Program EVALPLOT
(Version 2021-1)
by
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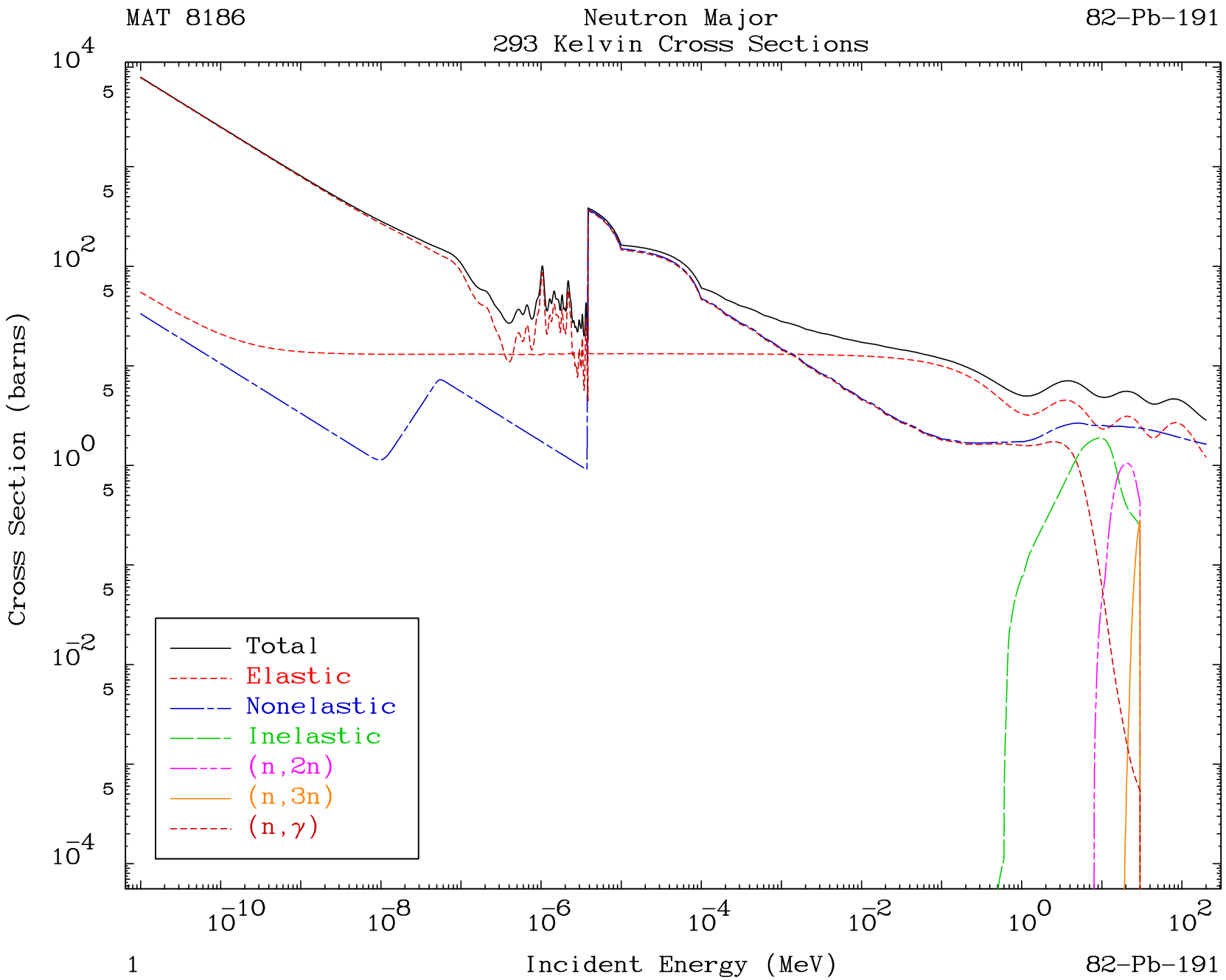
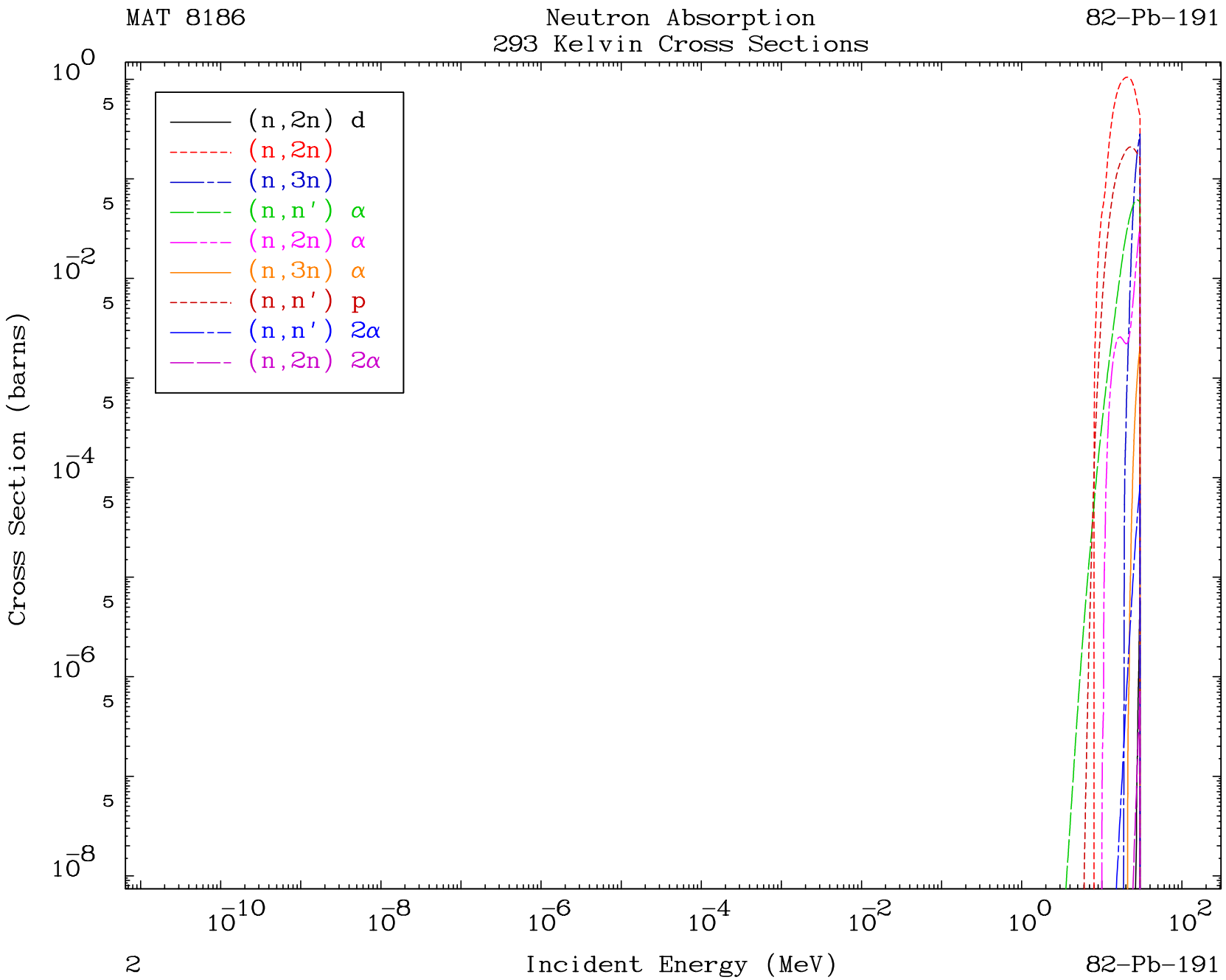
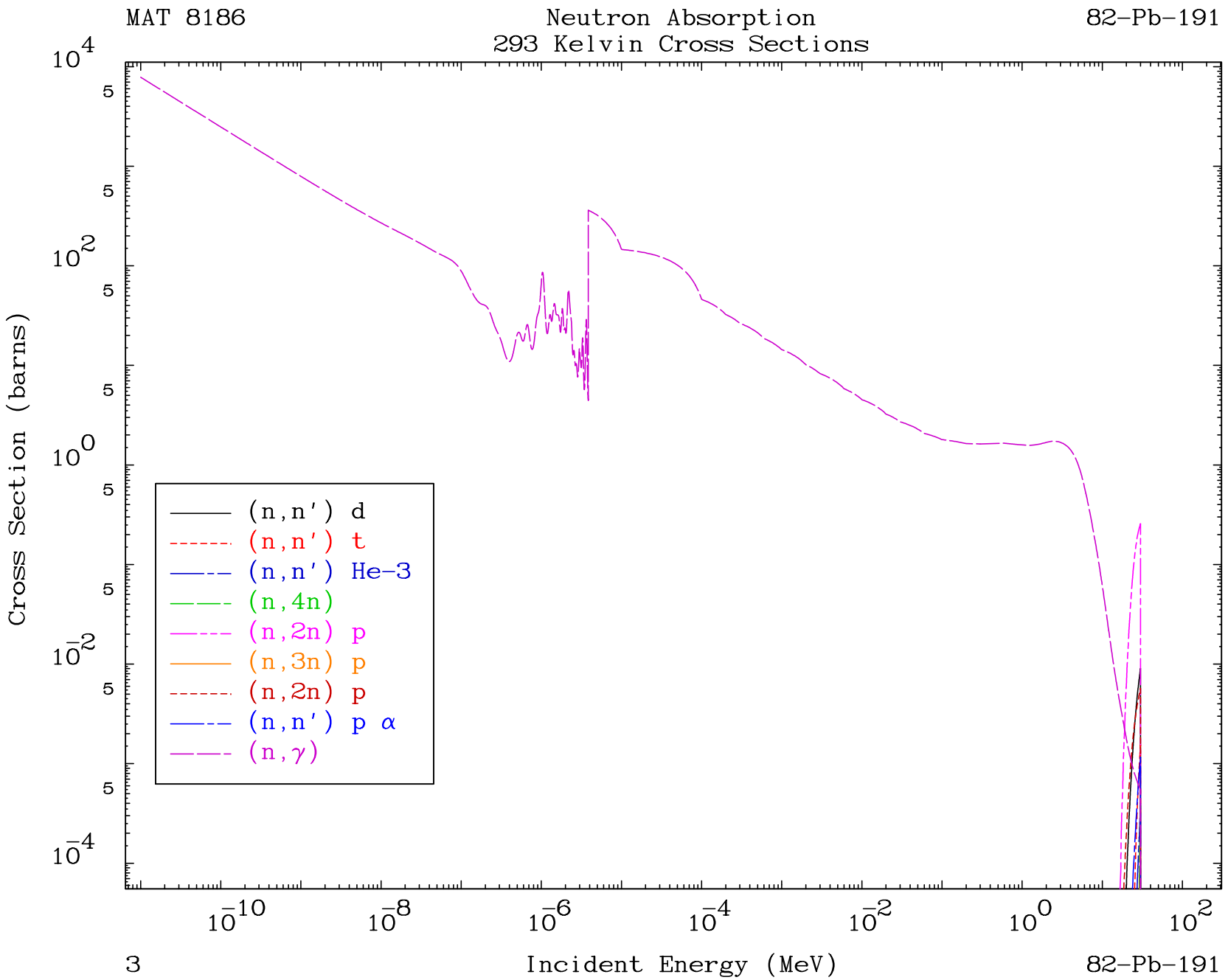
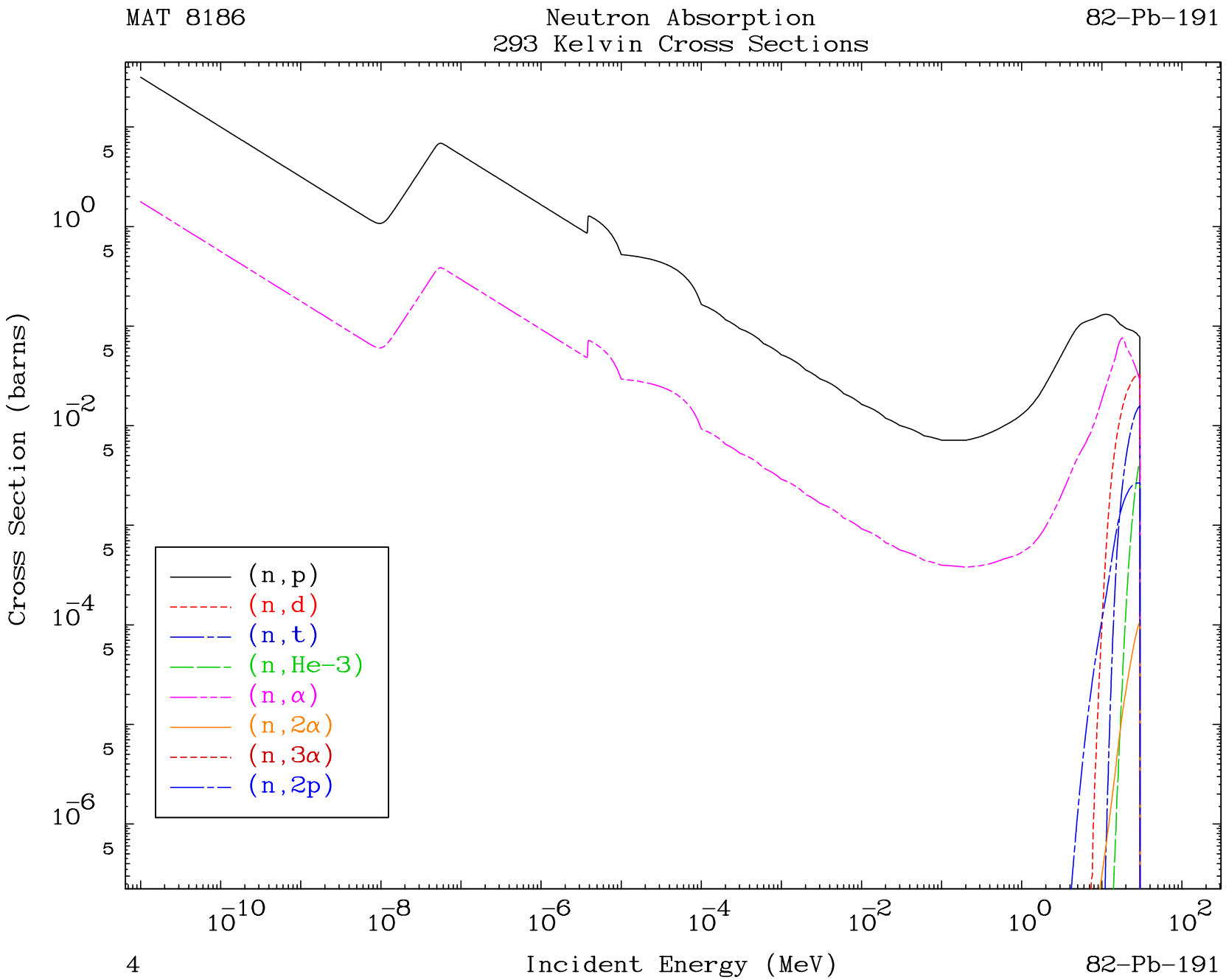
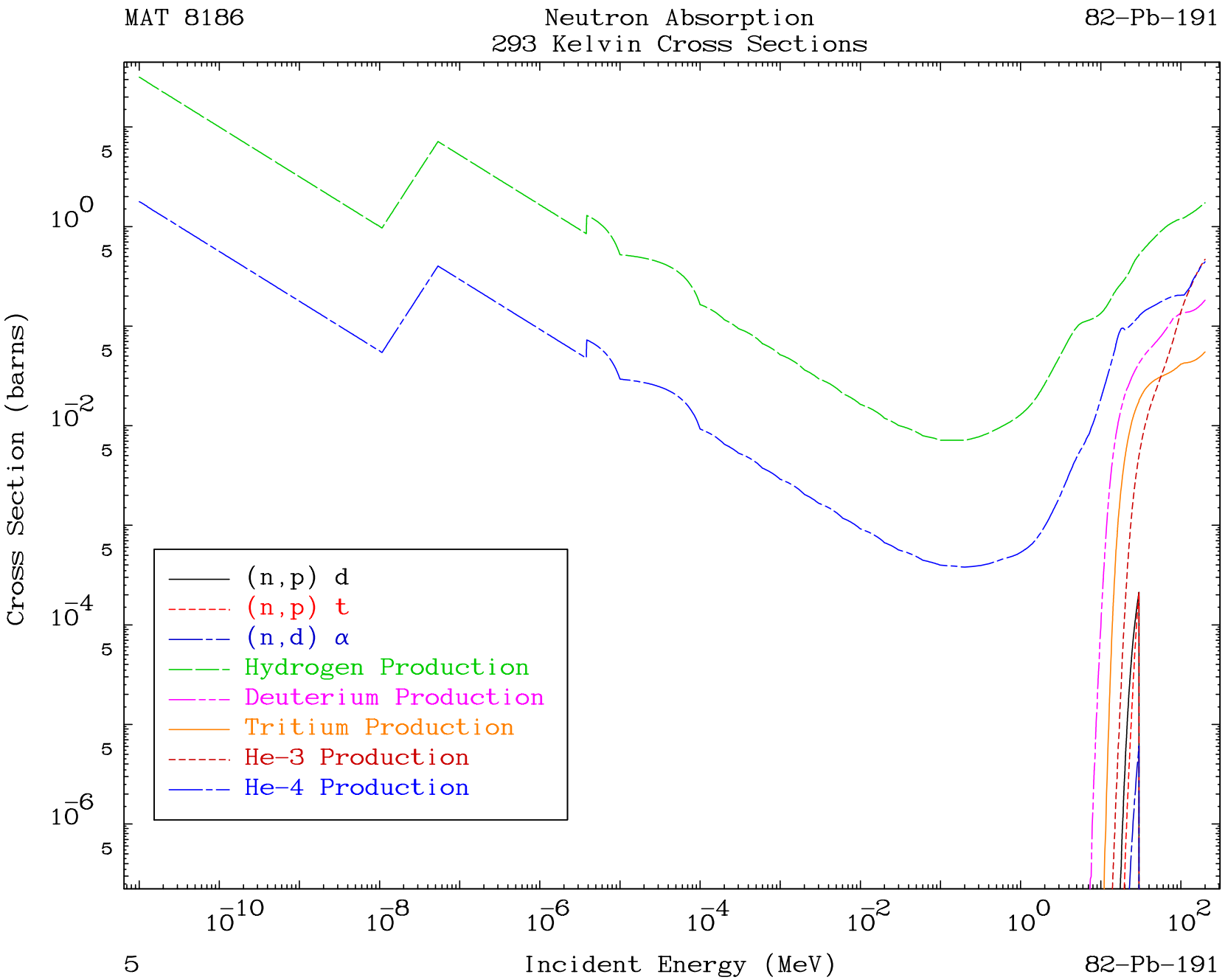
Press Mouse Button to Start

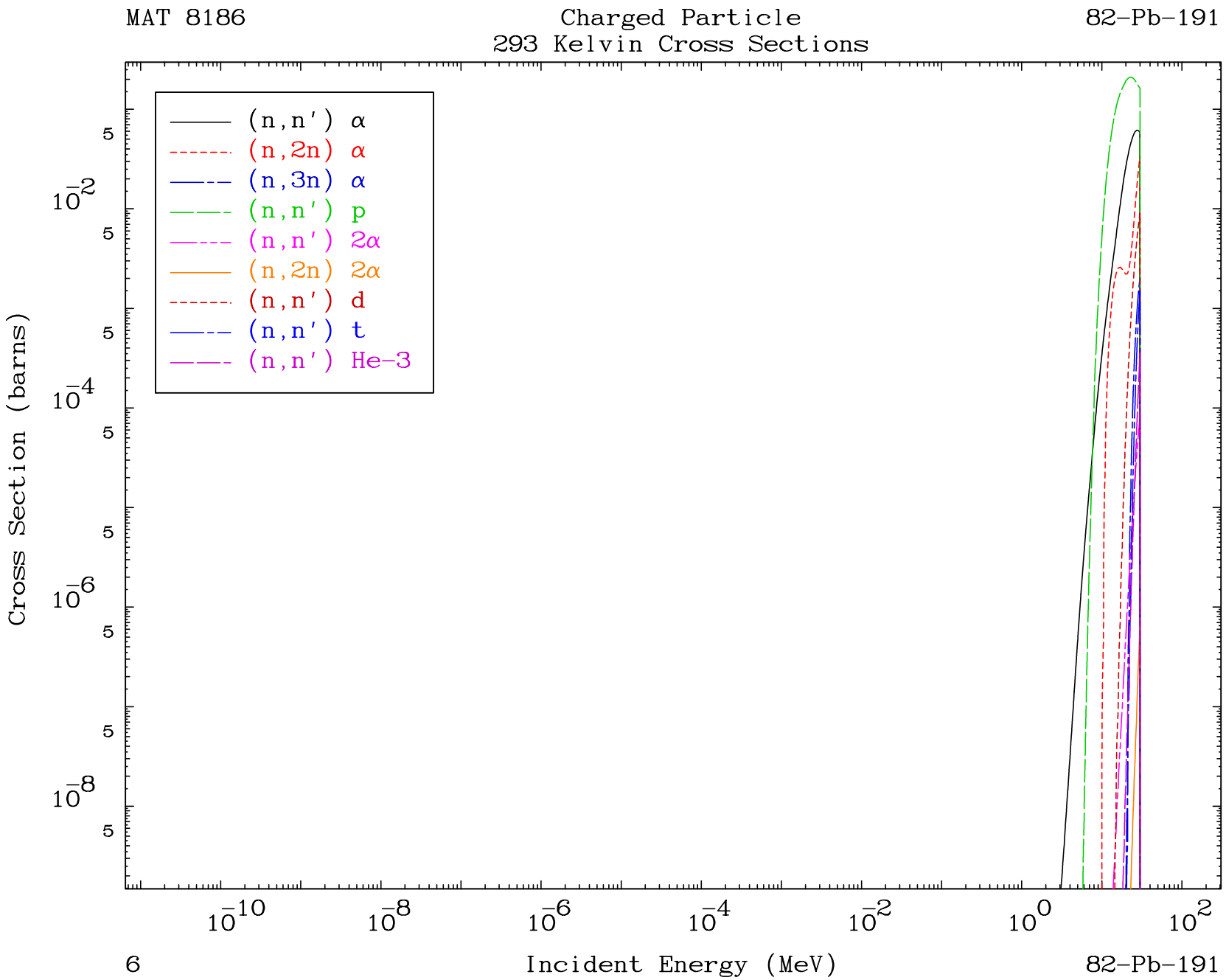

MAT 8186
Neutron Major
82-Pb-191
293 Kelvin Cross Sections
Cross Section (barns)
Incident Energy (MeV)
82-Pb-191
1
Total
Elastic
Nonelastic
Inelastic
(n,2n)
(n,3n)
(n,γ)

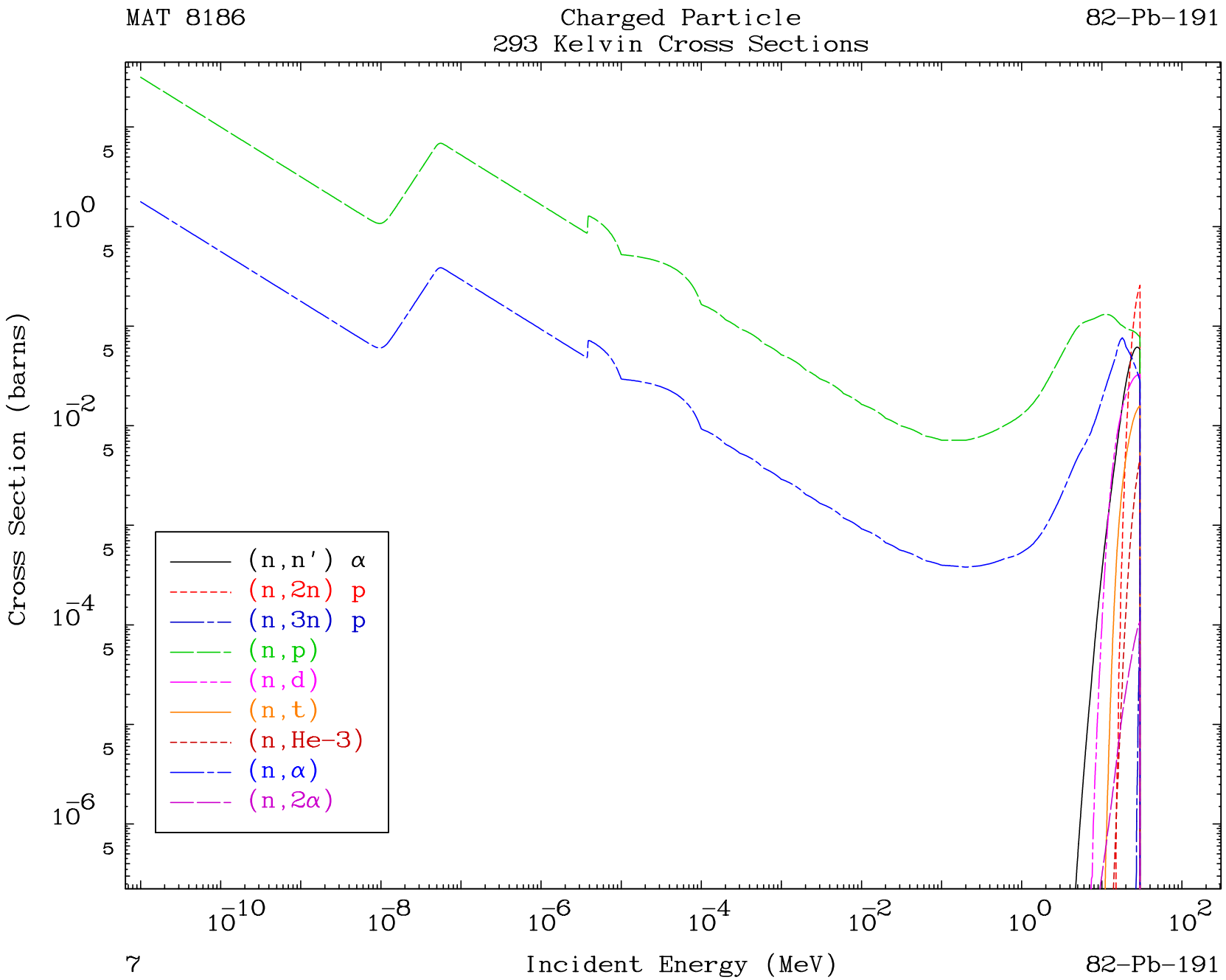

MAT 8186
Neutron Absorption
293 Kelvin Cross Sections
82-Pb-191
(n,2n) d
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,2n) 2α
Cross Section (barns)
Incident Energy (MeV)
2
82-Pb-191

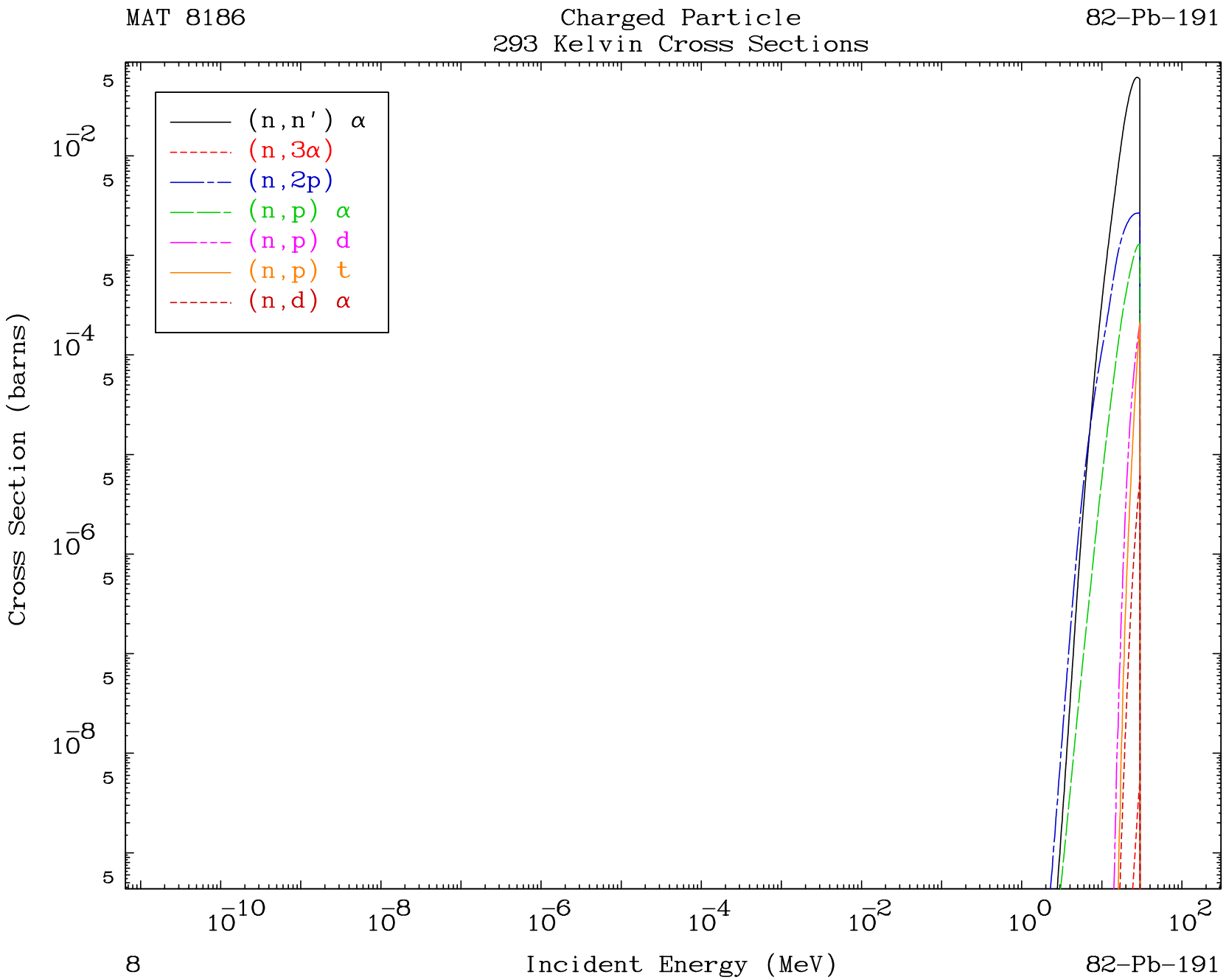

MAT 8186
Neutron Absorption
293 Kelvin Cross Sections
82-Pb-191
Cross Section (barns)
Incident Energy (MeV)
(n,n') d
(n,n') t
(n,n') He-3
(n,4n)
(n,2n) p
(n,3n) p
(n,2n) p
(n,n') p α
(n,γ)
3
82-Pb-191

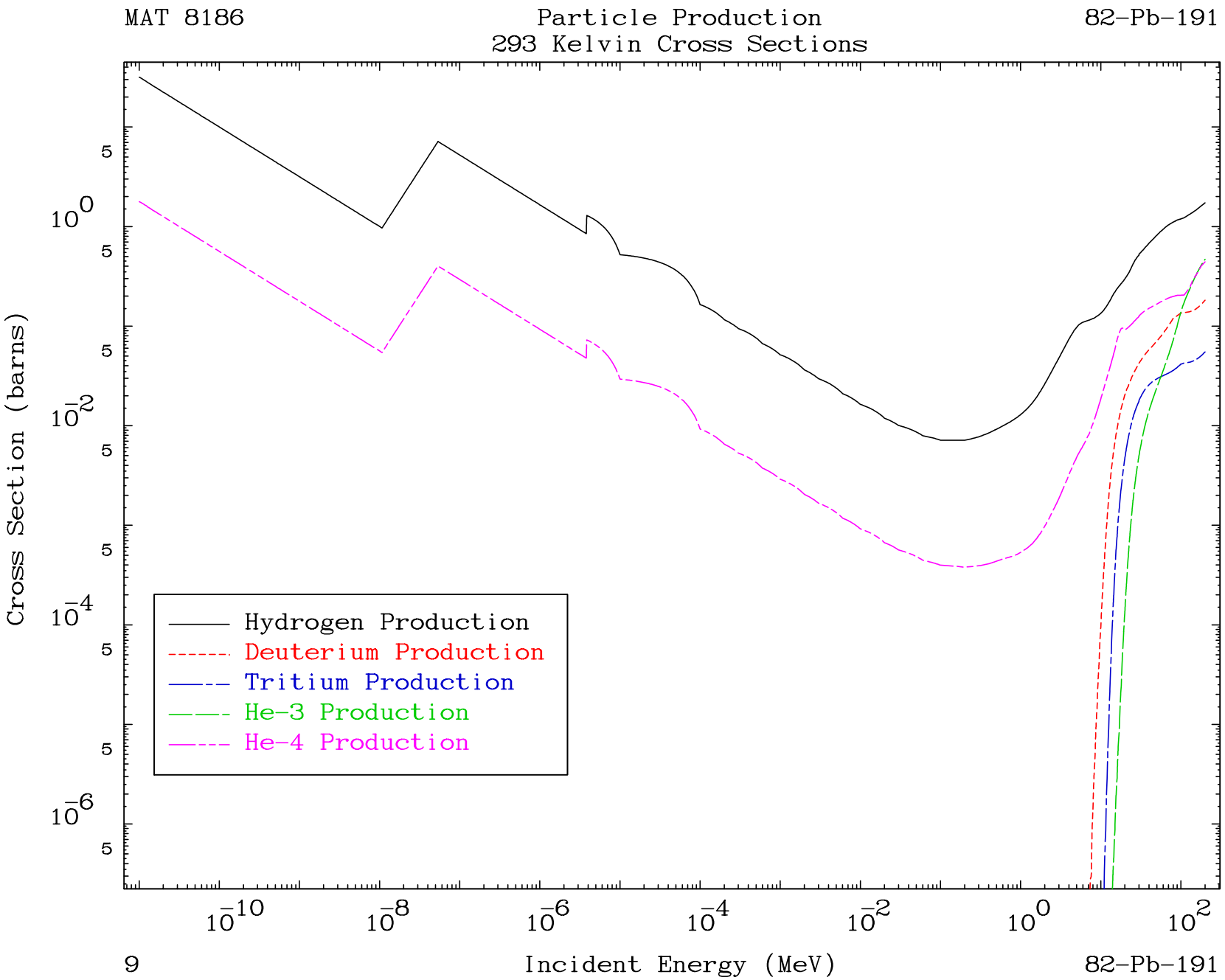

MAT 8186
Neutron Absorption
293 Kelvin Cross Sections
82-Pb-191
Cross Section (barns)
Incident Energy (MeV)
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,3α)
(n,2p)
4
82-Pb-191

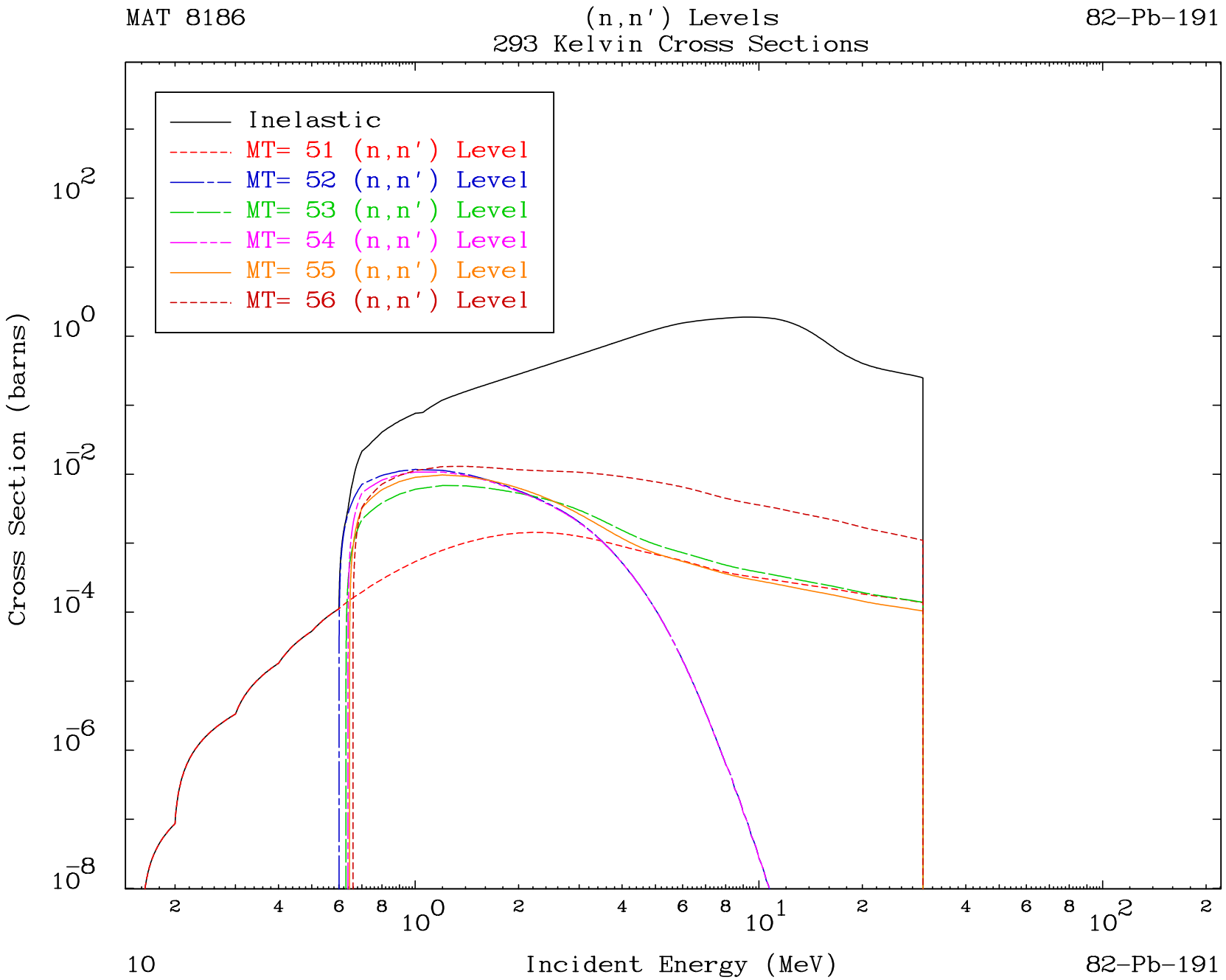

MAT 8186
Neutron Absorption
293 Kelvin Cross Sections
82-Pb-191
Cross Section (barns)
Incident Energy (MeV)
82-Pb-191
5
(n,p) d
(n,p) t
(n,d) α
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production

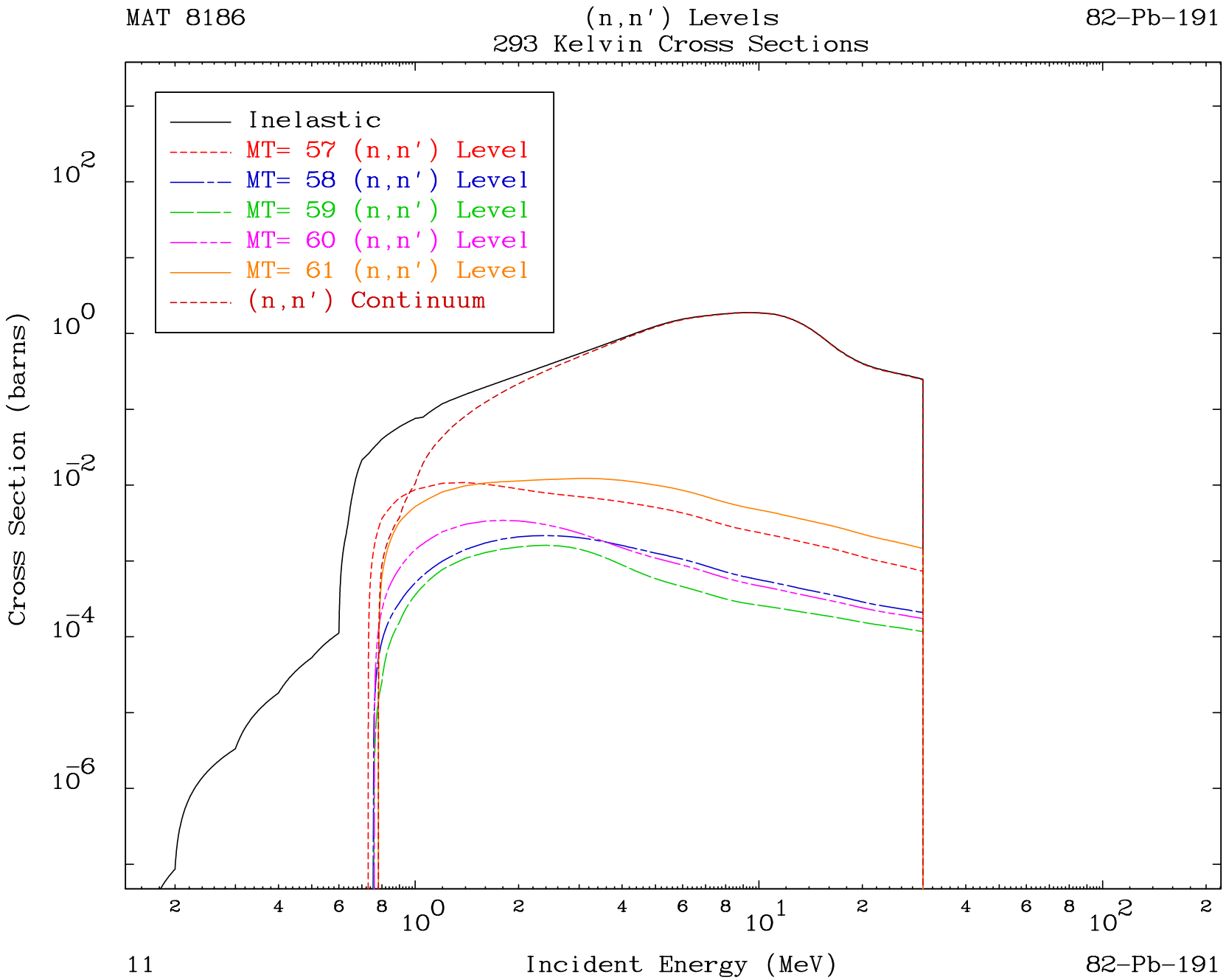

MAT 8186
Charged Particle
293 Kelvin Cross Sections
82-Pb-191
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,2n) 2α
(n,n') d
(n,n') t
(n,n') He-3
Cross Section (barns)
Incident Energy (MeV)
6
82-Pb-191

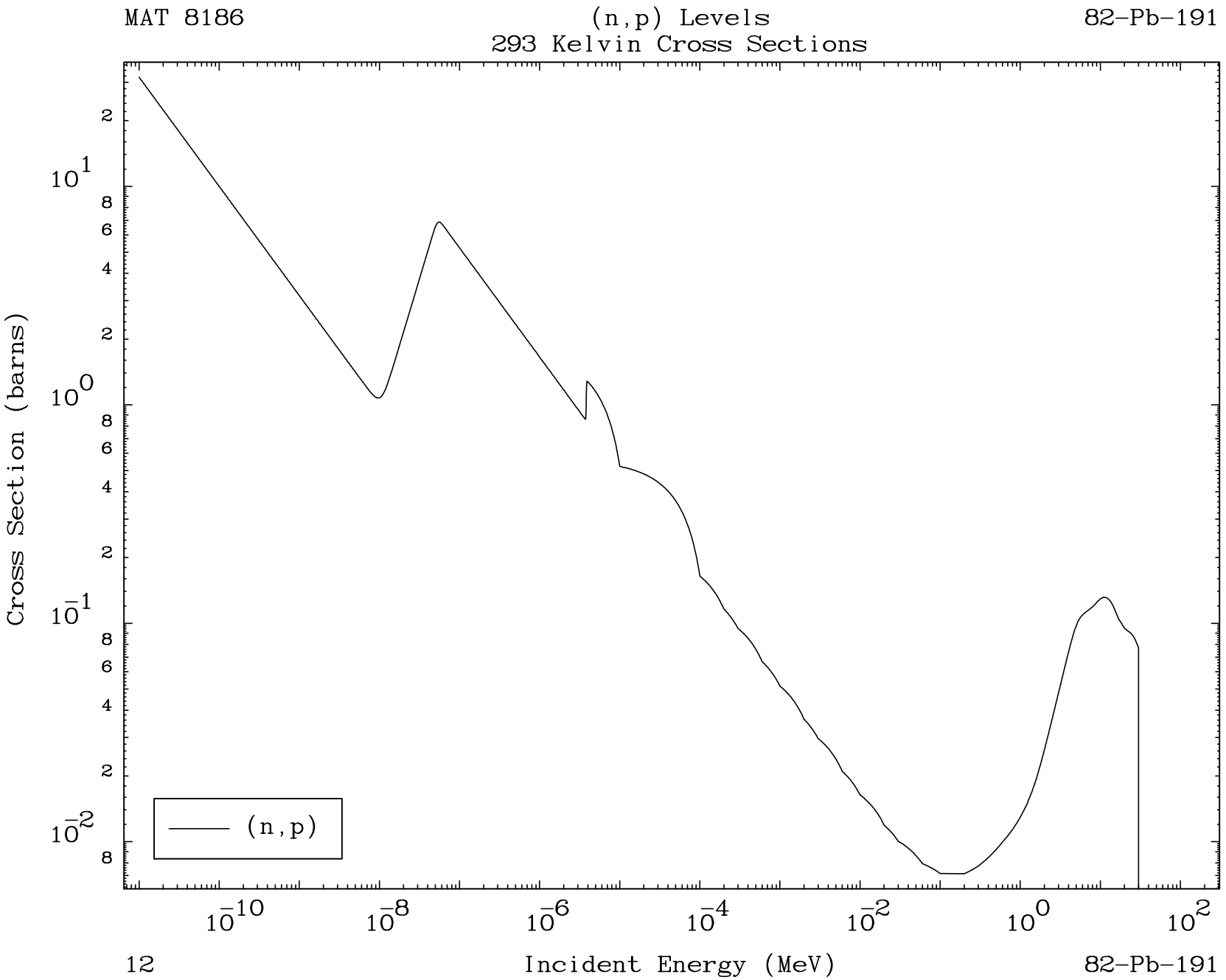

MAT 8186
Charged Particle
293 Kelvin Cross Sections
82-Pb-191
Cross Section (barns)
Incident Energy (MeV)
(n,n') α
(n,2n) p
(n,3n) p
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
7
82-Pb-191

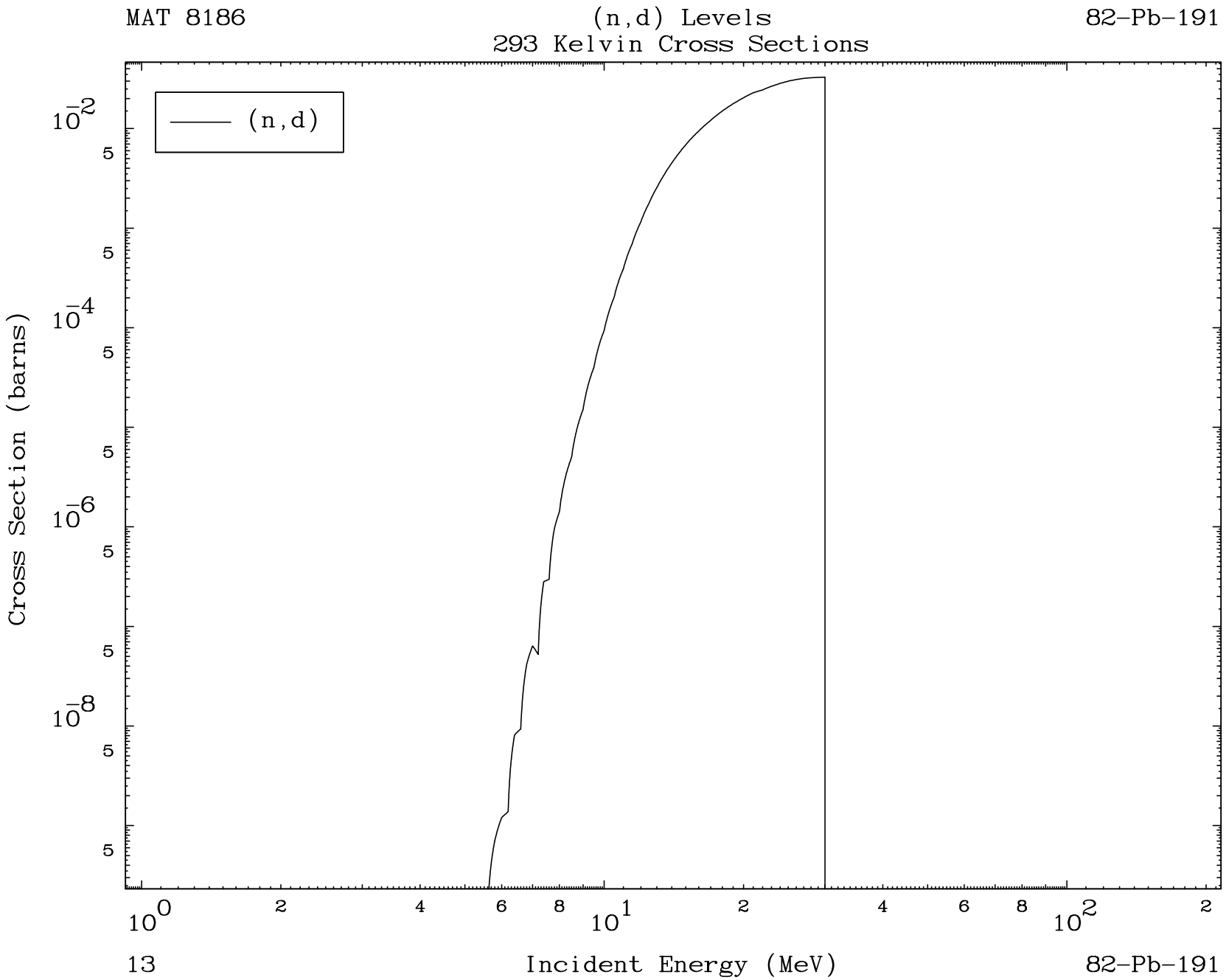

MAT 8186
Charged Particle
293 Kelvin Cross Sections
82-Pb-191
(n,n') α
(n,3α)
(n,2p)
(n,p) α
(n,p) d
(n,p) t
(n,d) α
Cross Section (barns)
Incident Energy (MeV)
8
82-Pb-191

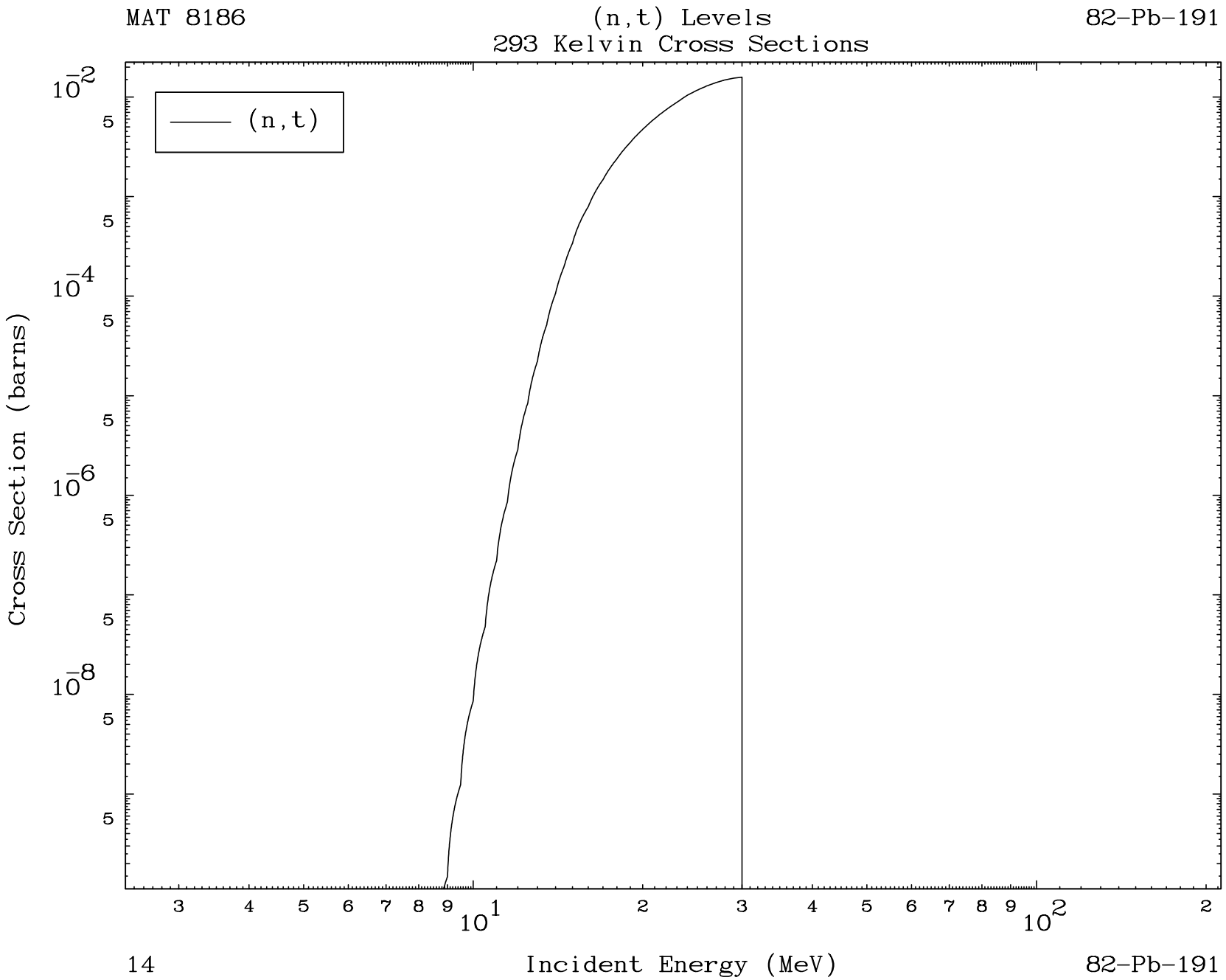

MAT 8186
Particle Production
293 Kelvin Cross Sections
82-Pb-191
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
5
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
9
82-Pb-191

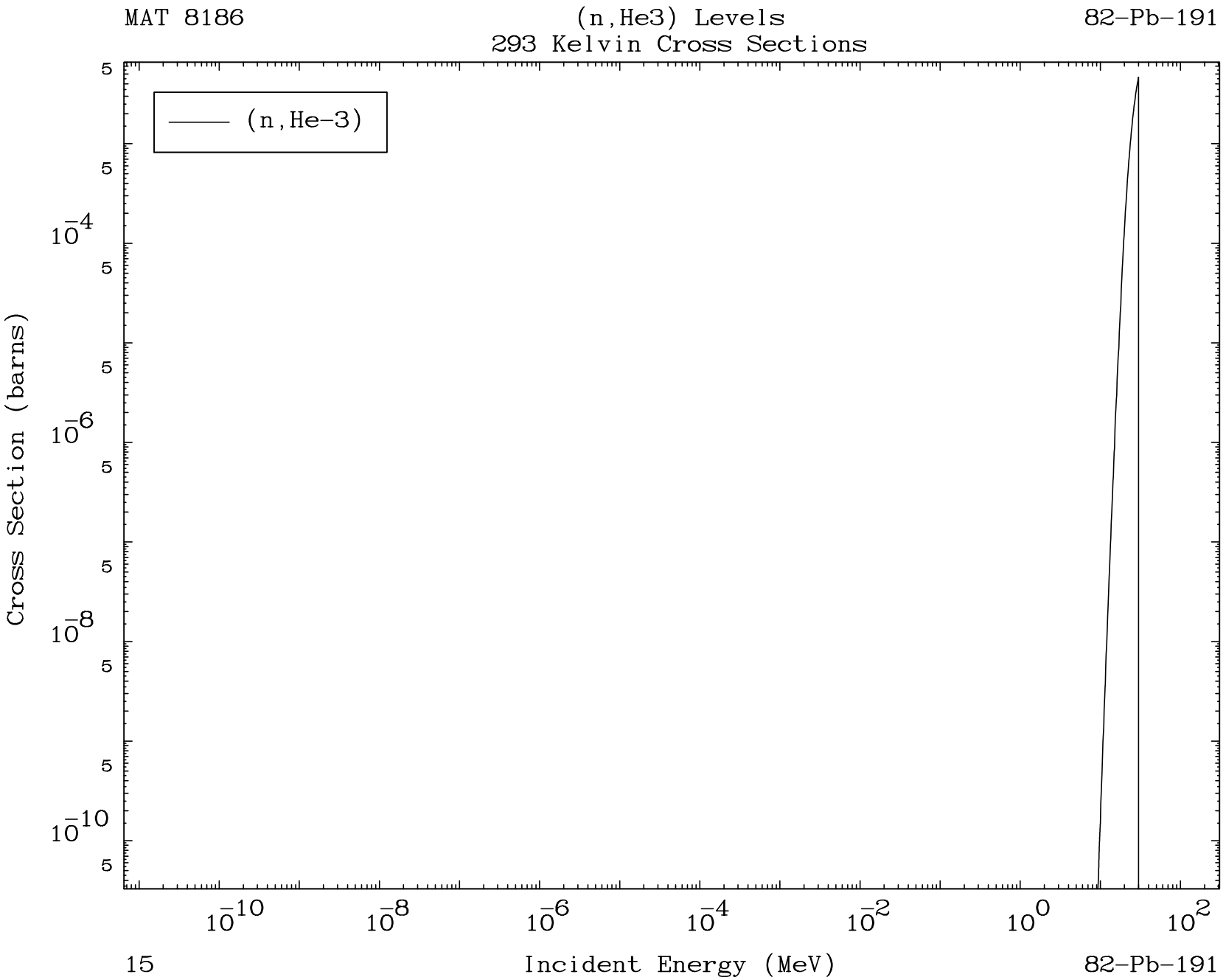

MAT 8186
(n,n') Levels
82-Pb-191
293 Kelvin Cross Sections
Inelastic
MT= 51 (n,n') Level
MT= 52 (n,n') Level
MT= 53 (n,n') Level
MT= 54 (n,n') Level
MT= 55 (n,n') Level
MT= 56 (n,n') Level
Cross Section (barns)
Incident Energy (MeV)
82-Pb-191

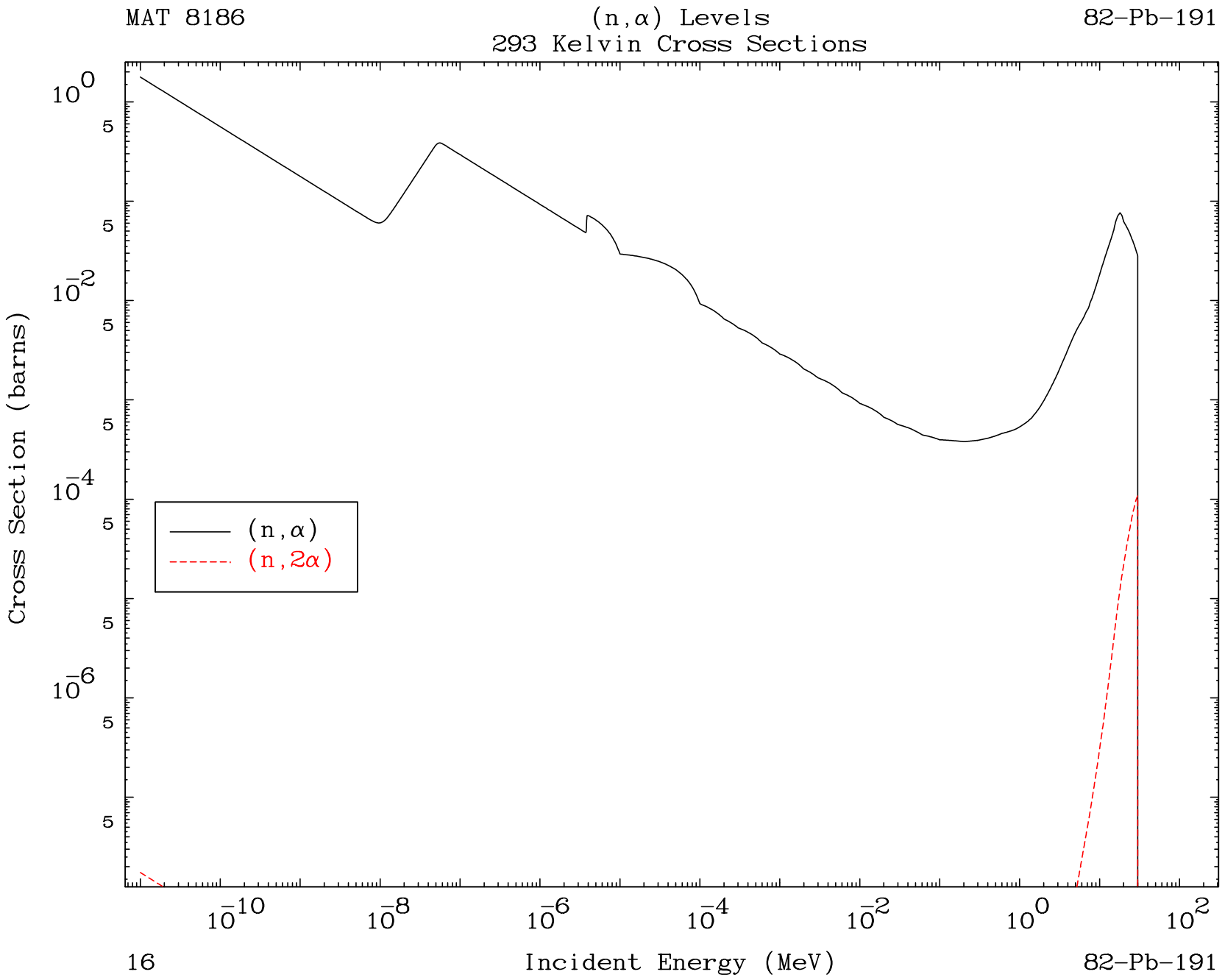

MAT 8186
(n,n') Levels
82-Pb-191
293 Kelvin Cross Sections
Inelastic
MT= 57 (n,n') Level
MT= 58 (n,n') Level
MT= 59 (n,n') Level
MT= 60 (n,n') Level
MT= 61 (n,n') Level
(n,n') Continuum
Cross Section (barns)
10^2
10^0
10^-2
10^-4
10^-6
2 4 6 8 10^0 2 4 6 8 10^1 2 4 6 8 10^2 2
Incident Energy (MeV)
11
82-Pb-191

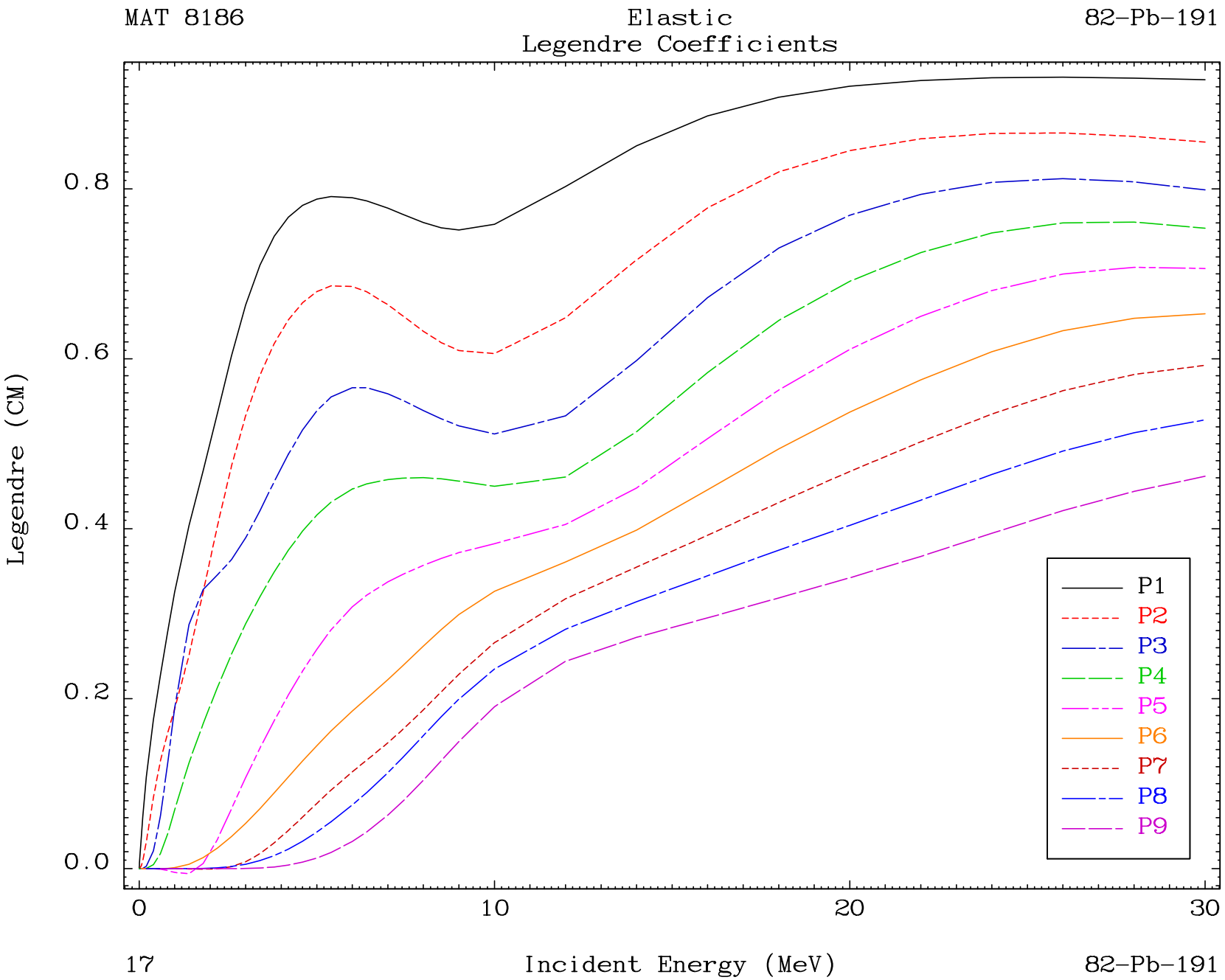

MAT 8186
(n,p) Levels
82-Pb-191
293 Kelvin Cross Sections
Cross Section (barns)
(n,p)
Incident Energy (MeV)
12
82-Pb-191

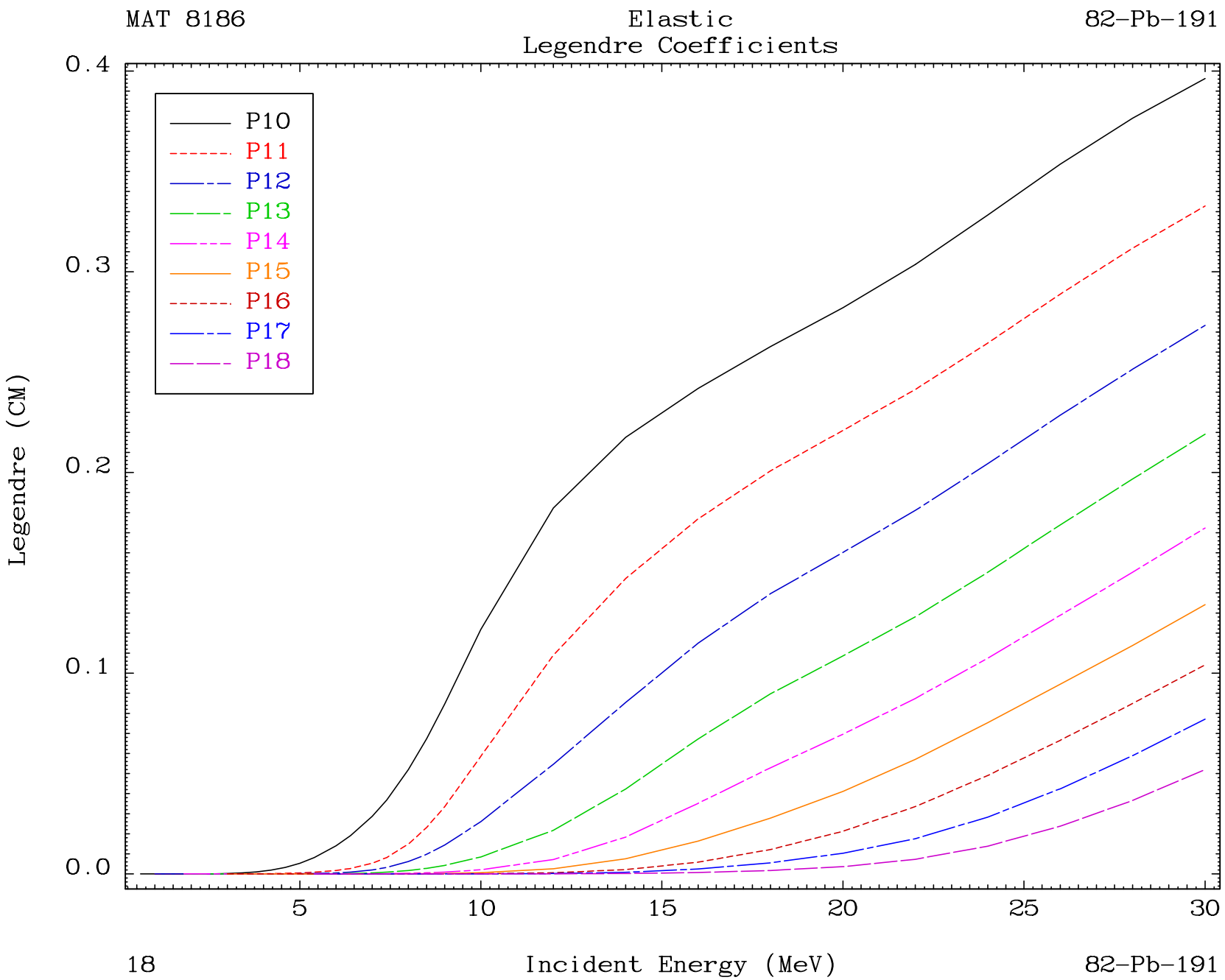

MAT 8186
(n,d) Levels
82-Pb-191
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
10-2
10-4
10-6
10-8
5
100
2
4
6
8
101
102
13
Incident Energy (MeV)
82-Pb-191

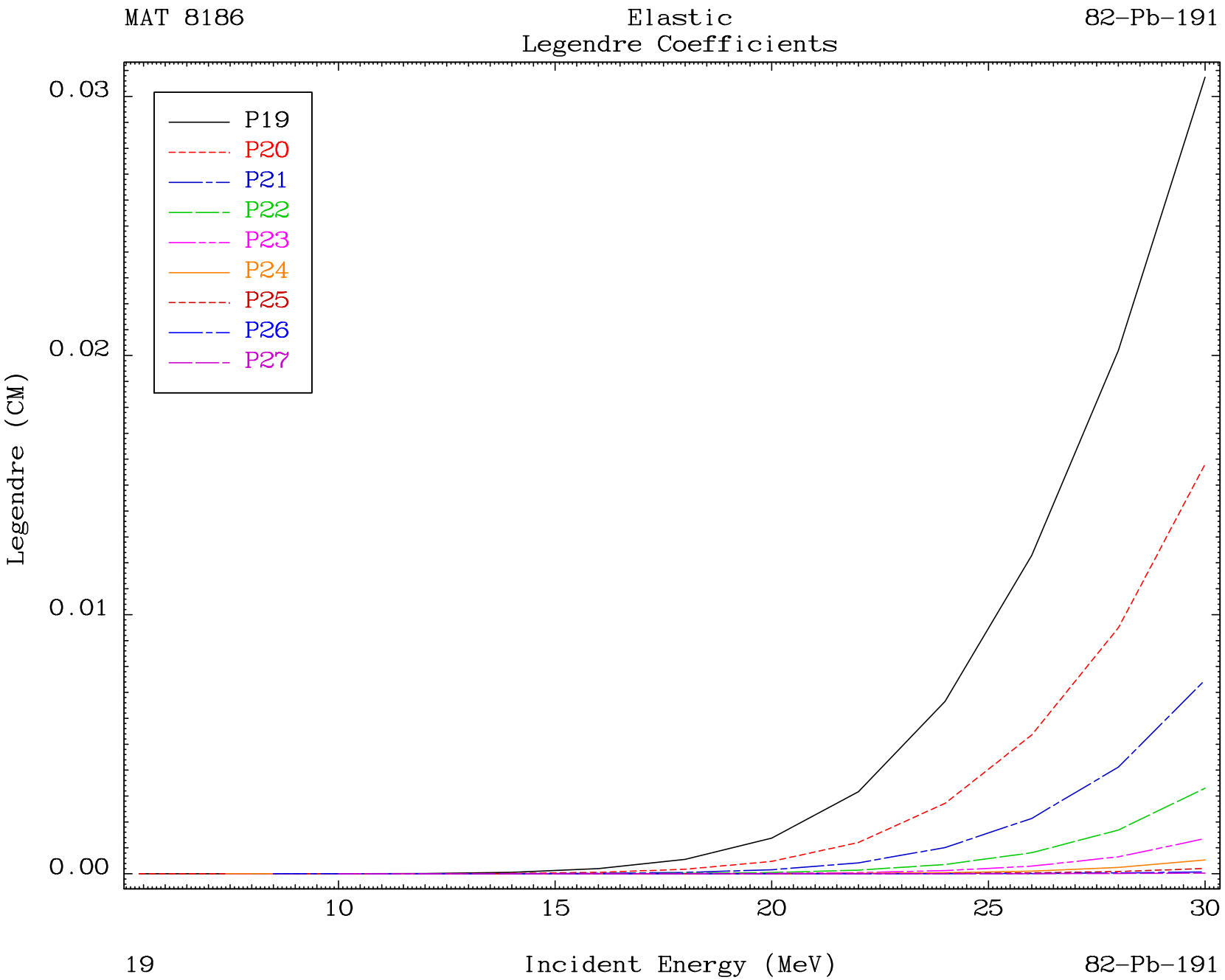

MAT 8186
(n,t) Levels
82-Pb-191
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
10-2
10-4
10-6
10-8
Incident Energy (MeV)
14
82-Pb-191

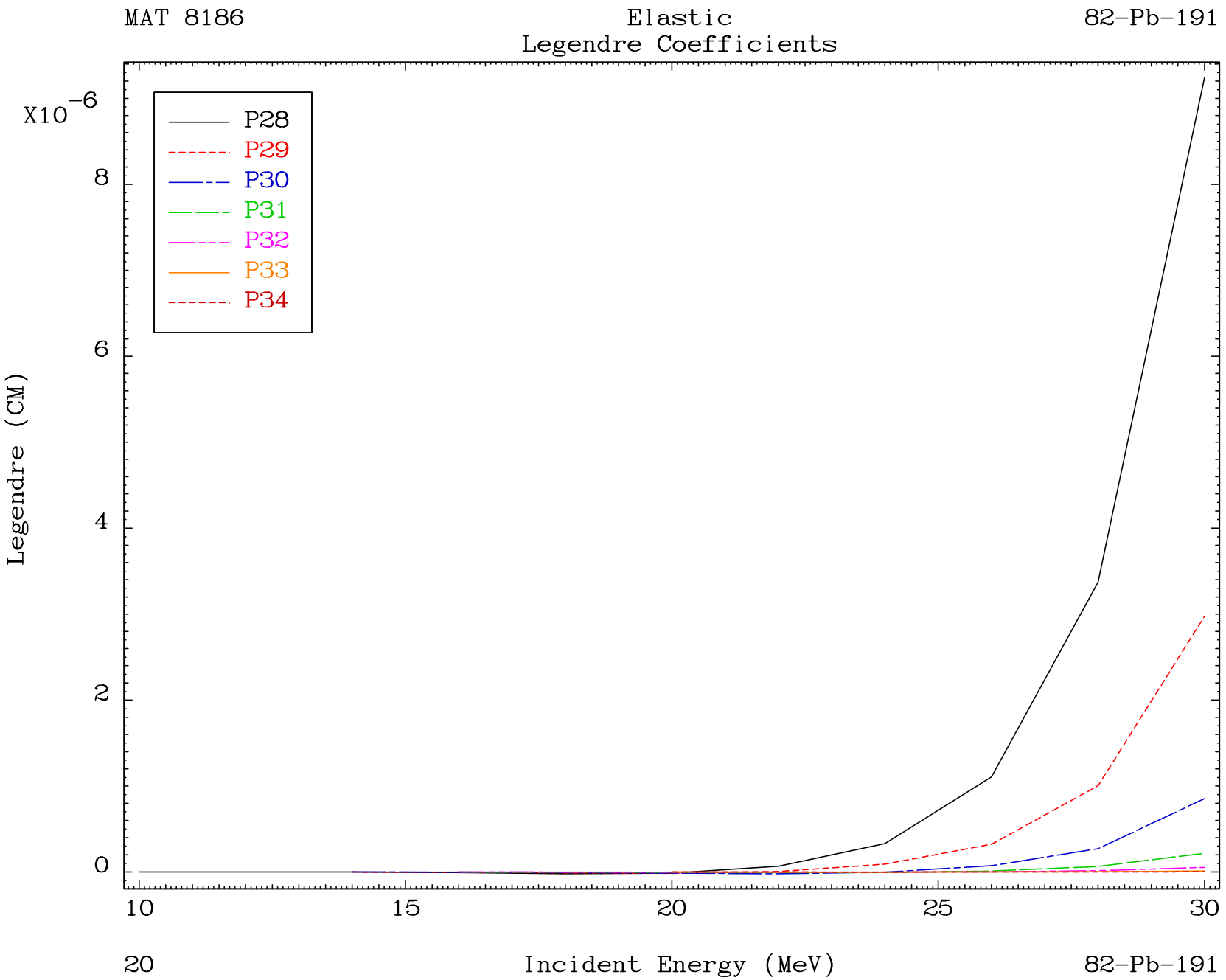

MAT 8186
(n,He3) Levels
82-Pb-191
293 Kelvin Cross Sections
(n,He-3)
Cross Section (barns)
Incident Energy (MeV)
15
82-Pb-191

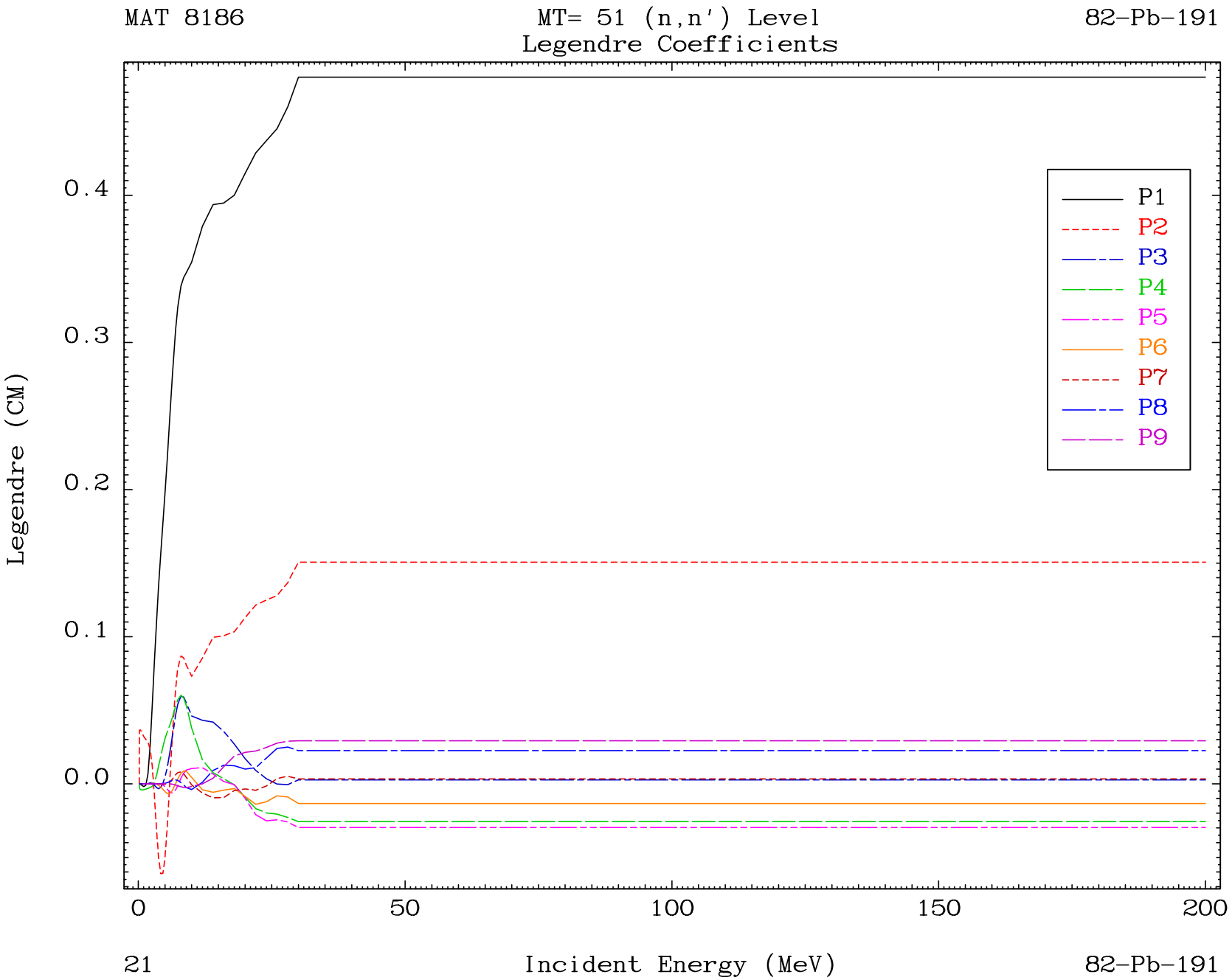

MAT 8186
(n,α) Levels
82-Pb-191
293 Kelvin Cross Sections
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
(n,α)
(n,2α)
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
16
82-Pb-191

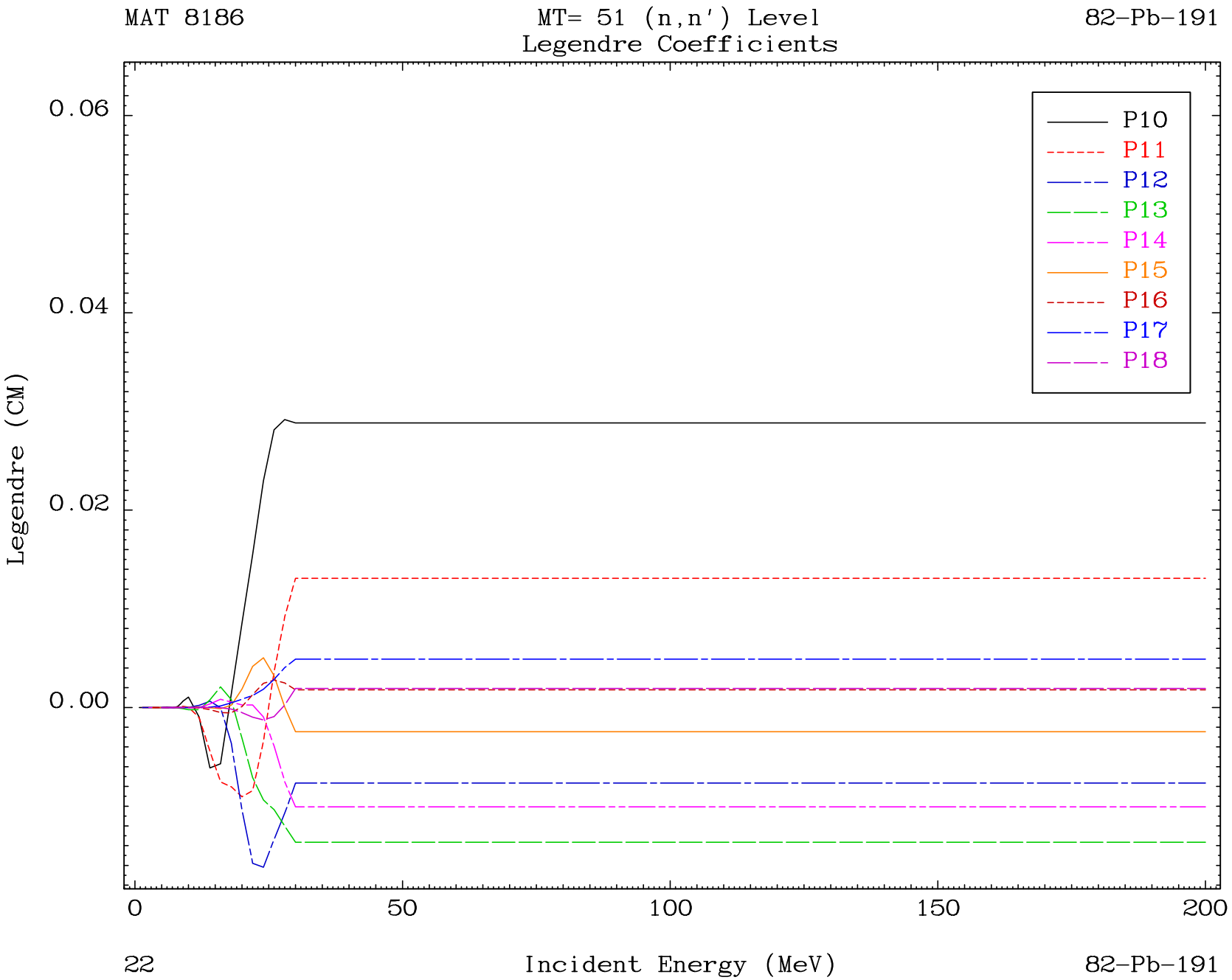

MAT 8186
Elastic
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.0
0.2
0.4
0.6
0.8
0
10
20
30
17
Incident Energy (MeV)
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9

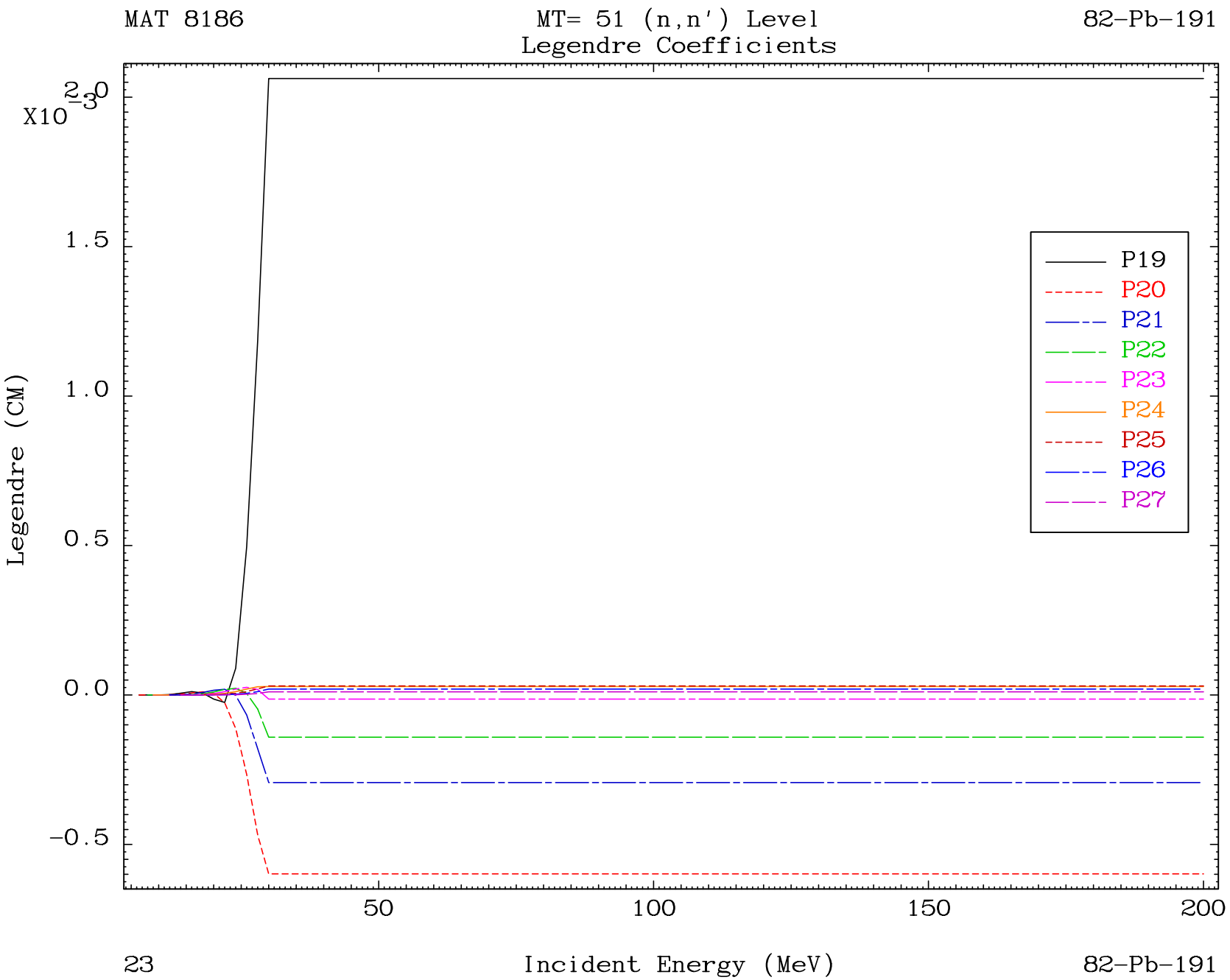

MAT 8186
Elastic
Legendre Coefficients
82-Pb-191
P10
P11
P12
P13
P14
P15
P16
P17
P18
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
5
10
15
20
25
30
18
Incident Energy (MeV)
82-Pb-191

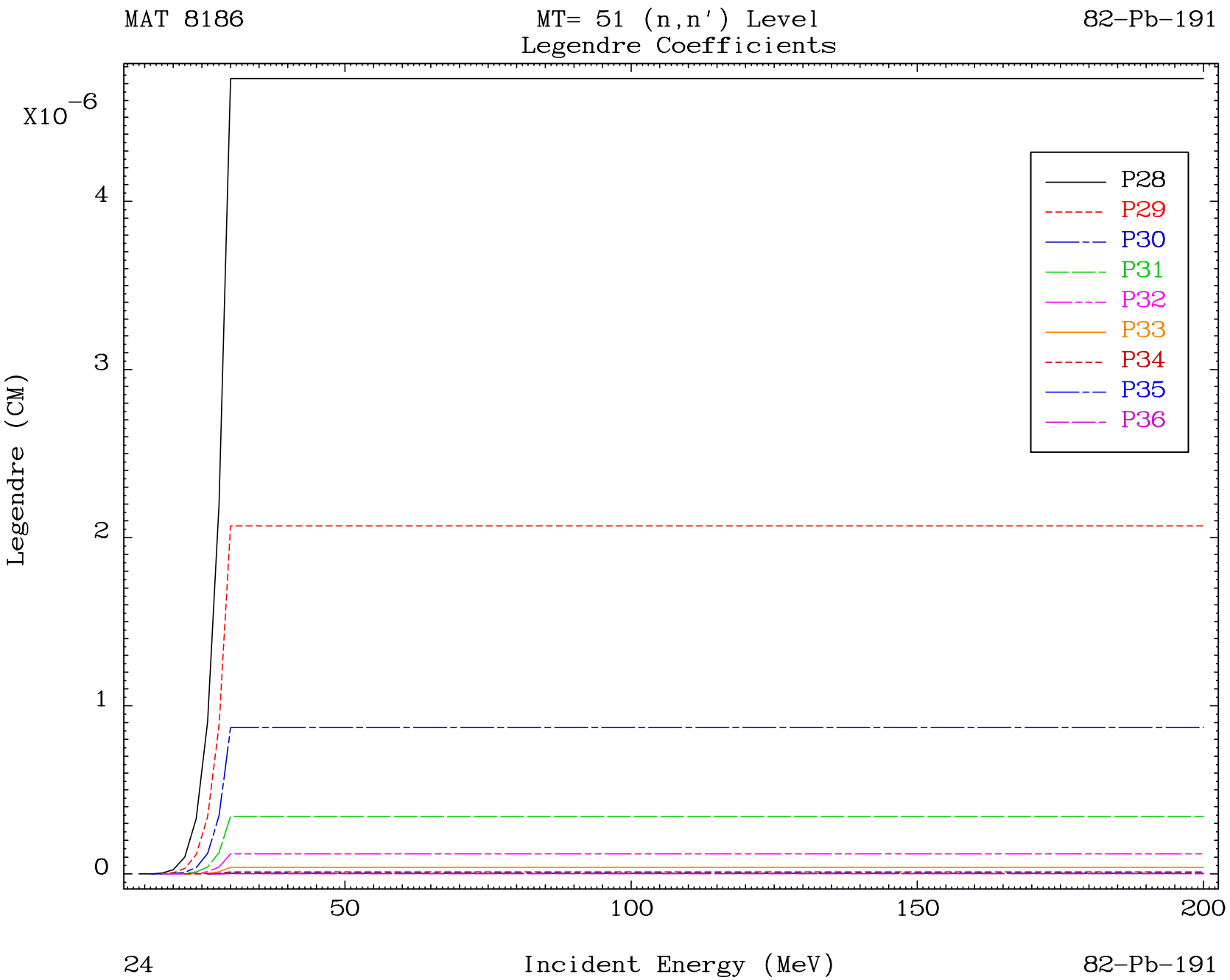

MAT 8186
Elastic
Legendre Coefficients
82-Pb-191
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.03
0.02
0.01
0.00
Legendre (CM)
10
15
20
25
30
19
Incident Energy (MeV)
82-Pb-191

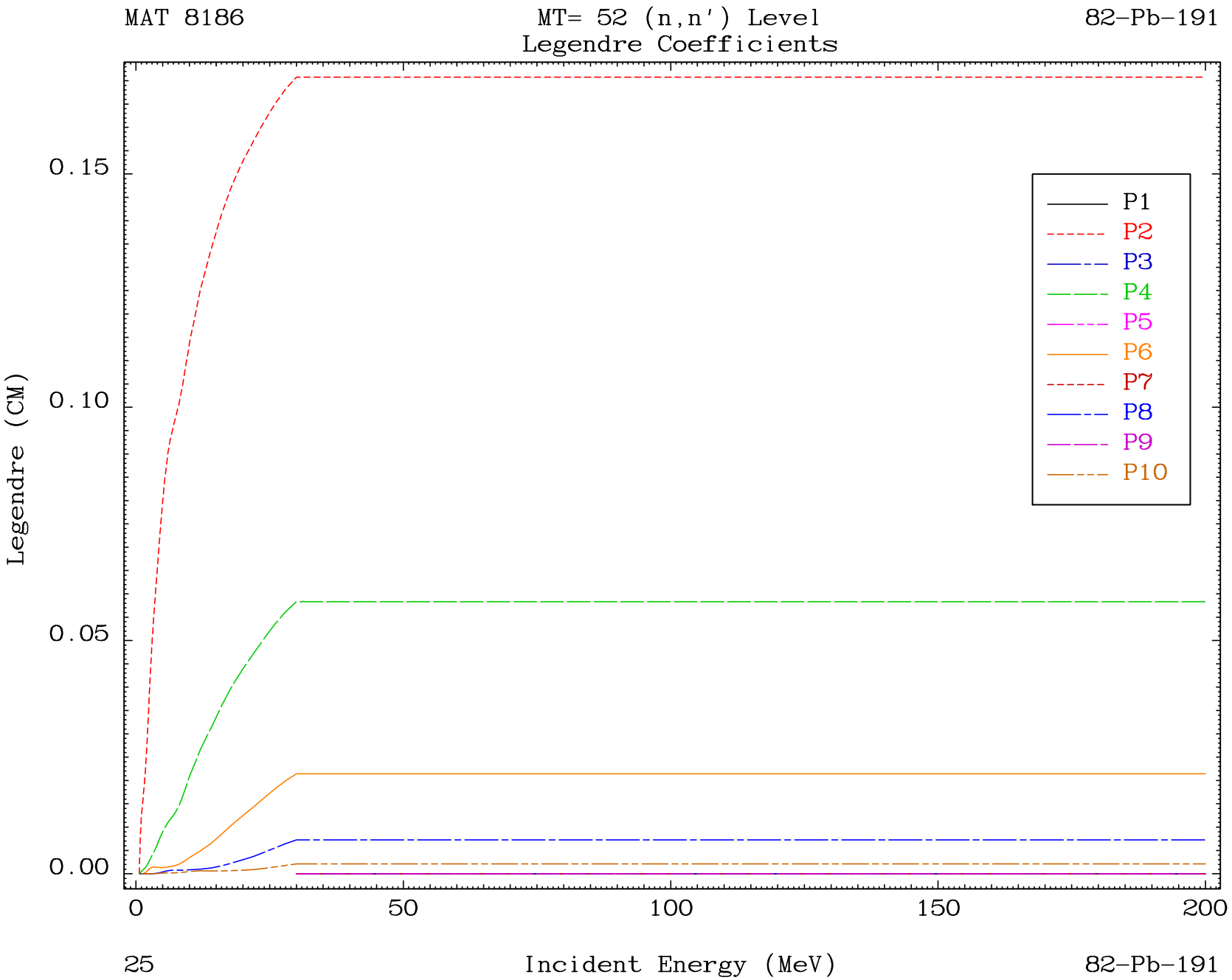

MAT 8186
Elastic
Legendre Coefficients
82-Pb-191
X10 −6
8
6
4
2
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
10
15
20
25
30
20
Incident Energy (MeV)
82-Pb-191

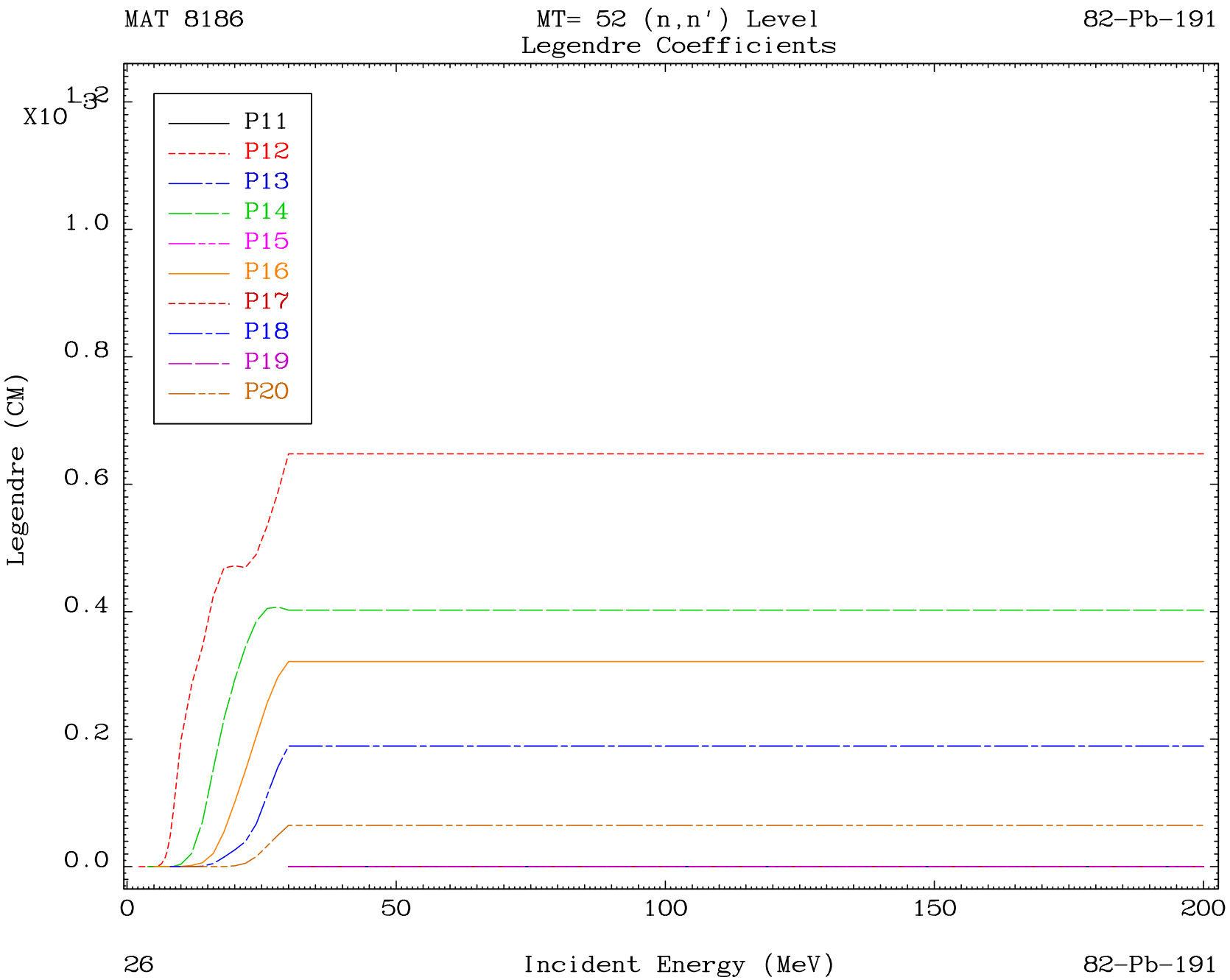

MAT 8186
MT= 51 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
21
Incident Energy (MeV)
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9

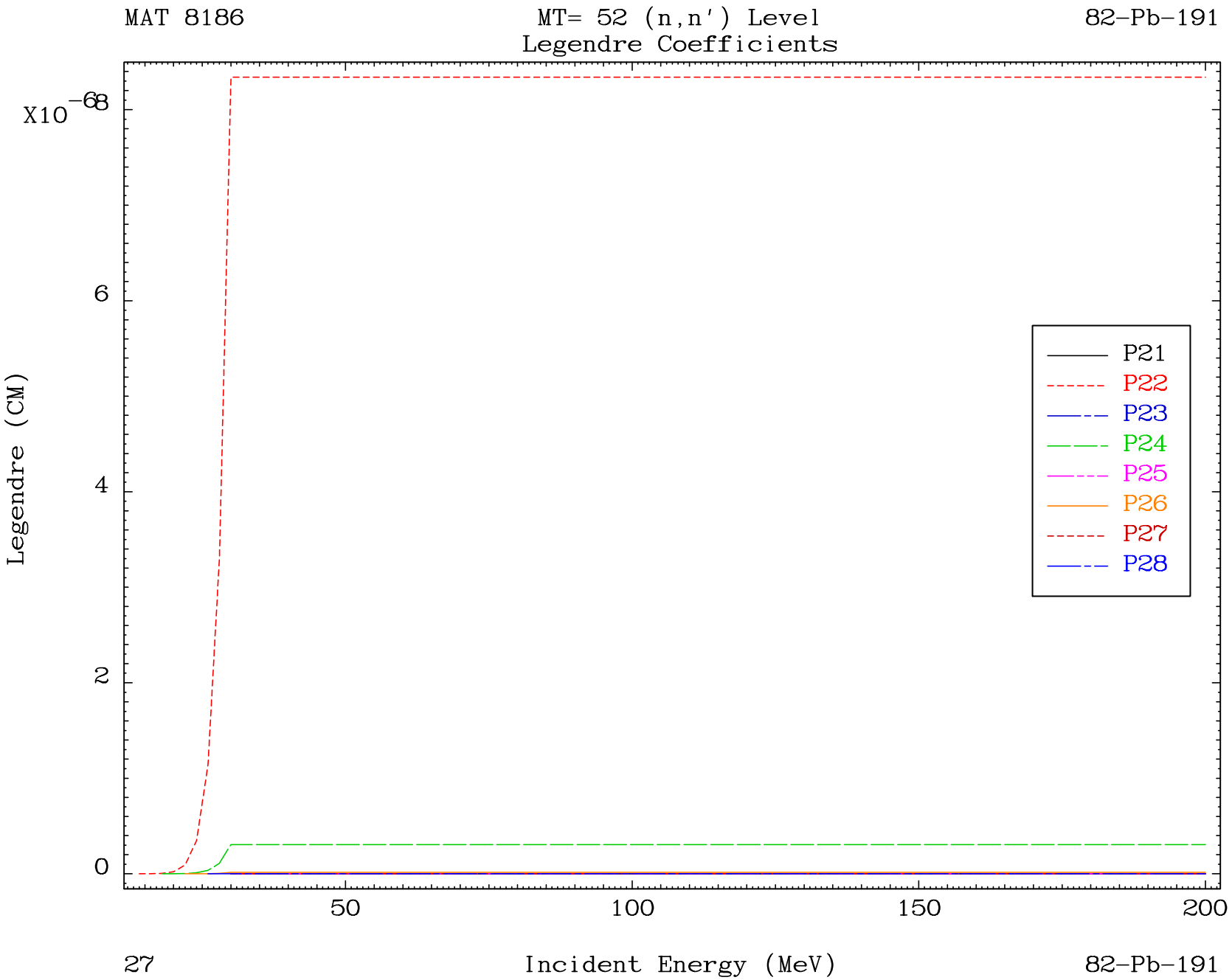

MAT 8186
MT= 51 (n,n') Level
Legendre Coefficients
82-Pb-191
0.06
0.04
0.02
0.00
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
22
Incident Energy (MeV)
82-Pb-191

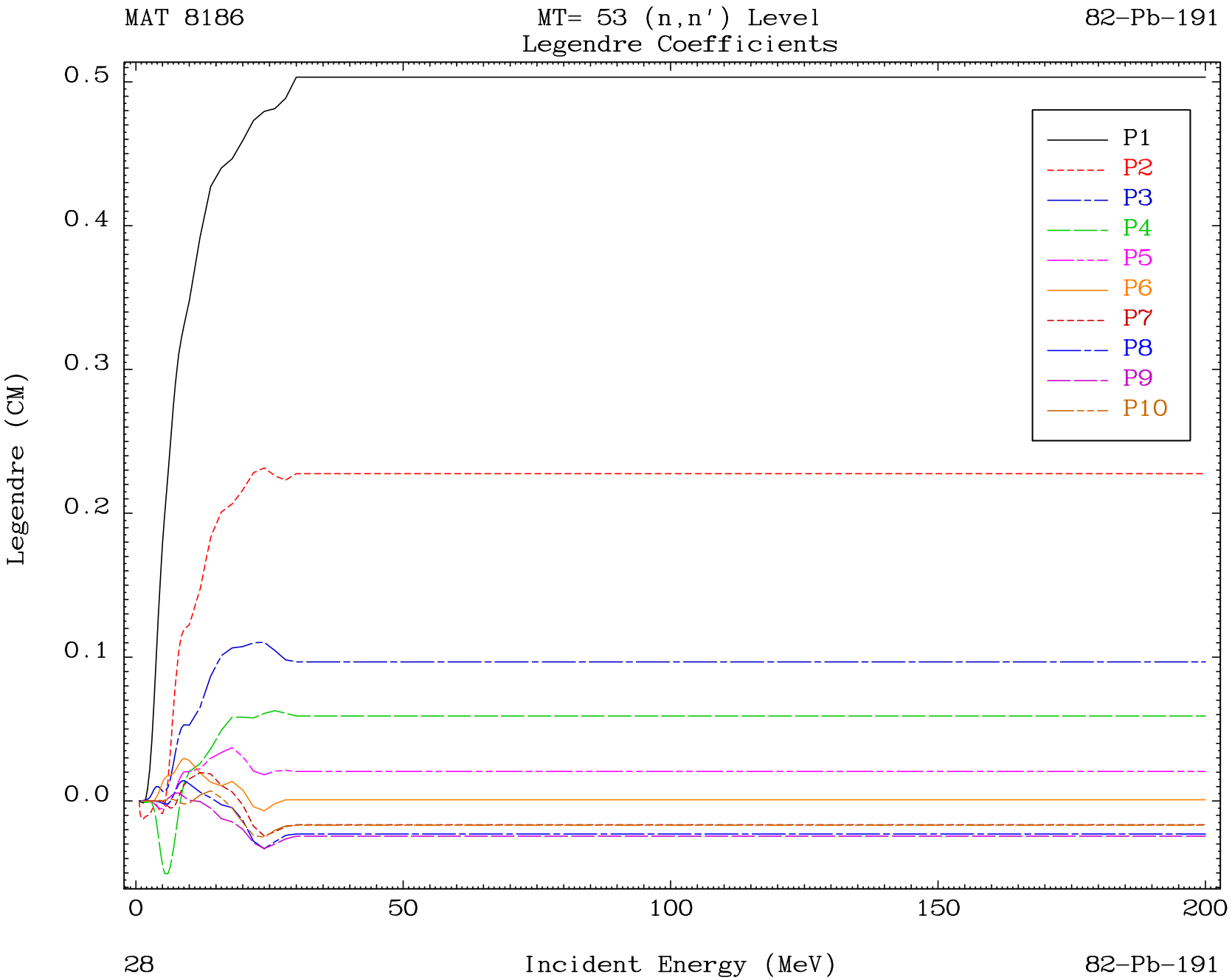

MAT 8186
MT= 51 (n,n') Level
Legendre Coefficients
82-Pb-191
X10-3
2.0
1.5
1.0
0.5
0.0
-0.5
Legendre (CM)
50
100
150
200
Incident Energy (MeV)
23
82-Pb-191
P19
P20
P21
P22
P23
P24
P25
P26
P27

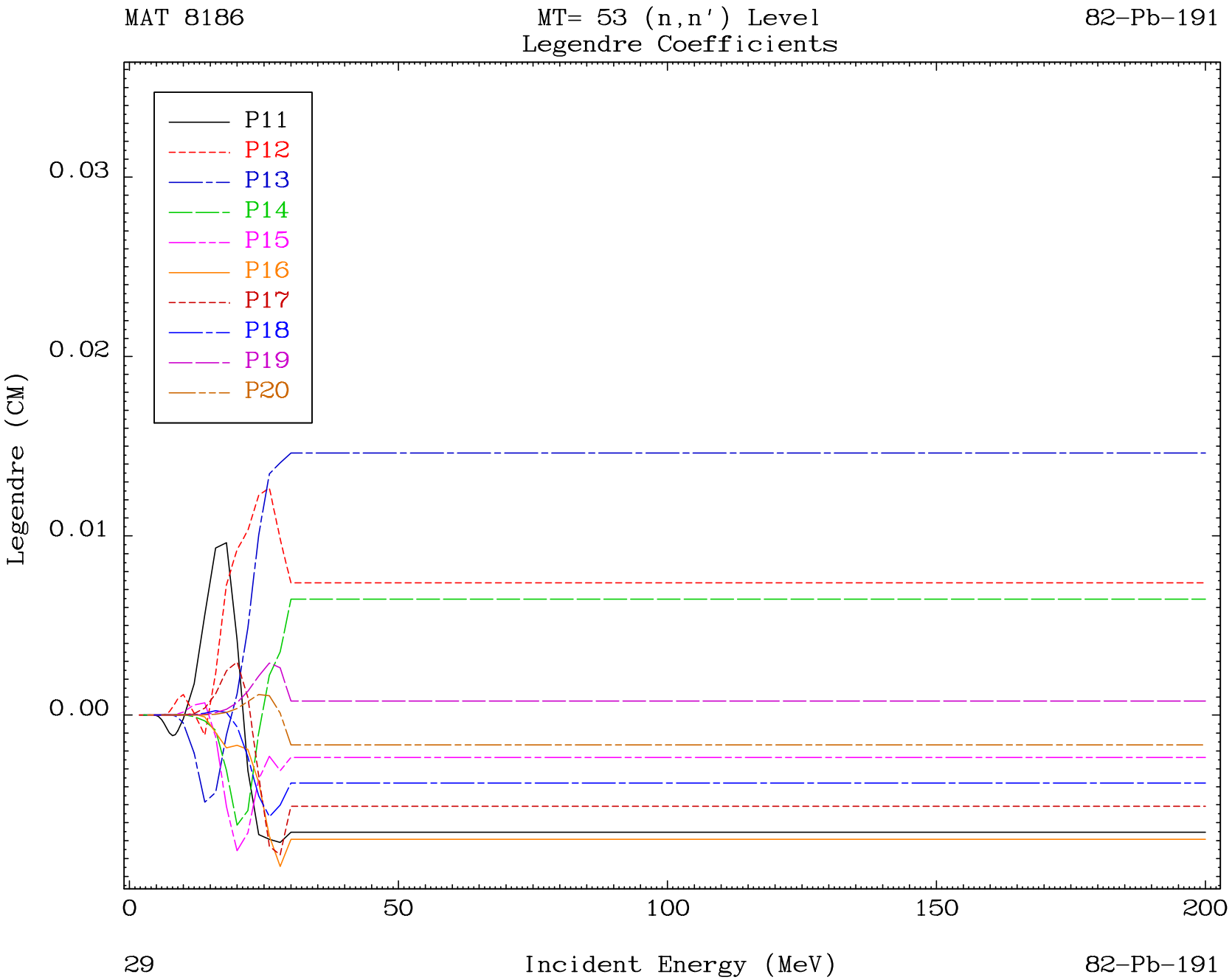

MAT 8186
MT= 51 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-6
4
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
24
Incident Energy (MeV)
82-Pb-191

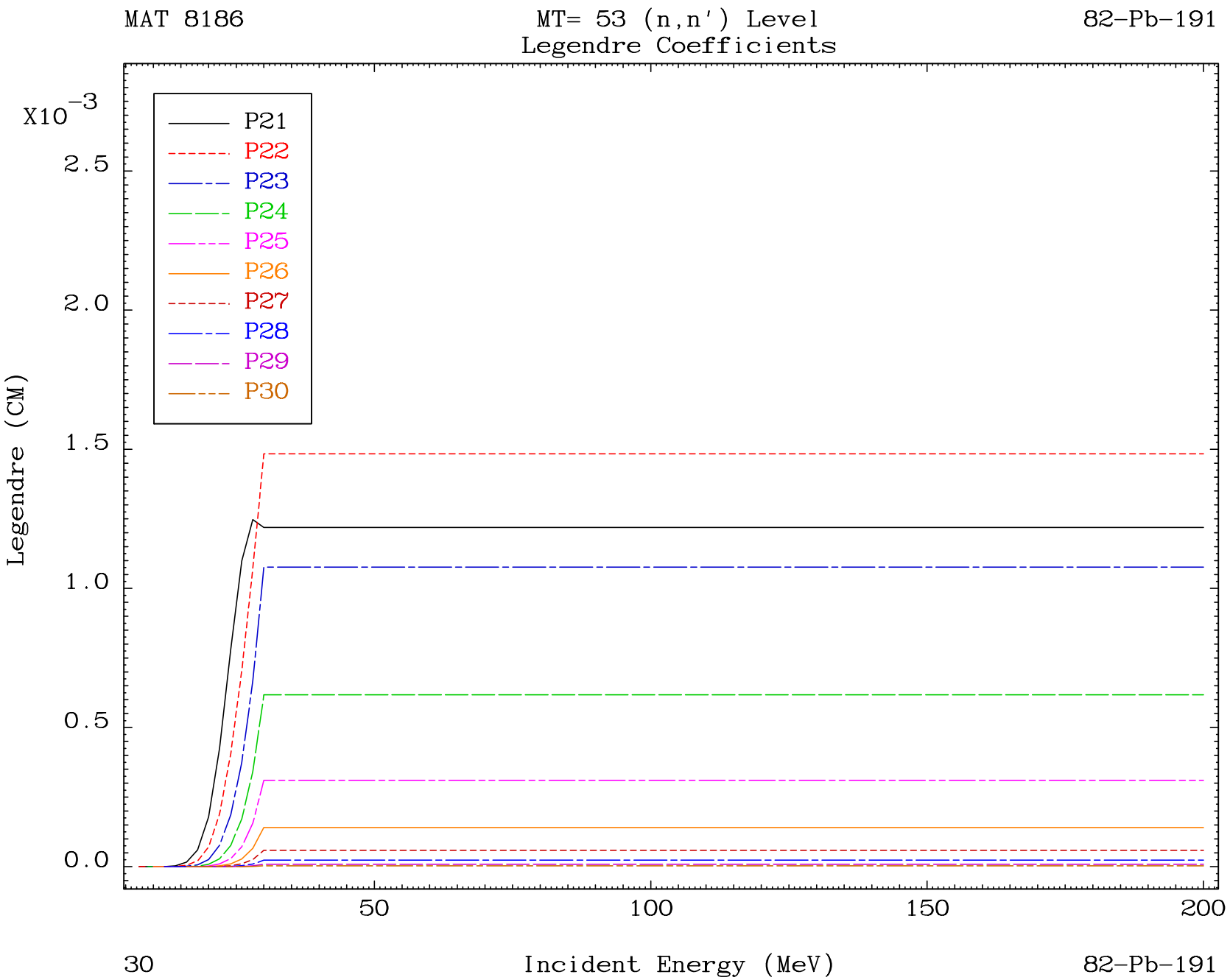

MAT 8186
MT= 52 (n,n') Level
Legendre Coefficients
82-Pb-191
0.15
0.10
0.05
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
0
50
100
150
200
25
Incident Energy (MeV)
82-Pb-191

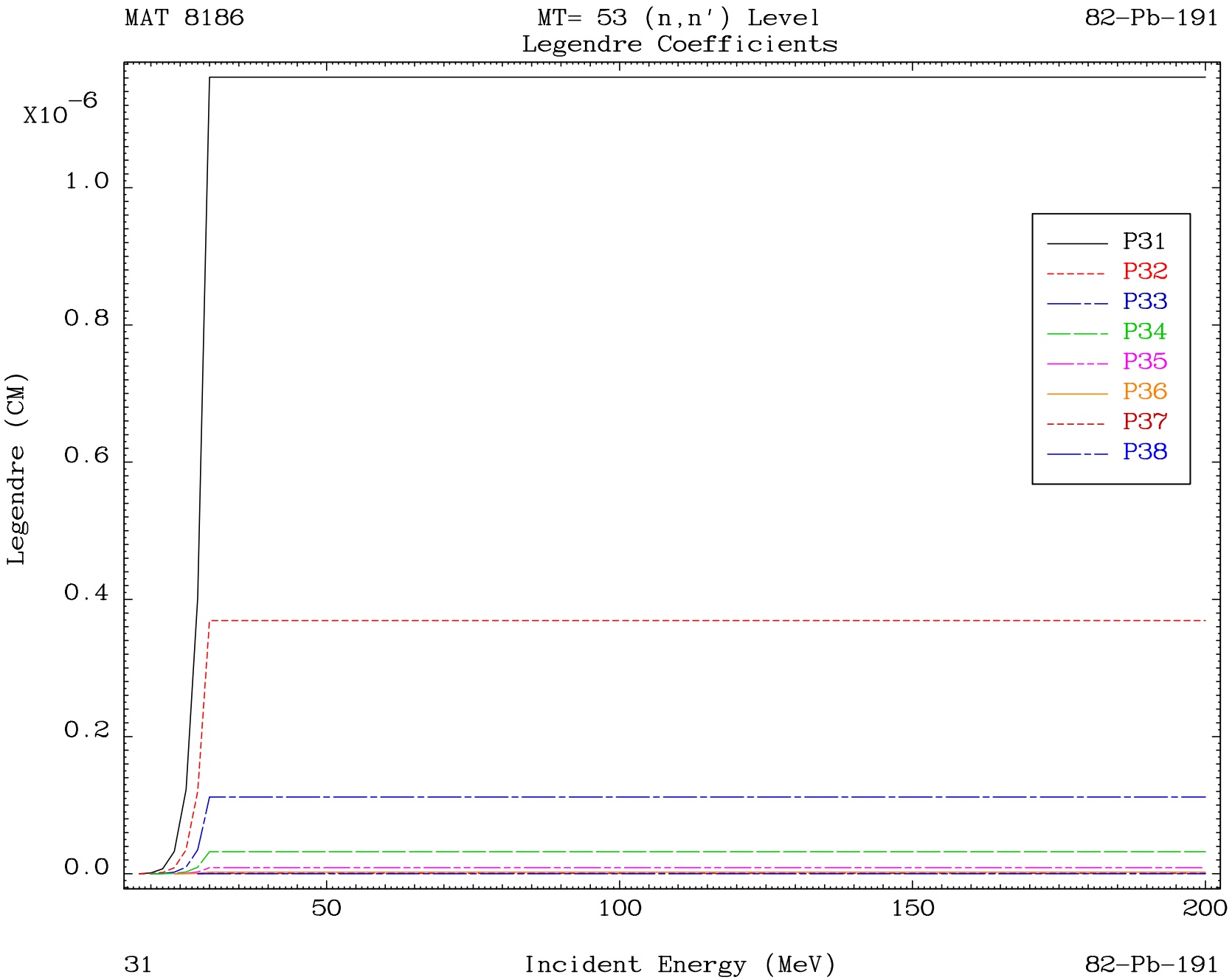

MAT 8186
MT= 52 (n,n') Level
Legendre Coefficients
82-Pb-191
X10-3
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0
50
100
150
200
26
Incident Energy (MeV)
82-Pb-191

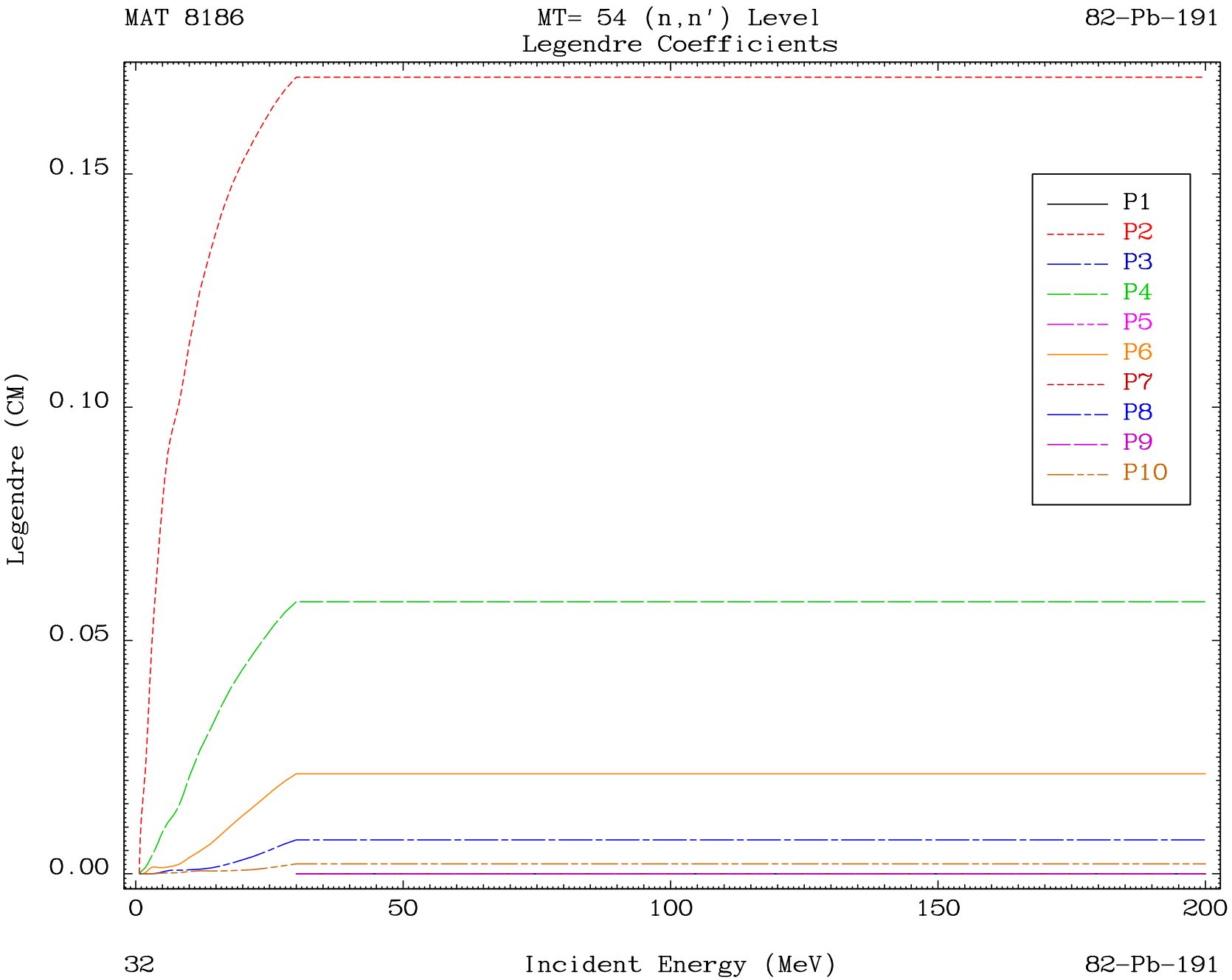

MAT 8186
MT= 52 (n,n') Level
Legendre Coefficients
82-Pb-191
X10 -6
8
6
4
2
0
Legendre (CM)
50
100
150
200
Incident Energy (MeV)
27
82-Pb-191
P21
P22
P23
P24
P25
P26
P27
P28

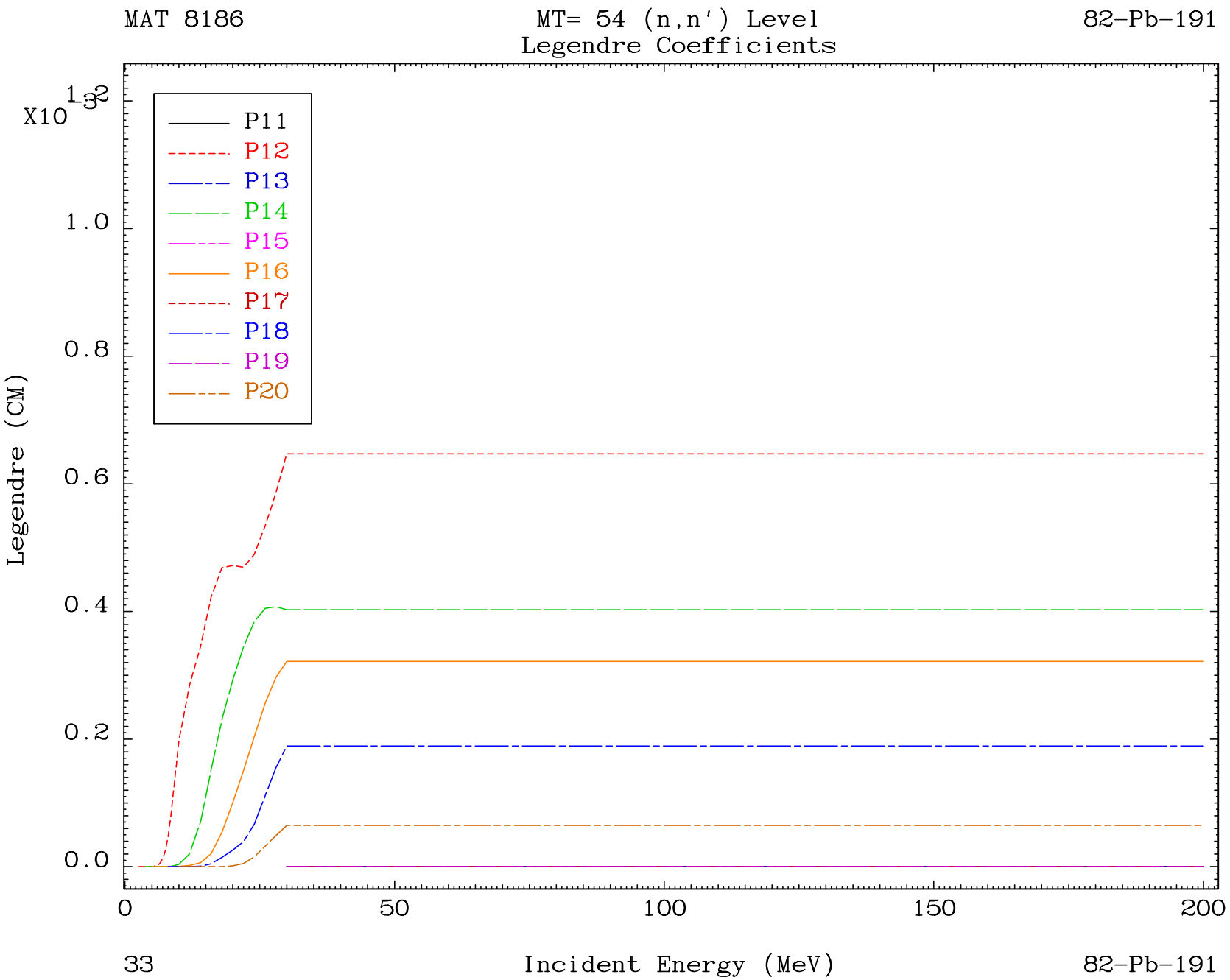

MAT 8186
MT= 53 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
28
Incident Energy (MeV)
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

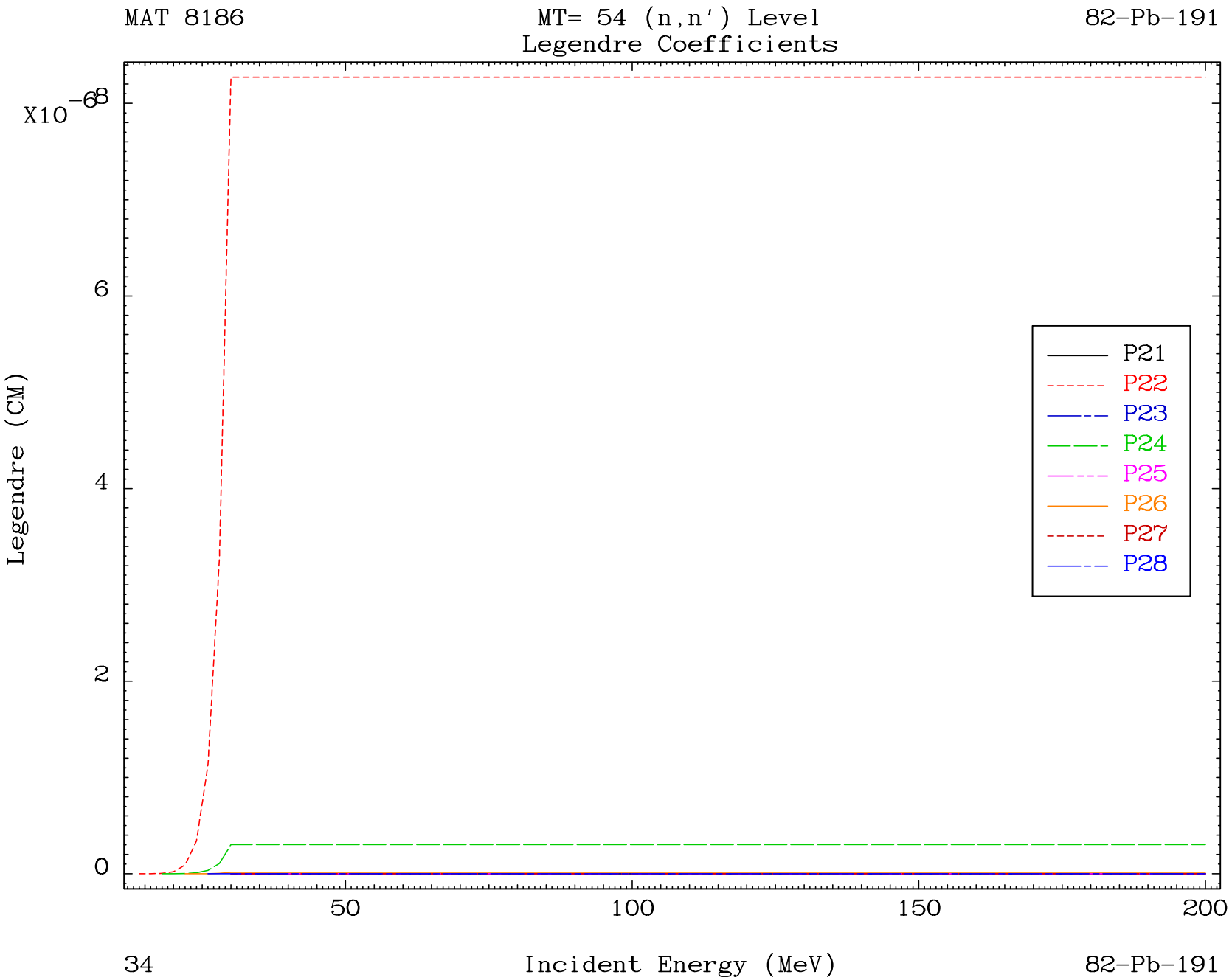

MAT 8186
MT= 53 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.03
0.02
0.01
0.00
Legendre (CM)
0
50
100
150
200
29
Incident Energy (MeV)
82-Pb-191

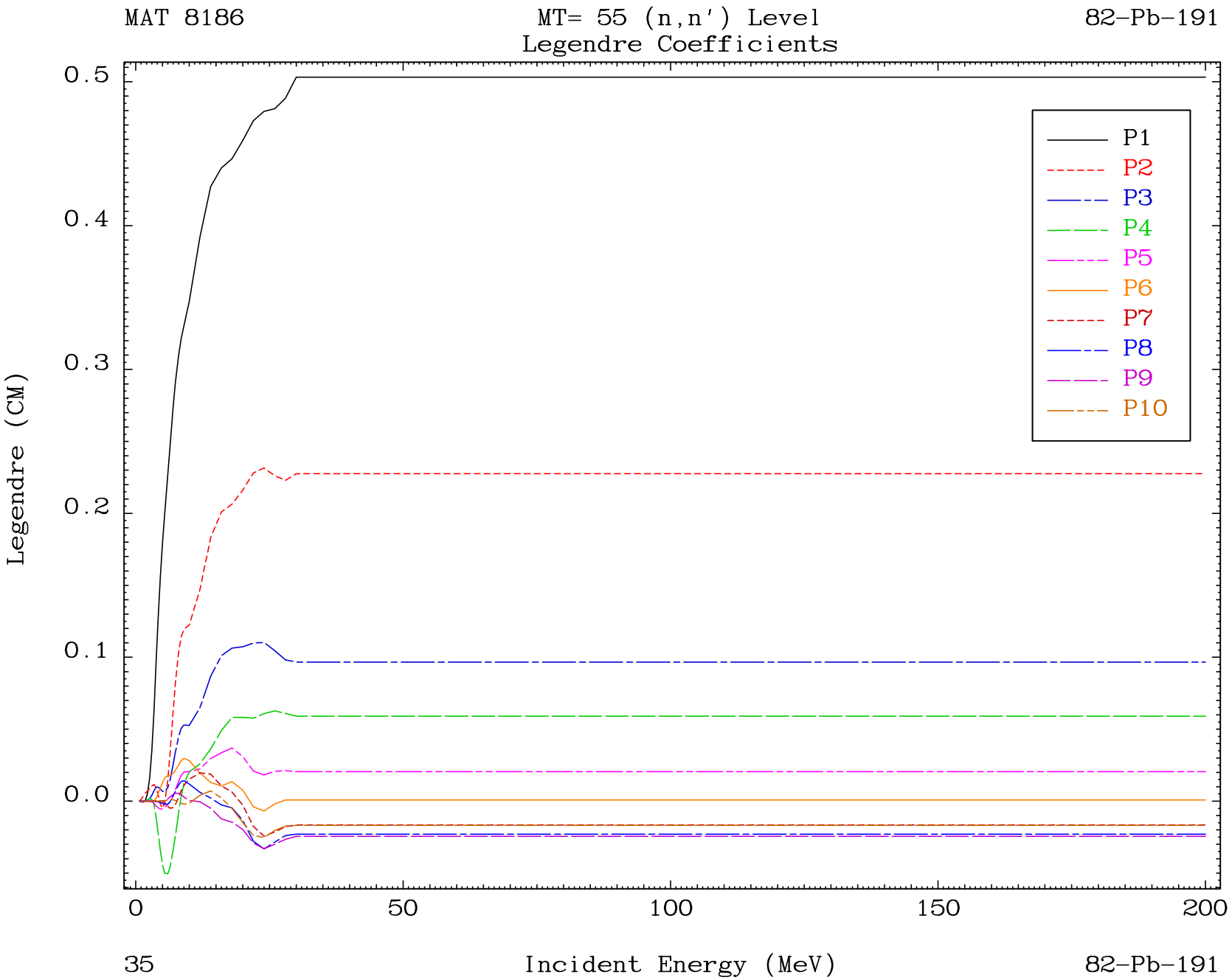

MAT 8186
MT= 53 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-3
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
50
100
150
200
30
Incident Energy (MeV)
82-Pb-191

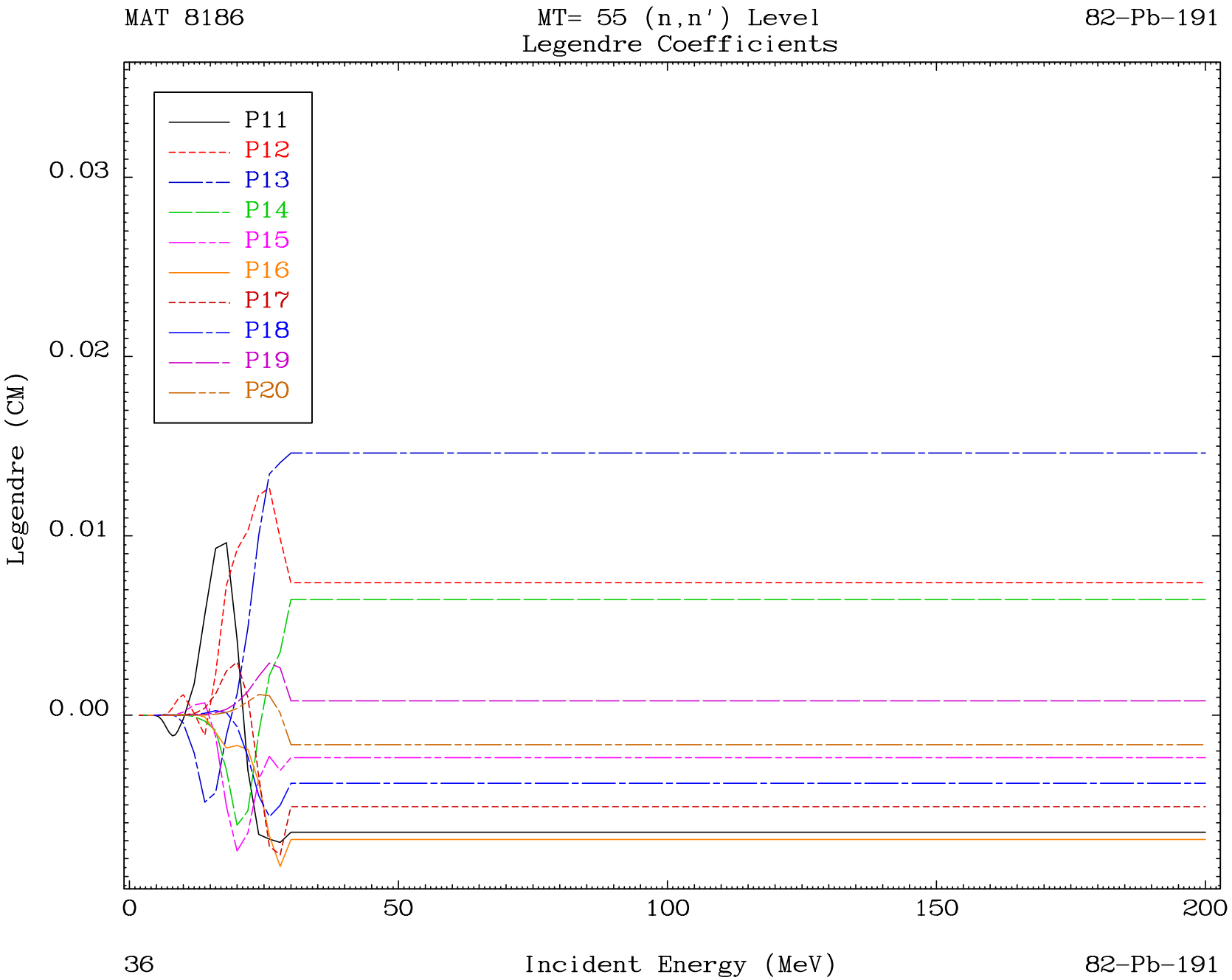

MAT 8186
MT= 53 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-6
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
31
Incident Energy (MeV)
82-Pb-191

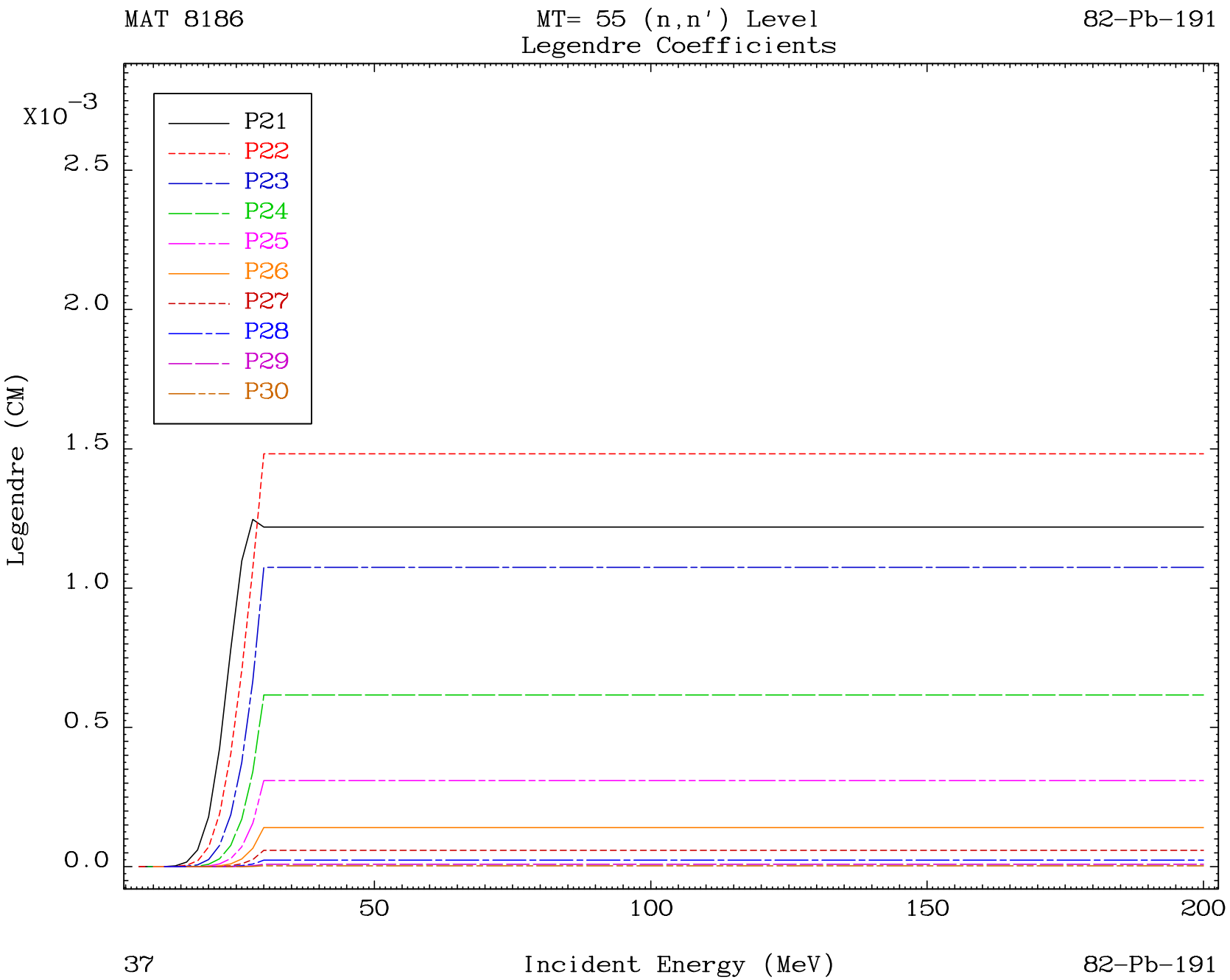

MAT 8186
MT= 54 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.15
0.10
0.05
0.00
0
50
100
150
200
32
Incident Energy (MeV)
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

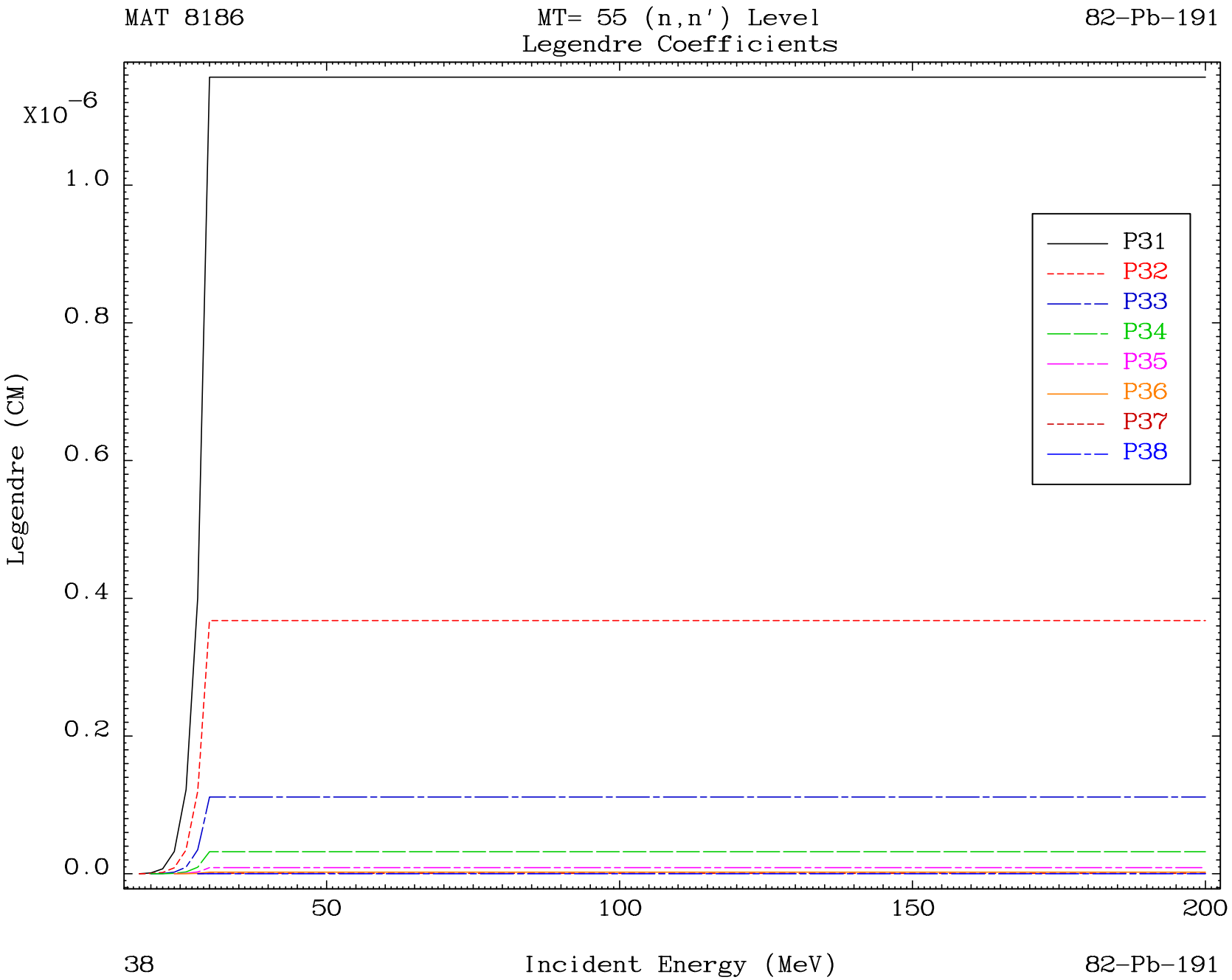

MAT 8186
MT= 54 (n,n') Level
Legendre Coefficients
82-Pb-191
X10-2
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0
50
100
150
200
33
Incident Energy (MeV)
82-Pb-191

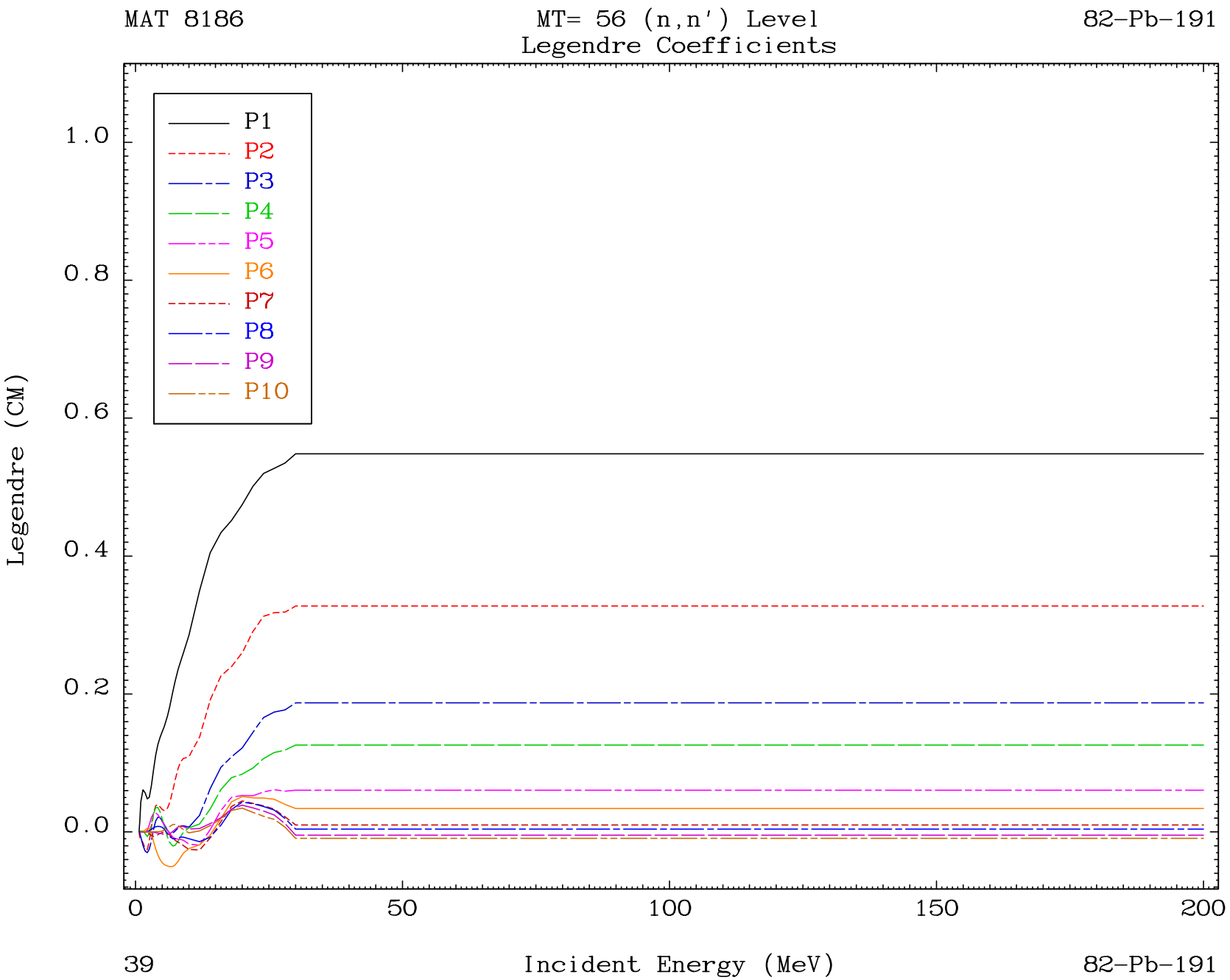

MAT 8186
MT= 54 (n,n') Level
Legendre Coefficients
82-Pb-191
X10 -6
8
6
4
2
0
Legendre (CM)
50
100
150
200
34
Incident Energy (MeV)
82-Pb-191
P21
P22
P23
P24
P25
P26
P27
P28

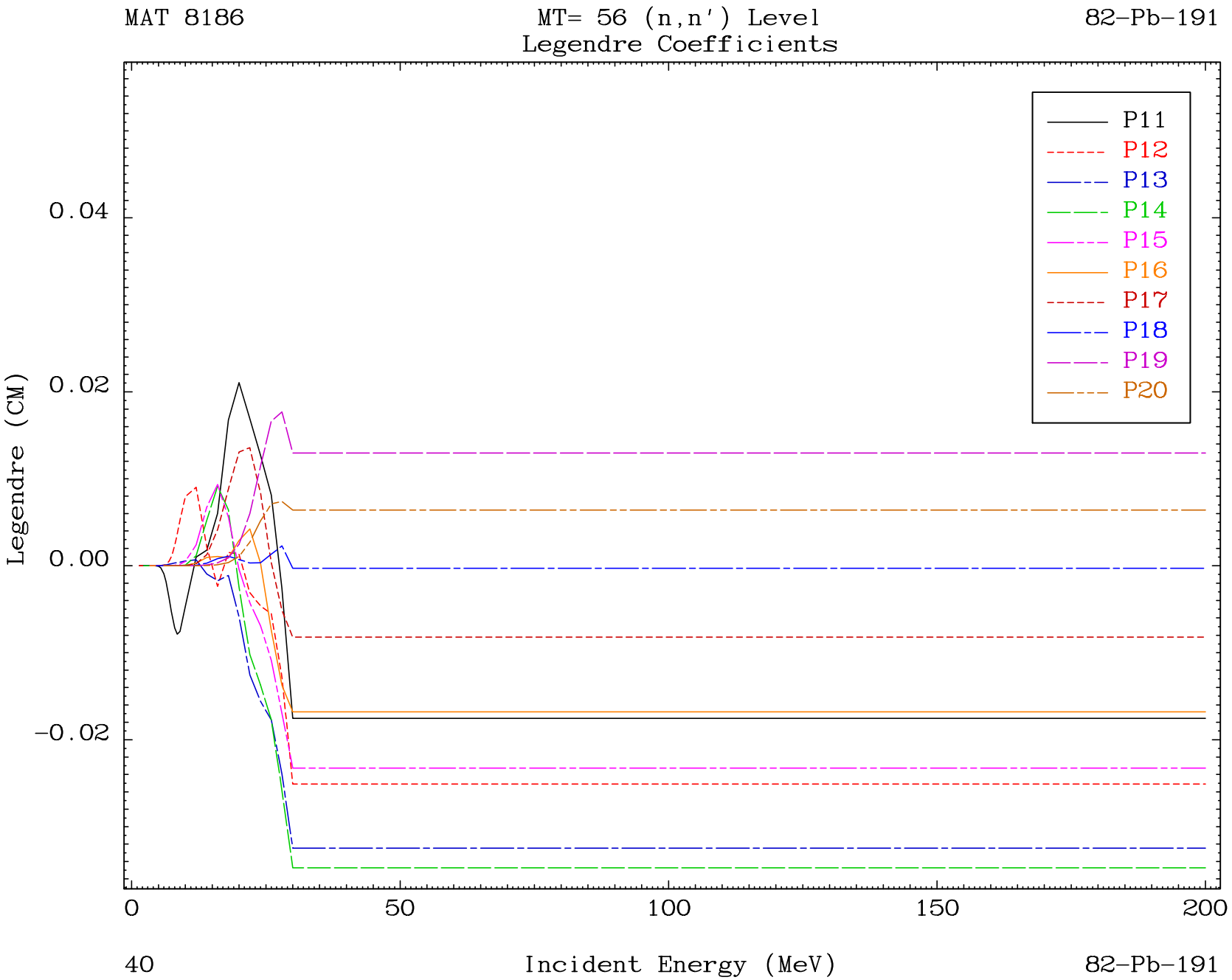

MAT 8186
MT= 55 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
35
Incident Energy (MeV)
82-Pb-191

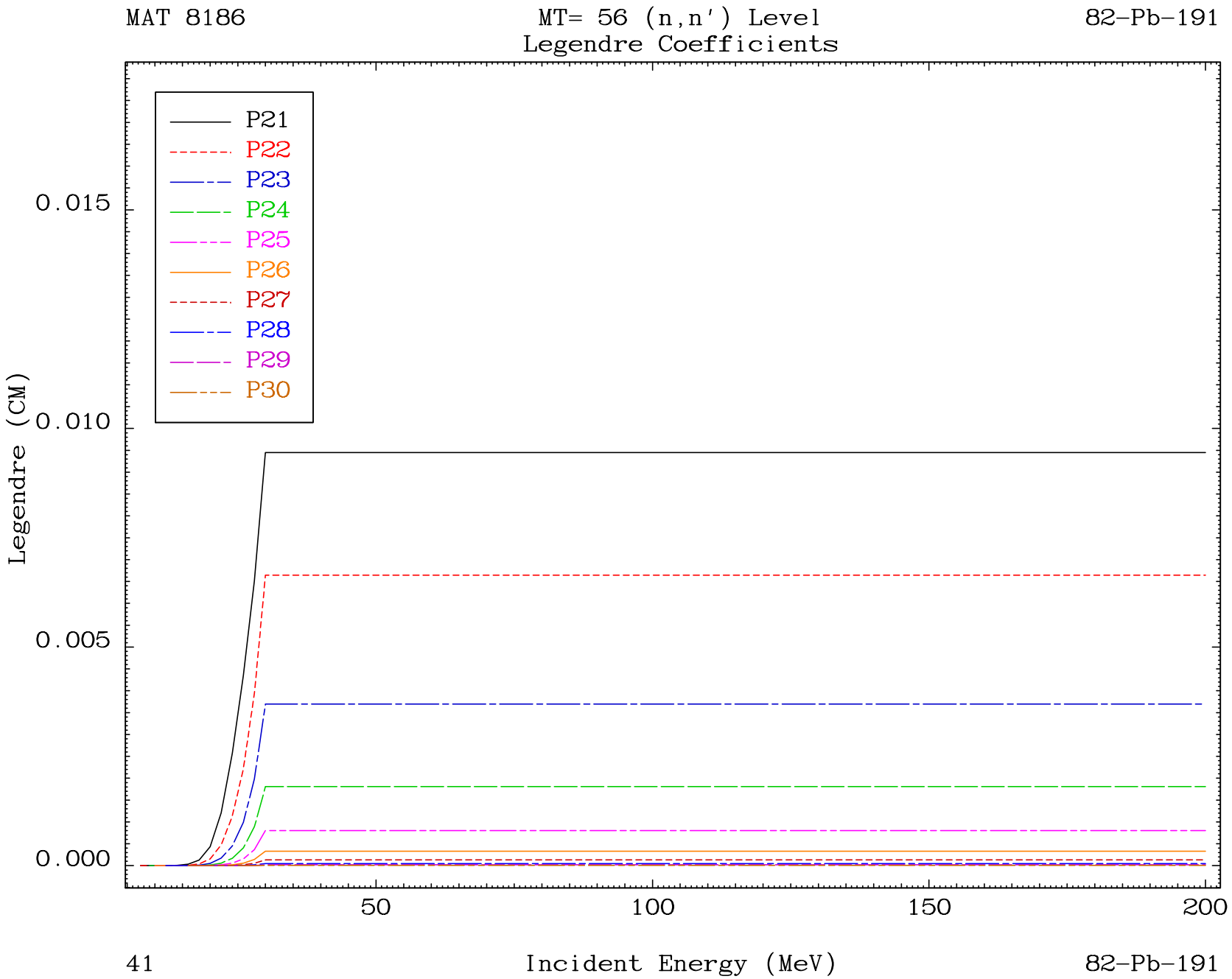

MAT 8186
MT= 55 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.03
0.02
0.01
0.00
Legendre (CM)
0
50
100
150
200
36
Incident Energy (MeV)
82-Pb-191

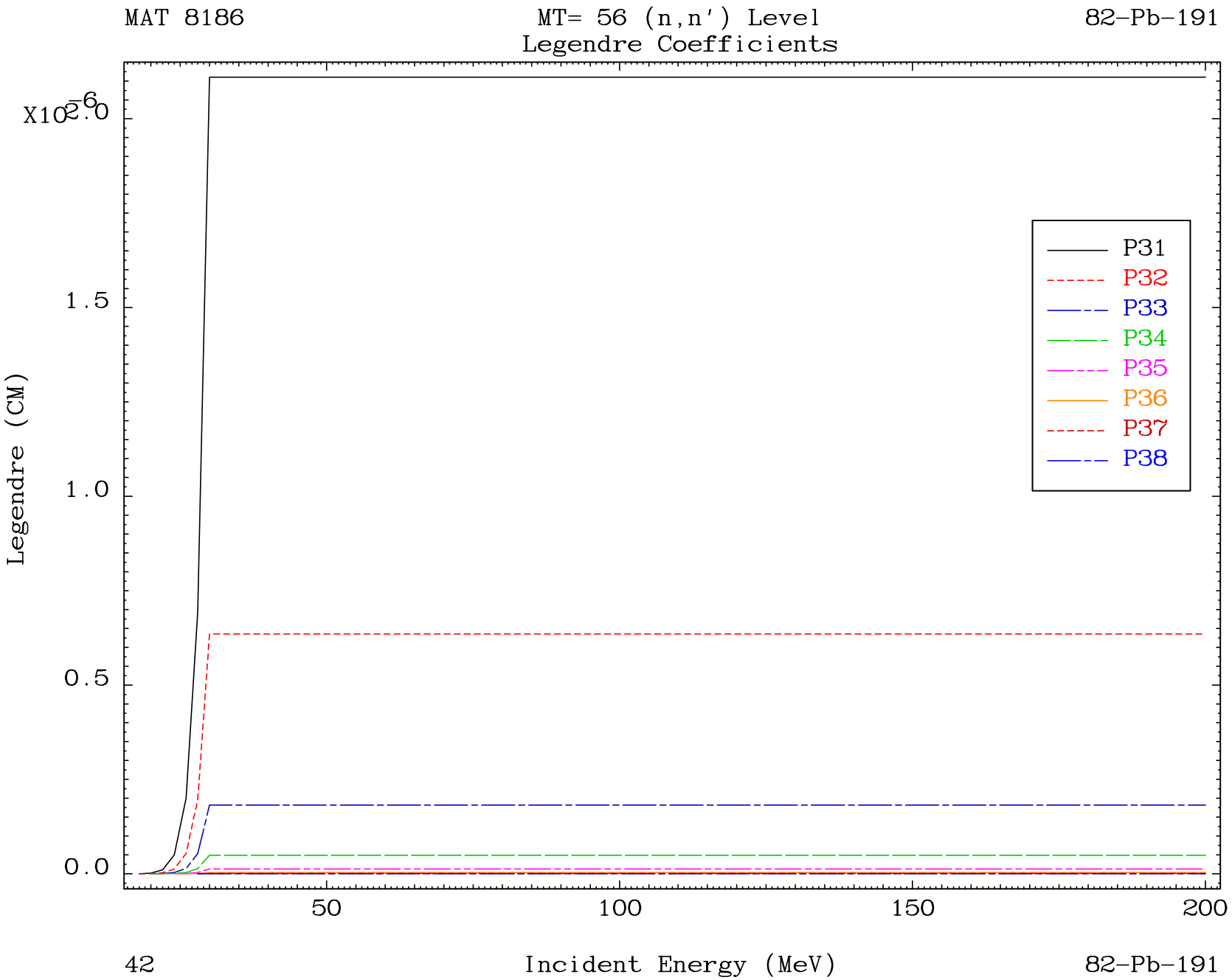

MAT 8186
MT= 55 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-3
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
50
100
150
200
37
Incident Energy (MeV)
82-Pb-191

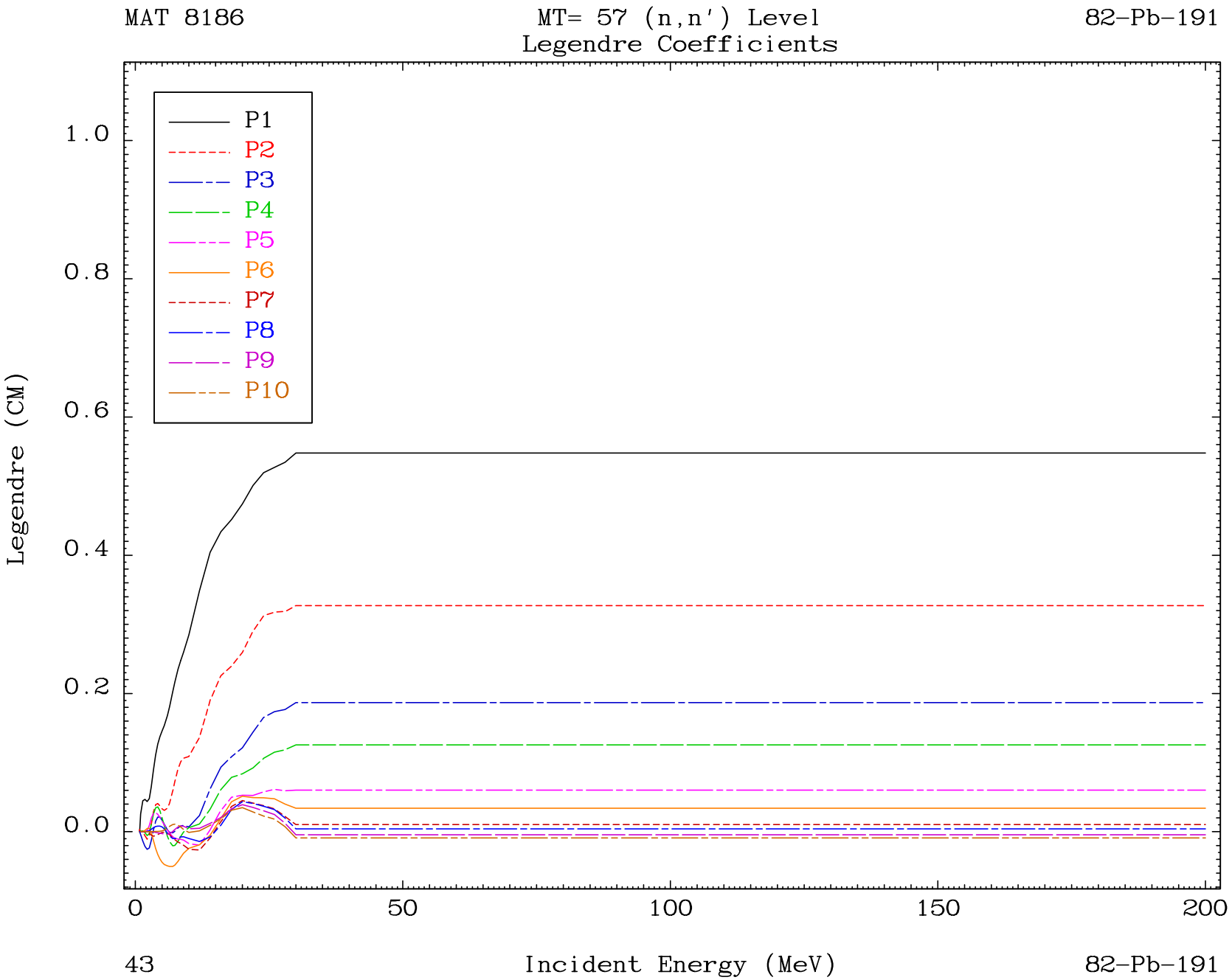

MAT 8186
MT= 55 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-6
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
38
Incident Energy (MeV)
82-Pb-191

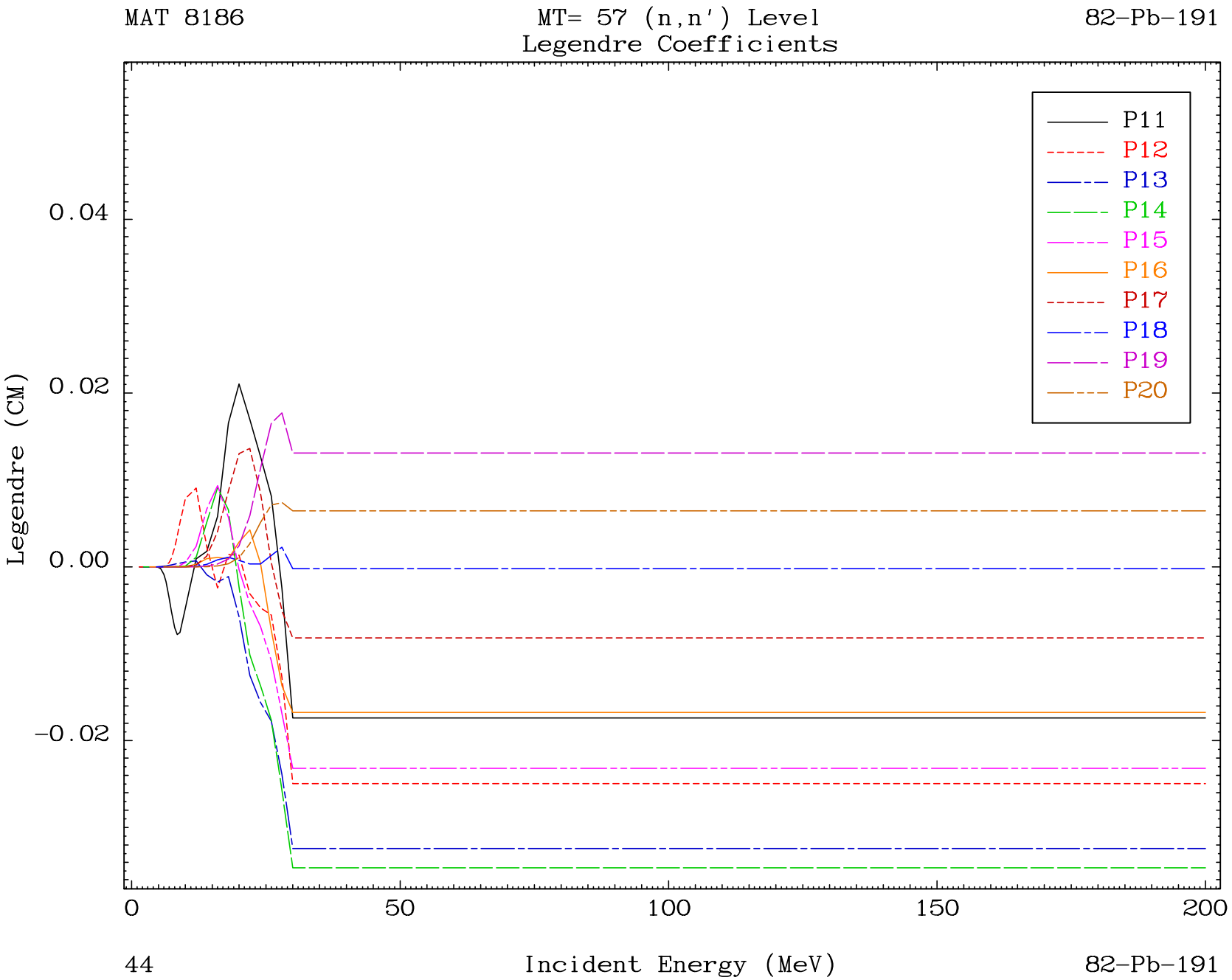

MAT 8186
MT= 56 (n,n') Level
Legendre Coefficients
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
Legendre (CM)
1.0
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
39
Incident Energy (MeV)
82-Pb-191

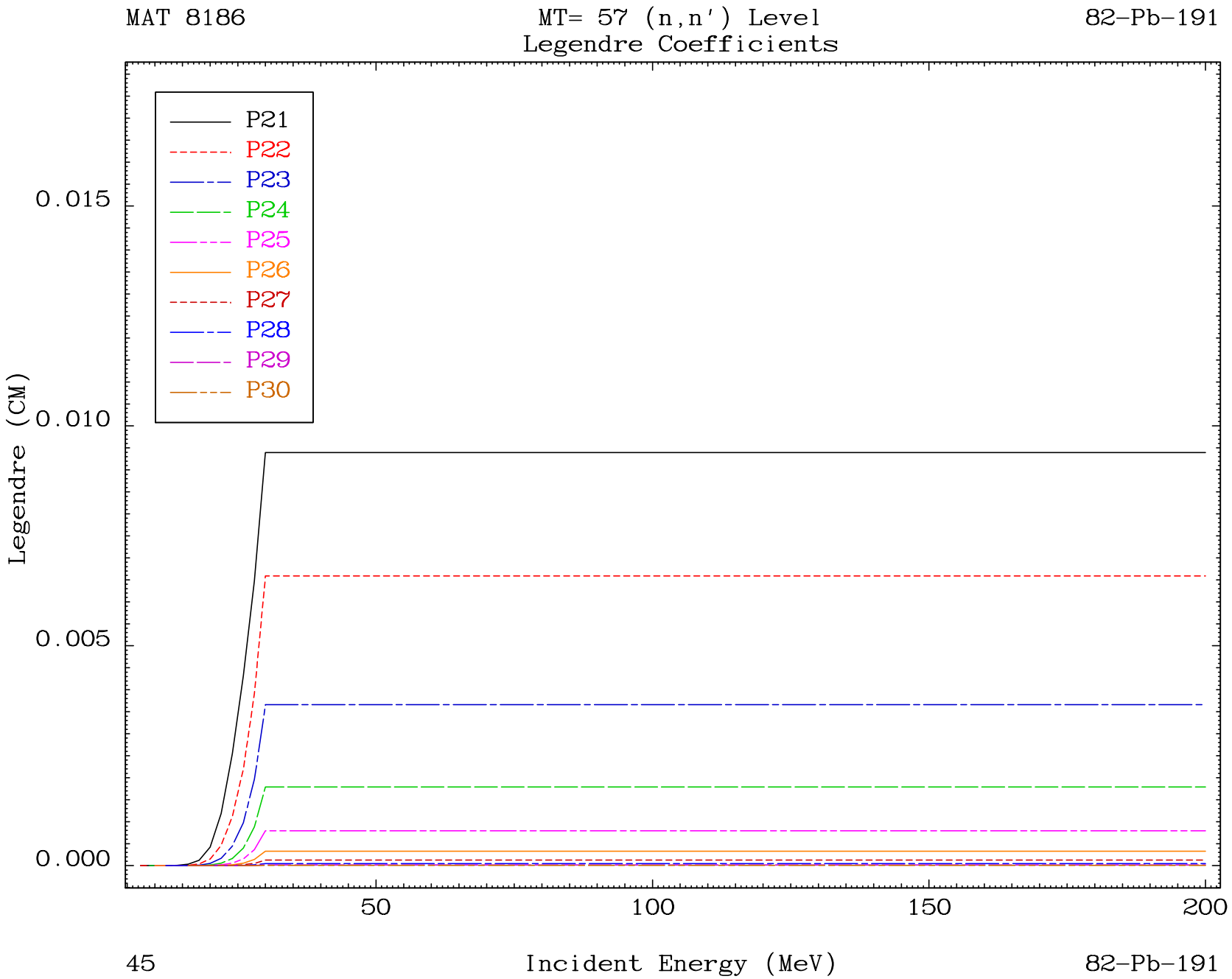

MAT 8186
MT= 56 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
40
Incident Energy (MeV)
82-Pb-191

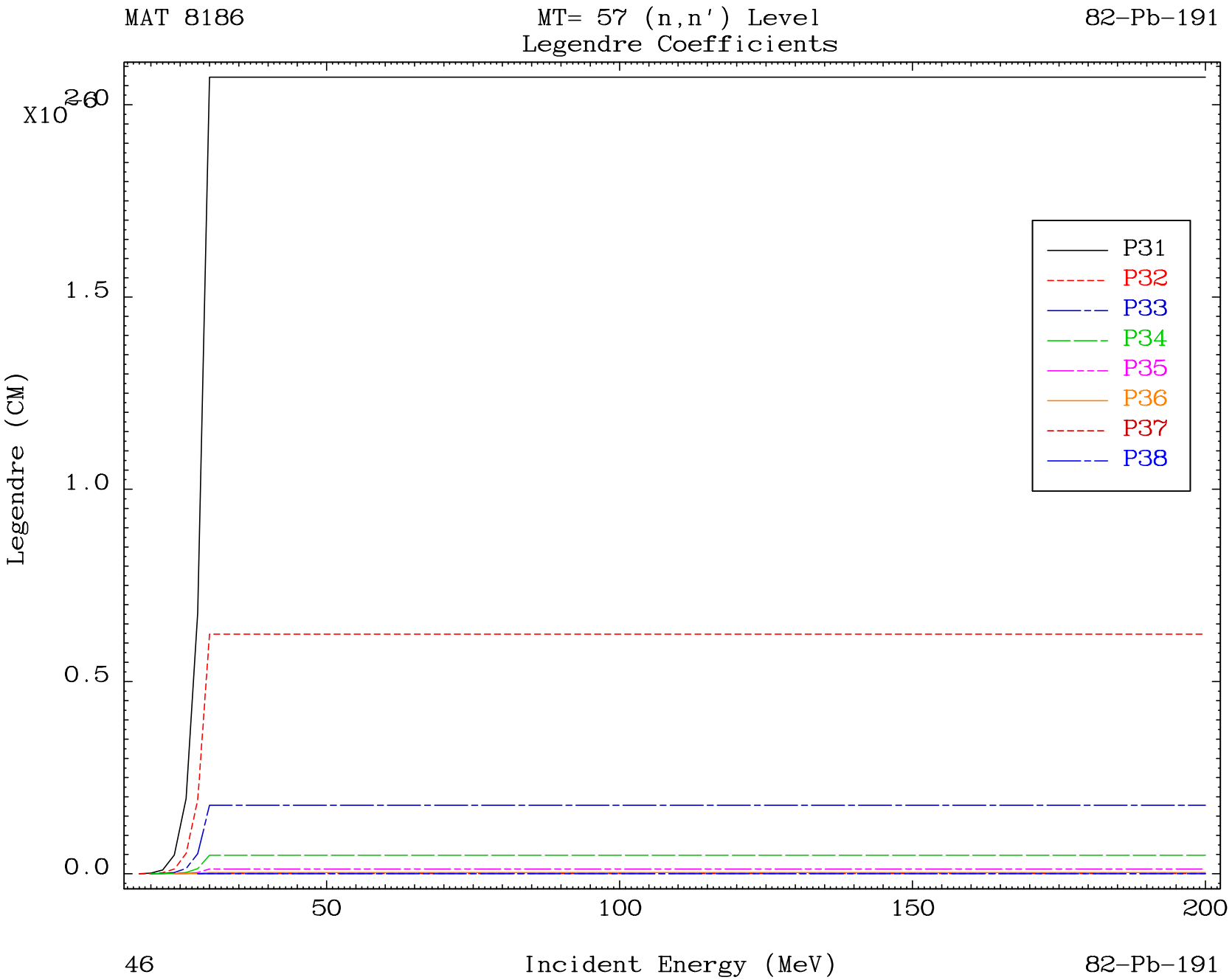

MAT 8186
MT= 56 (n,n') Level
Legendre Coefficients
82-Pb-191
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
41
Incident Energy (MeV)
82-Pb-191

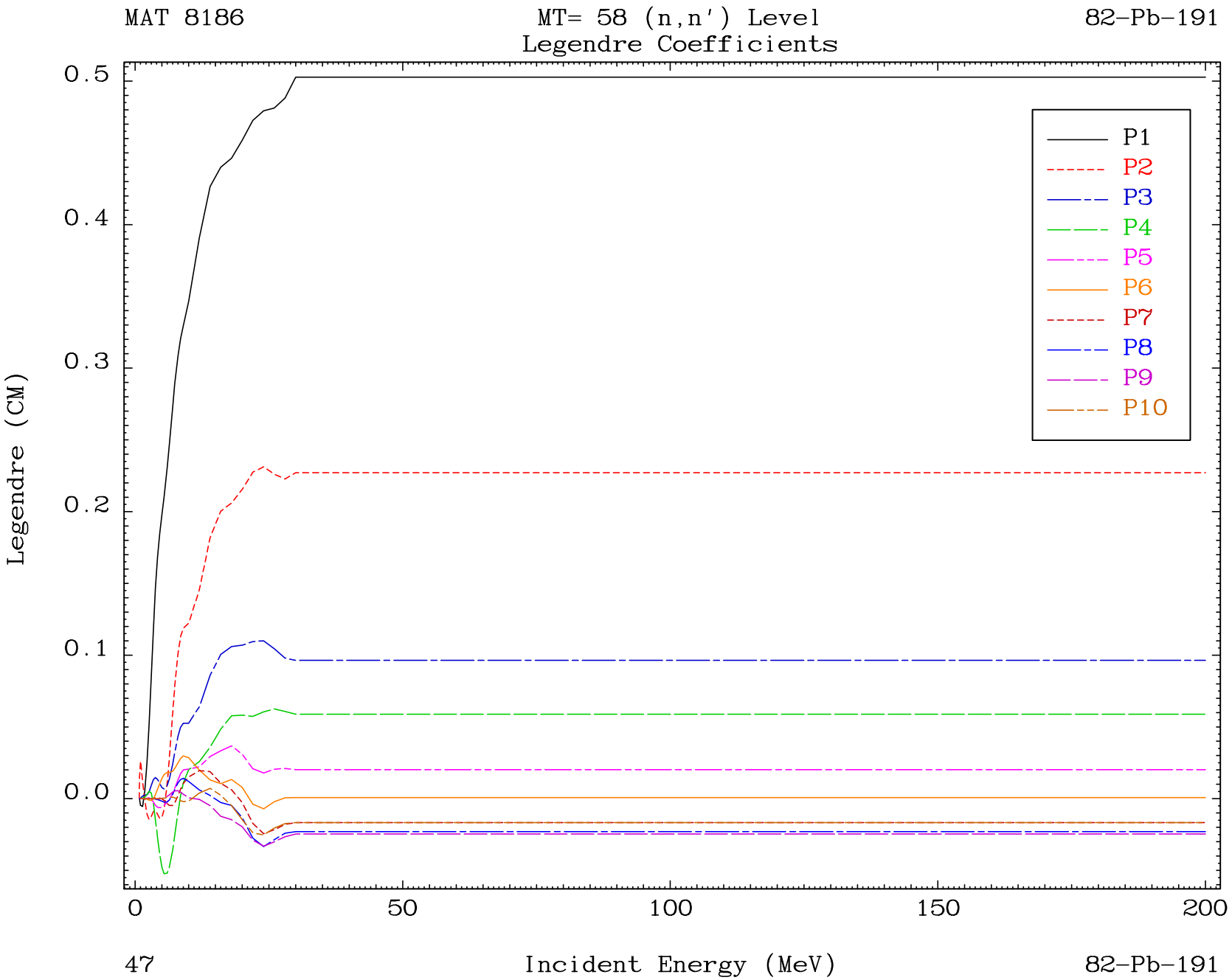

MAT 8186
MT= 56 (n,n') Level
Legendre Coefficients
82-Pb-191
X10-6
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
42
Incident Energy (MeV)
82-Pb-191

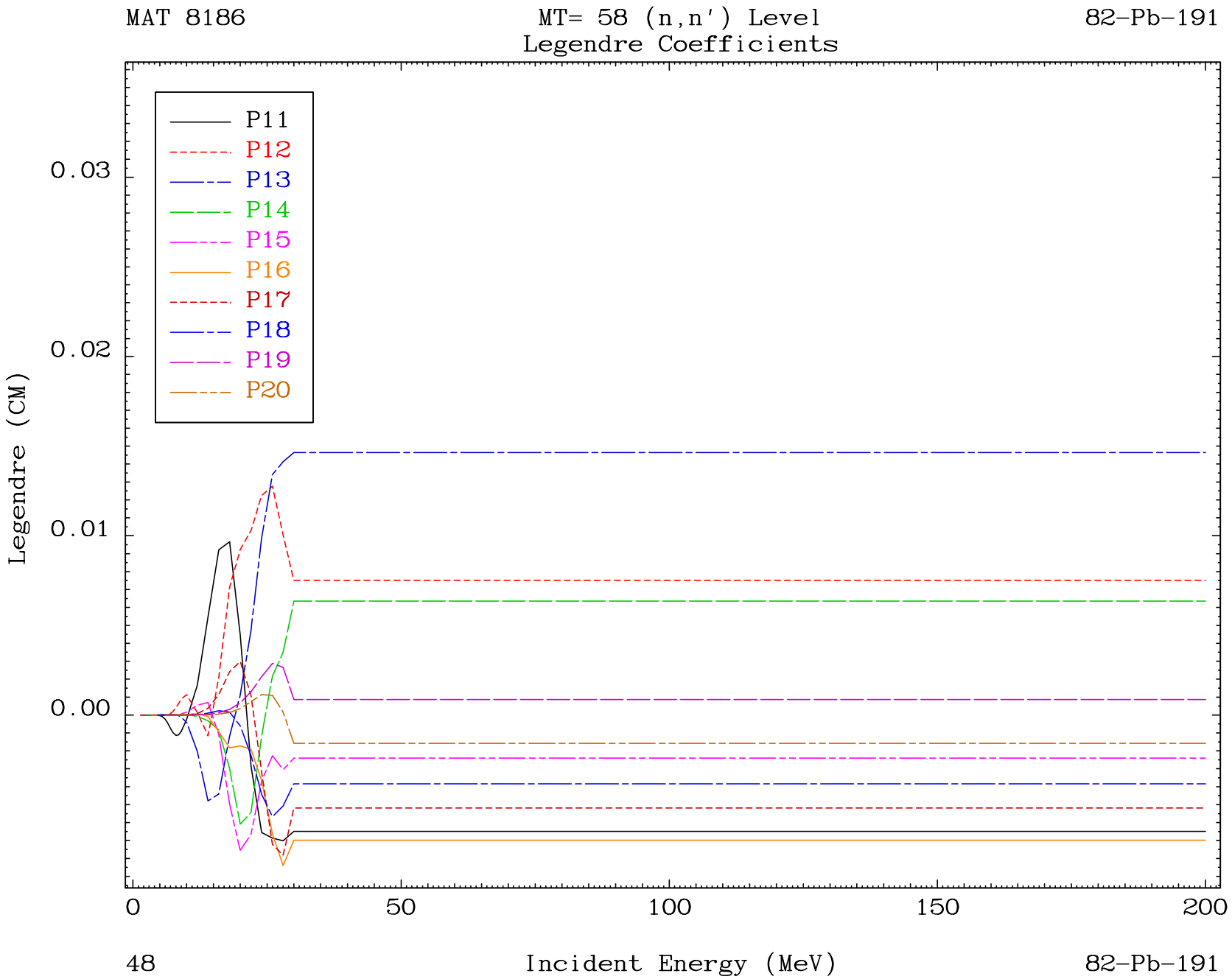

MAT 8186
MT= 57 (n,n') Level
Legendre Coefficients
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
Legendre (CM)
1.0
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
43
Incident Energy (MeV)
82-Pb-191

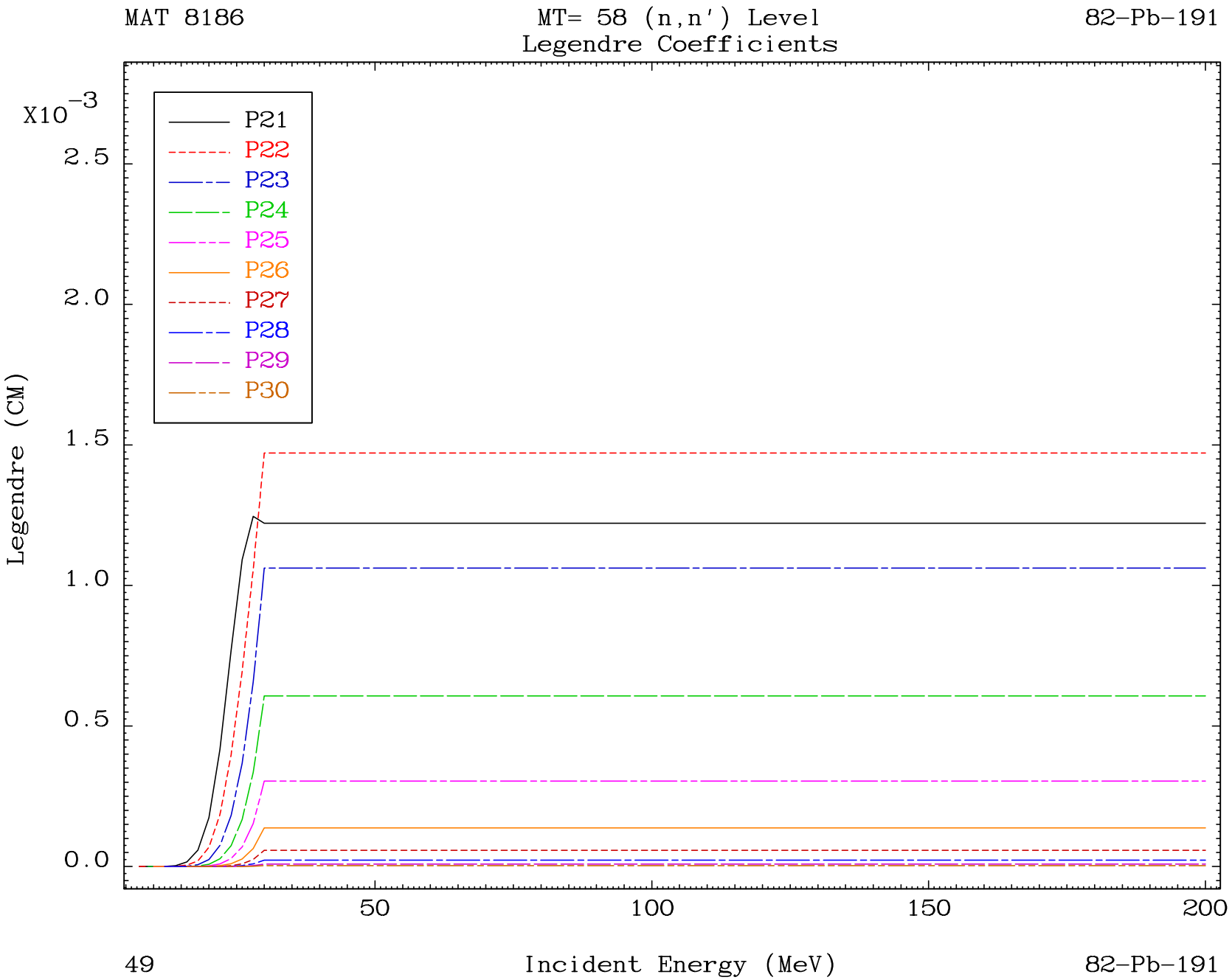

MAT 8186
MT= 57 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
44
Incident Energy (MeV)
82-Pb-191

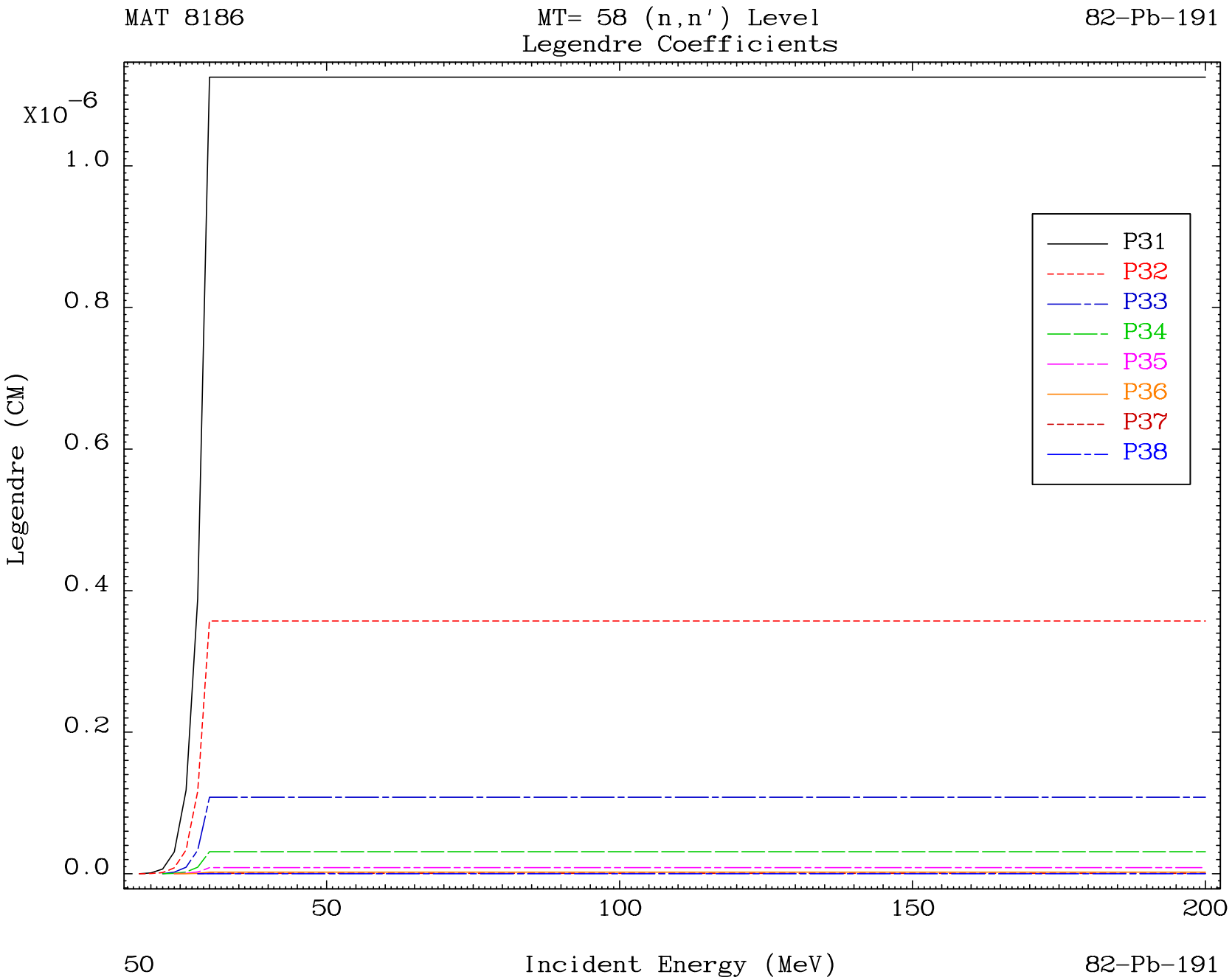

MAT 8186
MT= 57 (n,n') Level
Legendre Coefficients
82-Pb-191
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
45
Incident Energy (MeV)
82-Pb-191

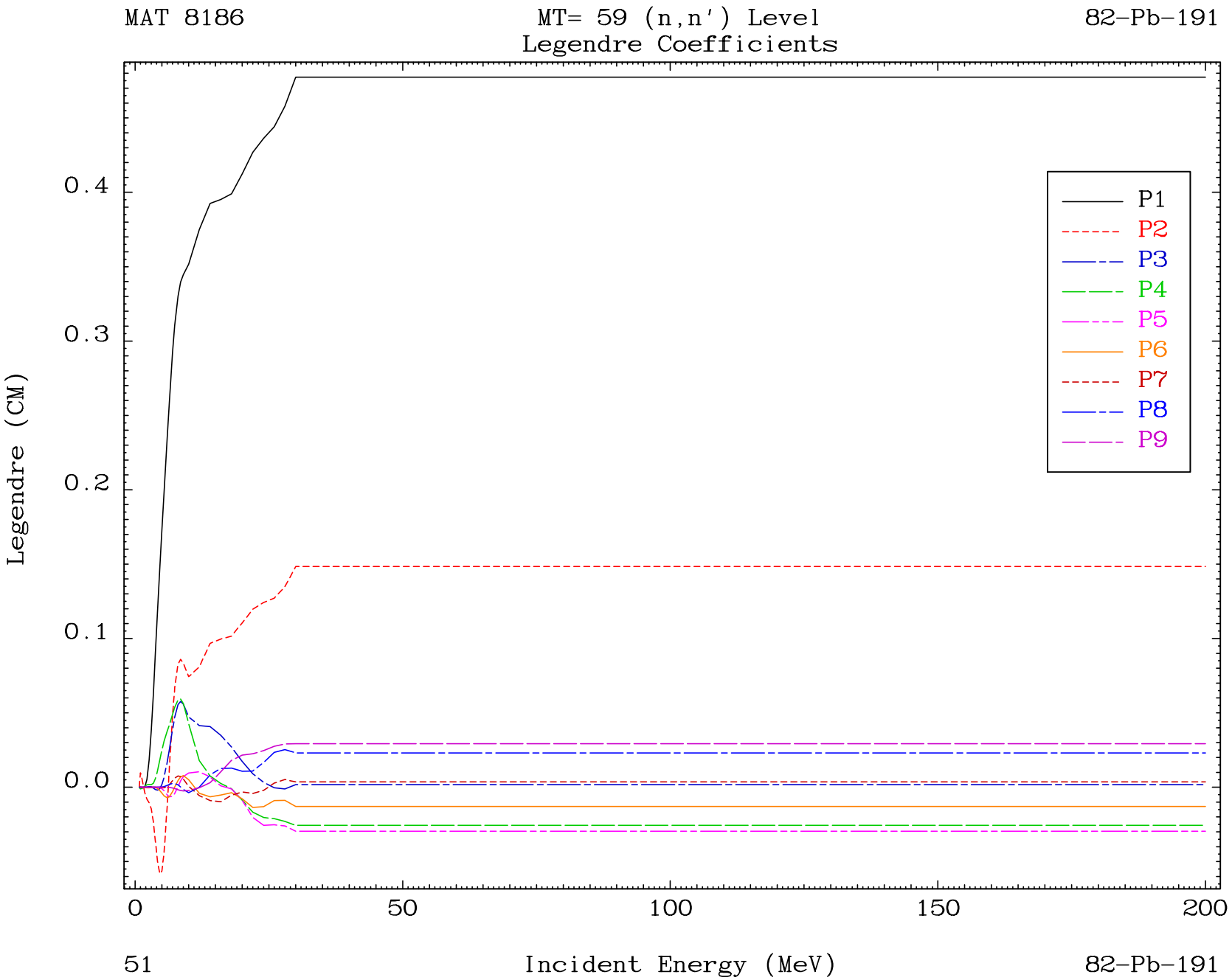

MAT 8186
MT= 57 (n,n') Level
Legendre Coefficients
82-Pb-191
X10-2
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
46
Incident Energy (MeV)
82-Pb-191

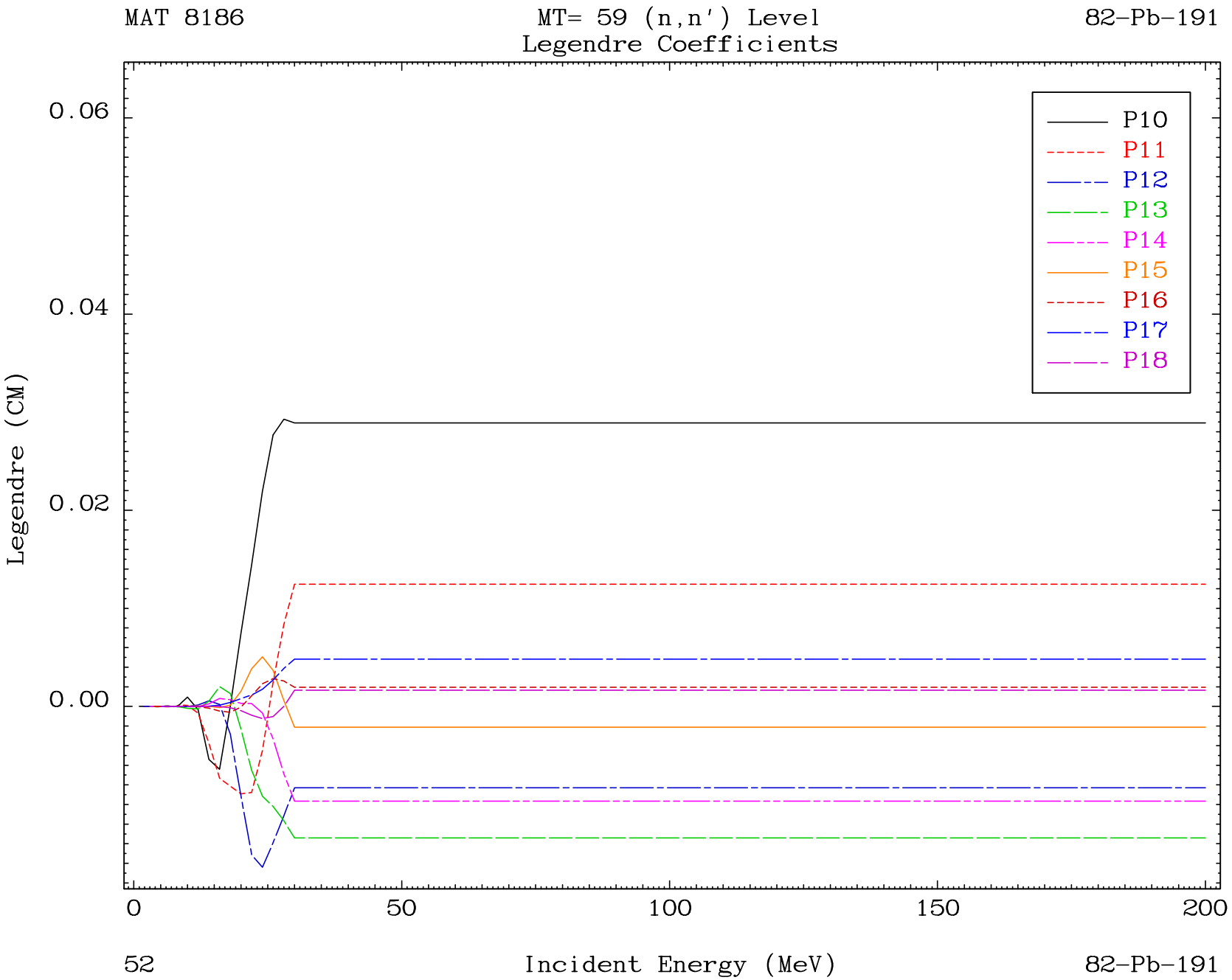

MAT 8186
MT= 58 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
47
Incident Energy (MeV)
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

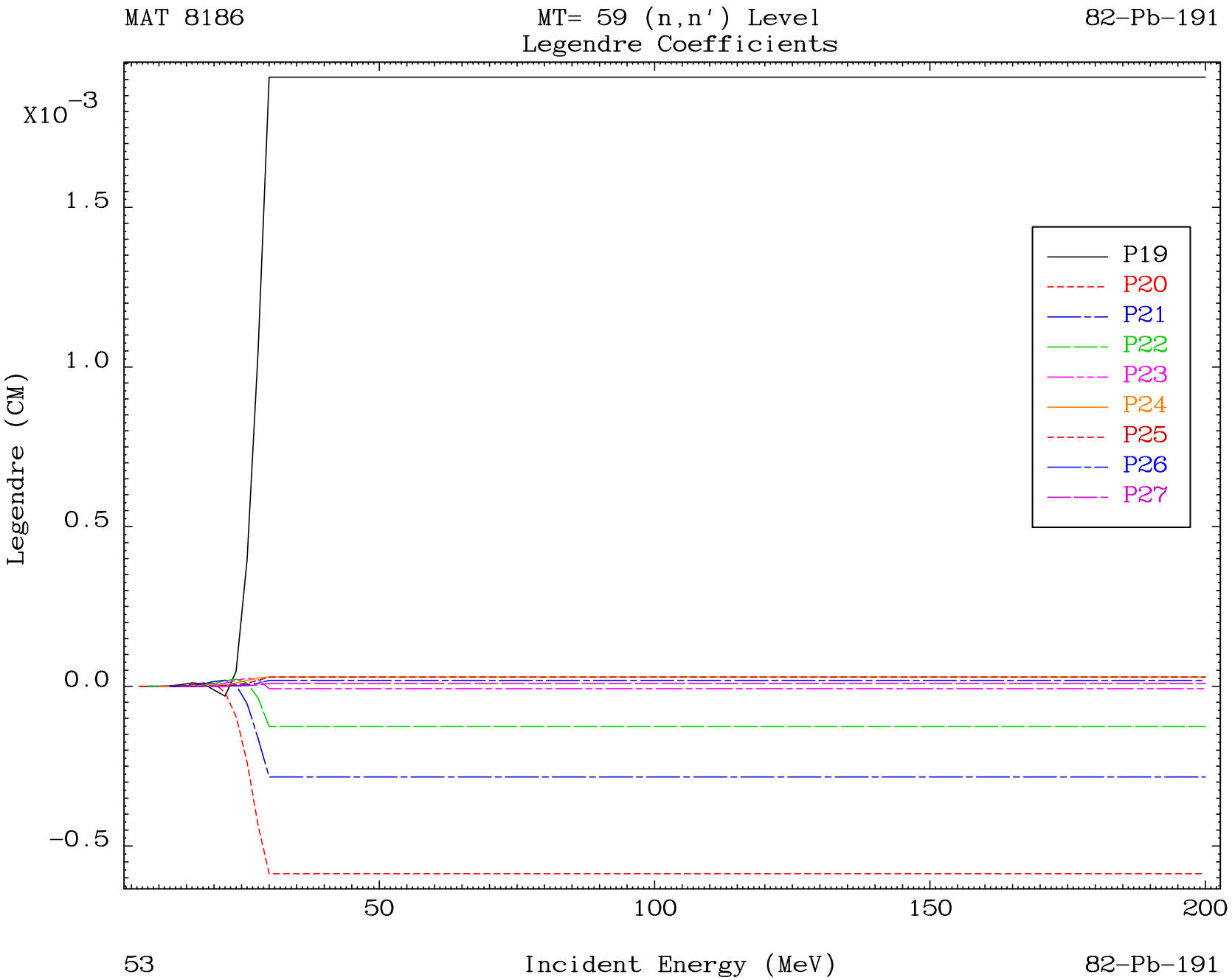

MAT 8186
MT= 58 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.03
0.02
0.01
0.00
Legendre (CM)
0
50
100
150
200
48
Incident Energy (MeV)
82-Pb-191

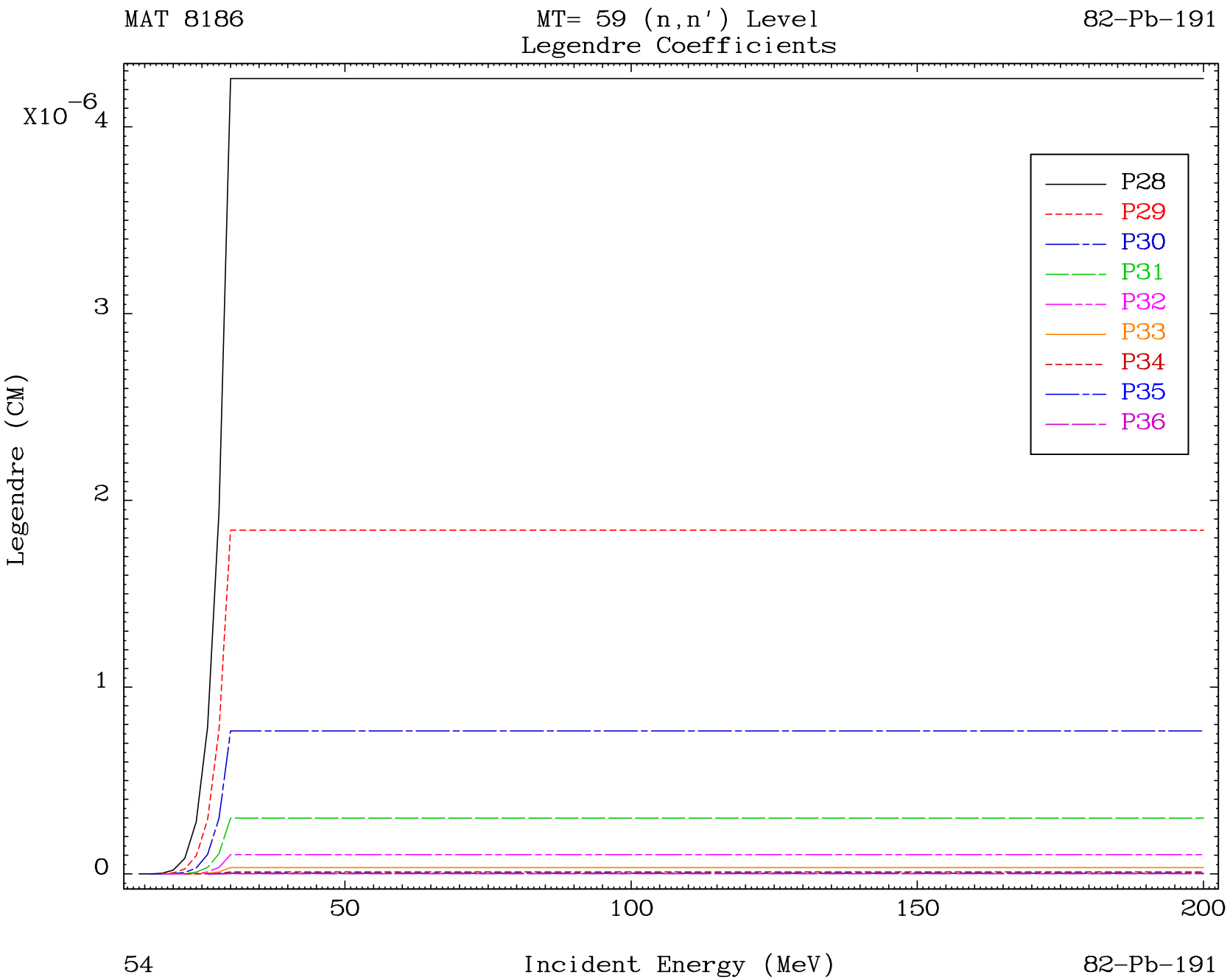

MAT 8186
MT= 58 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-3
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
50
100
150
200
49
Incident Energy (MeV)
82-Pb-191

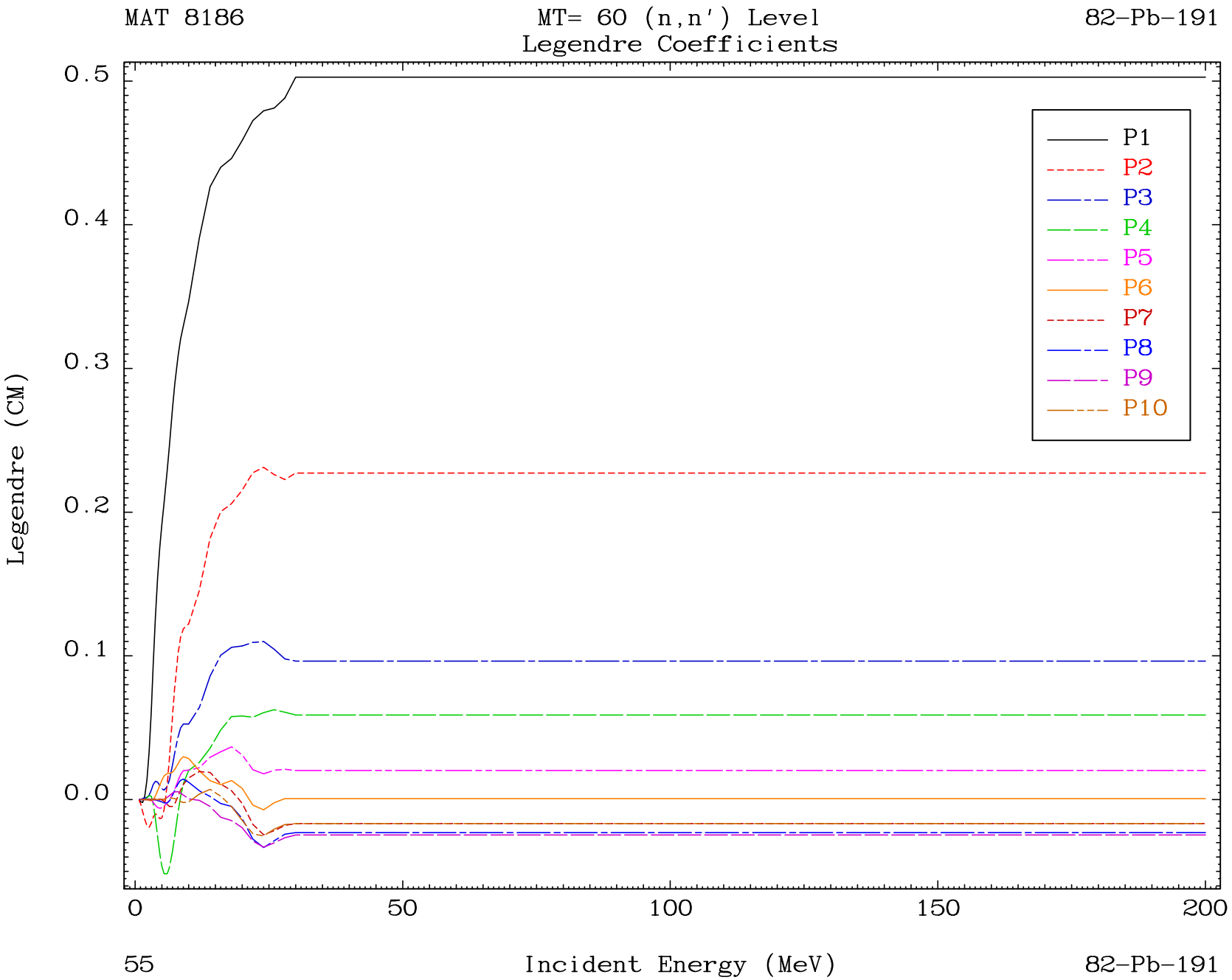

MAT 8186
MT= 58 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-6
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
50
Incident Energy (MeV)
82-Pb-191

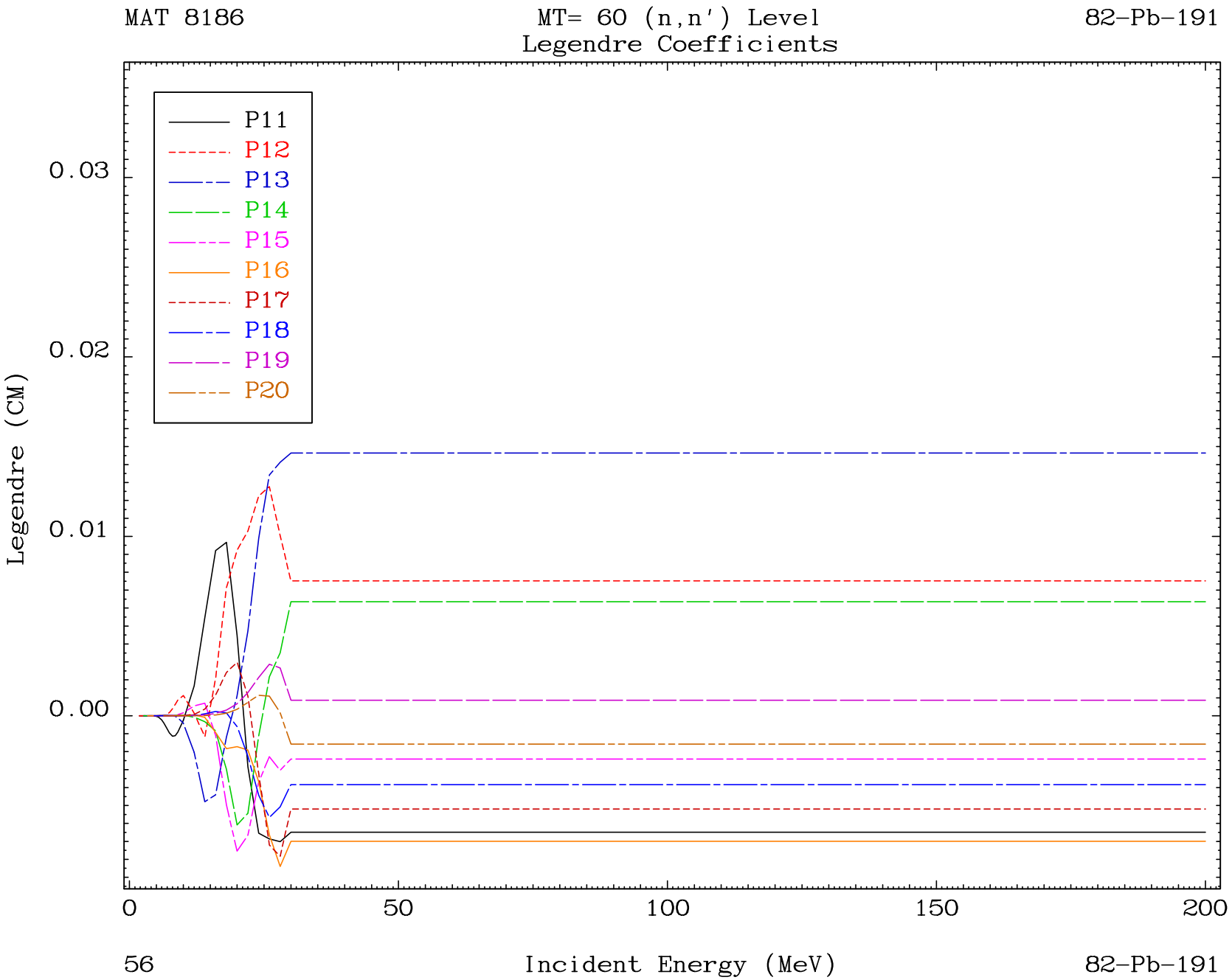

MAT 8186
MT= 59 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
51
Incident Energy (MeV)
82-Pb-191

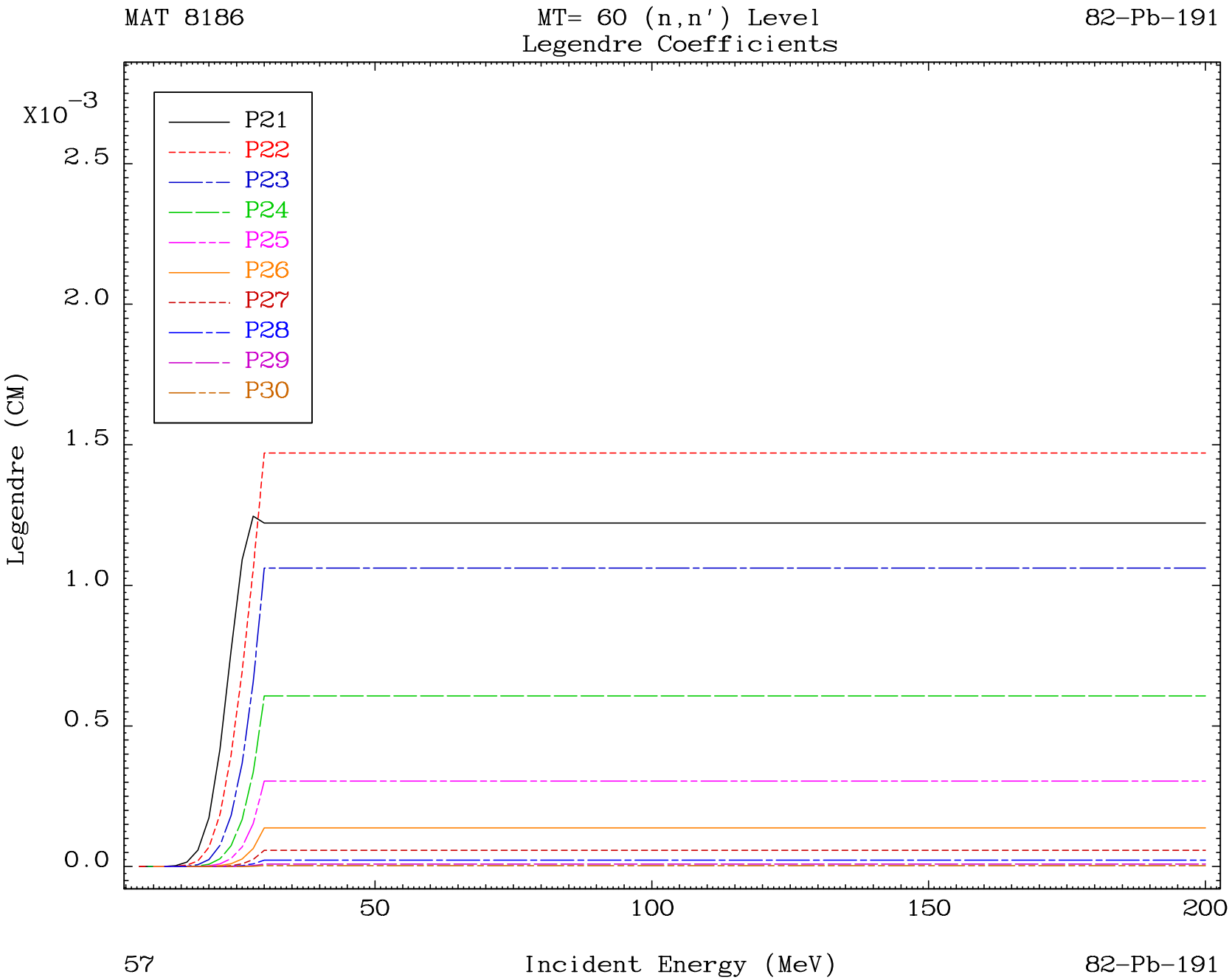

MAT 8186
MT= 59 (n,n') Level
Legendre Coefficients
82-Pb-191
0.06
0.04
0.02
0.00
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
52
Incident Energy (MeV)
82-Pb-191

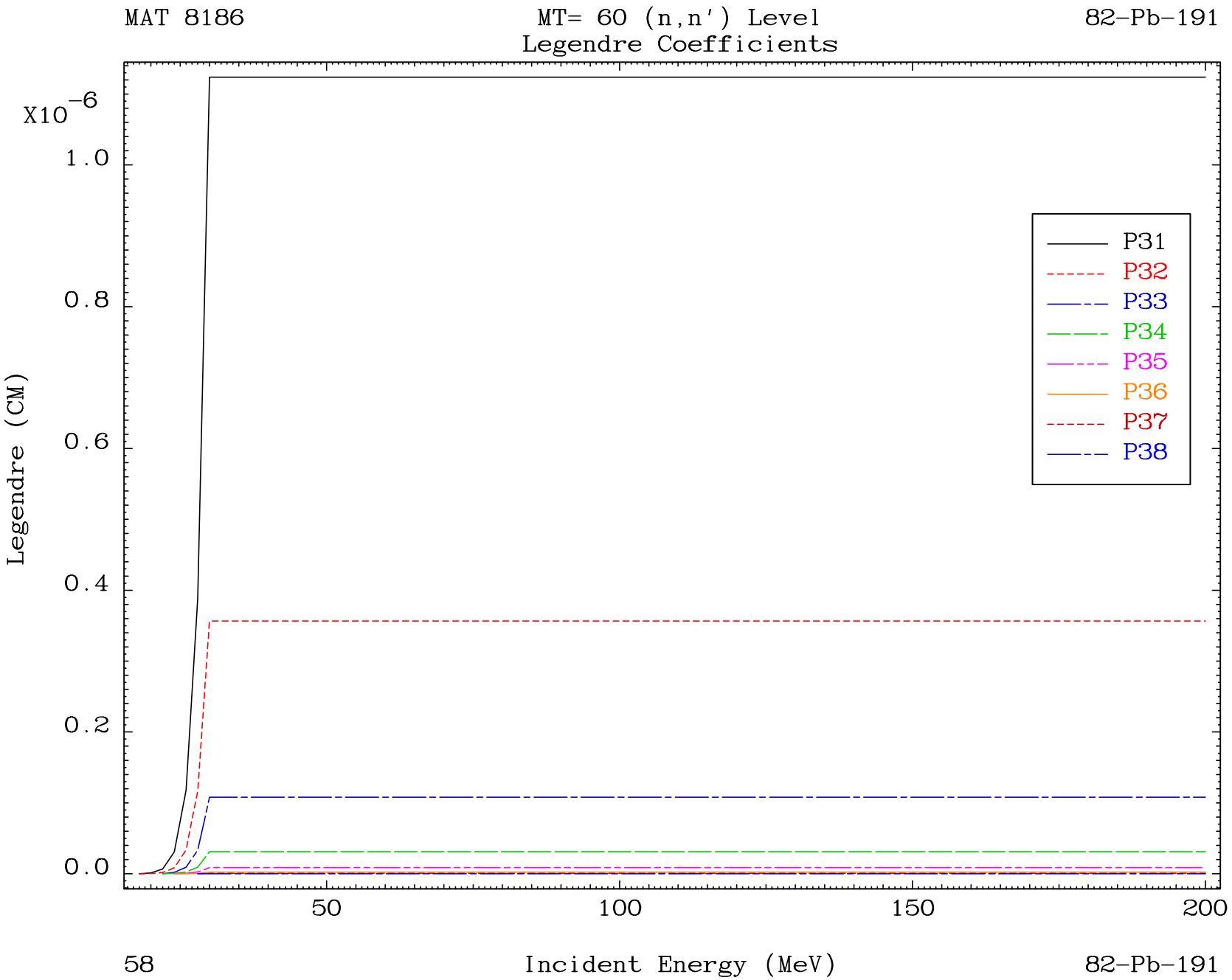

MAT 8186
MT= 59 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-3
1.5
1.0
0.5
0.0
-0.5
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
53
Incident Energy (MeV)
82-Pb-191

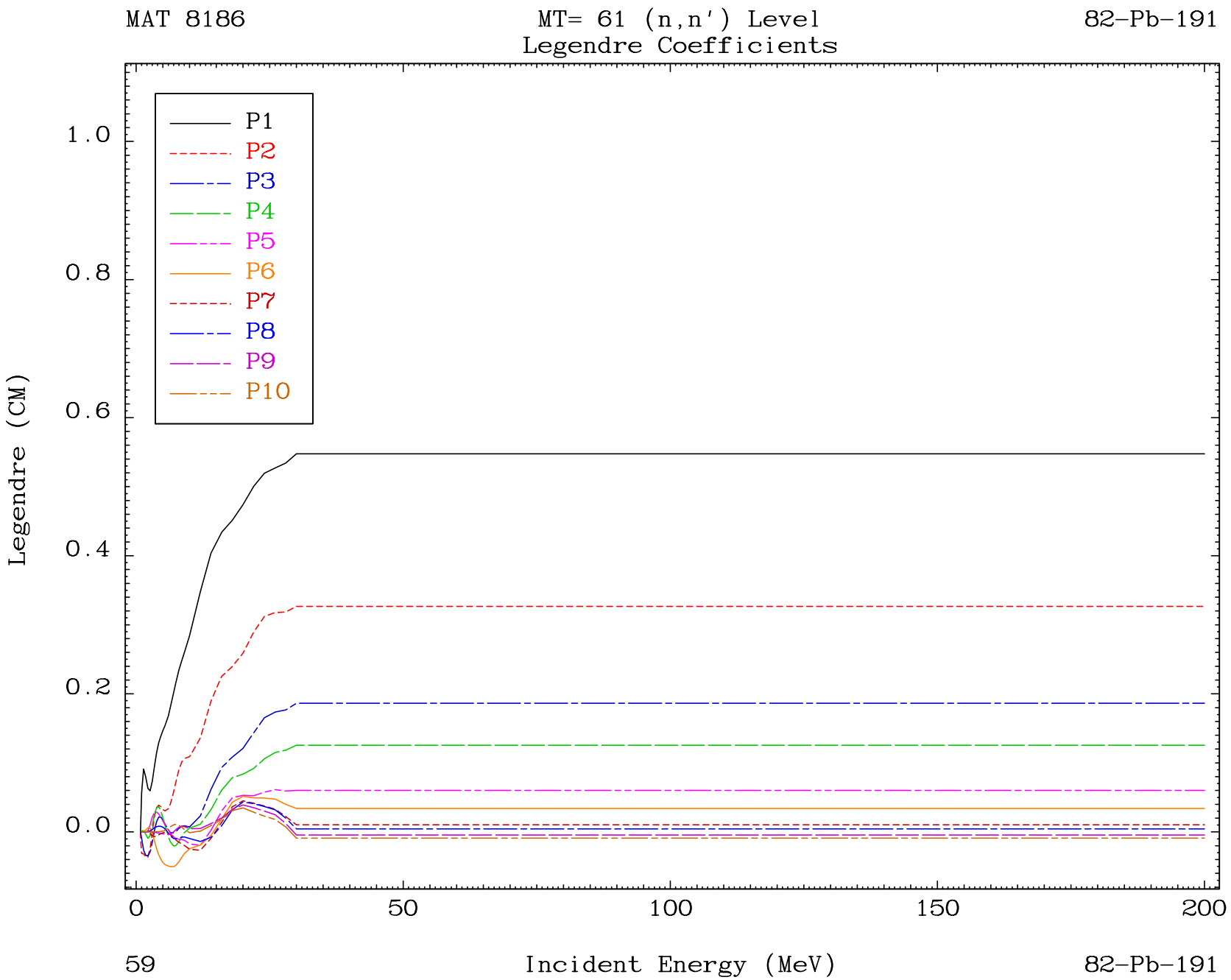

MAT 8186
MT= 59 (n,n') Level
Legendre Coefficients
82-Pb-191
X10 -6
4
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
54
Incident Energy (MeV)
82-Pb-191

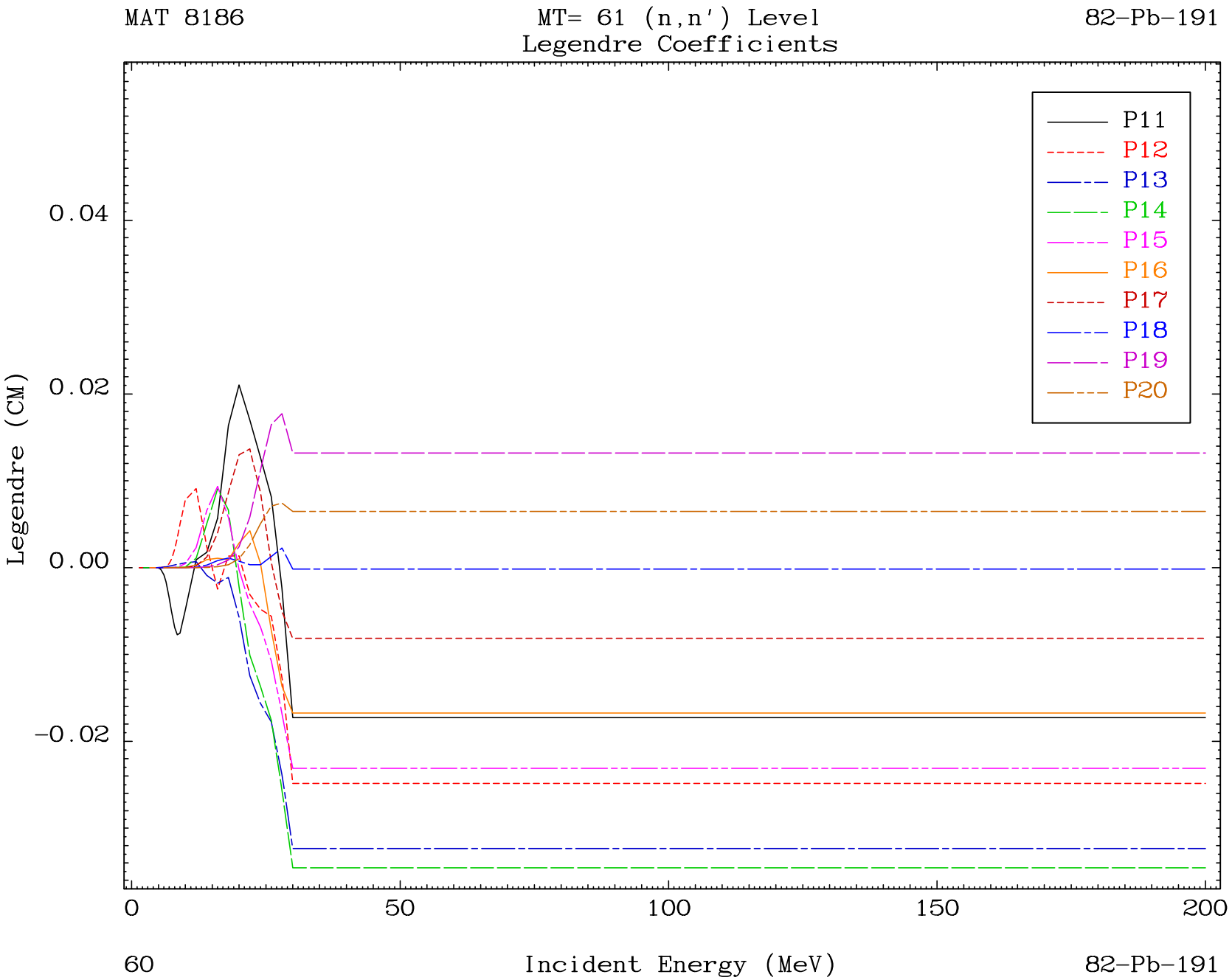

MAT 8186
MT= 60 (n,n') Level
Legendre Coefficients
82-Pb-191
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
55
Incident Energy (MeV)
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

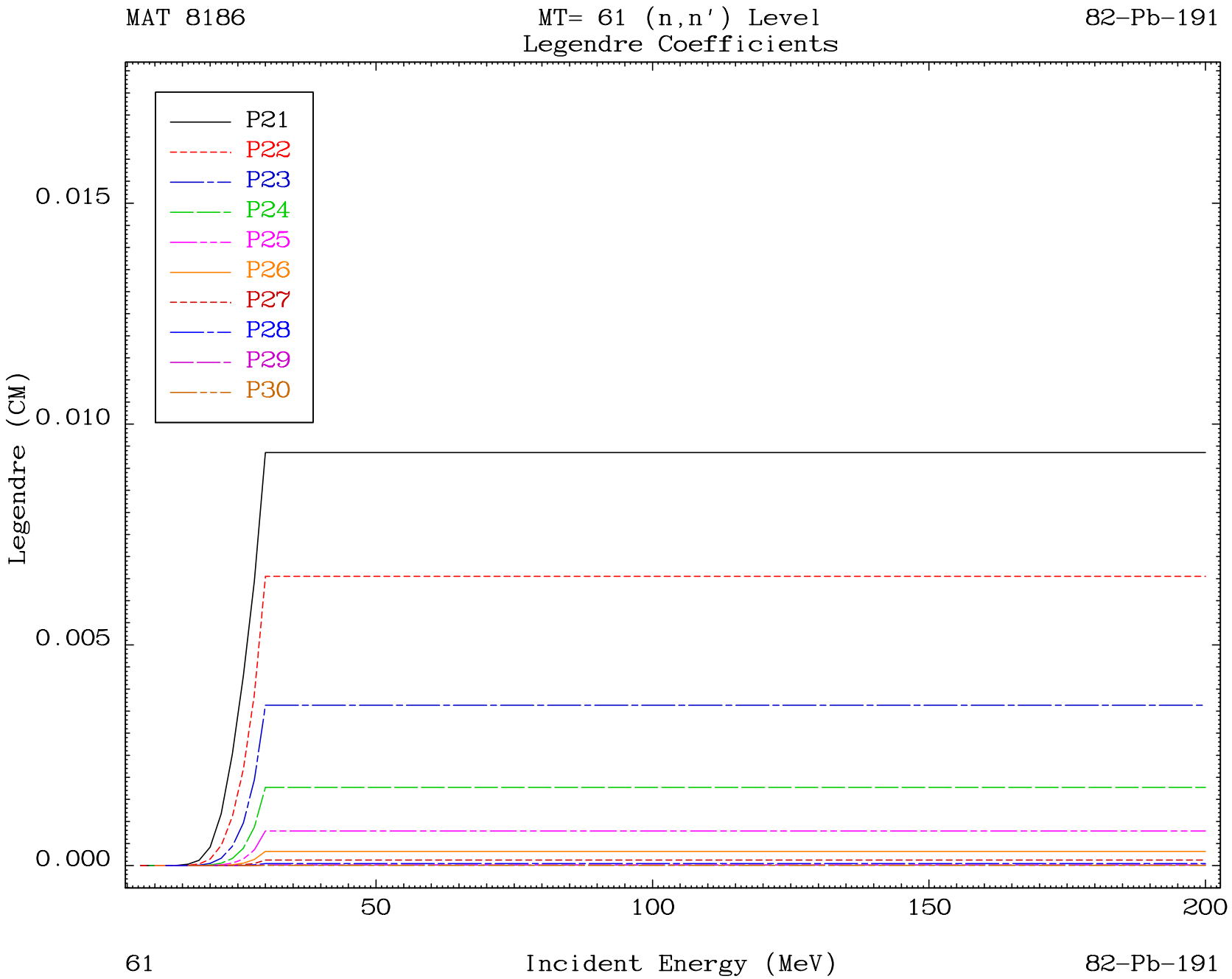

MAT 8186
MT= 60 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.03
0.02
0.01
0.00
Legendre (CM)
0
50
100
150
200
56
Incident Energy (MeV)
82-Pb-191

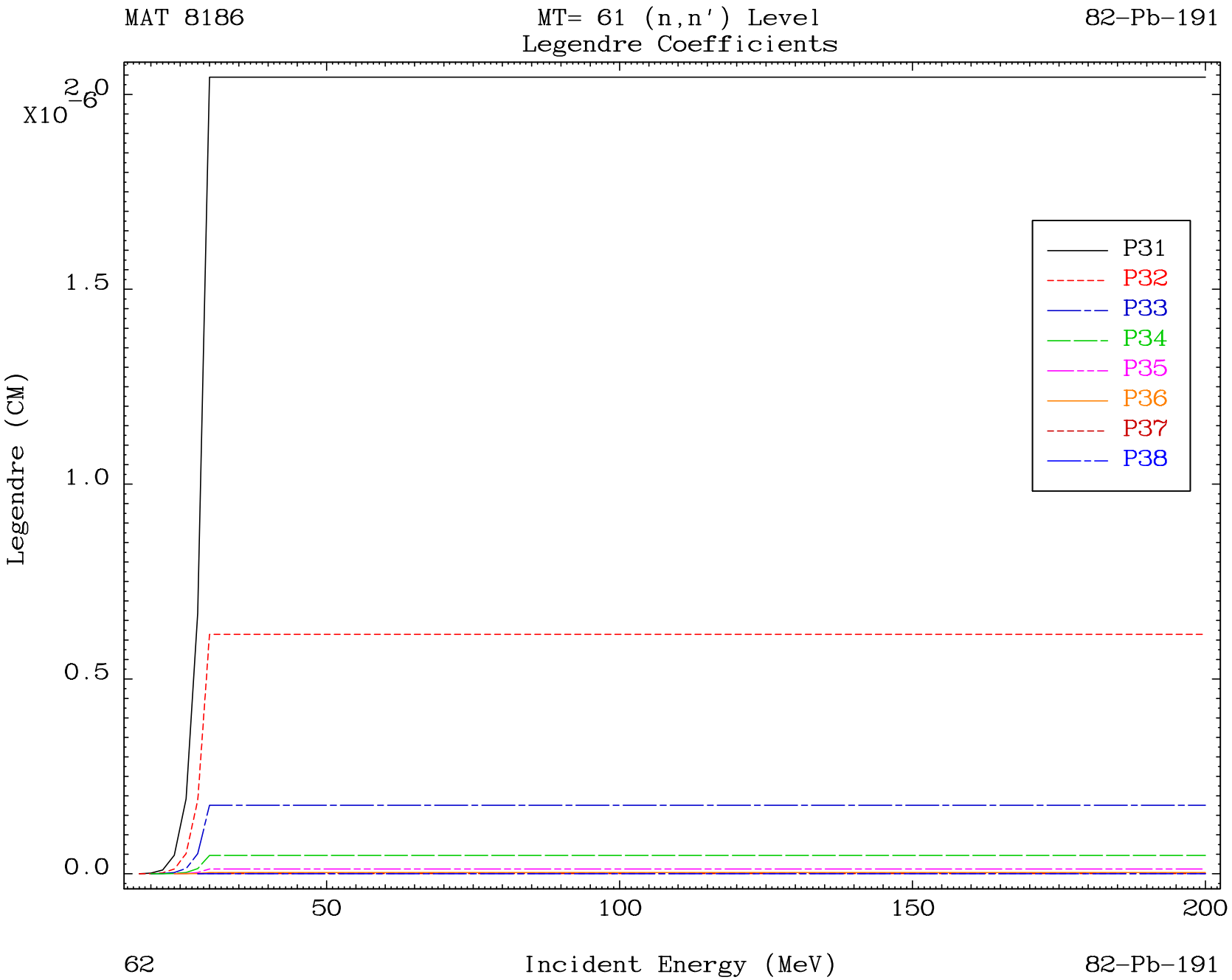

MAT 8186
MT= 60 (n,n') Level
Legendre Coefficients
82-Pb-191
X10 -3
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
50
100
150
200
57
Incident Energy (MeV)
82-Pb-191

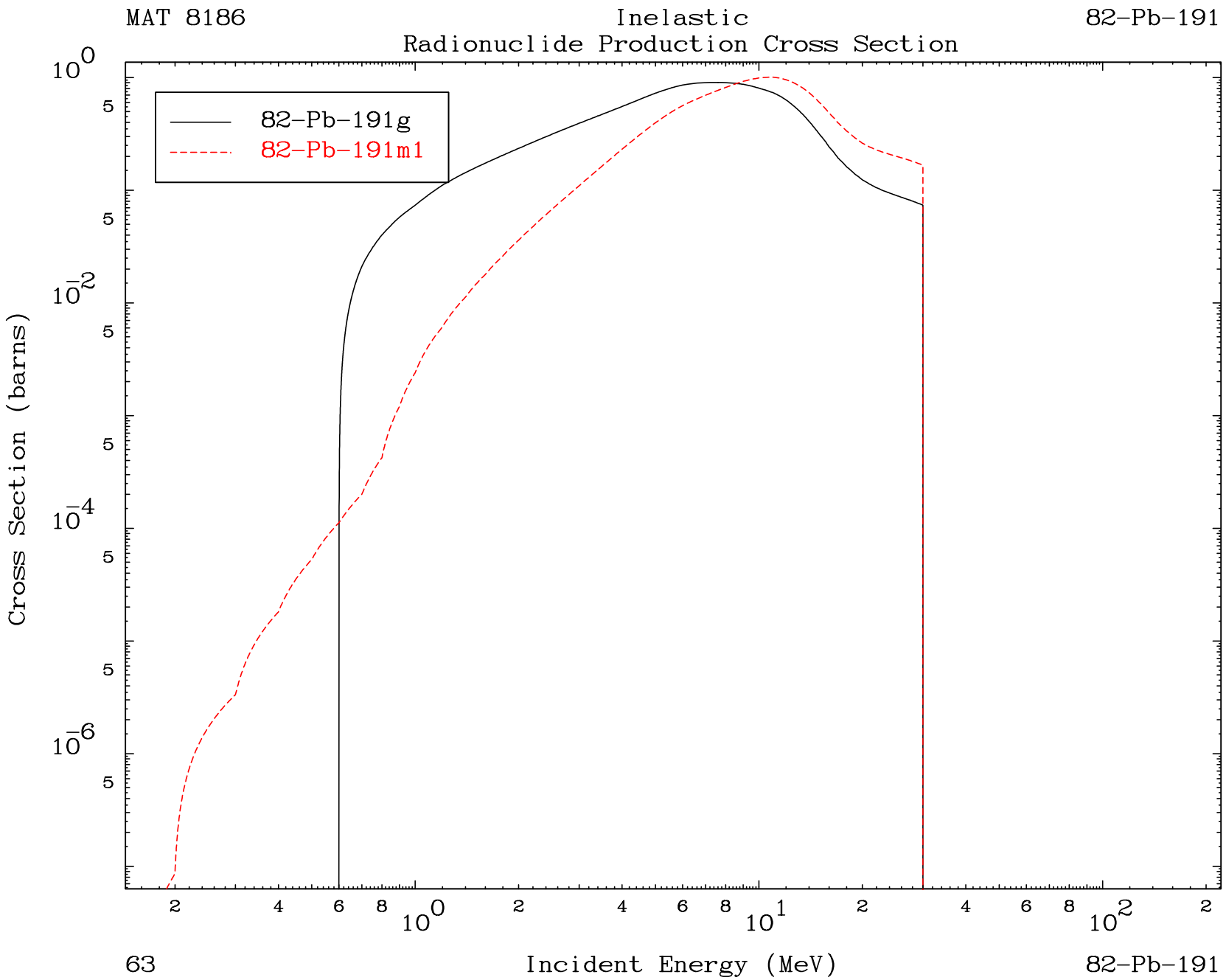

MAT 8186
MT= 60 (n,n') Level
Legendre Coefficients
82-Pb-191
X10^-6
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
50
100
150
200
58
Incident Energy (MeV)
82-Pb-191
P31
P32
P33
P34
P35
P36
P37
P38

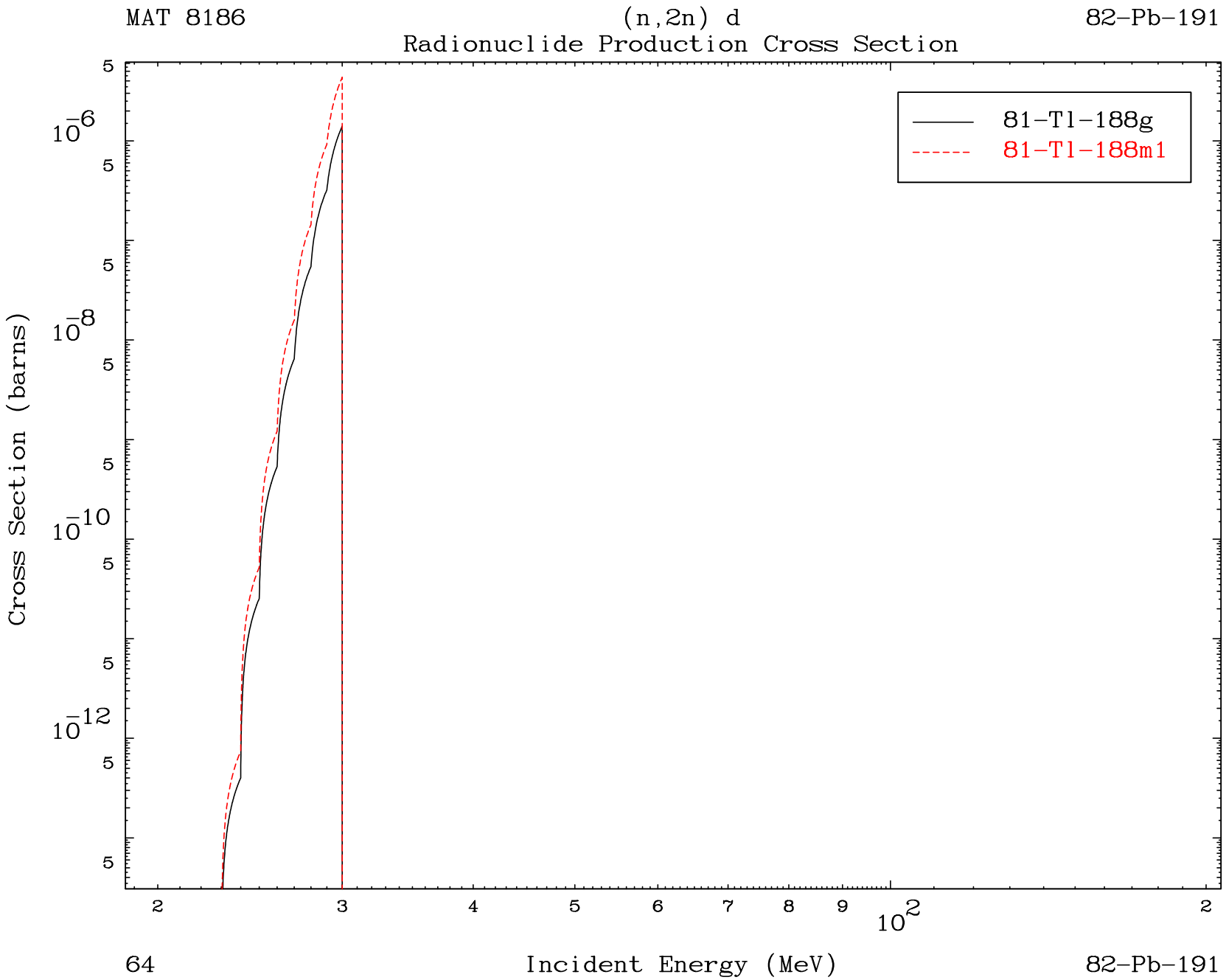

MAT 8186
MT= 61 (n,n') Level
Legendre Coefficients
82-Pb-191
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
Legendre (CM)
1.0
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
59
Incident Energy (MeV)
82-Pb-191

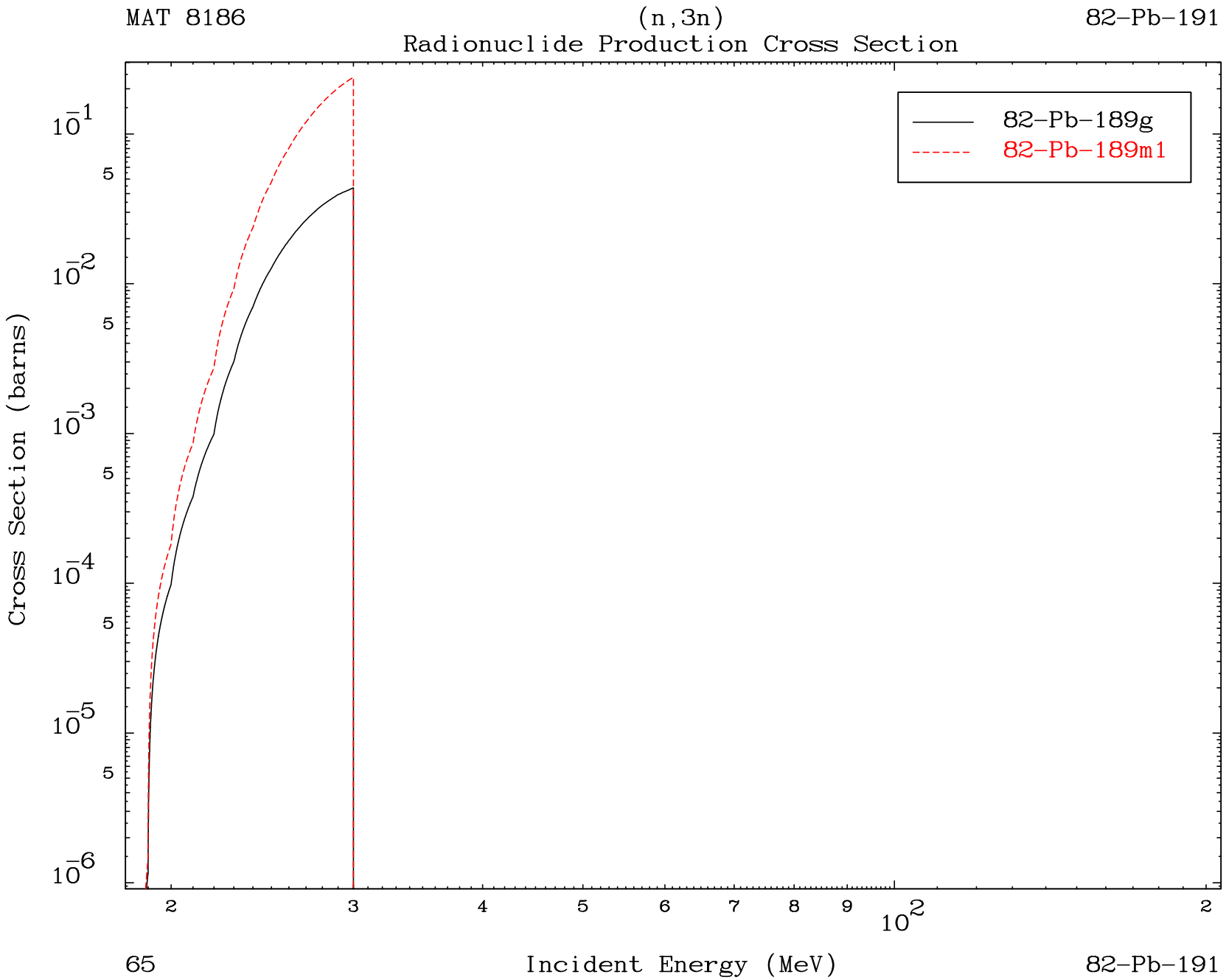

MAT 8186
MT= 61 (n,n') Level
Legendre Coefficients
82-Pb-191
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
60
Incident Energy (MeV)
82-Pb-191

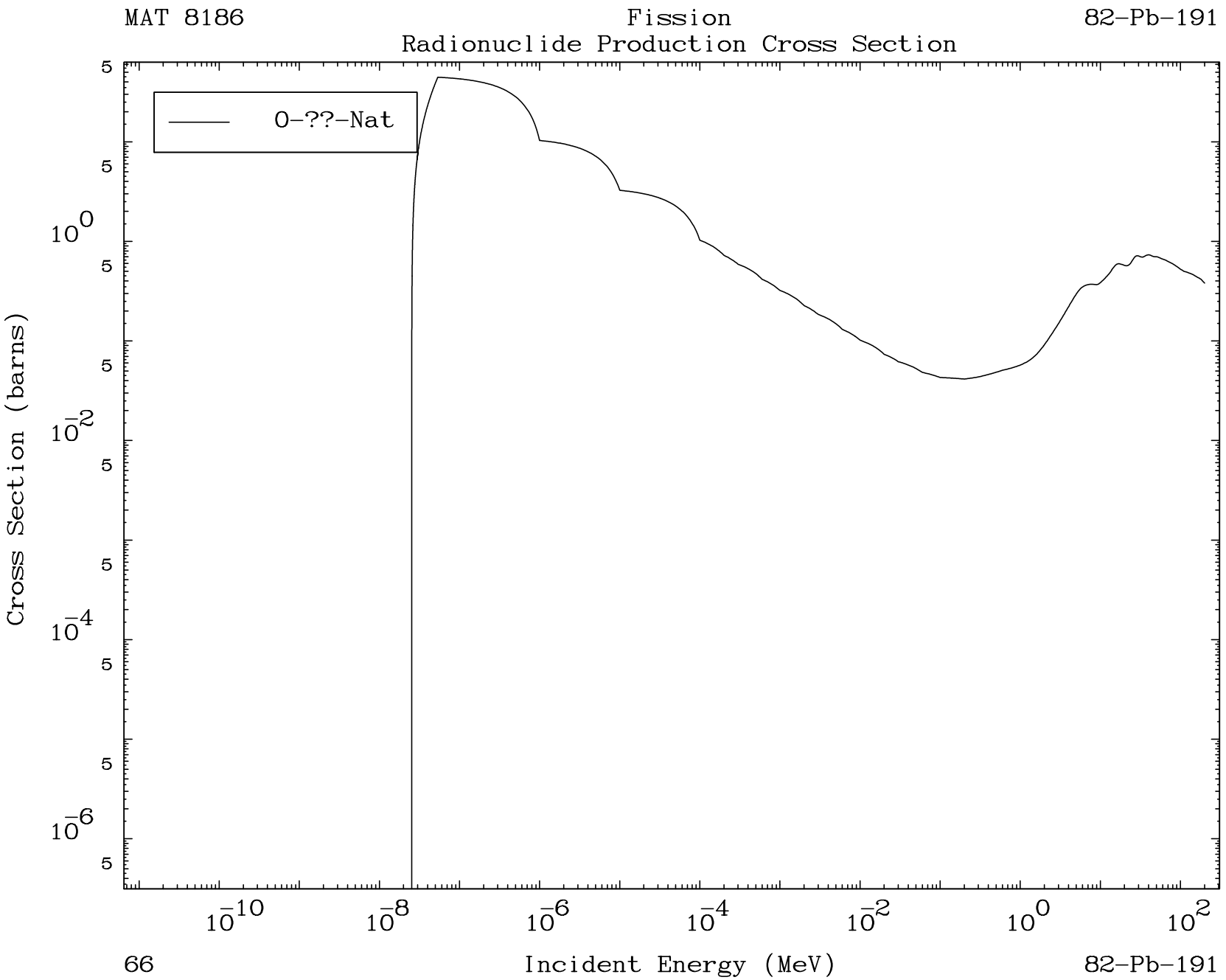

MAT 8186
MT= 61 (n,n') Level
Legendre Coefficients
82-Pb-191
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
61
Incident Energy (MeV)
82-Pb-191

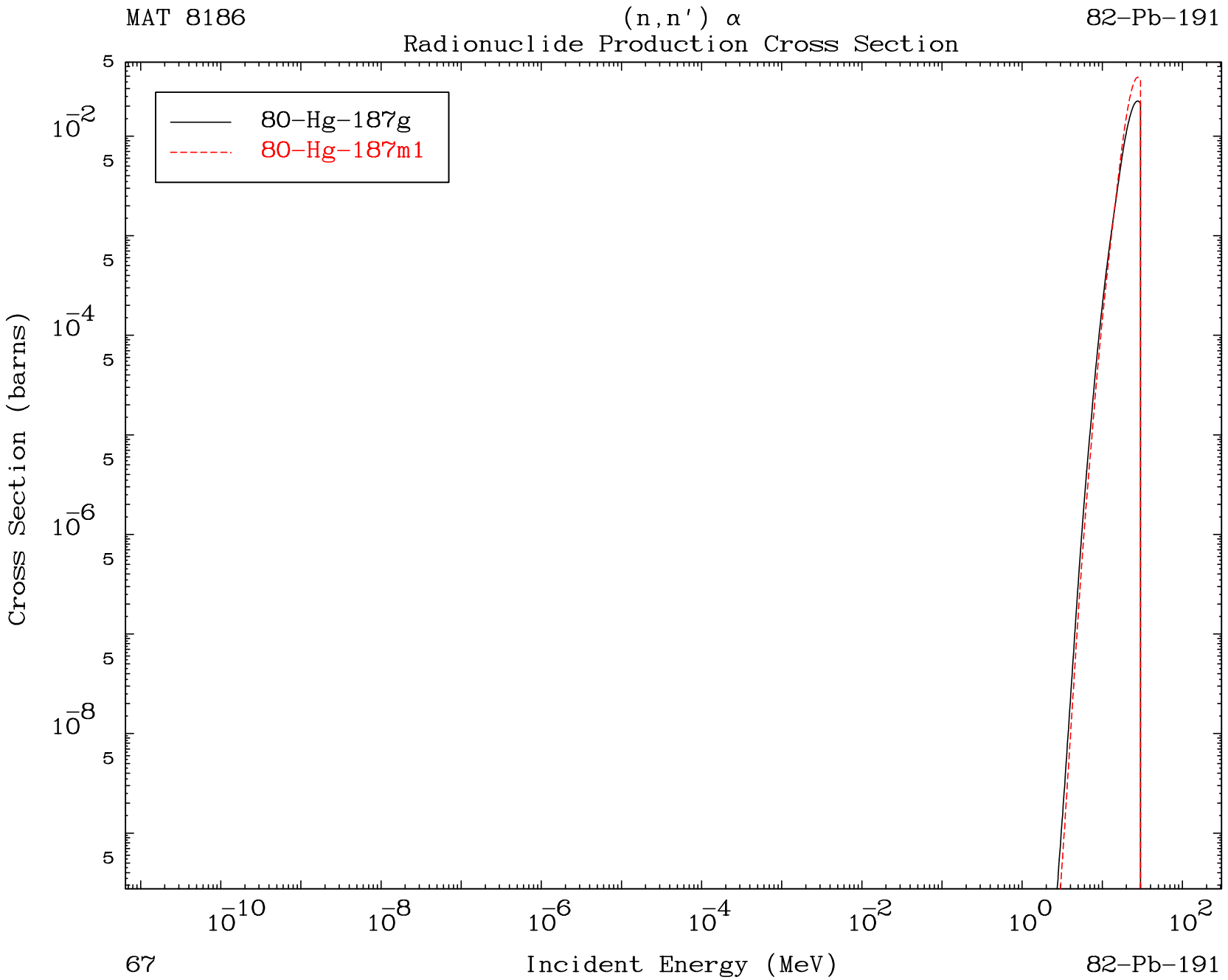

MAT 8186
MT= 61 (n,n') Level
Legendre Coefficients
82-Pb-191
X10-6
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
62
Incident Energy (MeV)
82-Pb-191

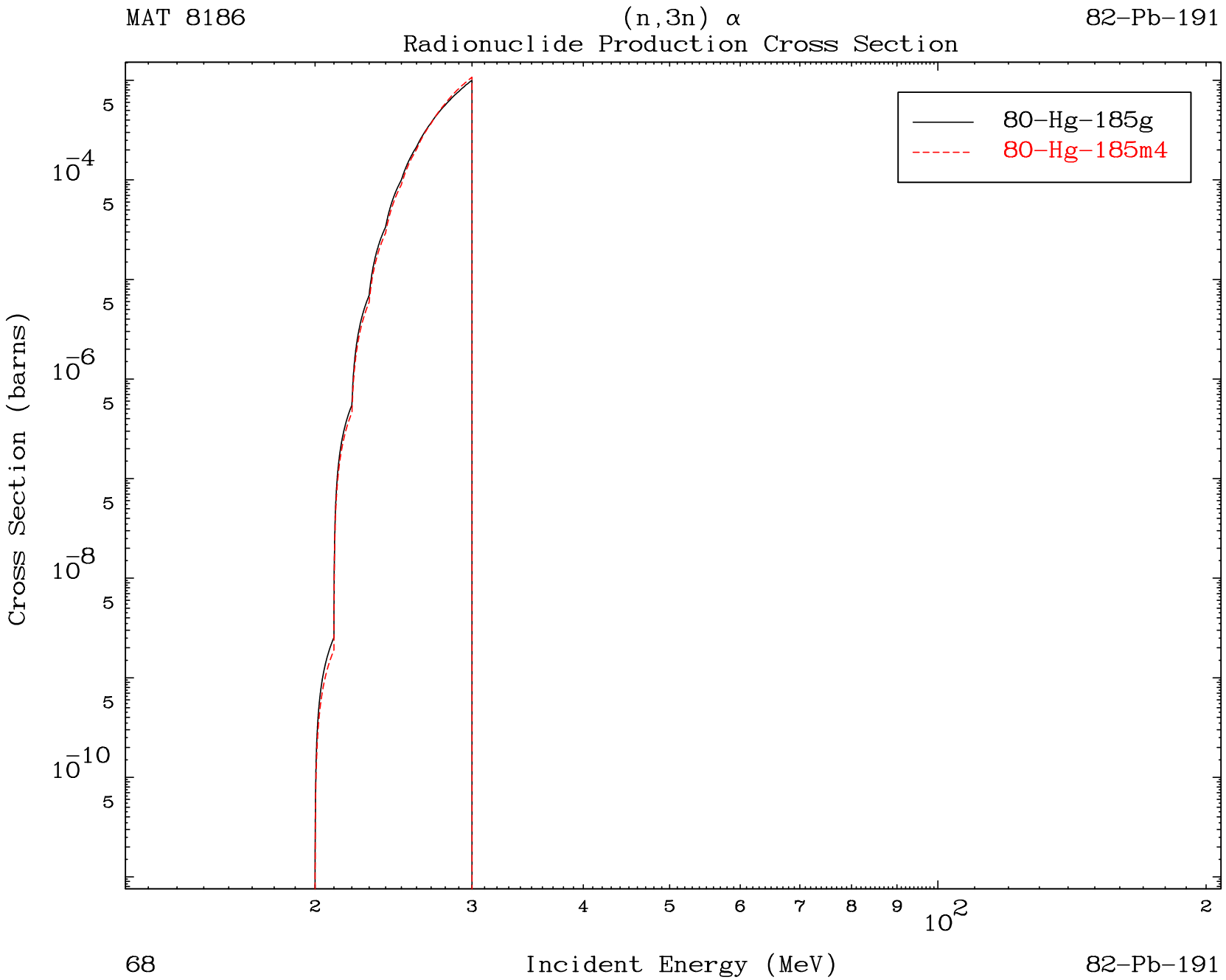

MAT 8186
Inelastic
82-Pb-191
Radionuclide Production Cross Section
82-Pb-191g
82-Pb-191m1
Cross Section (barns)
Incident Energy (MeV)
63
82-Pb-191

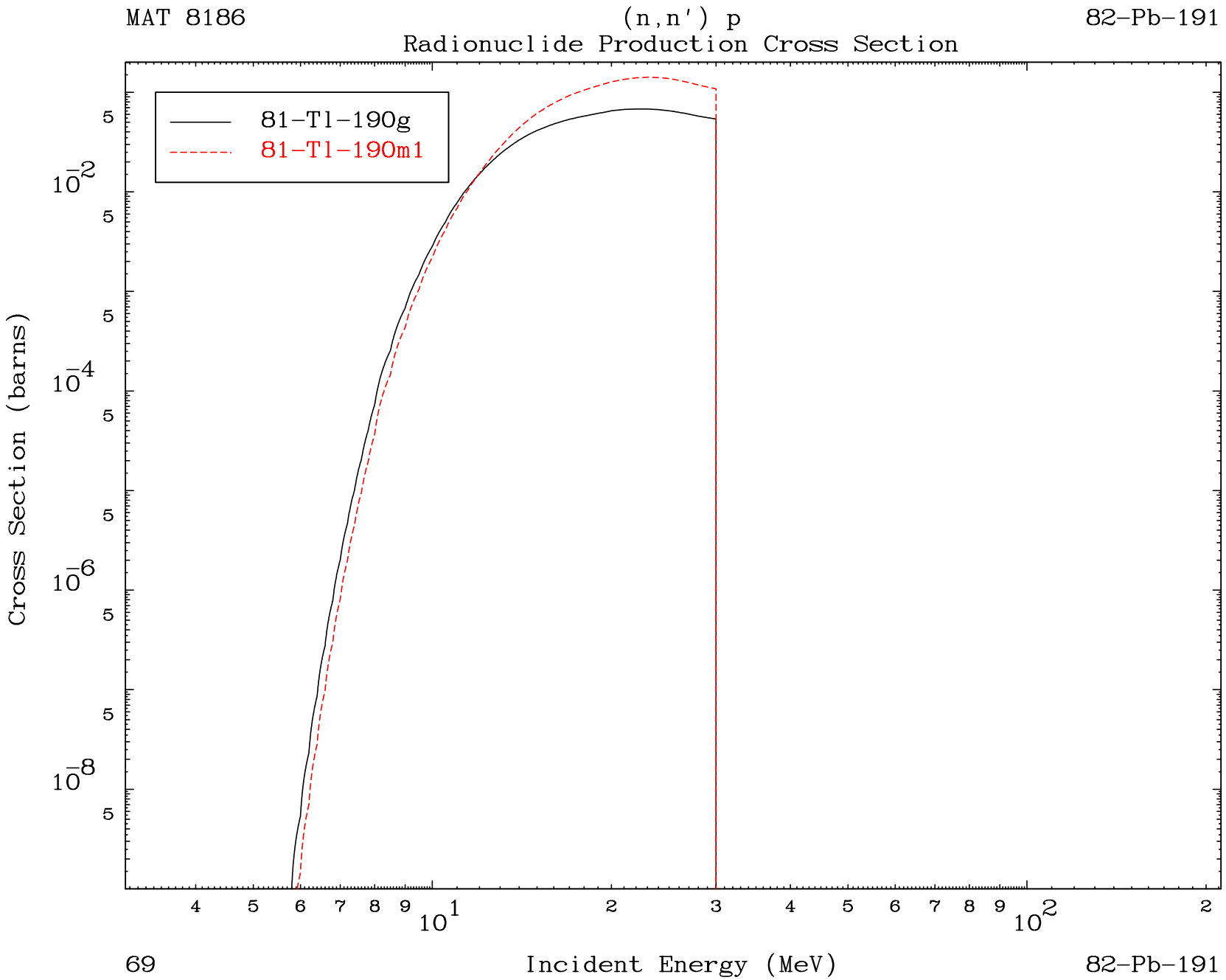

MAT 8186
(n,2n) d
82-Pb-191
Radionuclide Production Cross Section
81-Tl-188g
81-Tl-188m1
Cross Section (barns)
10-6
10-8
10-10
10-12
5
2
3
4
5
6
7
8
9
10 2
2
64
Incident Energy (MeV)
82-Pb-191

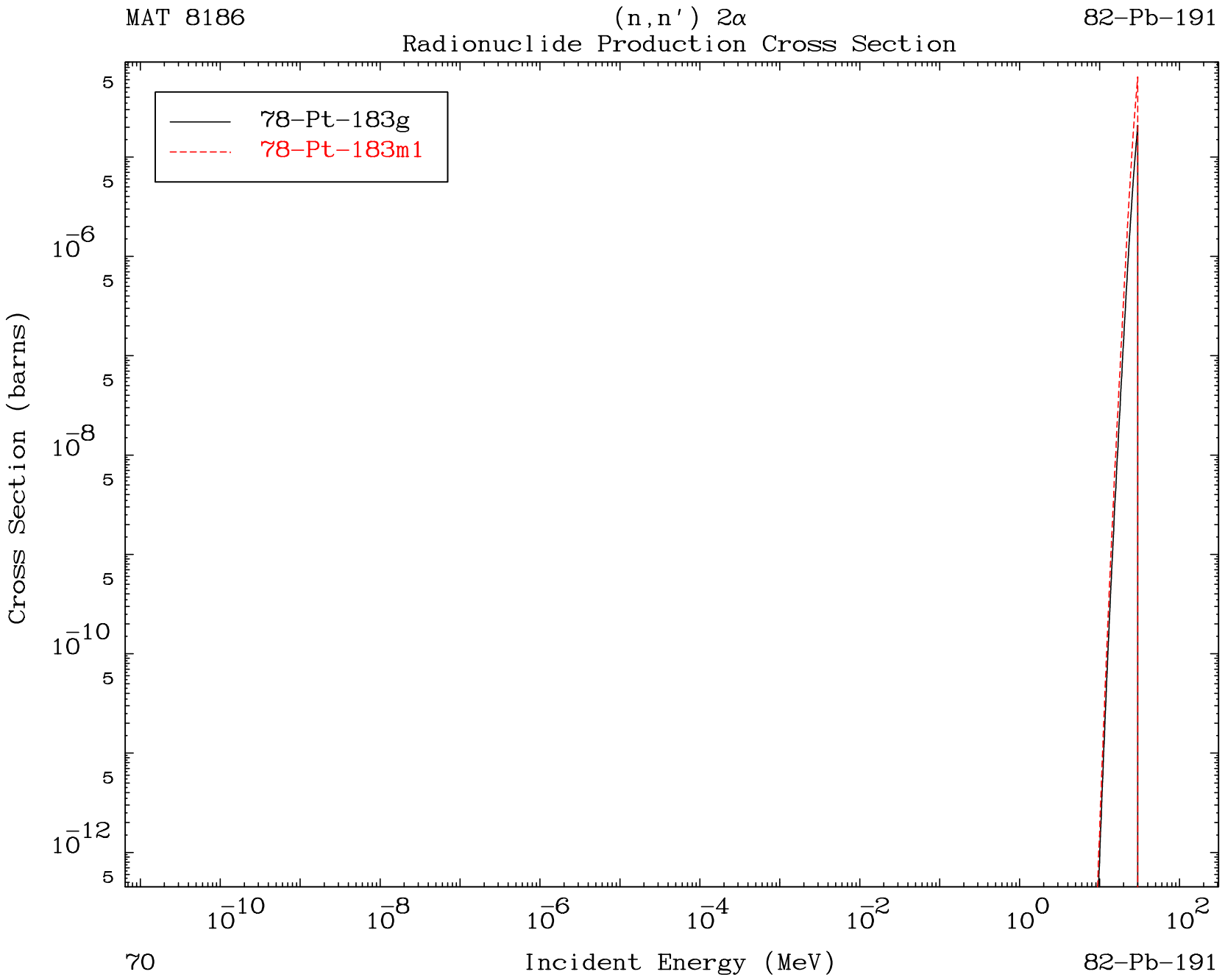

MAT 8186
(n,3n)
82-Pb-191
Radionuclide Production Cross Section
82-Pb-189g
82-Pb-189m1
Cross Section (barns)
Incident Energy (MeV)
65
82-Pb-191

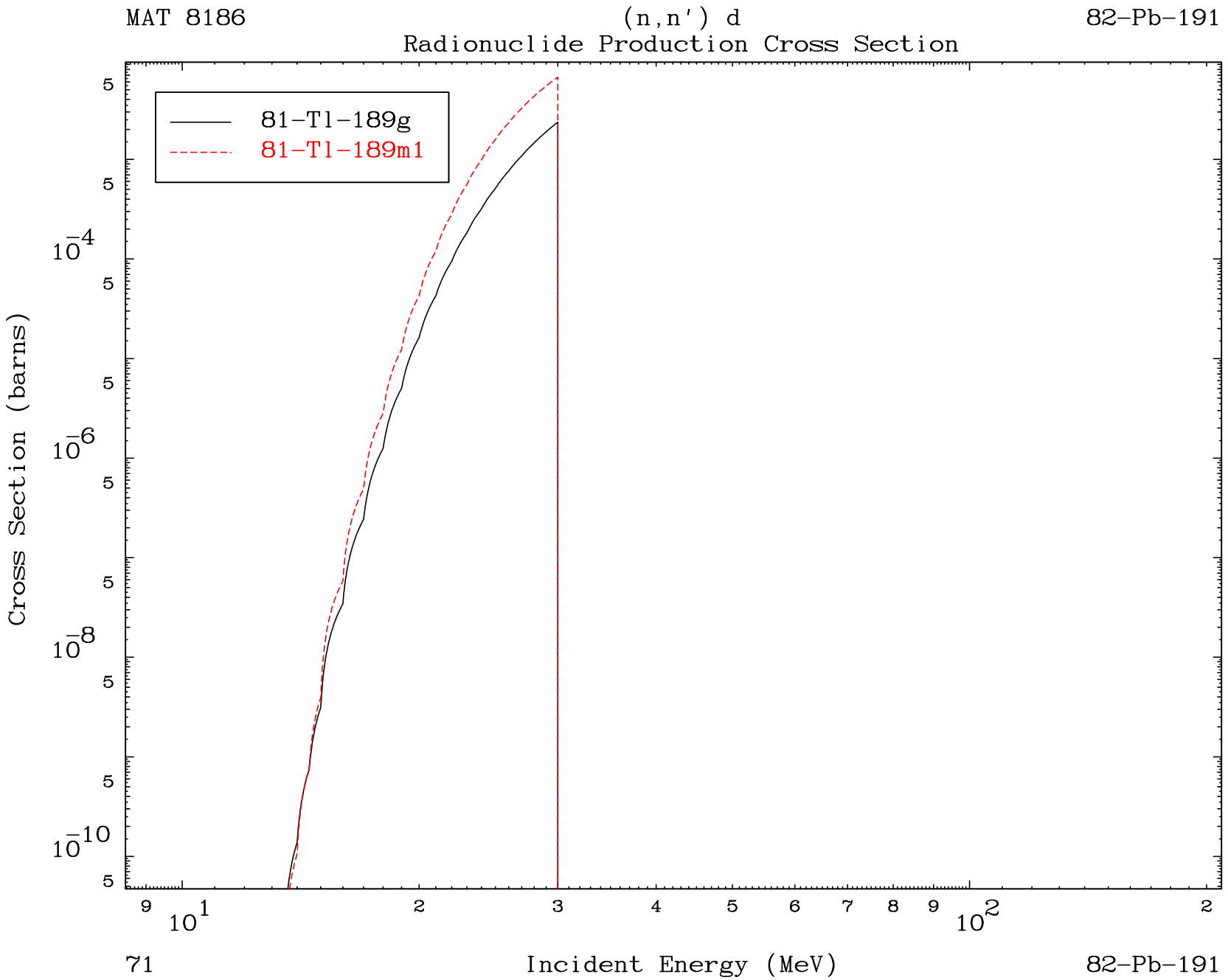

MAT 8186
Fission
82-Pb-191
Radionuclide Production Cross Section
0-??-Nat
Cross Section (barns)
Incident Energy (MeV)
66
82-Pb-191

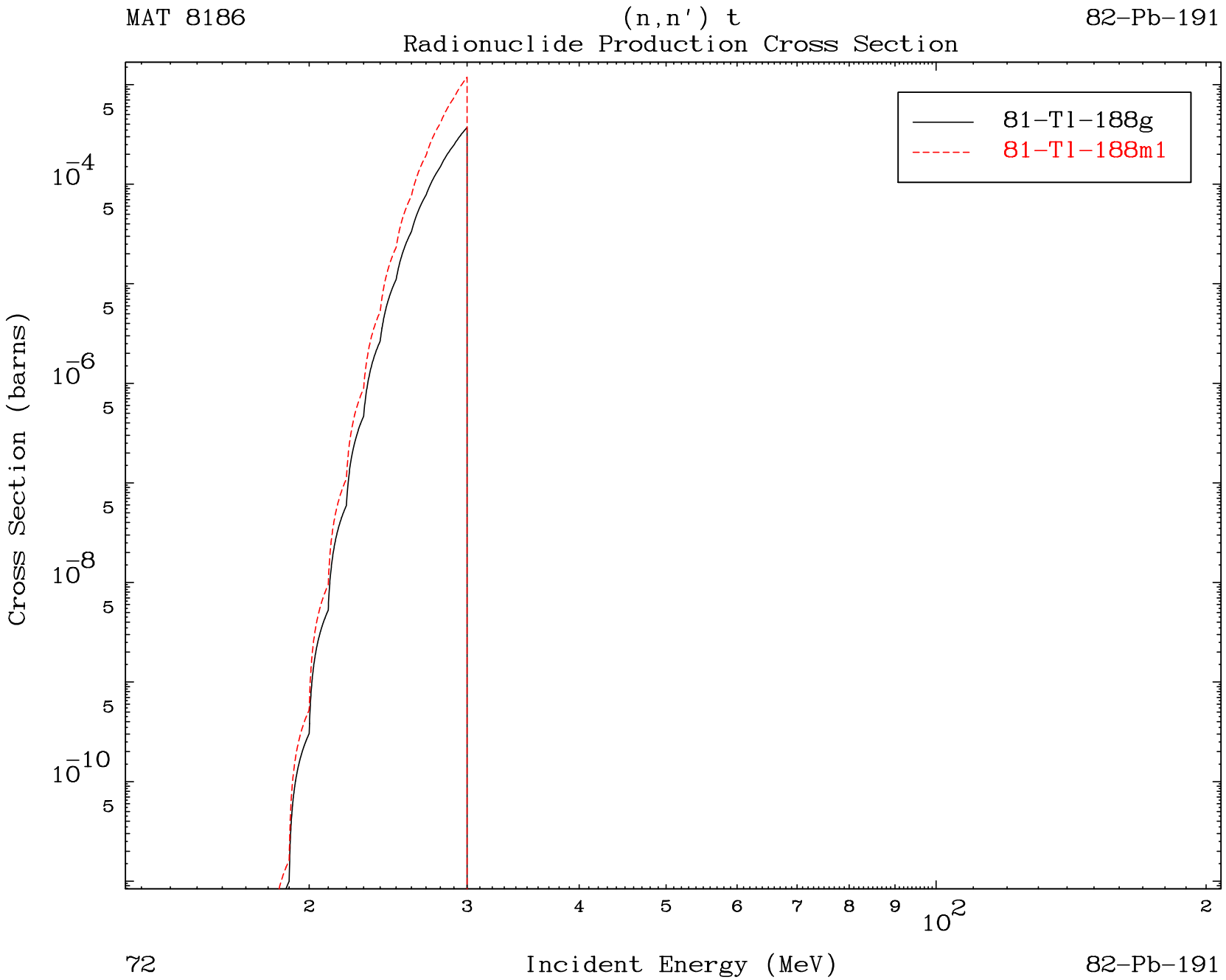

MAT 8186
(n,n') α
82-Pb-191
Radionuclide Production Cross Section
80-Hg-187g
80-Hg-187m1
Cross Section (barns)
Incident Energy (MeV)
67
82-Pb-191

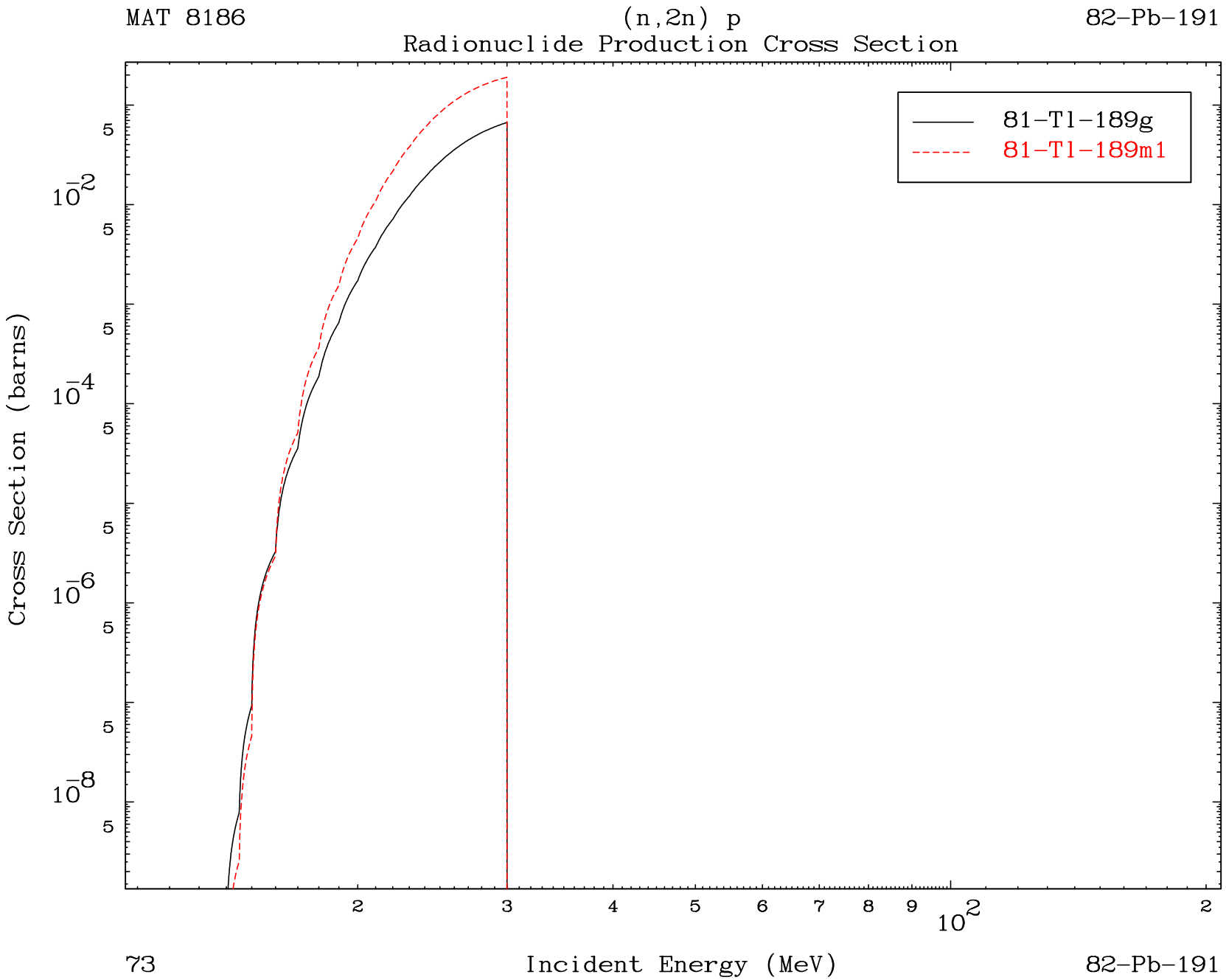

MAT 8186
(n,3n) α
82-Pb-191
Radionuclide Production Cross Section
80-Hg-185g
80-Hg-185m4
Cross Section (barns)
10-4
10-6
10-8
10-10
2
3
4
5
6
7
8
9
10 2
2
68
Incident Energy (MeV)
82-Pb-191

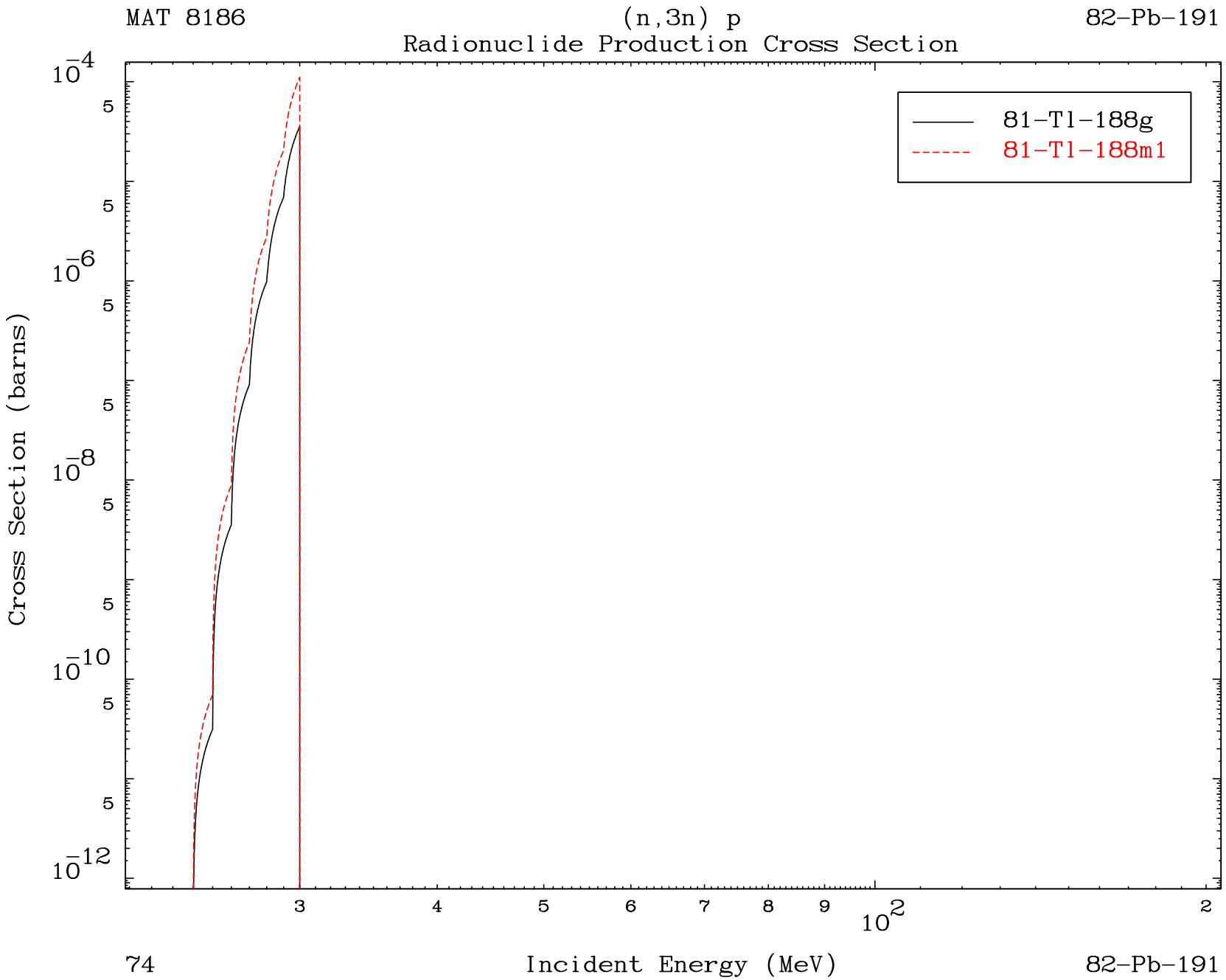

MAT 8186
(n,n') p
82-Pb-191
Radionuclide Production Cross Section
81-Tl-190g
81-Tl-190m1
Cross Section (barns)
Incident Energy (MeV)
69
82-Pb-191

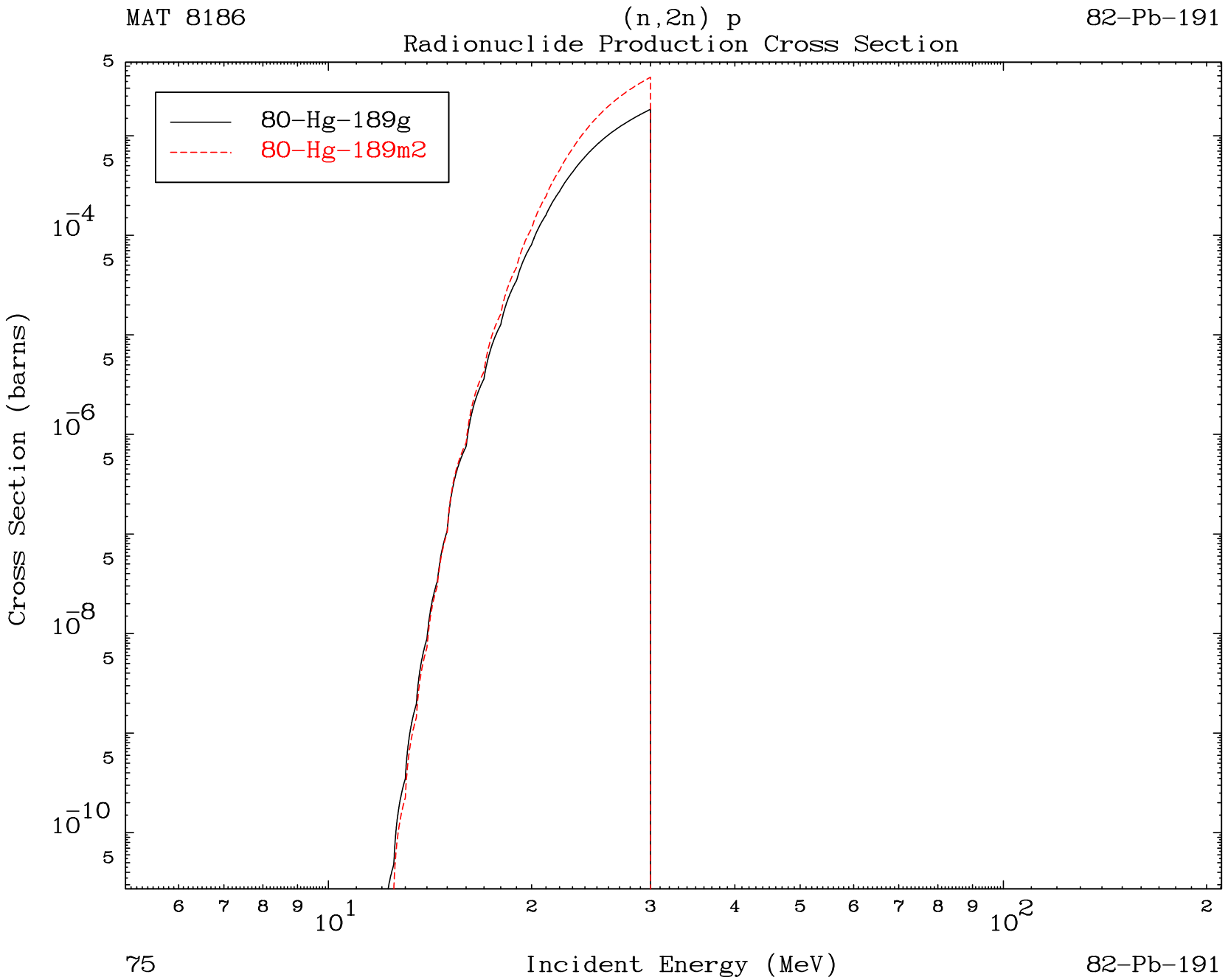

MAT 8186
(n,n') 2α
82-Pb-191
Radionuclide Production Cross Section
78-Pt-183g
78-Pt-183m1
Cross Section (barns)
Incident Energy (MeV)
70
82-Pb-191

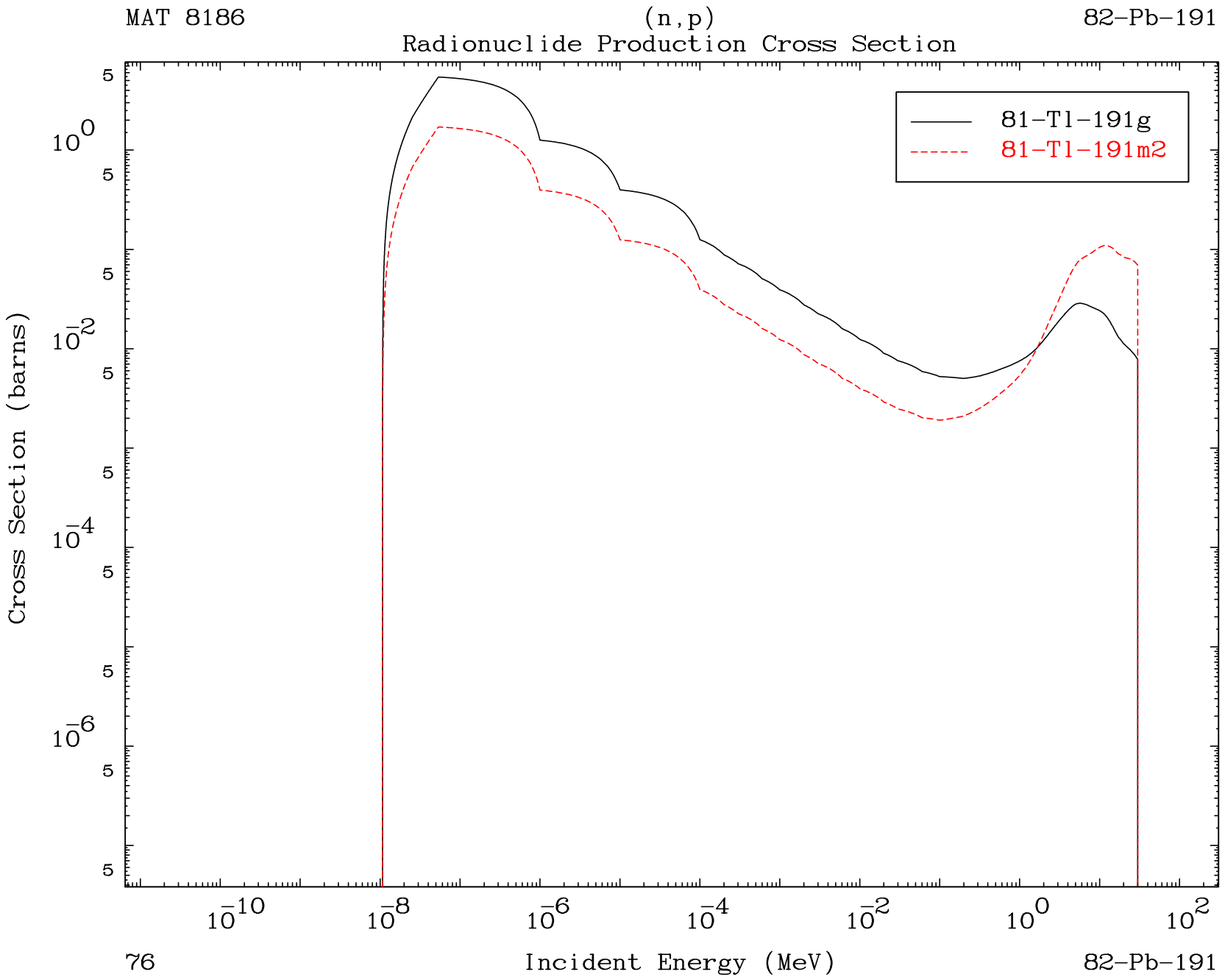

MAT 8186
(n,n') d
82-Pb-191
Radionuclide Production Cross Section
81-Tl-189g
81-Tl-189m1
Cross Section (barns)
Incident Energy (MeV)
71
82-Pb-191

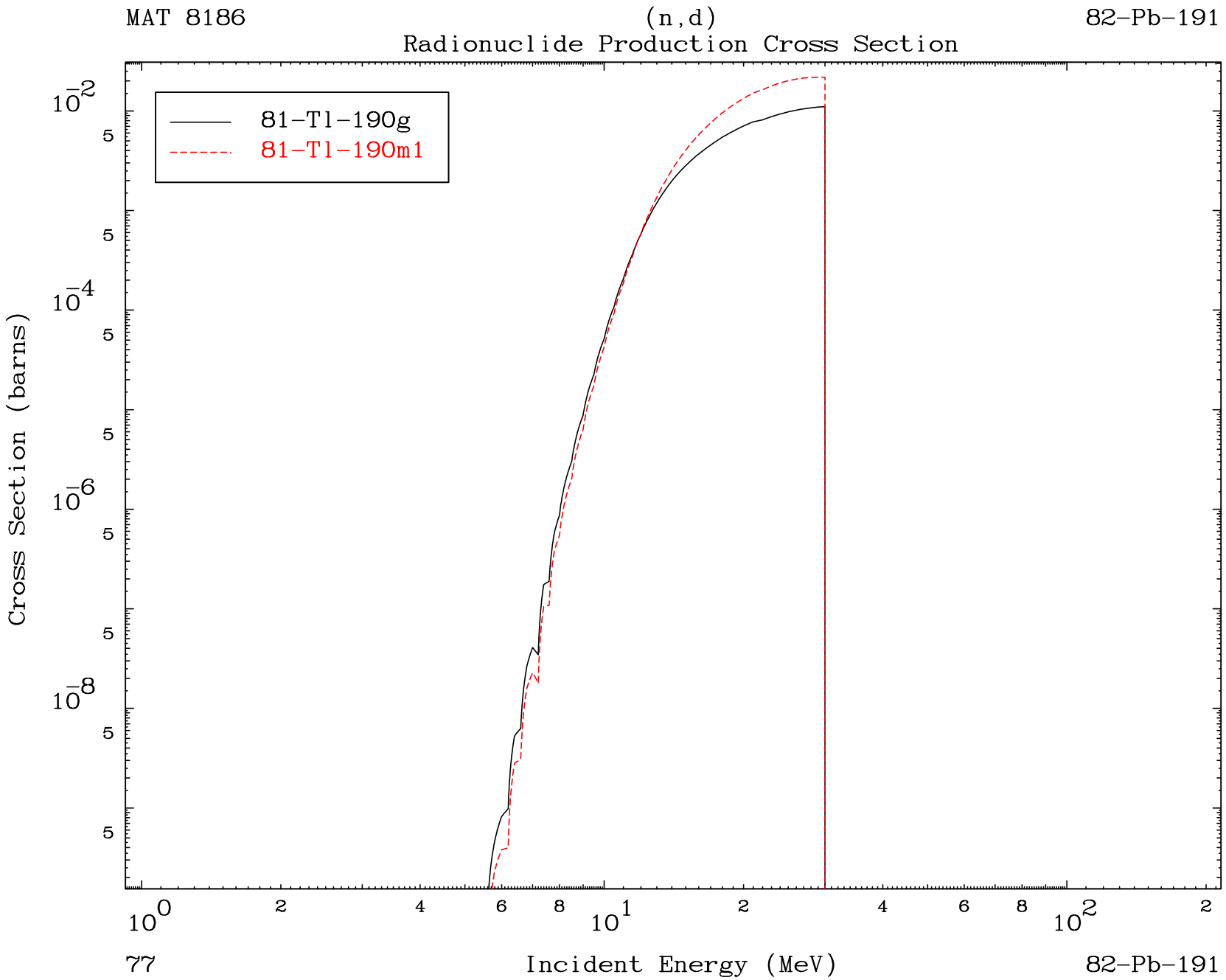

MAT 8186
(n,n') t
82-Pb-191
Radionuclide Production Cross Section
81-Tl-188g
81-Tl-188m1
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
5
2
3
4
5
6
7
8
9
10^2
2
72
Incident Energy (MeV)
82-Pb-191

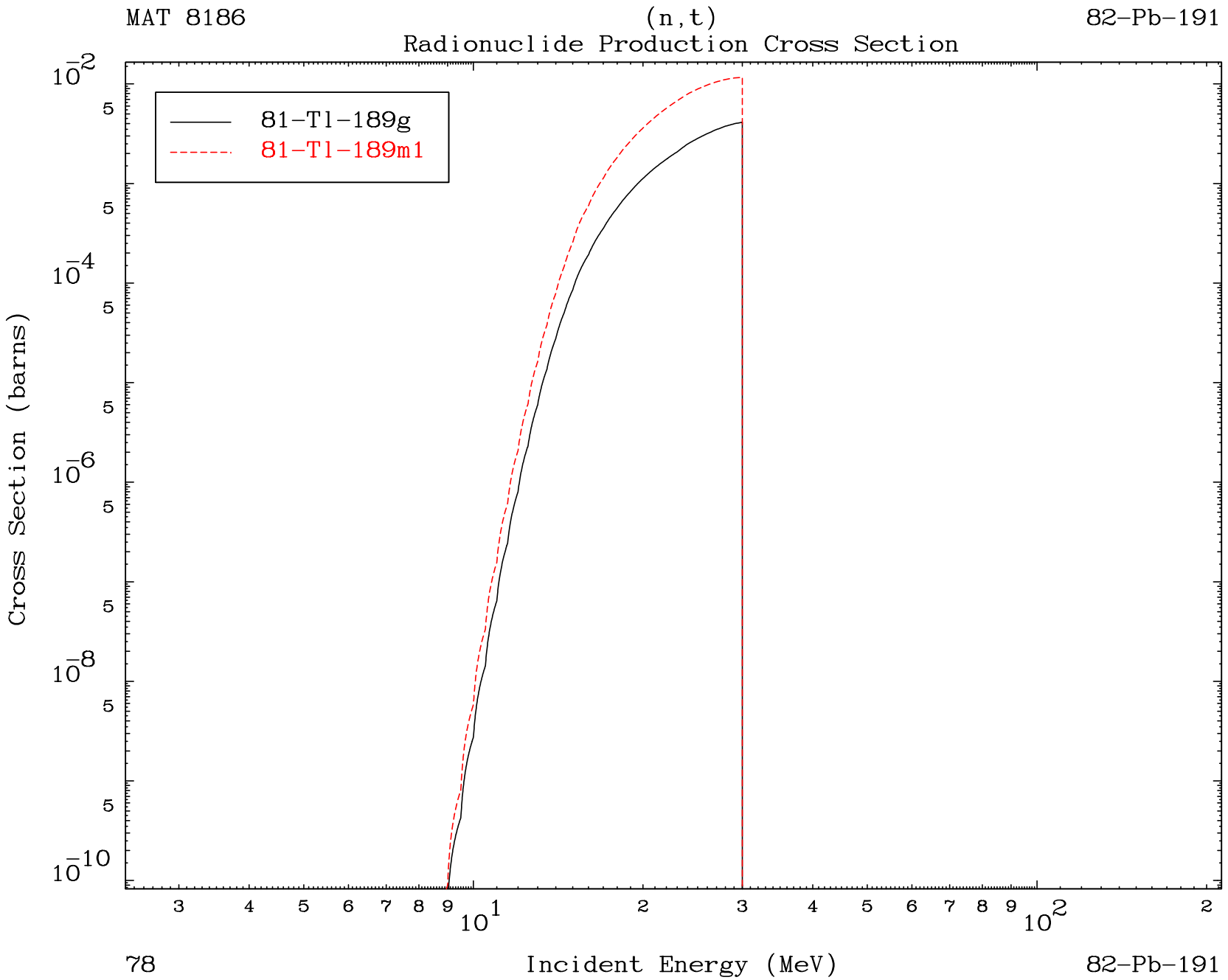

MAT 8186
(n,2n) p
82-Pb-191
Radionuclide Production Cross Section
81-Tl-189g
81-Tl-189m1
Cross Section (barns)
10-2
10-4
10-6
10-8
5
2
3
4
5
6
7
8
9
10 2
2
73
Incident Energy (MeV)
82-Pb-191

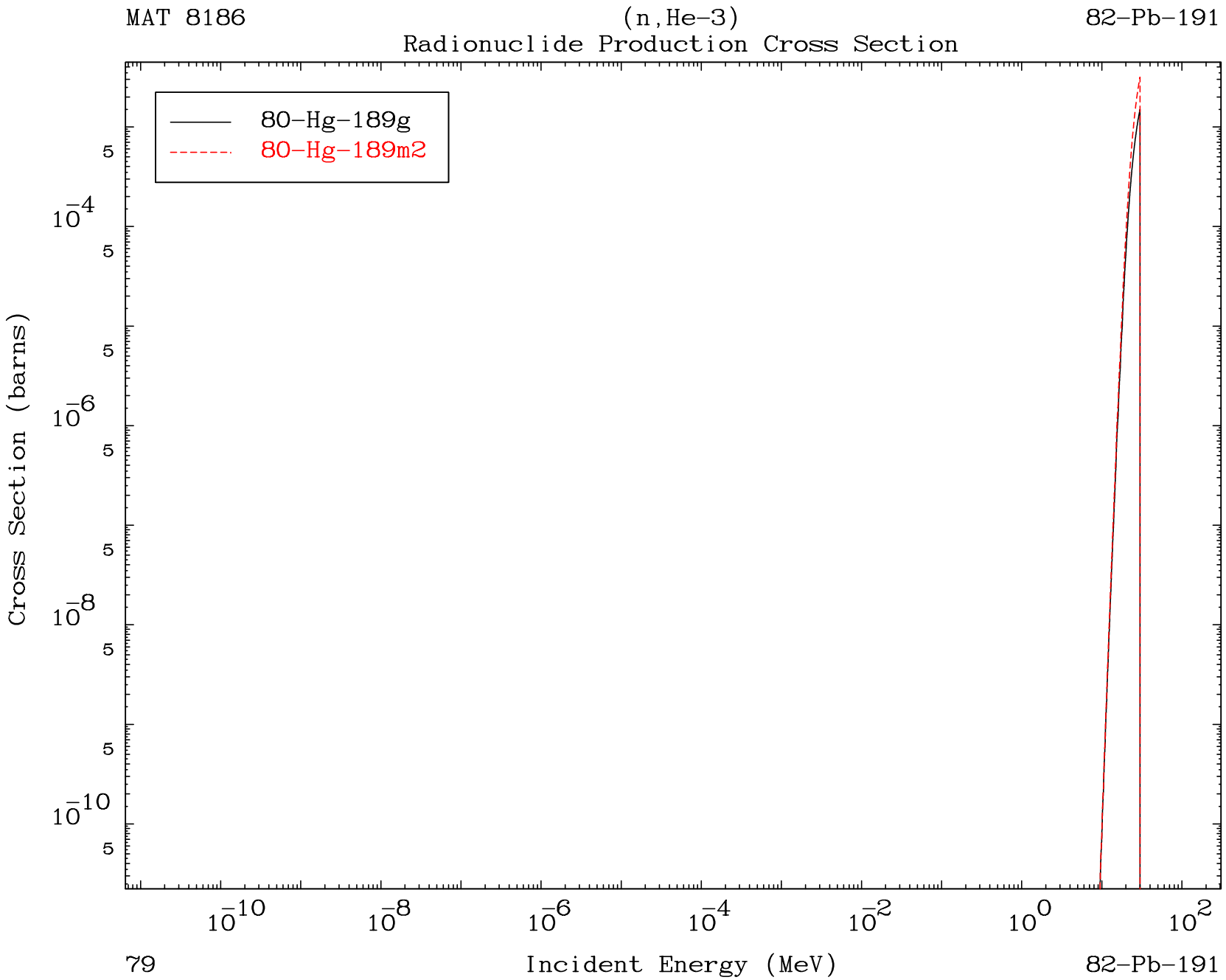

MAT 8186
(n,3n) p
82-Pb-191
Radionuclide Production Cross Section
81-Tl-188g
81-Tl-188m1
Cross Section (barns)
Incident Energy (MeV)
74
82-Pb-191

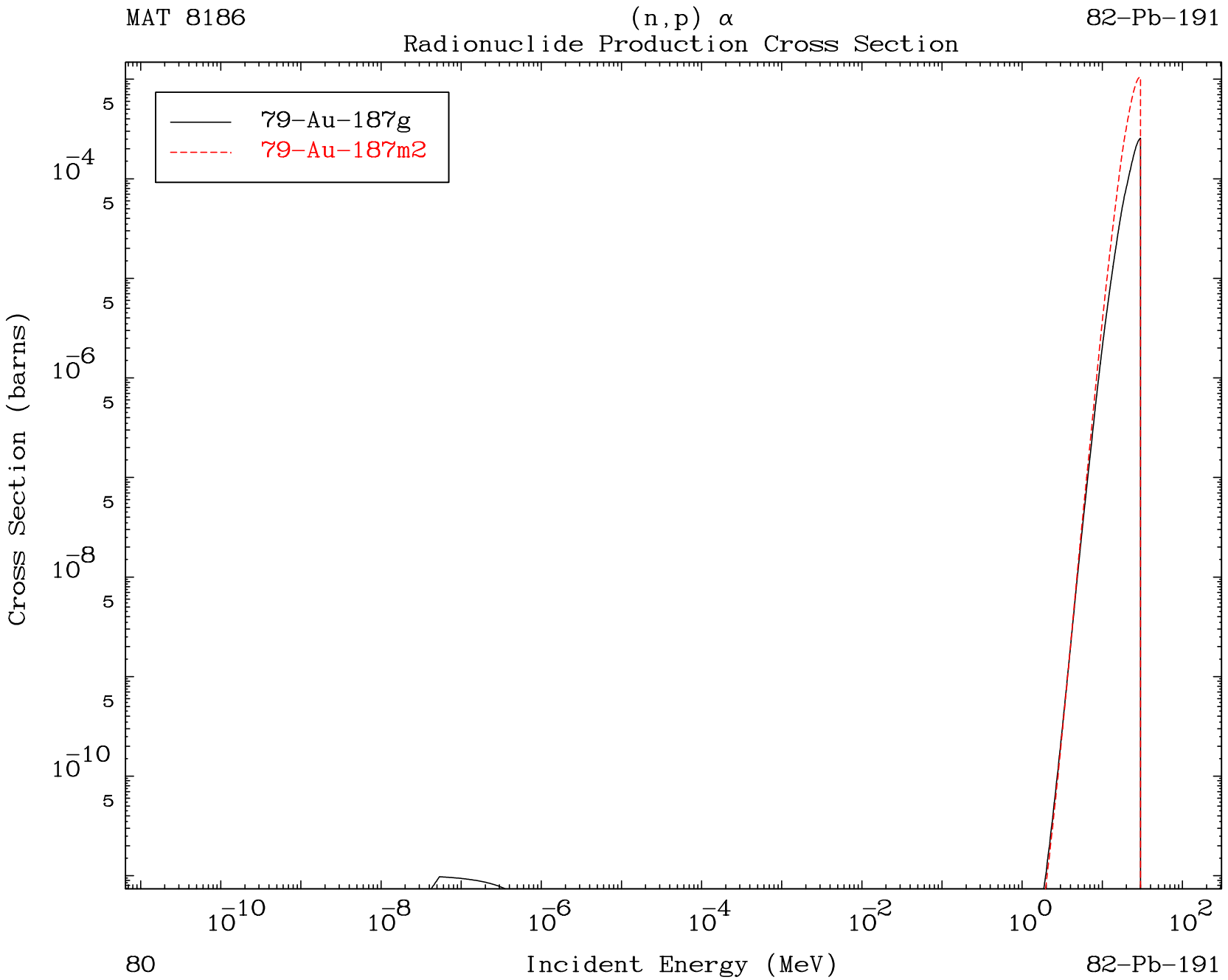

MAT 8186
(n,2n) p
82-Pb-191
Radionuclide Production Cross Section
80-Hg-189g
80-Hg-189m2
Cross Section (barns)
Incident Energy (MeV)
75
82-Pb-191

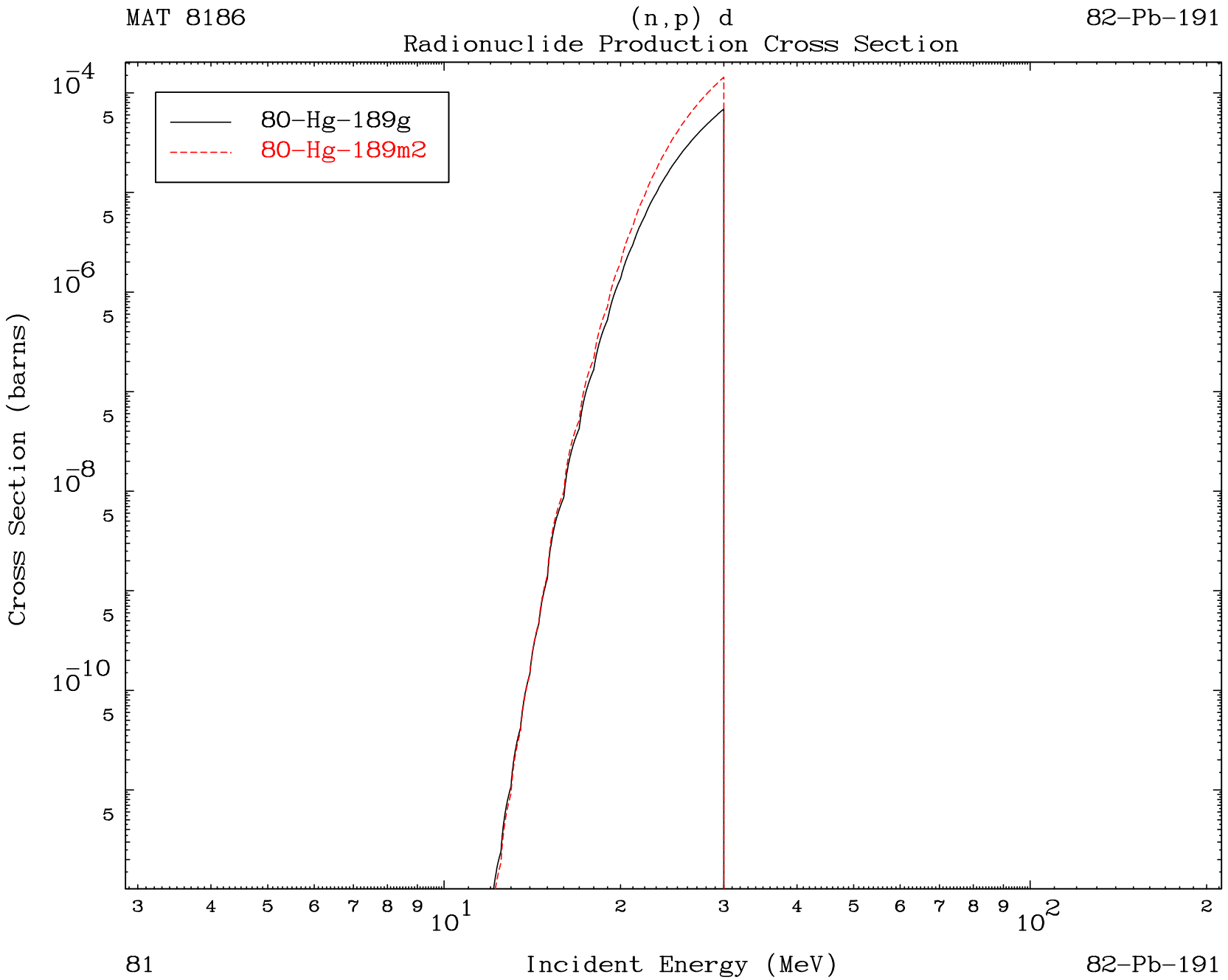

MAT 8186
(n,p)
82-Pb-191
Radionuclide Production Cross Section
81-Tl-191g
81-Tl-191m2
Cross Section (barns)
Incident Energy (MeV)
76
82-Pb-191


MAT 8186
(n,d)
82-Pb-191
Radionuclide Production Cross Section
81-Tl-190g
81-Tl-190m1
Cross Section (barns)
Incident Energy (MeV)
77
82-Pb-191


MAT 8186
(n,t)
82-Pb-191
Radionuclide Production Cross Section
81-Tl-189g
81-Tl-189m1
Cross Section (barns)
Incident Energy (MeV)
78
82-Pb-191


MAT 8186
(n,He-3)
82-Pb-191
Radionuclide Production Cross Section
80-Hg-189g
80-Hg-189m2
Cross Section (barns)
10-4
10-6
10-8
10-10
5
10-10
10-8
10-6
10-4
10-2
100
102
79
Incident Energy (MeV)
82-Pb-191


MAT 8186
(n,p) α
82-Pb-191
Radionuclide Production Cross Section
79-Au-187g
79-Au-187m2
Cross Section (barns)
Incident Energy (MeV)
80
82-Pb-191


MAT 8186
(n,p) d
82-Pb-191
Radionuclide Production Cross Section
80-Hg-189g
80-Hg-189m2
Cross Section (barns)
Incident Energy (MeV)
81
82-Pb-191