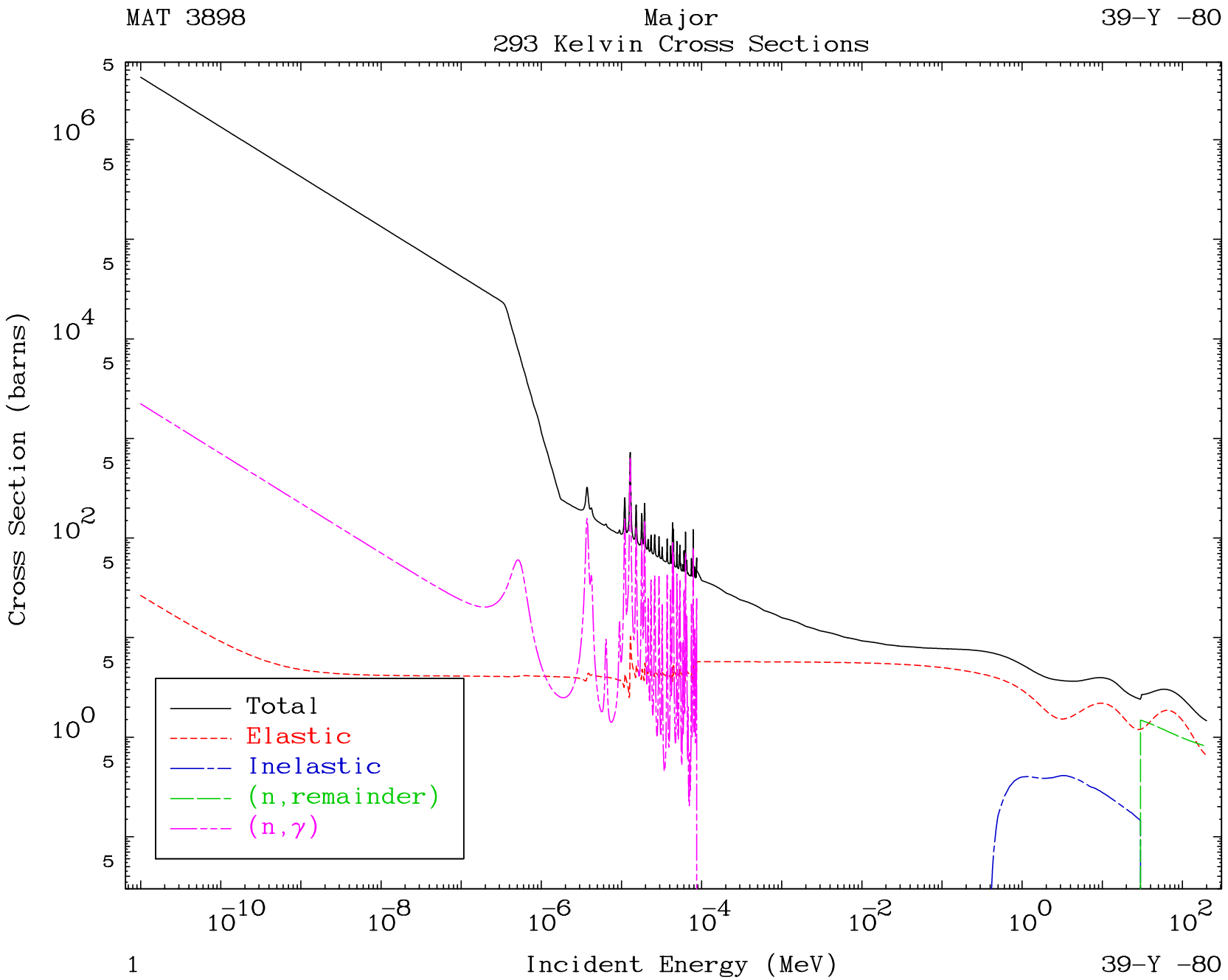
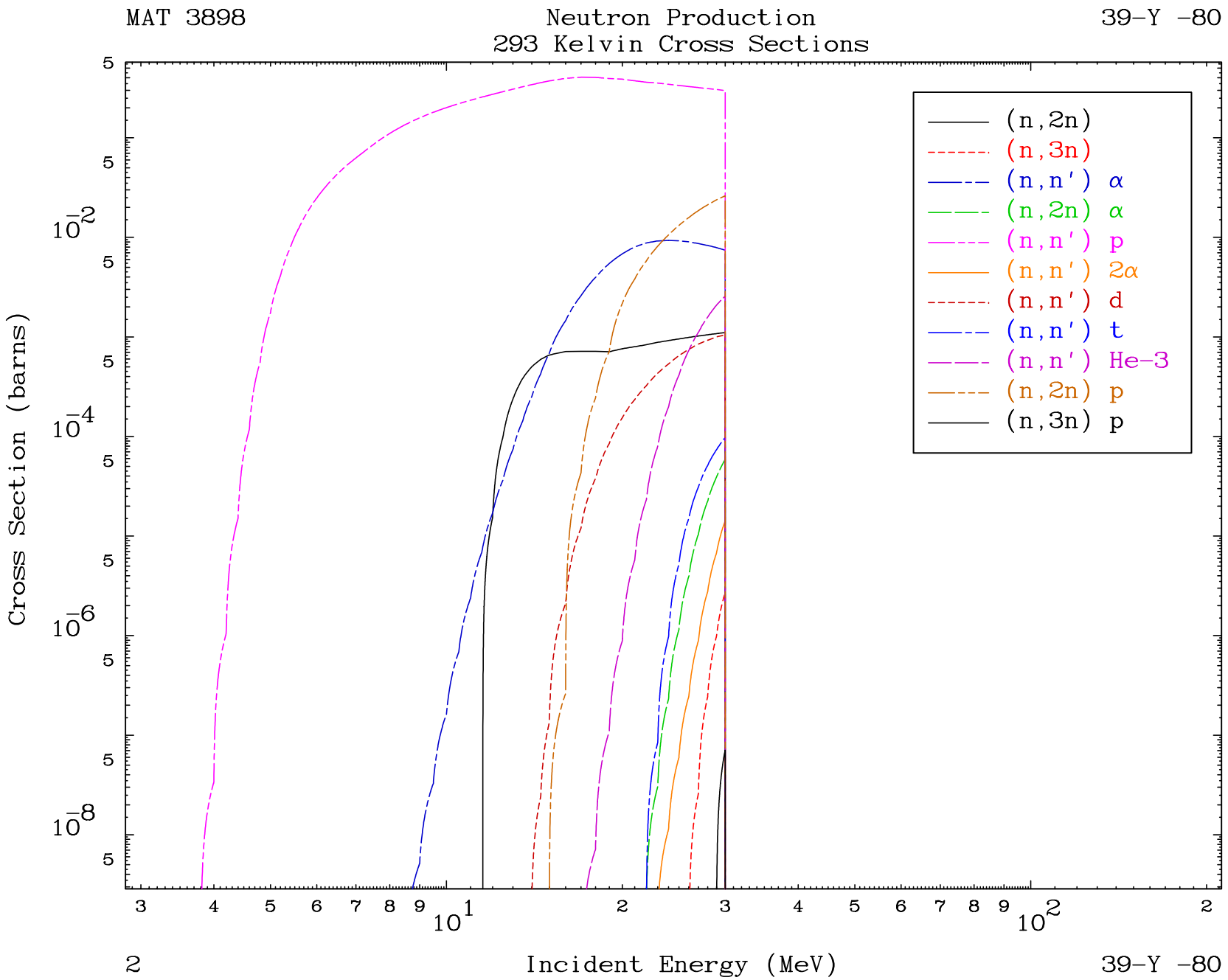
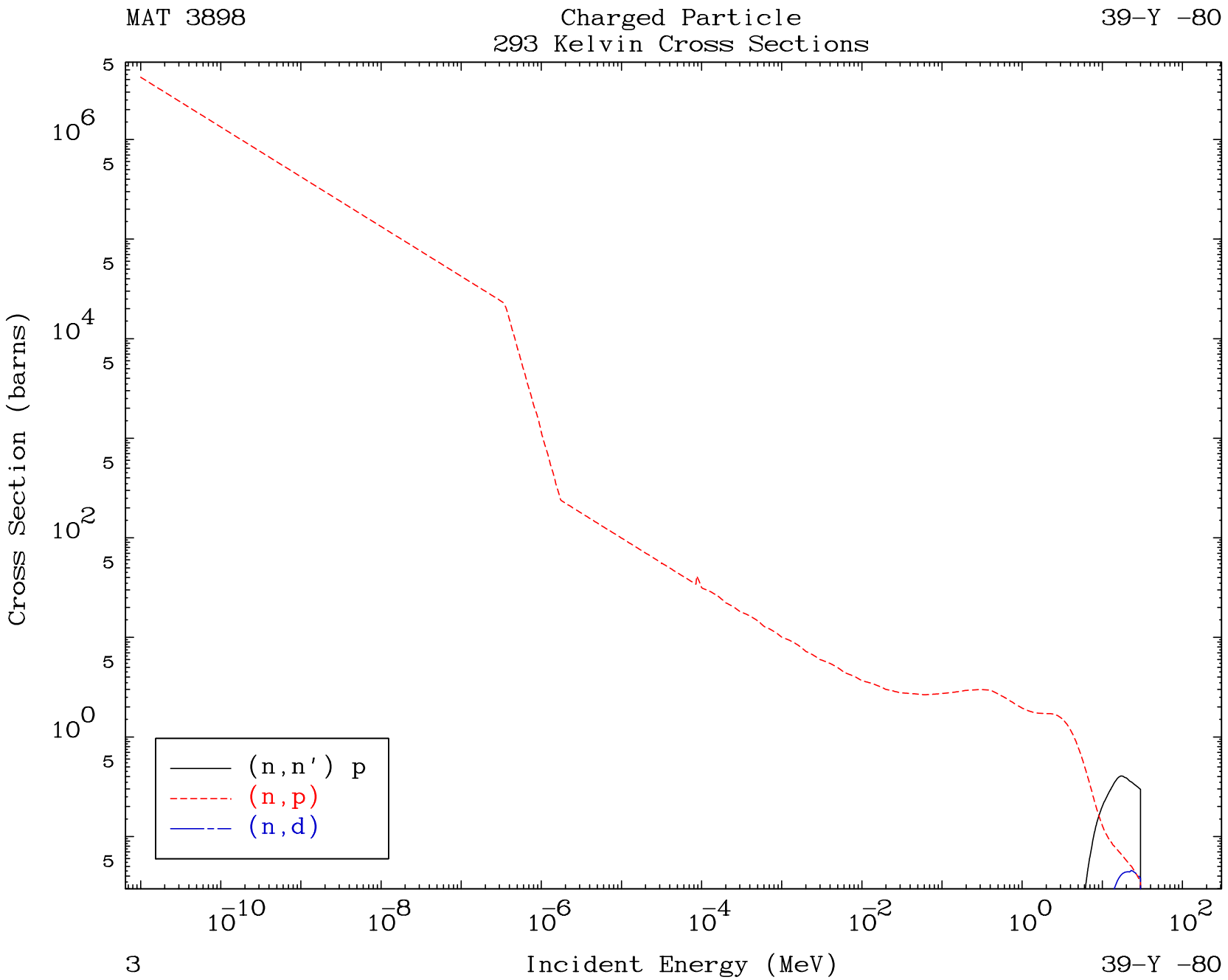
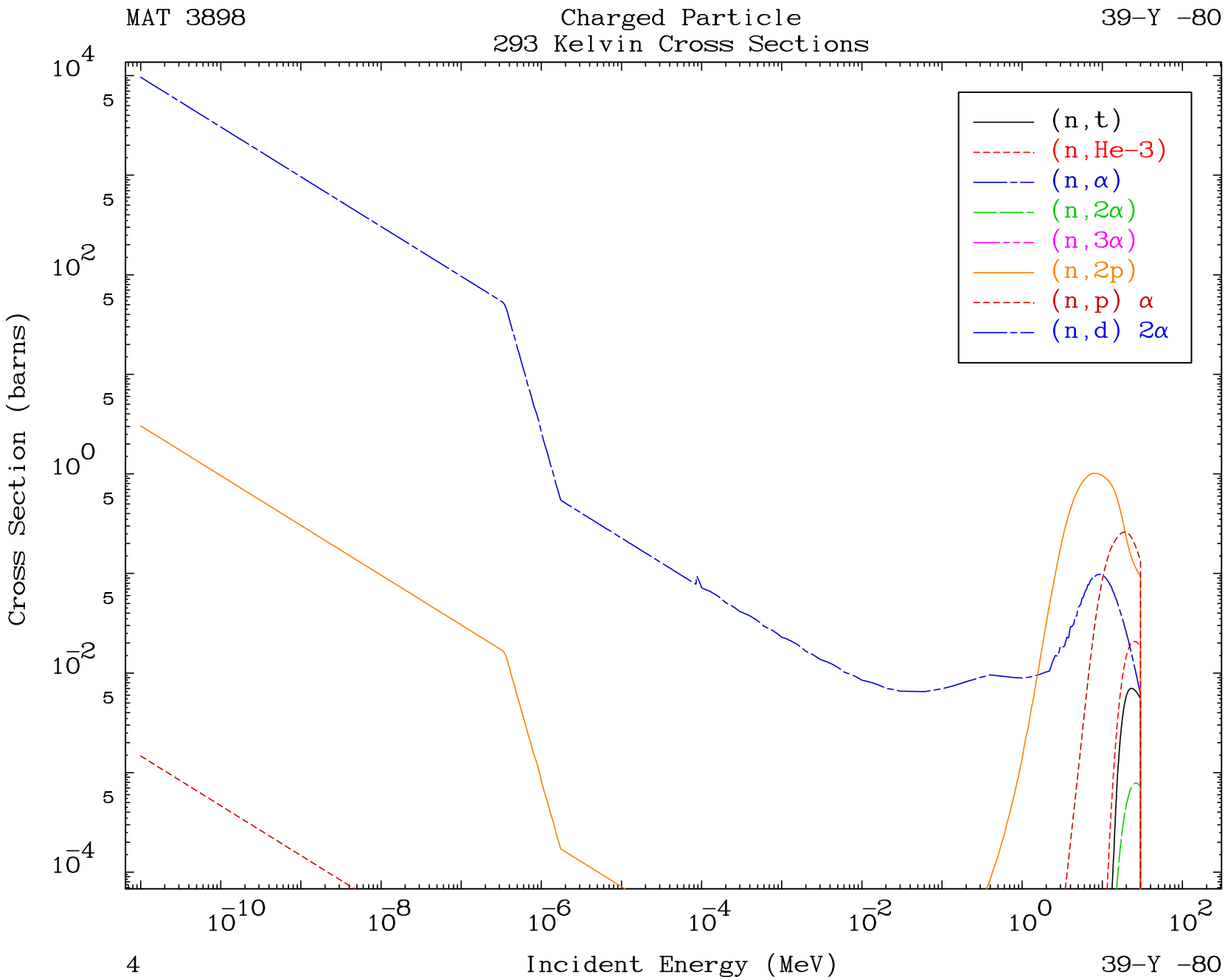
Program EVALPLOT
(Version 2017-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

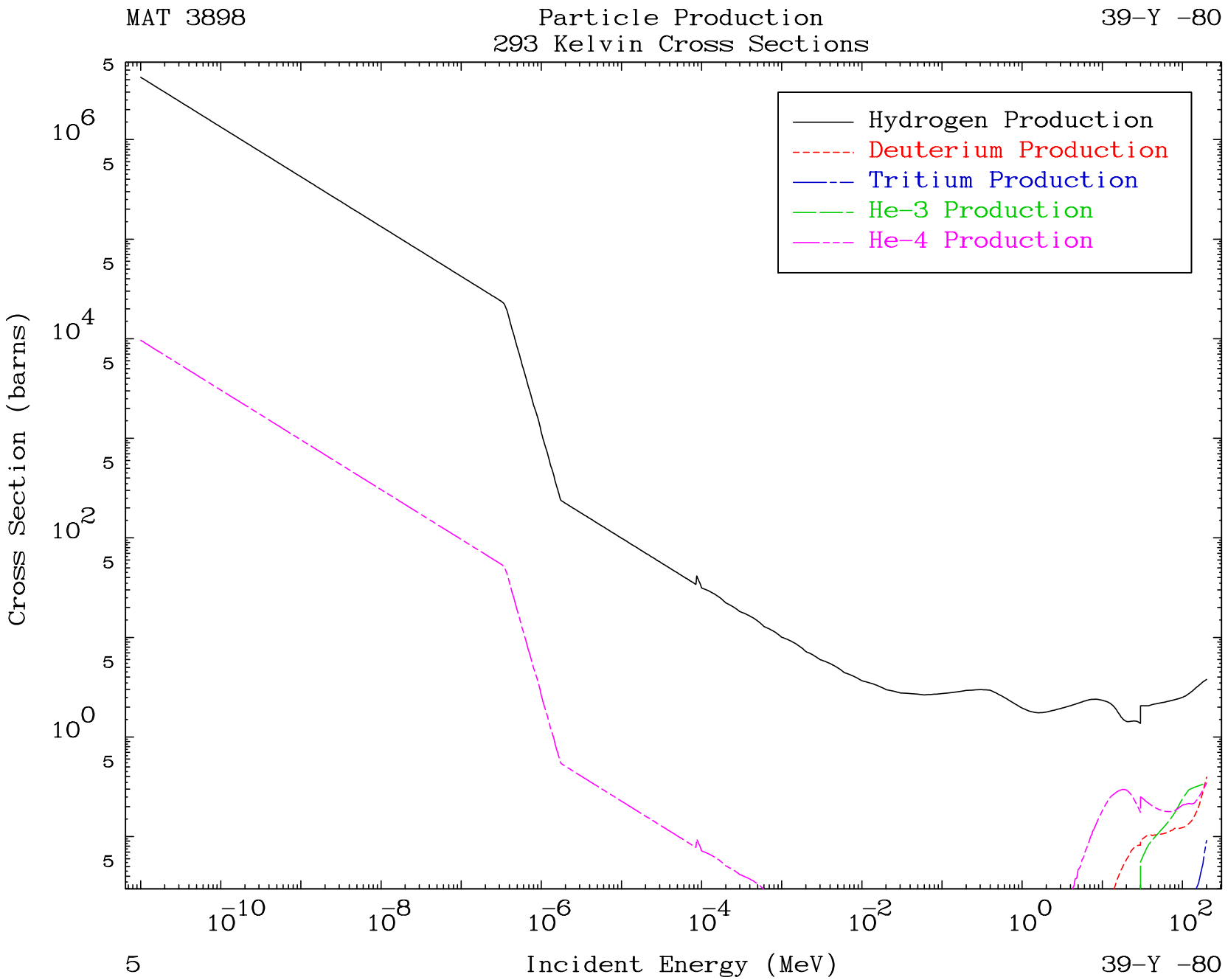
Press Mouse Button to Start

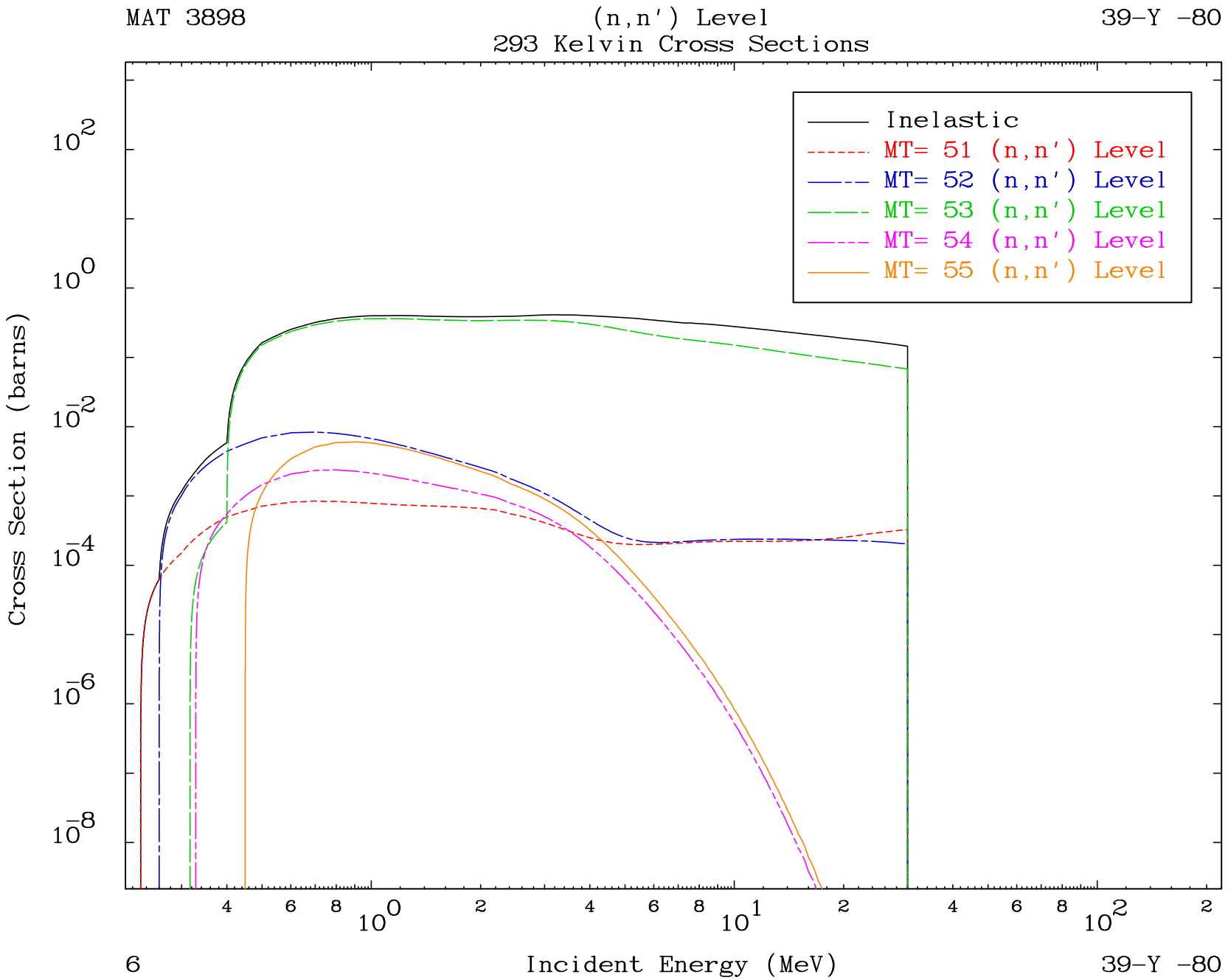

MAT 3898
Major
39-Y -80
293 Kelvin Cross Sections
Cross Section (barns)
Incident Energy (MeV)
Total
Elastic
Inelastic
(n,remainder)
(n,γ)
1
39-Y -80

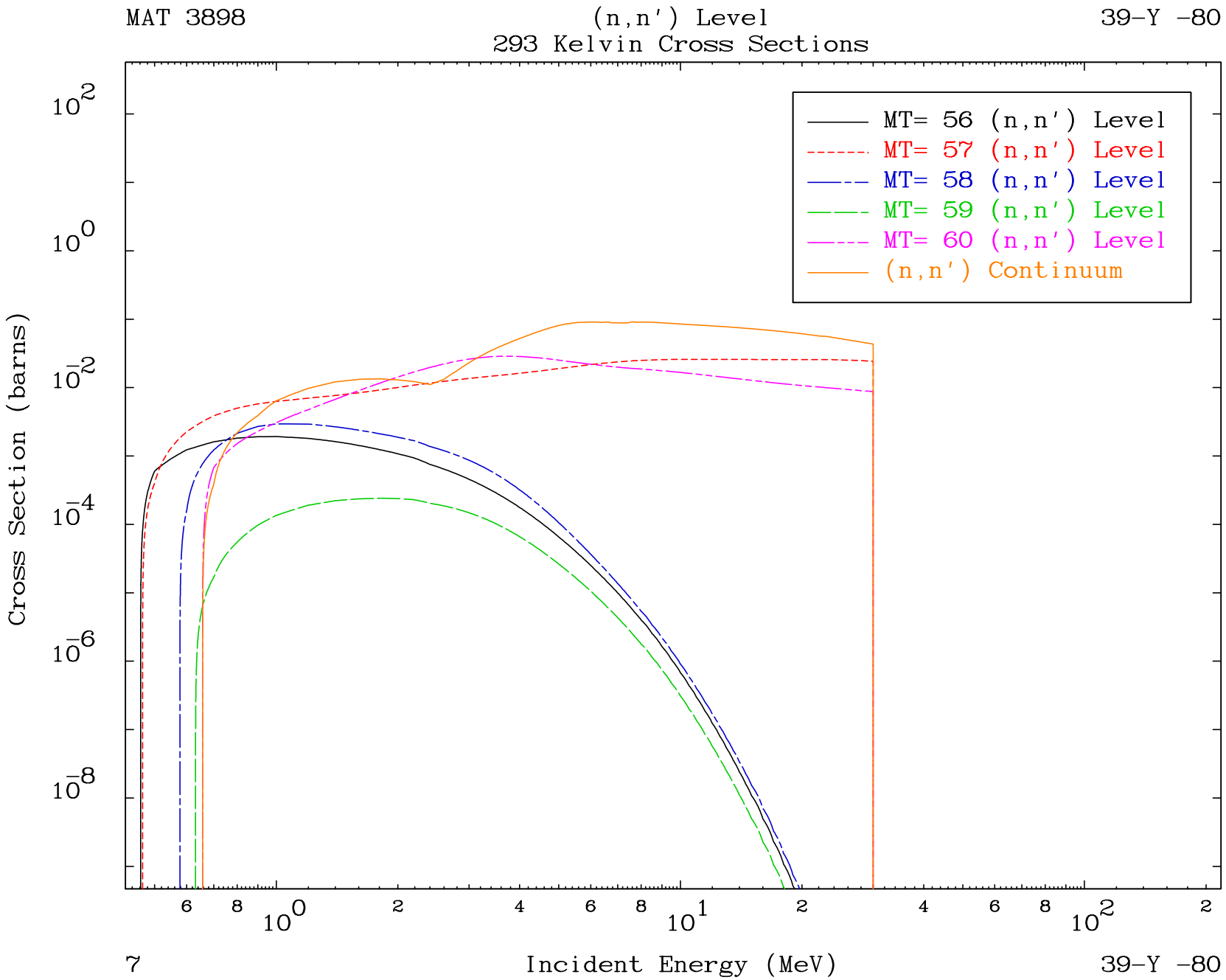

MAT 3898
Neutron Production
293 Kelvin Cross Sections
39-Y -80
Cross Section (barns)
Incident Energy (MeV)
39-Y -80
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,n') p
(n,n') 2α
(n,n') d
(n,n') t
(n,n') He-3
(n,2n) p
(n,3n) p

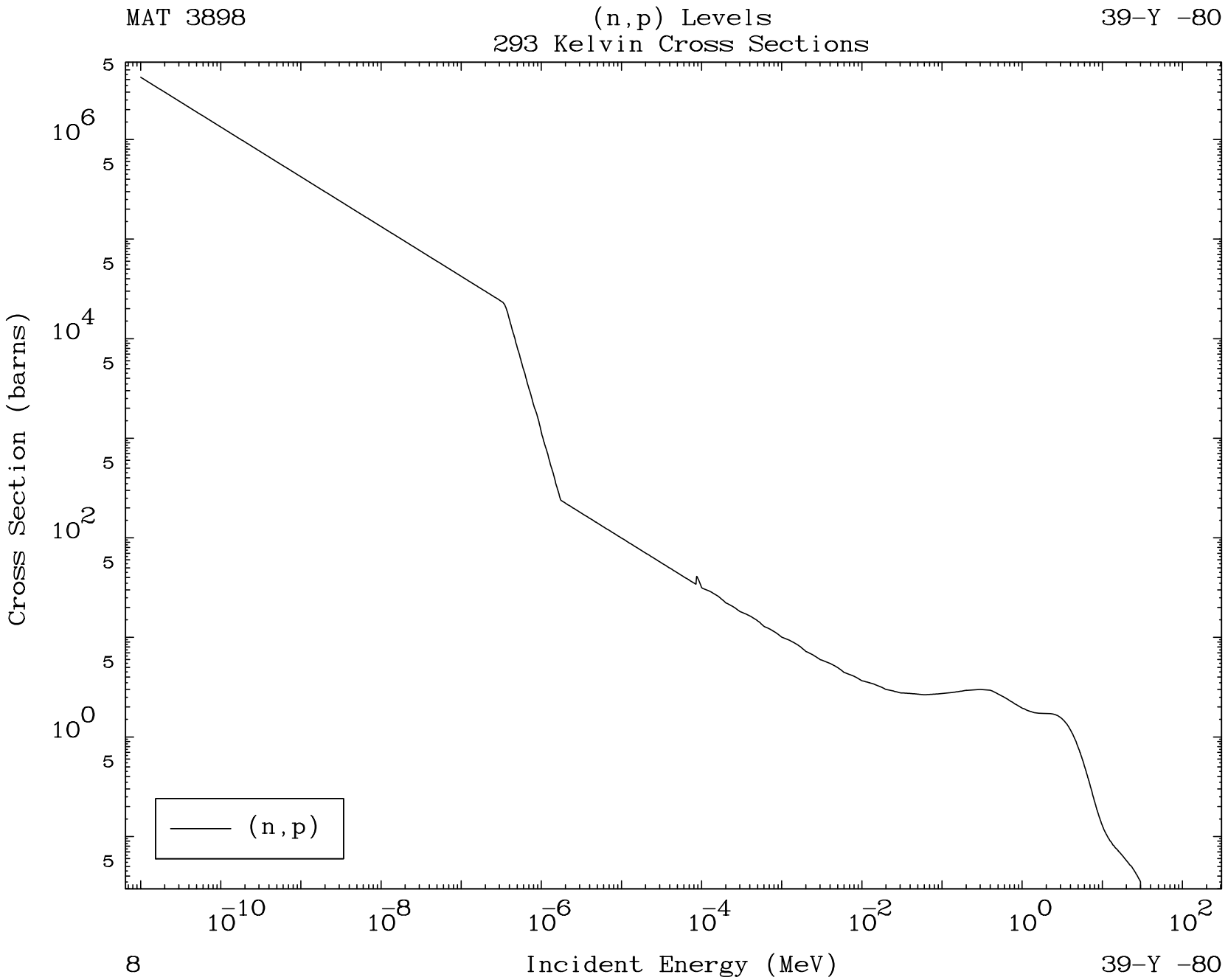

MAT 3898
Charged Particle
293 Kelvin Cross Sections
39-Y -80
Cross Section (barns)
Incident Energy (MeV)
(n,n') p
(n,p)
(n,d)
3
39-Y -80

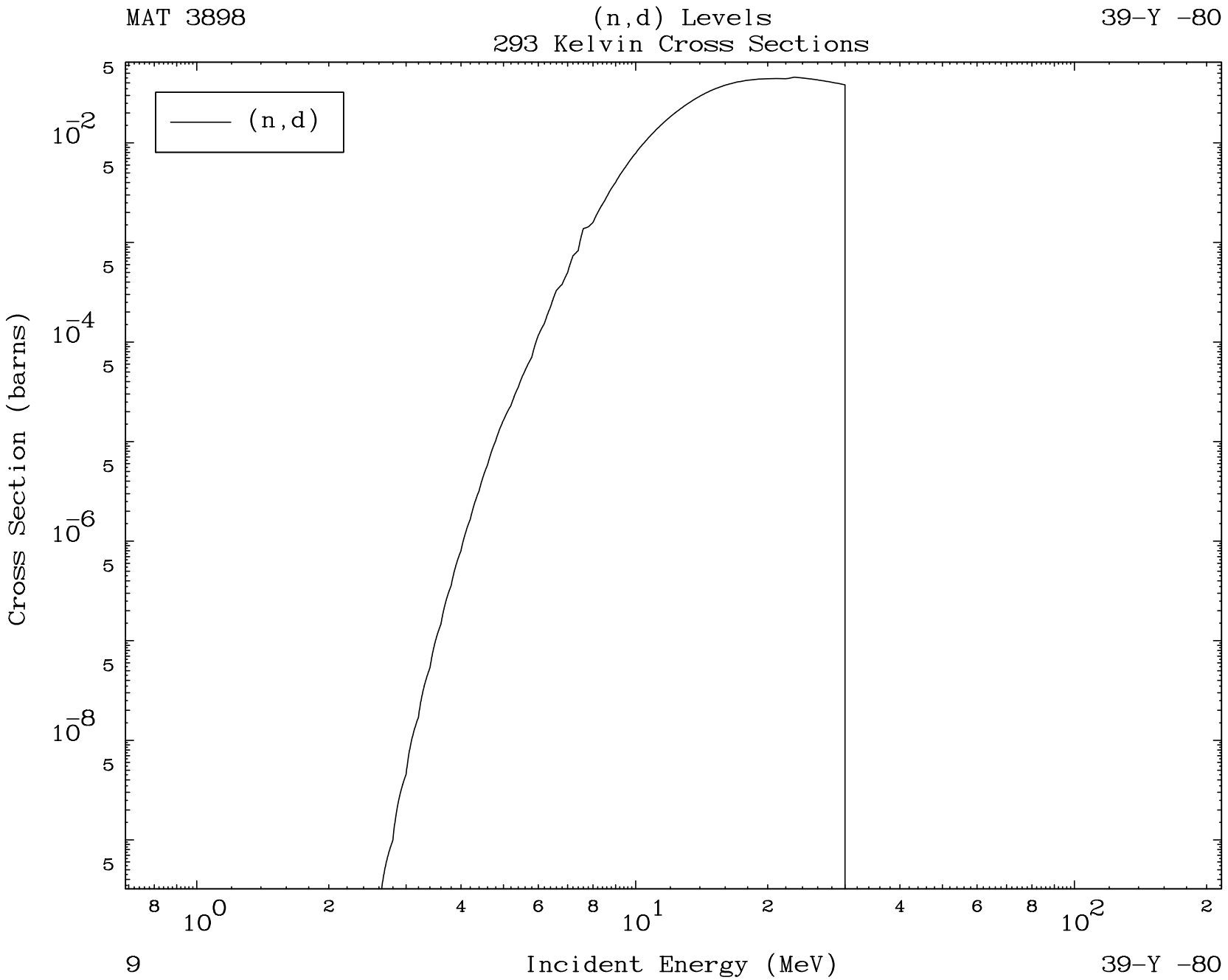

MAT 3898
Charged Particle
293 Kelvin Cross Sections
39-Y -80
Cross Section (barns)
Incident Energy (MeV)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,3α)
(n,2p)
(n,p) α
(n,d) 2α
4
39-Y -80

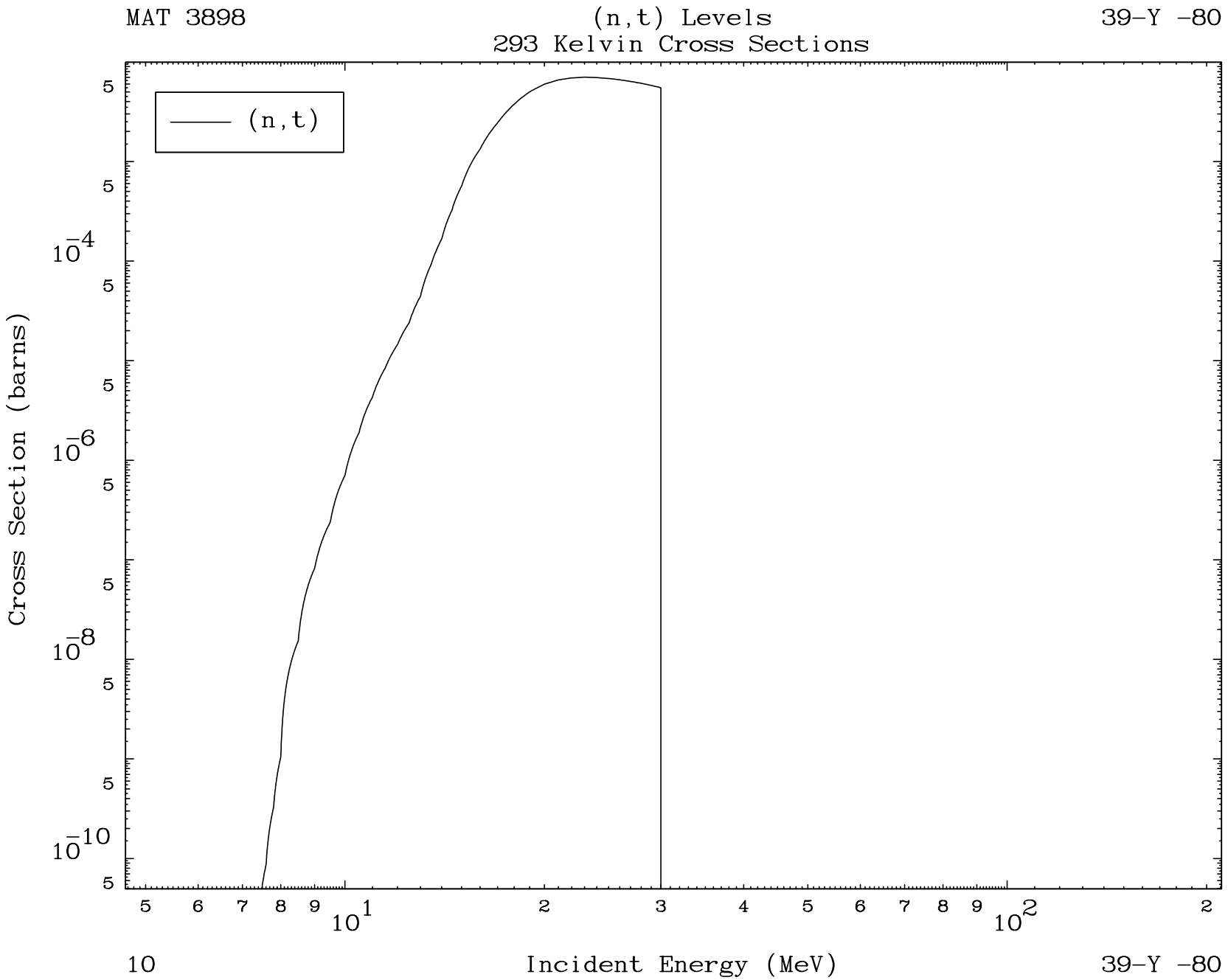

MAT 3898
Particle Production
293 Kelvin Cross Sections
39-Y -80
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
Cross Section (barns)
Incident Energy (MeV)
39-Y -80

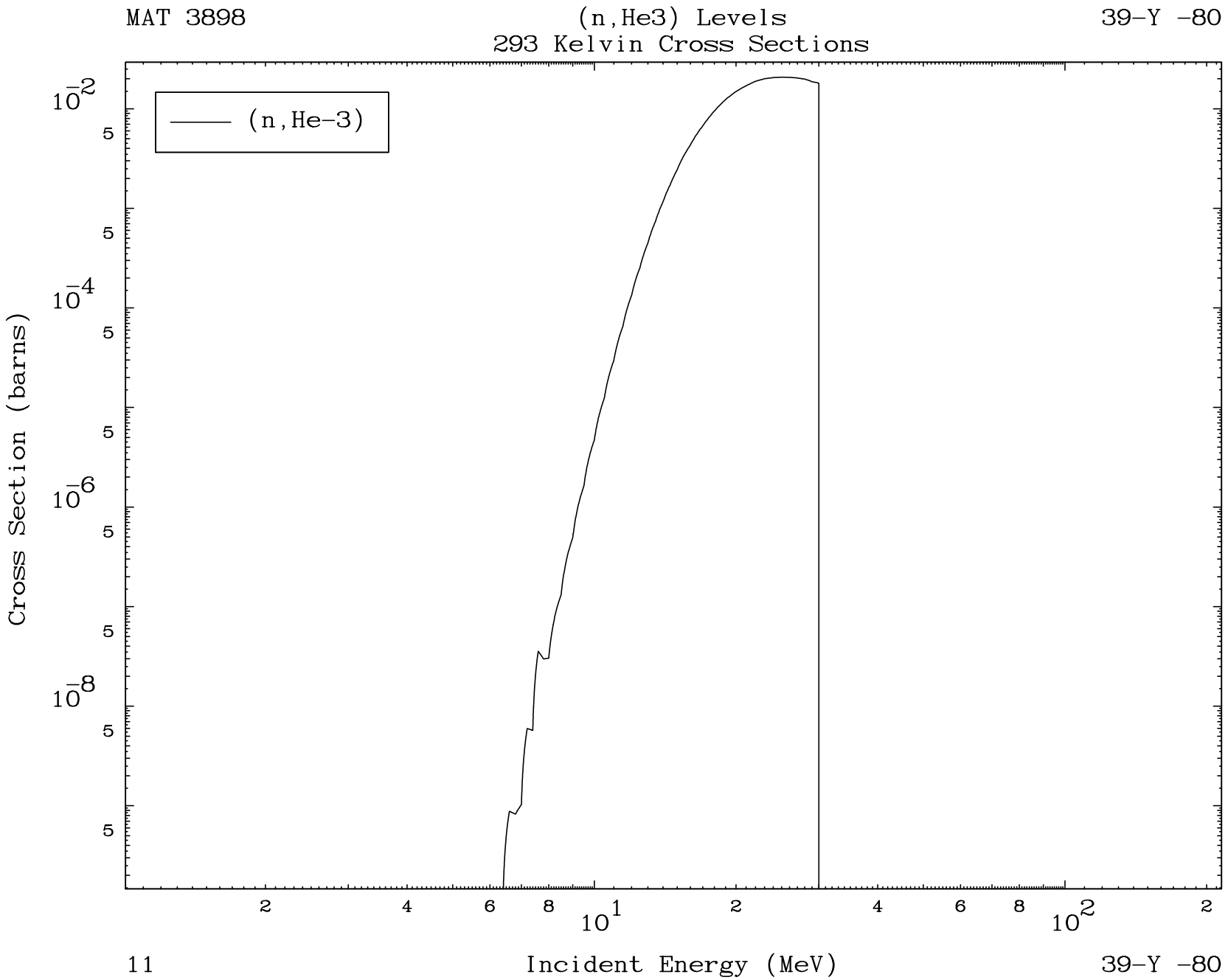

MAT 3898
(n,n') Level
293 Kelvin Cross Sections
39-Y -80
Inelastic
MT= 51 (n,n') Level
MT= 52 (n,n') Level
MT= 53 (n,n') Level
MT= 54 (n,n') Level
MT= 55 (n,n') Level
Cross Section (barns)
10^2
10^0
10^-2
10^-4
10^-6
10^-8
4 6 8 10^0 2 4 6 8 10^1 2 4 6 8 10^2 2
Incident Energy (MeV)
6
39-Y -80

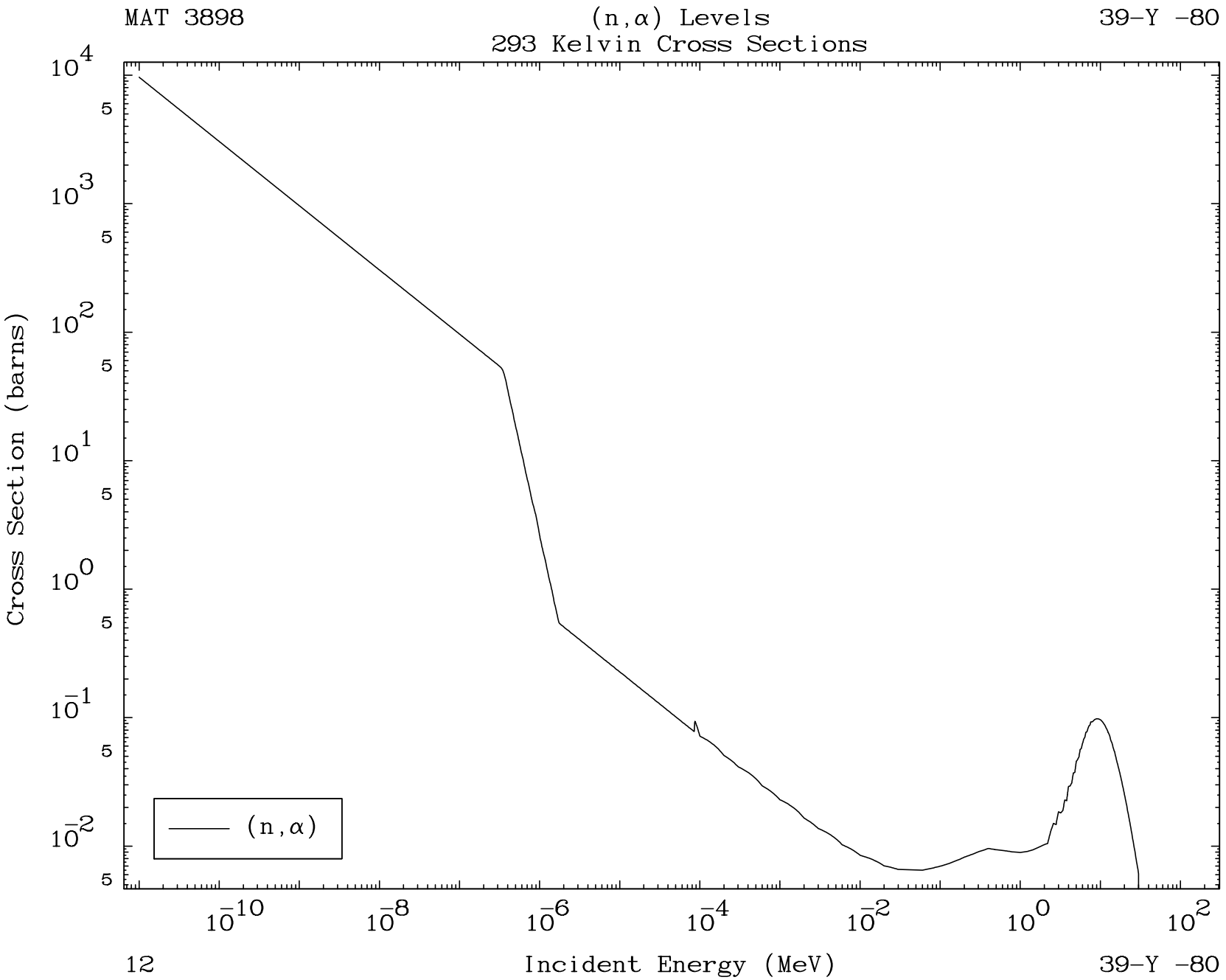

MAT 3898
(n,n') Level
293 Kelvin Cross Sections
39-Y -80
MT= 56 (n,n') Level
MT= 57 (n,n') Level
MT= 58 (n,n') Level
MT= 59 (n,n') Level
MT= 60 (n,n') Level
(n,n') Continuum
Cross Section (barns)
Incident Energy (MeV)
7
39-Y -80

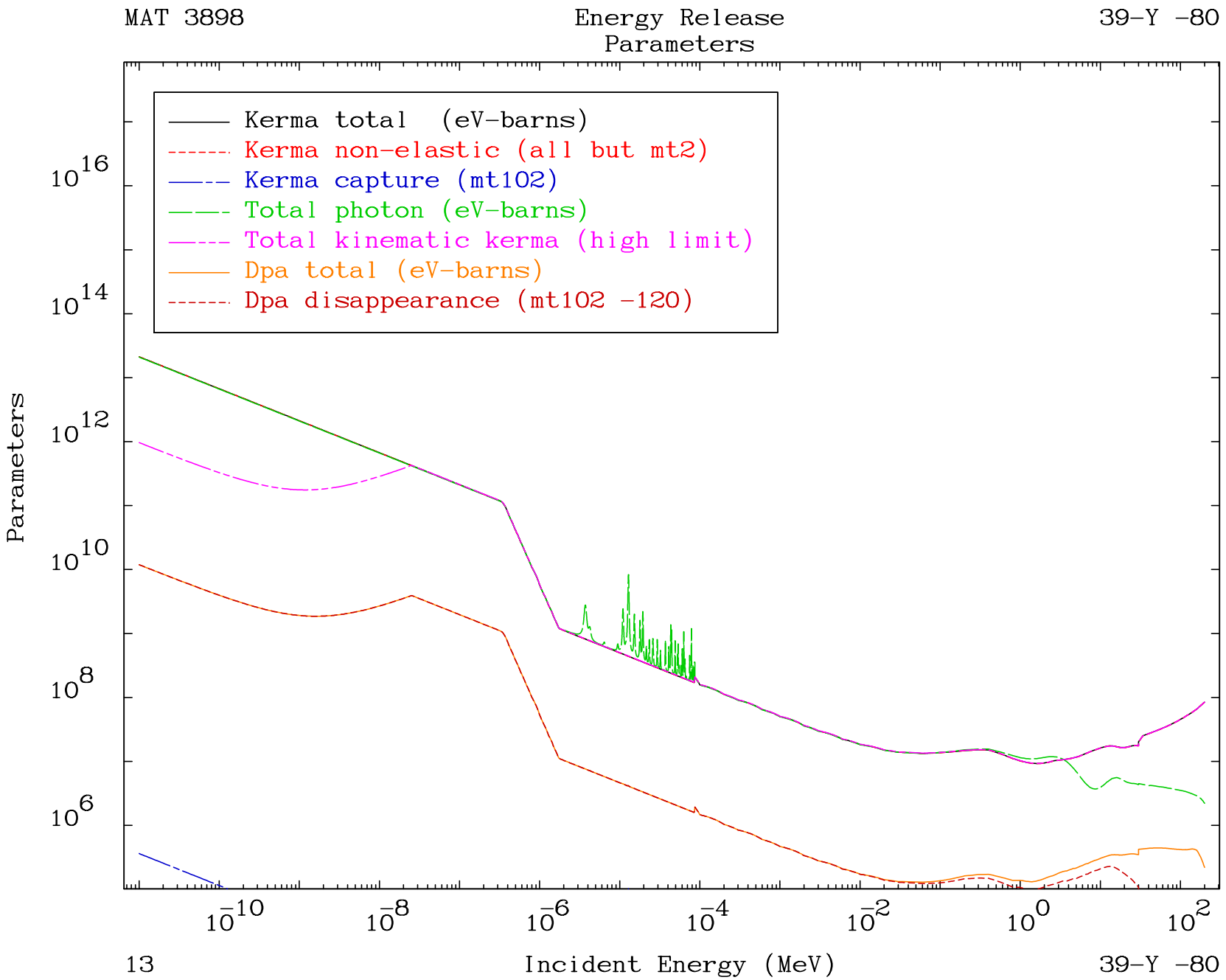

MAT 3898
(n,p) Levels
39-Y -80
293 Kelvin Cross Sections
Cross Section (barns)
10^6
10^4
10^2
10^0
(n,p)
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
8
39-Y -80

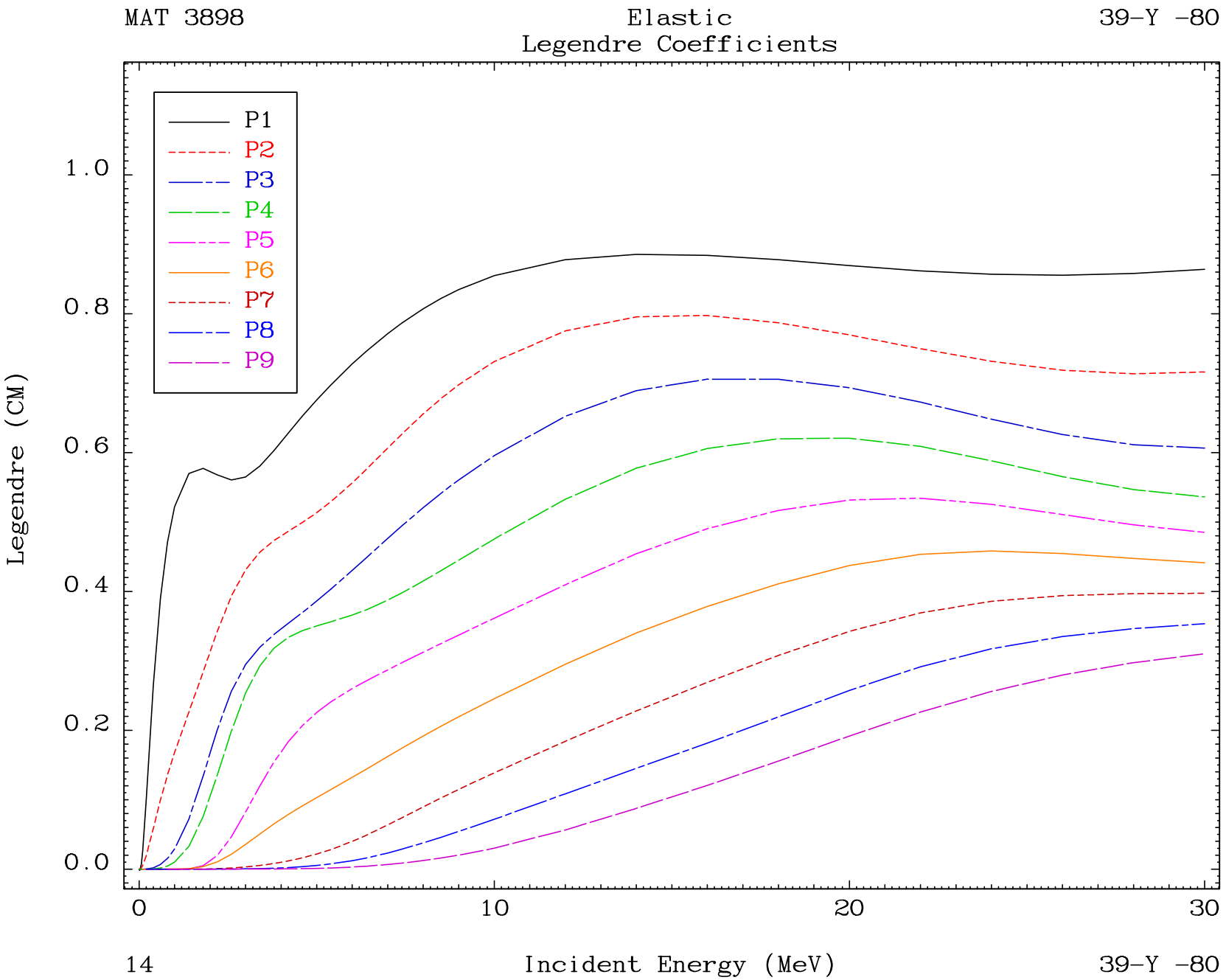

MAT 3898
(n,d) Levels
39-Y -80
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
Incident Energy (MeV)
9
39-Y -80

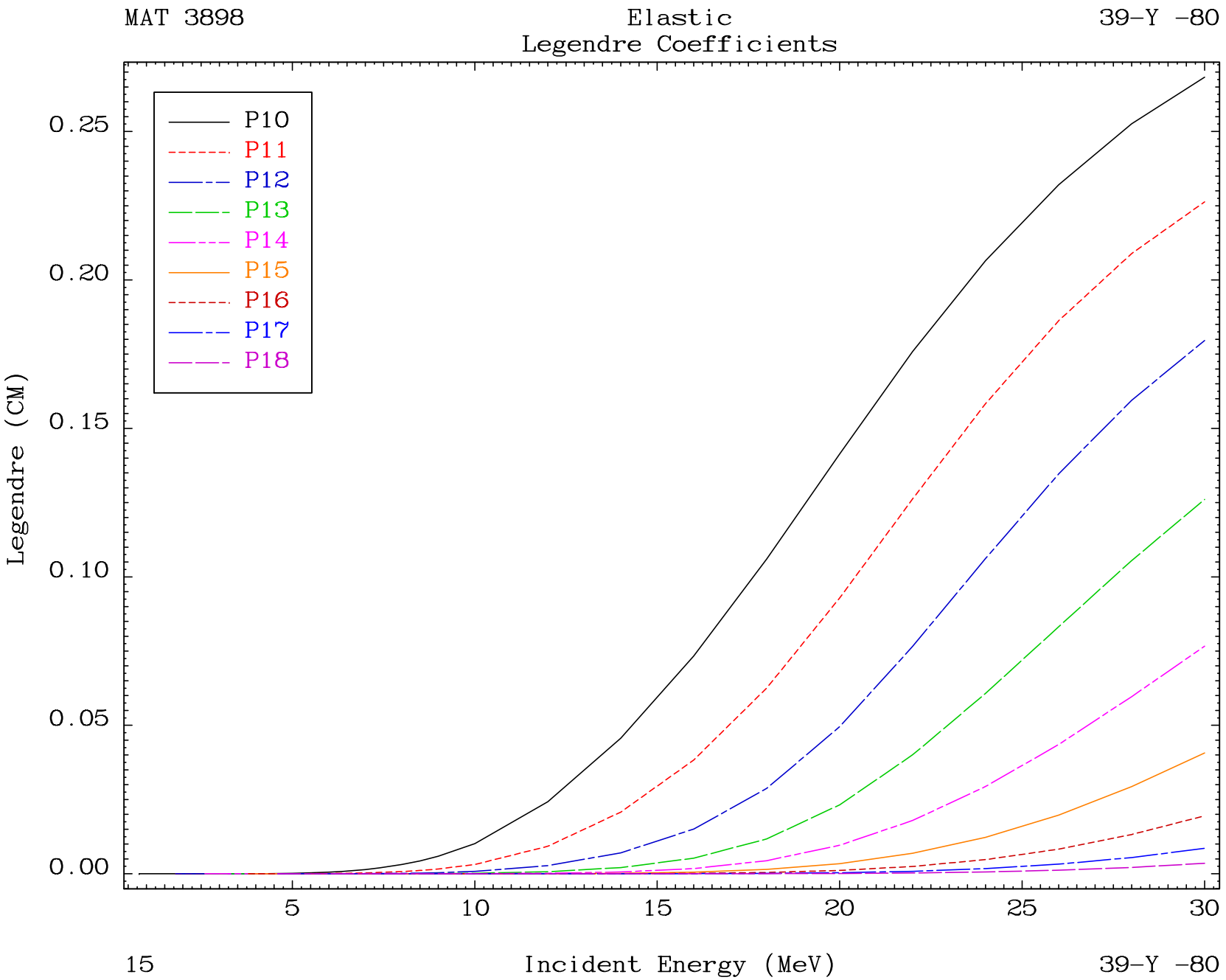

MAT 3898
(n,t) Levels
39-Y -80
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
10^1
10^2
Incident Energy (MeV)
10
39-Y -80

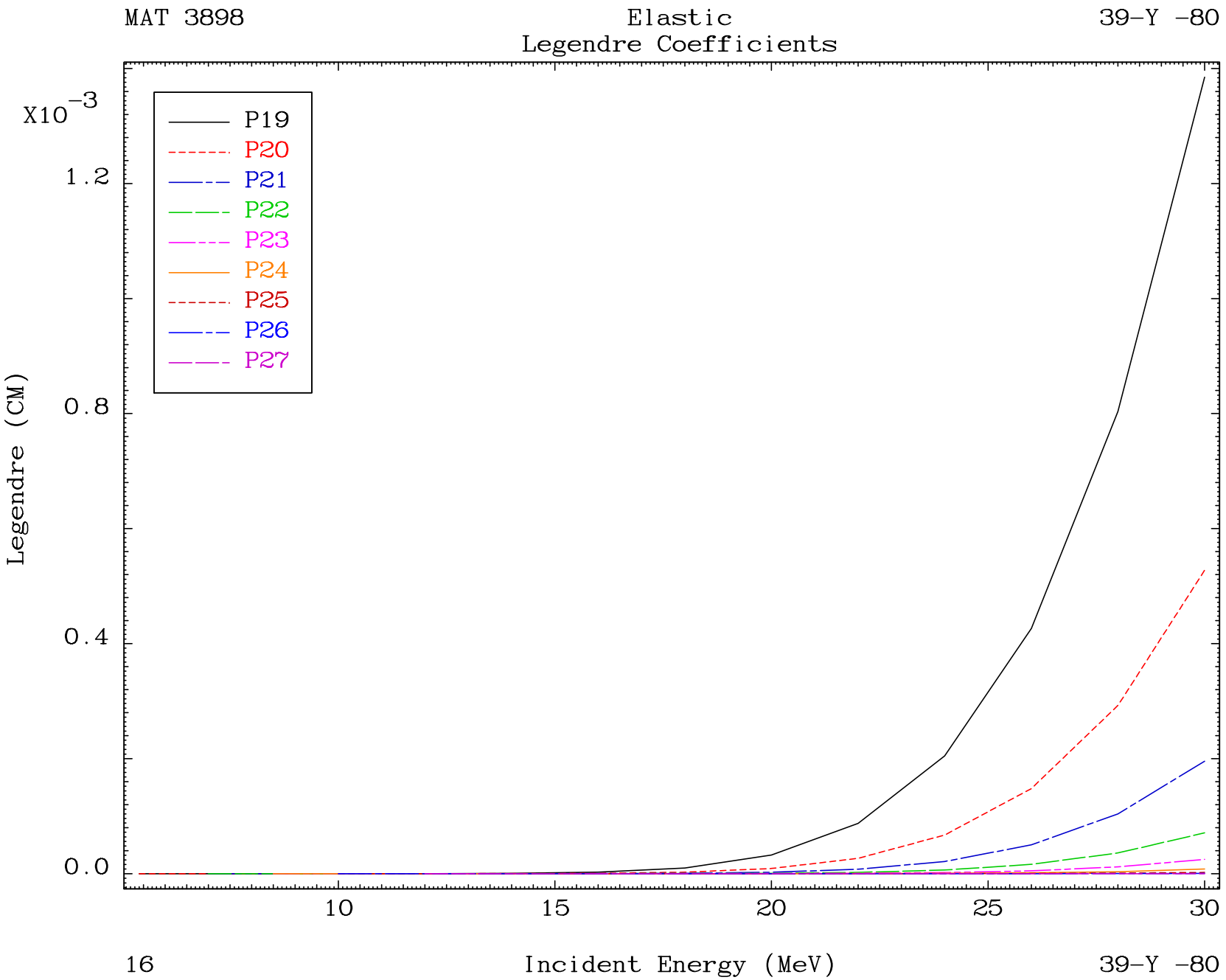

MAT 3898
(n,He3) Levels
293 Kelvin Cross Sections
39-Y -80
(n,He-3)
Cross Section (barns)
10-2
10-4
10-6
10-8
5
2
4
6
8
10 1
10 2
Incident Energy (MeV)
11
39-Y -80

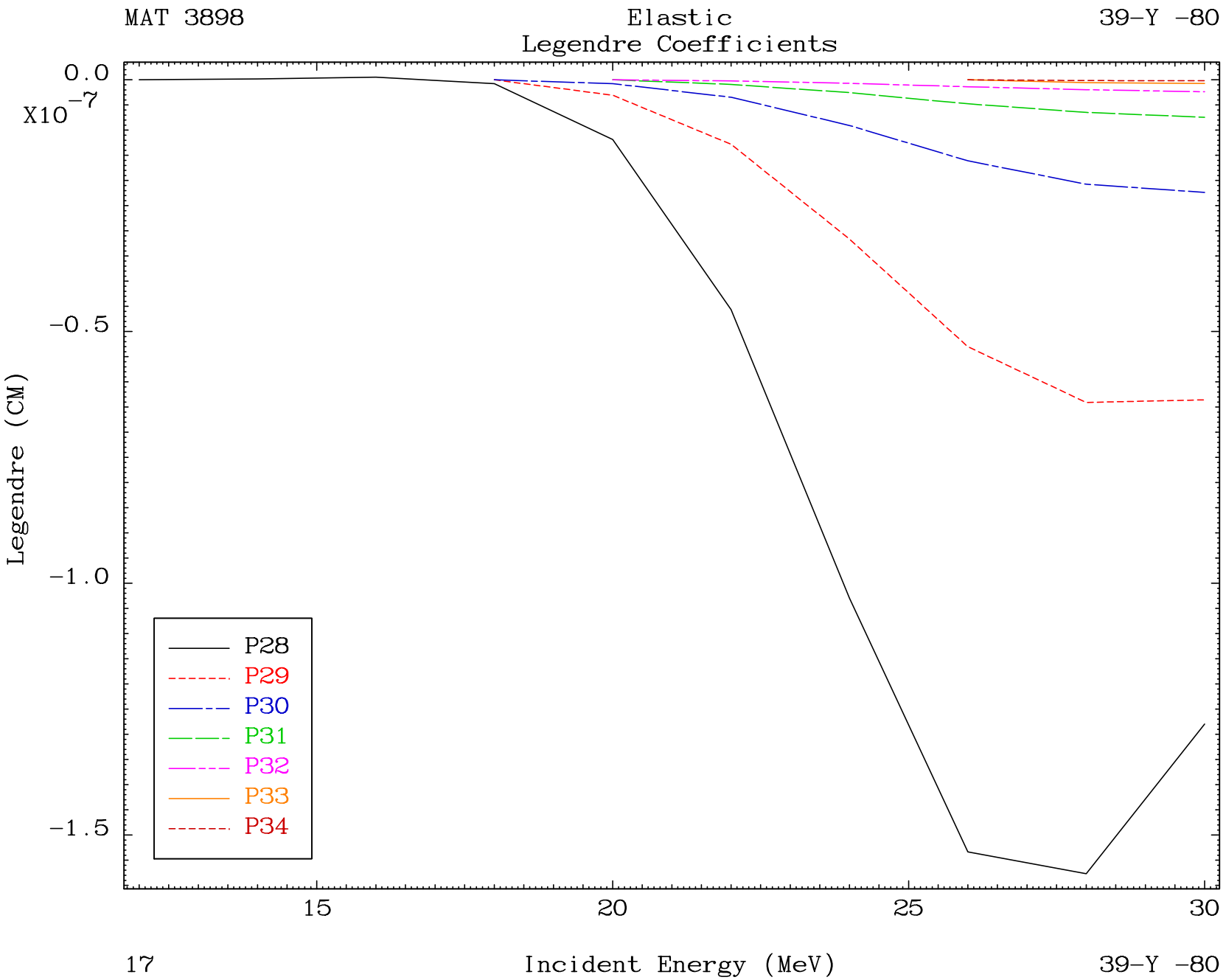

MAT 3898
(n,α) Levels
39-Y -80
293 Kelvin Cross Sections
Cross Section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
5
(n,α)
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
12
39-Y -80

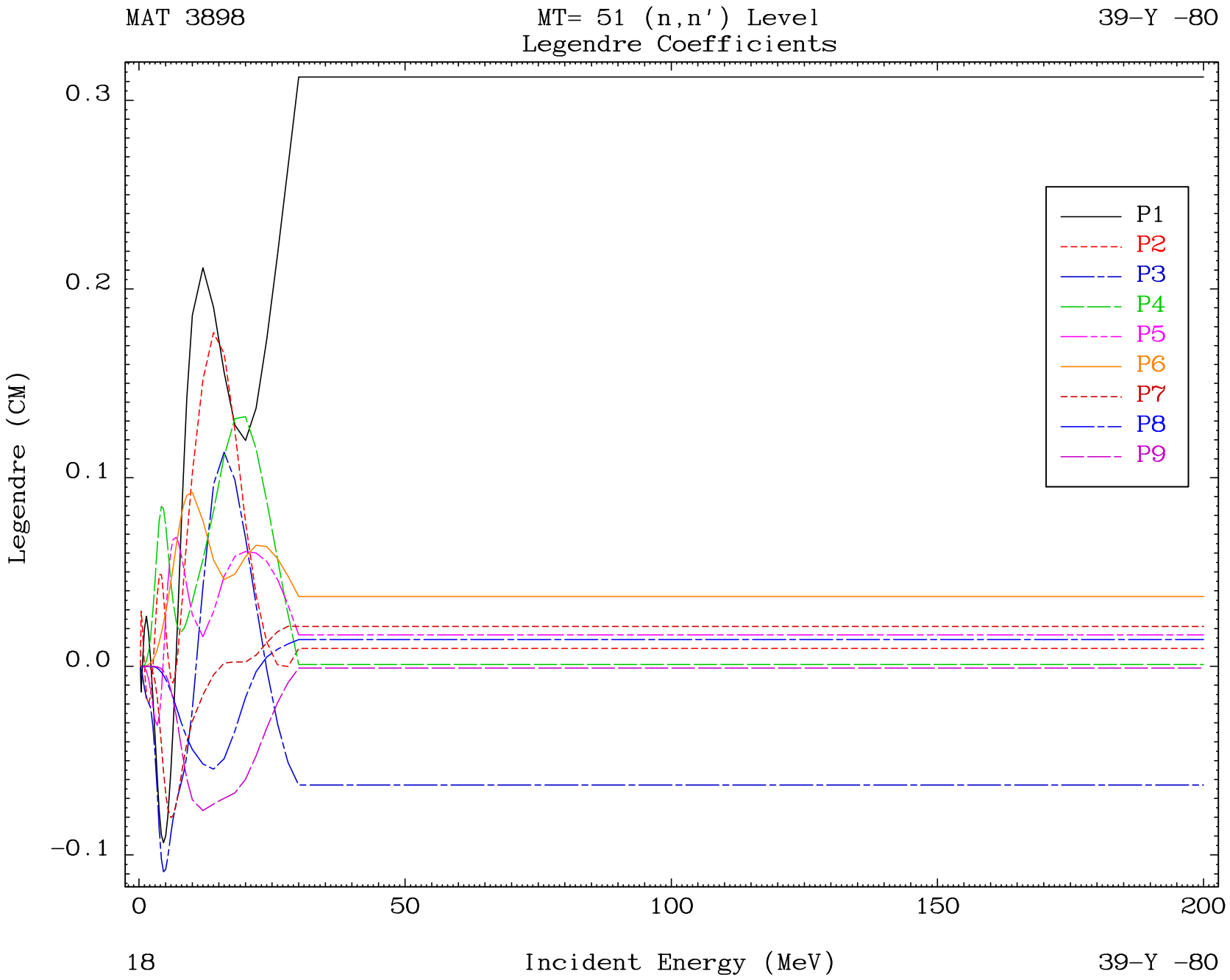

MAT 3898
Energy Release
Parameters
39-Y -80
Kerma total (eV-barns)
Kerma non-elastic (all but mt2)
Kerma capture (mt102)
Total photon (eV-barns)
Total kinematic kerma (high limit)
Dpa total (eV-barns)
Dpa disappearance (mt102 -120)
Parameters
10^{16}
10^{14}
10^{12}
10^{10}
10^{8}
10^{6}
10^{-10}
10^{-8}
10^{-6}
10^{-4}
10^{-2}
10^{0}
10^{2}
13
Incident Energy (MeV)
39-Y -80

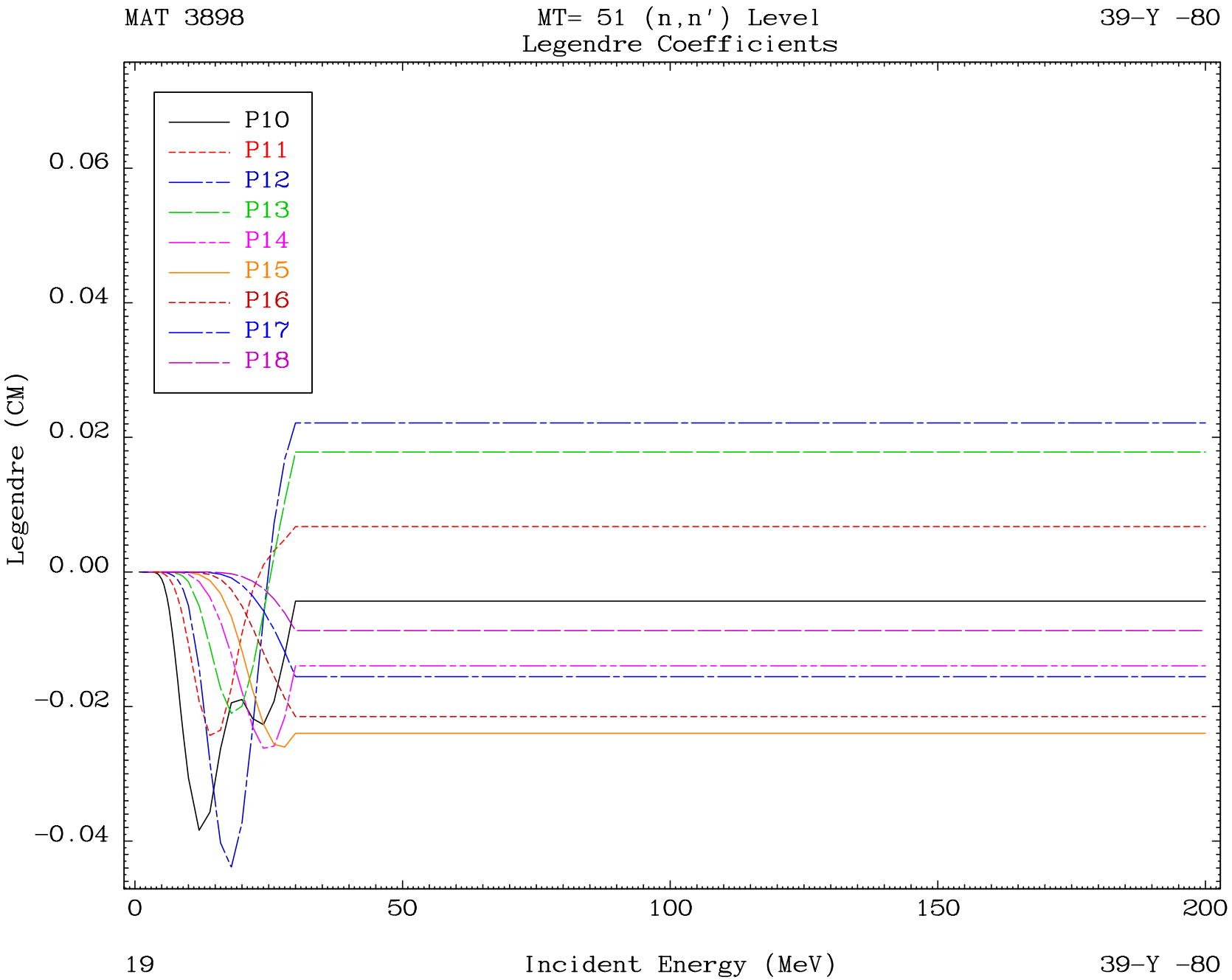

MAT 3898
Elastic
Legendre Coefficients
39-Y -80
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
14
Incident Energy (MeV)
39-Y -80

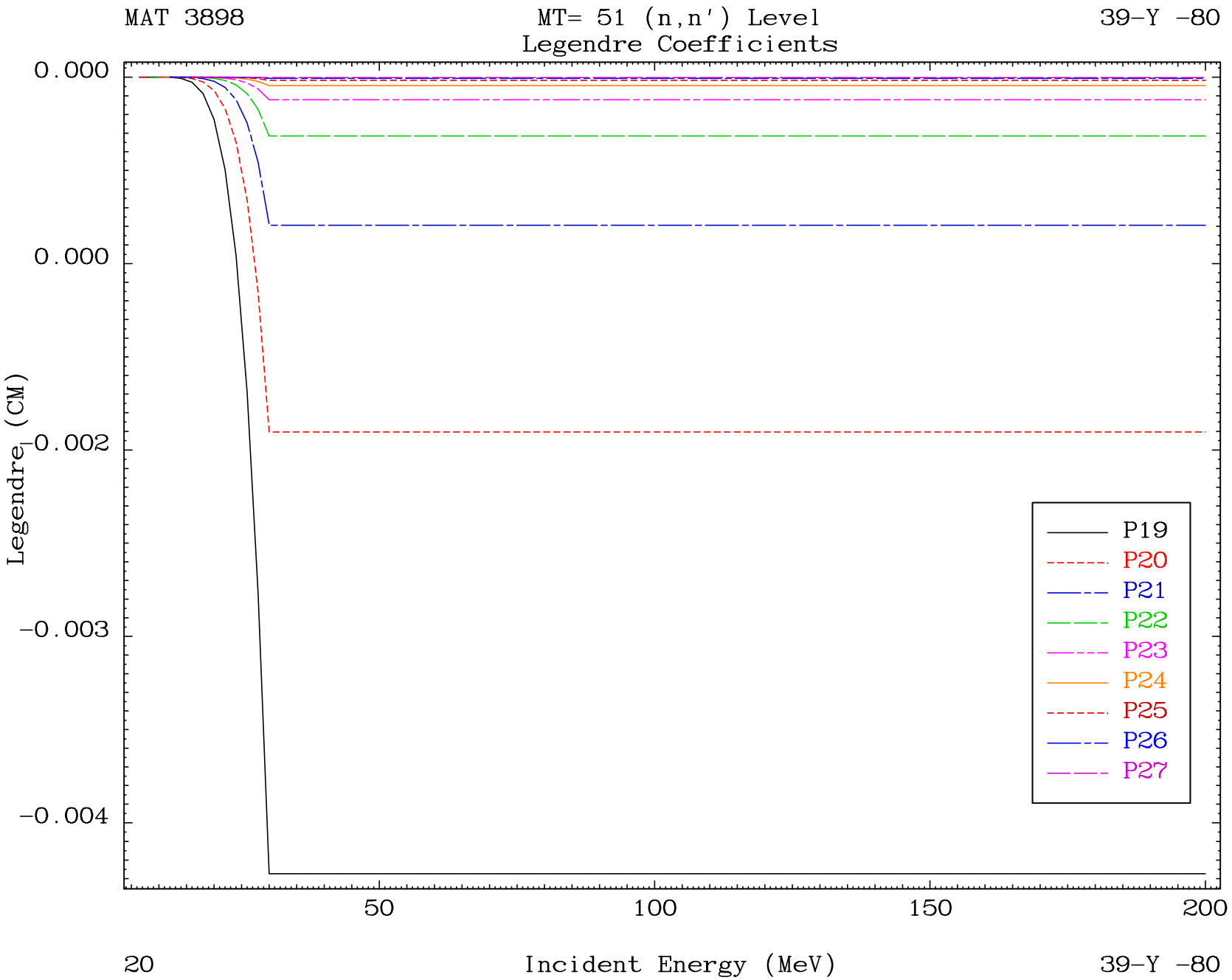

MAT 3898
Elastic
Legendre Coefficients
39-Y -80
P10
P11
P12
P13
P14
P15
P16
P17
P18
Legendre (CM)
0.25
0.20
0.15
0.10
0.05
0.00
5
10
15
20
25
30
15
Incident Energy (MeV)
39-Y -80

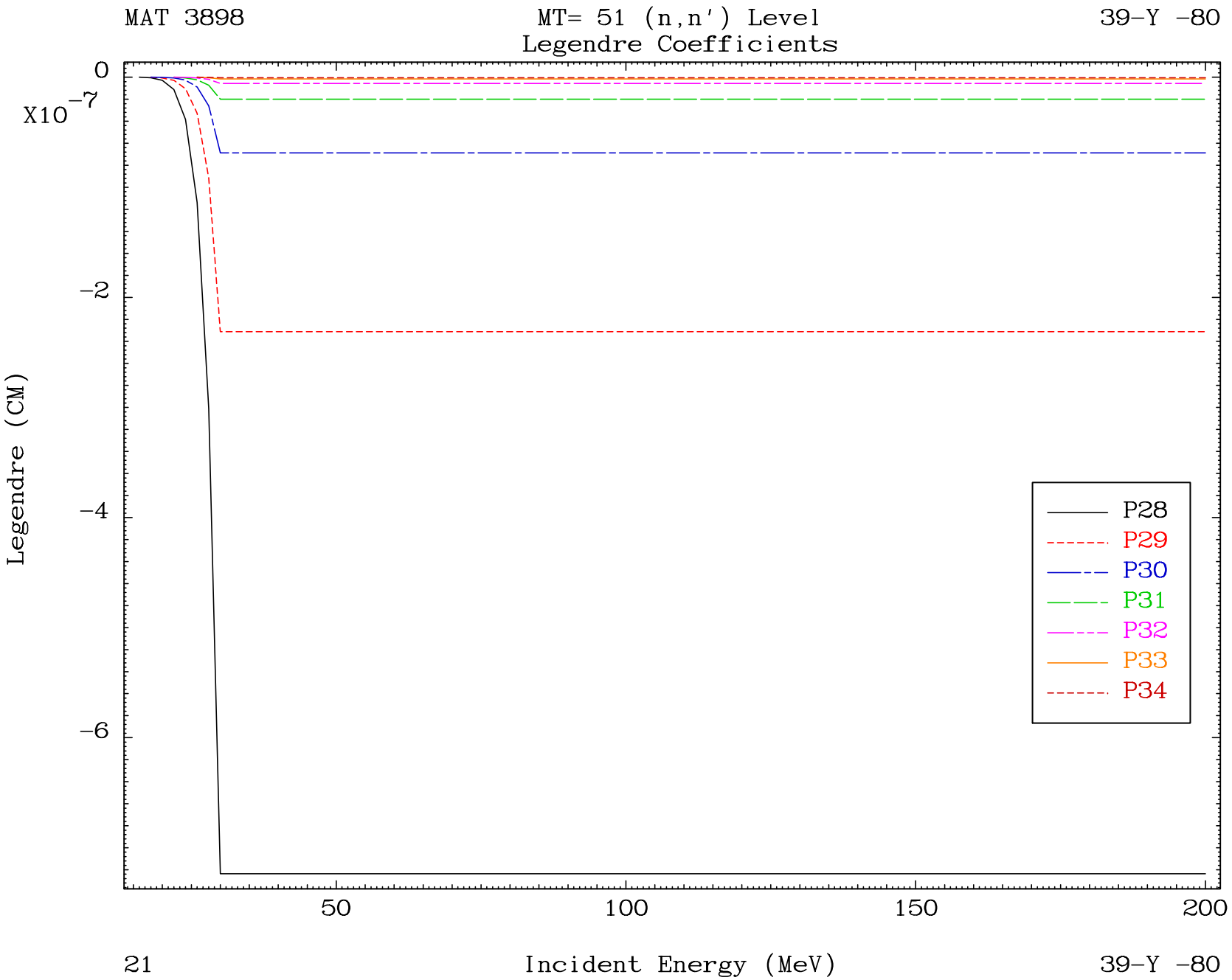

MAT 3898
Elastic
Legendre Coefficients
39-Y -80
X10-3
1.2
0.8
0.4
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
10
15
20
25
30
16
Incident Energy (MeV)
39-Y -80

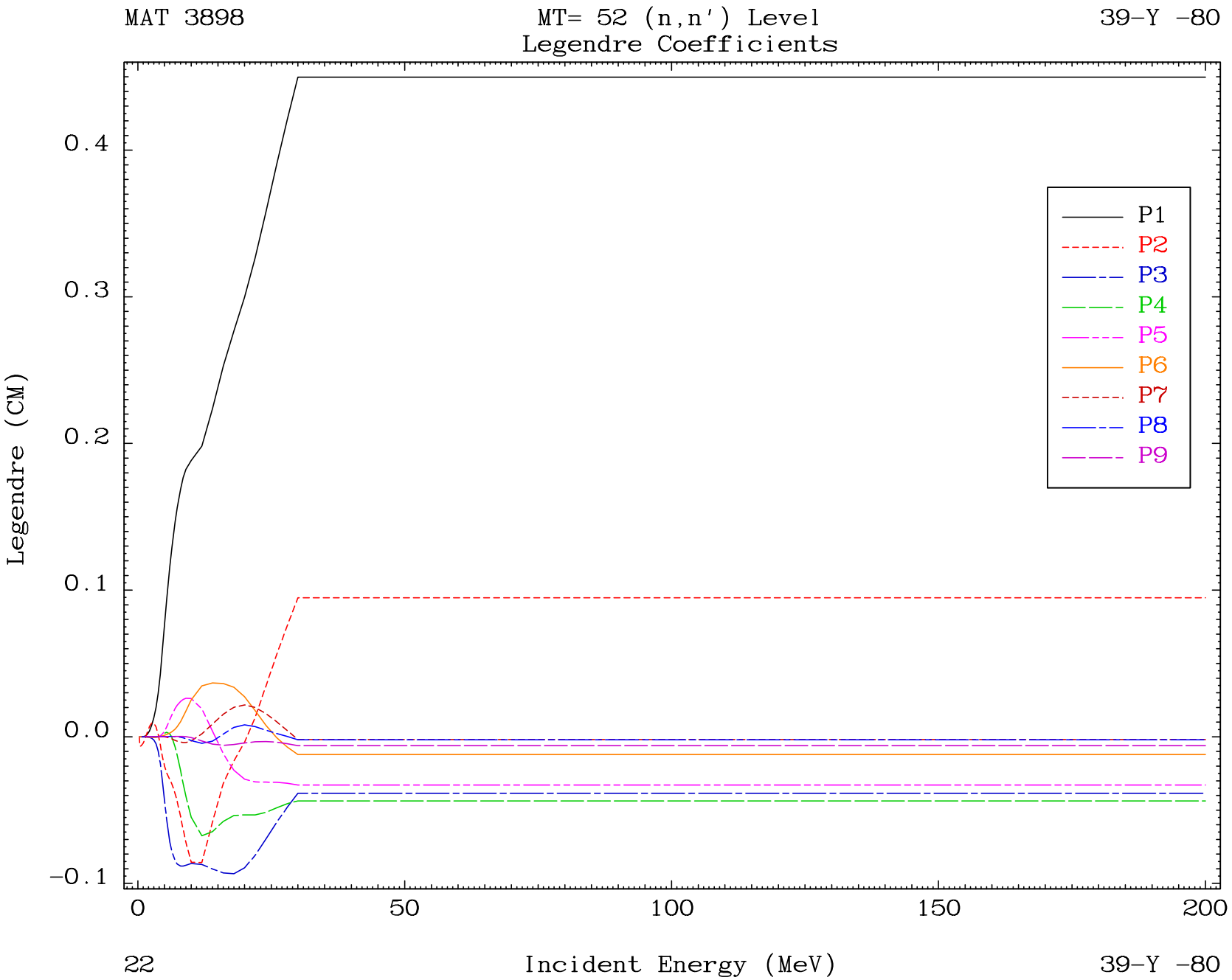

MAT 3898
Elastic
Legendre Coefficients
39-Y -80
0.0
X10^-7
-0.5
-1.0
-1.5
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
15
20
25
30
17
Incident Energy (MeV)
39-Y -80

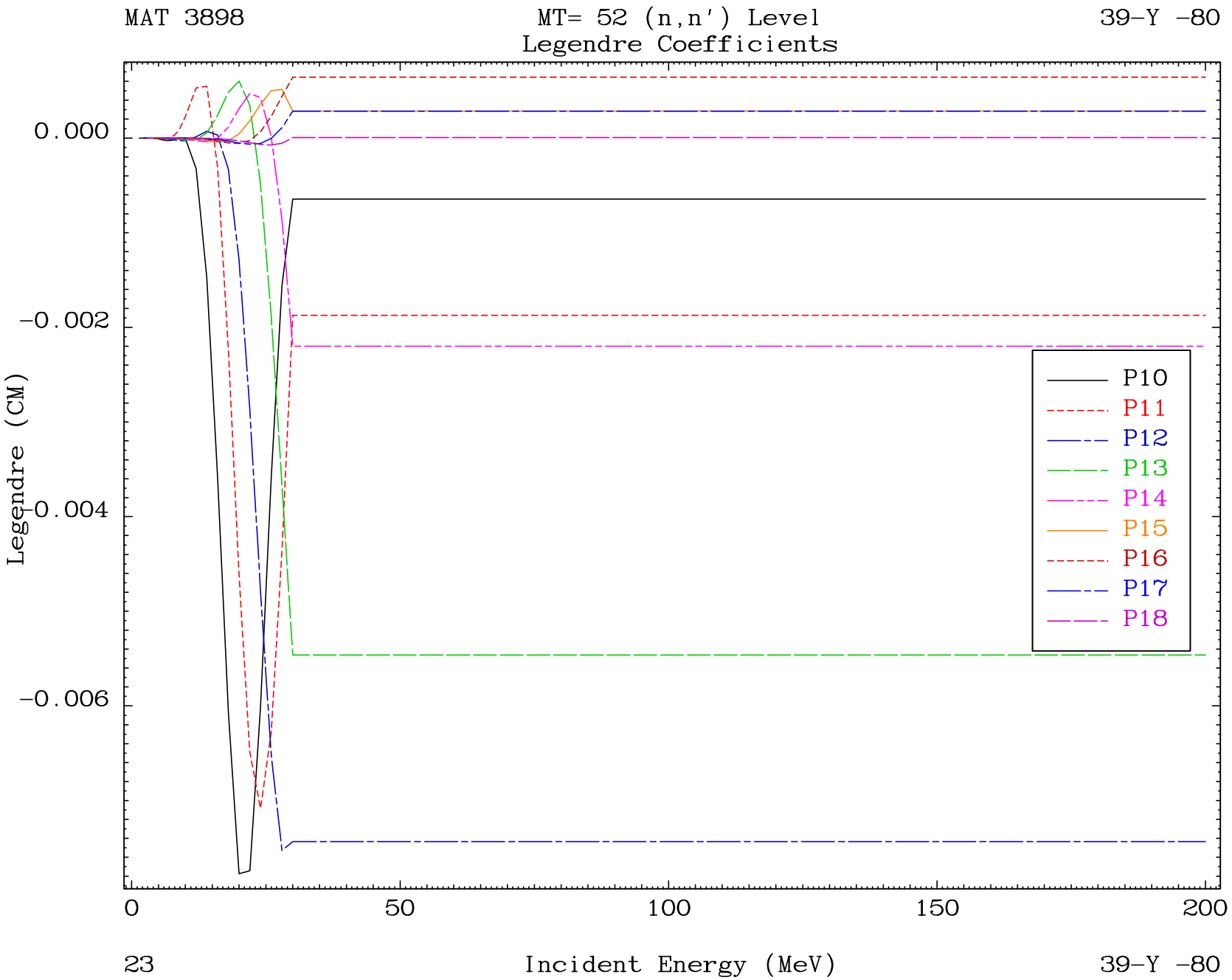

MAT 3898
MT= 51 (n,n') Level
Legendre Coefficients
39-Y -80
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
0
50
100
150
200
18
Incident Energy (MeV)
39-Y -80
P1
P2
P3
P4
P5
P6
P7
P8
P9

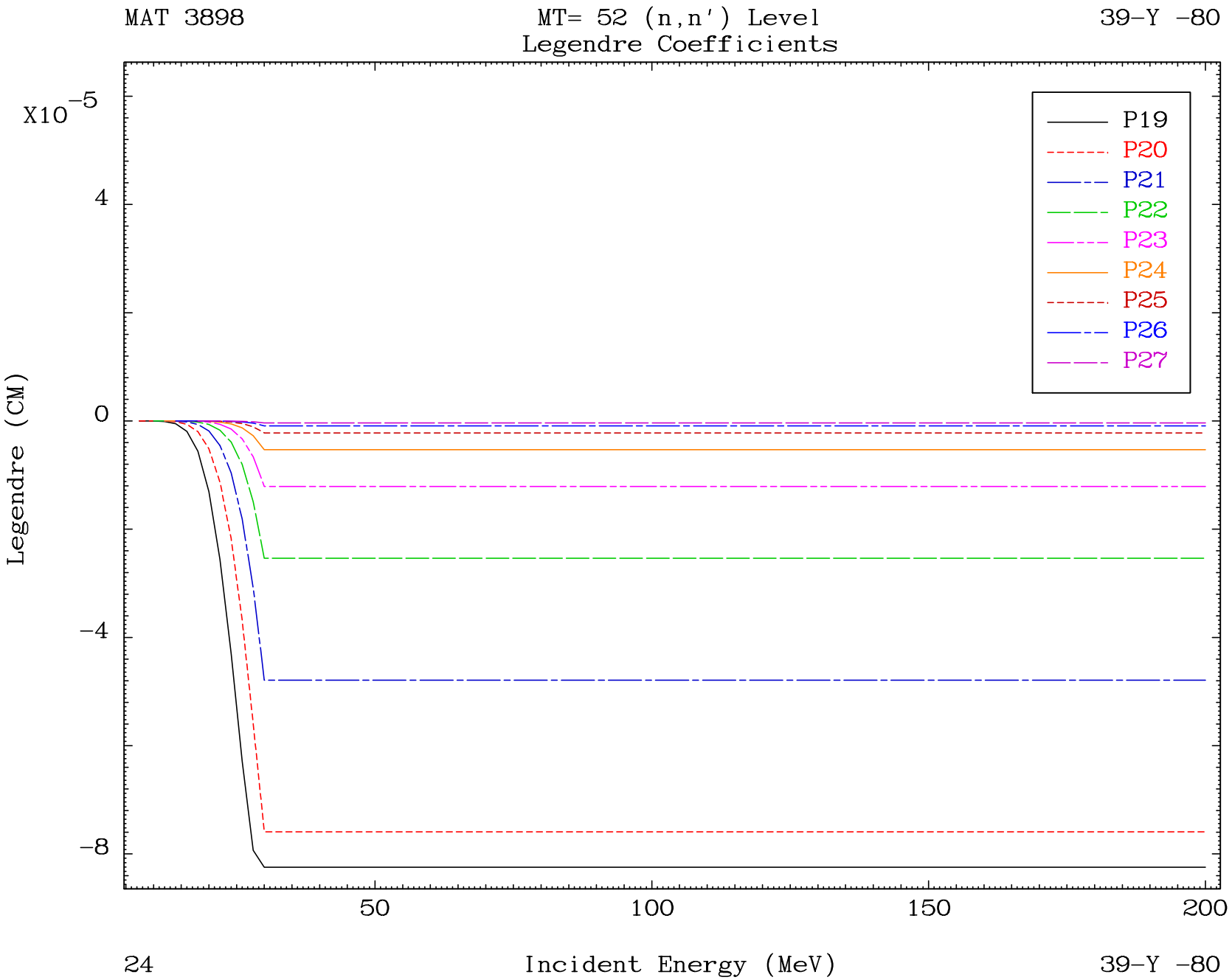

MAT 3898
MT= 51 (n,n') Level
Legendre Coefficients
39-Y -80
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.06
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
19
Incident Energy (MeV)
39-Y -80

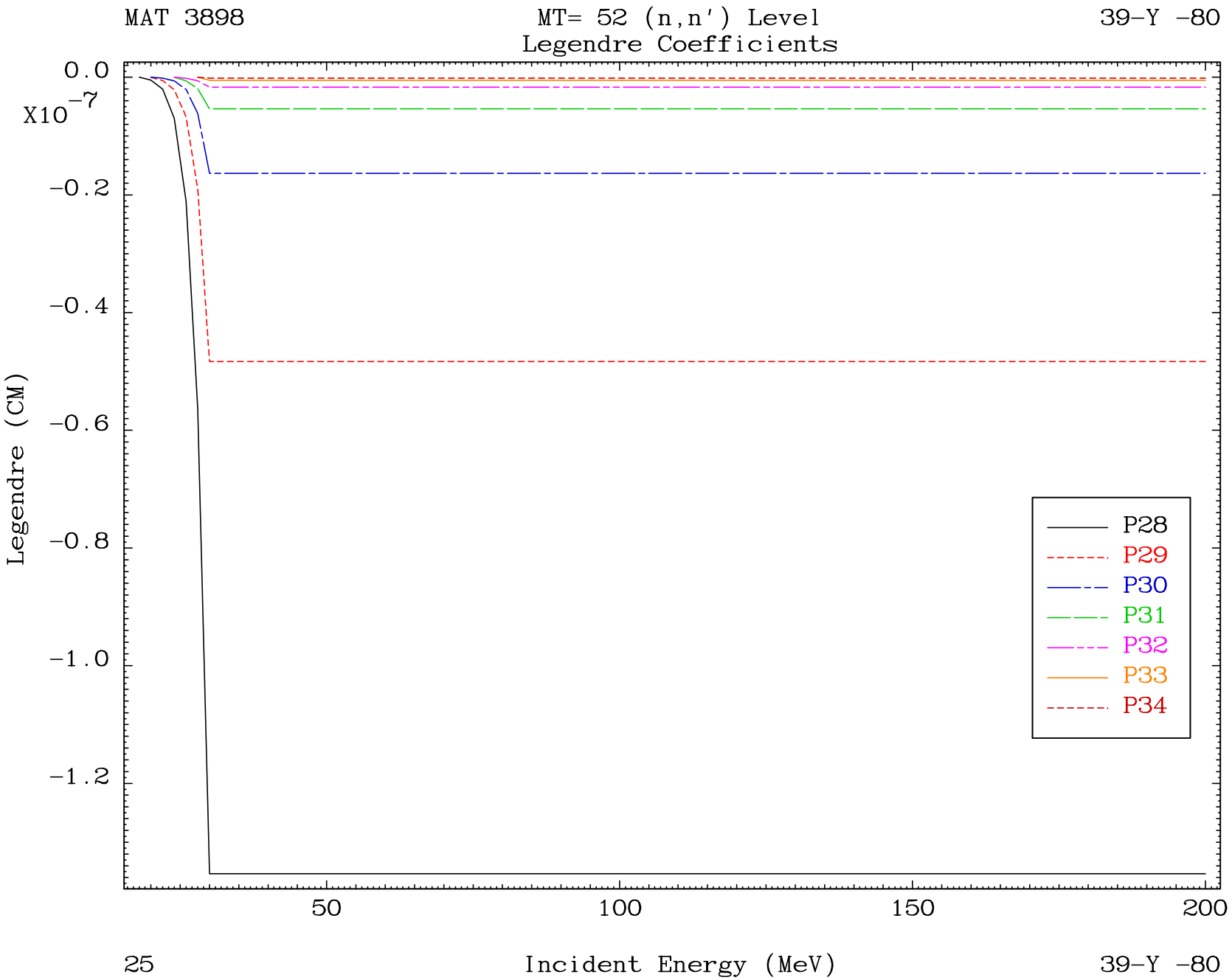

MAT 3898
MT= 51 (n,n') Level
Legendre Coefficients
39-Y -80
0.000
0.000
-0.002
-0.003
-0.004
Legendre$_l$ (CM)
50
100
150
200
20
Incident Energy (MeV)
39-Y -80
P19
P20
P21
P22
P23
P24
P25
P26
P27

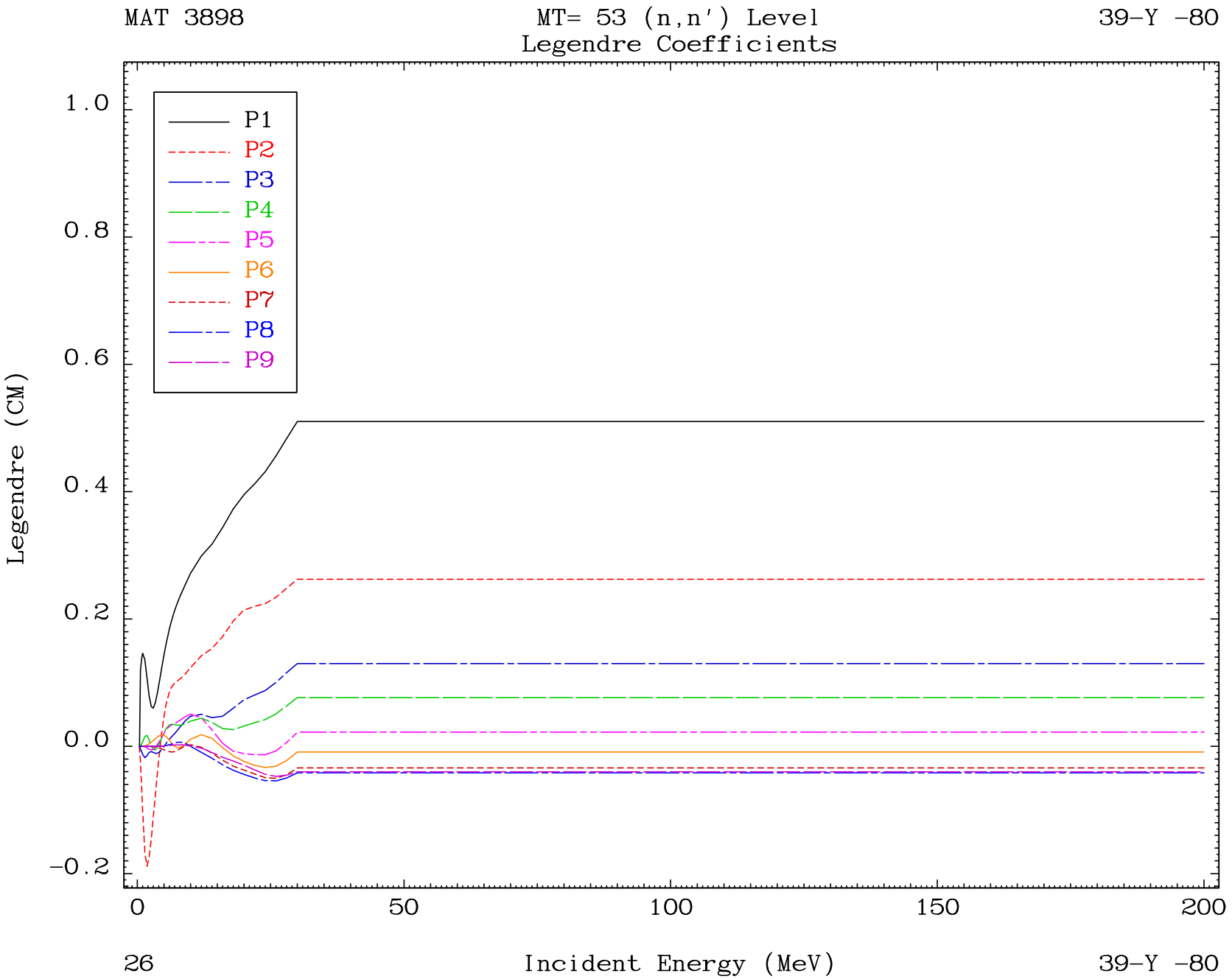

MAT 3898
MT= 51 (n,n') Level
Legendre Coefficients
39-Y -80
X10-7
0
-2
-4
-6
Legendre (CM)
50
100
150
200
21
Incident Energy (MeV)
39-Y -80
P28
P29
P30
P31
P32
P33
P34

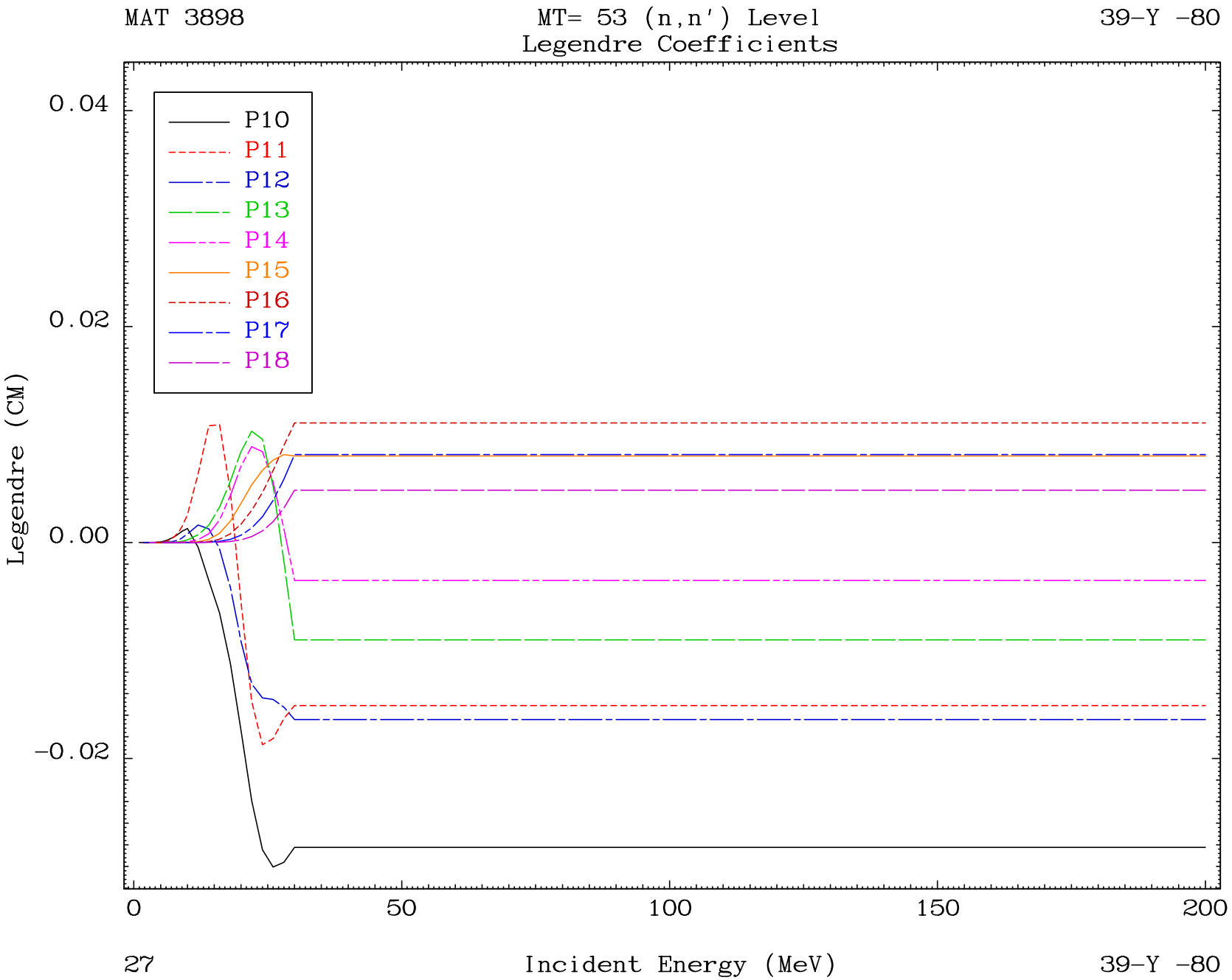

MAT 3898
MT= 52 (n,n') Level
Legendre Coefficients
39-Y -80
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
-0.1
0
50
100
150
200
22
Incident Energy (MeV)
39-Y -80
P1
P2
P3
P4
P5
P6
P7
P8
P9

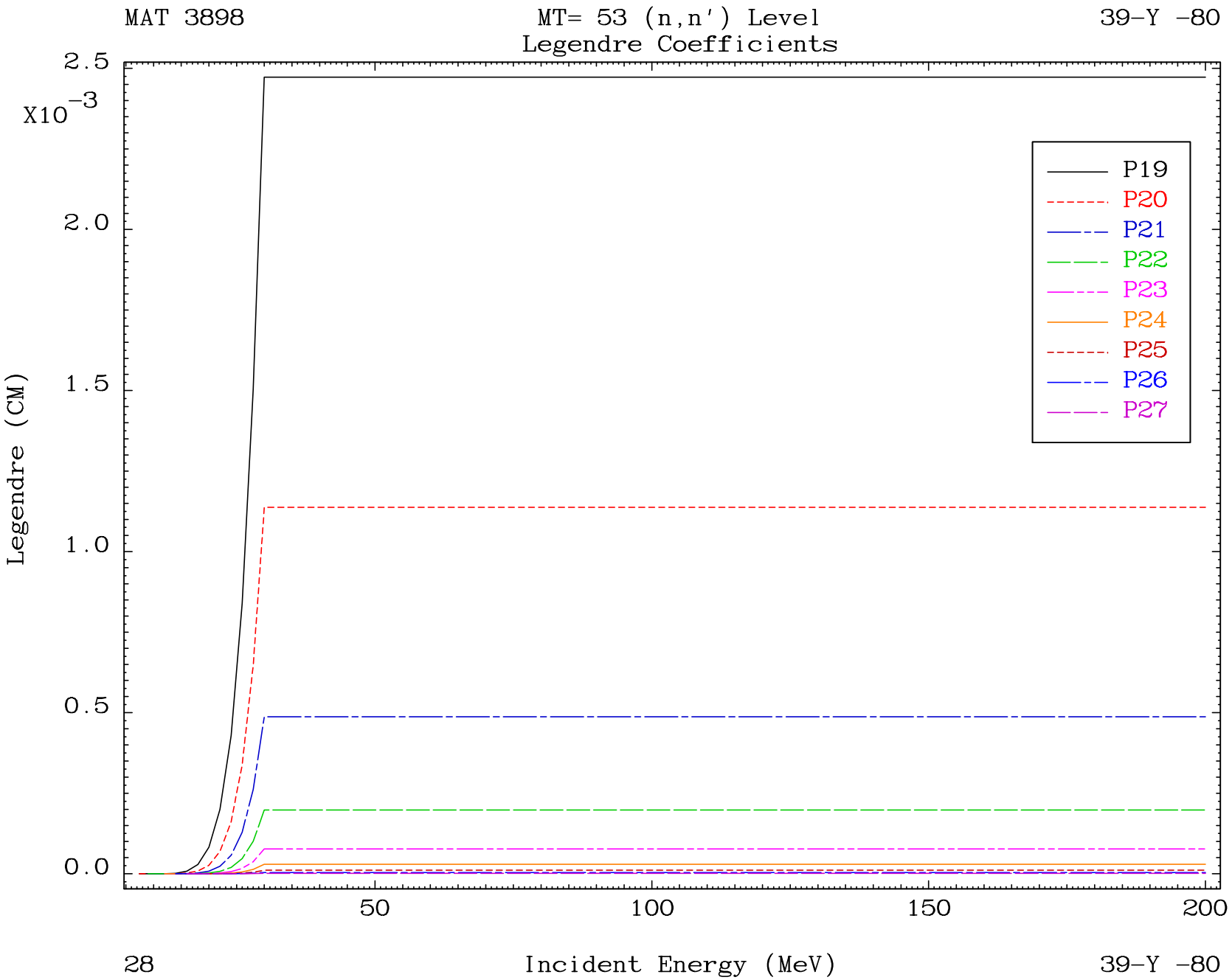

MAT 3898
MT= 52 (n,n') Level
Legendre Coefficients
39-Y -80
0.000
-0.002
-0.004
-0.006
Legendre (CM)
0
50
100
150
200
23
Incident Energy (MeV)
39-Y -80
P10
P11
P12
P13
P14
P15
P16
P17
P18

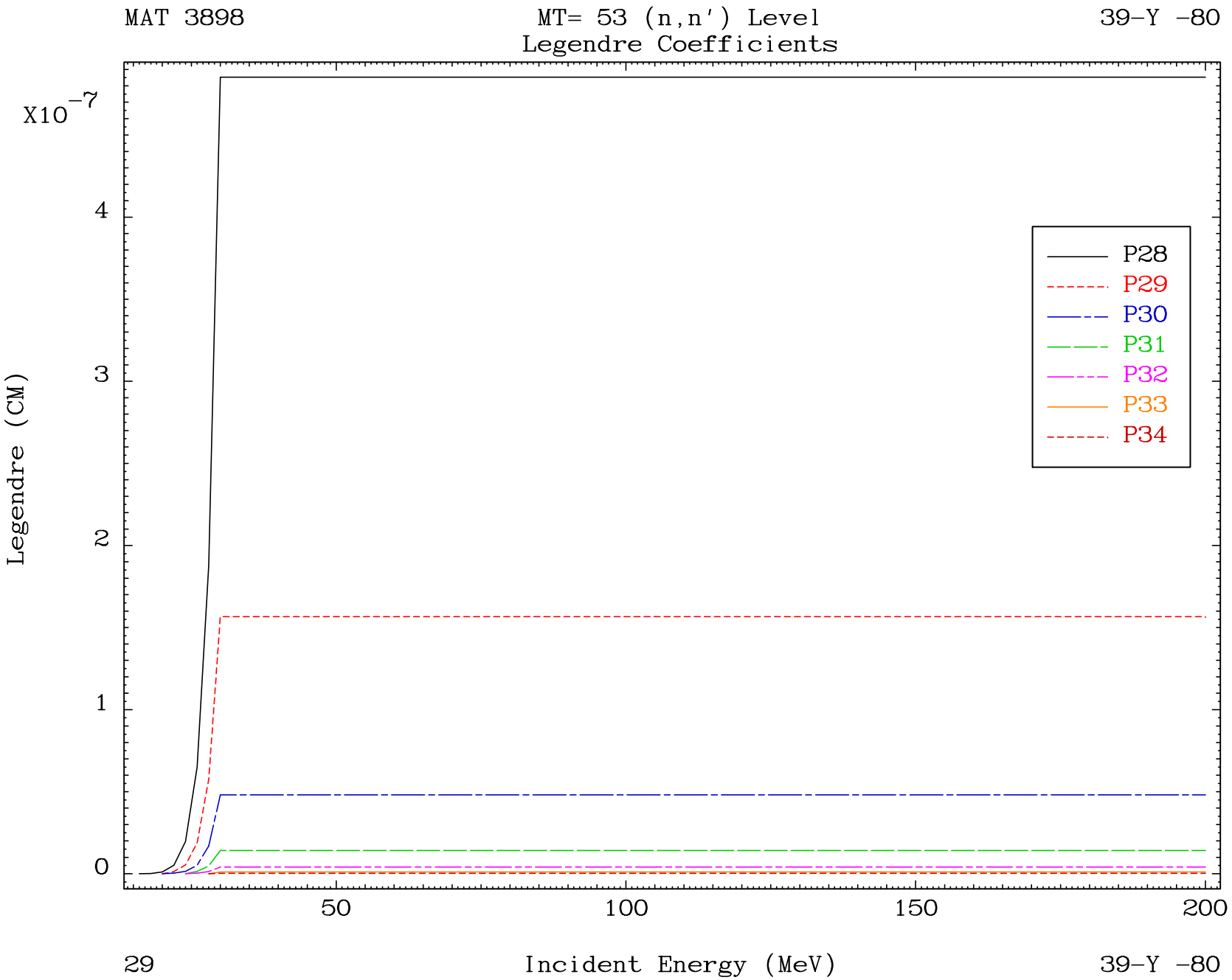

MAT 3898
MT= 52 (n,n') Level
Legendre Coefficients
39-Y -80
X10-5
4
0
-4
-8
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
24
Incident Energy (MeV)
39-Y -80

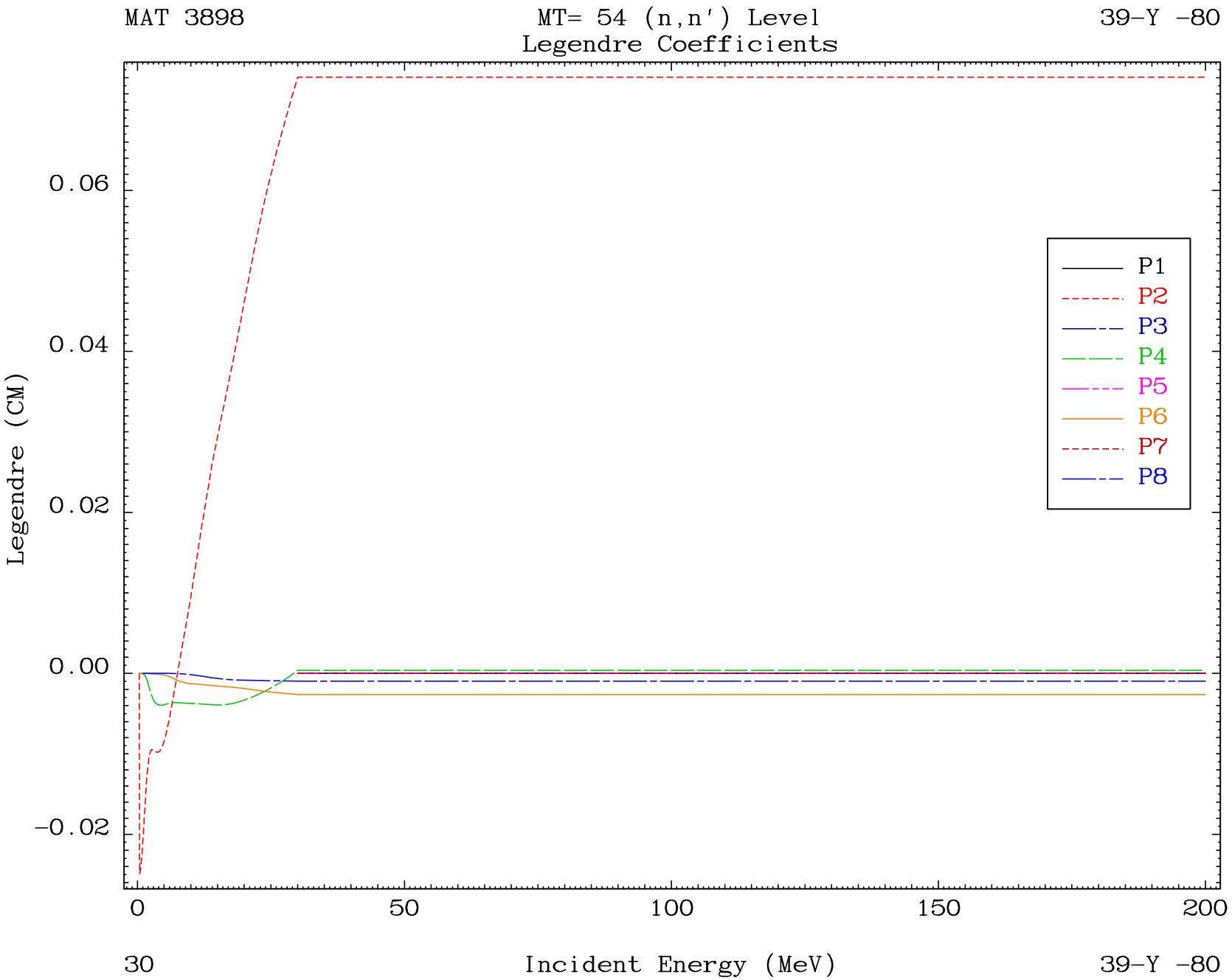

MAT 3898
MT= 52 (n,n') Level
Legendre Coefficients
39-Y -80
0.0
X10-7
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
Legendre (CM)
50
100
150
200
25
Incident Energy (MeV)
39-Y -80
P28
P29
P30
P31
P32
P33
P34

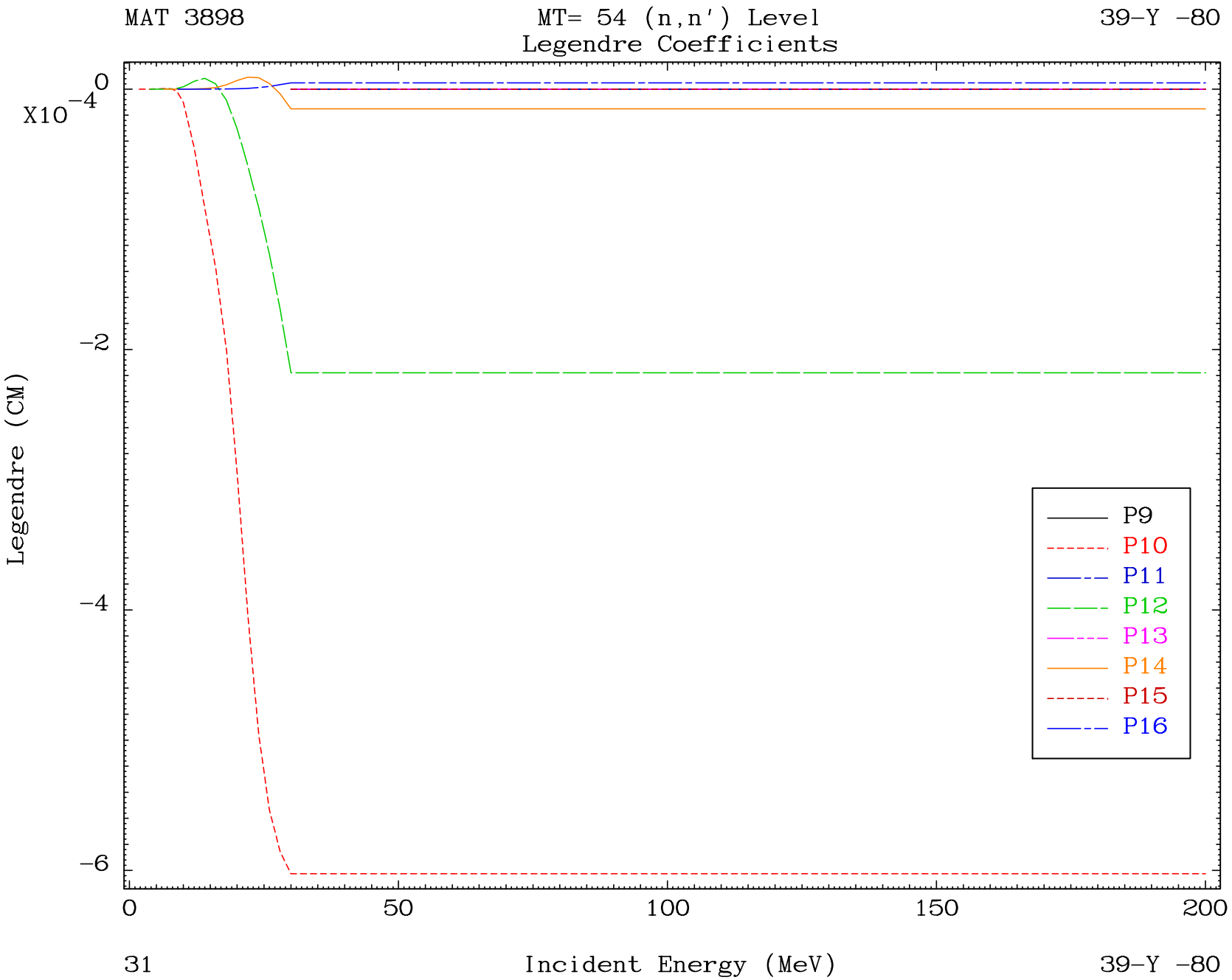

MAT 3898
MT= 53 (n,n') Level
Legendre Coefficients
39-Y -80
P1
P2
P3
P4
P5
P6
P7
P8
P9
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
Legendre (CM)
0
50
100
150
200
26
Incident Energy (MeV)
39-Y -80

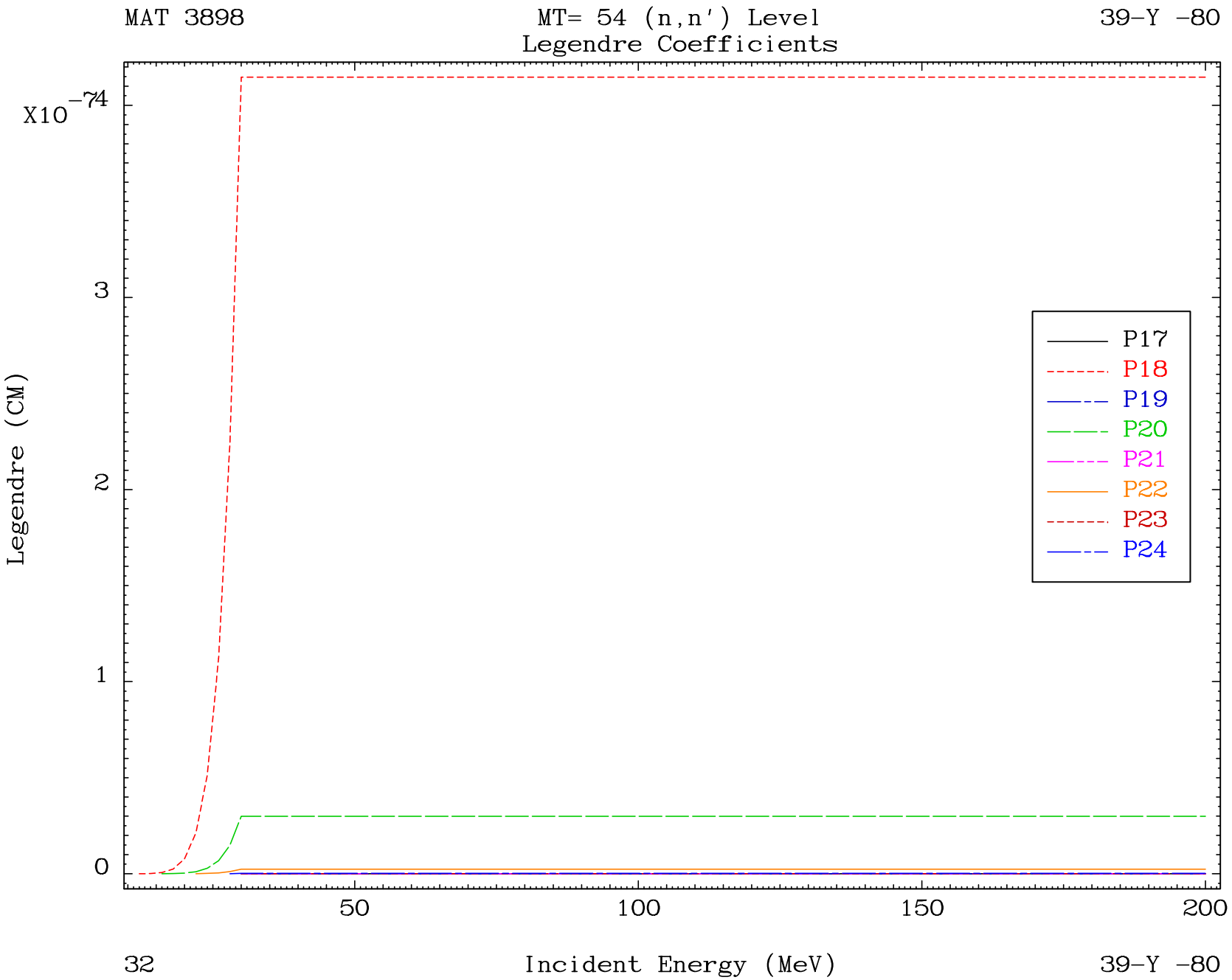

MAT 3898
MT= 53 (n,n') Level
Legendre Coefficients
39-Y -80
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
27
Incident Energy (MeV)
39-Y -80

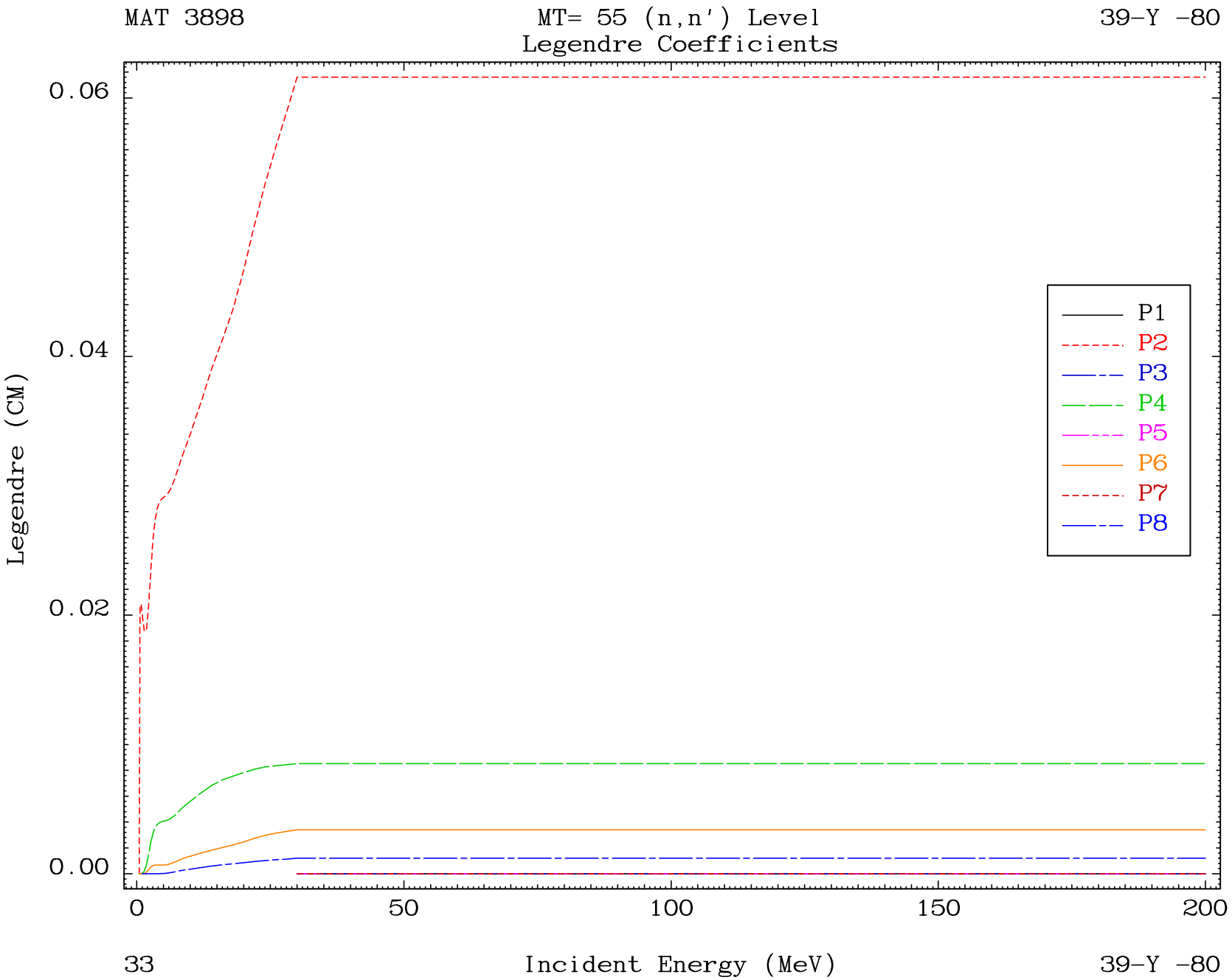

MAT 3898
MT= 53 (n,n') Level
Legendre Coefficients
39-Y -80
X10-3
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
28
Incident Energy (MeV)
39-Y -80

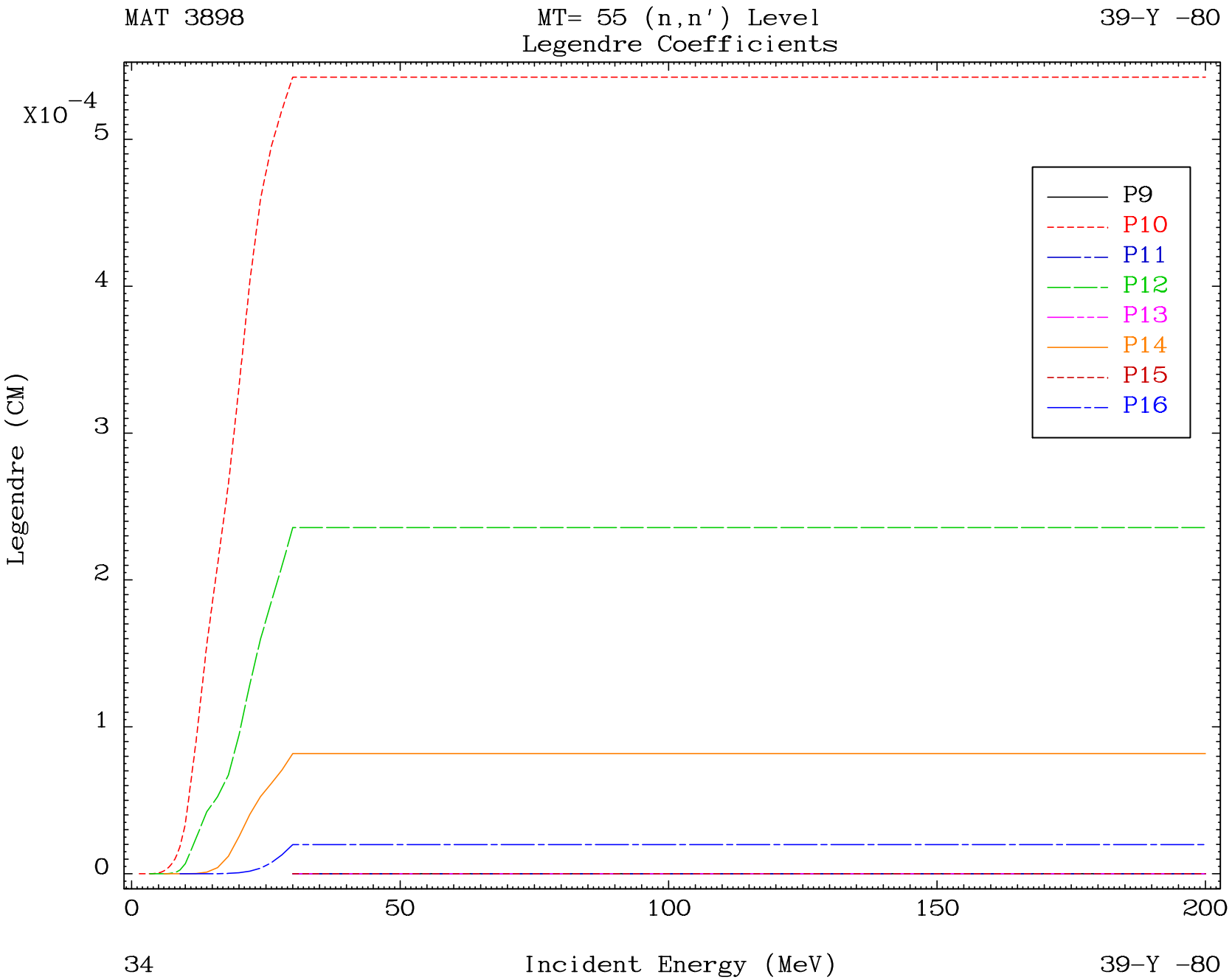

MAT 3898
MT= 53 (n,n') Level
Legendre Coefficients
39-Y -80
X10-7
4
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
50
100
150
200
29
Incident Energy (MeV)
39-Y -80

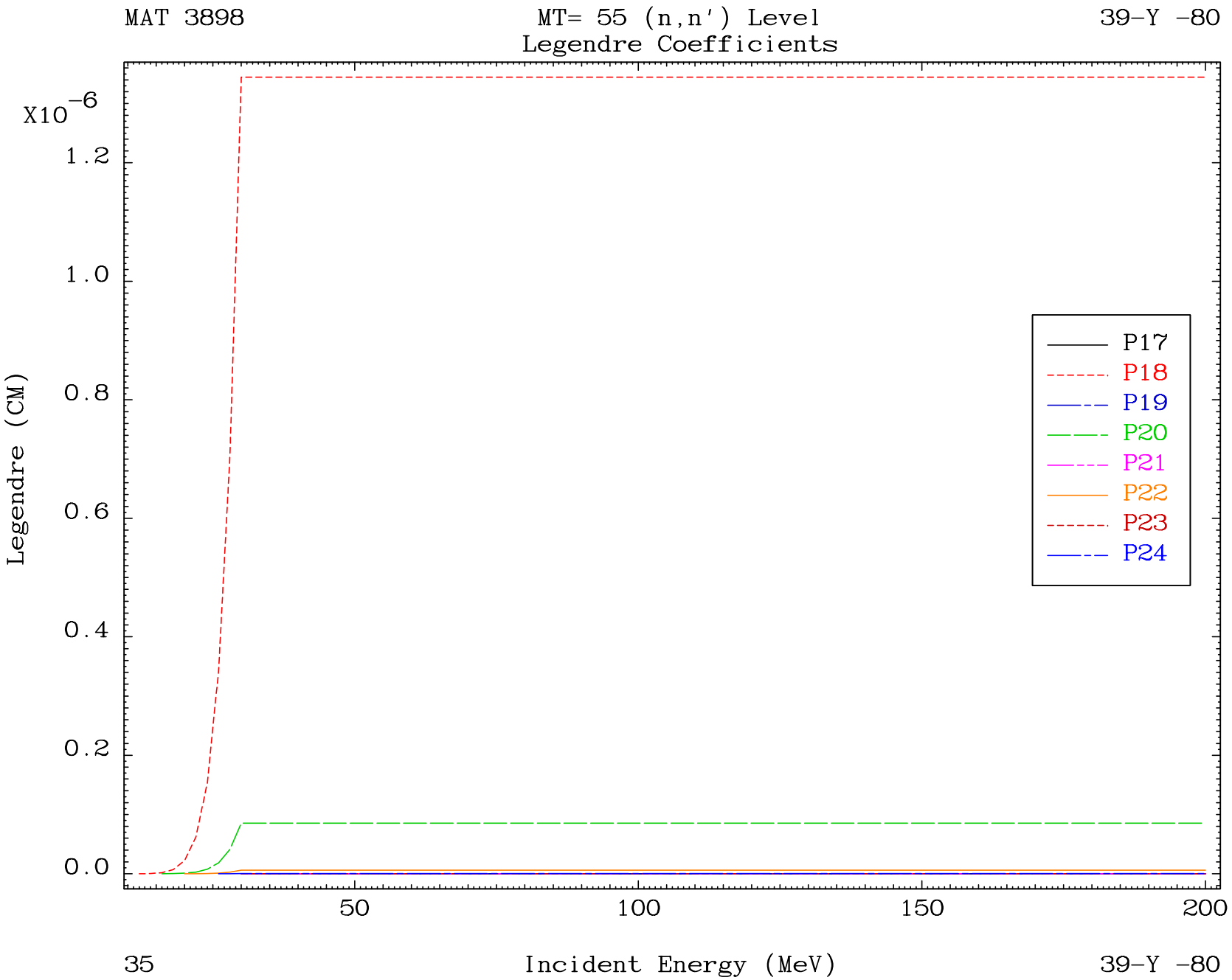

MAT 3898
MT= 54 (n,n') Level
Legendre Coefficients
39-Y -80
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
30
Incident Energy (MeV)
39-Y -80

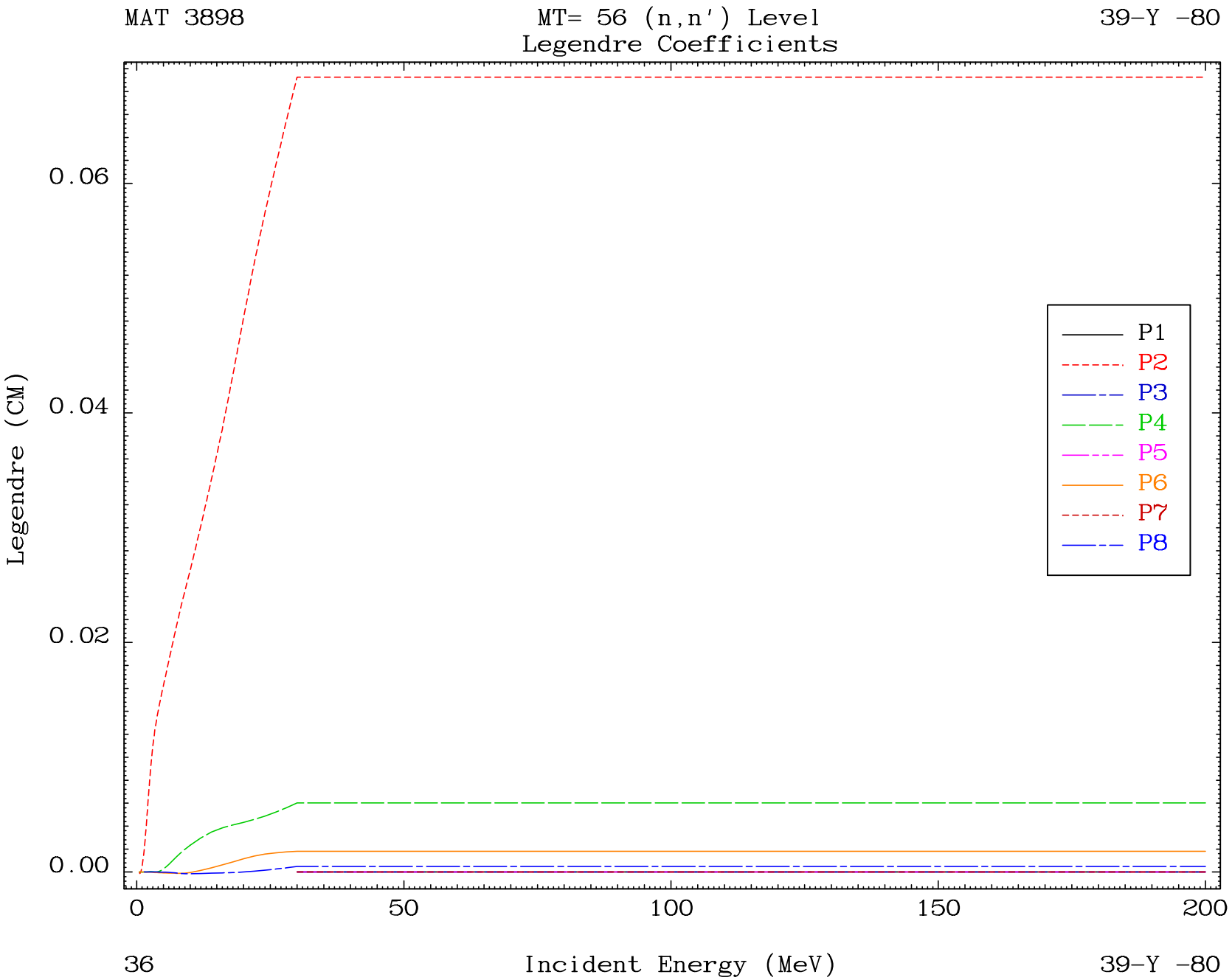

MAT 3898
MT= 54 (n,n') Level
Legendre Coefficients
39-Y -80
X10^-4
0
-2
-4
-6
Legendre (CM)
0
50
100
150
200
31
Incident Energy (MeV)
39-Y -80
P9
P10
P11
P12
P13
P14
P15
P16

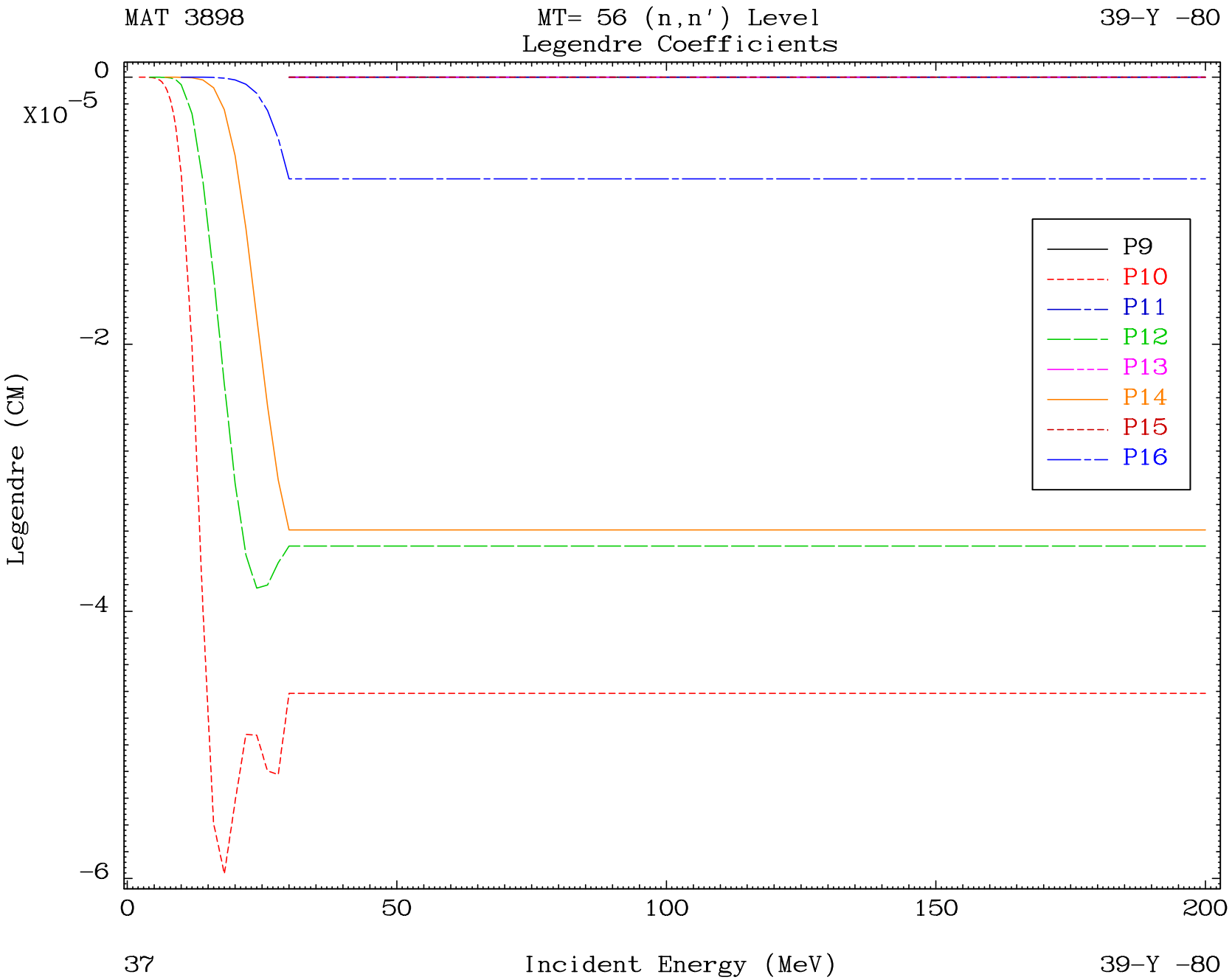

MAT 3898
MT= 54 (n,n') Level
Legendre Coefficients
39-Y -80
X10-74
3
2
1
0
Legendre (CM)
50
100
150
200
32
Incident Energy (MeV)
39-Y -80
P17
P18
P19
P20
P21
P22
P23
P24

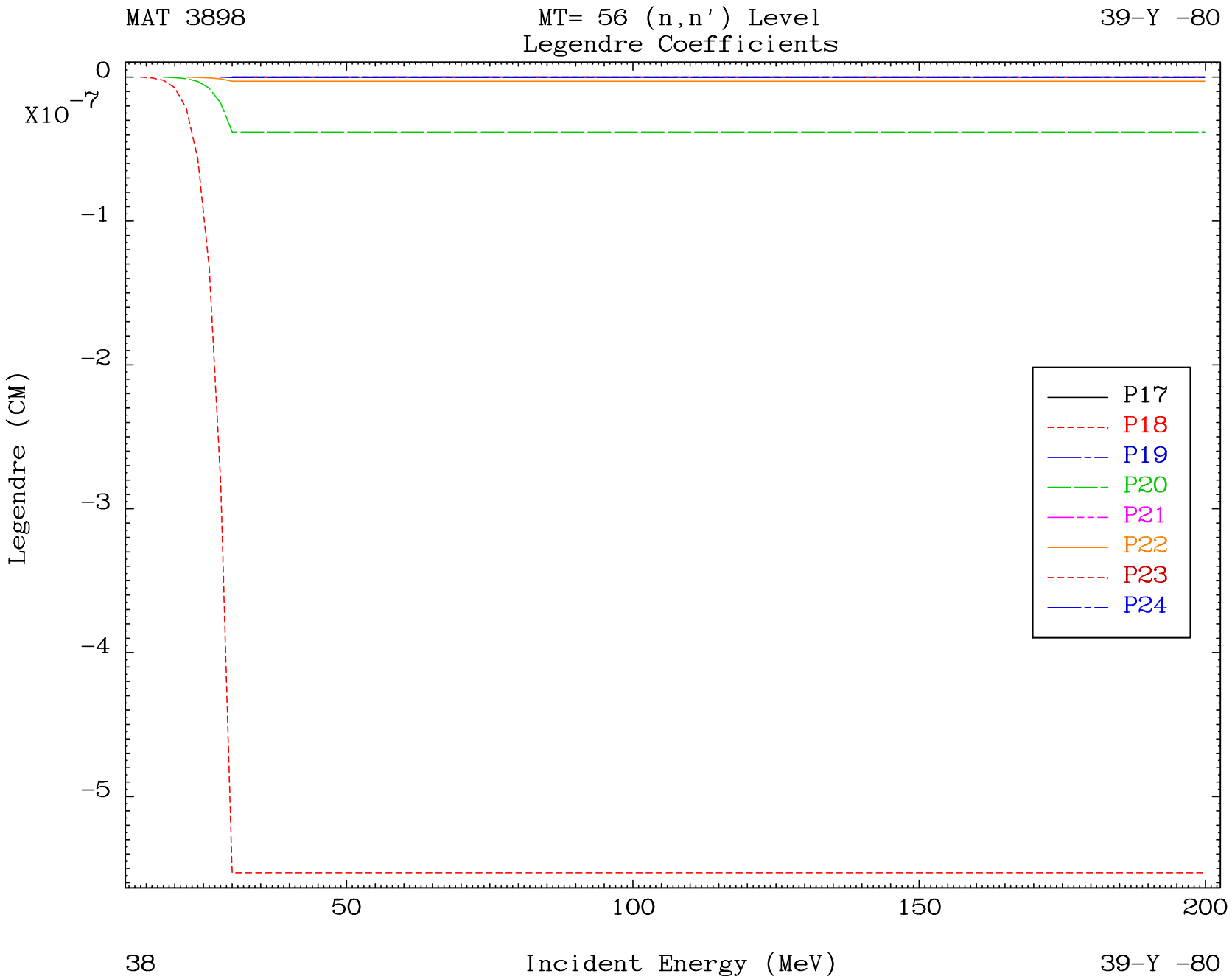

MAT 3898
MT= 55 (n,n') Level
Legendre Coefficients
39-Y -80
0.06
0.04
0.02
0.00
Legendre (CM)
0
50
100
150
200
33
Incident Energy (MeV)
39-Y -80
P1
P2
P3
P4
P5
P6
P7
P8

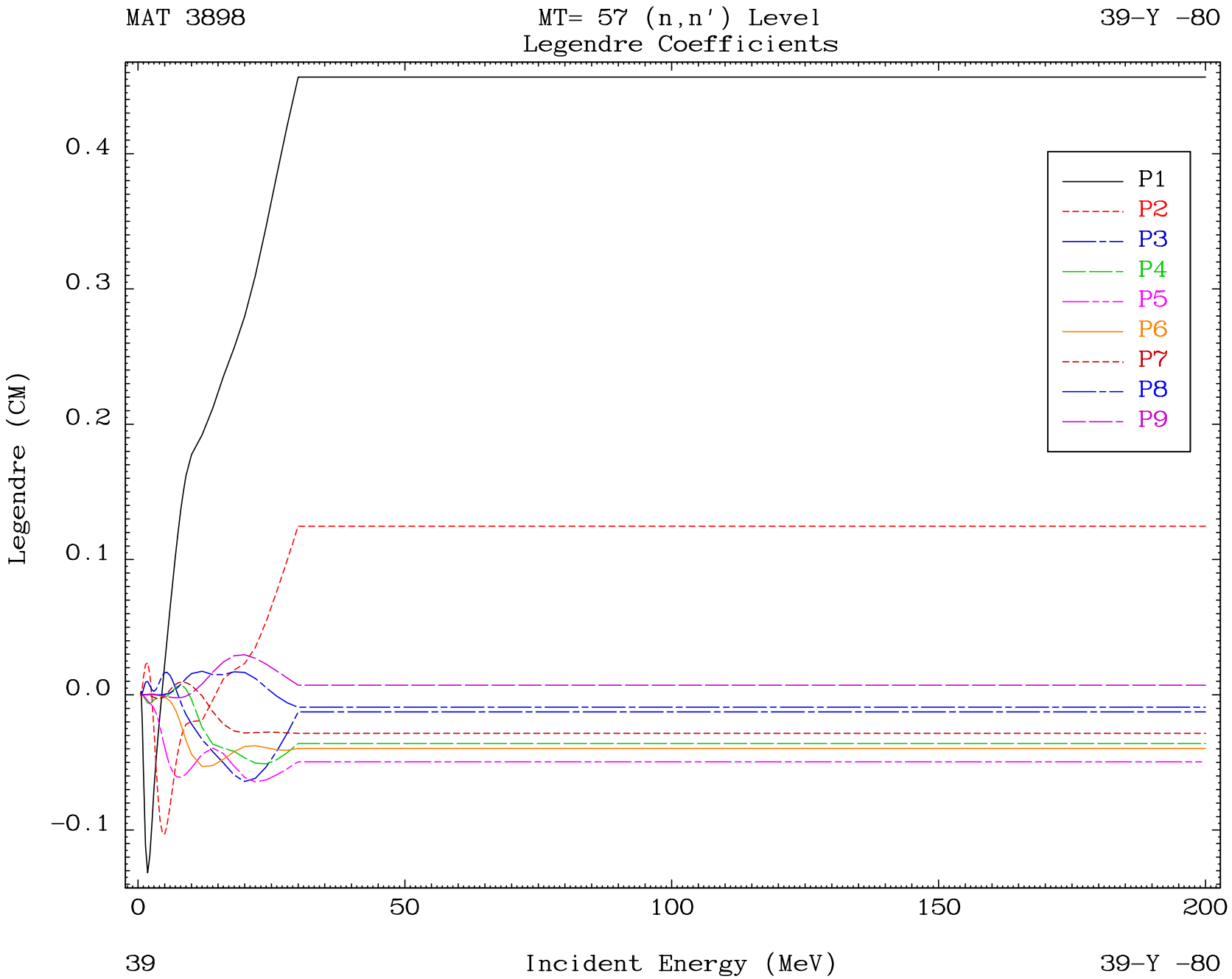

MAT 3898
MT= 55 (n,n') Level
Legendre Coefficients
39-Y -80
X10^-4
5
4
3
2
1
0
Legendre (CM)
P9
P10
P11
P12
P13
P14
P15
P16
0
50
100
150
200
34
Incident Energy (MeV)
39-Y -80

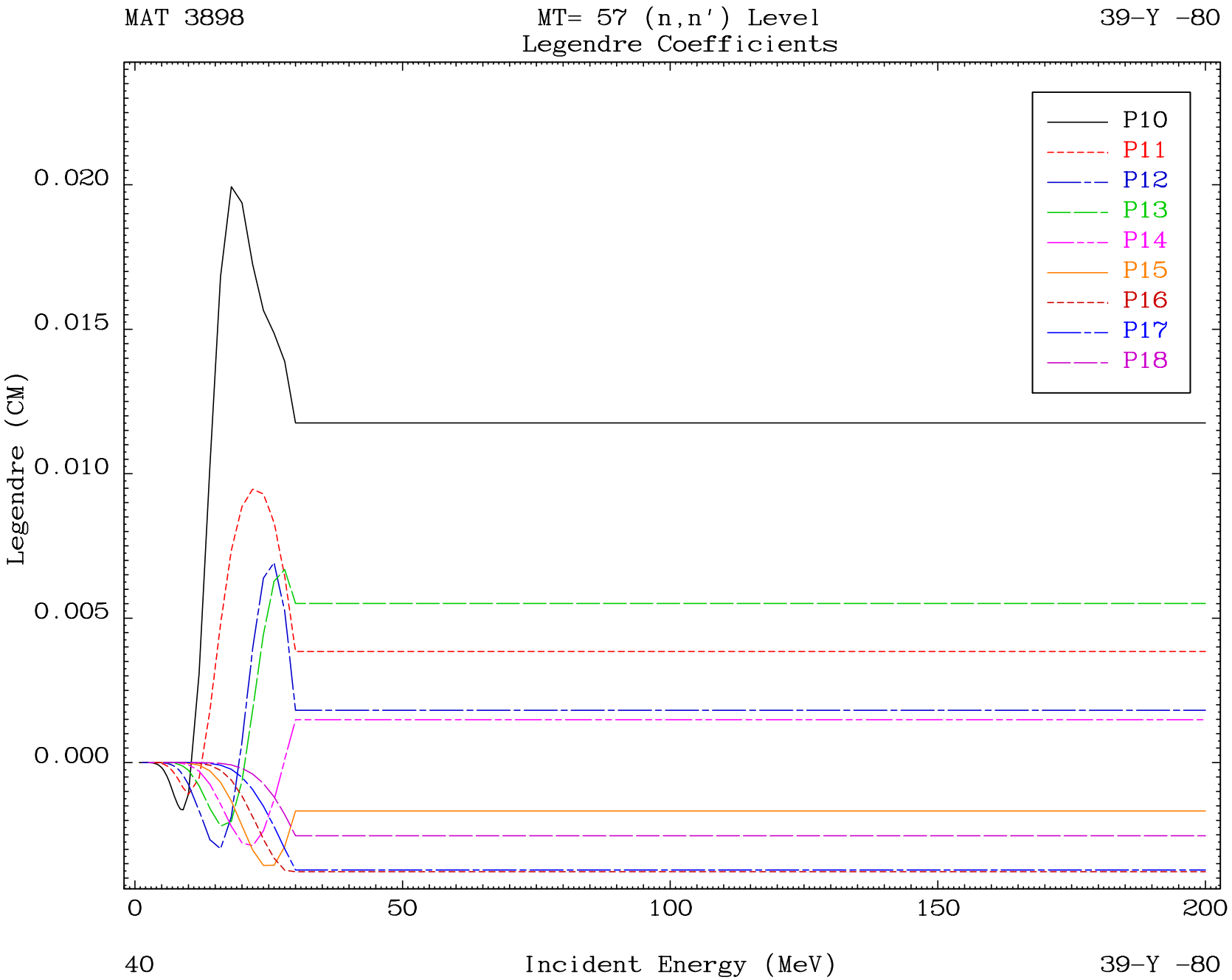

MAT 3898
MT= 55 (n,n') Level
Legendre Coefficients
39-Y -80
X10-6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P17
P18
P19
P20
P21
P22
P23
P24
50
100
150
200
35
Incident Energy (MeV)
39-Y -80

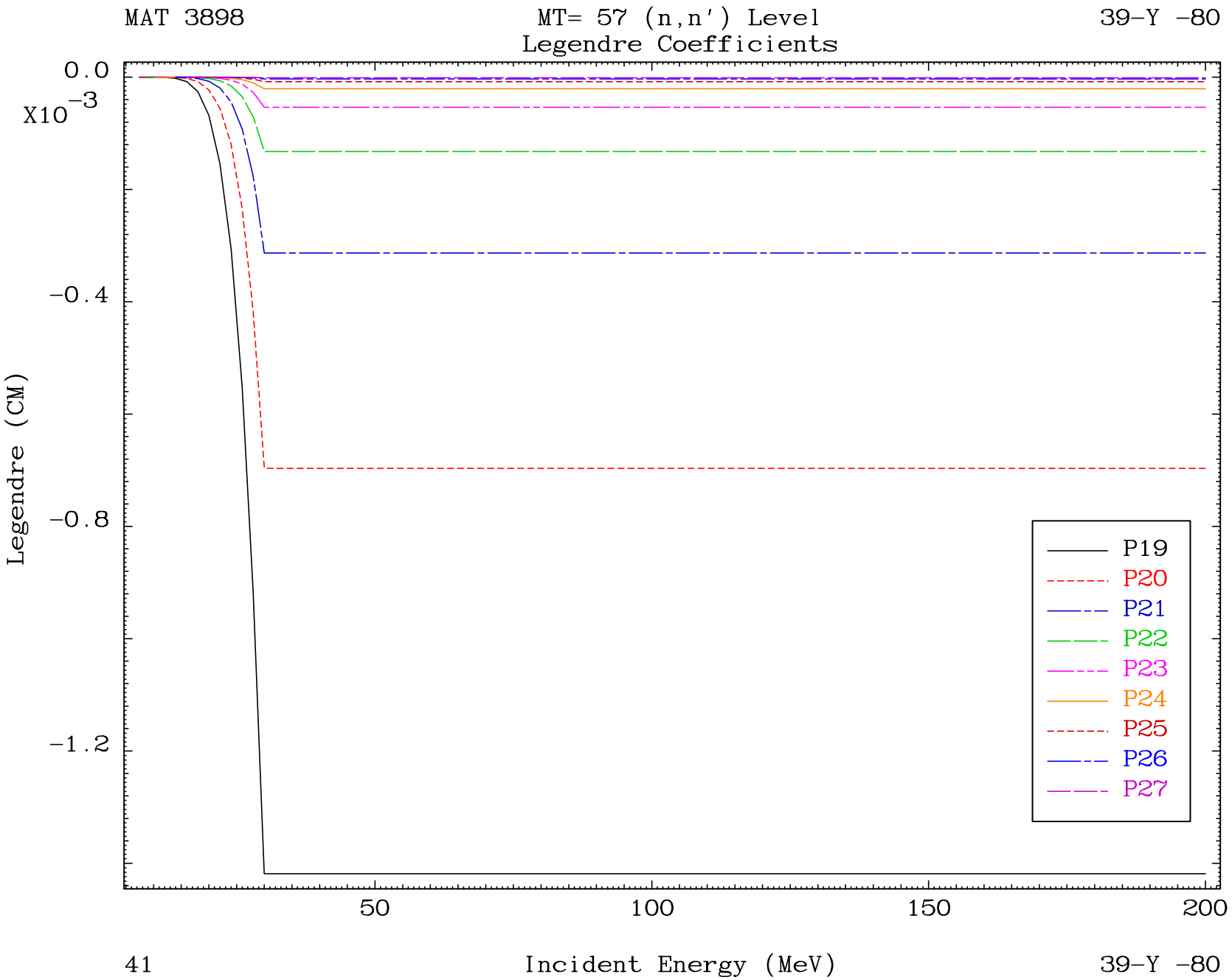

MAT 3898
MT= 56 (n,n') Level
Legendre Coefficients
39-Y -80
0.06
0.04
0.02
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
36
Incident Energy (MeV)
39-Y -80

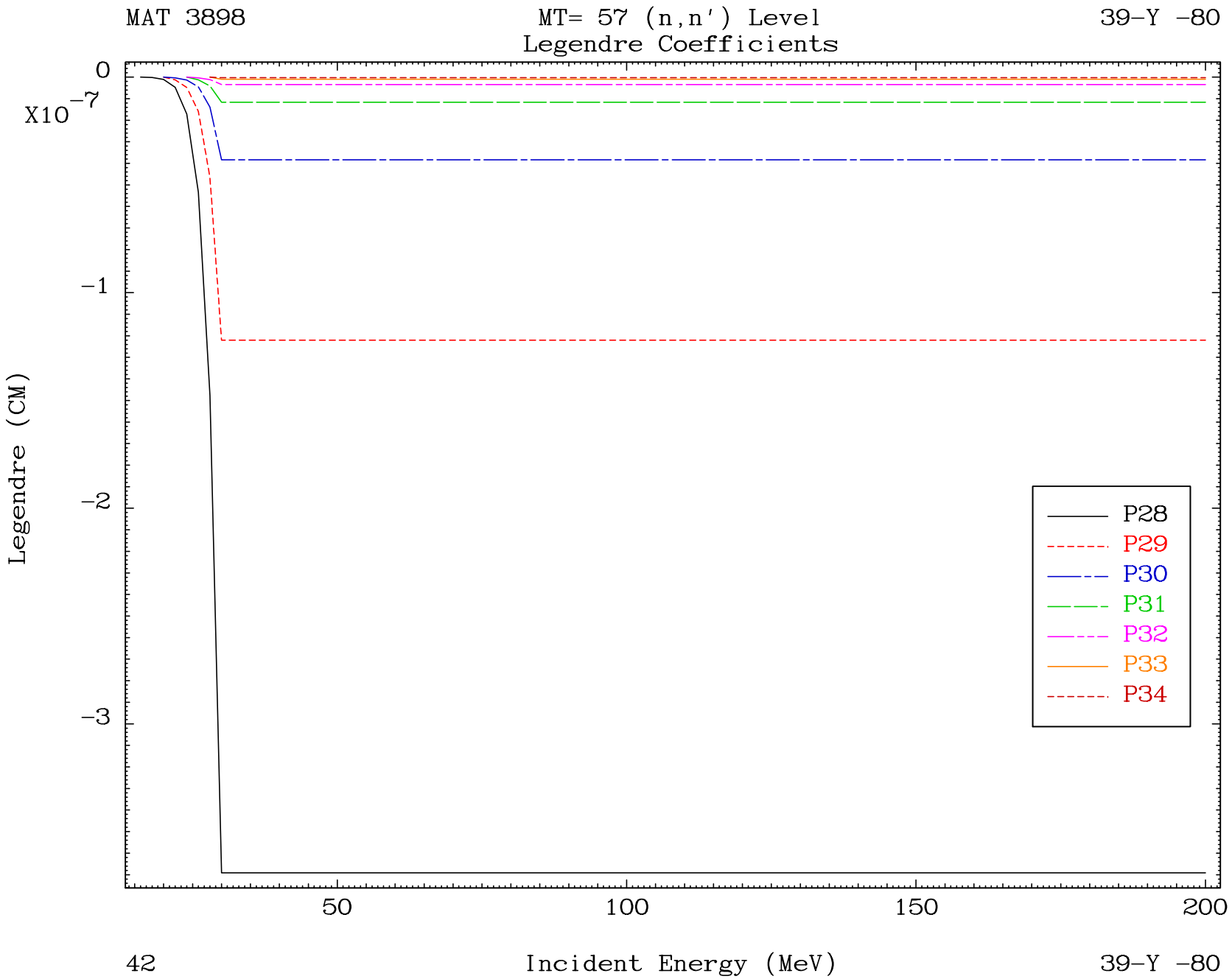

MAT 3898
MT= 56 (n,n') Level
Legendre Coefficients
39-Y -80
0
X10 -5
-2
-4
-6
Legendre (CM)
0
50
100
150
200
37
Incident Energy (MeV)
39-Y -80
P9
P10
P11
P12
P13
P14
P15
P16

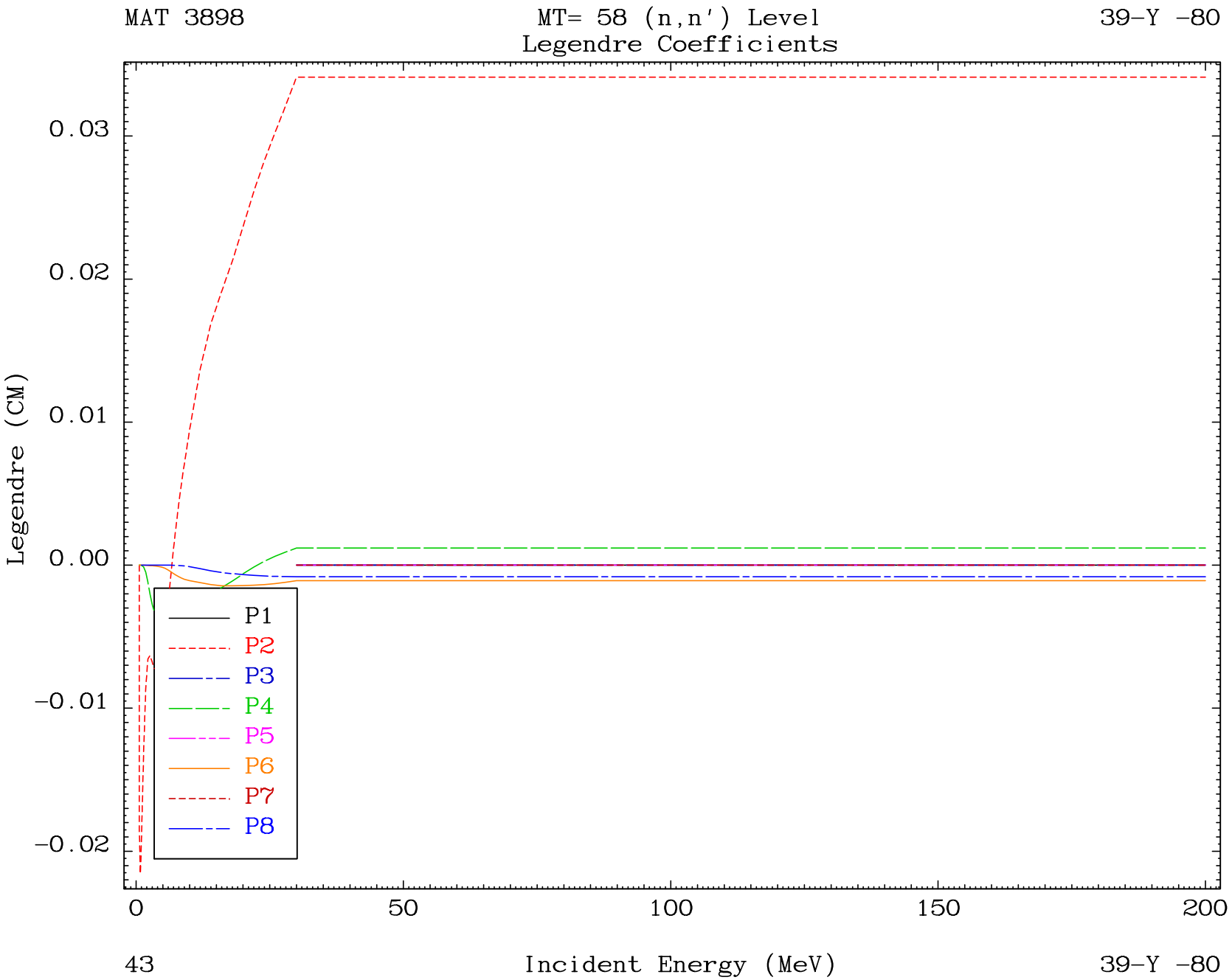

MAT 3898
MT= 56 (n,n') Level
Legendre Coefficients
39-Y -80
X10-7
0
-1
-2
-3
-4
-5
Legendre (CM)
50
100
150
200
38
Incident Energy (MeV)
39-Y -80
P17
P18
P19
P20
P21
P22
P23
P24

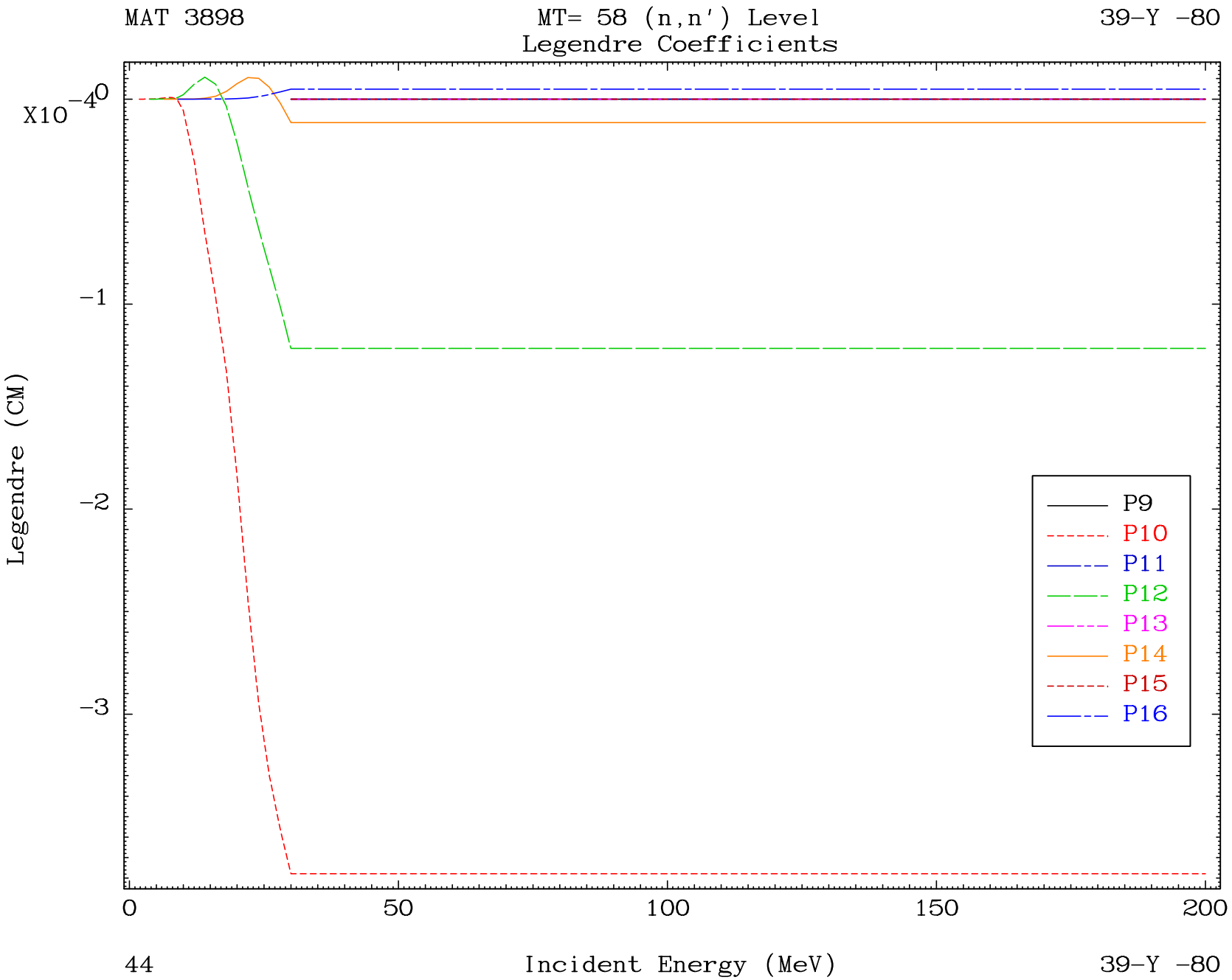

MAT 3898
MT= 57 (n,n') Level
Legendre Coefficients
39-Y -80
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
-0.1
0
50
100
150
200
39
Incident Energy (MeV)
39-Y -80
P1
P2
P3
P4
P5
P6
P7
P8
P9

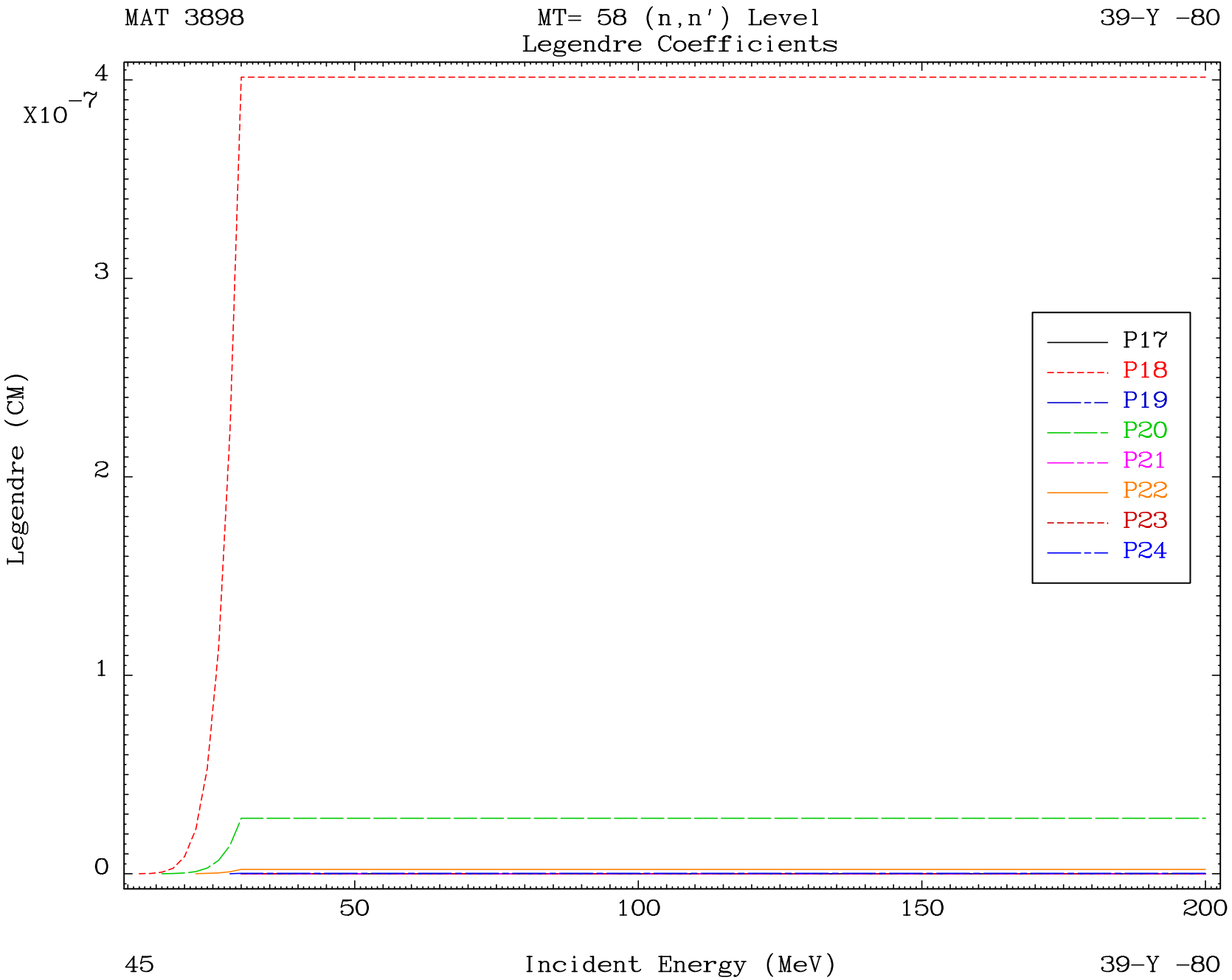

MAT 3898
MT= 57 (n,n') Level
Legendre Coefficients
39-Y -80
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
0
50
100
150
200
40
Incident Energy (MeV)
39-Y -80

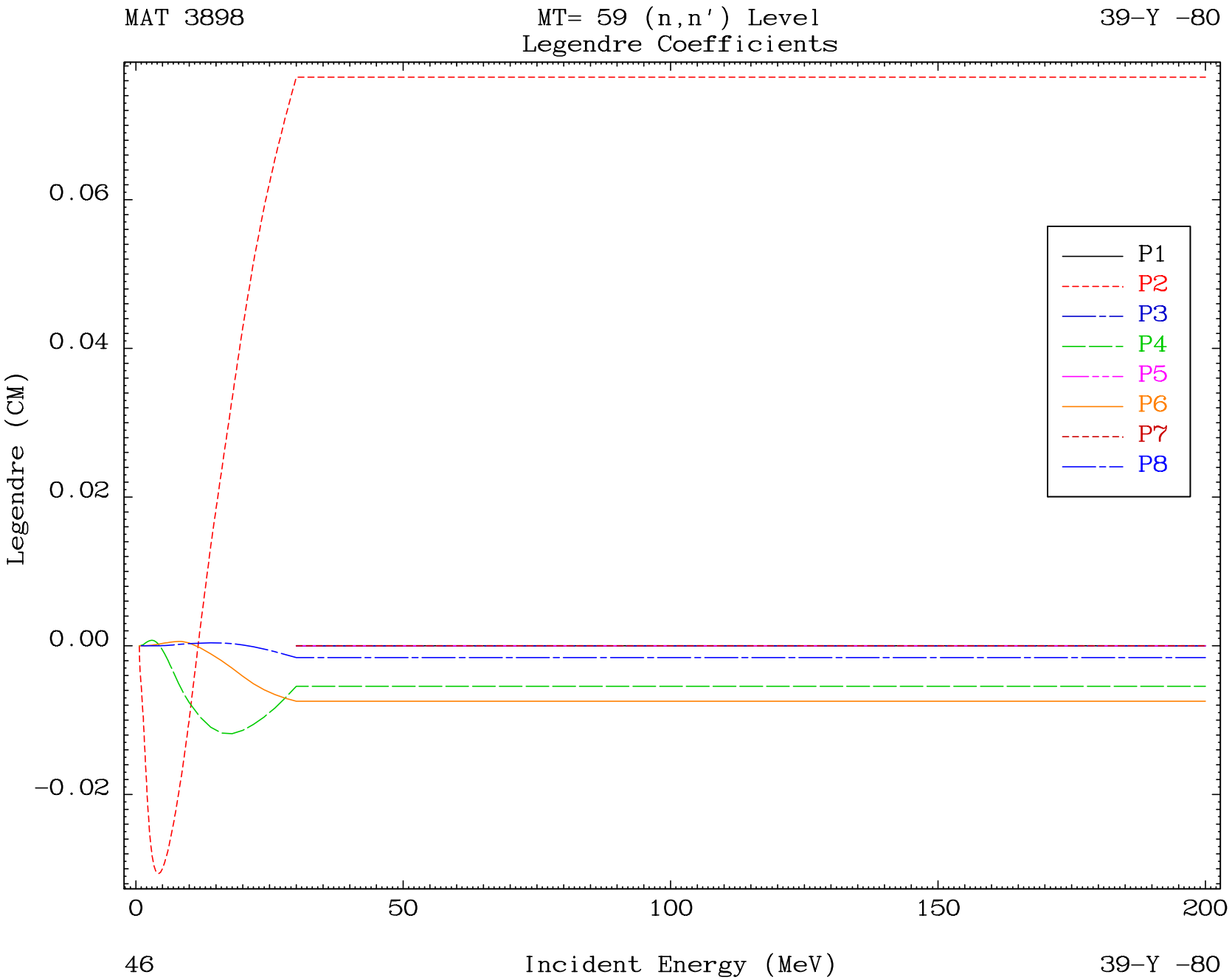

MAT 3898
MT= 57 (n,n') Level
Legendre Coefficients
39-Y -80
0.0
X10^-3
-0.4
-0.8
-1.2
Legendre (CM)
50
100
150
200
41
Incident Energy (MeV)
39-Y -80
P19
P20
P21
P22
P23
P24
P25
P26
P27

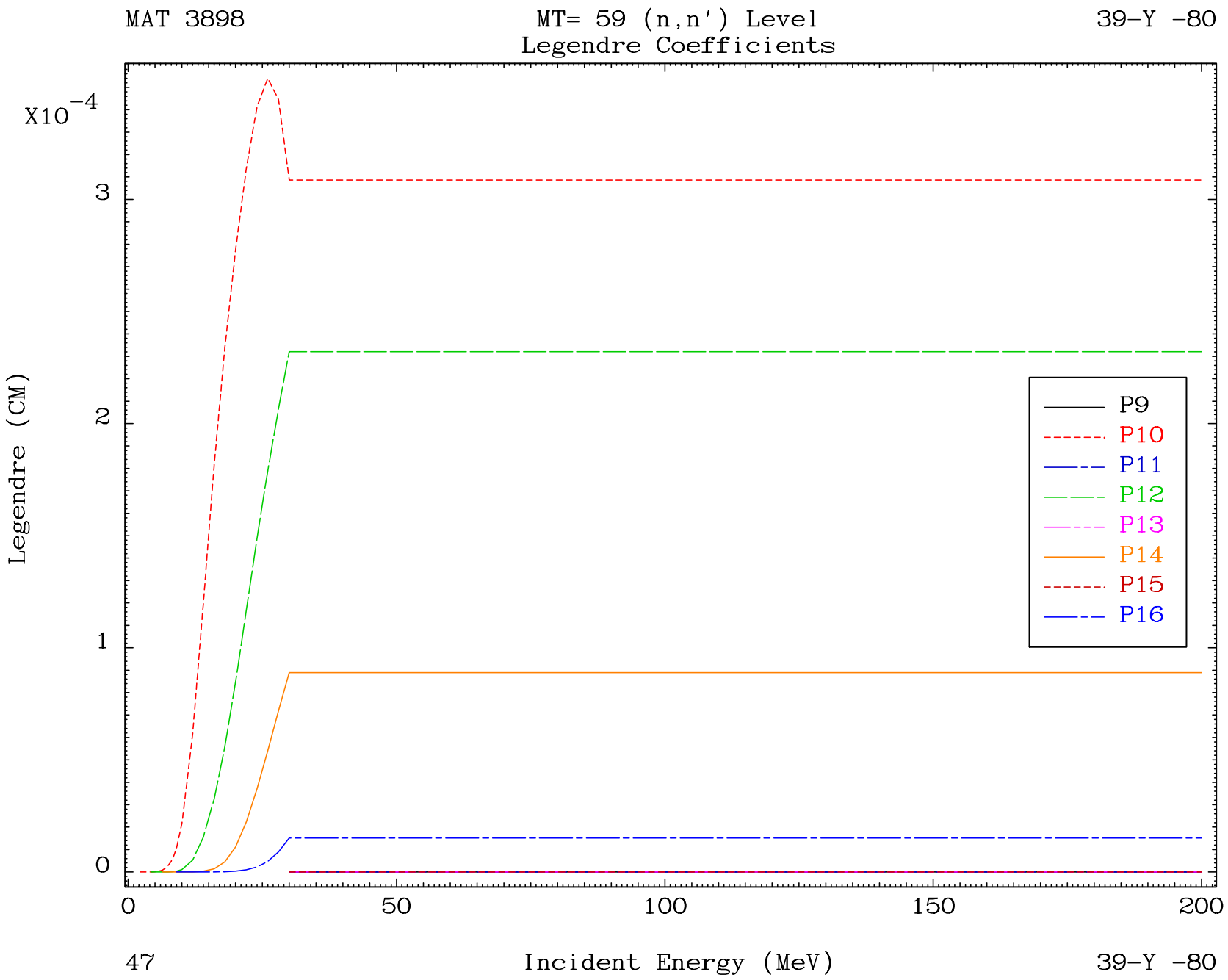

MAT 3898
MT= 57 (n,n') Level
Legendre Coefficients
39-Y -80
X10-7
0
-1
-2
-3
Legendre (CM)
50
100
150
200
42
Incident Energy (MeV)
39-Y -80
P28
P29
P30
P31
P32
P33
P34

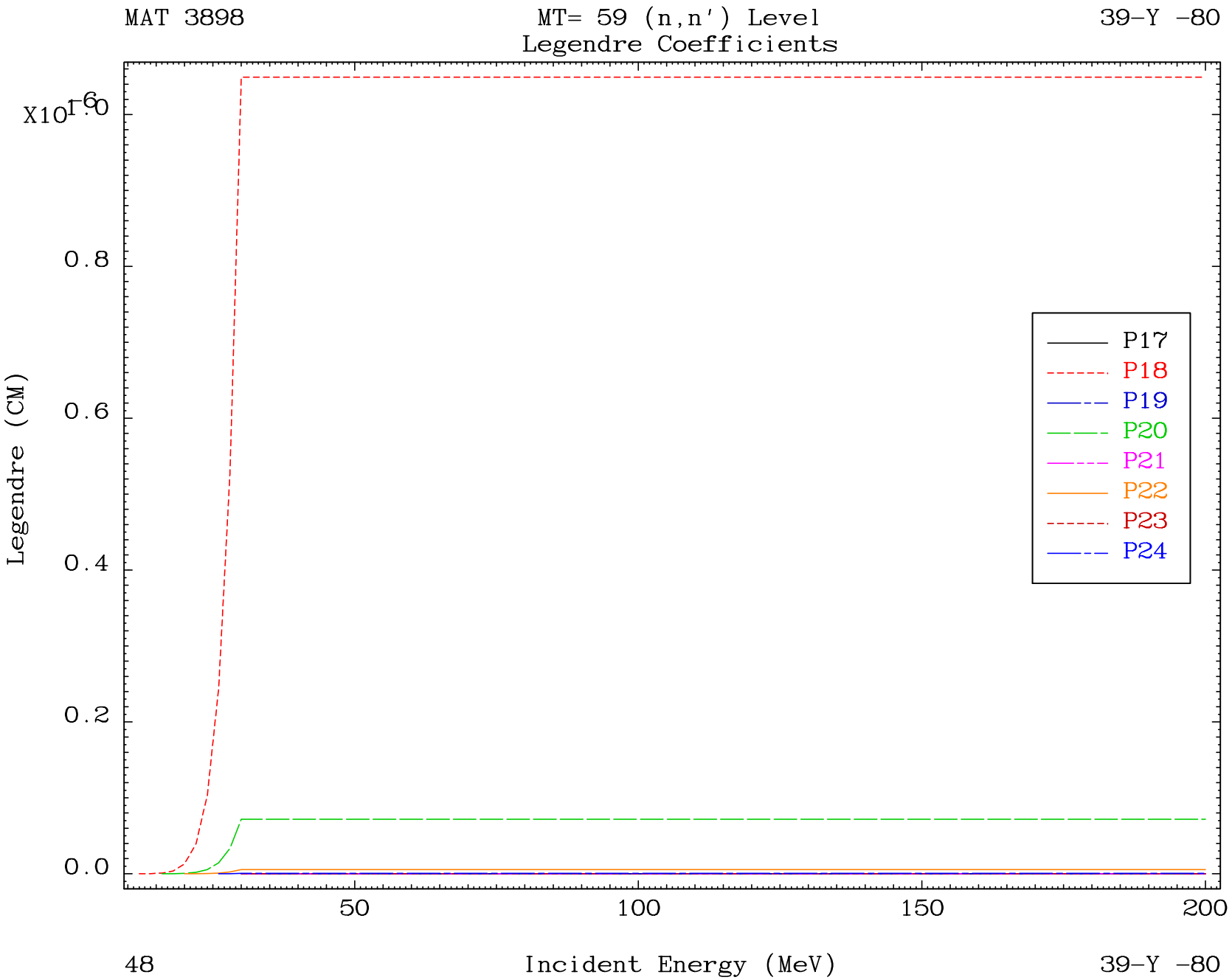

MAT 3898
MT= 58 (n,n') Level
Legendre Coefficients
39-Y -80
0.03
0.02
0.01
0.00
-0.01
-0.02
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
43
Incident Energy (MeV)
39-Y -80

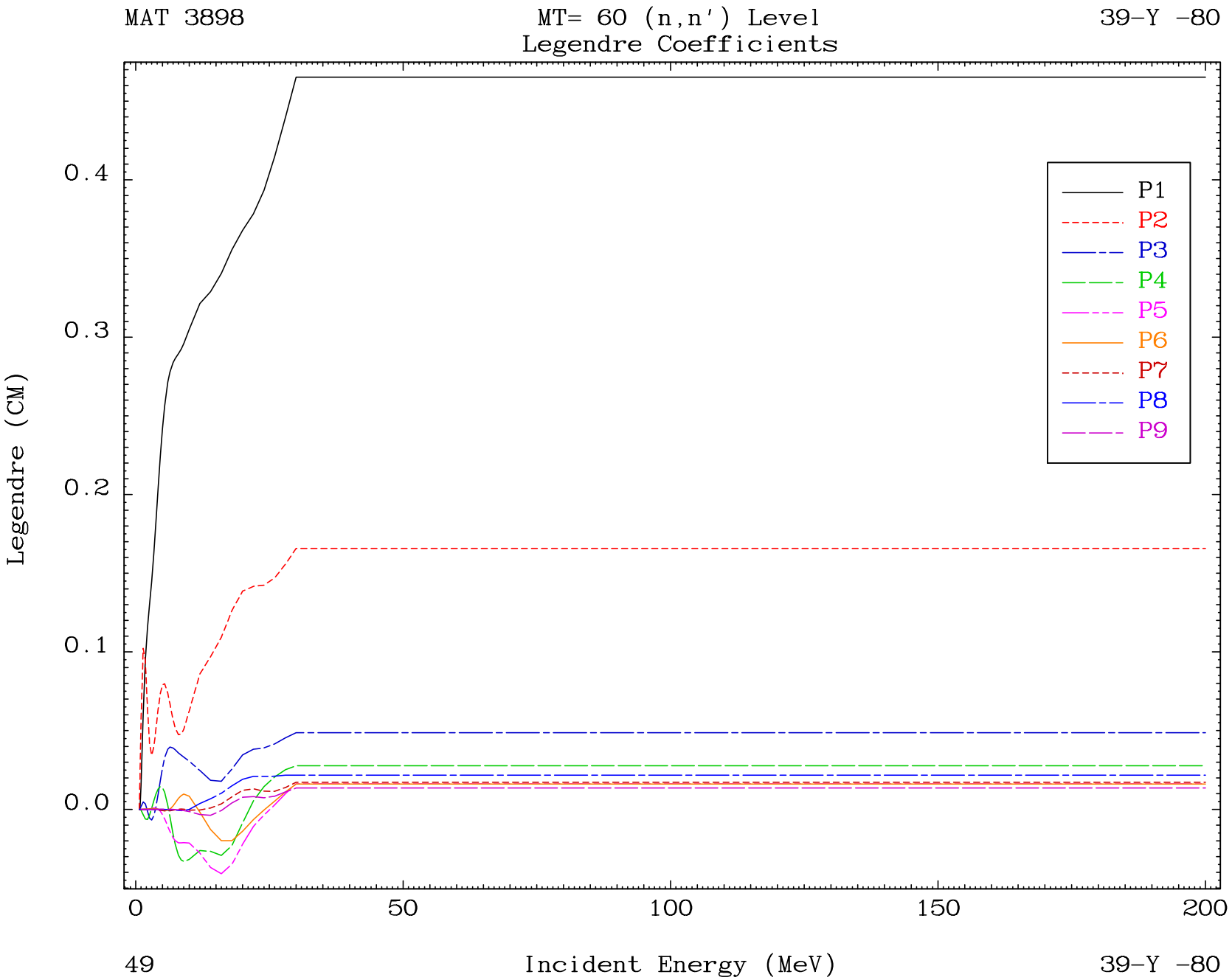

MAT 3898
MT= 58 (n,n') Level
Legendre Coefficients
39-Y -80
X10^-4
0
-1
-2
-3
Legendre (CM)
0
50
100
150
200
44
Incident Energy (MeV)
39-Y -80
P9
P10
P11
P12
P13
P14
P15
P16

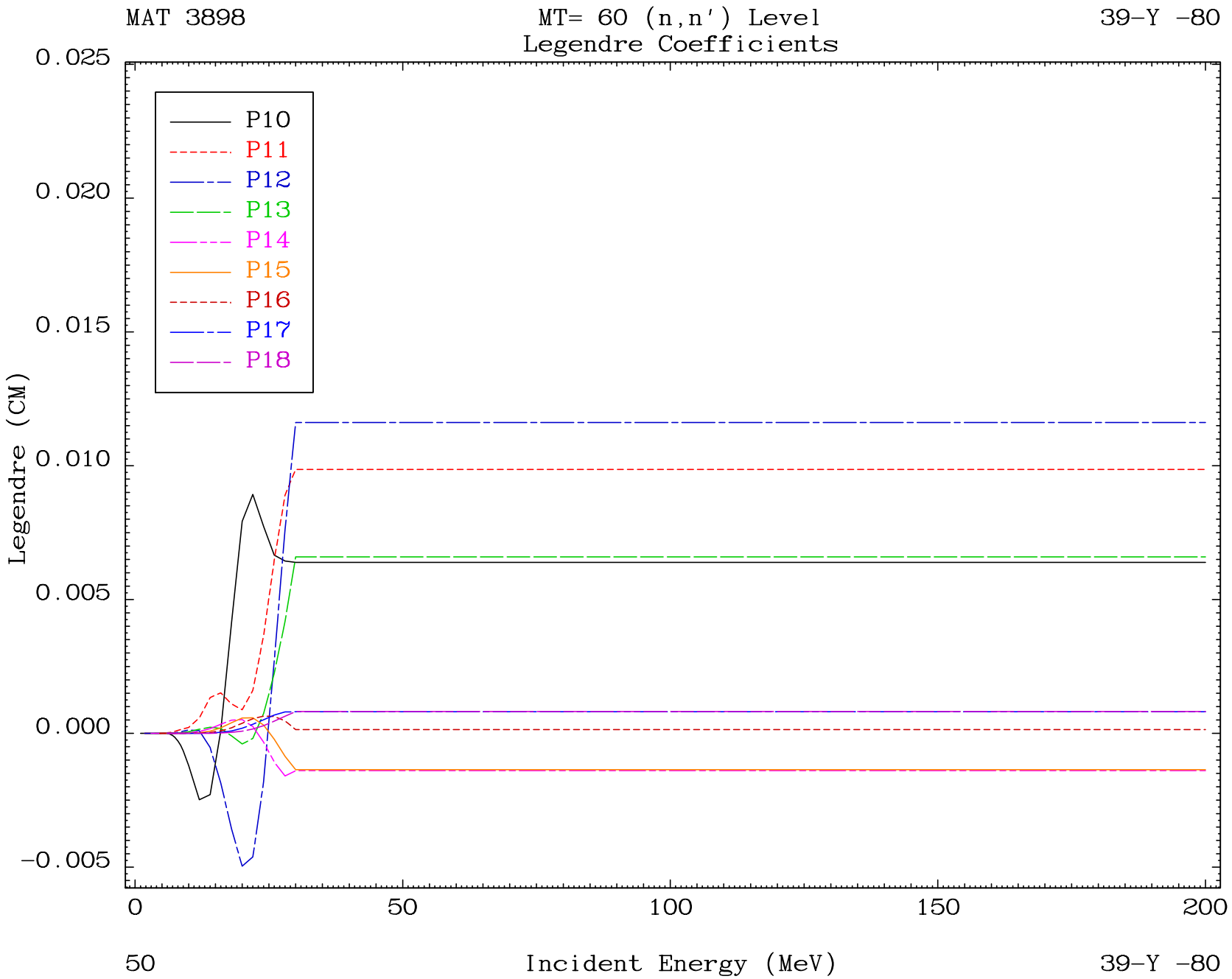

MAT 3898
MT= 58 (n,n') Level
Legendre Coefficients
39-Y -80
X10-7
4
3
2
1
0
Legendre (CM)
P17
P18
P19
P20
P21
P22
P23
P24
50
100
150
200
45
Incident Energy (MeV)
39-Y -80

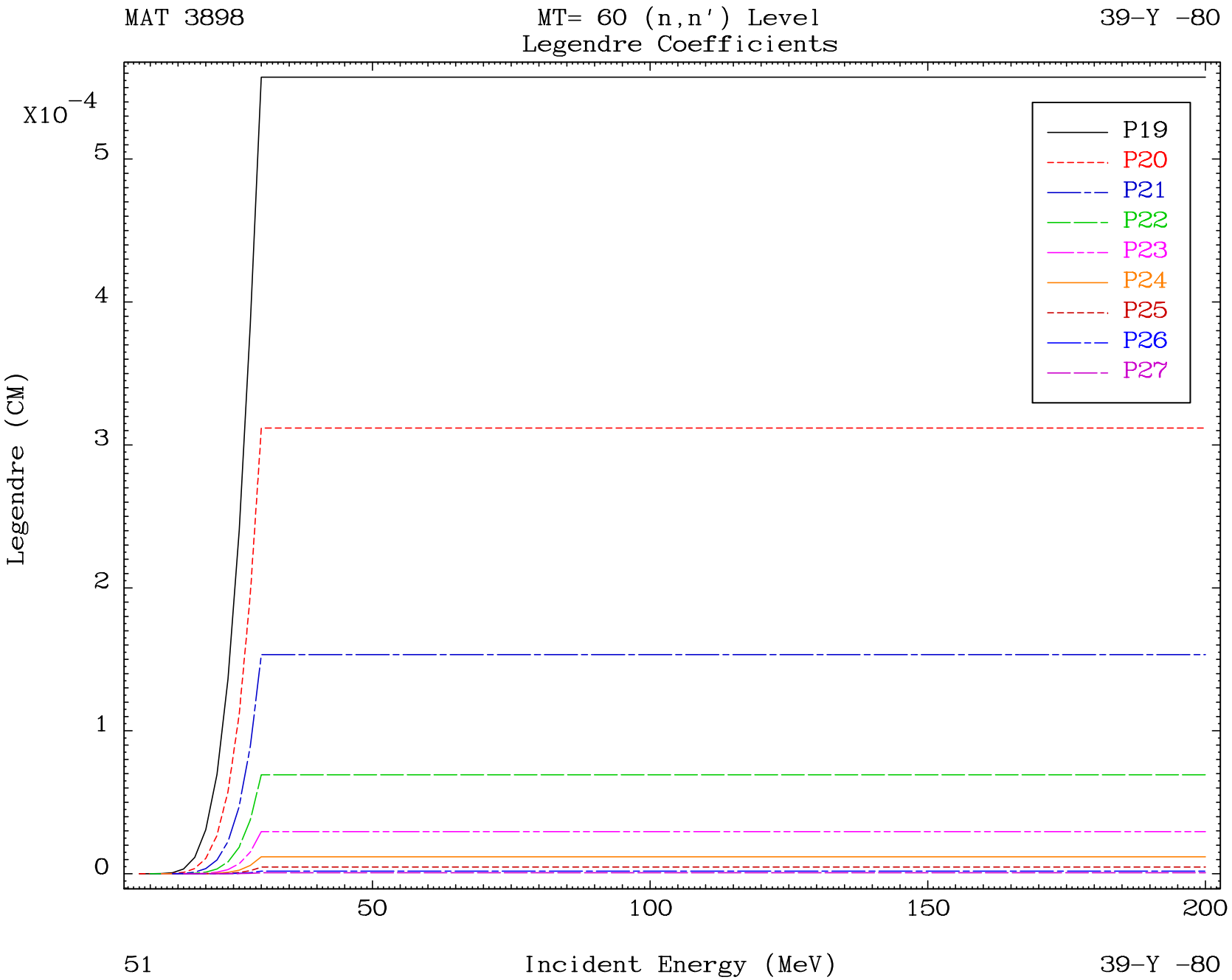

MAT 3898
MT= 59 (n,n') Level
Legendre Coefficients
39-Y -80
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
0
50
100
150
200
46
Incident Energy (MeV)
39-Y -80

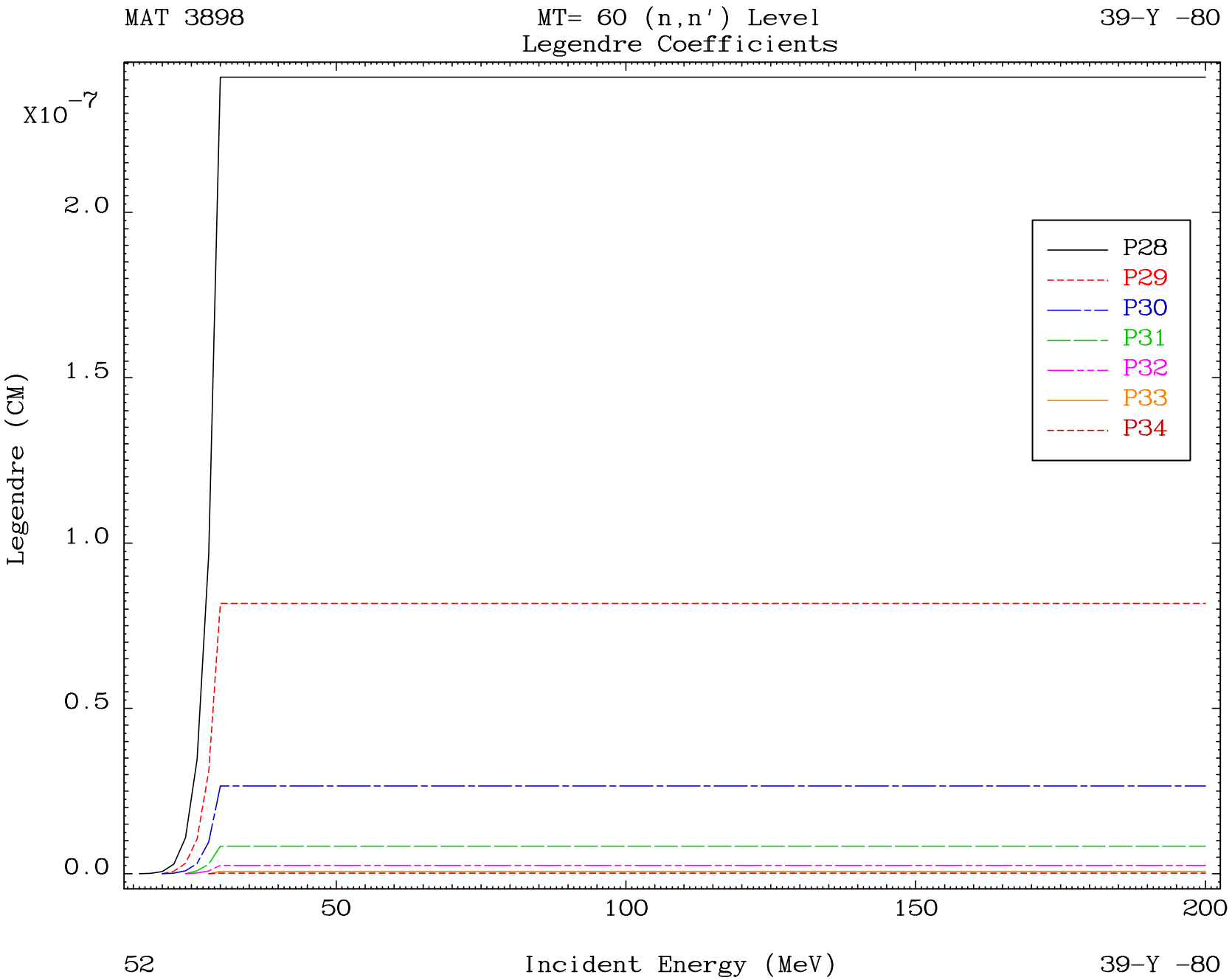

MAT 3898
MT= 59 (n,n') Level
Legendre Coefficients
39-Y -80
X10^-4
3
2
1
0
Legendre (CM)
0
50
100
150
200
47
Incident Energy (MeV)
39-Y -80
P9
P10
P11
P12
P13
P14
P15
P16

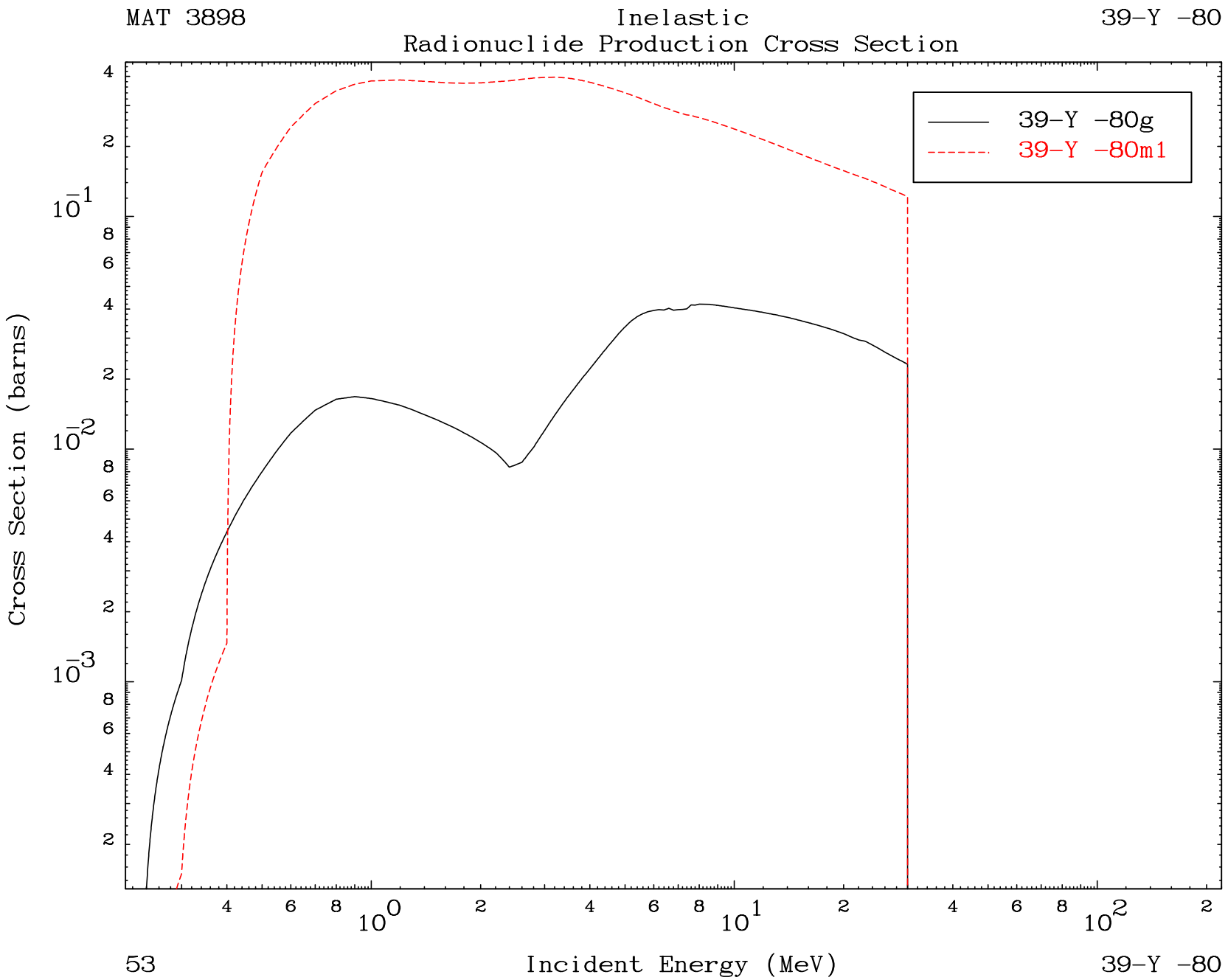

MAT 3898
MT= 59 (n,n') Level
Legendre Coefficients
39-Y -80
X10-6
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
50
100
150
200
48
Incident Energy (MeV)
39-Y -80
P17
P18
P19
P20
P21
P22
P23
P24

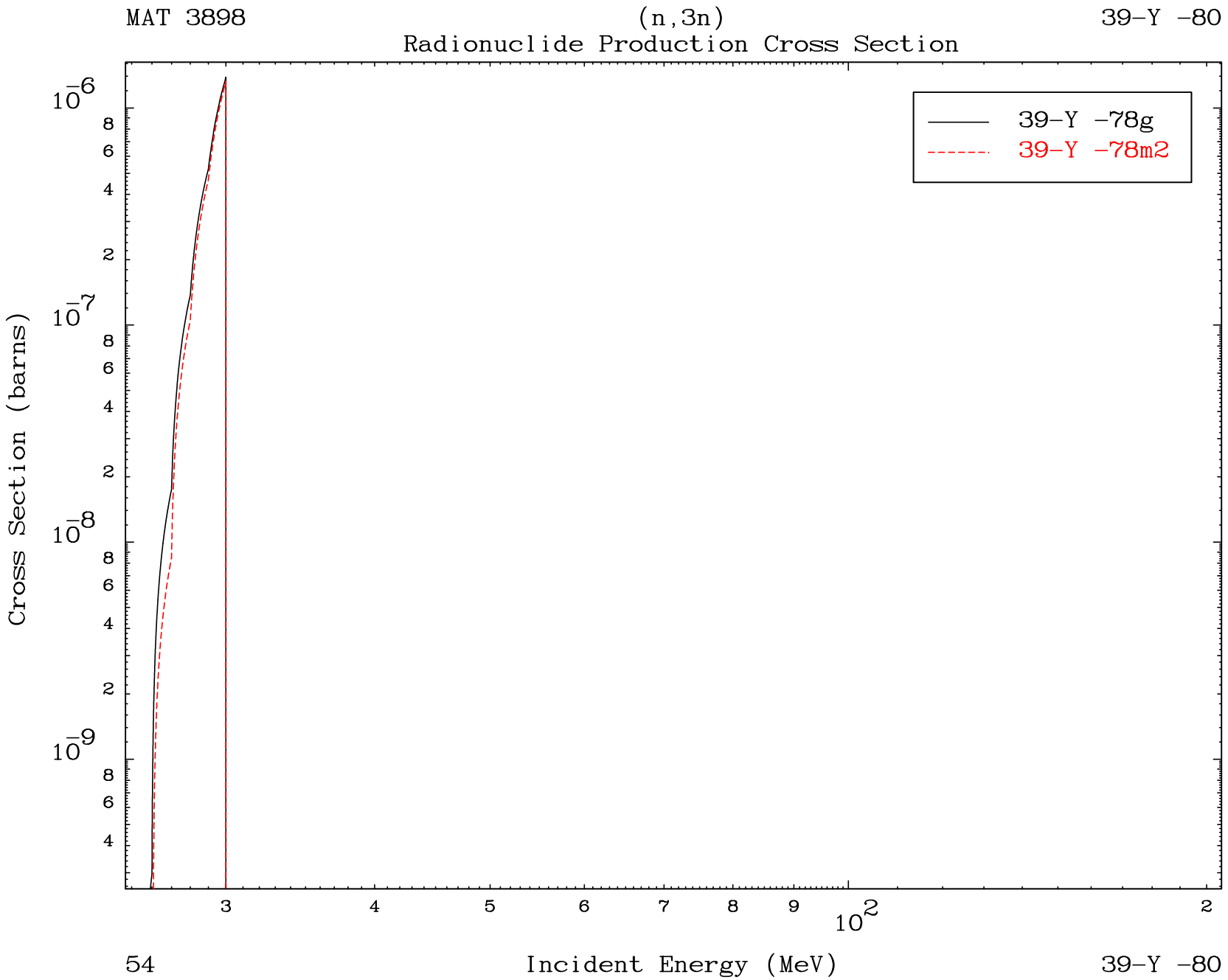

MAT 3898
MT= 60 (n,n') Level
Legendre Coefficients
39-Y -80
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
49
Incident Energy (MeV)
39-Y -80

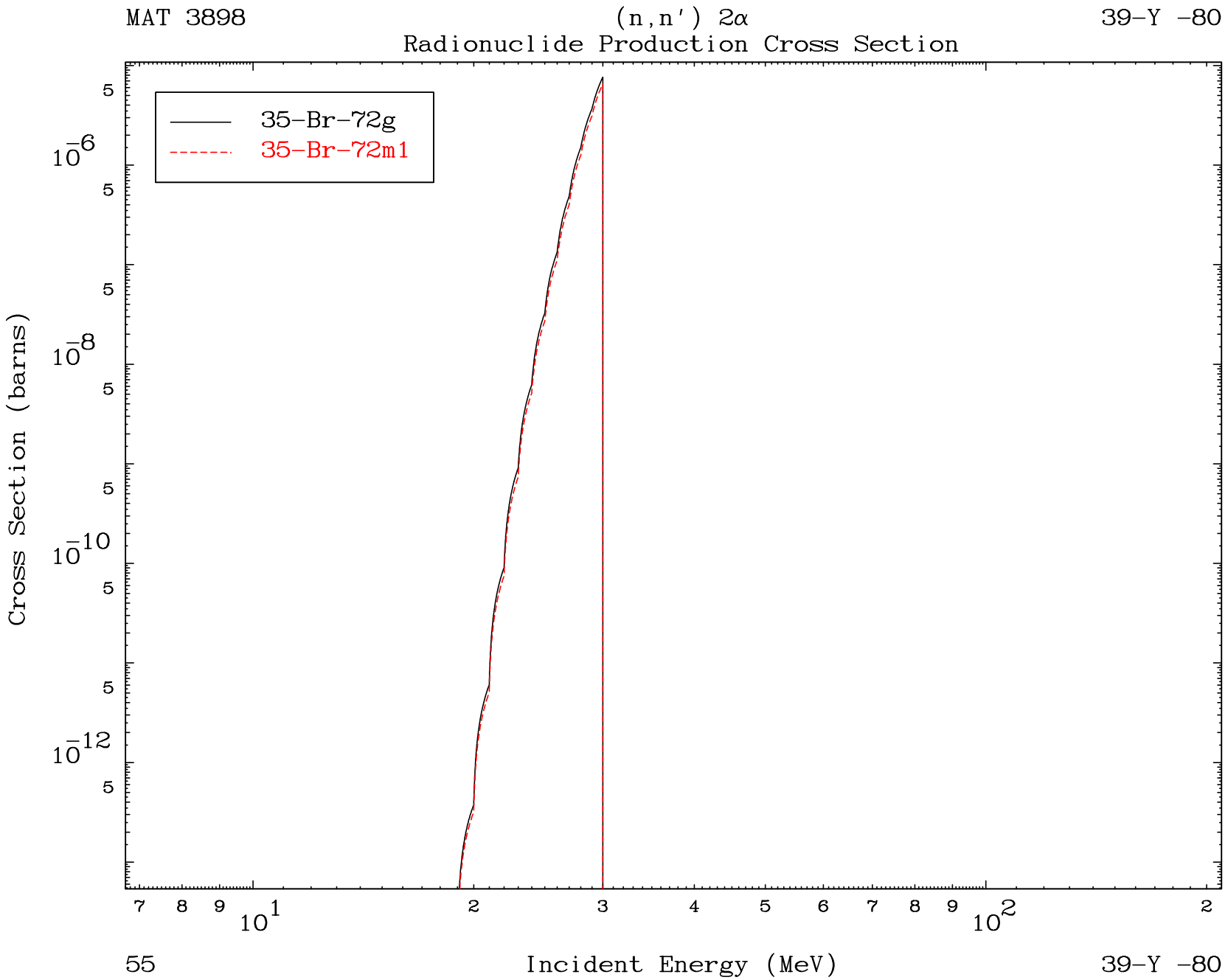

MAT 3898
MT= 60 (n,n') Level
Legendre Coefficients
39-Y -80
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
Legendre (CM)
0
50
100
150
200
50
Incident Energy (MeV)
39-Y -80

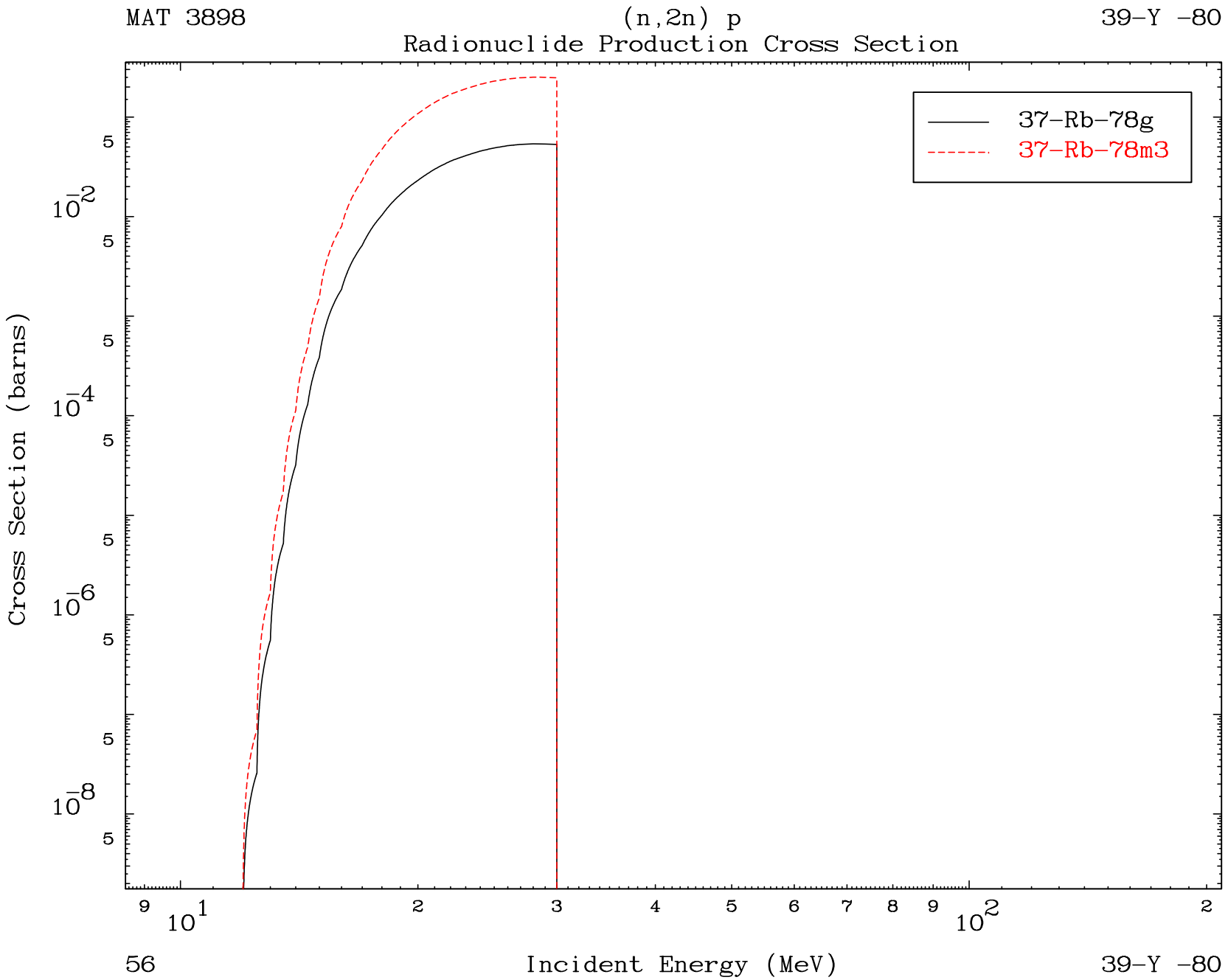

MAT 3898
MT= 60 (n,n') Level
Legendre Coefficients
39-Y -80
X10^-4
5
4
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
51
Incident Energy (MeV)
39-Y -80

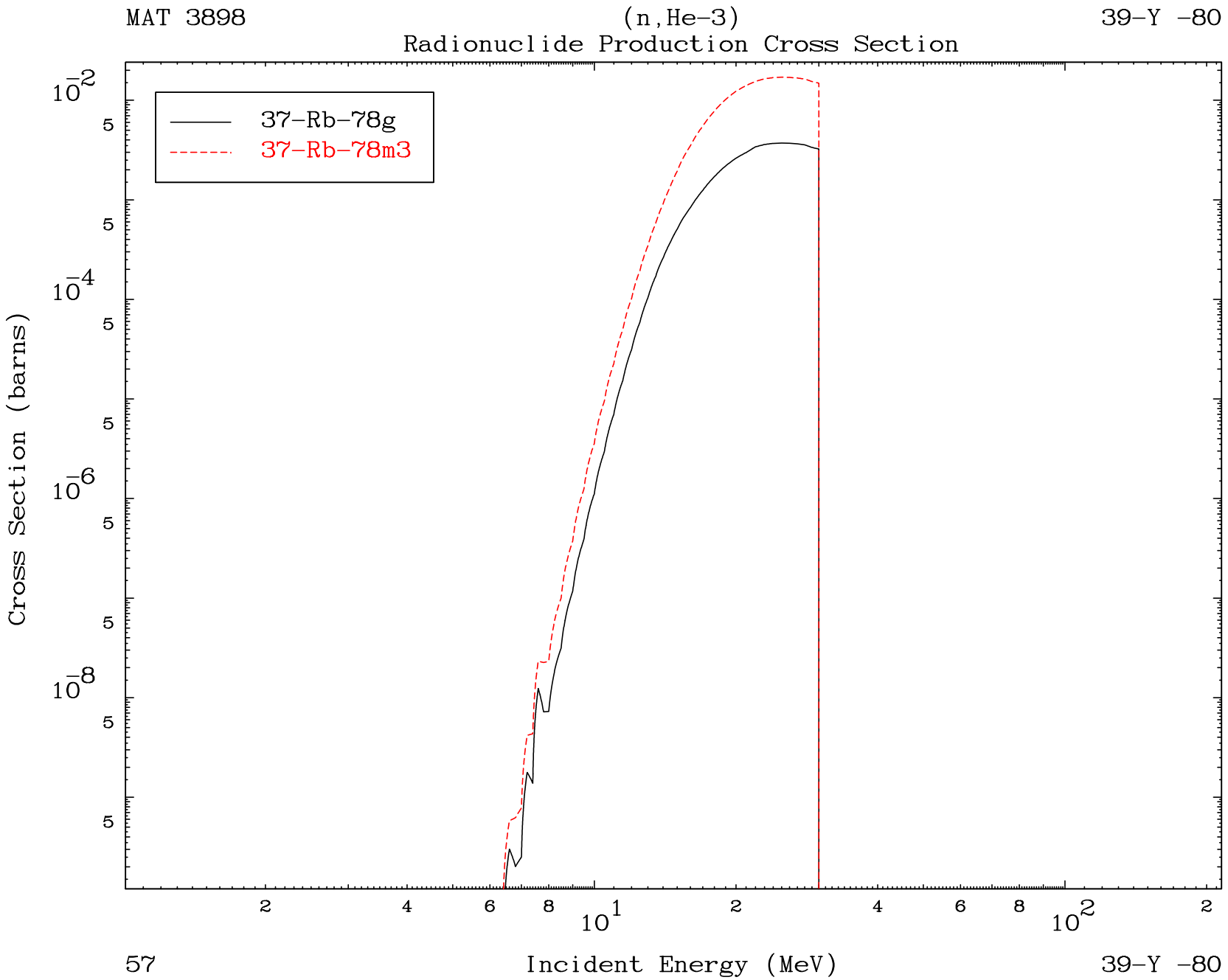

MAT 3898
MT= 60 (n,n') Level
Legendre Coefficients
39-Y -80
X10-7
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
50
100
150
200
52
Incident Energy (MeV)
39-Y -80

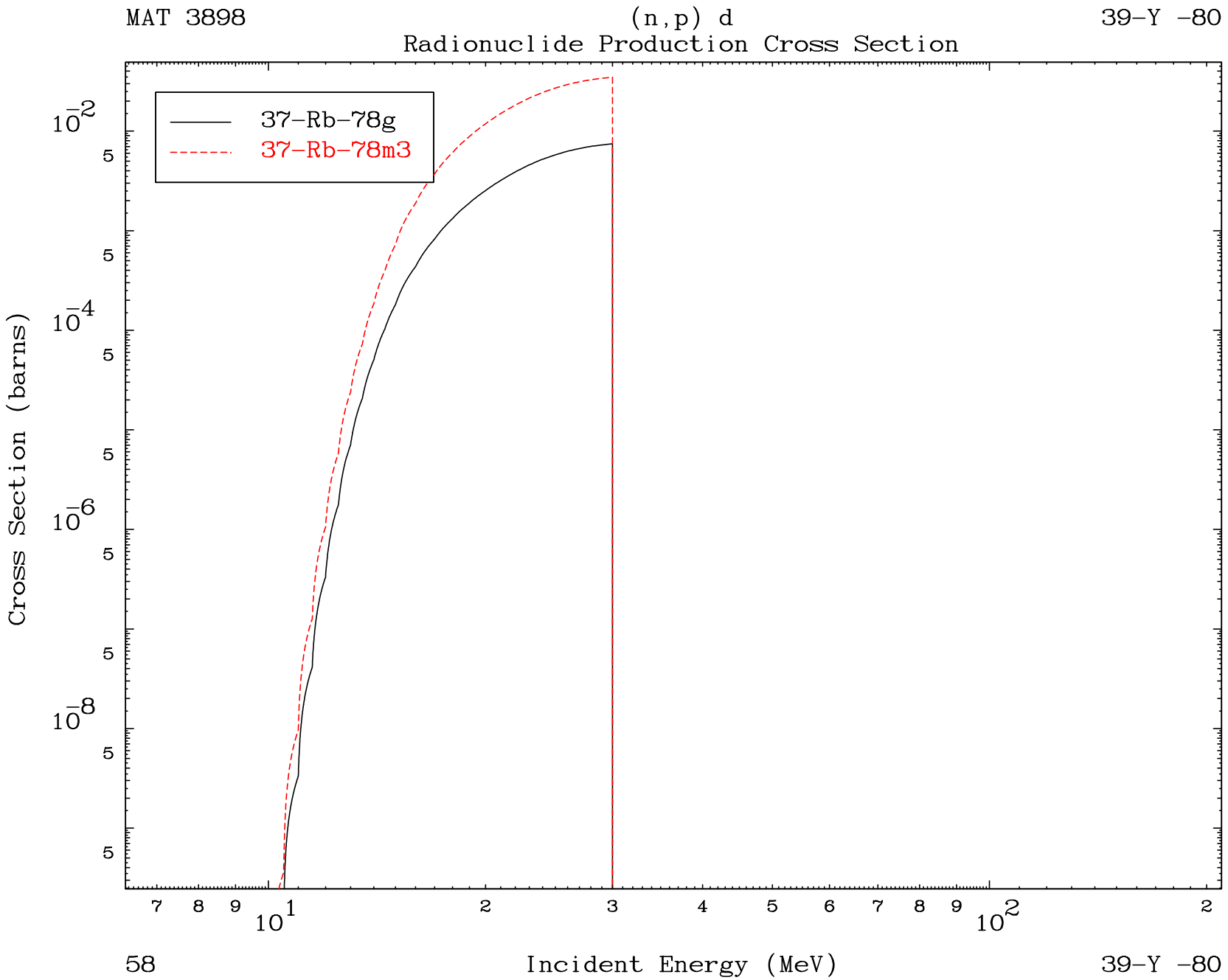

MAT 3898
Inelastic
39-Y -80
Radionuclide Production Cross Section
39-Y -80g
39-Y -80m1
Cross Section (barns)
Incident Energy (MeV)
53
39-Y -80


MAT 3898
(n,3n)
39-Y -80
Radionuclide Production Cross Section
39-Y -78g
39-Y -78m2
Cross Section (barns)
Incident Energy (MeV)
54
39-Y -80


MAT 3898
(n,n') 2α
39-Y -80
Radionuclide Production Cross Section
35-Br-72g
35-Br-72m1
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
55
Incident Energy (MeV)
39-Y -80


MAT 3898
(n,2n) p
39-Y -80
Radionuclide Production Cross Section
37-Rb-78g
37-Rb-78m3
Cross Section (barns)
10-2
10-4
10-6
10-8
9
10 1
2
3
4
5
6
7
8
9
10 2
2
56
Incident Energy (MeV)
39-Y -80


MAT 3898
(n,He-3)
39-Y -80
Radionuclide Production Cross Section
37-Rb-78g
37-Rb-78m3
Cross Section (barns)
10-2
10-4
10-6
10-8
5
2
4
6
8
101
102
57
Incident Energy (MeV)
39-Y -80


MAT 3898
(n,p) d
39-Y -80
Radionuclide Production Cross Section
37-Rb-78g
37-Rb-78m3
Cross Section (barns)
10-2
10-4
10-6
10-8
5
7 8 9
10 1
2 3 4 5 6 7 8 9
10 2
2
58
Incident Energy (MeV)
39-Y -80