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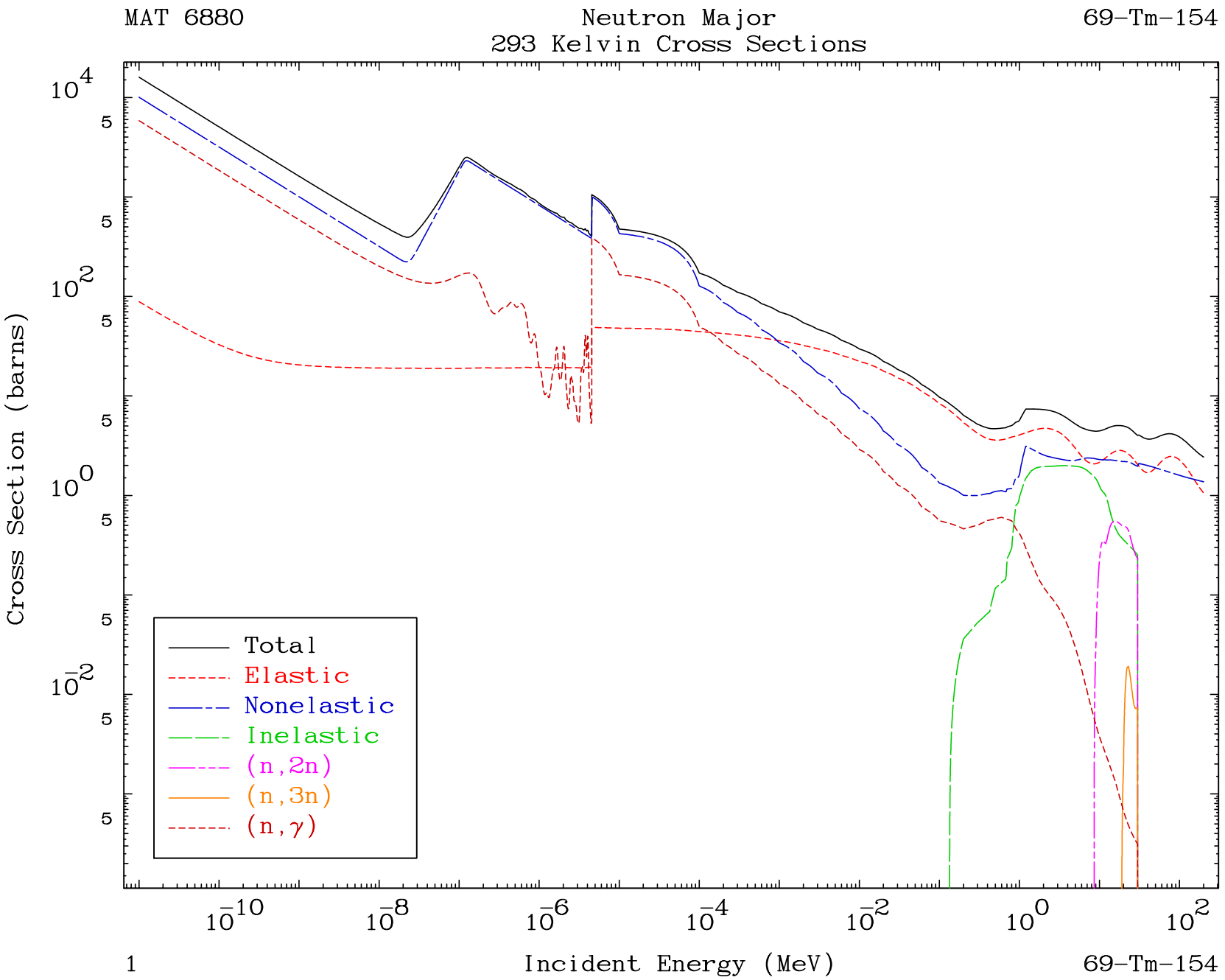
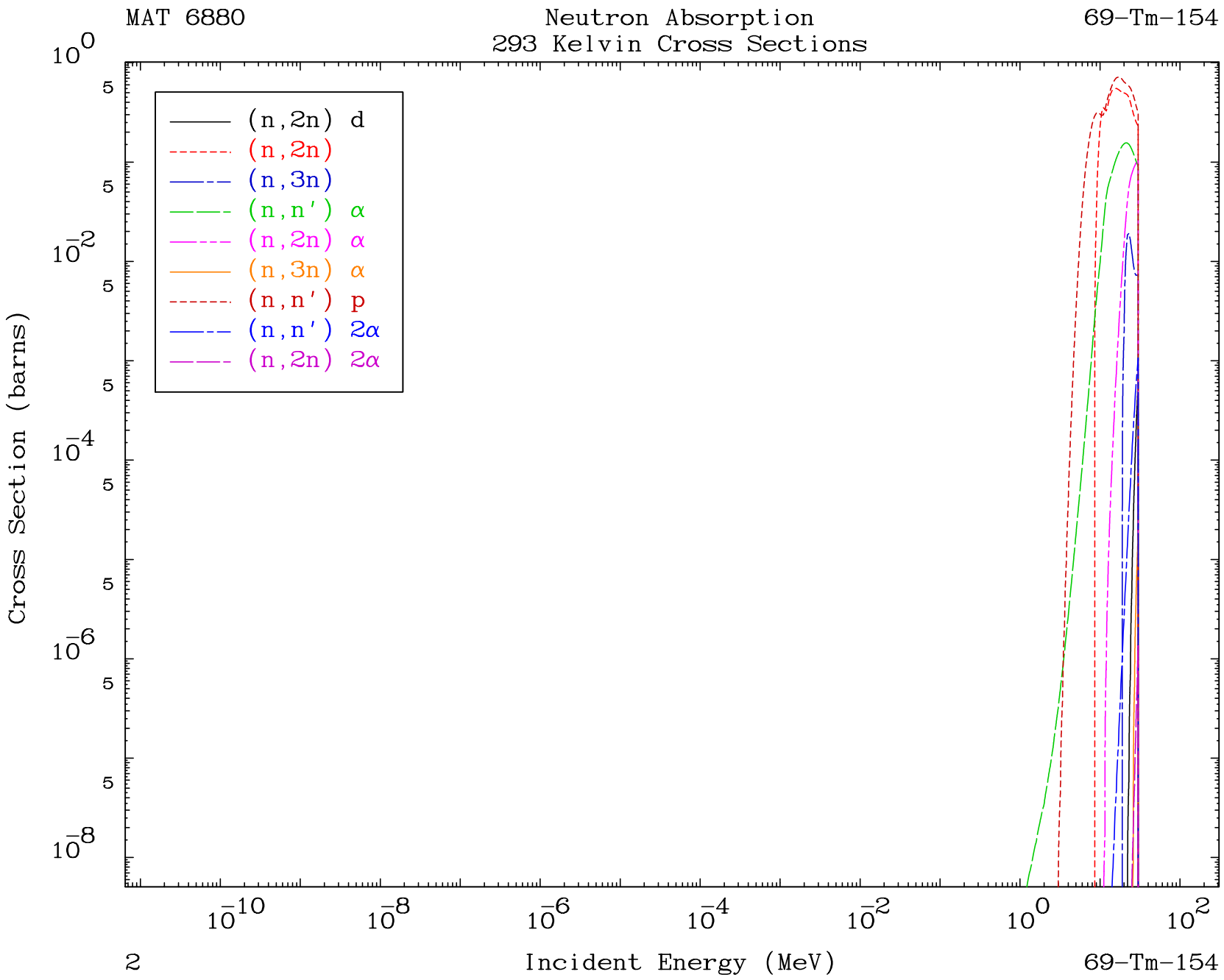
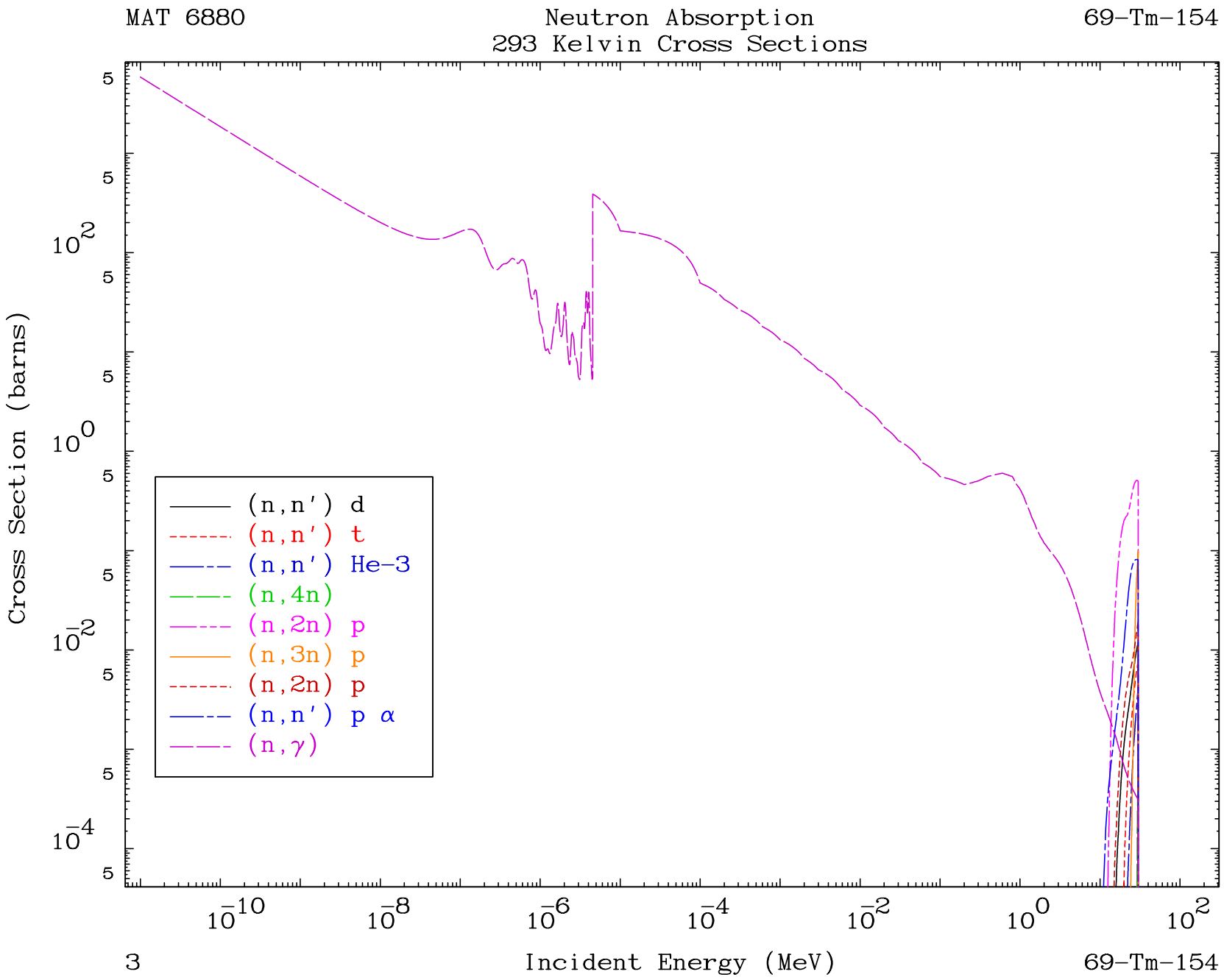
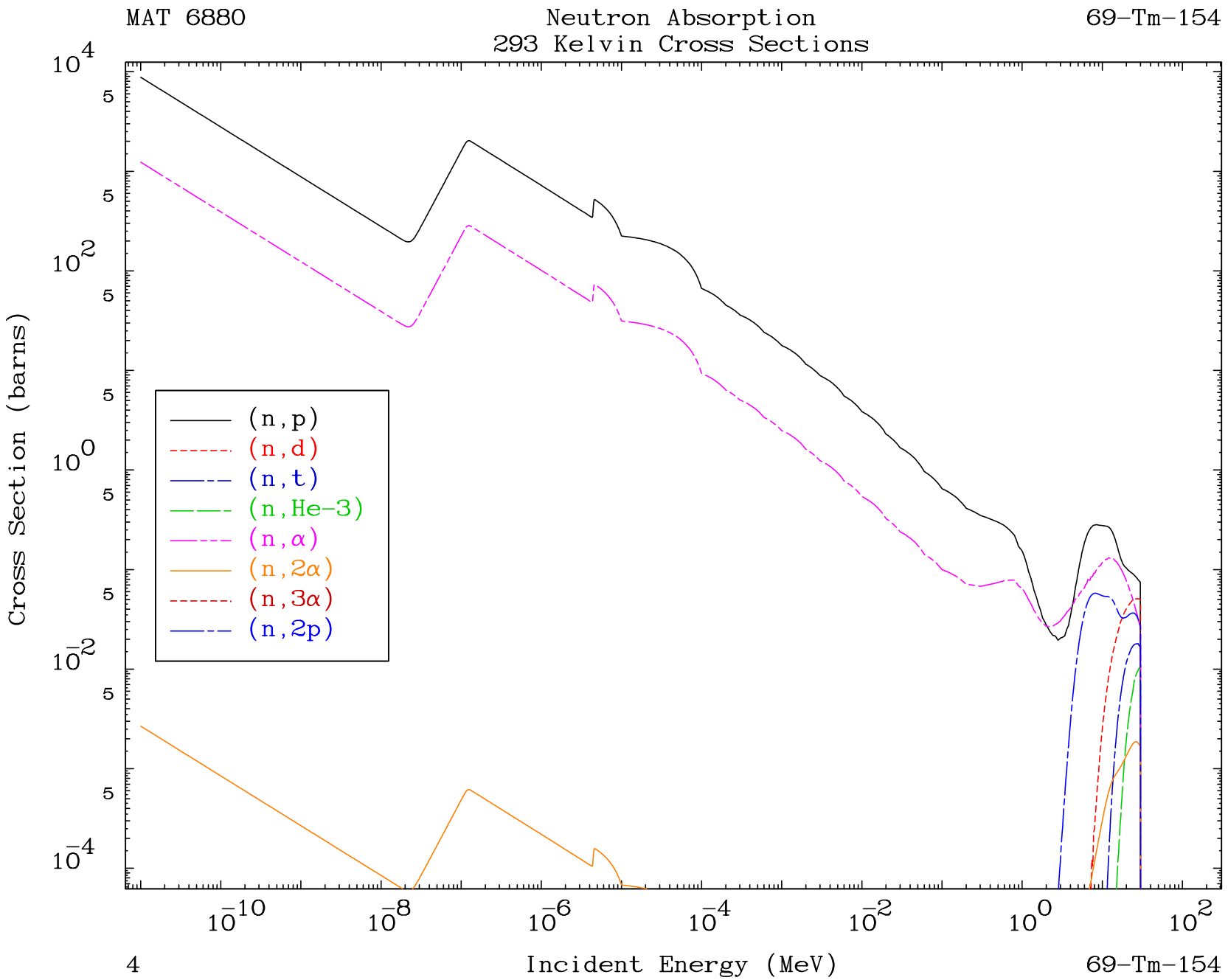
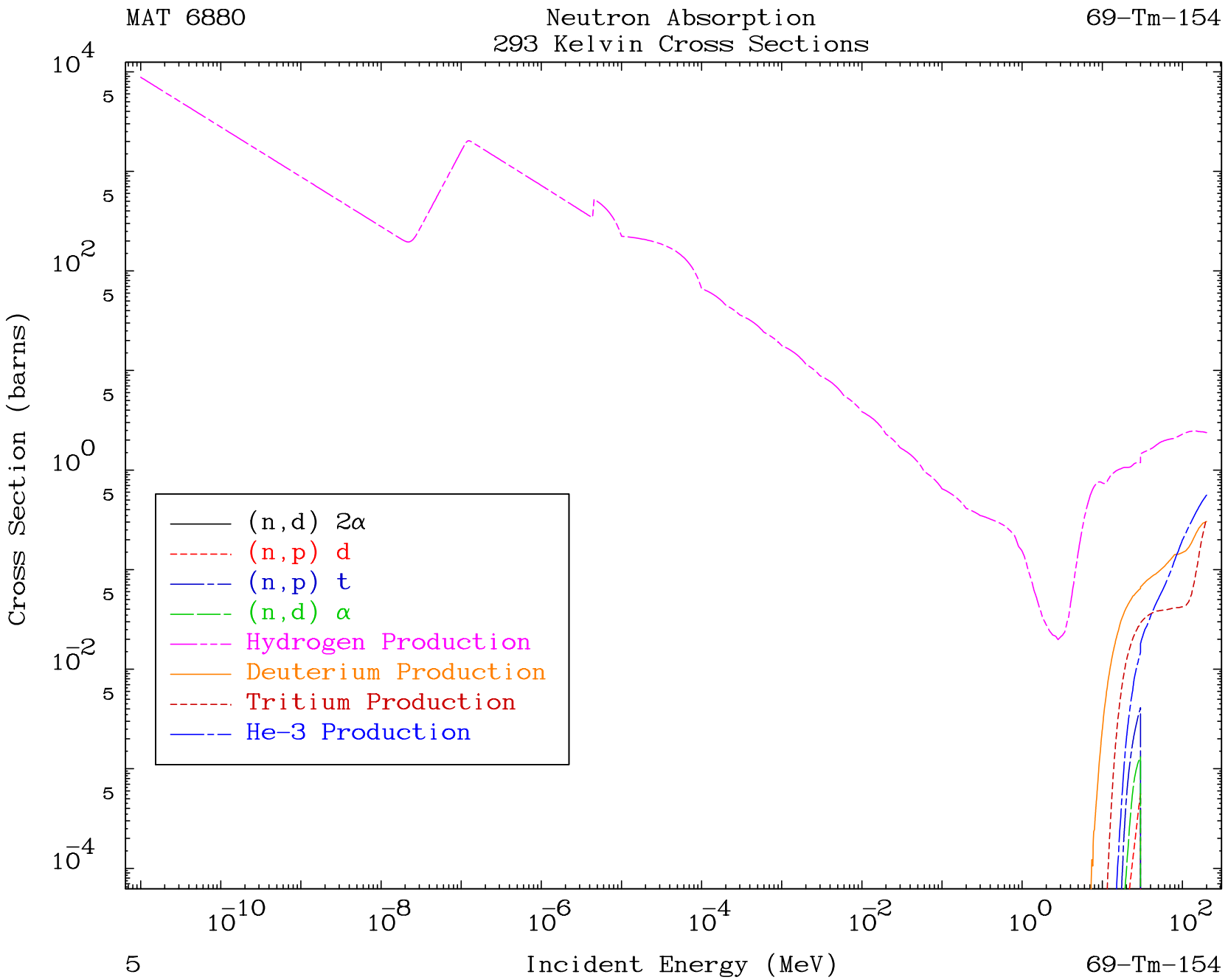
Press Mouse Button to Start

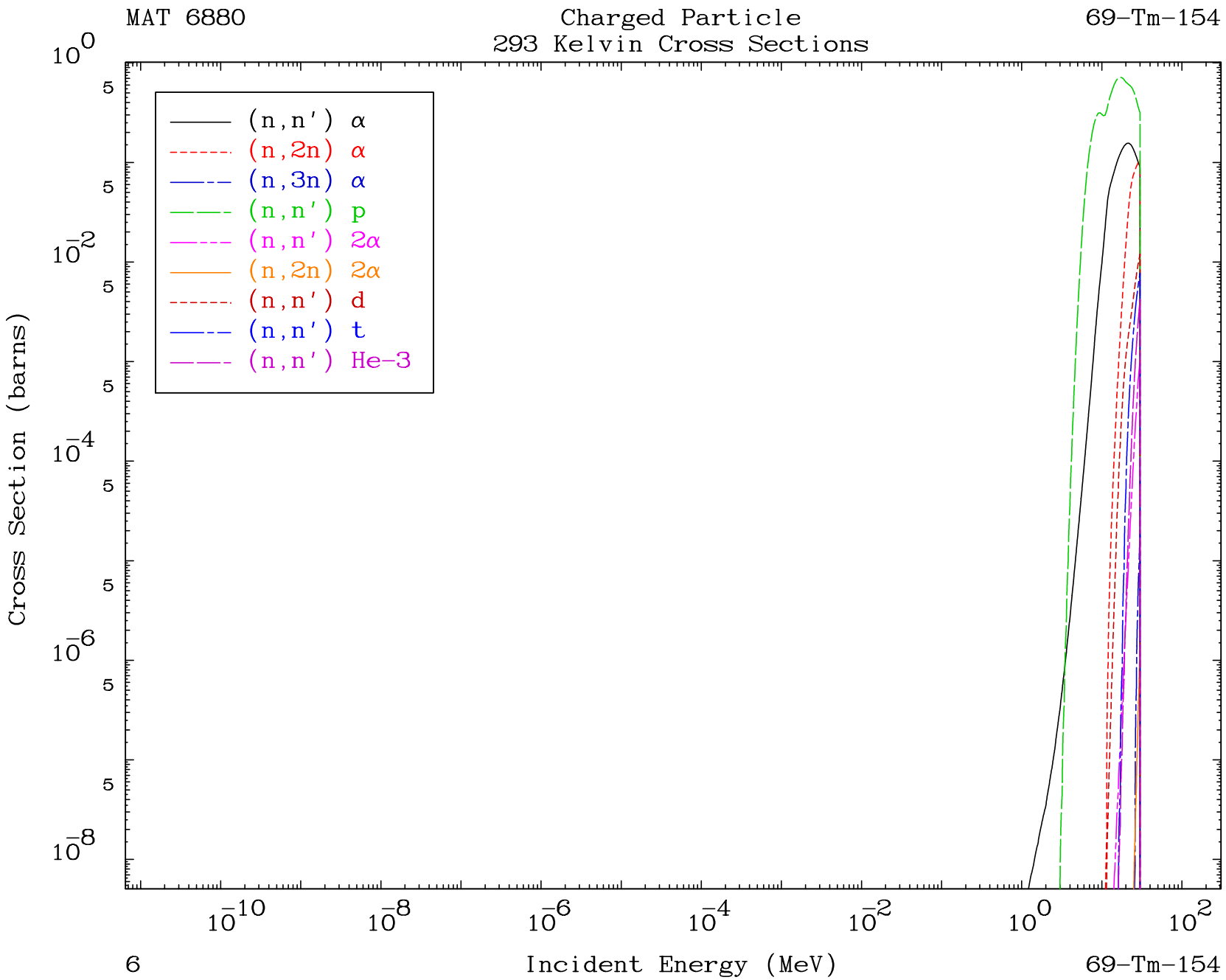

MAT 6880
Neutron Major
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
Total
Elastic
Nonelastic
Inelastic
(n,2n)
(n,3n)
(n,γ)
1
69-Tm-154

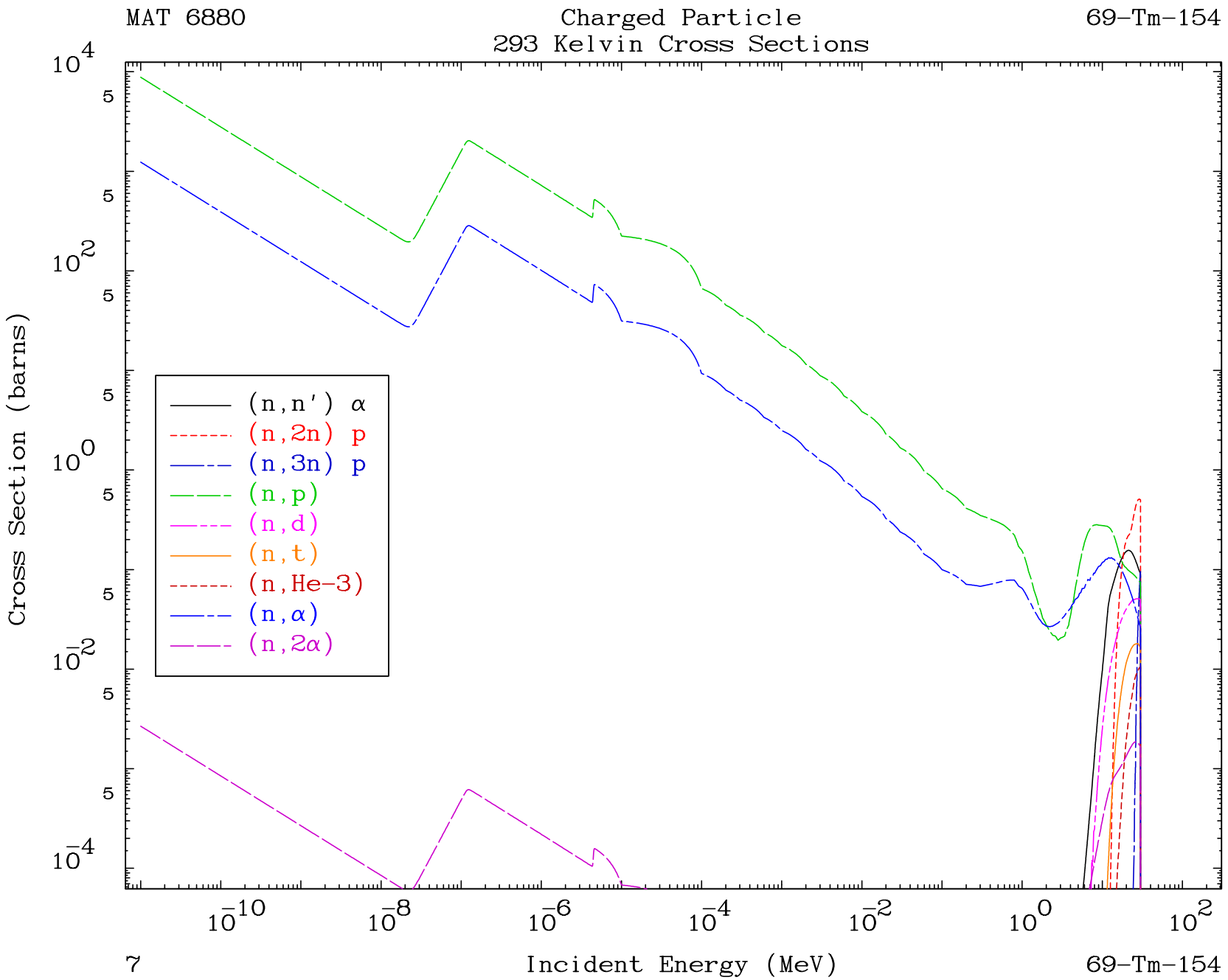

MAT 6880
Neutron Absorption
293 Kelvin Cross Sections
69-Tm-154
(n,2n) d
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,2n) 2α
Cross Section (barns)
Incident Energy (MeV)
69-Tm-154
2

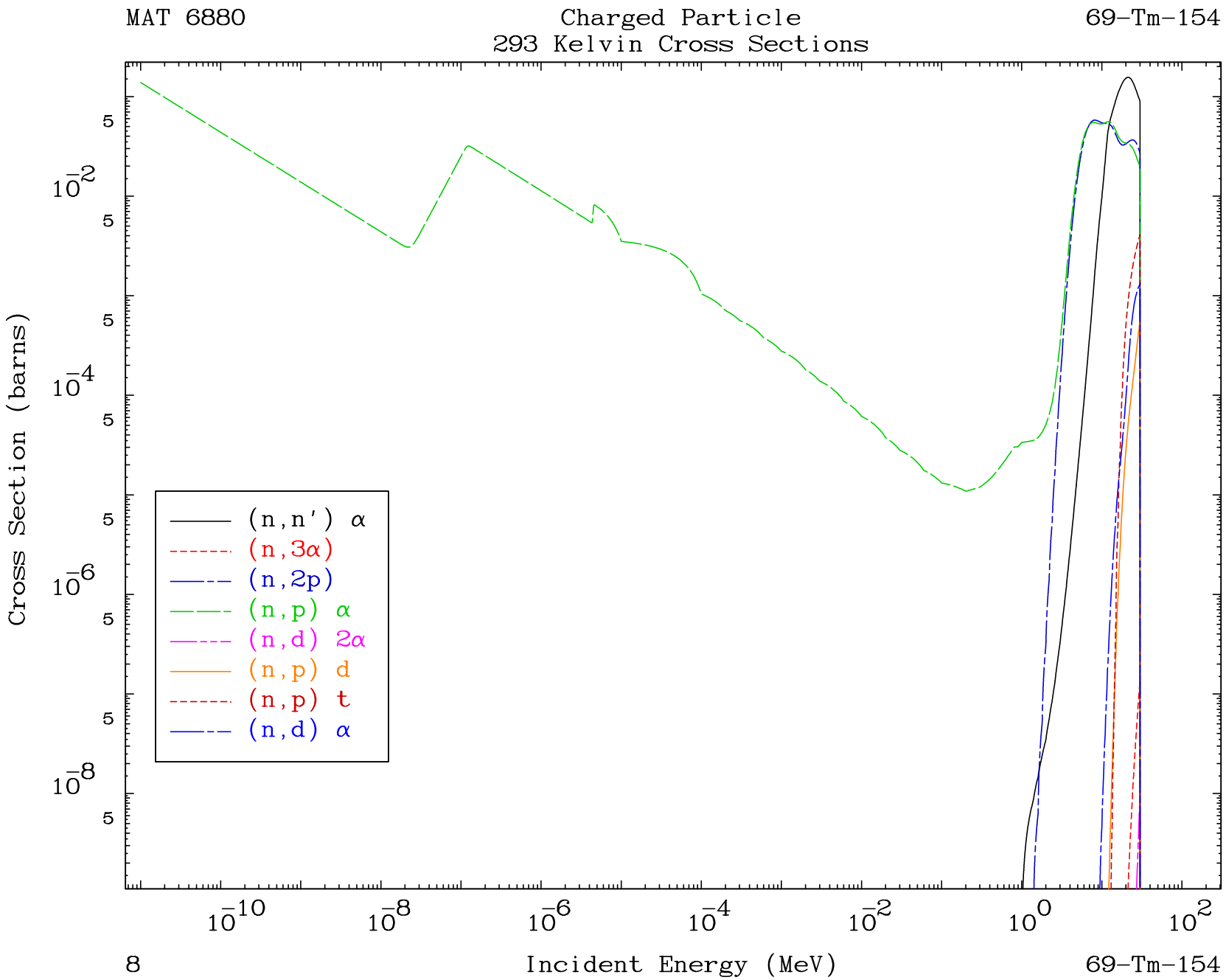

MAT 6880
Neutron Absorption
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
(n,n') d
(n,n') t
(n,n') He-3
(n,4n)
(n,2n) p
(n,3n) p
(n,2n) p
(n,n') p α
(n,γ)
3
69-Tm-154

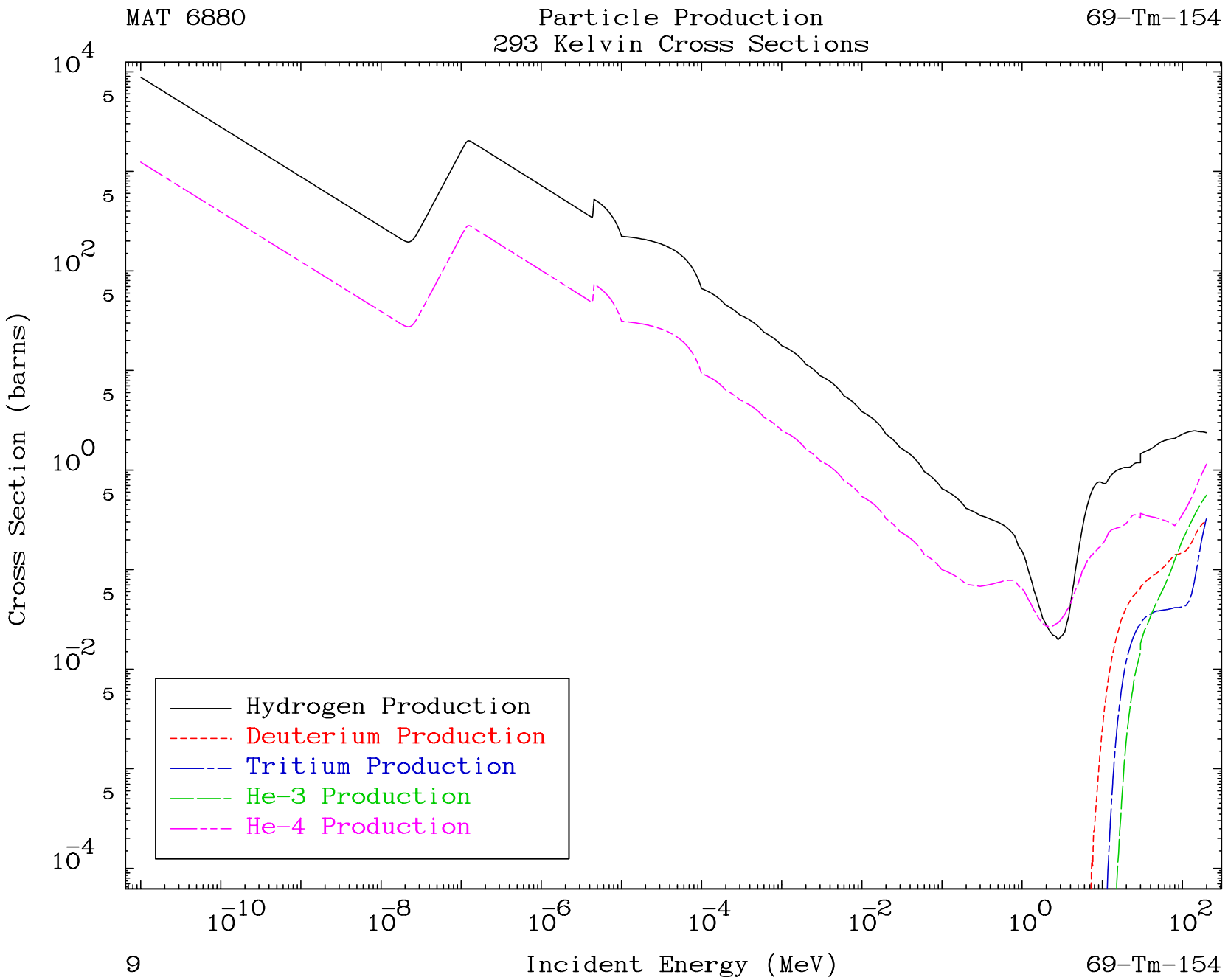

MAT 6880
Neutron Absorption
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,3α)
(n,2p)
4
69-Tm-154

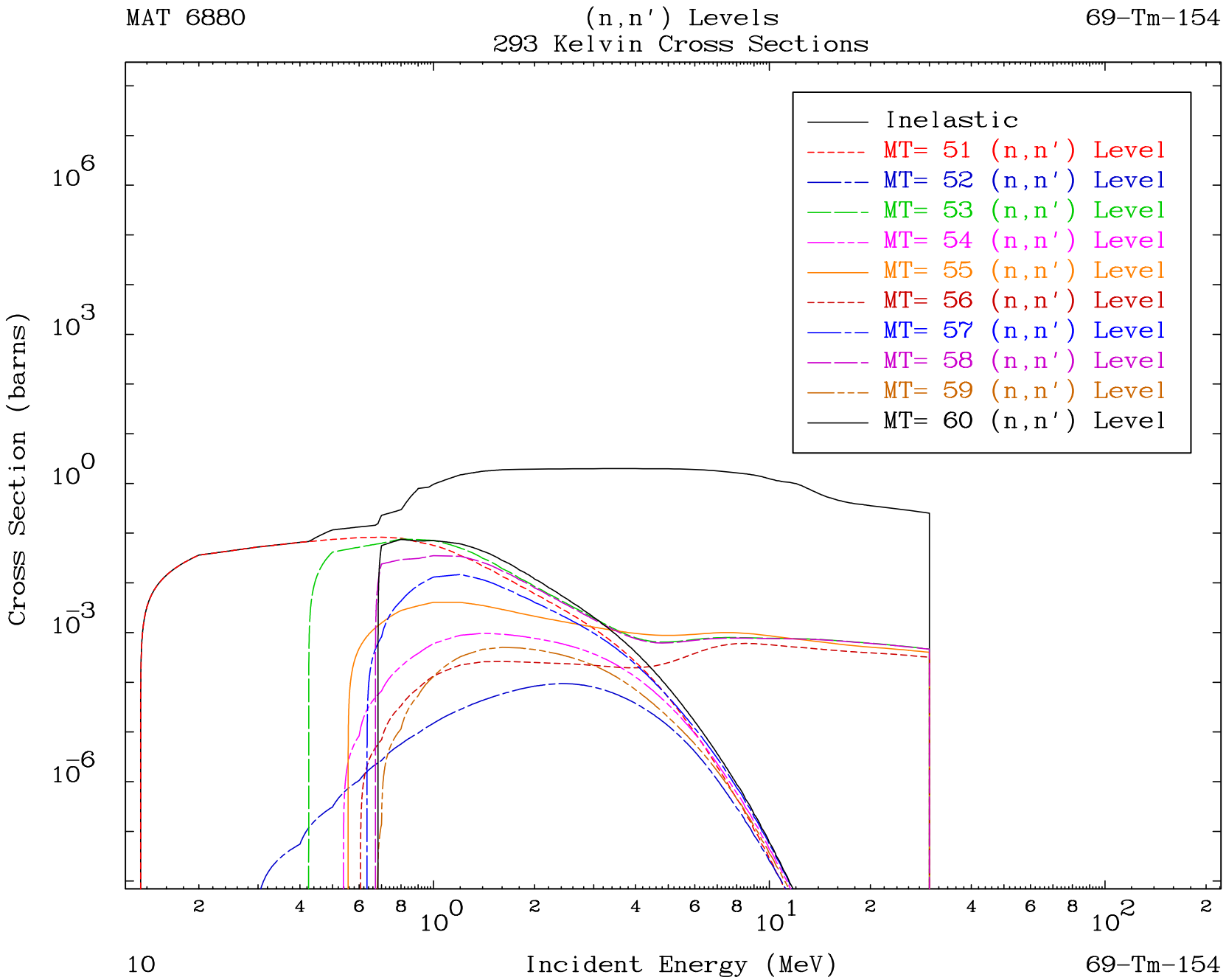

MAT 6880
Neutron Absorption
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
69-Tm-154
5
(n,d) 2α
(n,p) d
(n,p) t
(n,d) α
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production

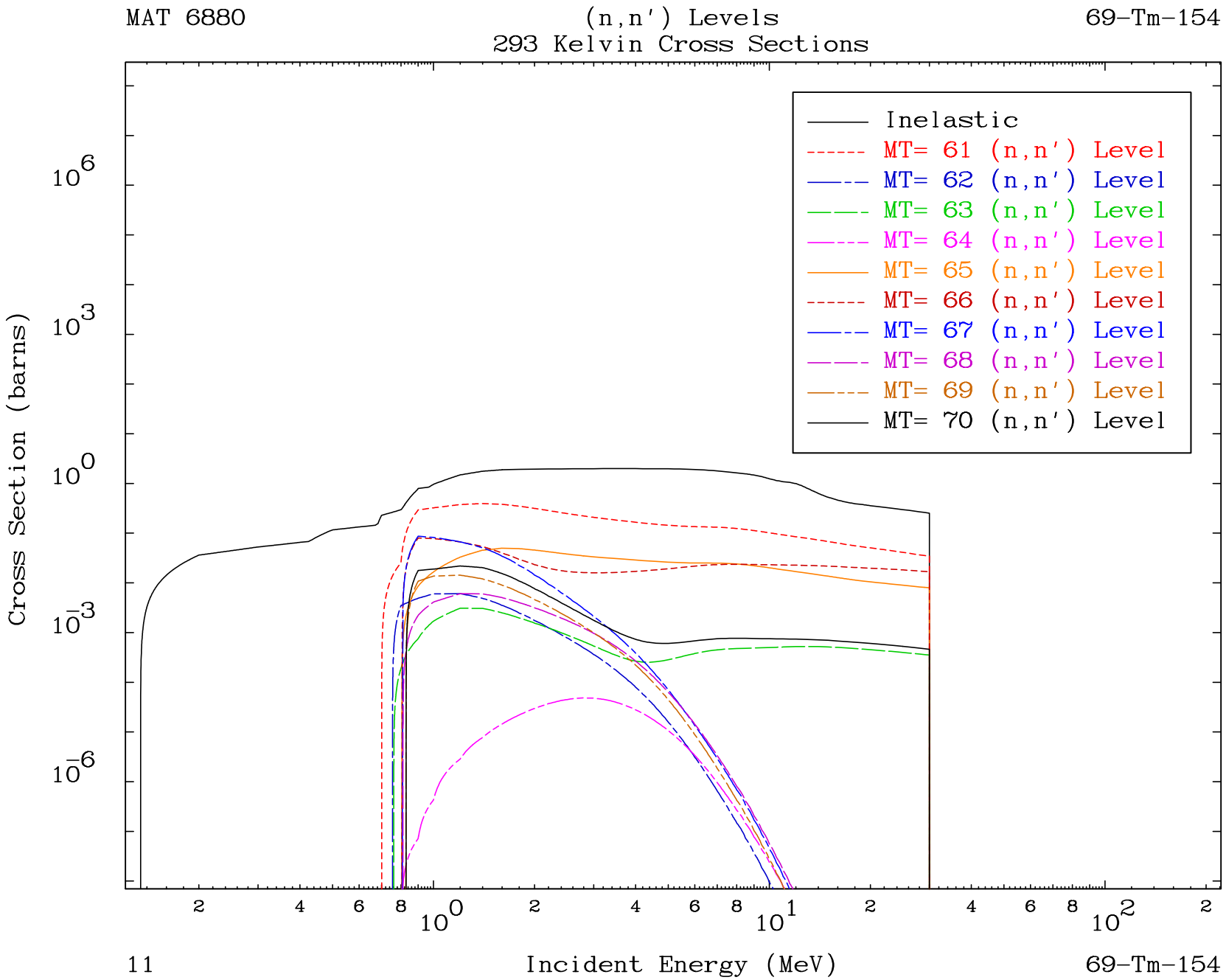

MAT 6880
Charged Particle
293 Kelvin Cross Sections
69-Tm-154
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,2n) 2α
(n,n') d
(n,n') t
(n,n') He-3
Cross Section (barns)
Incident Energy (MeV)
6
69-Tm-154

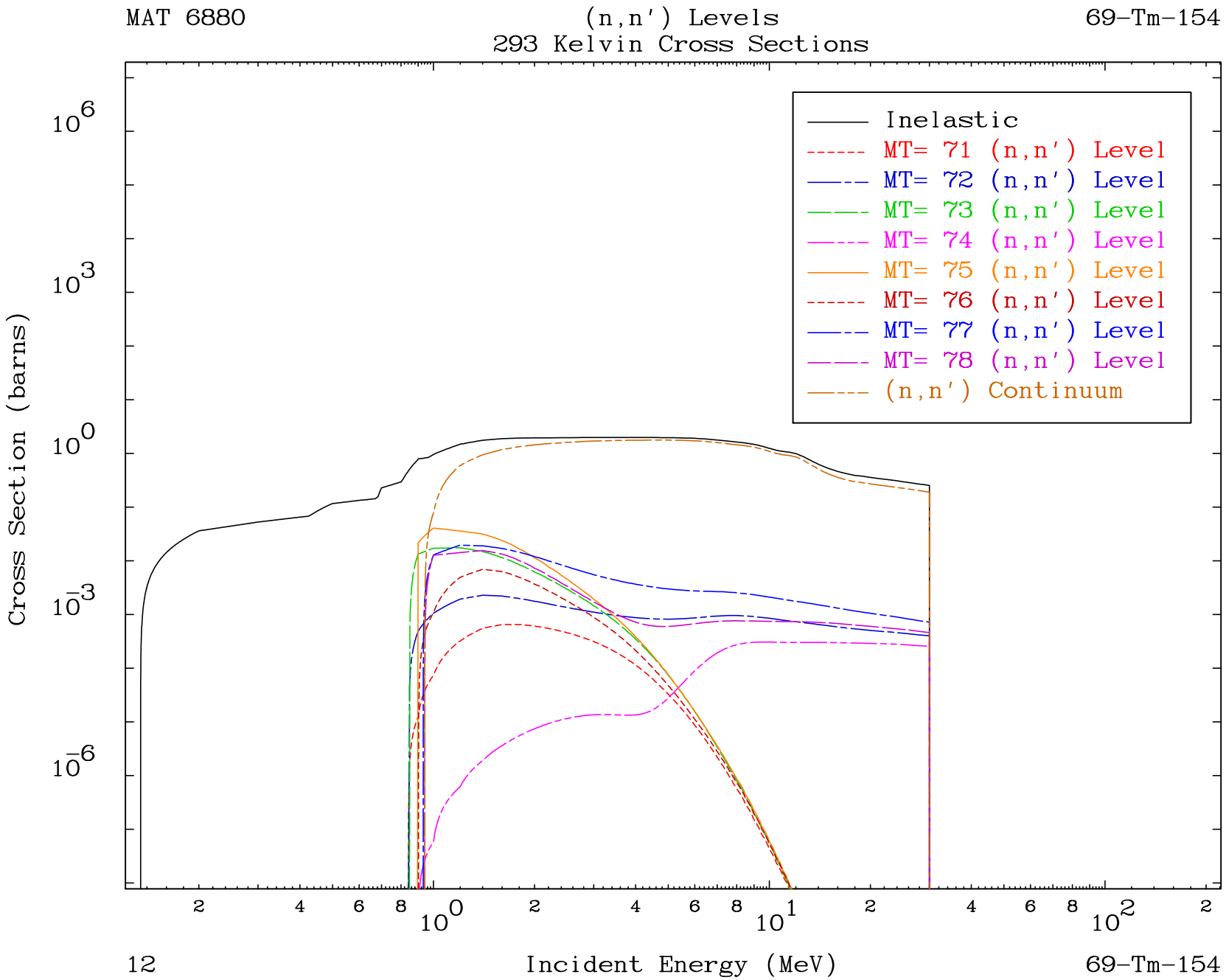

MAT 6880
Charged Particle
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
7
69-Tm-154
(n,n') α
(n,2n) p
(n,3n) p
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)

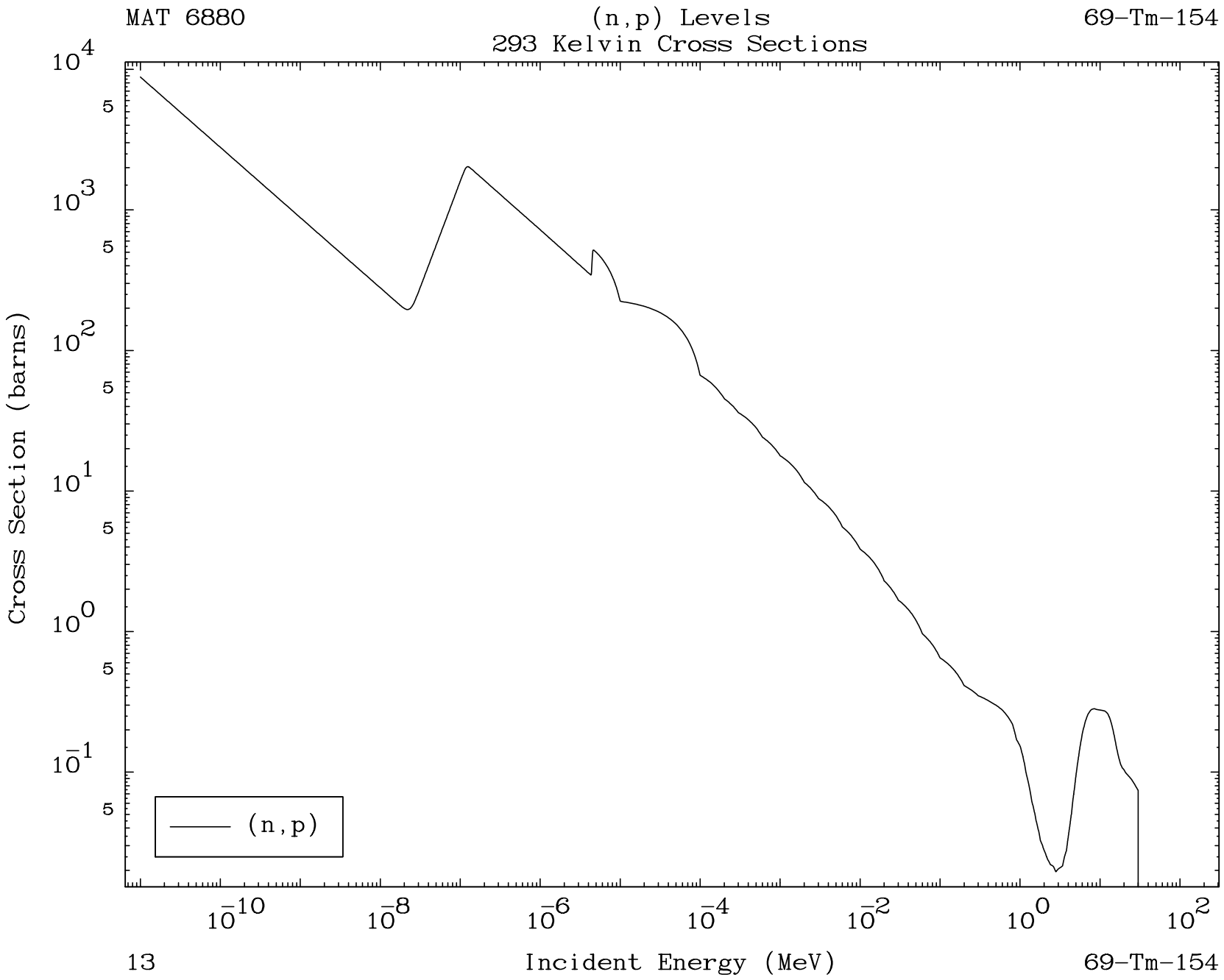

MAT 6880
Charged Particle
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
(n,n') α
(n,3α)
(n,2p)
(n,p) α
(n,d) 2α
(n,p) d
(n,p) t
(n,d) α
8
69-Tm-154

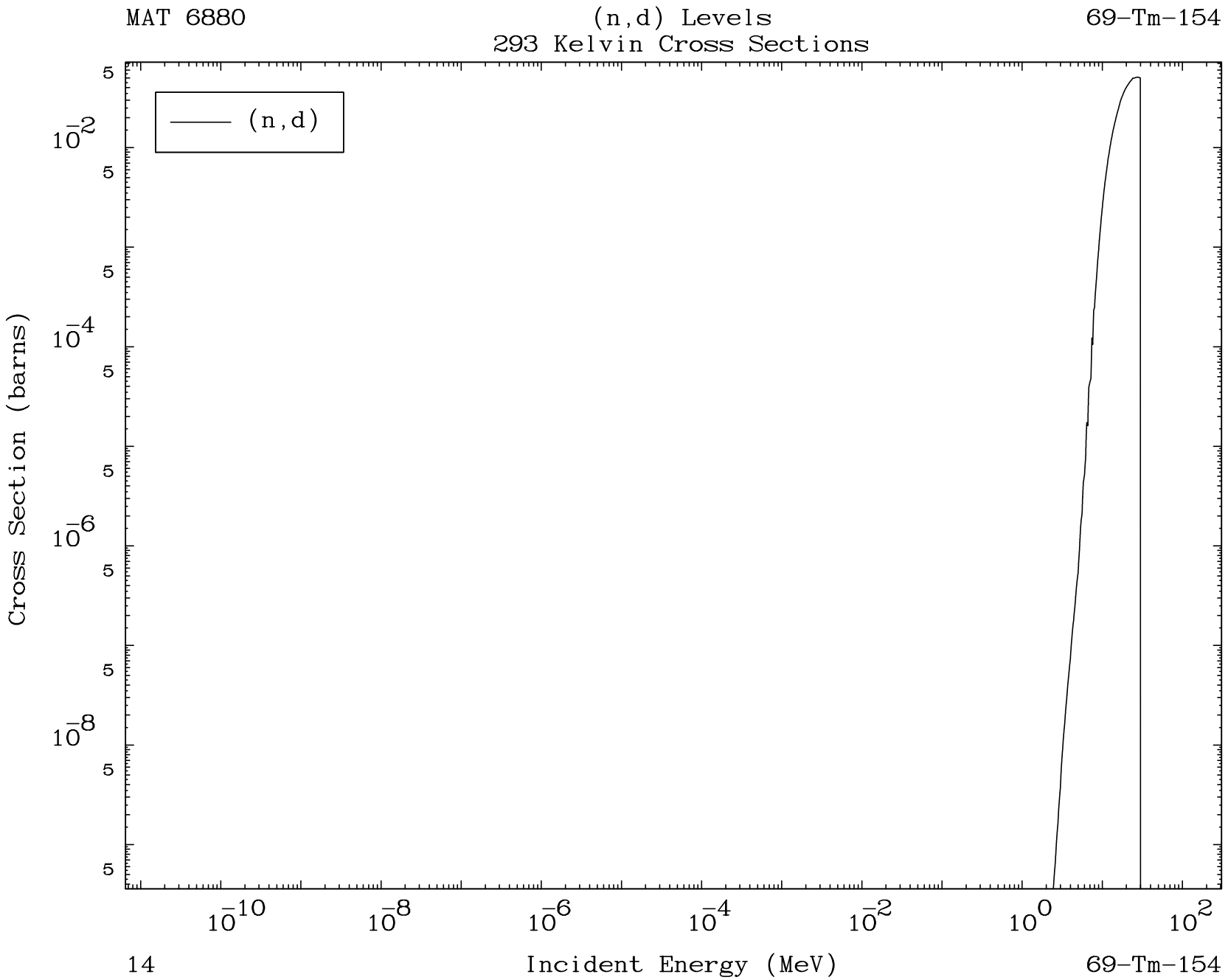

MAT 6880
Particle Production
293 Kelvin Cross Sections
69-Tm-154
Cross Section (barns)
Incident Energy (MeV)
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
9
69-Tm-154

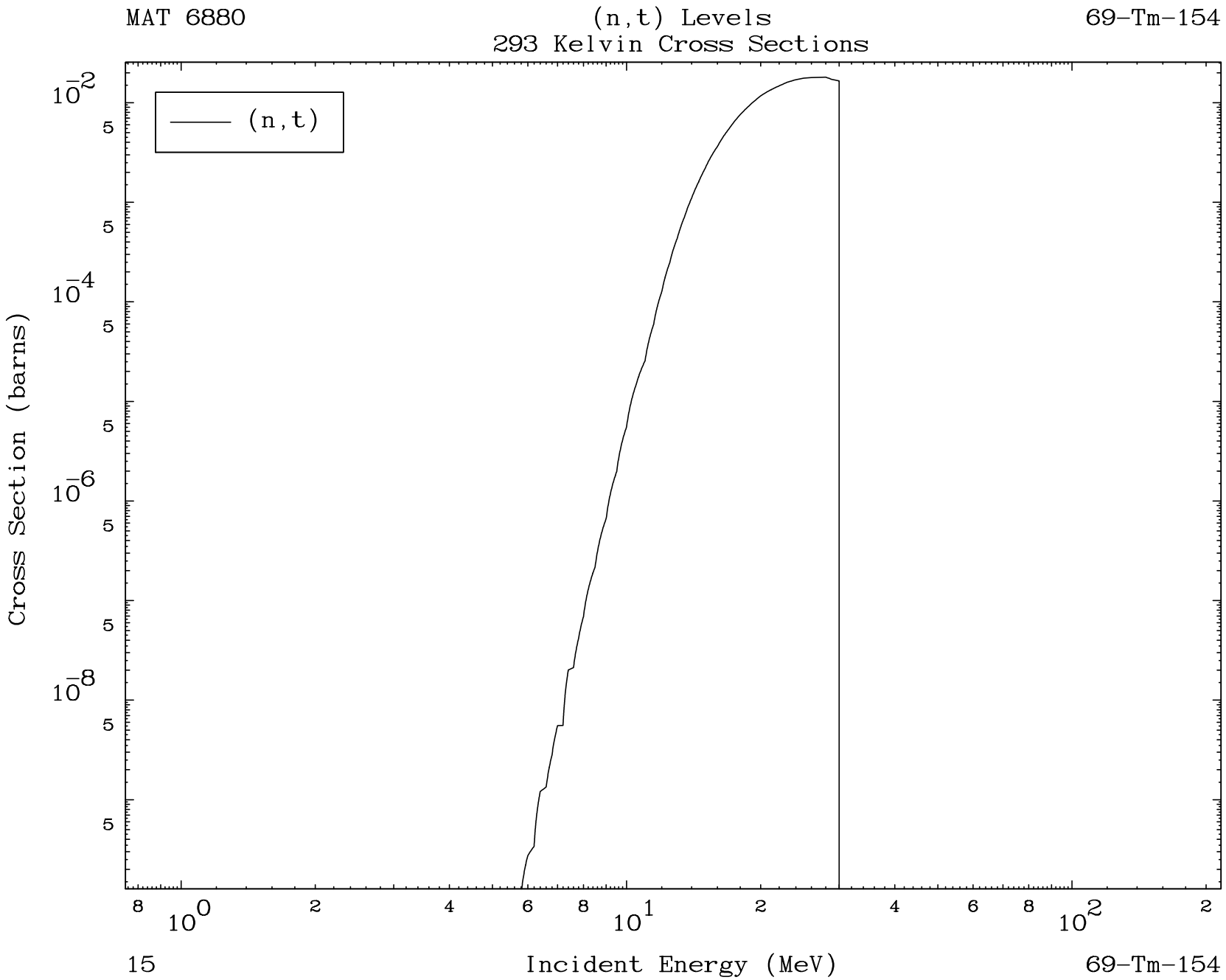

MAT 6880
(n,n') Levels
293 Kelvin Cross Sections
69-Tm-154
Inelastic
MT= 51 (n,n') Level
MT= 52 (n,n') Level
MT= 53 (n,n') Level
MT= 54 (n,n') Level
MT= 55 (n,n') Level
MT= 56 (n,n') Level
MT= 57 (n,n') Level
MT= 58 (n,n') Level
MT= 59 (n,n') Level
MT= 60 (n,n') Level
Cross Section (barns)
10^6
10^3
10^0
10^-3
10^-6
2 4 6 8 10^0 2 4 6 8 10^1 2 4 6 8 10^2 2
10
Incident Energy (MeV)
69-Tm-154

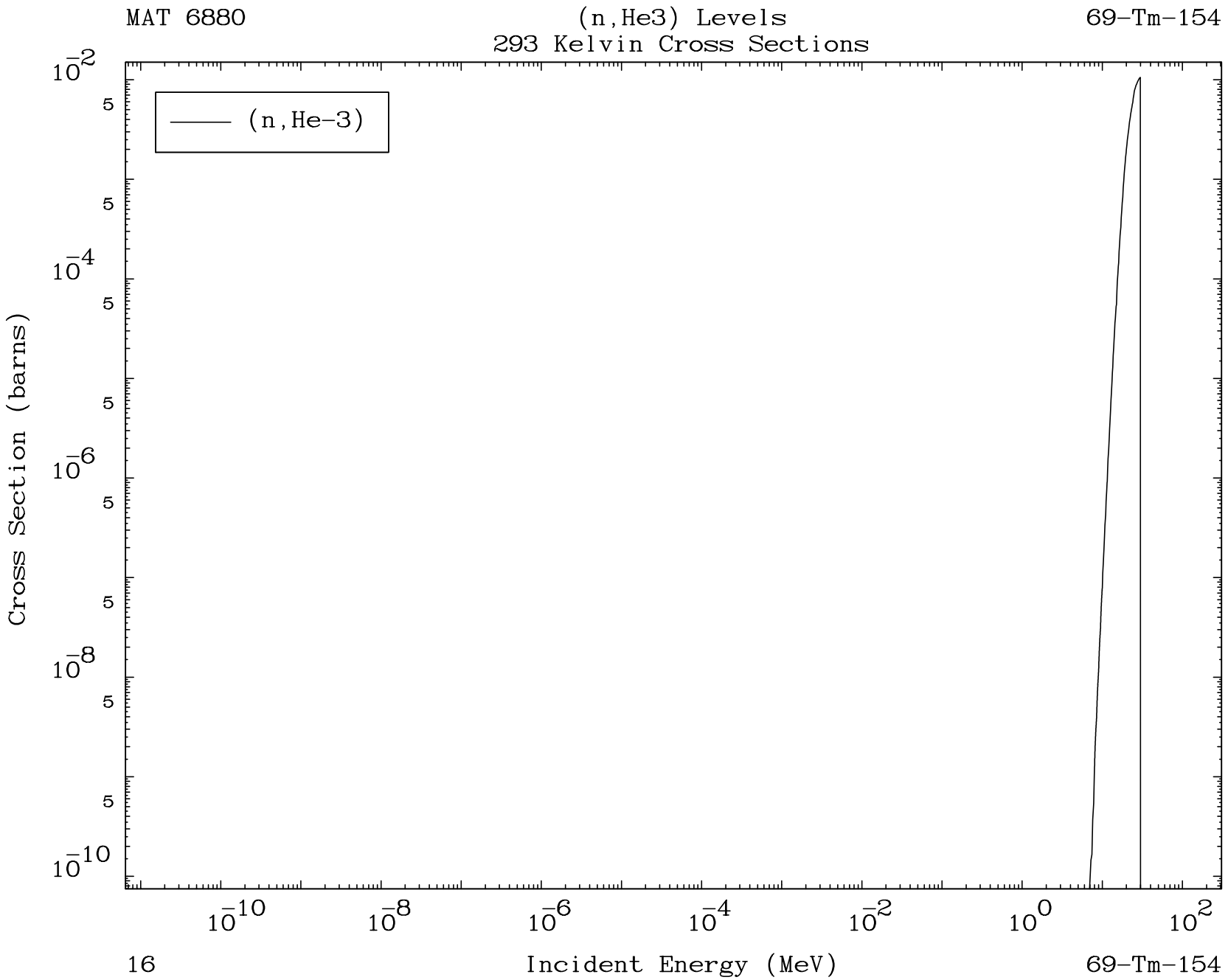

MAT 6880
(n,n') Levels
293 Kelvin Cross Sections
69-Tm-154
Inelastic
MT= 61 (n,n') Level
MT= 62 (n,n') Level
MT= 63 (n,n') Level
MT= 64 (n,n') Level
MT= 65 (n,n') Level
MT= 66 (n,n') Level
MT= 67 (n,n') Level
MT= 68 (n,n') Level
MT= 69 (n,n') Level
MT= 70 (n,n') Level
Cross Section (barns)
10^6
10^3
10^0
10^-3
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
69-Tm-154

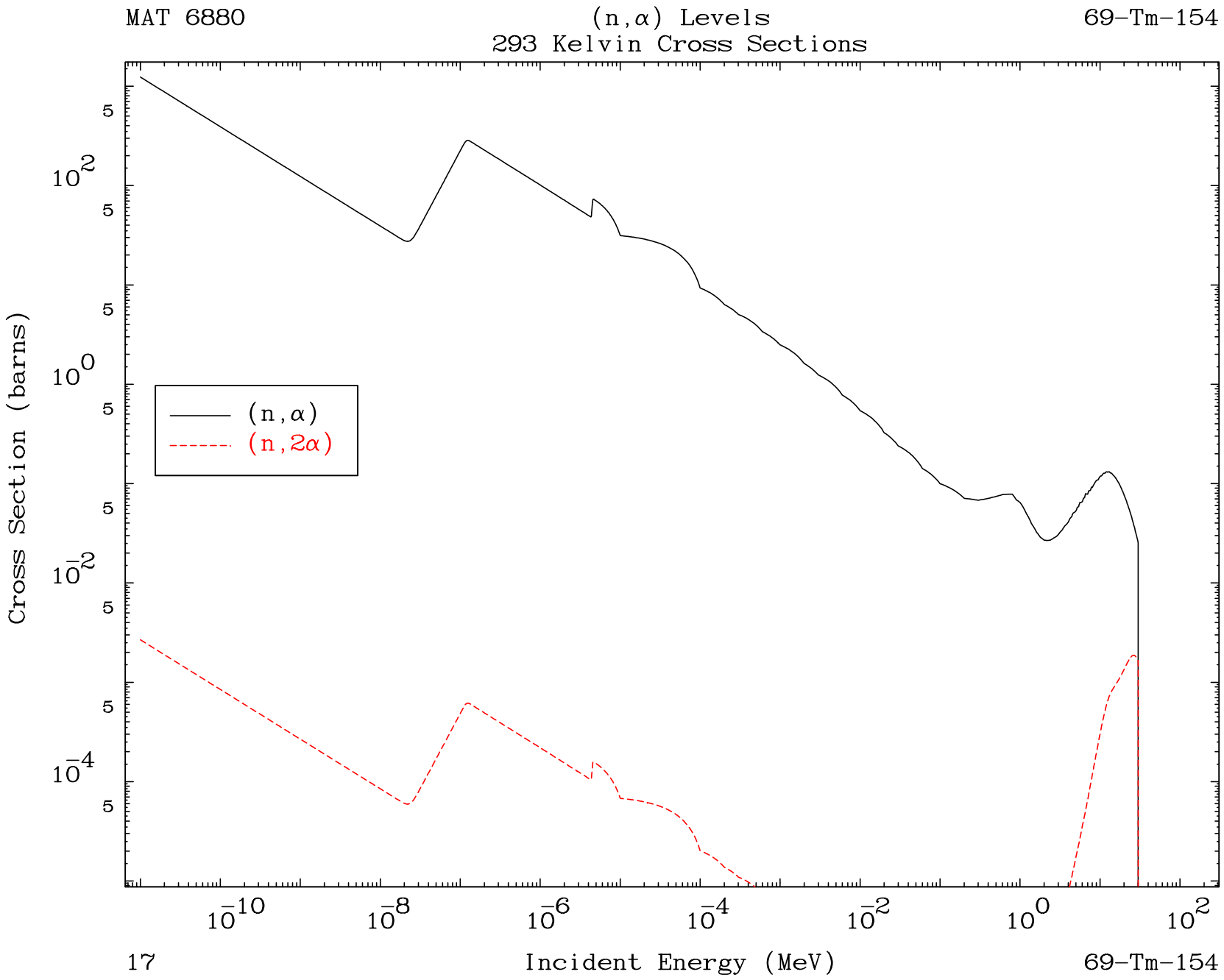

MAT 6880
(n,n') Levels
293 Kelvin Cross Sections
69-Tm-154
Inelastic
MT= 71 (n,n') Level
MT= 72 (n,n') Level
MT= 73 (n,n') Level
MT= 74 (n,n') Level
MT= 75 (n,n') Level
MT= 76 (n,n') Level
MT= 77 (n,n') Level
MT= 78 (n,n') Level
(n,n') Continuum
Cross Section (barns)
Incident Energy (MeV)
12
69-Tm-154

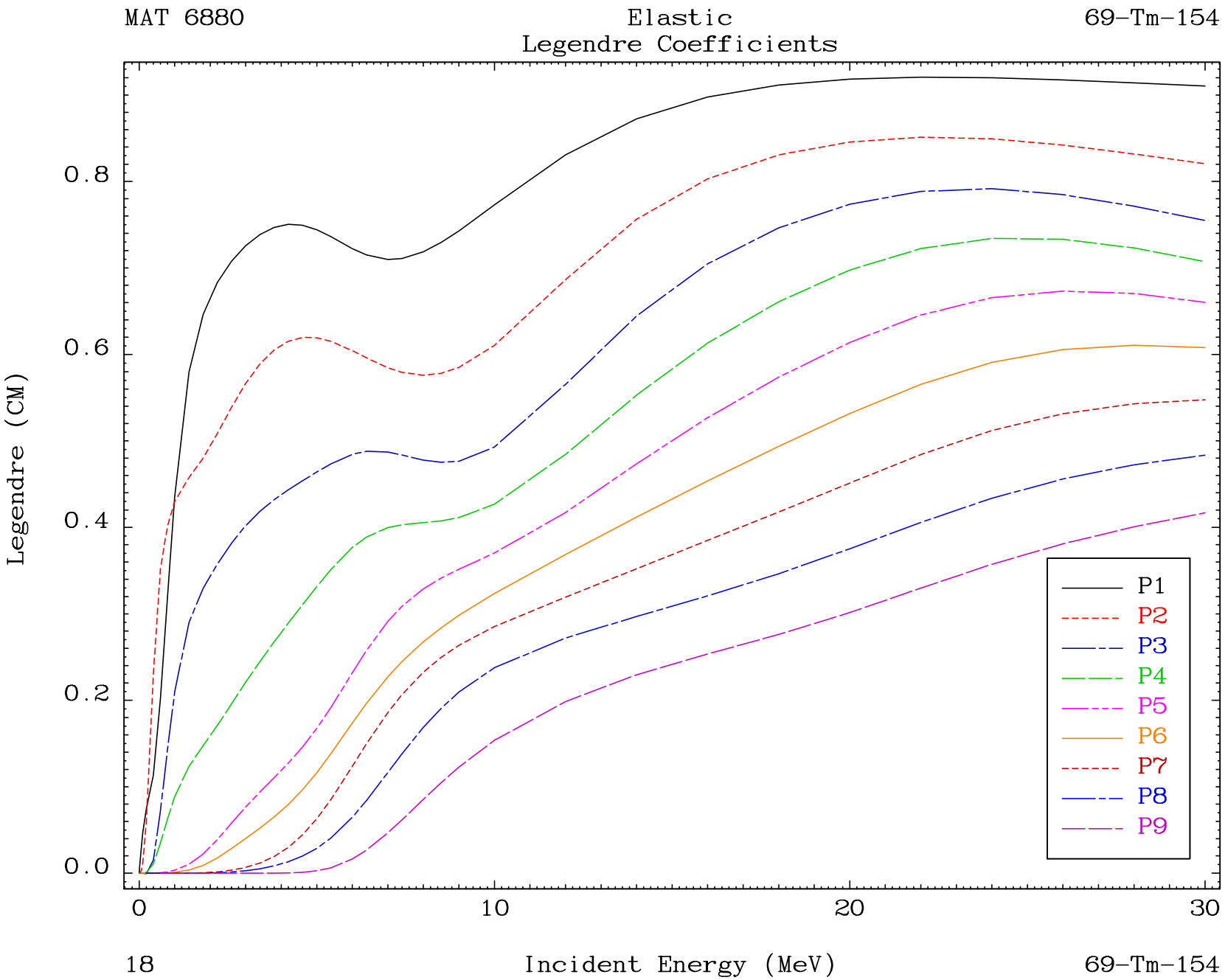

MAT 6880
(n,p) Levels
69-Tm-154
293 Kelvin Cross Sections
Cross Section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
5
(n,p)
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
13
69-Tm-154

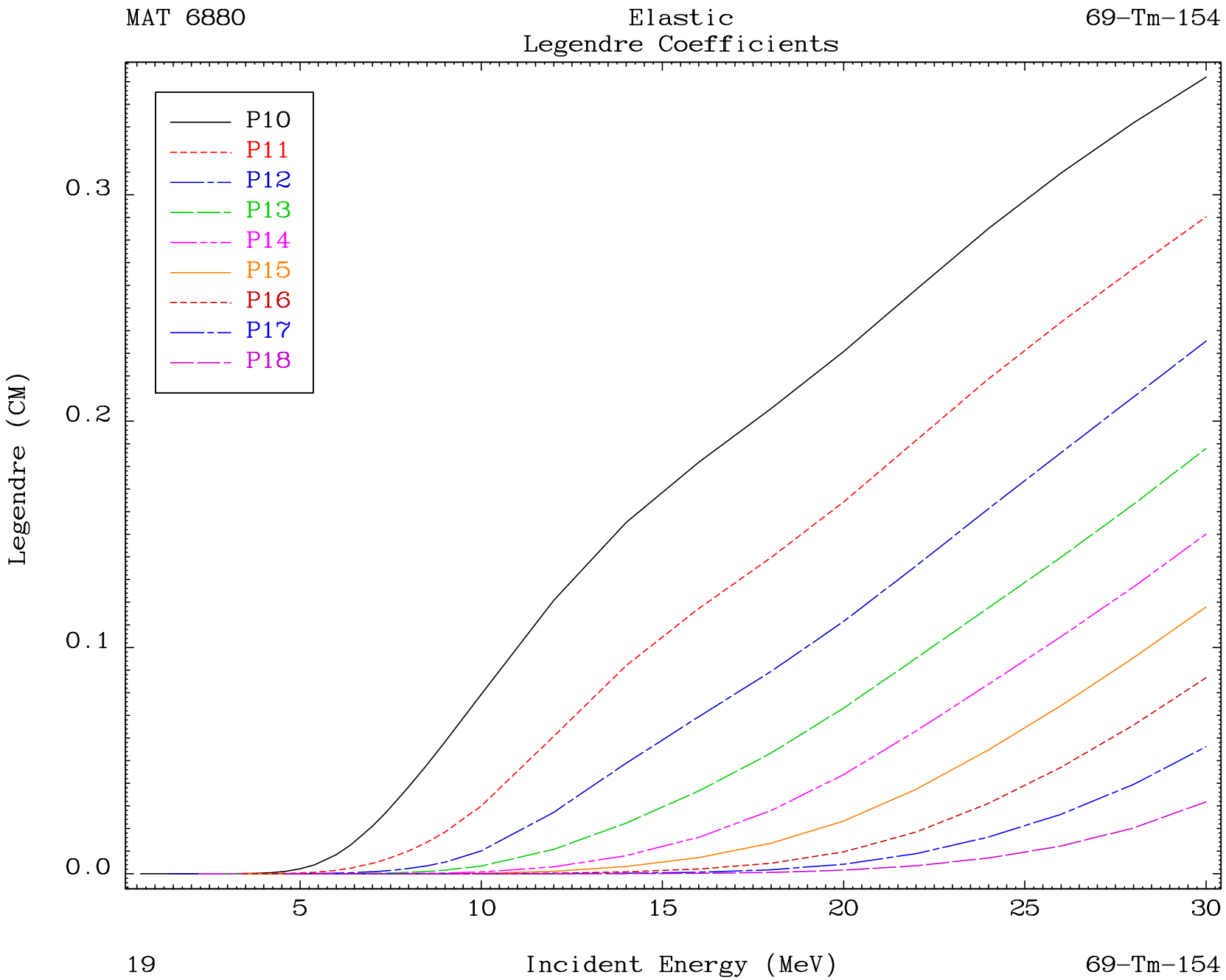

MAT 6880
(n,d) Levels
69-Tm-154
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
Incident Energy (MeV)
14
69-Tm-154

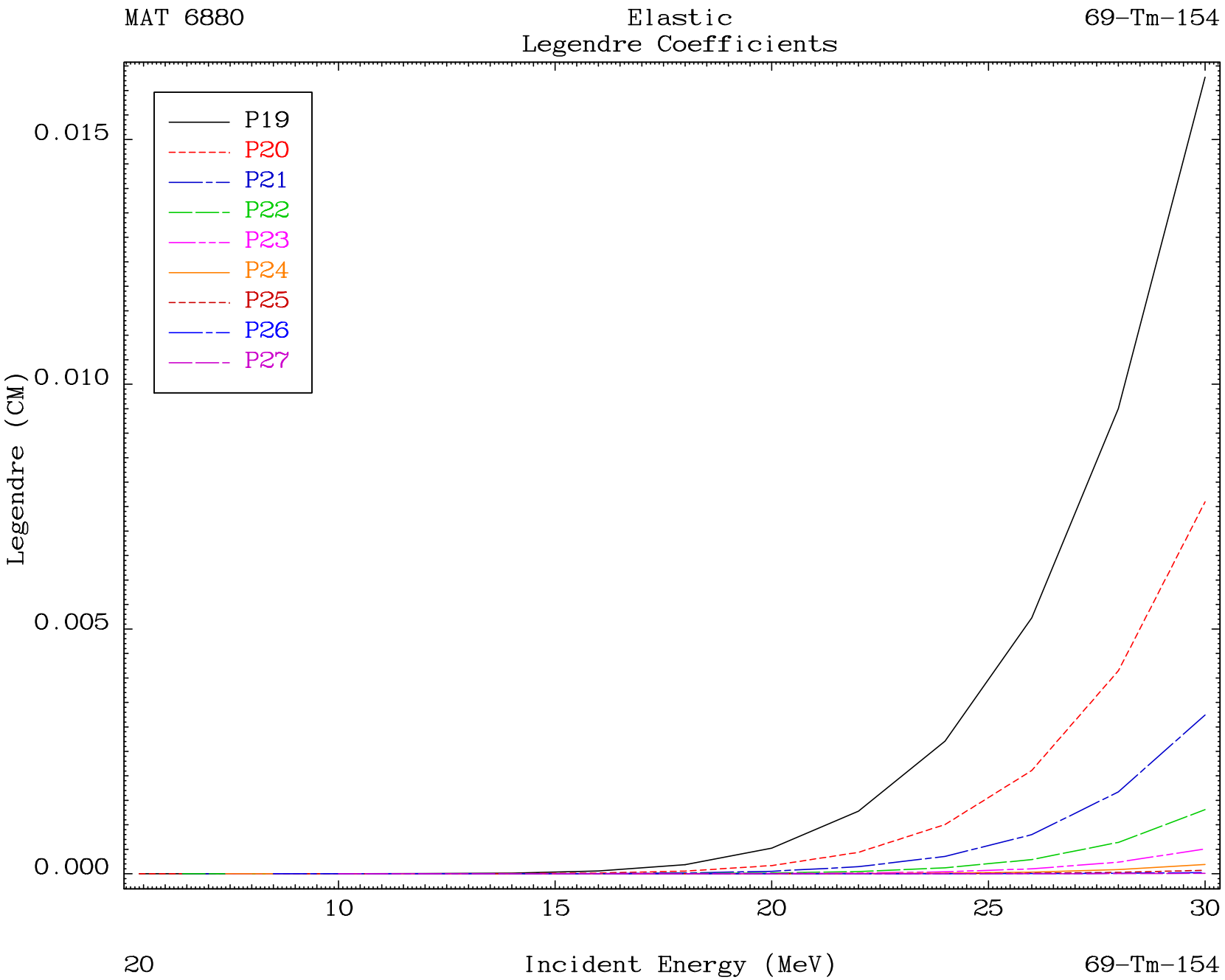

MAT 6880
(n,t) Levels
69-Tm-154
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
Incident Energy (MeV)
15
69-Tm-154

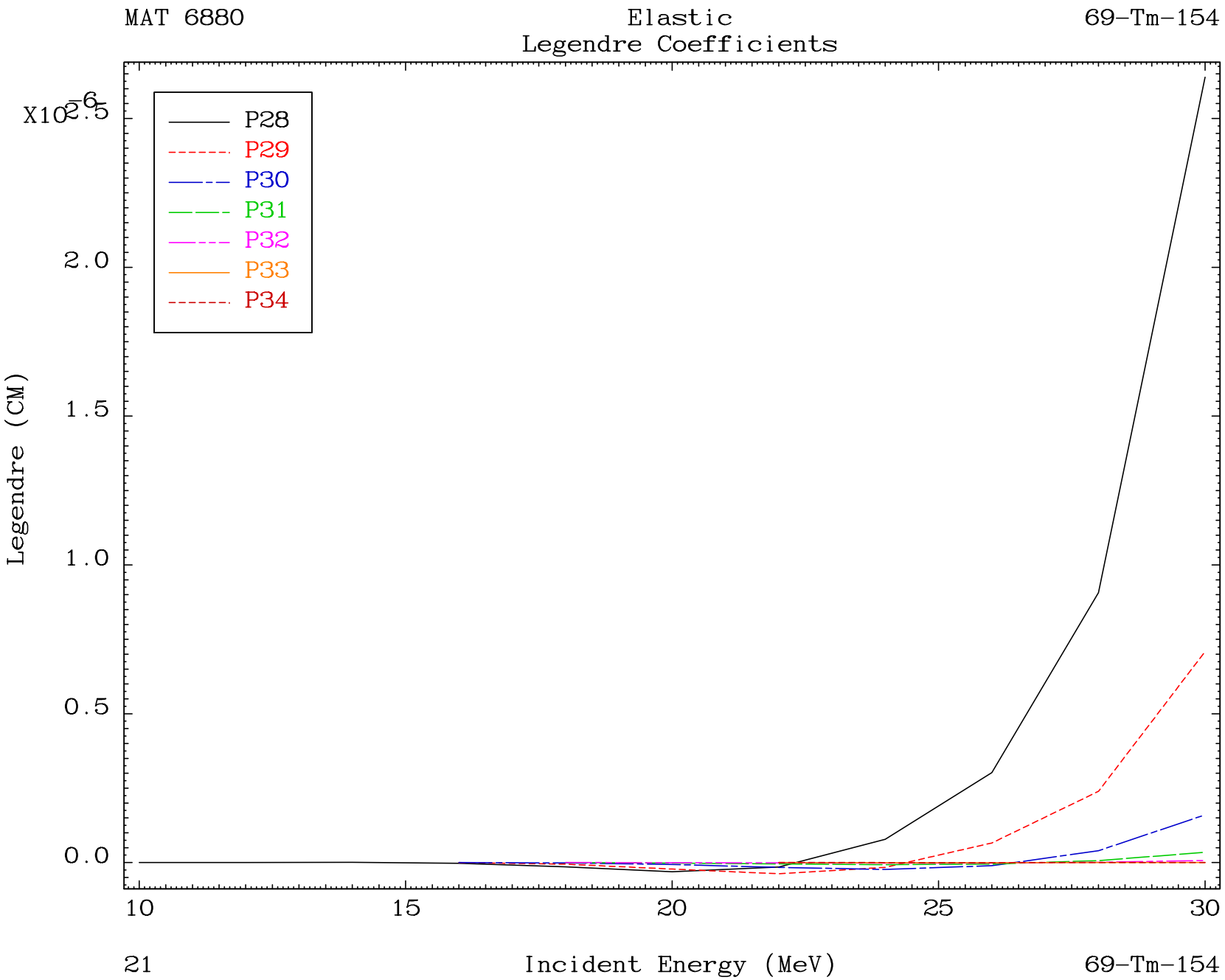

MAT 6880
(n,He3) Levels
69-Tm-154
293 Kelvin Cross Sections
(n,He-3)
Cross Section (barns)
Incident Energy (MeV)
16
69-Tm-154

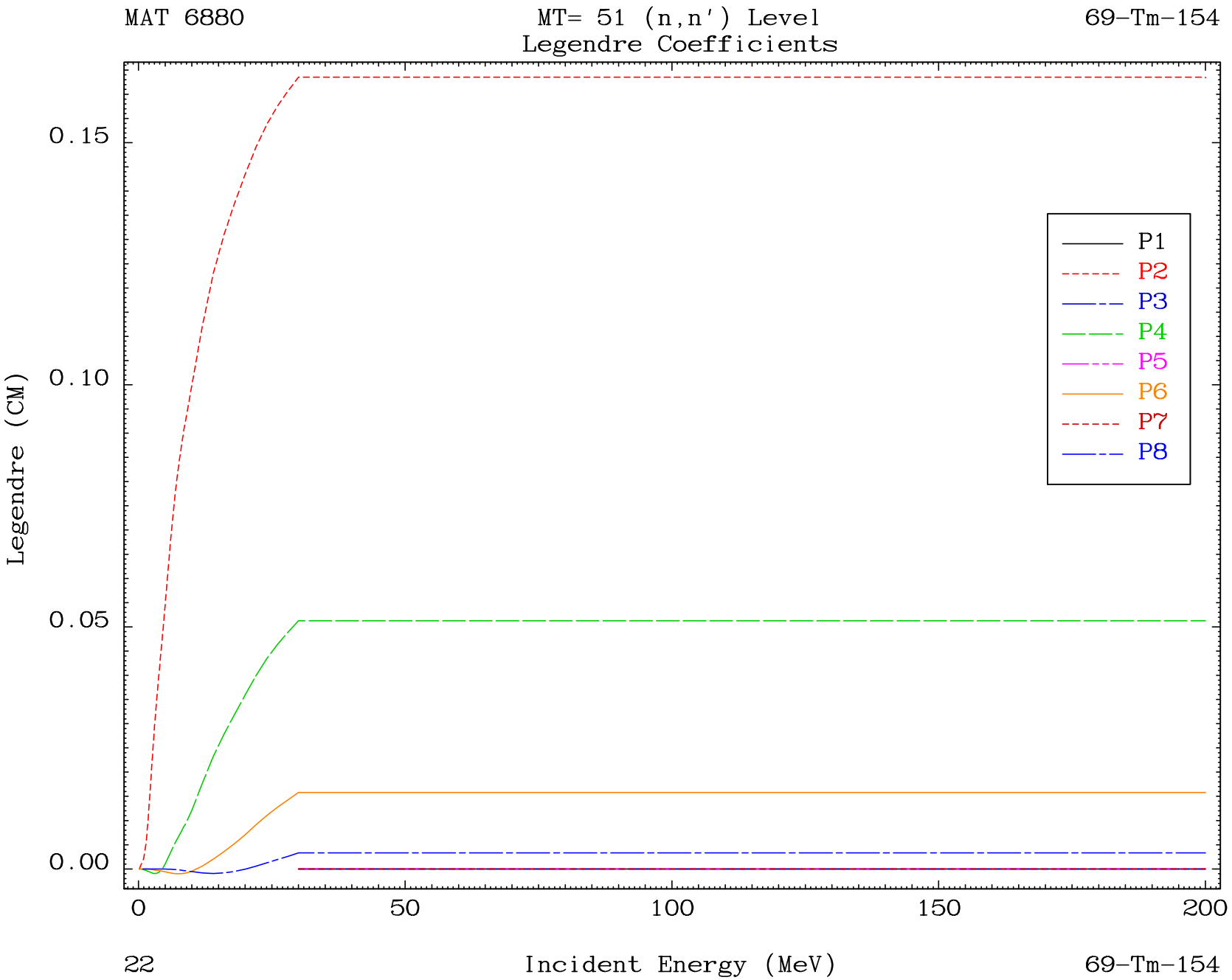

MAT 6880
(n,α) Levels
69-Tm-154
293 Kelvin Cross Sections
Cross Section (barns)
10^2
10^0
10^-2
10^-4
5
(n,α)
(n,2α)
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
17
Incident Energy (MeV)
69-Tm-154

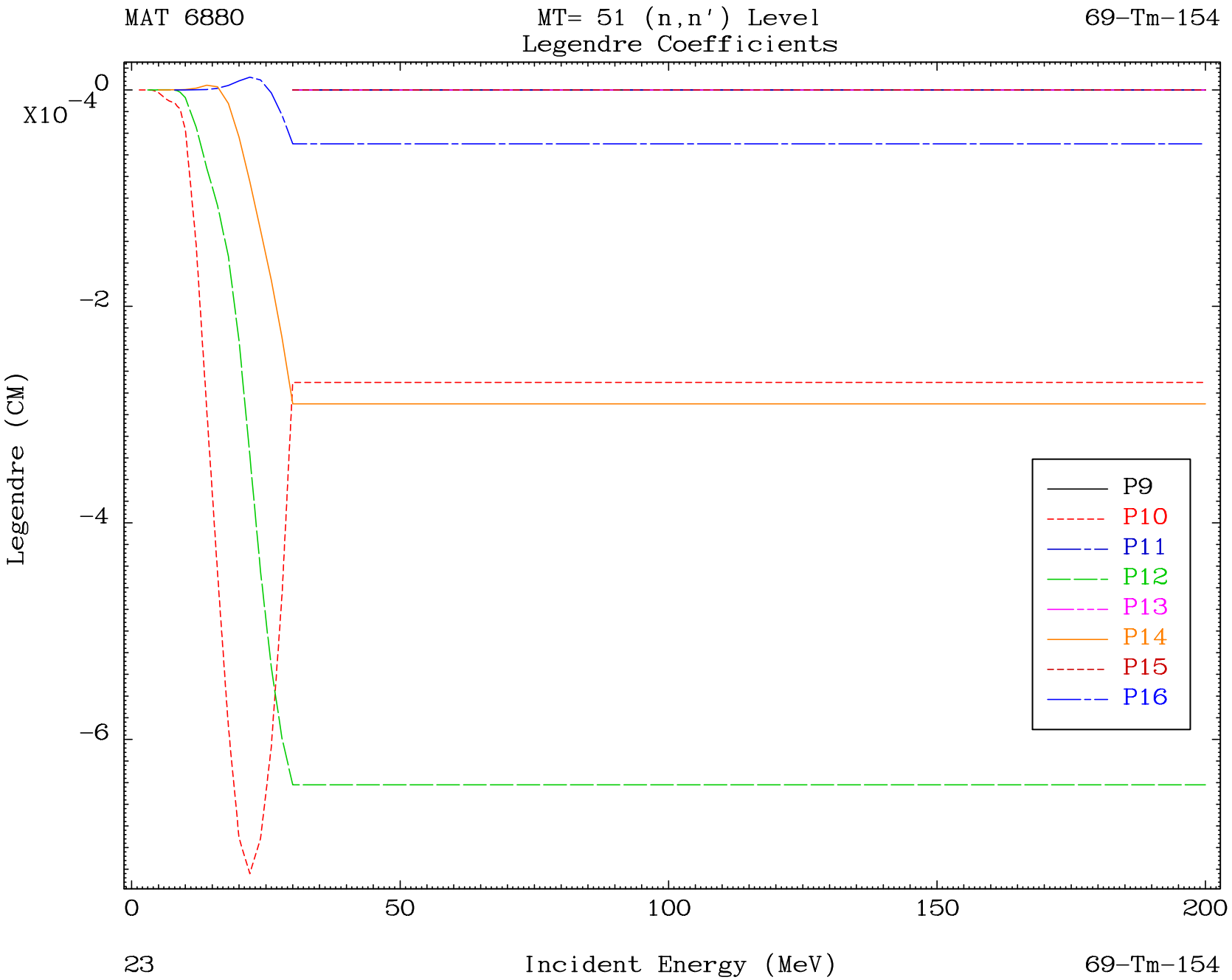

MAT 6880
Elastic
Legendre Coefficients
69-Tm-154
Legendre (CM)
0.0
0.2
0.4
0.6
0.8
0
10
20
30
18
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

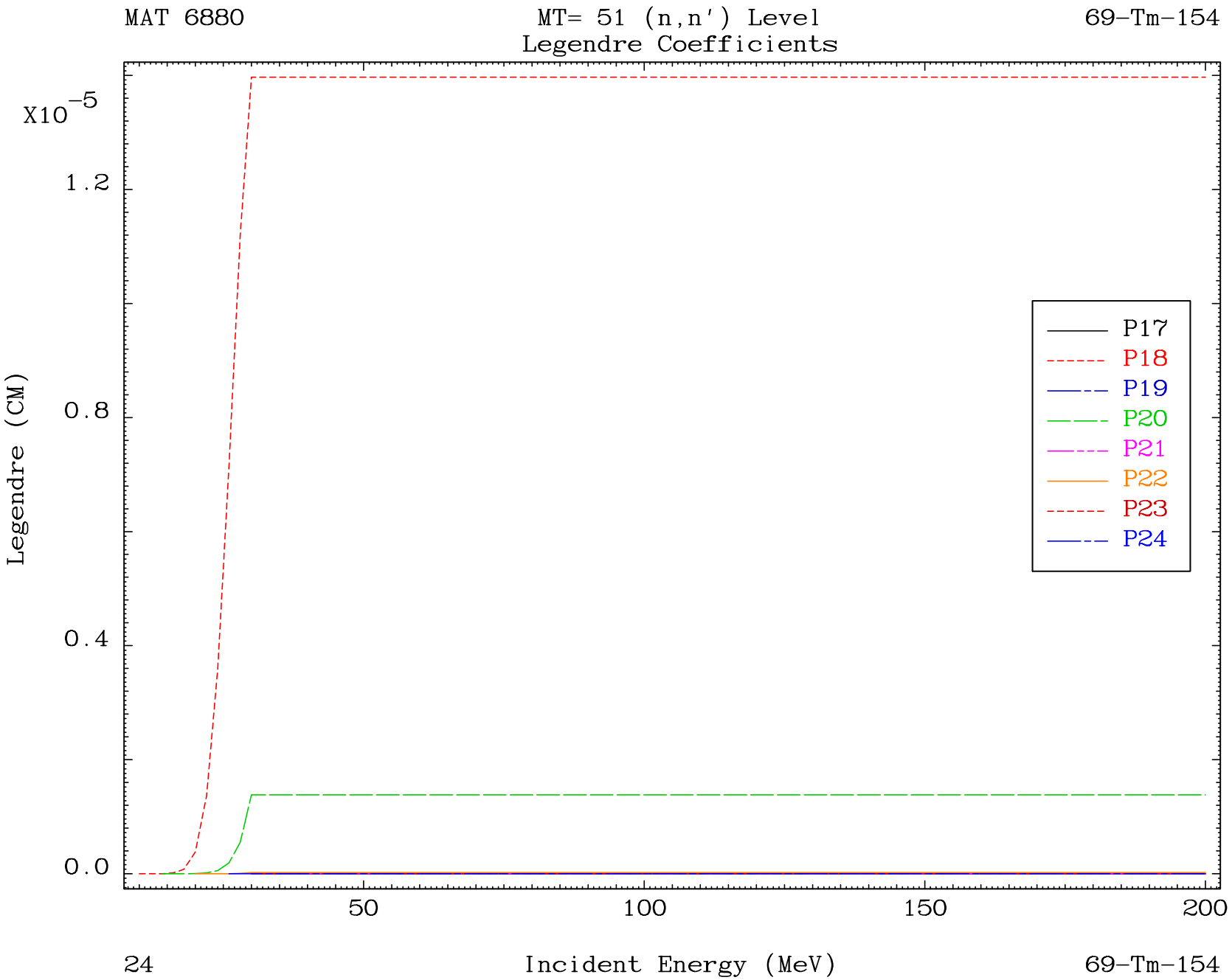

MAT 6880
Elastic
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
Legendre (CM)
0.0
0.1
0.2
0.3
5
10
15
20
25
30
19
Incident Energy (MeV)
69-Tm-154

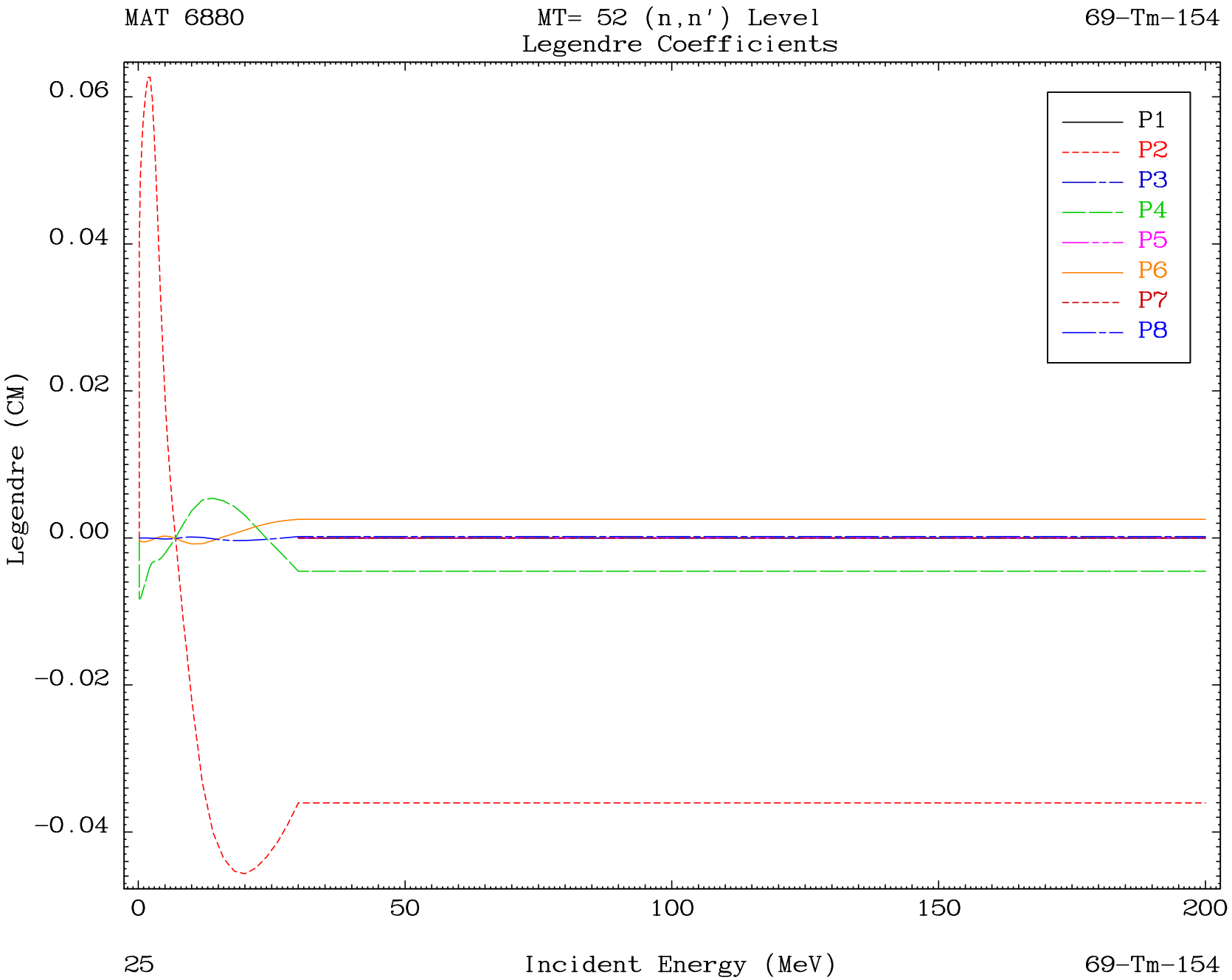

MAT 6880
Elastic
Legendre Coefficients
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.015
0.010
0.005
0.000
Legendre (CM)
10
15
20
25
30
20
Incident Energy (MeV)
69-Tm-154

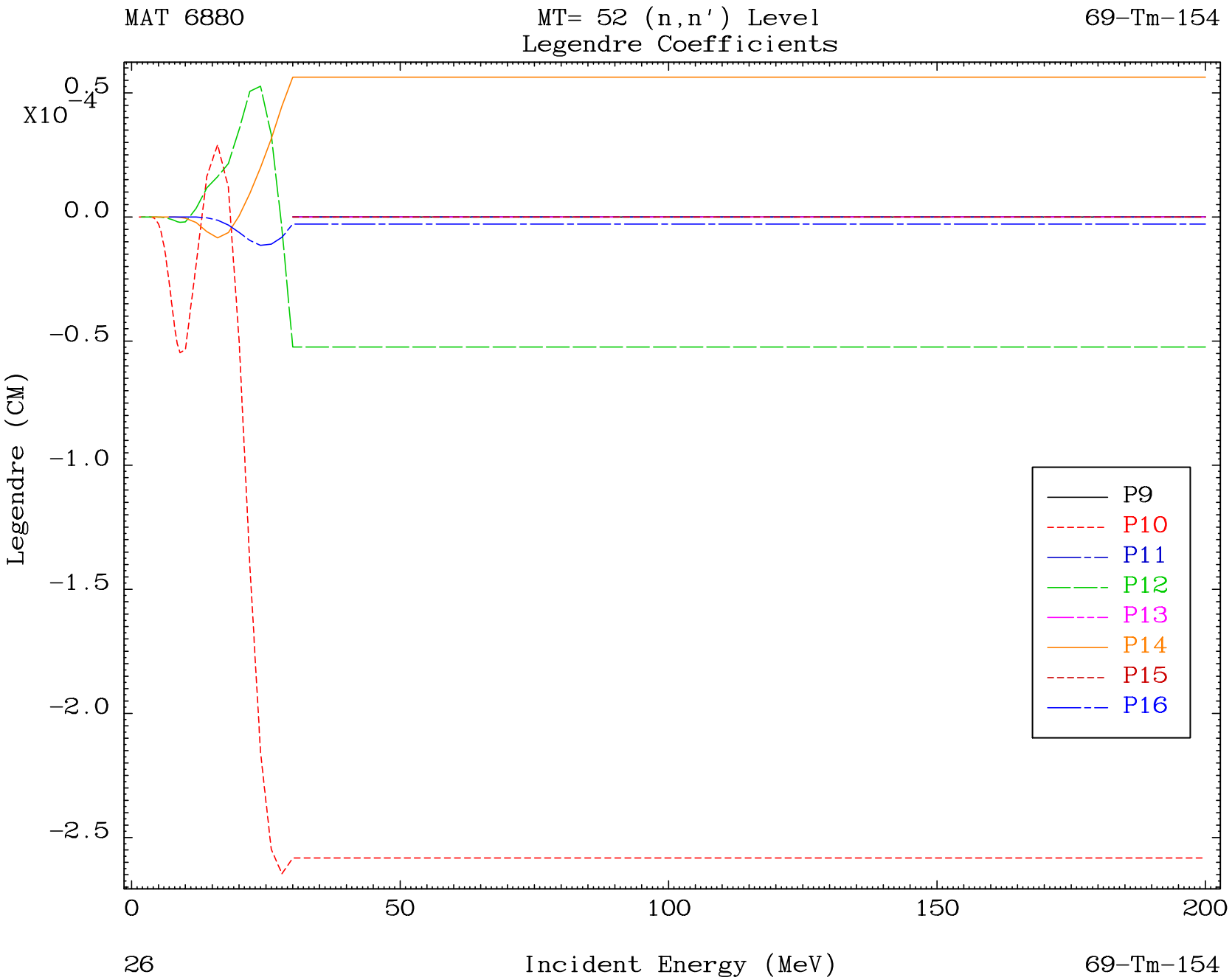

MAT 6880
Elastic
Legendre Coefficients
69-Tm-154
X10-6
2.5
2.0
1.5
1.0
0.5
0.0
P28
P29
P30
P31
P32
P33
P34
Legendre (CM)
10
15
20
25
30
21
Incident Energy (MeV)
69-Tm-154

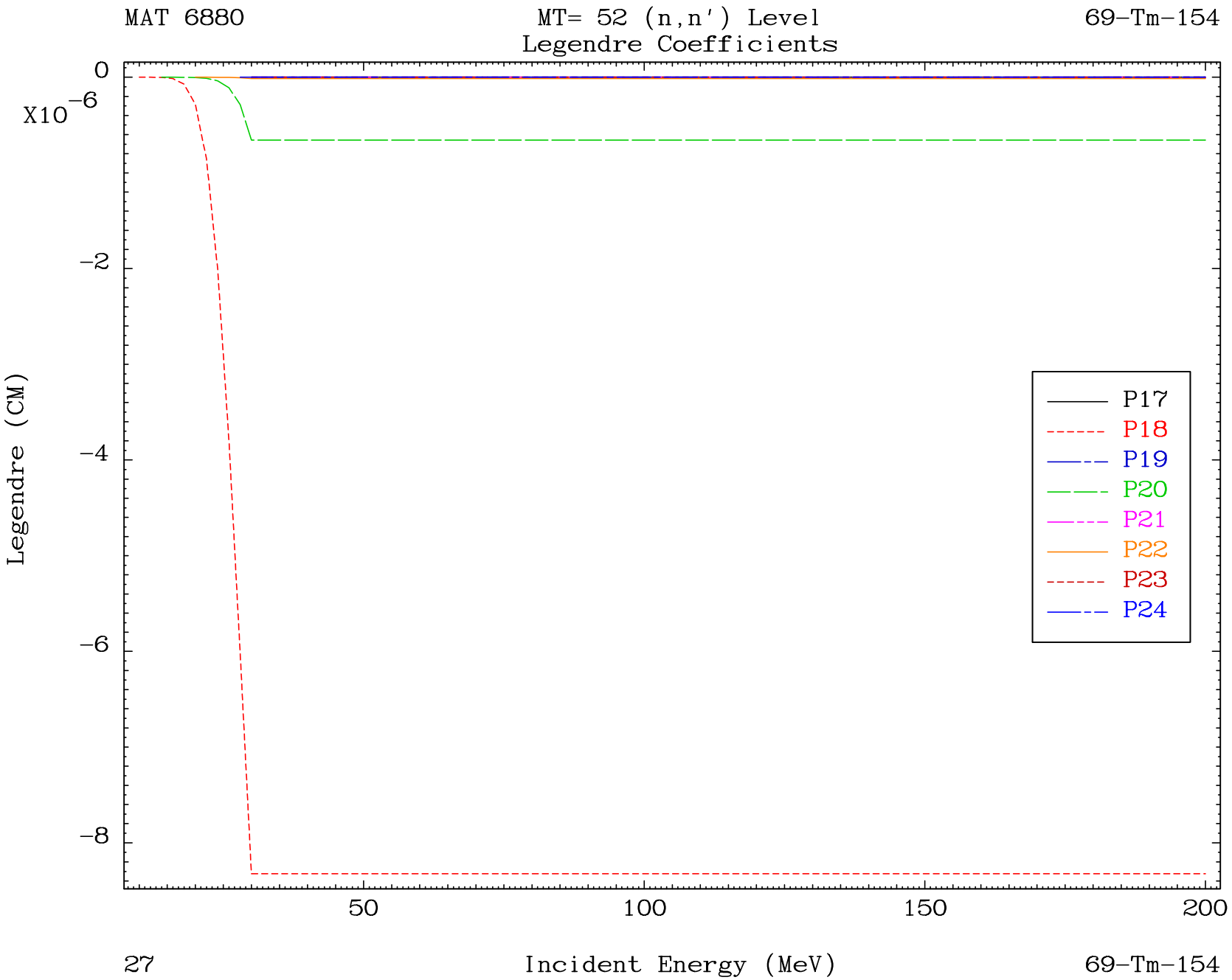

MAT 6880
MT= 51 (n,n') Level
Legendre Coefficients
69-Tm-154
0.15
0.10
0.05
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
22
Incident Energy (MeV)
69-Tm-154

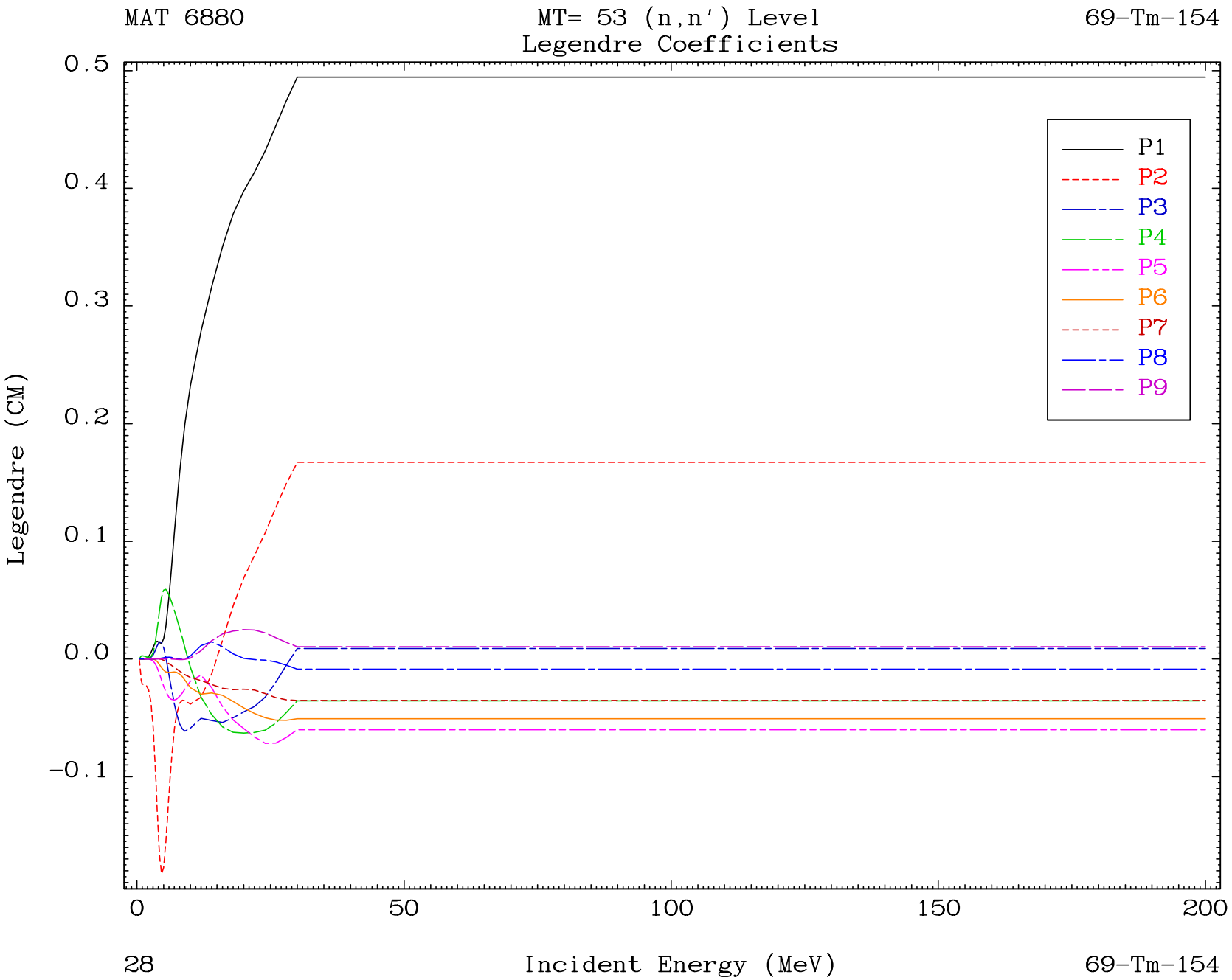

MAT 6880
MT= 51 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
0
-2
-4
-6
Legendre (CM)
0
50
100
150
200
23
Incident Energy (MeV)
69-Tm-154
P9
P10
P11
P12
P13
P14
P15
P16

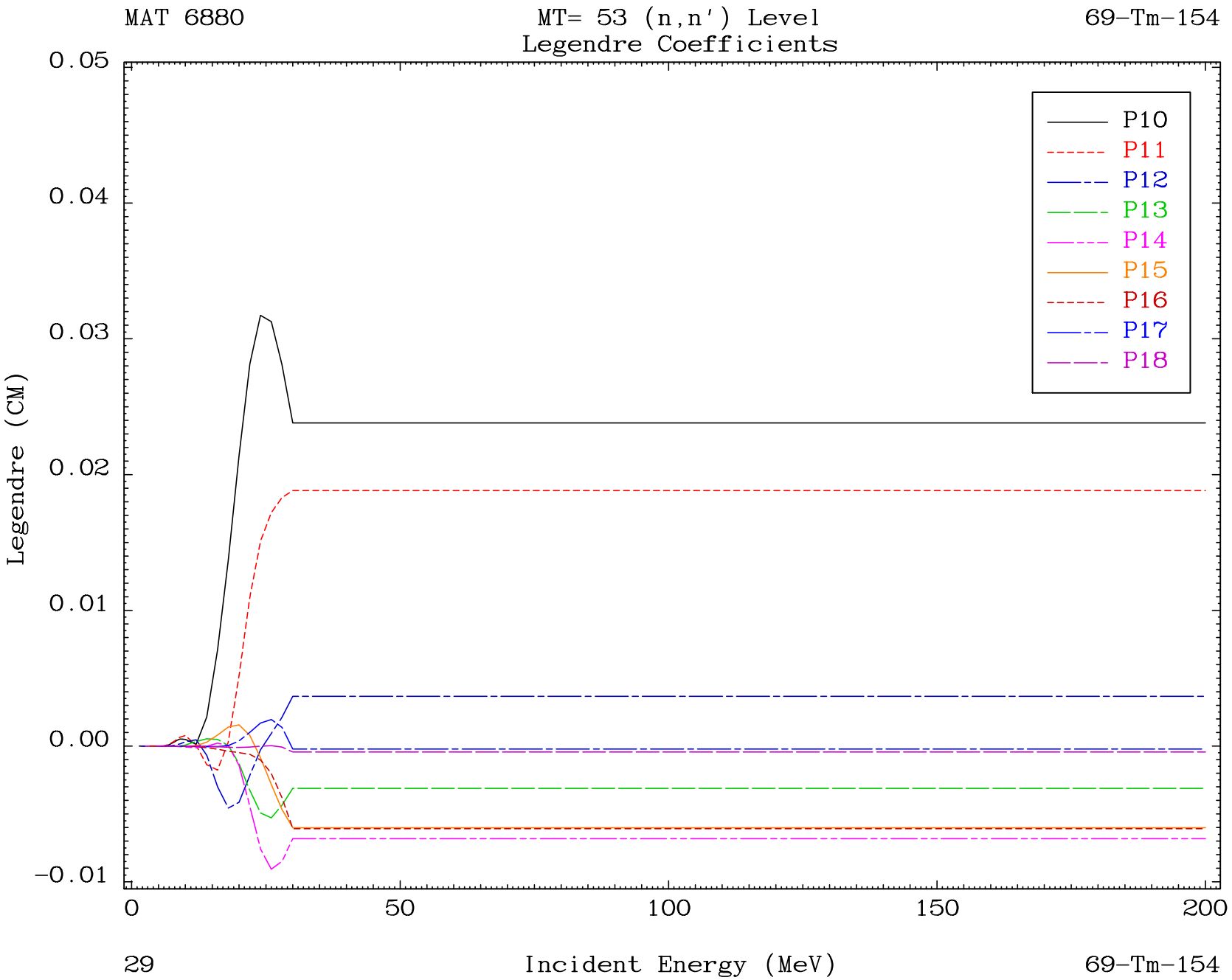

MAT 6880
MT= 51 (n,n') Level
Legendre Coefficients
69-Tm-154
X10-5
1.2
0.8
0.4
0.0
Legendre (CM)
P17
P18
P19
P20
P21
P22
P23
P24
50
100
150
200
24
Incident Energy (MeV)
69-Tm-154

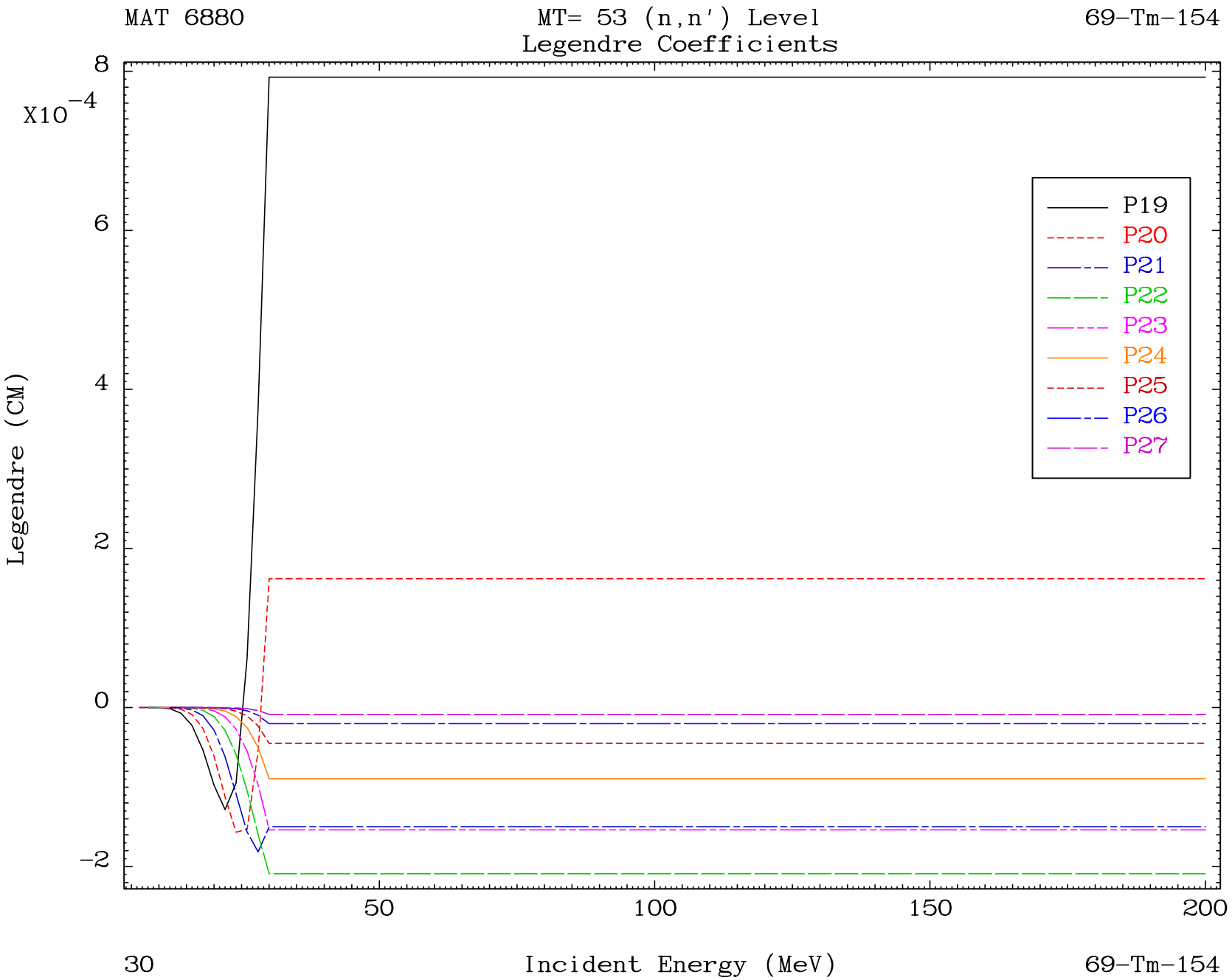

MAT 6880
MT= 52 (n,n') Level
Legendre Coefficients
69-Tm-154
0.06
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
25
Incident Energy (MeV)
69-Tm-154

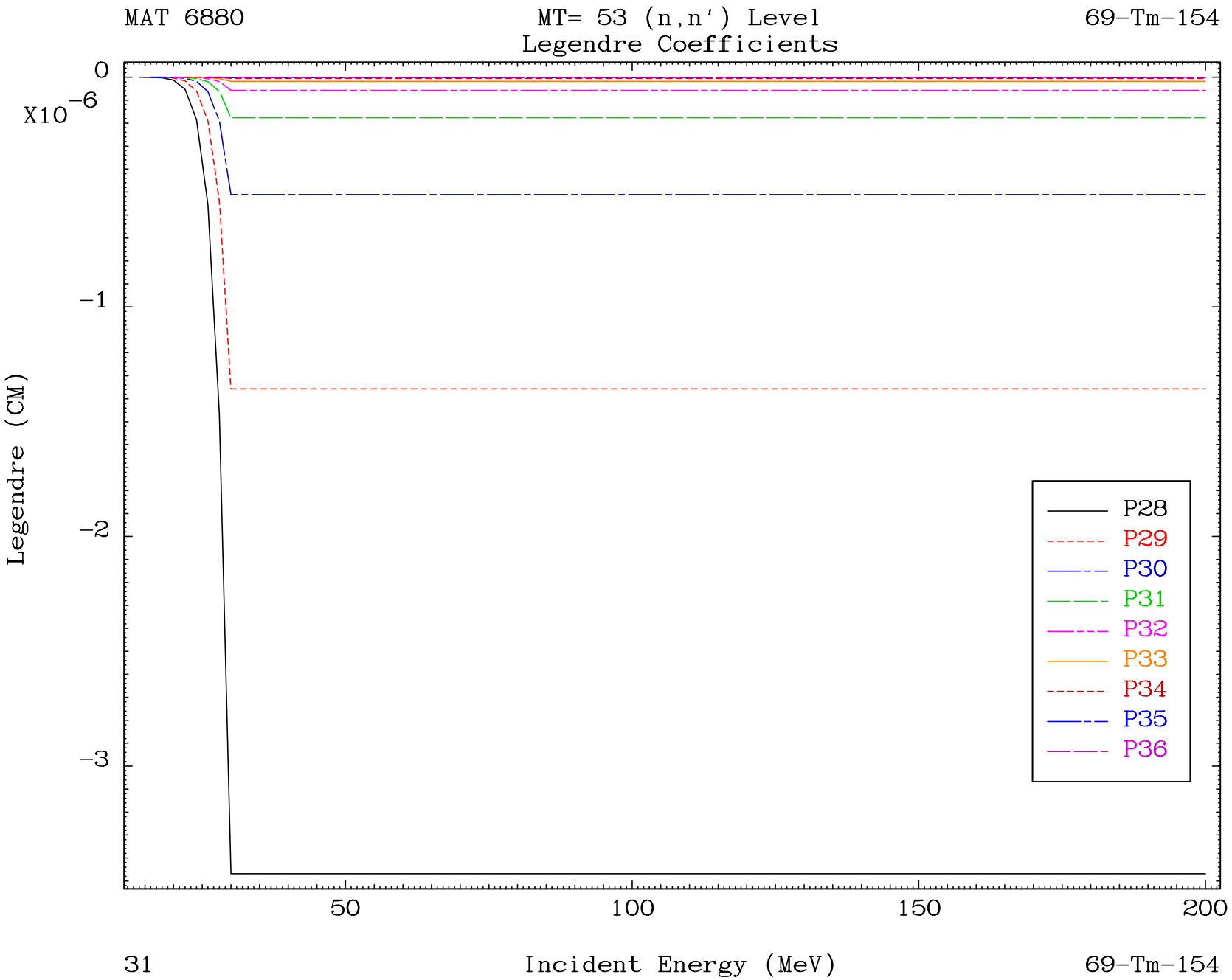

MAT 6880
MT= 52 (n,n') Level
Legendre Coefficients
69-Tm-154
X10-4
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
Legendre (CM)
0
50
100
150
200
Incident Energy (MeV)
26
69-Tm-154
P9
P10
P11
P12
P13
P14
P15
P16

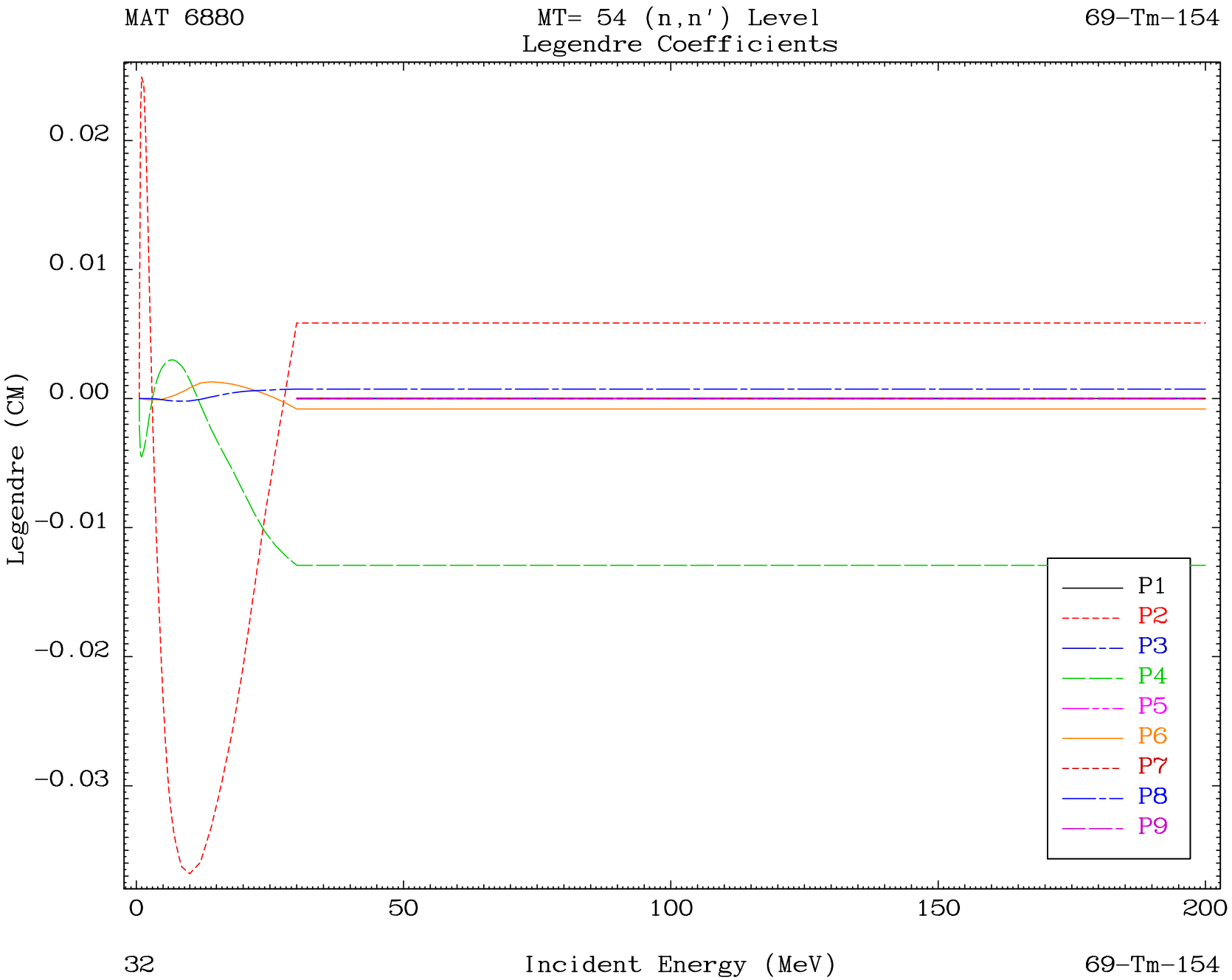

MAT 6880
MT= 52 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-2
-4
-6
-8
Legendre (CM)
P17
P18
P19
P20
P21
P22
P23
P24
50
100
150
200
27
Incident Energy (MeV)
69-Tm-154

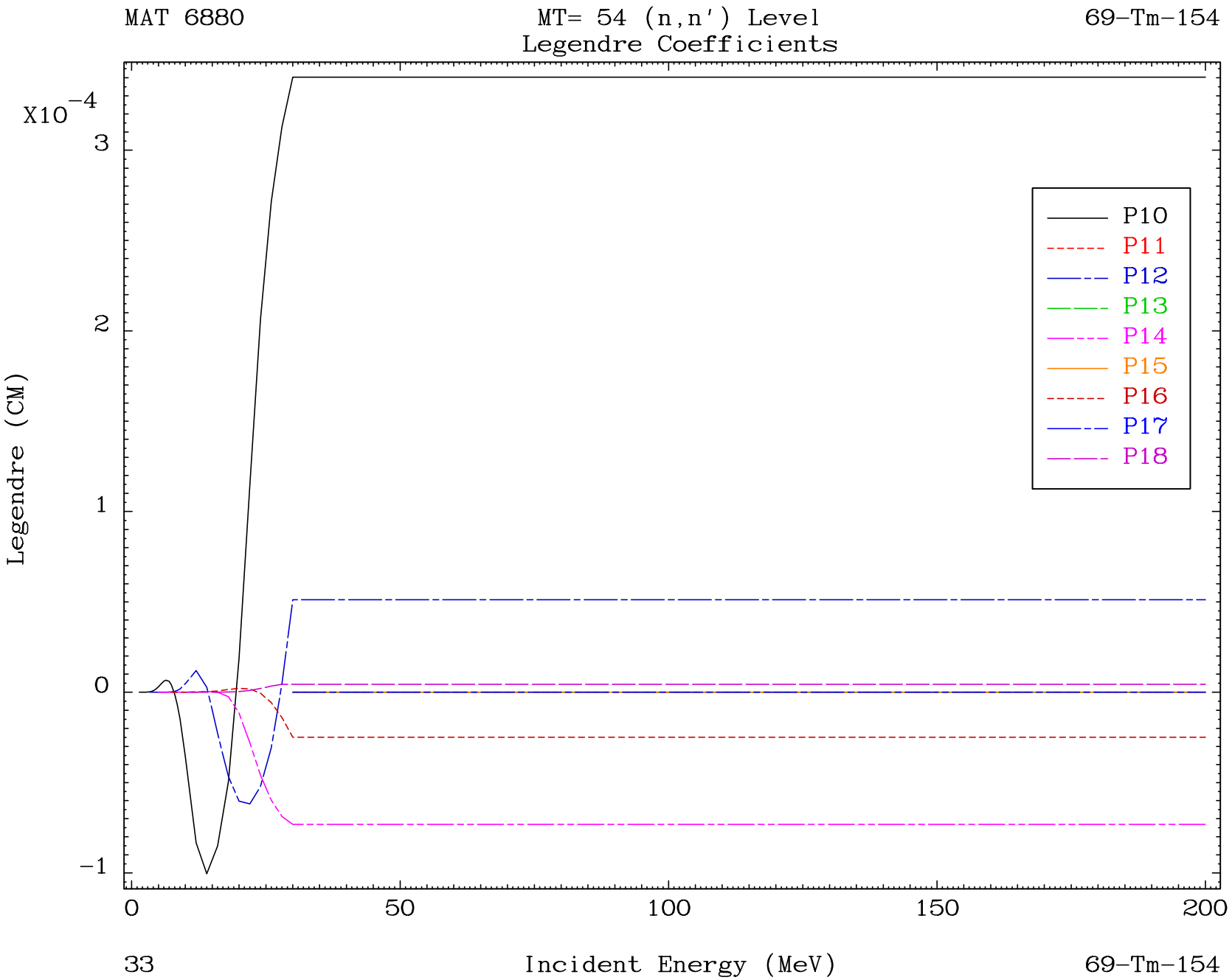

MAT 6880
MT= 53 (n,n') Level
Legendre Coefficients
69-Tm-154
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
28
Incident Energy (MeV)
69-Tm-154

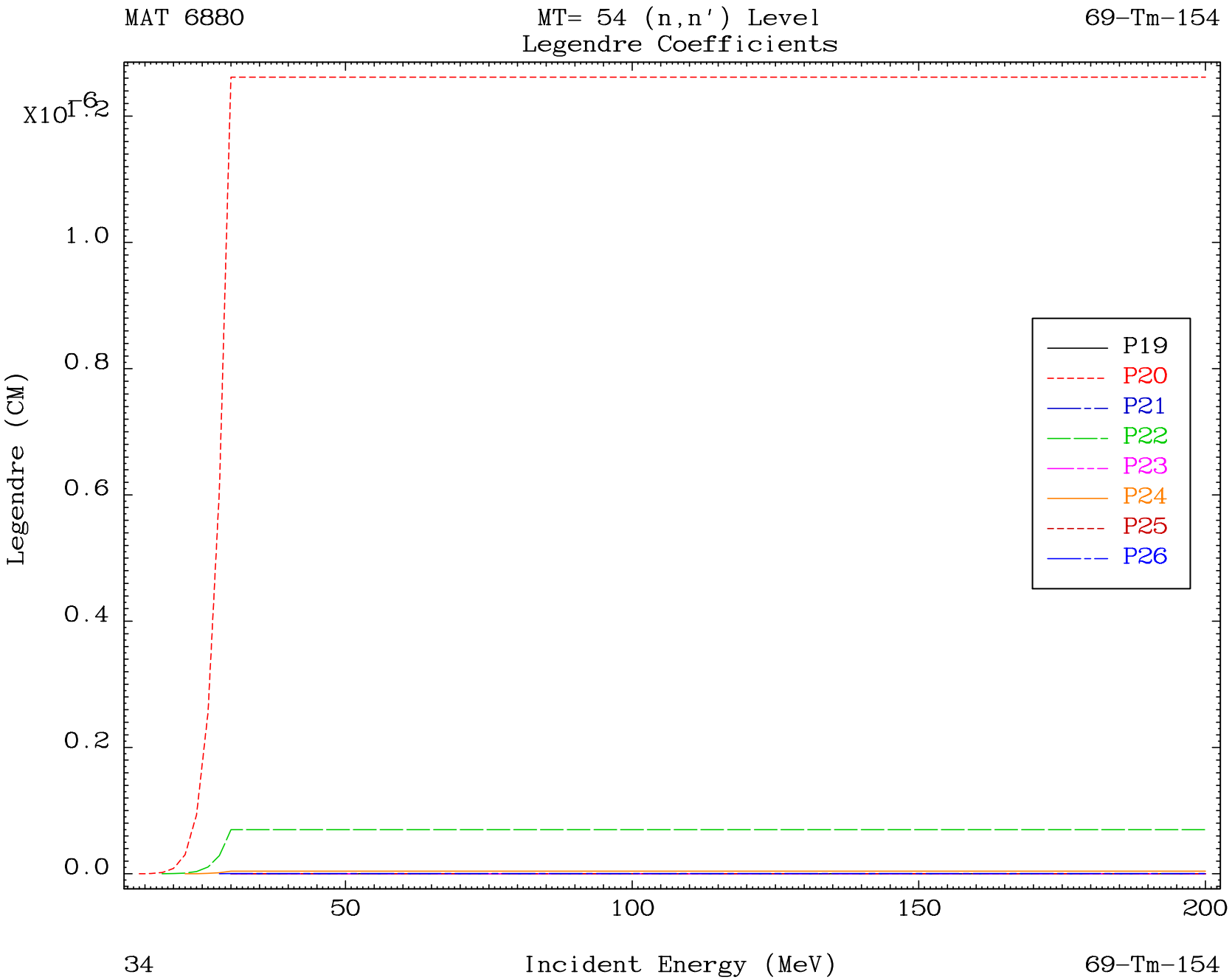

MAT 6880
MT= 53 (n,n') Level
Legendre Coefficients
69-Tm-154
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
29
Incident Energy (MeV)
69-Tm-154

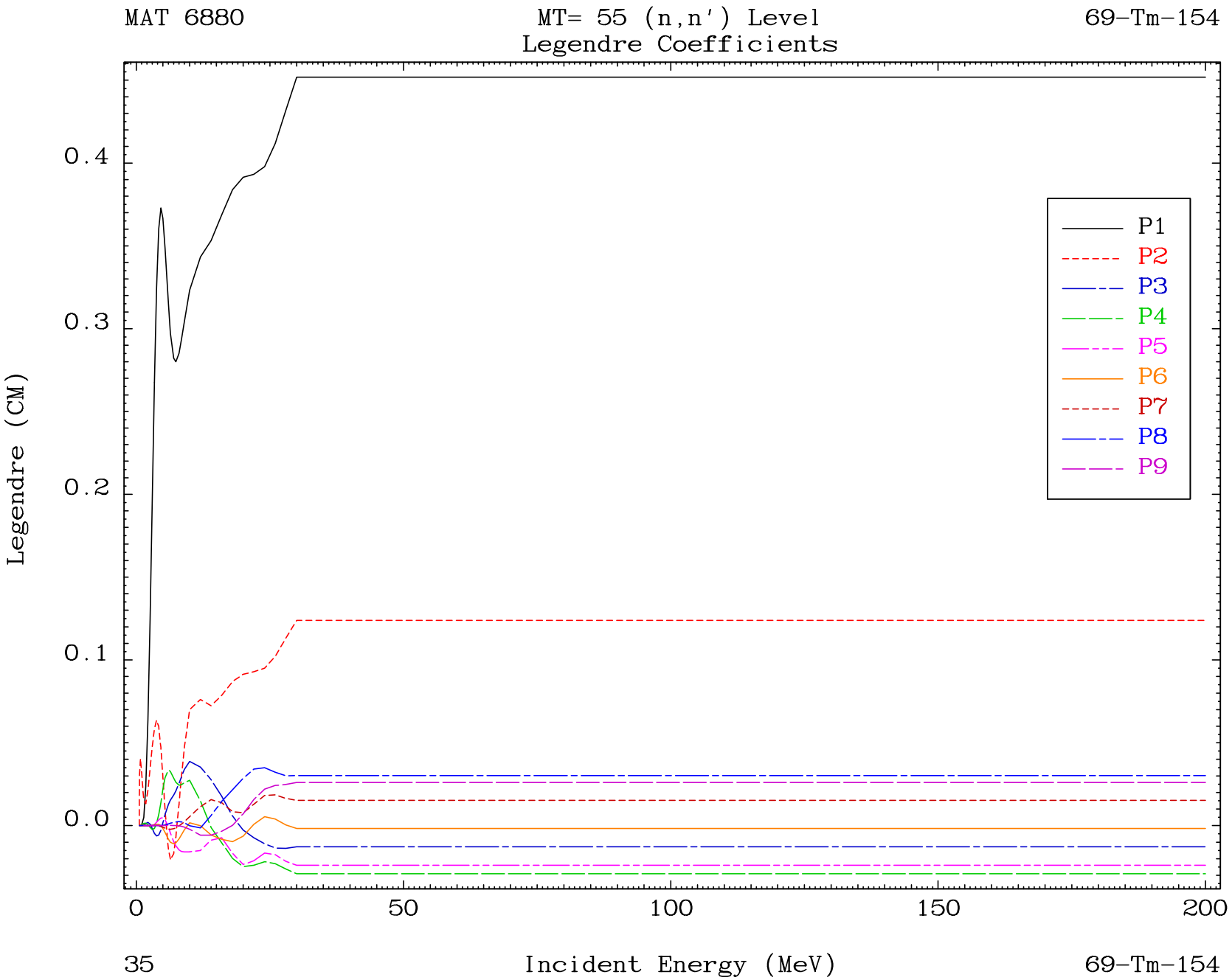

MAT 6880
MT= 53 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
8
6
4
2
0
-2
Legendre (CM)
50
100
150
200
30
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27

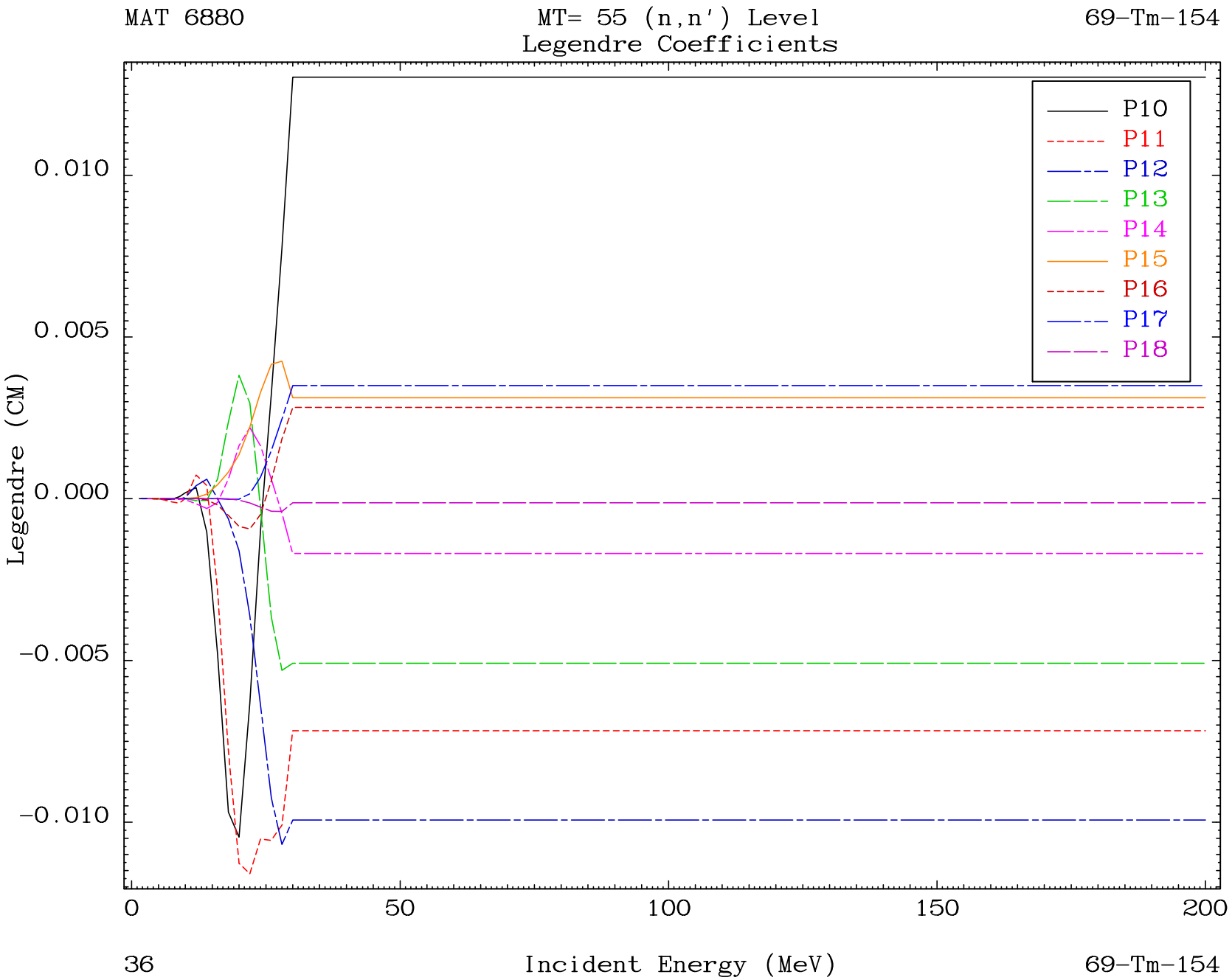

MAT 6880
MT= 53 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-1
-2
-3
Legendre (CM)
50
100
150
200
31
Incident Energy (MeV)
69-Tm-154
P28
P29
P30
P31
P32
P33
P34
P35
P36

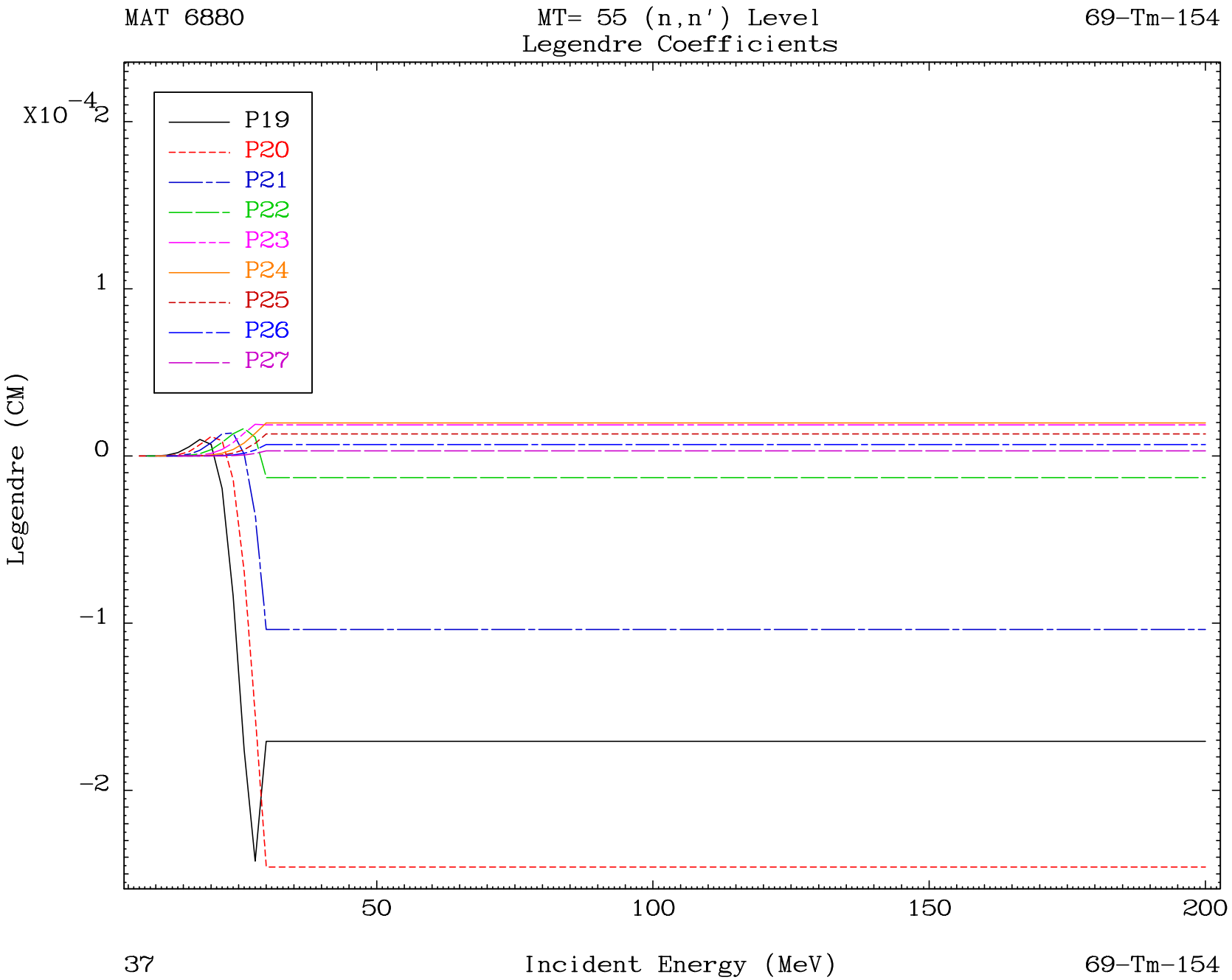

MAT 6880
MT= 54 (n,n') Level
Legendre Coefficients
69-Tm-154
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
0
50
100
150
200
32
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

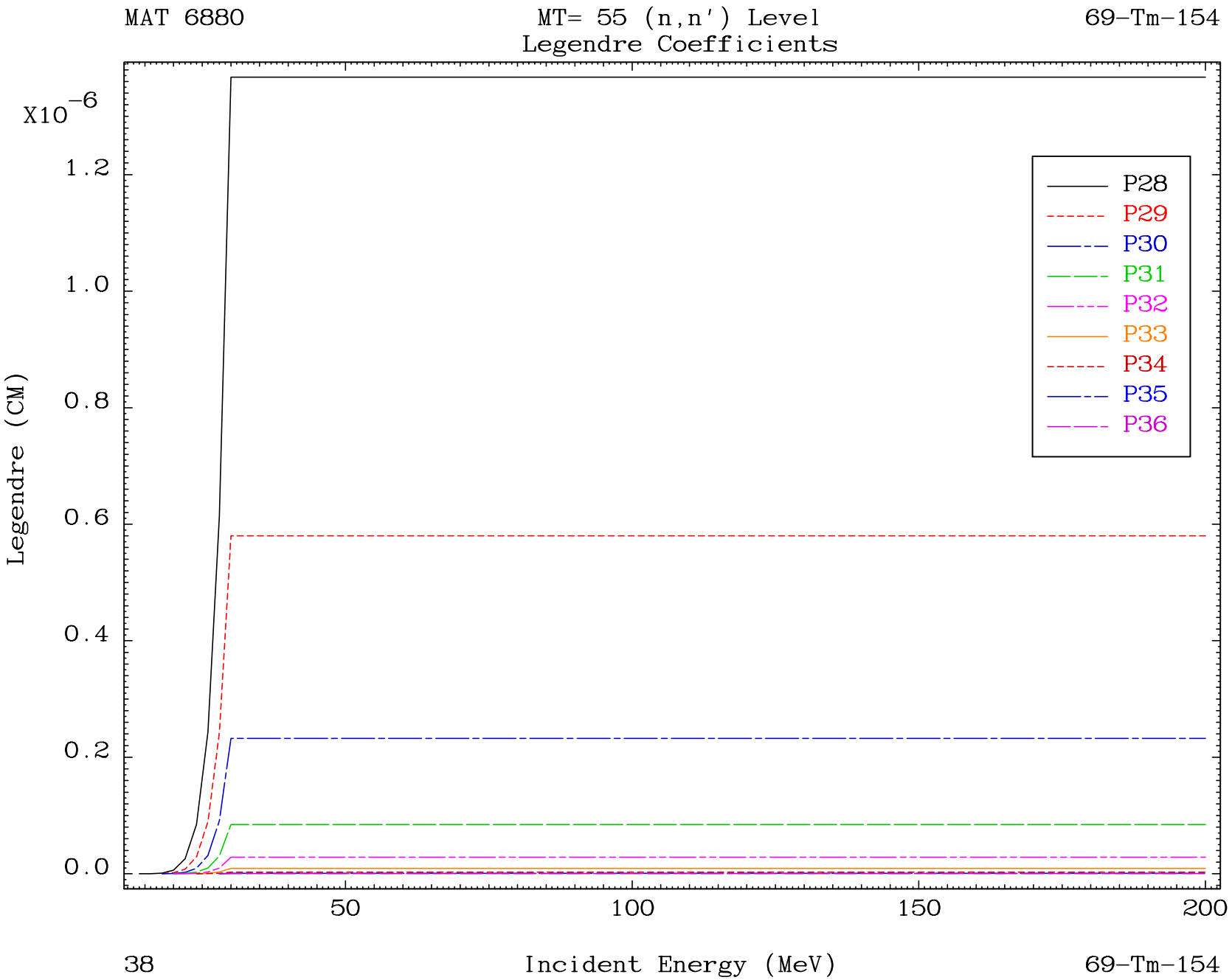

MAT 6880
MT= 54 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
3
2
1
0
-1
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
33
Incident Energy (MeV)
69-Tm-154

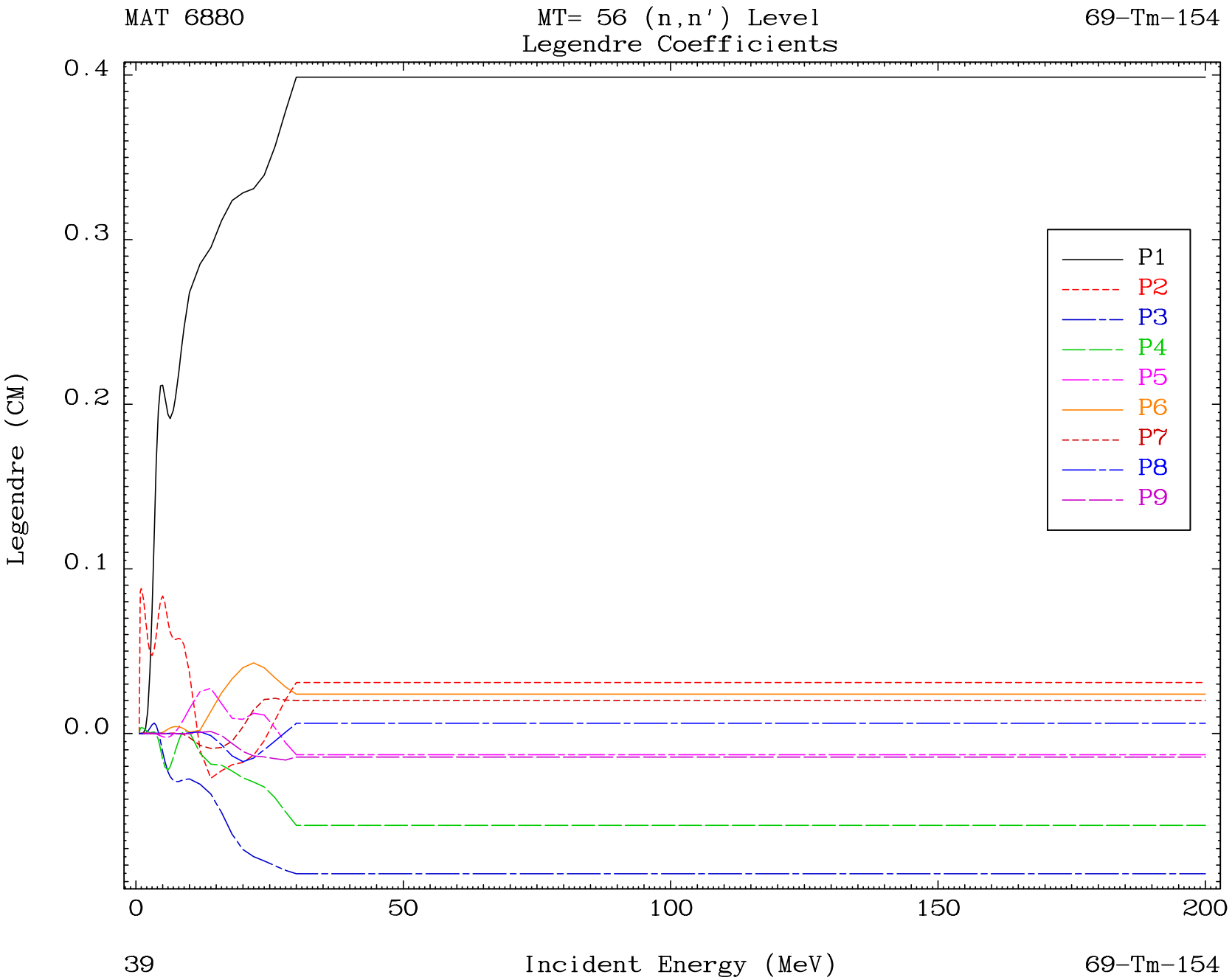

MAT 6880
MT= 54 (n,n') Level
Legendre Coefficients
69-Tm-154
X10-6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
50
100
150
200
34
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

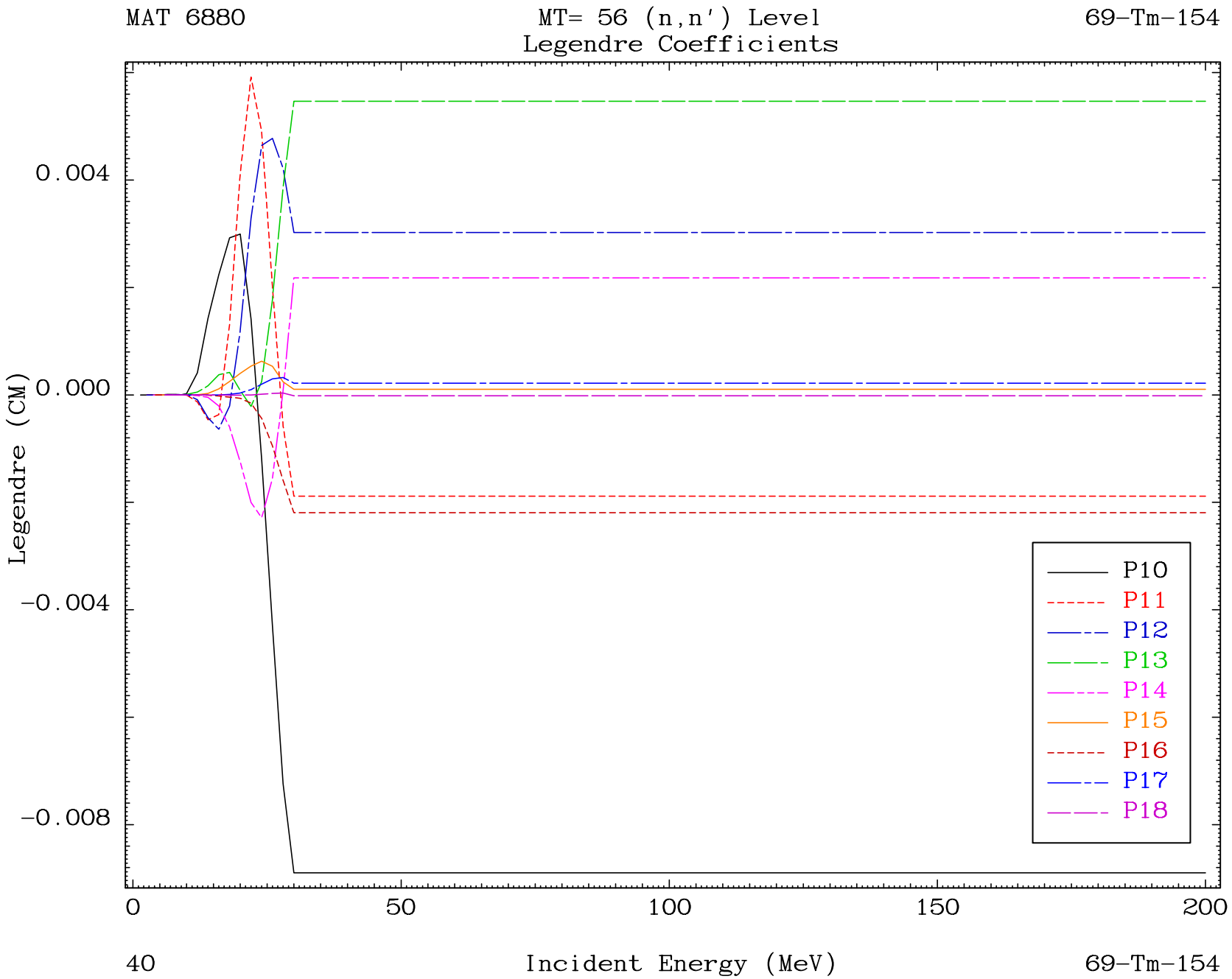

MAT 6880
MT= 55 (n,n') Level
Legendre Coefficients
69-Tm-154
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
35
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

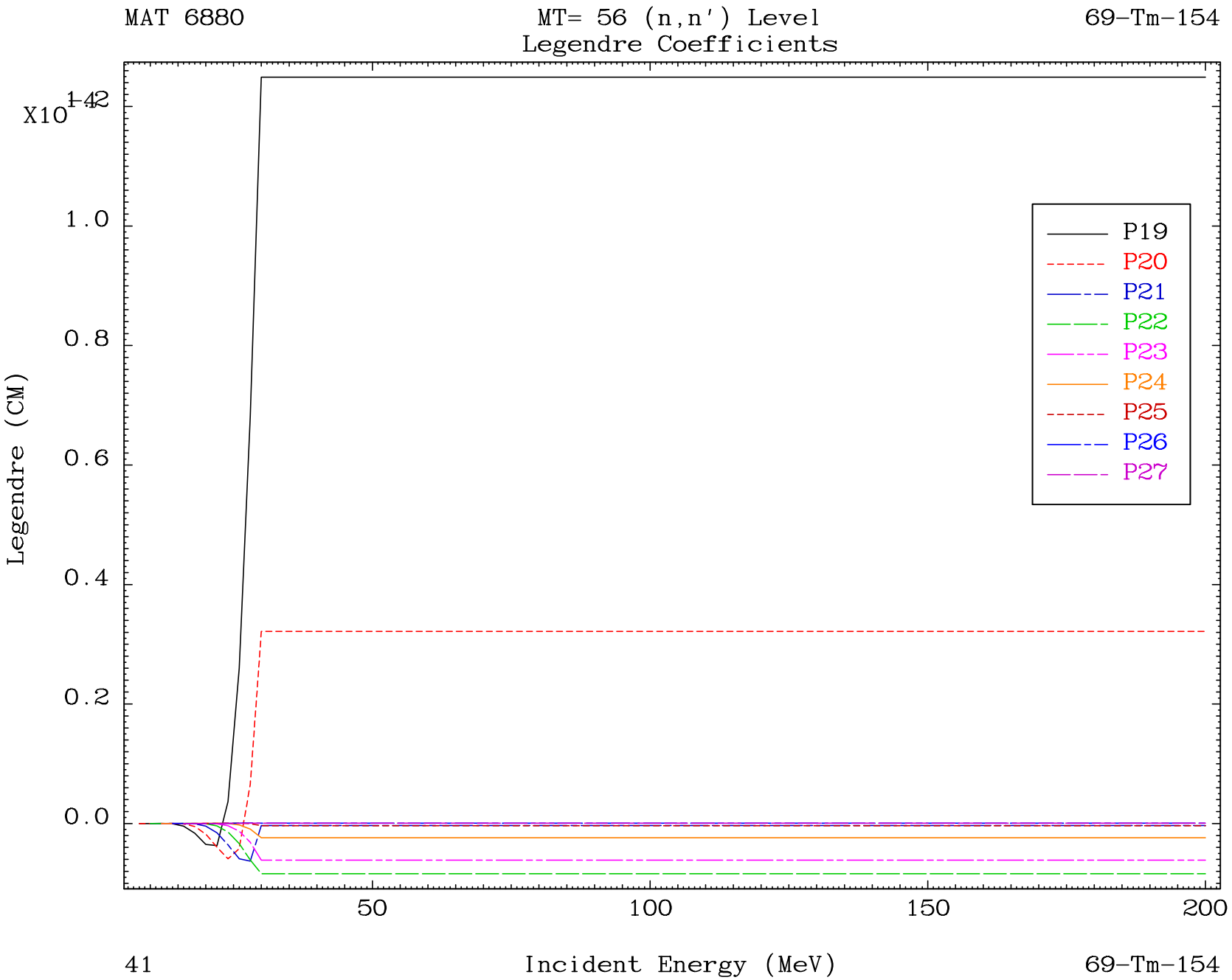

MAT 6880
MT= 55 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
0
50
100
150
200
36
Incident Energy (MeV)
69-Tm-154

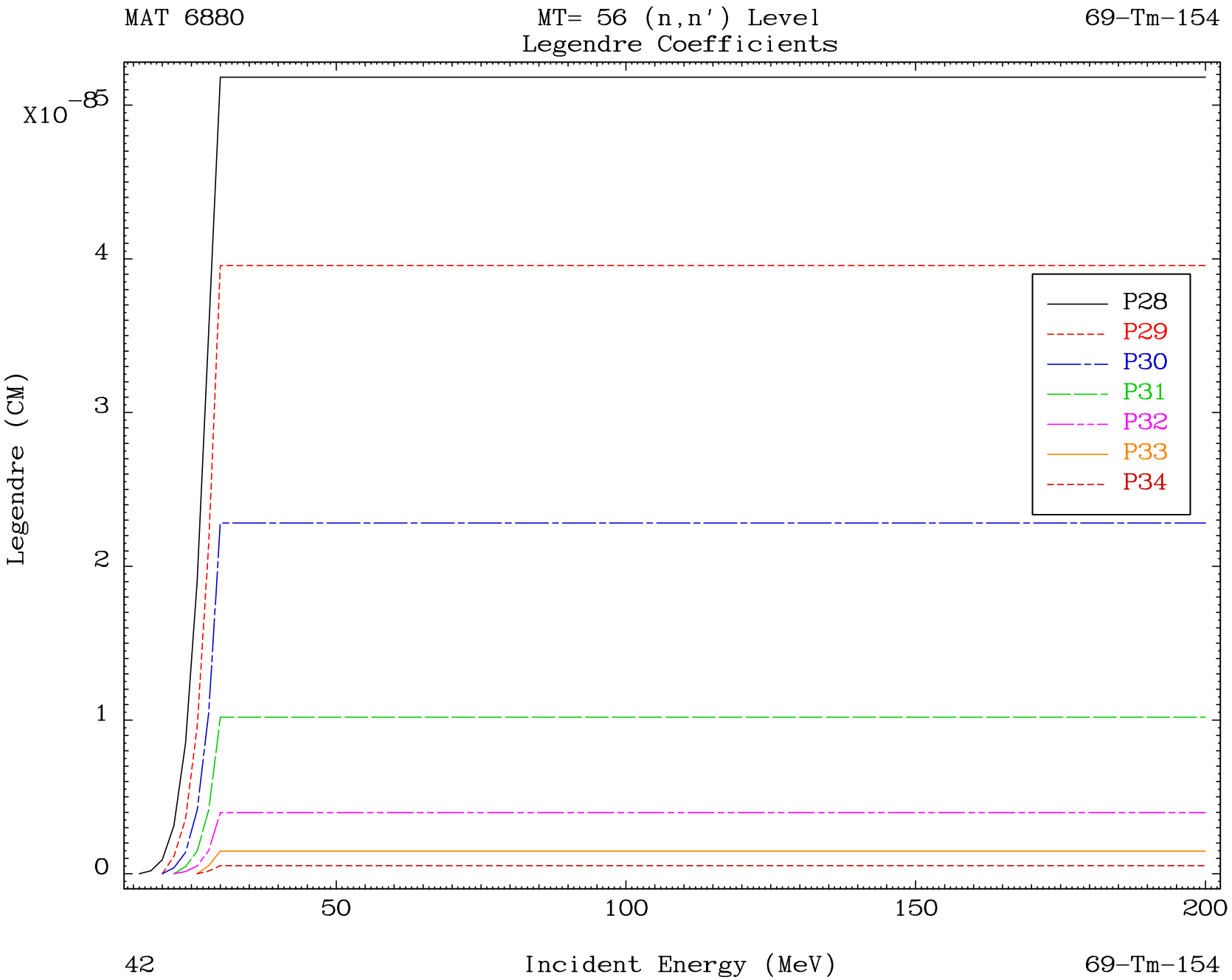

MAT 6880
MT= 55 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
2
1
0
-1
-2
P19
P20
P21
P22
P23
P24
P25
P26
P27
Legendre (CM)
50
100
150
200
37
Incident Energy (MeV)
69-Tm-154

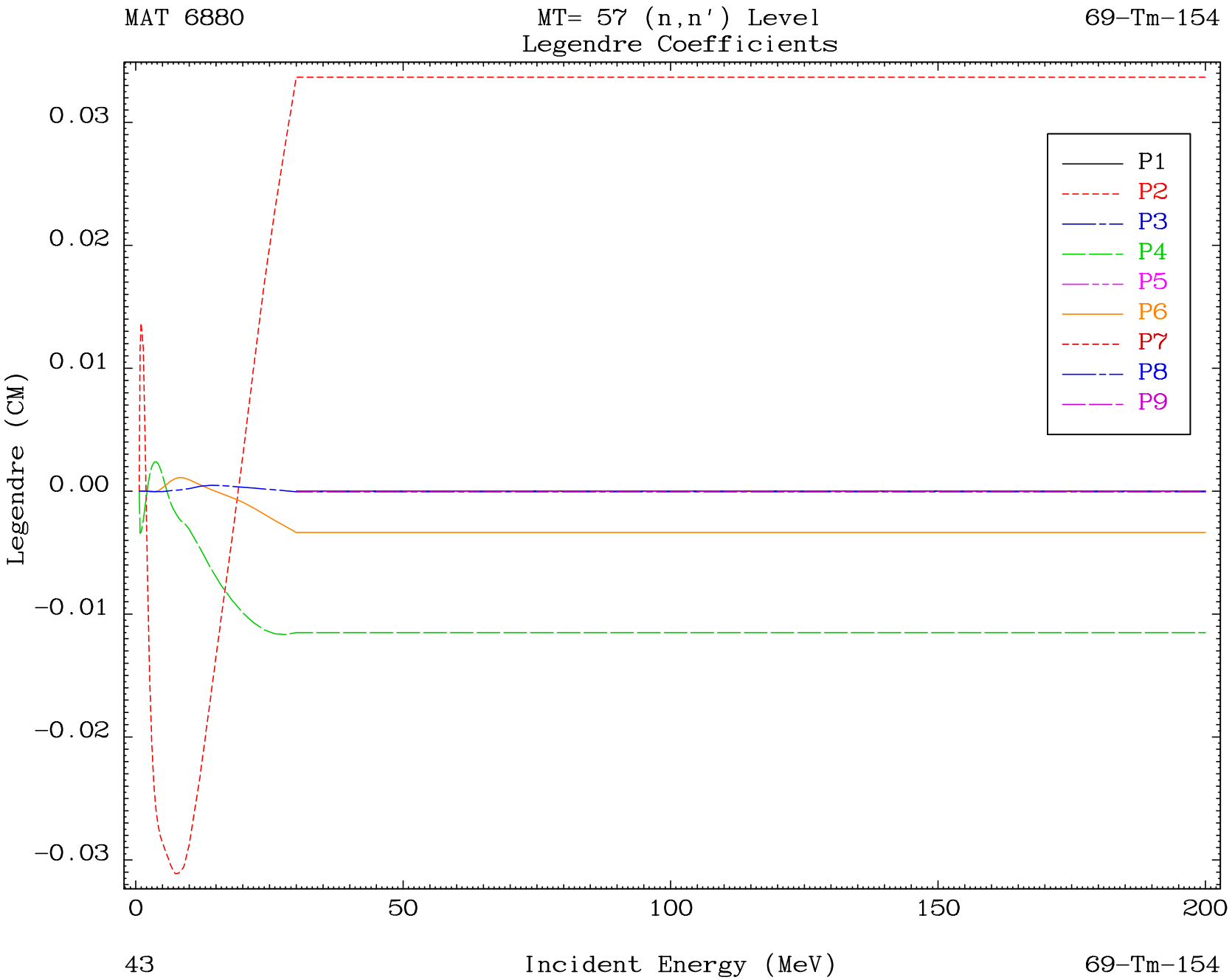

MAT 6880
MT= 55 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
38
Incident Energy (MeV)
69-Tm-154

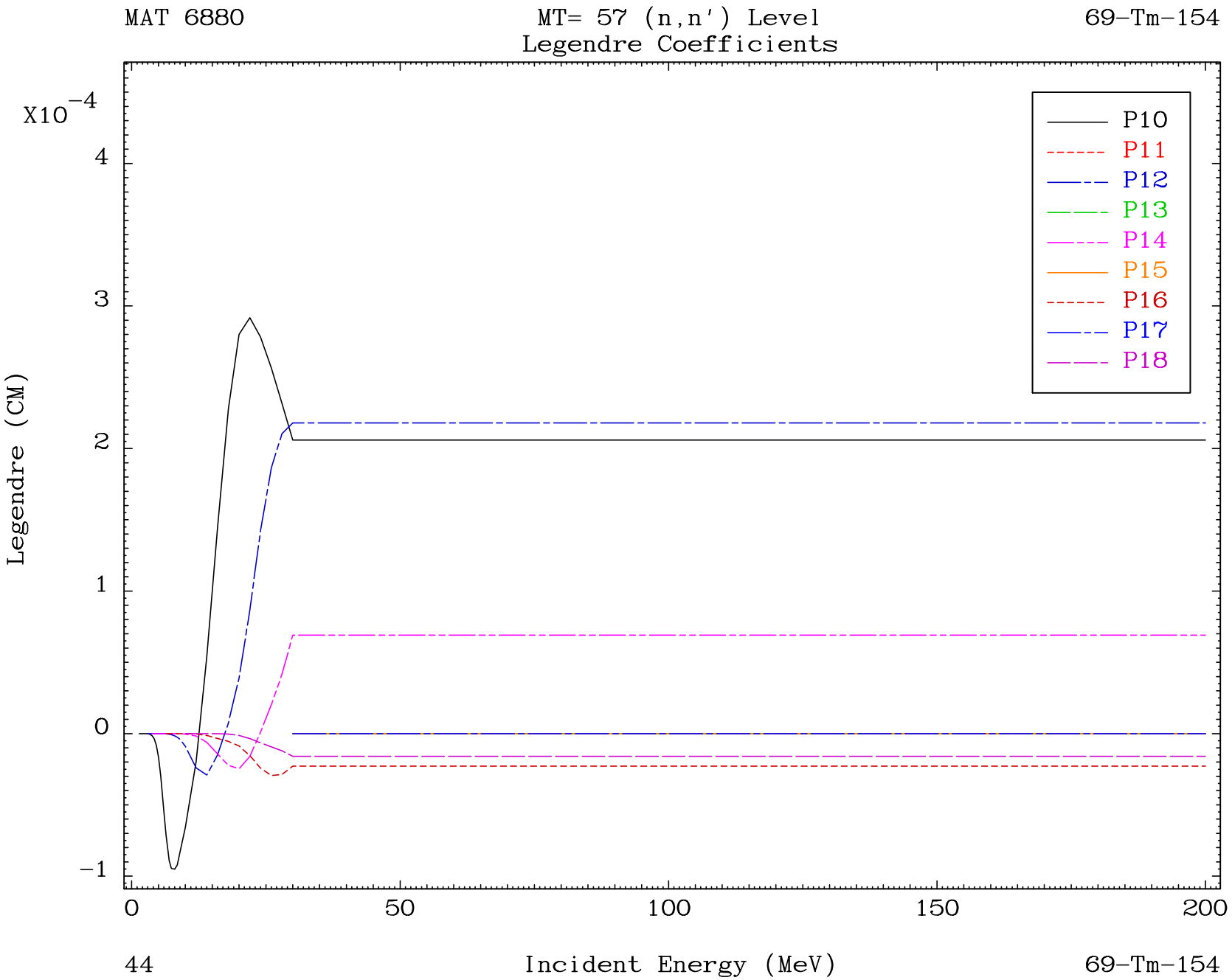

MAT 6880
MT= 56 (n,n') Level
Legendre Coefficients
69-Tm-154
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
39
Incident Energy (MeV)
69-Tm-154

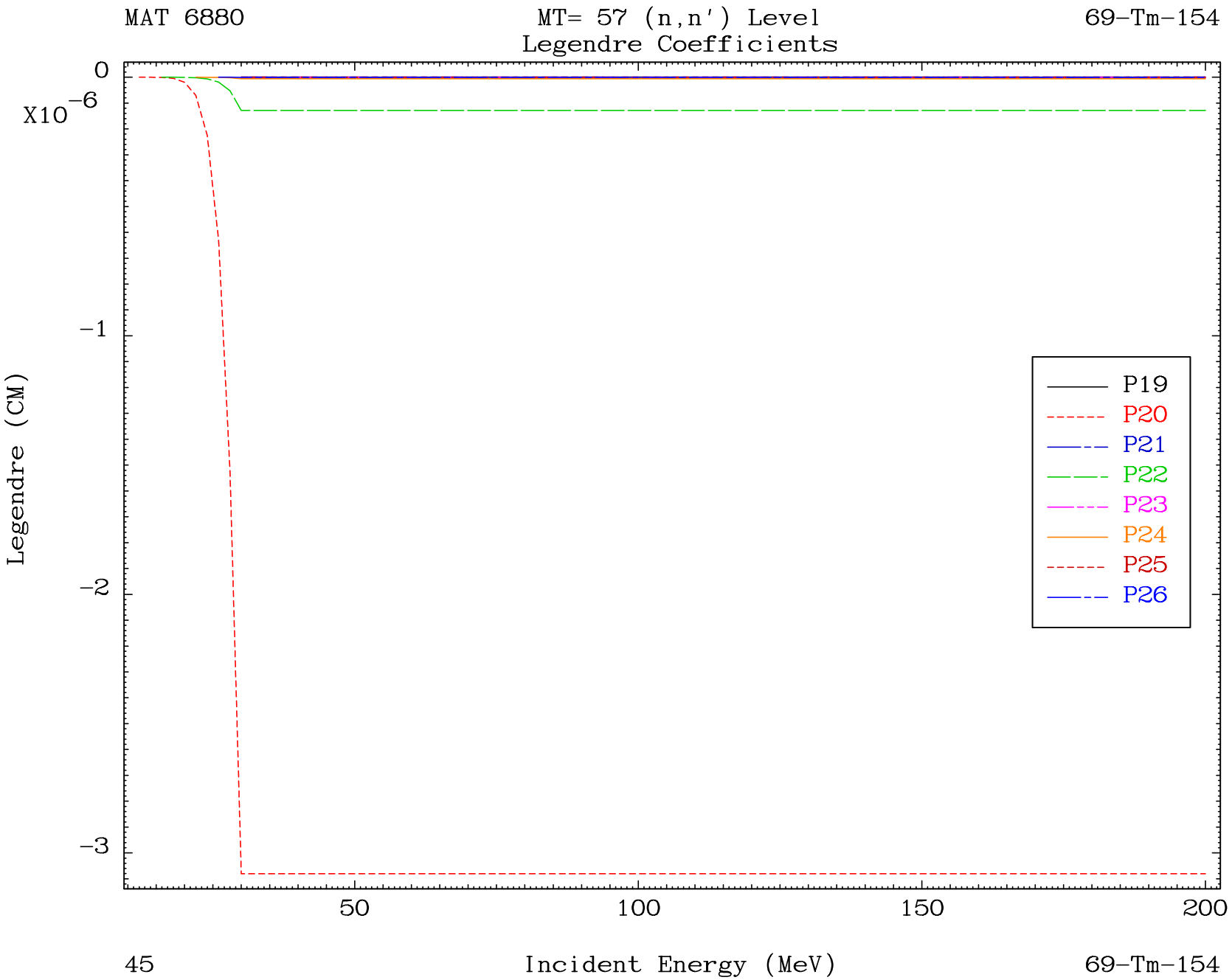

MAT 6880
MT= 56 (n,n') Level
Legendre Coefficients
69-Tm-154
0.004
0.000
-0.004
-0.008
Legendre (CM)
0
50
100
150
200
40
Incident Energy (MeV)
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18

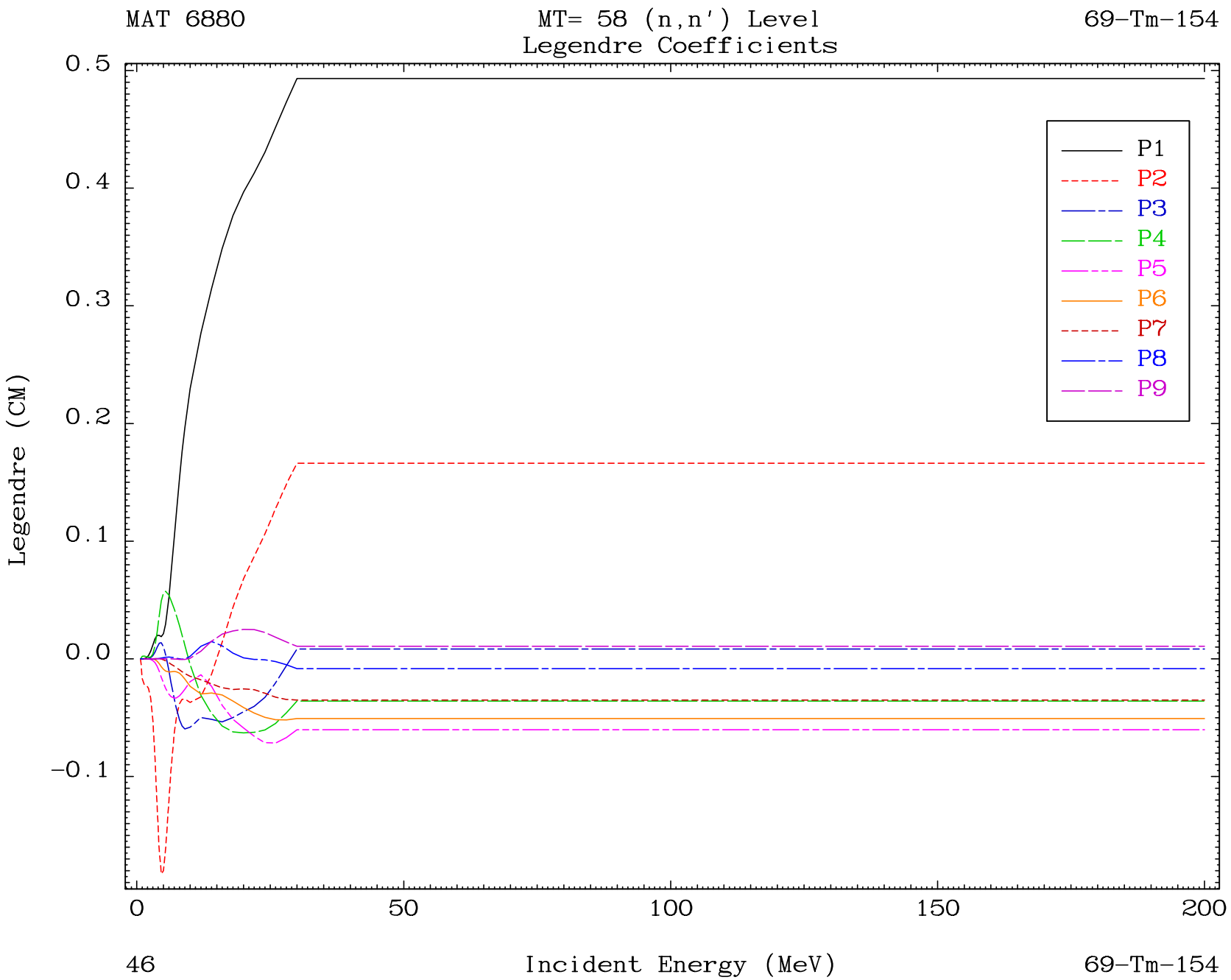

MAT 6880
MT= 56 (n,n') Level
Legendre Coefficients
69-Tm-154
X10+42
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
50
100
150
200
41
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27

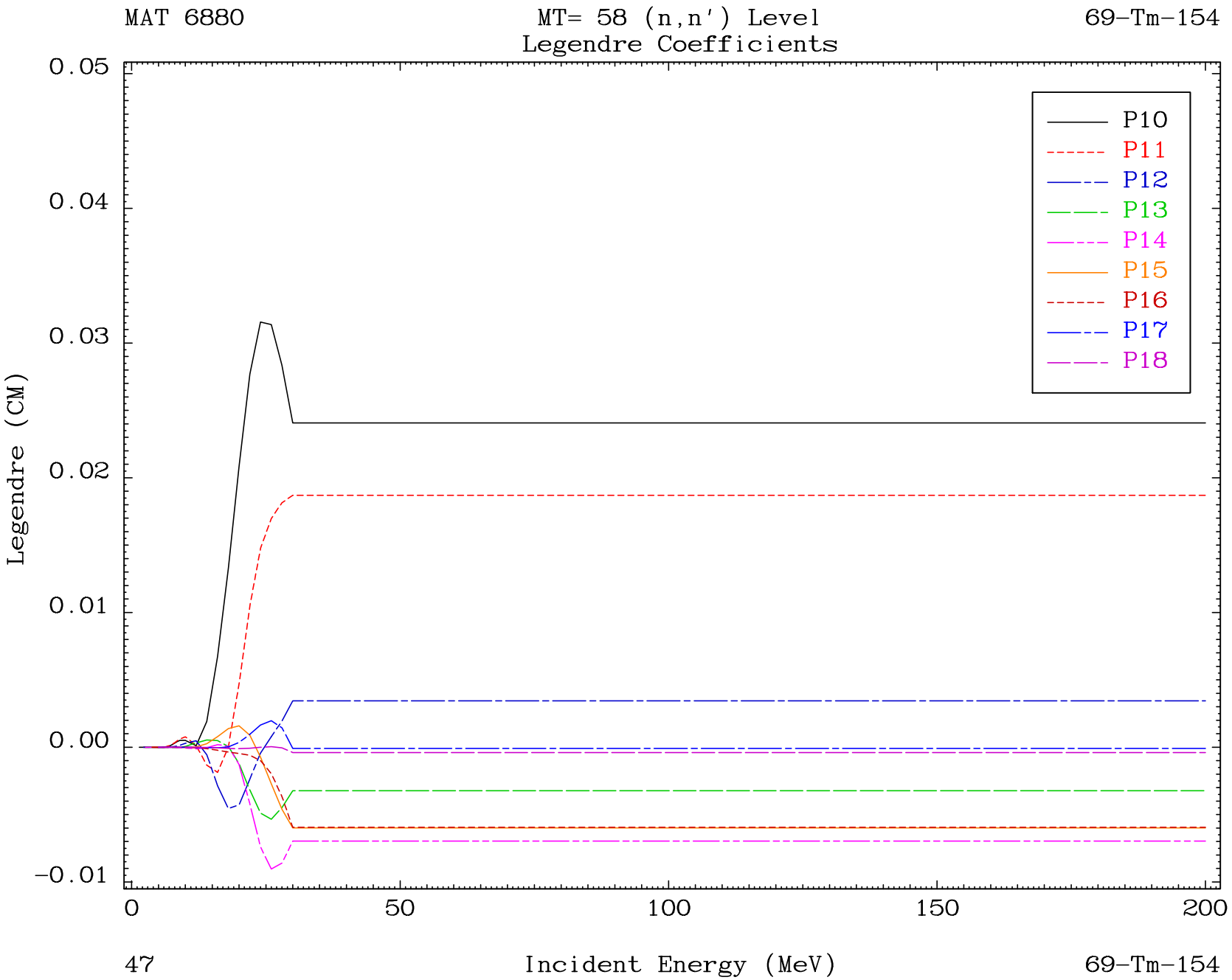

MAT 6880
MT= 56 (n,n') Level
Legendre Coefficients
69-Tm-154
X10-85
4
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
50
100
150
200
42
Incident Energy (MeV)
69-Tm-154

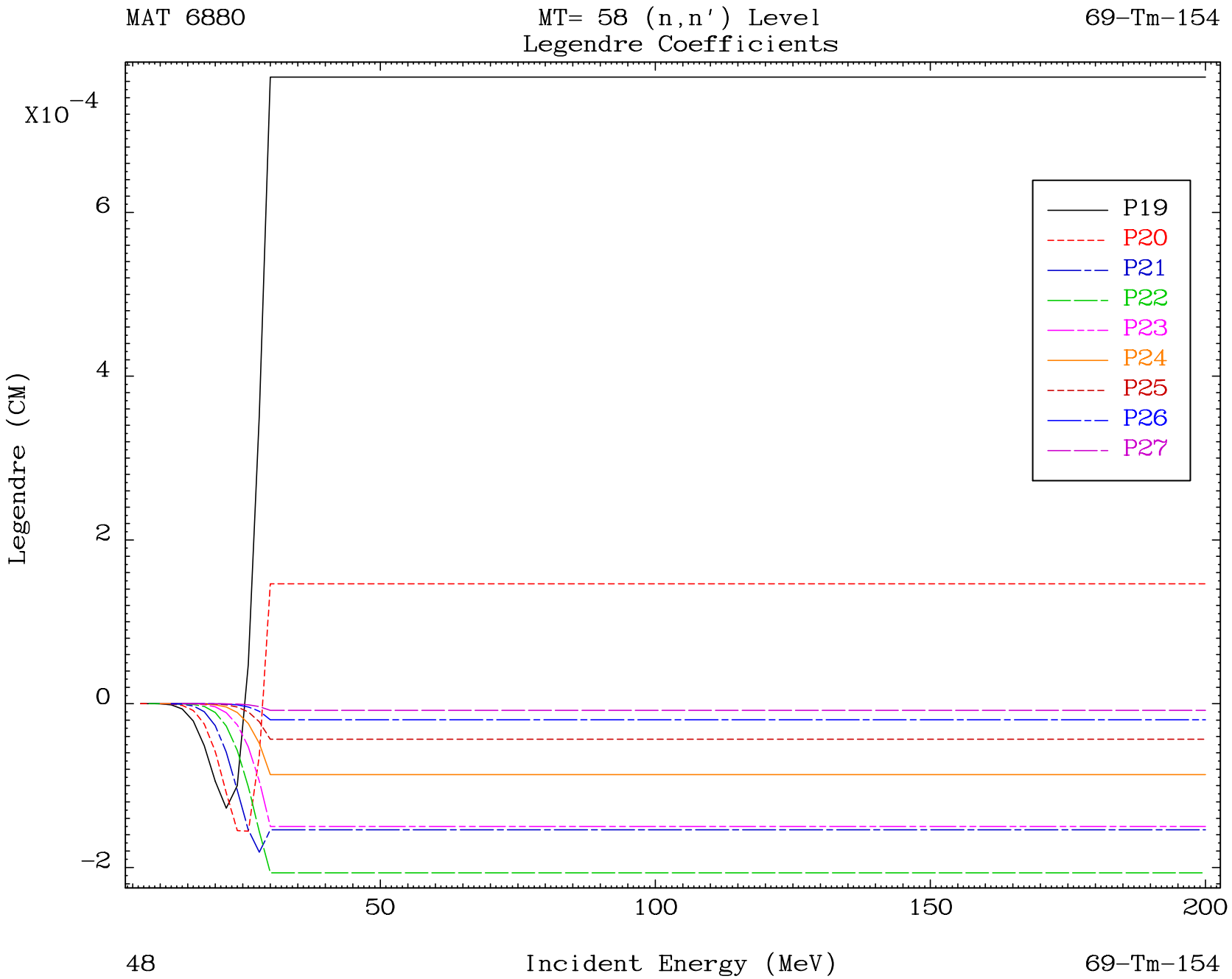

MAT 6880
MT= 57 (n,n') Level
Legendre Coefficients
69-Tm-154
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
43
Incident Energy (MeV)
69-Tm-154

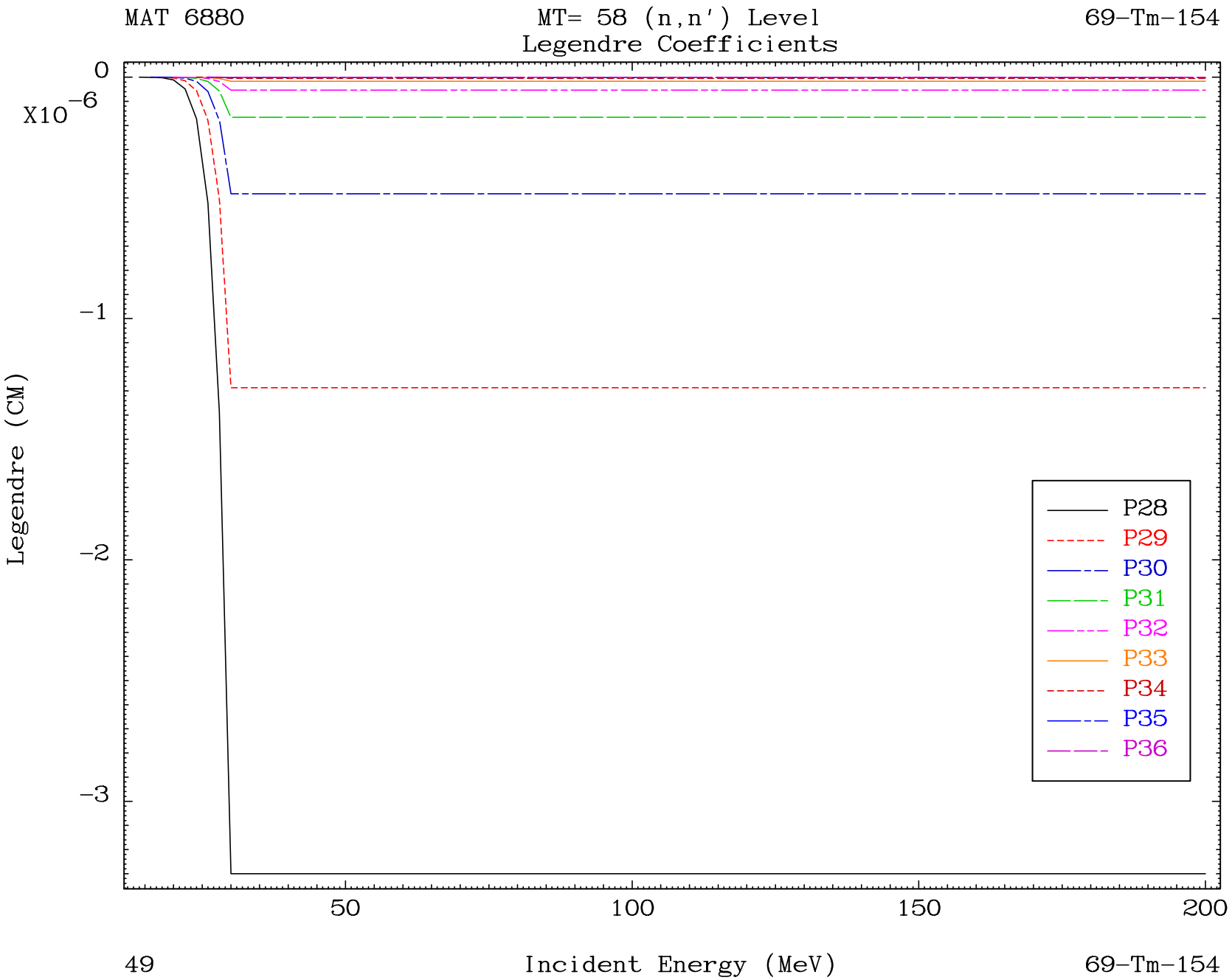

MAT 6880
MT= 57 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
4
3
2
1
0
-1
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
44
Incident Energy (MeV)
69-Tm-154

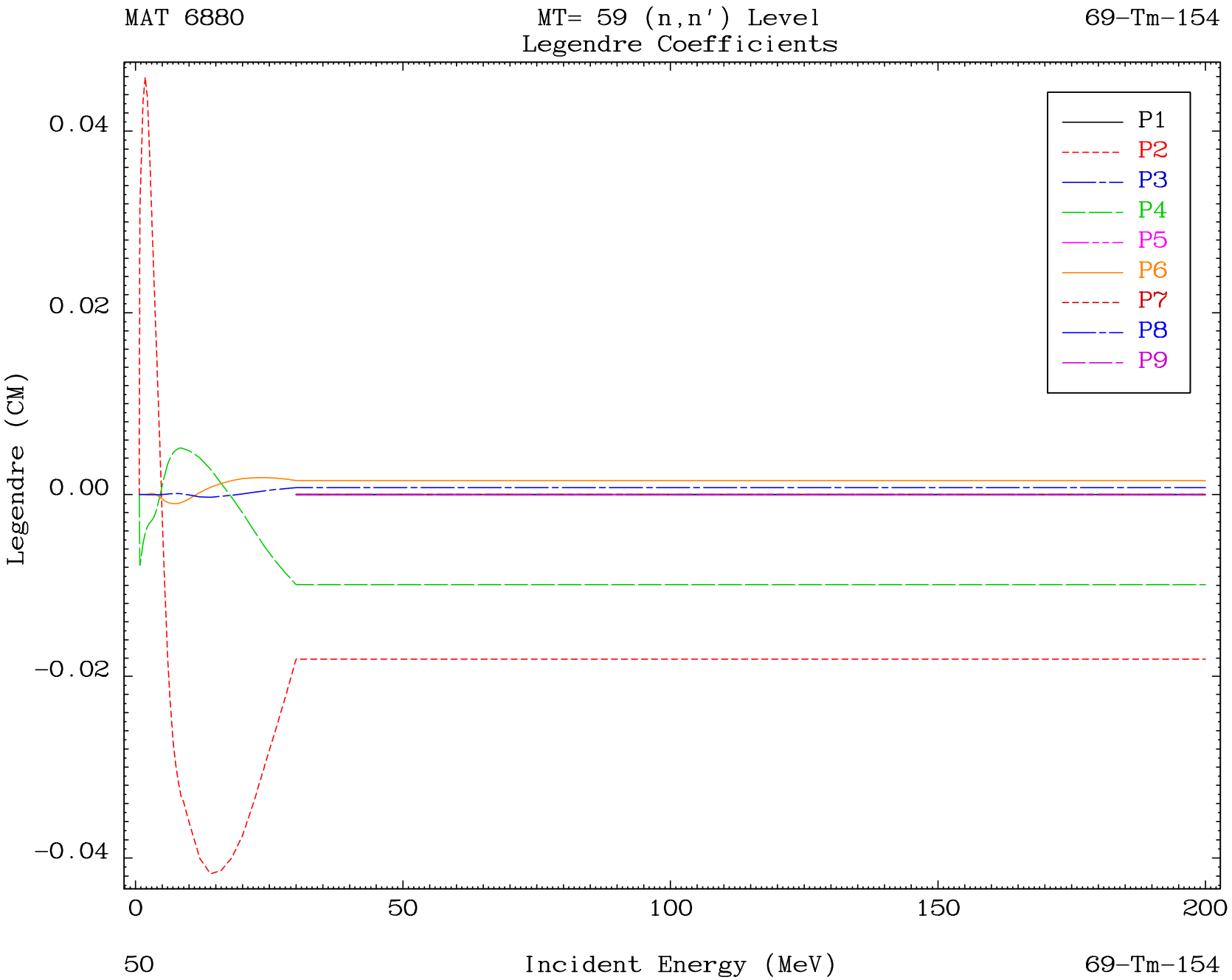

MAT 6880
MT= 57 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-1
-2
-3
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
50
100
150
200
45
Incident Energy (MeV)
69-Tm-154

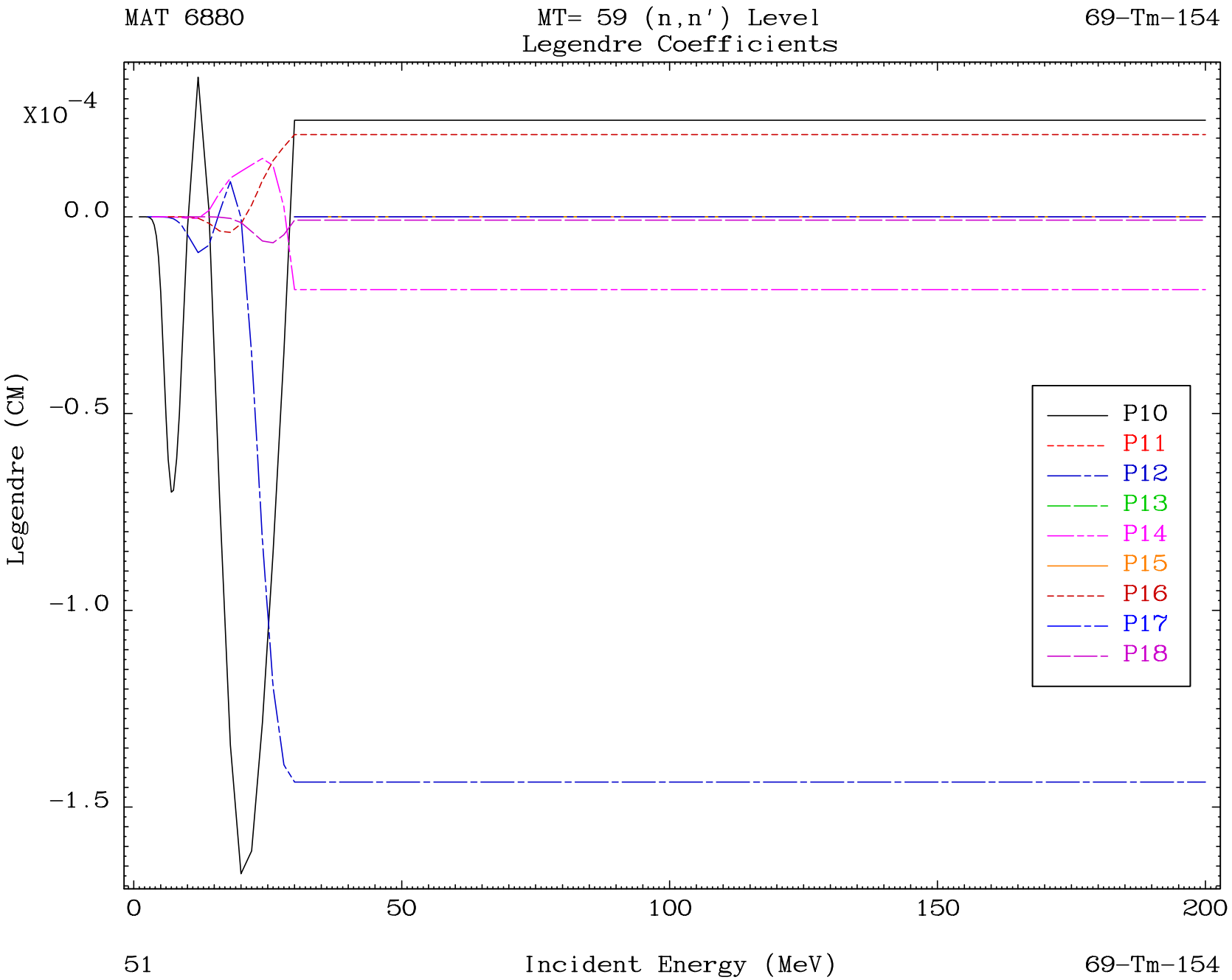

MAT 6880
MT= 58 (n,n') Level
Legendre Coefficients
69-Tm-154
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
46
Incident Energy (MeV)
69-Tm-154

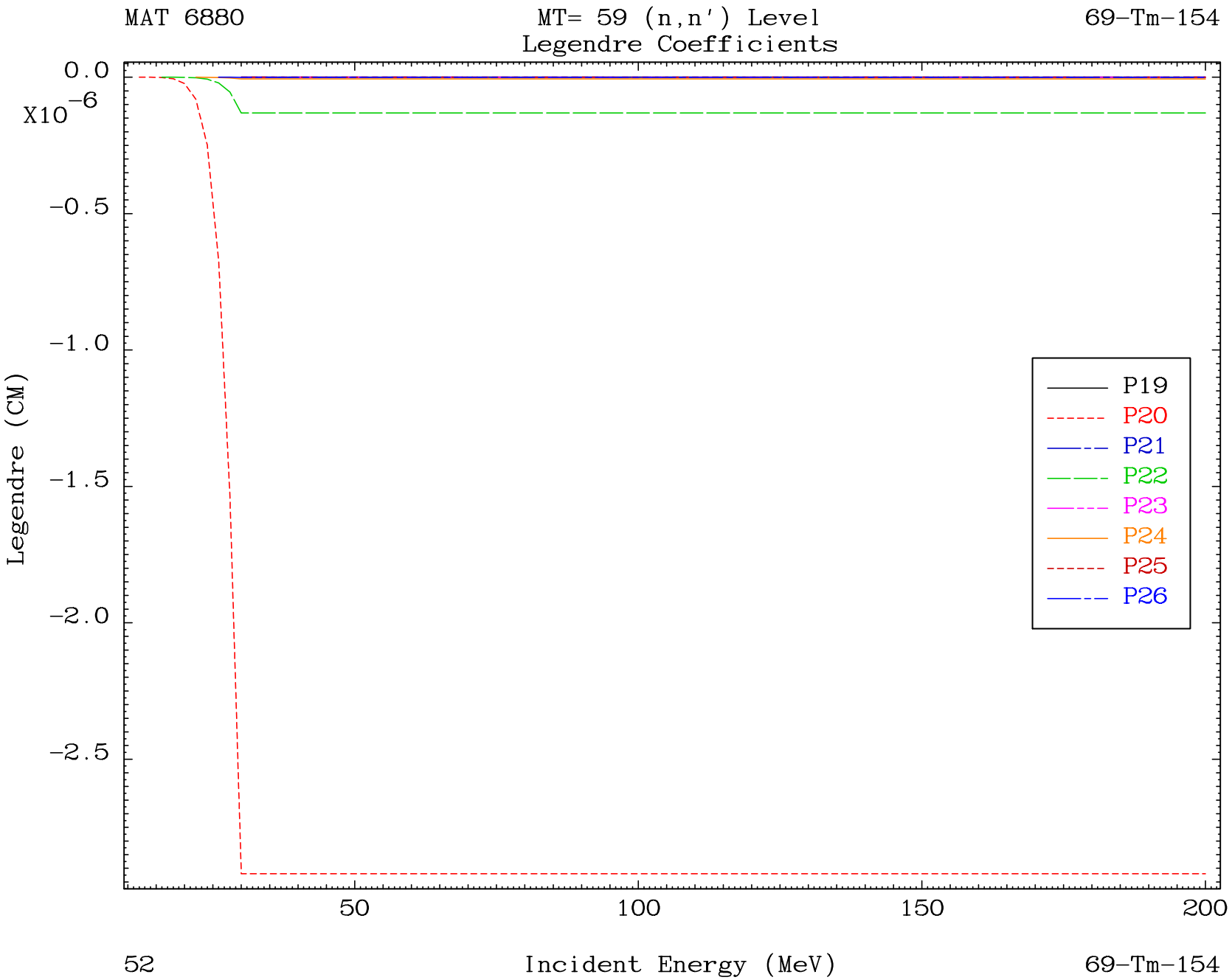

MAT 6880
MT= 58 (n,n') Level
Legendre Coefficients
69-Tm-154
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
47
Incident Energy (MeV)
69-Tm-154

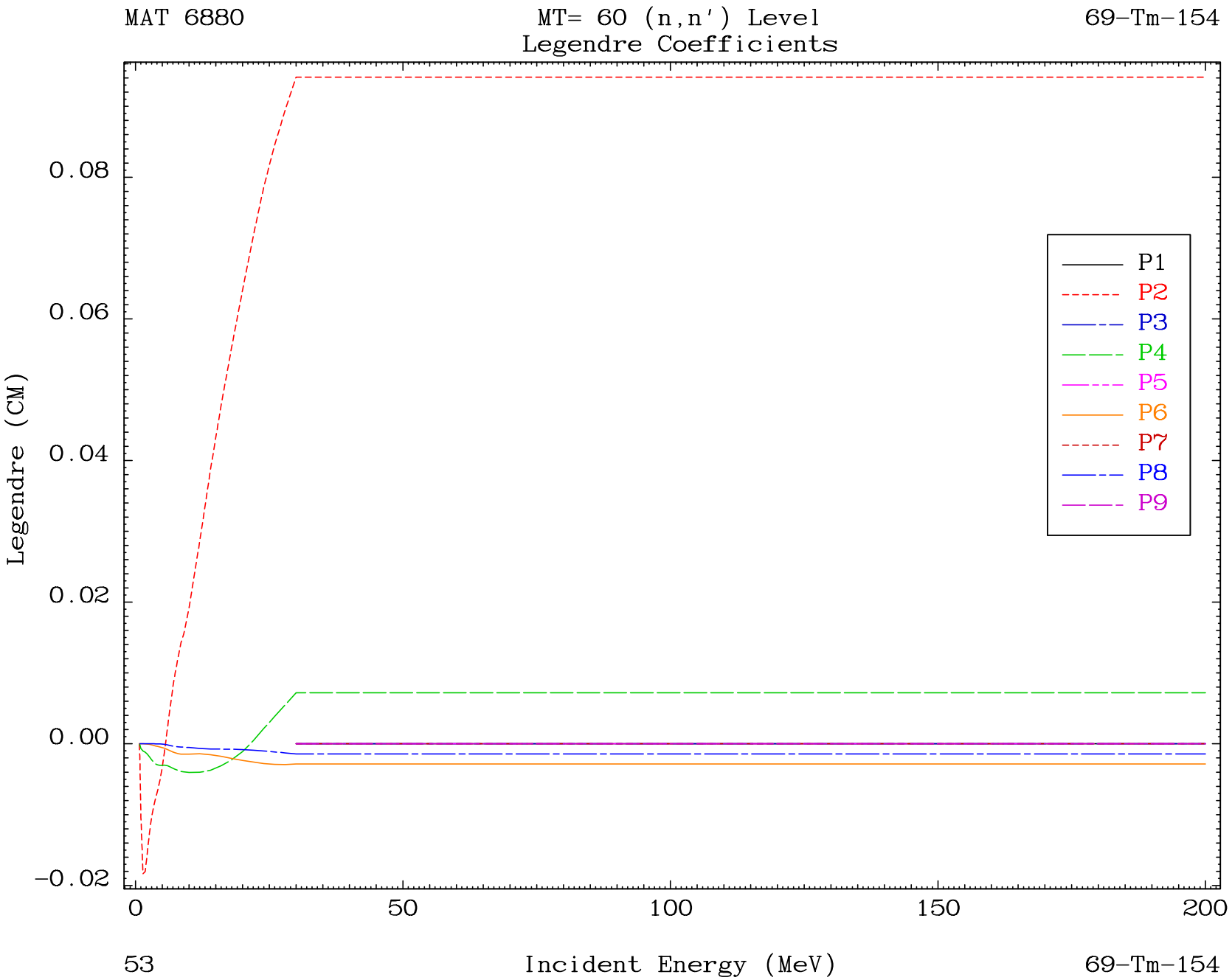

MAT 6880
MT= 58 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
6
4
2
0
-2
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
48
Incident Energy (MeV)
69-Tm-154

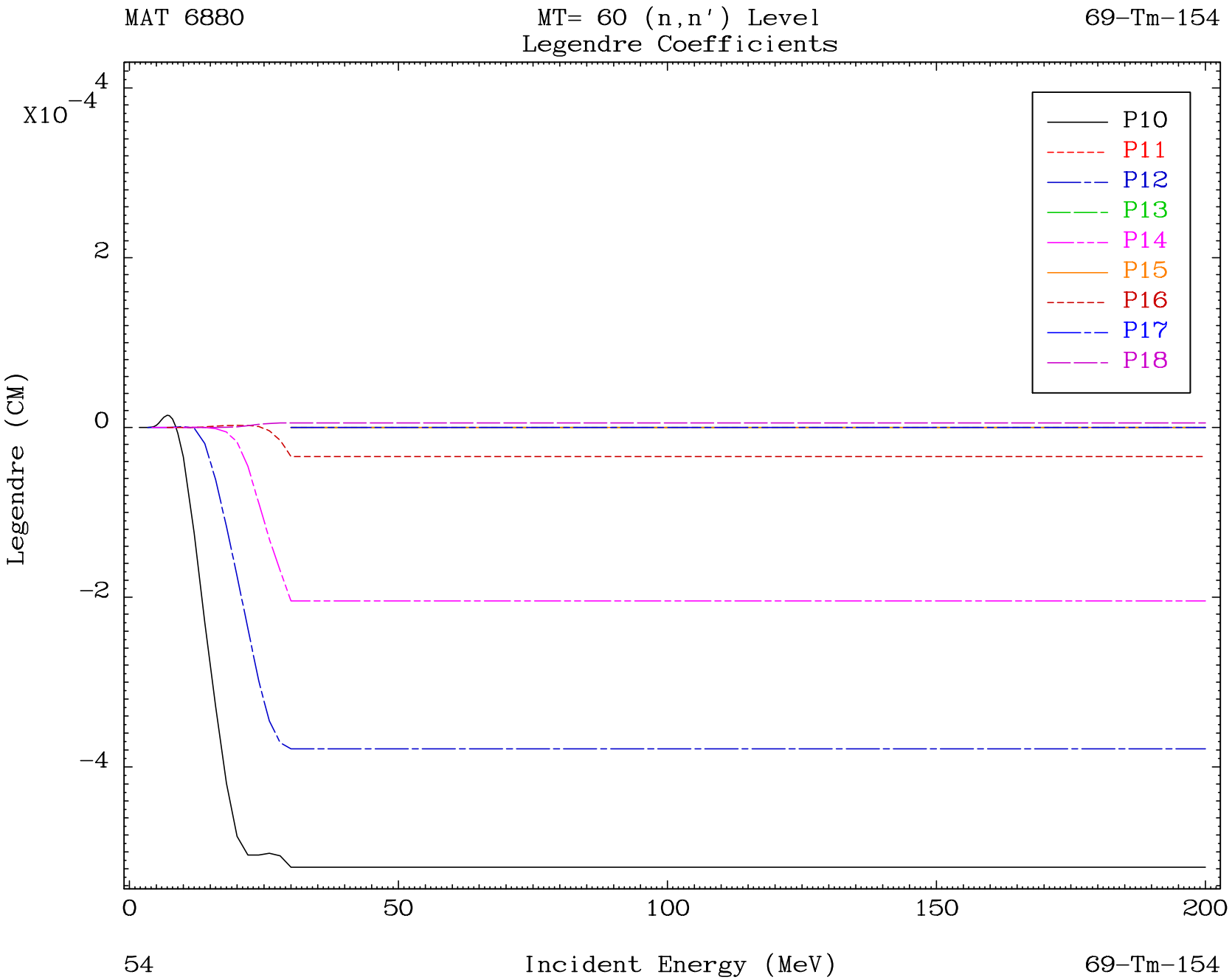

MAT 6880
MT= 58 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-1
-2
-3
Legendre (CM)
50
100
150
200
P28
P29
P30
P31
P32
P33
P34
P35
P36
49
Incident Energy (MeV)
69-Tm-154

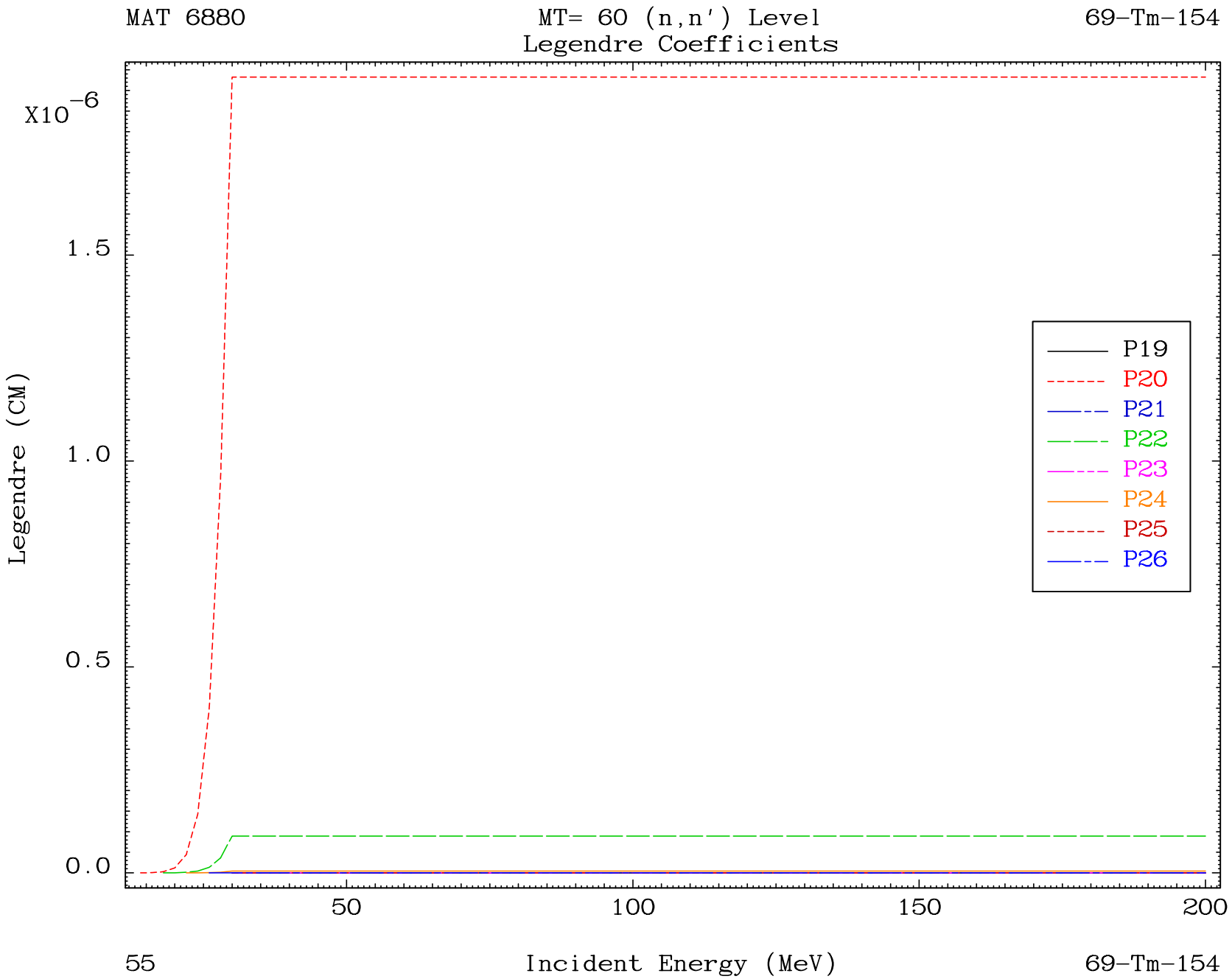

MAT 6880
MT= 59 (n,n') Level
Legendre Coefficients
69-Tm-154
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
50
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

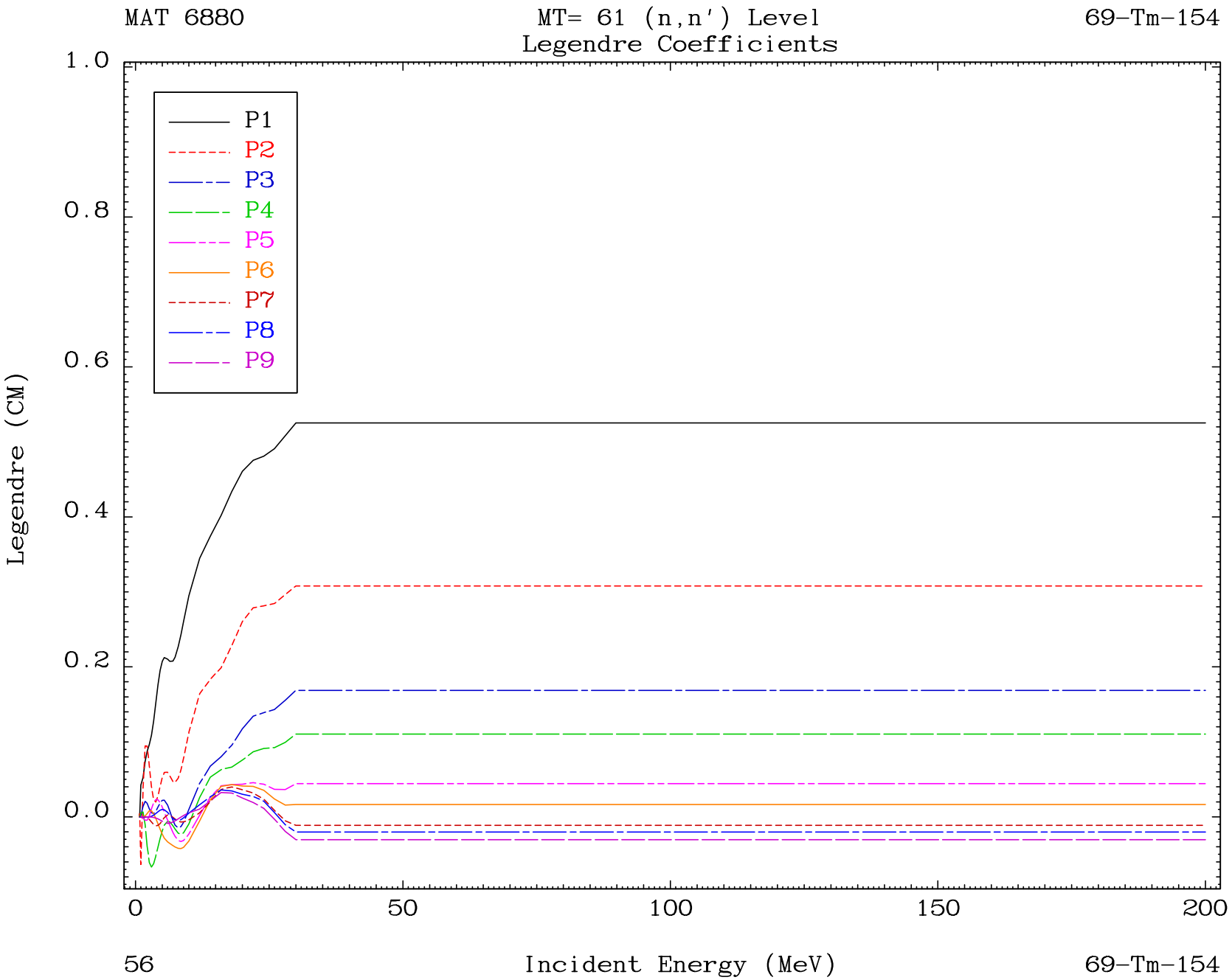

MAT 6880
MT= 59 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
0.0
-0.5
-1.0
-1.5
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
51
Incident Energy (MeV)
69-Tm-154

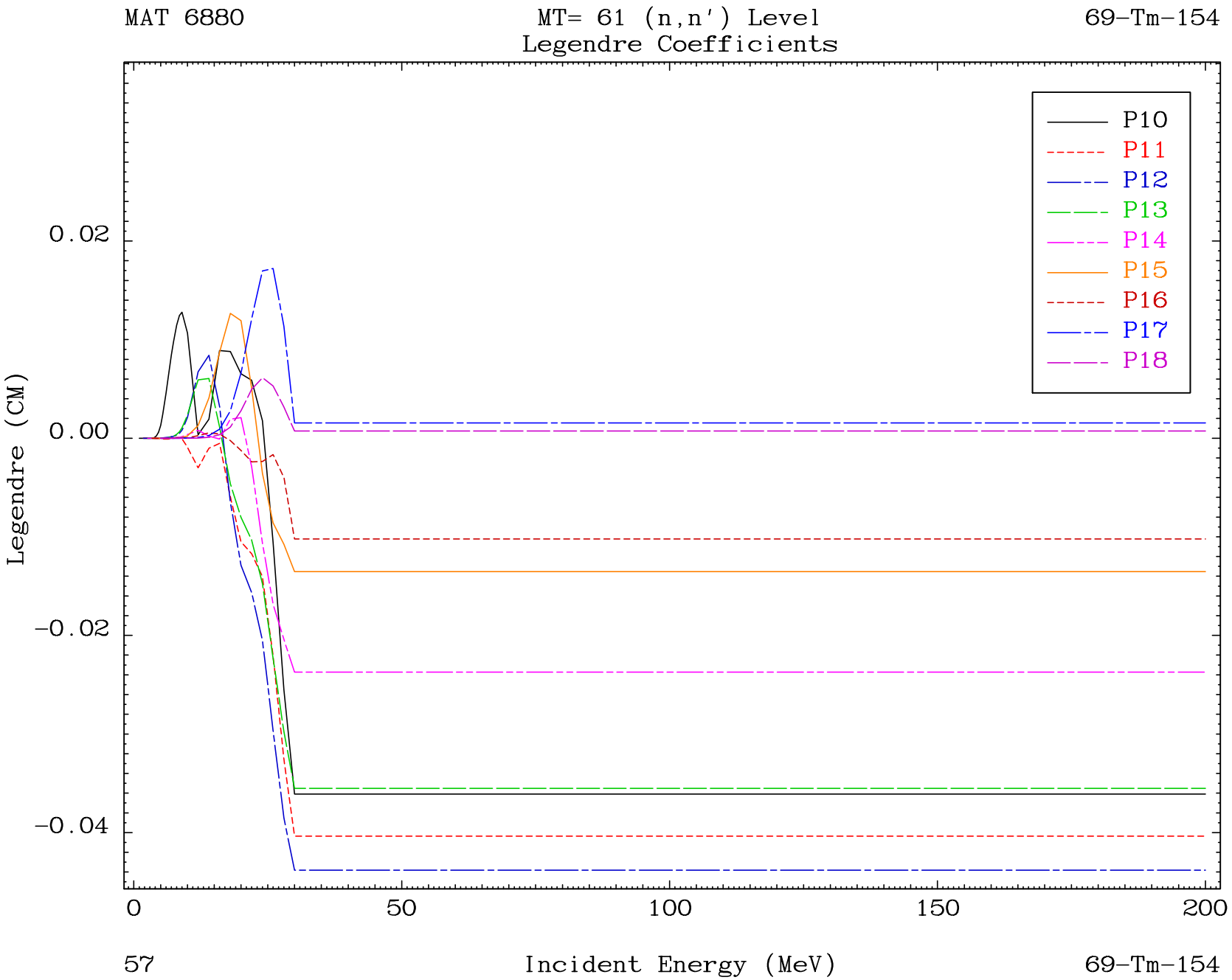

MAT 6880
MT= 59 (n,n') Level
Legendre Coefficients
69-Tm-154
0.0
X10^-6
-0.5
-1.0
-1.5
-2.0
-2.5
Legendre (CM)
50
100
150
200
52
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

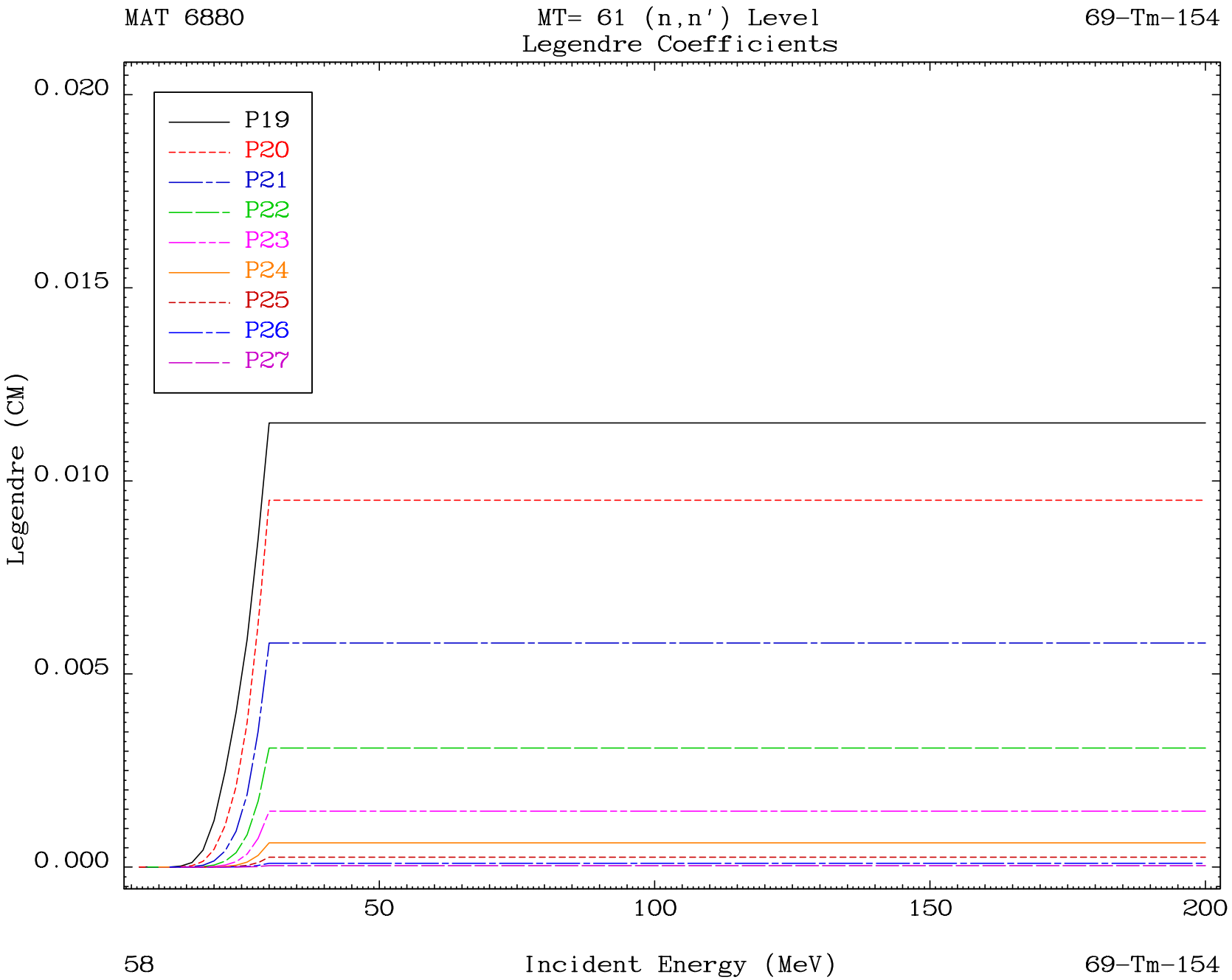

MAT 6880
MT= 60 (n,n') Level
Legendre Coefficients
69-Tm-154
0.08
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
Incident Energy (MeV)
53
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

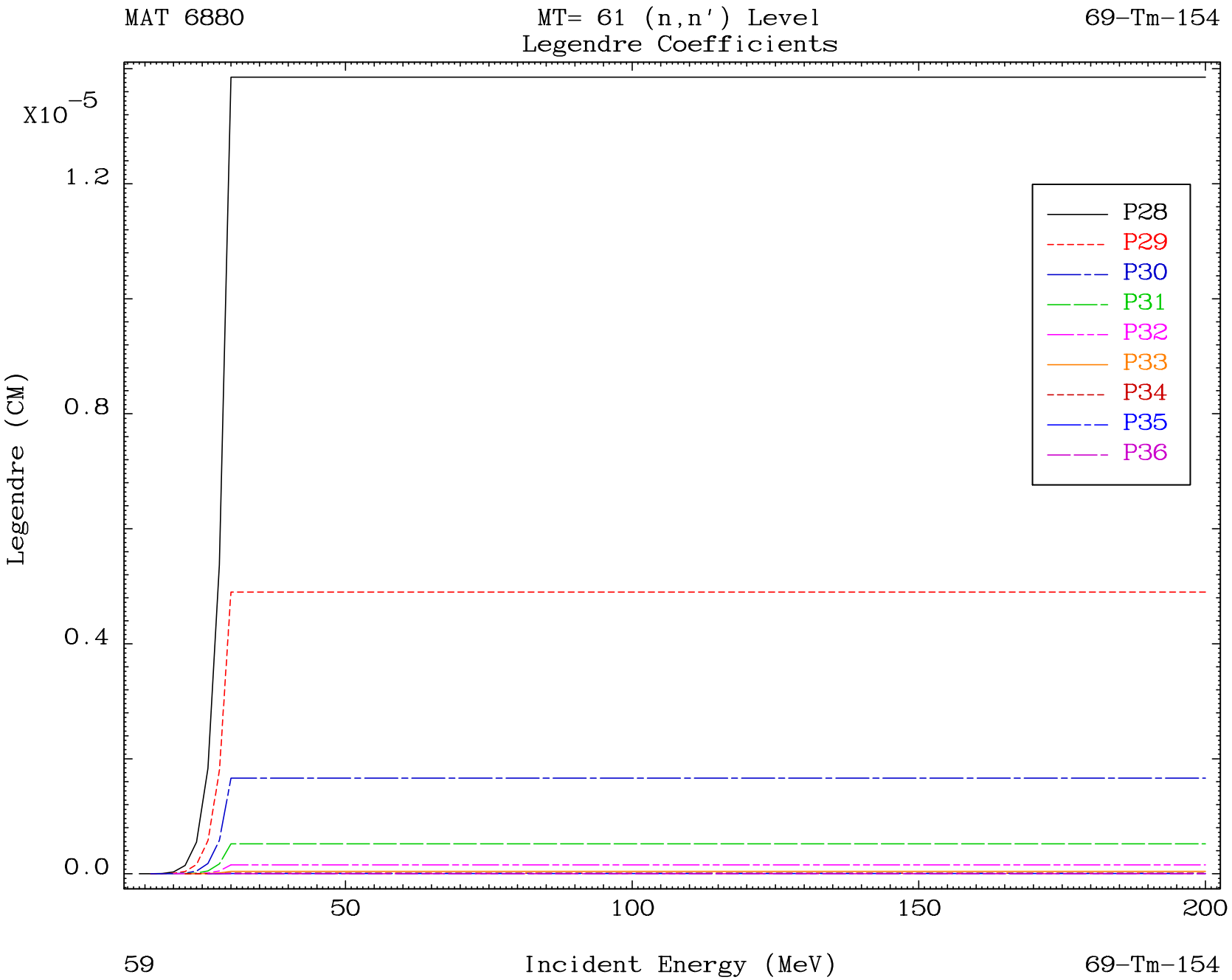

MAT 6880
MT= 60 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
4
2
0
-2
-4
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
54
Incident Energy (MeV)
69-Tm-154

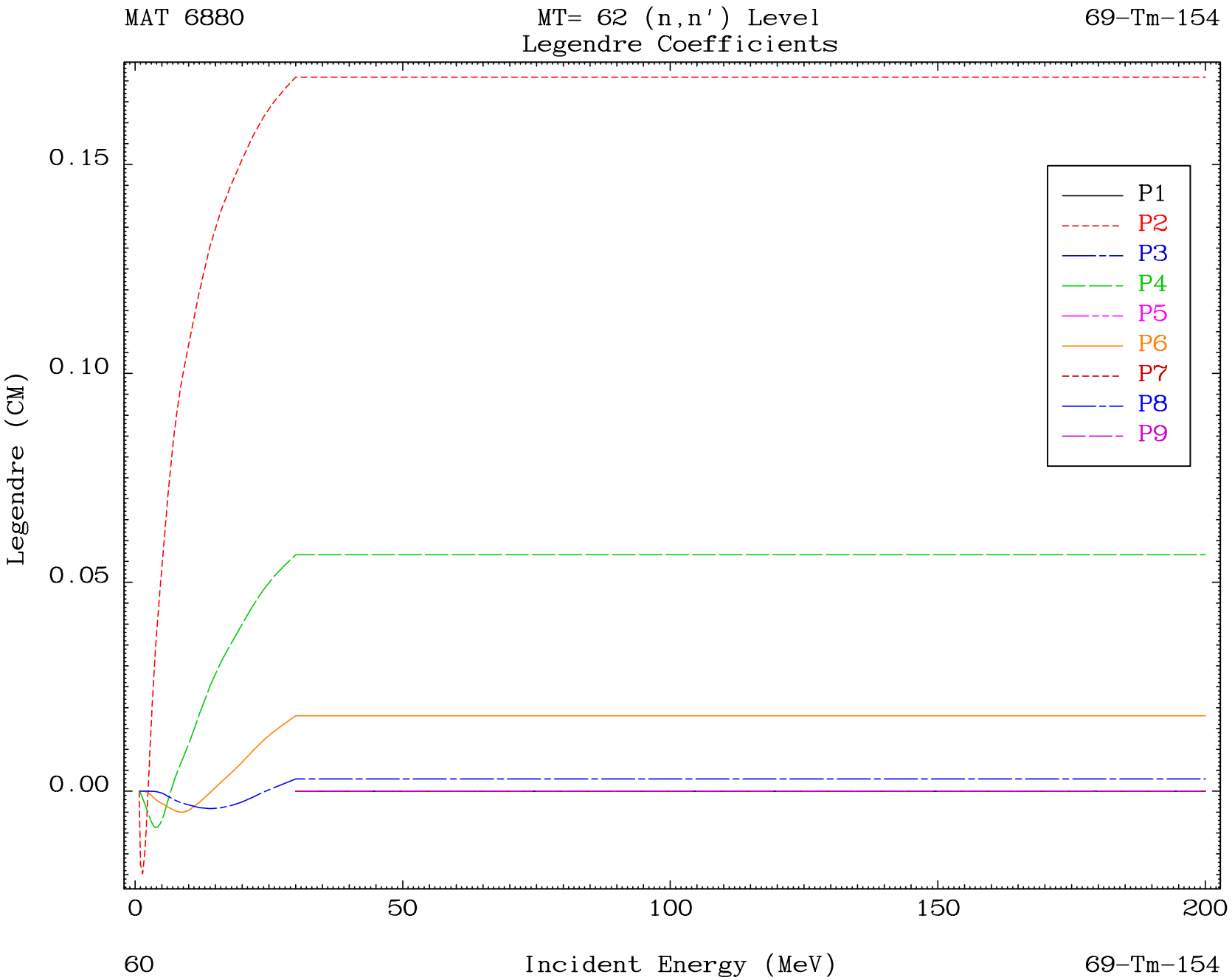

MAT 6880
MT= 60 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
50
100
150
200
55
Incident Energy (MeV)
69-Tm-154

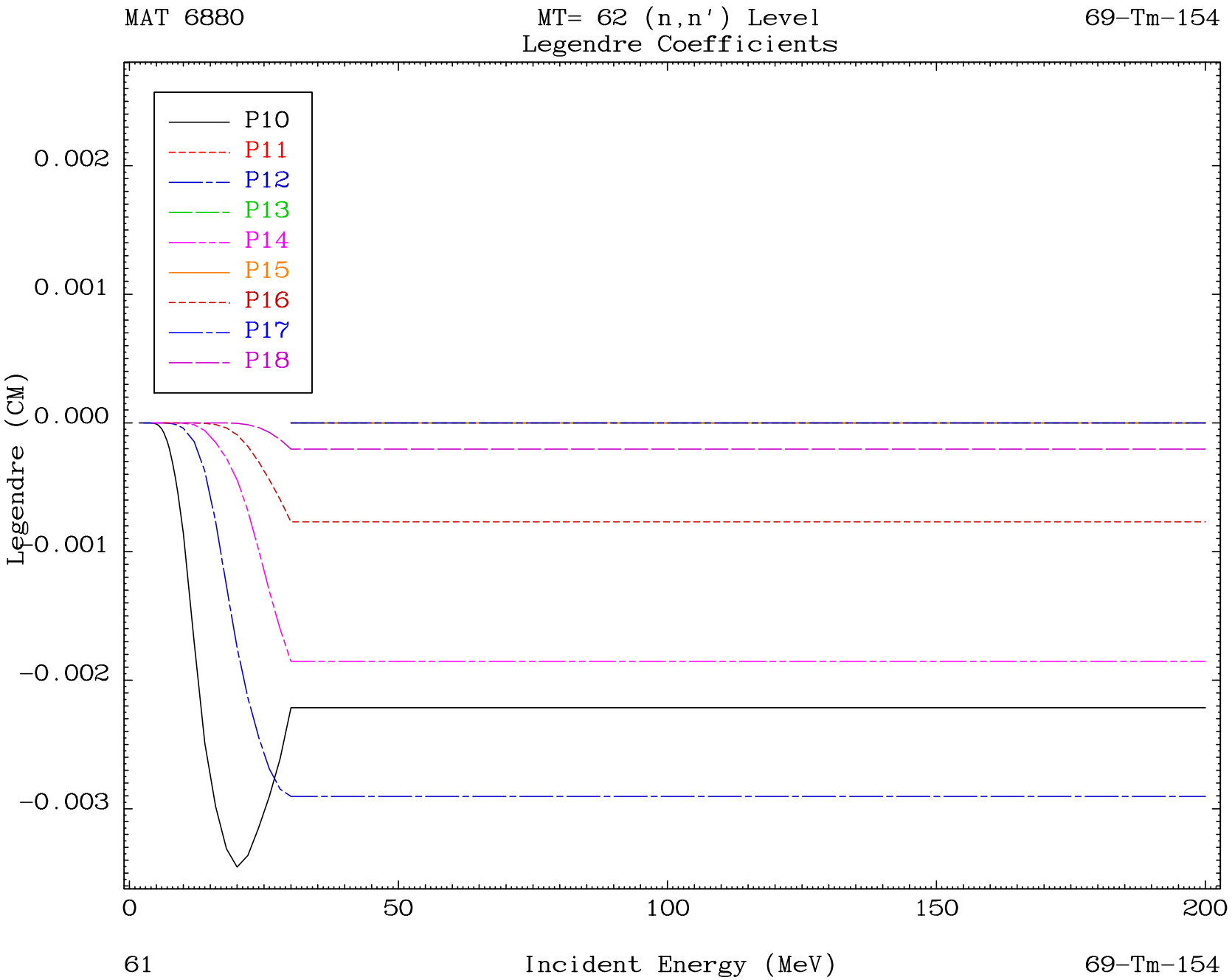

MAT 6880
MT= 61 (n,n') Level
Legendre Coefficients
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
1.0
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
56
Incident Energy (MeV)
69-Tm-154

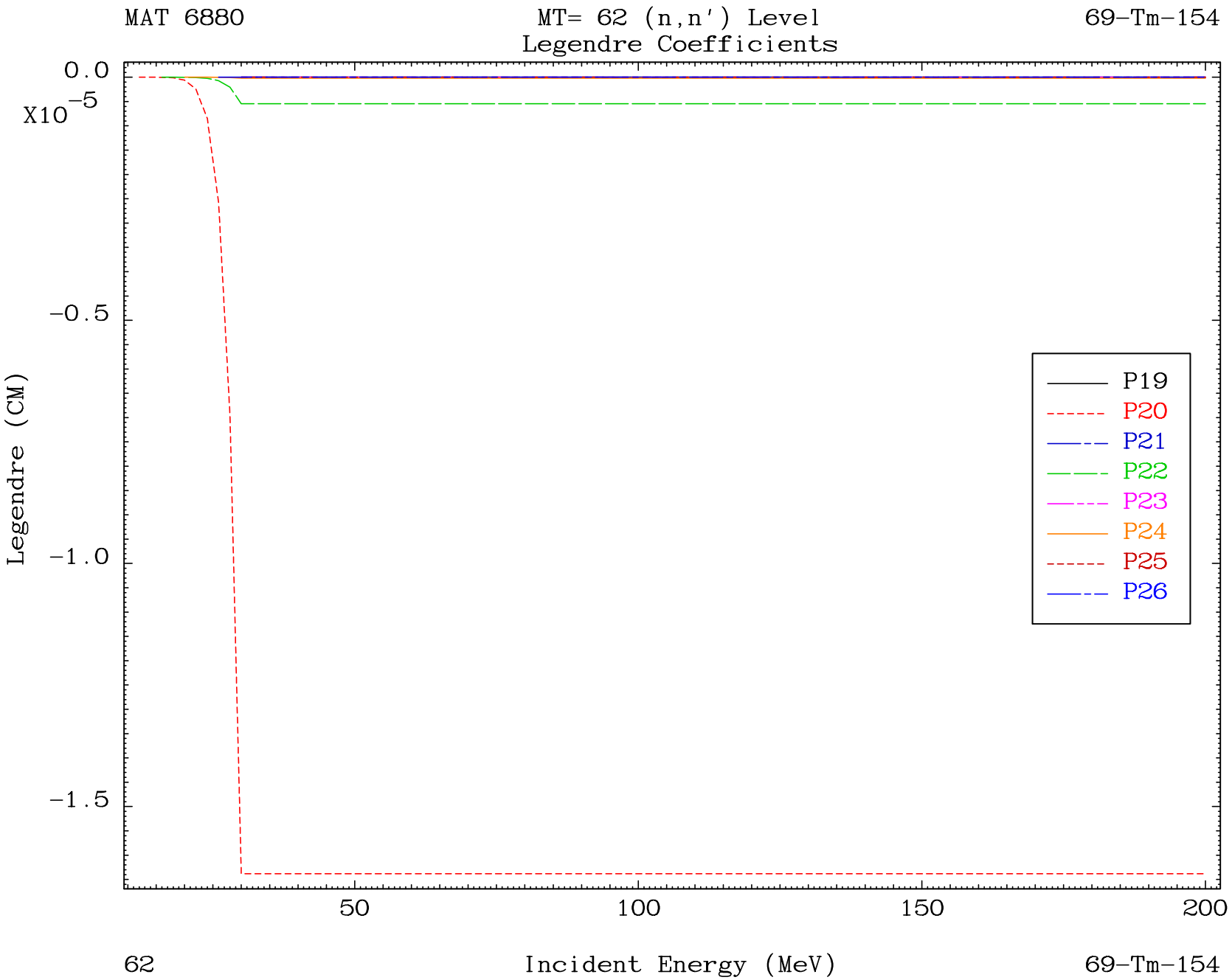

MAT 6880
MT= 61 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
57
Incident Energy (MeV)
69-Tm-154

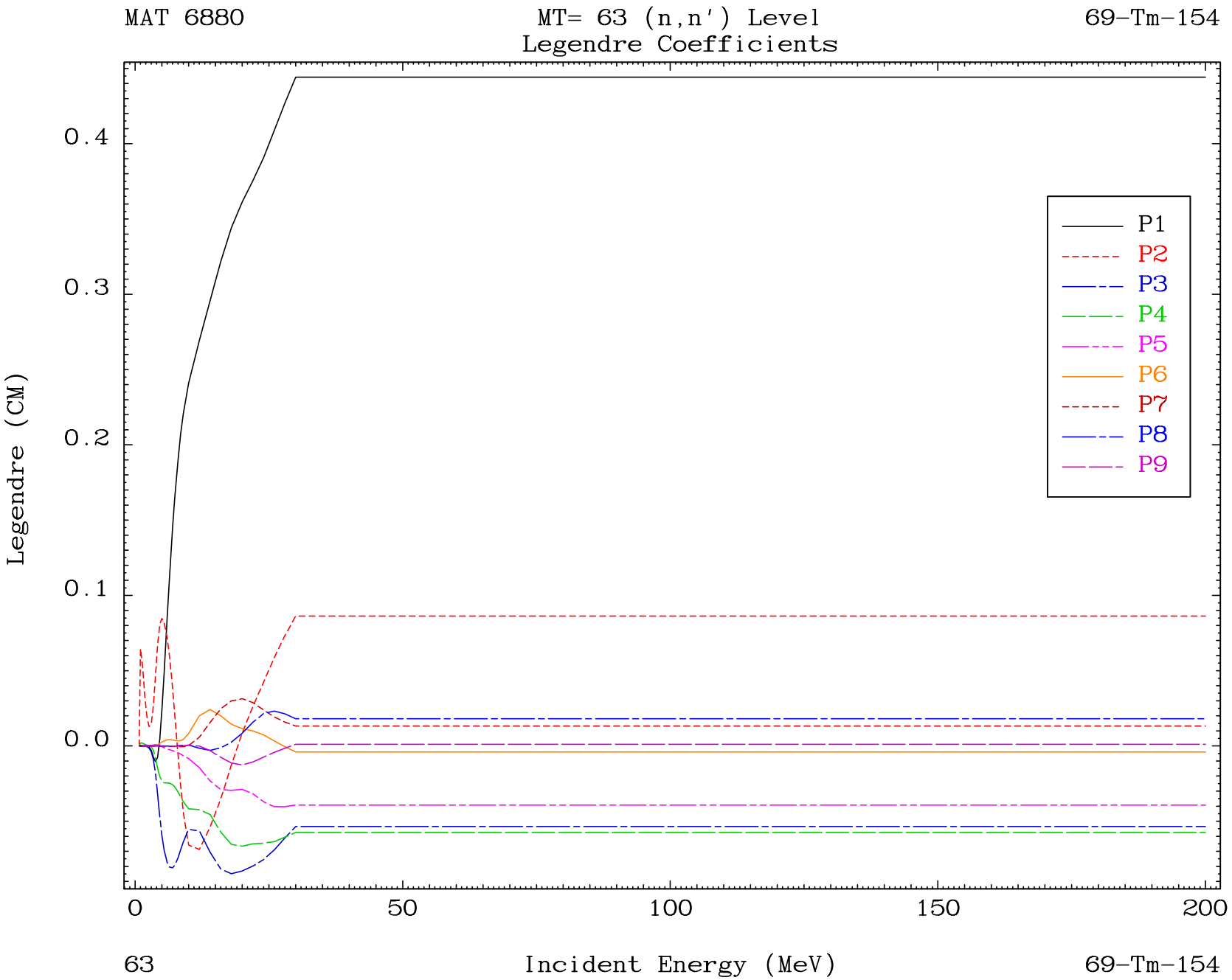

MAT 6880
MT= 61 (n,n') Level
Legendre Coefficients
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
58
Incident Energy (MeV)
69-Tm-154

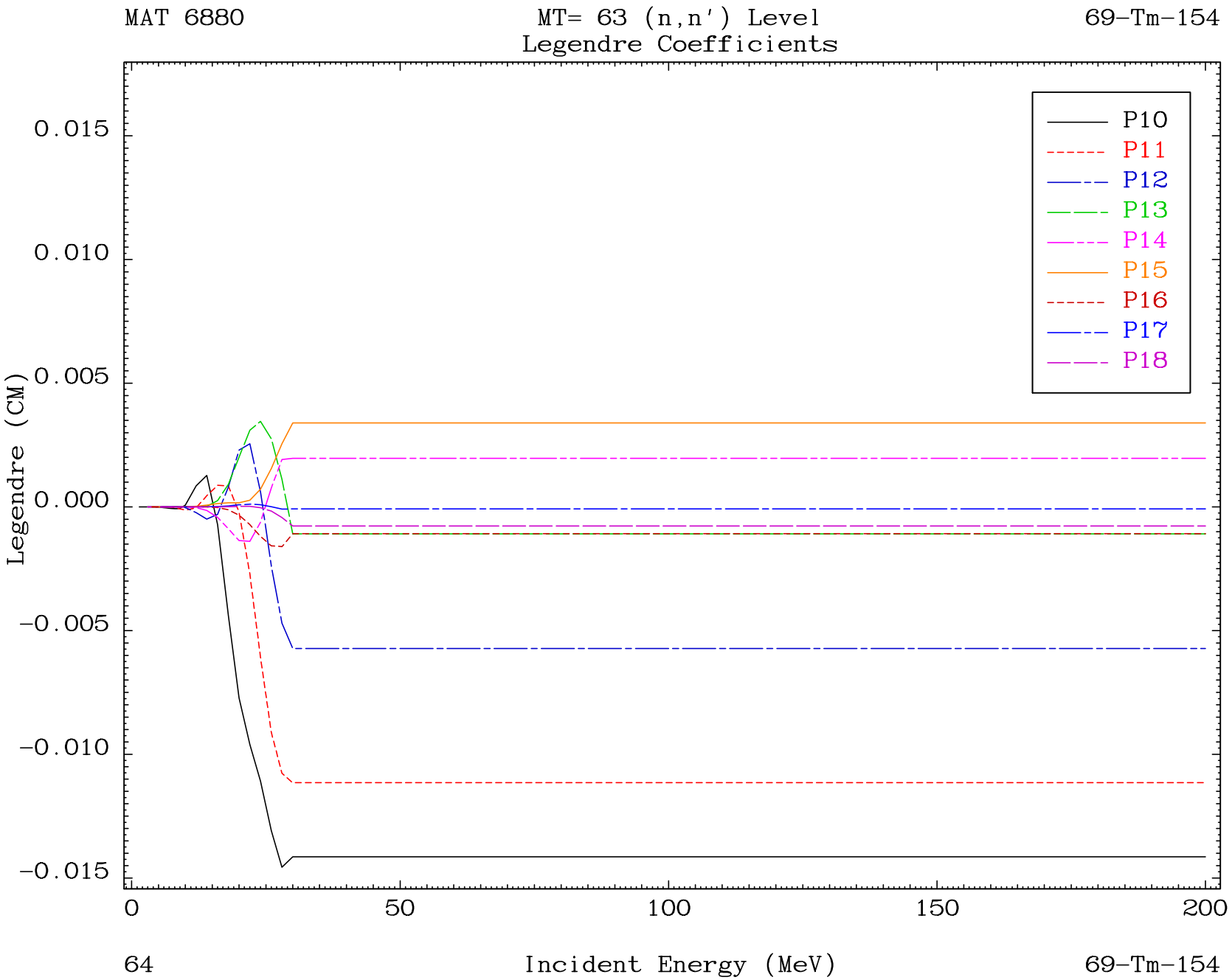

MAT 6880
MT= 61 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-5
1.2
0.8
0.4
0.0
Legendre (CM)
50
100
150
200
59
Incident Energy (MeV)
69-Tm-154
P28
P29
P30
P31
P32
P33
P34
P35
P36

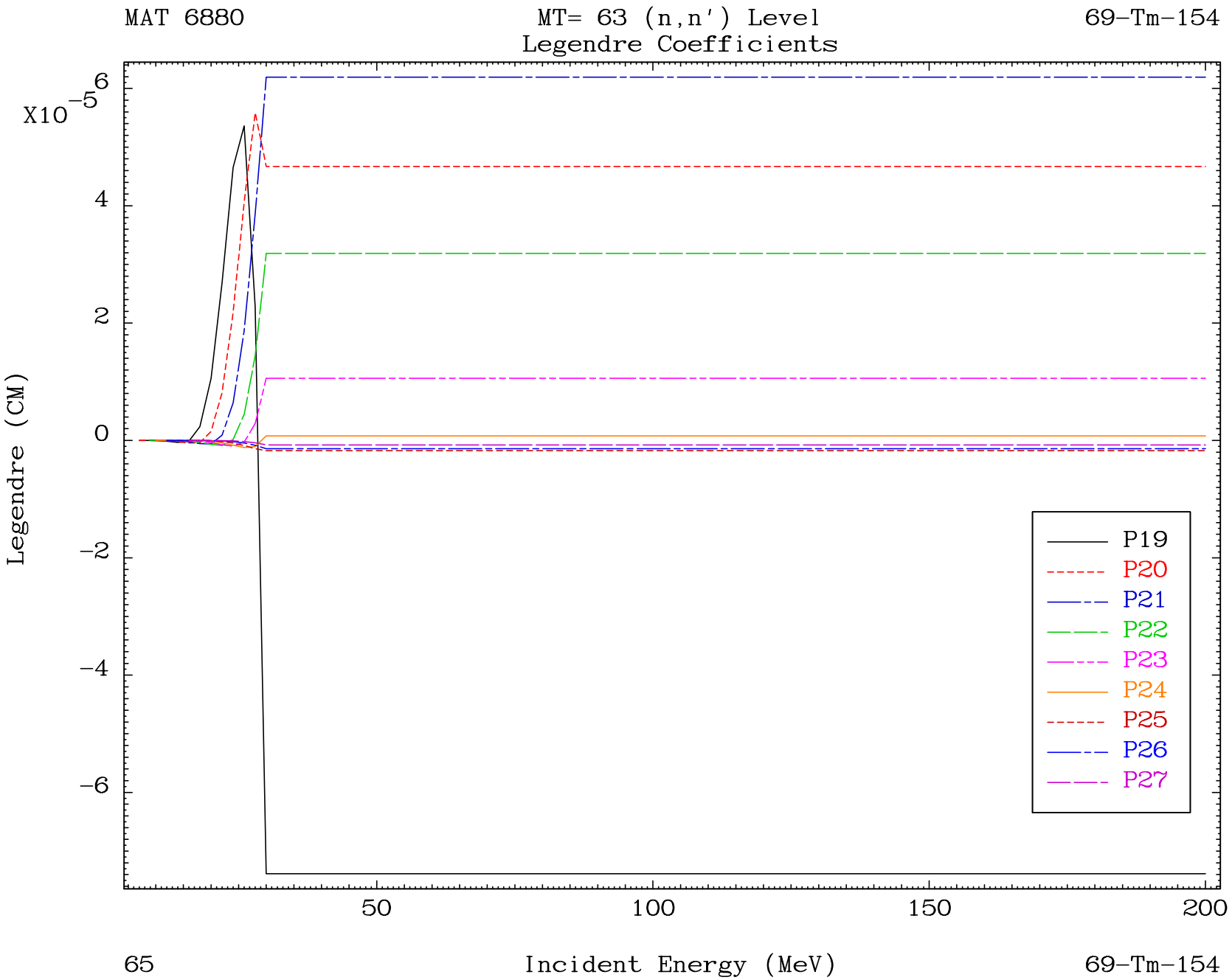

MAT 6880
MT= 62 (n,n') Level
Legendre Coefficients
69-Tm-154
0.15
0.10
0.05
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
60
Incident Energy (MeV)
69-Tm-154

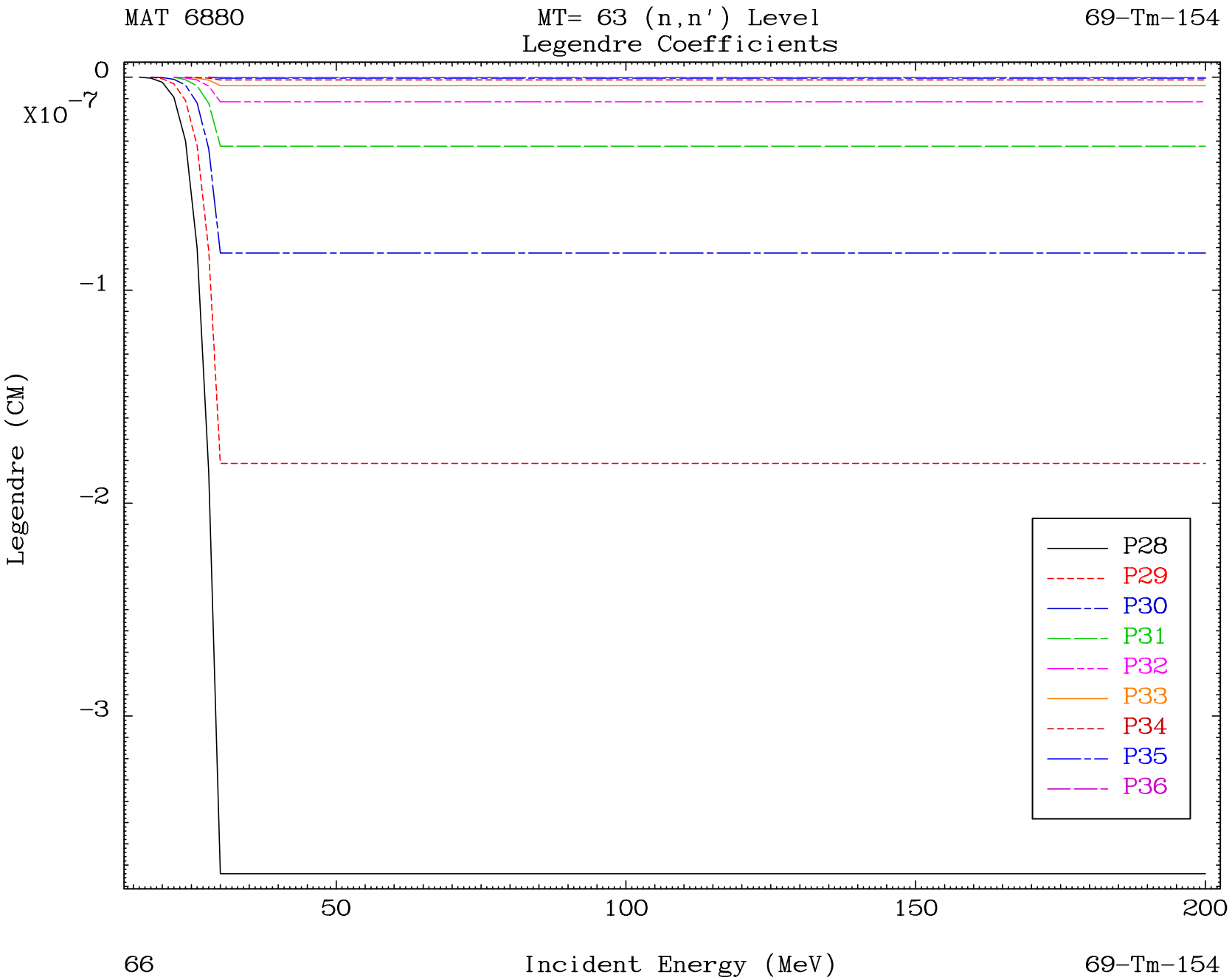

MAT 6880
MT= 62 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.002
0.001
0.000
-0.001
-0.002
-0.003
Legendre (CM)
0
50
100
150
200
61
Incident Energy (MeV)
69-Tm-154

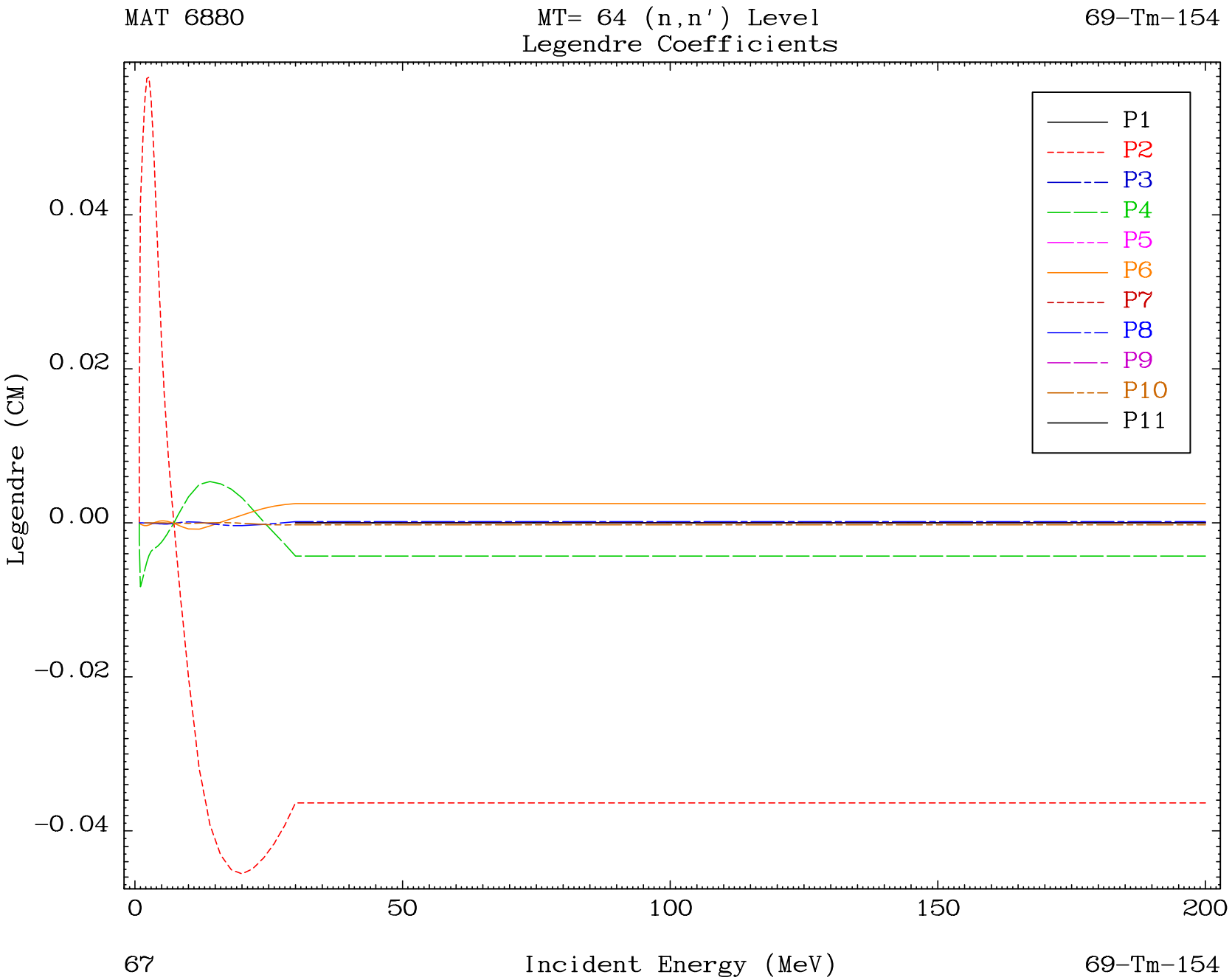

MAT 6880
MT= 62 (n,n') Level
Legendre Coefficients
69-Tm-154
0.0
X10^-5
-0.5
-1.0
-1.5
Legendre (CM)
50
100
150
200
62
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

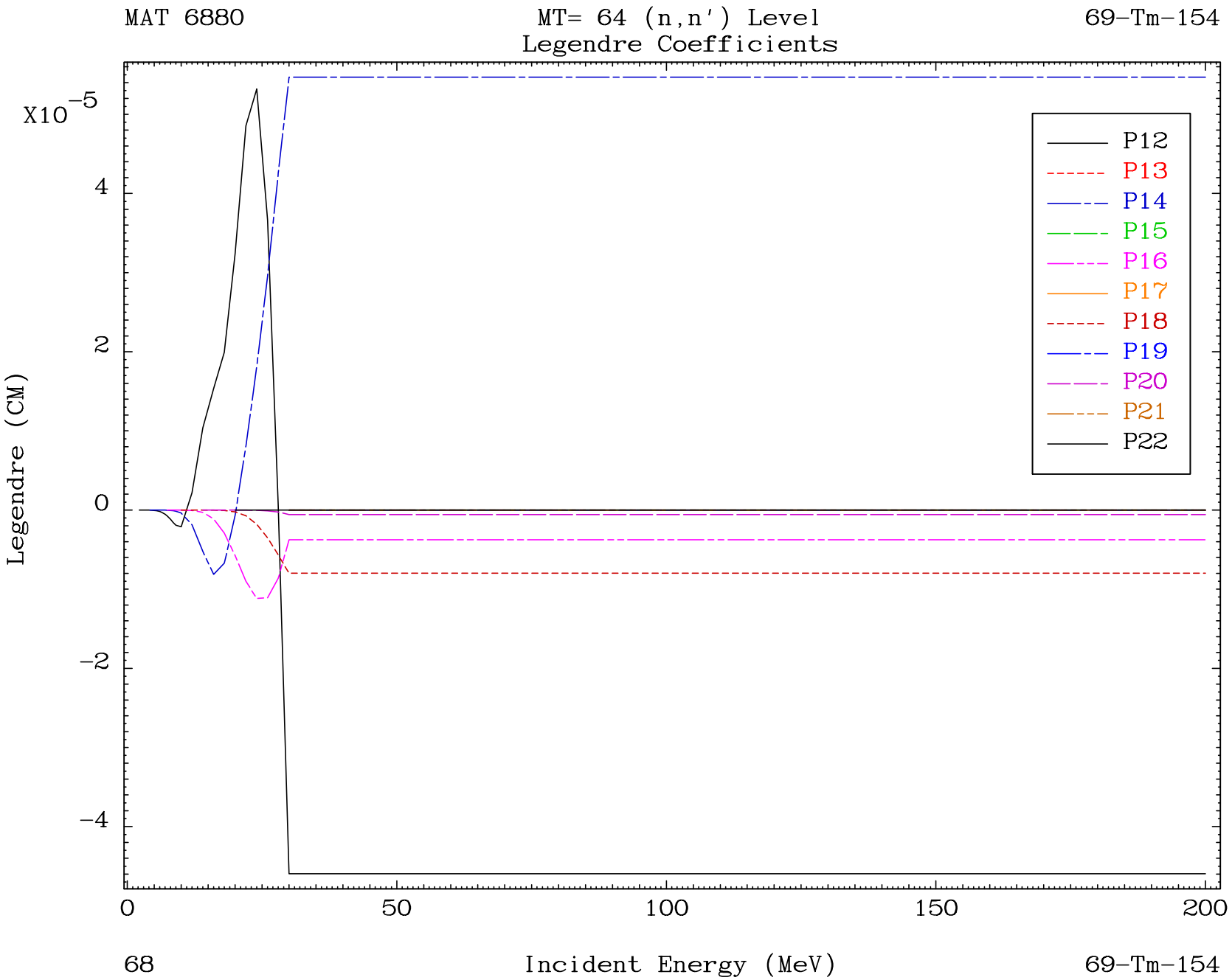

MAT 6880
MT= 63 (n,n') Level
Legendre Coefficients
69-Tm-154
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
63
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

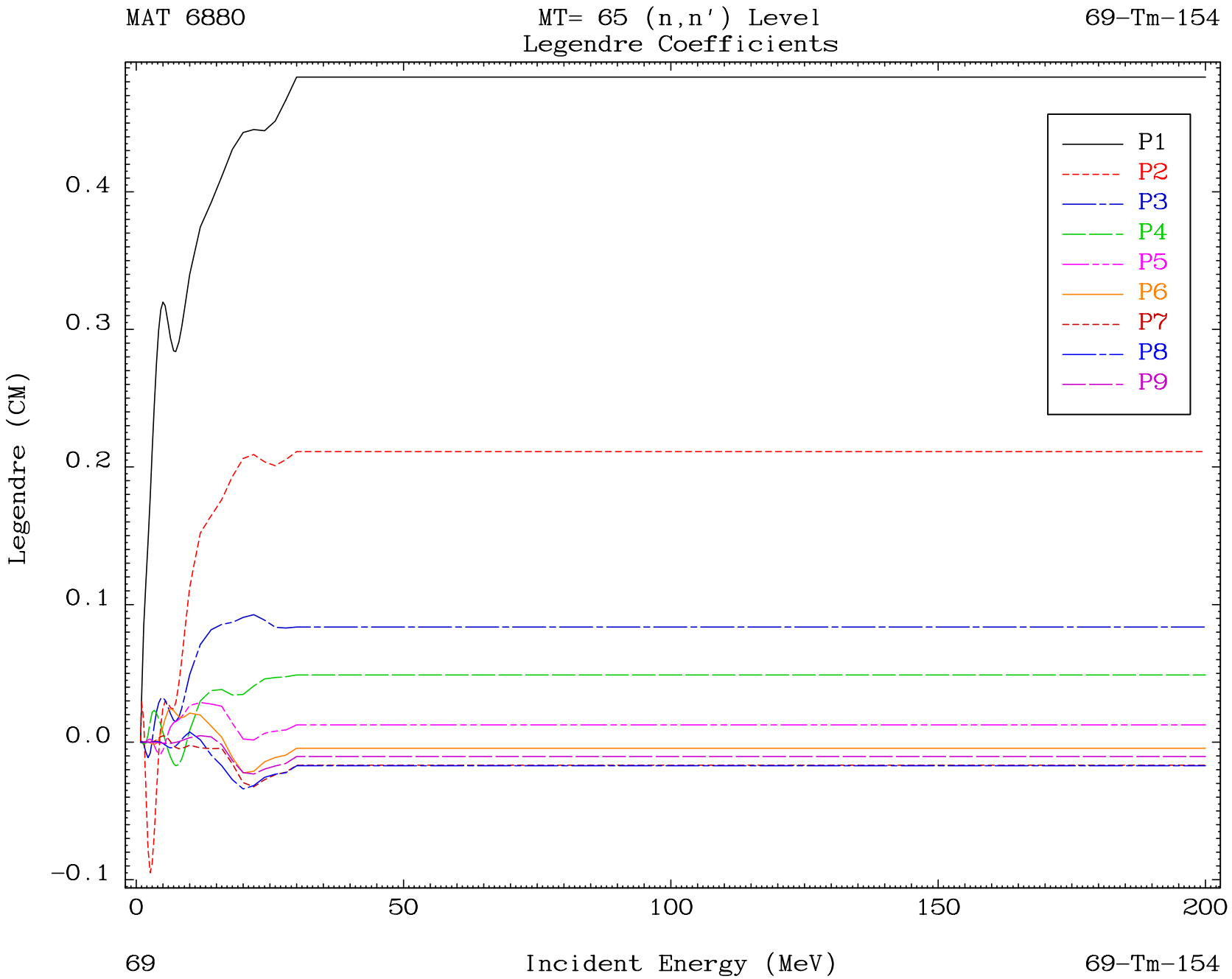

MAT 6880
MT= 63 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
Legendre (CM)
0
50
100
150
200
64
Incident Energy (MeV)
69-Tm-154

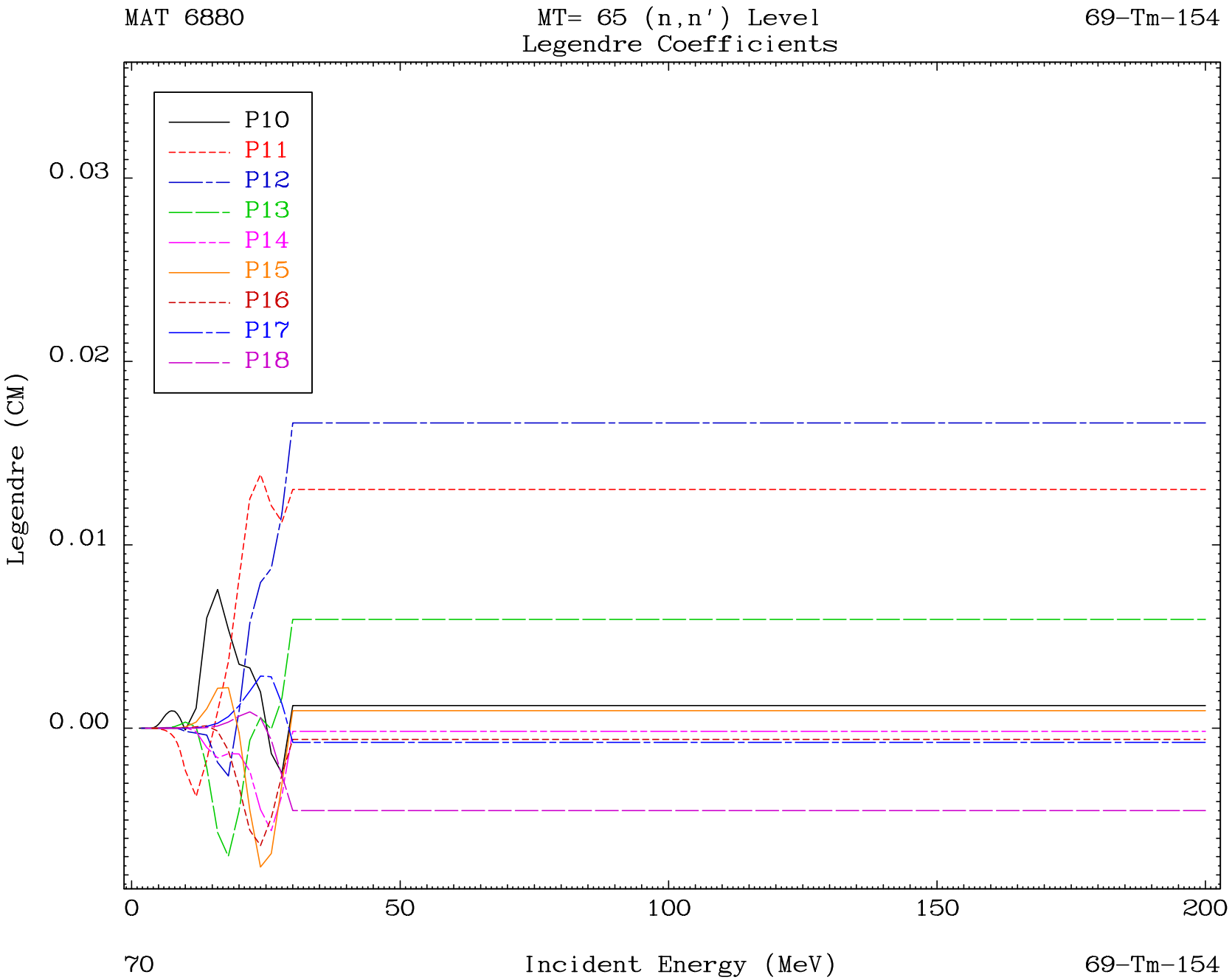

MAT 6880
MT= 63 (n,n') Level
Legendre Coefficients
69-Tm-154
X10 -5
6
4
2
0
-2
-4
-6
Legendre (CM)
50
100
150
200
65
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27

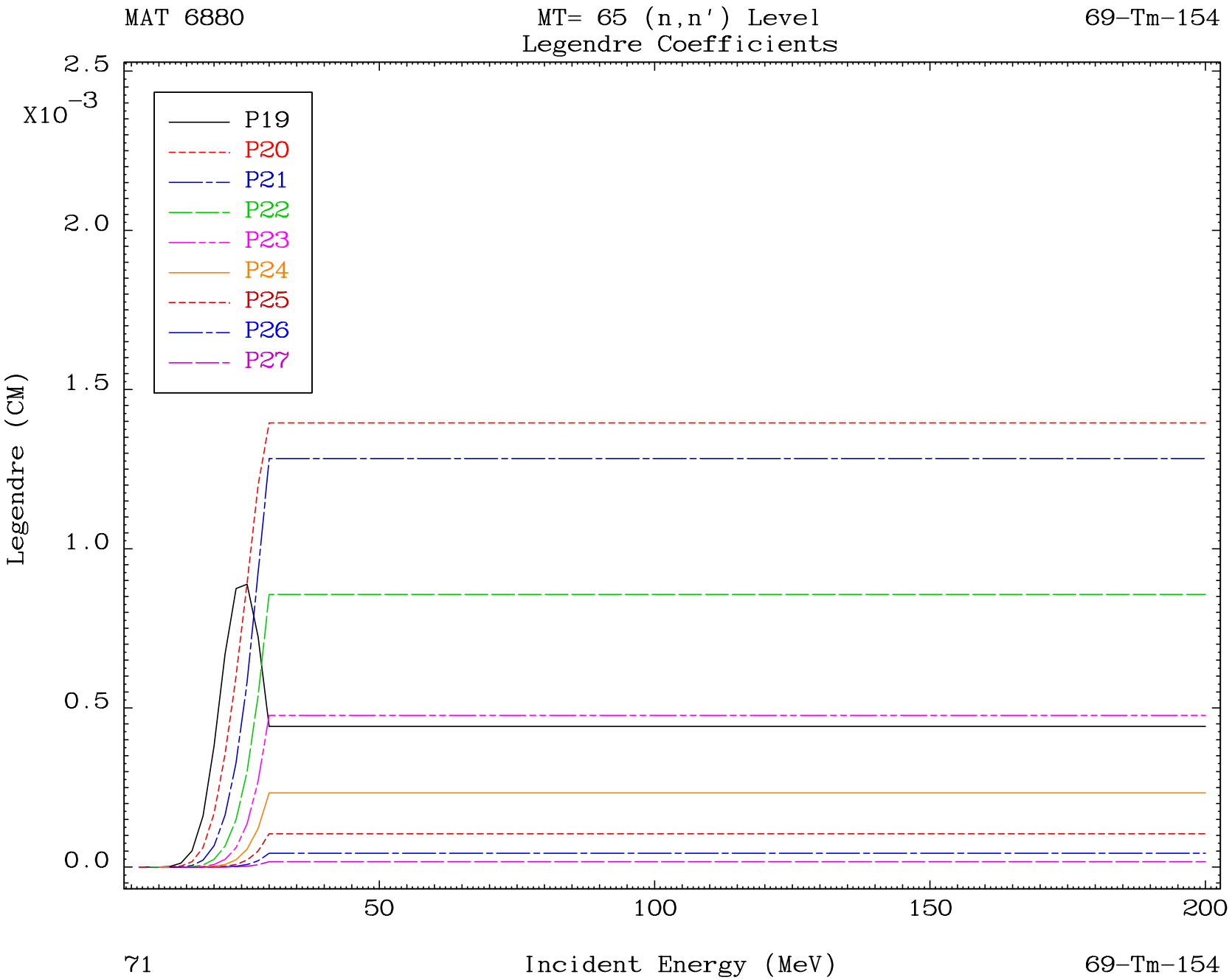

MAT 6880
MT= 63 (n,n') Level
Legendre Coefficients
69-Tm-154
X10-7
0
-1
-2
-3
Legendre (CM)
50
100
150
200
66
Incident Energy (MeV)
69-Tm-154
P28
P29
P30
P31
P32
P33
P34
P35
P36

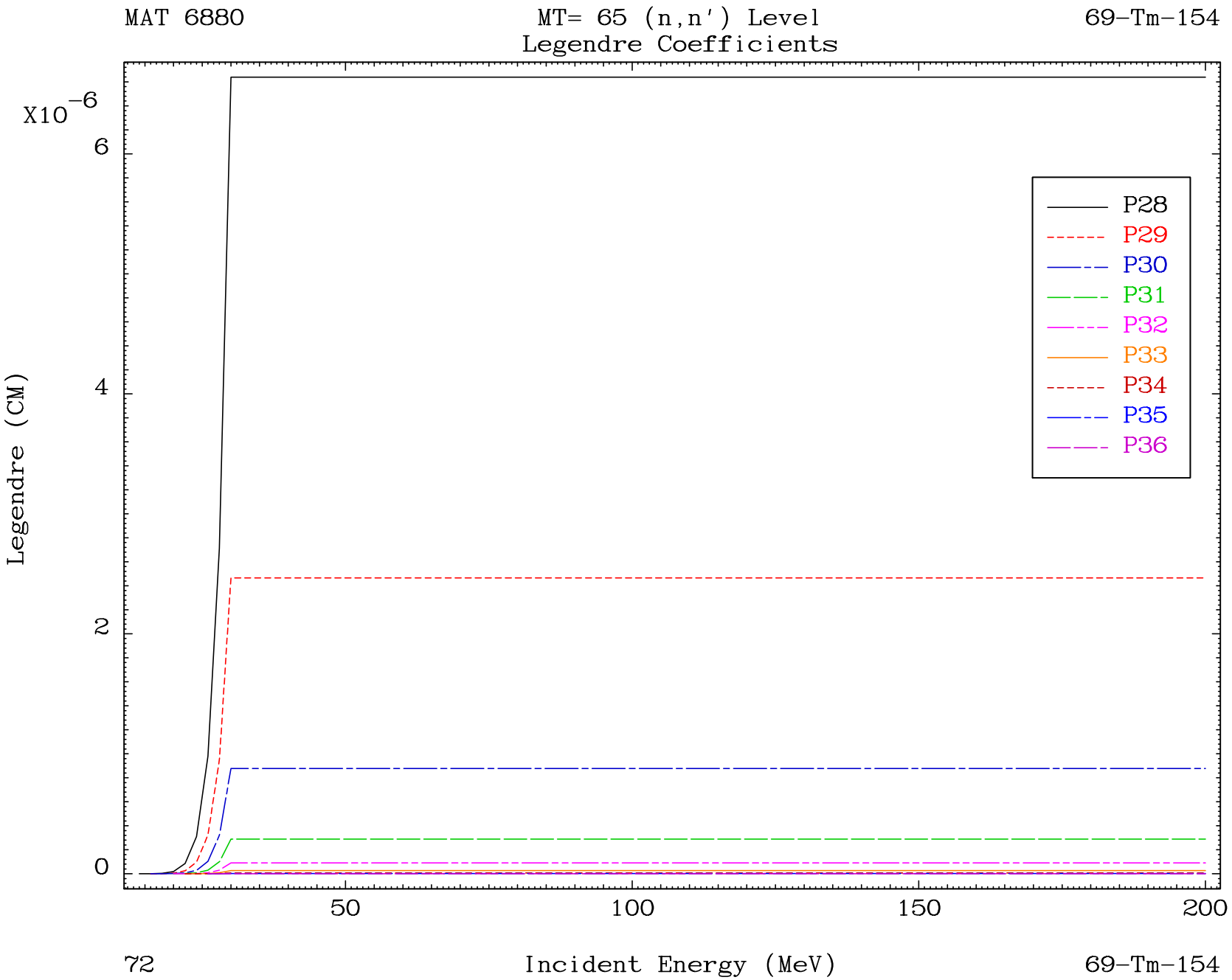

MAT 6880
MT= 64 (n,n') Level
Legendre Coefficients
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
67
Incident Energy (MeV)
69-Tm-154

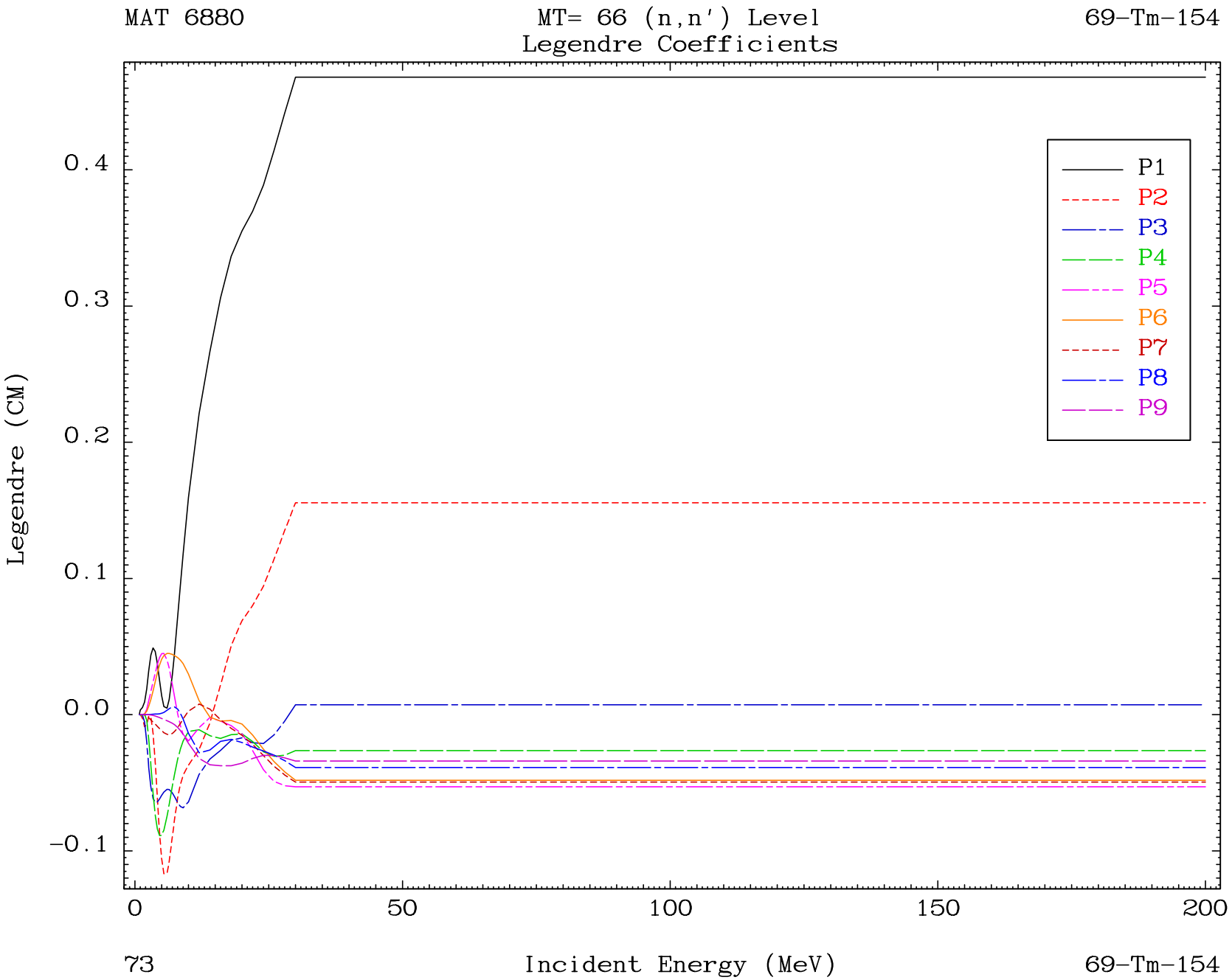

MAT 6880
MT= 64 (n,n') Level
Legendre Coefficients
69-Tm-154
X10−5
4
2
0
−2
−4
Legendre (CM)
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0
50
100
150
200
68
Incident Energy (MeV)
69-Tm-154

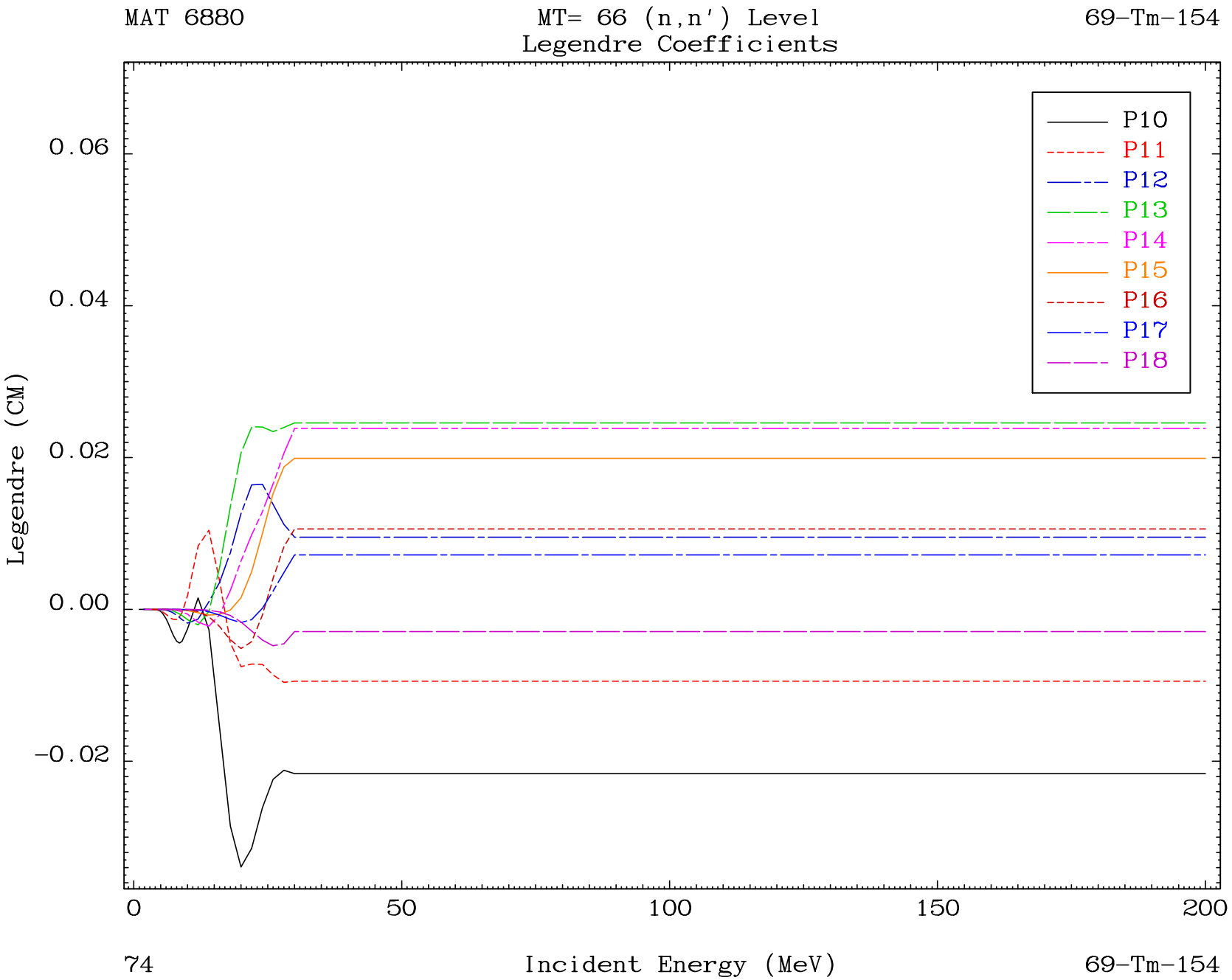

MAT 6880
MT= 65 (n,n') Level
Legendre Coefficients
69-Tm-154
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
-0.1
0
50
100
150
200
69
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

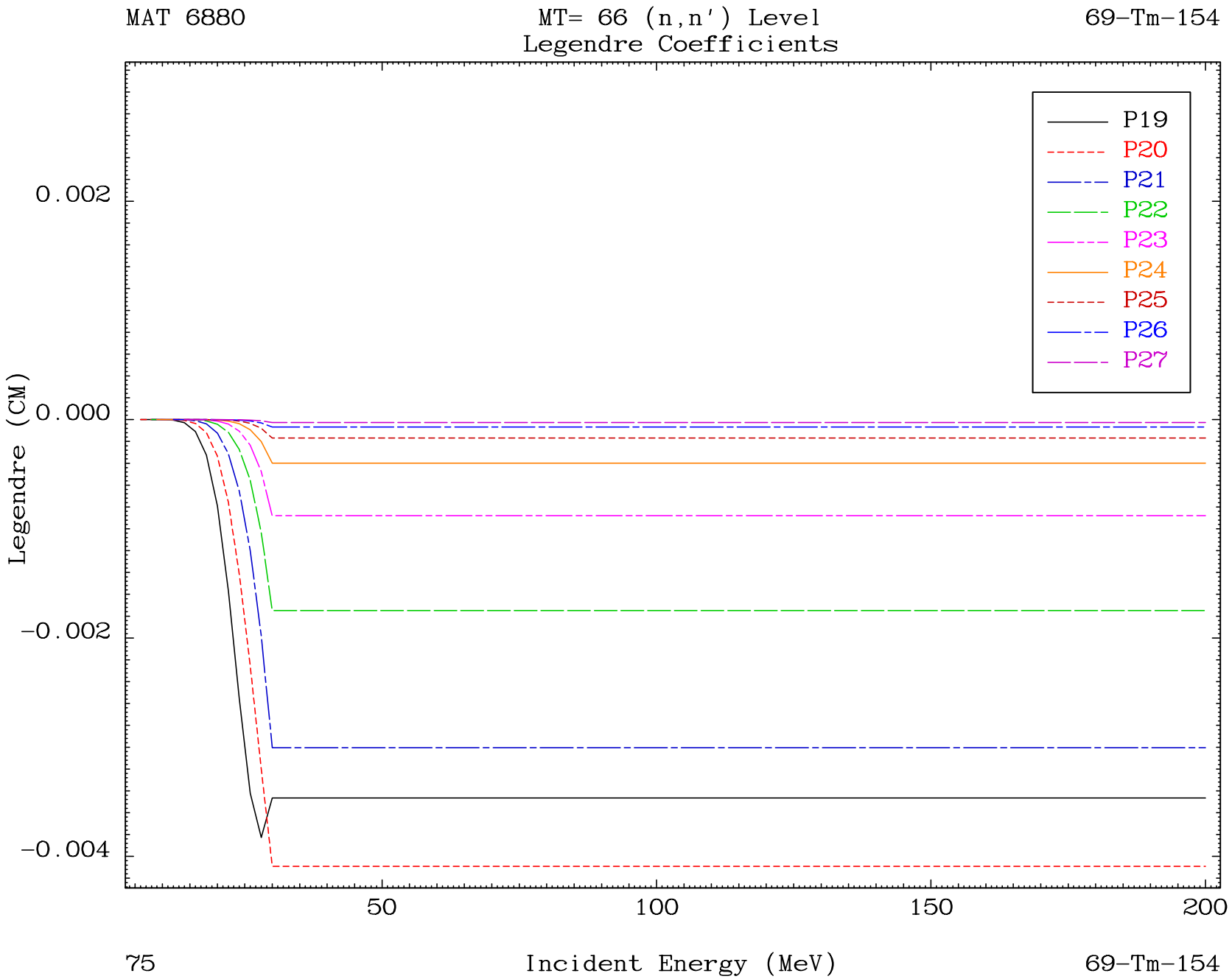

MAT 6880
MT= 65 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.03
0.02
0.01
0.00
Legendre (CM)
0
50
100
150
200
70
Incident Energy (MeV)
69-Tm-154

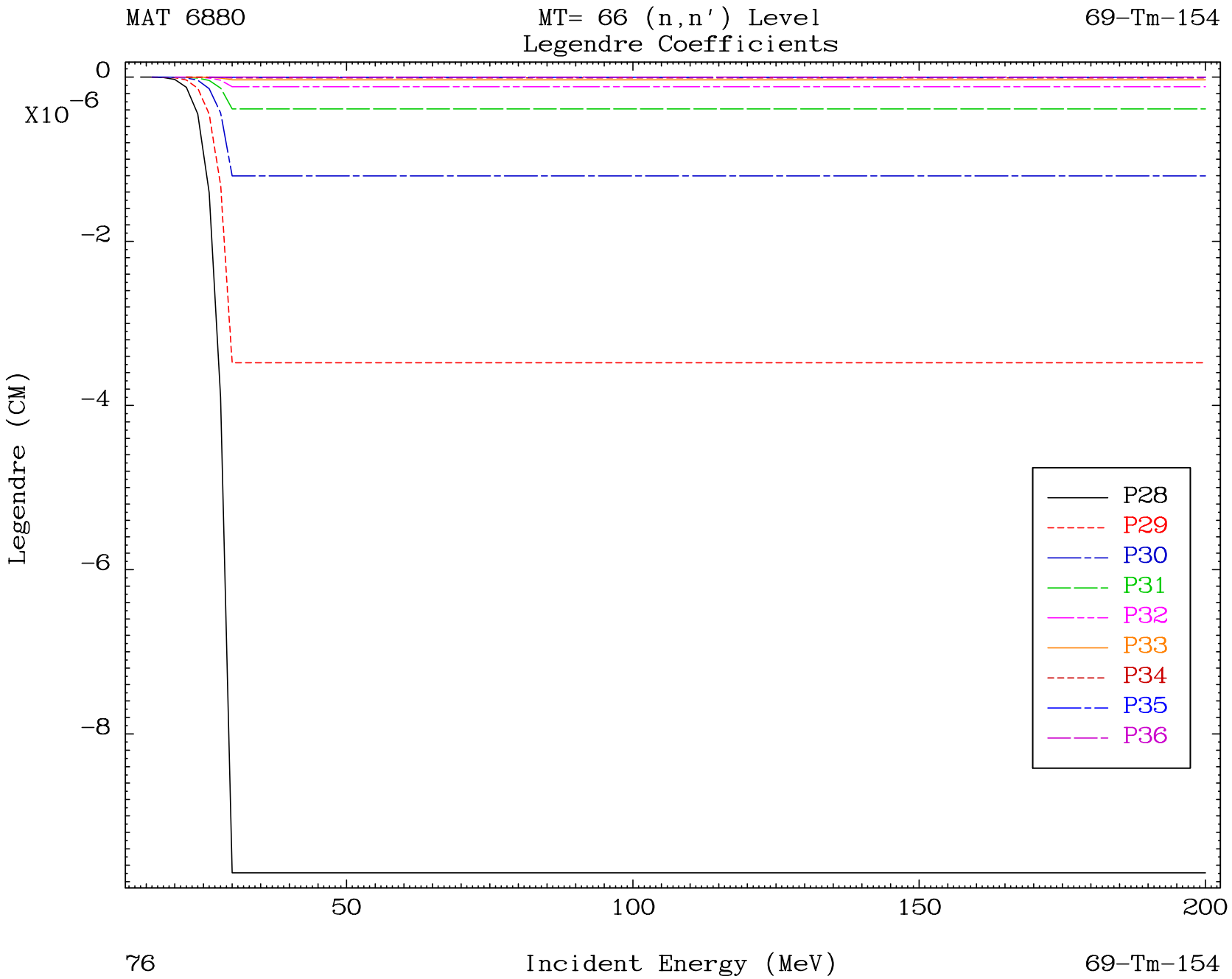

MAT 6880
MT= 65 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-3
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
71
Incident Energy (MeV)
69-Tm-154

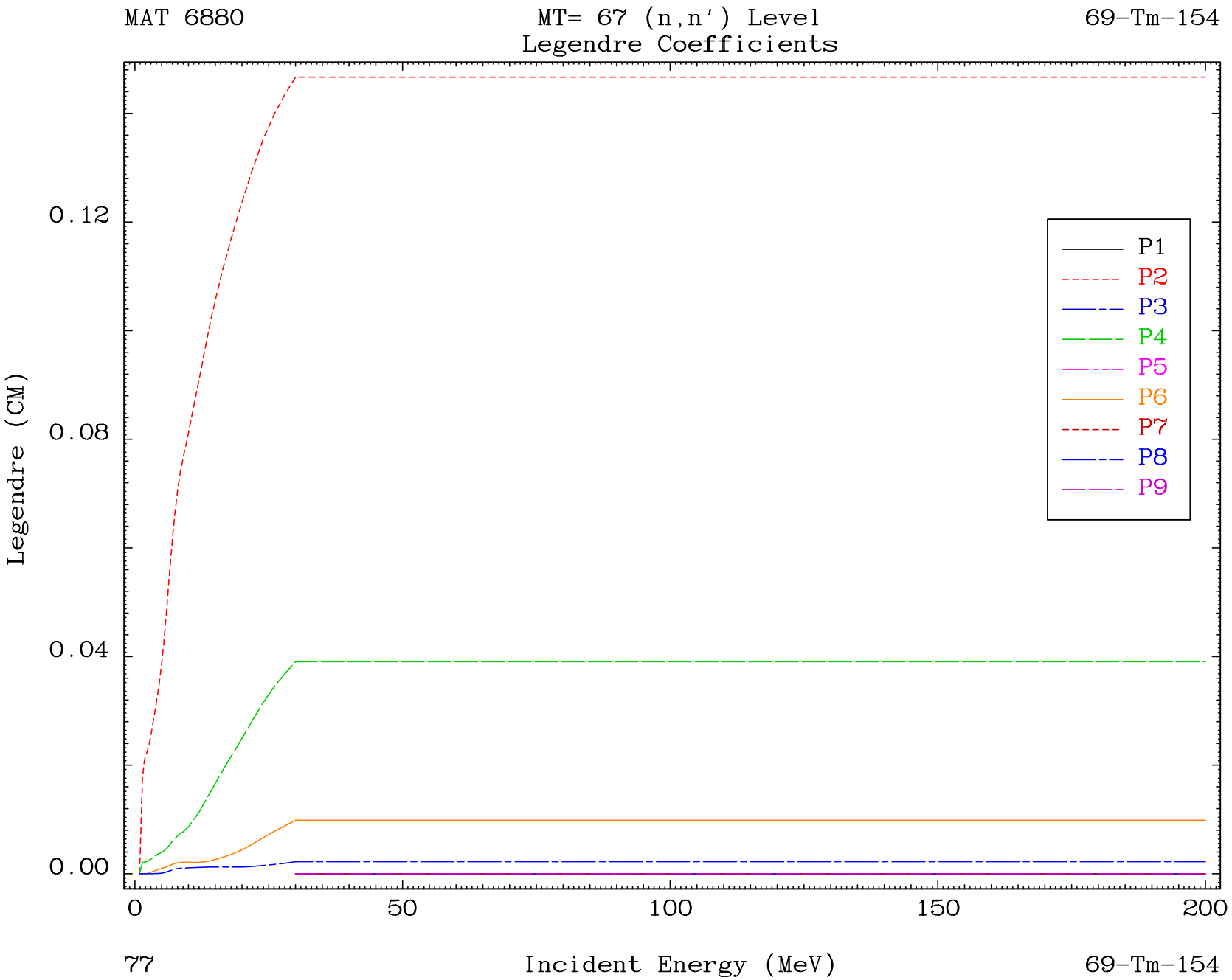

MAT 6880
MT= 65 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
6
4
2
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
72
Incident Energy (MeV)
69-Tm-154

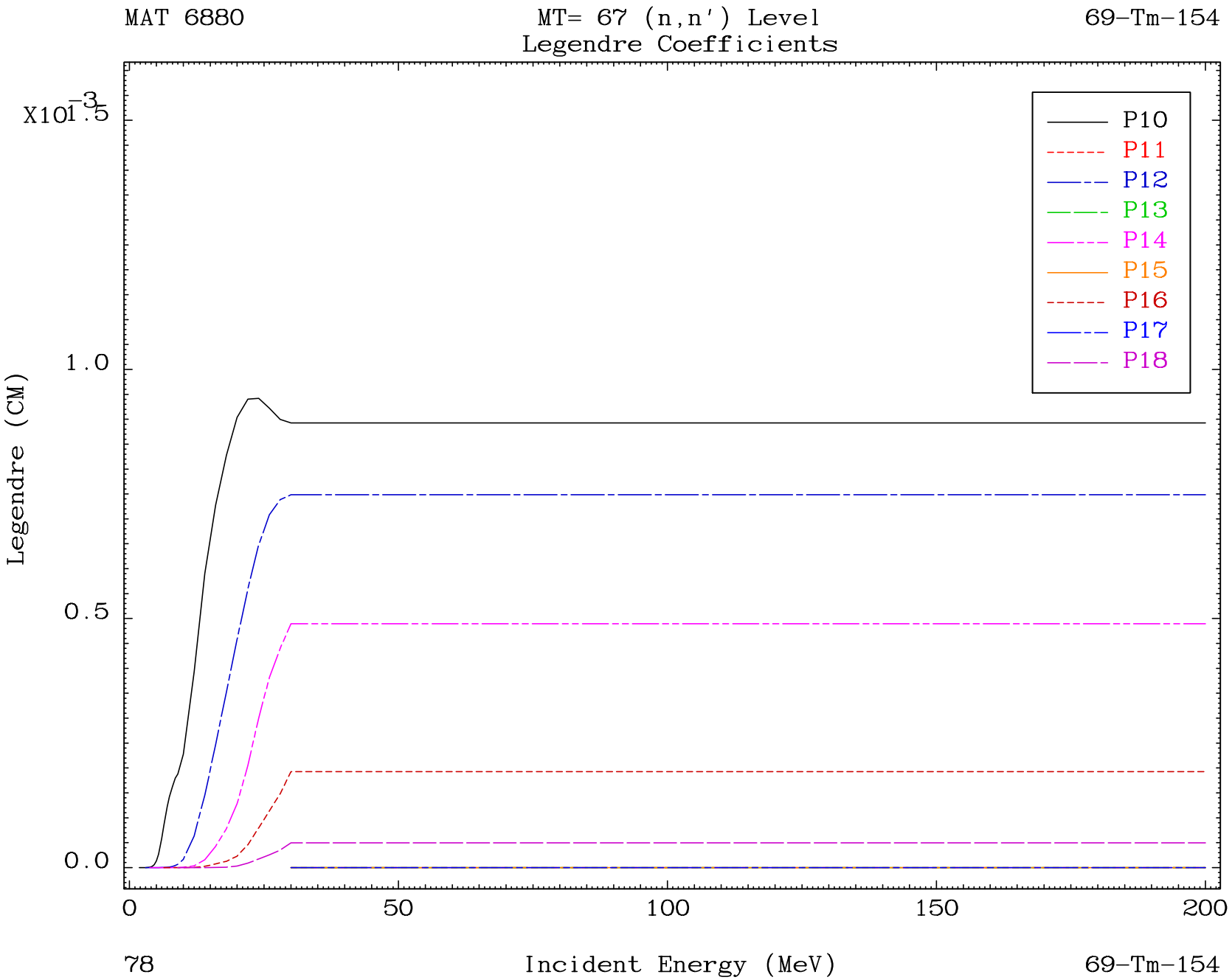

MAT 6880
MT= 66 (n,n') Level
Legendre Coefficients
69-Tm-154
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
-0.1
0
50
100
150
200
Incident Energy (MeV)
73
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

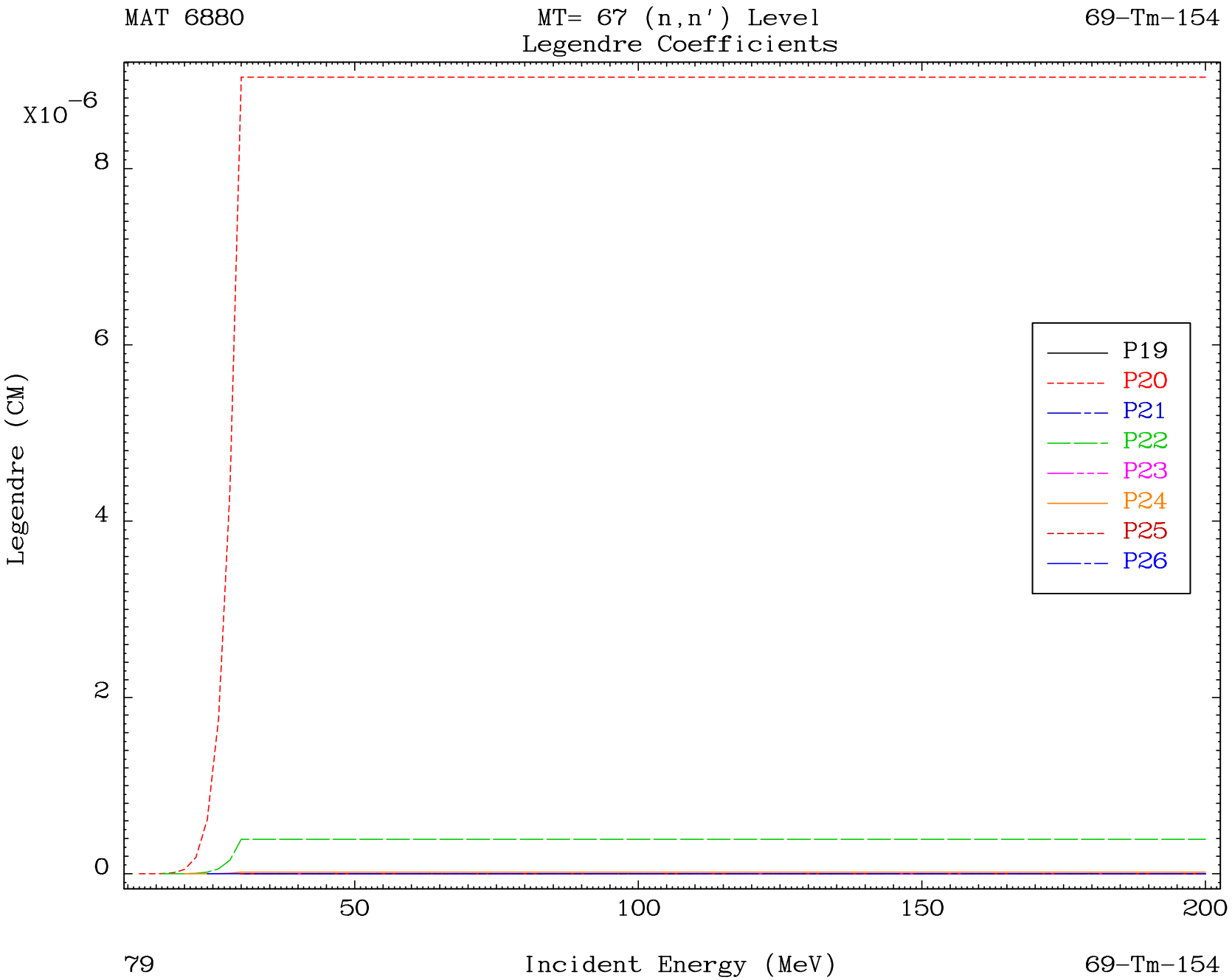

MAT 6880
MT= 66 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
74
Incident Energy (MeV)
69-Tm-154

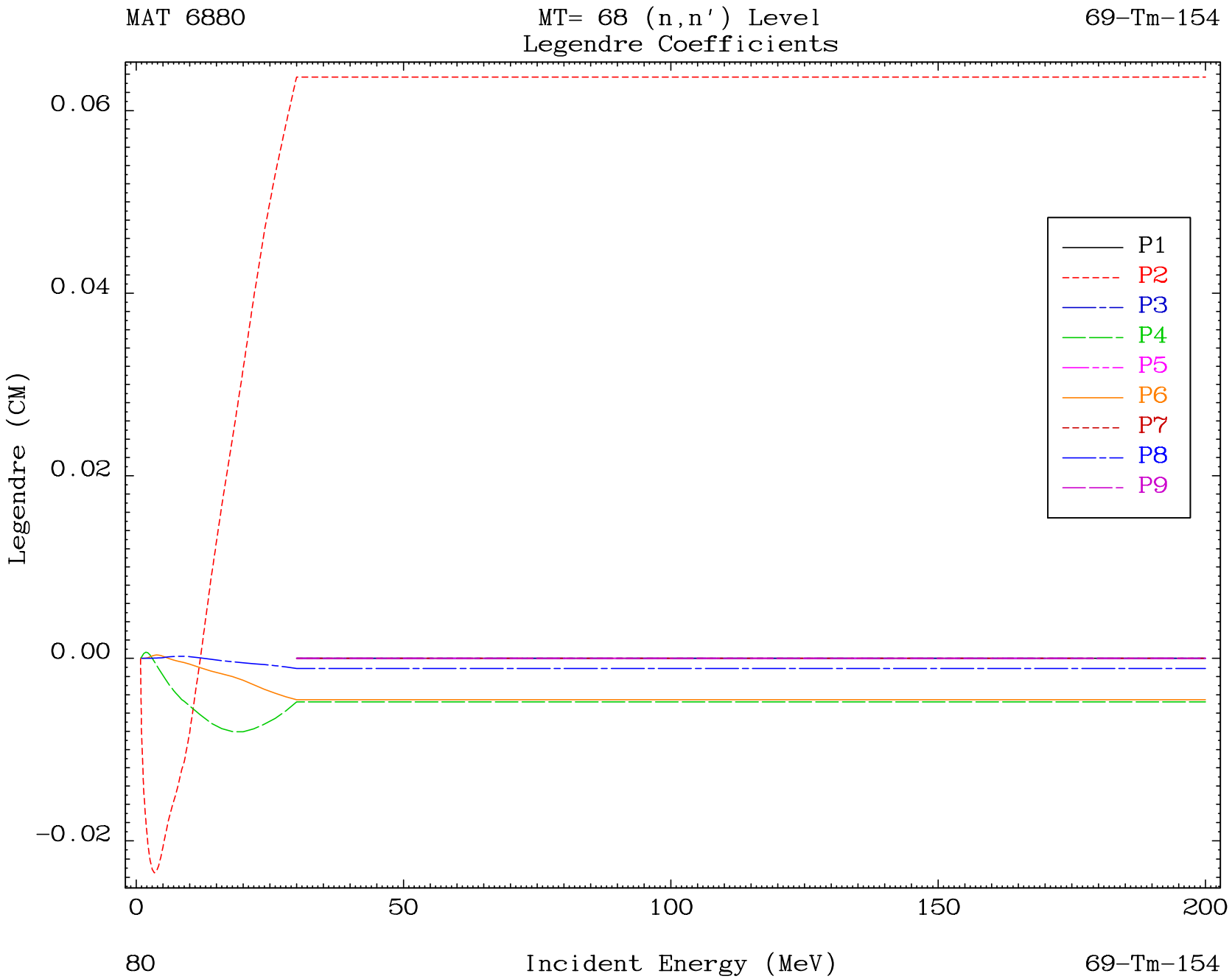

MAT 6880
MT= 66 (n,n') Level
Legendre Coefficients
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.002
0.000
-0.002
-0.004
Legendre (CM)
50
100
150
200
75
Incident Energy (MeV)
69-Tm-154

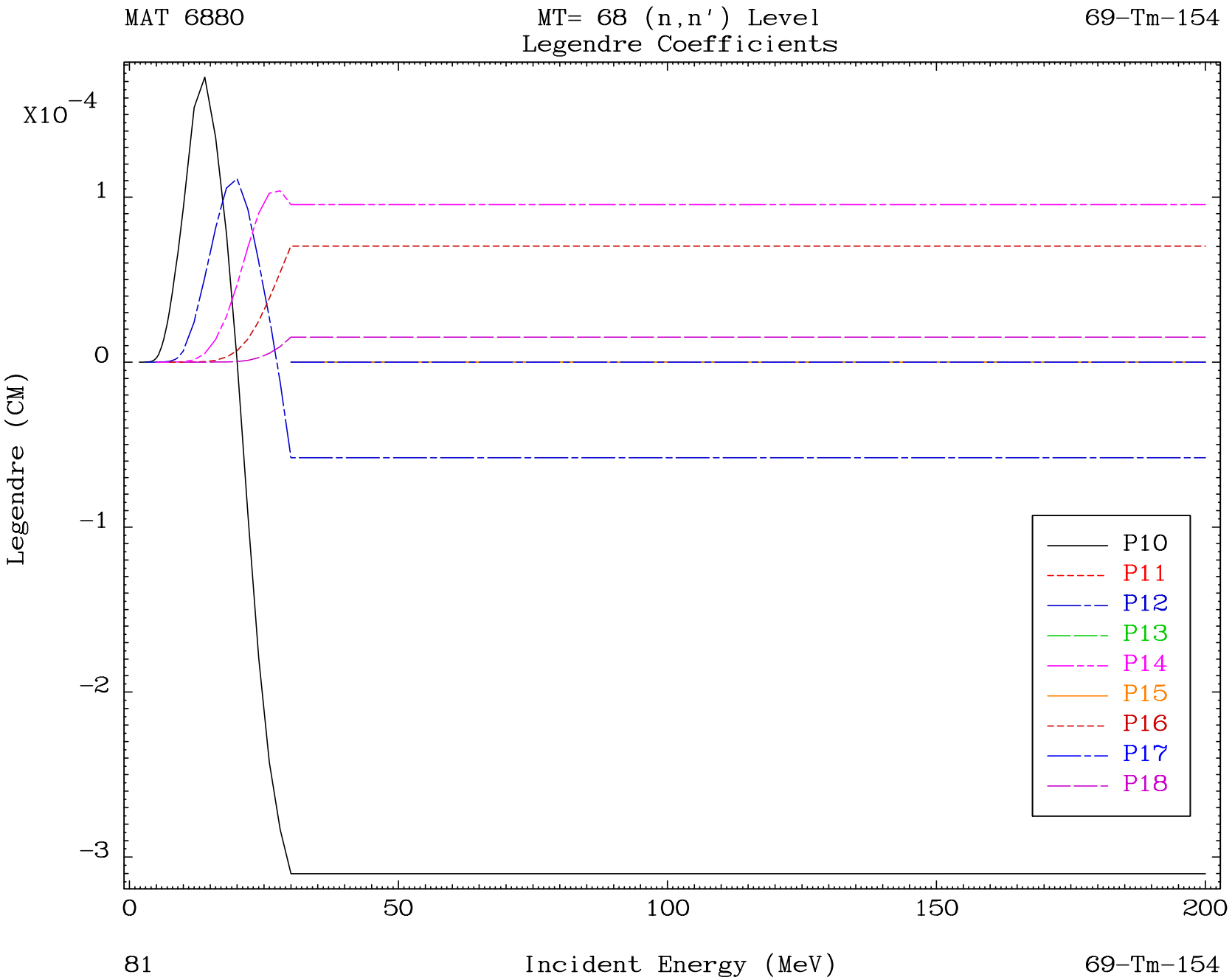

MAT 6880
MT= 66 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-2
-4
-6
-8
Legendre (CM)
50
100
150
200
76
Incident Energy (MeV)
69-Tm-154
P28
P29
P30
P31
P32
P33
P34
P35
P36

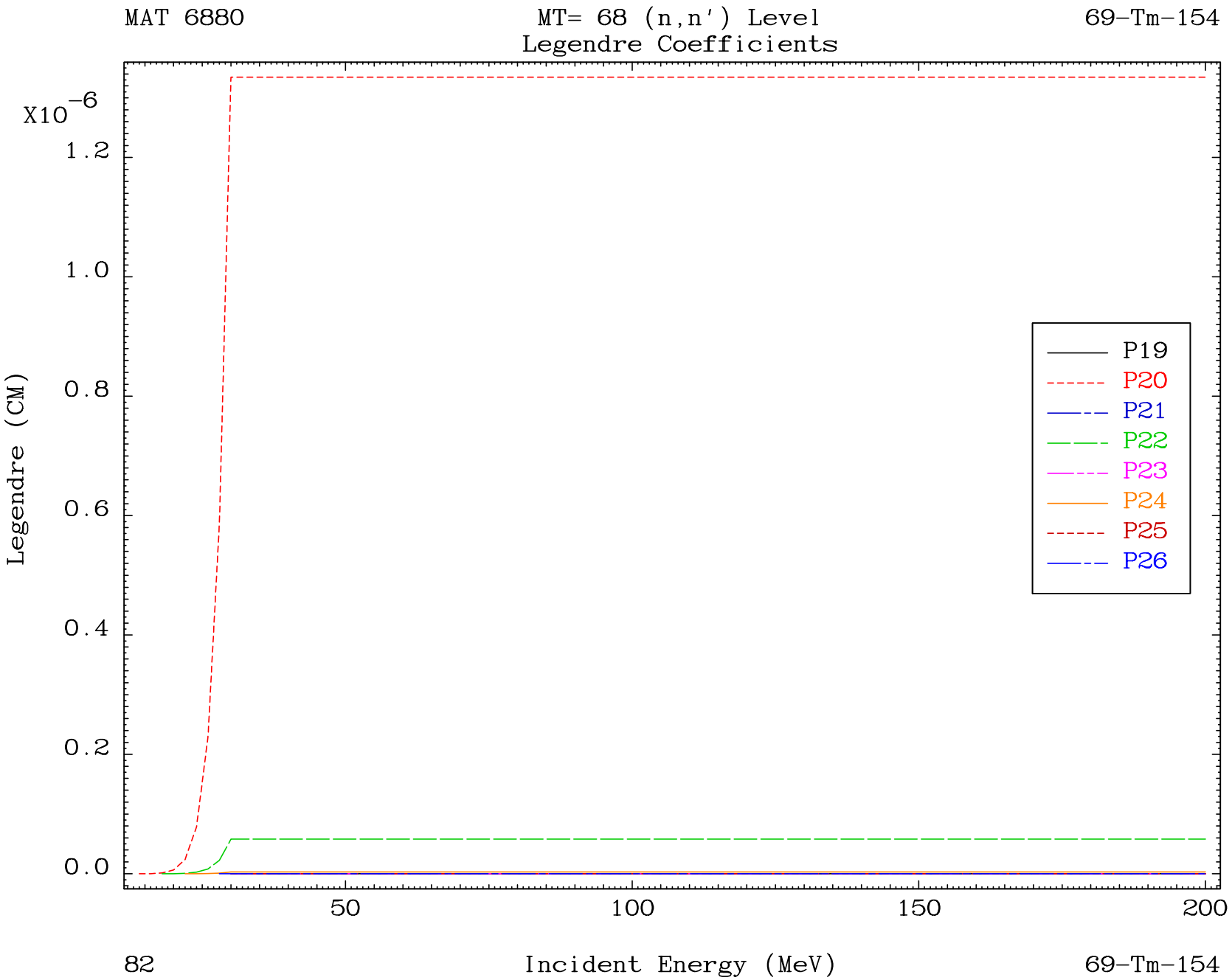

MAT 6880
MT= 67 (n,n') Level
Legendre Coefficients
69-Tm-154
0.12
0.08
0.04
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
77
Incident Energy (MeV)
69-Tm-154

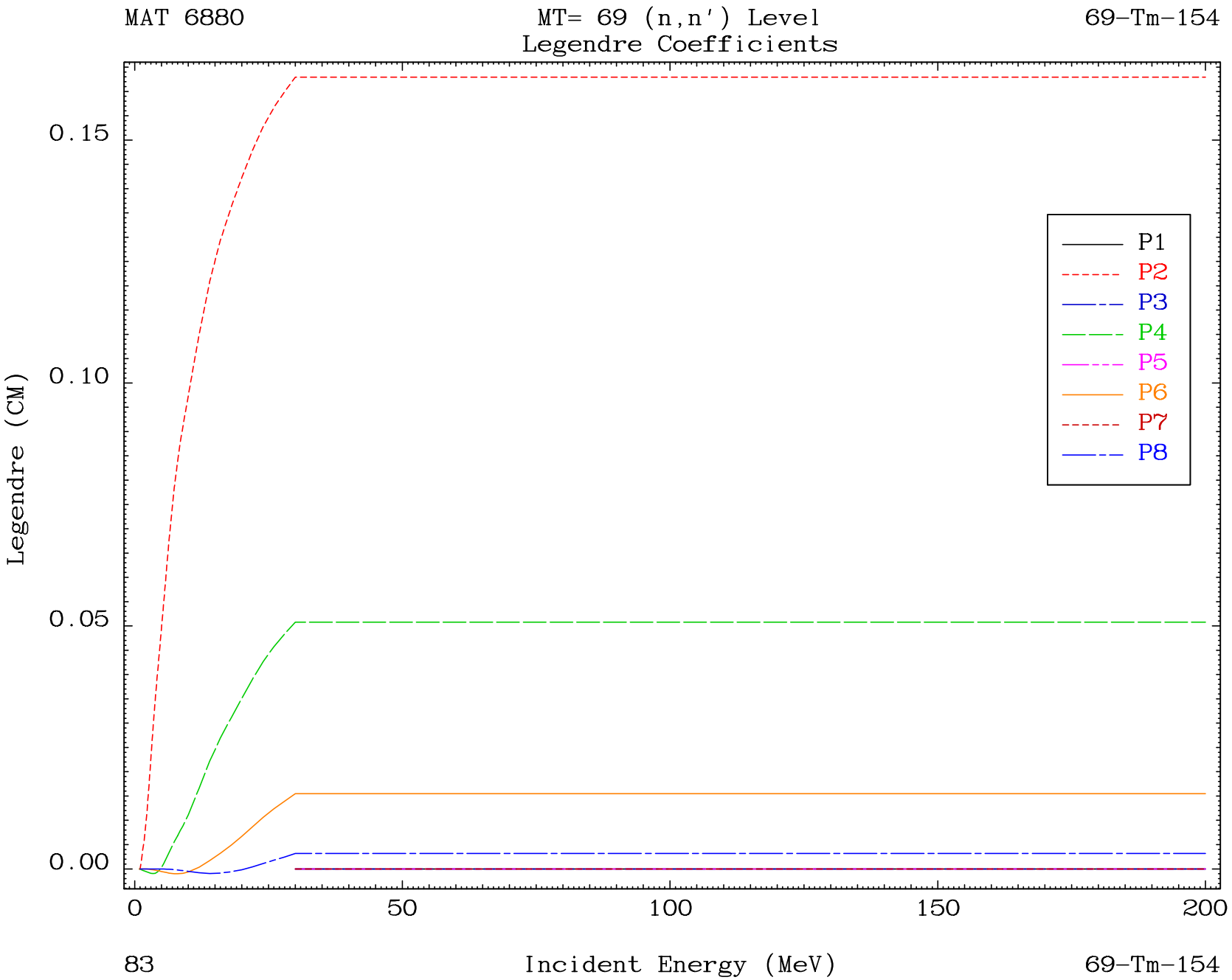

MAT 6880
MT= 67 (n,n') Level
Legendre Coefficients
69-Tm-154
X10-3
1.5
1.0
0.5
0.0
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
78
Incident Energy (MeV)
69-Tm-154

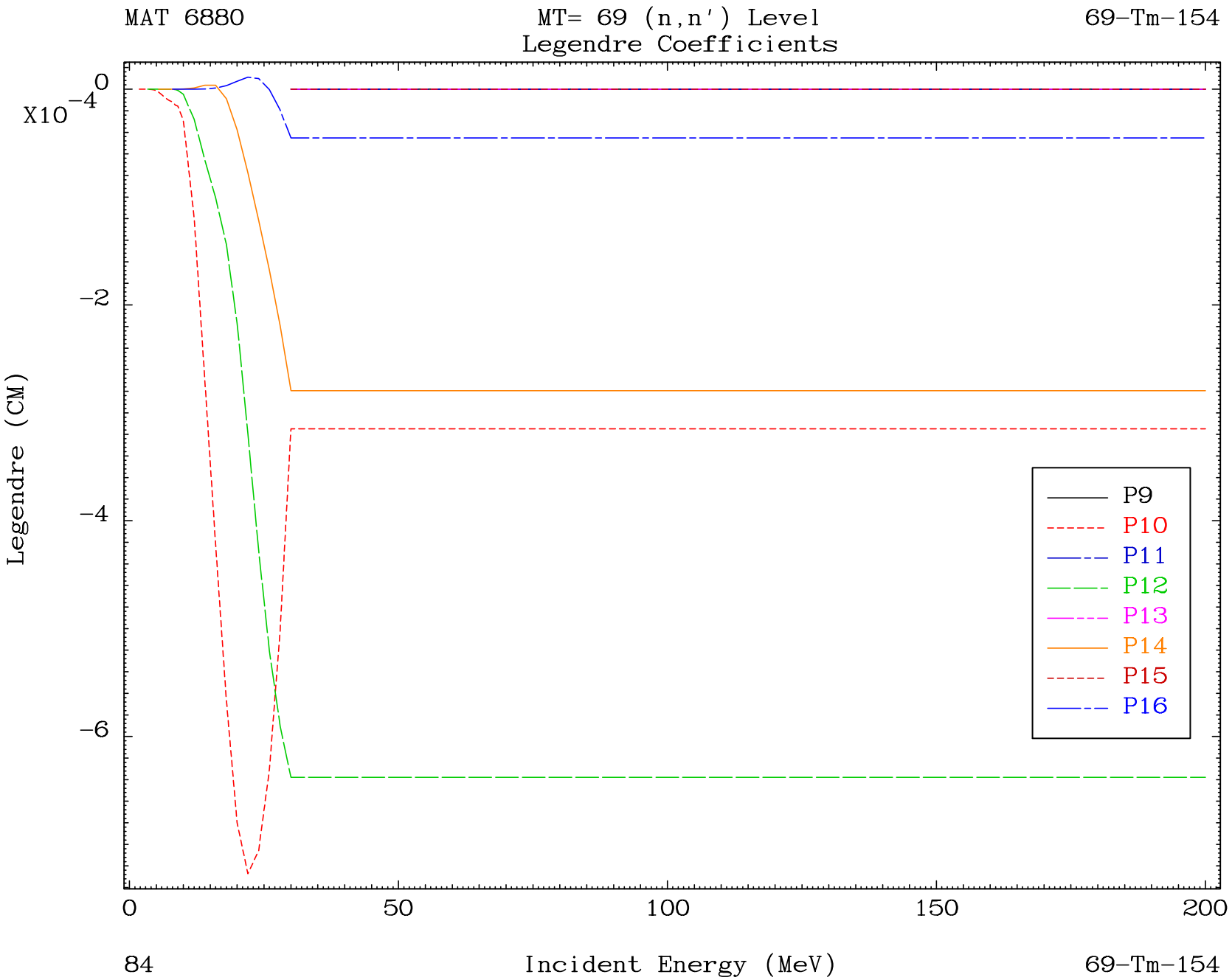

MAT 6880
MT= 67 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
8
6
4
2
0
Legendre (CM)
50
100
150
200
79
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

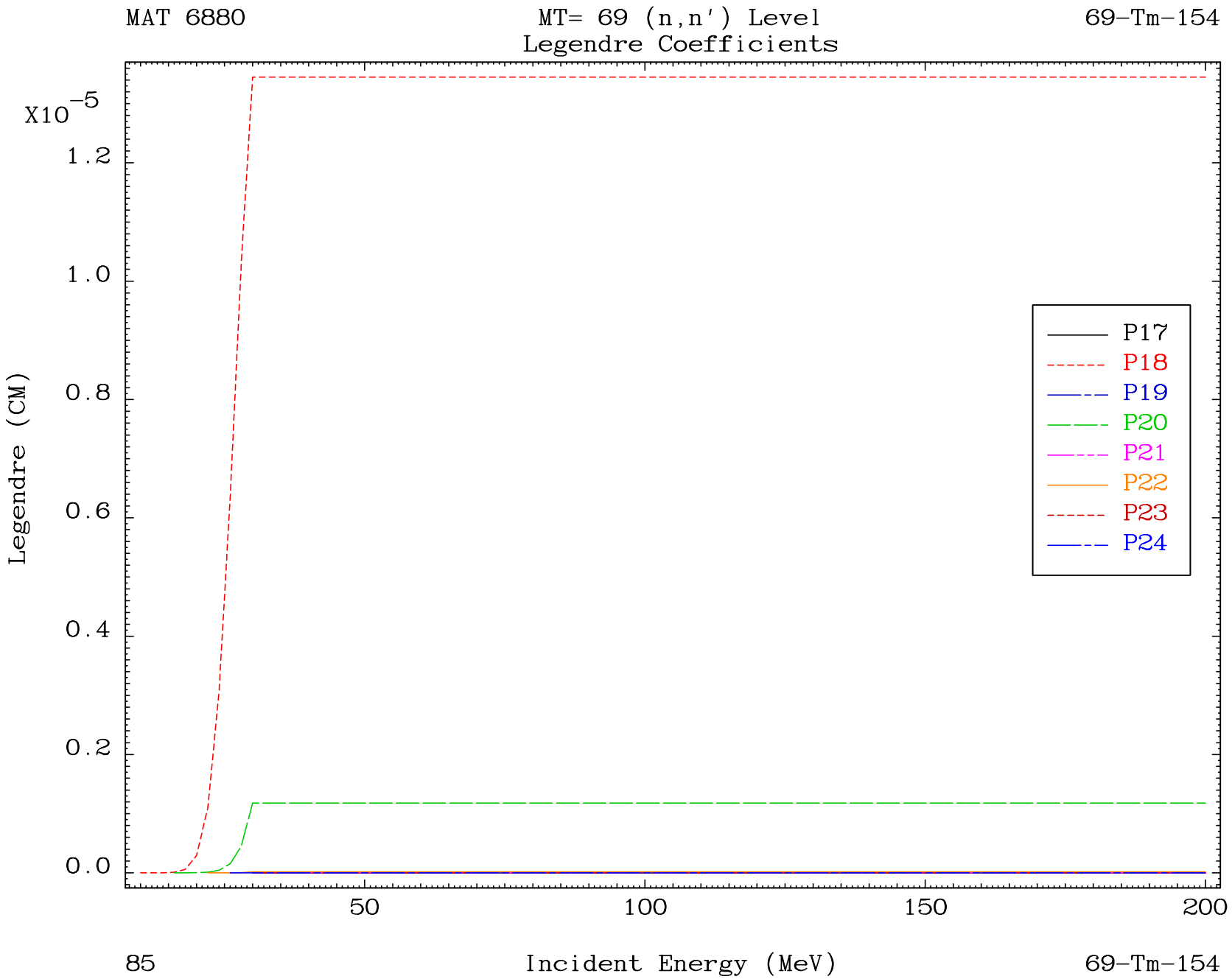

MAT 6880
MT= 68 (n,n') Level
Legendre Coefficients
69-Tm-154
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
80
Incident Energy (MeV)
69-Tm-154

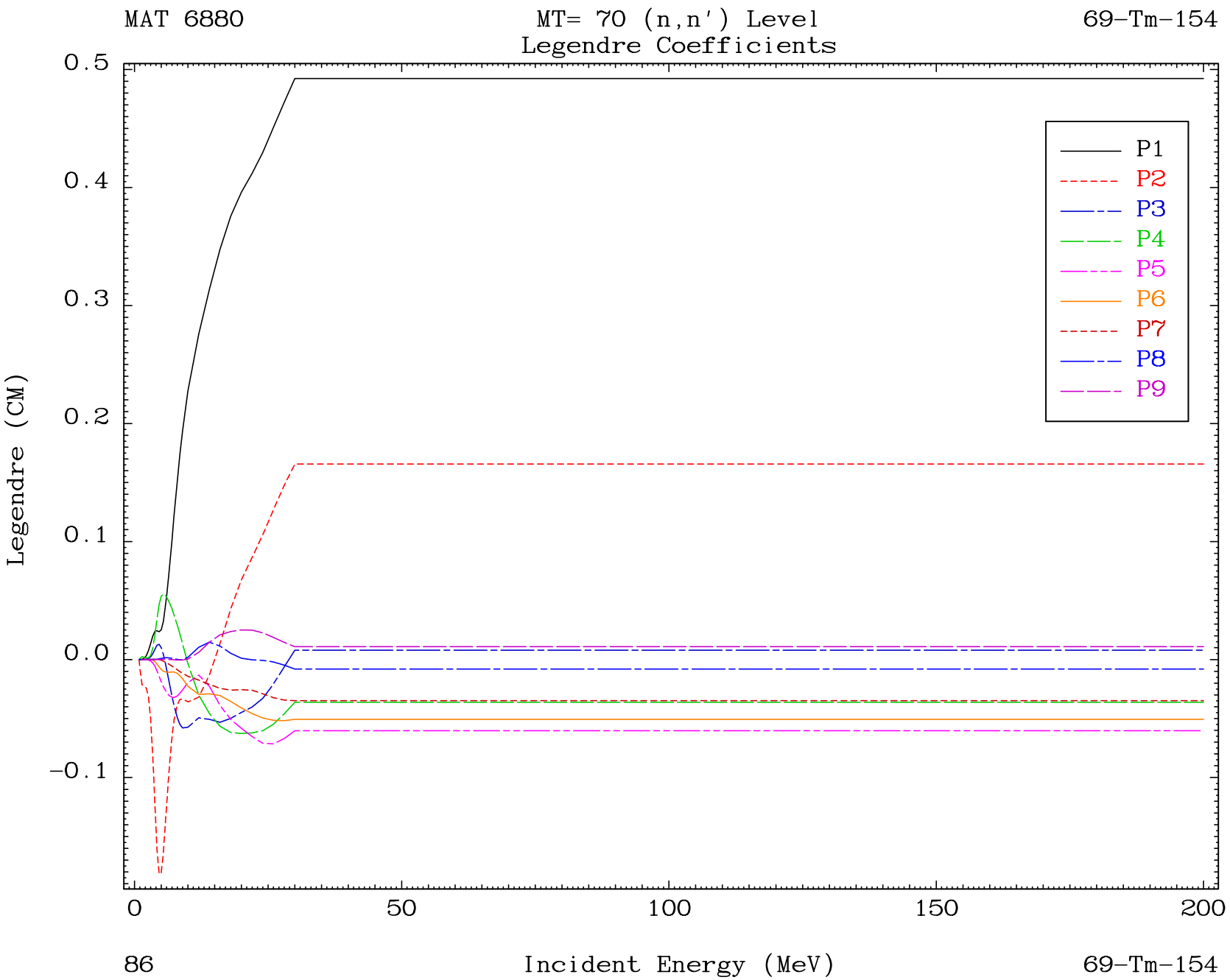

MAT 6880
MT= 68 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
1
0
-1
-2
-3
Legendre (CM)
0
50
100
150
200
81
Incident Energy (MeV)
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18

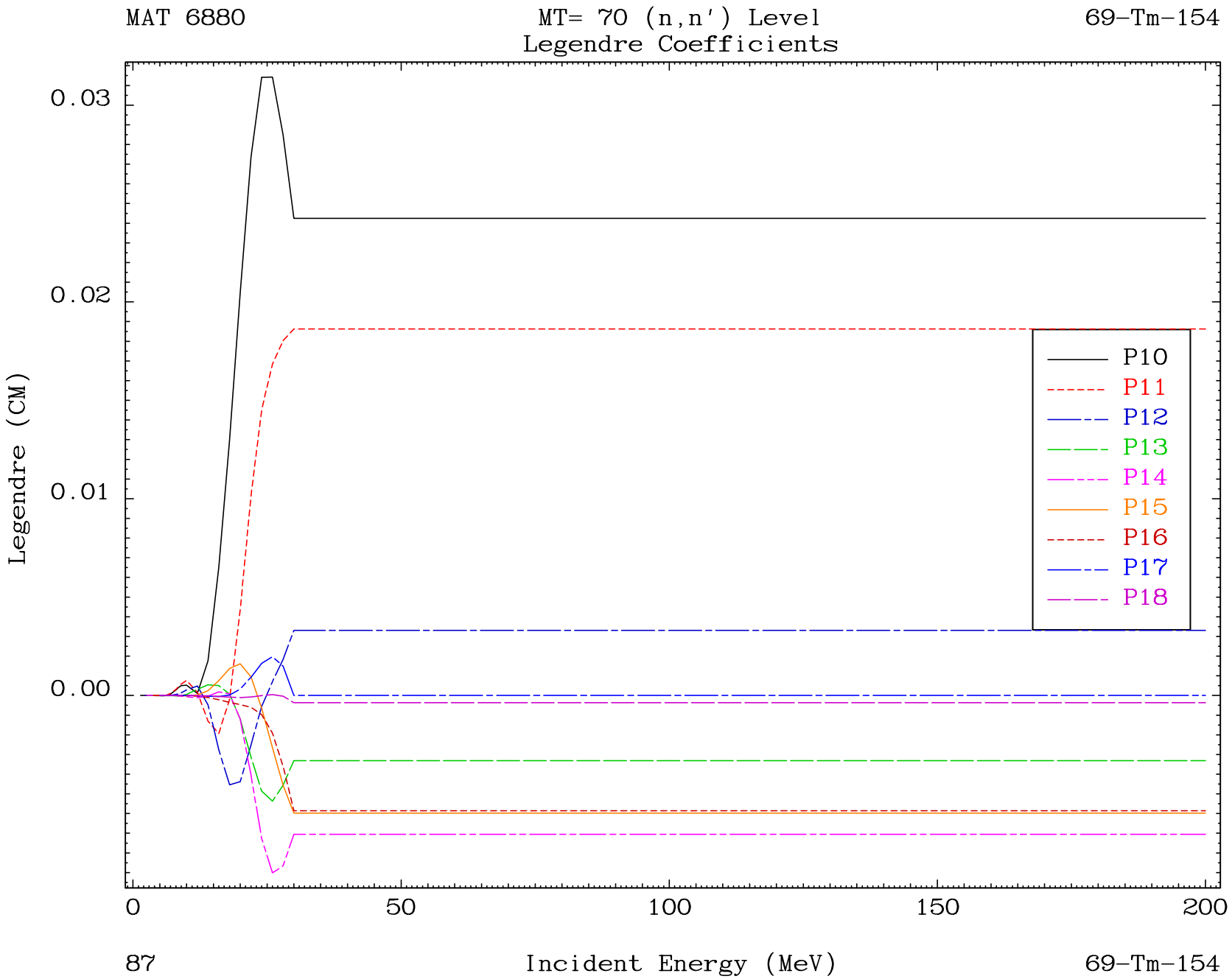

MAT 6880
MT= 68 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
50
100
150
200
P19
P20
P21
P22
P23
P24
P25
P26
82
Incident Energy (MeV)
69-Tm-154

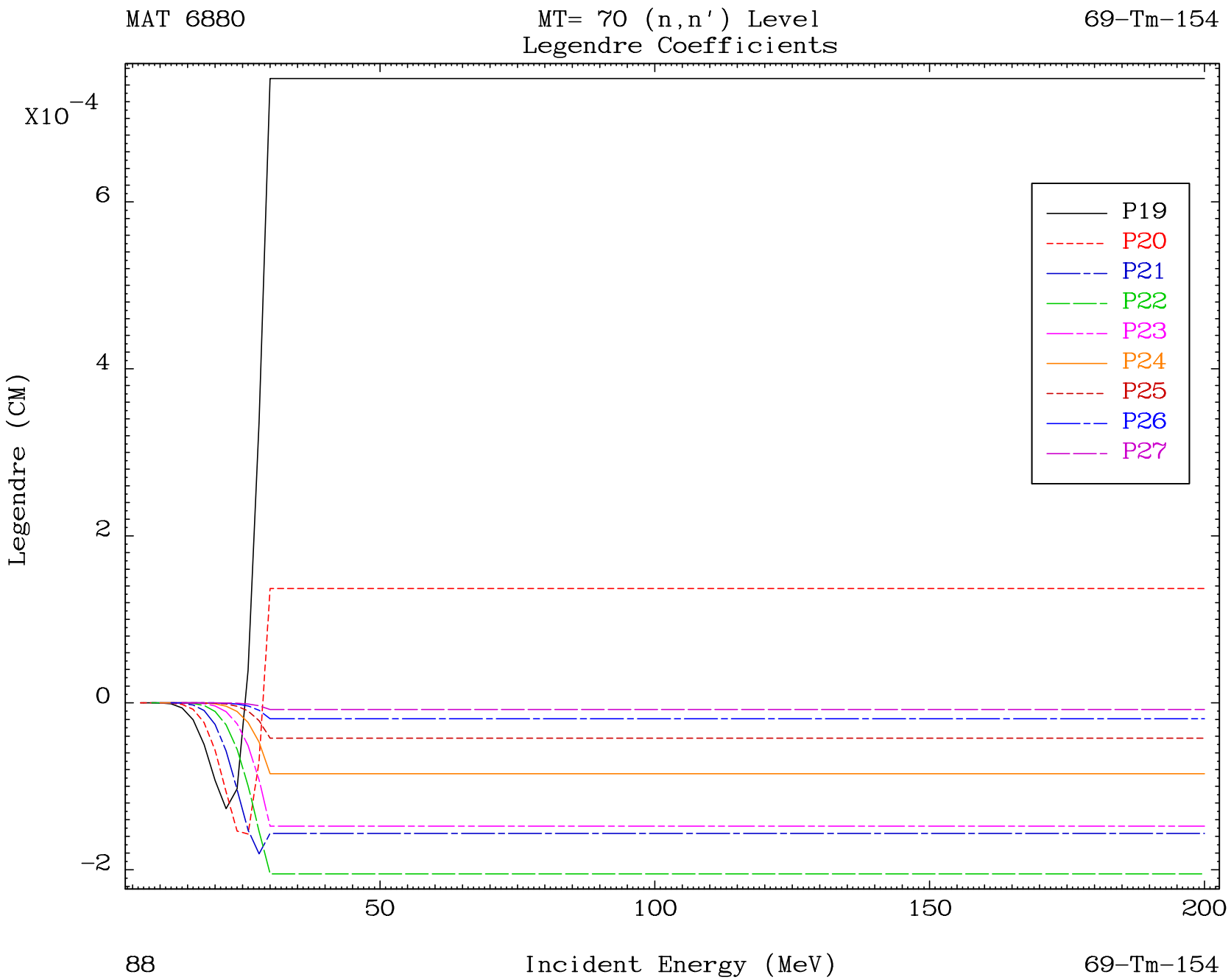

MAT 6880
MT= 69 (n,n') Level
Legendre Coefficients
69-Tm-154
0.15
0.10
0.05
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
83
Incident Energy (MeV)
69-Tm-154

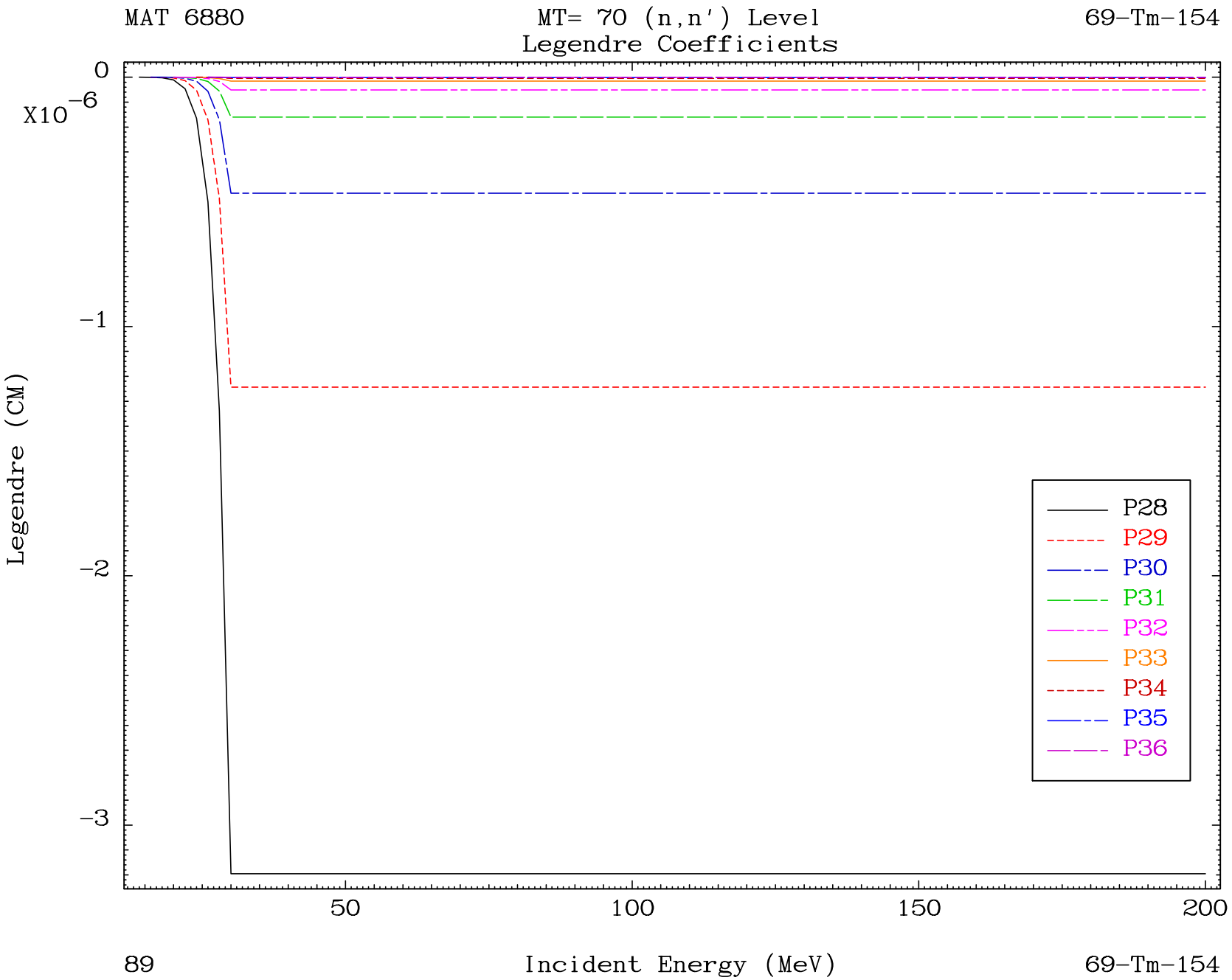

MAT 6880
MT= 69 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
0
-2
-4
-6
Legendre (CM)
0
50
100
150
200
84
Incident Energy (MeV)
69-Tm-154
P9
P10
P11
P12
P13
P14
P15
P16

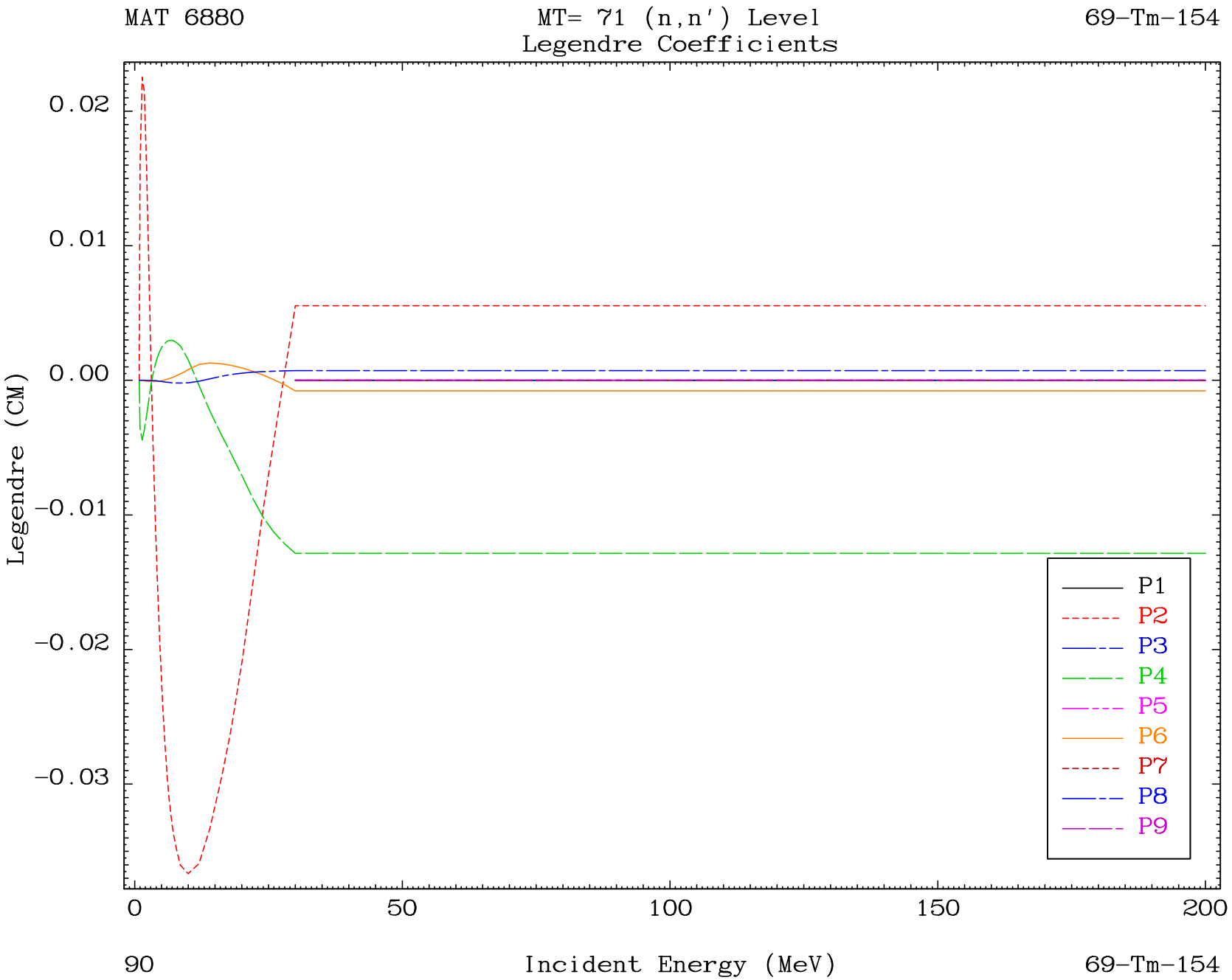

MAT 6880
MT= 69 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-5
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P17
P18
P19
P20
P21
P22
P23
P24
50
100
150
200
85
Incident Energy (MeV)
69-Tm-154

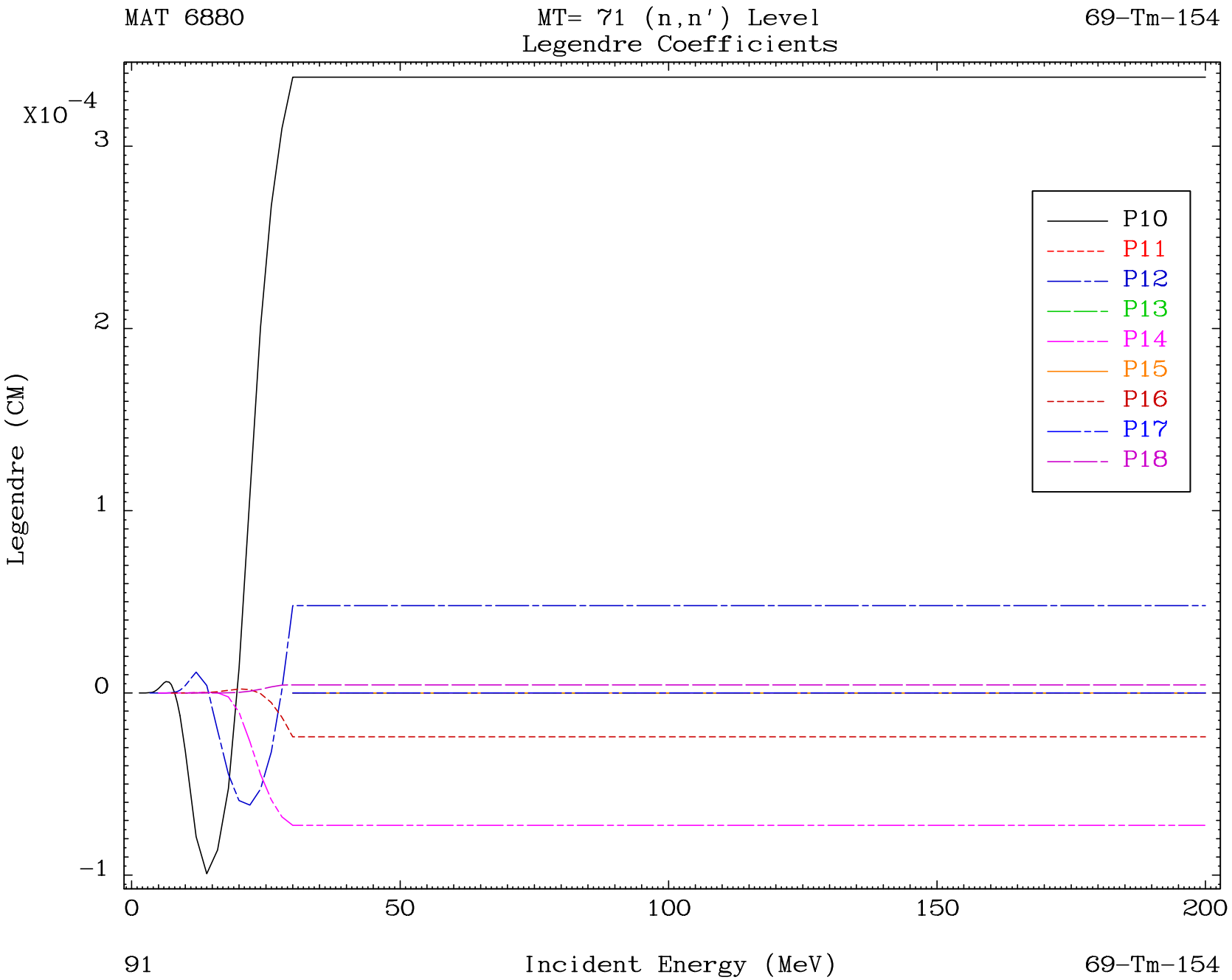

MAT 6880
MT= 70 (n,n') Level
Legendre Coefficients
69-Tm-154
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
86
Incident Energy (MeV)
69-Tm-154

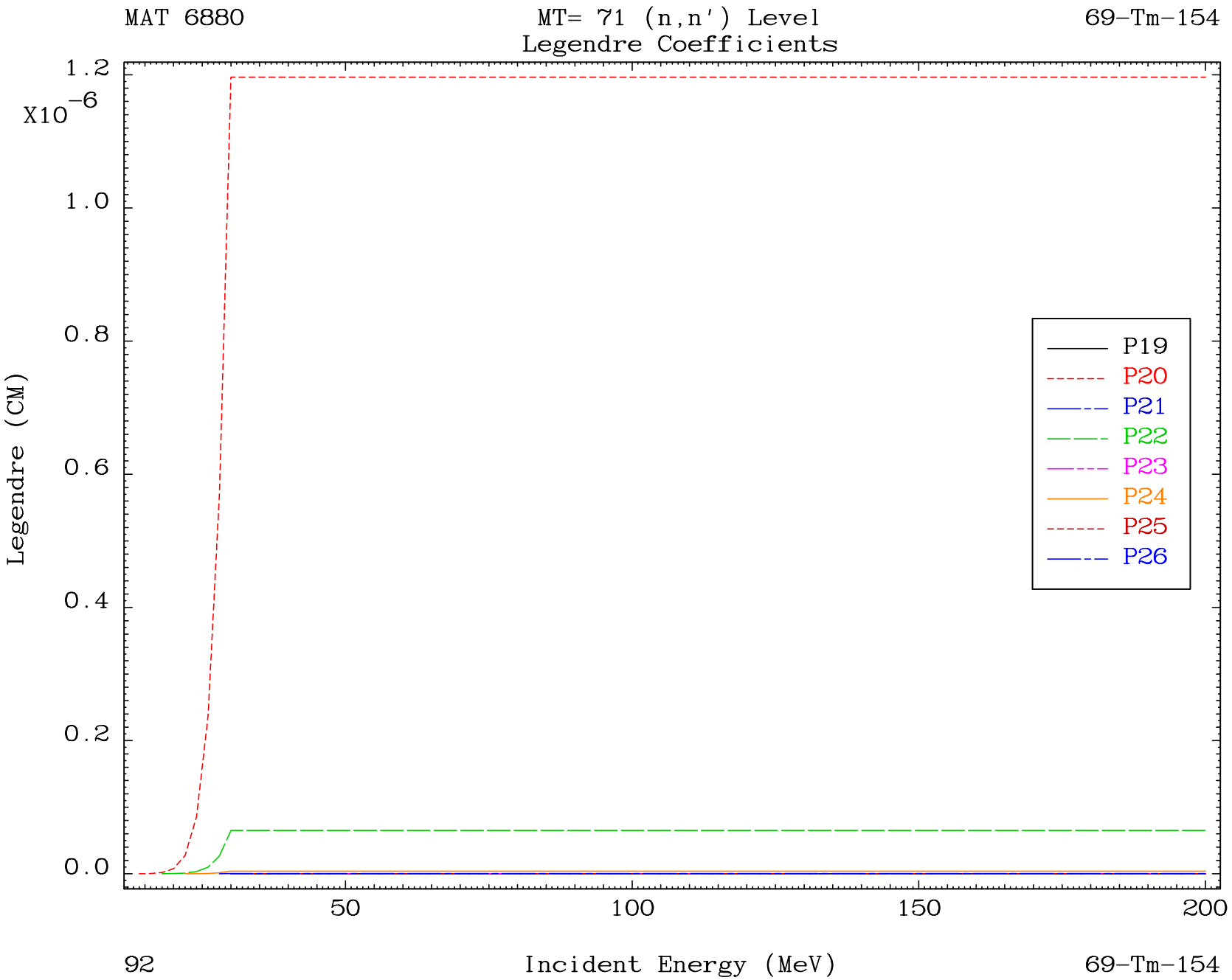

MAT 6880
MT= 70 (n,n') Level
Legendre Coefficients
69-Tm-154
0.03
0.02
0.01
0.00
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
87
Incident Energy (MeV)
69-Tm-154

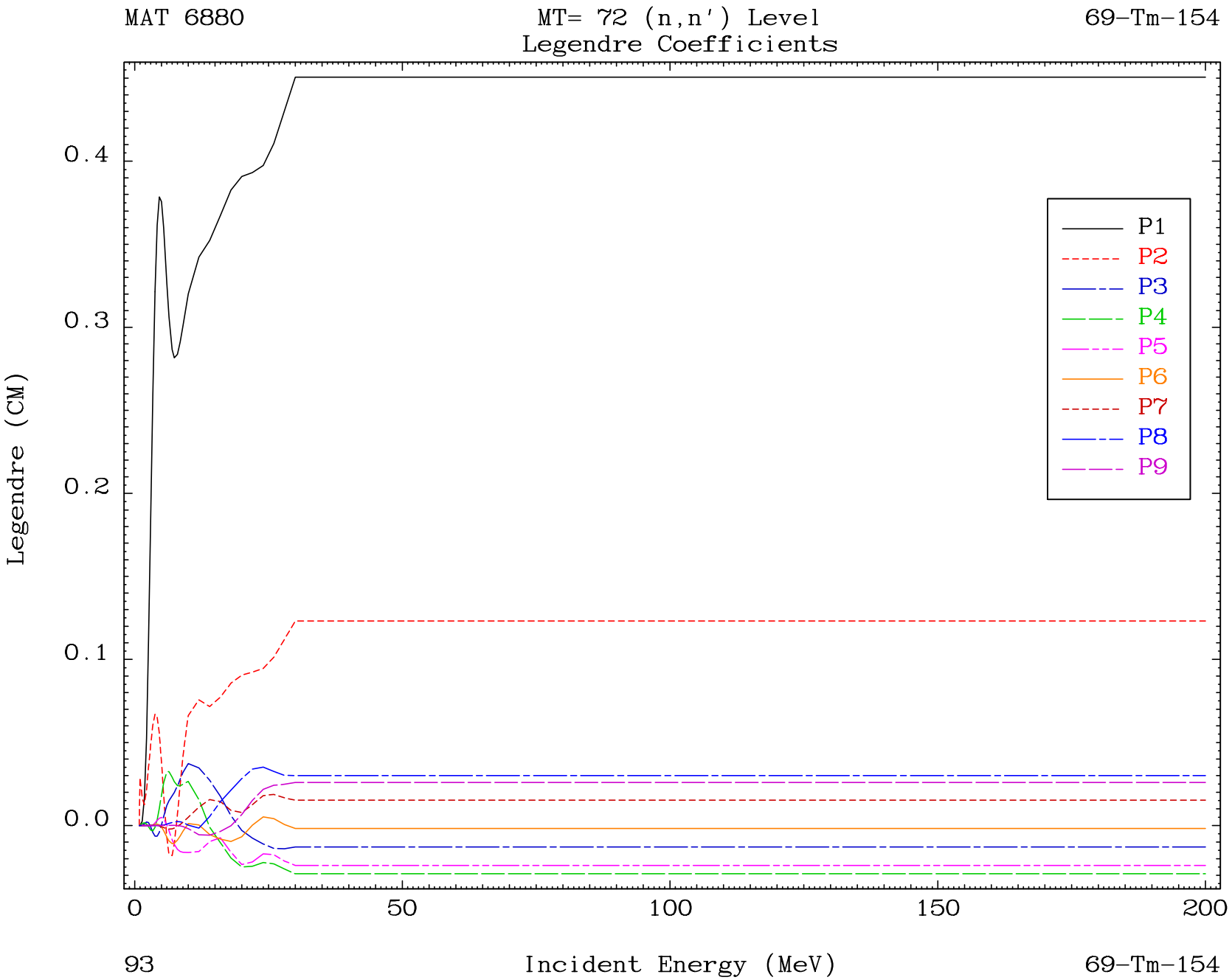

MAT 6880
MT= 70 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
6
4
2
0
-2
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
88
Incident Energy (MeV)
69-Tm-154

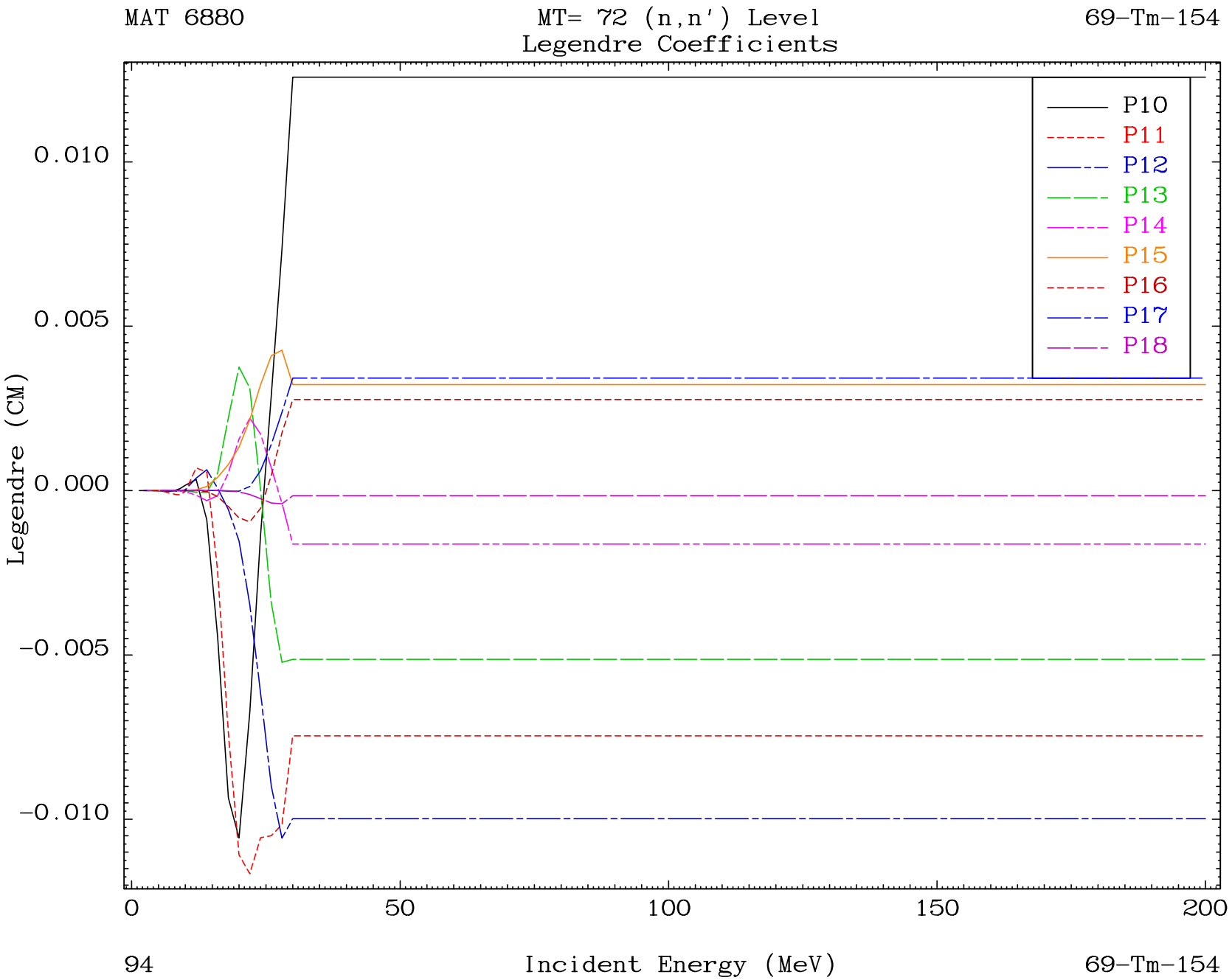

MAT 6880
MT= 70 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-1
-2
-3
Legendre (CM)
50
100
150
200
P28
P29
P30
P31
P32
P33
P34
P35
P36
89
Incident Energy (MeV)
69-Tm-154

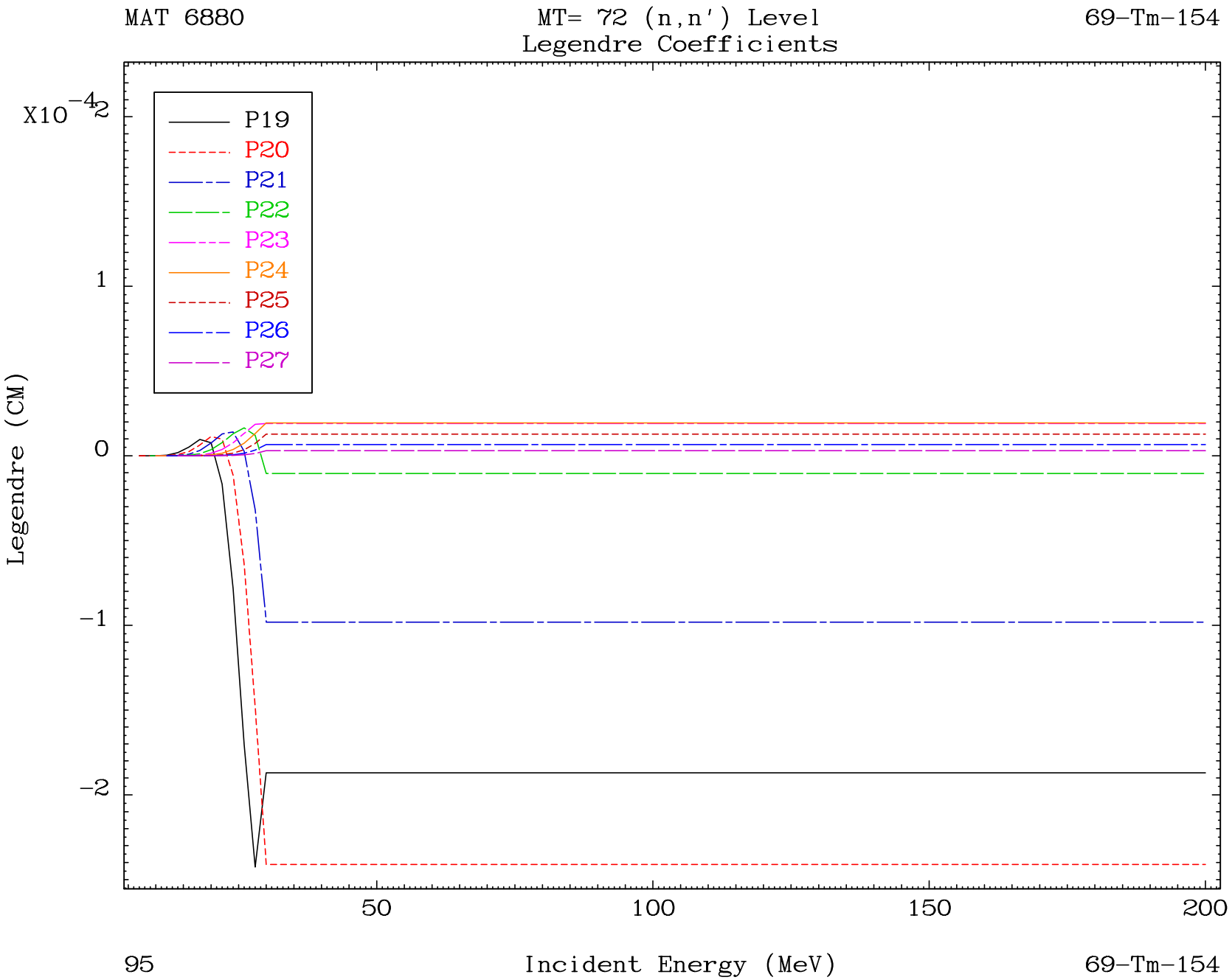

MAT 6880
MT= 71 (n,n') Level
Legendre Coefficients
69-Tm-154
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
0
50
100
150
200
90
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

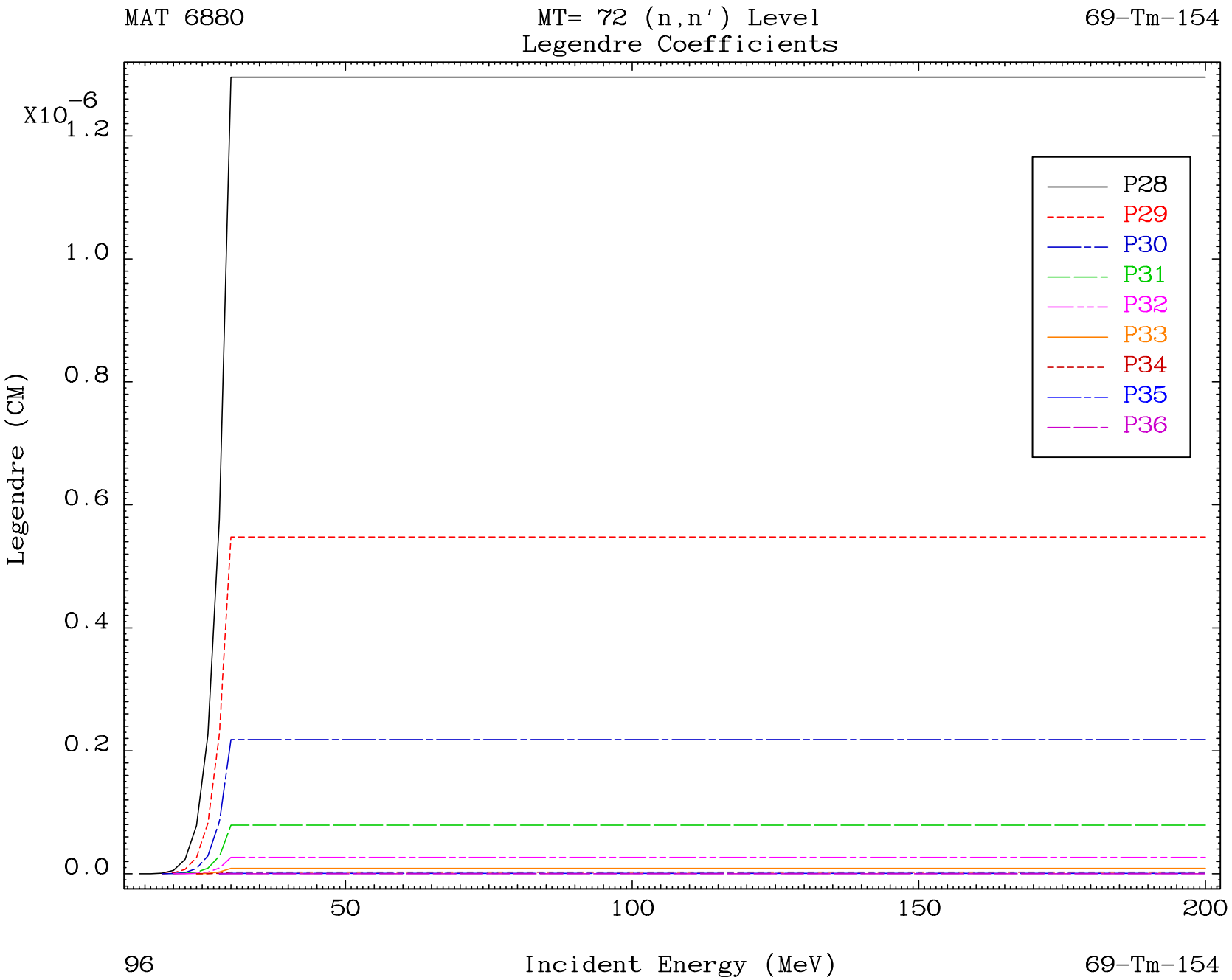

MAT 6880
MT= 71 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
3
2
1
0
-1
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
91
Incident Energy (MeV)
69-Tm-154

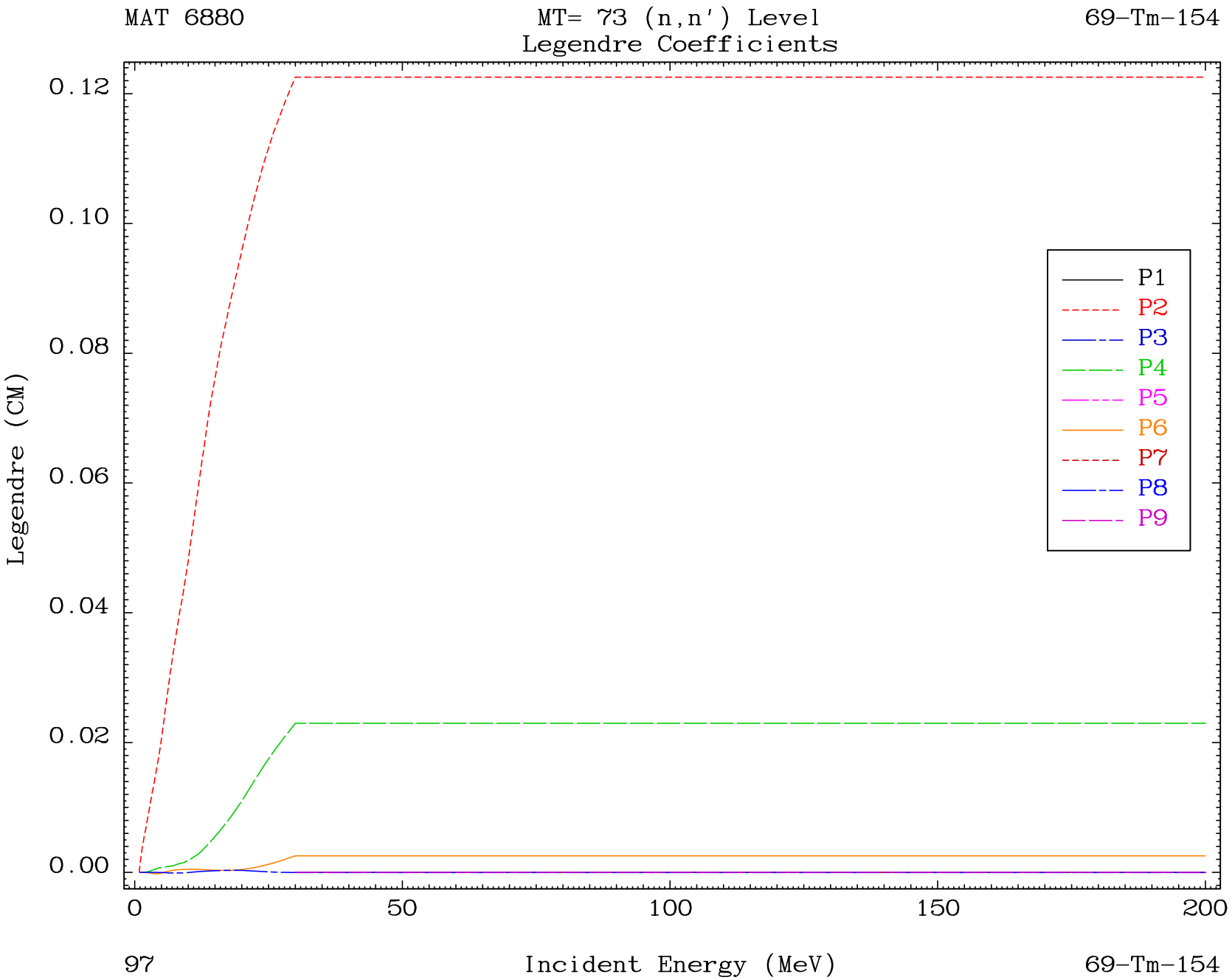

MAT 6880
MT= 71 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
50
100
150
200
92
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

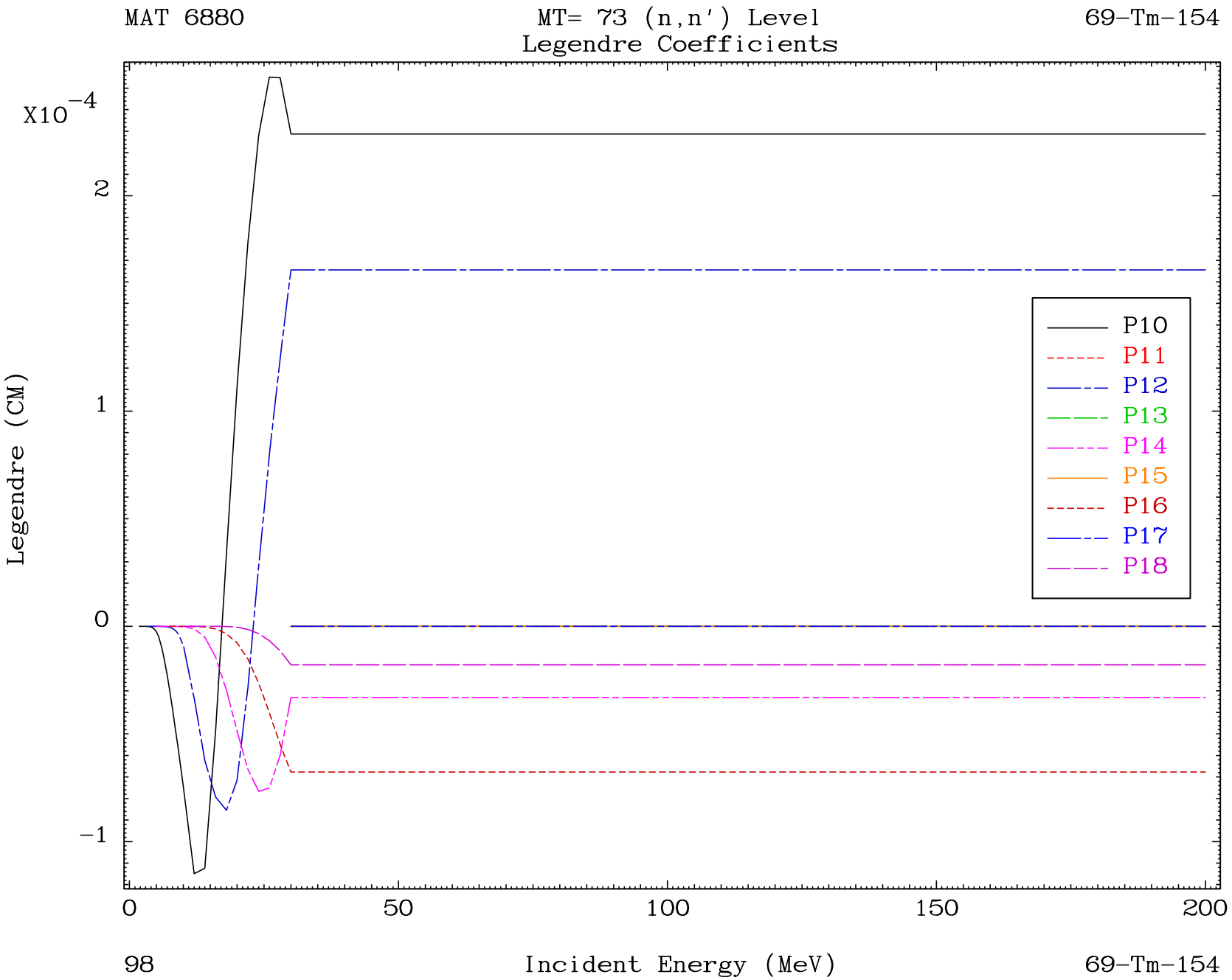

MAT 6880
MT= 72 (n,n') Level
Legendre Coefficients
69-Tm-154
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
93
Incident Energy (MeV)
69-Tm-154

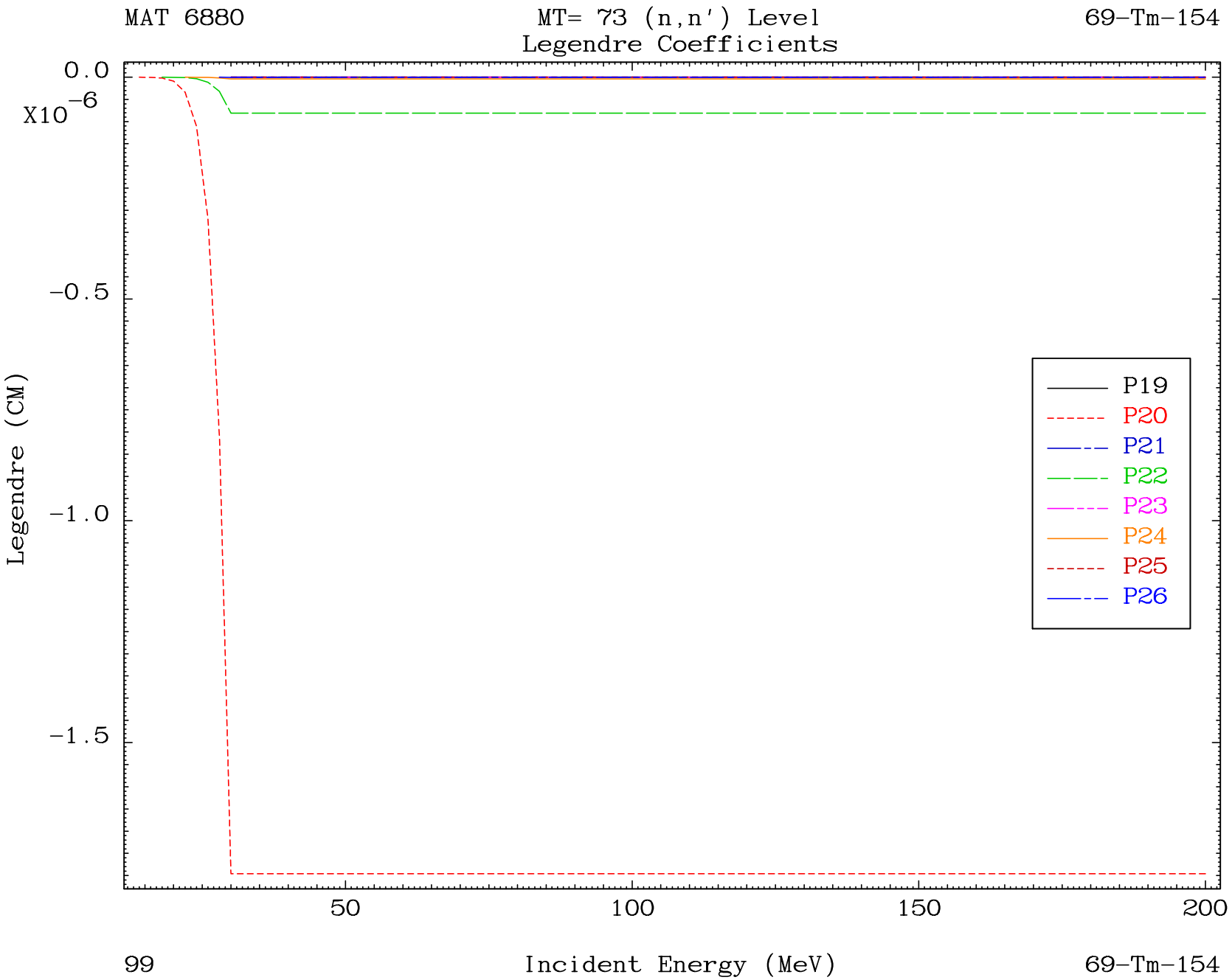

MAT 6880
MT= 72 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
0
50
100
150
200
94
Incident Energy (MeV)
69-Tm-154

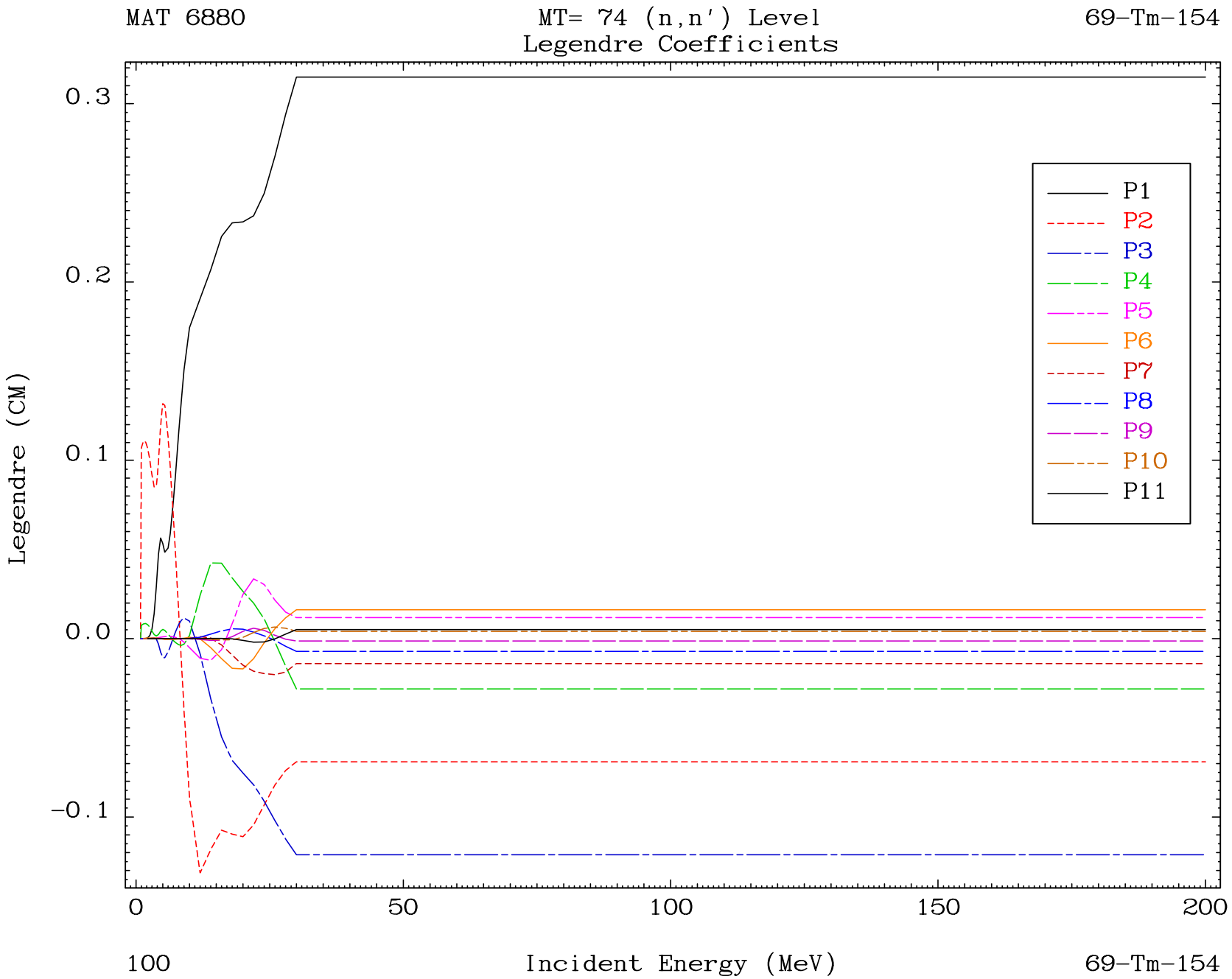

MAT 6880
MT= 72 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
2
1
0
-1
-2
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
95
Incident Energy (MeV)
69-Tm-154

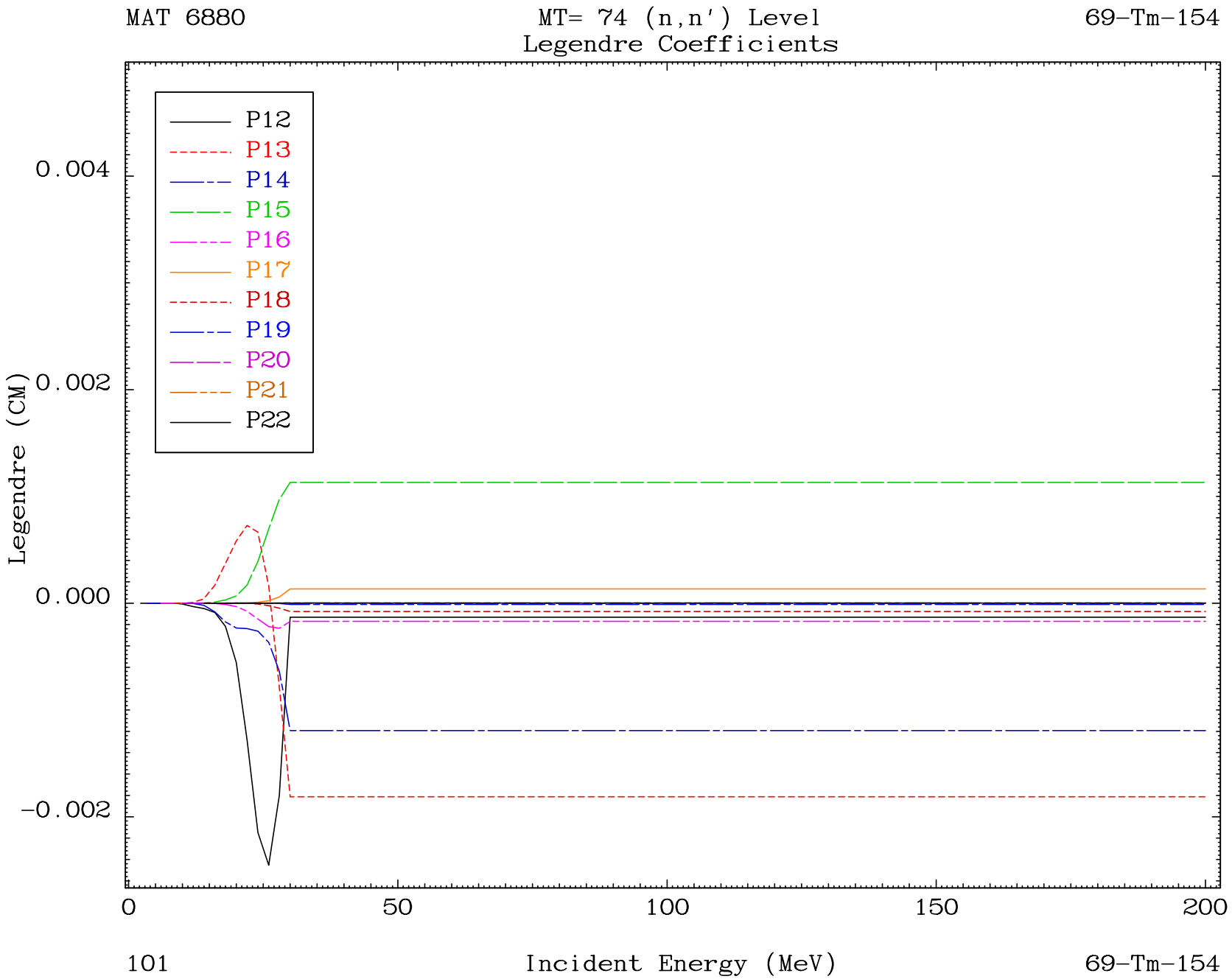

MAT 6880
MT= 72 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
96
Incident Energy (MeV)
69-Tm-154

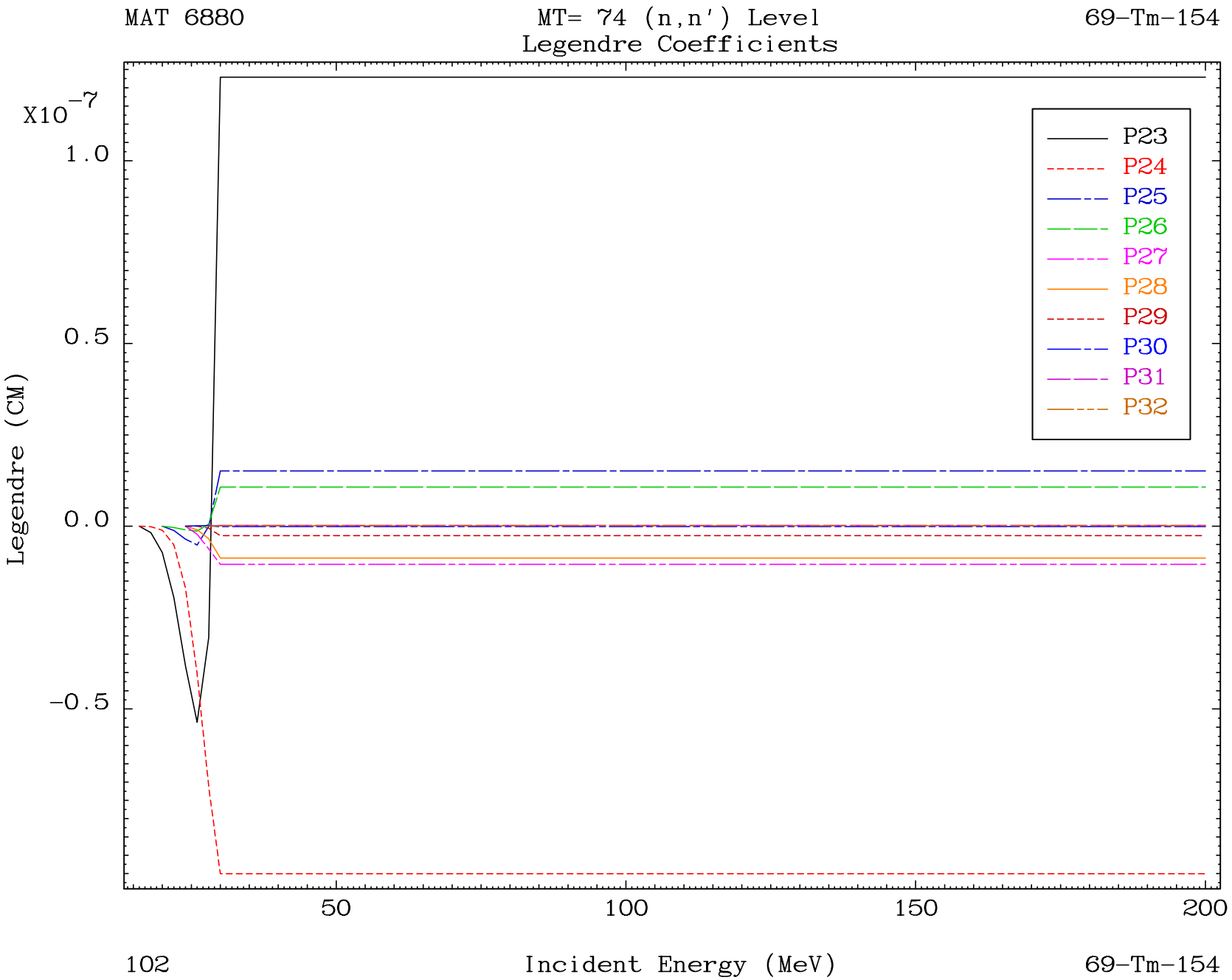

MAT 6880
MT= 73 (n,n') Level
Legendre Coefficients
69-Tm-154
0.12
0.10
0.08
0.06
0.04
0.02
0.00
Legendre (CM)
0
50
100
150
200
97
Incident Energy (MeV)
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9

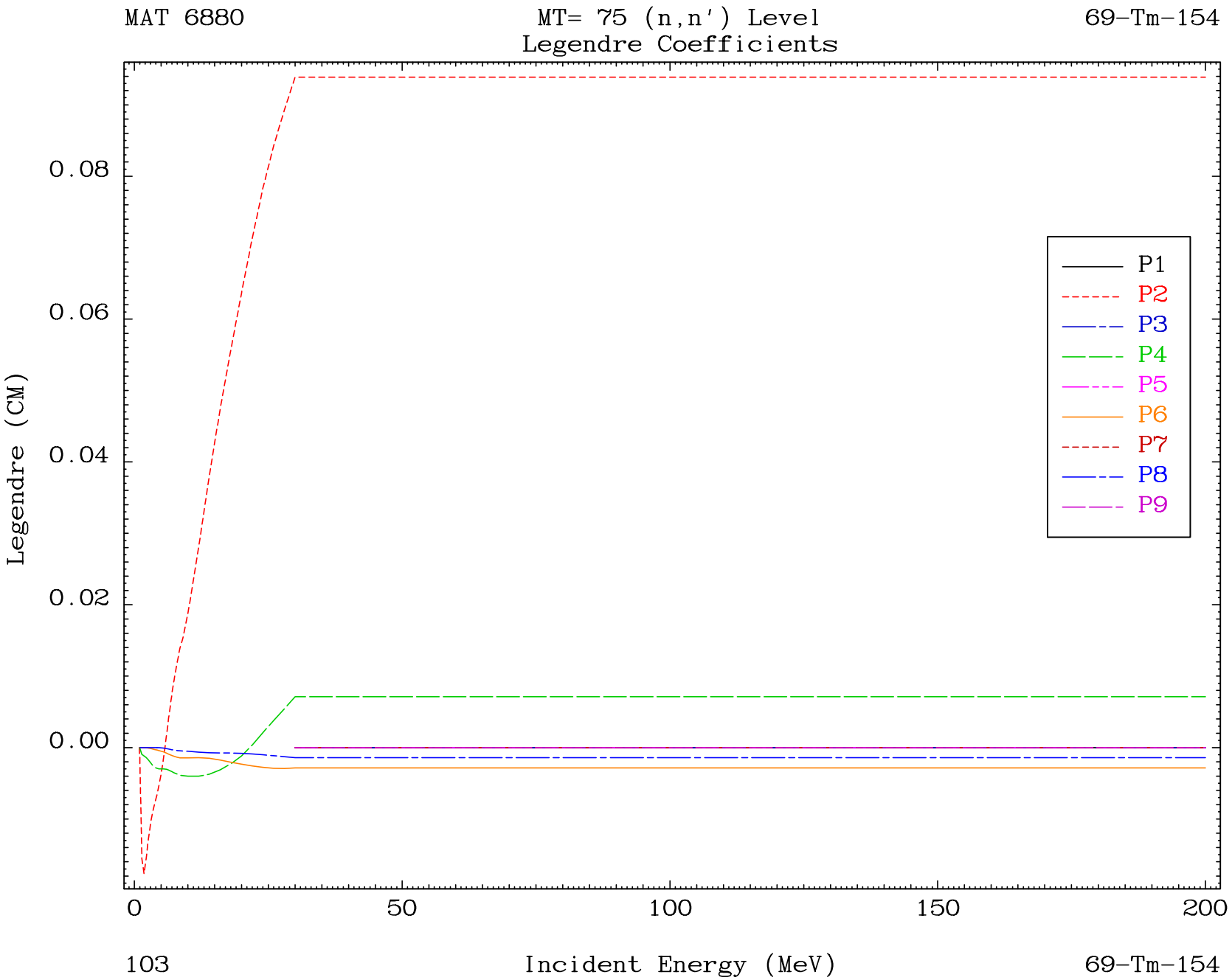

MAT 6880
MT= 73 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
2
1
0
-1
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
98
Incident Energy (MeV)
69-Tm-154

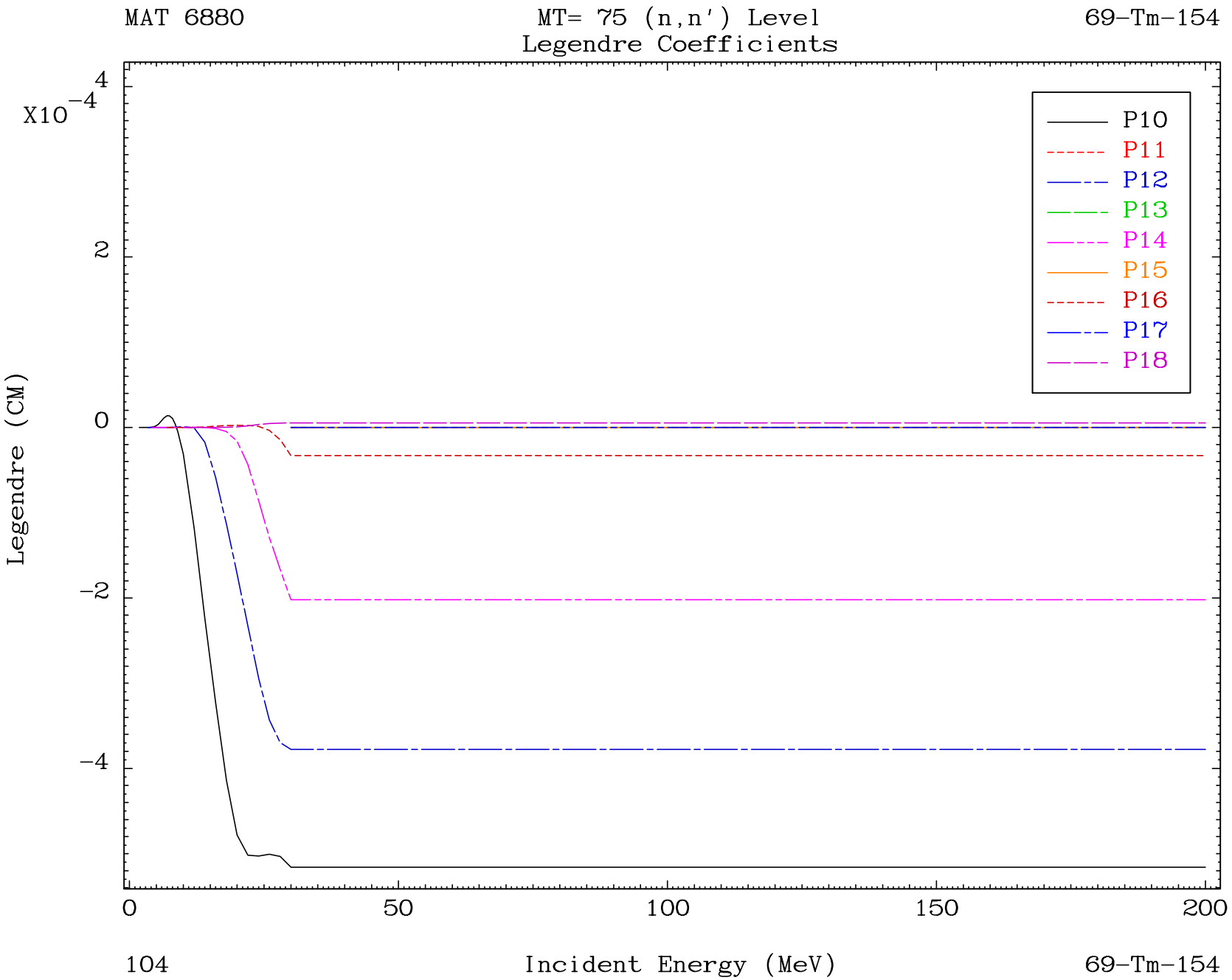

MAT 6880
MT= 73 (n,n') Level
Legendre Coefficients
69-Tm-154
0.0
X10^-6
-0.5
-1.0
-1.5
Legendre (CM)
50
100
150
200
99
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

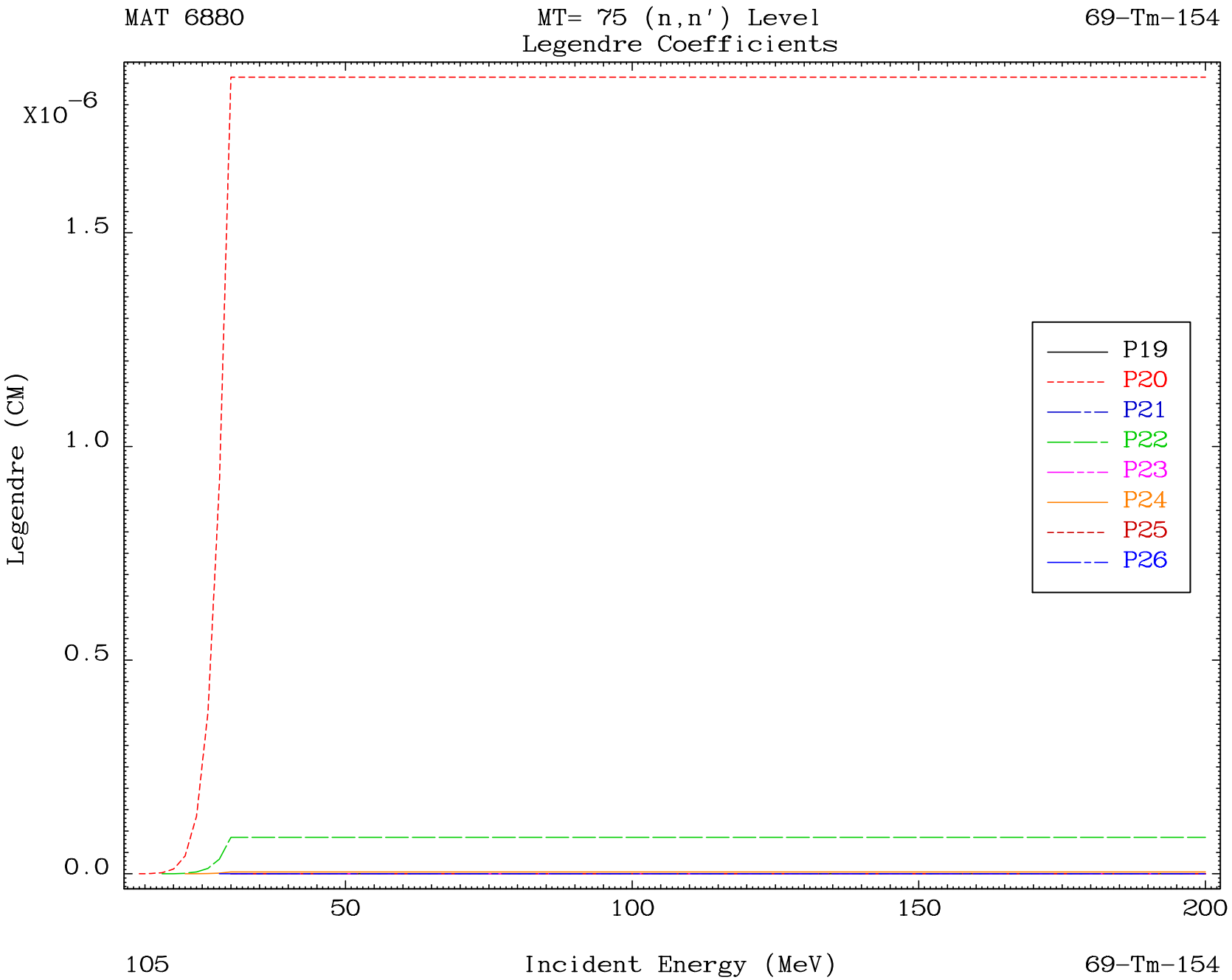

MAT 6880
MT= 74 (n,n') Level
Legendre Coefficients
69-Tm-154
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
0
50
100
150
200
100
Incident Energy (MeV)
69-Tm-154

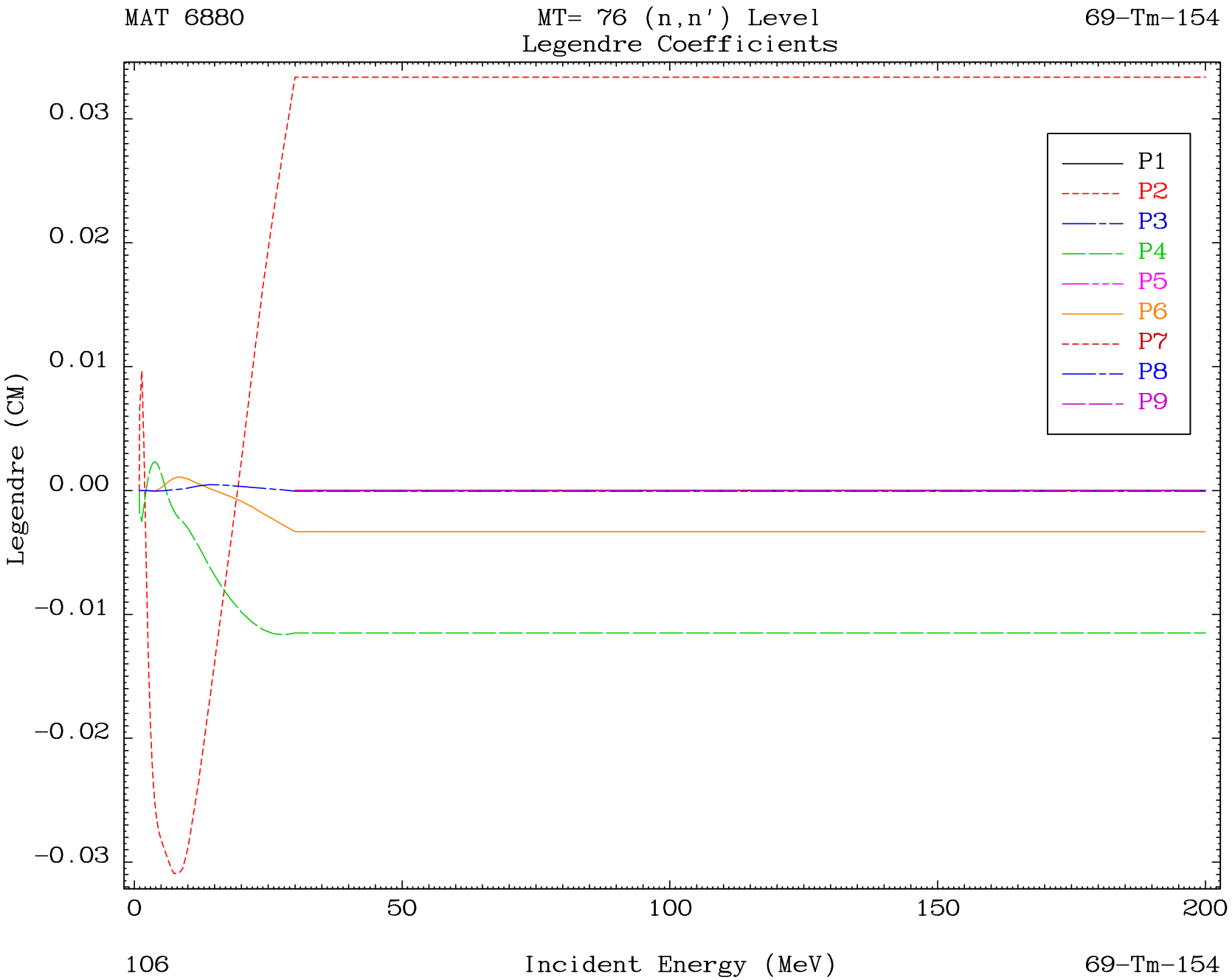

MAT 6880
MT= 74 (n,n') Level
Legendre Coefficients
69-Tm-154
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.004
0.002
0.000
-0.002
Legendre (CM)
0
50
100
150
200
101
Incident Energy (MeV)
69-Tm-154

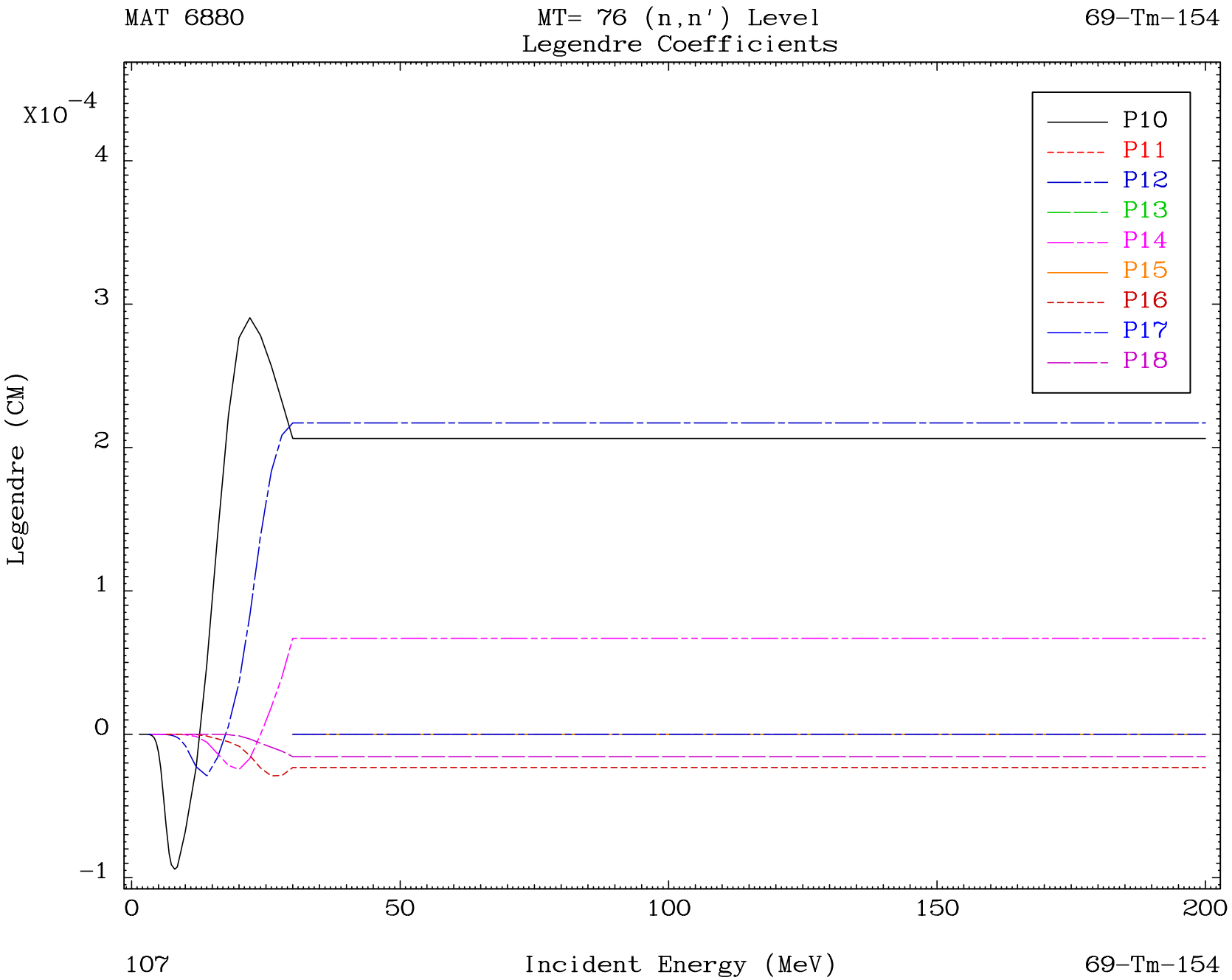

MAT 6880
MT= 74 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-7
1.0
0.5
0.0
-0.5
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
102
Incident Energy (MeV)
69-Tm-154

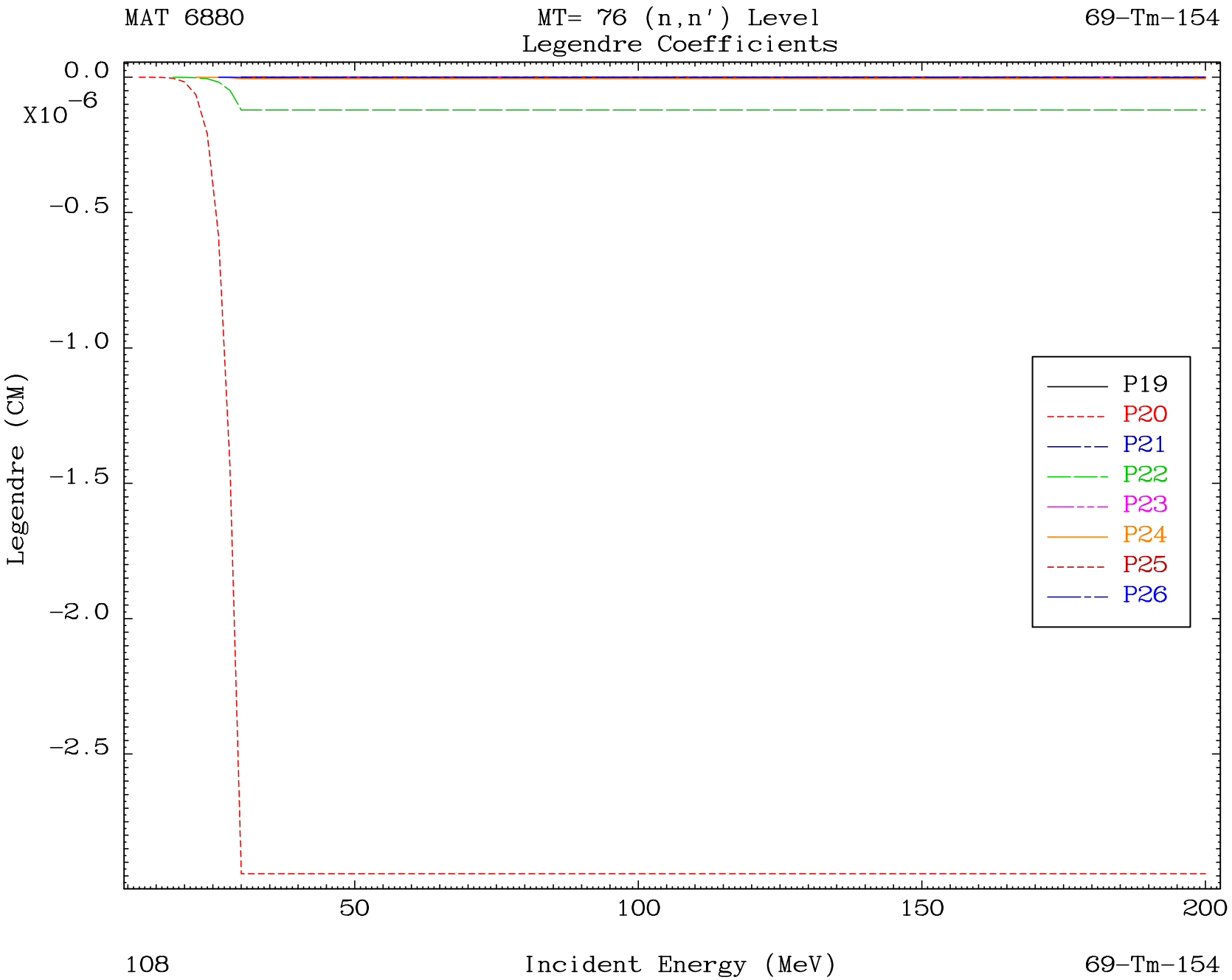

MAT 6880
MT= 75 (n,n') Level
Legendre Coefficients
69-Tm-154
0.08
0.06
0.04
0.02
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
103
Incident Energy (MeV)
69-Tm-154

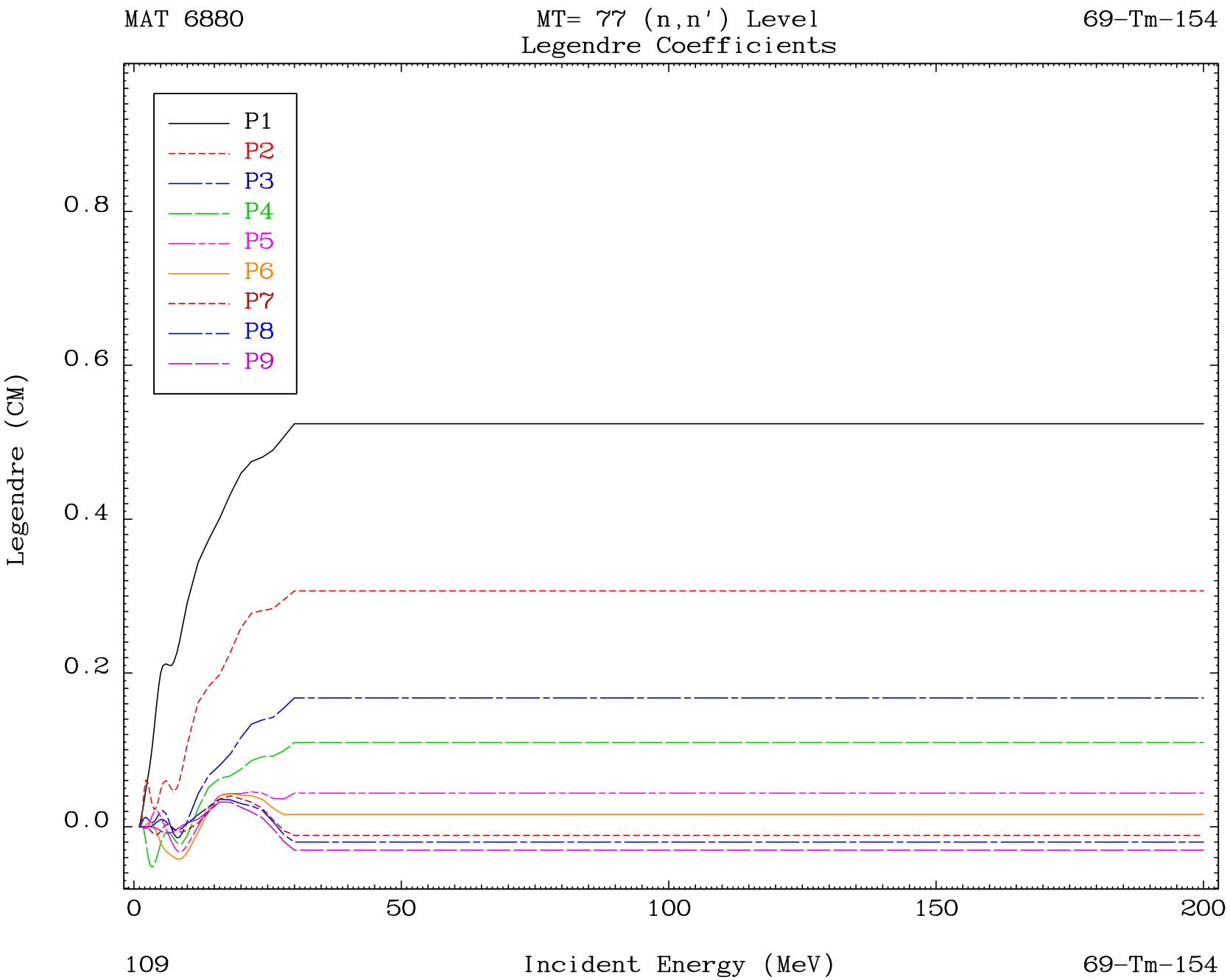

MAT 6880
MT= 75 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
4
2
0
-2
-4
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
104
Incident Energy (MeV)
69-Tm-154

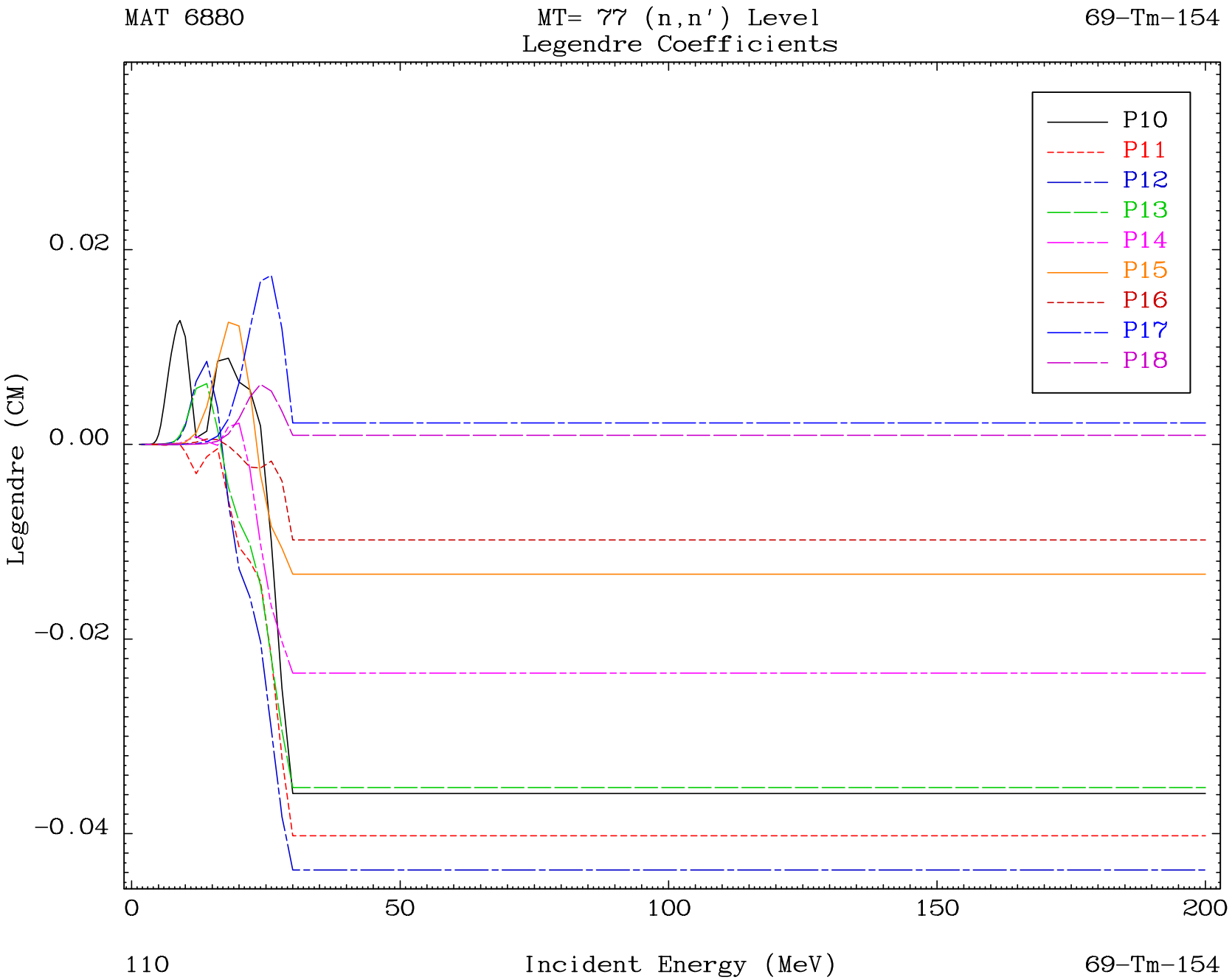

MAT 6880
MT= 75 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-6
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
50
100
150
200
105
Incident Energy (MeV)
69-Tm-154

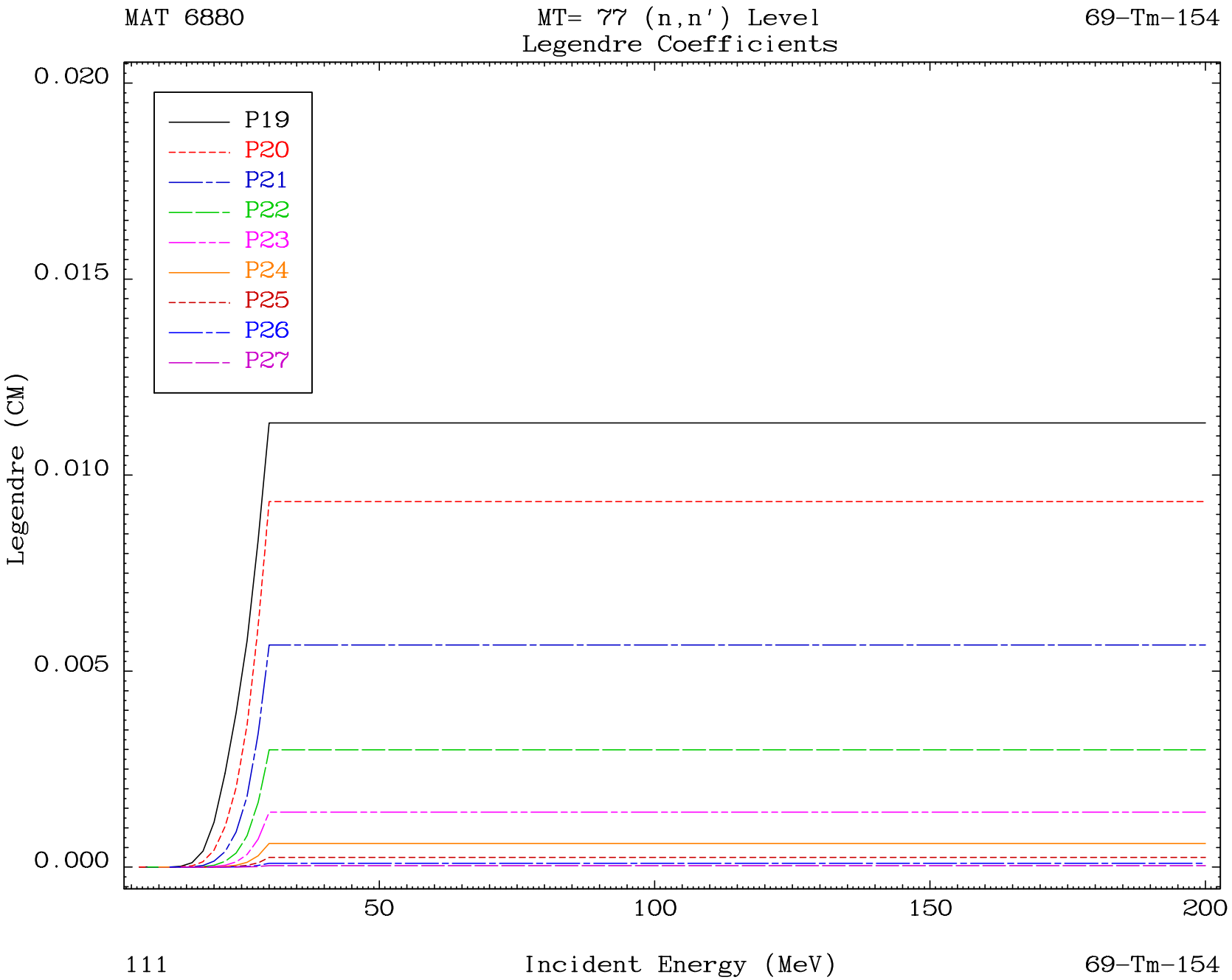

MAT 6880
MT= 76 (n,n') Level
Legendre Coefficients
69-Tm-154
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
106
Incident Energy (MeV)
69-Tm-154

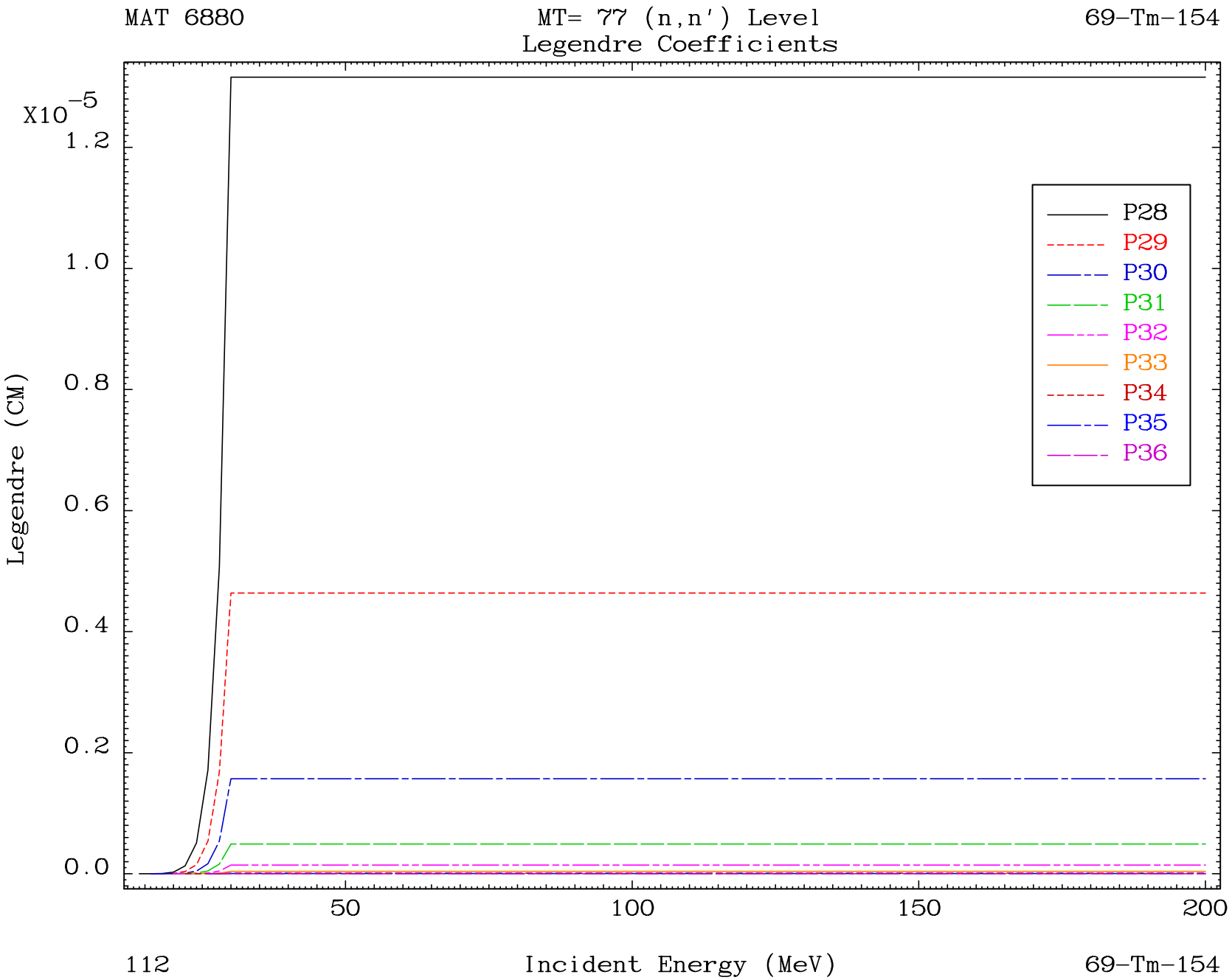

MAT 6880
MT= 76 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
4
3
2
1
0
-1
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
107
Incident Energy (MeV)
69-Tm-154

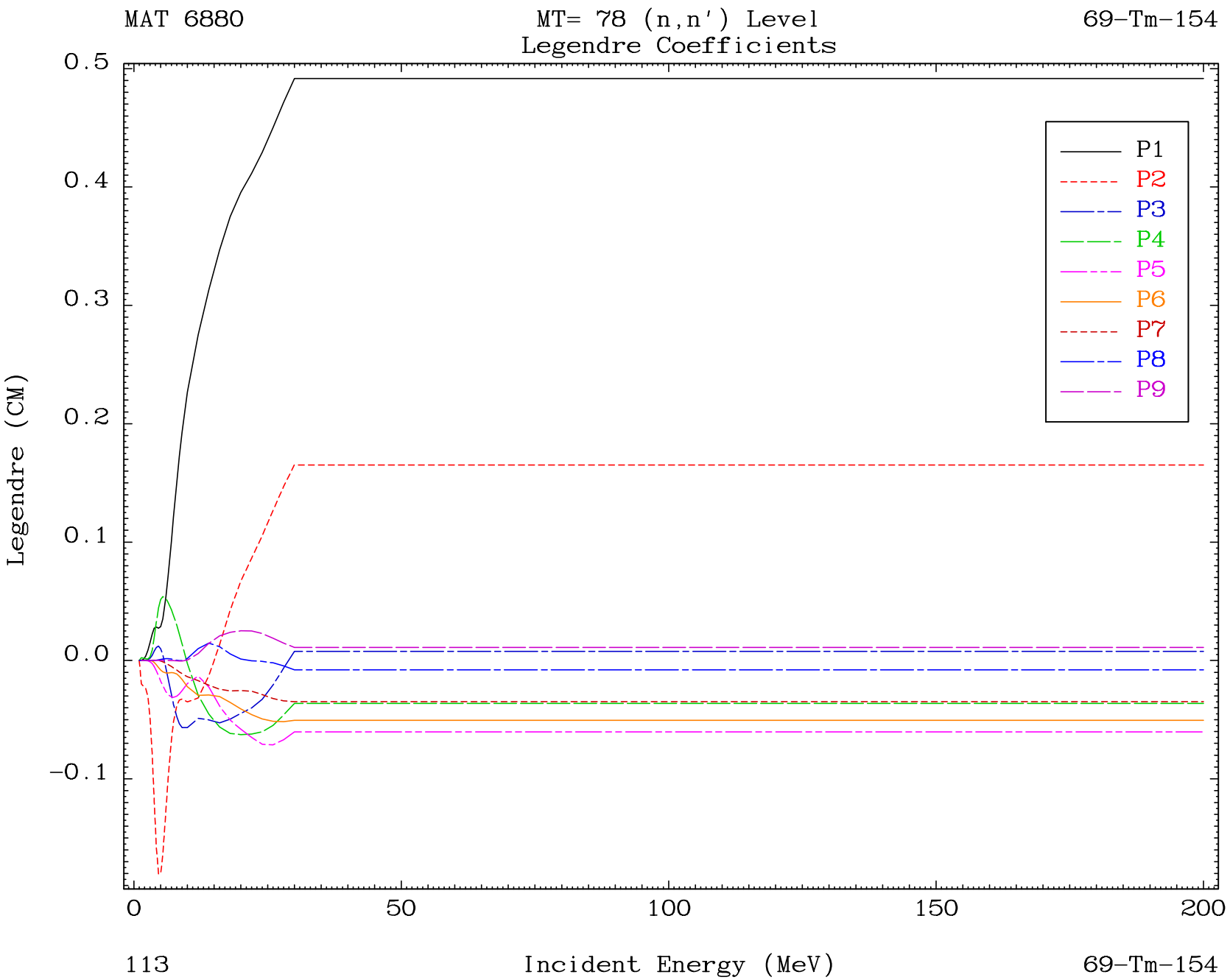

MAT 6880
MT= 76 (n,n') Level
Legendre Coefficients
69-Tm-154
0.0
X10^-6
-0.5
-1.0
-1.5
-2.0
-2.5
Legendre (CM)
50
100
150
200
108
Incident Energy (MeV)
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26

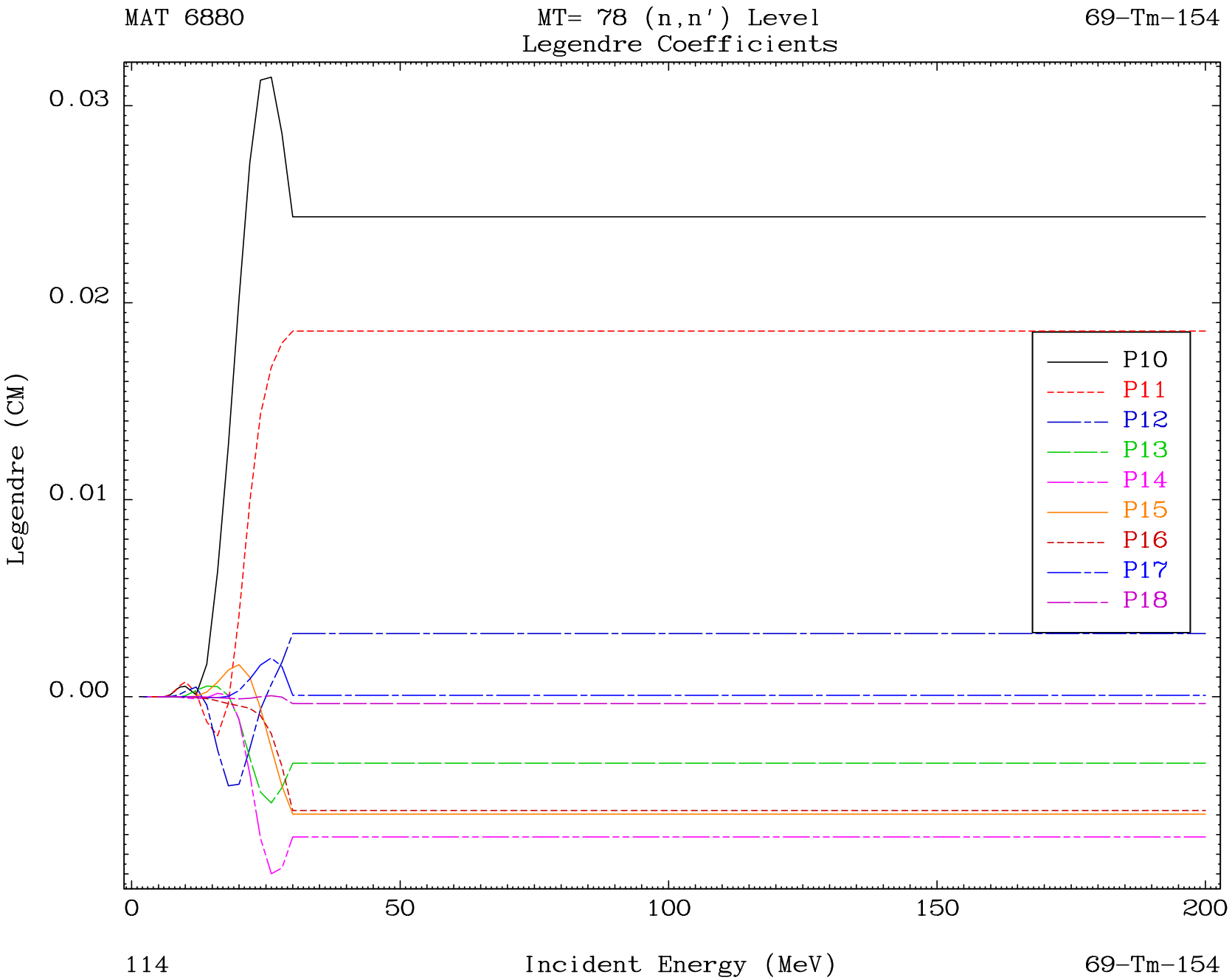

MAT 6880
MT= 77 (n,n') Level
Legendre Coefficients
69-Tm-154
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
109
Incident Energy (MeV)
69-Tm-154

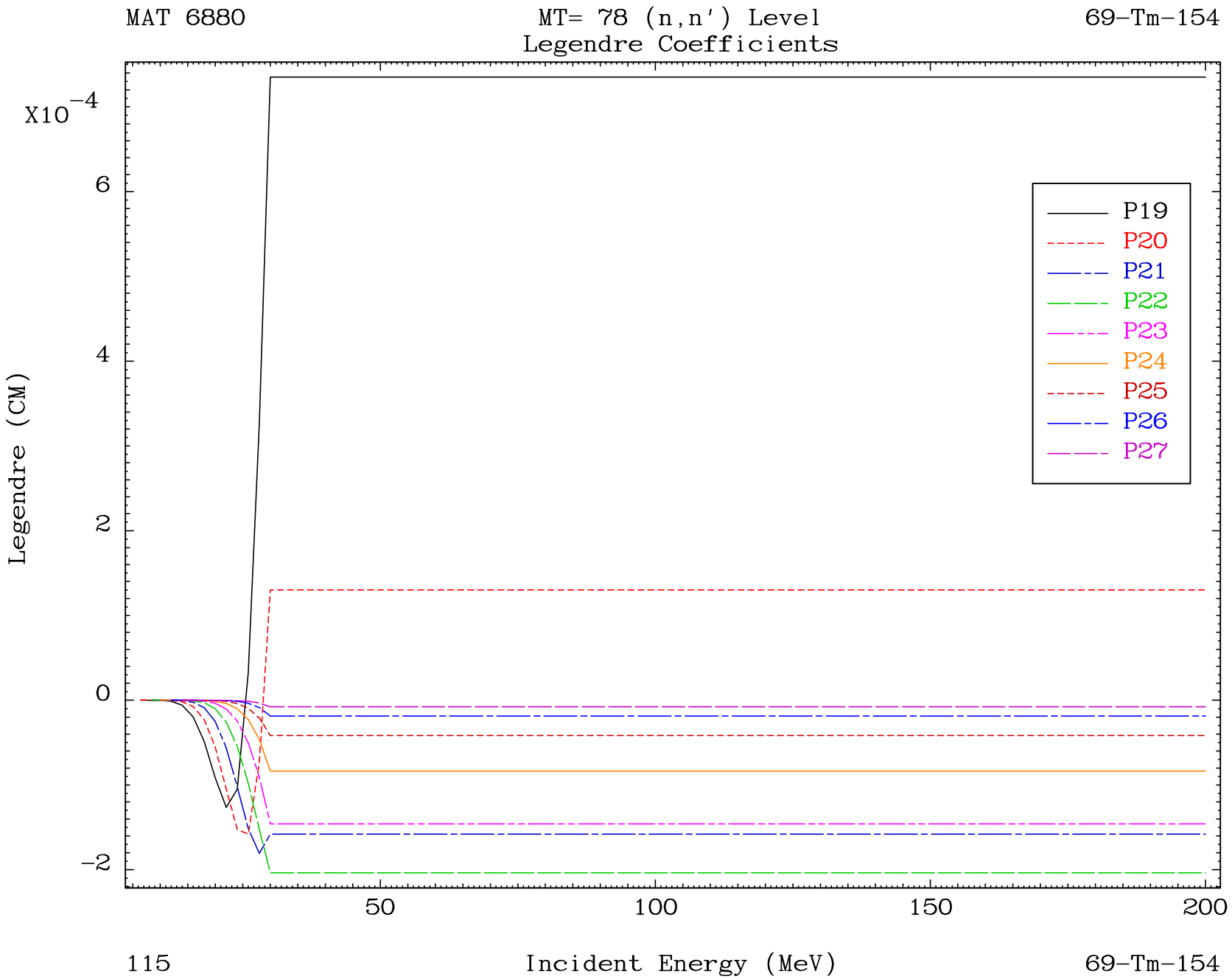

MAT 6880
MT= 77 (n,n') Level
Legendre Coefficients
69-Tm-154
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
110
Incident Energy (MeV)
69-Tm-154

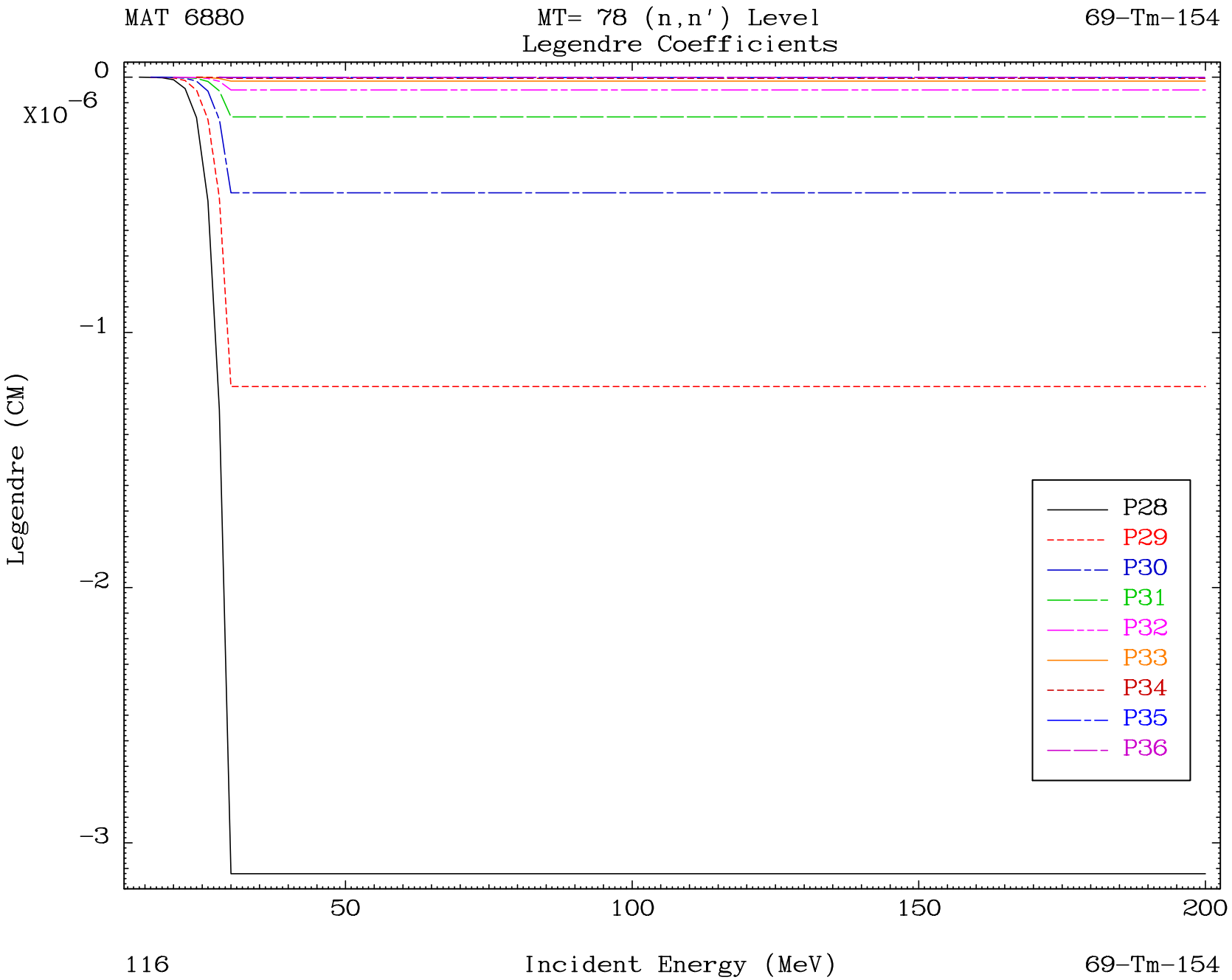

MAT 6880
MT= 77 (n,n') Level
Legendre Coefficients
69-Tm-154
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
111
Incident Energy (MeV)
69-Tm-154

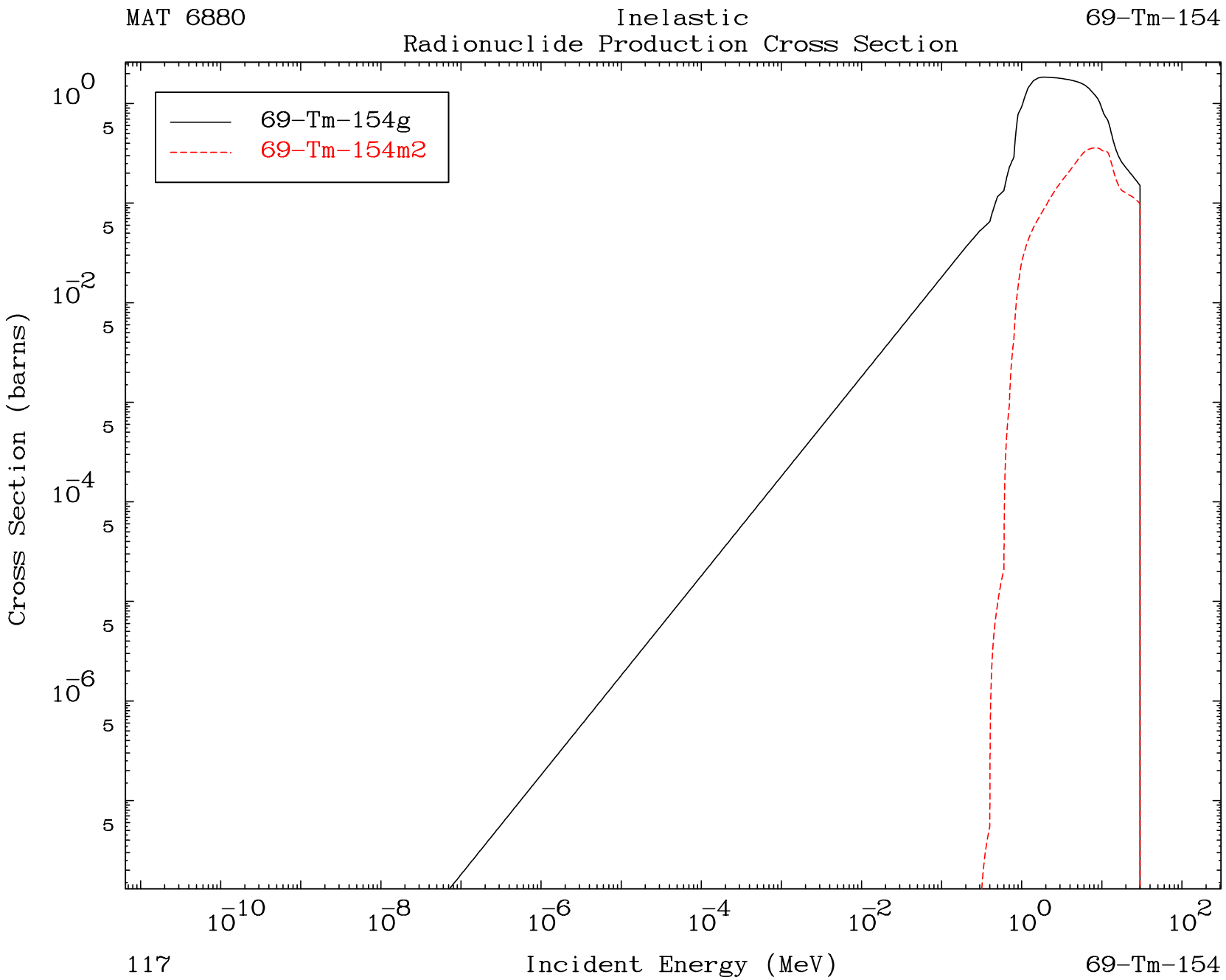

MAT 6880
MT= 77 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-5
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
112
Incident Energy (MeV)
69-Tm-154

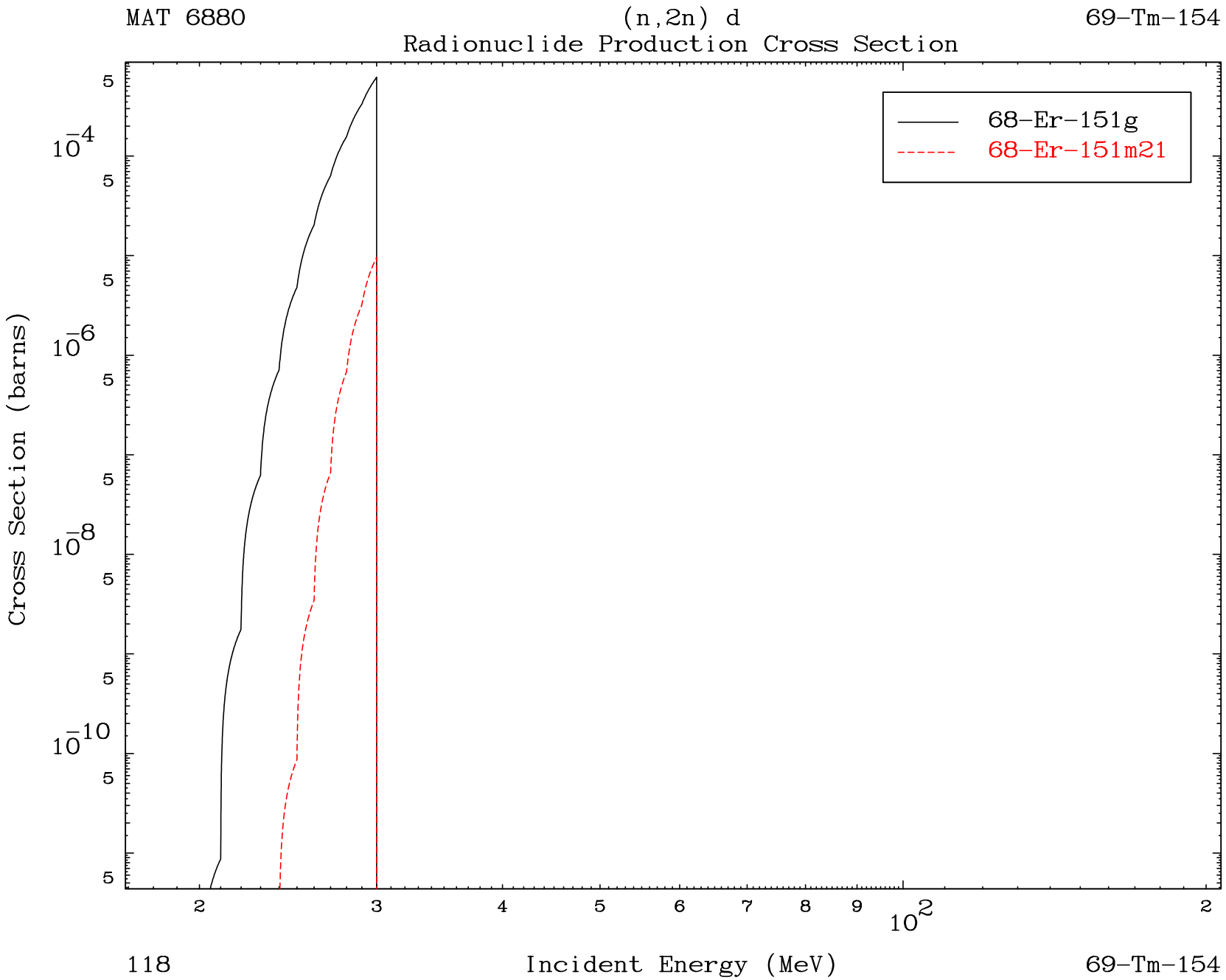

MAT 6880
MT= 78 (n,n') Level
Legendre Coefficients
69-Tm-154
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
113
Incident Energy (MeV)
69-Tm-154

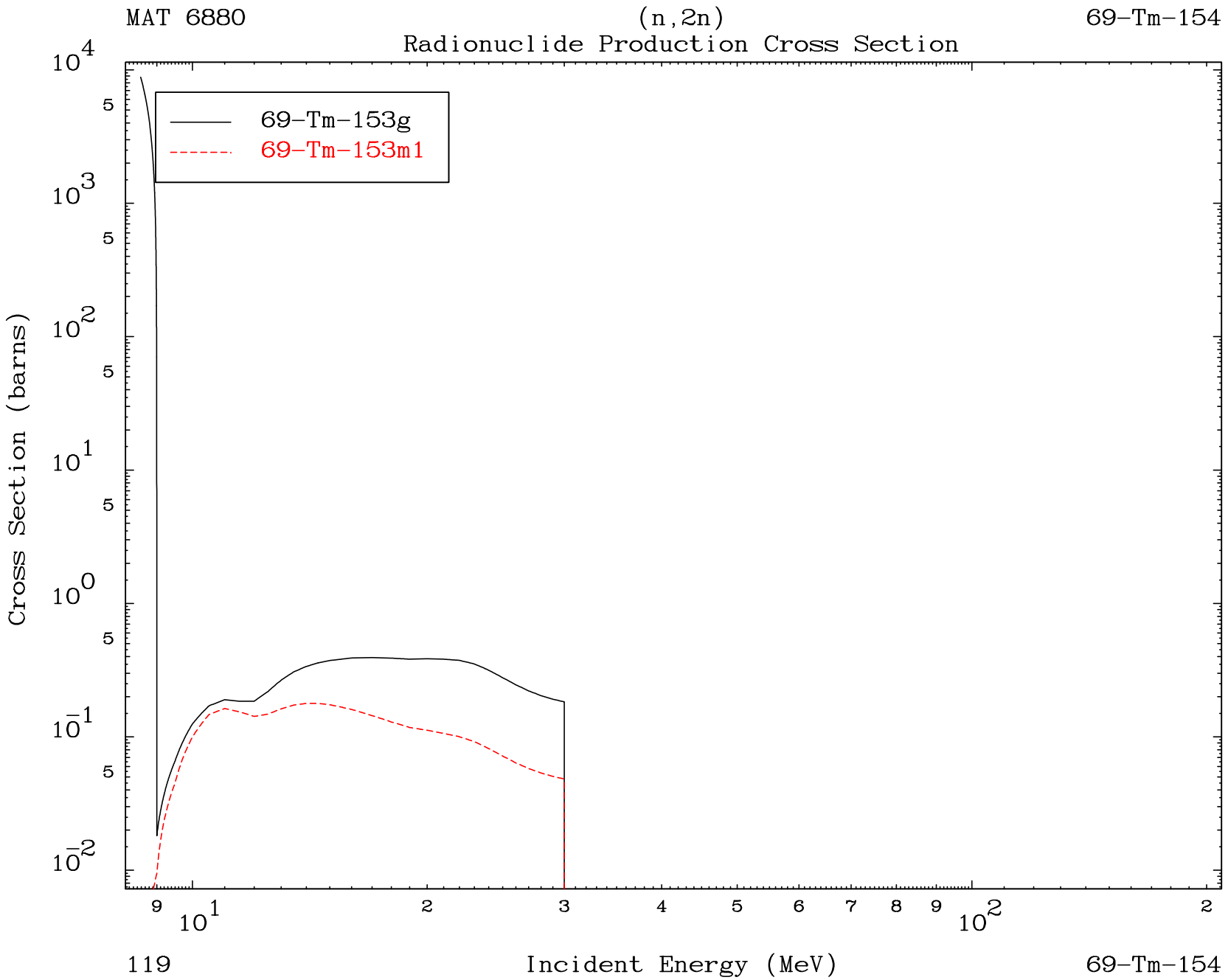

MAT 6880
MT= 78 (n,n') Level
Legendre Coefficients
69-Tm-154
0.03
0.02
0.01
0.00
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
114
Incident Energy (MeV)
69-Tm-154

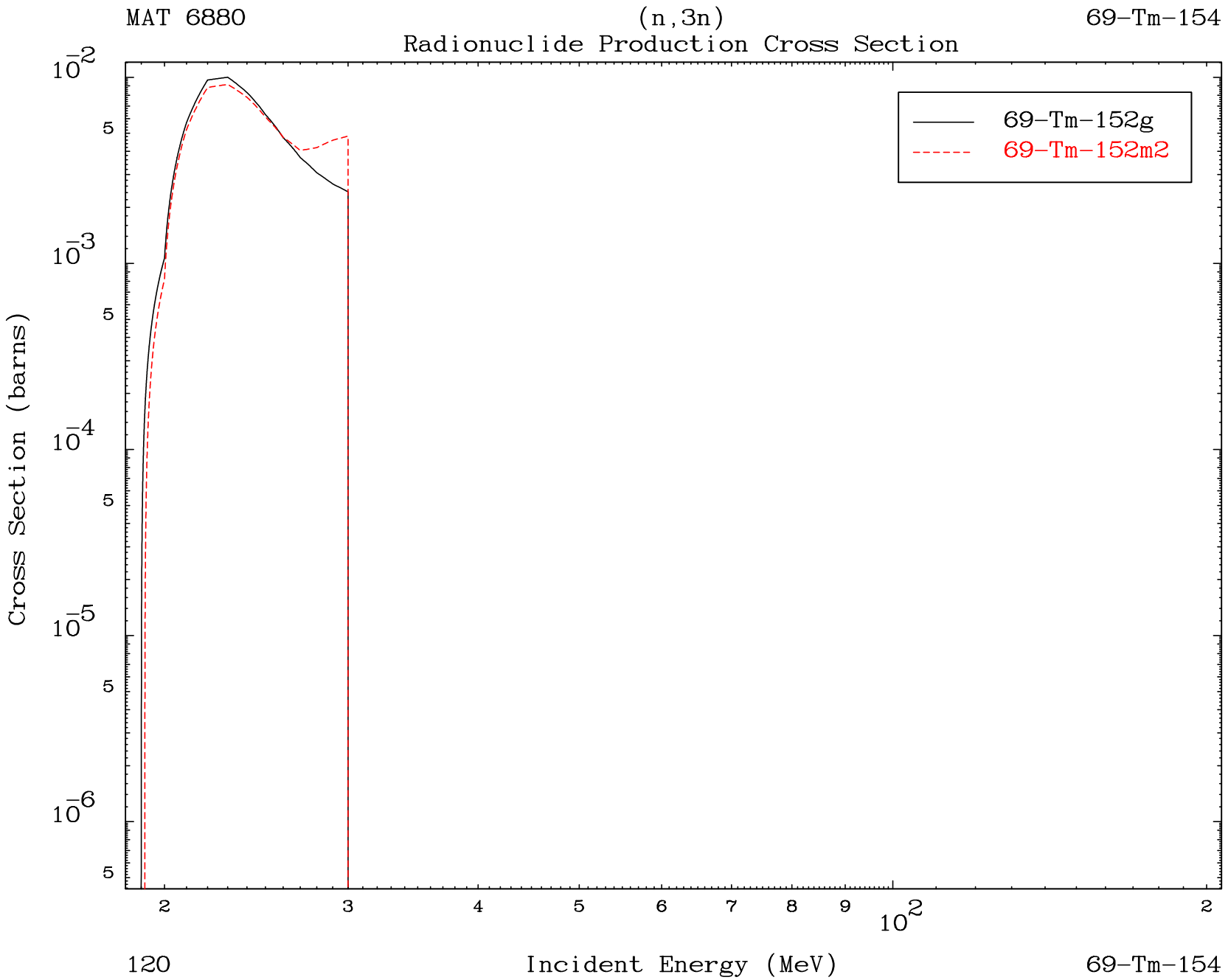

MAT 6880
MT= 78 (n,n') Level
Legendre Coefficients
69-Tm-154
X10^-4
6
4
2
0
-2
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
115
Incident Energy (MeV)
69-Tm-154

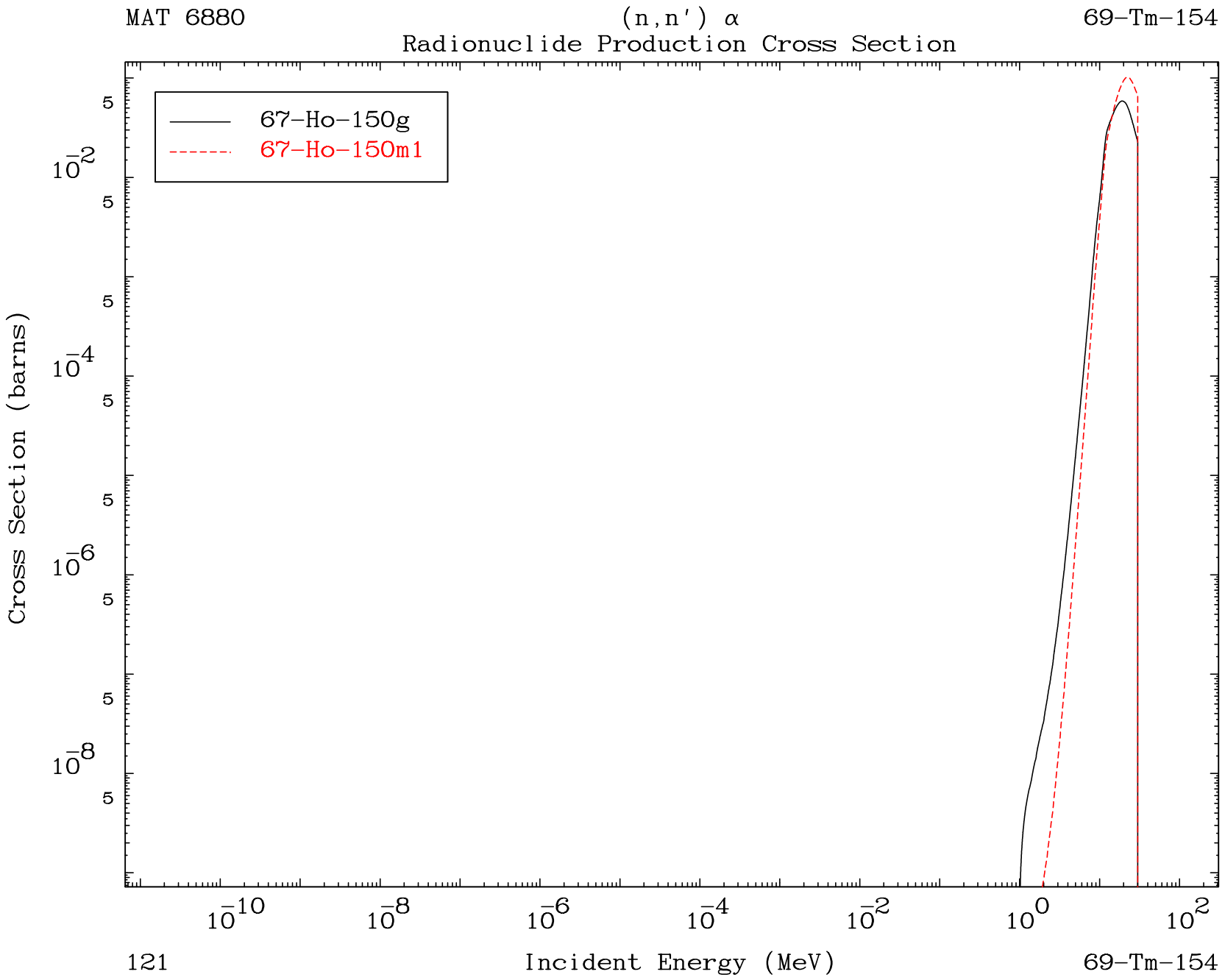

MAT 6880
MT= 78 (n,n') Level
Legendre Coefficients
69-Tm-154
0
X10^-6
-1
-2
-3
Legendre (CM)
50
100
150
200
116
Incident Energy (MeV)
69-Tm-154
P28
P29
P30
P31
P32
P33
P34
P35
P36

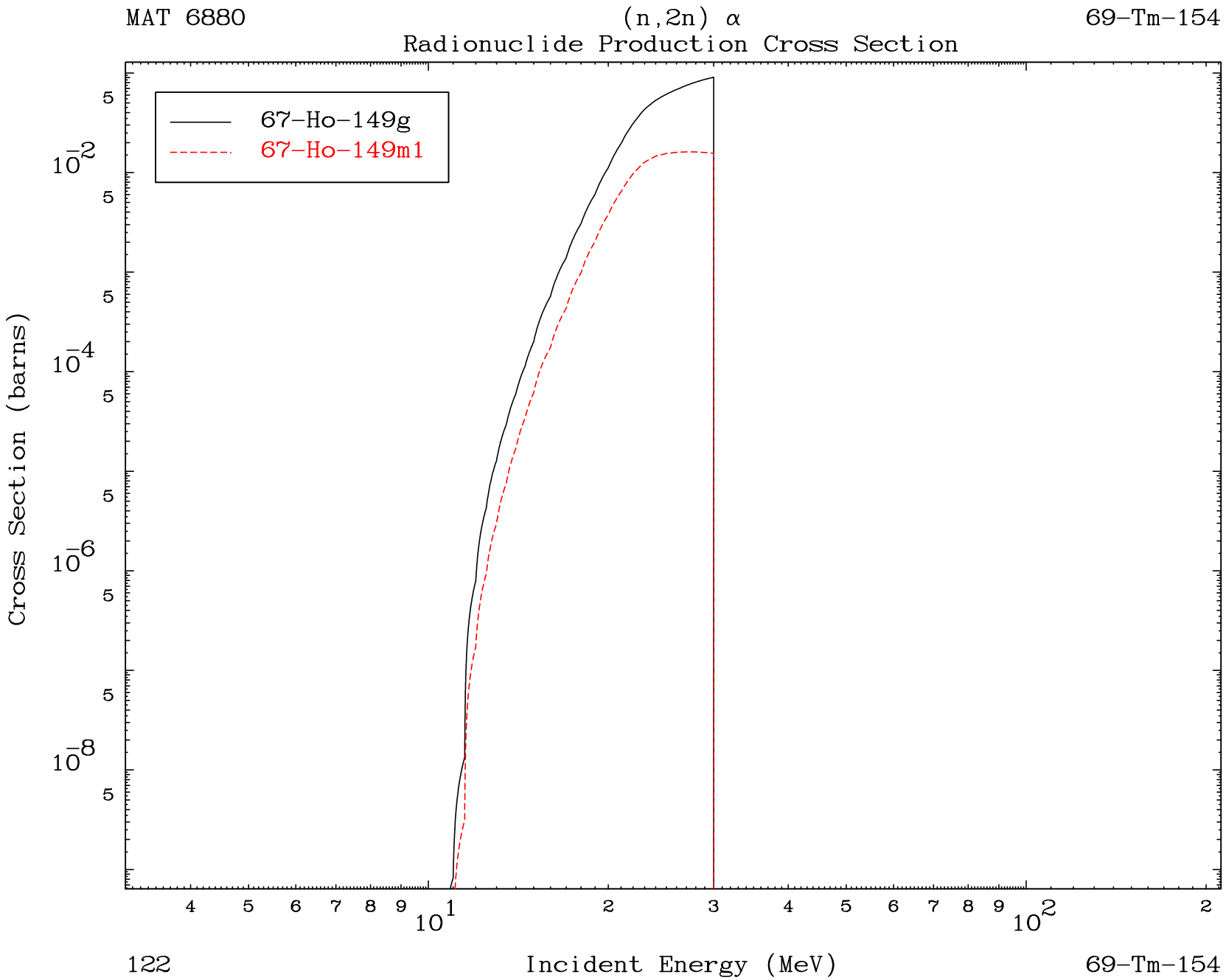

MAT 6880
Inelastic
69-Tm-154
Radionuclide Production Cross Section
69-Tm-154g
69-Tm-154m2
Cross Section (barns)
Incident Energy (MeV)
117
69-Tm-154

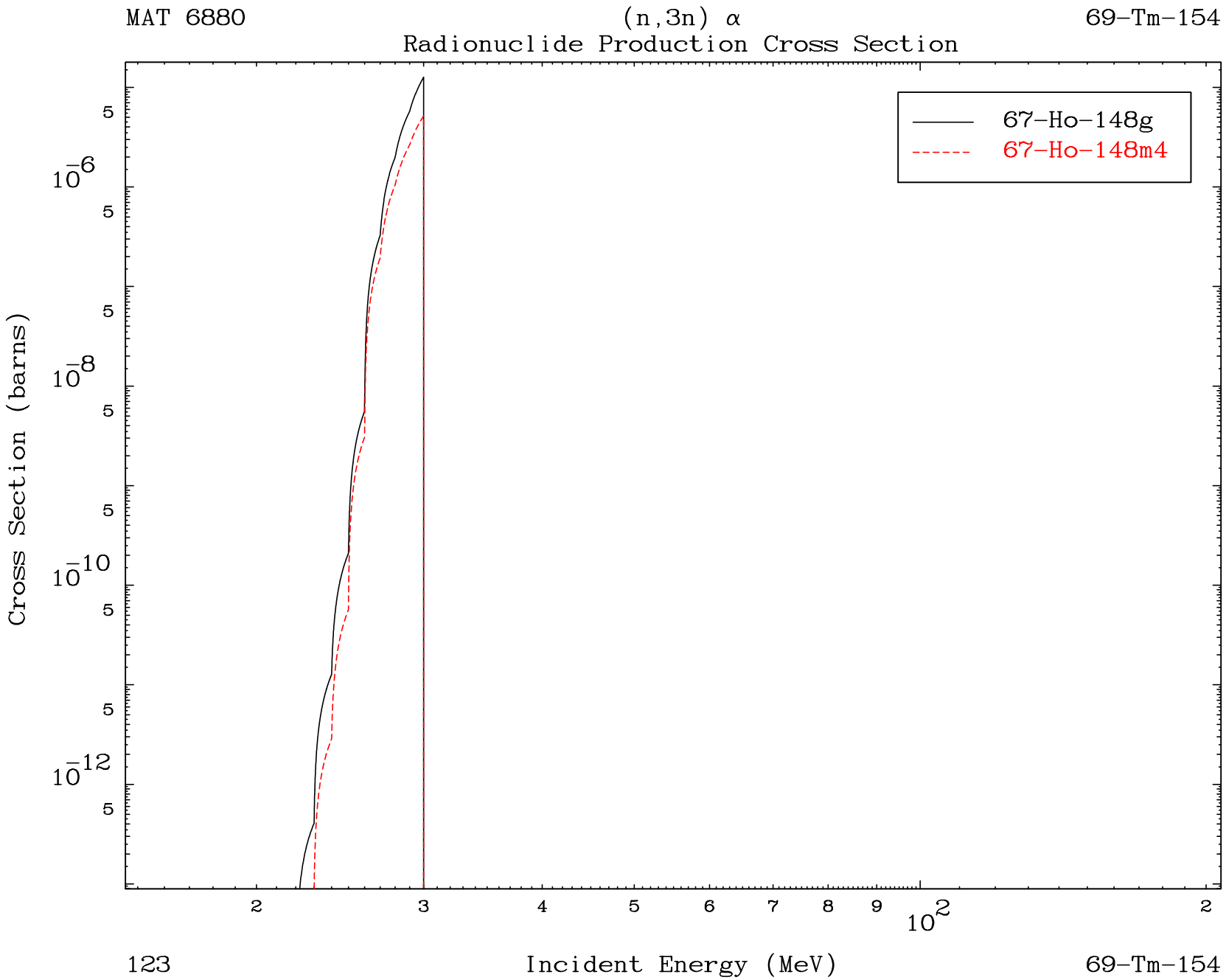

MAT 6880
(n,2n) d
69-Tm-154
Radionuclide Production Cross Section
68-Er-151g
68-Er-151m21
Cross Section (barns)
Incident Energy (MeV)
118
69-Tm-154

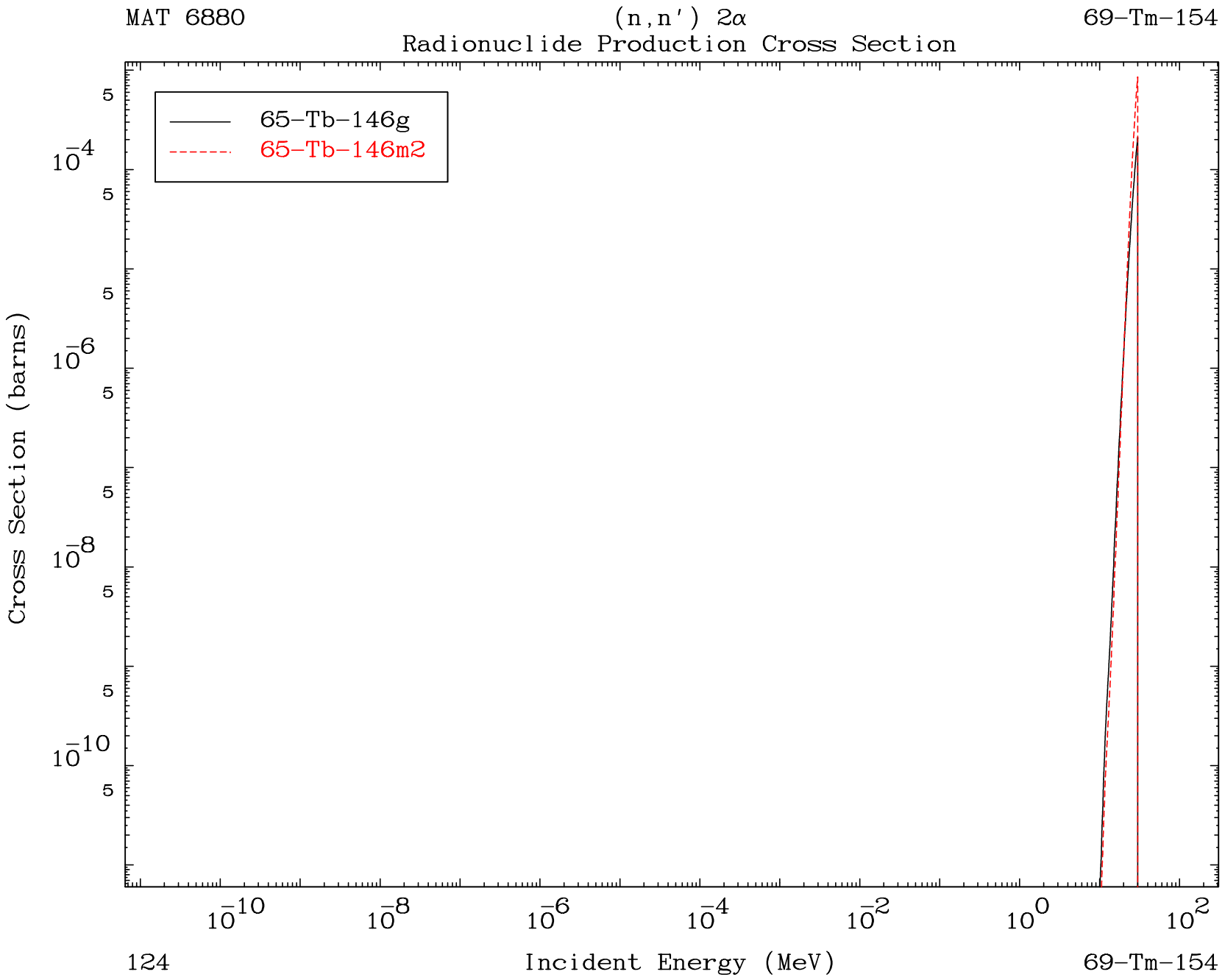

MAT 6880
(n,2n)
69-Tm-154
Radionuclide Production Cross Section
69-Tm-153g
69-Tm-153m1
Cross Section (barns)
Incident Energy (MeV)
119
69-Tm-154

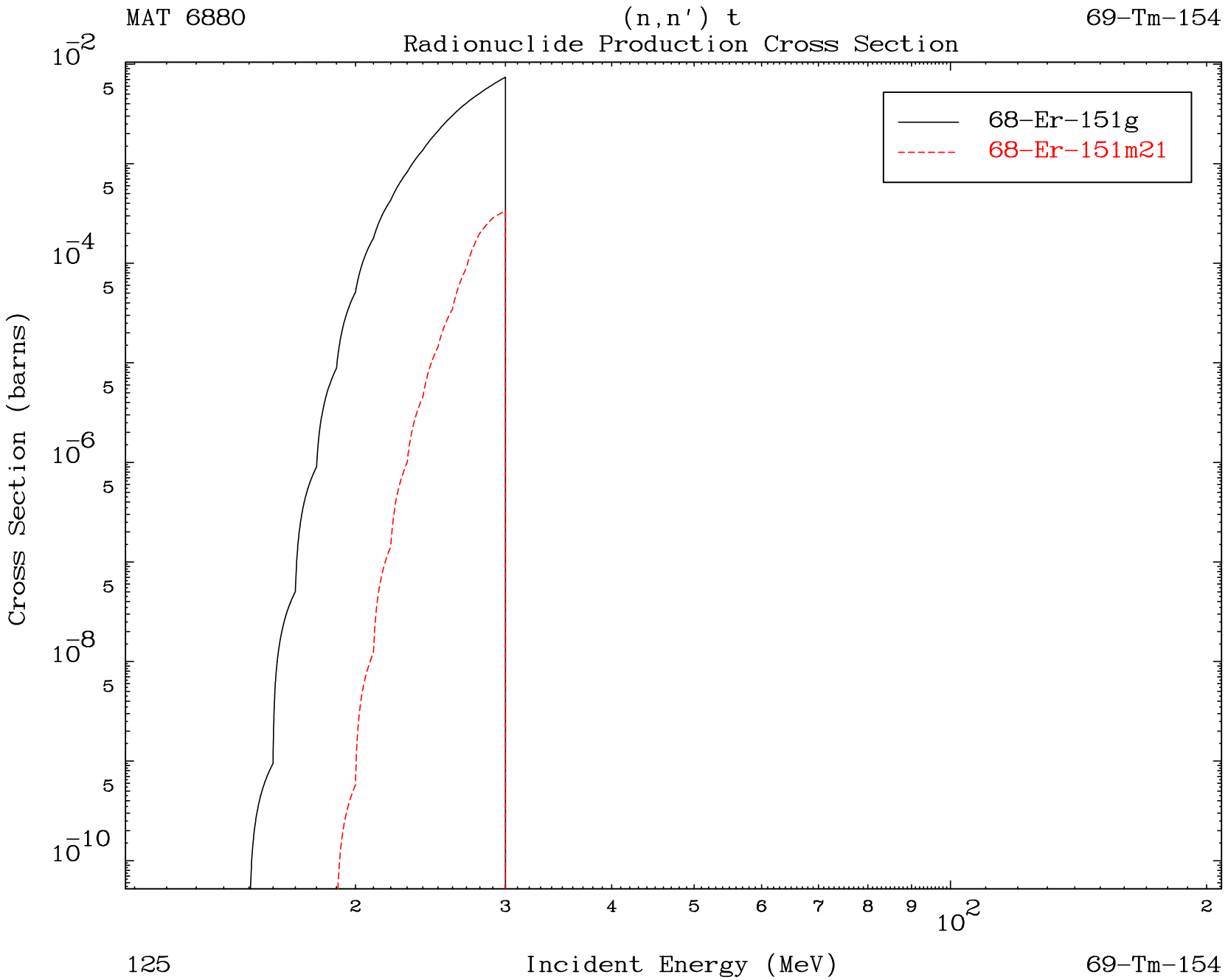

MAT 6880
(n,3n)
69-Tm-154
Radionuclide Production Cross Section
69-Tm-152g
69-Tm-152m2
Cross Section (barns)
Incident Energy (MeV)
120
69-Tm-154

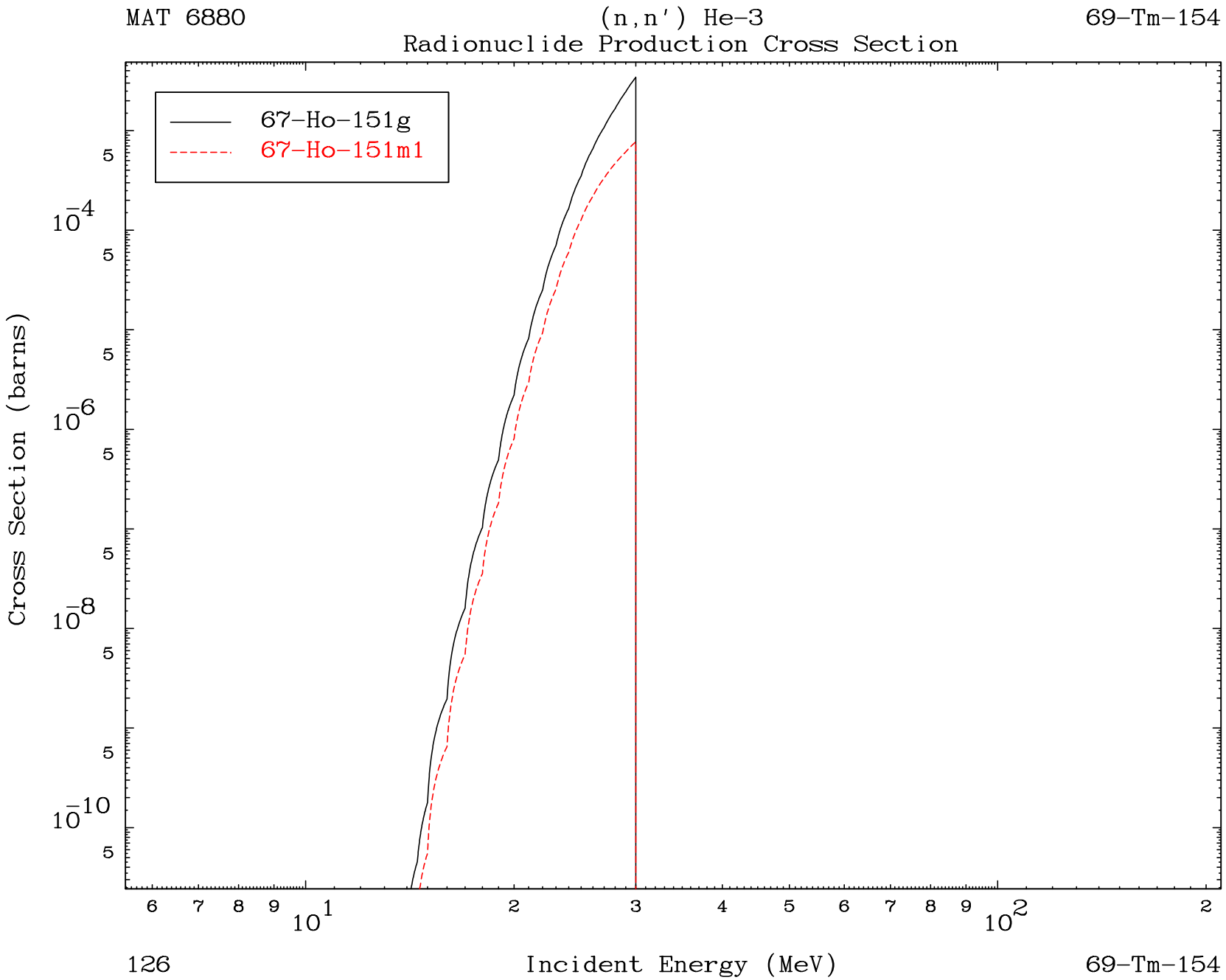

MAT 6880
(n,n') α
69-Tm-154
Radionuclide Production Cross Section
67-Ho-150g
67-Ho-150m1
Cross Section (barns)
Incident Energy (MeV)
121
69-Tm-154

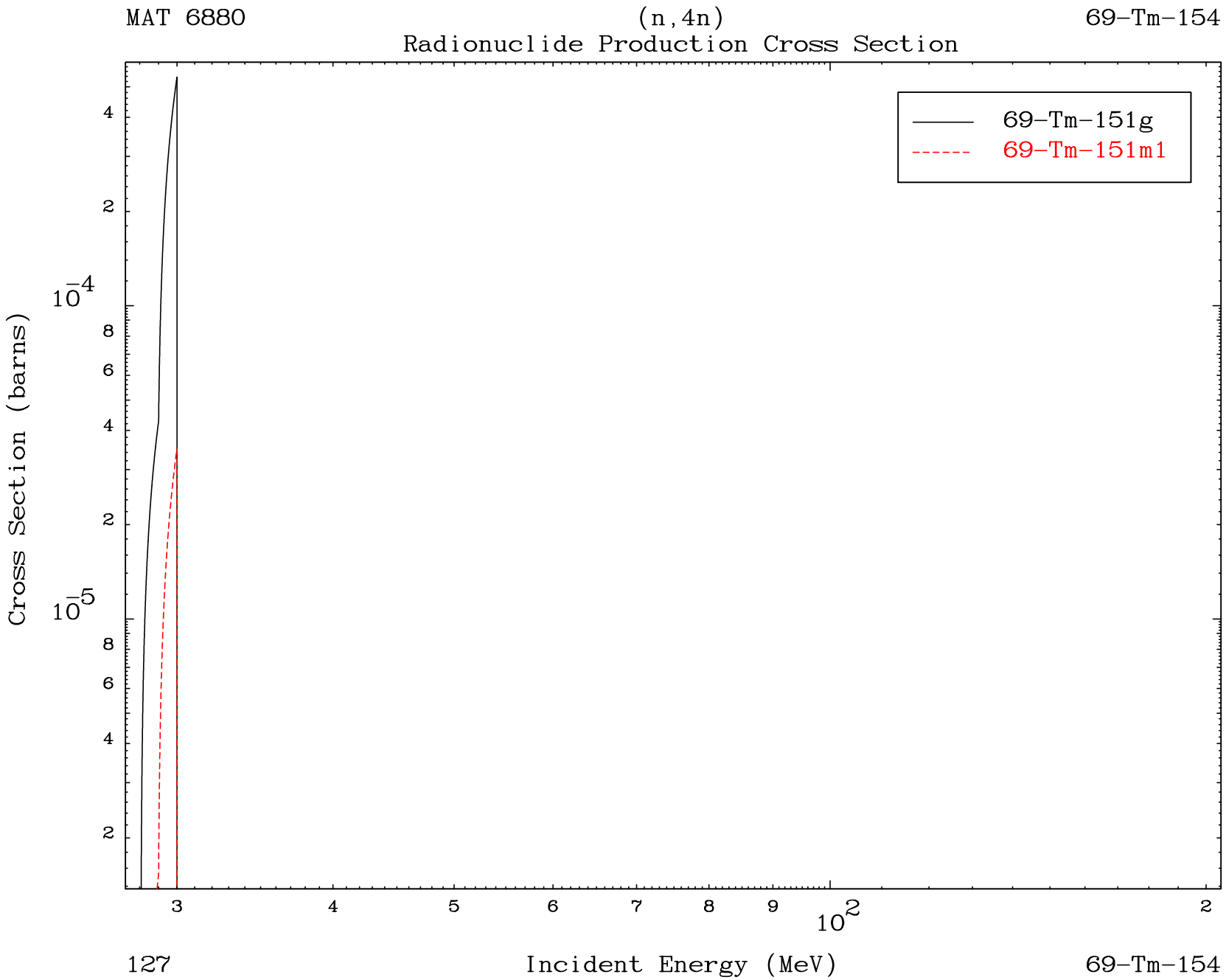

MAT 6880
(n,2n) α
69-Tm-154
Radionuclide Production Cross Section
67-Ho-149g
67-Ho-149m1
Cross Section (barns)
10-2
10-4
10-6
10-8
4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 2 2
122
Incident Energy (MeV)
69-Tm-154

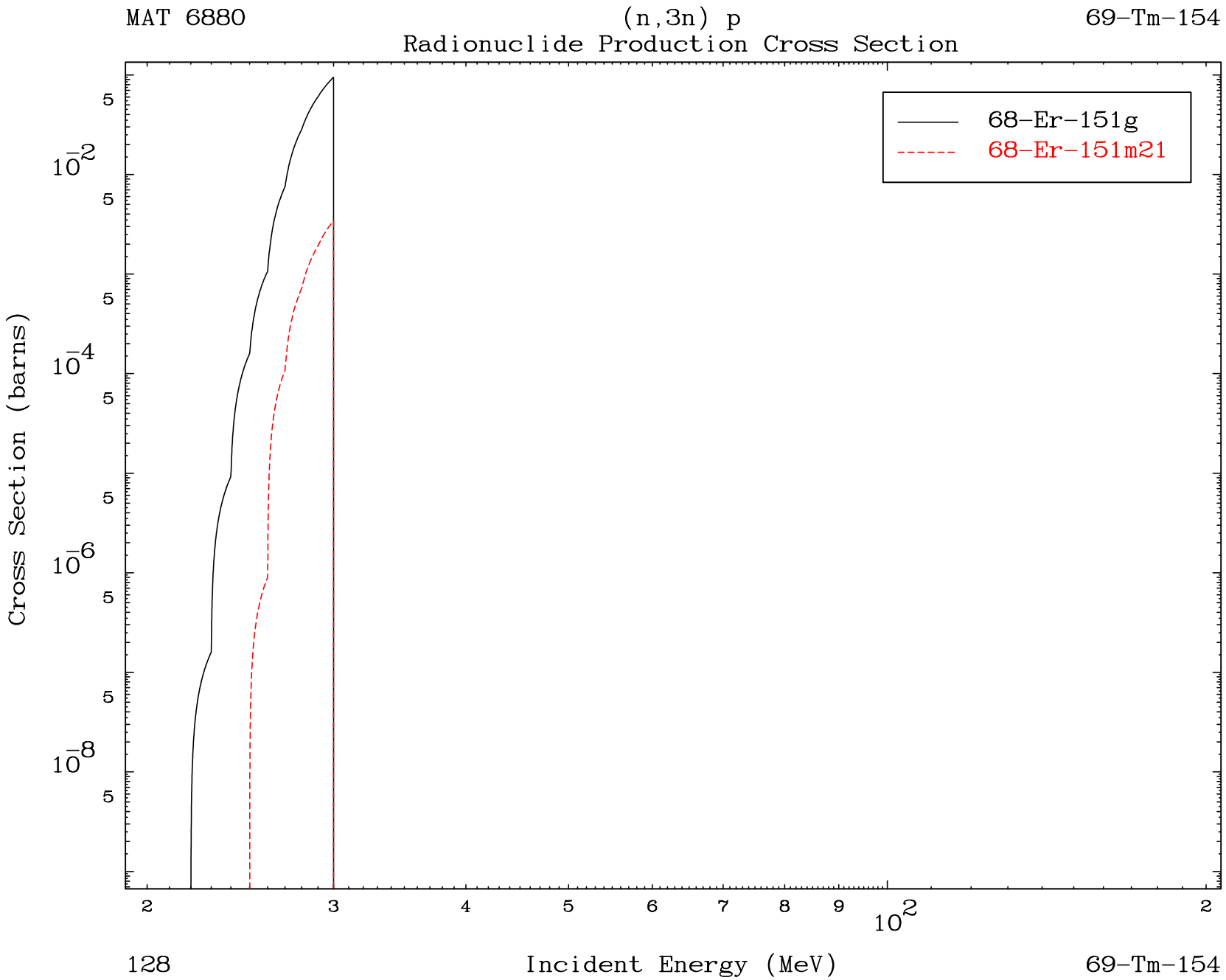

MAT 6880
(n,3n) α
69-Tm-154
Radionuclide Production Cross Section
67-Ho-148g
67-Ho-148m4
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
5
2
3
4
5
6
7
8
9
10^2
2
123
Incident Energy (MeV)
69-Tm-154

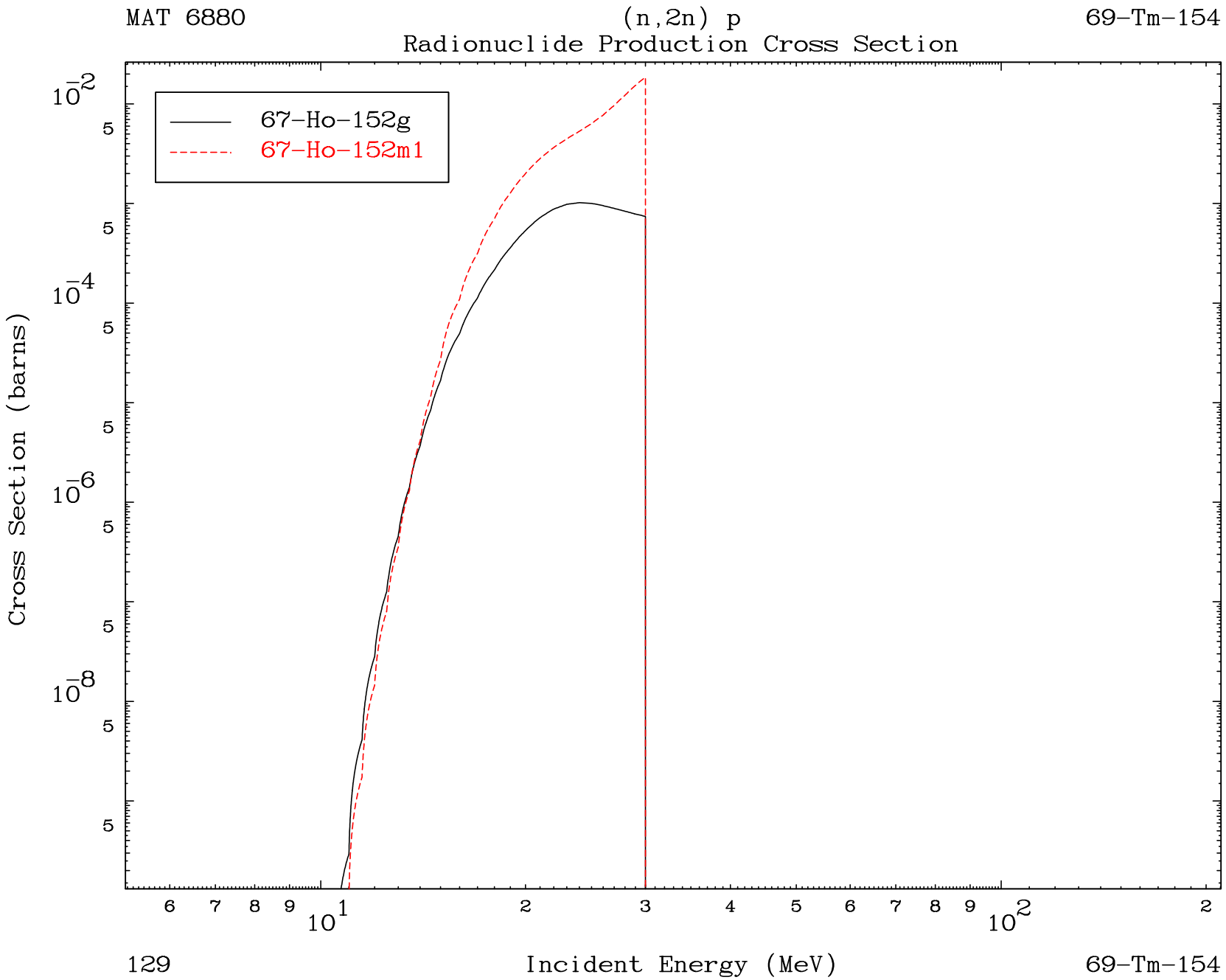

MAT 6880
(n,n') 2α
69-Tm-154
Radionuclide Production Cross Section
65-Tb-146g
65-Tb-146m2
Cross Section (barns)
Incident Energy (MeV)
124
69-Tm-154

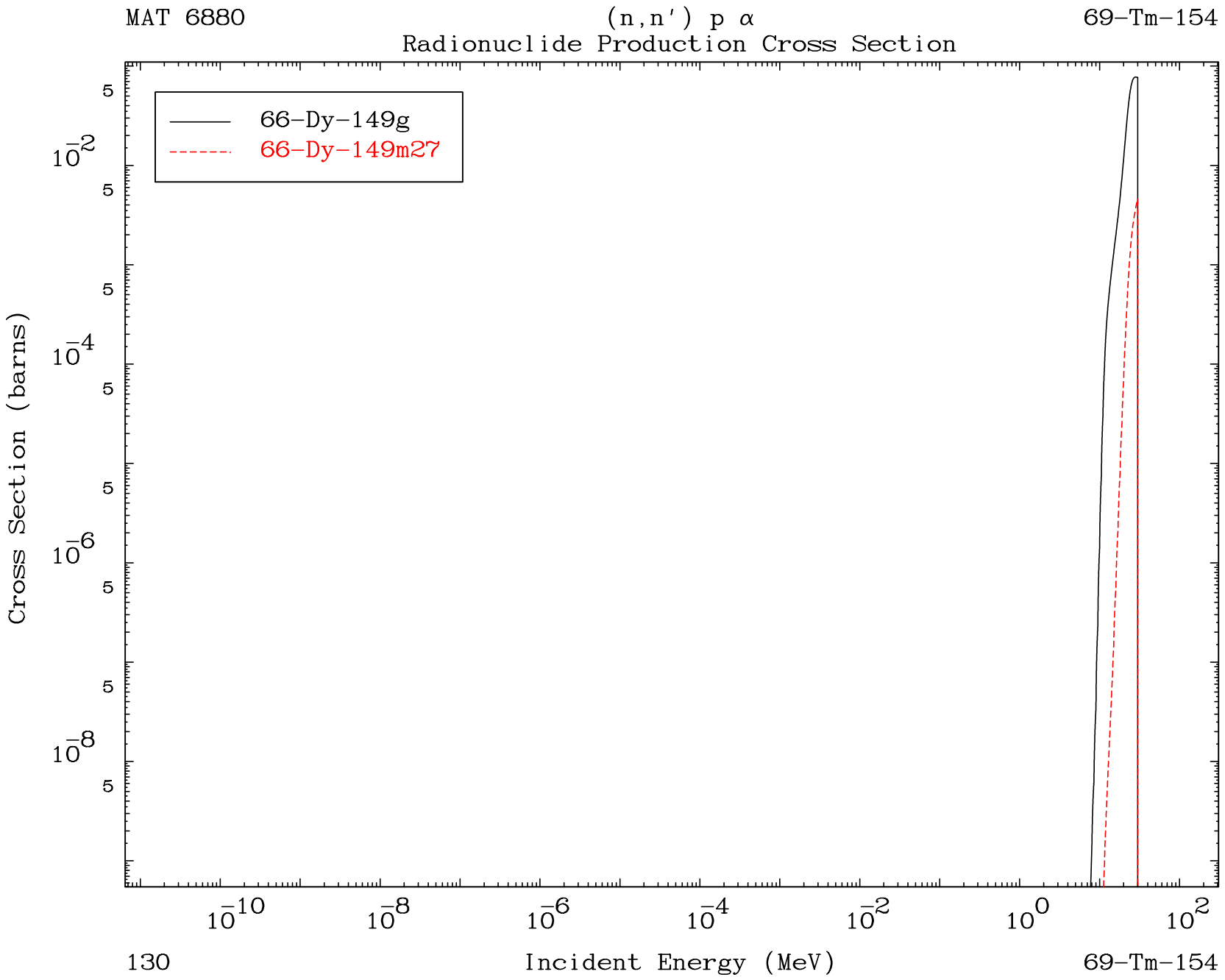

MAT 6880
(n,n') t
69-Tm-154
Radionuclide Production Cross Section
68-Er-151g
68-Er-151m21
Cross Section (barns)
Incident Energy (MeV)
125
69-Tm-154

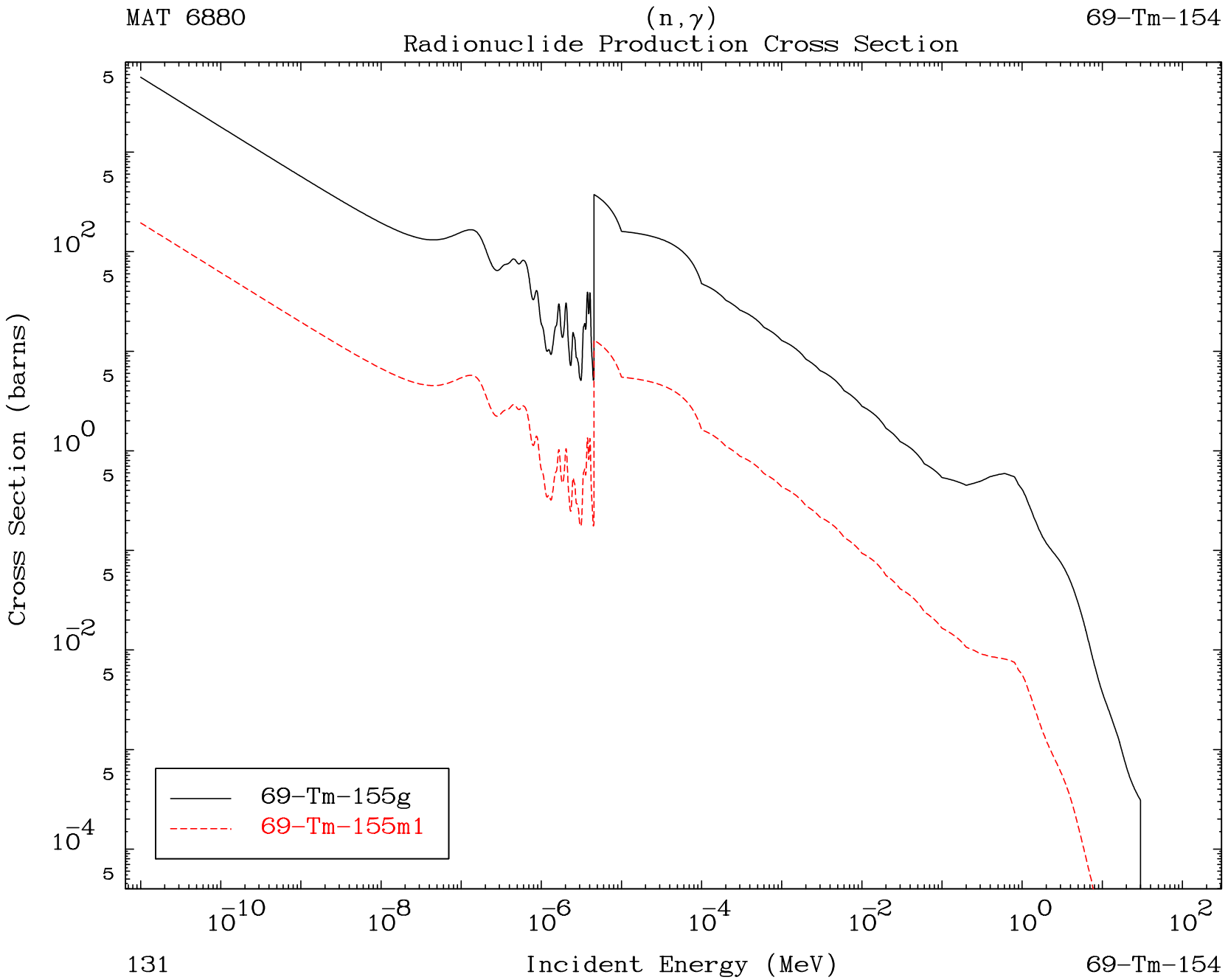

MAT 6880
(n,n') He-3
69-Tm-154
Radionuclide Production Cross Section
67-Ho-151g
67-Ho-151m1
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
5
6 7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
126
Incident Energy (MeV)
69-Tm-154

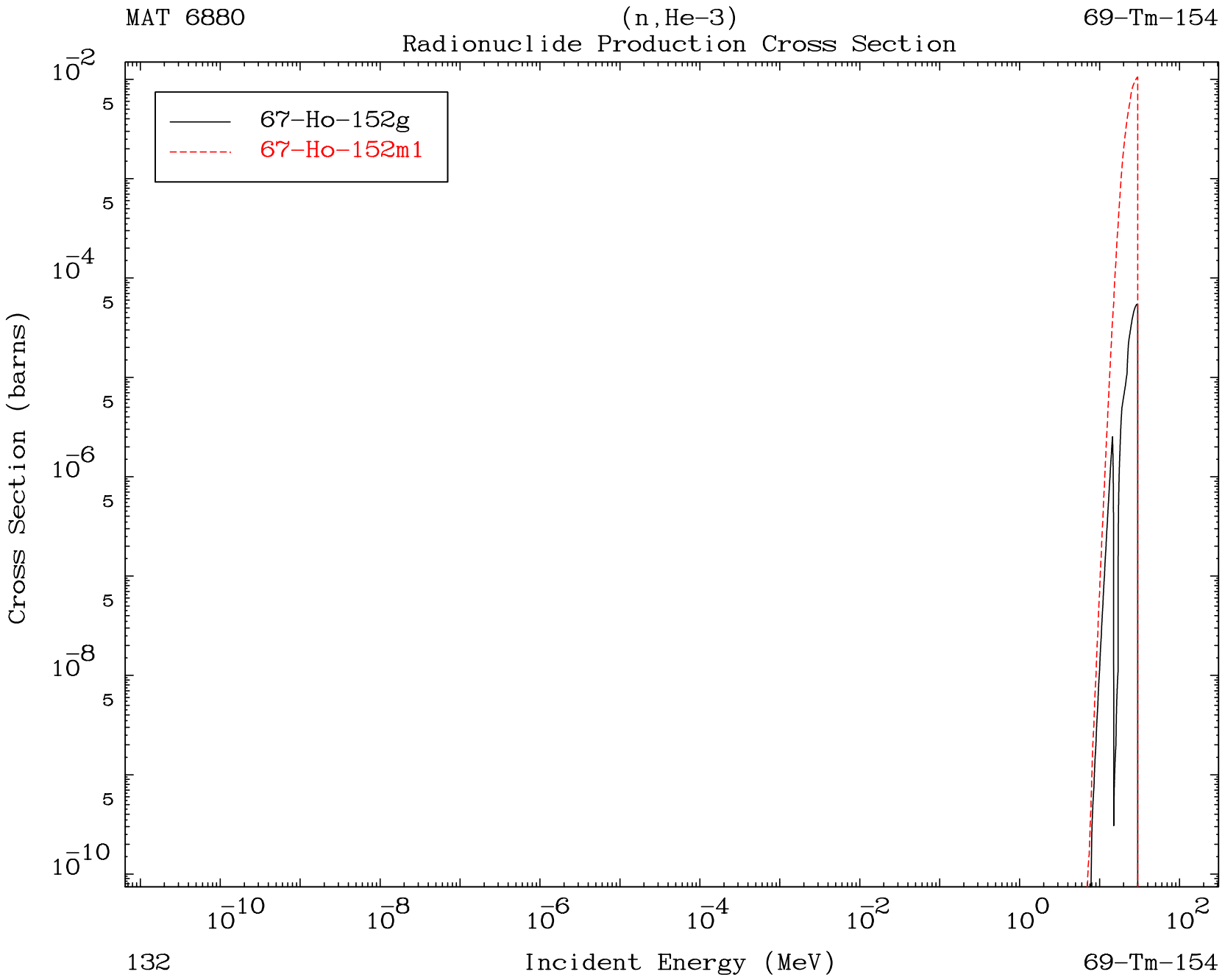

MAT 6880
(n,4n)
69-Tm-154
Radionuclide Production Cross Section
69-Tm-151g
69-Tm-151m1
Cross Section (barns)
10^-4
10^-5
2
4
6
8
3
4
5
6
7
8
9
10^2
2
127
Incident Energy (MeV)
69-Tm-154

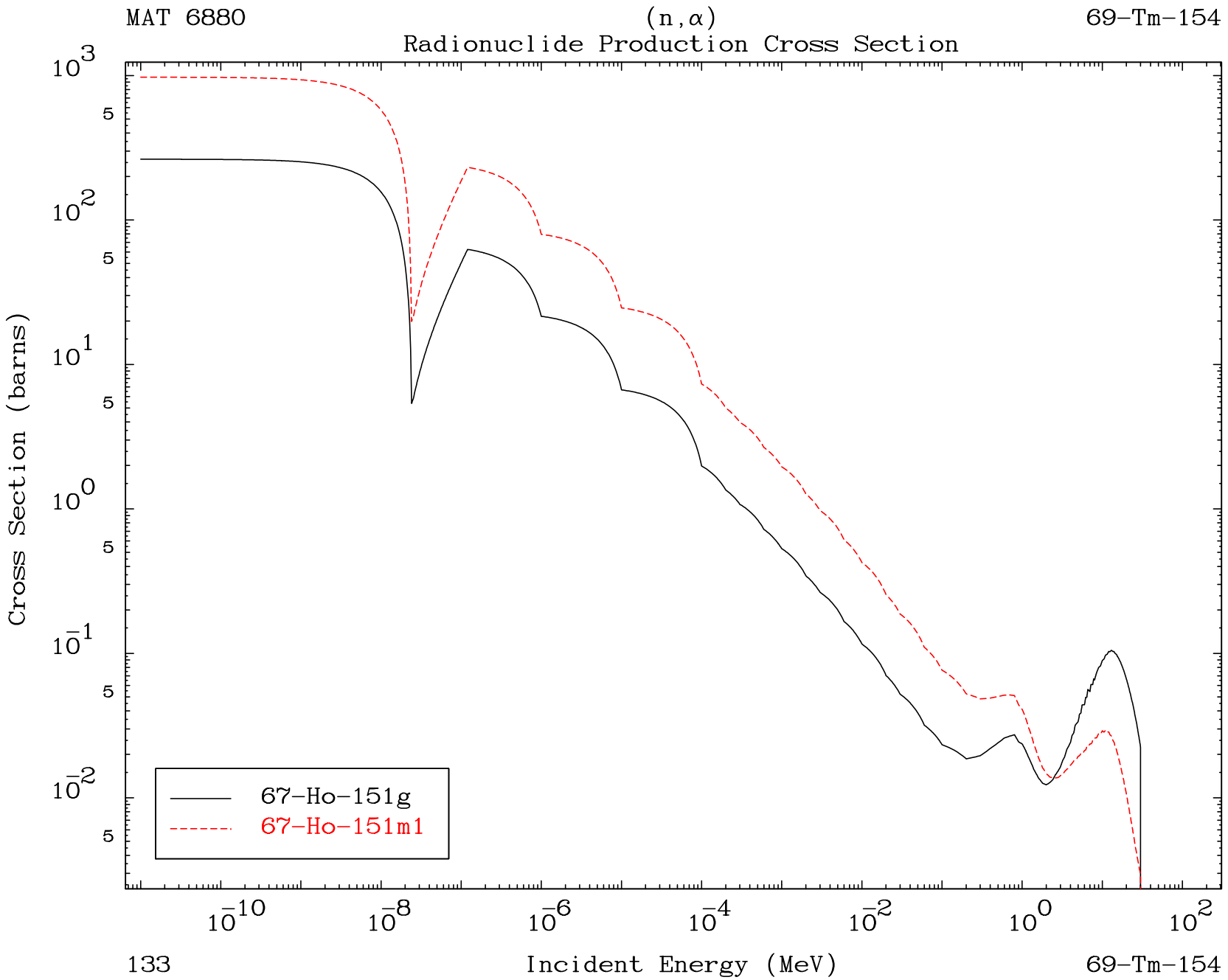

MAT 6880
(n,3n) p
69-Tm-154
Radionuclide Production Cross Section
68-Er-151g
68-Er-151m21
Cross Section (barns)
10-2
10-4
10-6
10-8
5
2
3
4
5
6
7
8
9
102
2
128
Incident Energy (MeV)
69-Tm-154

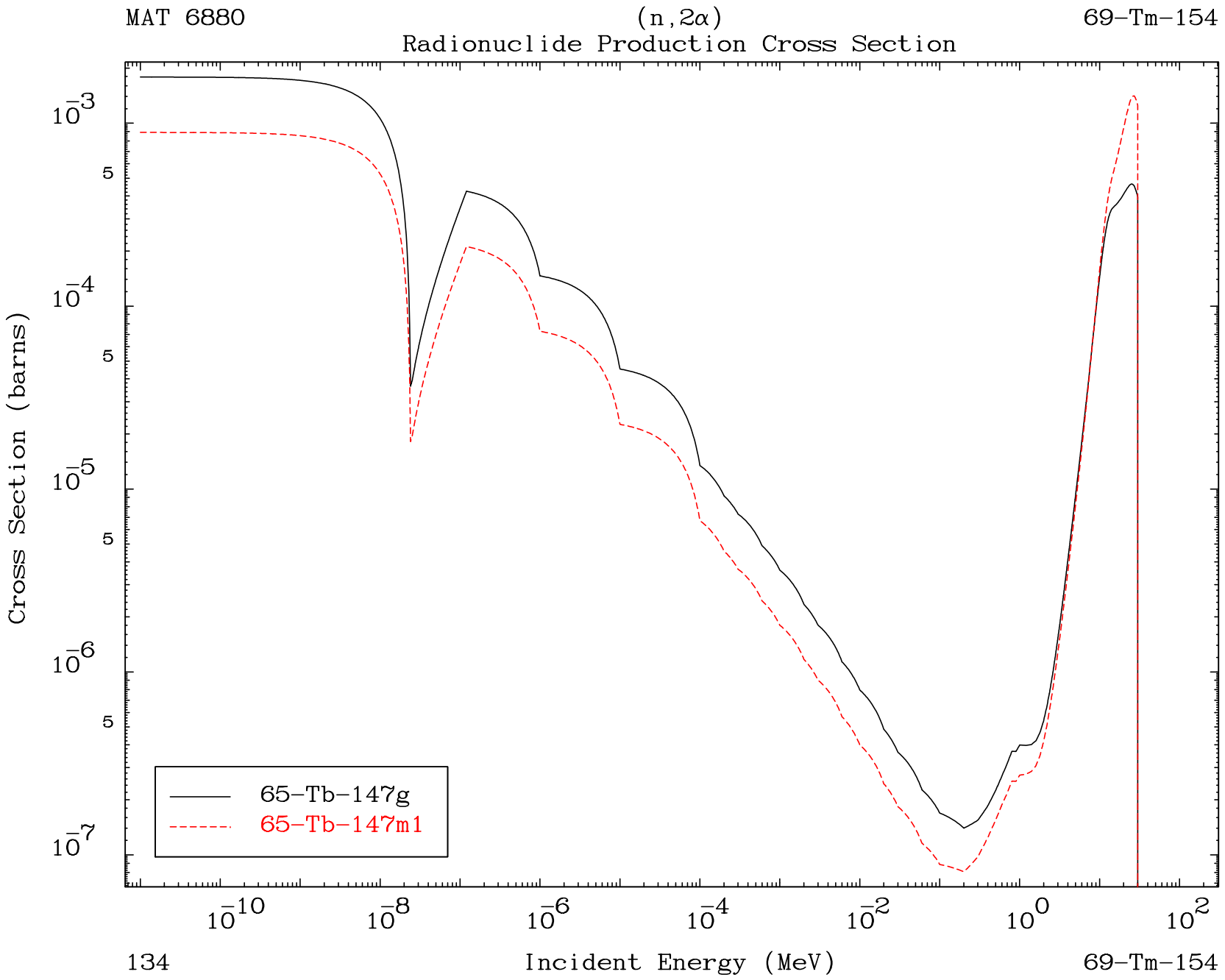

MAT 6880
(n,2n) p
69-Tm-154
Radionuclide Production Cross Section
67-Ho-152g
67-Ho-152m1
Cross Section (barns)
Incident Energy (MeV)
129
69-Tm-154

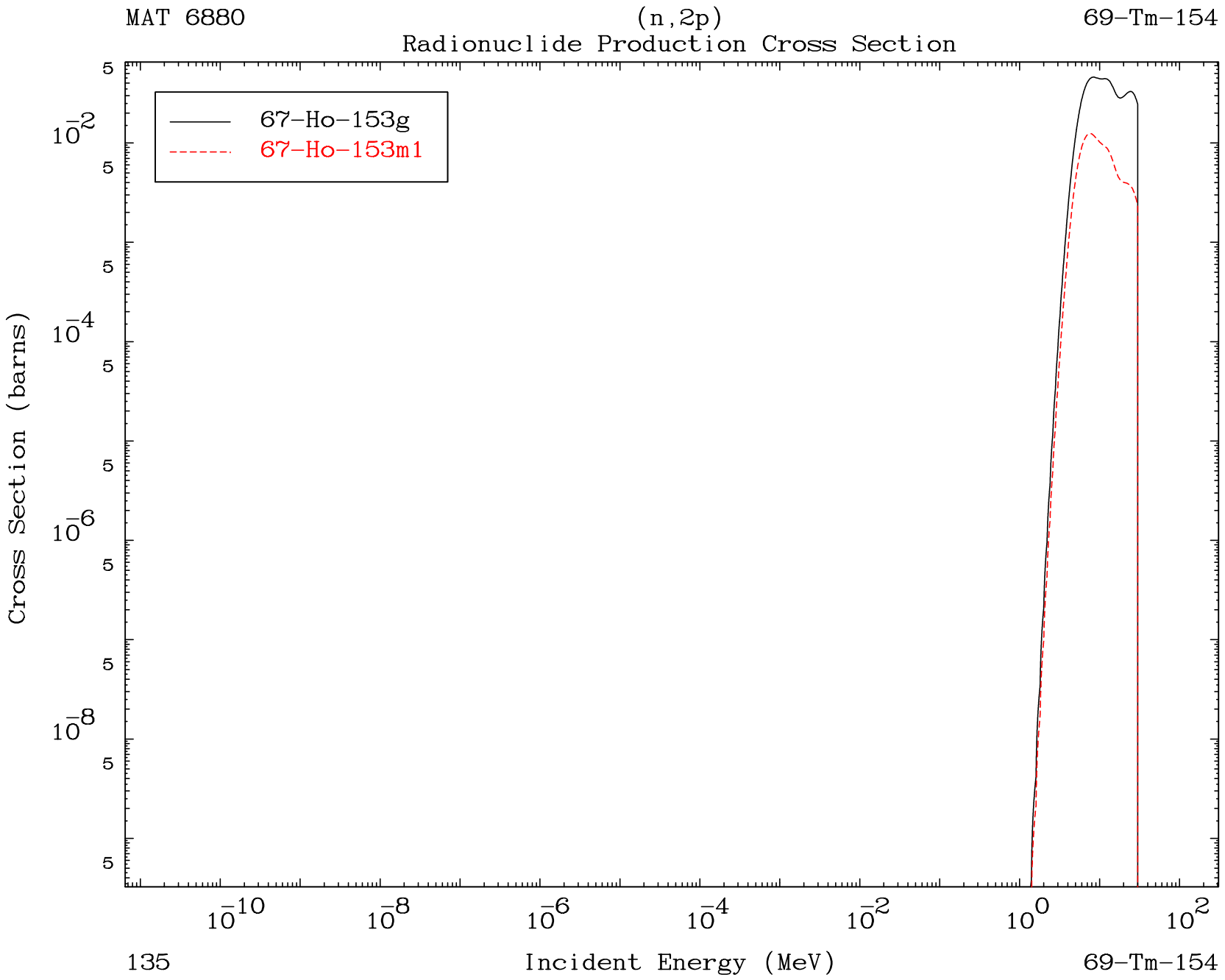

MAT 6880
(n,n') p α
69-Tm-154
Radionuclide Production Cross Section
66-Dy-149g
66-Dy-149m27
Cross Section (barns)
Incident Energy (MeV)
130
69-Tm-154

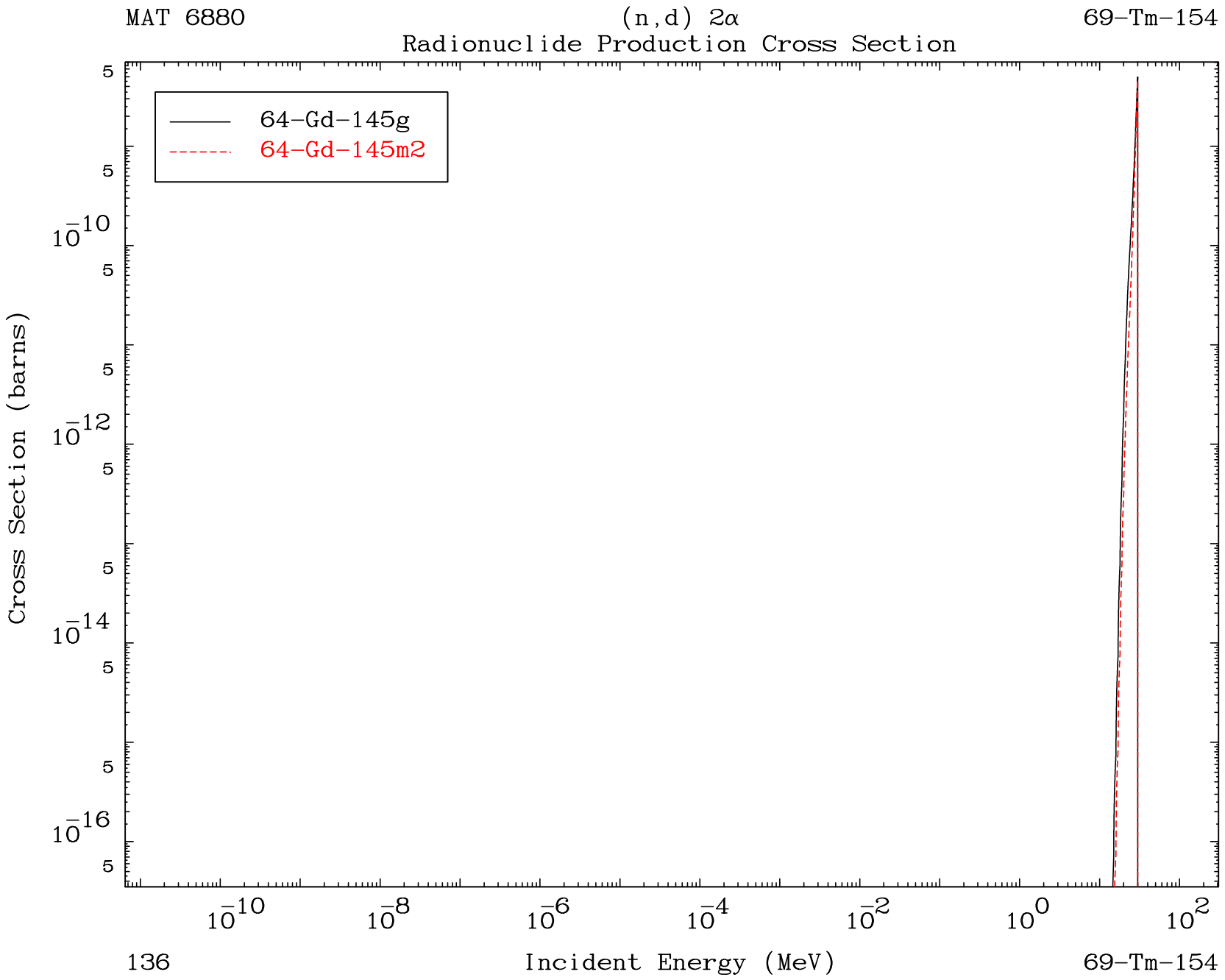

MAT 6880
(n,γ)
69-Tm-154
Radionuclide Production Cross Section
Cross Section (barns)
10^2
10^0
10^-2
10^-4
5
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
69-Tm-155g
69-Tm-155m1
131
69-Tm-154

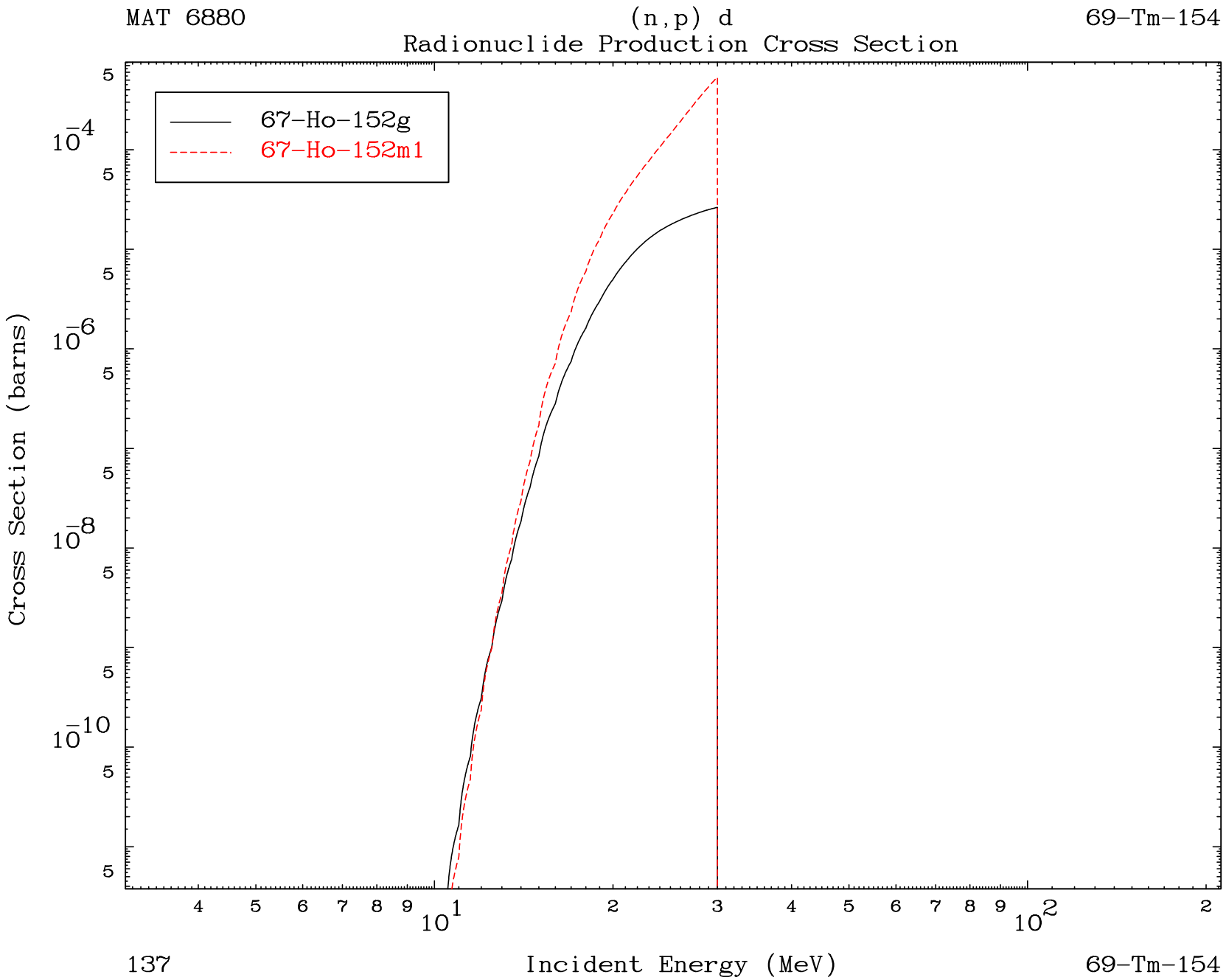

MAT 6880
(n,He-3)
69-Tm-154
Radionuclide Production Cross Section
67-Ho-152g
67-Ho-152m1
Cross Section (barns)
Incident Energy (MeV)
132
69-Tm-154

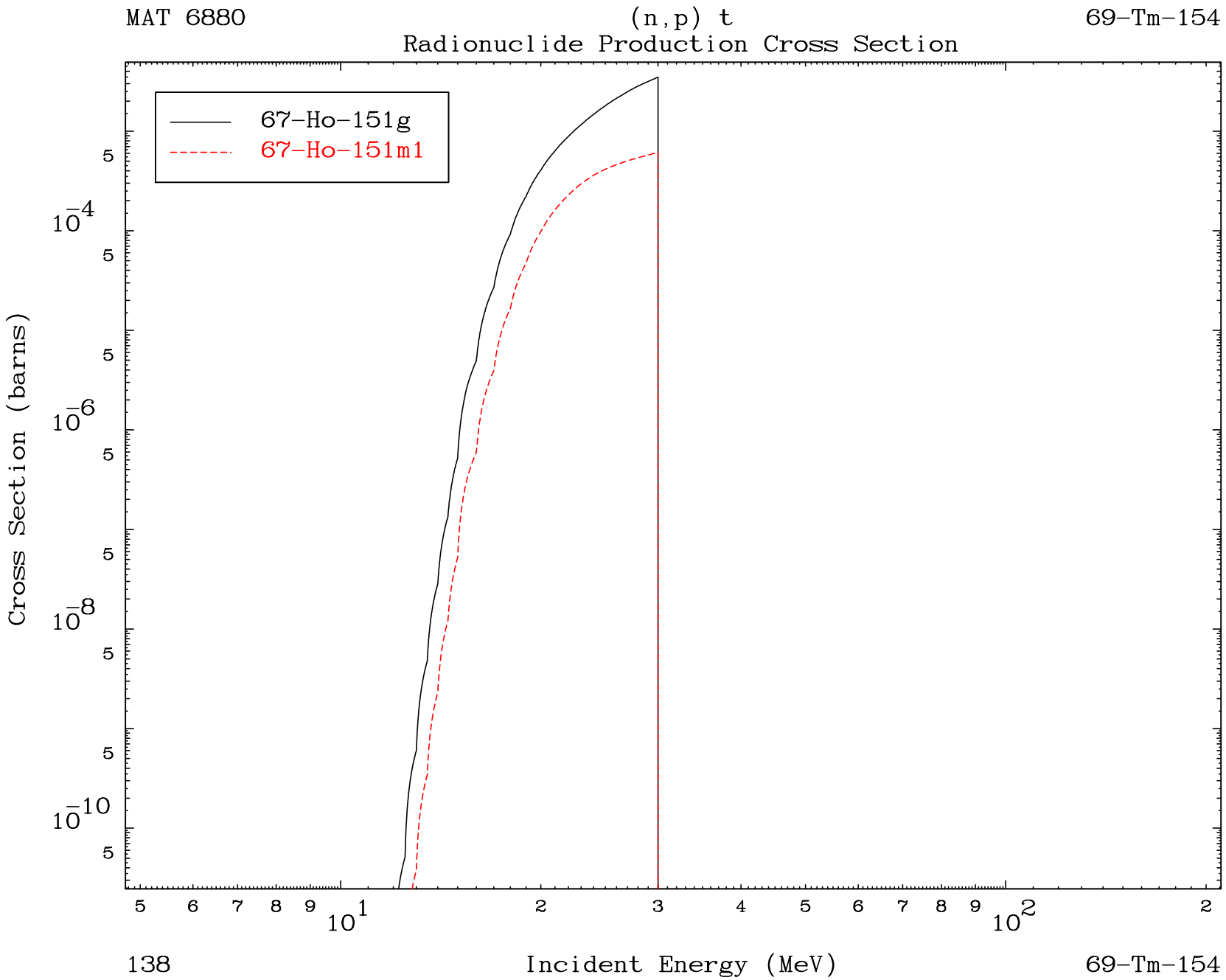

MAT 6880
(n,α)
69-Tm-154
Radionuclide Production Cross Section
Cross Section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-2
5
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
67-Ho-151g
67-Ho-151m1
133
69-Tm-154

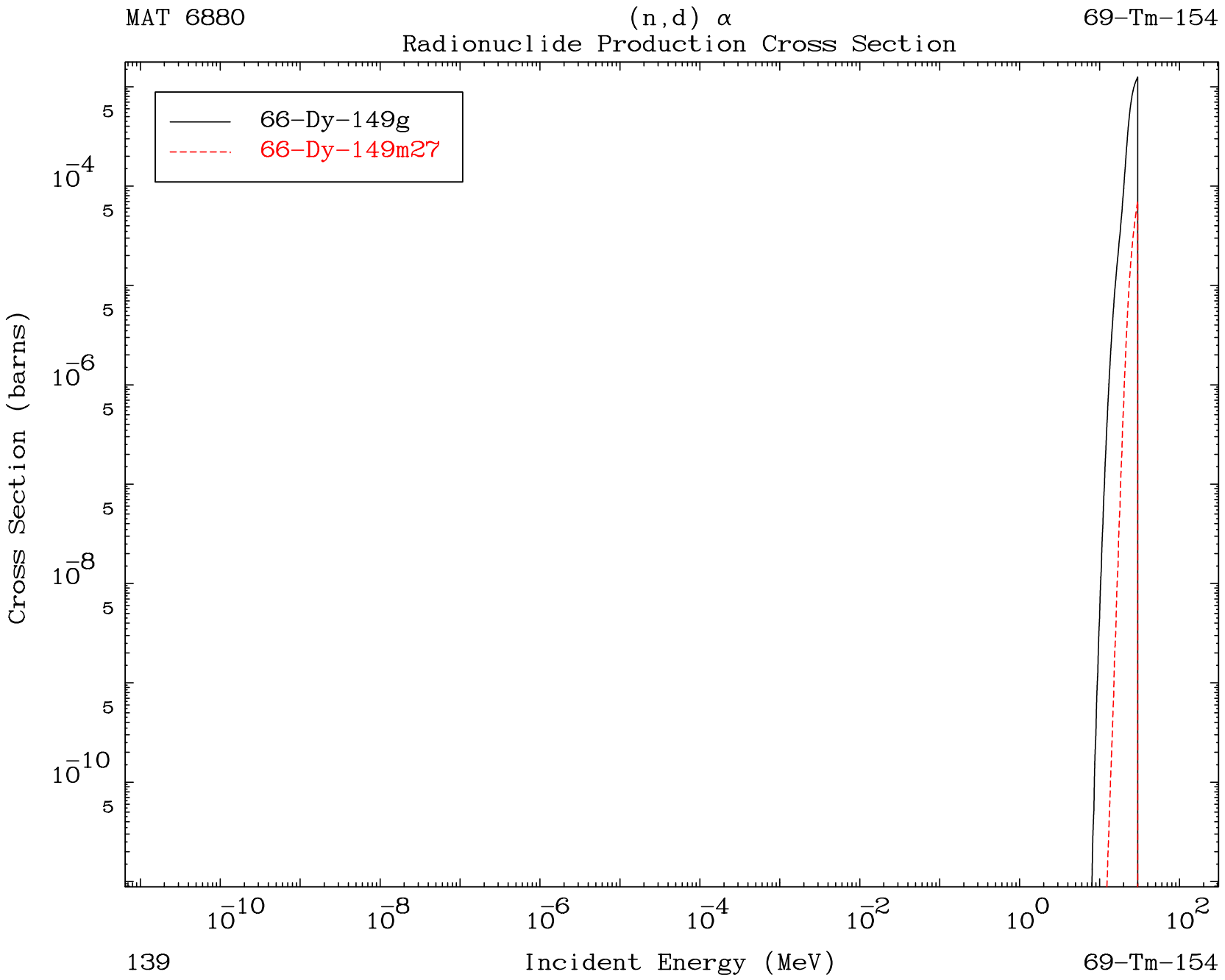

MAT 6880
(n,2α)
69-Tm-154
Radionuclide Production Cross Section
Cross Section (barns)
10-3
5
10-4
5
10-5
5
10-6
5
10-7
65-Tb-147g
65-Tb-147m1
10-10
10-8
10-6
10-4
10-2
100
102
134
Incident Energy (MeV)
69-Tm-154


MAT 6880
(n,2p)
69-Tm-154
Radionuclide Production Cross Section
67-Ho-153g
67-Ho-153m1
Cross Section (barns)
Incident Energy (MeV)
135
69-Tm-154


MAT 6880
(n,d) 2α
69-Tm-154
Radionuclide Production Cross Section
64-Gd-145g
64-Gd-145m2
Cross Section (barns)
Incident Energy (MeV)
136
69-Tm-154


MAT 6880
(n,p) d
69-Tm-154
Radionuclide Production Cross Section
67-Ho-152g
67-Ho-152m1
Cross Section (barns)
Incident Energy (MeV)
137
69-Tm-154


MAT 6880
(n,p) t
69-Tm-154
Radionuclide Production Cross Section
67-Ho-151g
67-Ho-151m1
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
5
10^1
2
3
4
5
6
7
8
9
10^2
2
138
Incident Energy (MeV)
69-Tm-154


MAT 6880
(n,d) α
69-Tm-154
Radionuclide Production Cross Section
66-Dy-149g
66-Dy-149m27
Cross Section (barns)
Incident Energy (MeV)
139
69-Tm-154