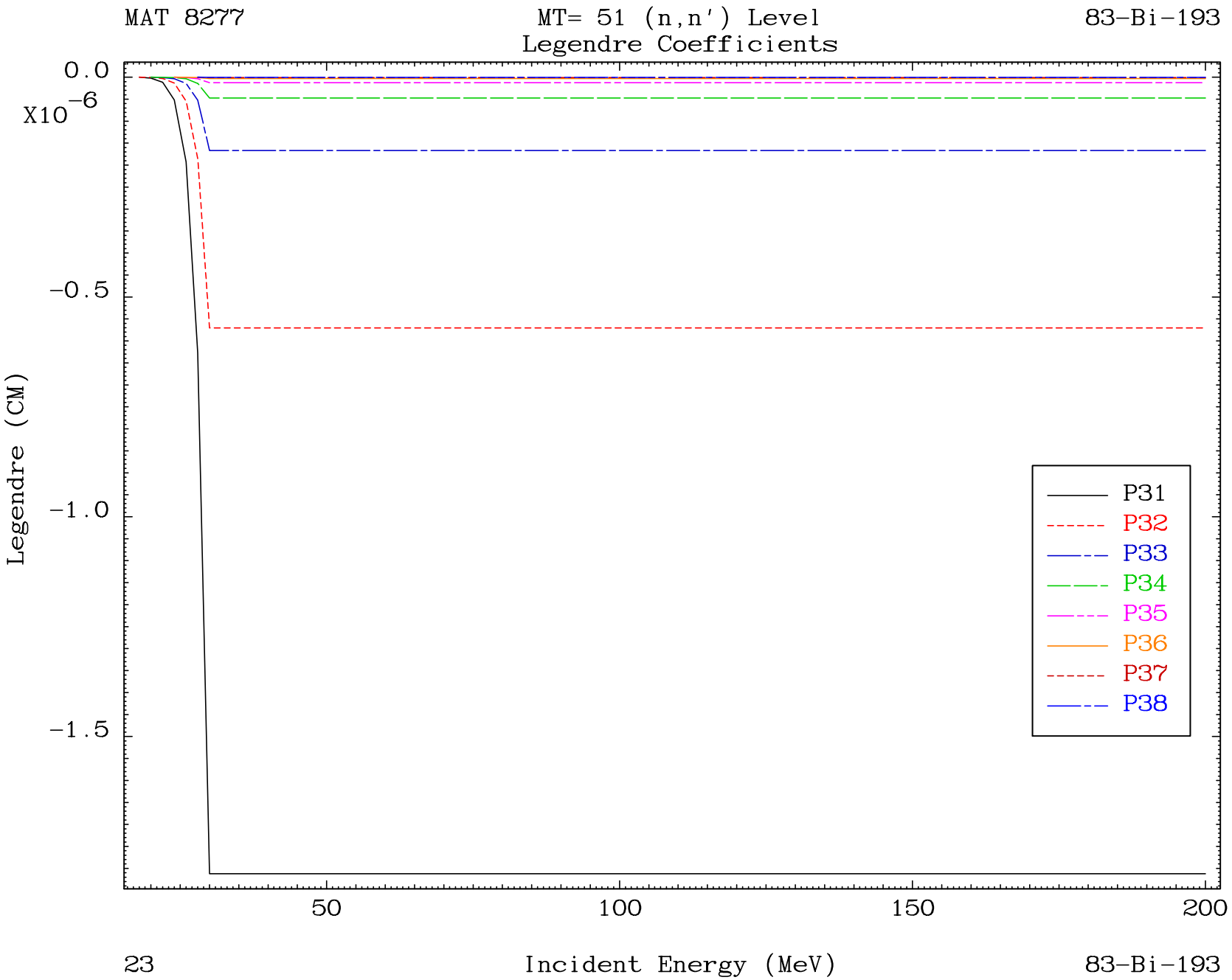

MAT 8277
Elastic
Legendre Coefficients
83-Bi-193
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.03
0.02
0.01
0.00
Legendre (CM)
10
15
20
25
30
18
Incident Energy (MeV)
83-Bi-193

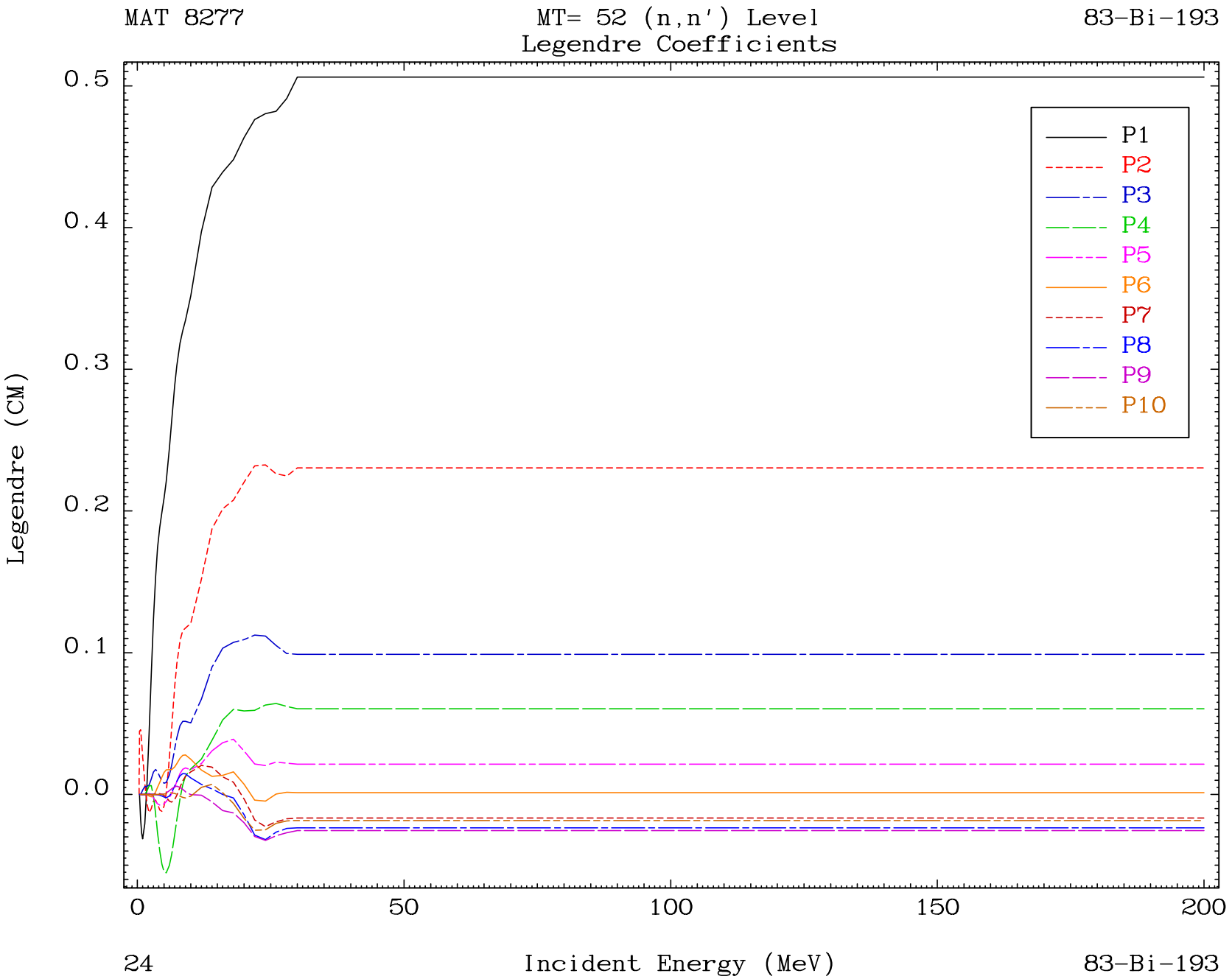

MAT 8277
Elastic
Legendre Coefficients
83-Bi-193
X10 −6
P28
P29
P30
P31
P32
P33
P34
Legendre (CM)
8
6
4
2
0
10
15
20
25
30
19
Incident Energy (MeV)
83-Bi-193

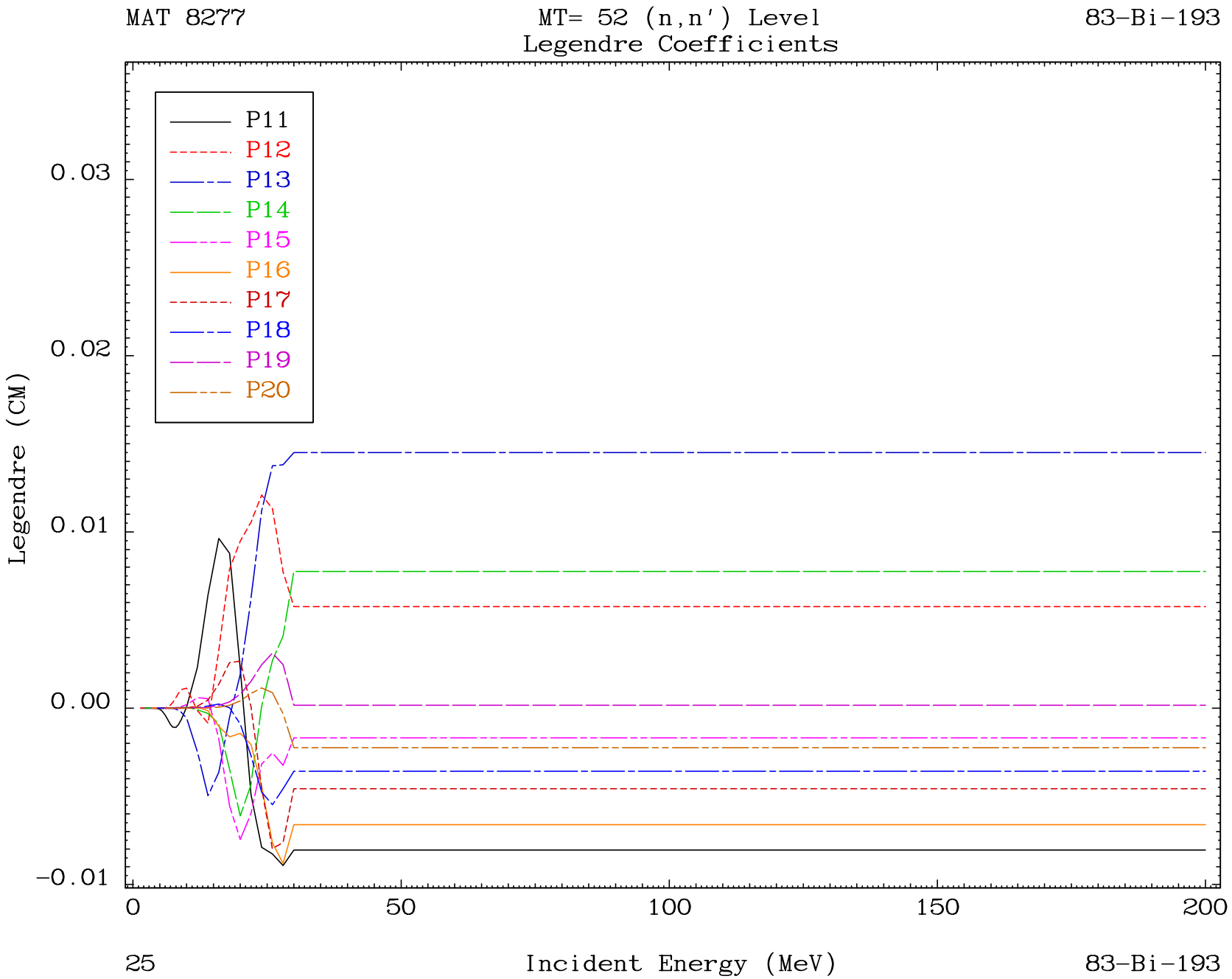

MAT 8277
MT= 51 (n,n') Level
Legendre Coefficients
83-Bi-193
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
0
50
100
150
200
20
Incident Energy (MeV)
83-Bi-193
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

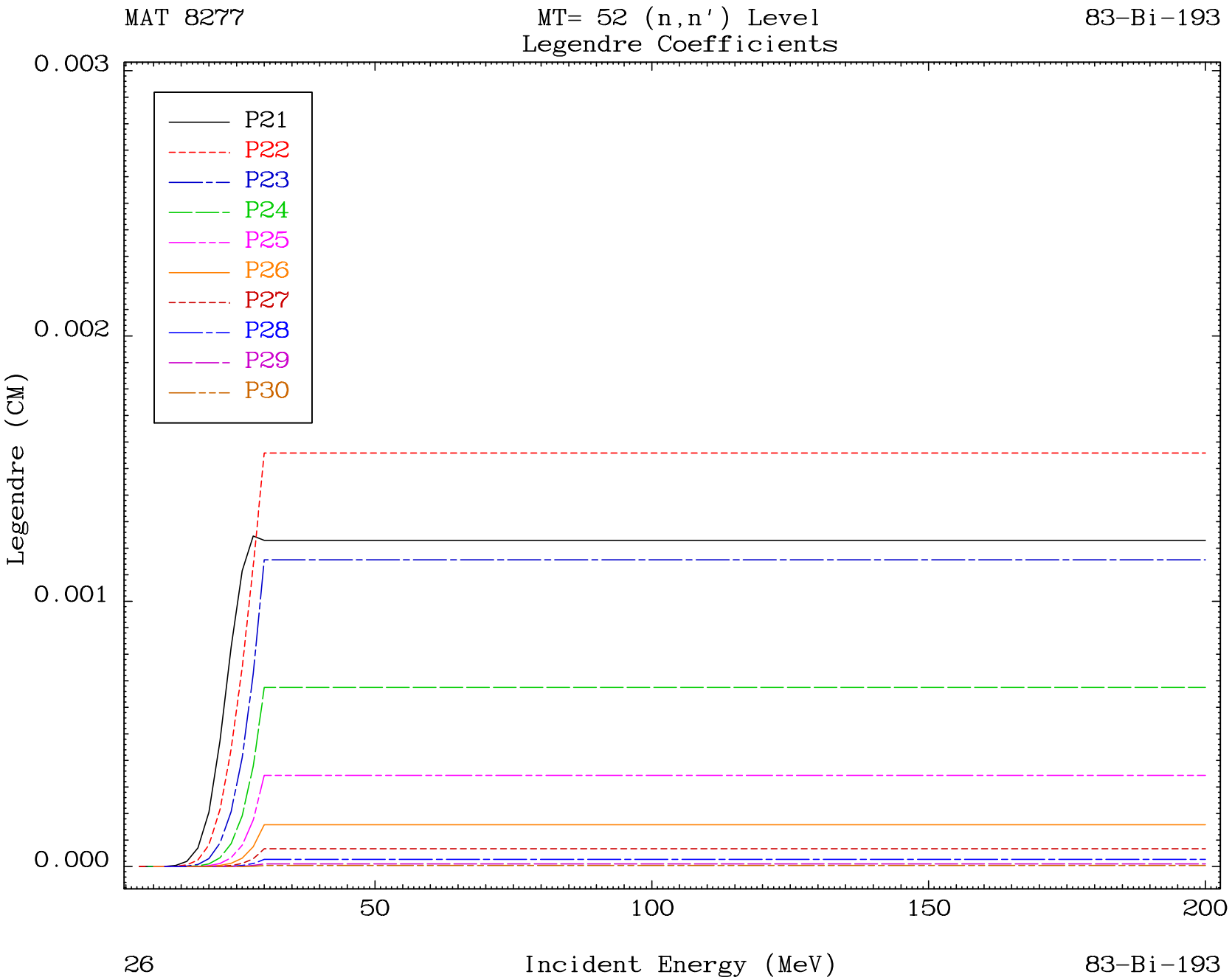

MAT 8277
MT= 51 (n,n') Level
Legendre Coefficients
83-Bi-193
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.08
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
21
Incident Energy (MeV)
83-Bi-193

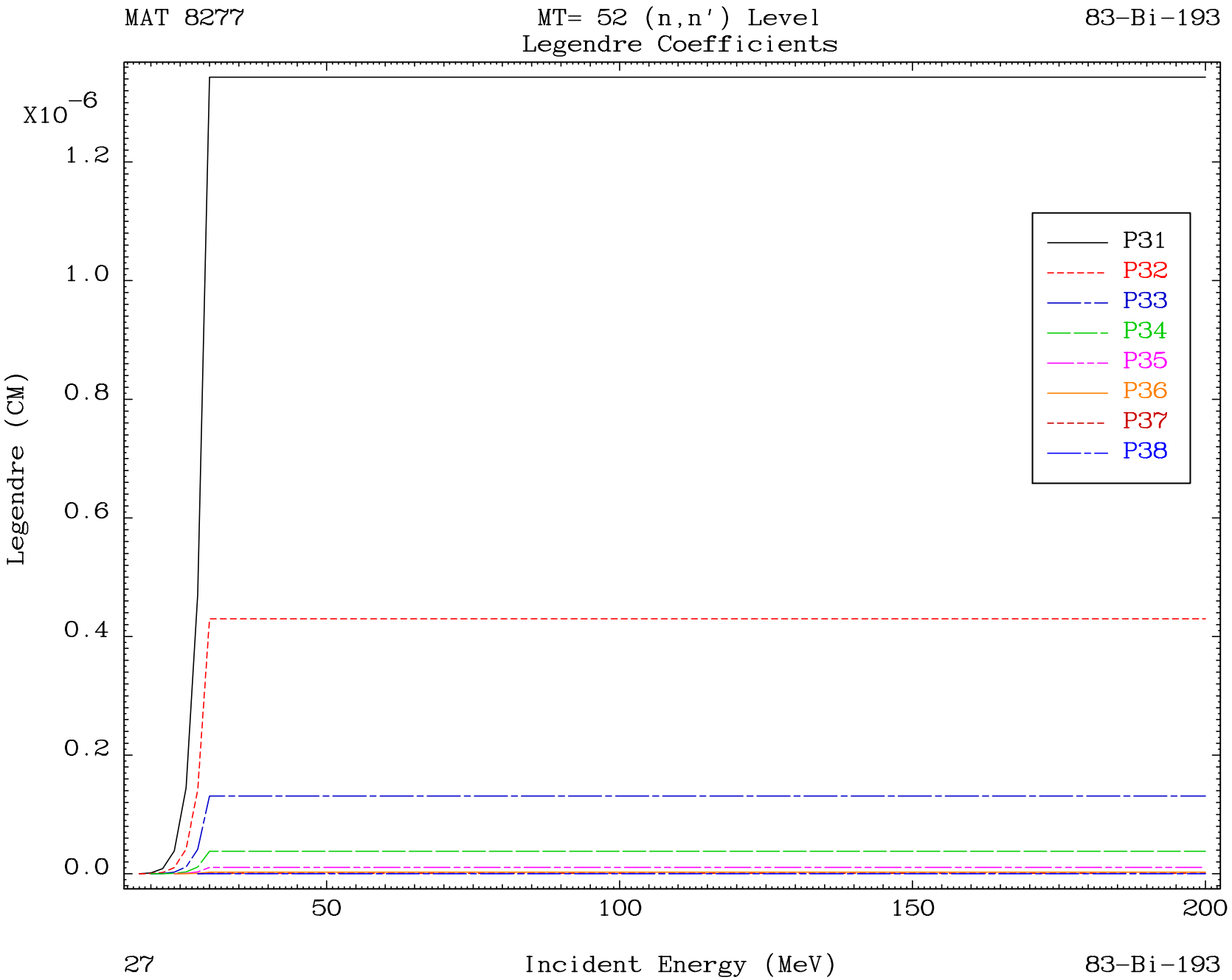

MAT 8277
MT= 51 (n,n') Level
Legendre Coefficients
83-Bi-193
0.004
0.002
0.000
-0.002
-0.004
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
50
100
150
200
22
Incident Energy (MeV)
83-Bi-193

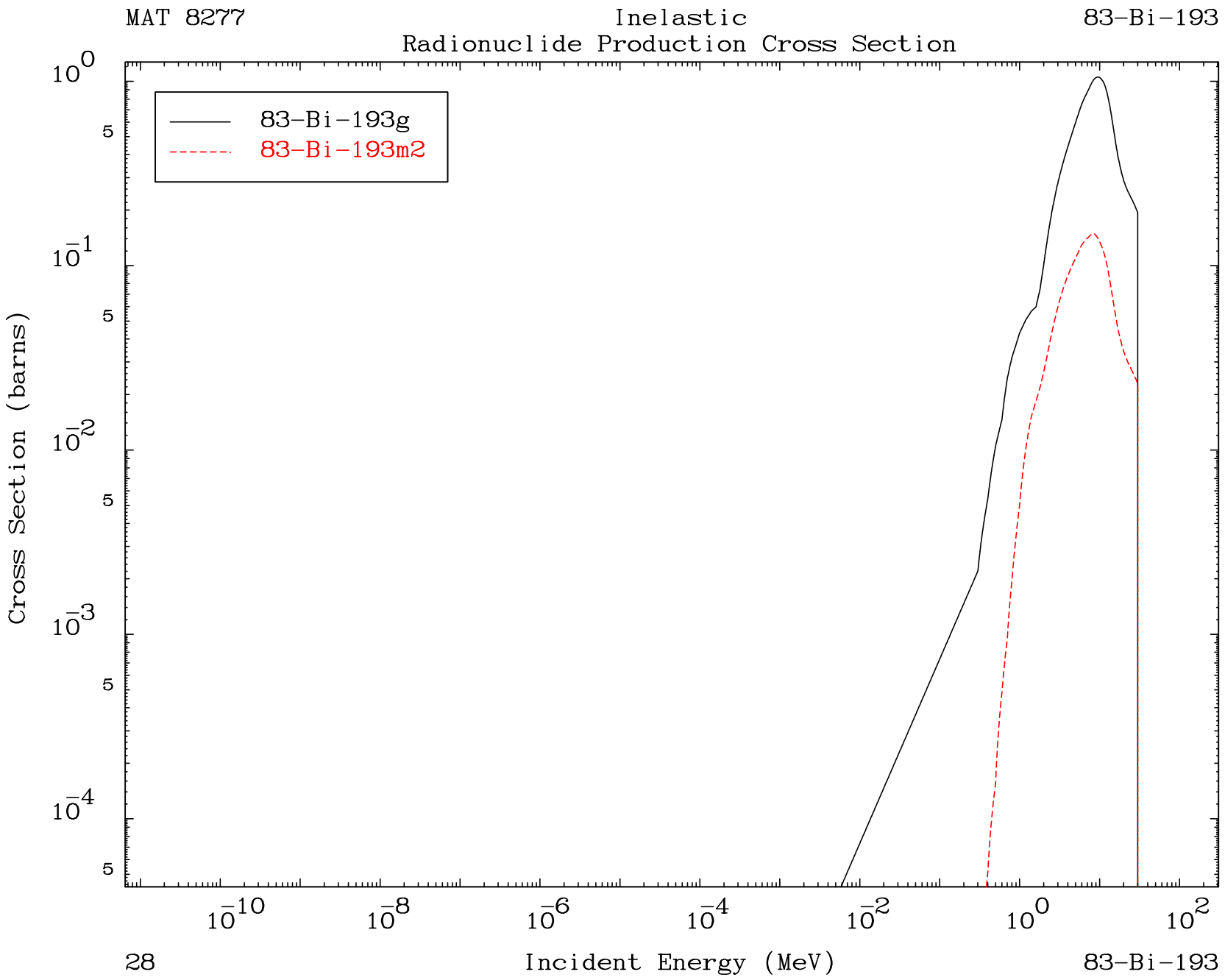

MAT 8277
MT= 51 (n,n') Level
Legendre Coefficients
83-Bi-193
0.0
X10^-6
-0.5
-1.0
-1.5
Legendre (CM)
50
100
150
200
23
Incident Energy (MeV)
83-Bi-193
P31
P32
P33
P34
P35
P36
P37
P38

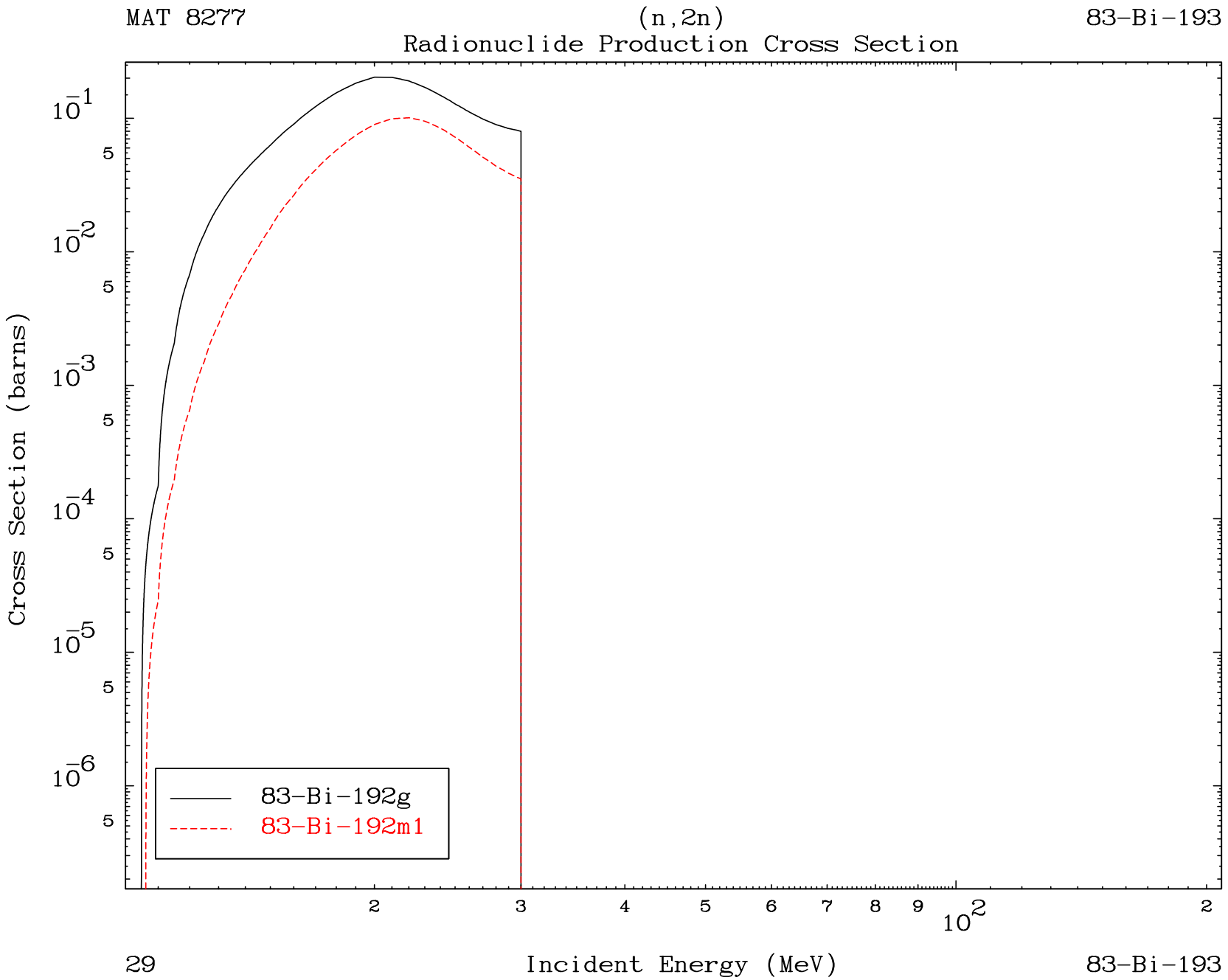

MAT 8277
MT= 52 (n,n') Level
Legendre Coefficients
83-Bi-193
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
24
Incident Energy (MeV)
83-Bi-193

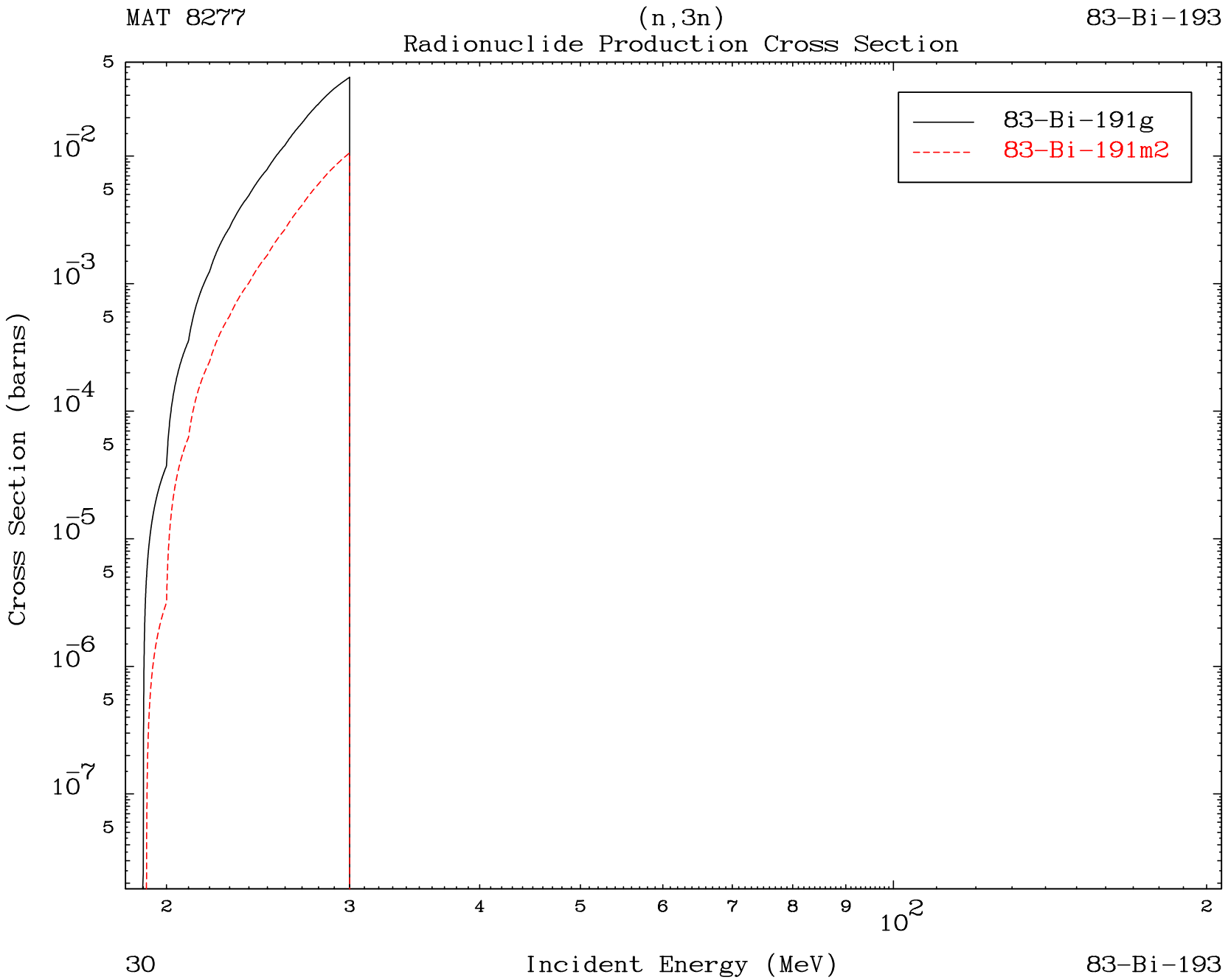

MAT 8277
MT= 52 (n,n') Level
Legendre Coefficients
83-Bi-193
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.03
0.02
0.01
0.00
-0.01
Legendre (CM)
0
50
100
150
200
25
Incident Energy (MeV)
83-Bi-193

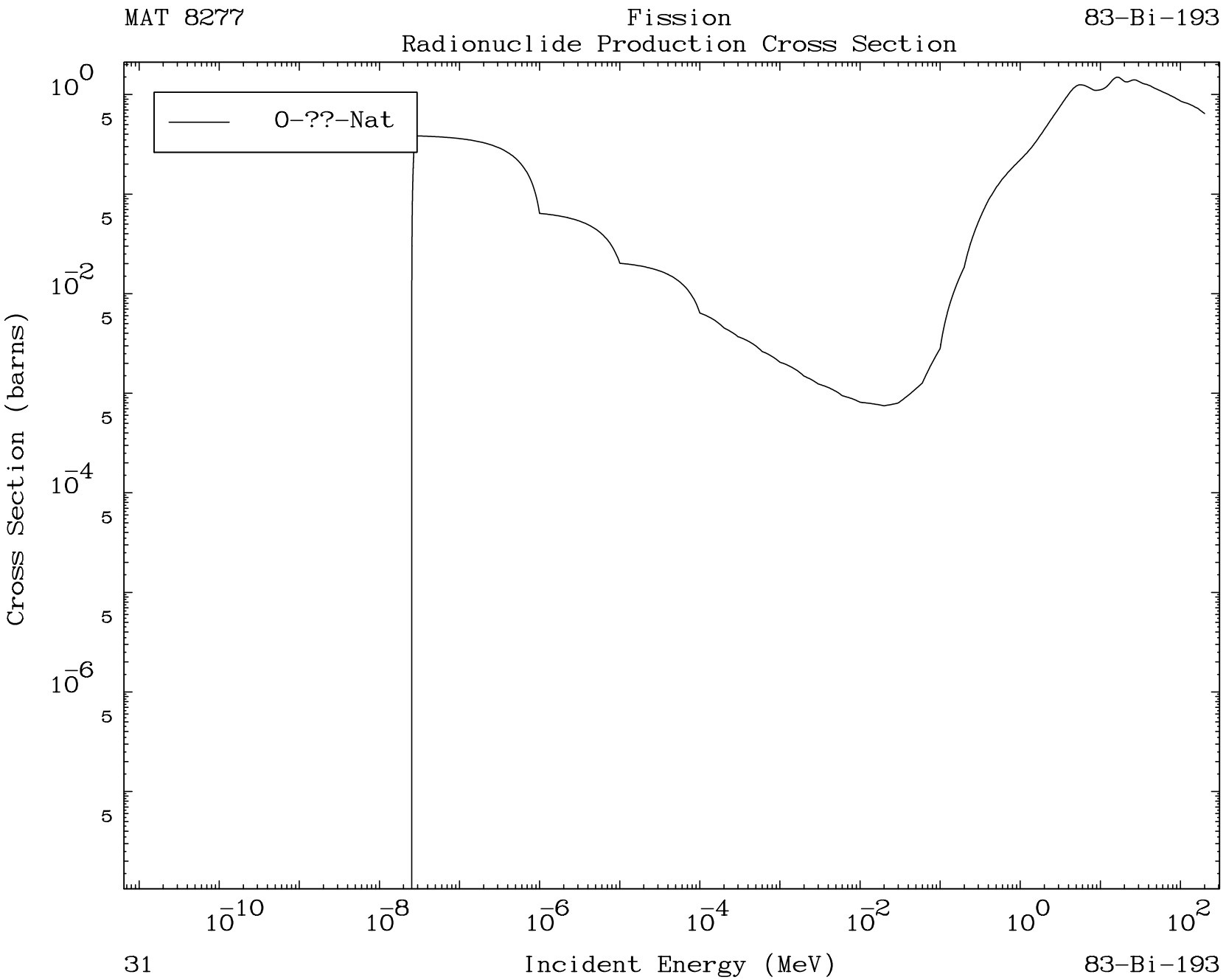

MAT 8277
MT= 52 (n,n') Level
Legendre Coefficients
83-Bi-193
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
0.003
0.002
0.001
0.000
Legendre (CM)
50
100
150
200
26
Incident Energy (MeV)
83-Bi-193

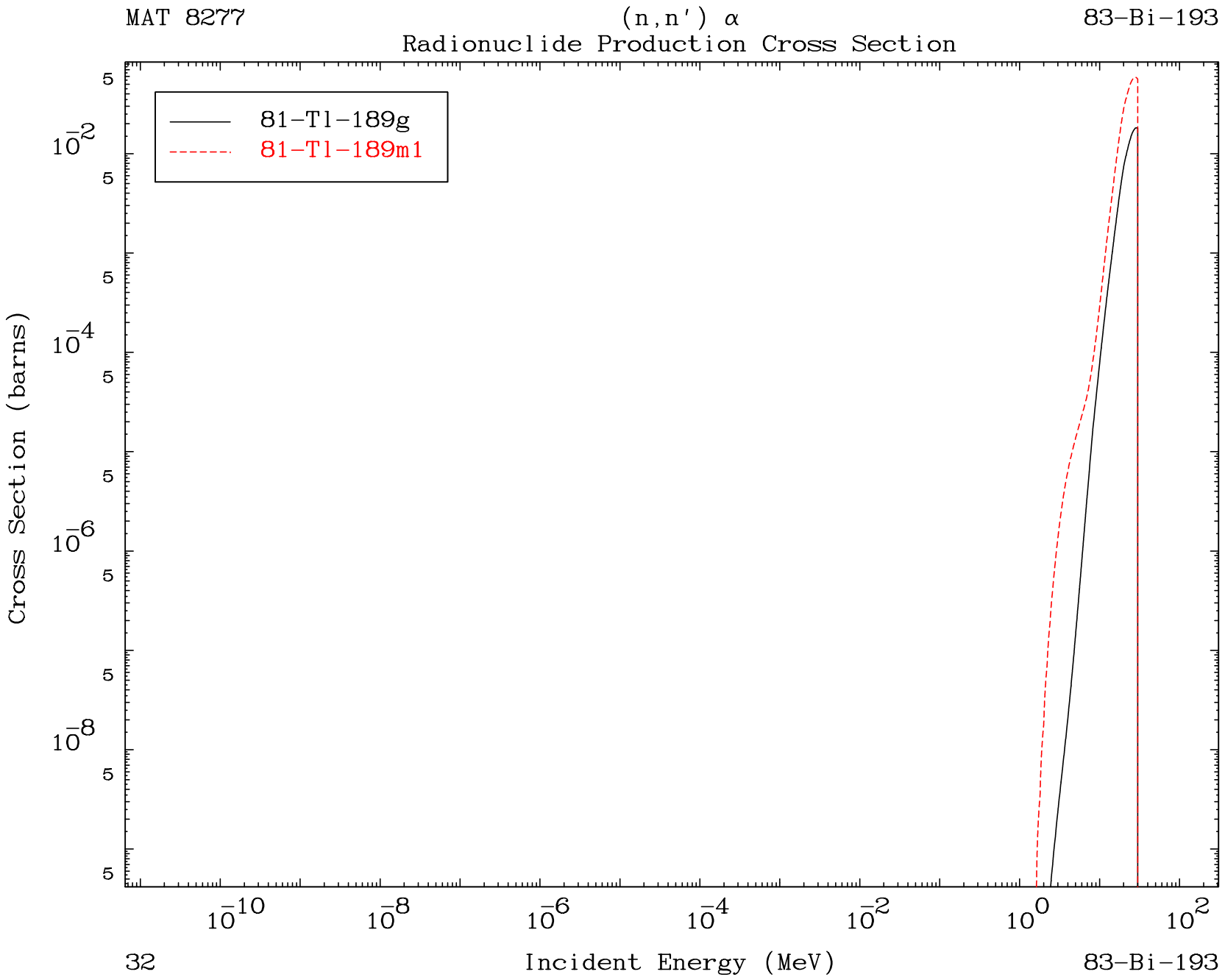

MAT 8277
MT= 52 (n,n') Level
Legendre Coefficients
83-Bi-193
X10 −6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
27
Incident Energy (MeV)
83-Bi-193

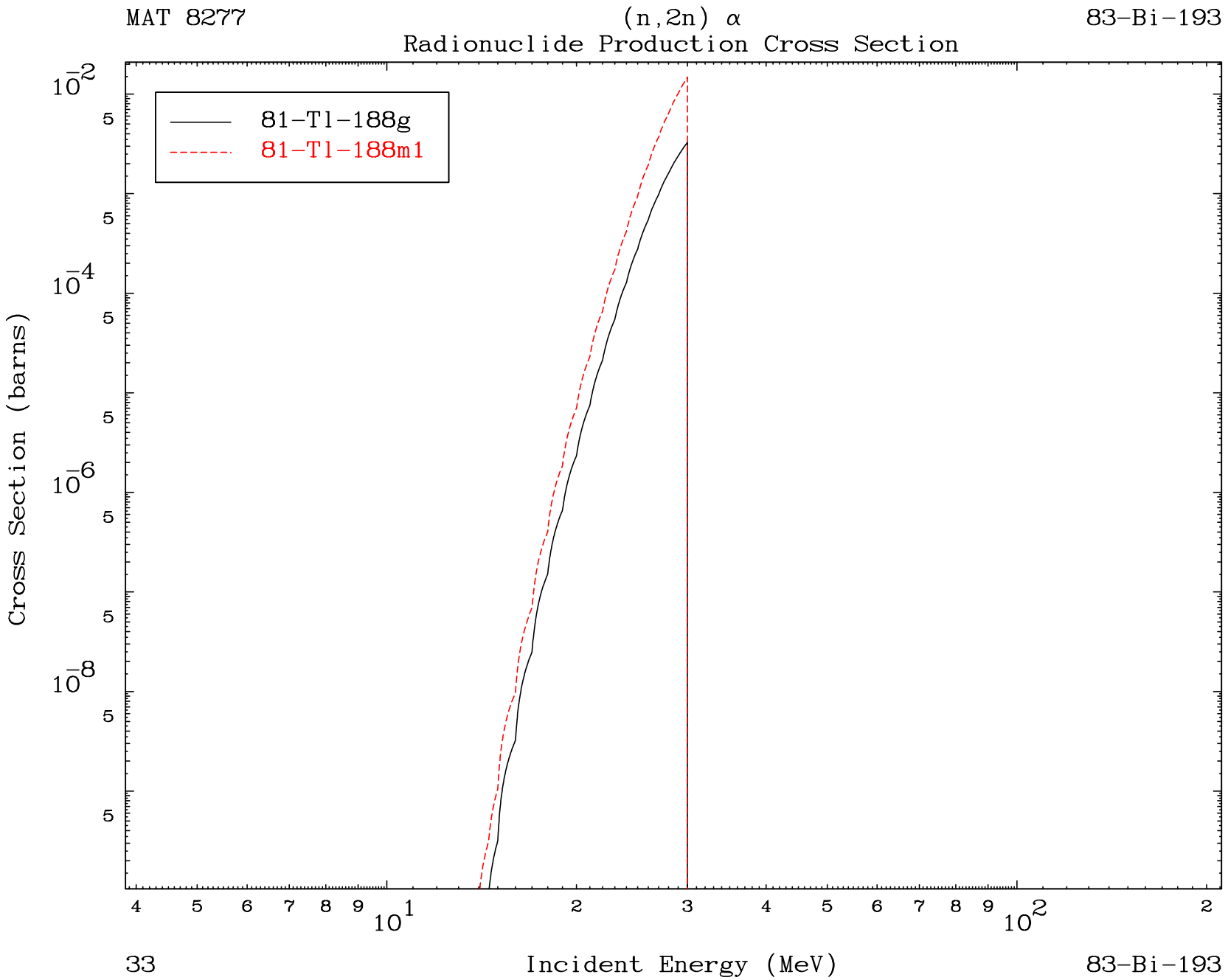

MAT 8277
Inelastic
83-Bi-193
Radionuclide Production Cross Section
83-Bi-193g
83-Bi-193m2
Cross Section (barns)
Incident Energy (MeV)
28
83-Bi-193

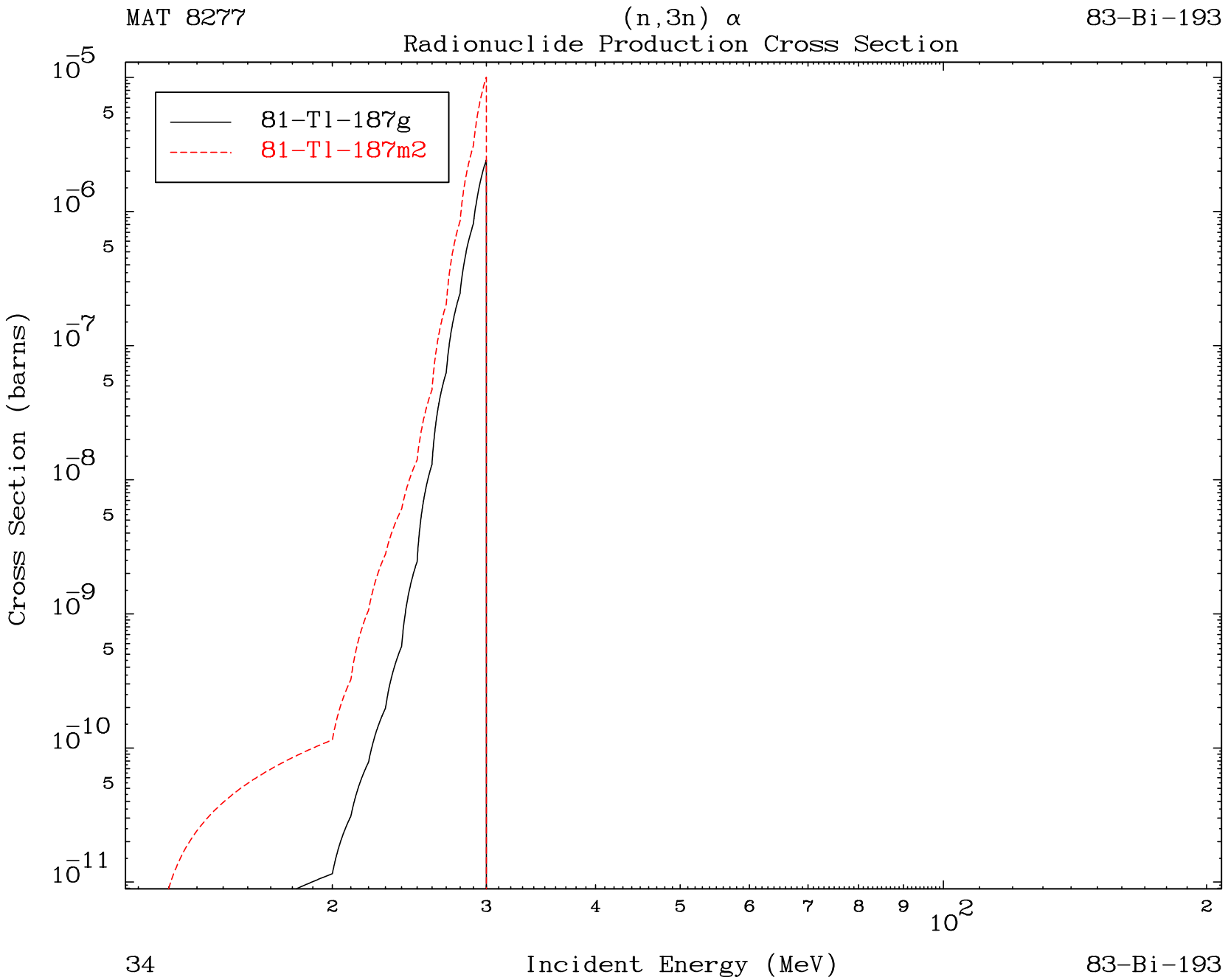

MAT 8277
(n,2n)
83-Bi-193
Radionuclide Production Cross Section
Cross Section (barns)
10-1
10-2
10-3
10-4
10-5
10-6
5
2
3
4
5
6
7
8
9
10 2
83-Bi-192g
83-Bi-192m1
29
Incident Energy (MeV)
83-Bi-193

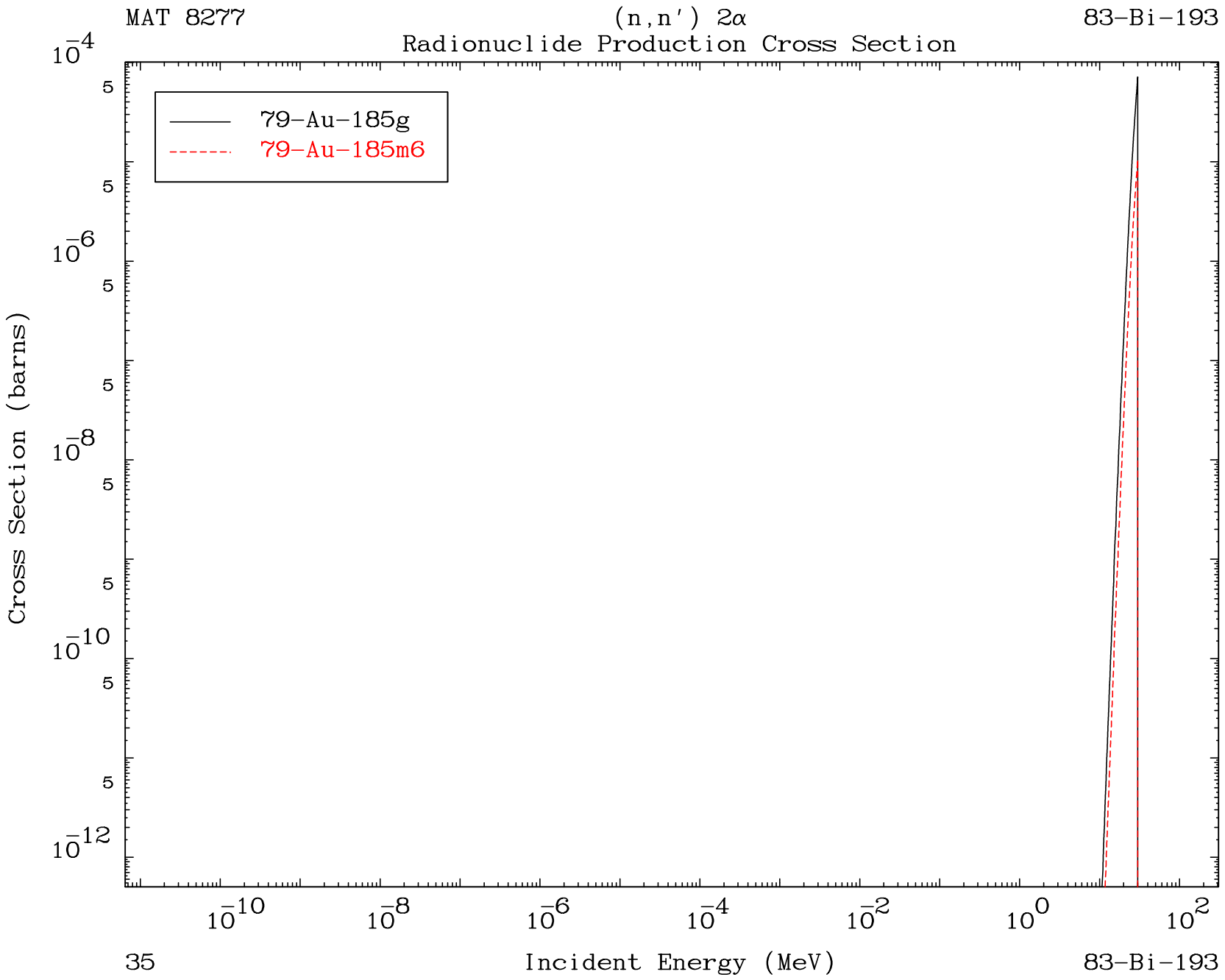

MAT 8277
(n,3n)
83-Bi-193
Radionuclide Production Cross Section
83-Bi-191g
83-Bi-191m2
Cross Section (barns)
Incident Energy (MeV)
30
83-Bi-193

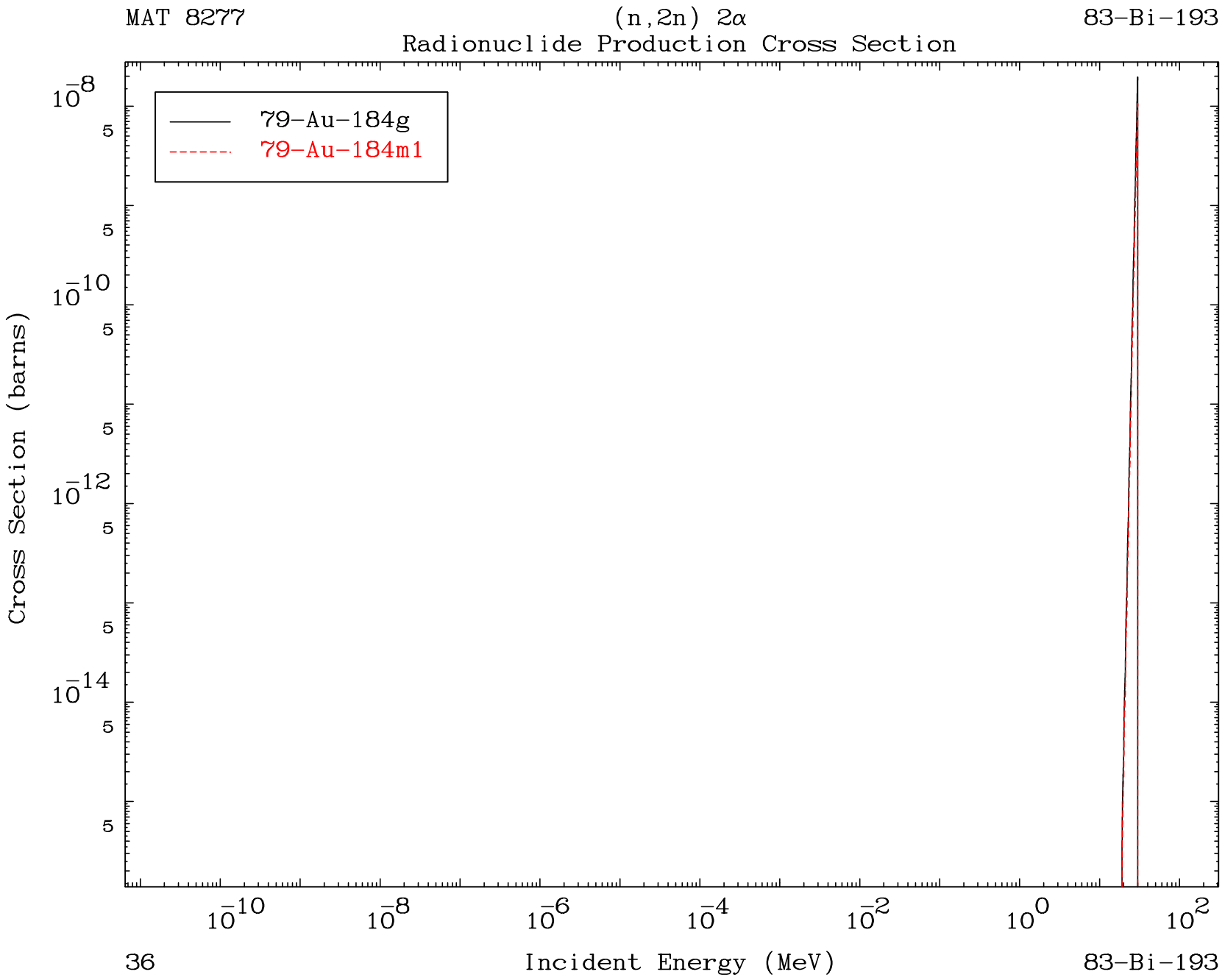

MAT 8277
Fission
83-Bi-193
Radionuclide Production Cross Section
0-??-Nat
Cross Section (barns)
Incident Energy (MeV)
31
83-Bi-193

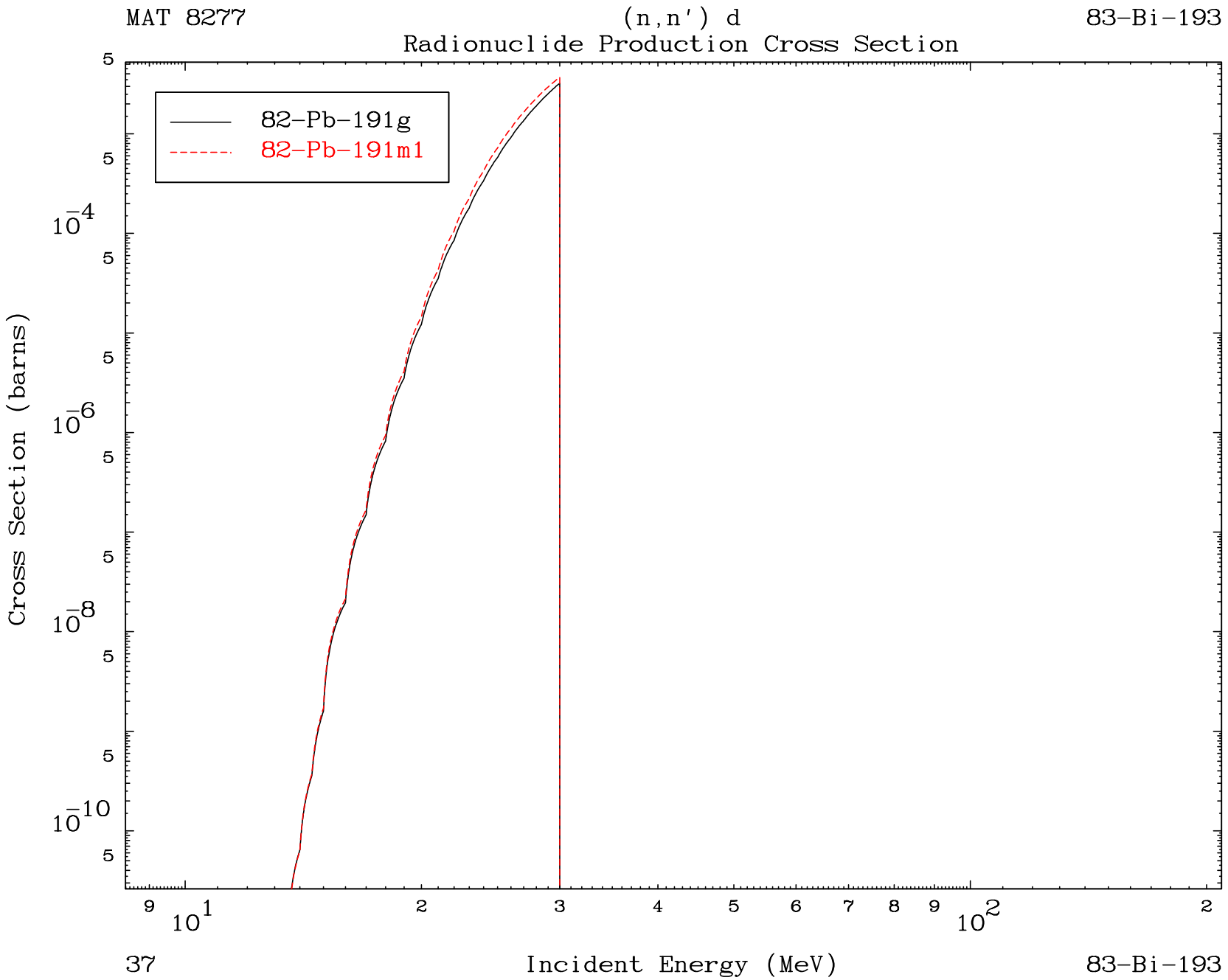

MAT 8277
(n,n') α
83-Bi-193
Radionuclide Production Cross Section
81-Tl-189g
81-Tl-189m1
Cross Section (barns)
Incident Energy (MeV)
32
83-Bi-193

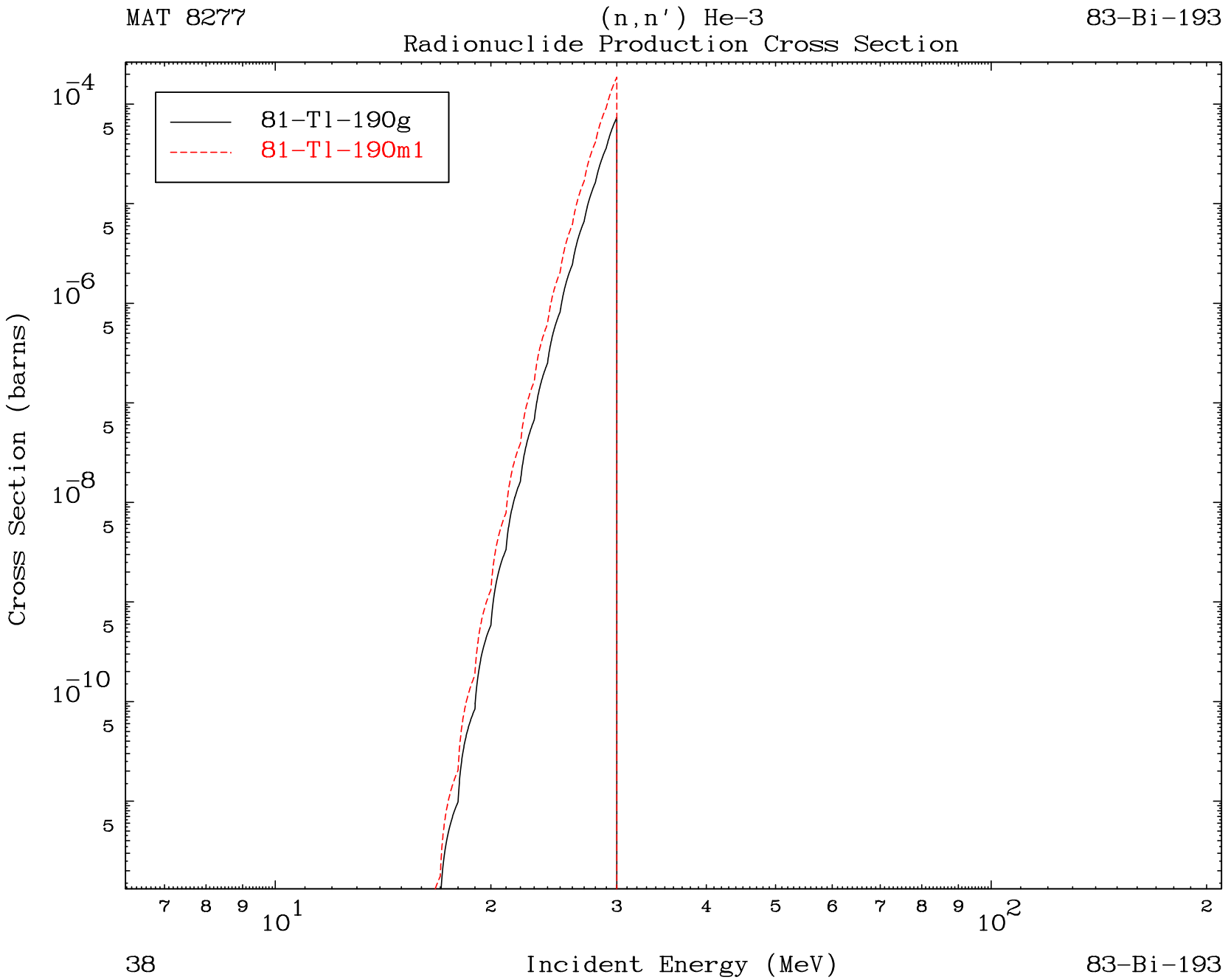

MAT 8277
(n,2n) α
83-Bi-193
Radionuclide Production Cross Section
81-Tl-188g
81-Tl-188m1
Cross Section (barns)
Incident Energy (MeV)
33
83-Bi-193

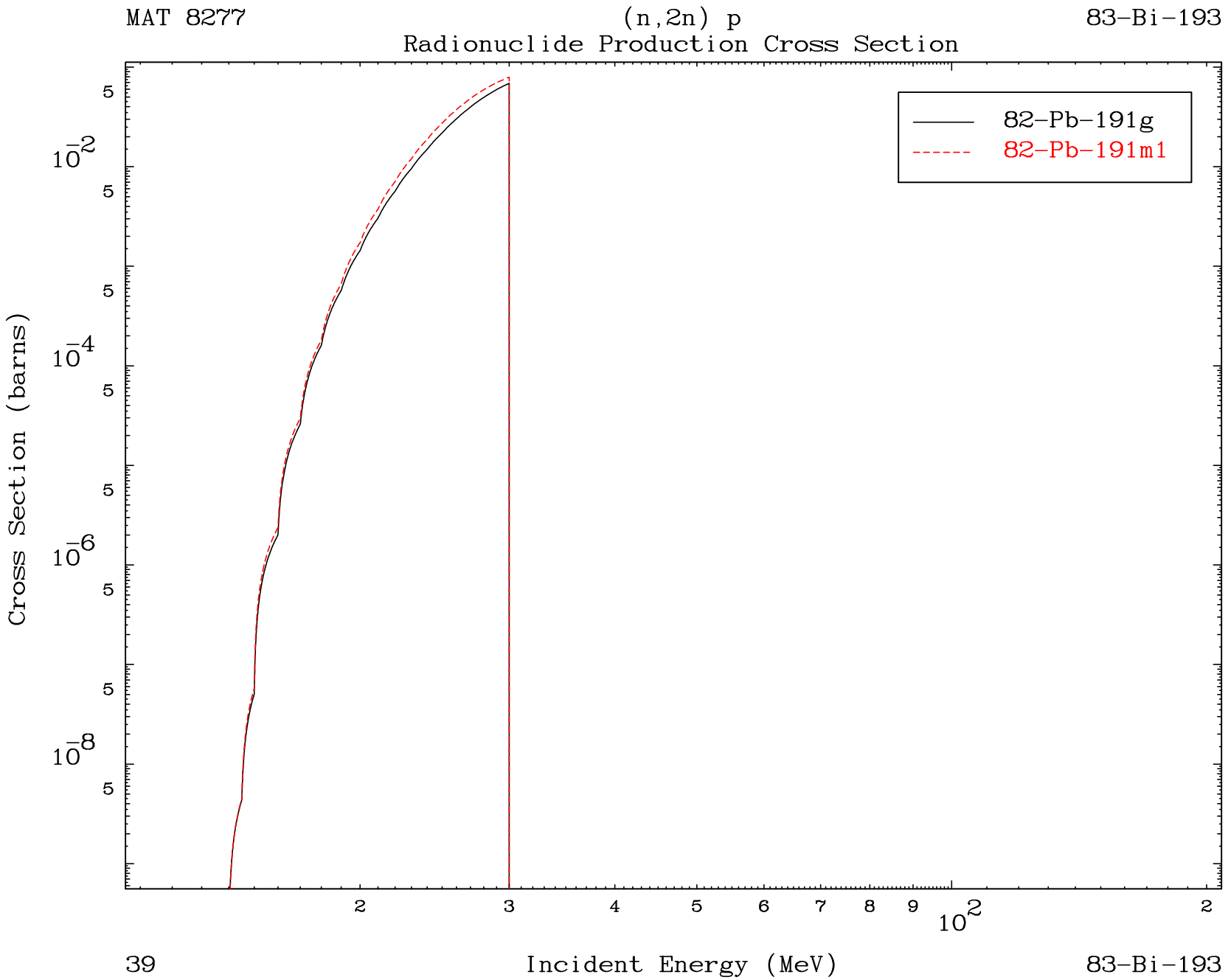

MAT 8277
(n,3n) α
83-Bi-193
Radionuclide Production Cross Section
81-Tl-187g
81-Tl-187m2
Cross Section (barns)
10-5
10-6
10-7
10-8
10-9
10-10
10-11
2
3
4
5
6
7
8
9
10 2
Incident Energy (MeV)
34
83-Bi-193

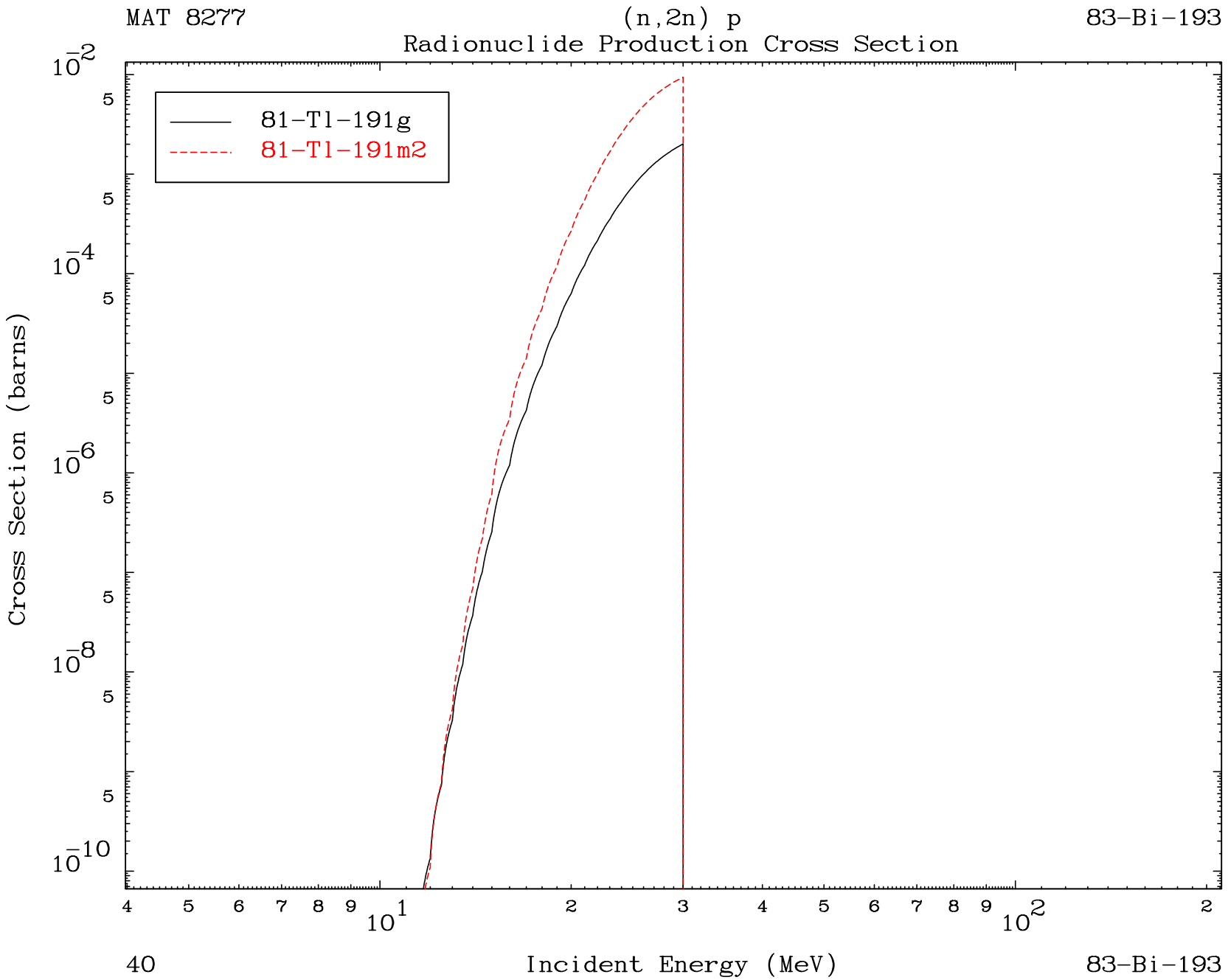

MAT 8277
(n,n') 2α
83-Bi-193
Radionuclide Production Cross Section
79-Au-185g
79-Au-185m6
Cross Section (barns)
Incident Energy (MeV)
35
83-Bi-193

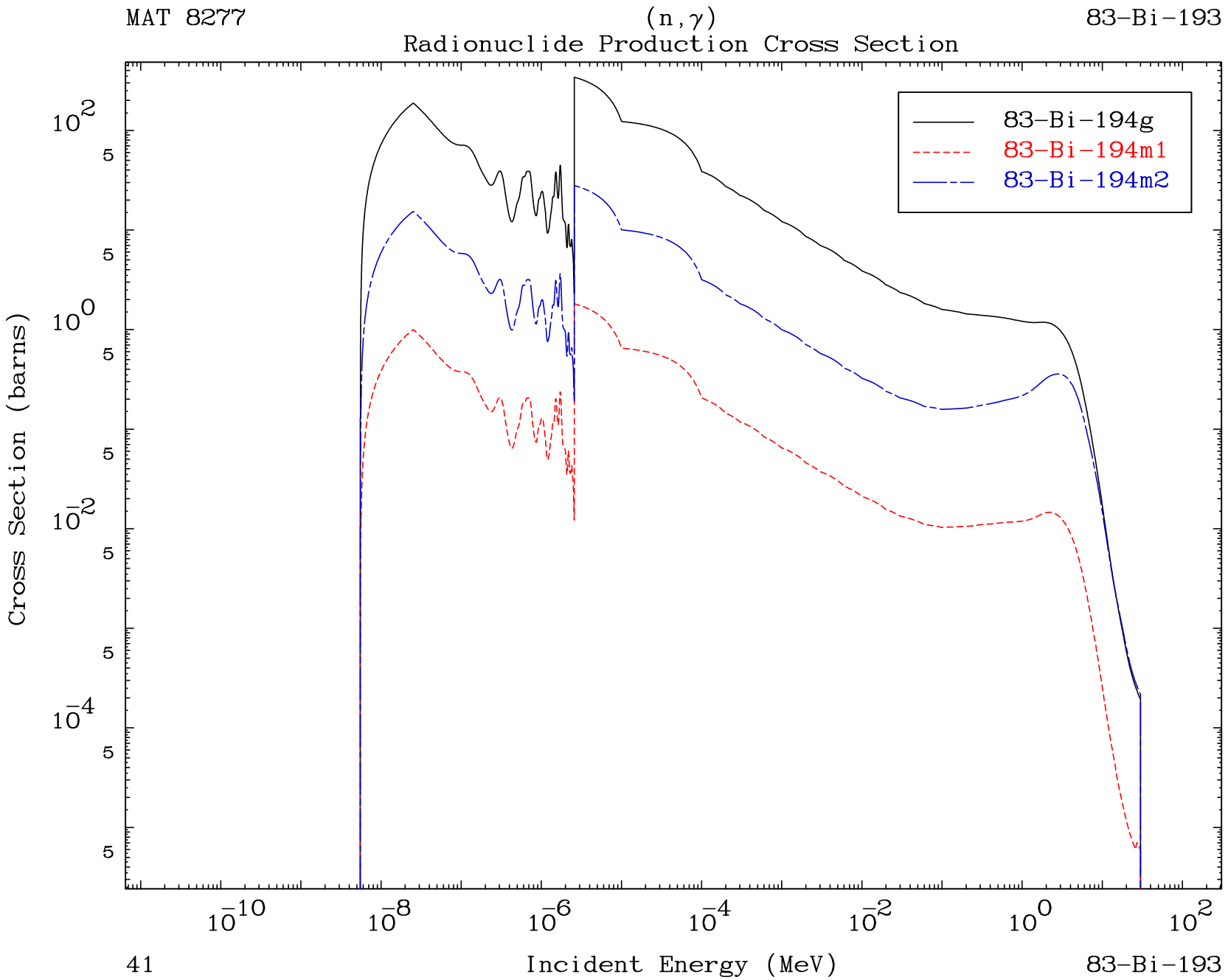

MAT 8277
(n,2n) 2α
83-Bi-193
Radionuclide Production Cross Section
79-Au-184g
79-Au-184m1
Cross Section (barns)
10^-8
5
10^-10
5
10^-12
5
10^-14
5
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
36
Incident Energy (MeV)
83-Bi-193

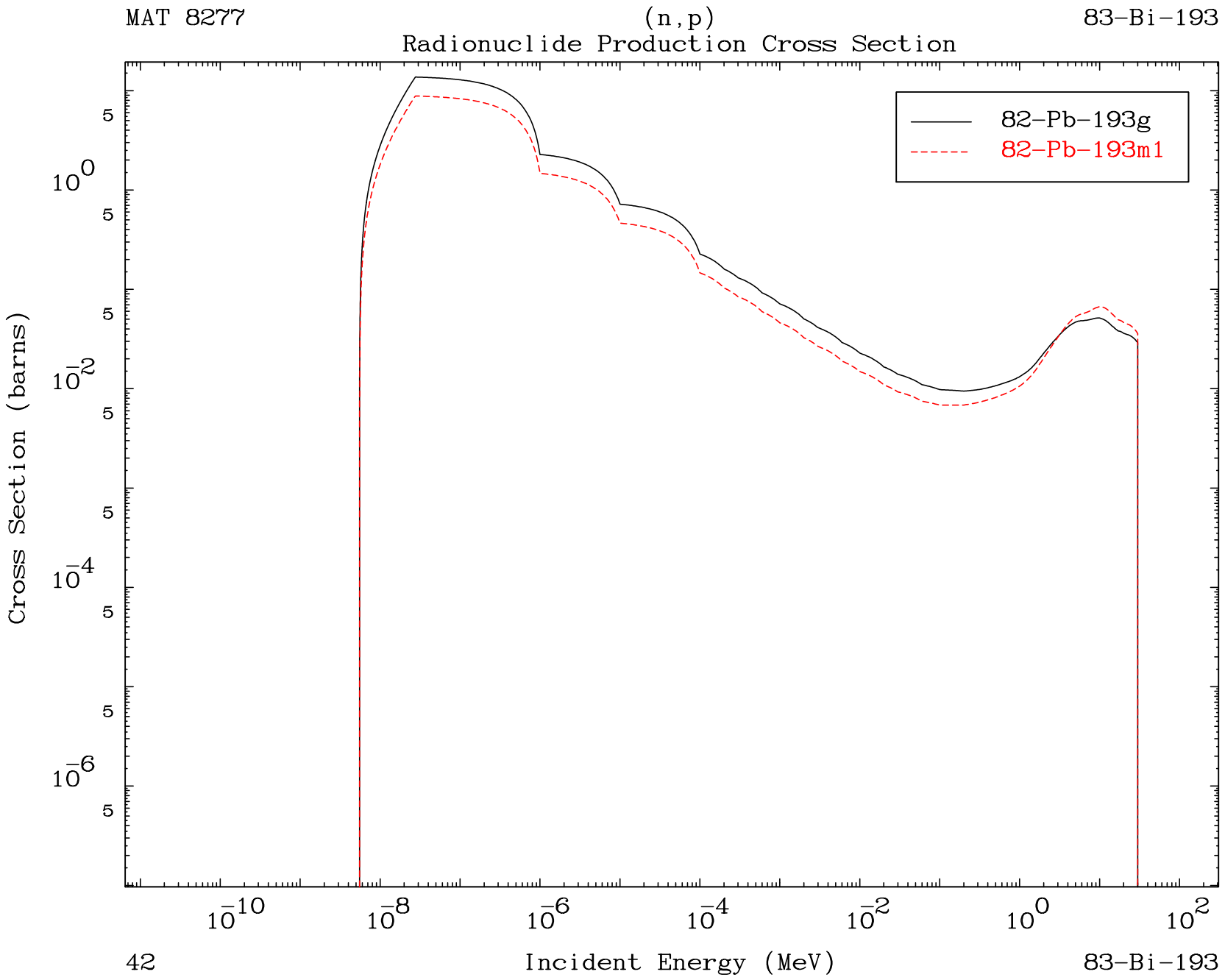

MAT 8277
(n,n') d
83-Bi-193
Radionuclide Production Cross Section
82-Pb-191g
82-Pb-191m1
Cross Section (barns)
Incident Energy (MeV)
37
83-Bi-193

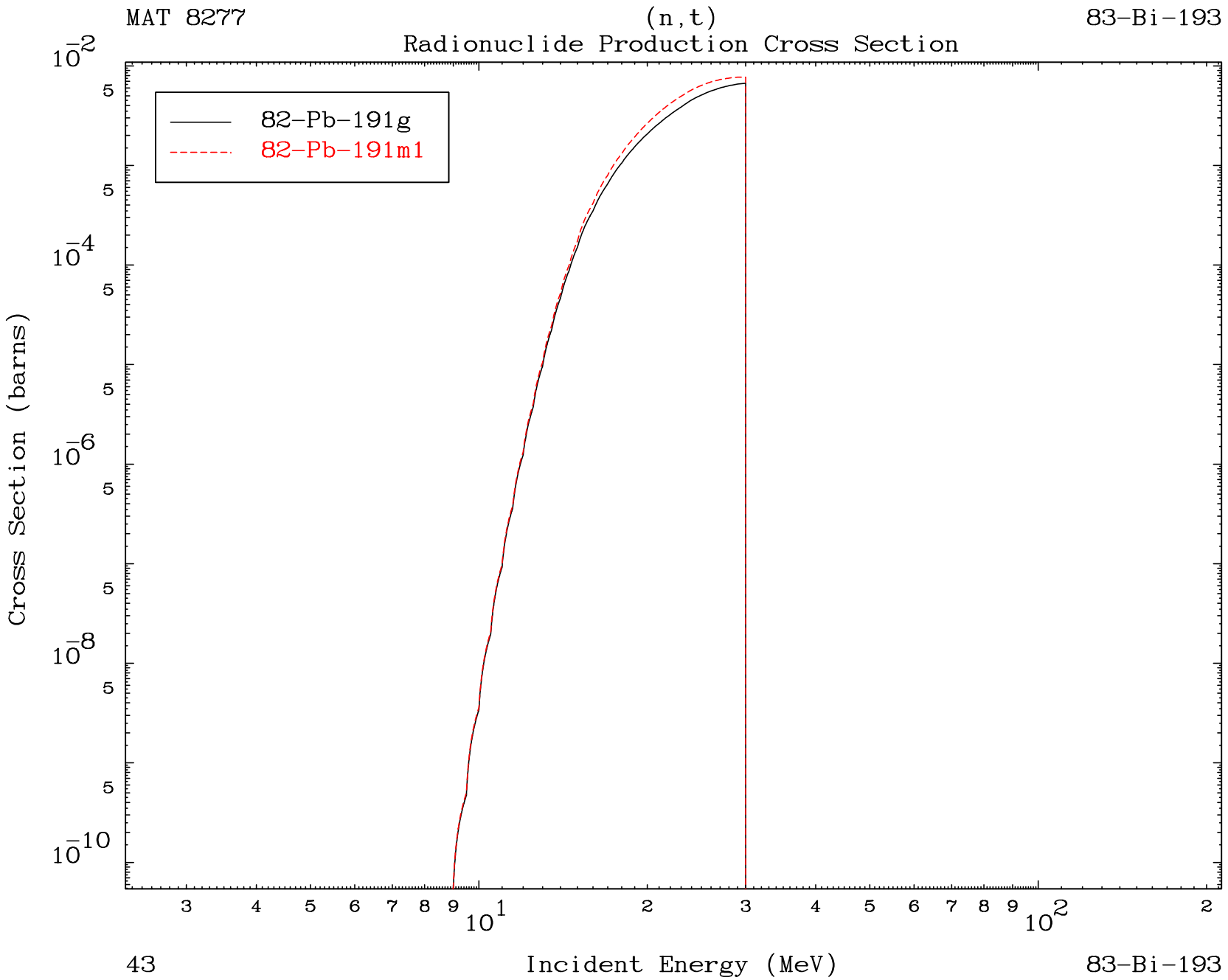

MAT 8277
(n,n') He-3
83-Bi-193
Radionuclide Production Cross Section
81-Tl-190g
81-Tl-190m1
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
5
7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
38
Incident Energy (MeV)
83-Bi-193

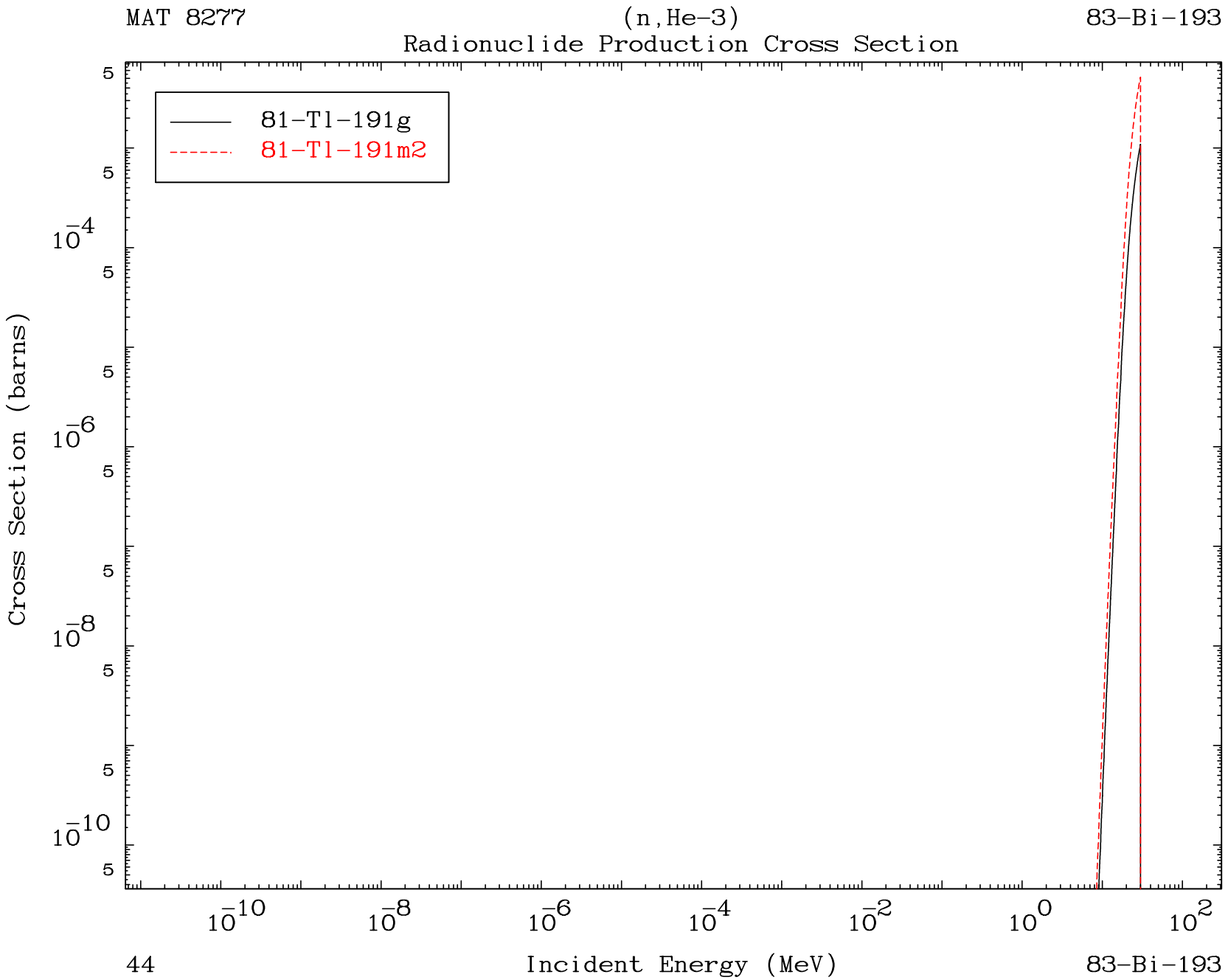

MAT 8277
(n,2n) p
83-Bi-193
Radionuclide Production Cross Section
82-Pb-191g
82-Pb-191m1
Cross Section (barns)
Incident Energy (MeV)
39
83-Bi-193

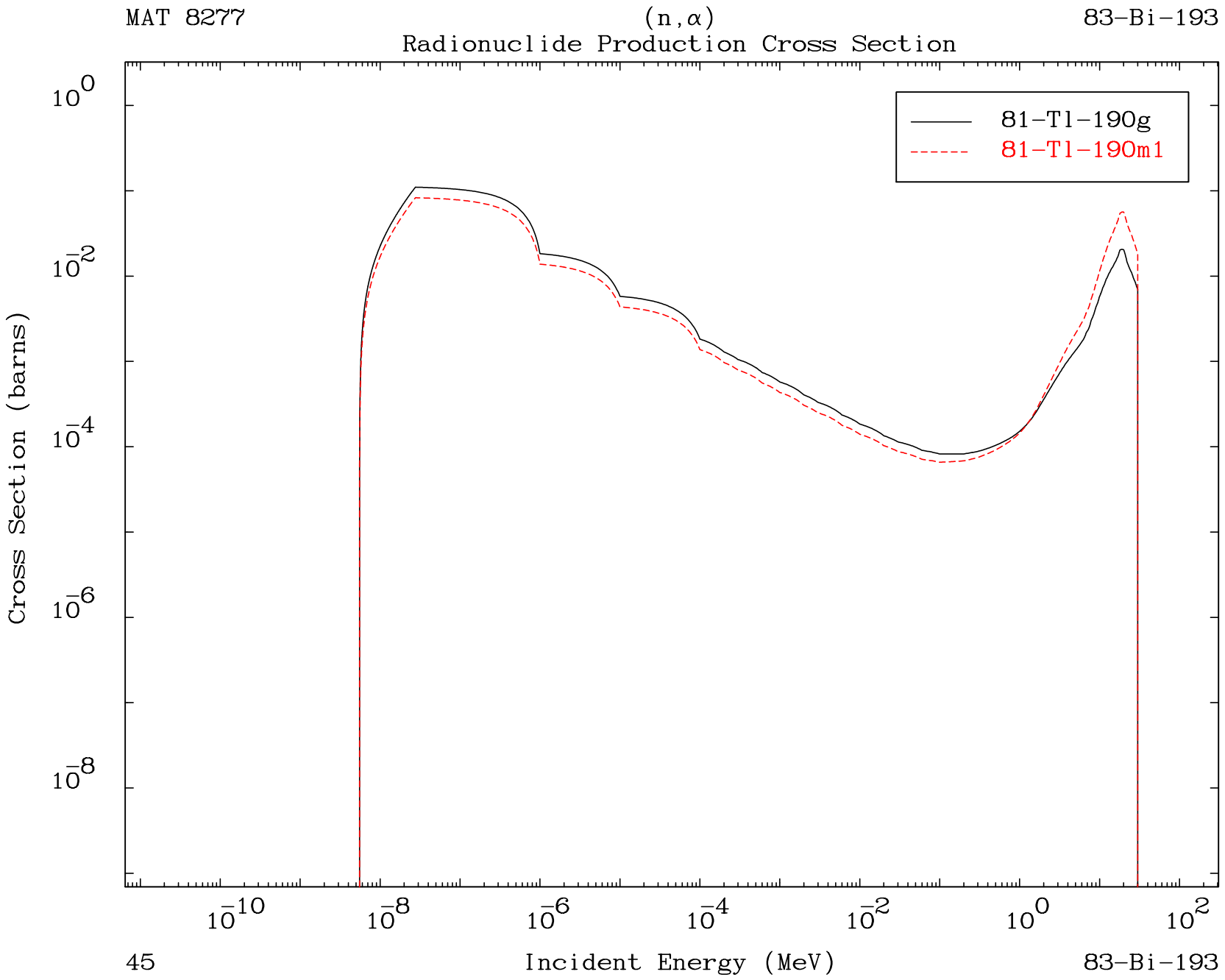

MAT 8277
(n,2n) p
83-Bi-193
Radionuclide Production Cross Section
81-Tl-191g
81-Tl-191m2
Cross Section (barns)
Incident Energy (MeV)
40
83-Bi-193

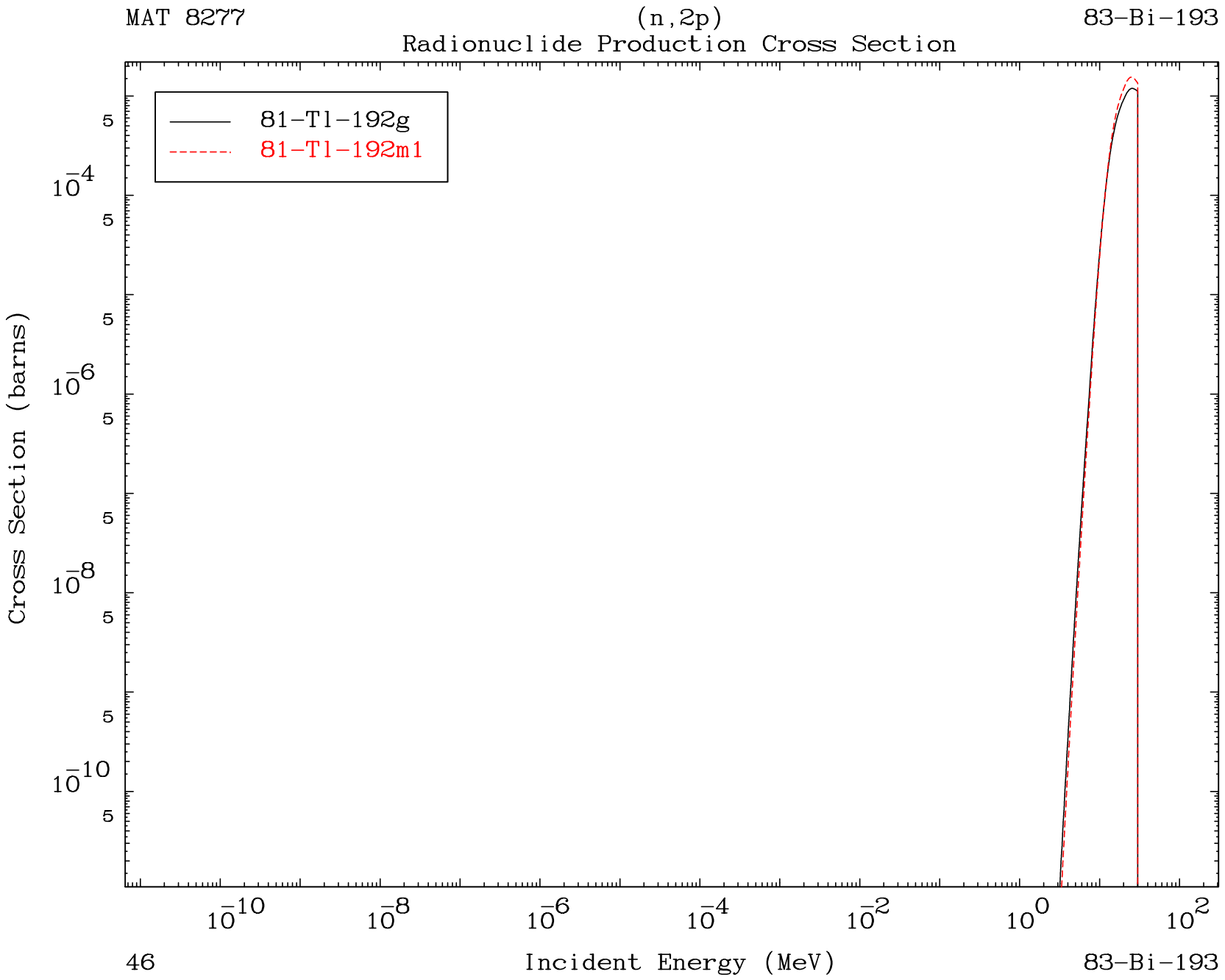

MAT 8277
(n,γ)
83-Bi-193
Radionuclide Production Cross Section
83-Bi-194g
83-Bi-194m1
83-Bi-194m2
Cross Section (barns)
Incident Energy (MeV)
41
83-Bi-193

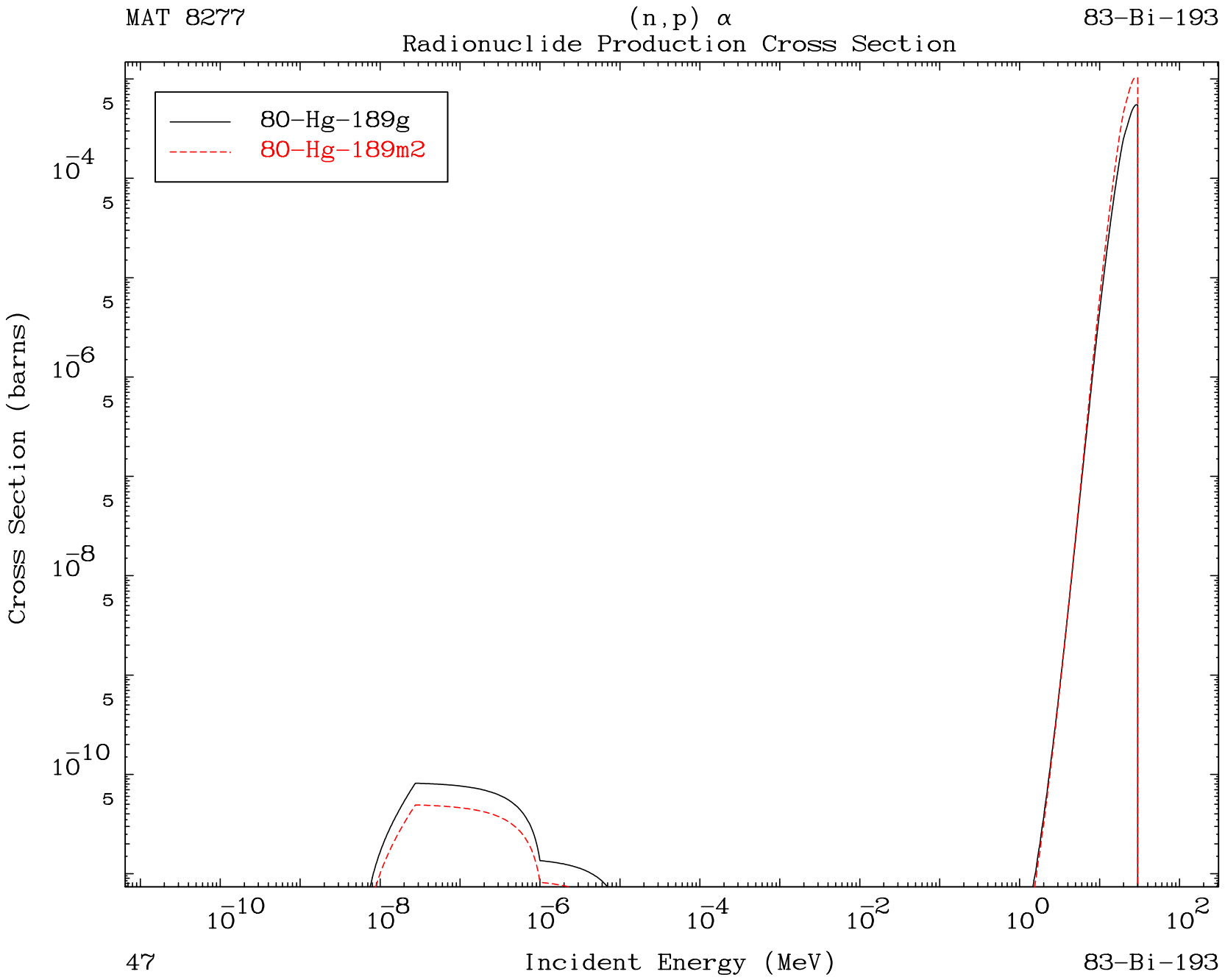

MAT 8277
(n,p)
83-Bi-193
Radionuclide Production Cross Section
82-Pb-193g
82-Pb-193m1
Cross Section (barns)
Incident Energy (MeV)
42
83-Bi-193

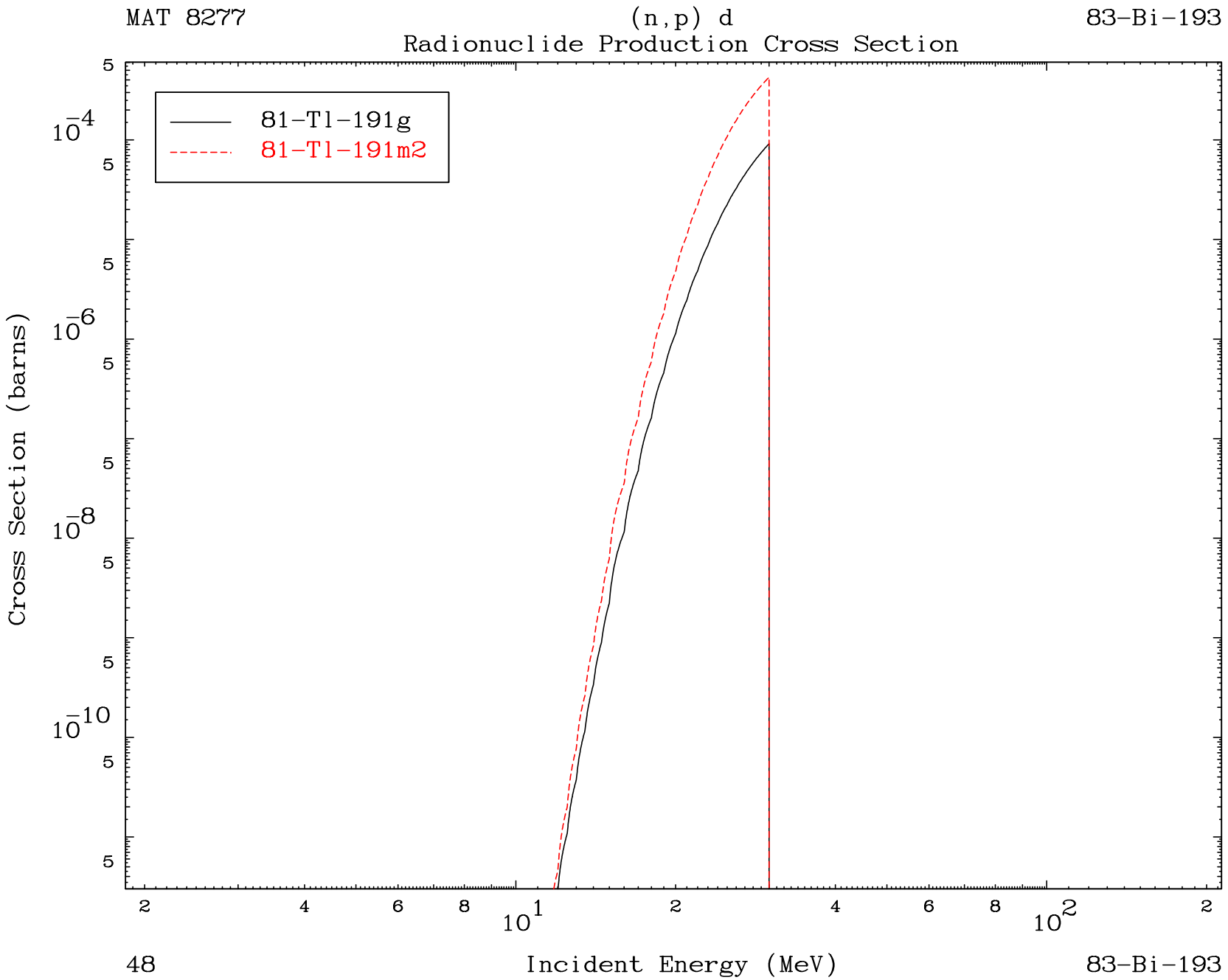

MAT 8277
(n,t)
83-Bi-193
Radionuclide Production Cross Section
82-Pb-191g
82-Pb-191m1
Cross Section (barns)
Incident Energy (MeV)
43
83-Bi-193

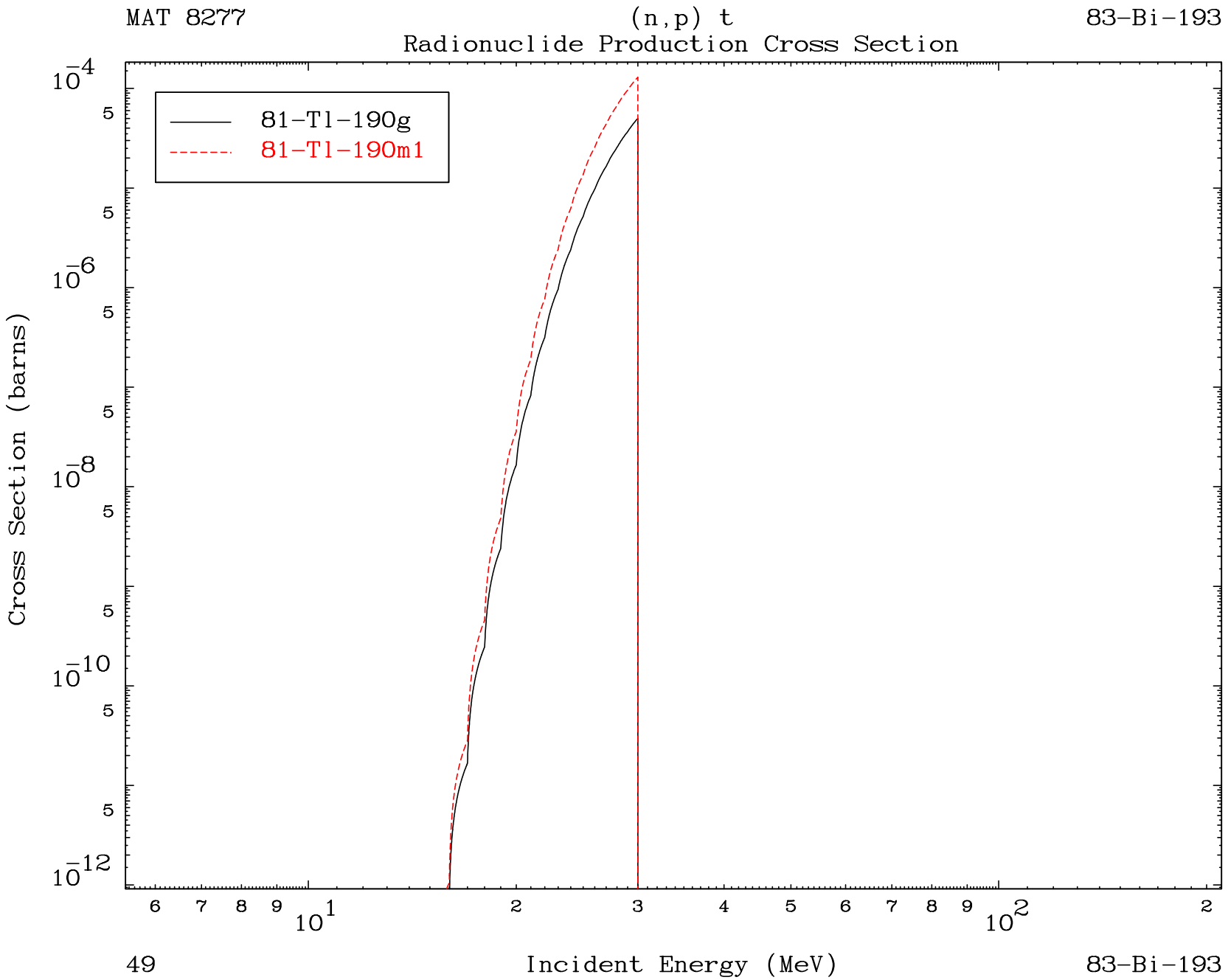

MAT 8277
(n,He-3)
83-Bi-193
Radionuclide Production Cross Section
81-Tl-191g
81-Tl-191m2
Cross Section (barns)
Incident Energy (MeV)
44
83-Bi-193


MAT 8277
(n,α)
83-Bi-193
Radionuclide Production Cross Section
81-Tl-190g
81-Tl-190m1
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
10^-8
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
45
Incident Energy (MeV)
83-Bi-193


MAT 8277
(n,2p)
83-Bi-193
Radionuclide Production Cross Section
81-Tl-192g
81-Tl-192m1
Cross Section (barns)
Incident Energy (MeV)
46
83-Bi-193


MAT 8277
(n,p) α
83-Bi-193
Radionuclide Production Cross Section
80-Hg-189g
80-Hg-189m2
Cross Section (barns)
Incident Energy (MeV)
47
83-Bi-193


MAT 8277
(n,p) d
83-Bi-193
Radionuclide Production Cross Section
81-Tl-191g
81-Tl-191m2
Cross Section (barns)
Incident Energy (MeV)
48
83-Bi-193


MAT 8277
(n,p) t
83-Bi-193
Radionuclide Production Cross Section
81-Tl-190g
81-Tl-190m1
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
10^-12
5
6 7 8 9
10^1
2 3 4 5 6 7 8 9
10^2
2
49
Incident Energy (MeV)
83-Bi-193