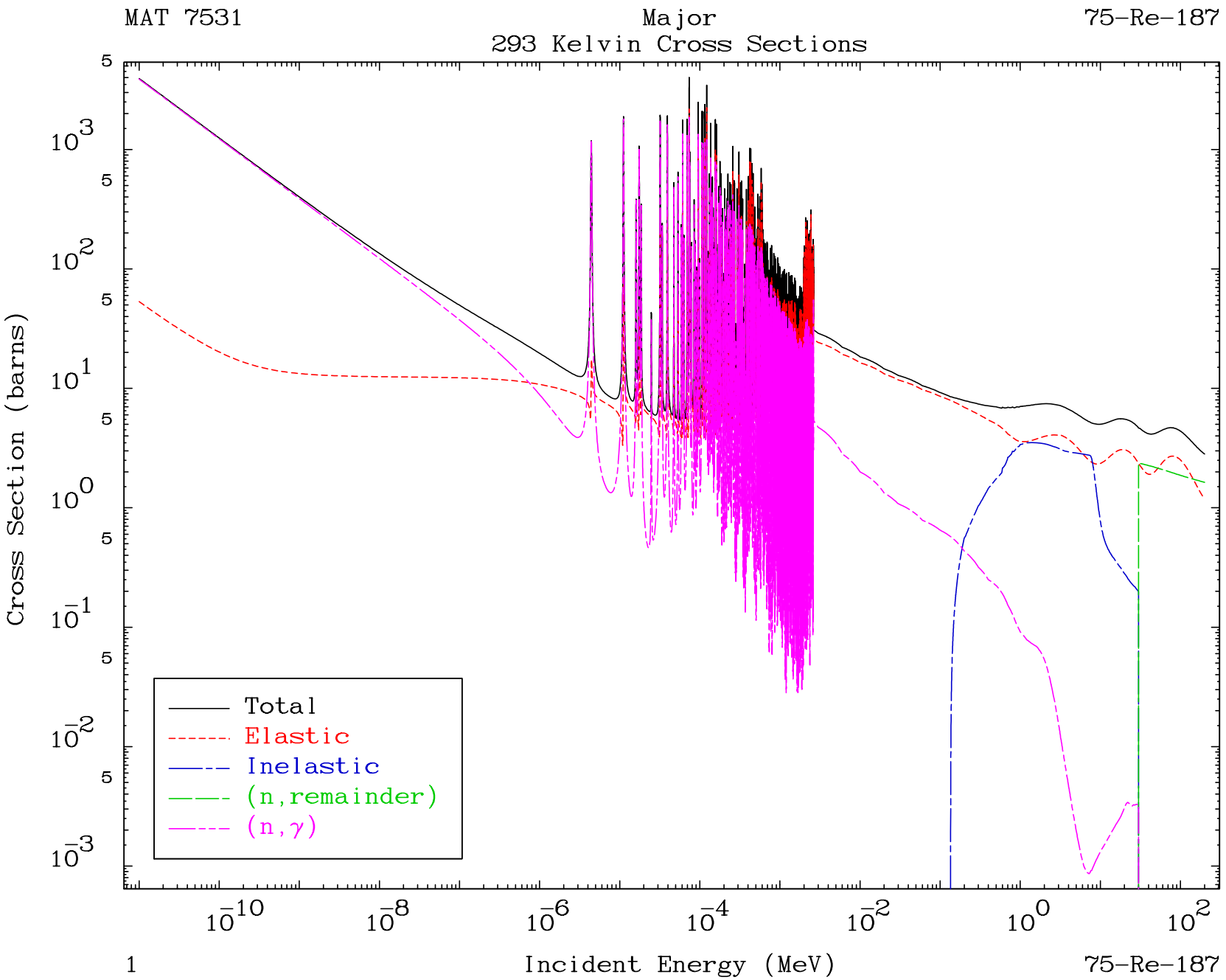
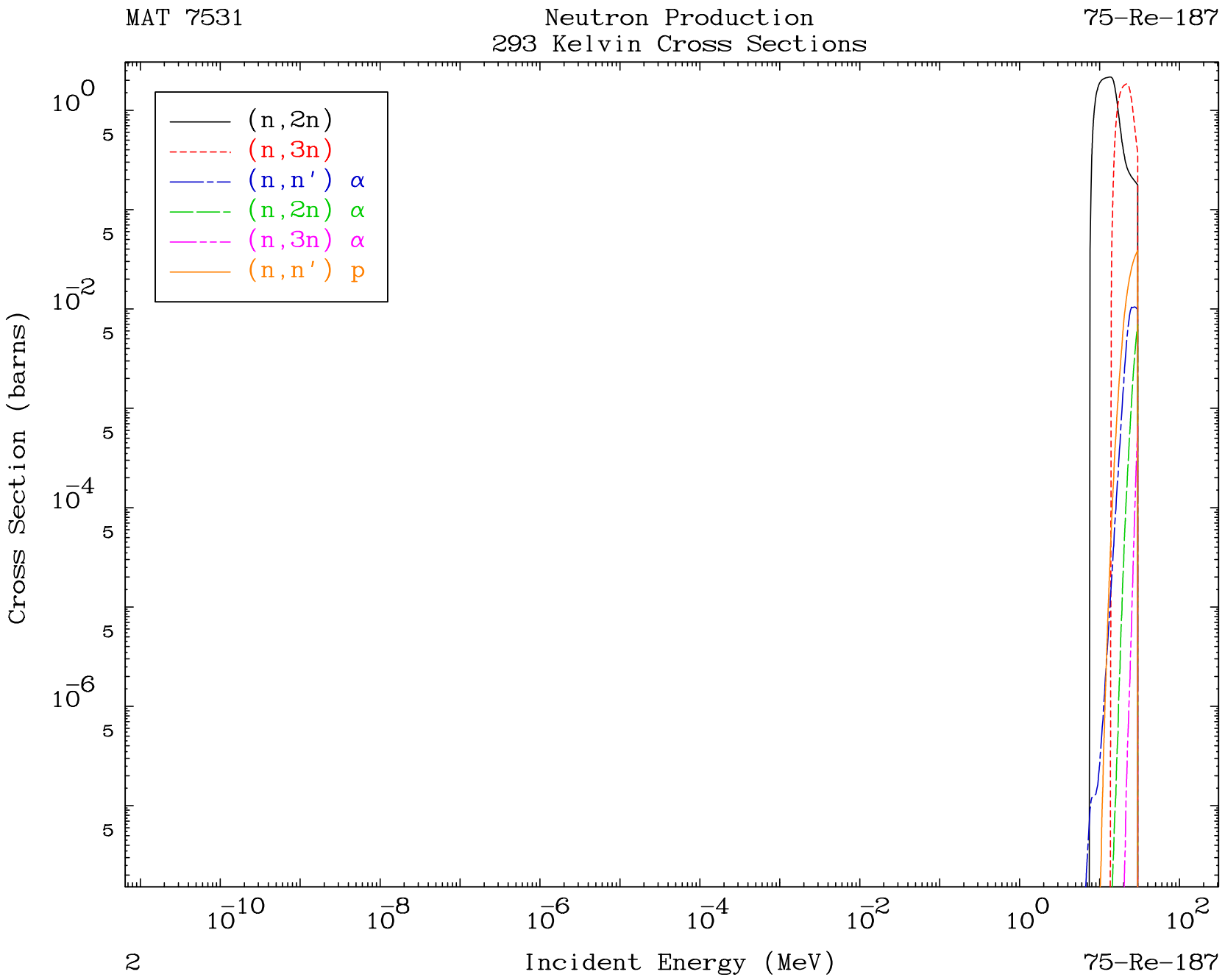
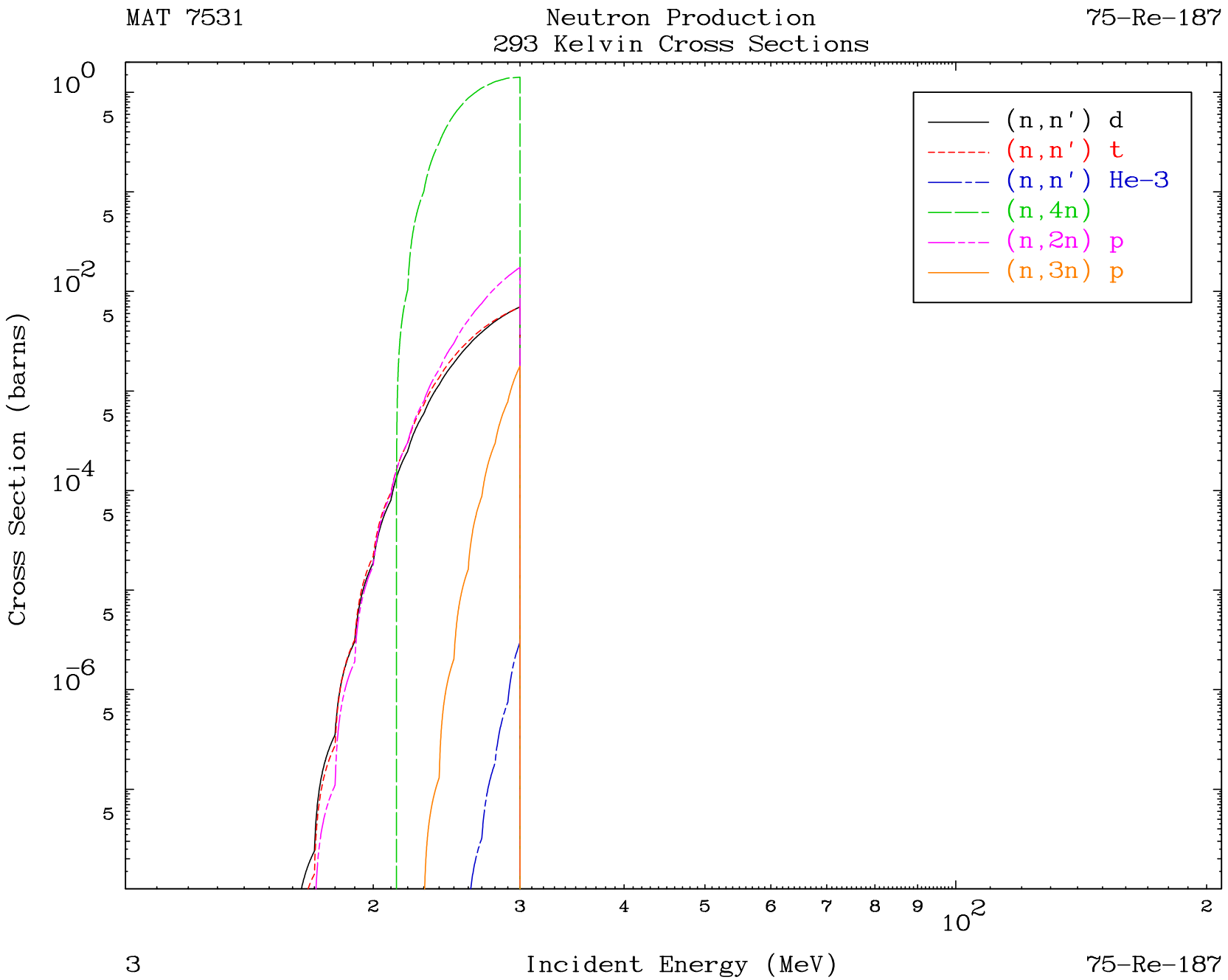
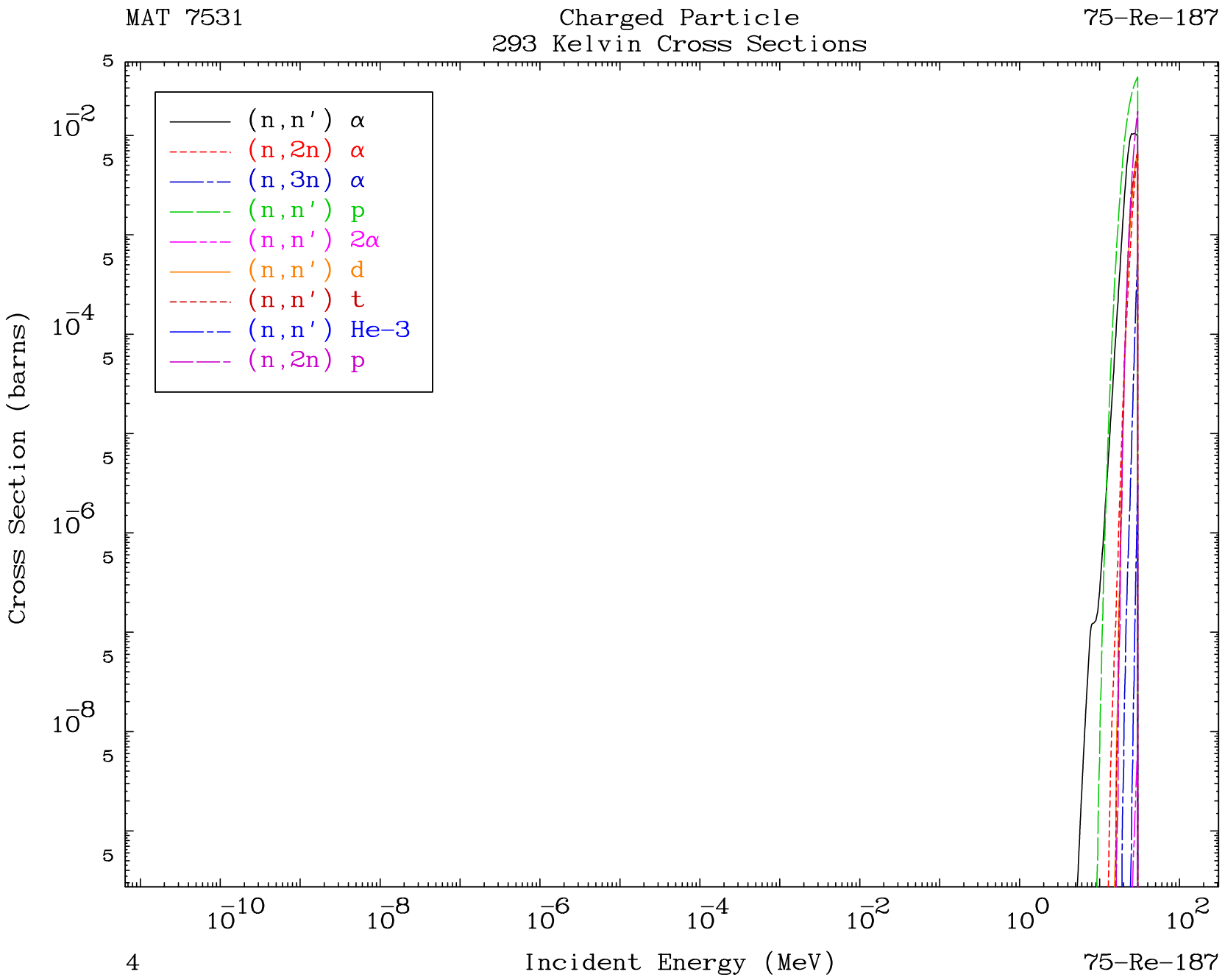
Program EVALPLOT
(Version 2015-2)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:home.comcast.net/~redcullen1

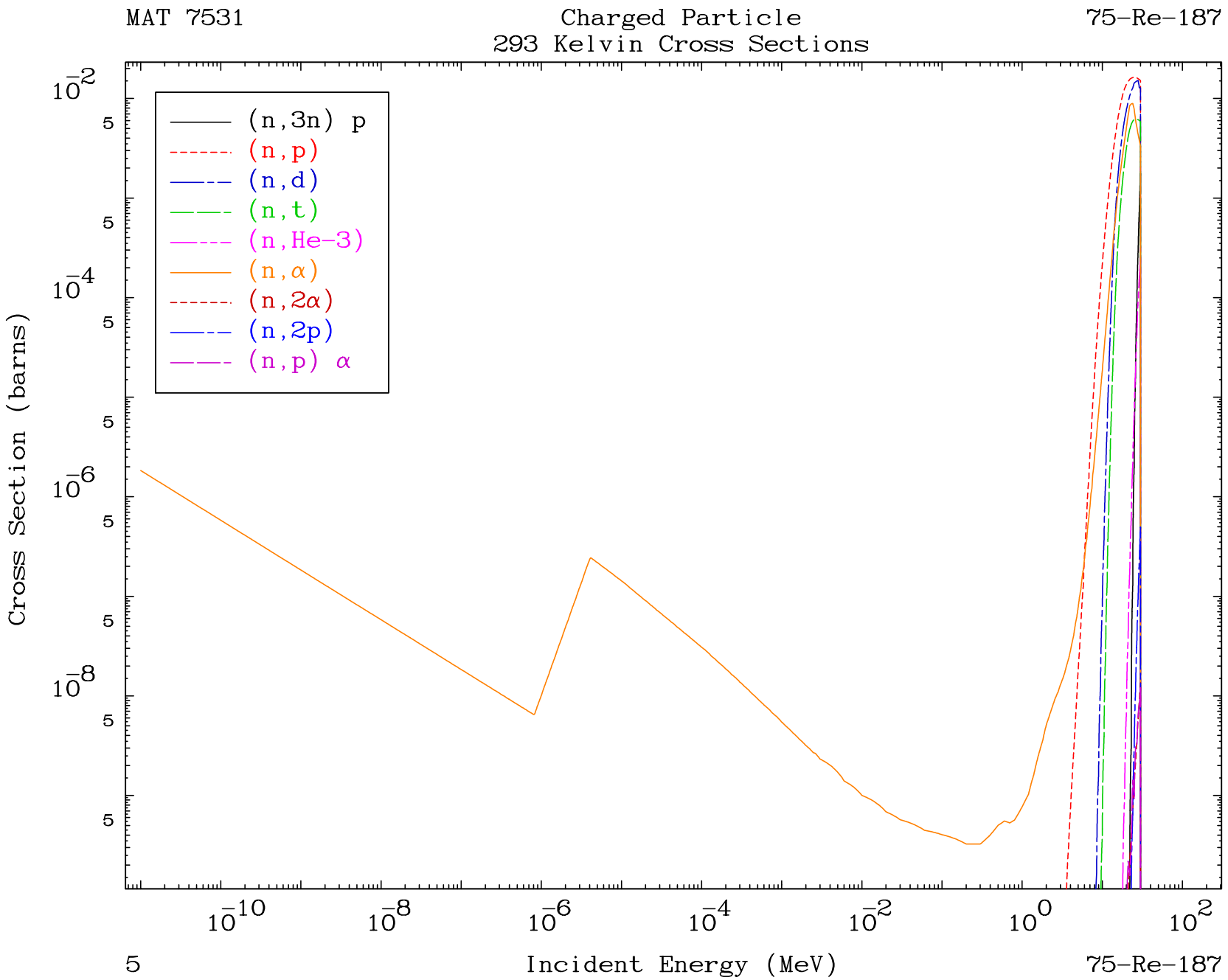
Press Mouse Button to Start

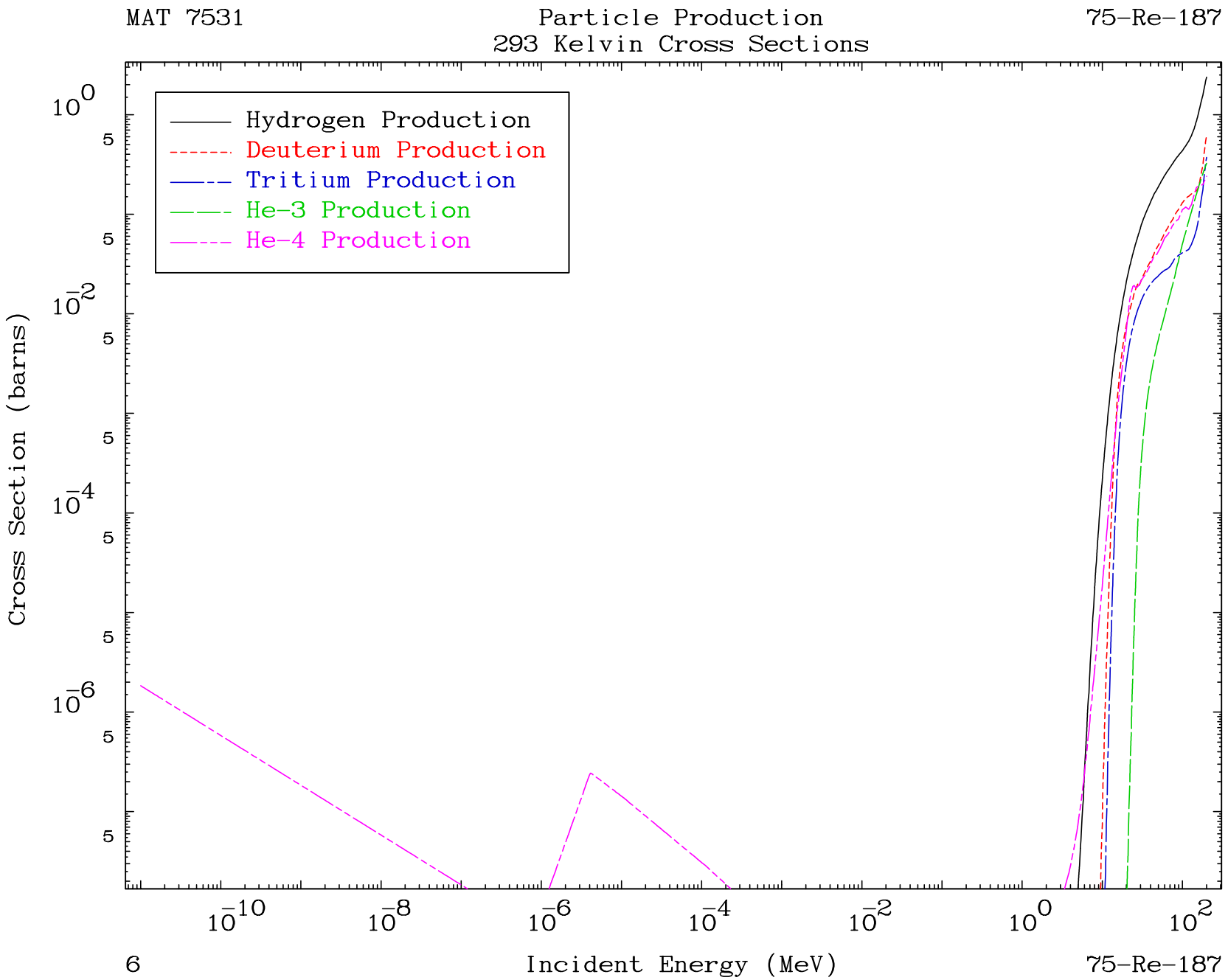

MAT 7531
Major
75-Re-187
293 Kelvin Cross Sections
Cross Section (barns)
Incident Energy (MeV)
Total
Elastic
Inelastic
(n,remainder)
(n,γ)
1
75-Re-187

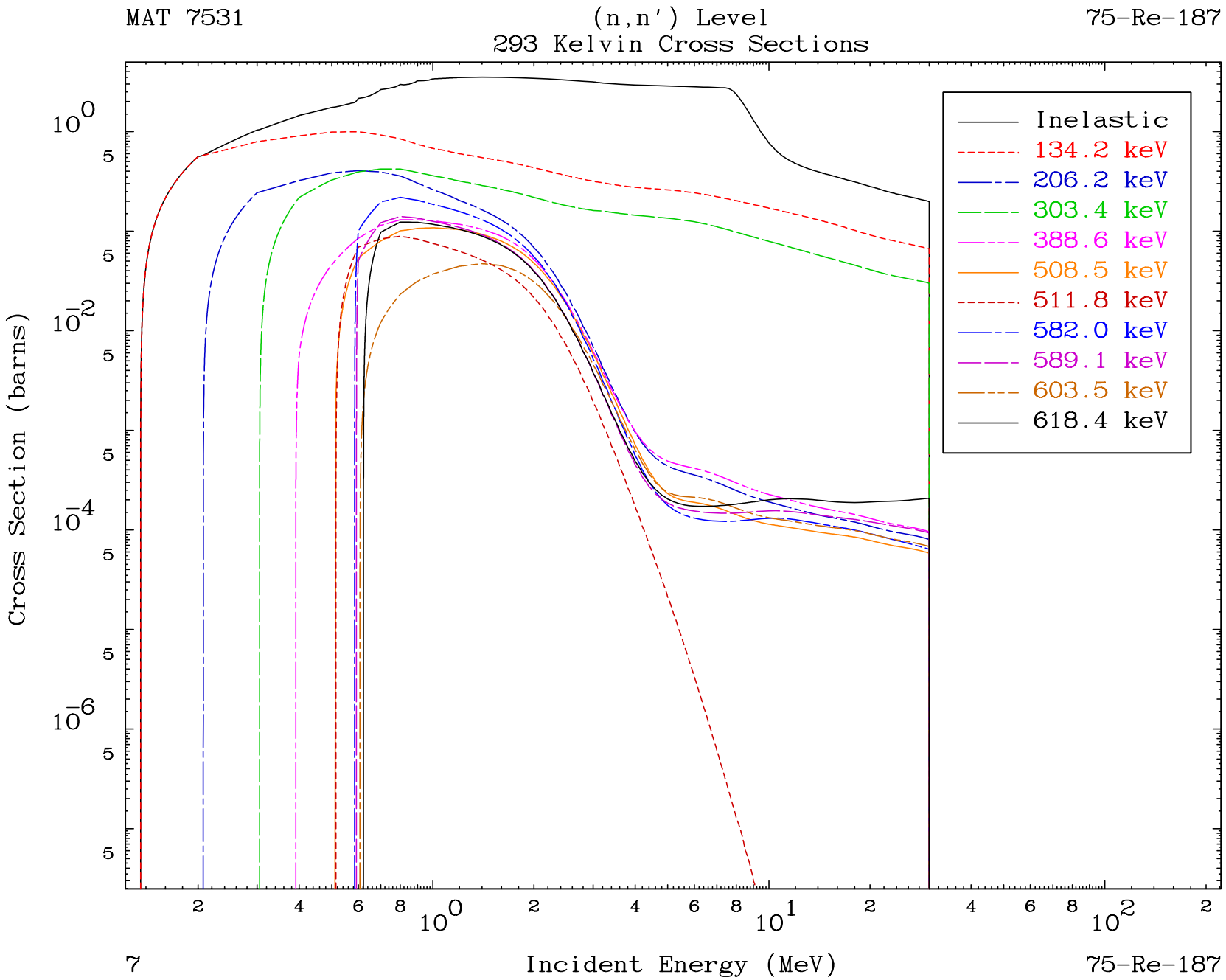

MAT 7531
Neutron Production
293 Kelvin Cross Sections
75-Re-187
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
Cross Section (barns)
Incident Energy (MeV)
2
75-Re-187

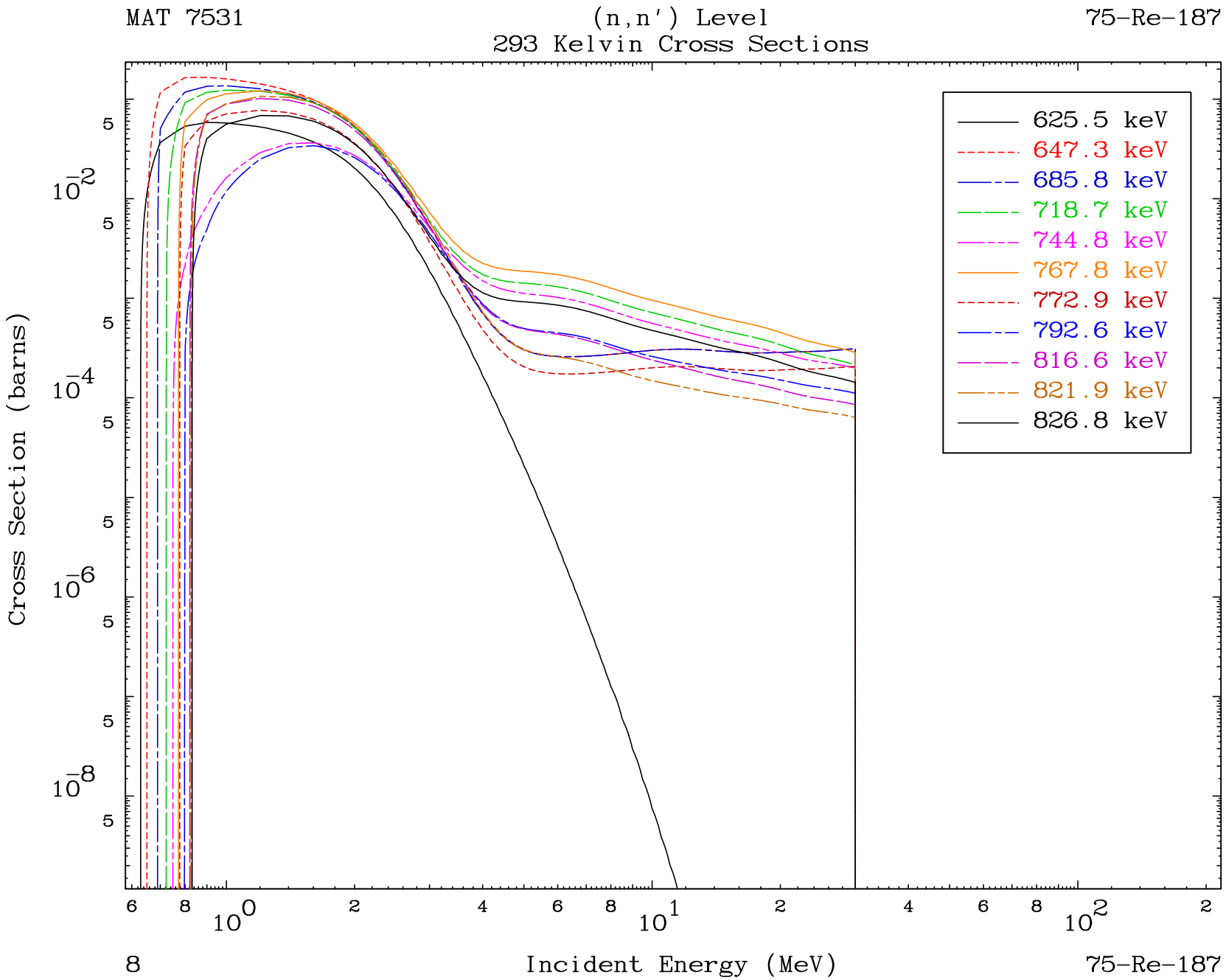

MAT 7531
Neutron Production
293 Kelvin Cross Sections
75-Re-187
(n,n') d
(n,n') t
(n,n') He-3
(n,4n)
(n,2n) p
(n,3n) p
Cross Section (barns)
Incident Energy (MeV)
3
75-Re-187

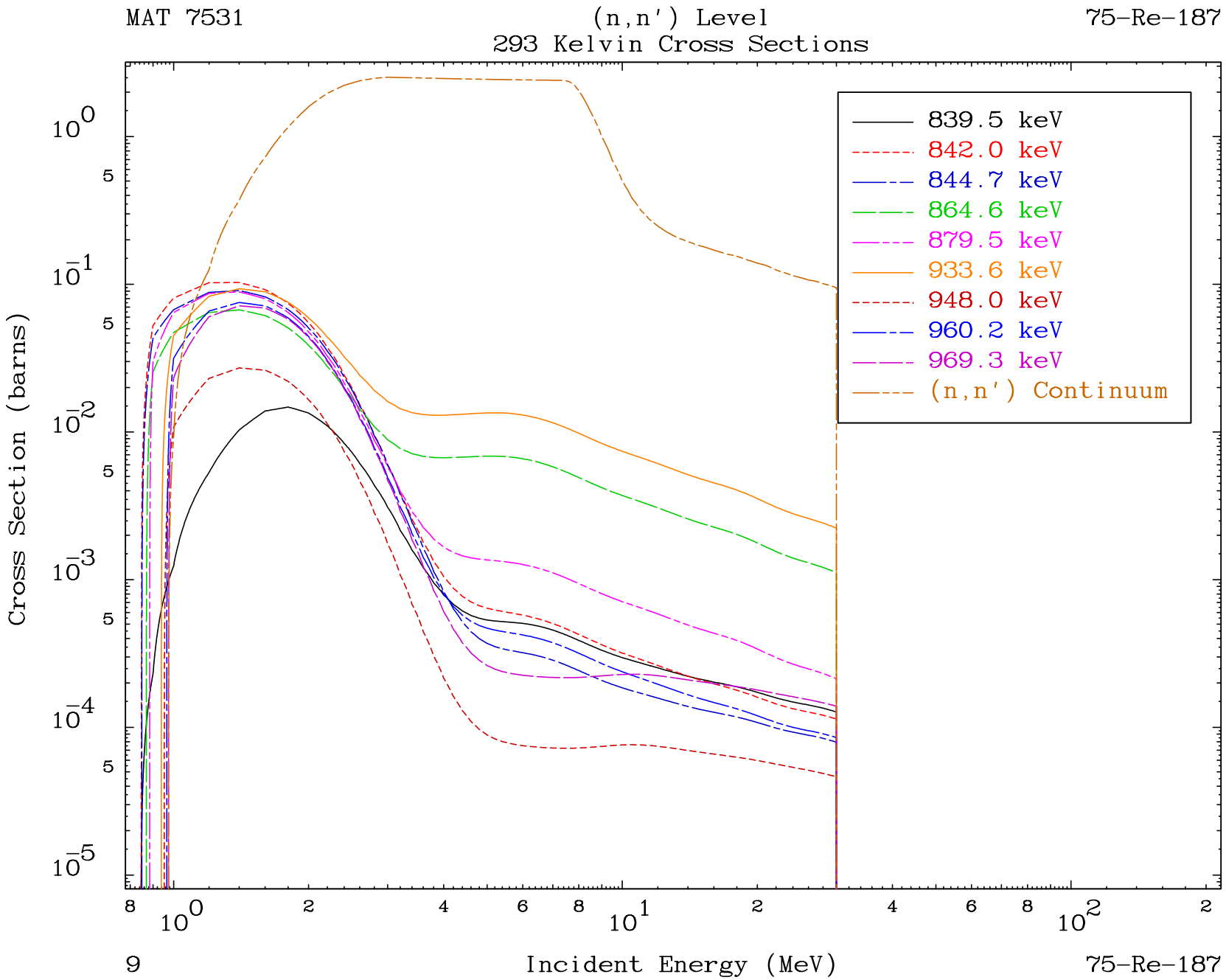

MAT 7531
Charged Particle
75-Re-187
293 Kelvin Cross Sections
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,n') d
(n,n') t
(n,n') He-3
(n,2n) p
Cross Section (barns)
Incident Energy (MeV)
4
75-Re-187

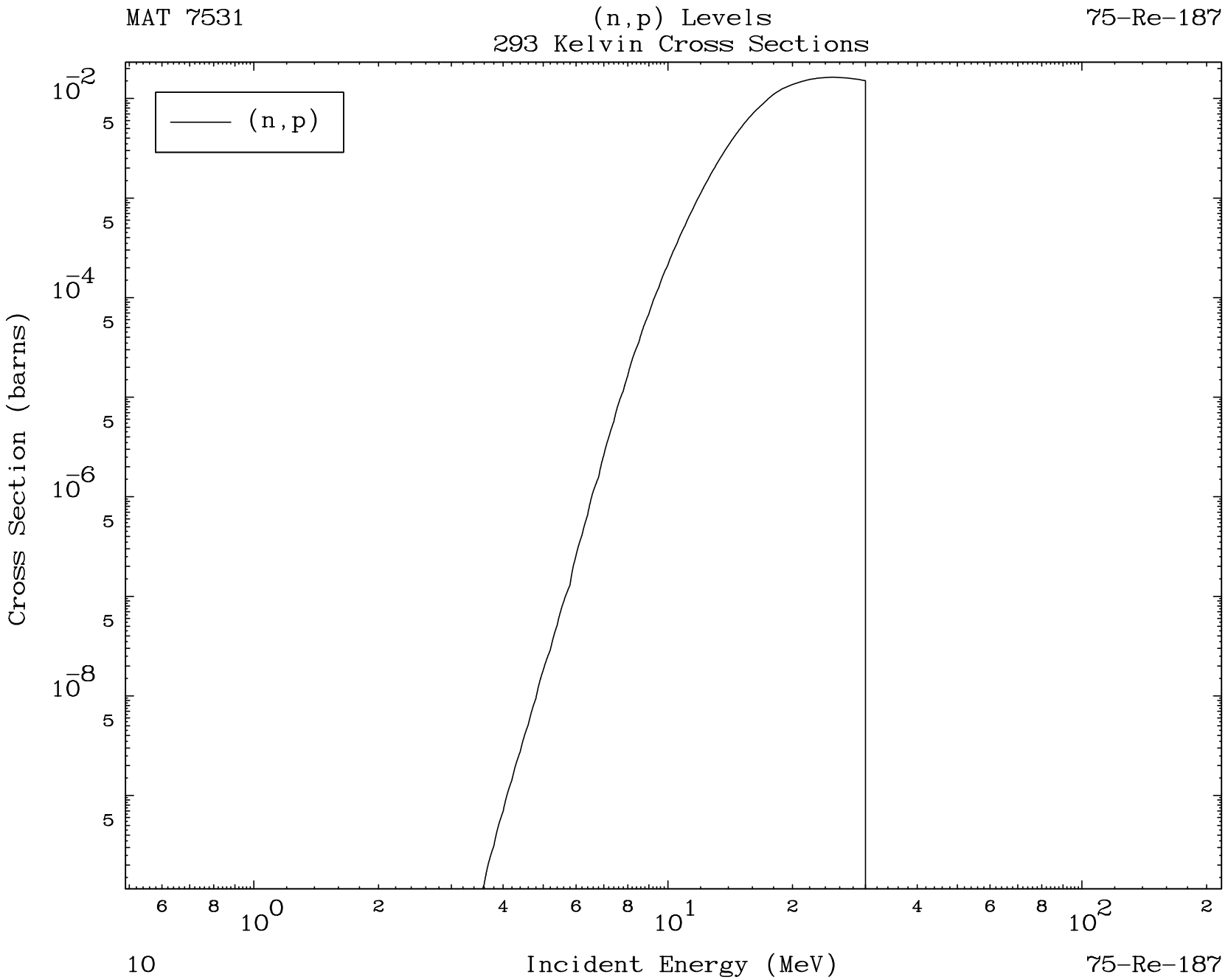

MAT 7531
Charged Particle
293 Kelvin Cross Sections
75-Re-187
(n,3n) p
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,2p)
(n,p) α
Cross Section (barns)
Incident Energy (MeV)
75-Re-187
5

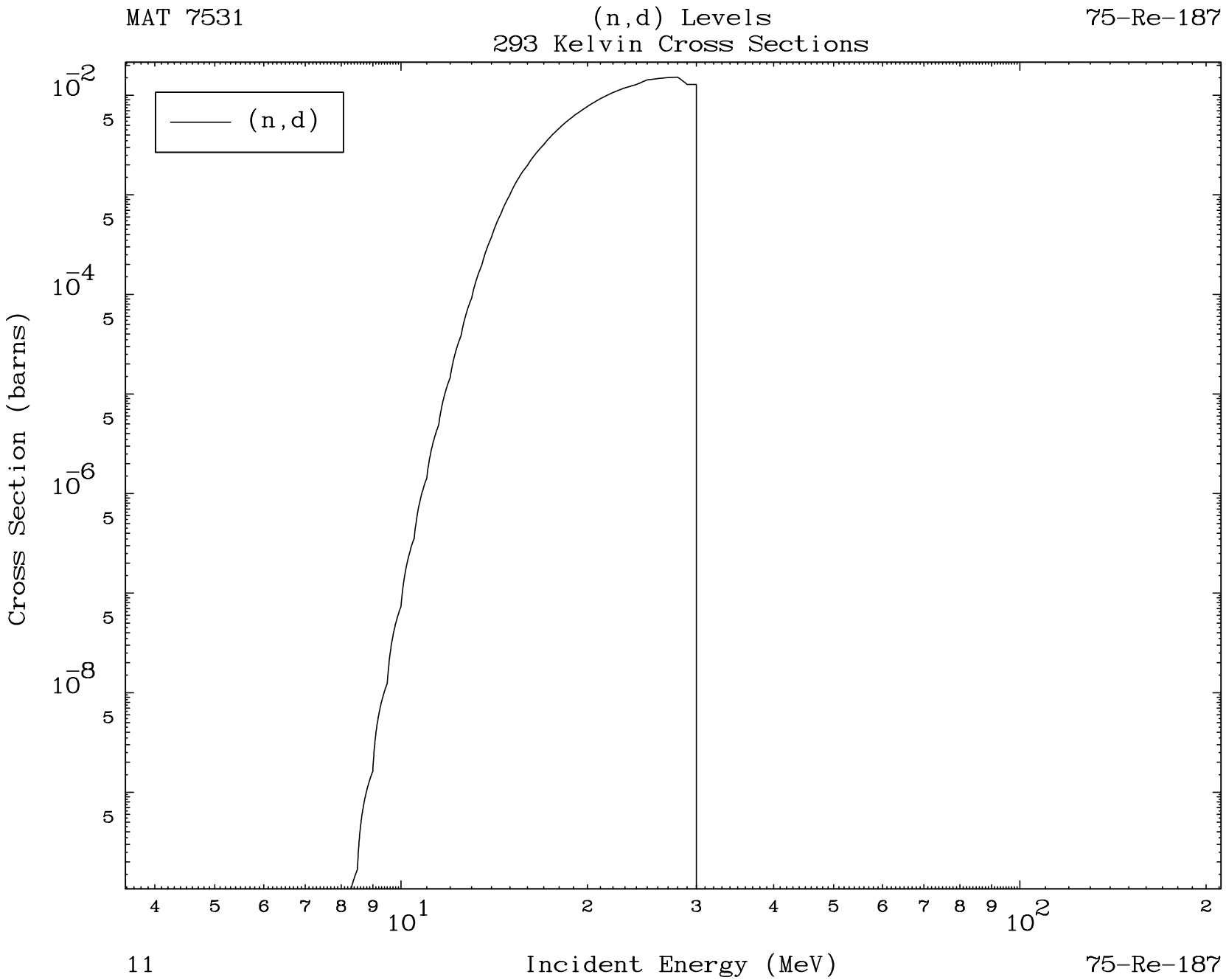

MAT 7531
Particle Production
293 Kelvin Cross Sections
75-Re-187
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
Cross Section (barns)
Incident Energy (MeV)
6
75-Re-187

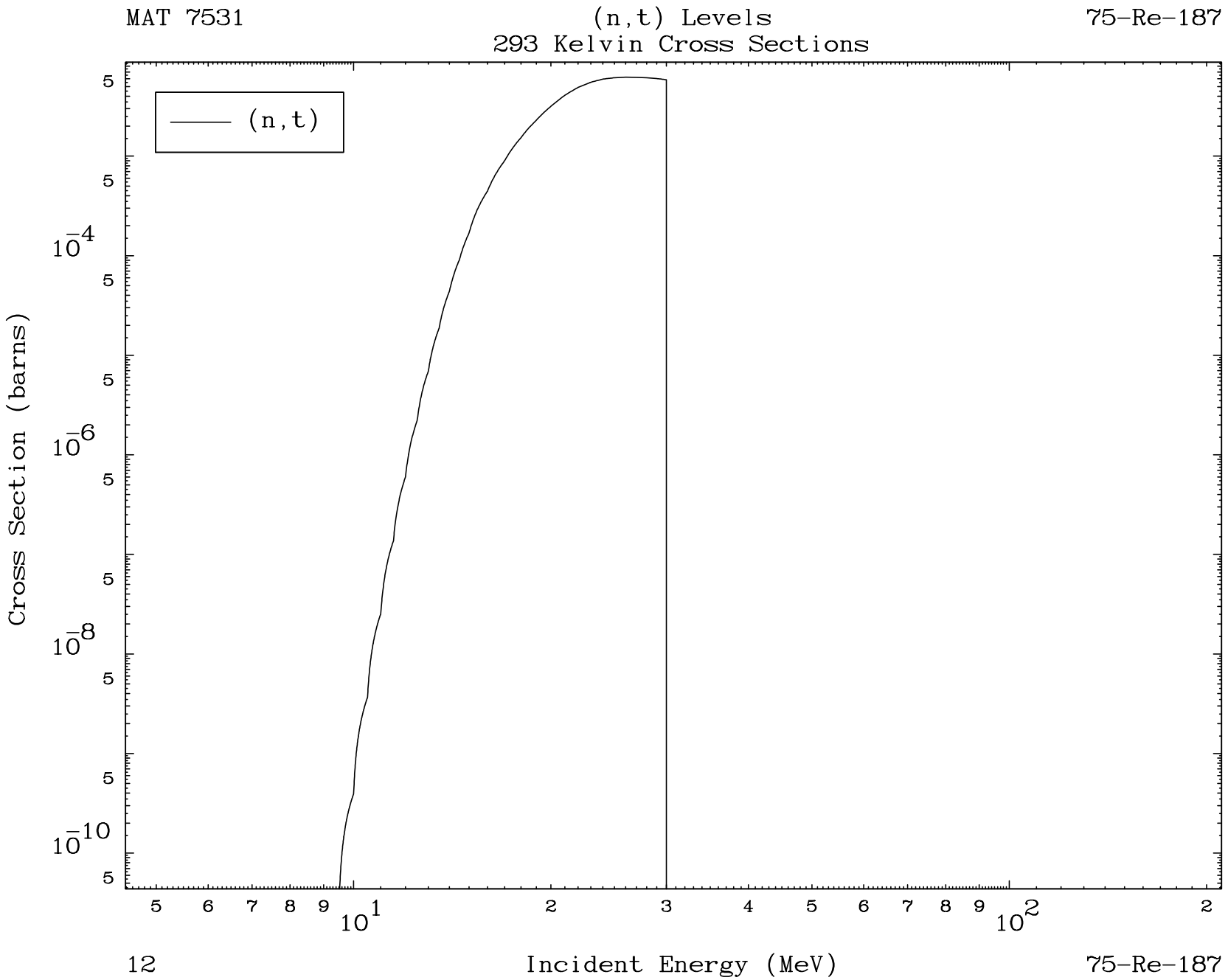

MAT 7531
(n,n') Level
293 Kelvin Cross Sections
75-Re-187
Cross Section (barns)
Incident Energy (MeV)
7
75-Re-187
Inelastic
134.2 keV
206.2 keV
303.4 keV
388.6 keV
508.5 keV
511.8 keV
582.0 keV
589.1 keV
603.5 keV
618.4 keV

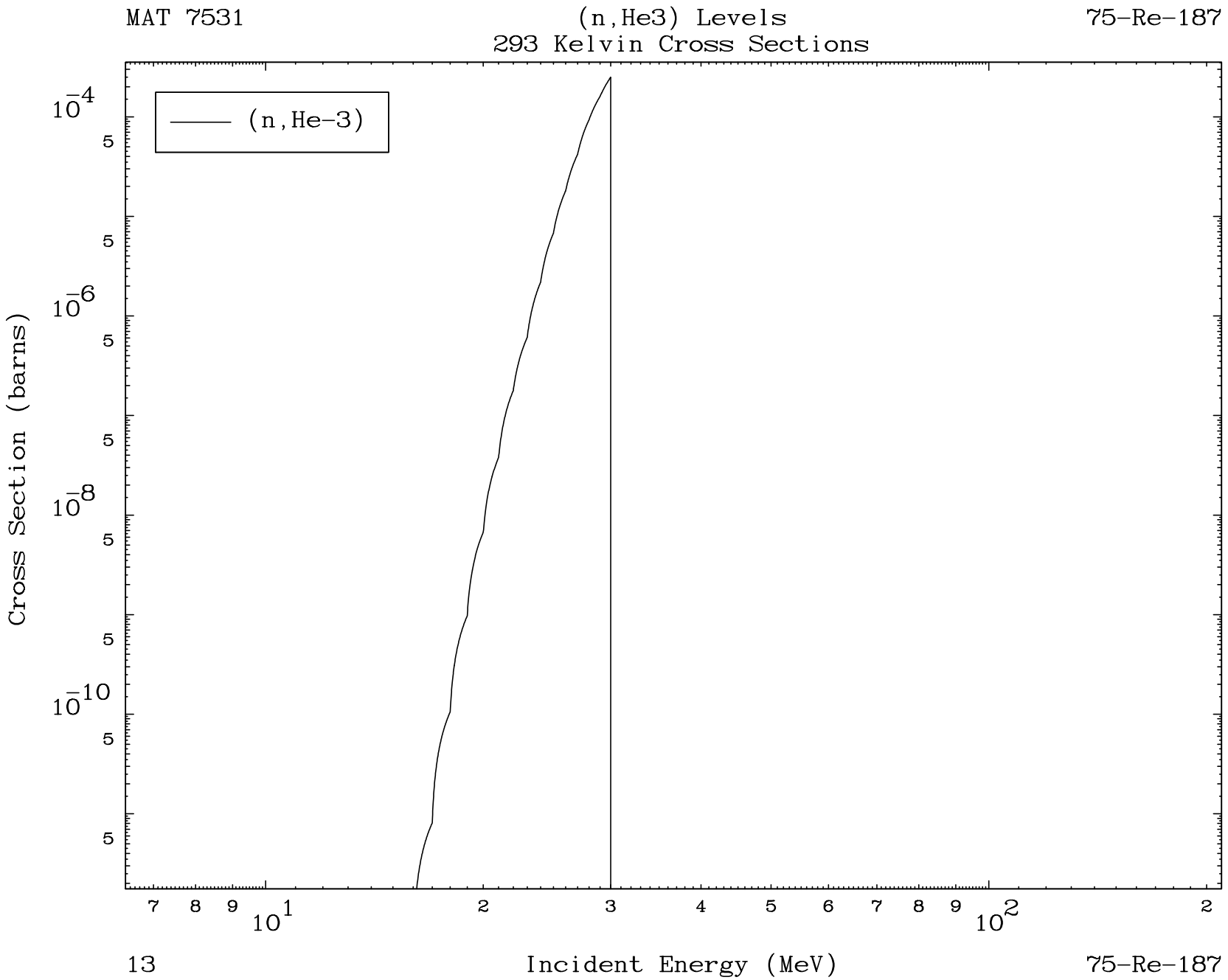

MAT 7531
(n,n') Level
293 Kelvin Cross Sections
75-Re-187
625.5 keV
647.3 keV
685.8 keV
718.7 keV
744.8 keV
767.8 keV
772.9 keV
792.6 keV
816.6 keV
821.9 keV
826.8 keV
Cross Section (barns)
Incident Energy (MeV)
8
75-Re-187

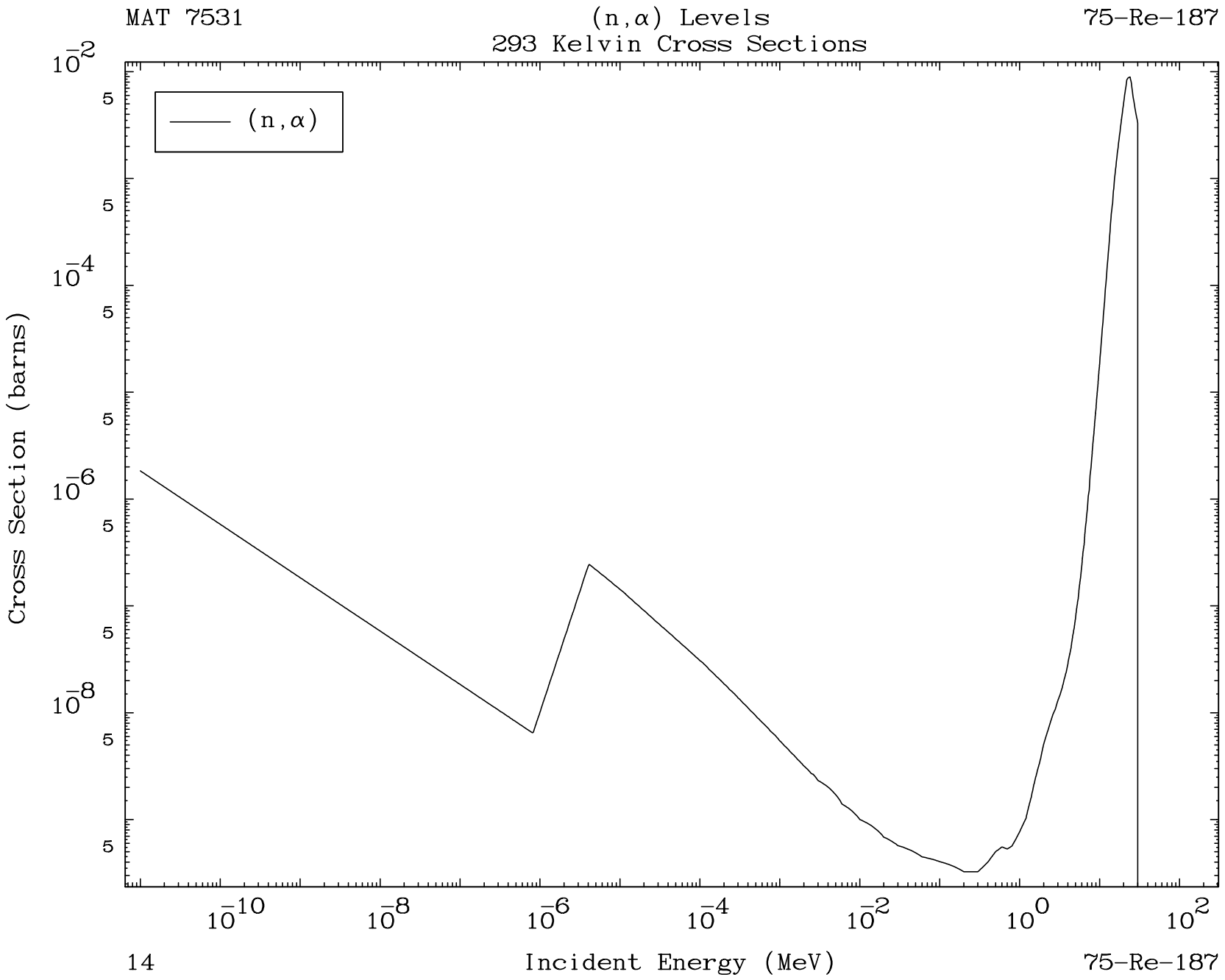

MAT 7531
(n,n') Level
293 Kelvin Cross Sections
75-Re-187
839.5 keV
842.0 keV
844.7 keV
864.6 keV
879.5 keV
933.6 keV
948.0 keV
960.2 keV
969.3 keV
(n,n') Continuum
Cross Section (barns)
Incident Energy (MeV)
9
75-Re-187

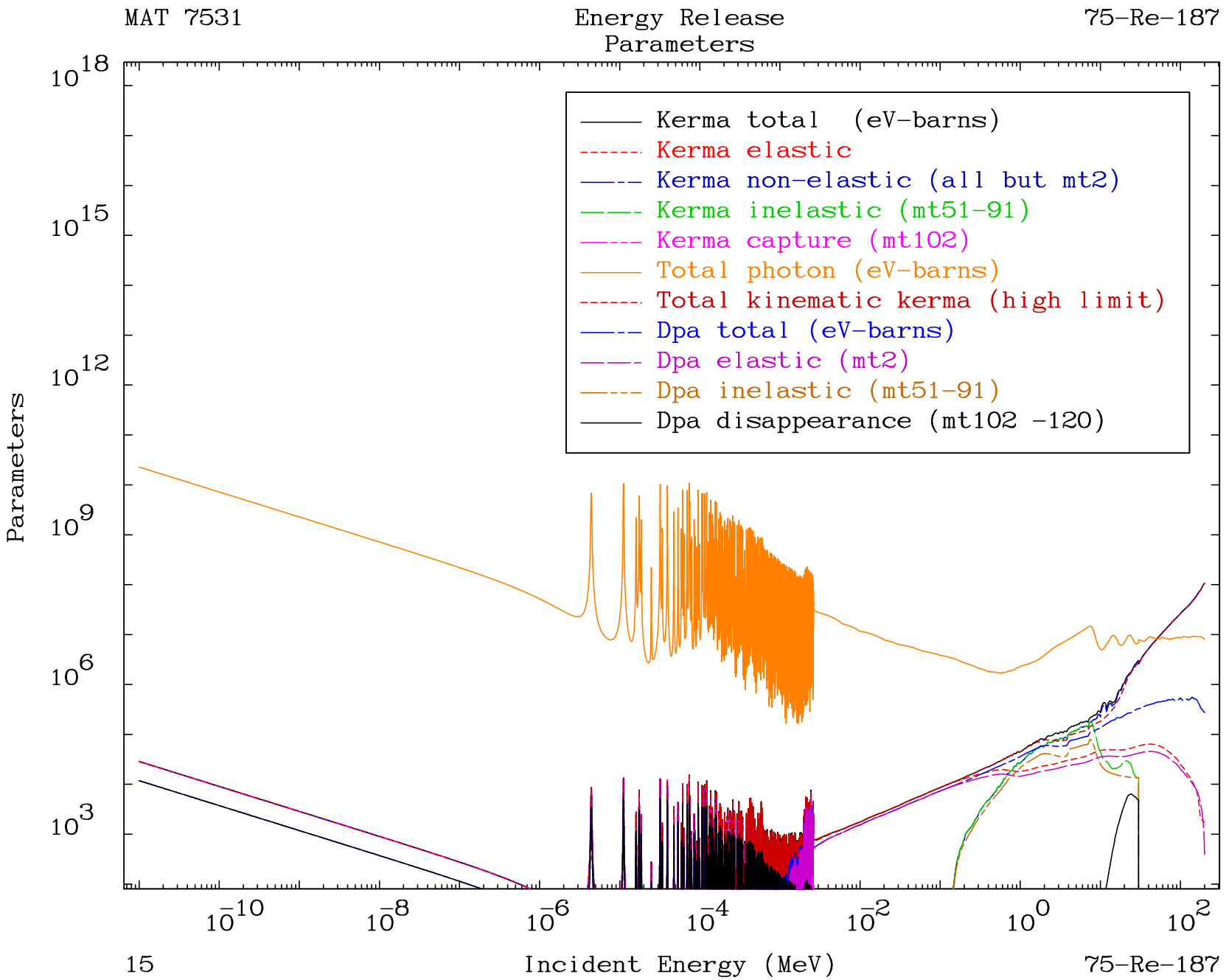

MAT 7531
(n,p) Levels
75-Re-187
293 Kelvin Cross Sections
(n,p)
Cross Section (barns)
Incident Energy (MeV)
75-Re-187

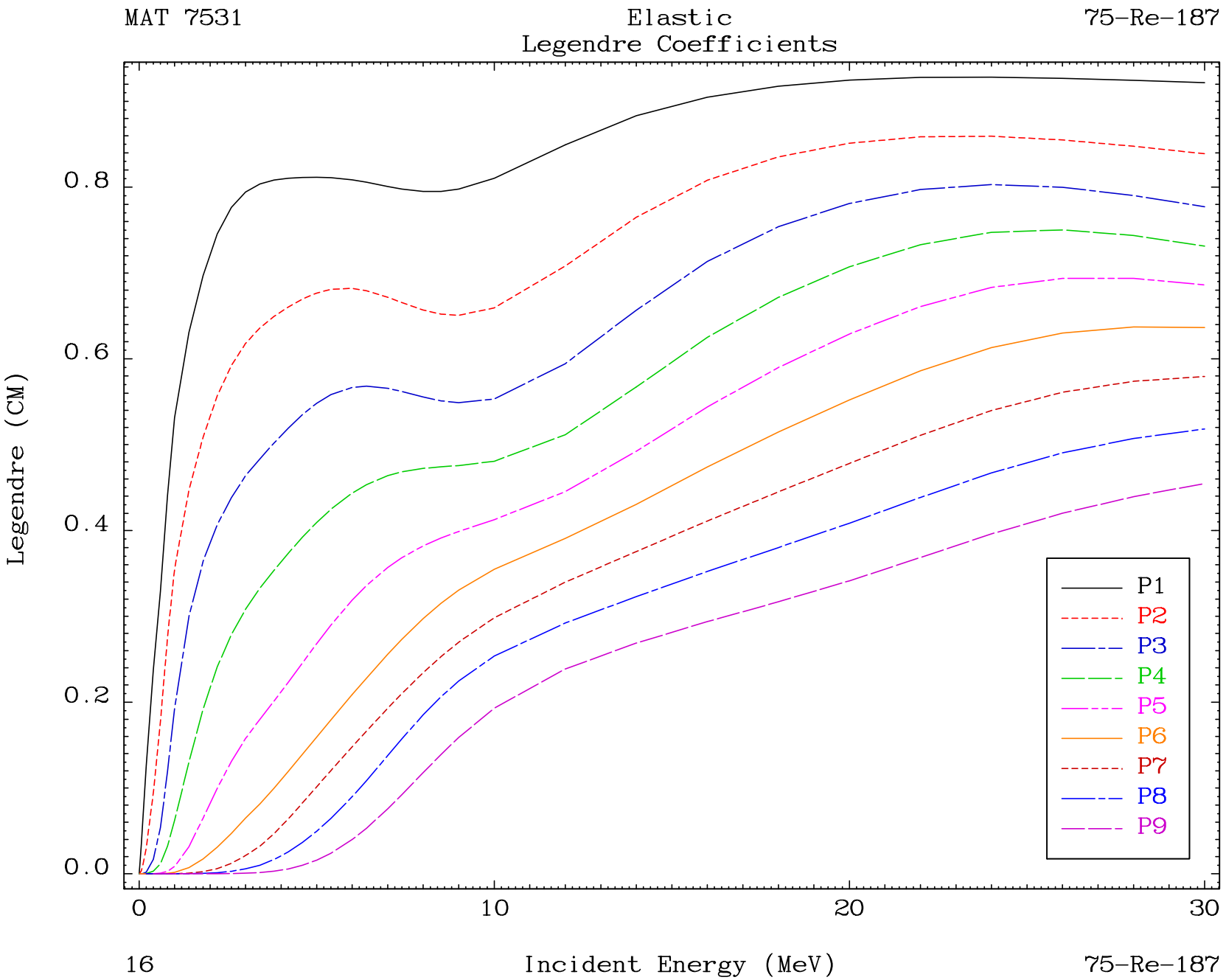

MAT 7531
(n,d) Levels
75-Re-187
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
Incident Energy (MeV)
11
75-Re-187

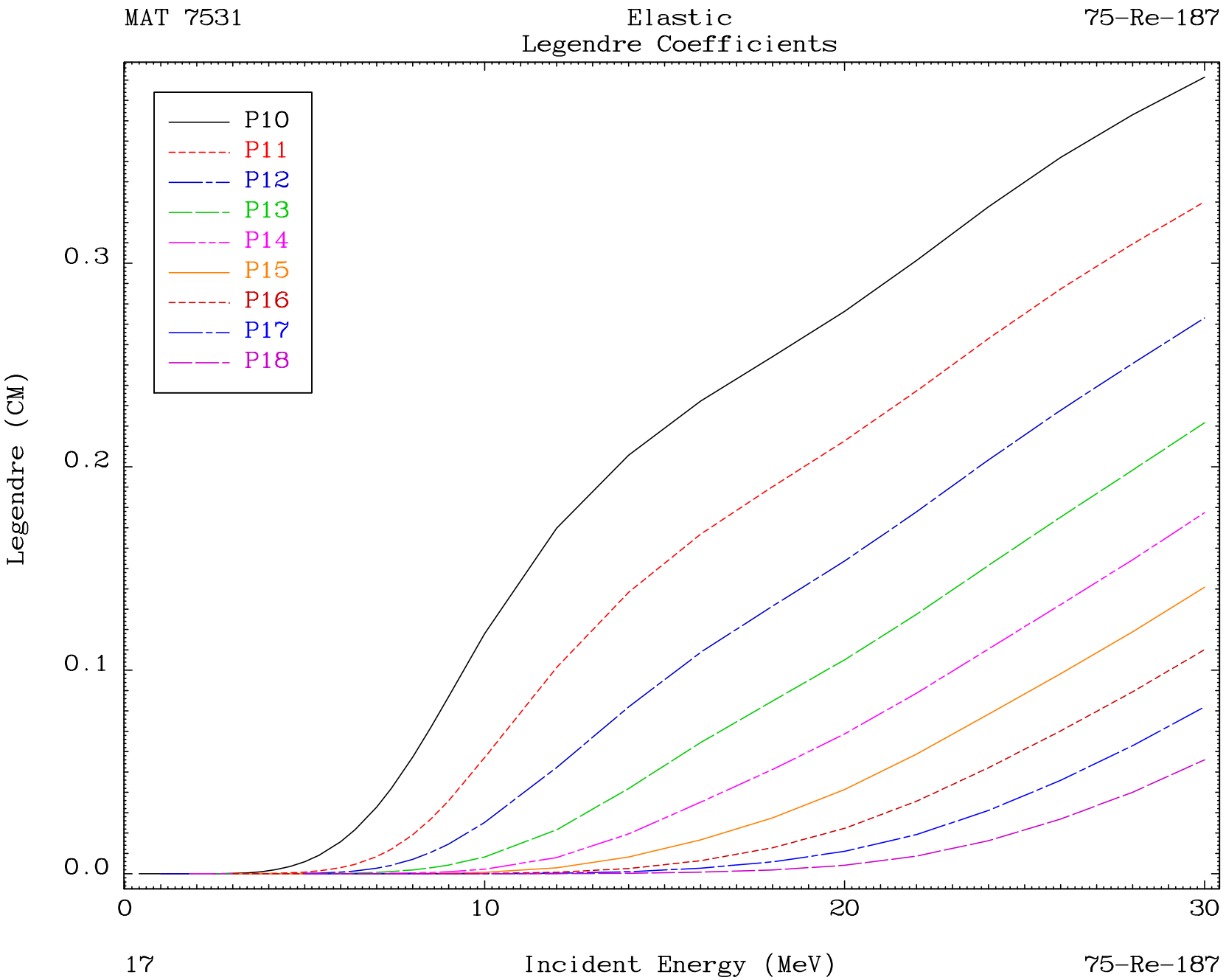

MAT 7531
(n,t) Levels
75-Re-187
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
Incident Energy (MeV)
12
75-Re-187

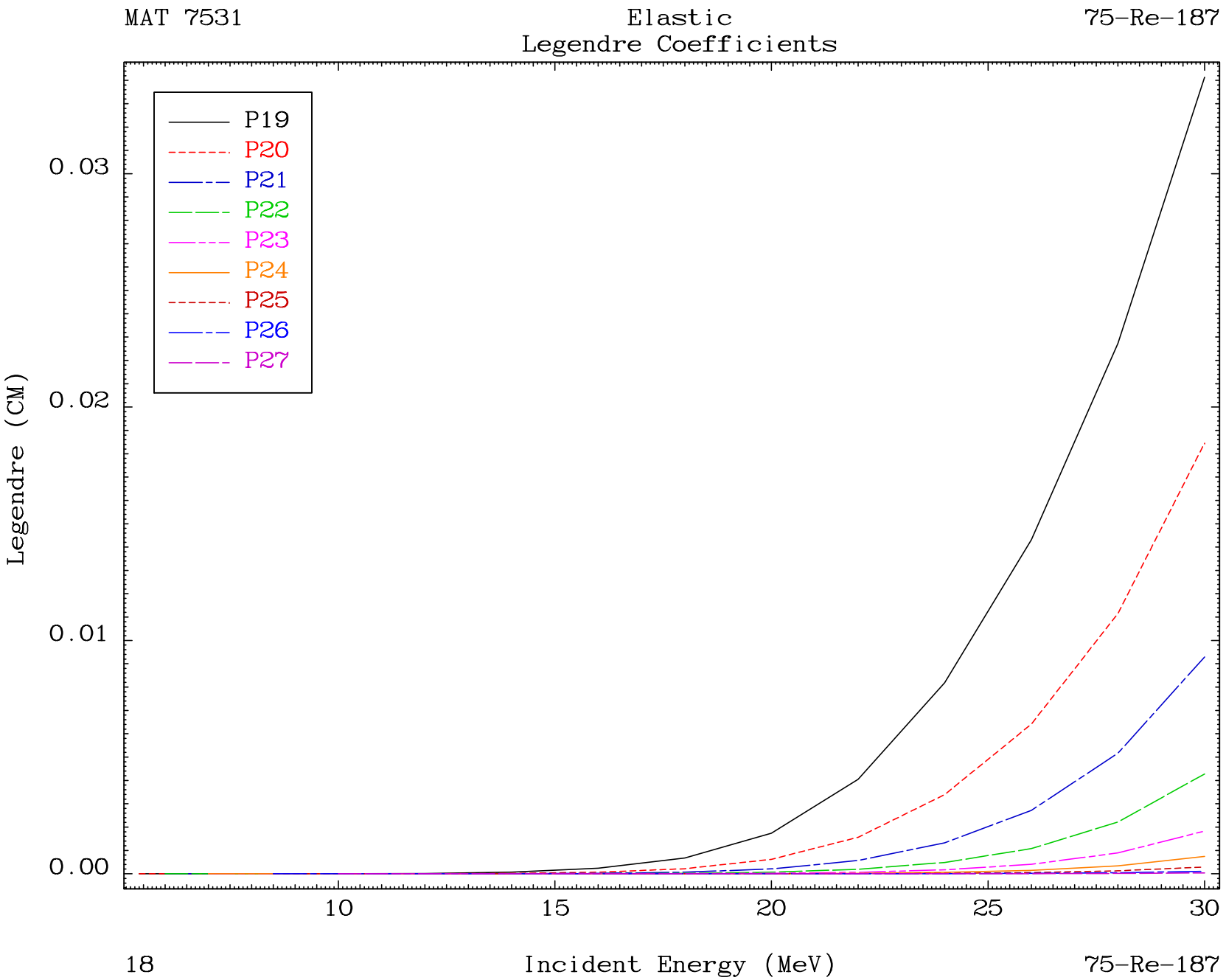

MAT 7531
(n,He3) Levels
75-Re-187
293 Kelvin Cross Sections
(n,He-3)
Cross Section (barns)
10-4
10-6
10-8
10-10
5
7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
Incident Energy (MeV)
13
75-Re-187

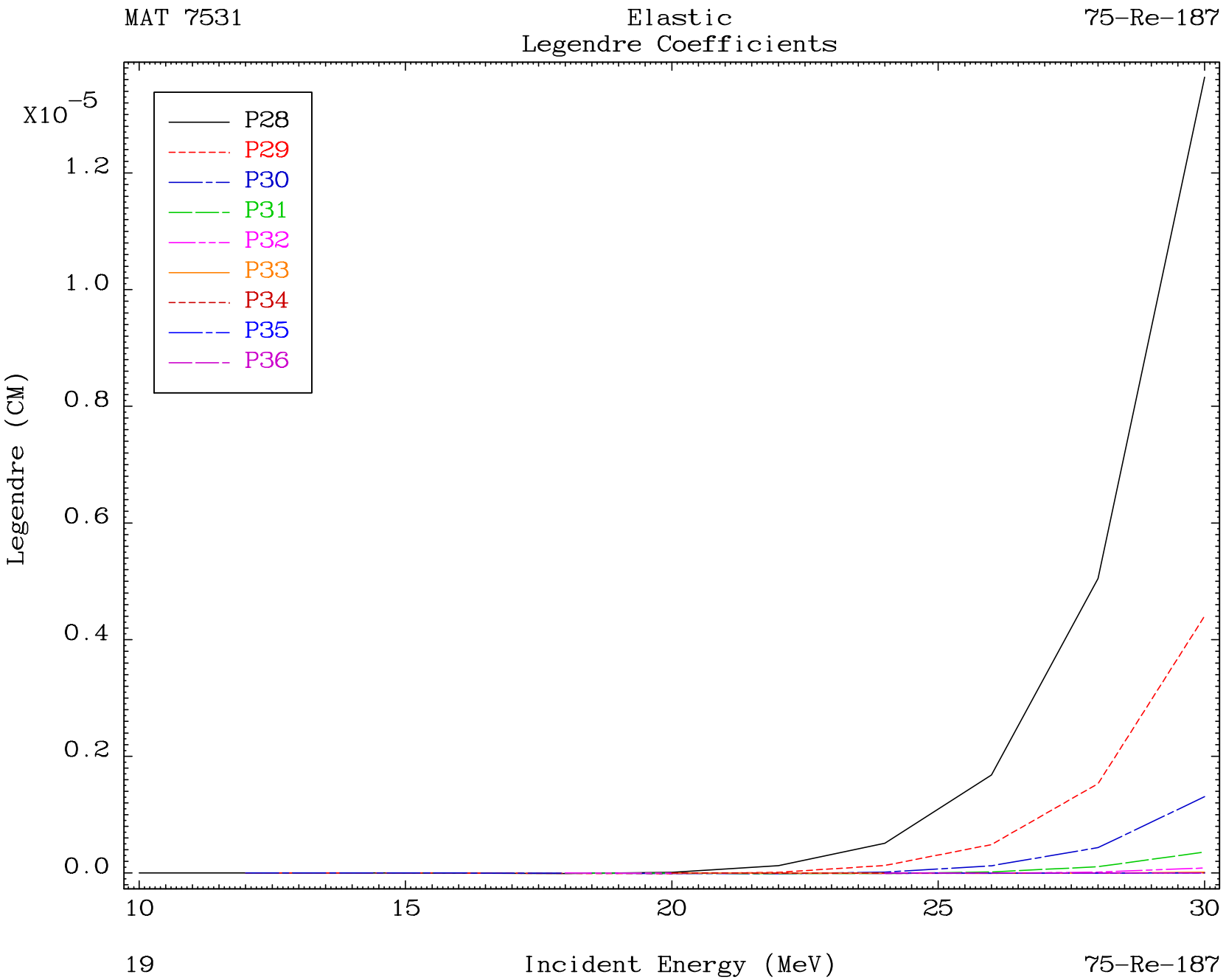

MAT 7531
(n,α) Levels
75-Re-187
293 Kelvin Cross Sections
(n,α)
Cross Section (barns)
10^-2
5
10^-4
5
10^-6
5
10^-8
5
5
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
14
Incident Energy (MeV)
75-Re-187

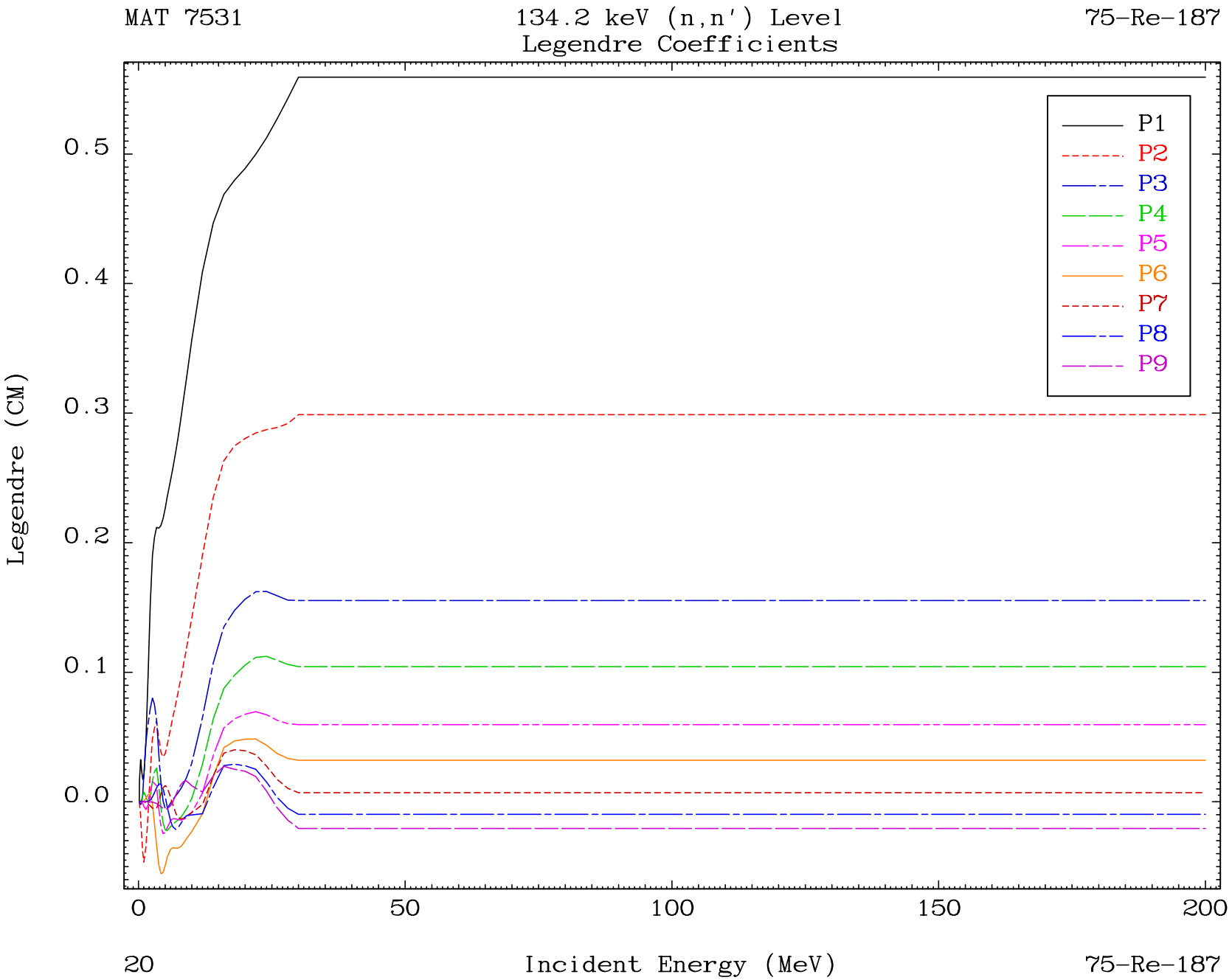

MAT 7531
Energy Release
Parameters
75-Re-187
Kerma total (eV-barns)
Kerma elastic
Kerma non-elastic (all but mt2)
Kerma inelastic (mt51-91)
Kerma capture (mt102)
Total photon (eV-barns)
Total kinematic kerma (high limit)
Dpa total (eV-barns)
Dpa elastic (mt2)
Dpa inelastic (mt51-91)
Dpa disappearance (mt102 -120)
Parameters
Incident Energy (MeV)
15
75-Re-187

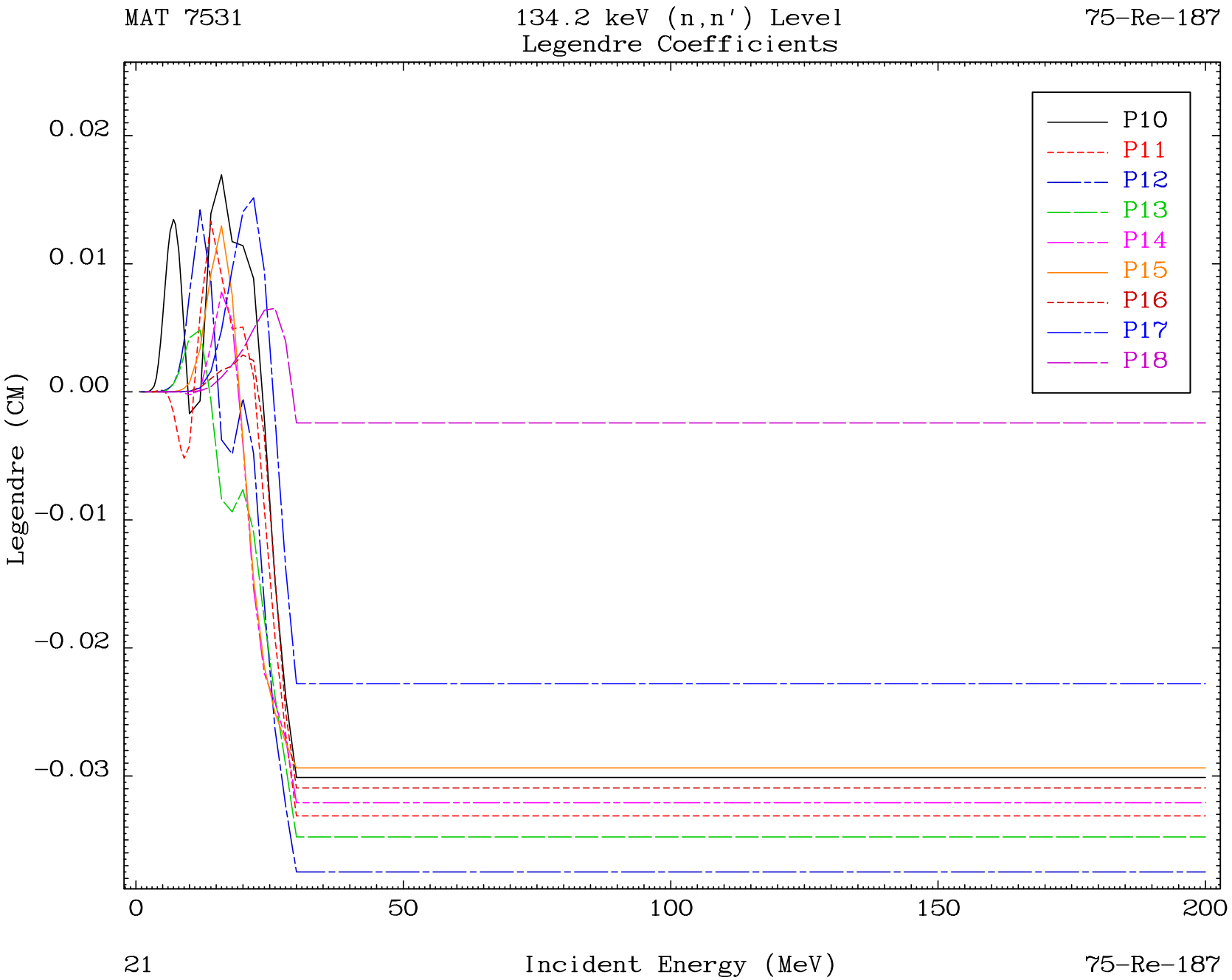

MAT 7531
Elastic
Legendre Coefficients
75-Re-187
Legendre (CM)
0.0
0.2
0.4
0.6
0.8
0
10
20
30
Incident Energy (MeV)
16
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9

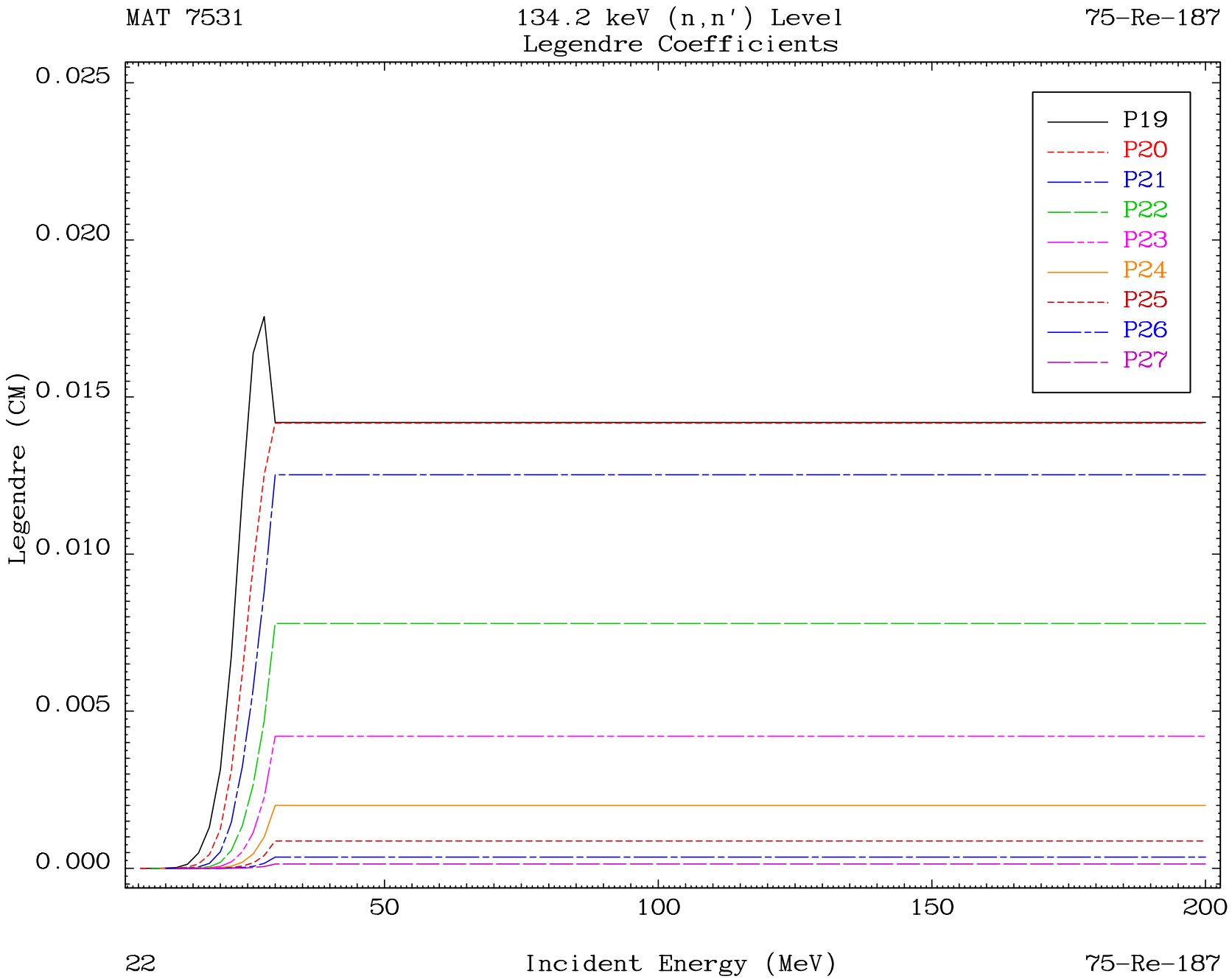

MAT 7531
Elastic
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
Legendre (CM)
0.0
0.1
0.2
0.3
0
10
20
30
17
Incident Energy (MeV)
75-Re-187

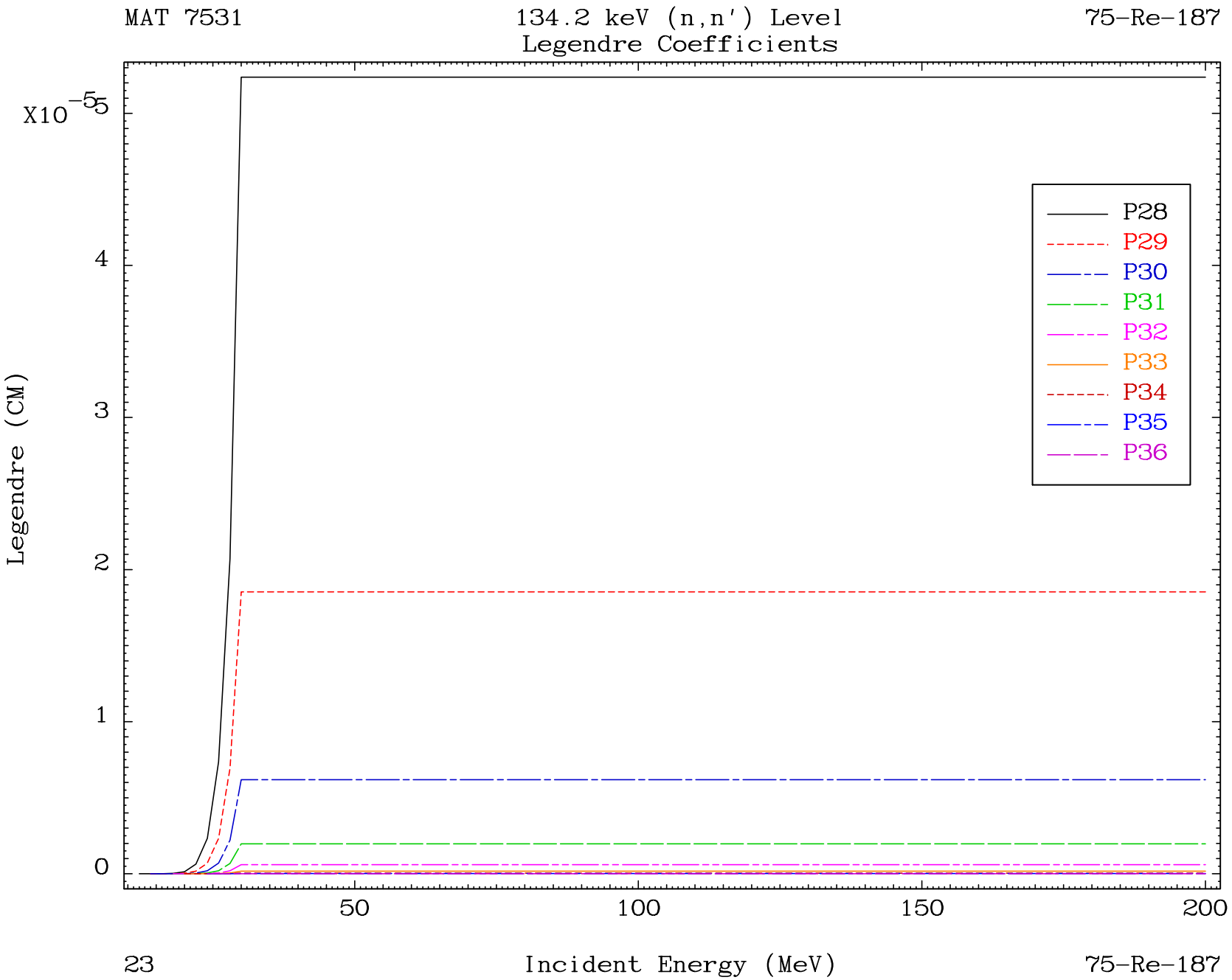

MAT 7531
Elastic
Legendre Coefficients
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.03
0.02
0.01
0.00
Legendre (CM)
10
15
20
25
30
18
Incident Energy (MeV)
75-Re-187

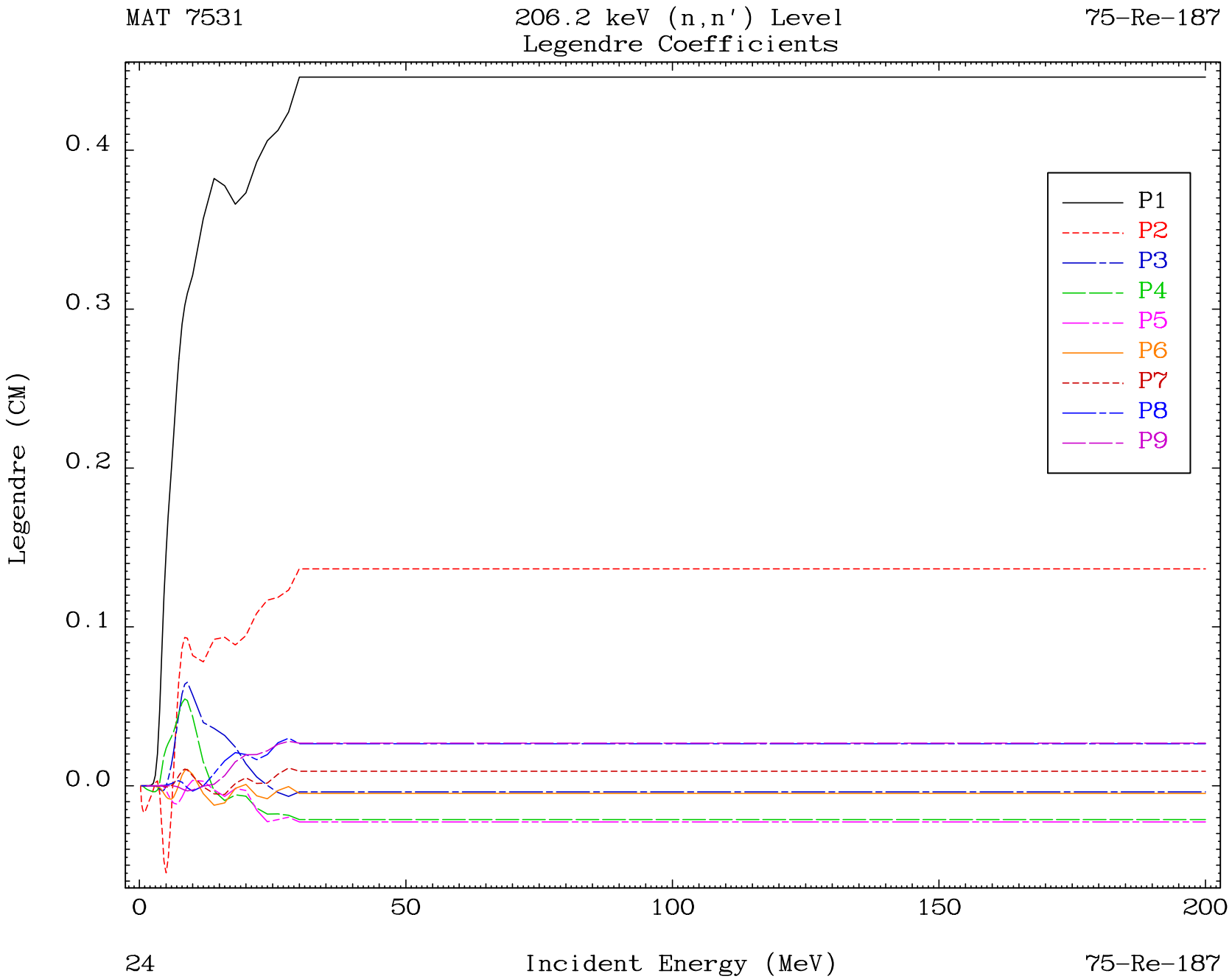

MAT 7531
Elastic
Legendre Coefficients
75-Re-187
X10 -5
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
10
15
20
25
30
19
Incident Energy (MeV)
75-Re-187

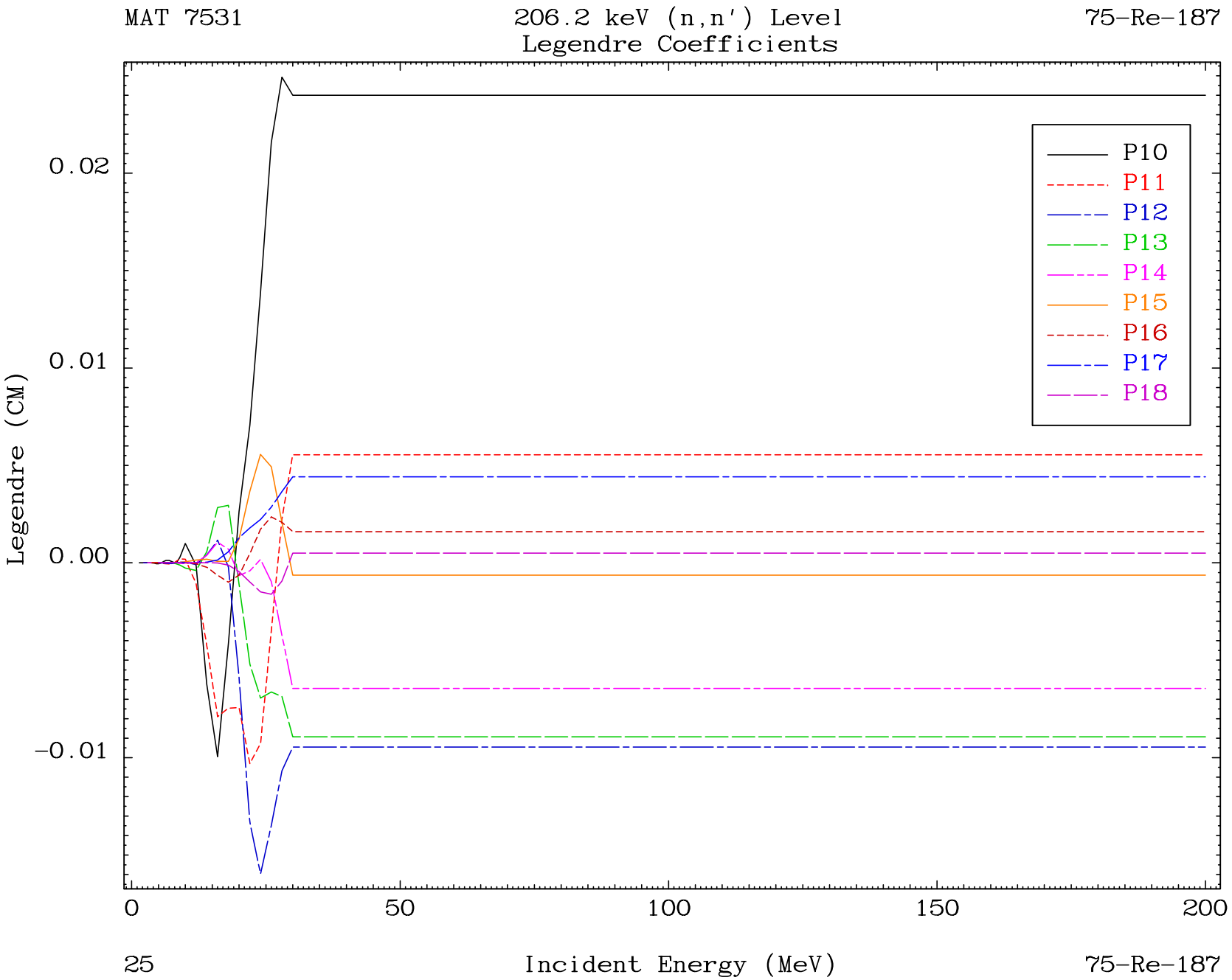

MAT 7531
134.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
20
Incident Energy (MeV)
75-Re-187

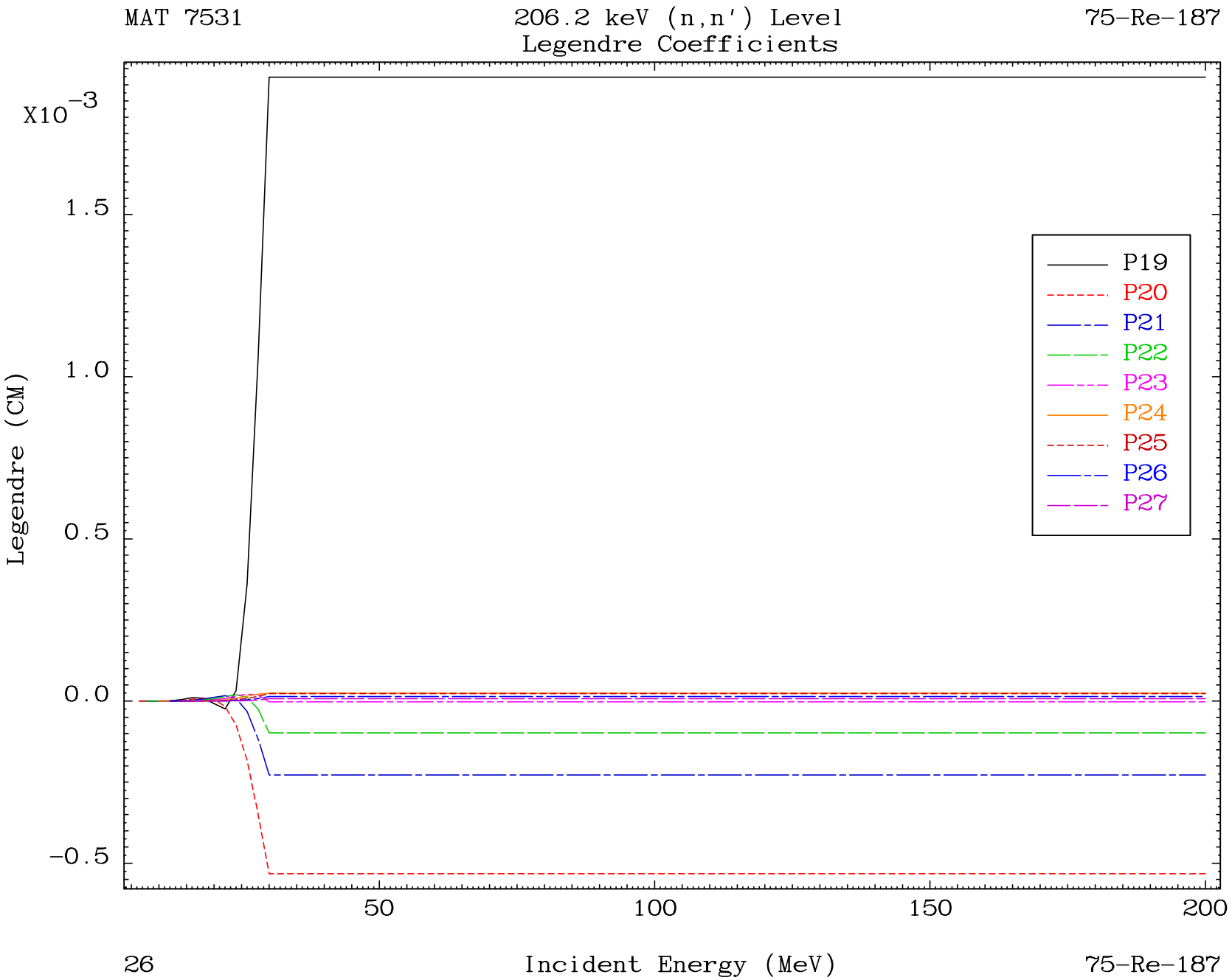

MAT 7531
134.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
0
50
100
150
200
21
Incident Energy (MeV)
75-Re-187

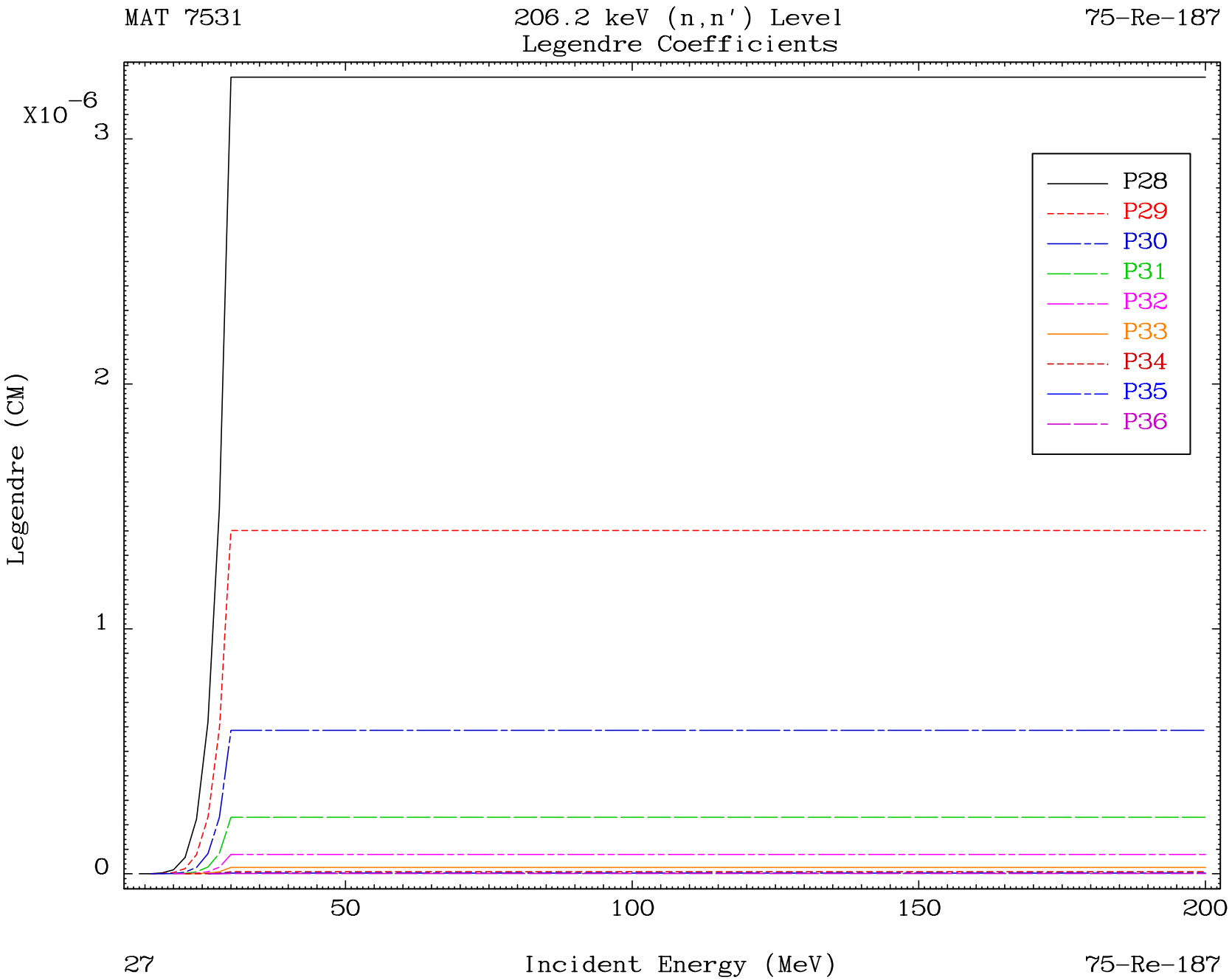

MAT 7531
134.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.025
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
22
Incident Energy (MeV)
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27

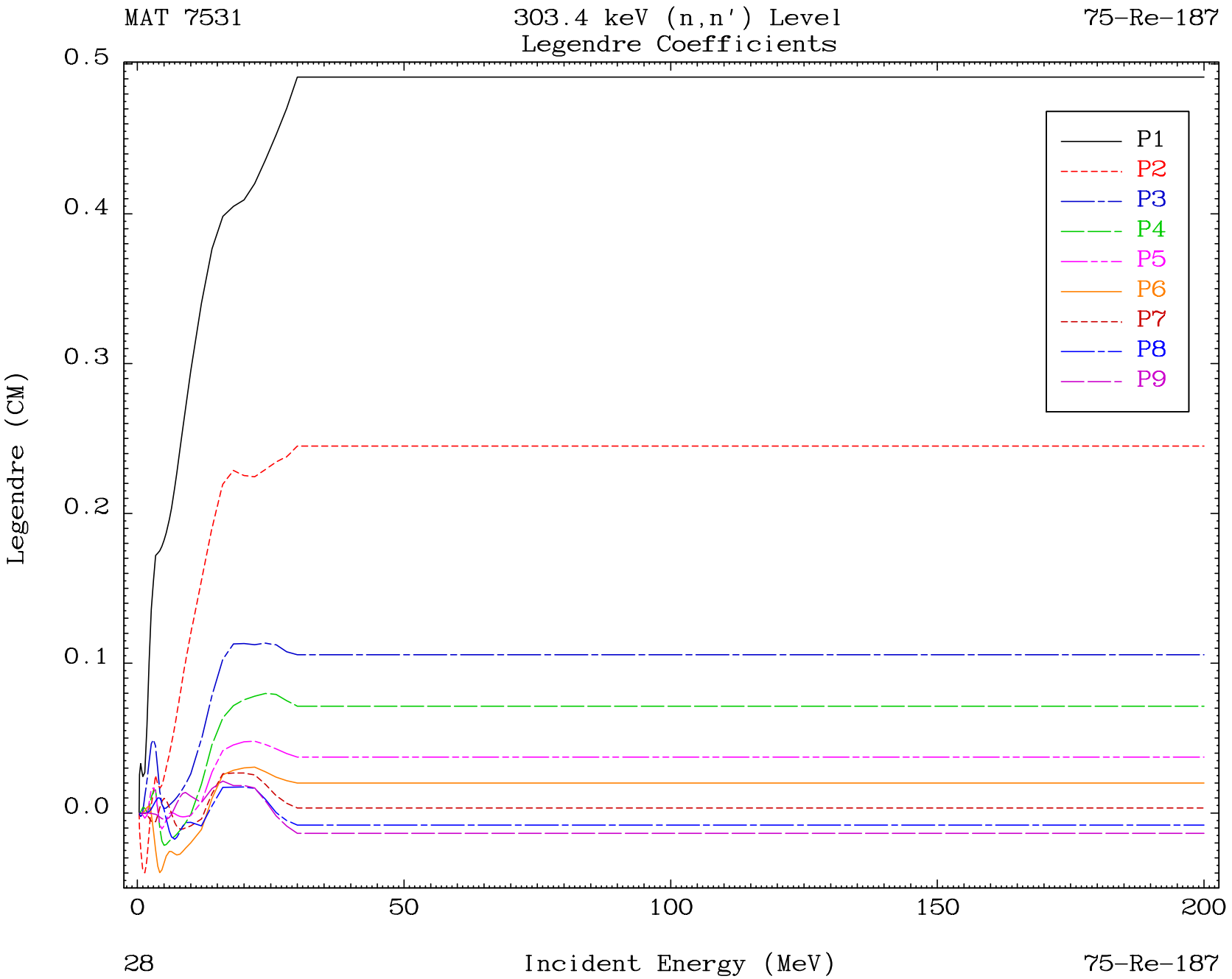

MAT 7531
134.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
5
4
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
23
Incident Energy (MeV)
75-Re-187

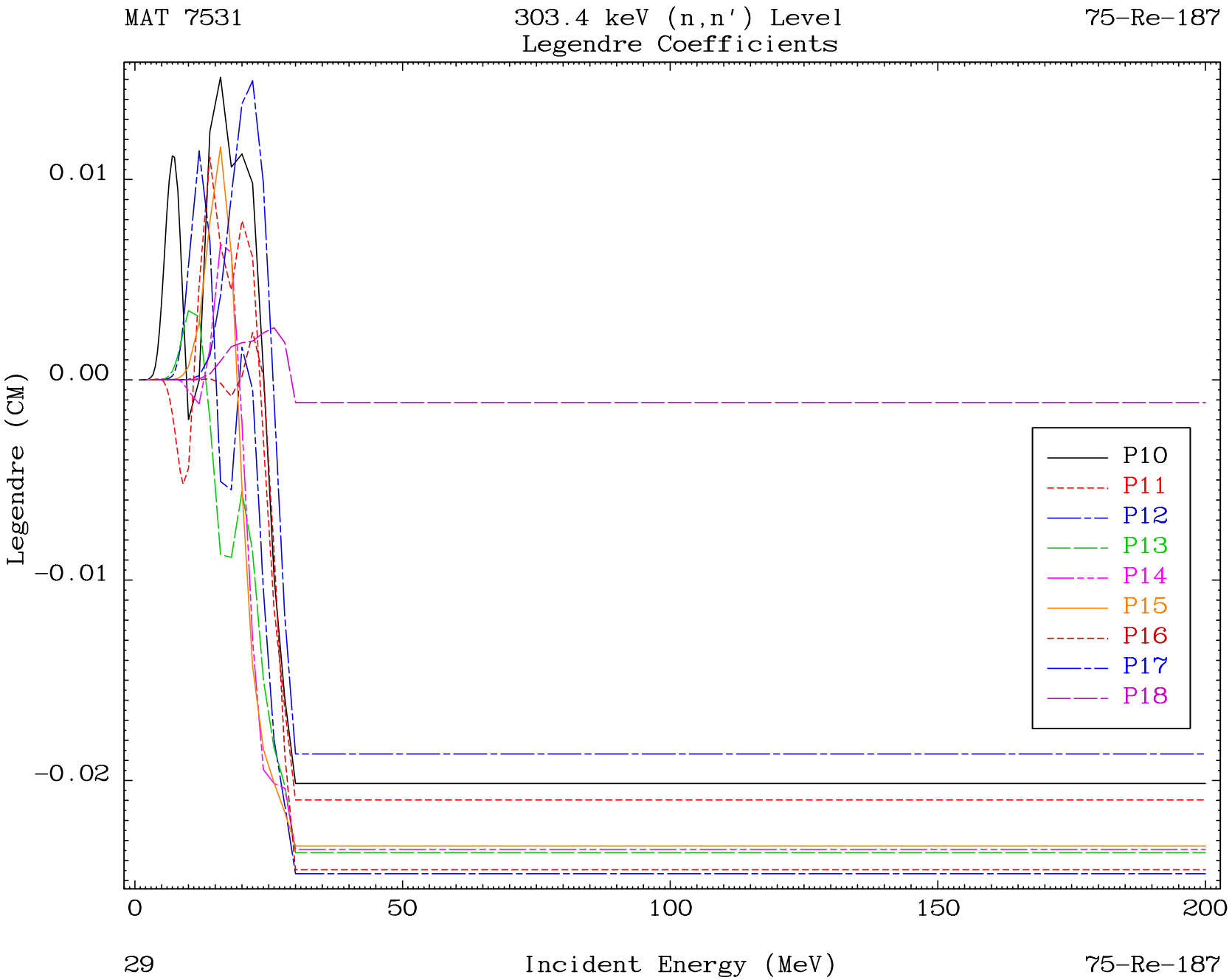

MAT 7531
206.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
24
Incident Energy (MeV)
75-Re-187

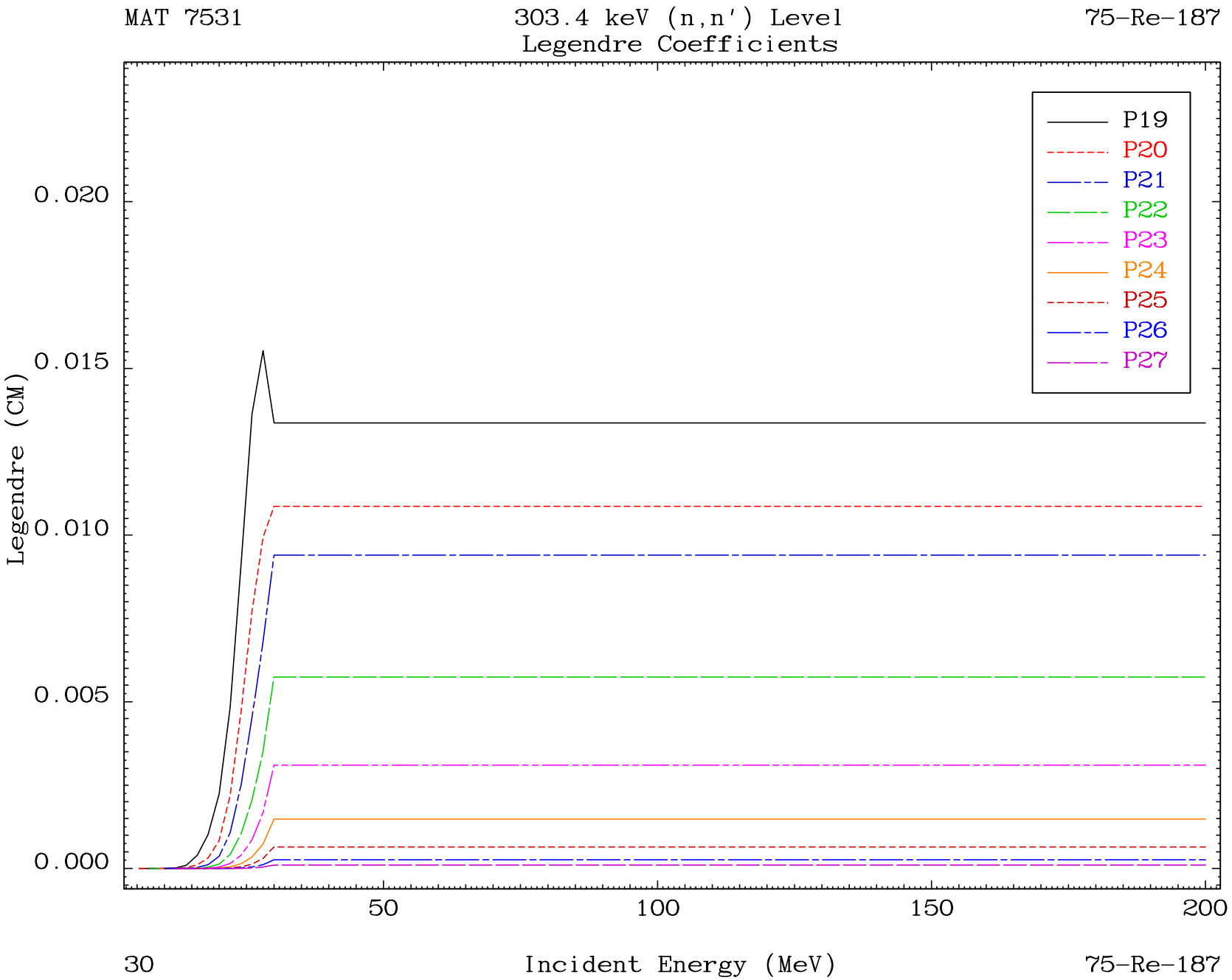

MAT 7531
206.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.02
0.01
0.00
-0.01
Legendre (CM)
0
50
100
150
200
25
Incident Energy (MeV)
75-Re-187

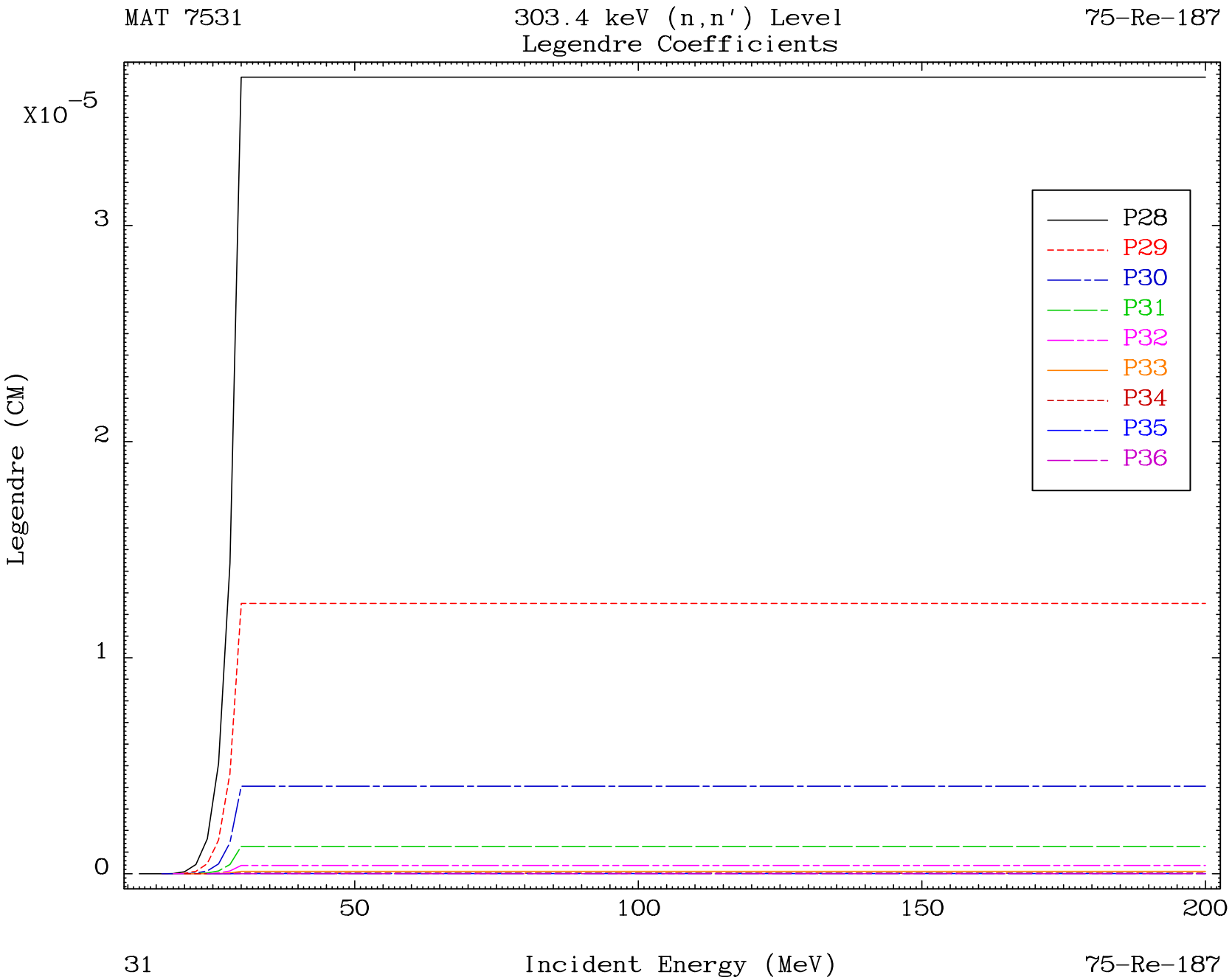

MAT 7531
206.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10^-3
1.5
1.0
0.5
0.0
-0.5
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
26
Incident Energy (MeV)
75-Re-187

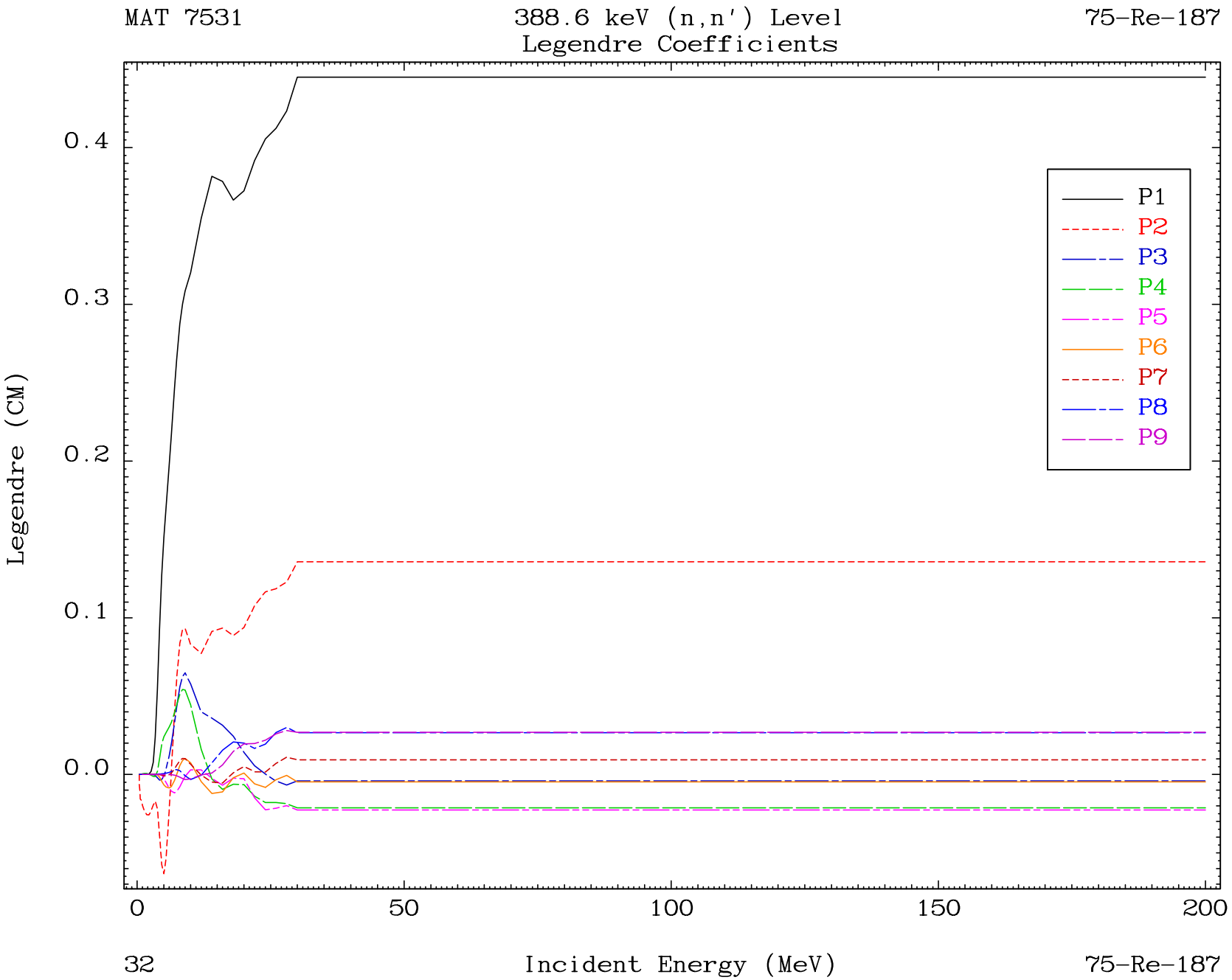

MAT 7531
206.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -6
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
27
Incident Energy (MeV)
75-Re-187

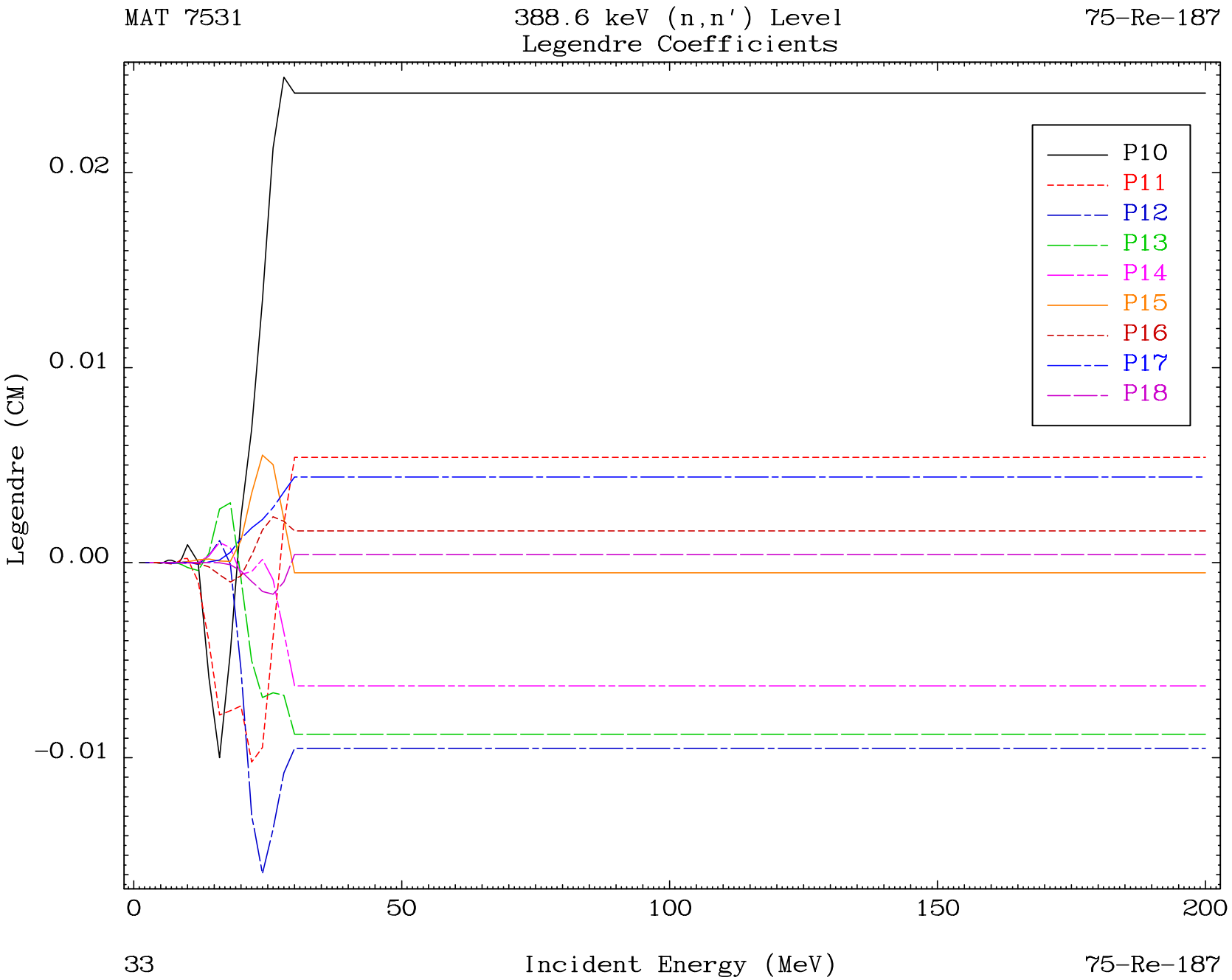

MAT 7531
303.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.5
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
28
Incident Energy (MeV)
75-Re-187

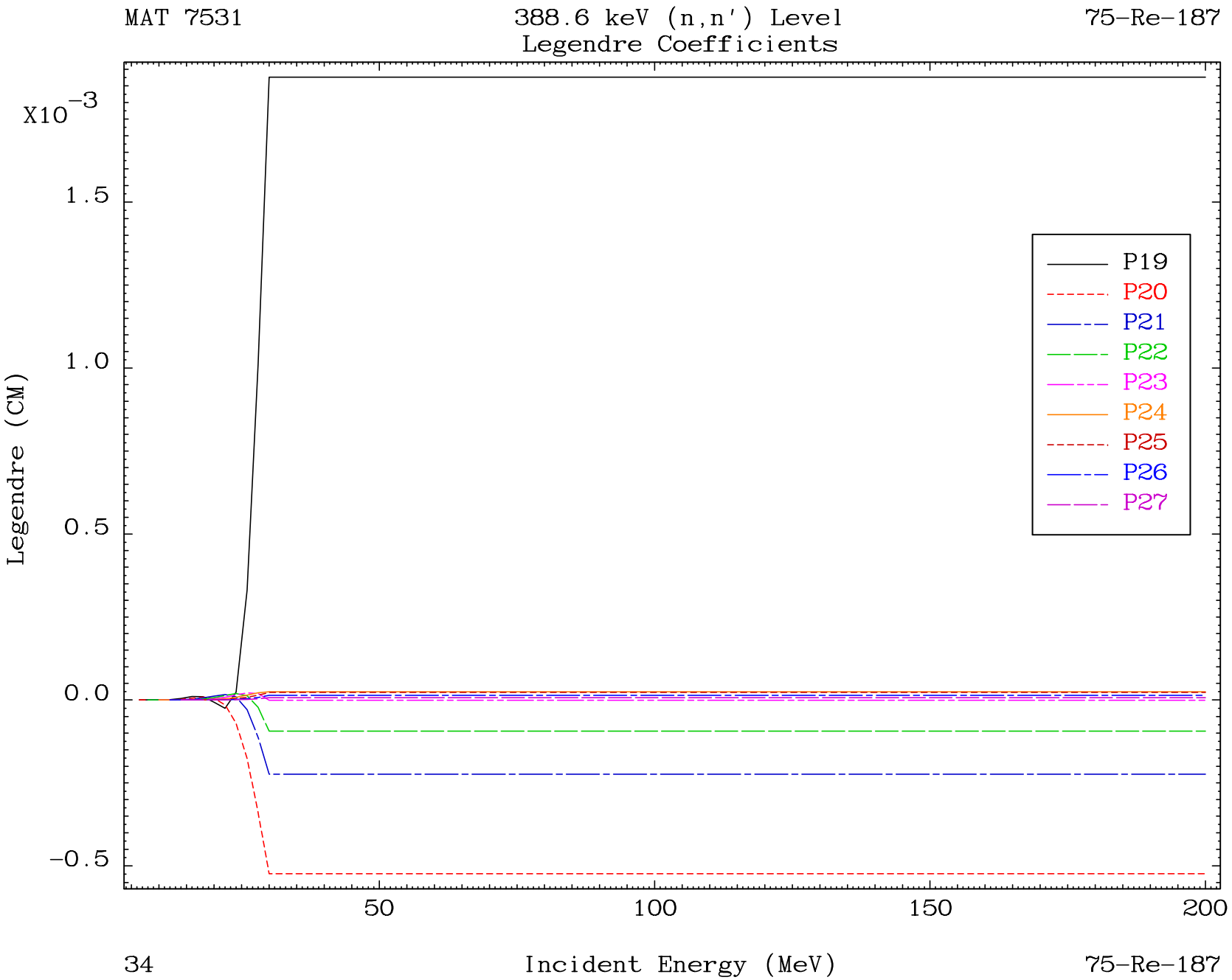

MAT 7531
303.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.01
0.00
-0.01
-0.02
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
29
Incident Energy (MeV)
75-Re-187

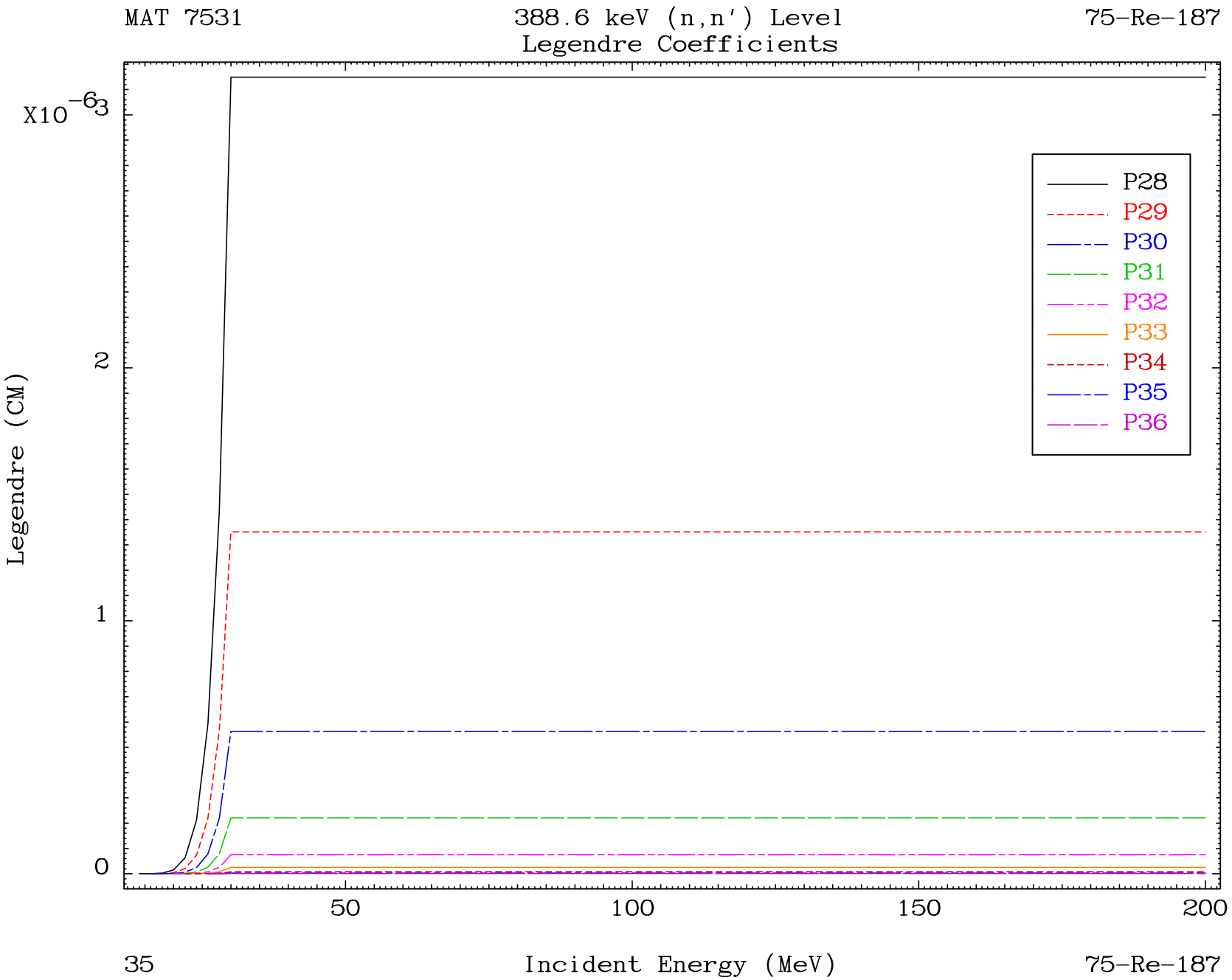

MAT 7531
303.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
30
50
100
150
200
Incident Energy (MeV)
75-Re-187

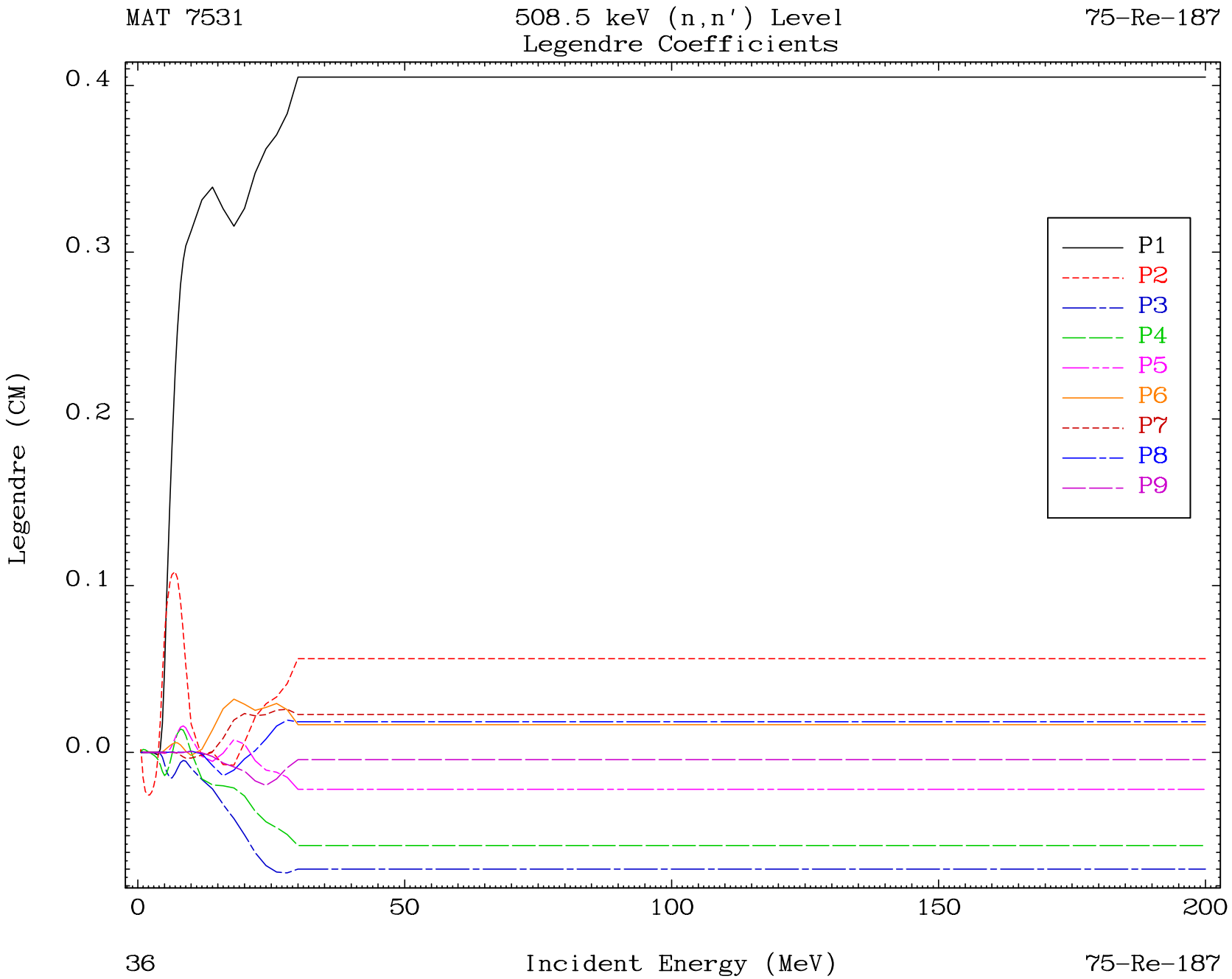

MAT 7531
303.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
31
Incident Energy (MeV)
75-Re-187

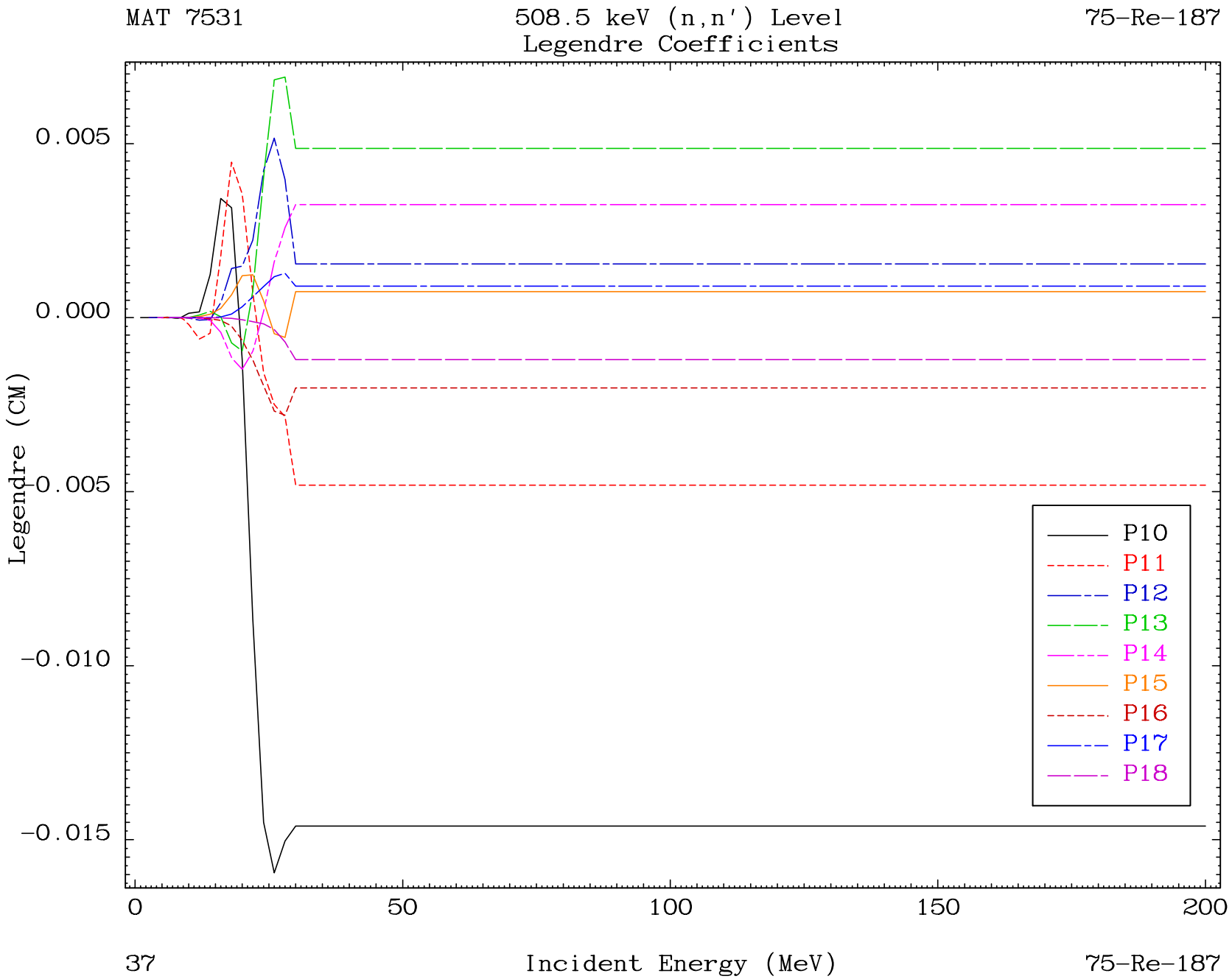

MAT 7531
388.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
32
Incident Energy (MeV)
75-Re-187

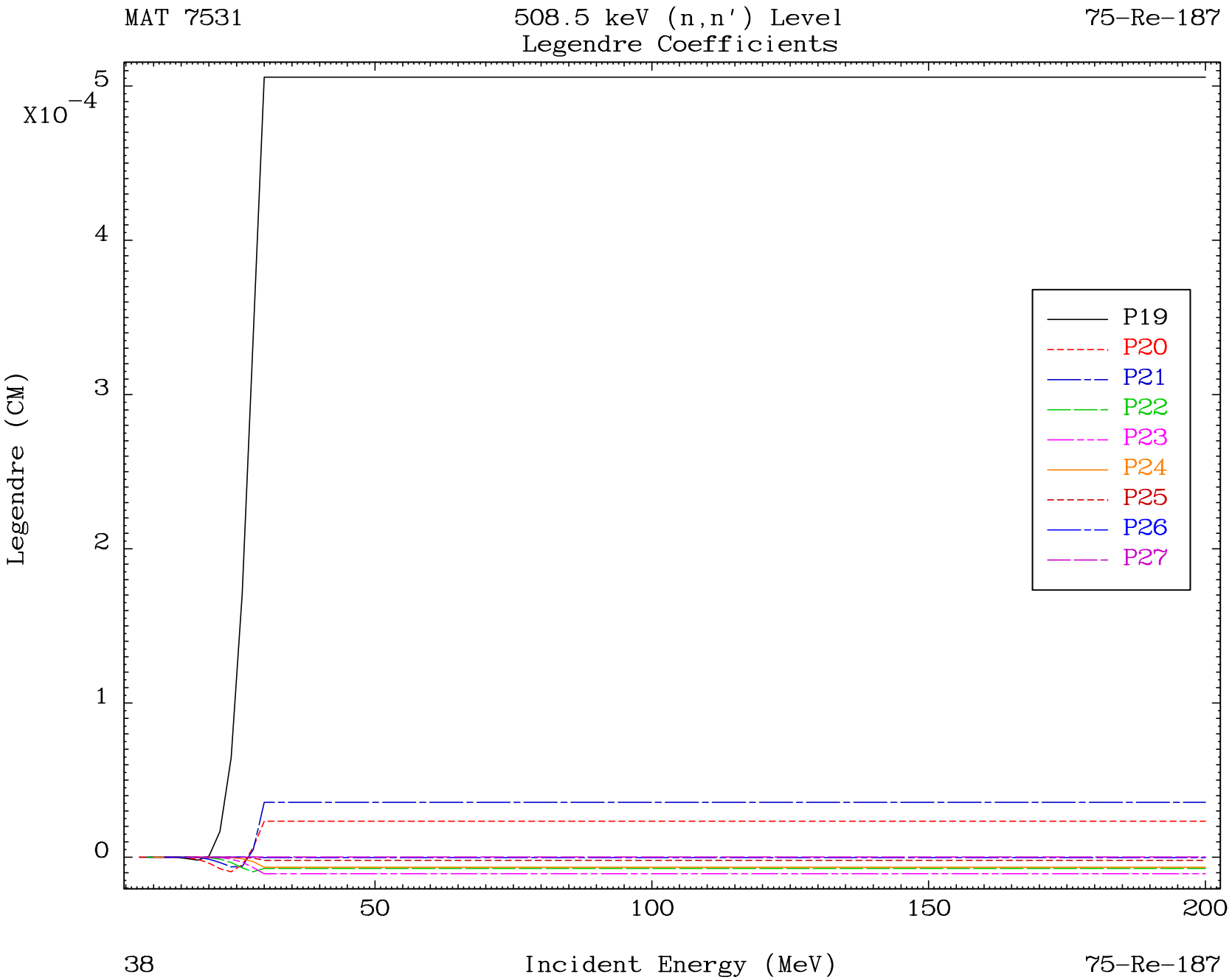

MAT 7531
388.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.02
0.01
0.00
-0.01
Legendre (CM)
0
50
100
150
200
33
Incident Energy (MeV)
75-Re-187

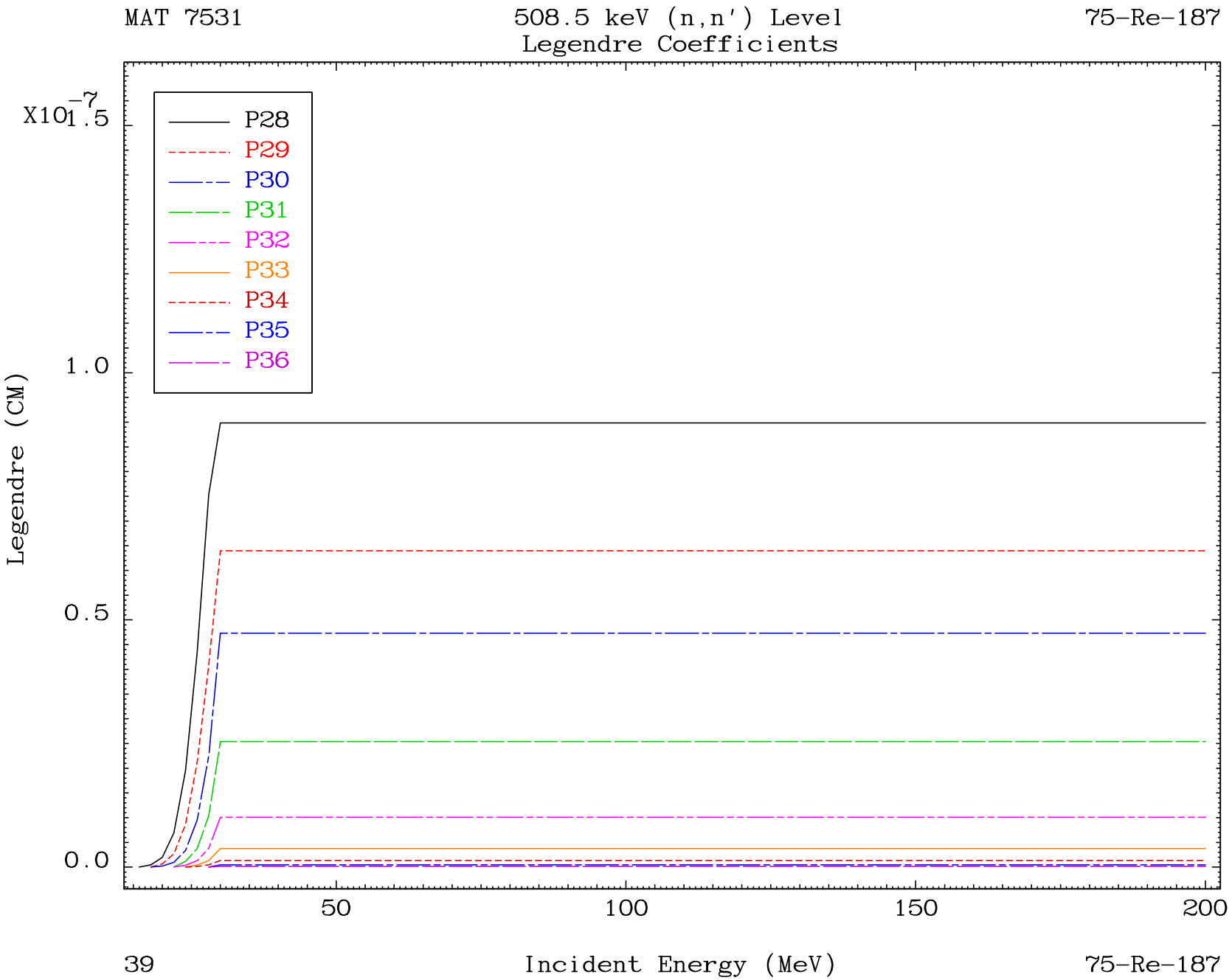

MAT 7531
388.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10^-3
1.5
1.0
0.5
0.0
-0.5
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
34
Incident Energy (MeV)
75-Re-187

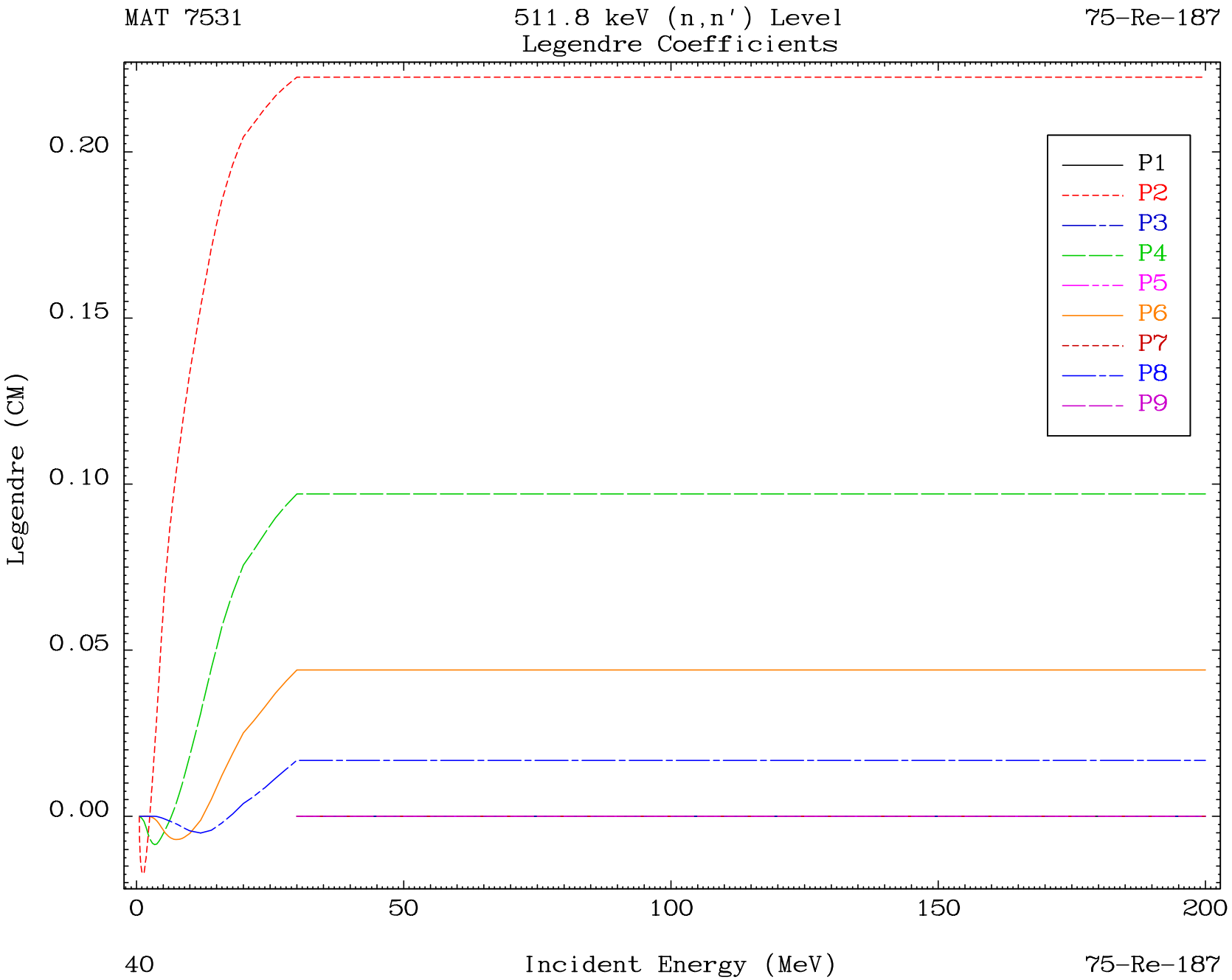

MAT 7531
388.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -6
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
35
Incident Energy (MeV)
75-Re-187

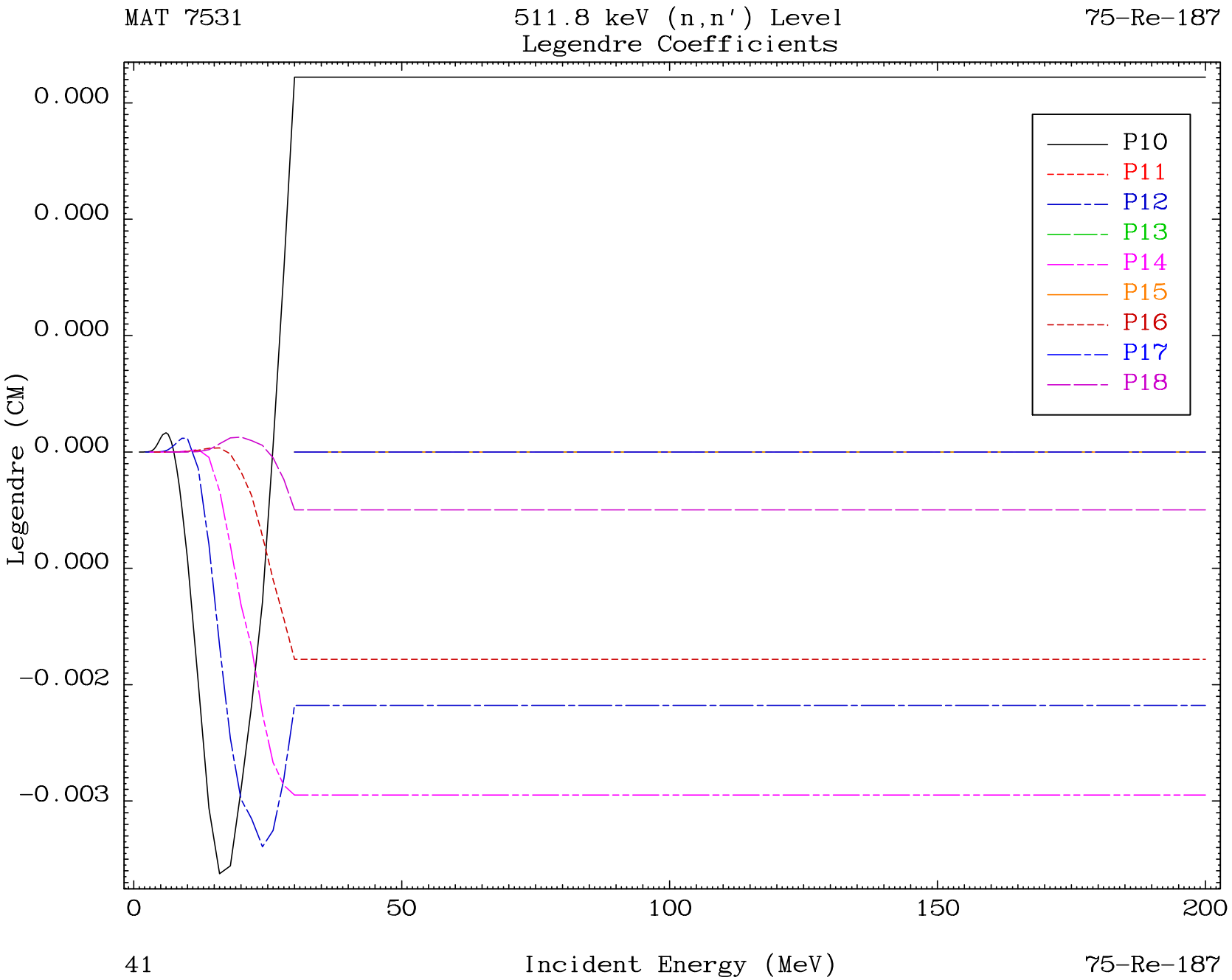

MAT 7531
508.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
36
Incident Energy (MeV)
75-Re-187

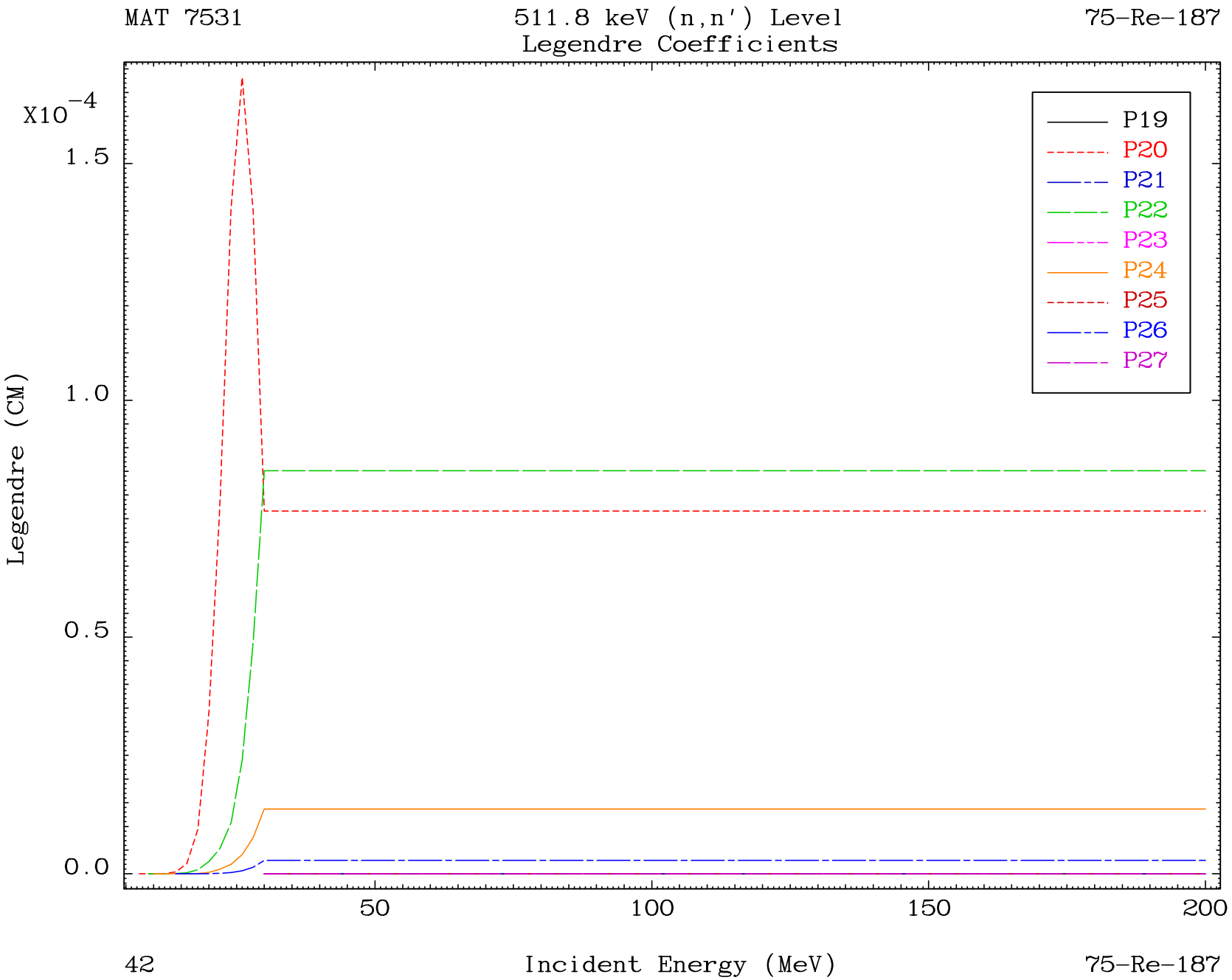

MAT 7531
508.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.005
0.000
-0.005
-0.010
-0.015
Legendre (CM)
0
50
100
150
200
37
Incident Energy (MeV)
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18

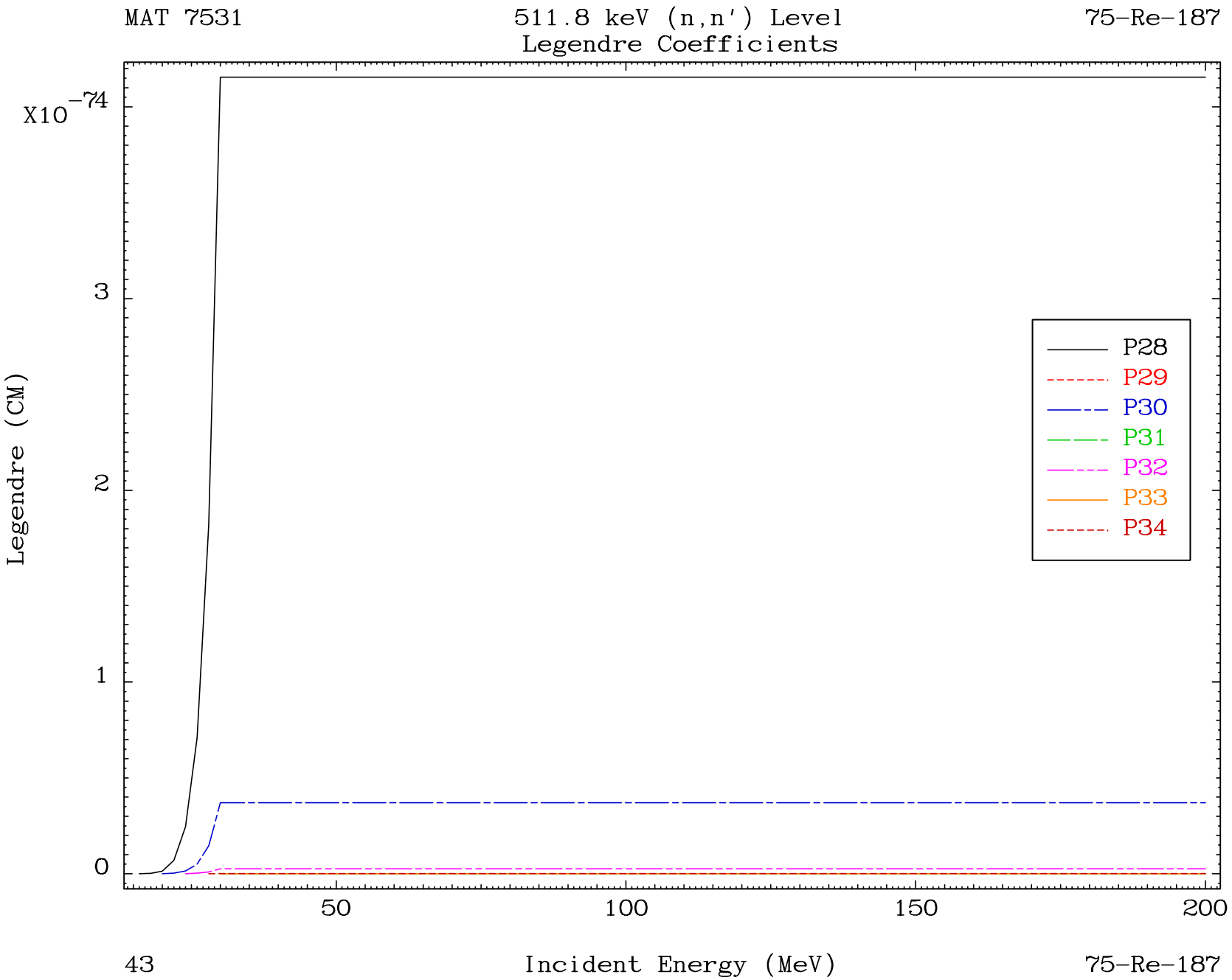

MAT 7531
508.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -4
5
4
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
38
Incident Energy (MeV)
75-Re-187

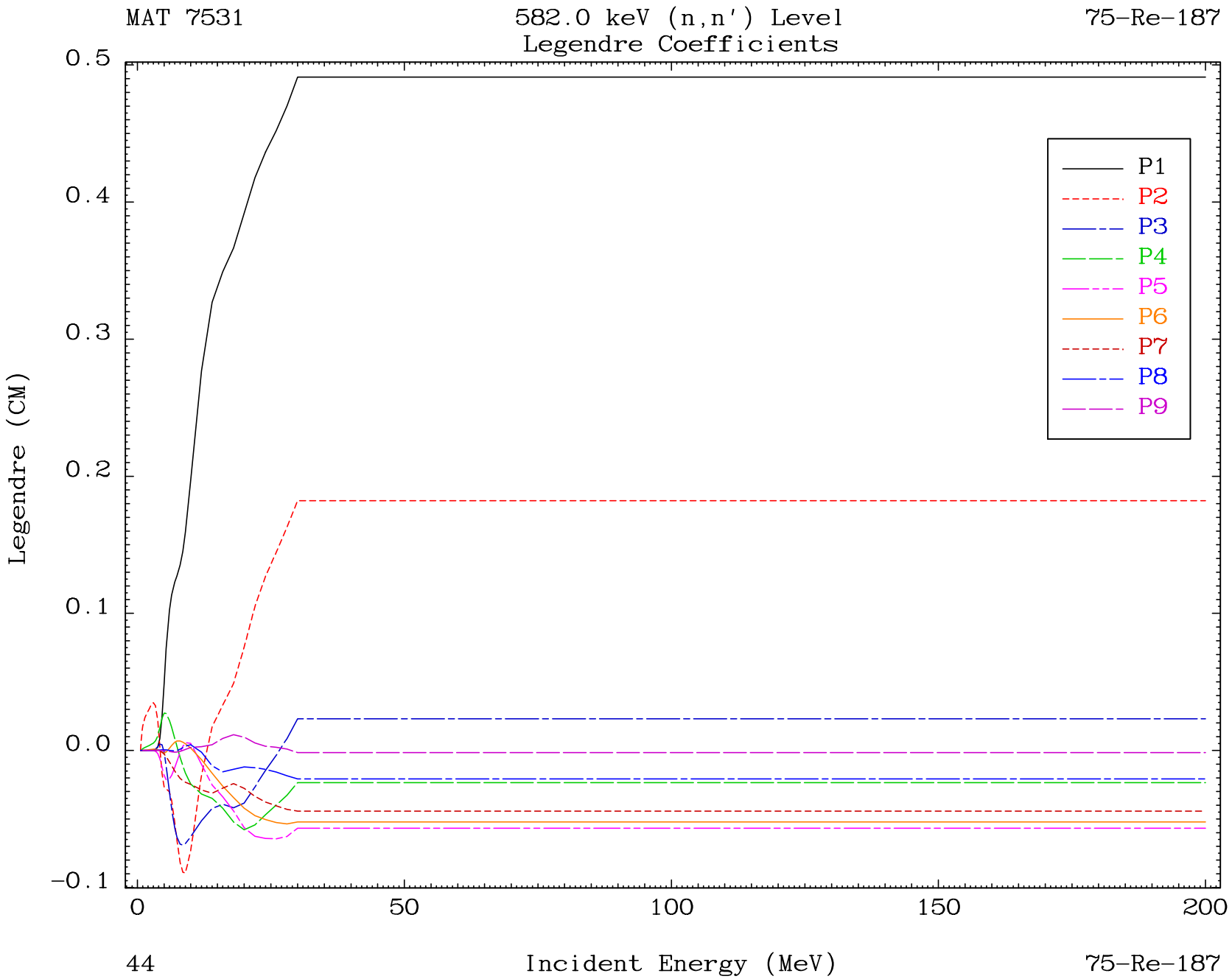

MAT 7531
508.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-7
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
39
Incident Energy (MeV)
75-Re-187

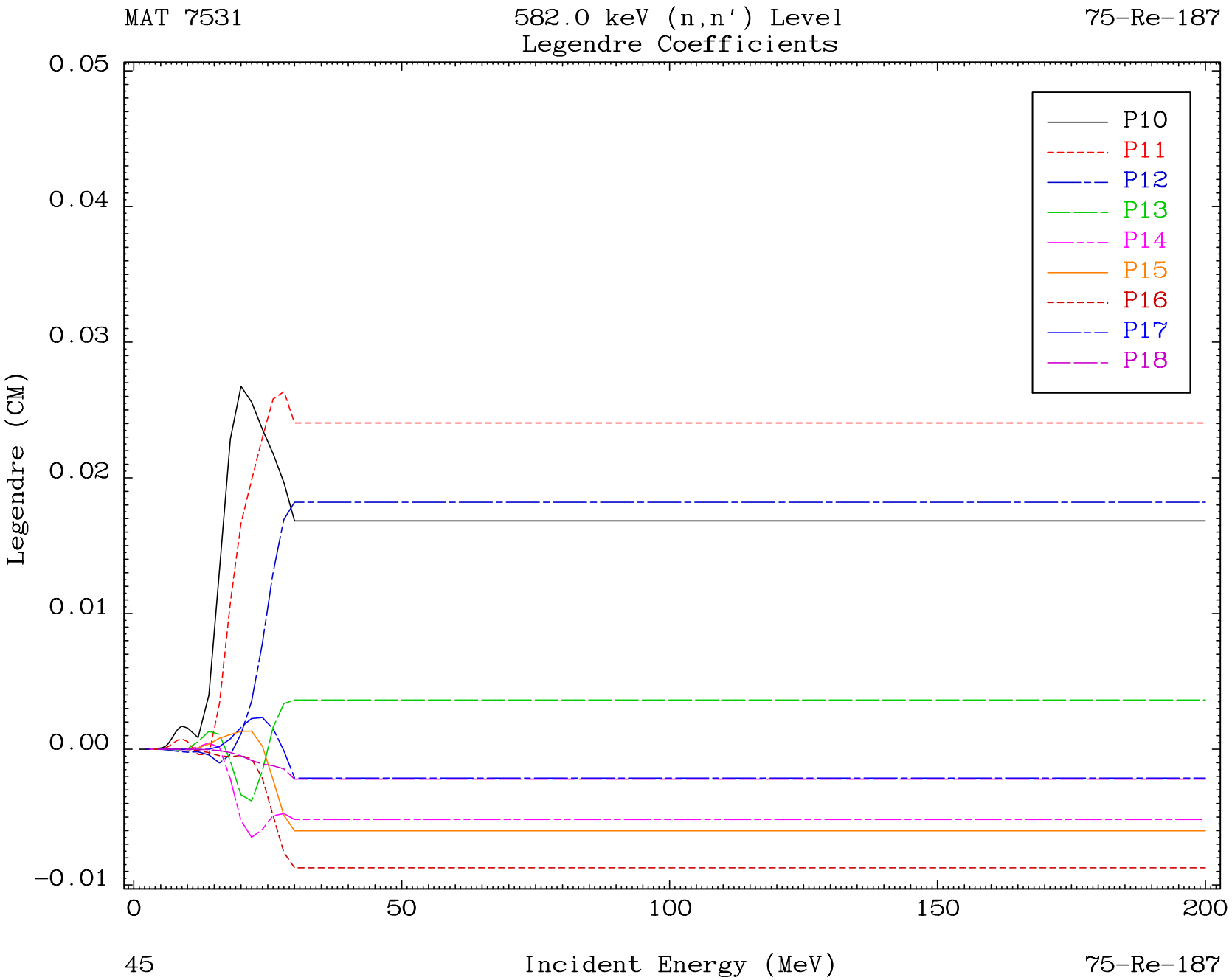

MAT 7531
511.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.20
0.15
0.10
0.05
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
40
Incident Energy (MeV)
75-Re-187

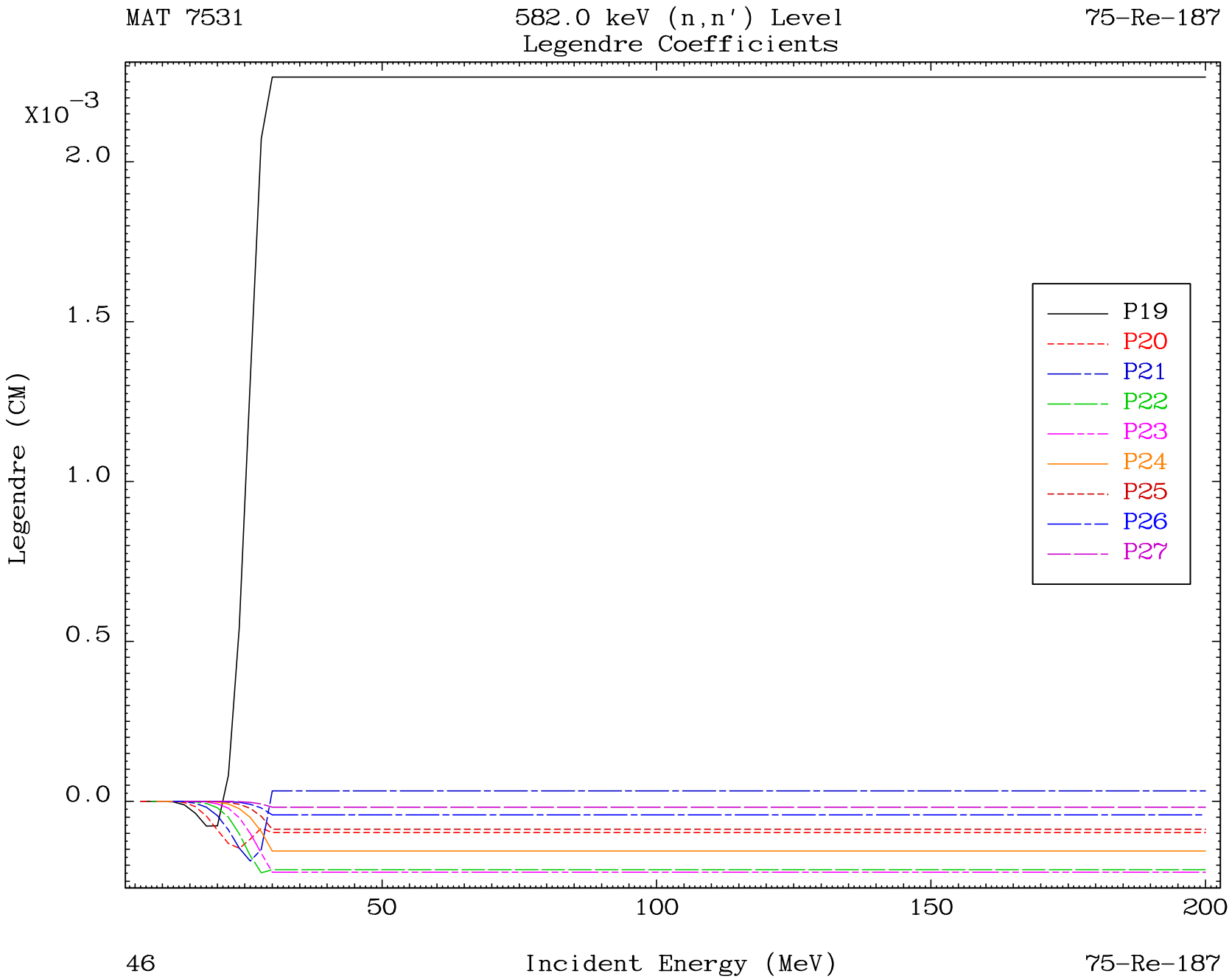

MAT 7531
511.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
0.000
0.000
0.000
-0.002
-0.003
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
41
Incident Energy (MeV)
75-Re-187

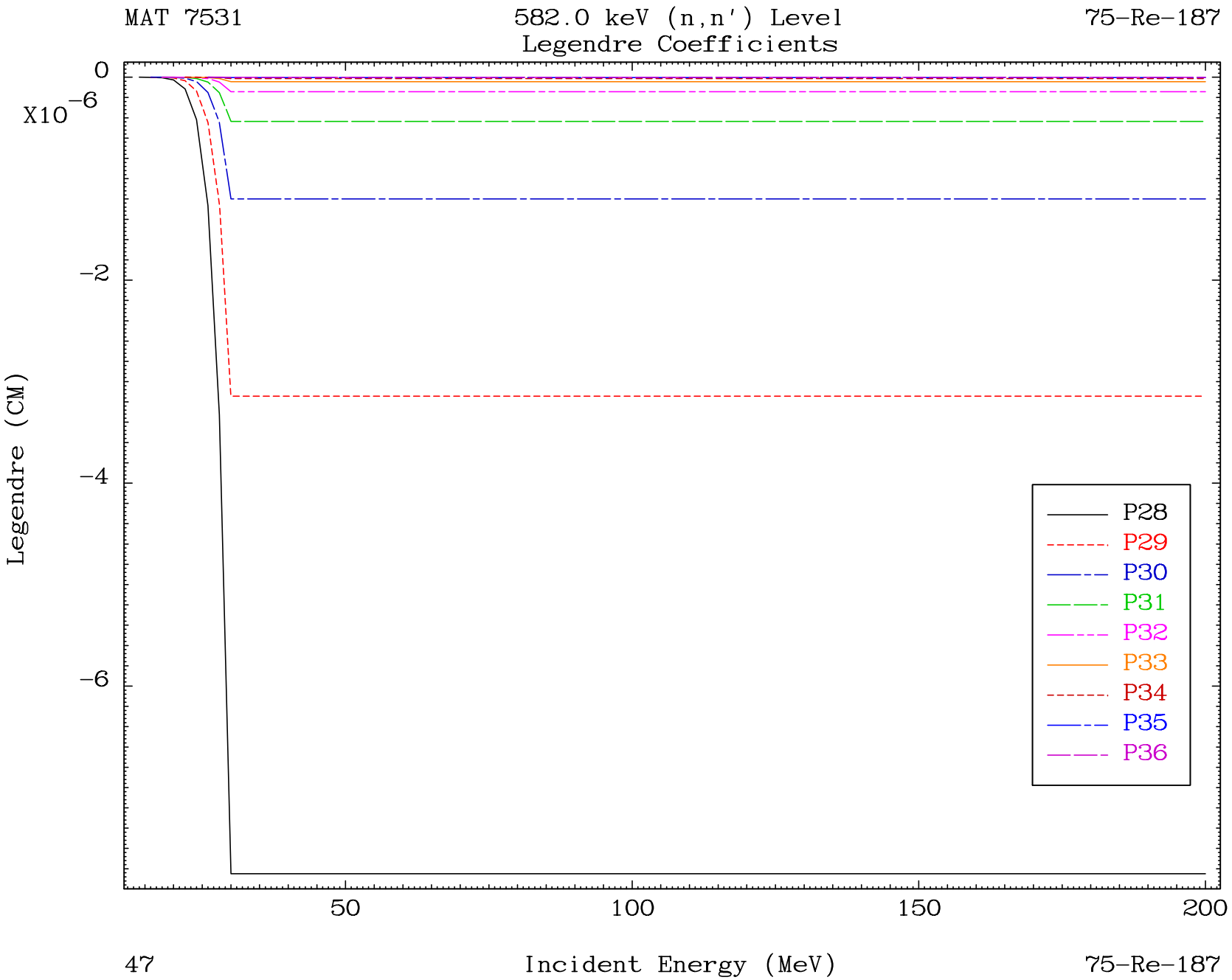

MAT 7531
511.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 −4
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
42
Incident Energy (MeV)
75-Re-187

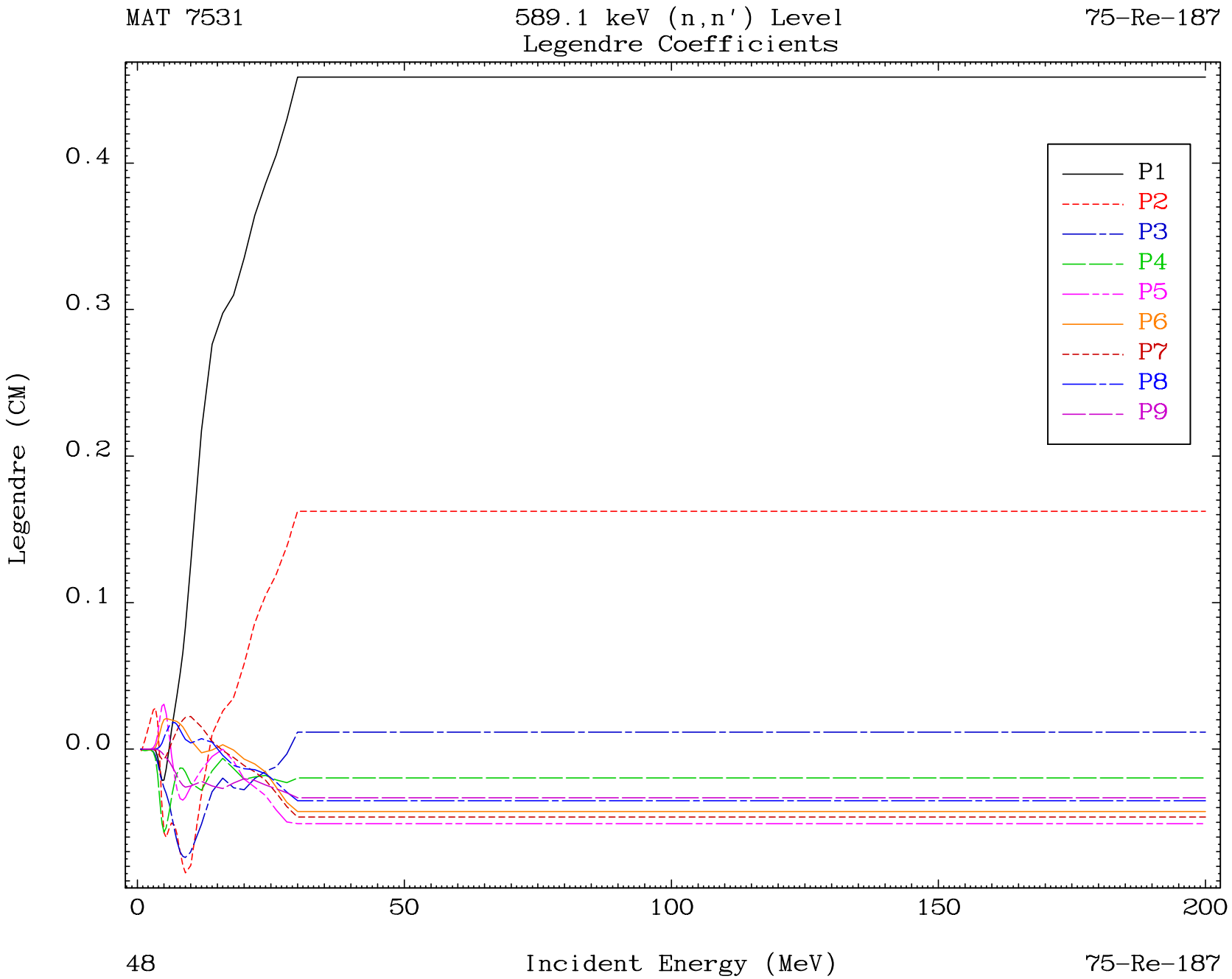

MAT 7531
511.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -74
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
50
100
150
200
43
Incident Energy (MeV)
75-Re-187

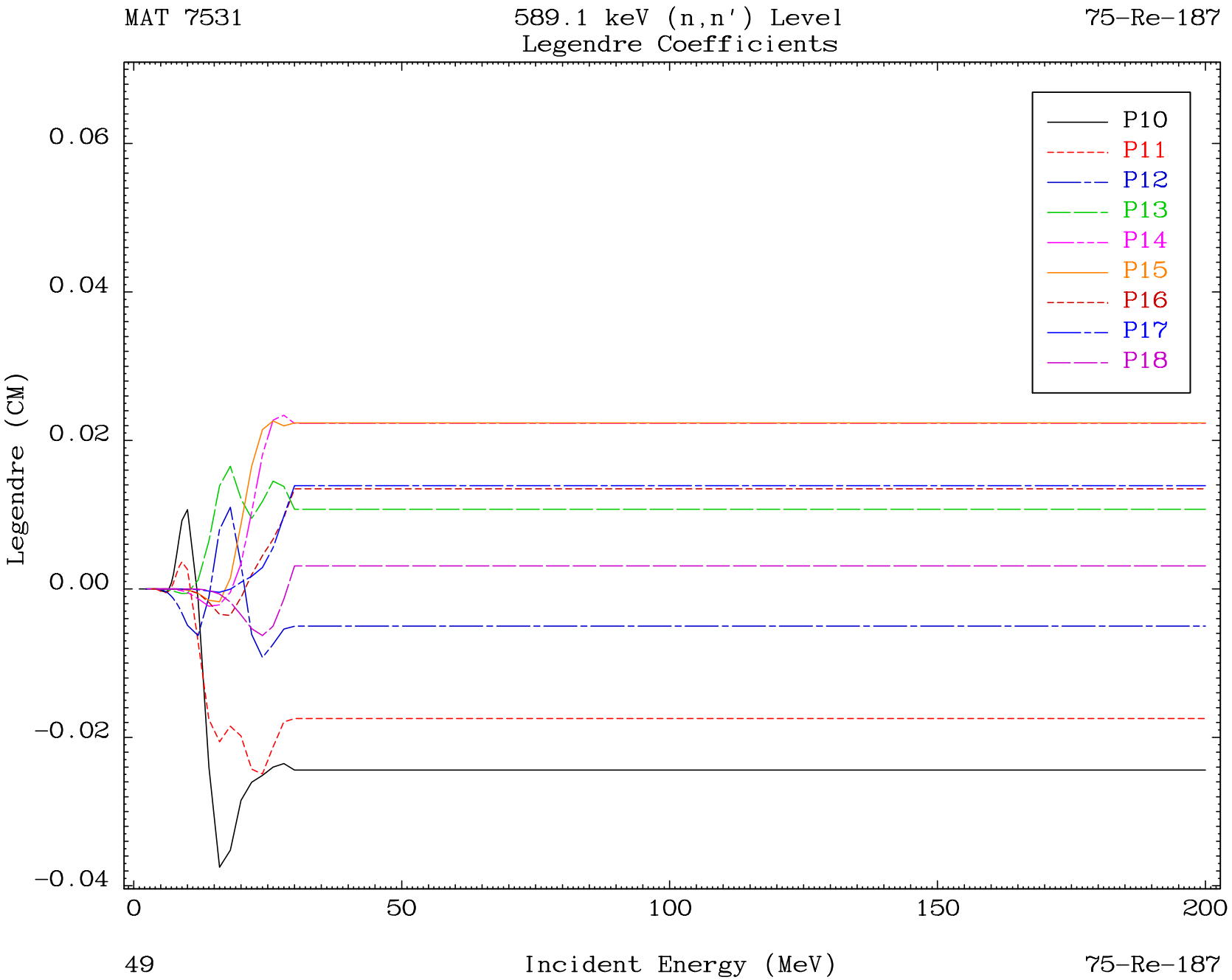

MAT 7531
582.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
44
Incident Energy (MeV)
75-Re-187

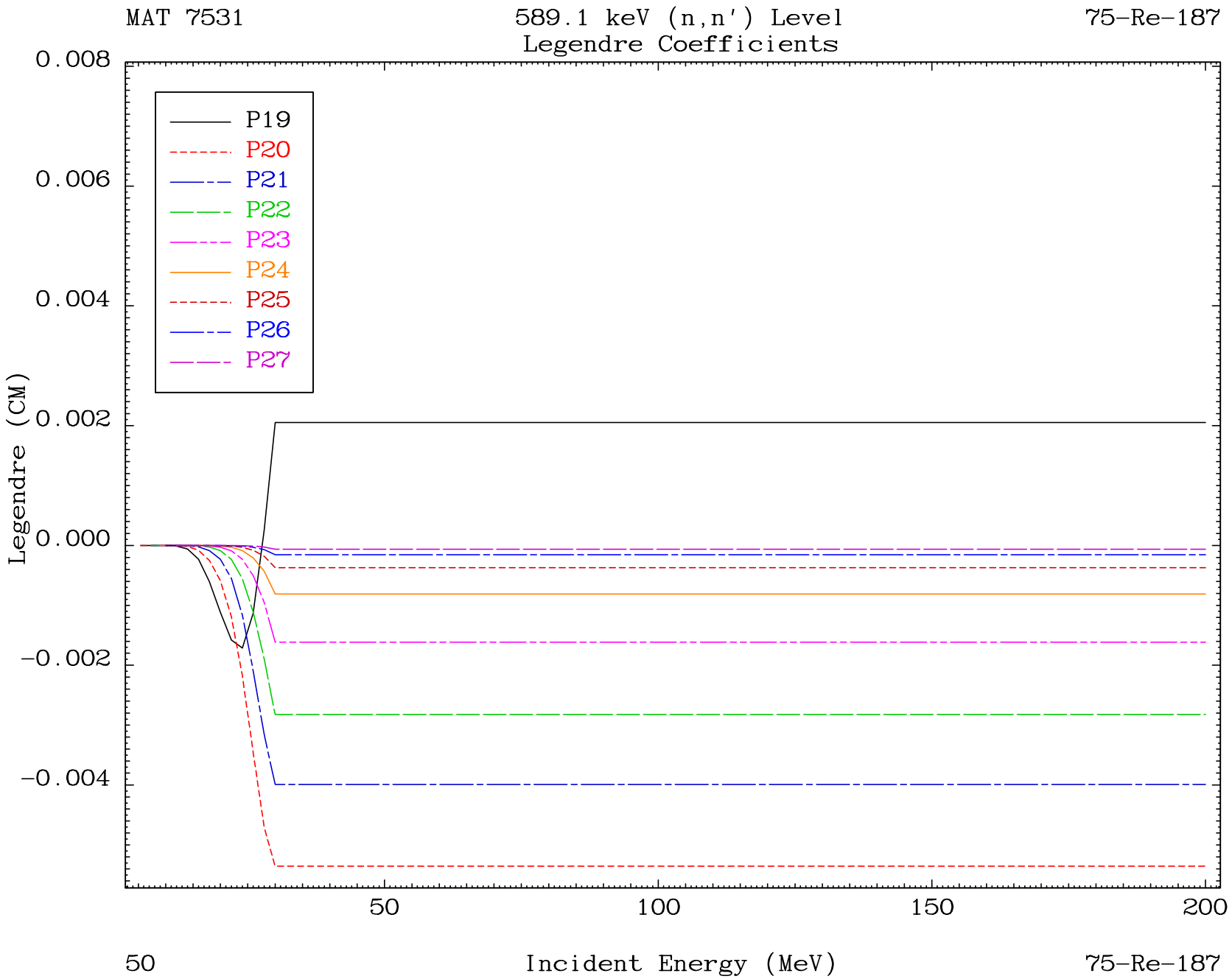

MAT 7531
582.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
45
Incident Energy (MeV)
75-Re-187

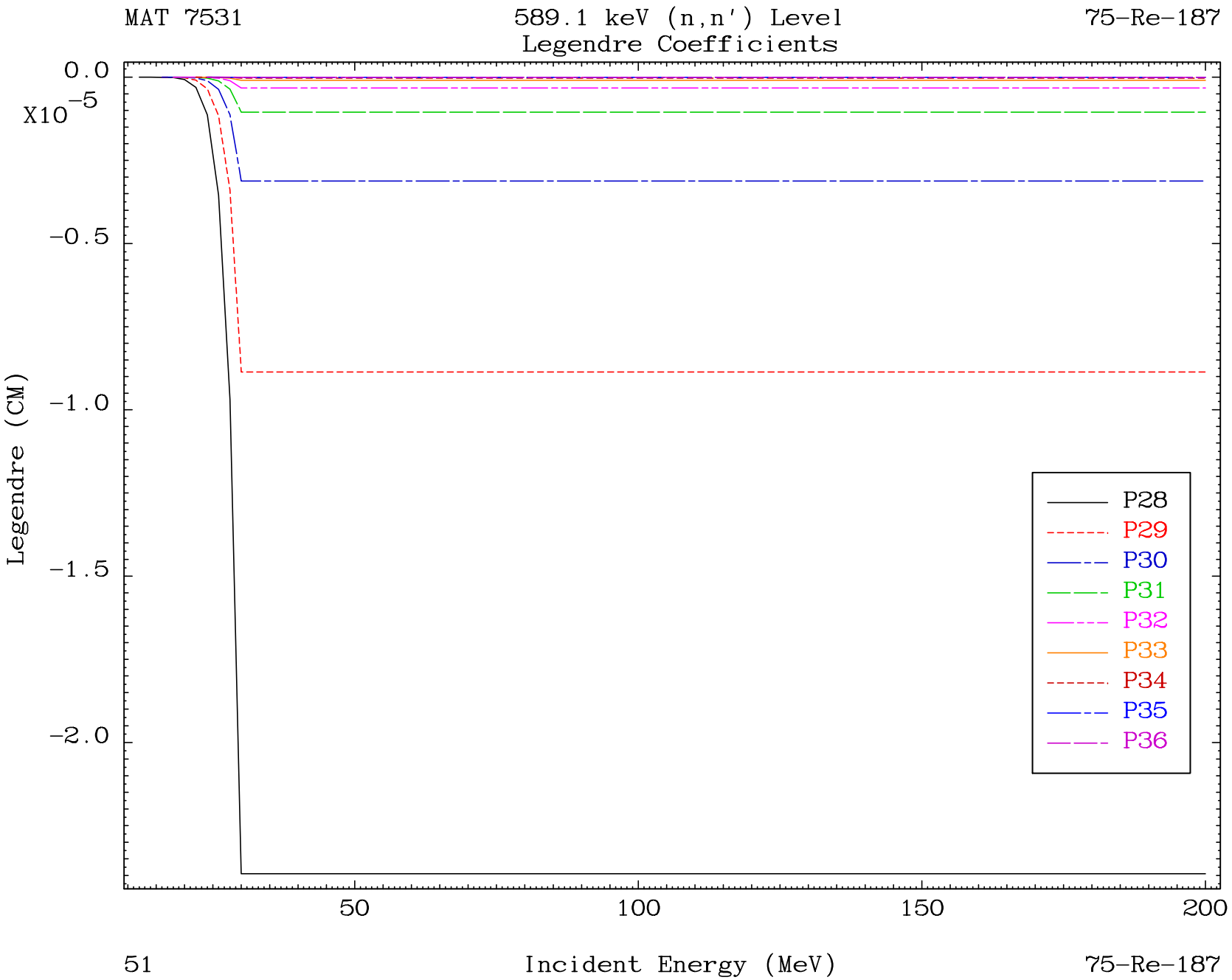

MAT 7531
582.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-3
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
46
Incident Energy (MeV)
75-Re-187

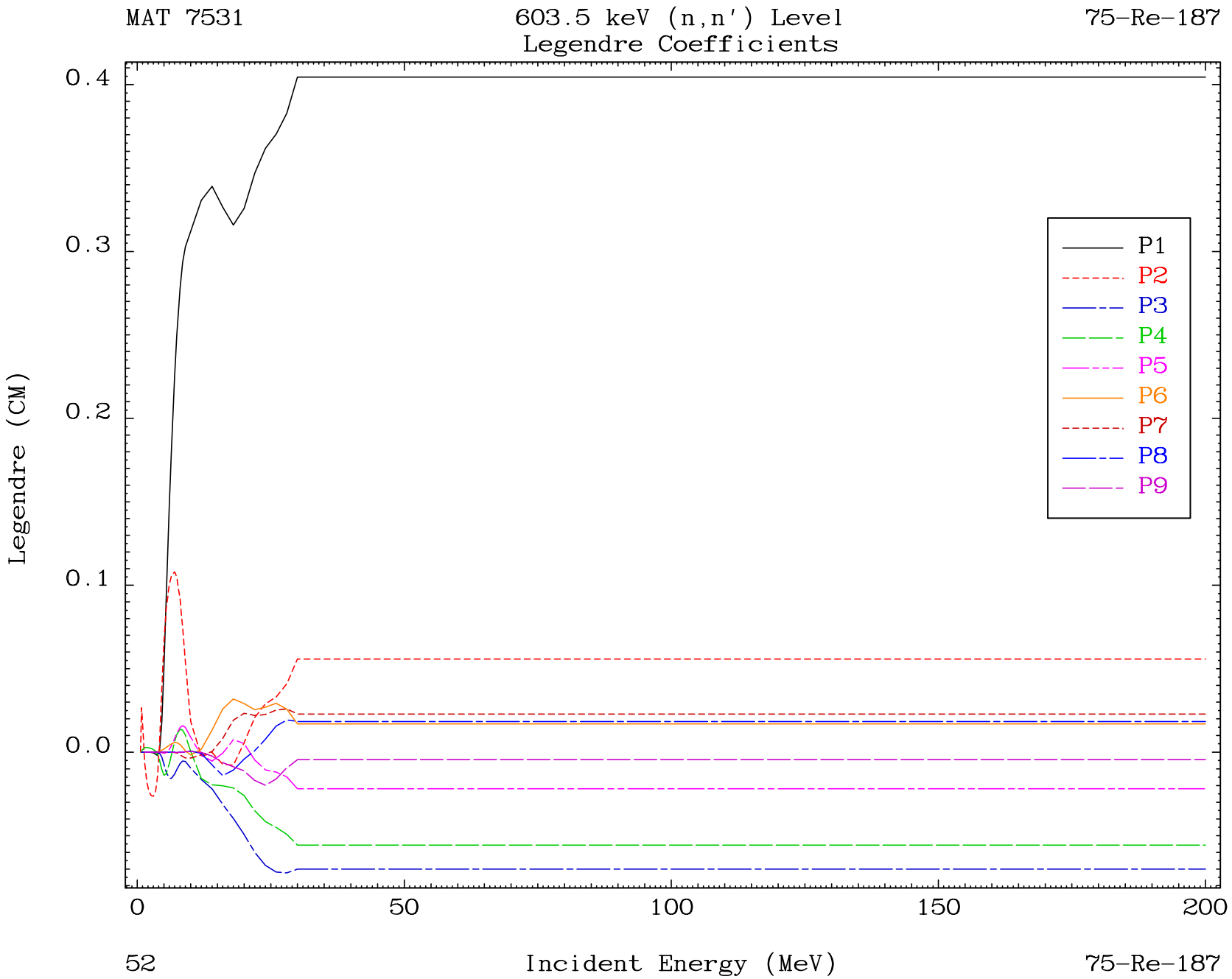

MAT 7531
582.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
0
X10^-6
-2
-4
-6
Legendre (CM)
50
100
150
200
47
Incident Energy (MeV)
75-Re-187
P28
P29
P30
P31
P32
P33
P34
P35
P36

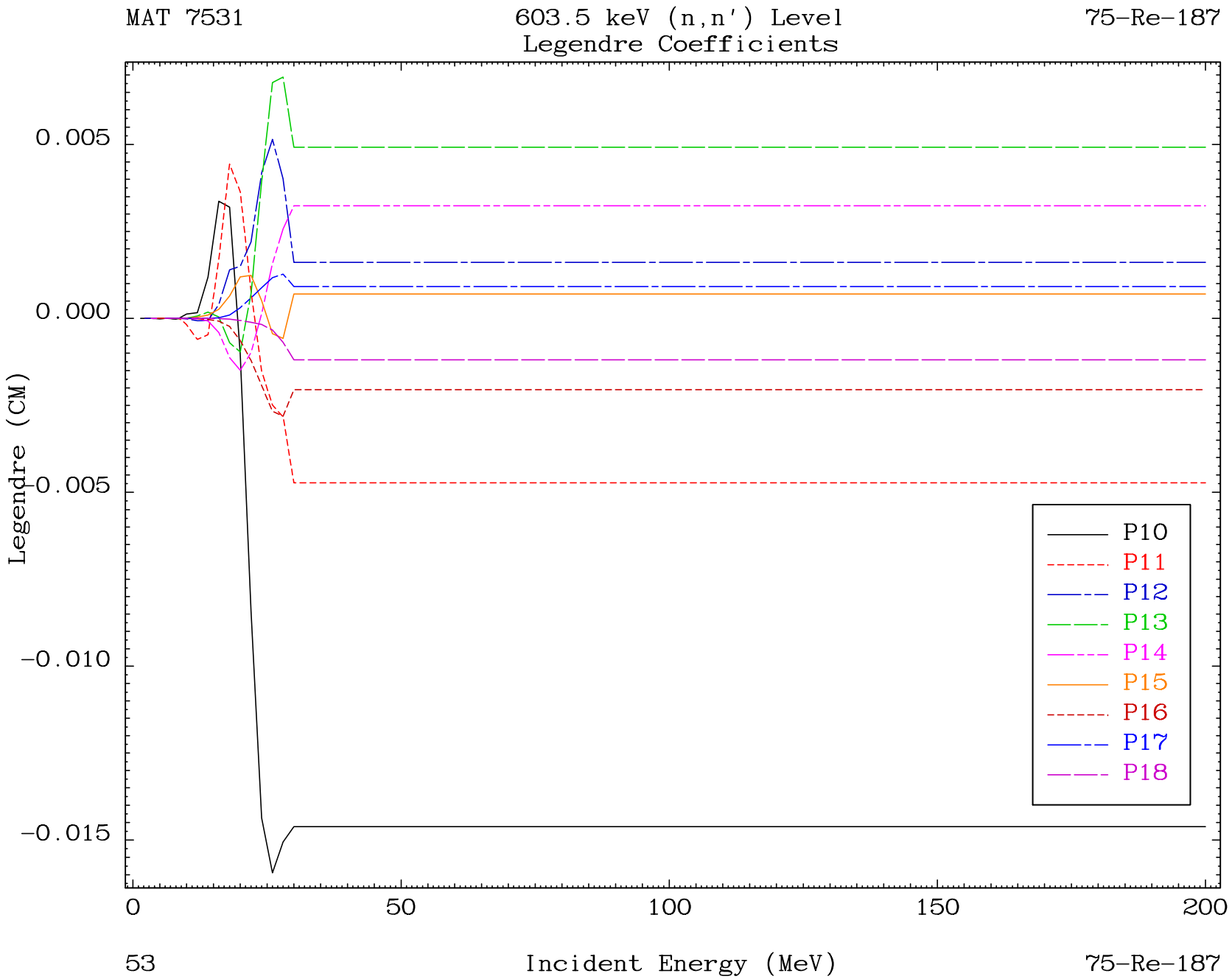

MAT 7531
589.1 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
48
Incident Energy (MeV)
75-Re-187

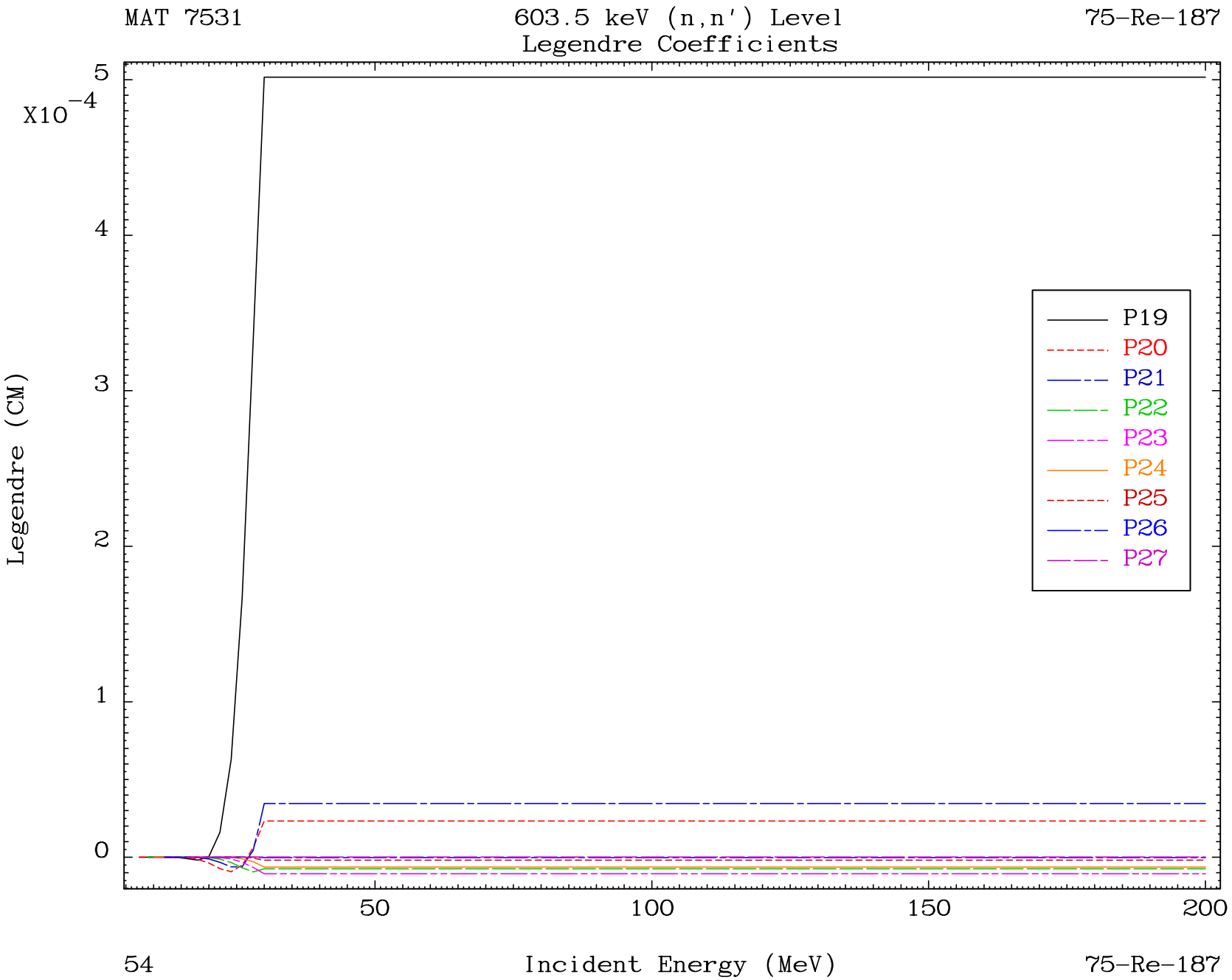

MAT 7531
589.1 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.06
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
49
Incident Energy (MeV)
75-Re-187

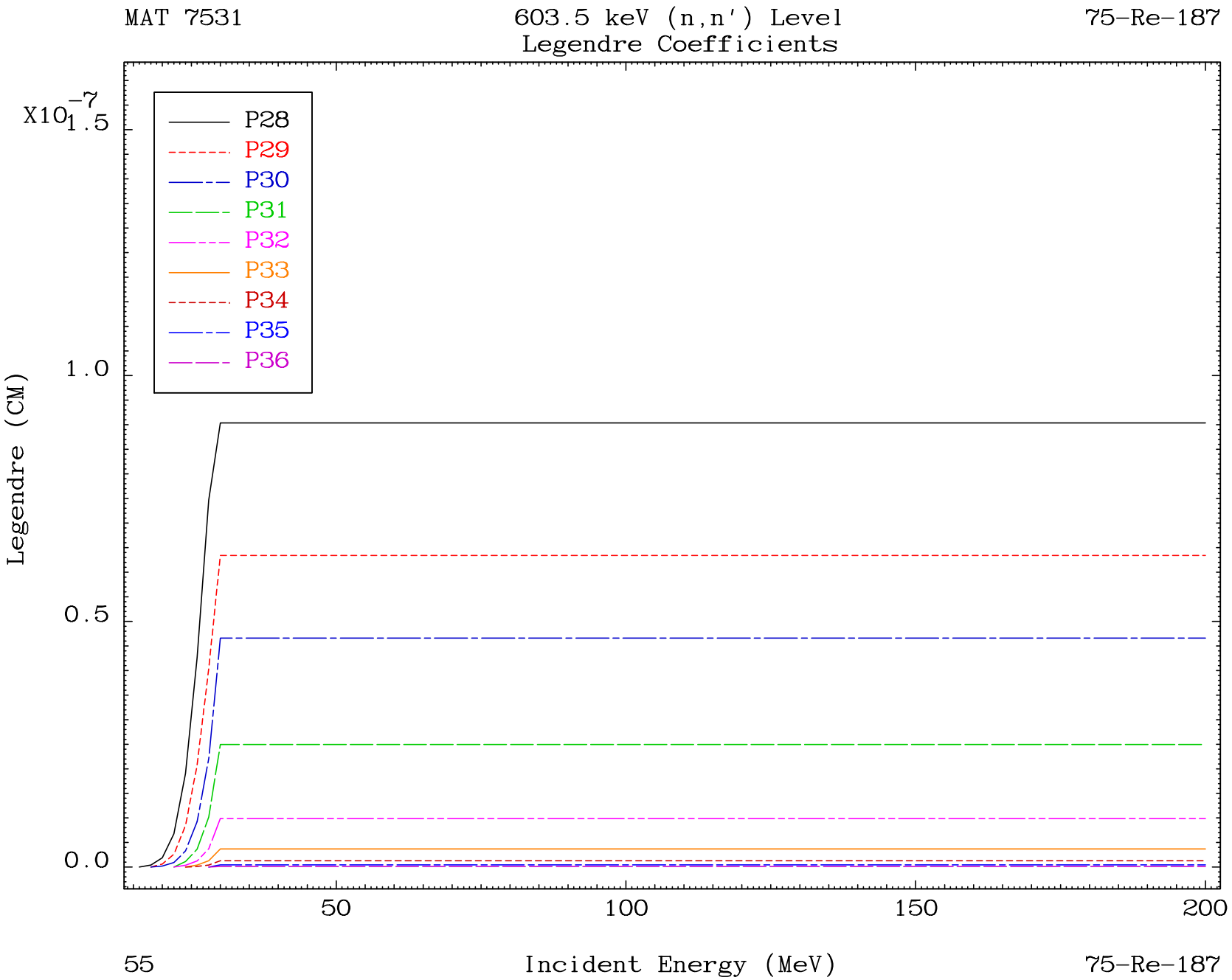

MAT 7531
589.1 keV (n,n') Level
Legendre Coefficients
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
Legendre (CM)
50
100
150
200
50
Incident Energy (MeV)
75-Re-187

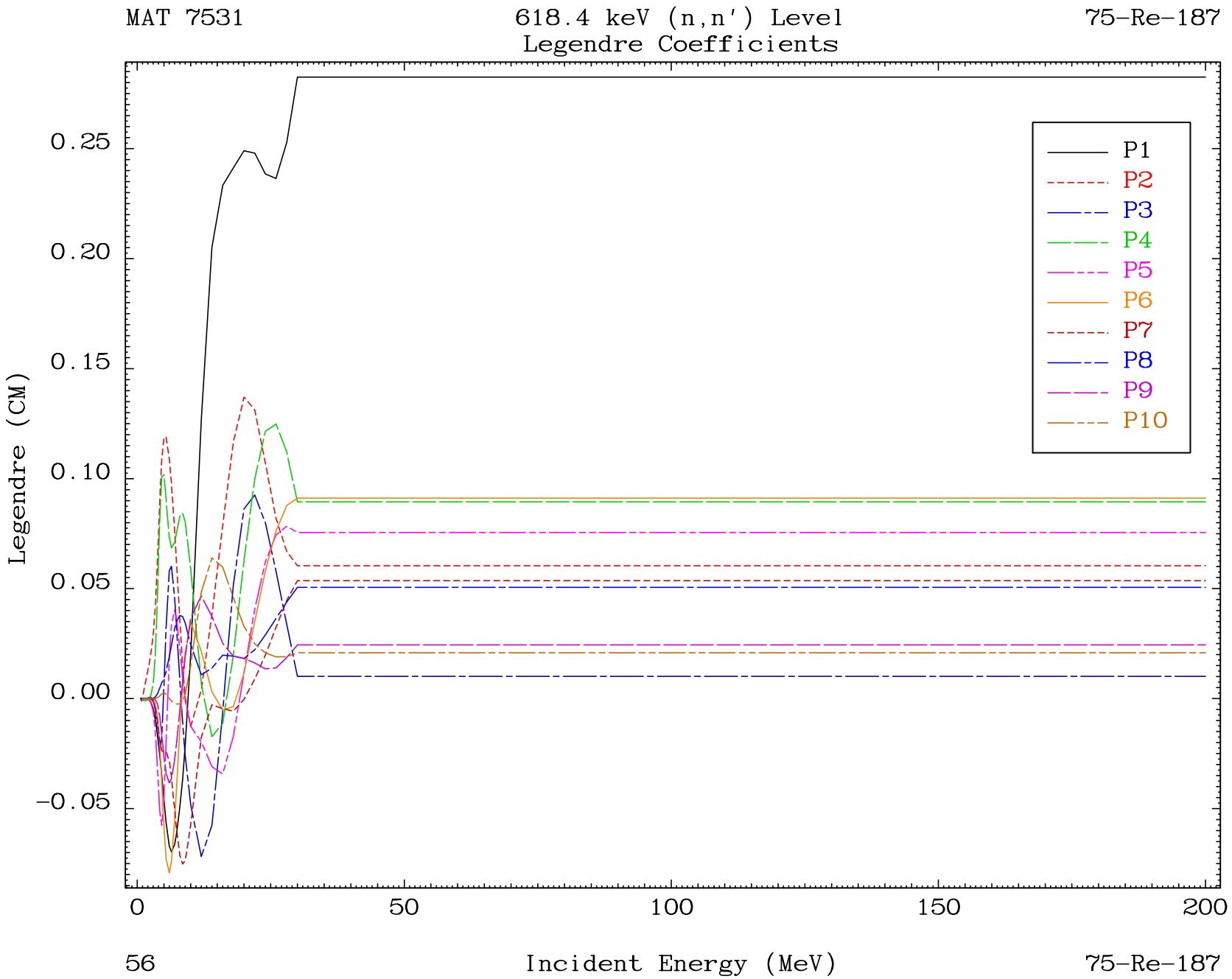

MAT 7531
589.1 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10^-5
-0.5
-1.0
-1.5
-2.0
Legendre (CM)
50
100
150
200
Incident Energy (MeV)
51
75-Re-187
P28
P29
P30
P31
P32
P33
P34
P35
P36

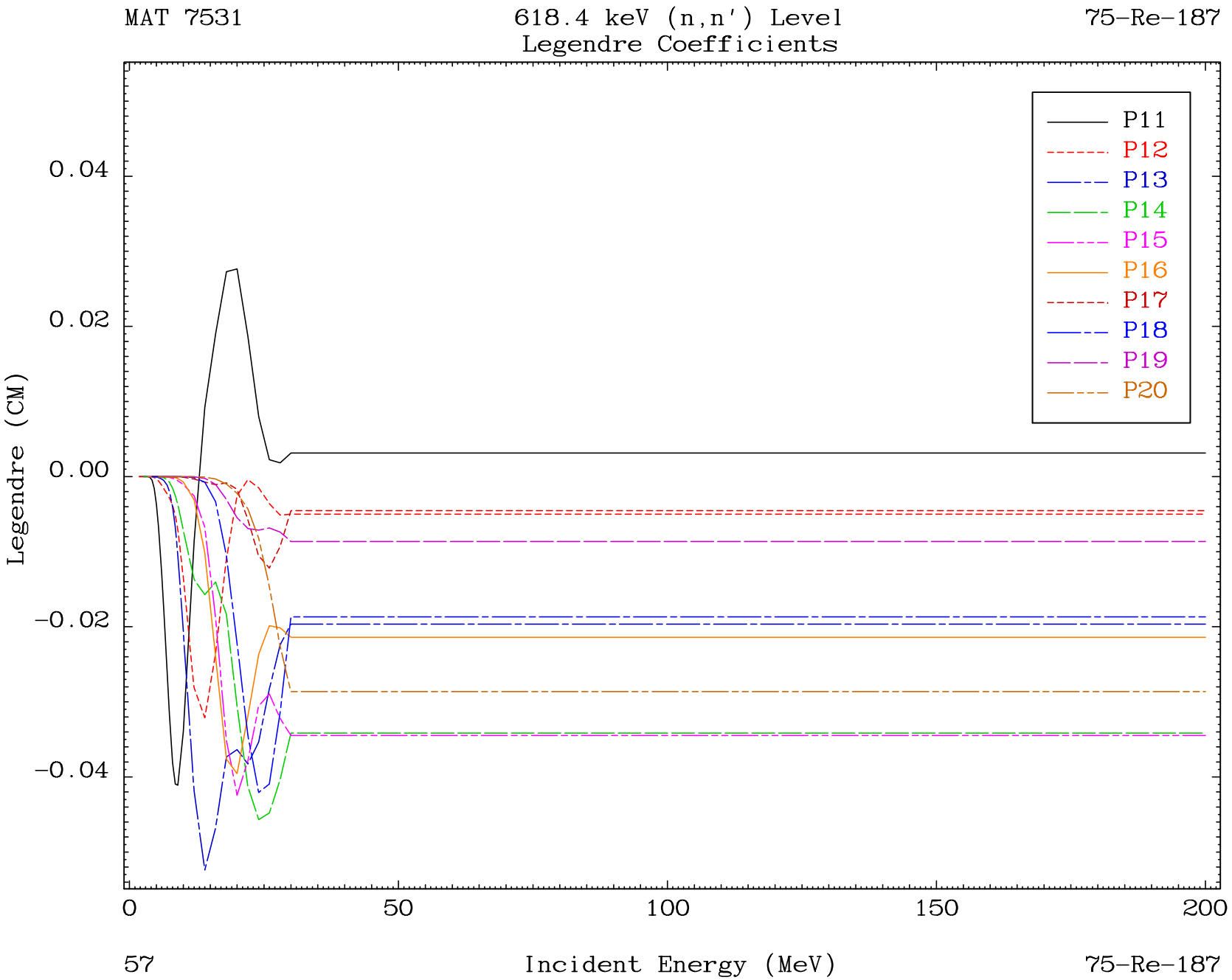

MAT 7531
603.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
52
Incident Energy (MeV)
75-Re-187

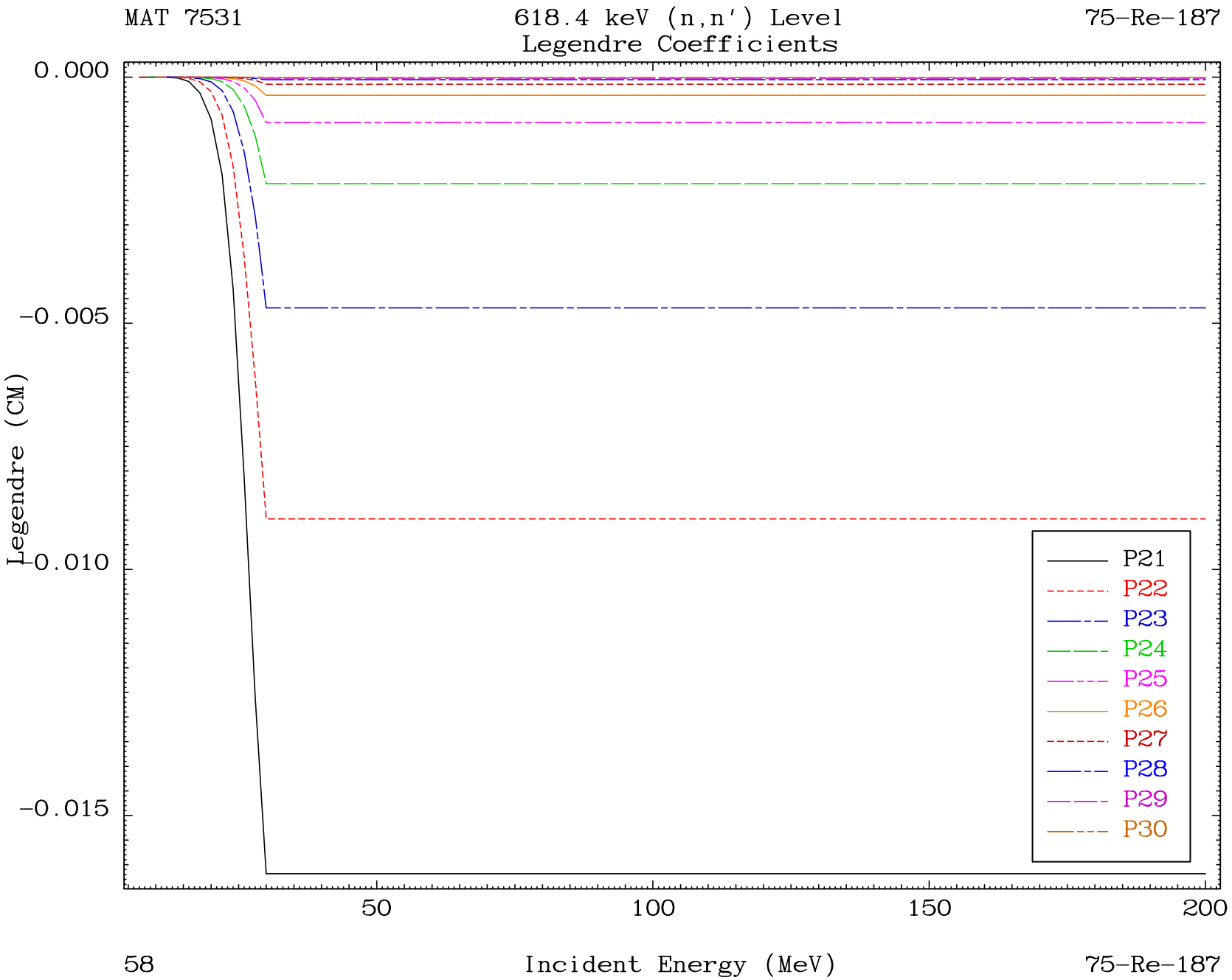

MAT 7531
603.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.005
0.000
-0.005
-0.010
-0.015
Legendre (CM)
0
50
100
150
200
53
Incident Energy (MeV)
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18

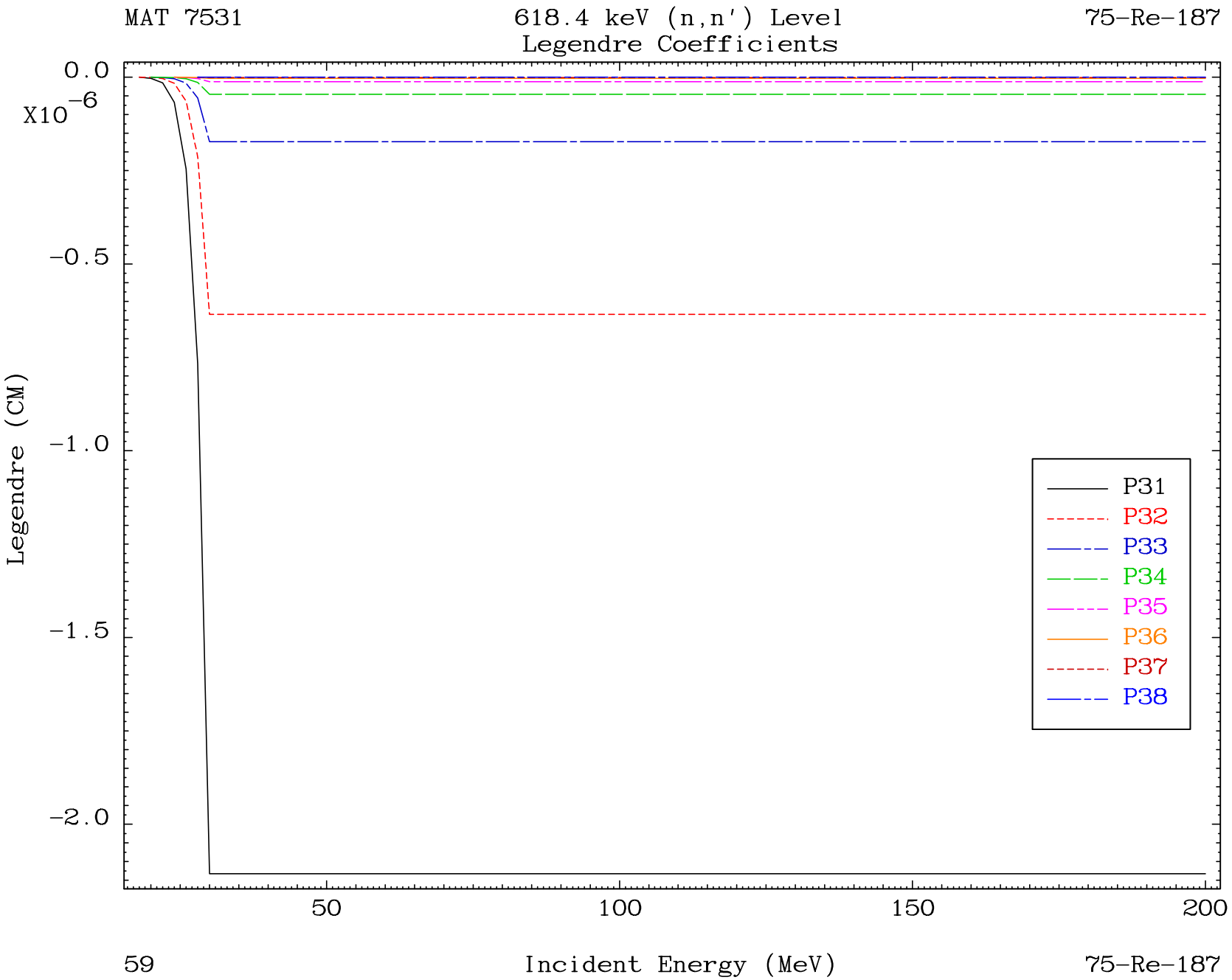

MAT 7531
603.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -4
5
4
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
54
Incident Energy (MeV)
75-Re-187

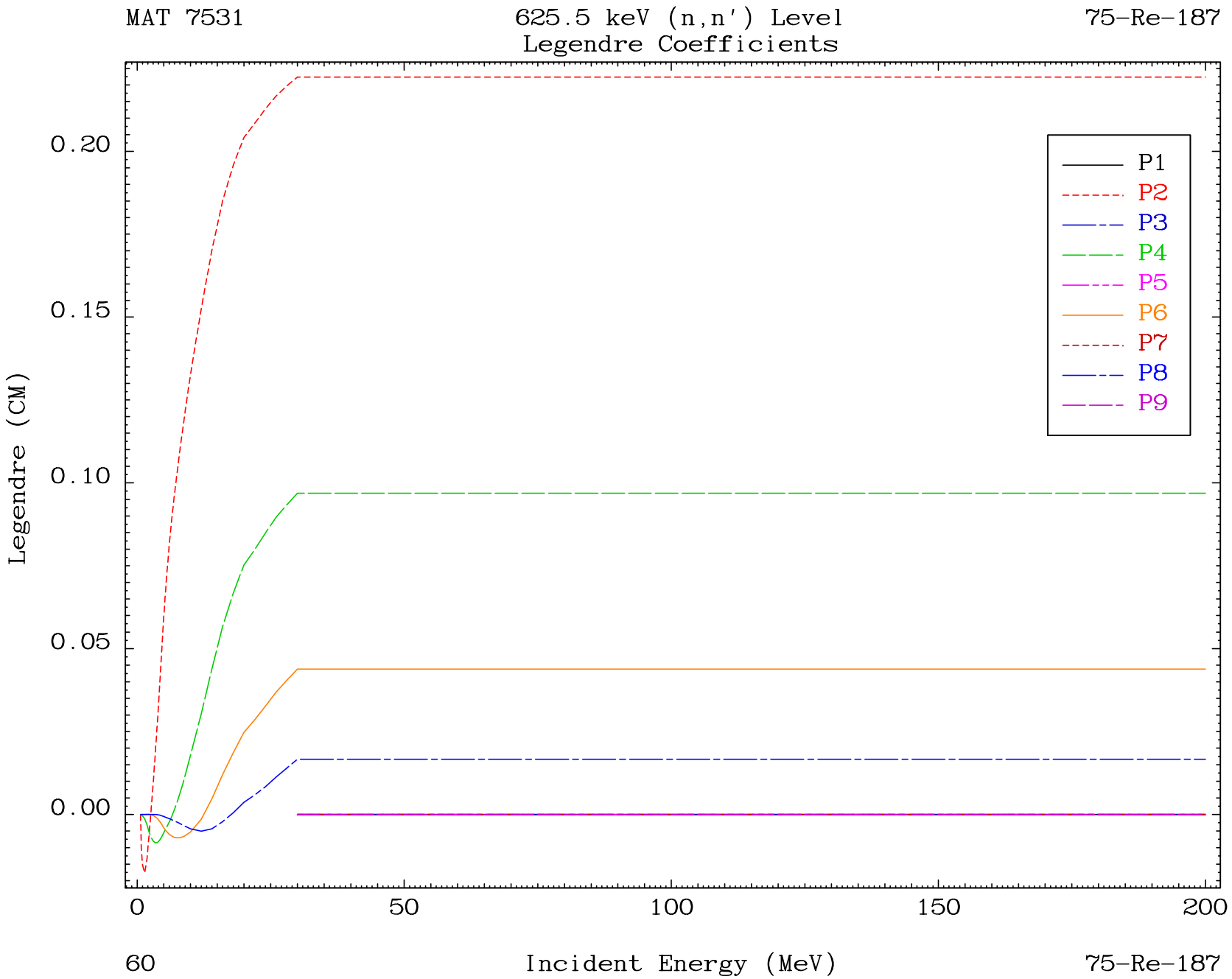

MAT 7531
603.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-7
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
55
Incident Energy (MeV)
75-Re-187

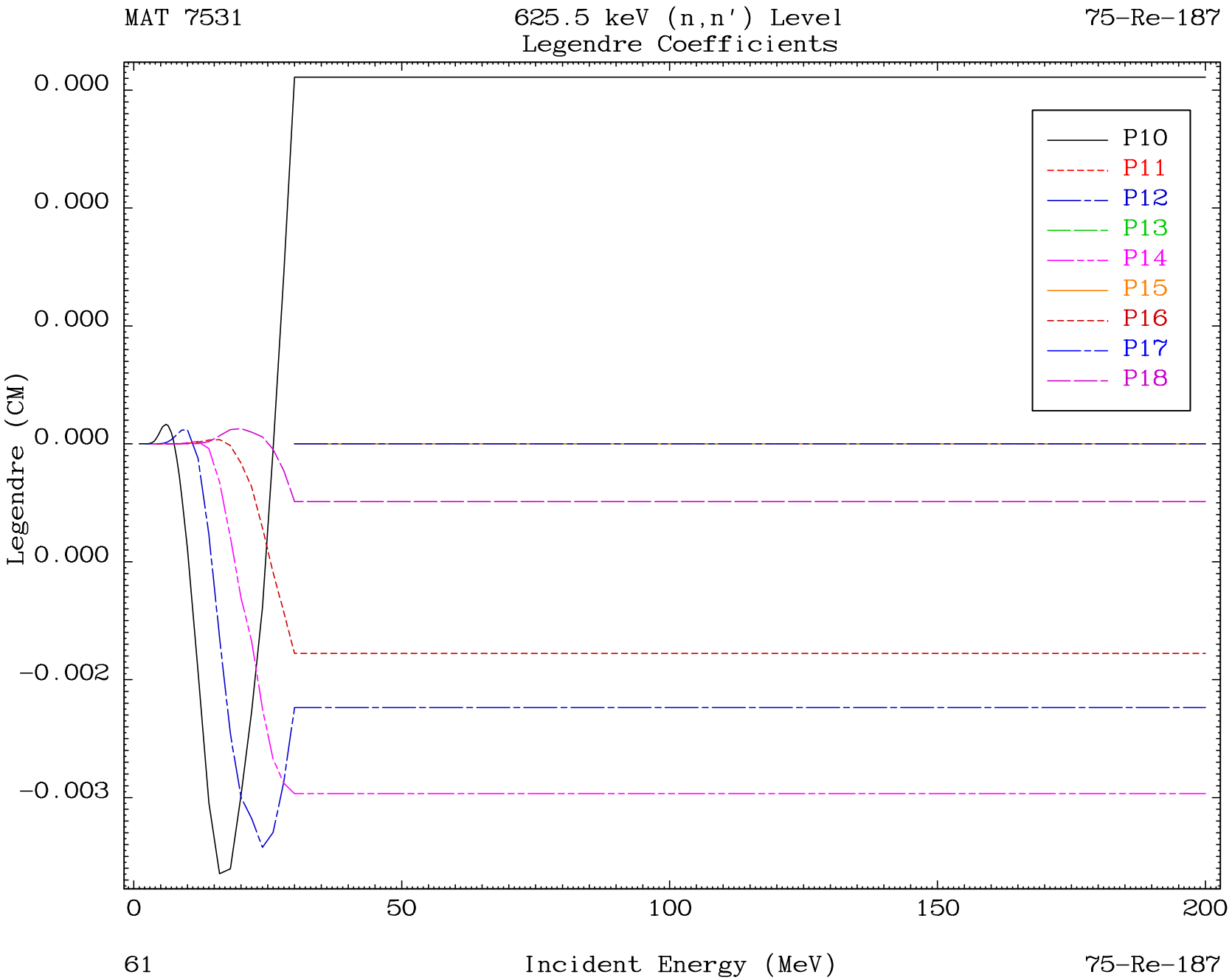

MAT 7531
618.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
0
50
100
150
200
56
Incident Energy (MeV)
75-Re-187

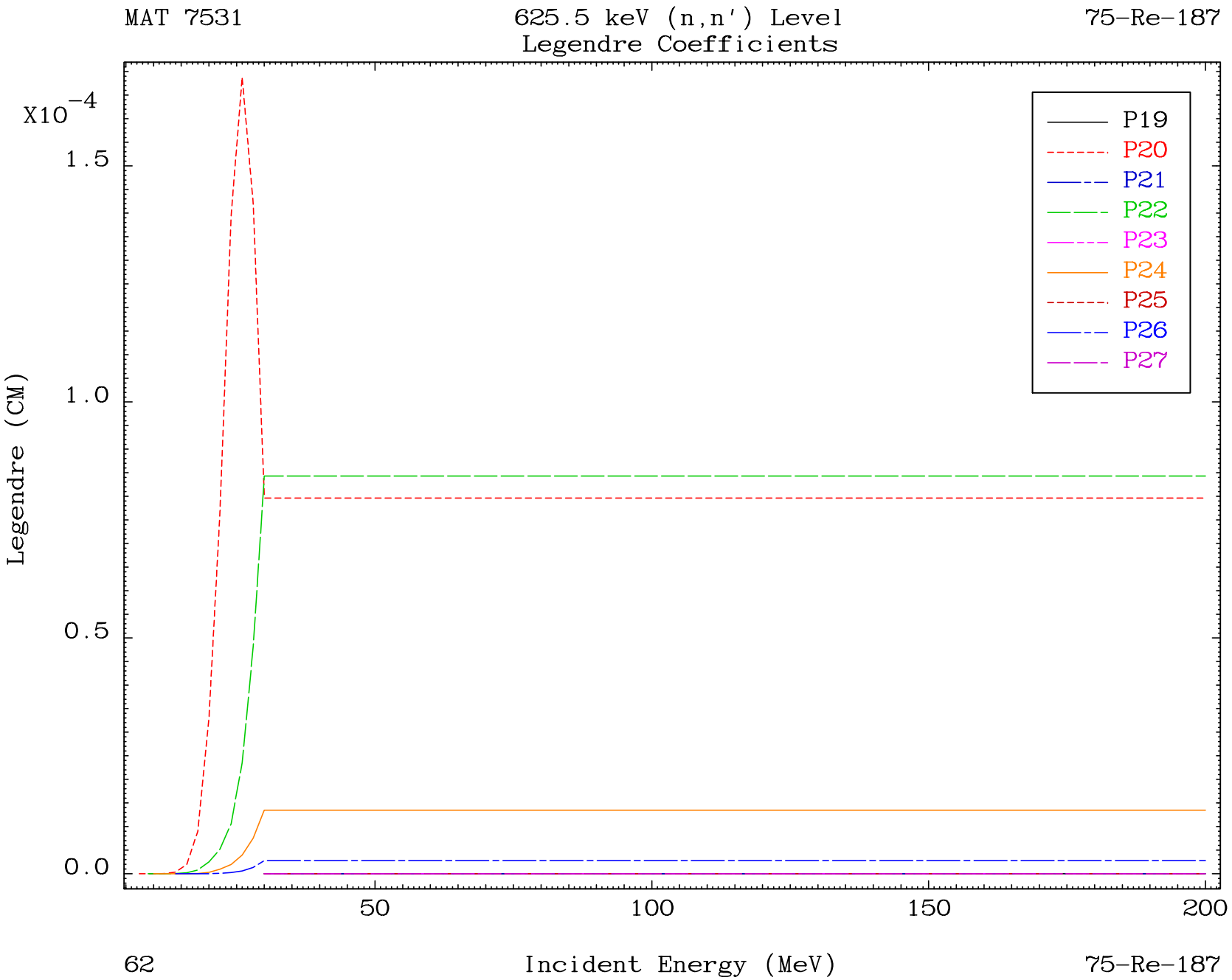

MAT 7531
618.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
57
Incident Energy (MeV)
75-Re-187

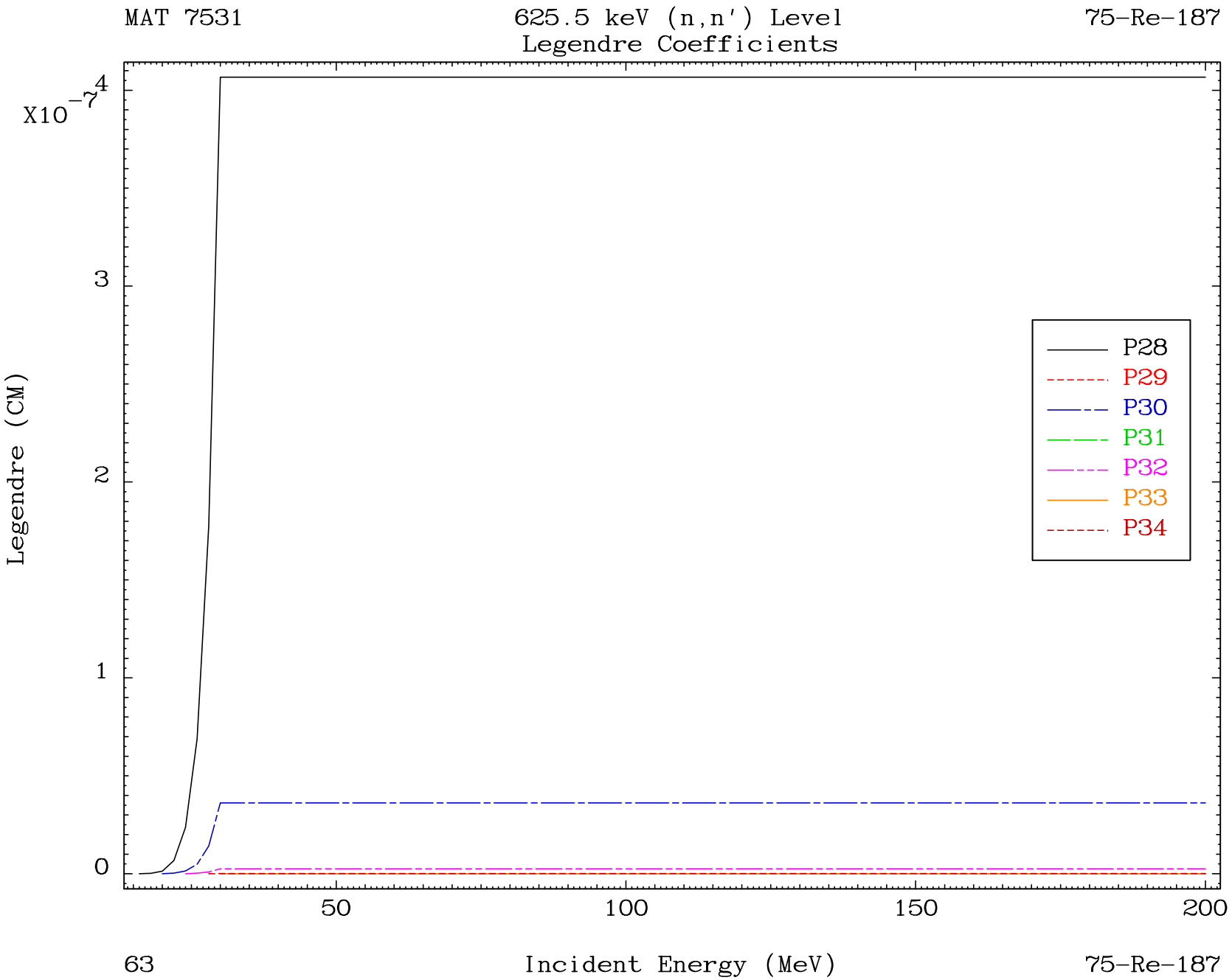

MAT 7531
618.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
-0.005
-0.010
-0.015
Legendre (CM)
50
100
150
200
58
Incident Energy (MeV)
75-Re-187
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30

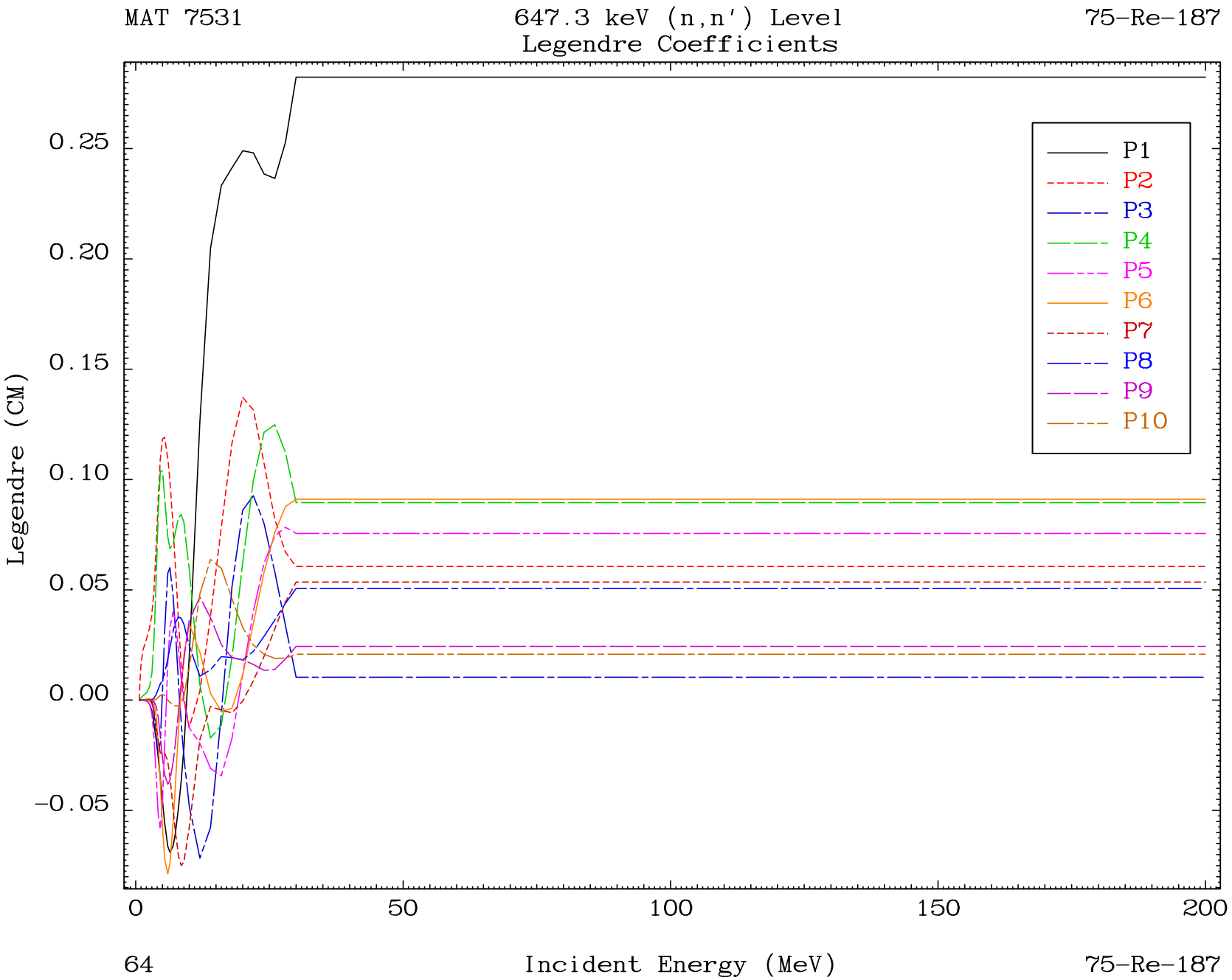

MAT 7531
618.4 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10^-6
-0.5
-1.0
-1.5
-2.0
Legendre (CM)
50
100
150
200
59
Incident Energy (MeV)
75-Re-187
P31
P32
P33
P34
P35
P36
P37
P38

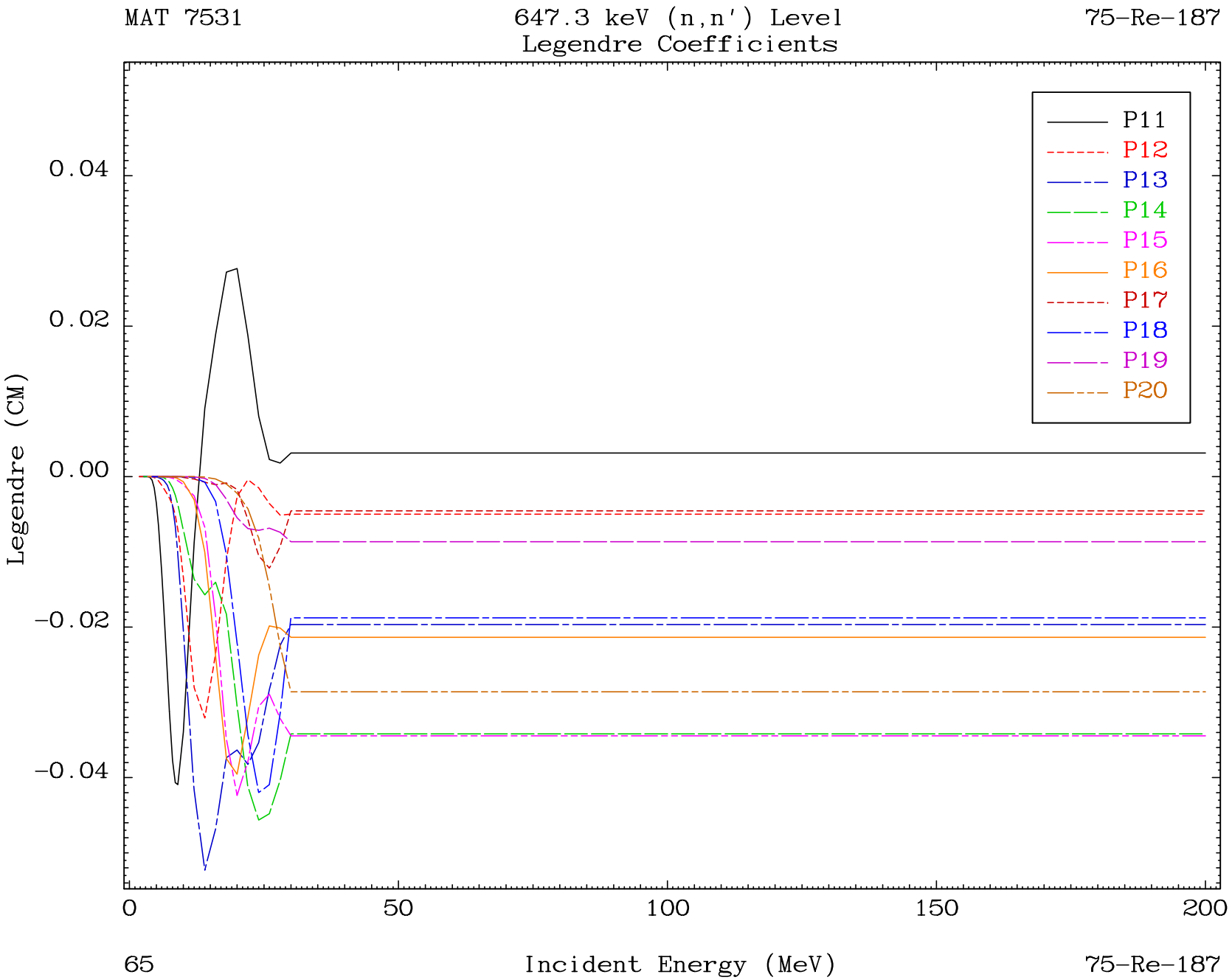

MAT 7531
625.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.20
0.15
0.10
0.05
0.00
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
60
Incident Energy (MeV)
75-Re-187

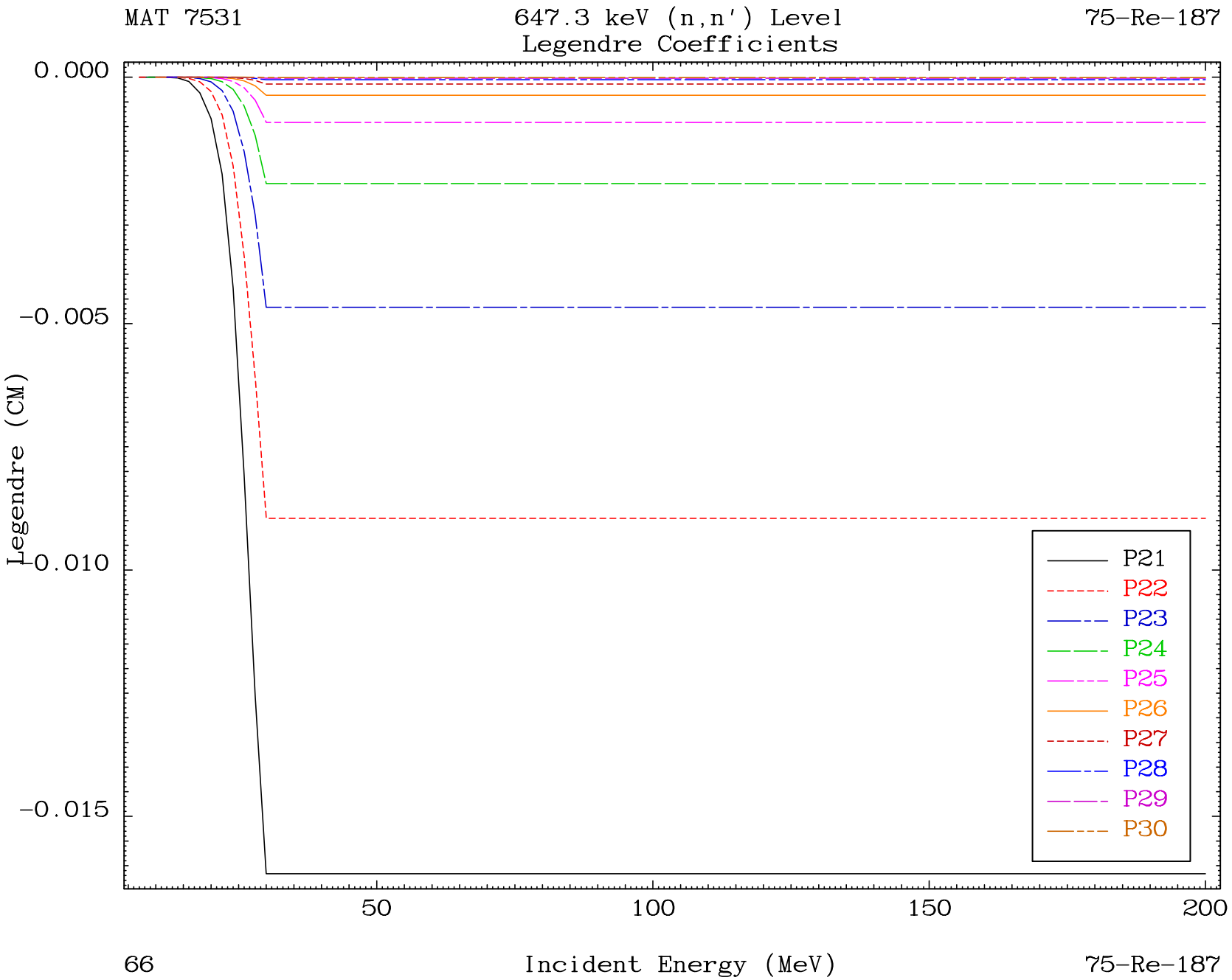

MAT 7531
625.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
0.000
0.000
0.000
-0.002
-0.003
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
61
Incident Energy (MeV)
75-Re-187

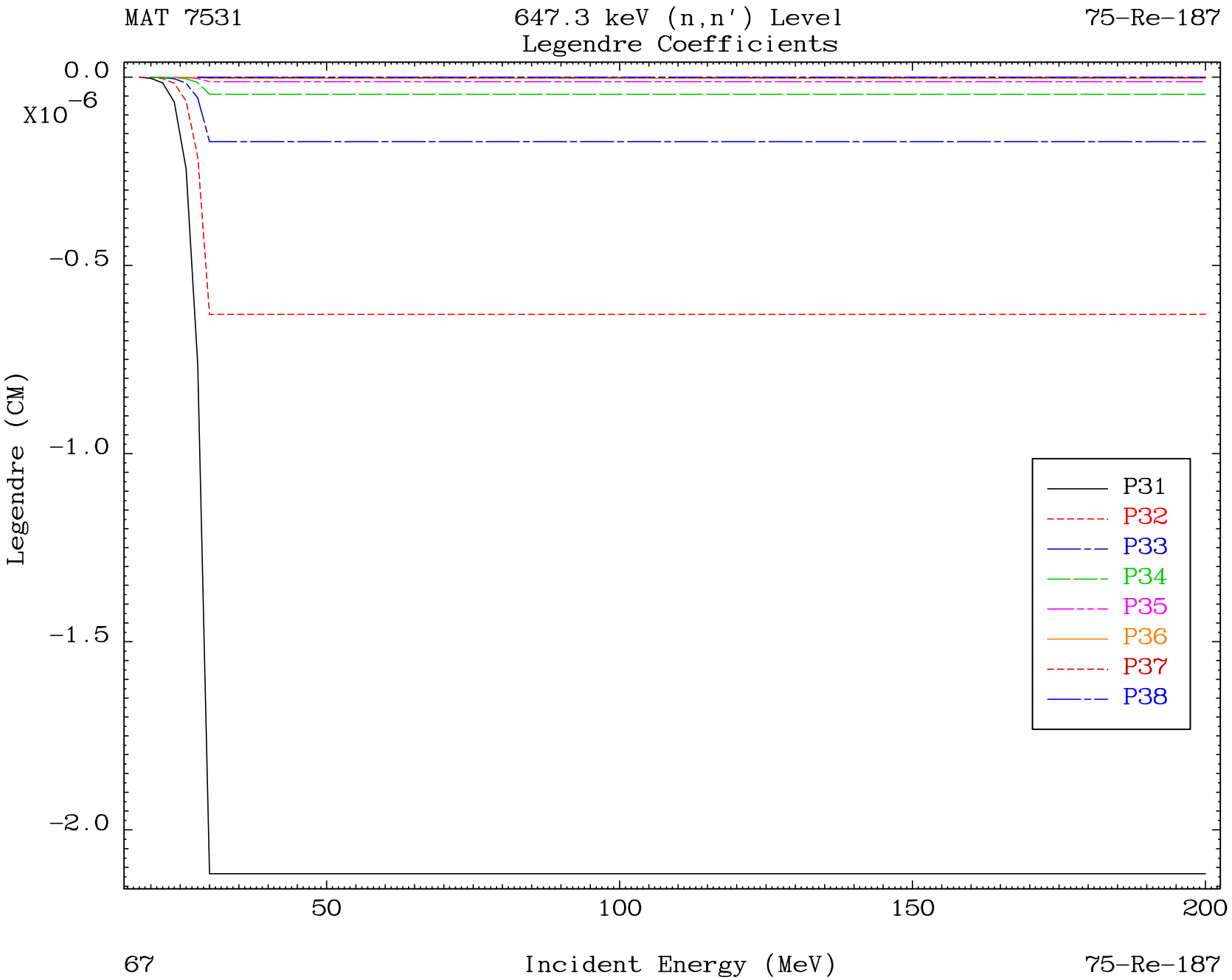

MAT 7531
625.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10^-4
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
62
Incident Energy (MeV)
75-Re-187

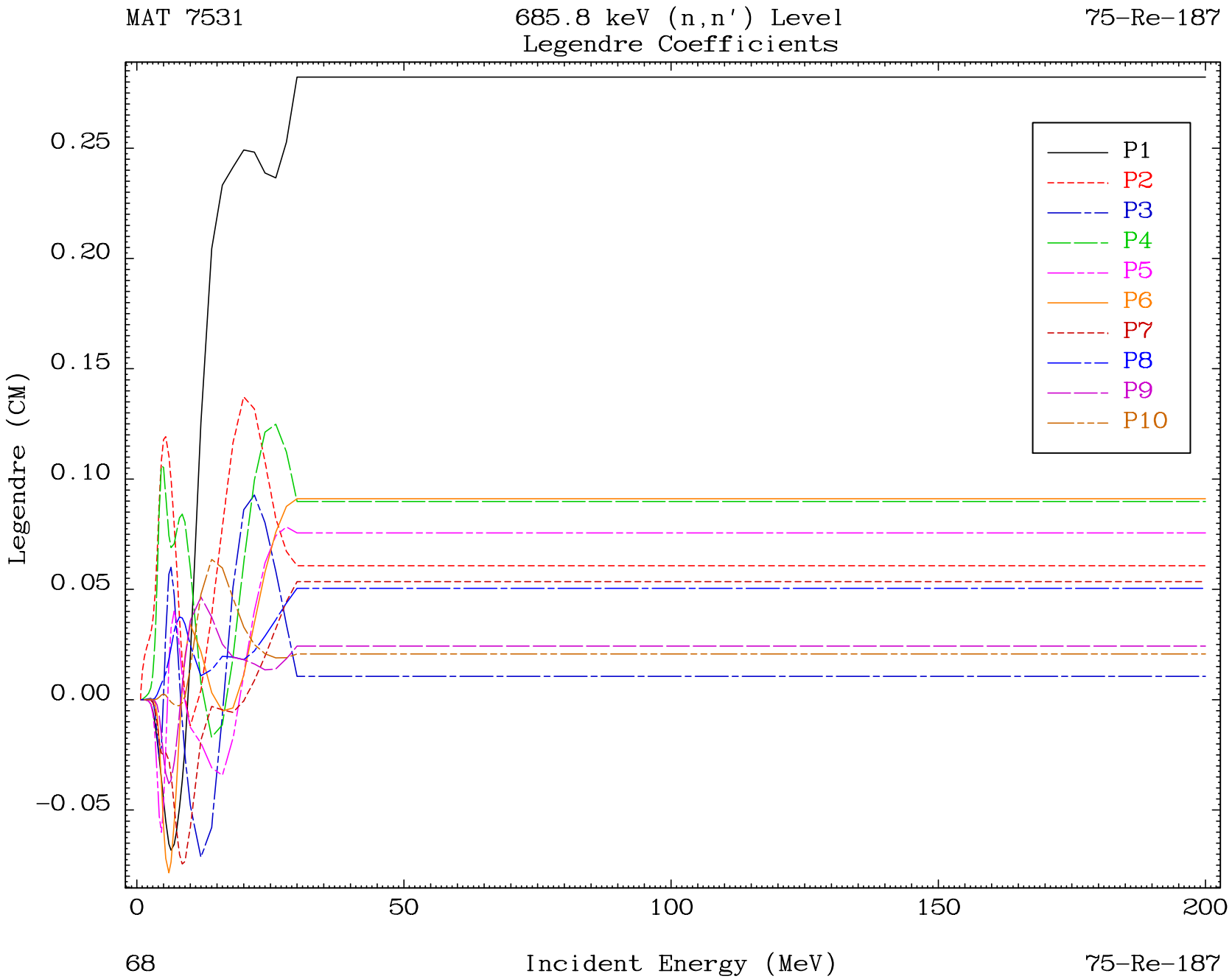

MAT 7531
625.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-4
4
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
50
100
150
200
63
Incident Energy (MeV)
75-Re-187

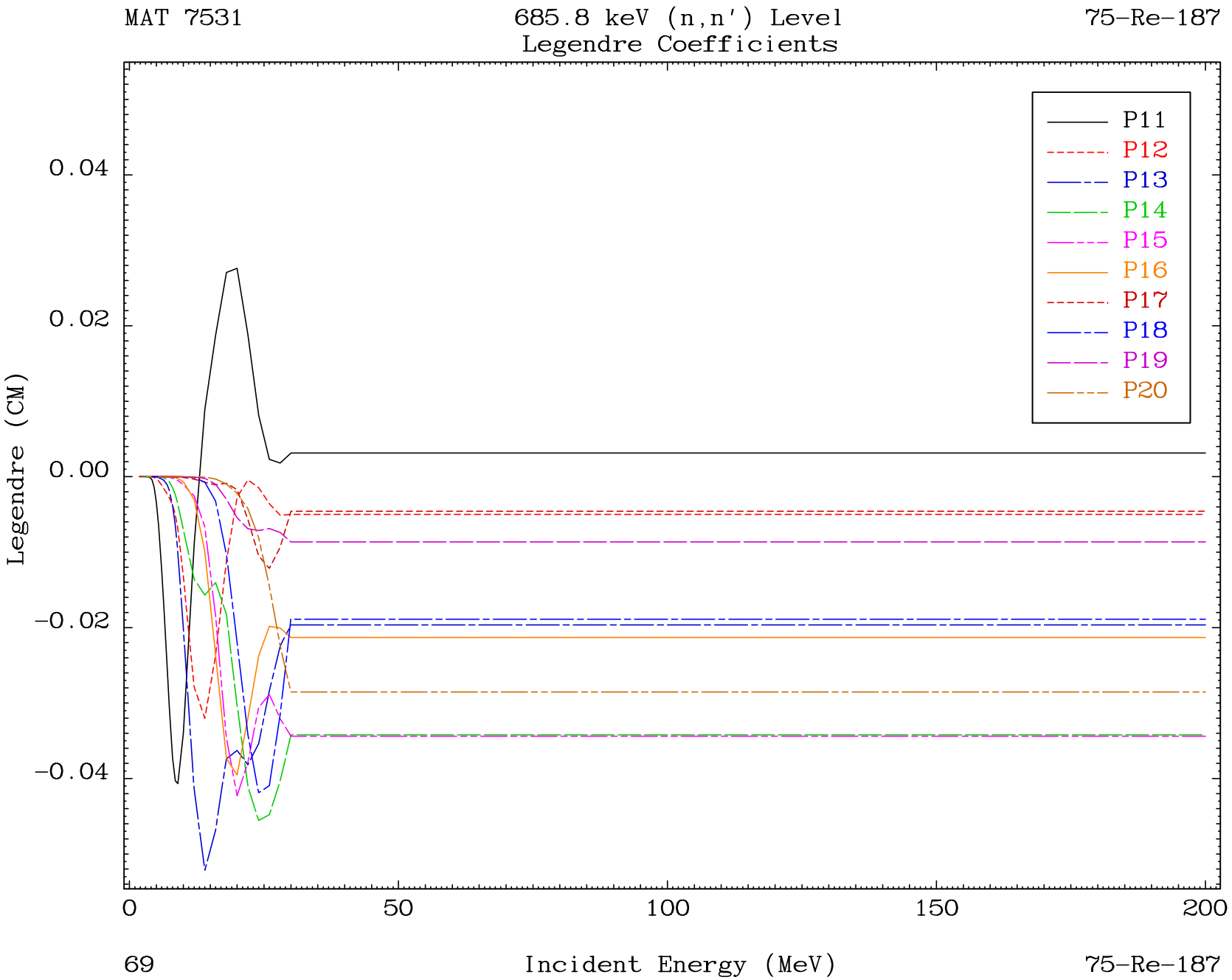

MAT 7531
647.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
64
Incident Energy (MeV)
75-Re-187

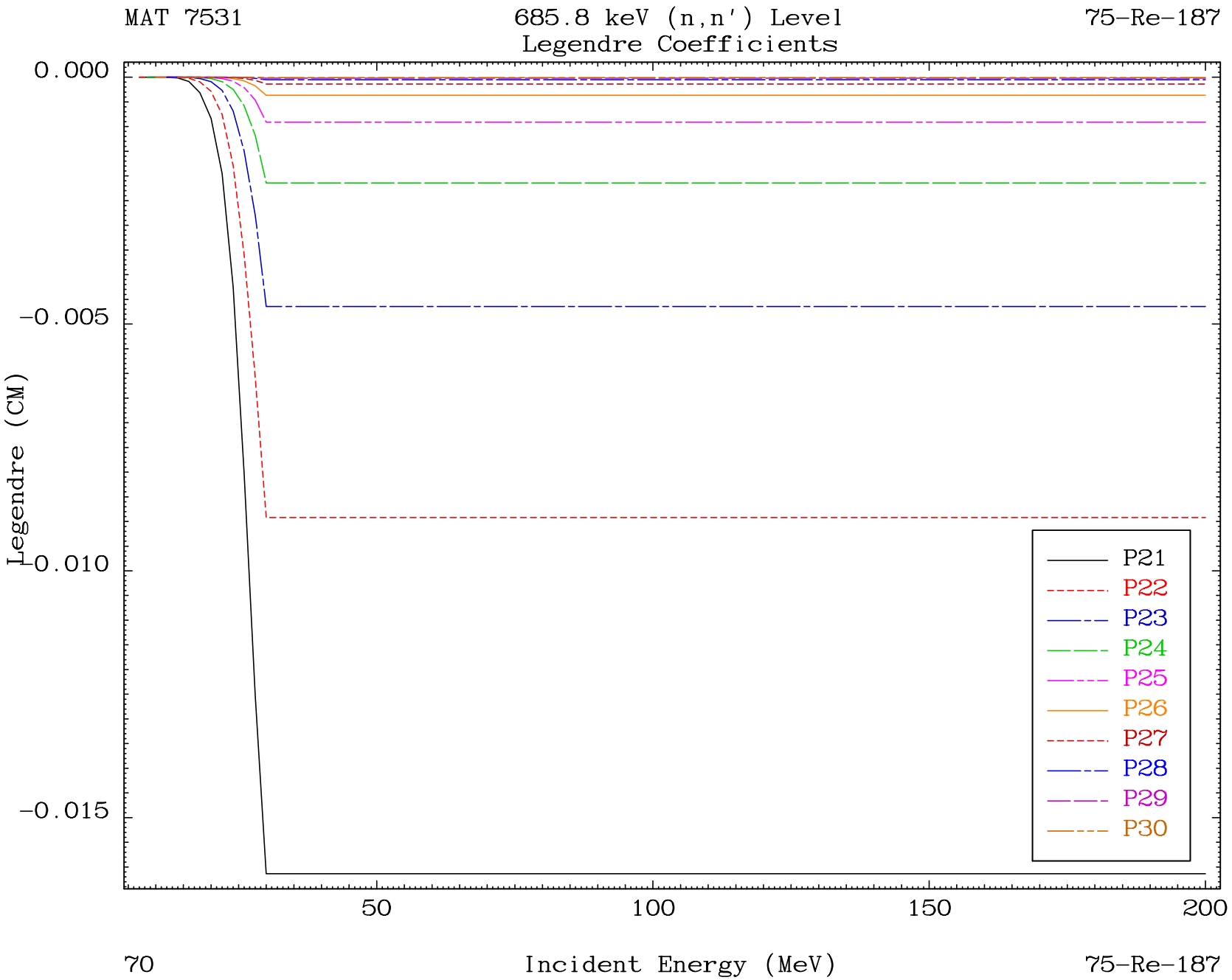

MAT 7531
647.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
65
Incident Energy (MeV)
75-Re-187

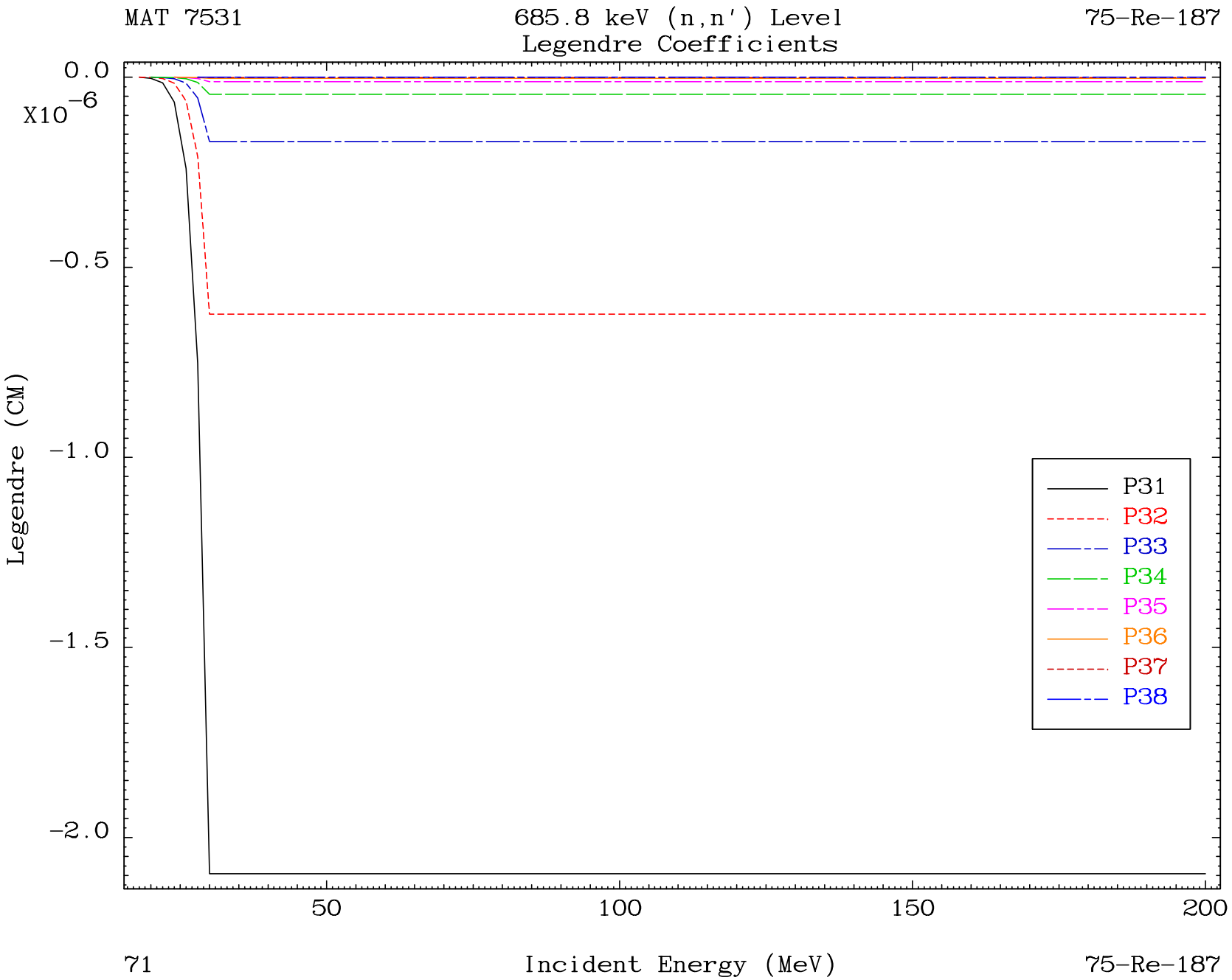

MAT 7531
647.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
-0.005
-0.010
-0.015
Legendre (CM)
50
100
150
200
66
Incident Energy (MeV)
75-Re-187
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30

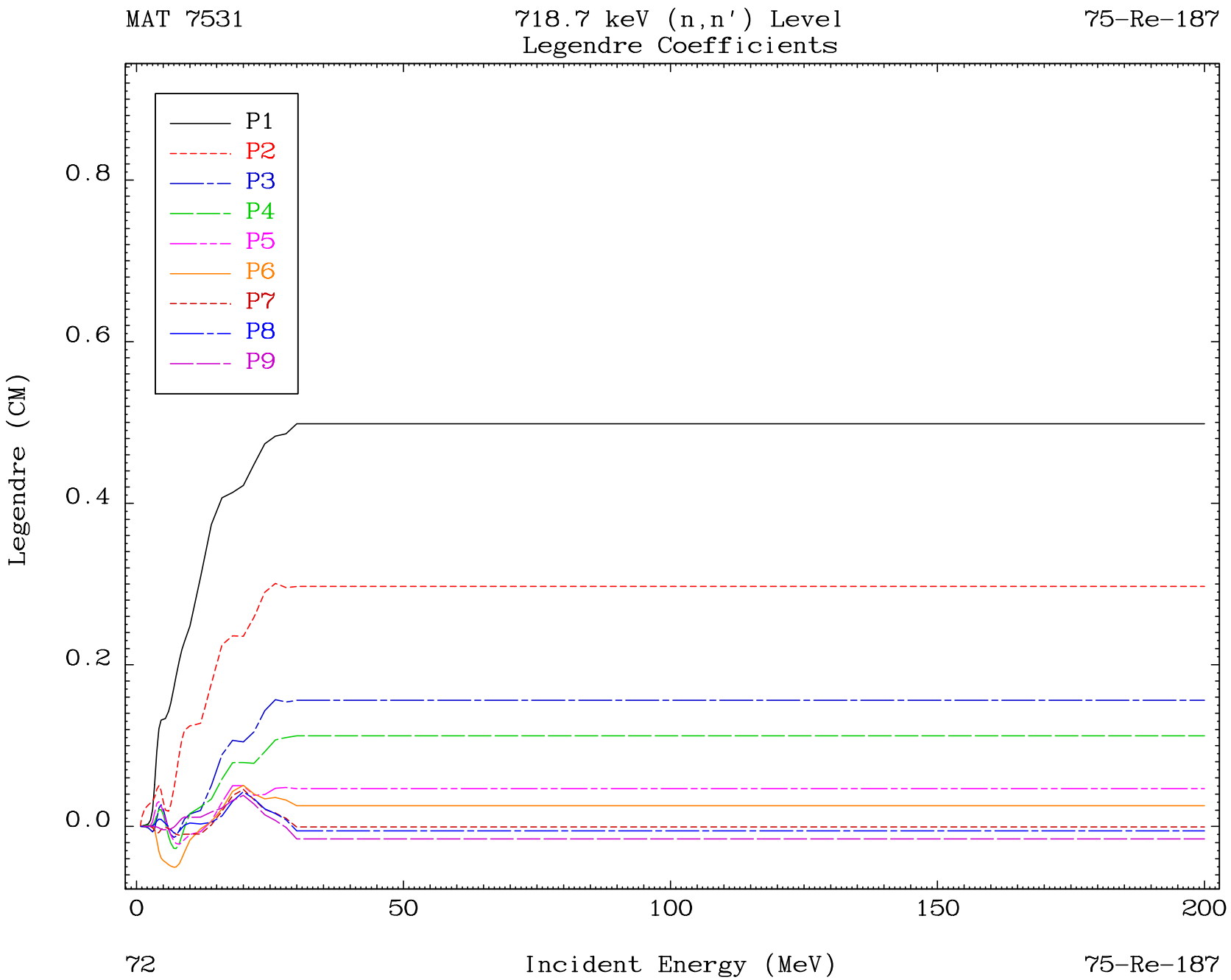

MAT 7531
647.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10 −6
−0.5
−1.0
−1.5
−2.0
Legendre (CM)
50
100
150
200
67
Incident Energy (MeV)
75-Re-187
P31
P32
P33
P34
P35
P36
P37
P38

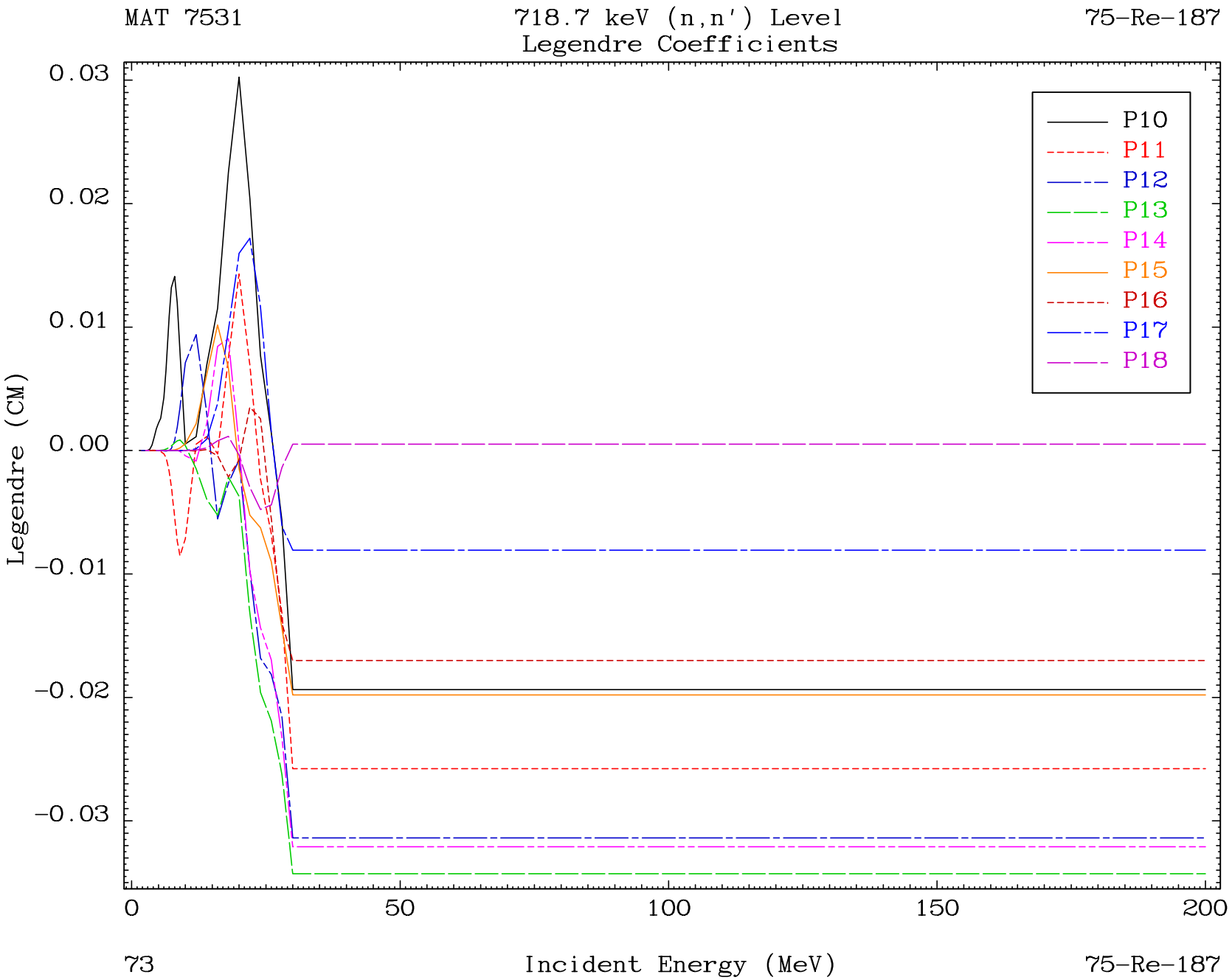

MAT 7531
685.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
0
50
100
150
200
68
Incident Energy (MeV)
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

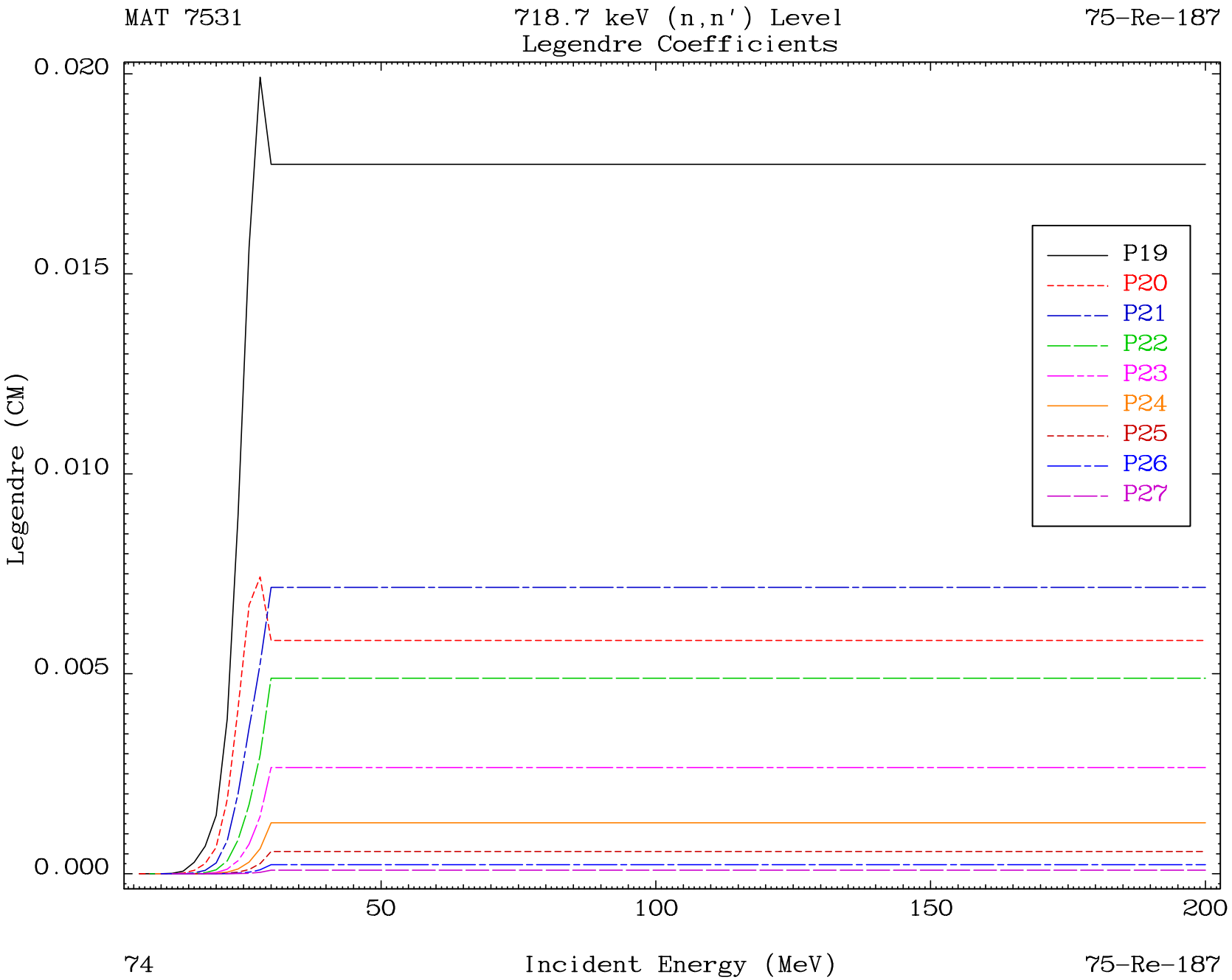

MAT 7531
685.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
69
Incident Energy (MeV)
75-Re-187

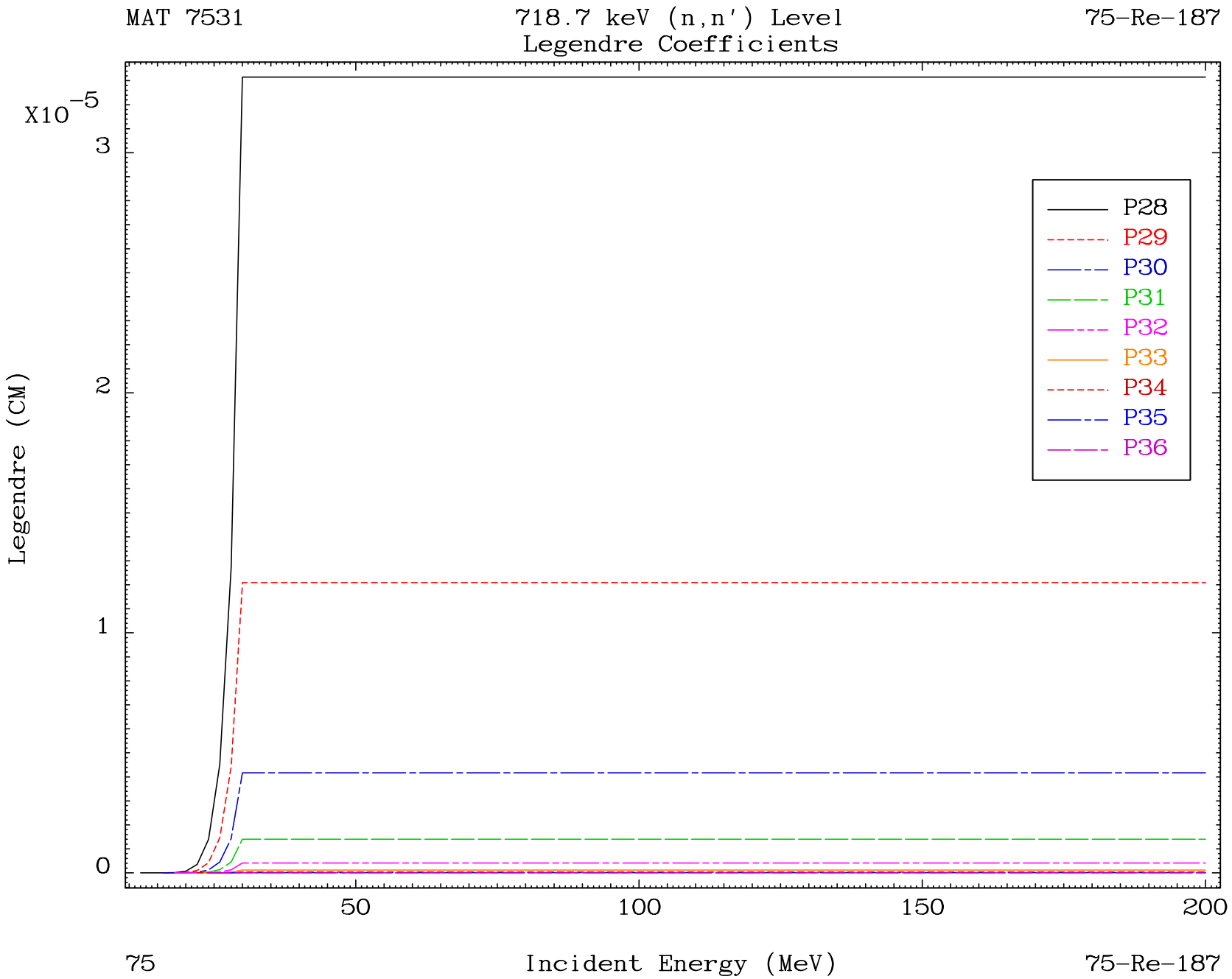

MAT 7531
685.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
-0.005
-0.010
-0.015
Legendre (CM)
50
100
150
200
70
Incident Energy (MeV)
75-Re-187
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30

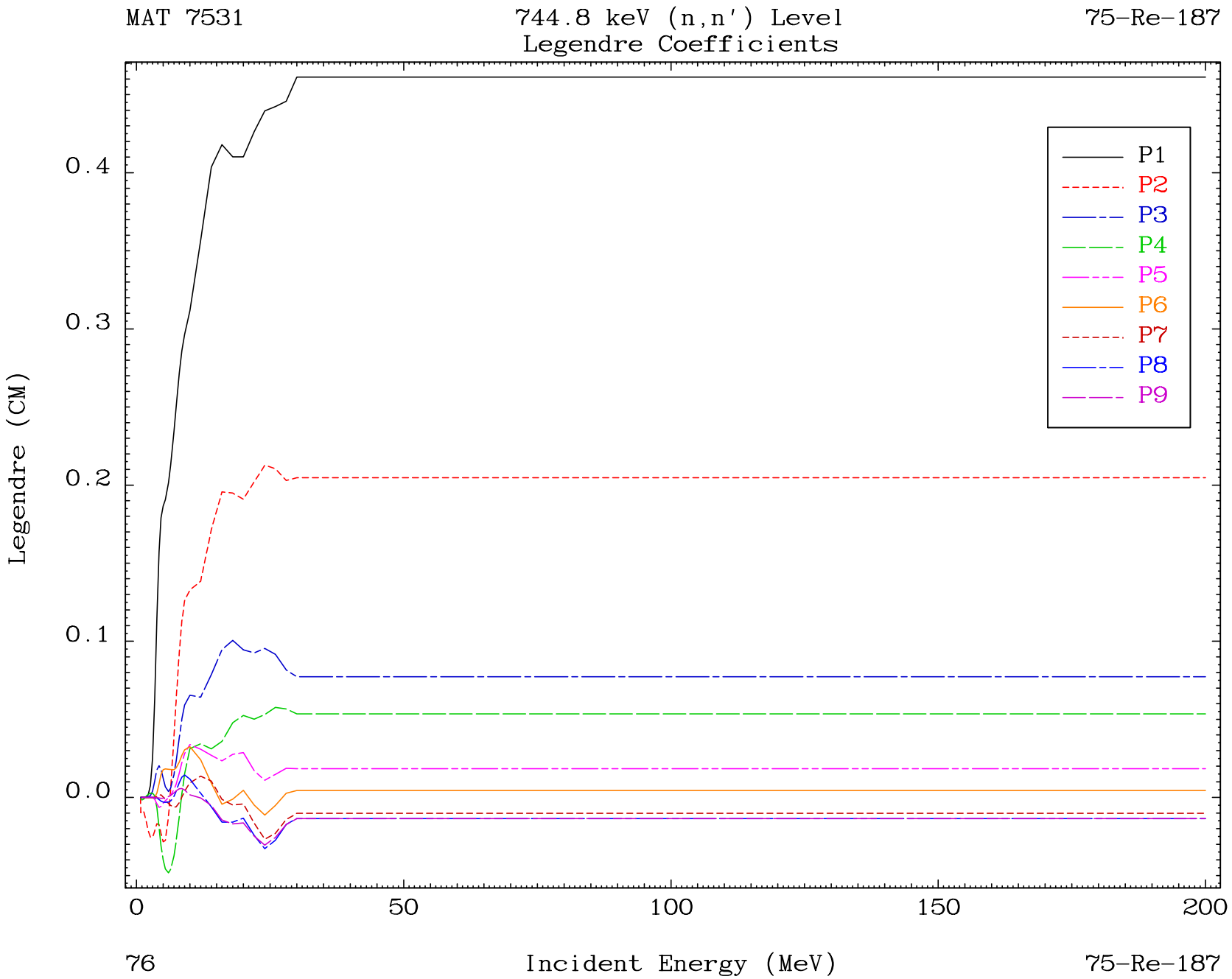

MAT 7531
685.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10 −6
−0.5
−1.0
−1.5
−2.0
Legendre (CM)
50
100
150
200
71
Incident Energy (MeV)
75-Re-187
P31
P32
P33
P34
P35
P36
P37
P38

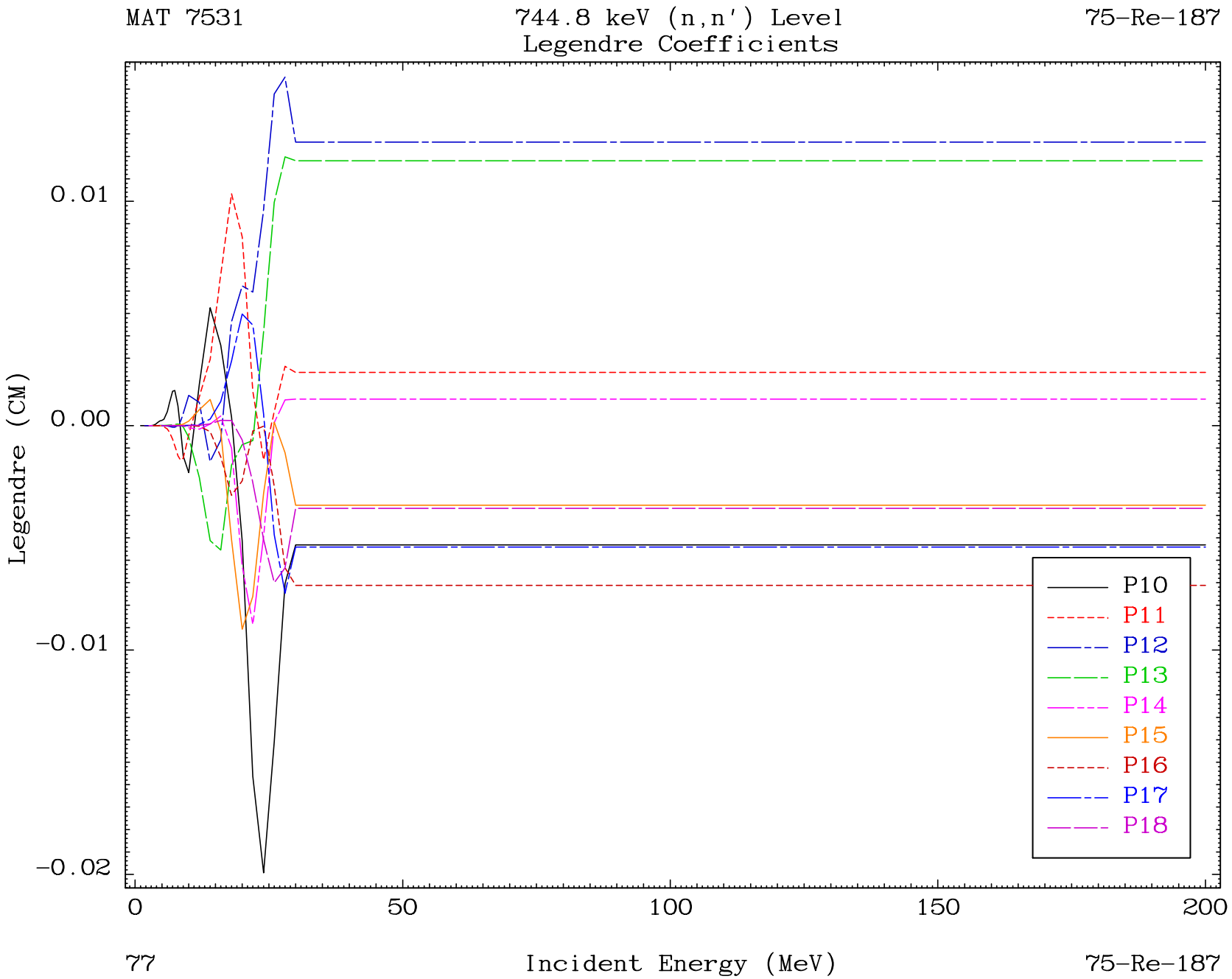

MAT 7531
718.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
72
Incident Energy (MeV)
75-Re-187

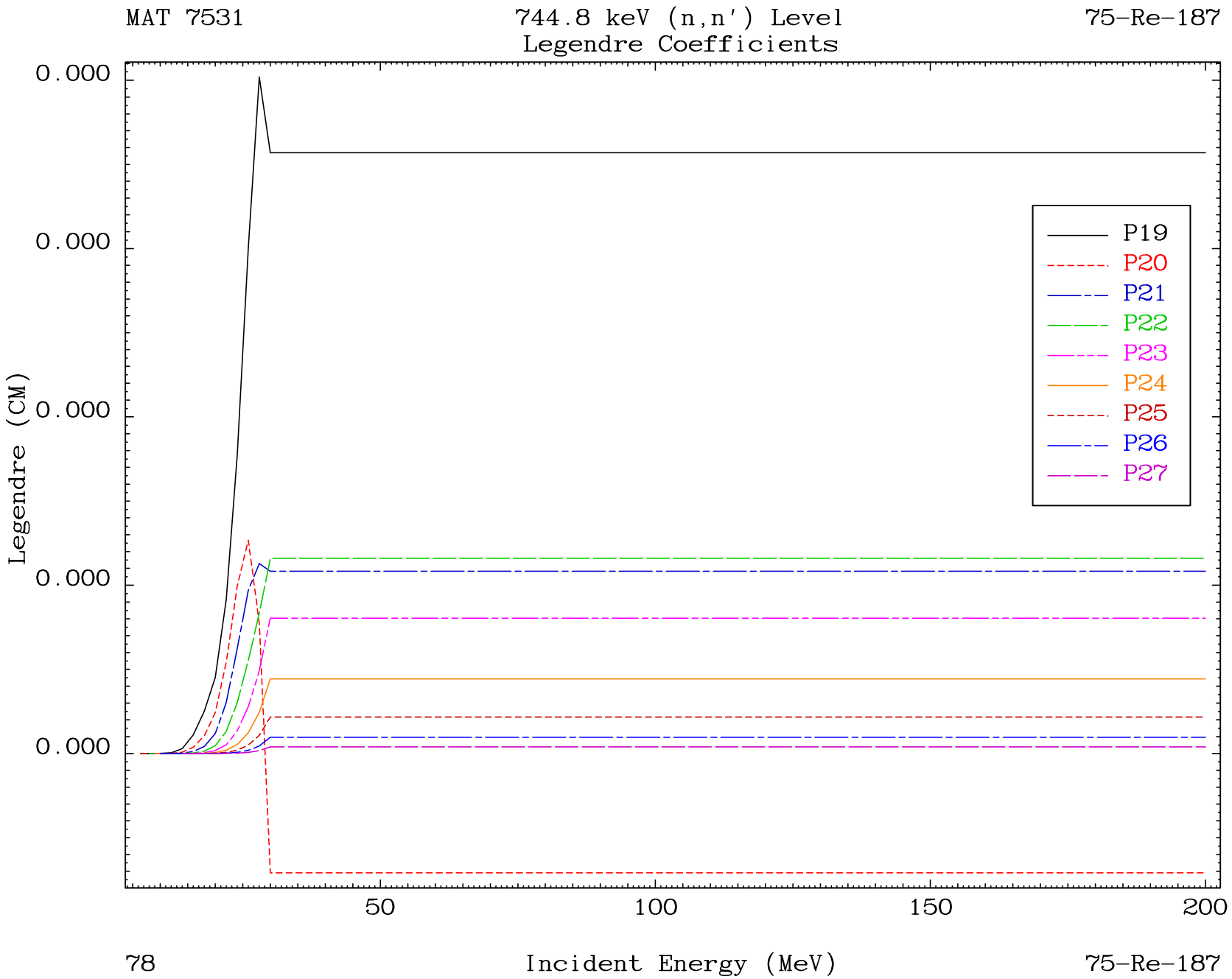

MAT 7531
718.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
73
Incident Energy (MeV)
75-Re-187

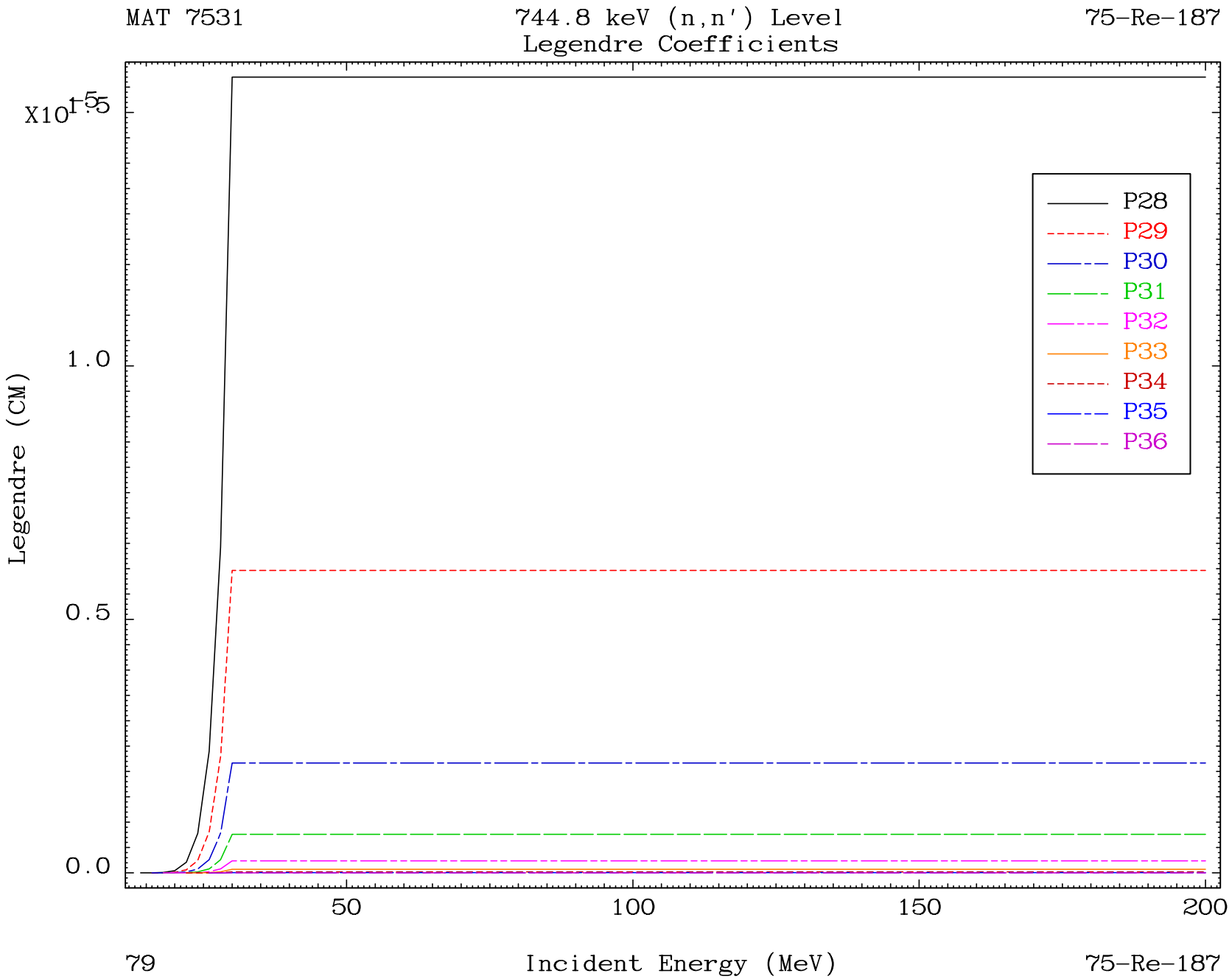

MAT 7531
718.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
74
Incident Energy (MeV)
75-Re-187

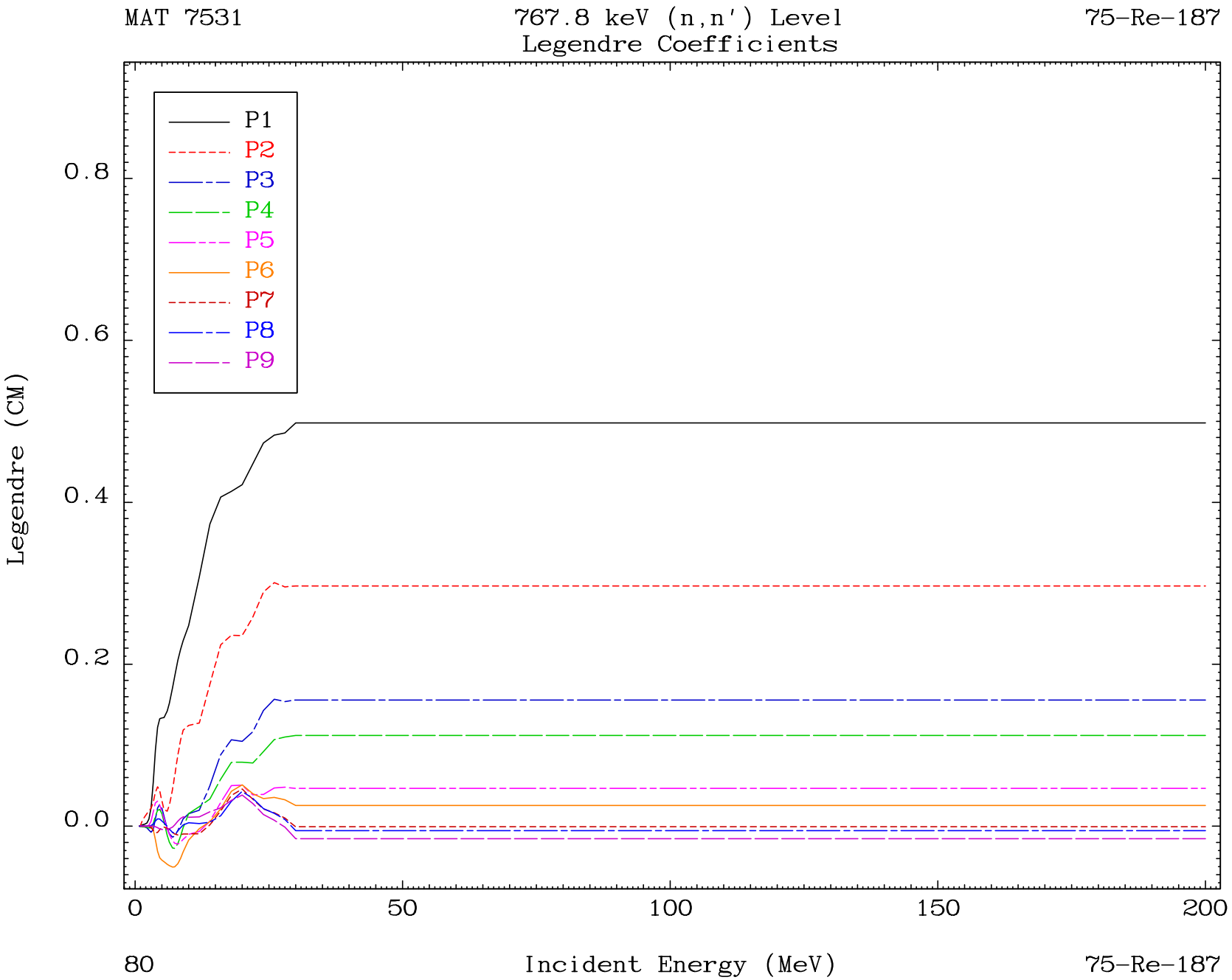

MAT 7531
718.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
75
Incident Energy (MeV)
75-Re-187

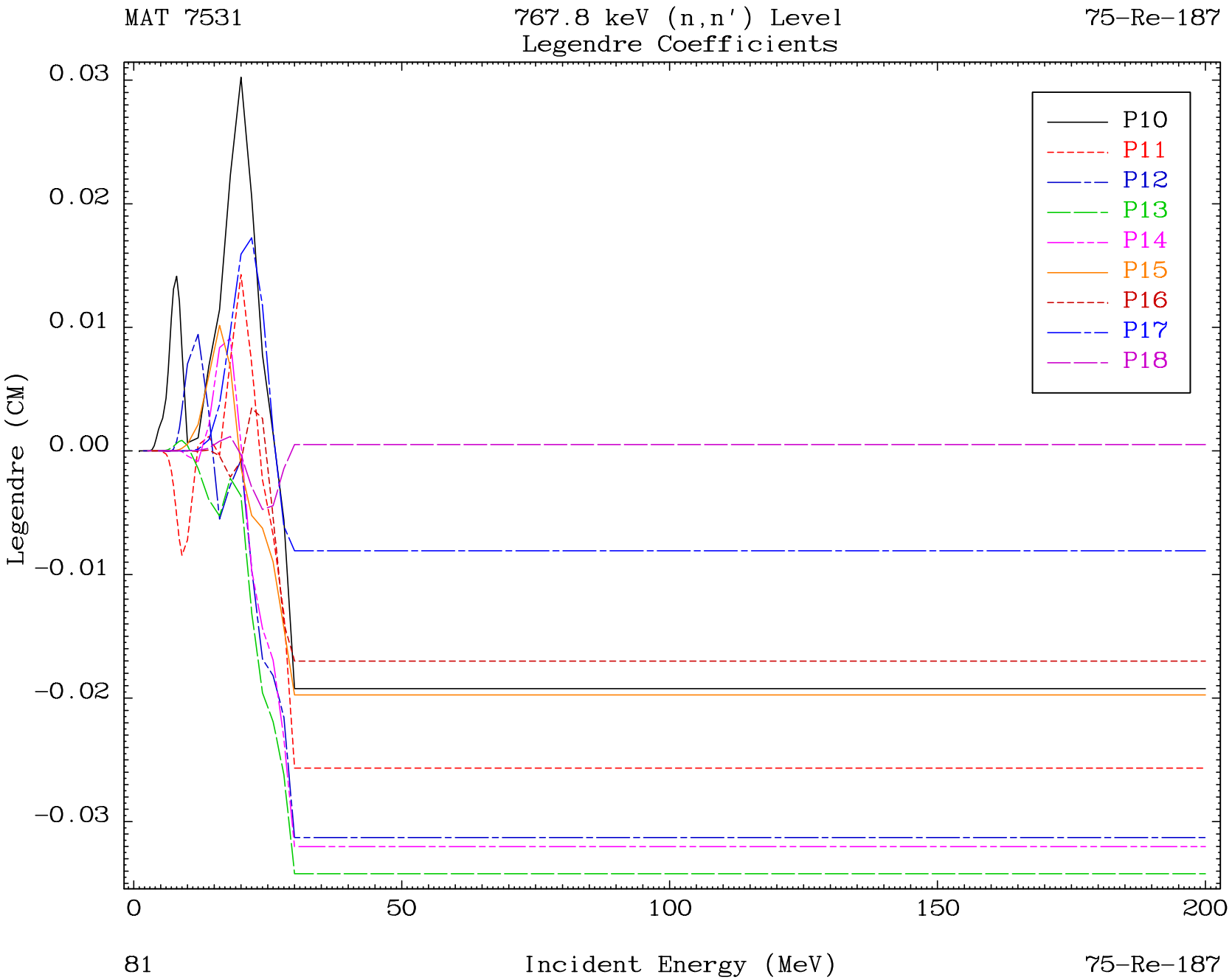

MAT 7531
744.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
76
Incident Energy (MeV)
75-Re-187

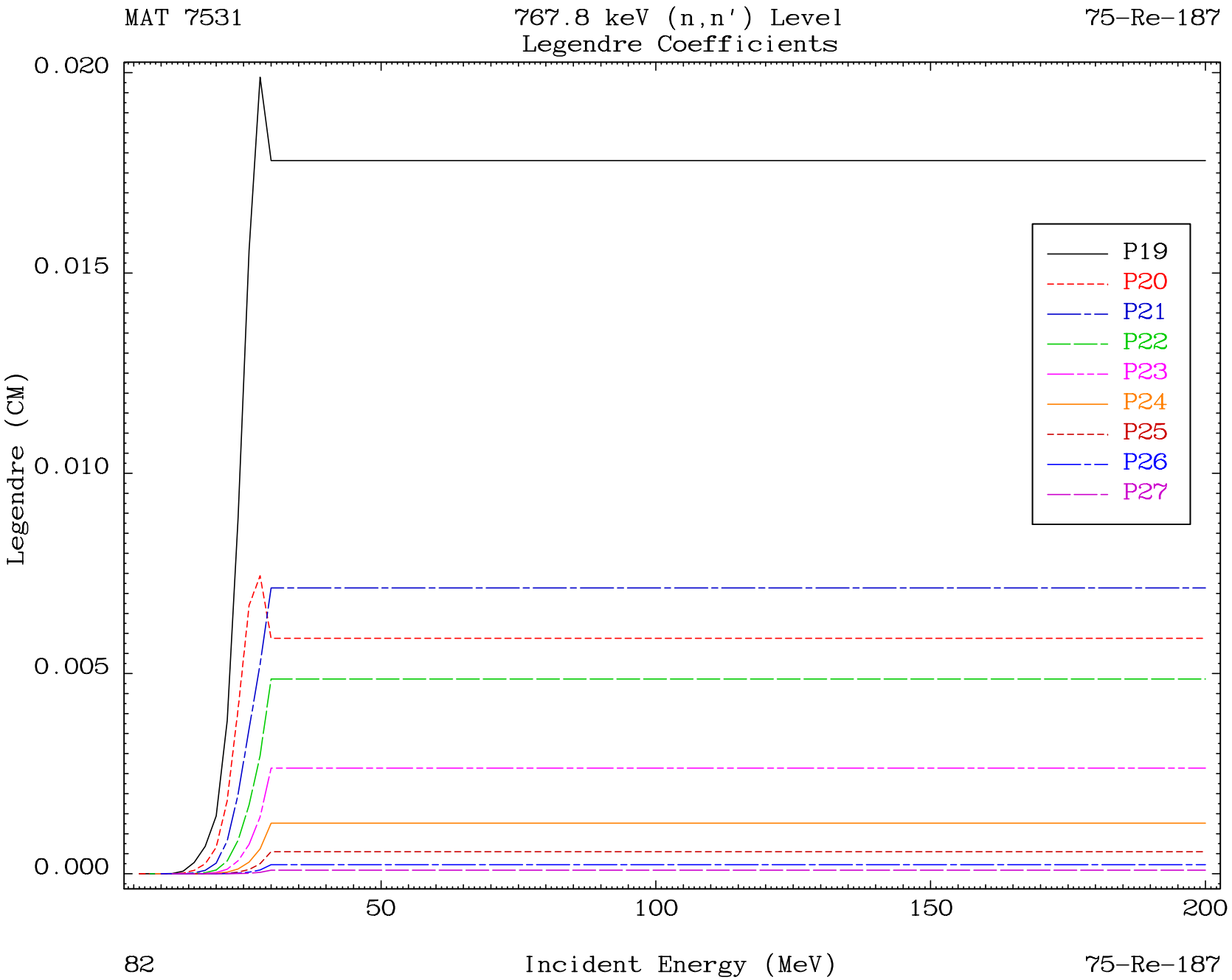

MAT 7531
744.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.01
0.00
-0.01
-0.02
Legendre (CM)
0
50
100
150
200
77
Incident Energy (MeV)
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18

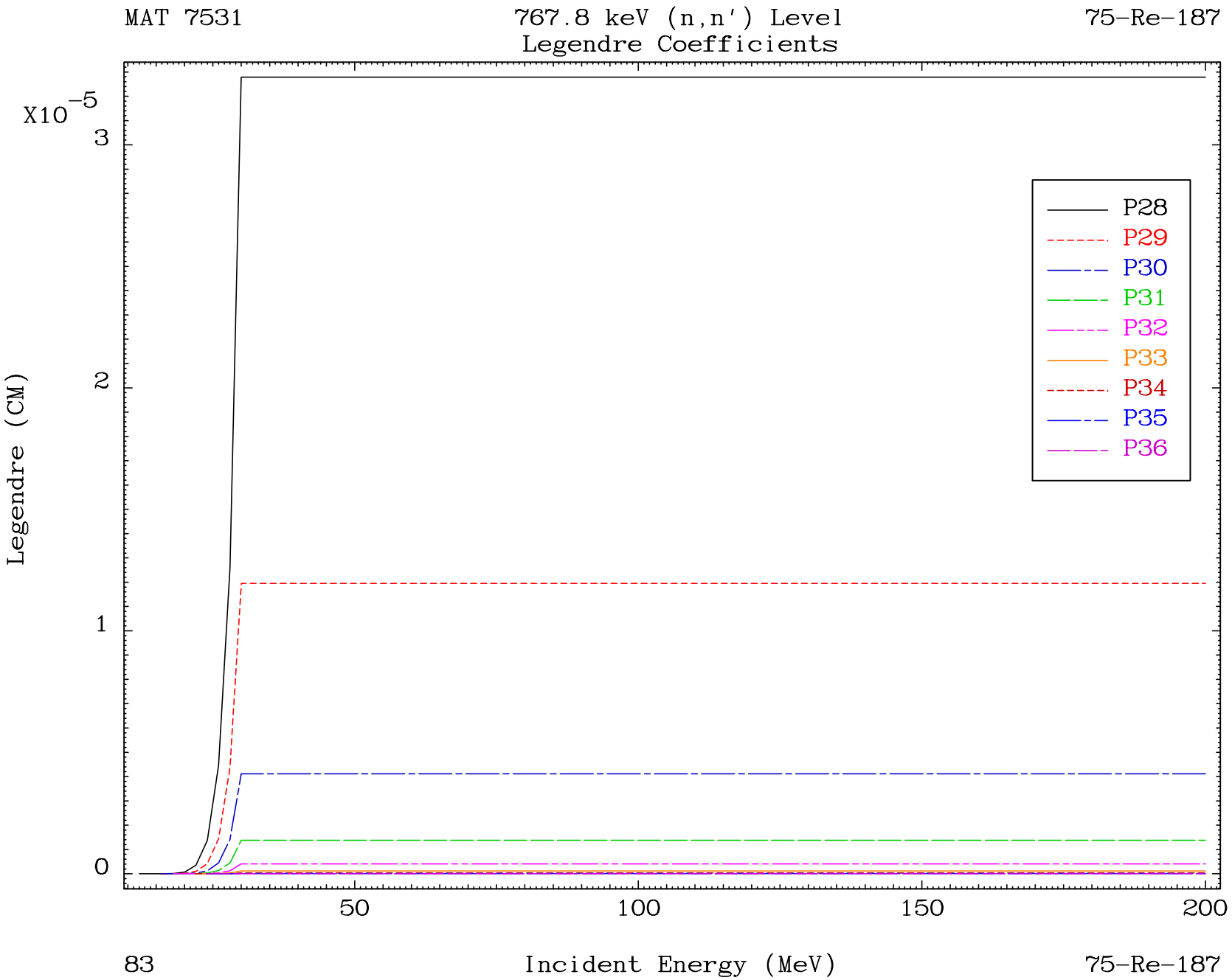

MAT 7531
744.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
0.000
0.000
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
78
Incident Energy (MeV)
75-Re-187

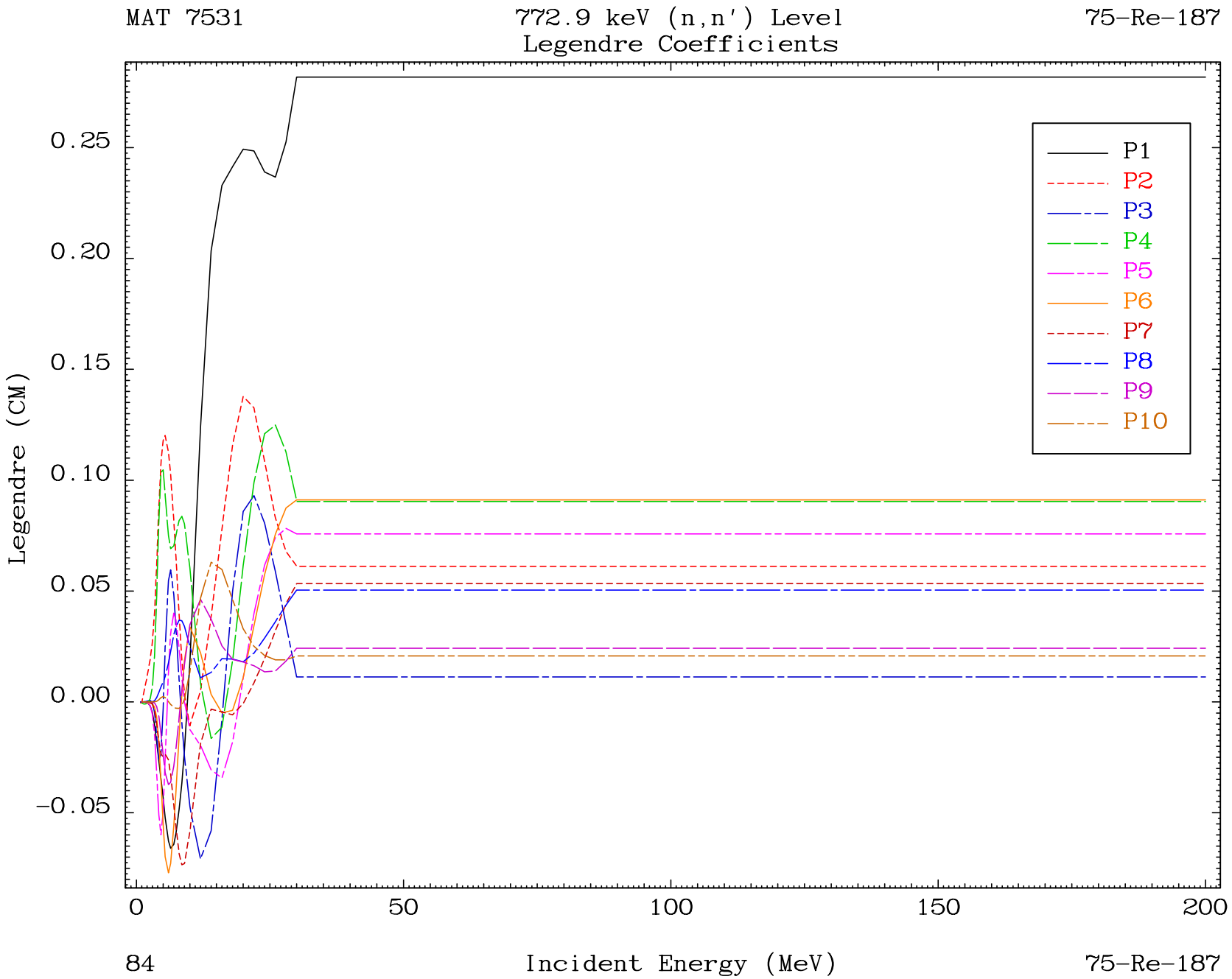

MAT 7531
744.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
79
Incident Energy (MeV)
75-Re-187

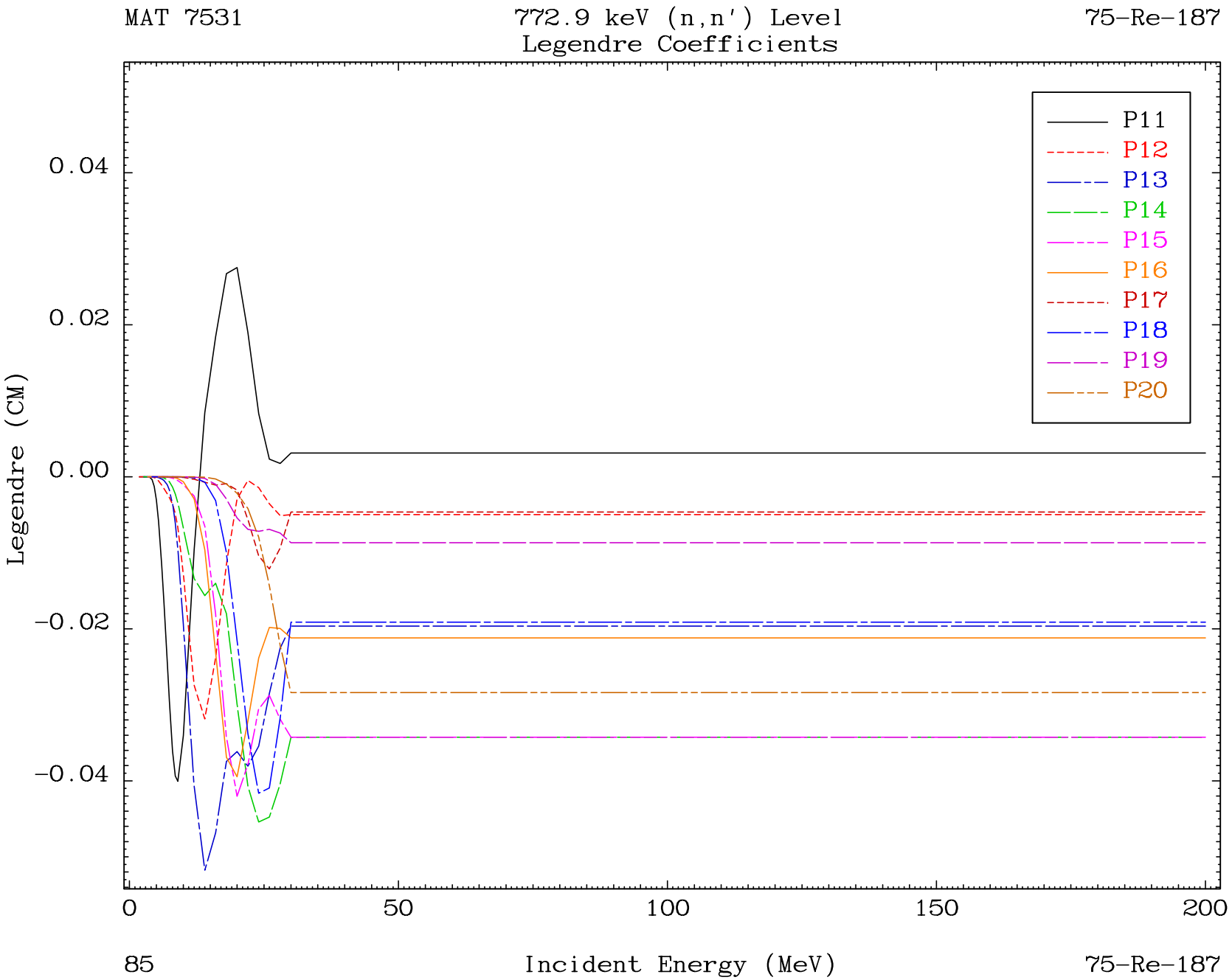

MAT 7531
767.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
80
Incident Energy (MeV)
75-Re-187

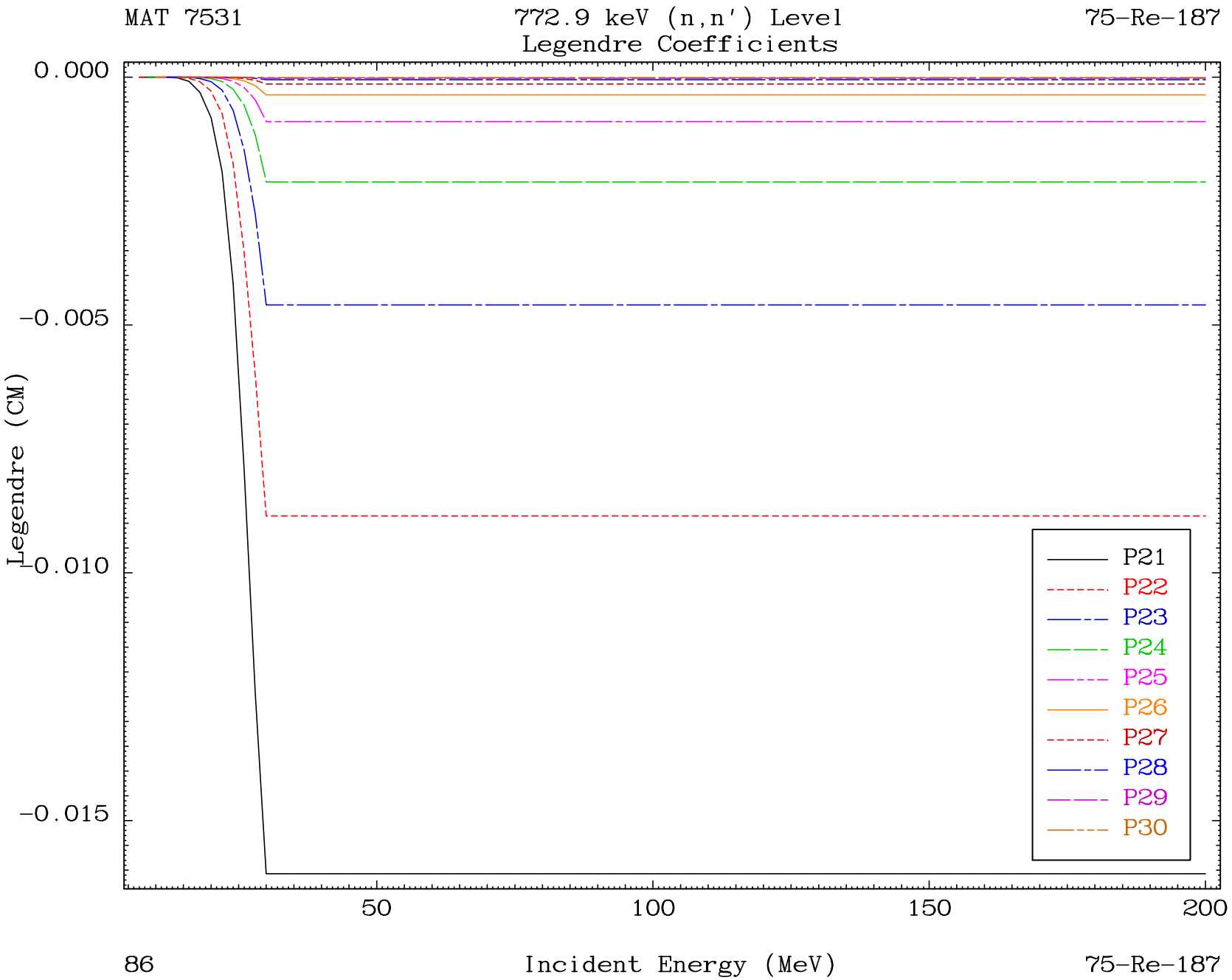

MAT 7531
767.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
81
Incident Energy (MeV)
75-Re-187

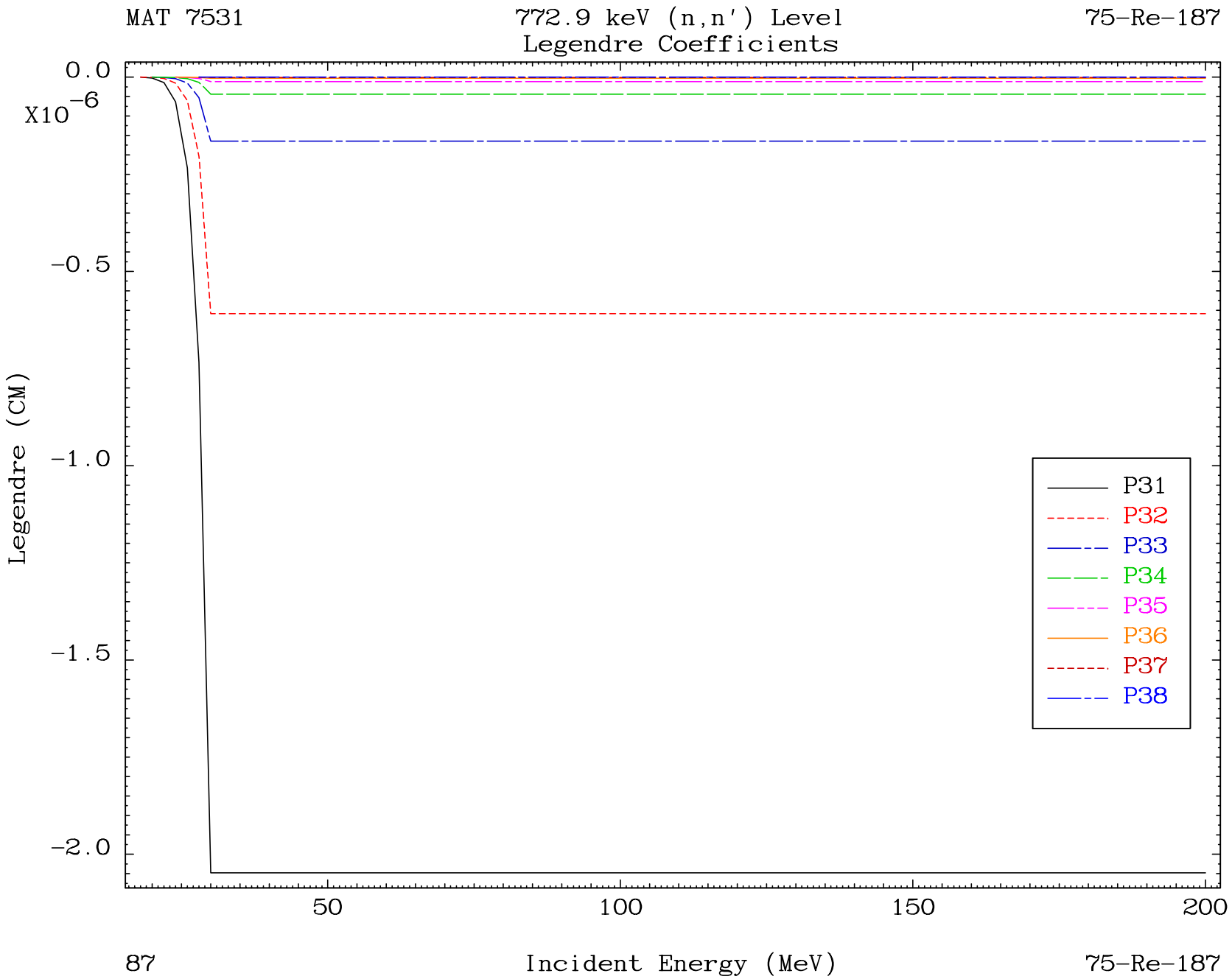

MAT 7531
767.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
82
Incident Energy (MeV)
75-Re-187

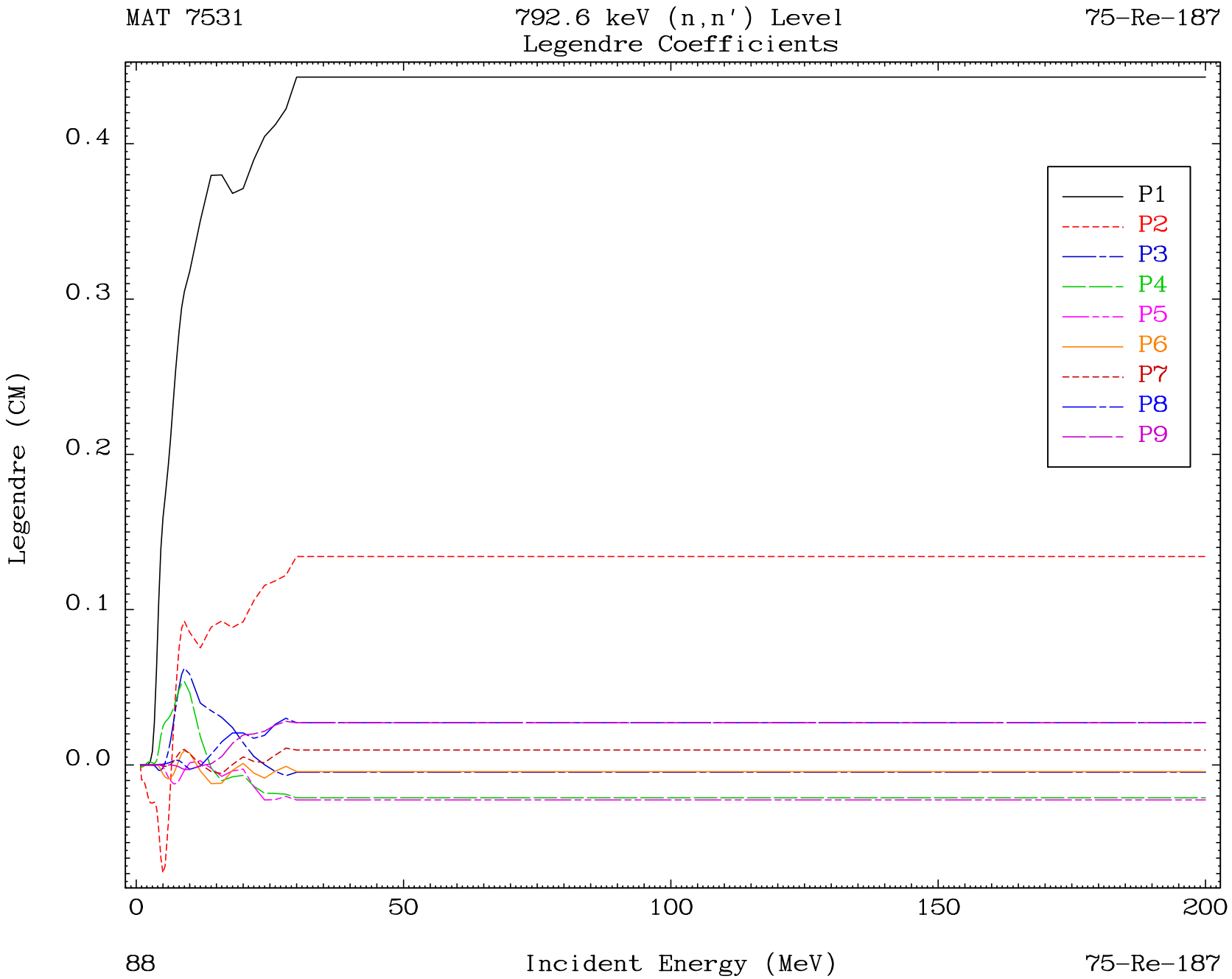

MAT 7531
767.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 −5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
83
Incident Energy (MeV)
75-Re-187

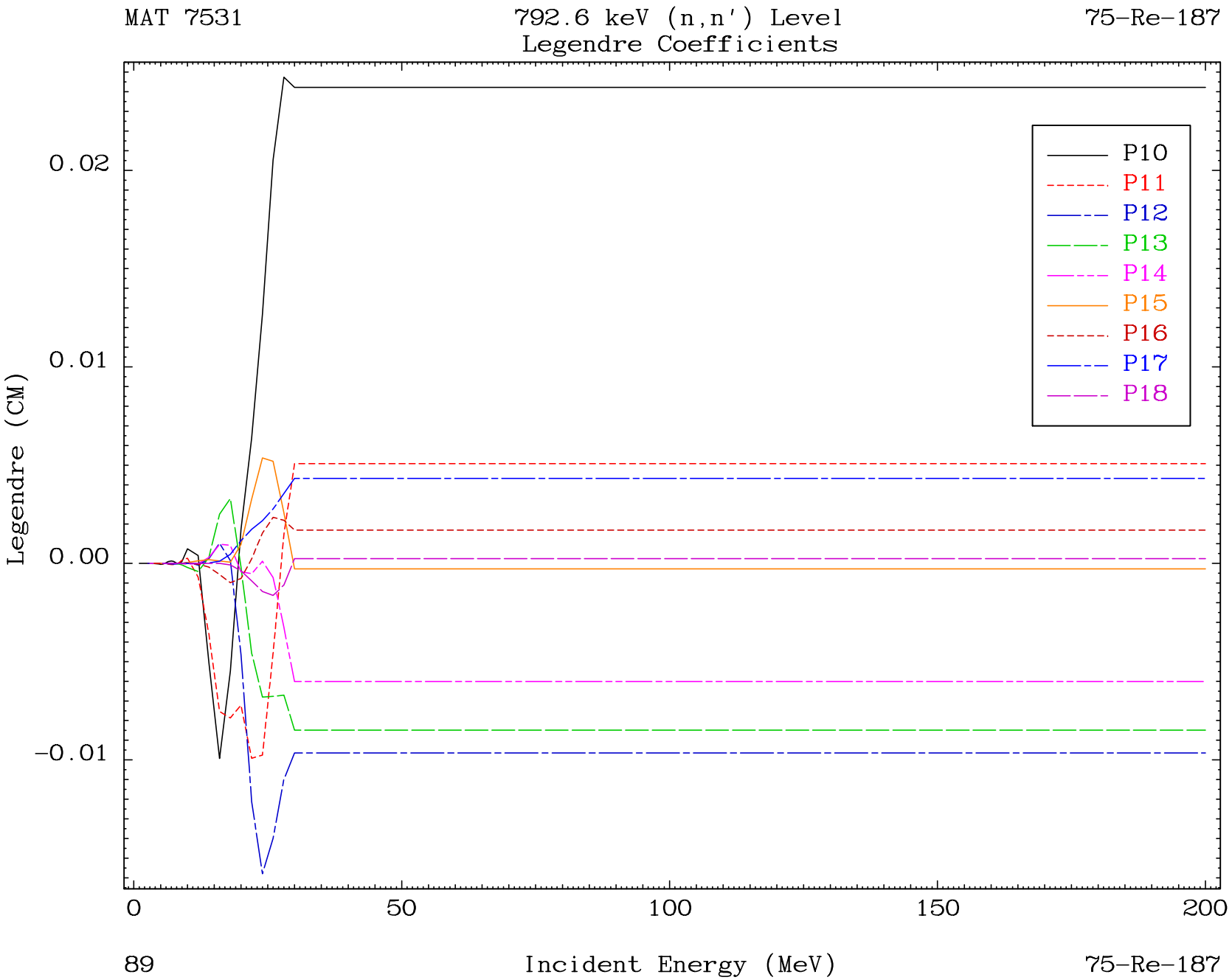

MAT 7531
772.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
0
50
100
150
200
84
Incident Energy (MeV)
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

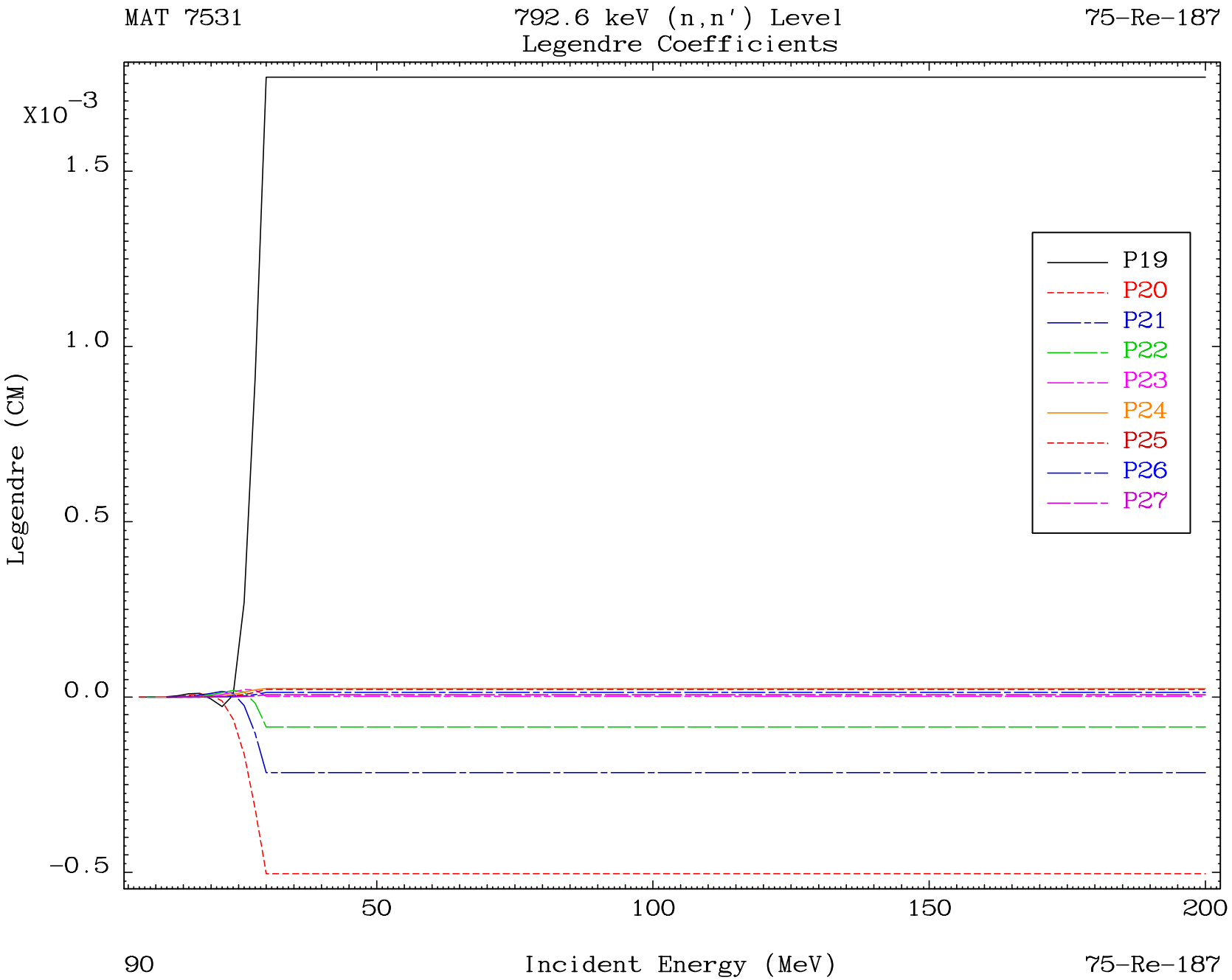

MAT 7531
772.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
85
Incident Energy (MeV)
75-Re-187

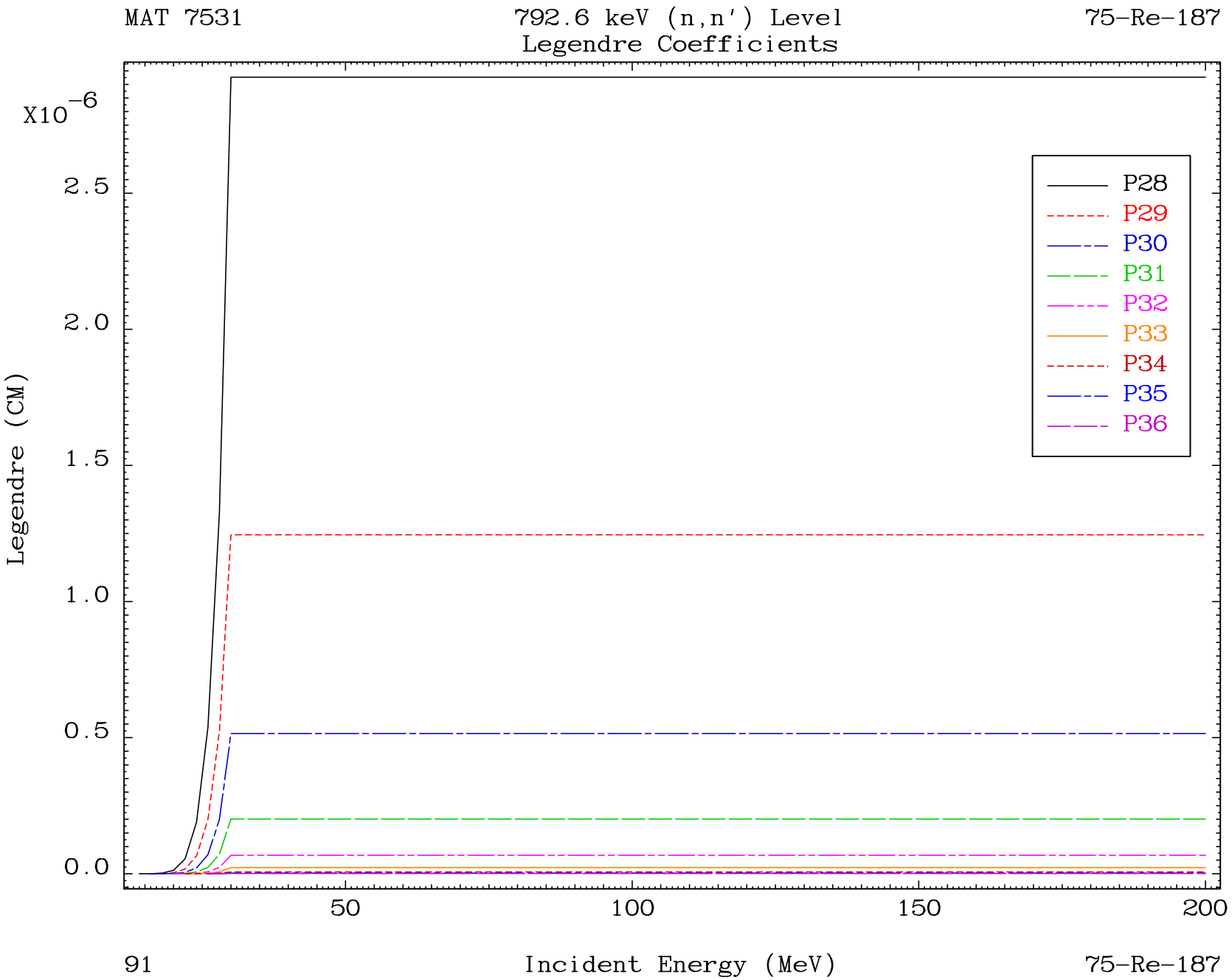

MAT 7531
772.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
-0.005
-0.010
-0.015
Legendre (CM)
50
100
150
200
86
Incident Energy (MeV)
75-Re-187
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30

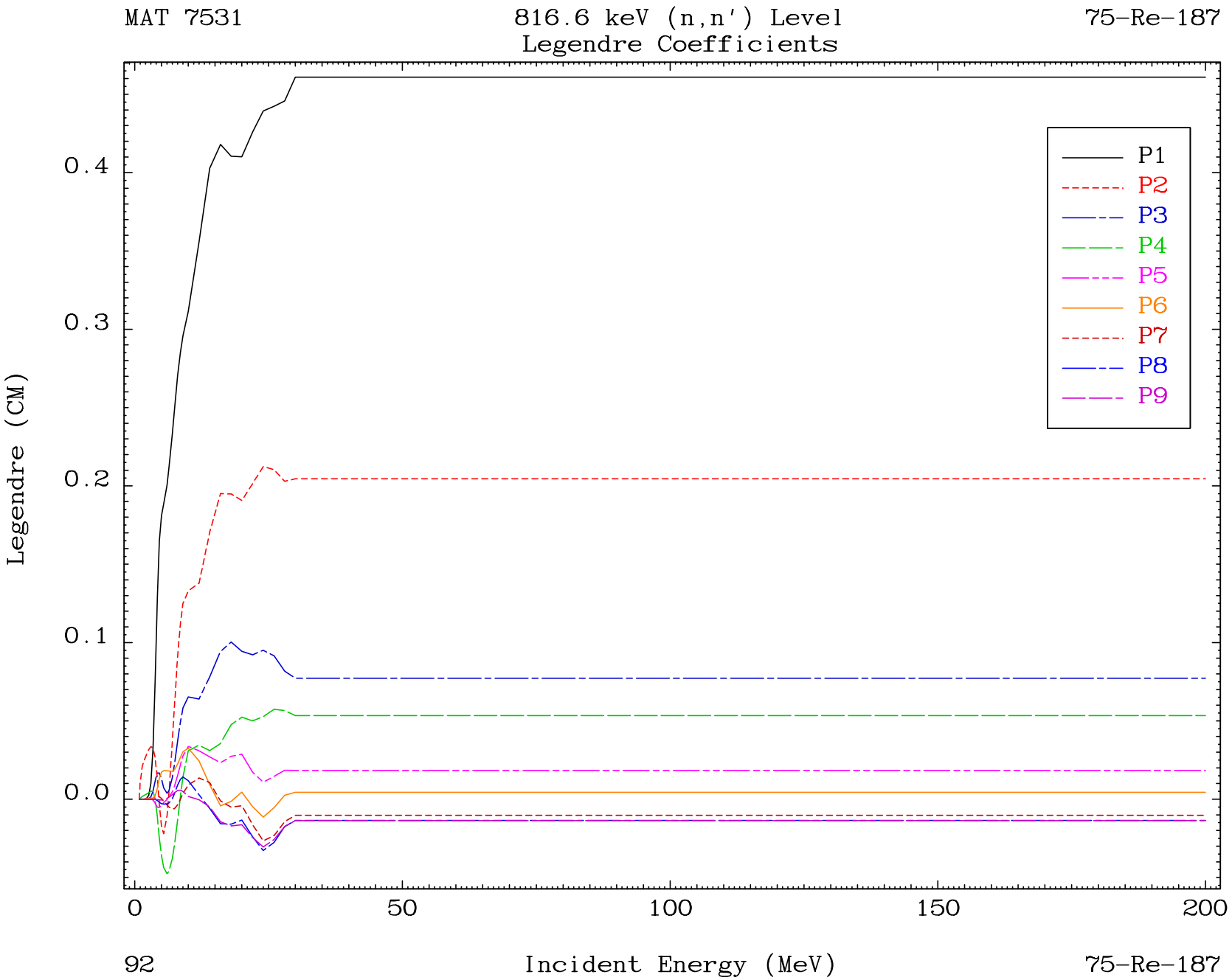

MAT 7531
772.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10 −6
−0.5
−1.0
−1.5
−2.0
Legendre (CM)
50
100
150
200
87
Incident Energy (MeV)
75-Re-187
P31
P32
P33
P34
P35
P36
P37
P38

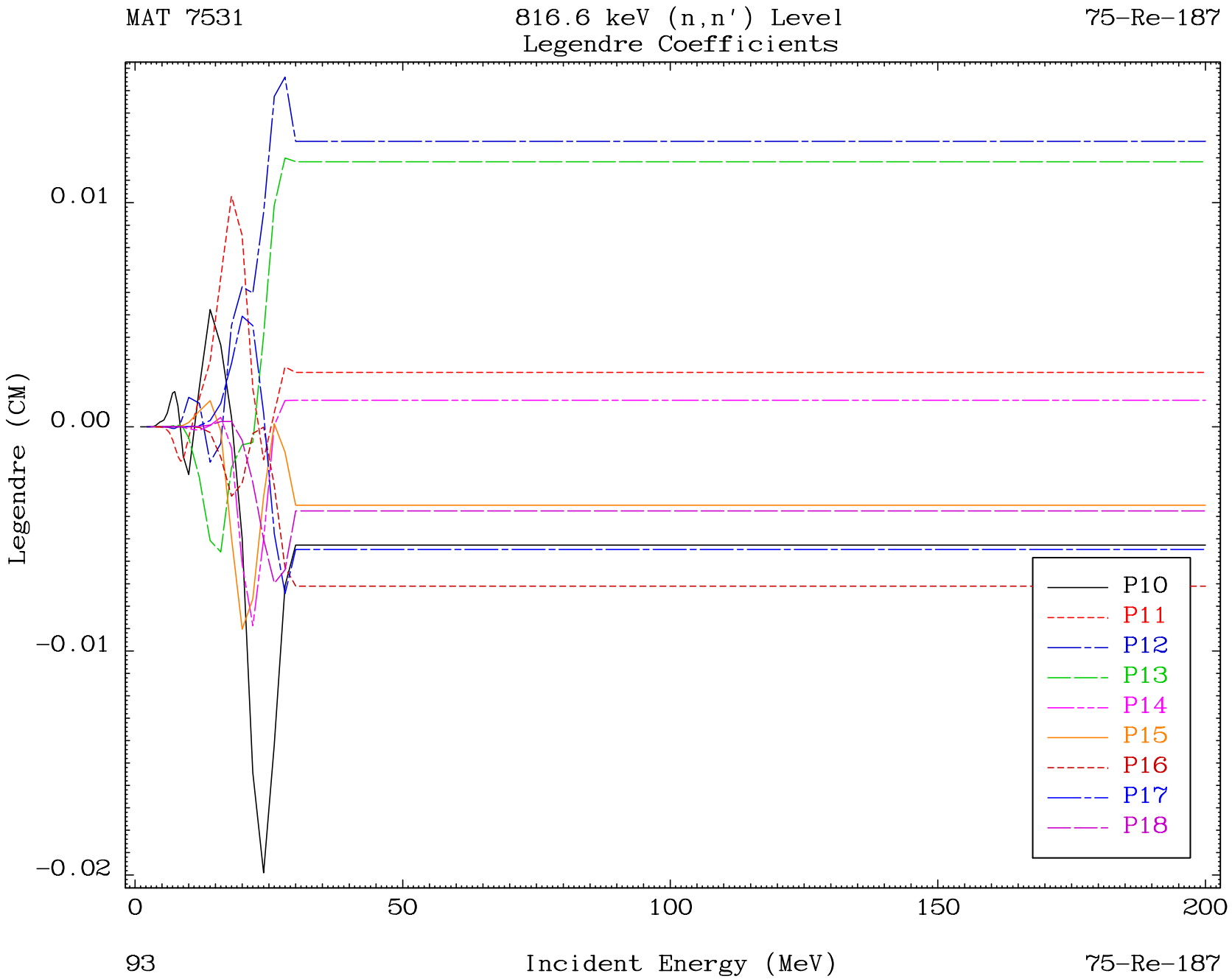

MAT 7531
792.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
88
Incident Energy (MeV)
75-Re-187

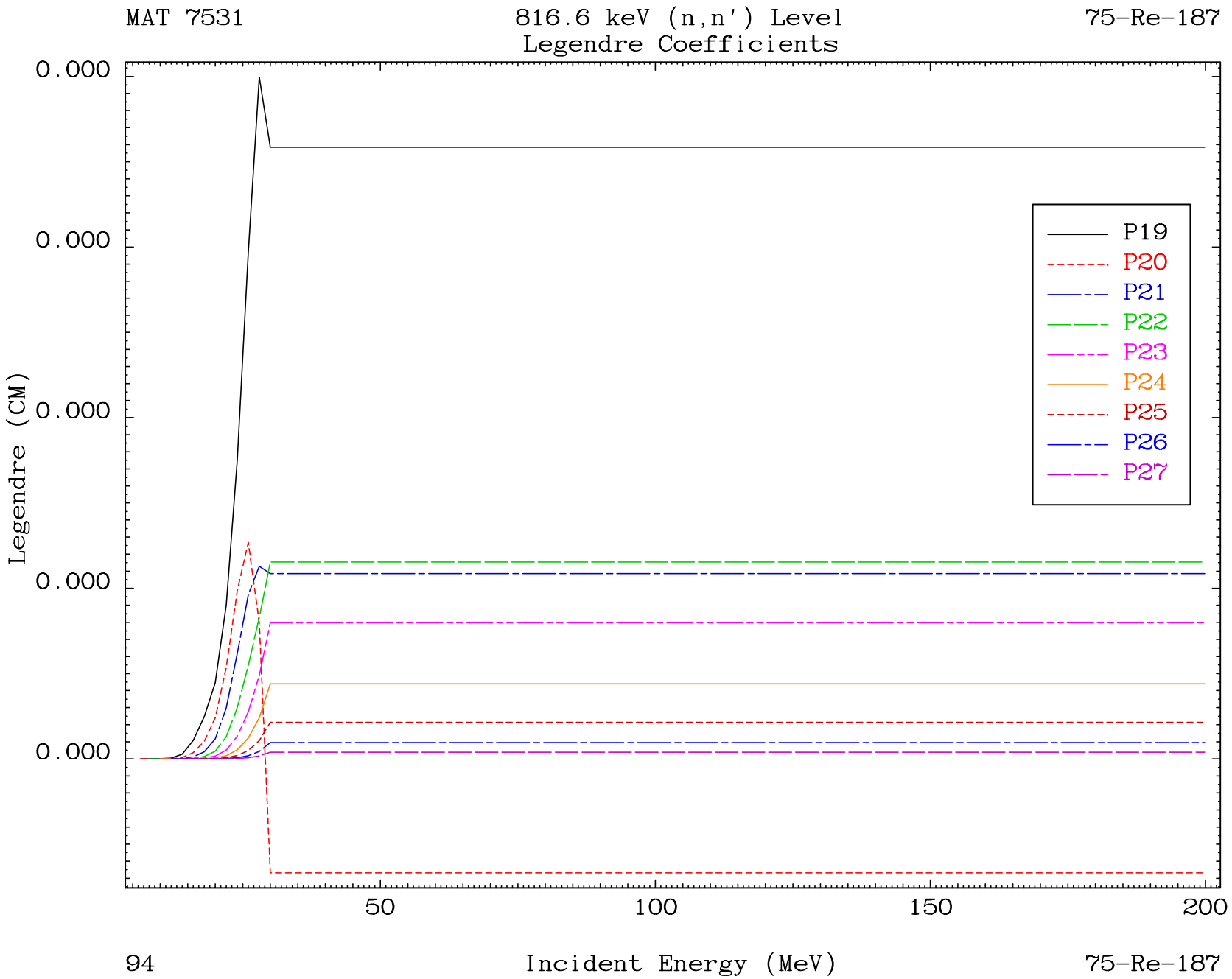

MAT 7531
792.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.02
0.01
0.00
-0.01
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
89
Incident Energy (MeV)
75-Re-187

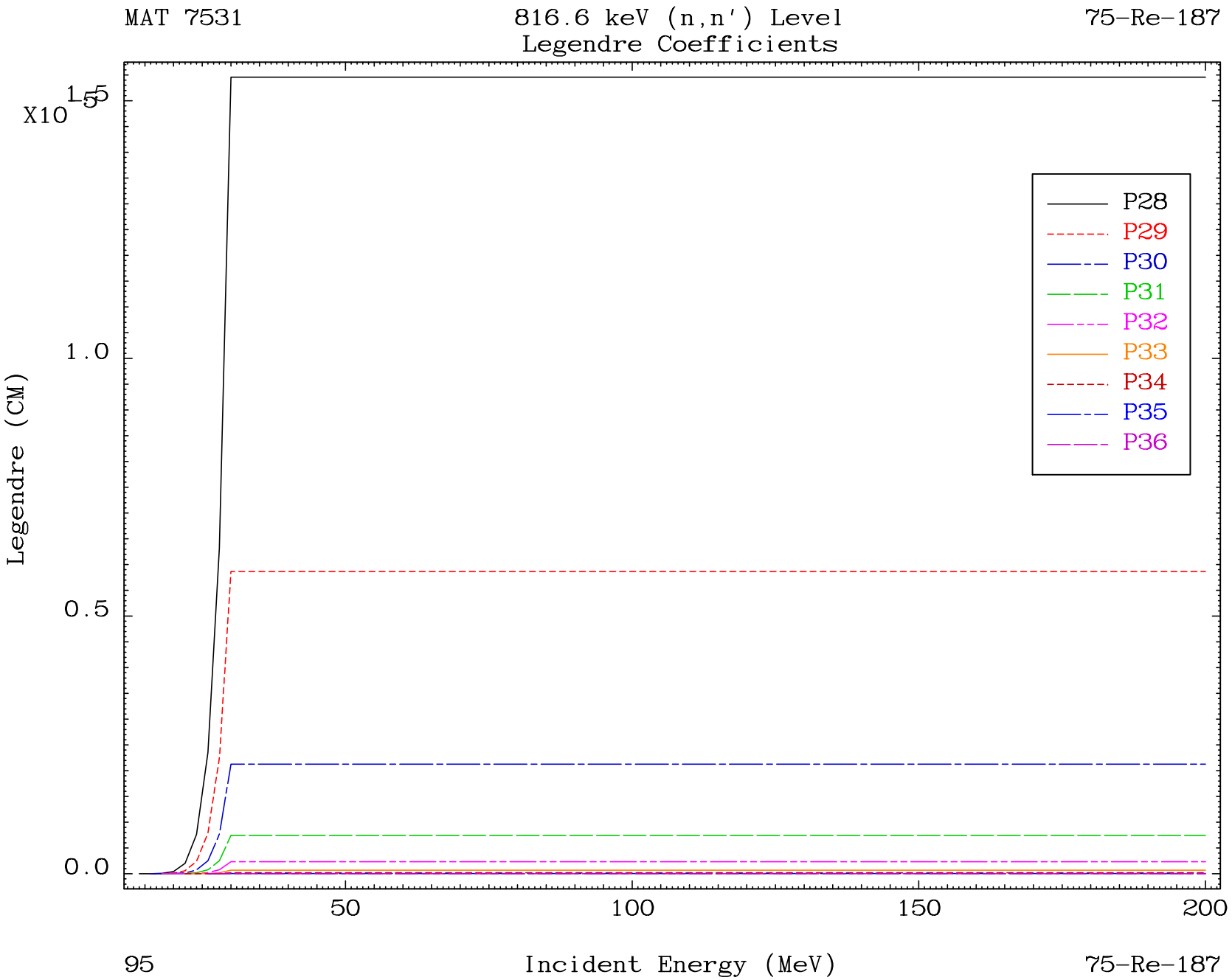

MAT 7531
792.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-3
1.5
1.0
0.5
0.0
-0.5
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
90
Incident Energy (MeV)
75-Re-187

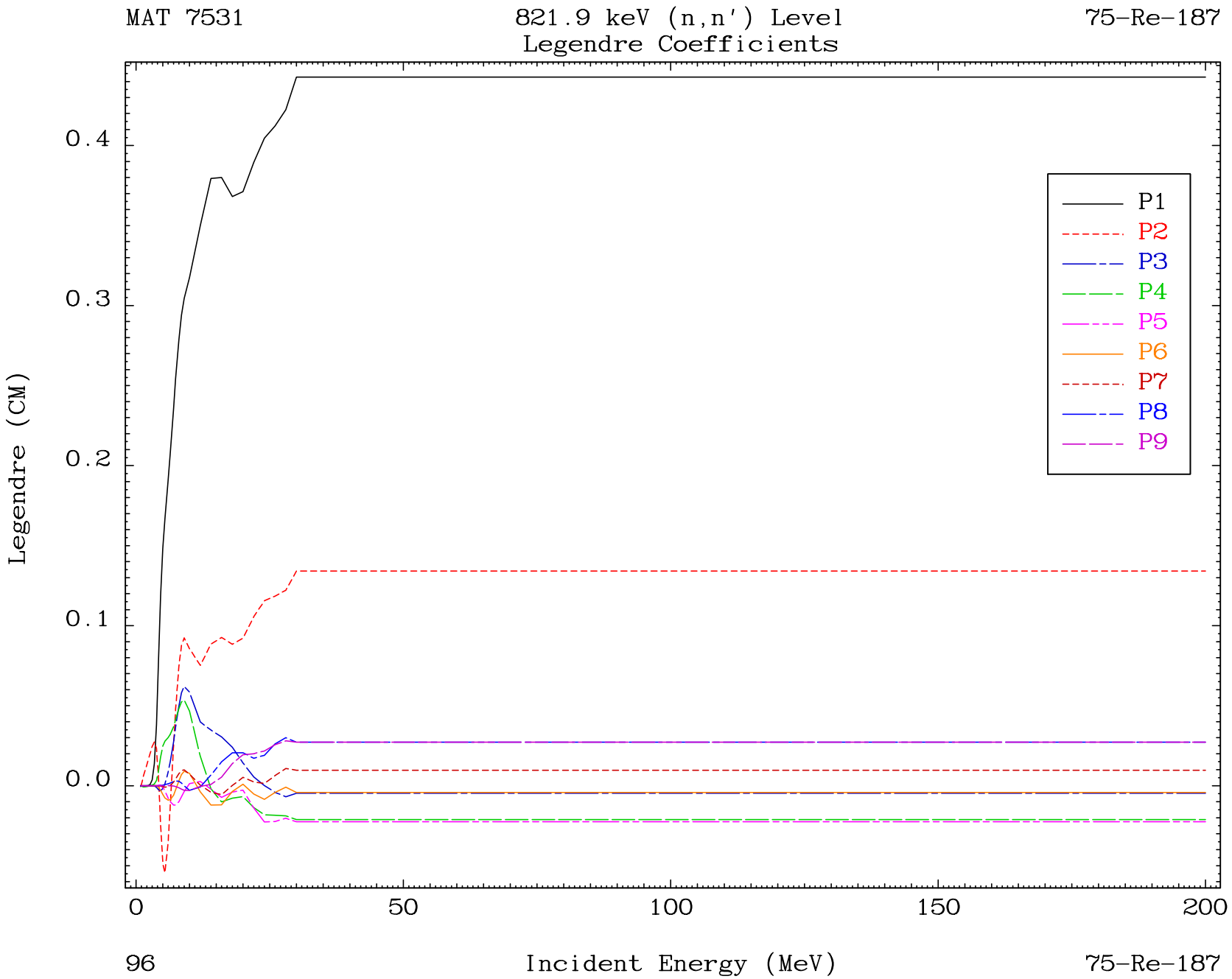

MAT 7531
792.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10−6
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
91
Incident Energy (MeV)
75-Re-187

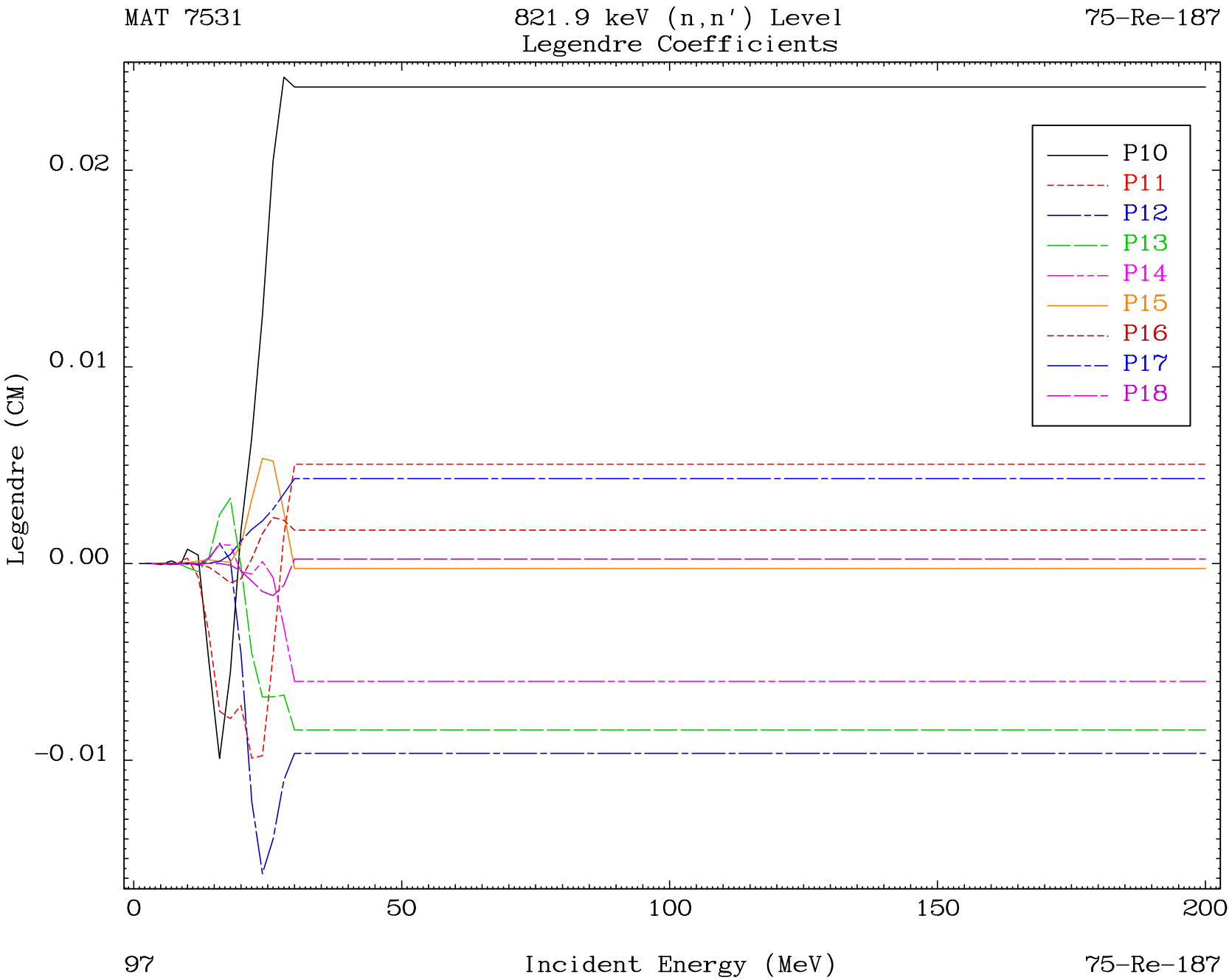

MAT 7531
816.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
92
Incident Energy (MeV)
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9

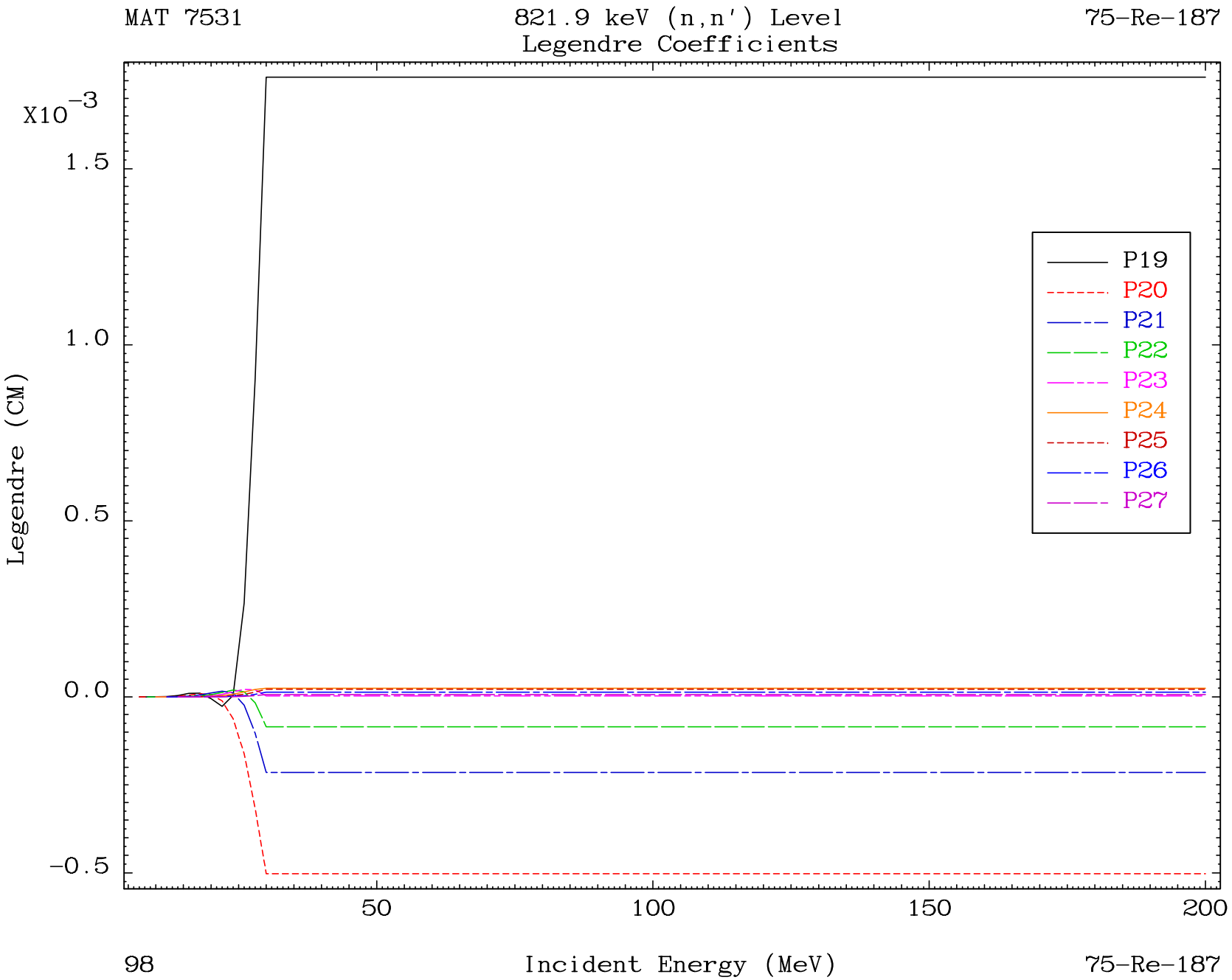

MAT 7531
816.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.01
0.00
-0.01
-0.02
Legendre (CM)
0
50
100
150
200
93
Incident Energy (MeV)
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18

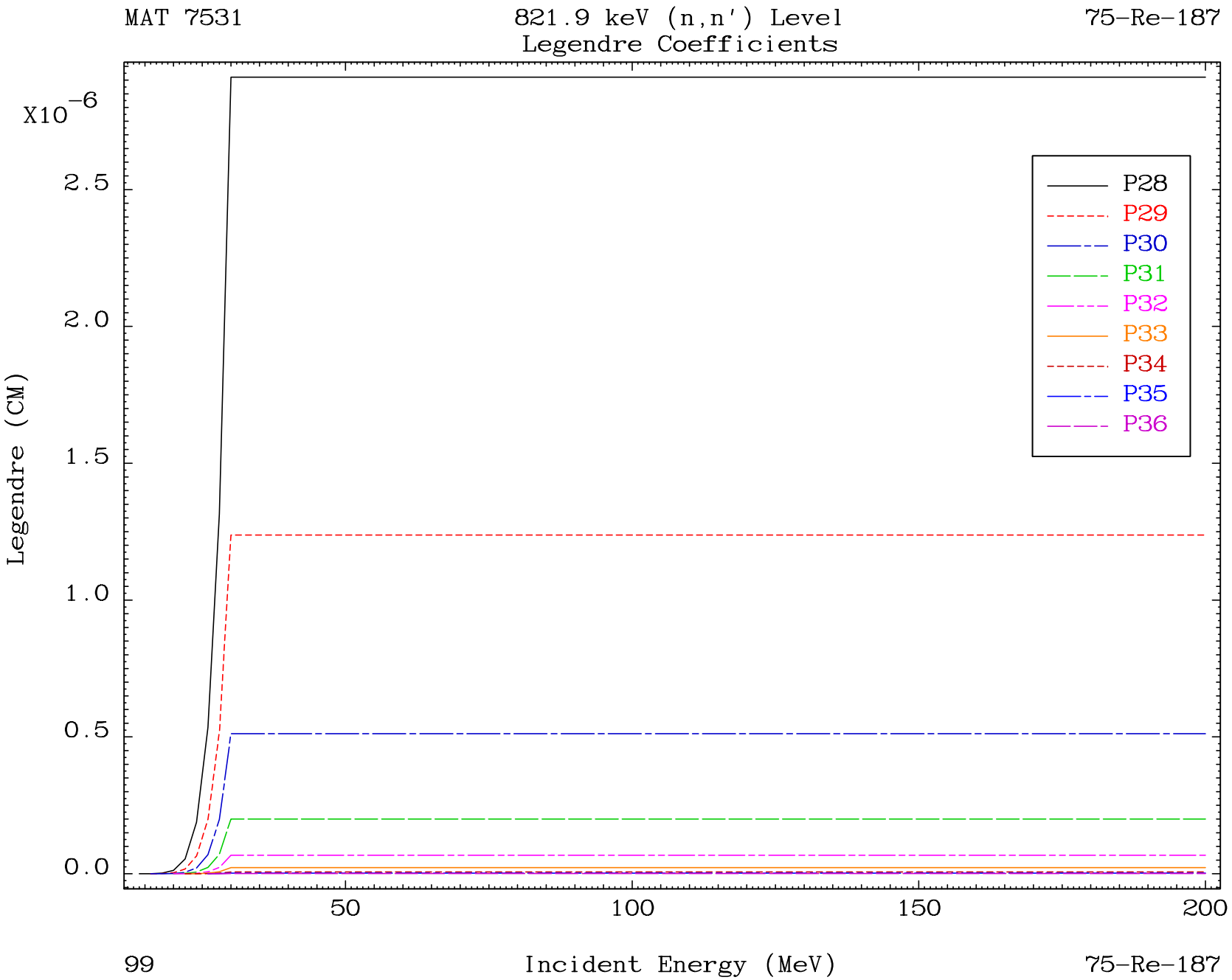

MAT 7531
816.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
0.000
0.000
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
94
Incident Energy (MeV)
75-Re-187

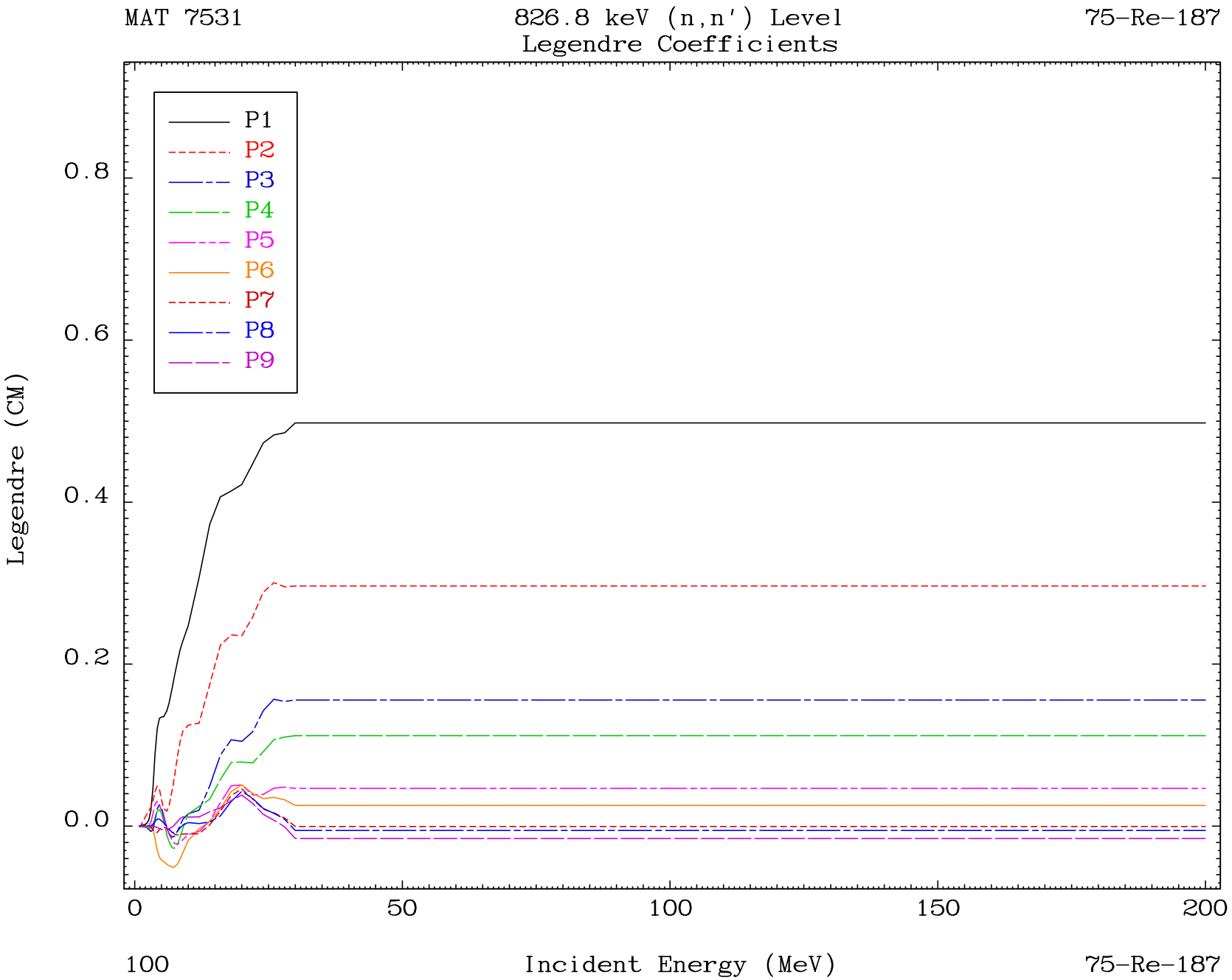

MAT 7531
816.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 5
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
95
Incident Energy (MeV)
75-Re-187

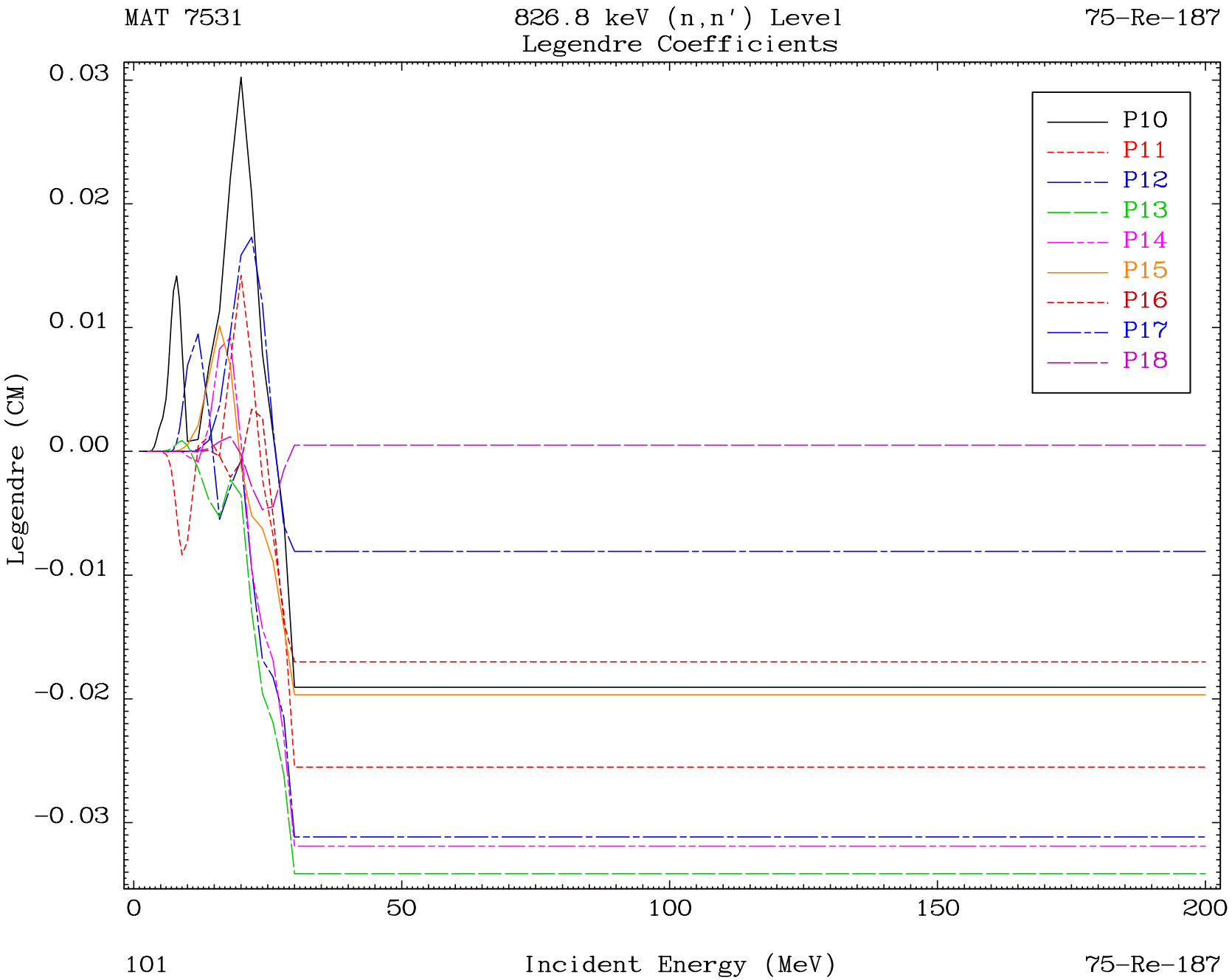

MAT 7531
821.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
96
Incident Energy (MeV)
75-Re-187

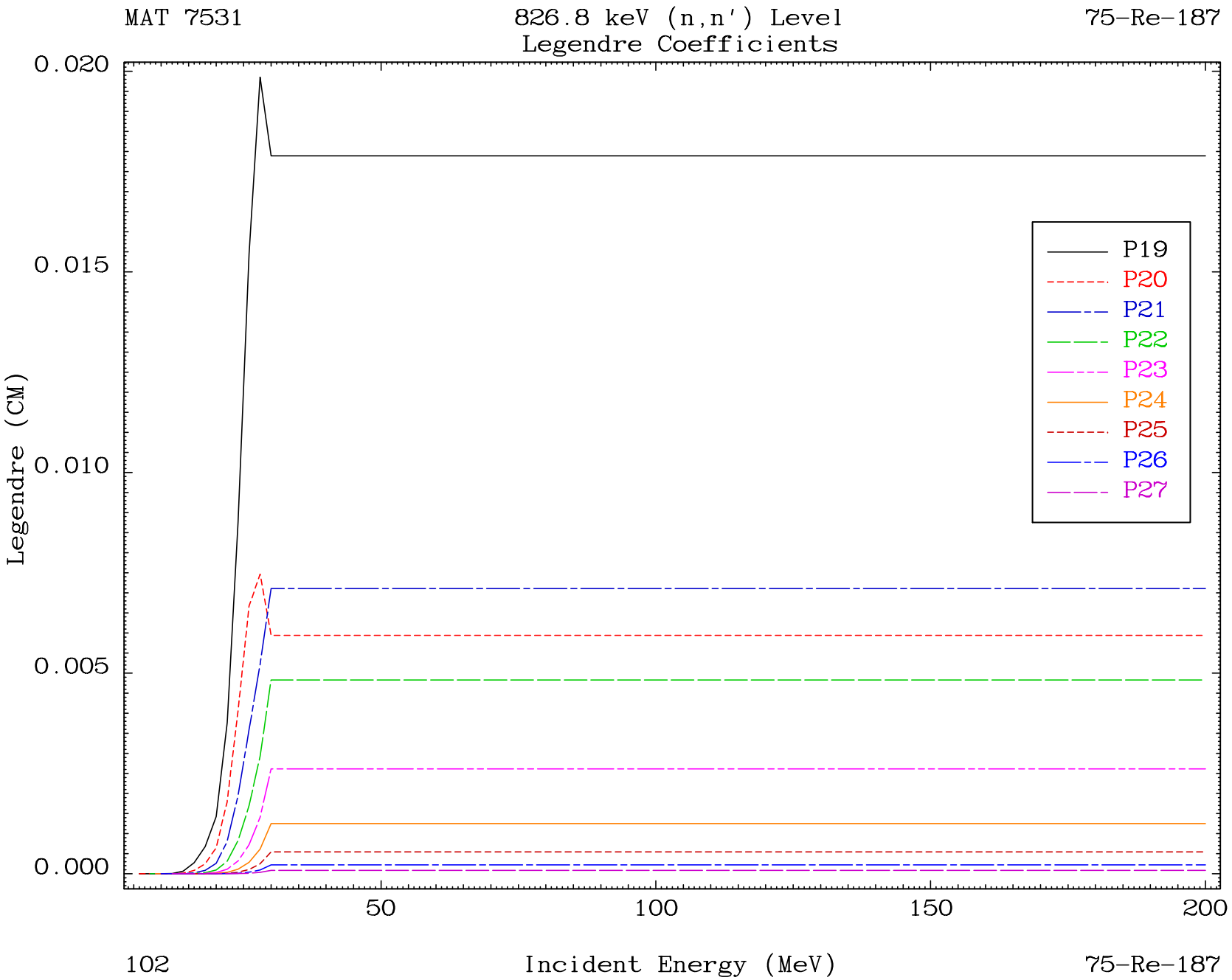

MAT 7531
821.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.02
0.01
0.00
-0.01
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
97
Incident Energy (MeV)
75-Re-187

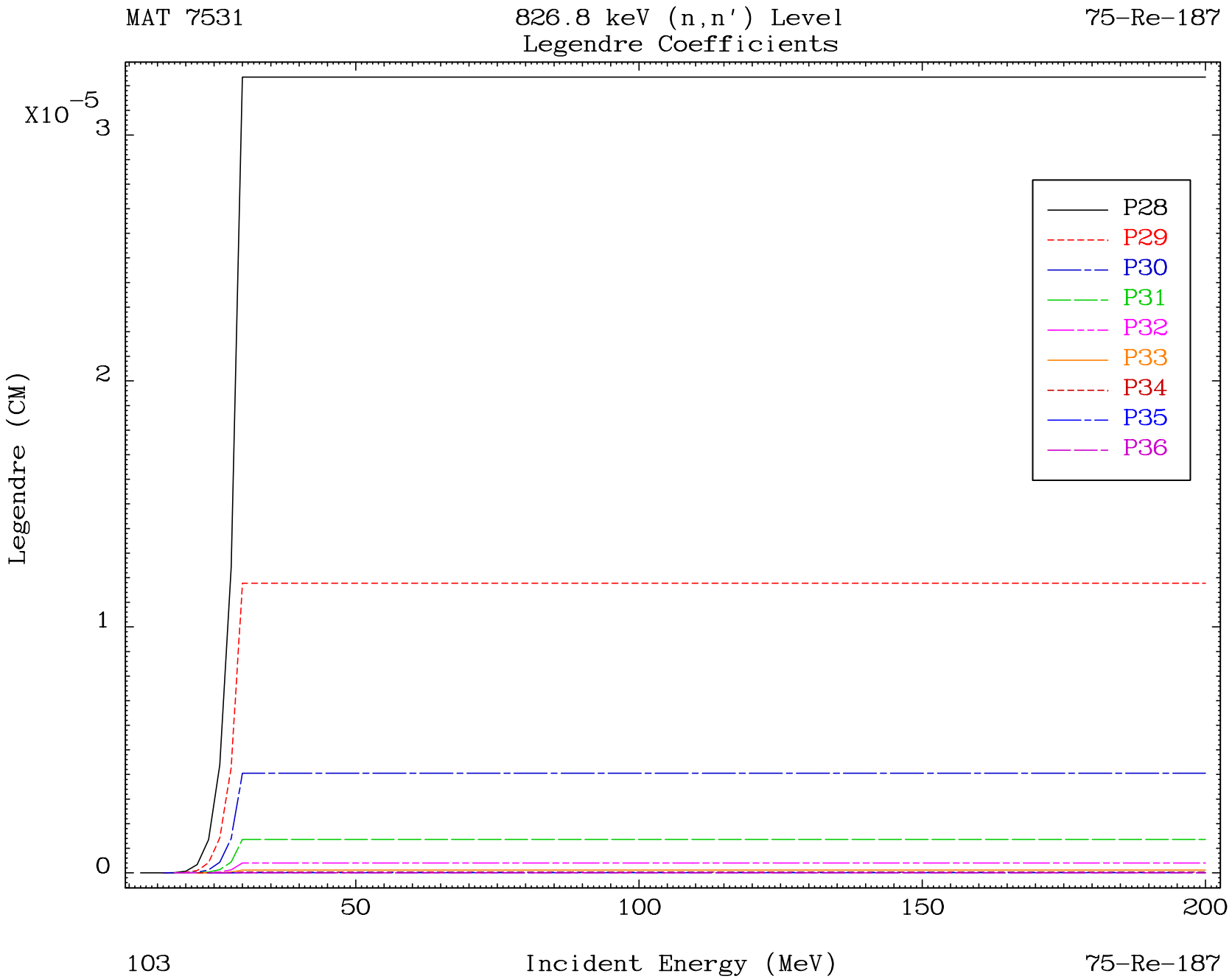

MAT 7531
821.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-3
1.5
1.0
0.5
0.0
-0.5
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
98
Incident Energy (MeV)
75-Re-187

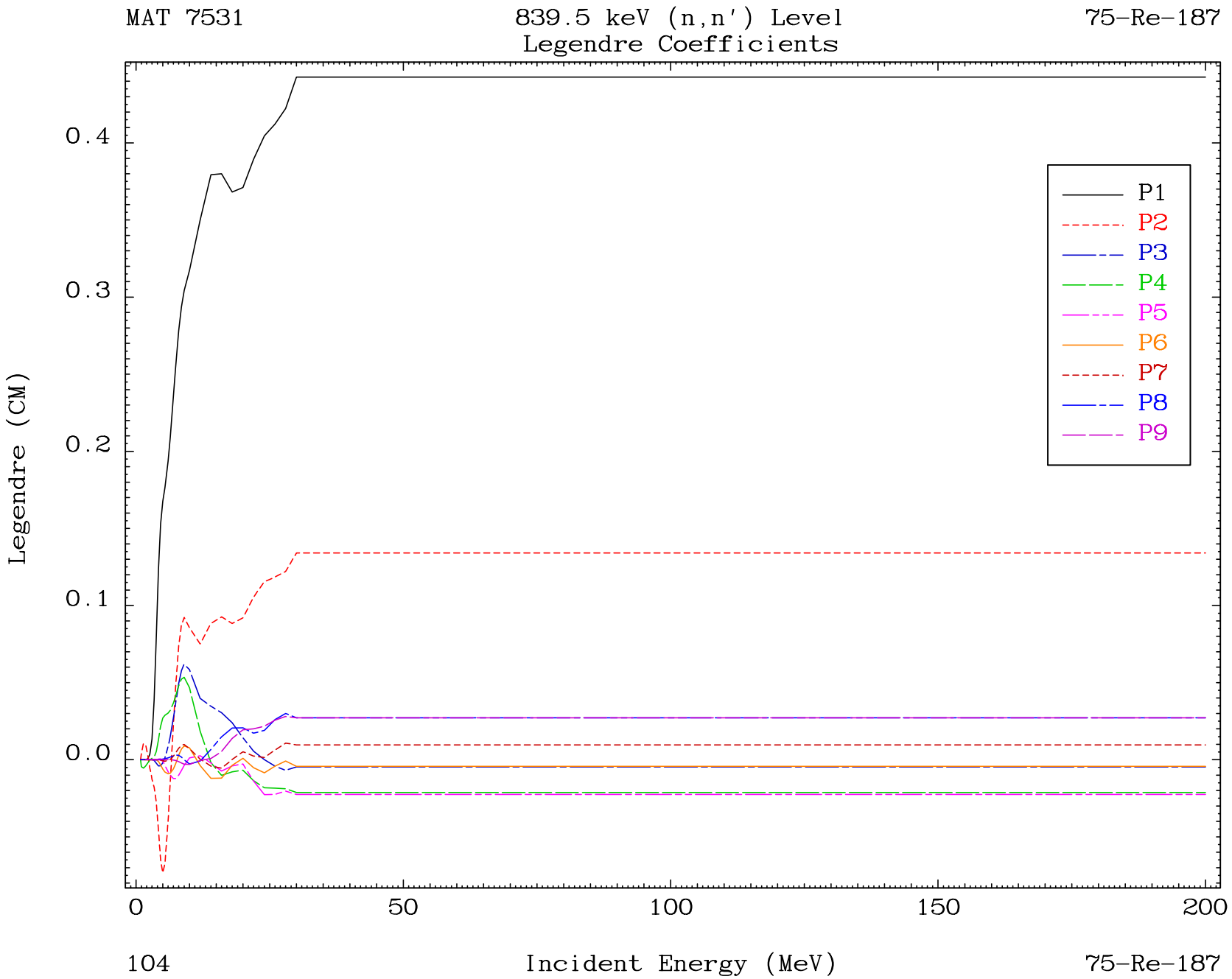

MAT 7531
821.9 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10−6
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
99
Incident Energy (MeV)
75-Re-187

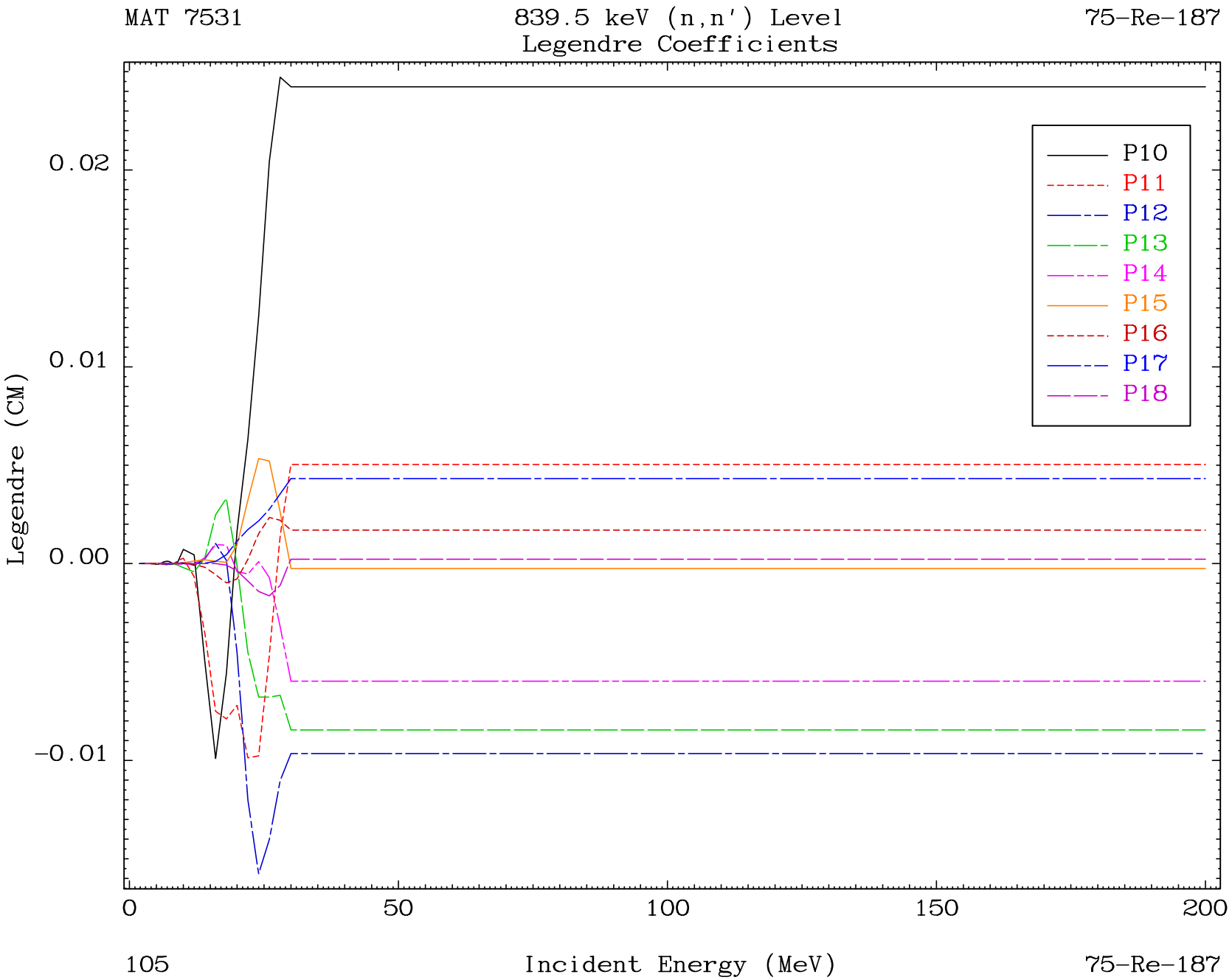

MAT 7531
826.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
100
Incident Energy (MeV)
75-Re-187

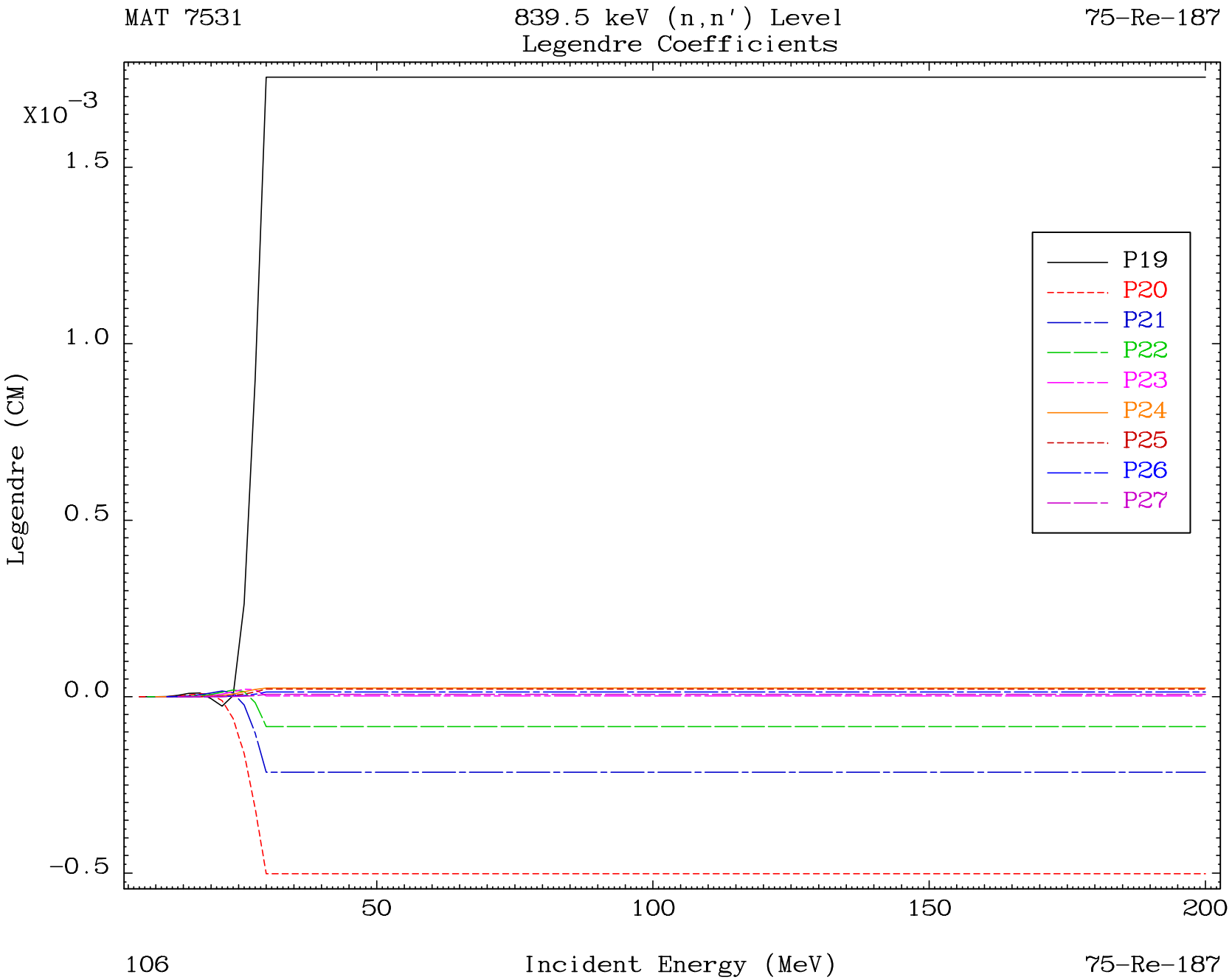

MAT 7531
826.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
101
Incident Energy (MeV)
75-Re-187

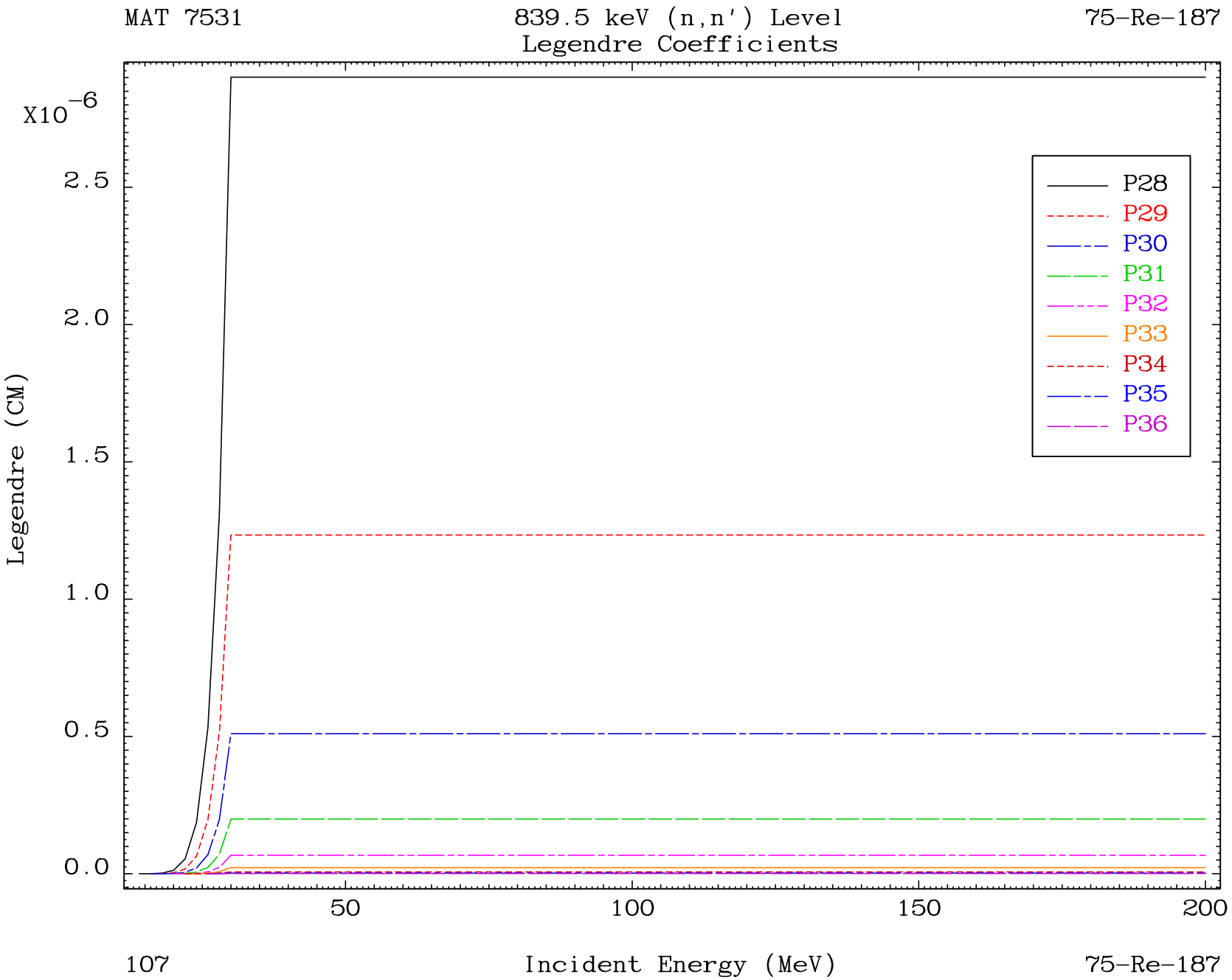

MAT 7531
826.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
102
Incident Energy (MeV)
75-Re-187

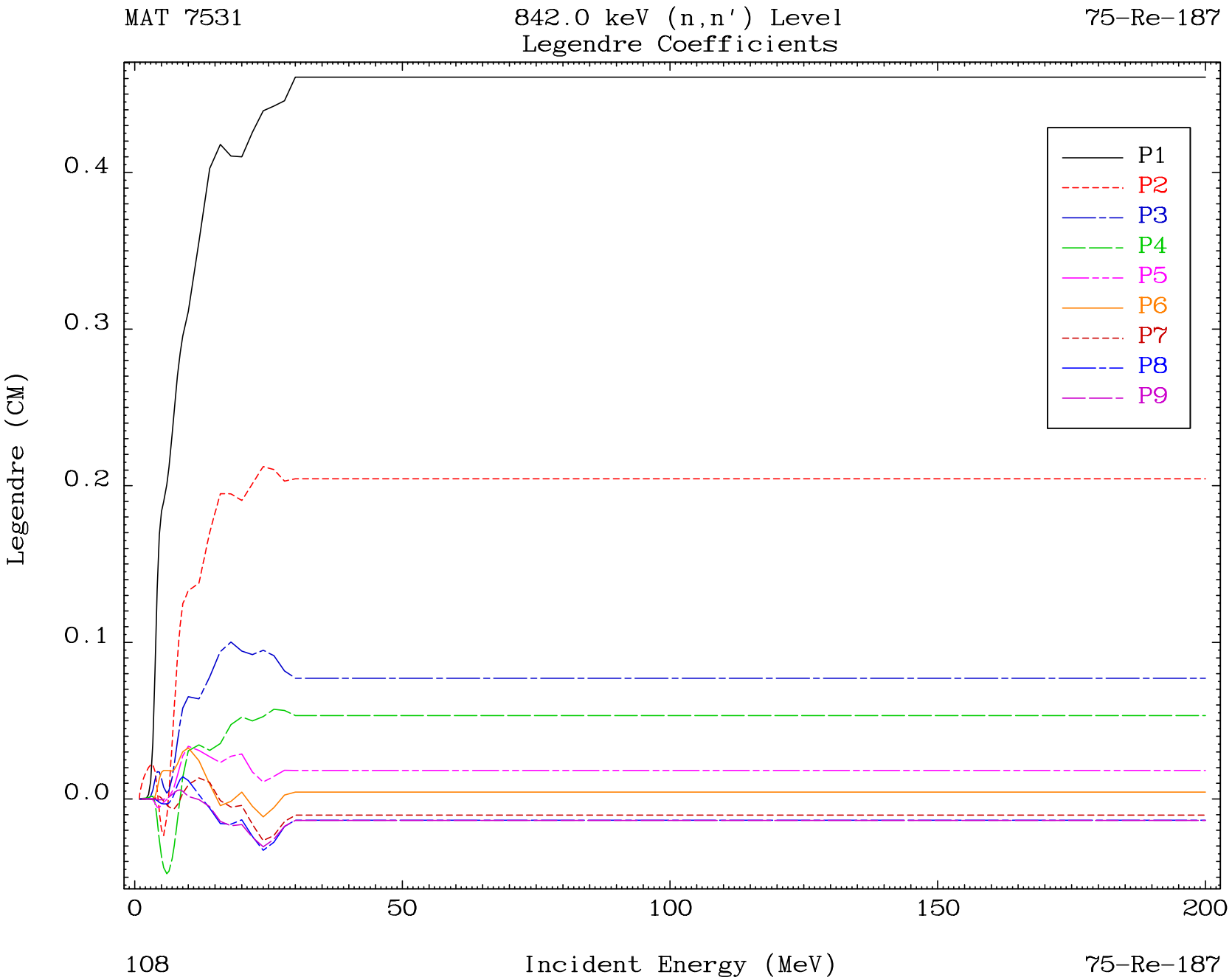

MAT 7531
826.8 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
103
Incident Energy (MeV)
75-Re-187

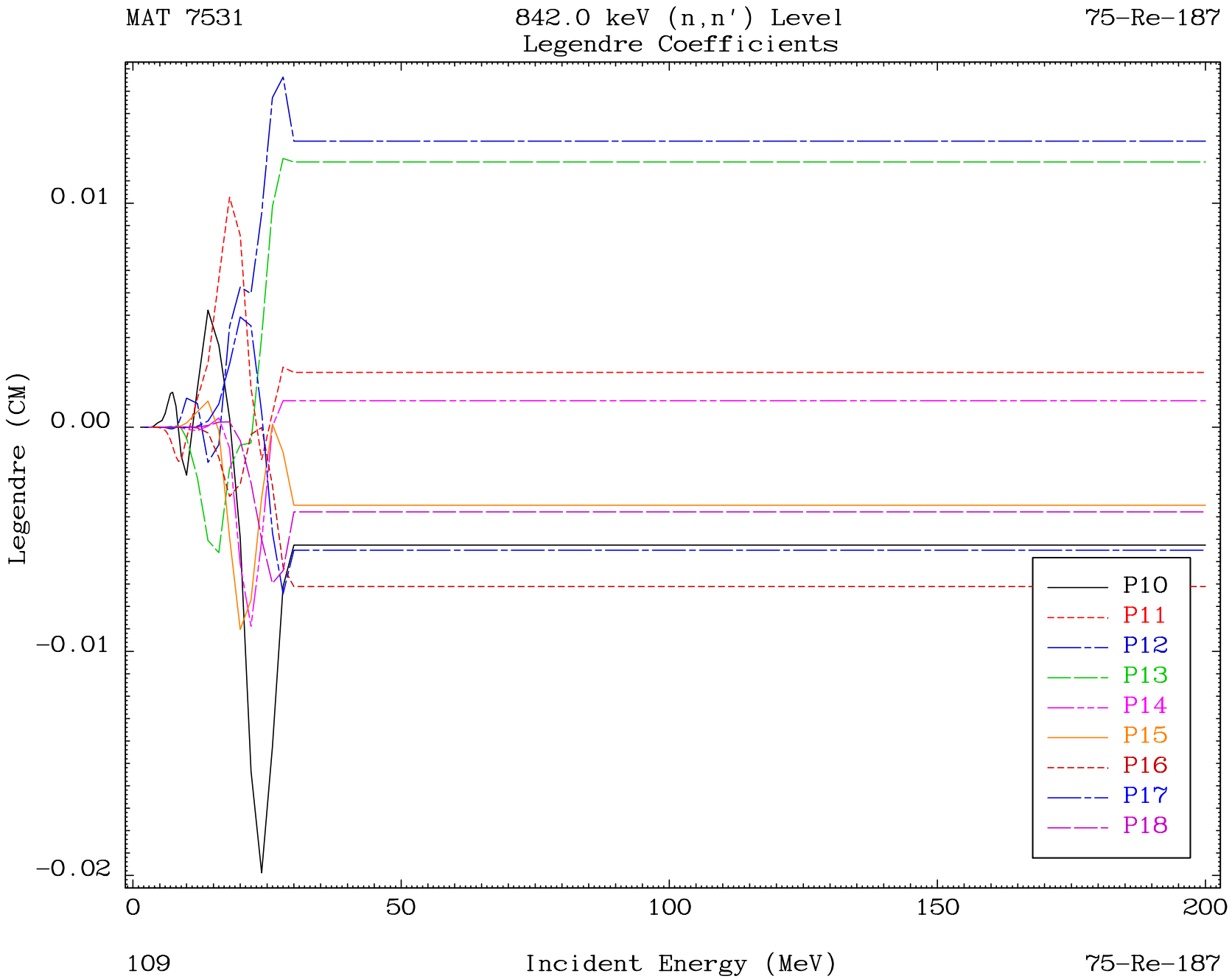

MAT 7531
839.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
104
Incident Energy (MeV)
75-Re-187

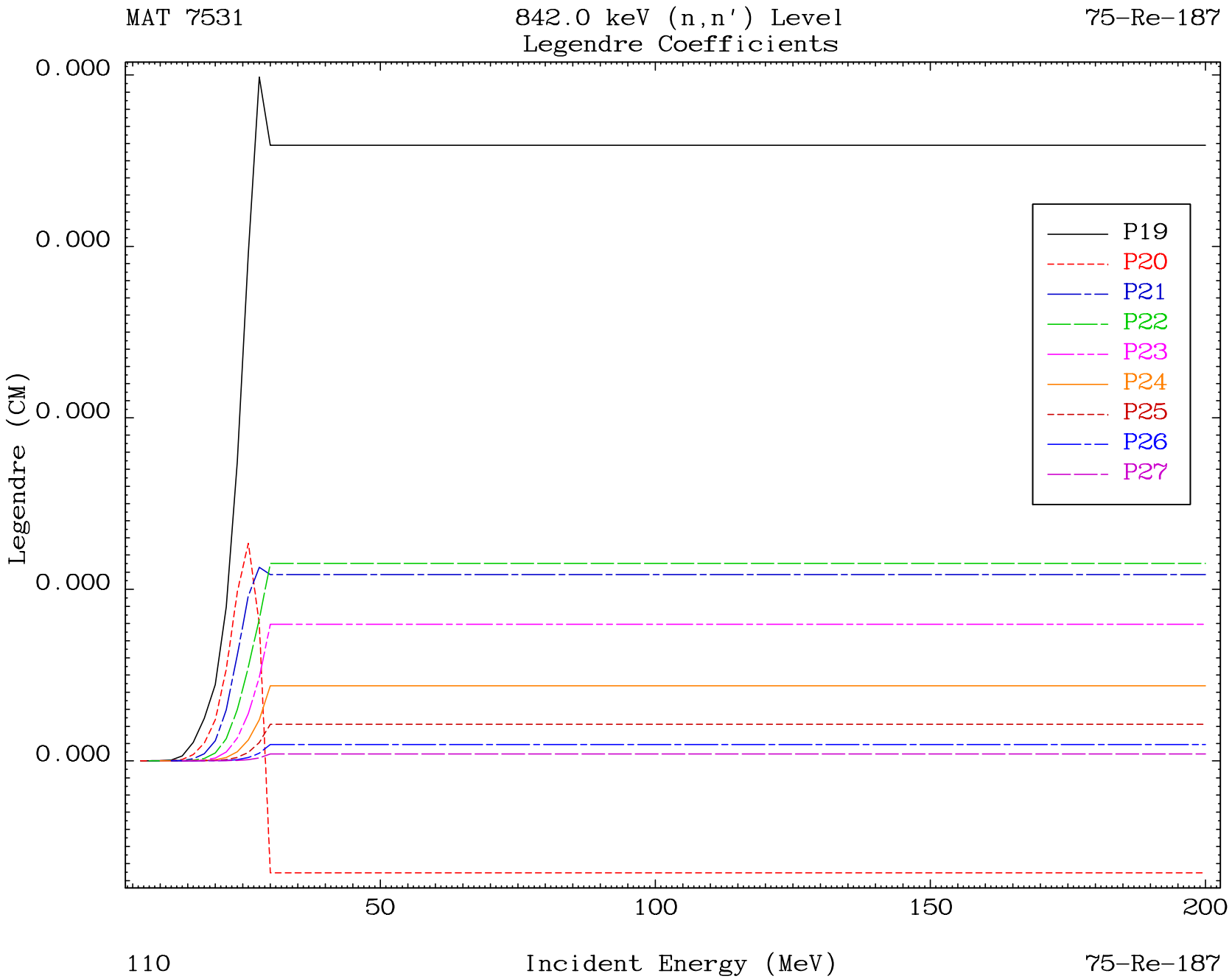

MAT 7531
839.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.02
0.01
0.00
-0.01
Legendre (CM)
0
50
100
150
200
105
Incident Energy (MeV)
75-Re-187

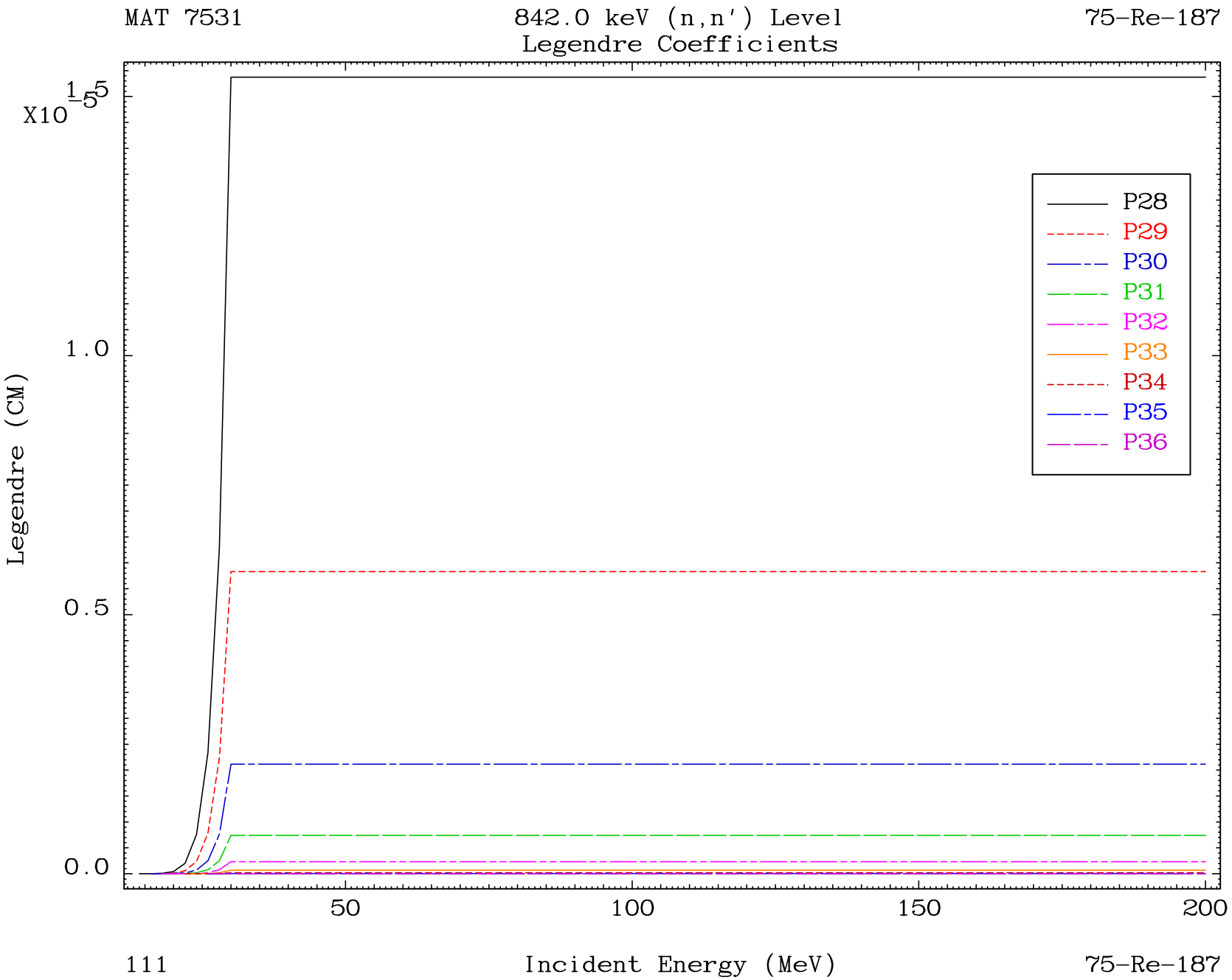

MAT 7531
839.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10^{-3}
1.5
1.0
0.5
0.0
−0.5
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
106
Incident Energy (MeV)
75-Re-187

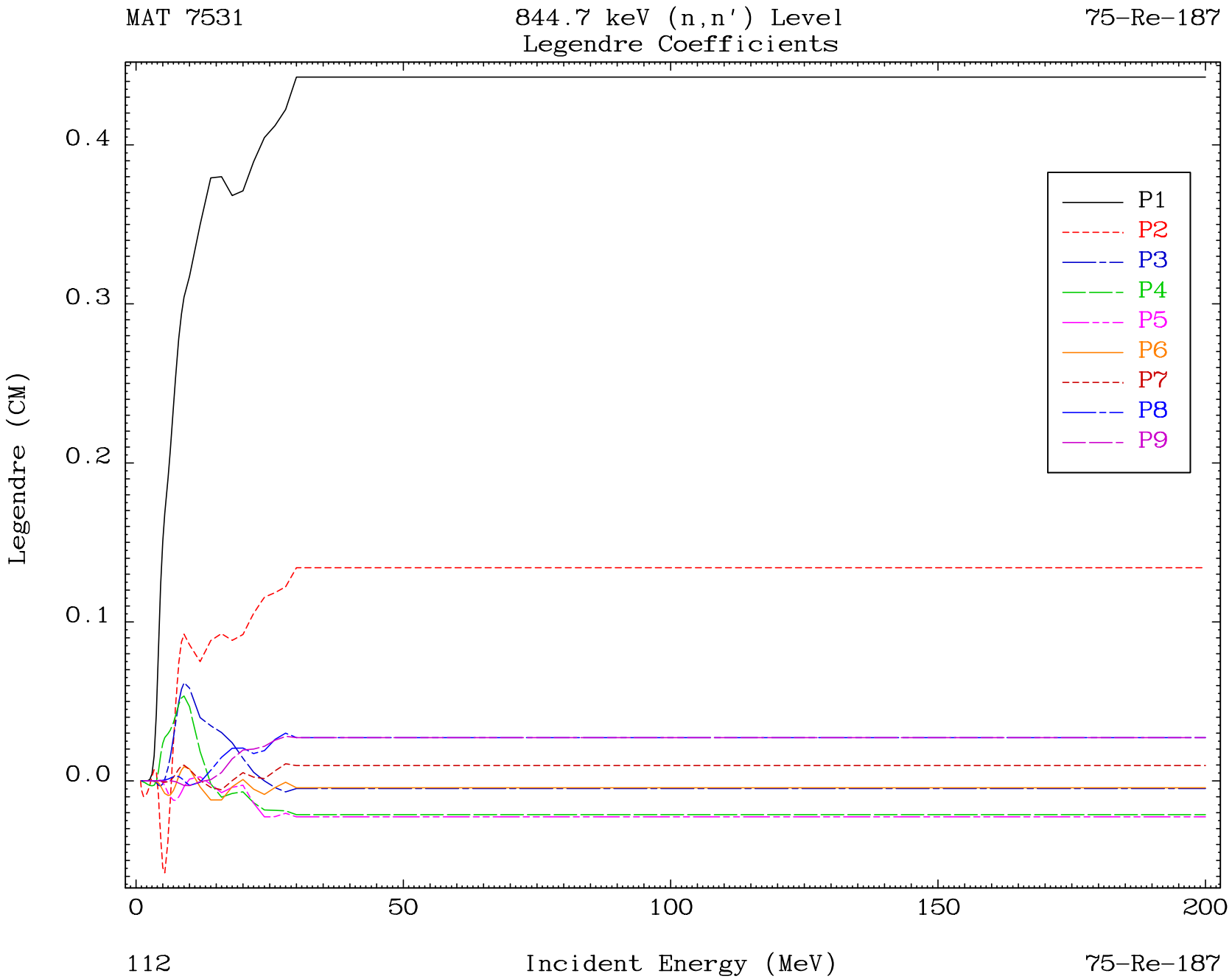

MAT 7531
839.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 −6
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
107
Incident Energy (MeV)
75-Re-187

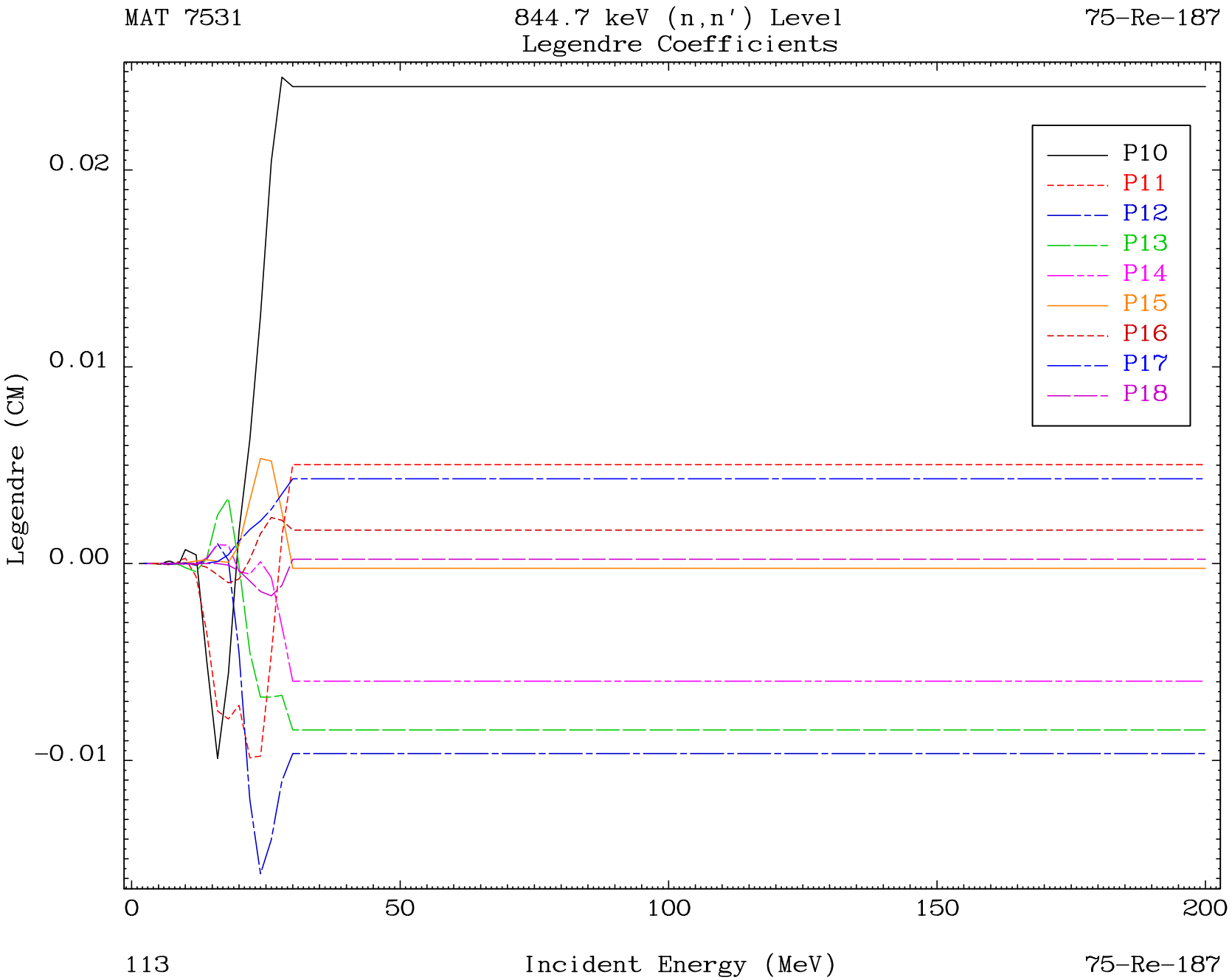

MAT 7531
842.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
108
Incident Energy (MeV)
75-Re-187

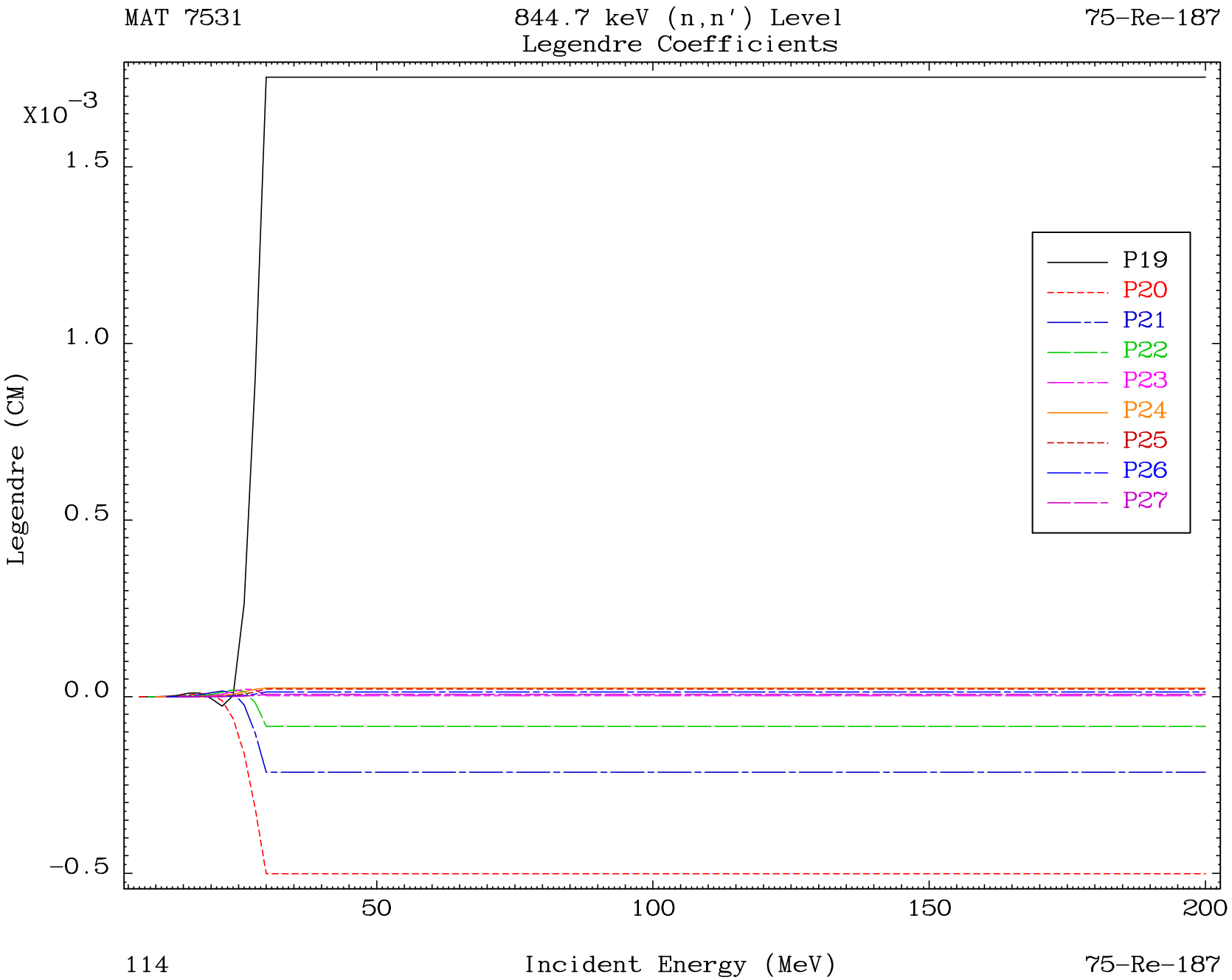

MAT 7531
842.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.01
0.00
-0.01
-0.02
Legendre (CM)
0
50
100
150
200
109
Incident Energy (MeV)
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18

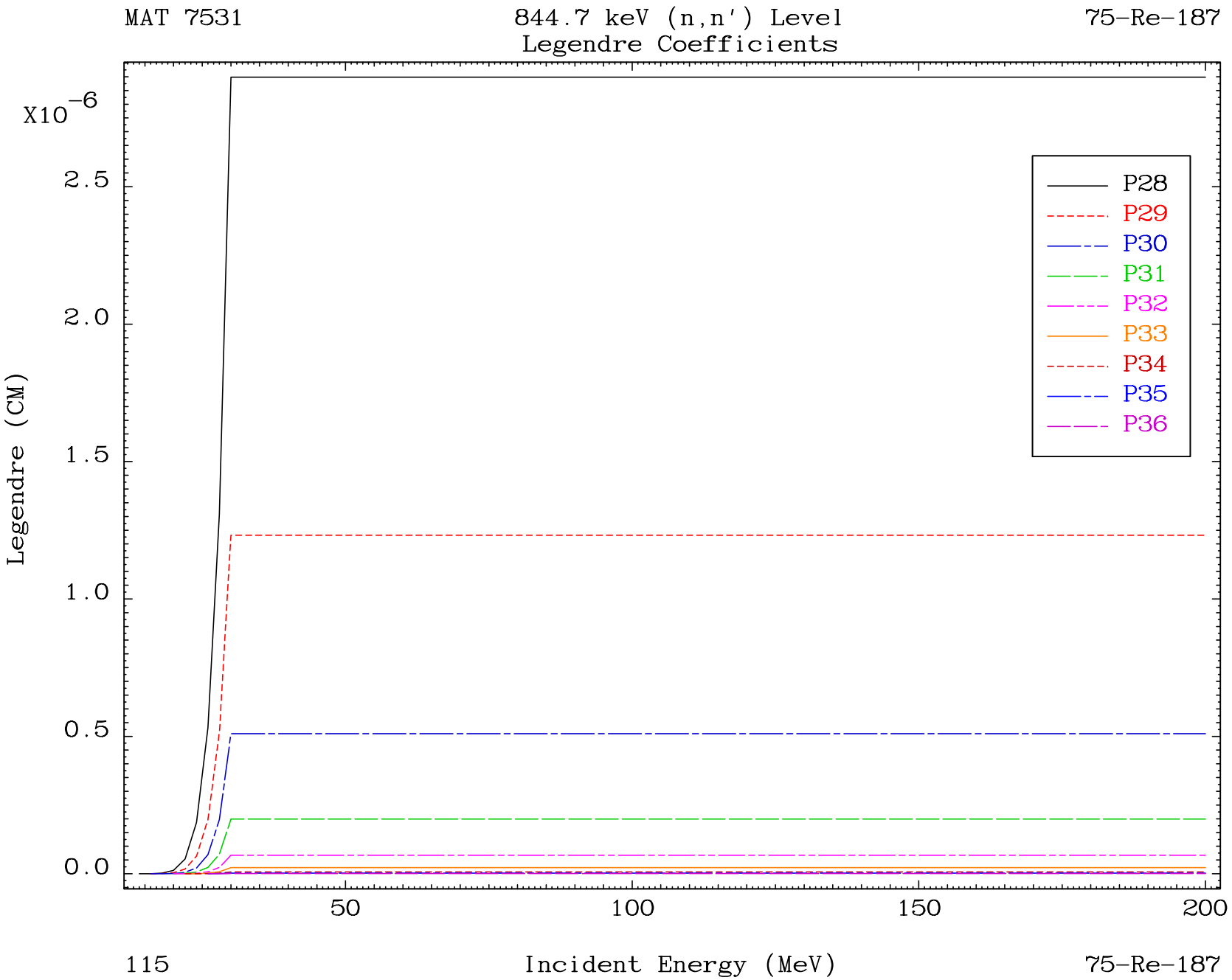

MAT 7531
842.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
0.000
0.000
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
110
Incident Energy (MeV)
75-Re-187

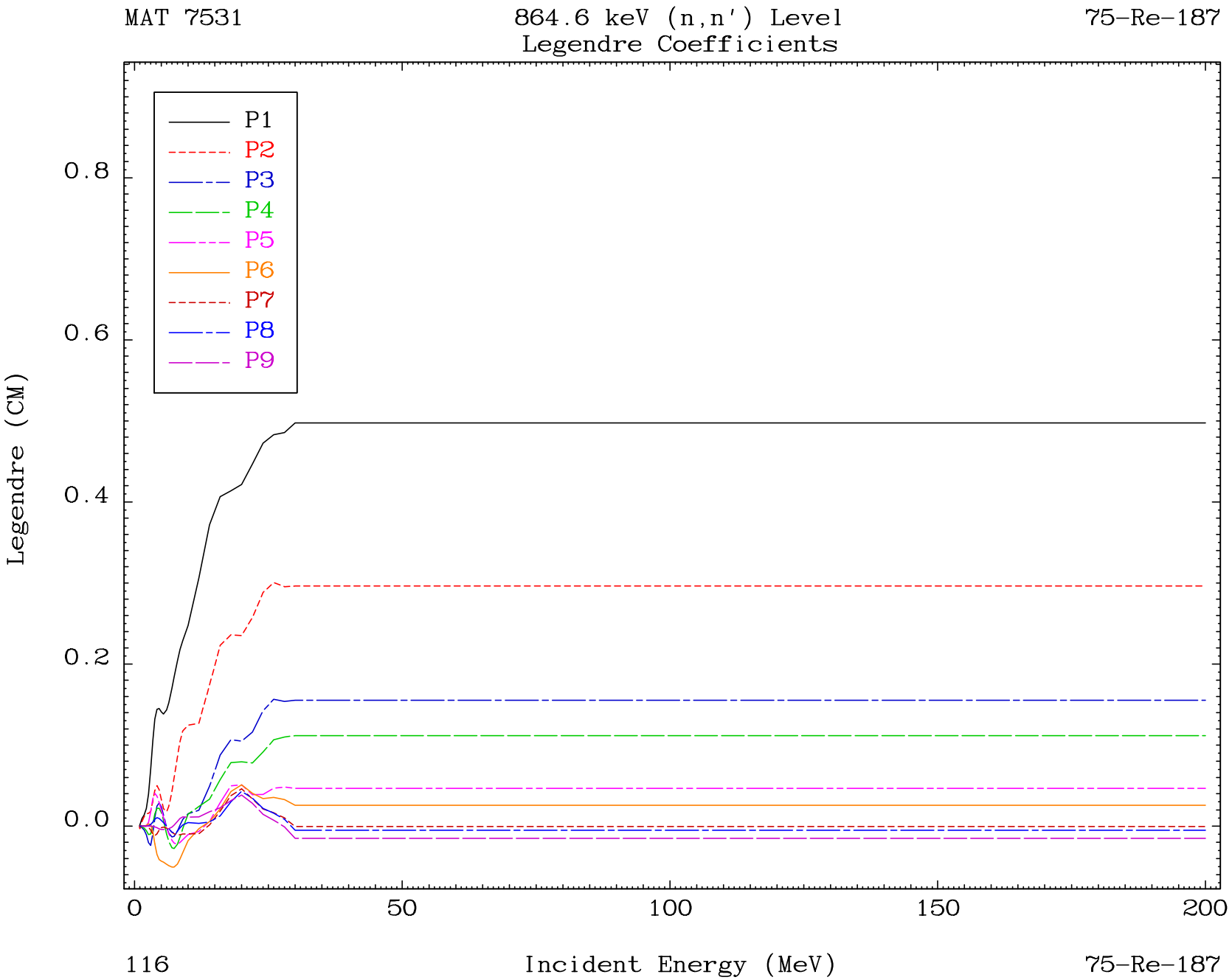

MAT 7531
842.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10-5
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
111
Incident Energy (MeV)
75-Re-187

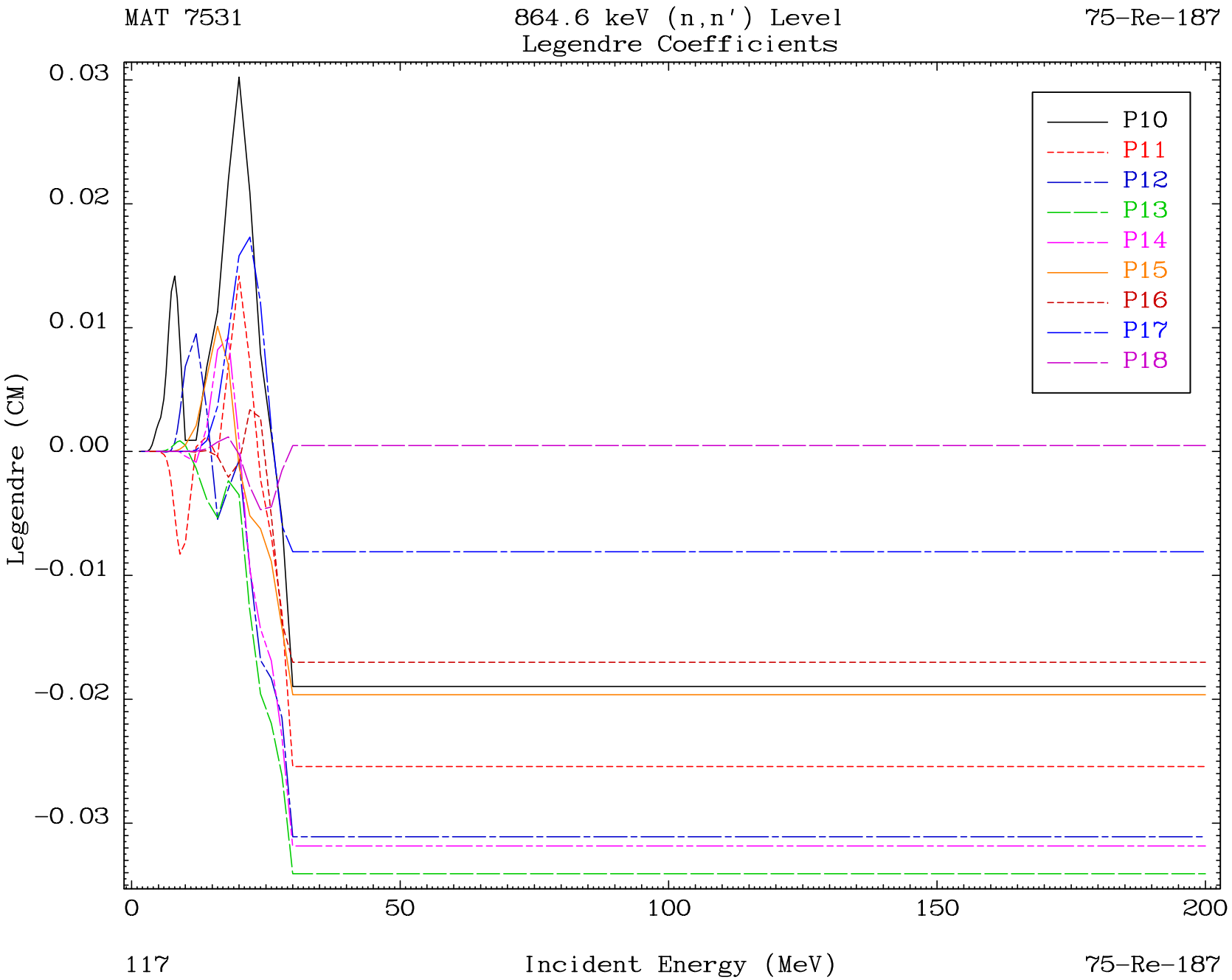

MAT 7531
844.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
112
Incident Energy (MeV)
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9

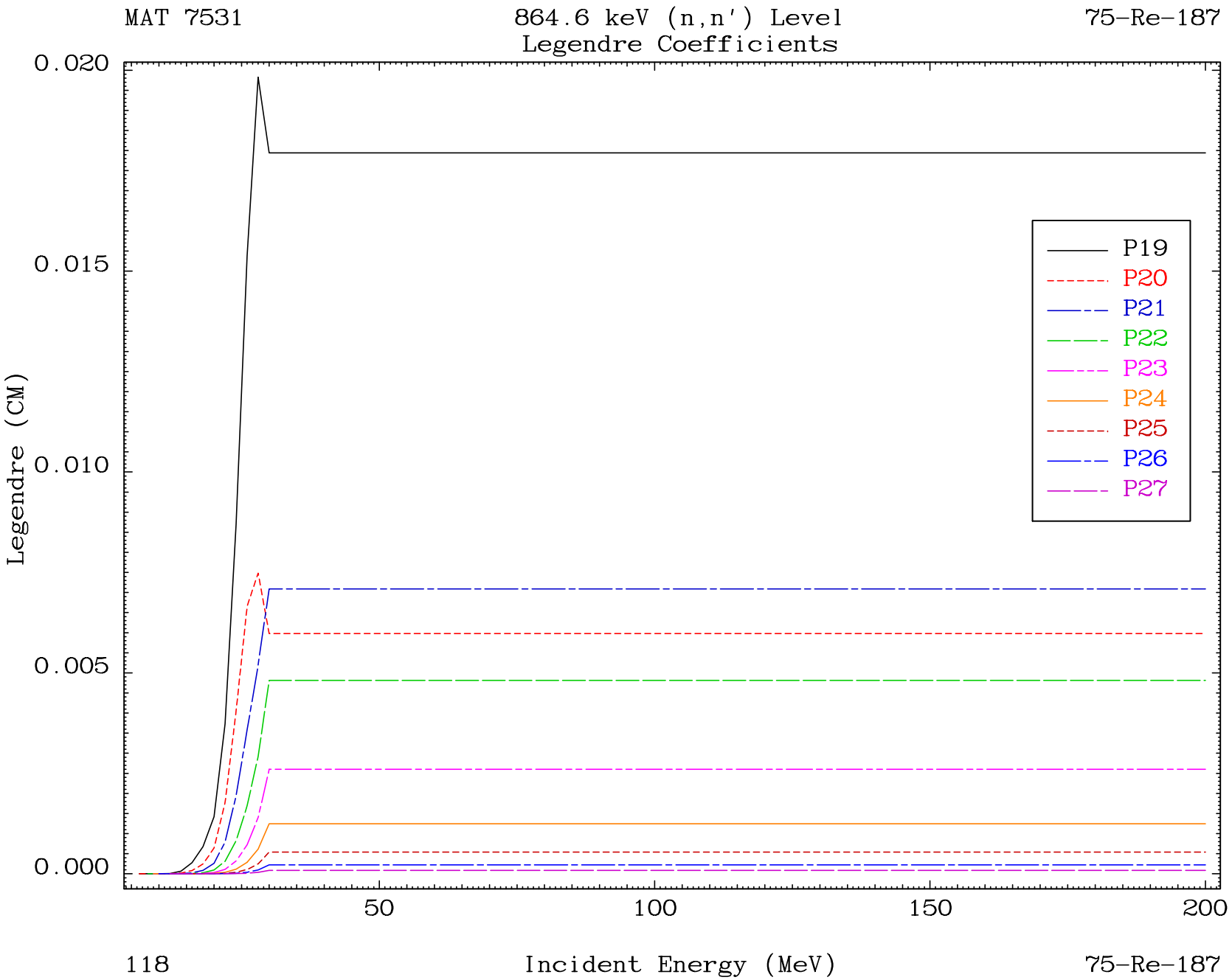

MAT 7531
844.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.02
0.01
0.00
-0.01
0
50
100
150
200
P10
P11
P12
P13
P14
P15
P16
P17
P18
113
Incident Energy (MeV)
75-Re-187

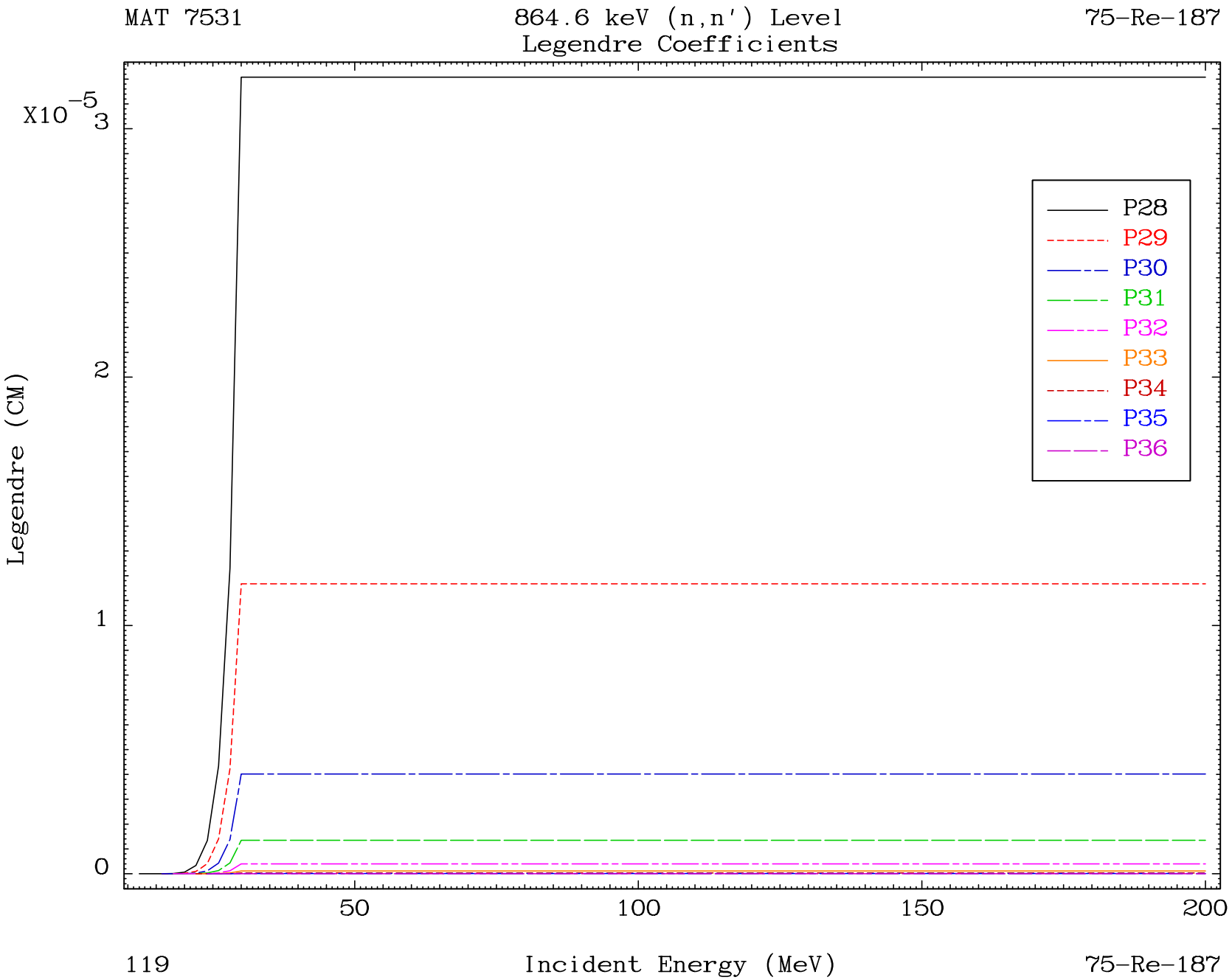

MAT 7531
844.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10^{-3}
1.5
1.0
0.5
0.0
−0.5
Legendre (CM)
50
100
150
200
Incident Energy (MeV)
114
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27

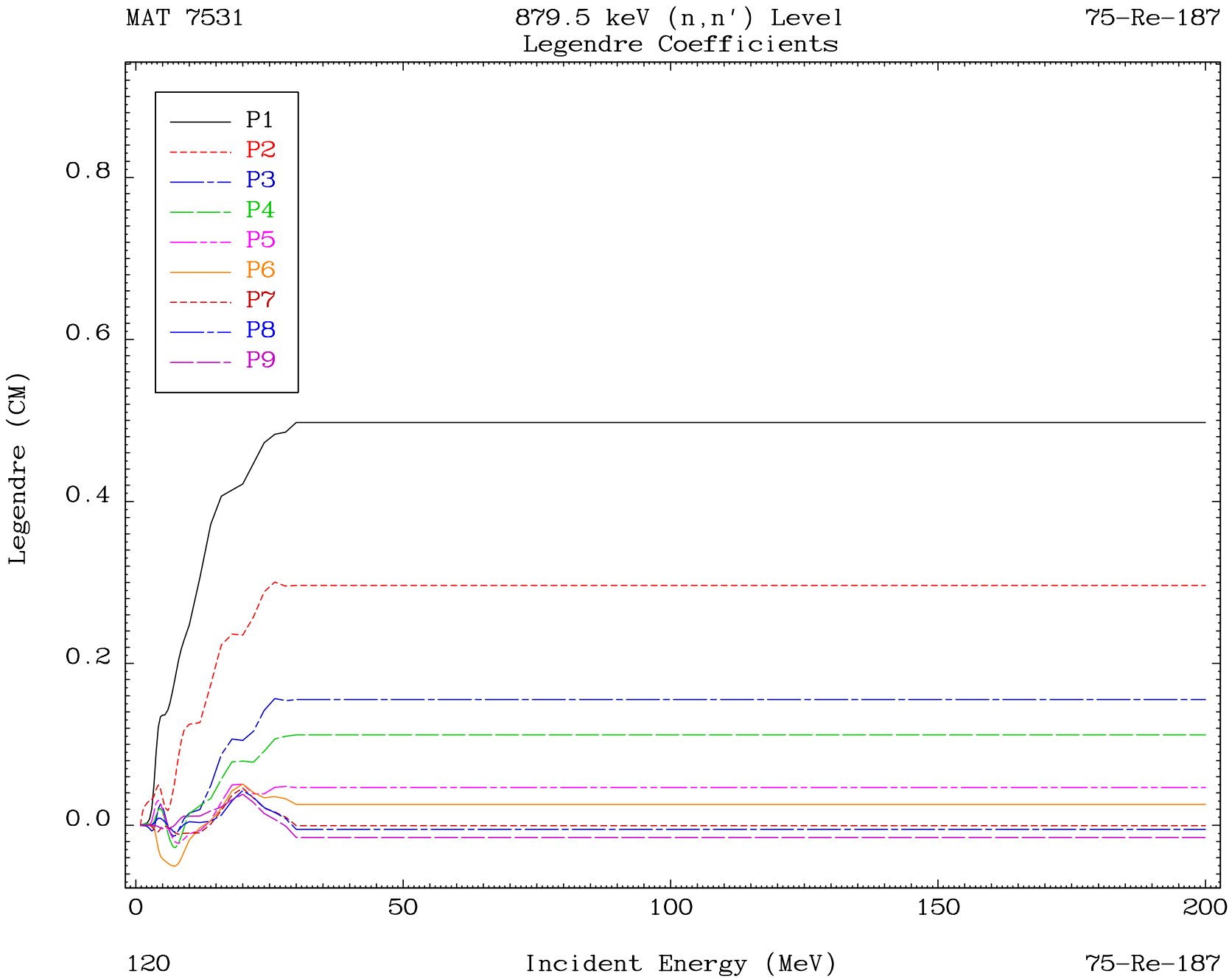

MAT 7531
844.7 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 −6
2.5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
115
Incident Energy (MeV)
75-Re-187

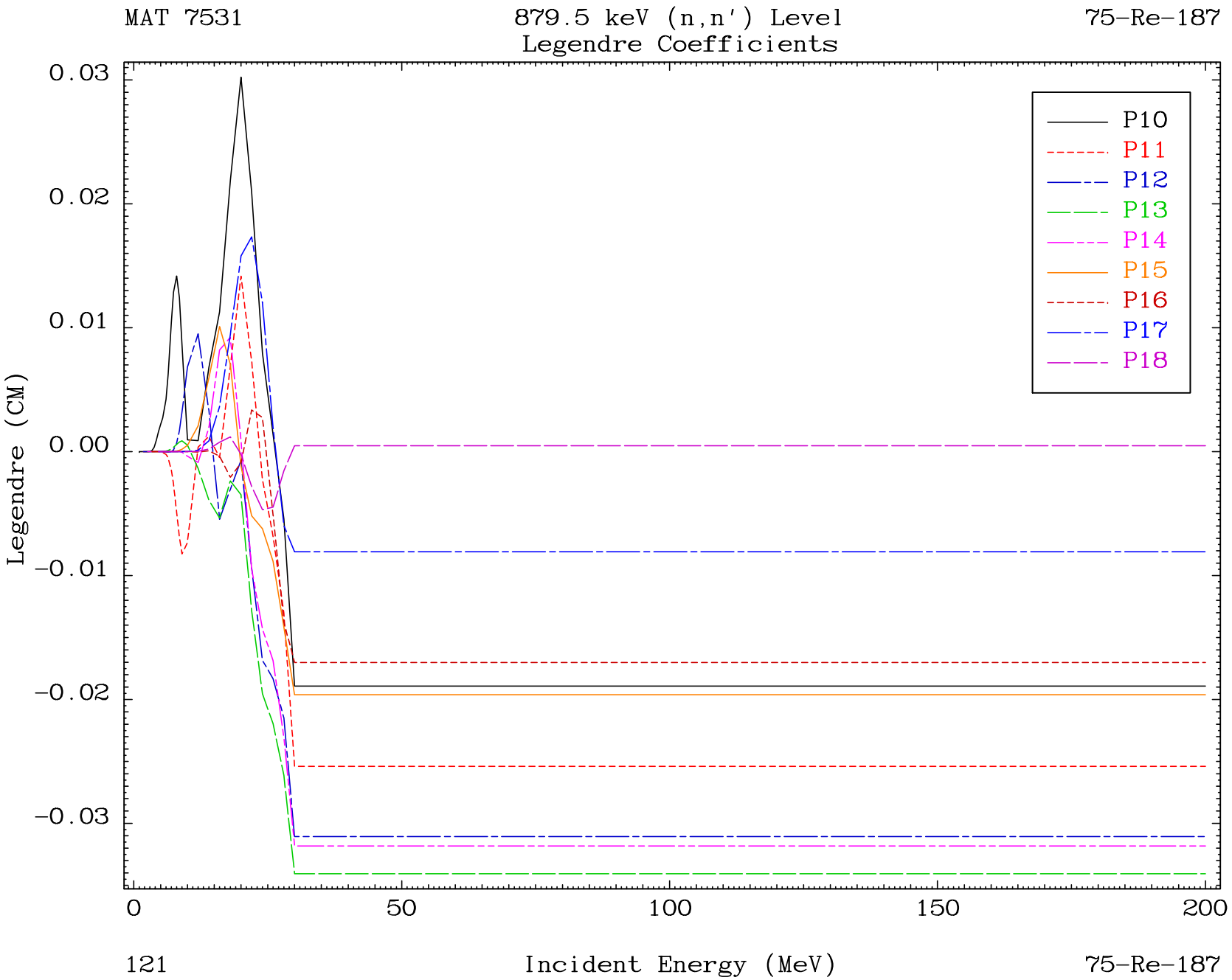

MAT 7531
864.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
116
Incident Energy (MeV)
75-Re-187

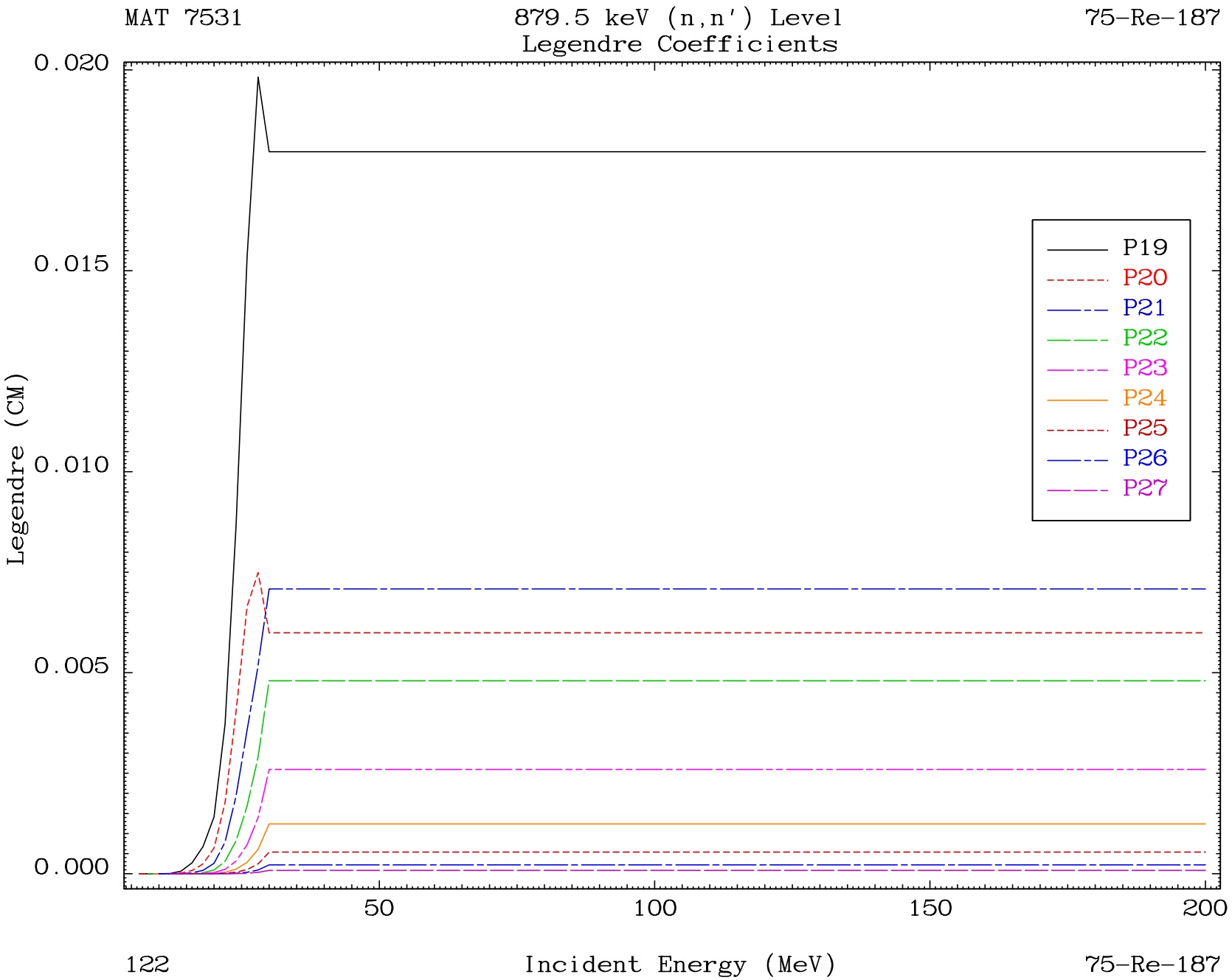

MAT 7531
864.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
117
Incident Energy (MeV)
75-Re-187

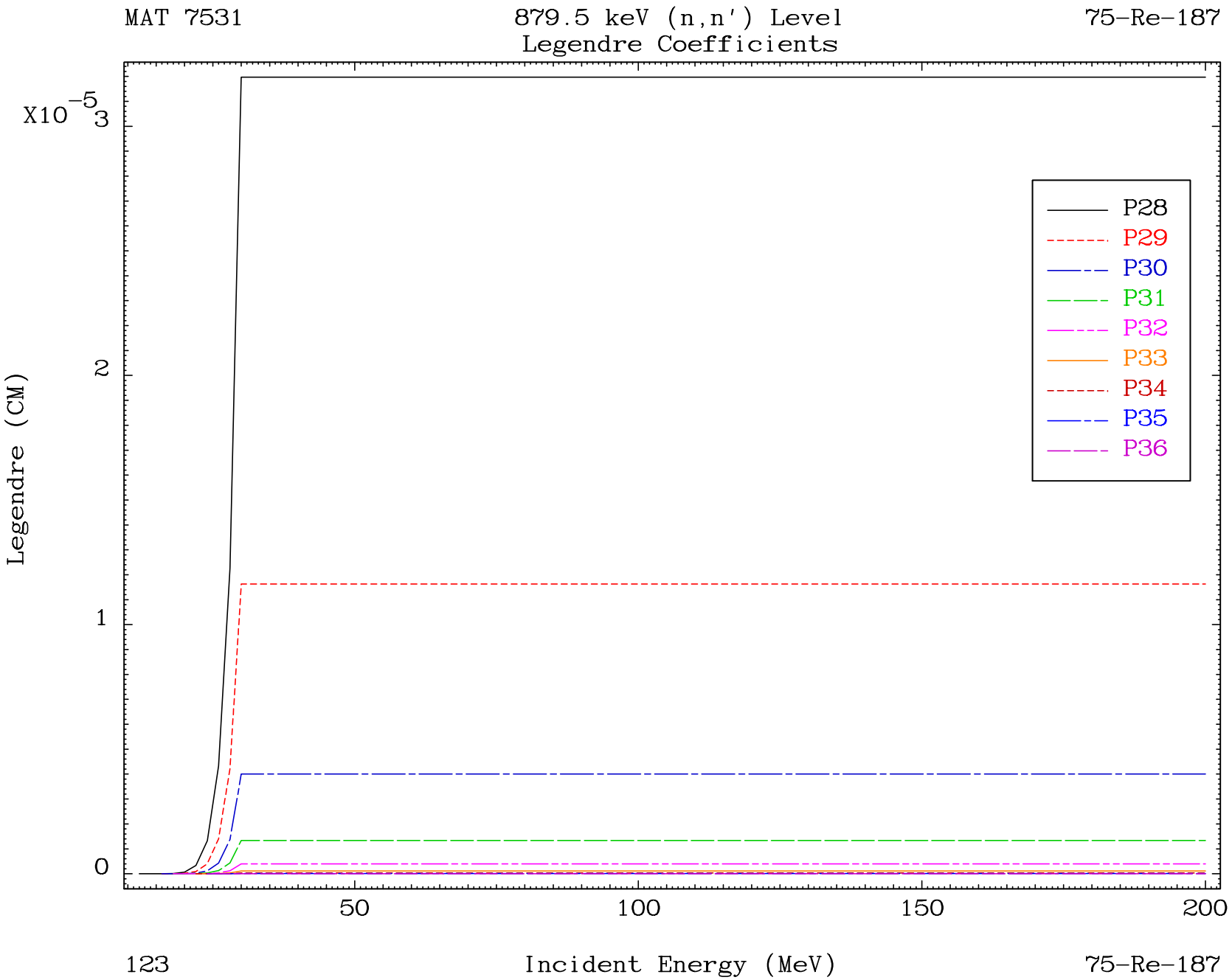

MAT 7531
864.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
118
Incident Energy (MeV)
75-Re-187

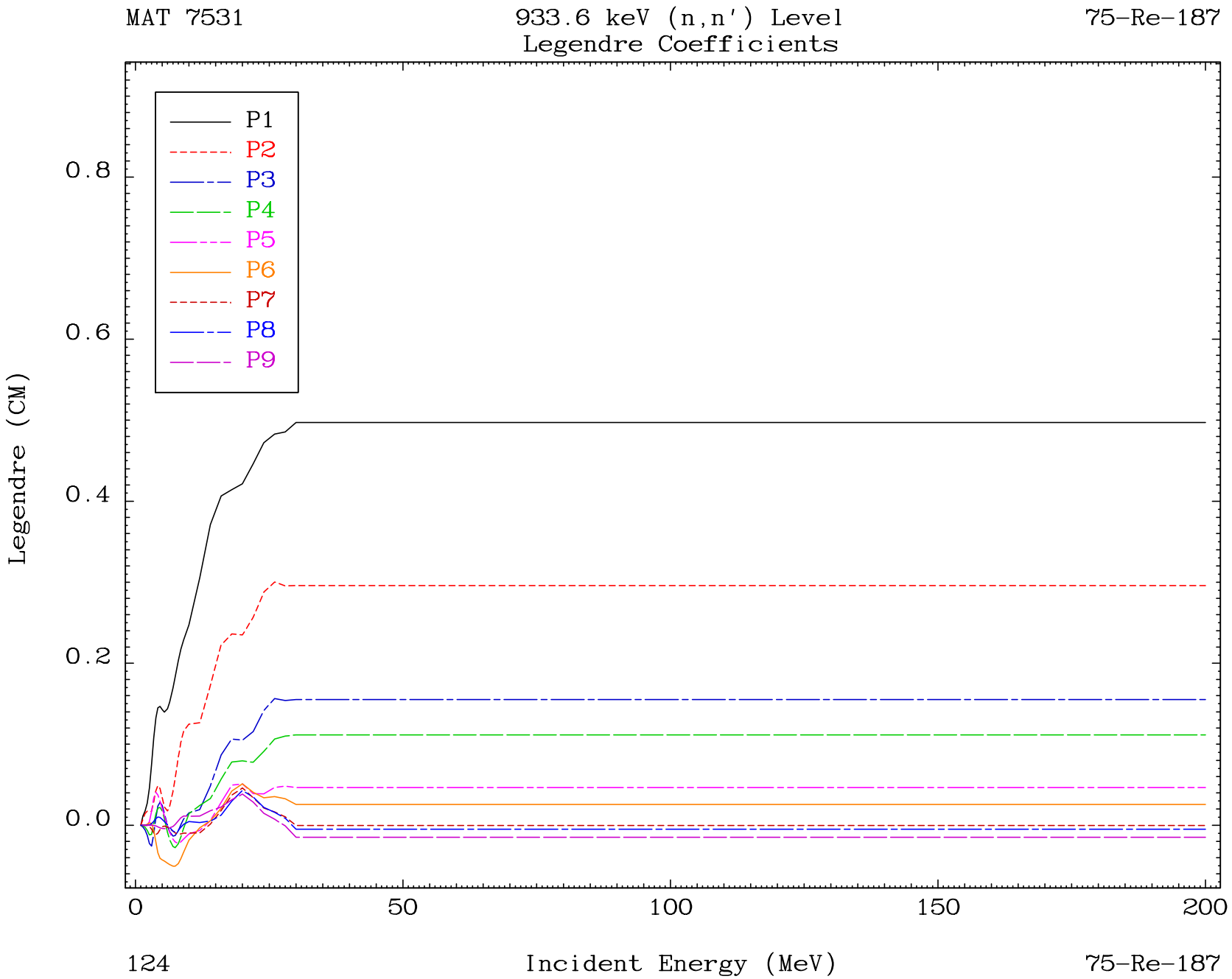

MAT 7531
864.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
119
Incident Energy (MeV)
75-Re-187

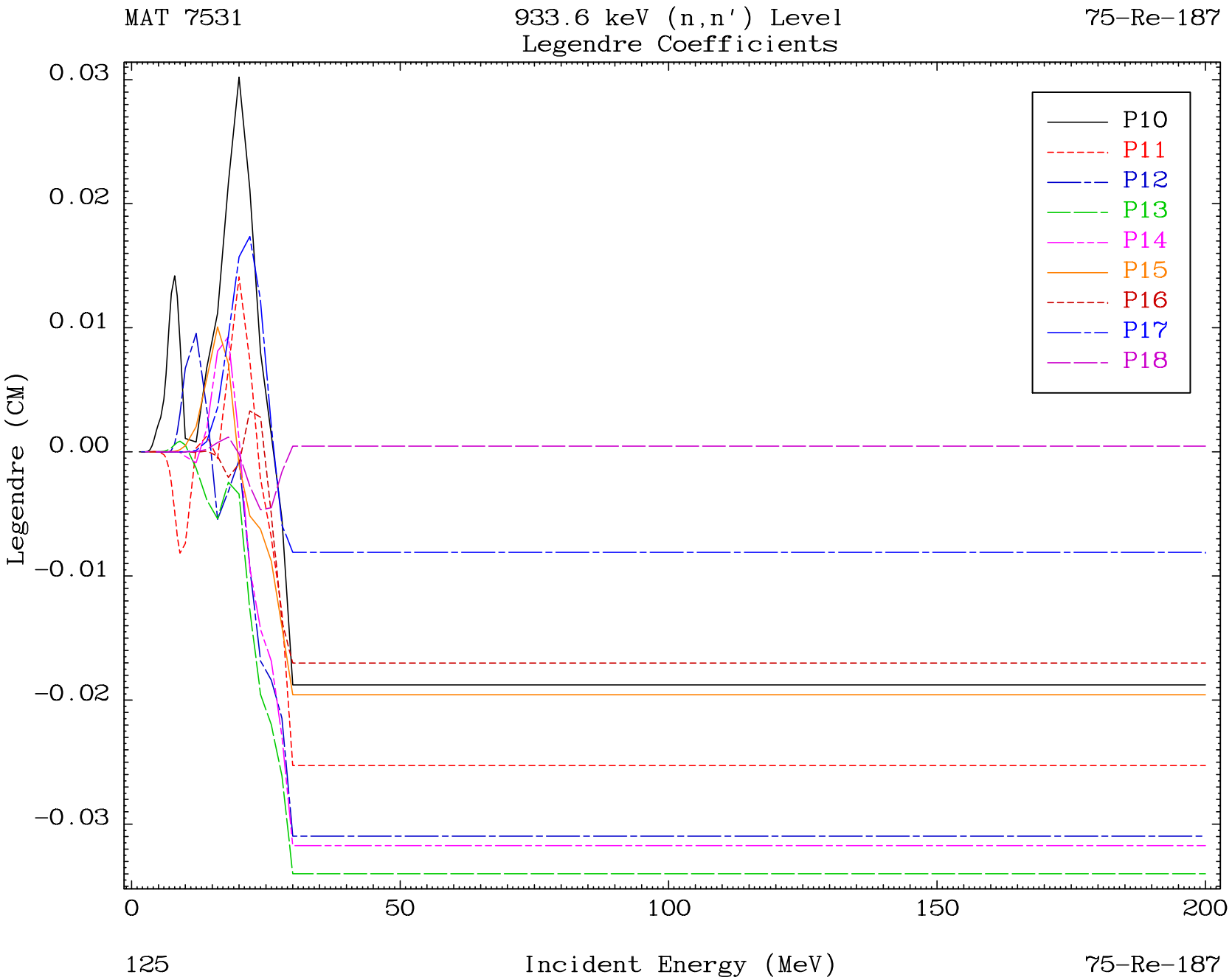

MAT 7531
879.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
120
Incident Energy (MeV)
75-Re-187

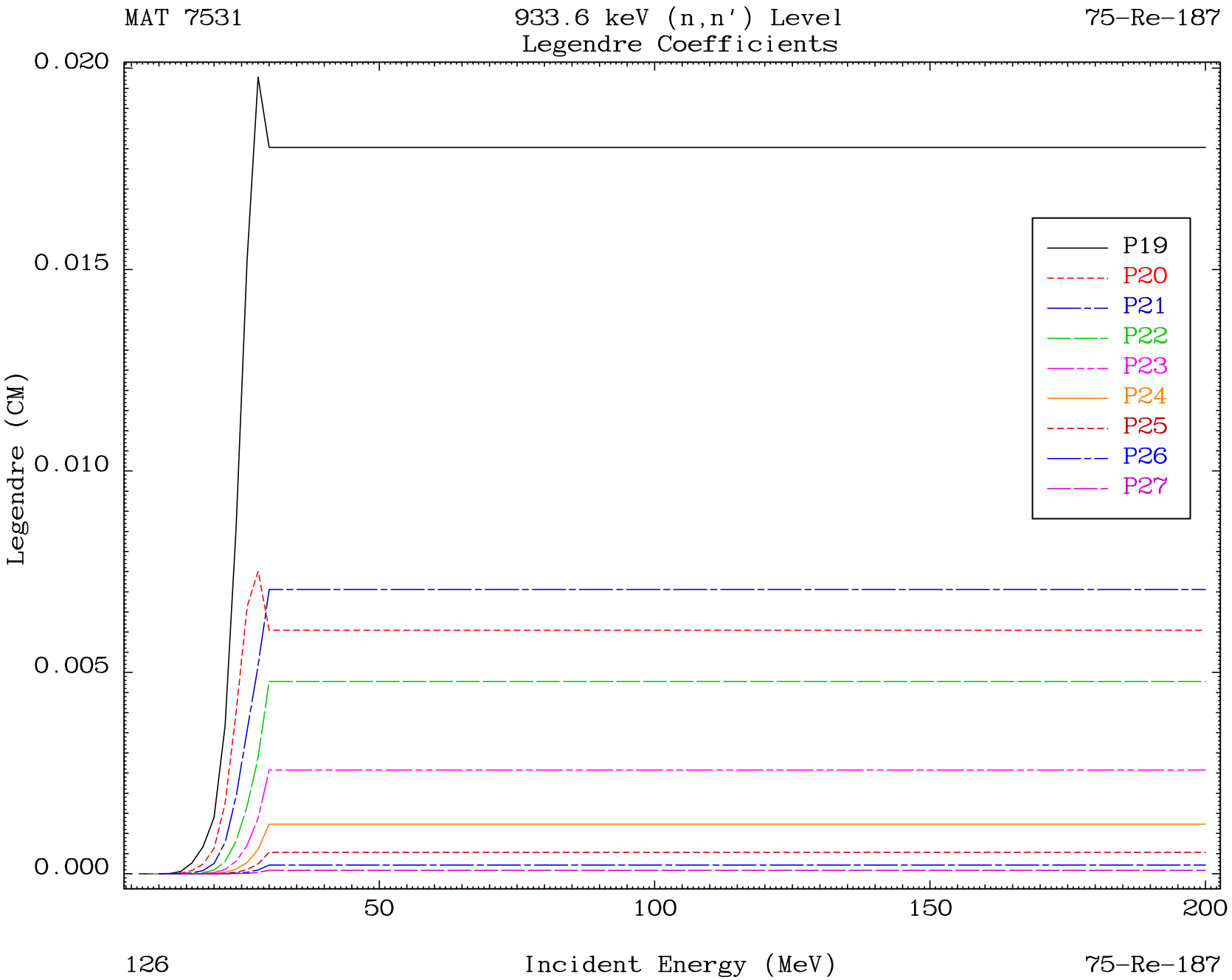

MAT 7531
879.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
121
Incident Energy (MeV)
75-Re-187

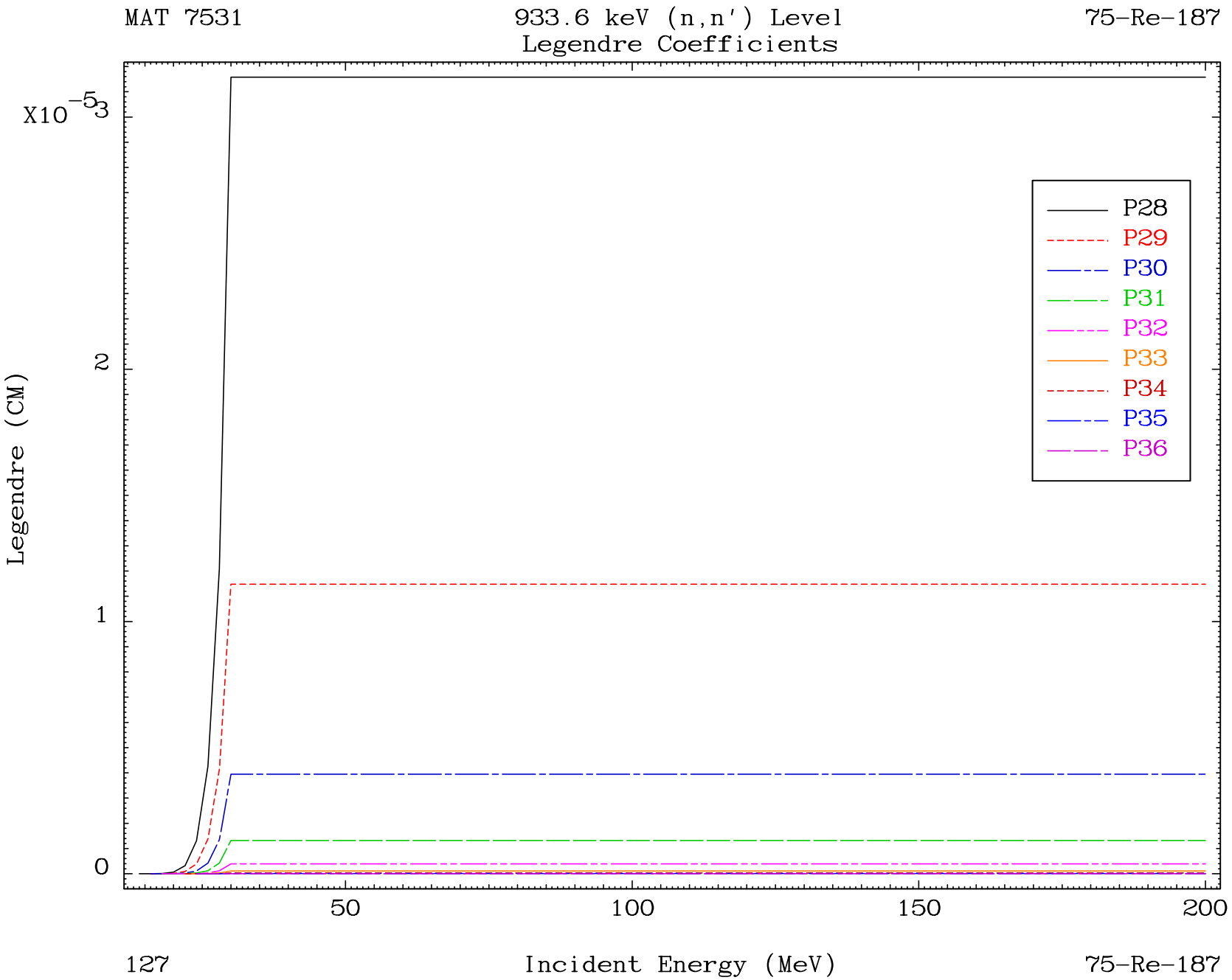

MAT 7531
879.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
122
Incident Energy (MeV)
75-Re-187

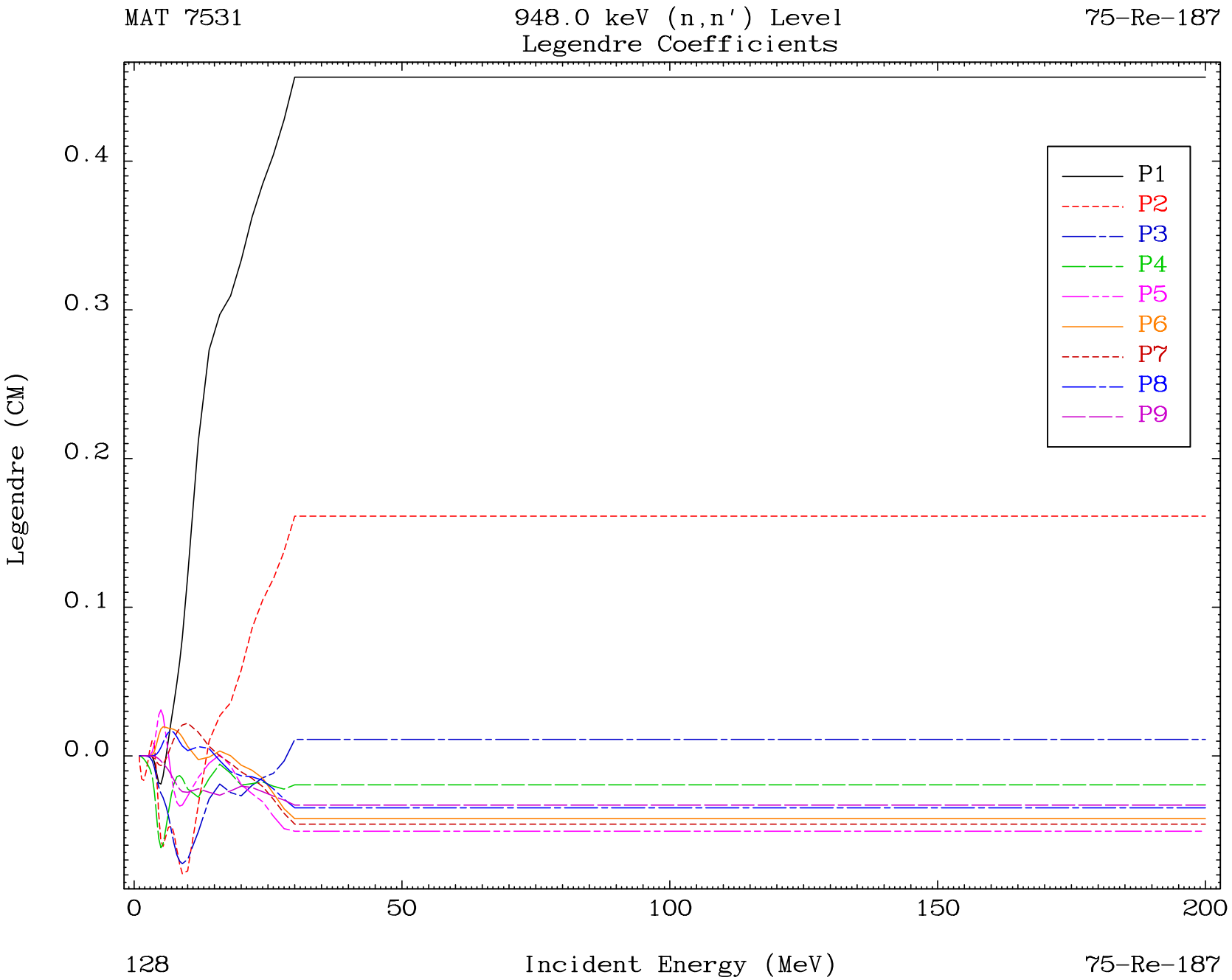

MAT 7531
879.5 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
123
Incident Energy (MeV)
75-Re-187

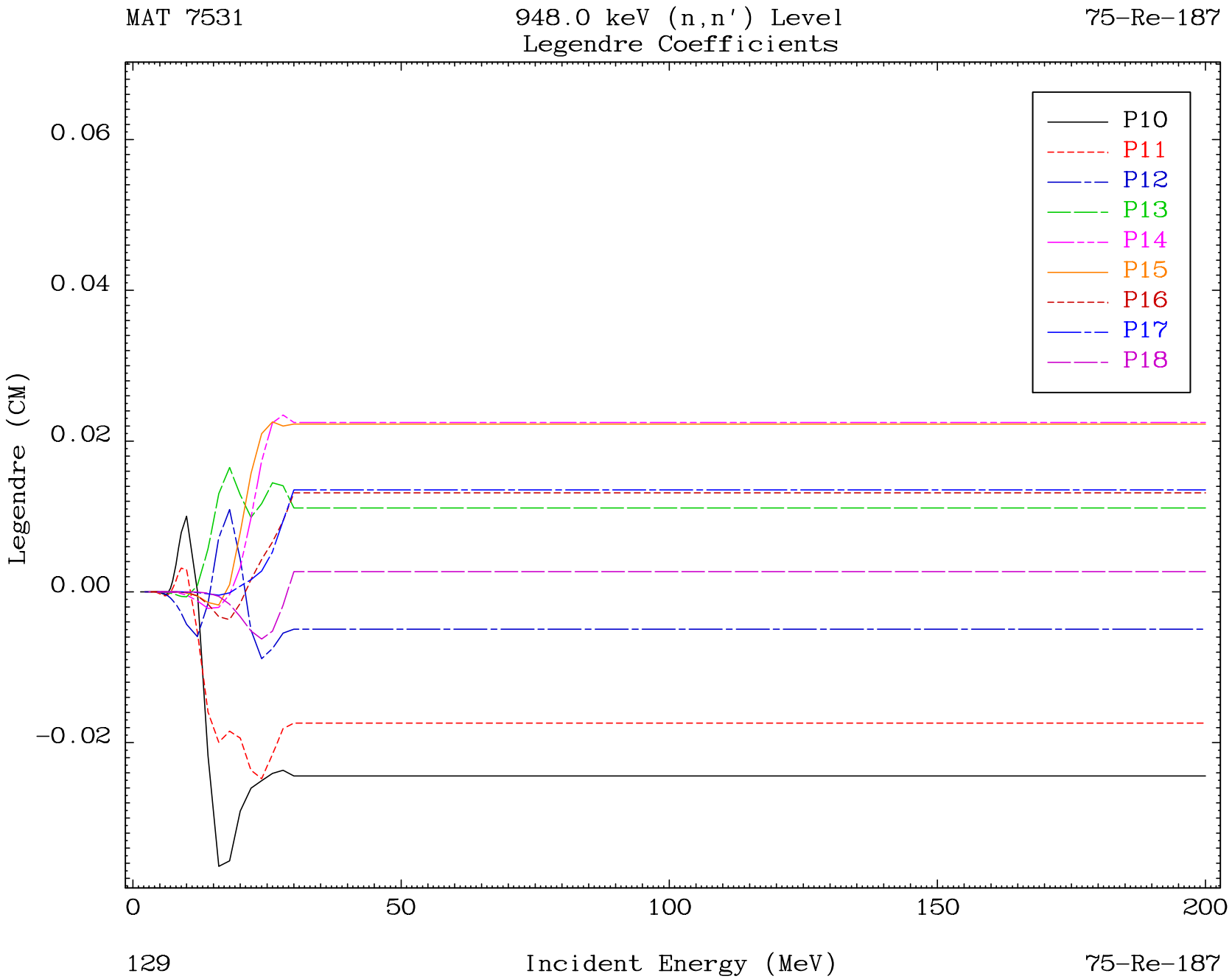

MAT 7531
933.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
0.8
0.6
0.4
0.2
0.0
0
50
100
150
200
124
Incident Energy (MeV)
75-Re-187

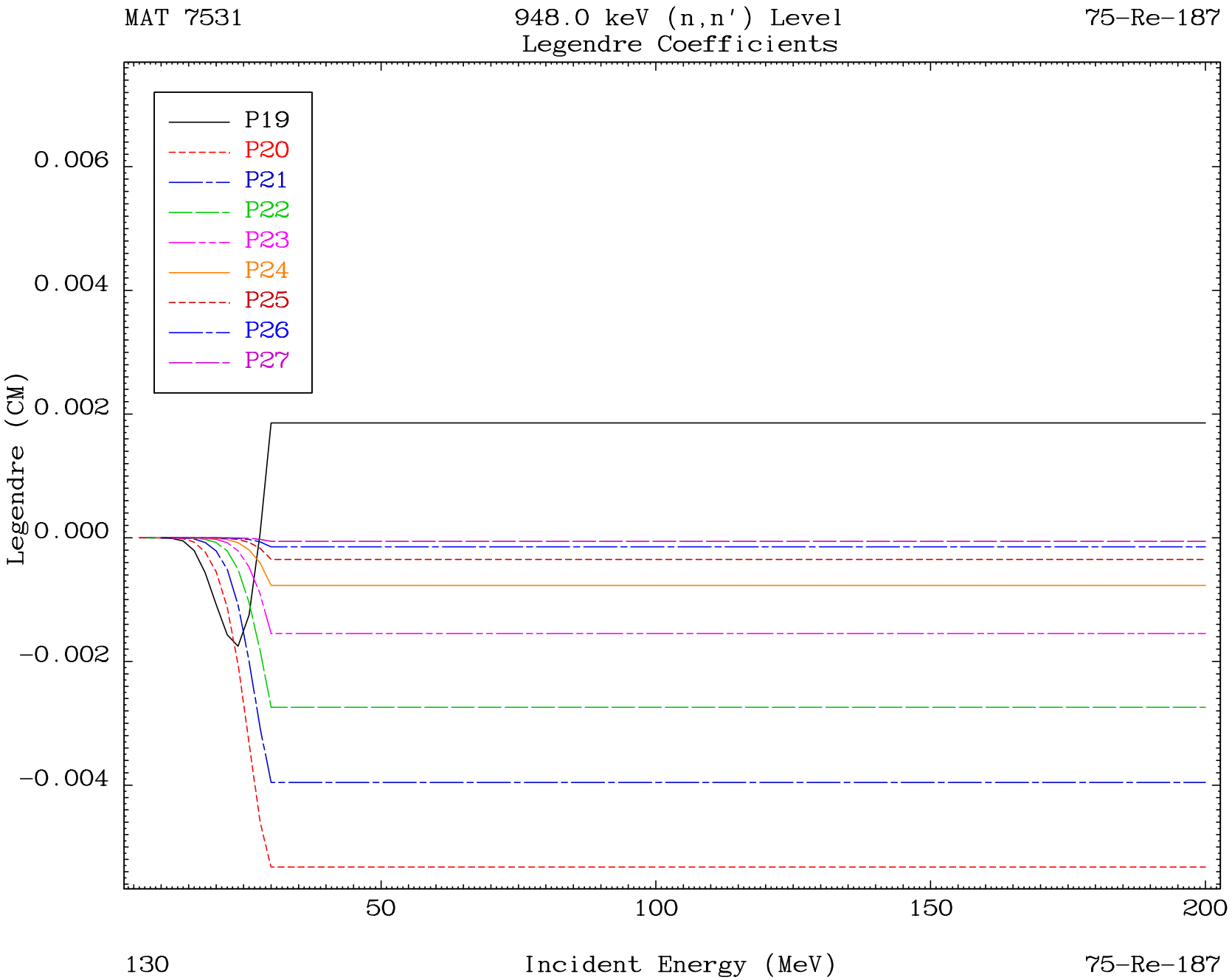

MAT 7531
933.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
125
Incident Energy (MeV)
75-Re-187

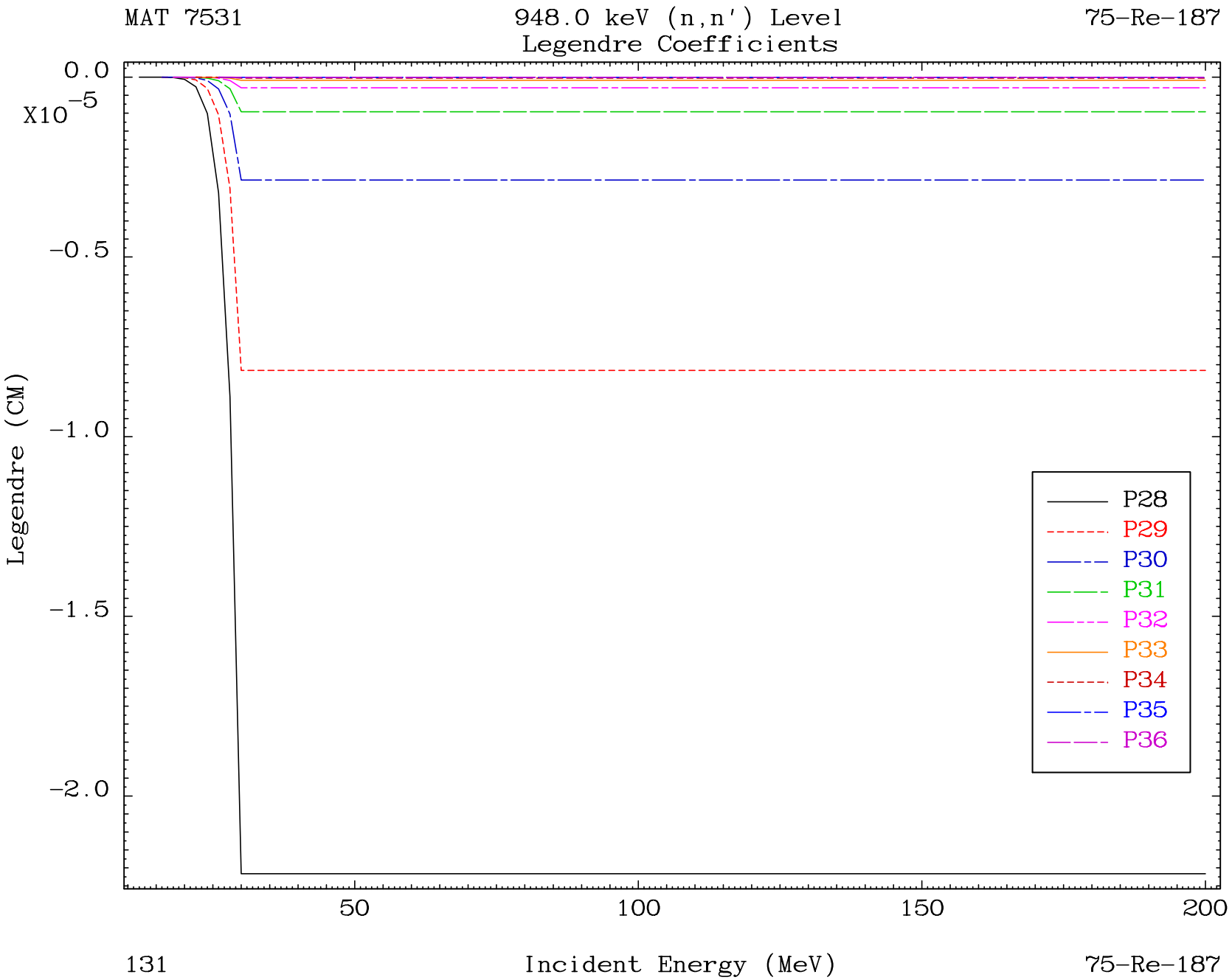

MAT 7531
933.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
126
Incident Energy (MeV)
75-Re-187

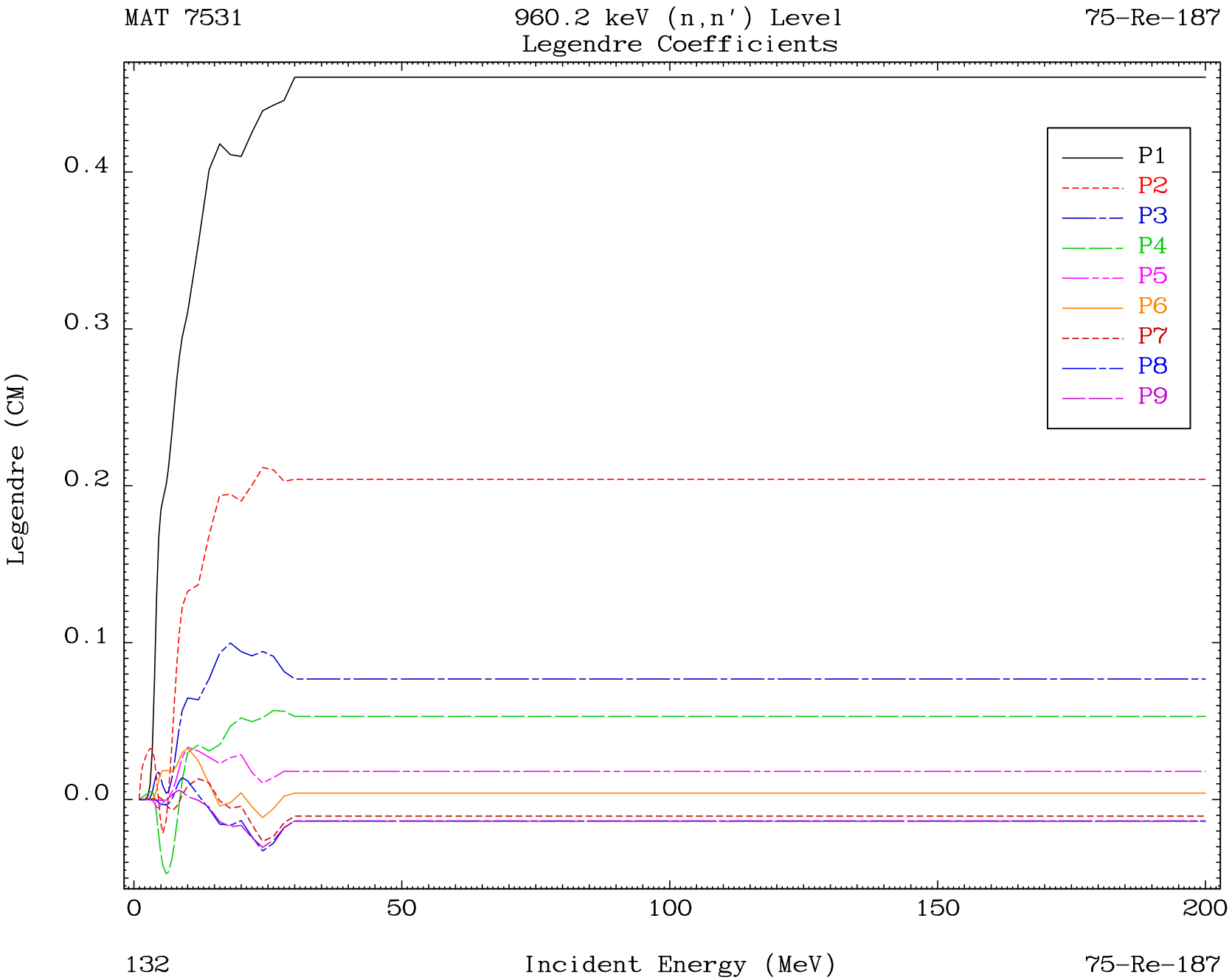

MAT 7531
933.6 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 -5
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
127
Incident Energy (MeV)
75-Re-187

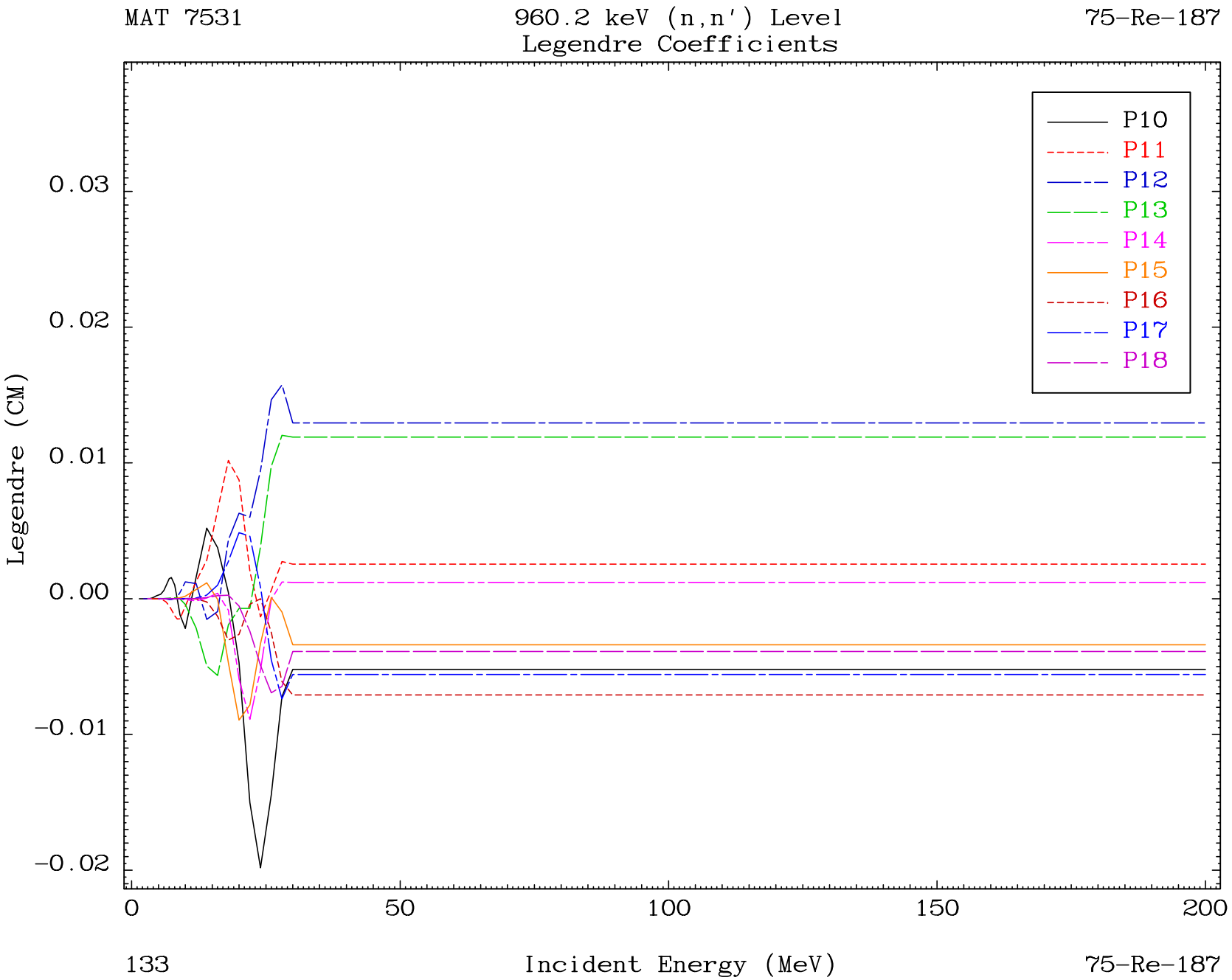

MAT 7531
948.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
128
Incident Energy (MeV)
75-Re-187

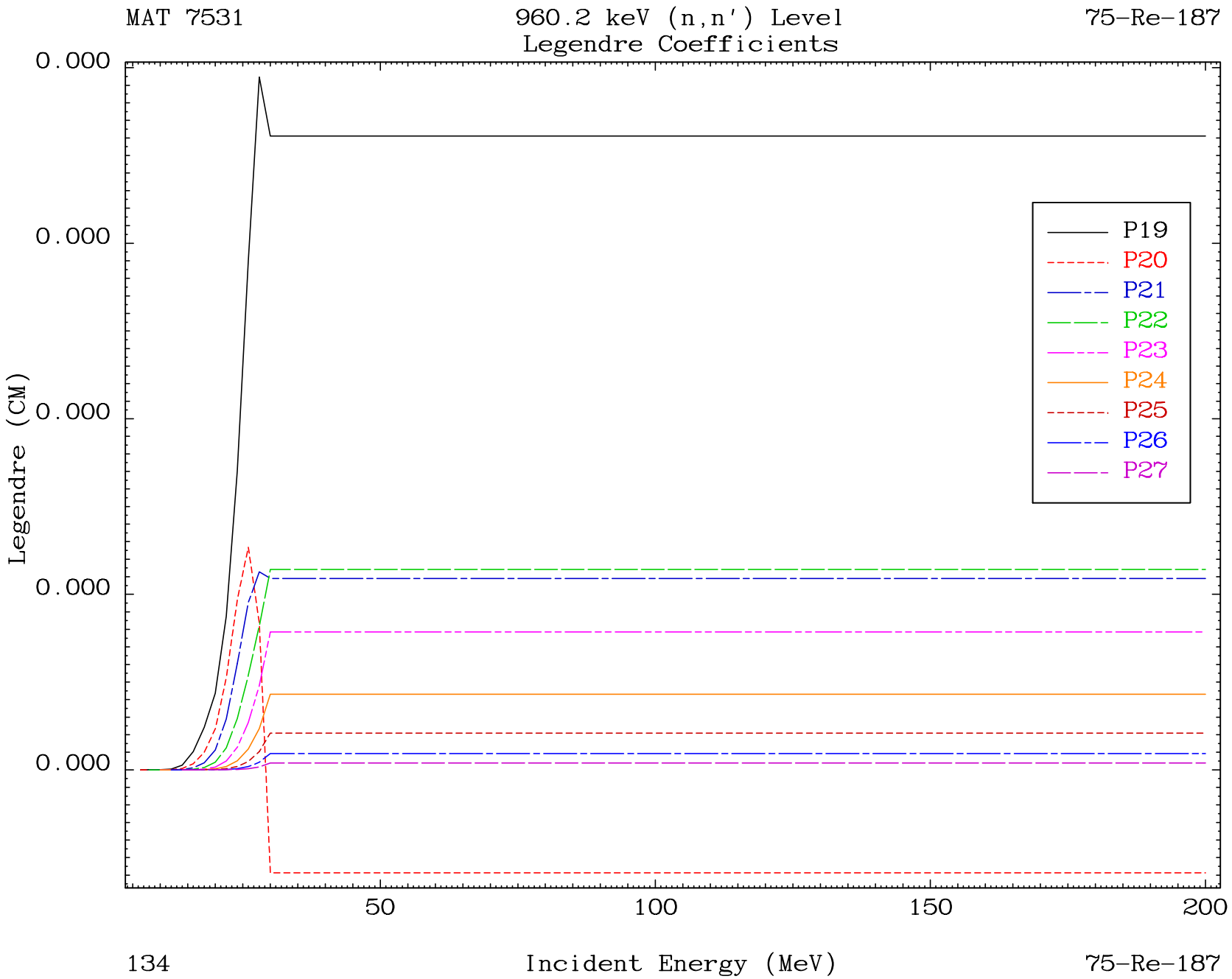

MAT 7531
948.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
129
Incident Energy (MeV)
75-Re-187

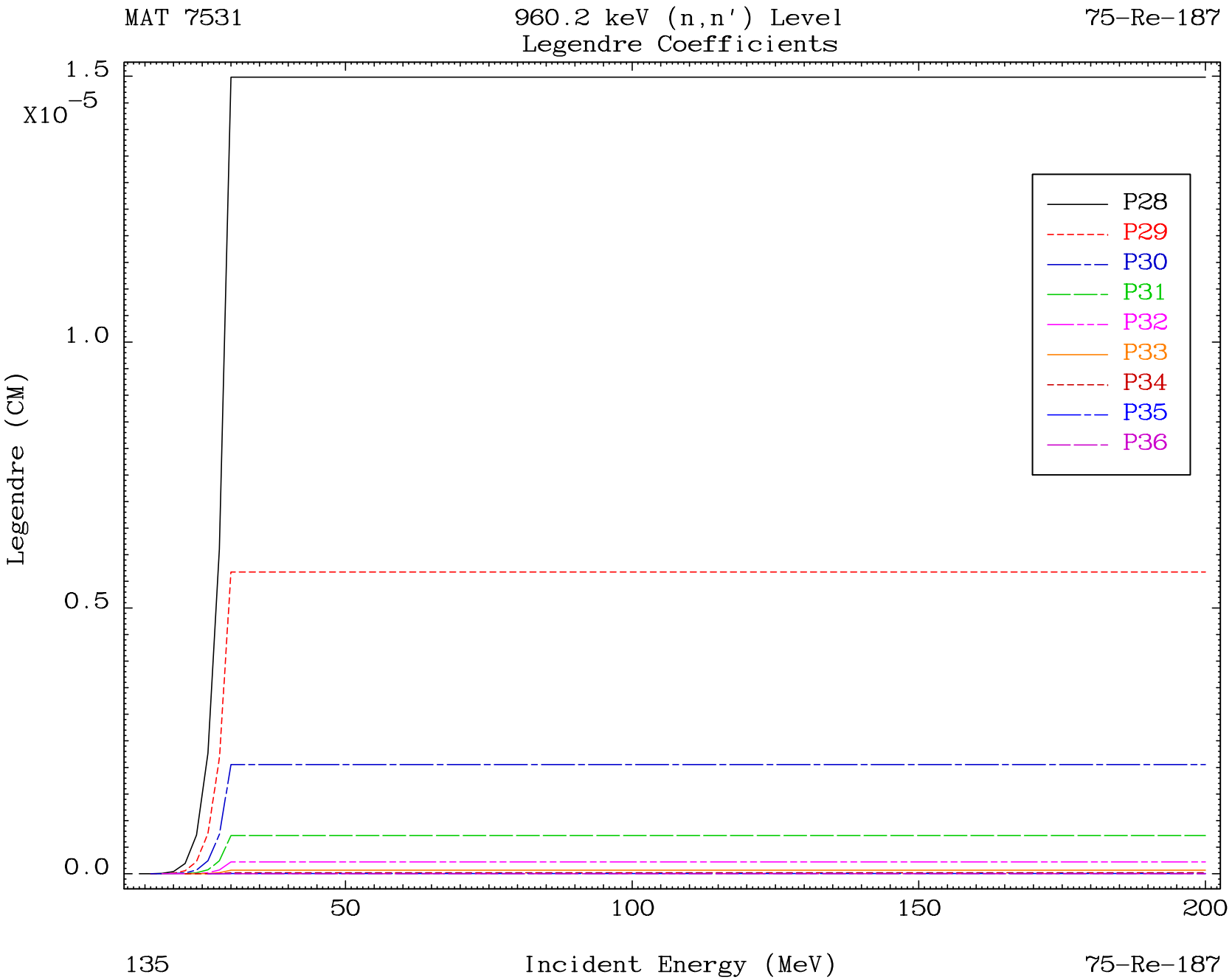

MAT 7531
948.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.006
0.004
0.002
0.000
-0.002
-0.004
Legendre (CM)
50
100
150
200
130
Incident Energy (MeV)
75-Re-187

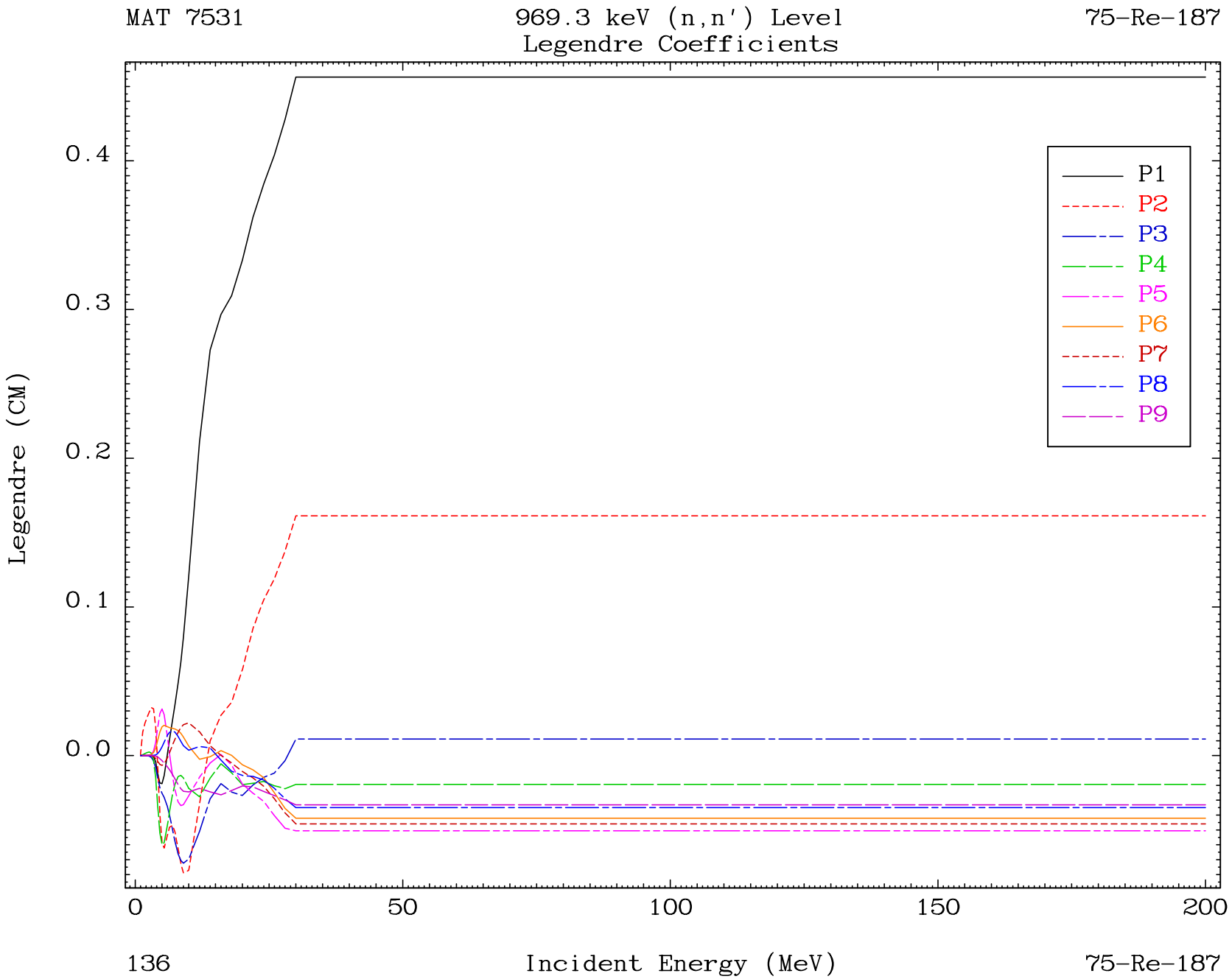

MAT 7531
948.0 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10^-5
-0.5
-1.0
-1.5
-2.0
Legendre (CM)
50
100
150
200
131
Incident Energy (MeV)
75-Re-187
P28
P29
P30
P31
P32
P33
P34
P35
P36

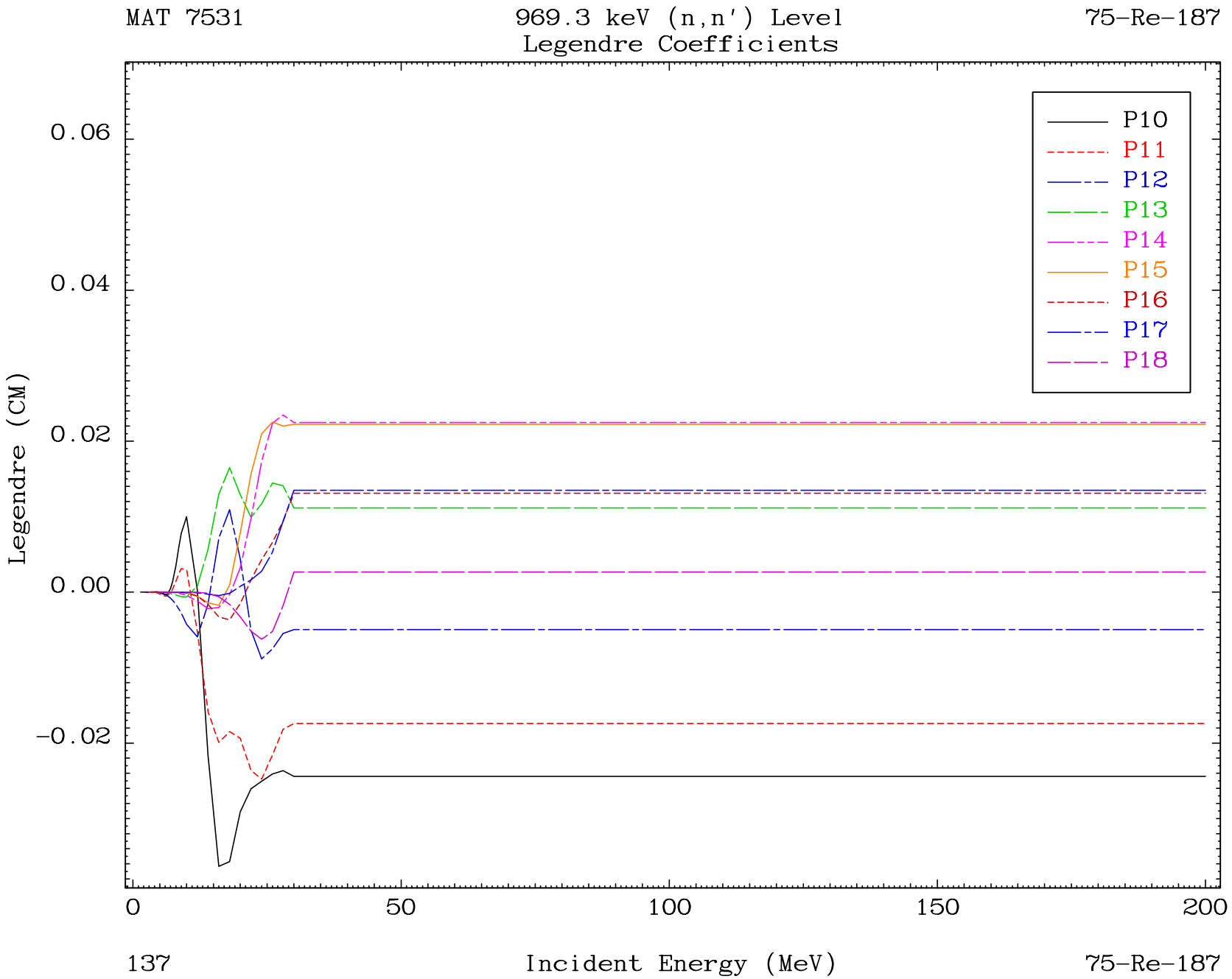

MAT 7531
960.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
132
Incident Energy (MeV)
75-Re-187

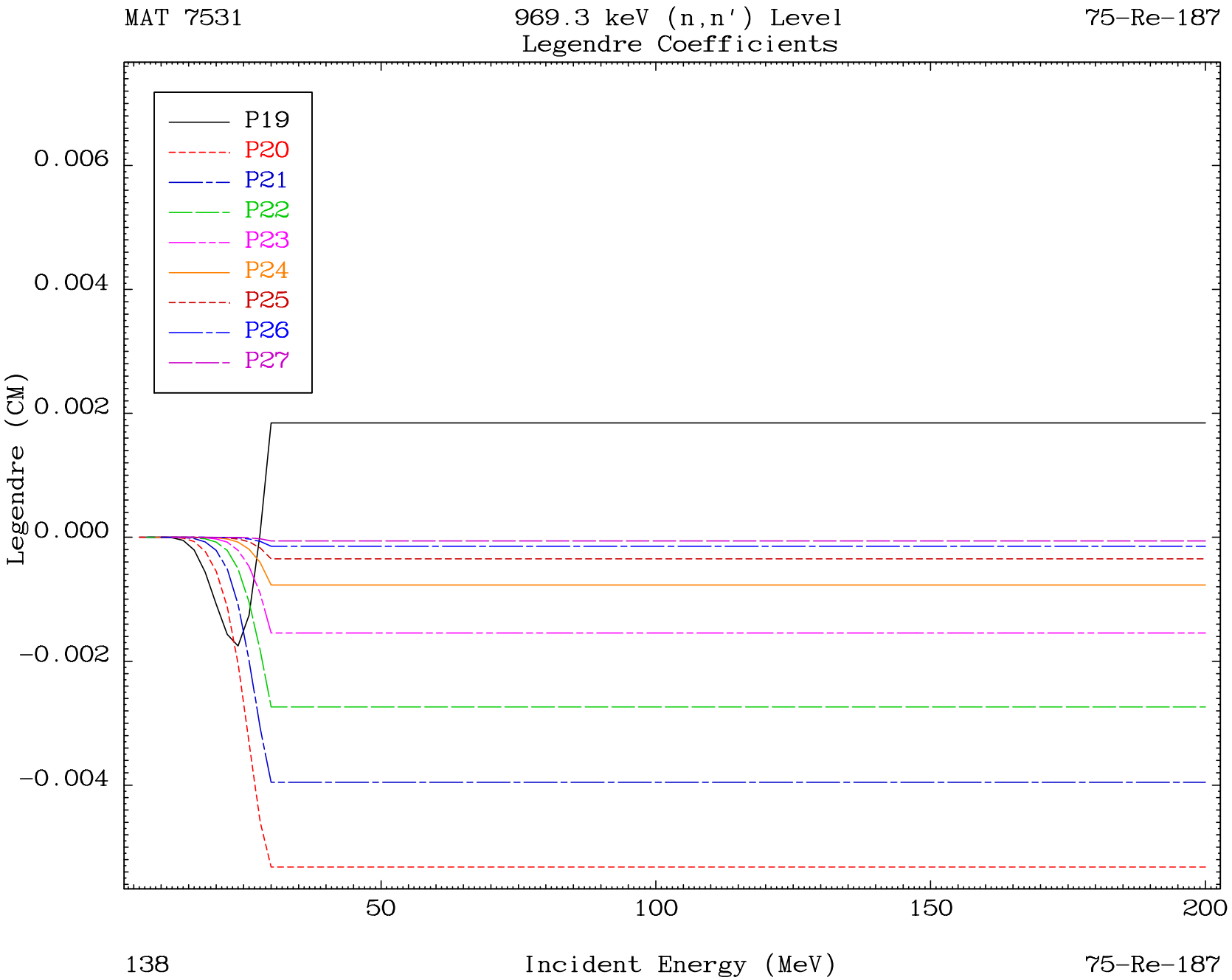

MAT 7531
960.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.03
0.02
0.01
0.00
-0.01
-0.02
Legendre (CM)
0
50
100
150
200
133
Incident Energy (MeV)
75-Re-187

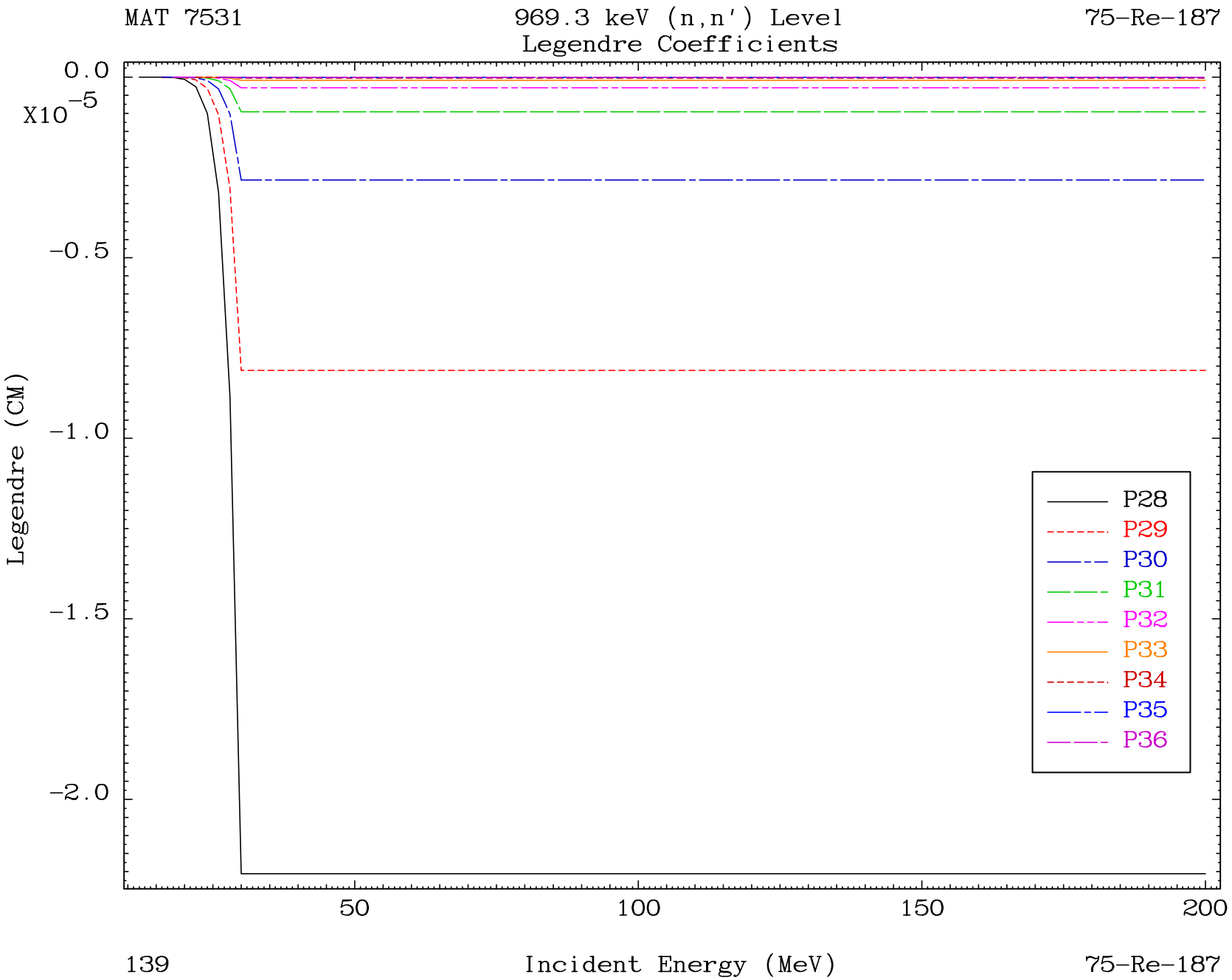

MAT 7531
960.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.000
0.000
0.000
0.000
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
134
Incident Energy (MeV)
75-Re-187

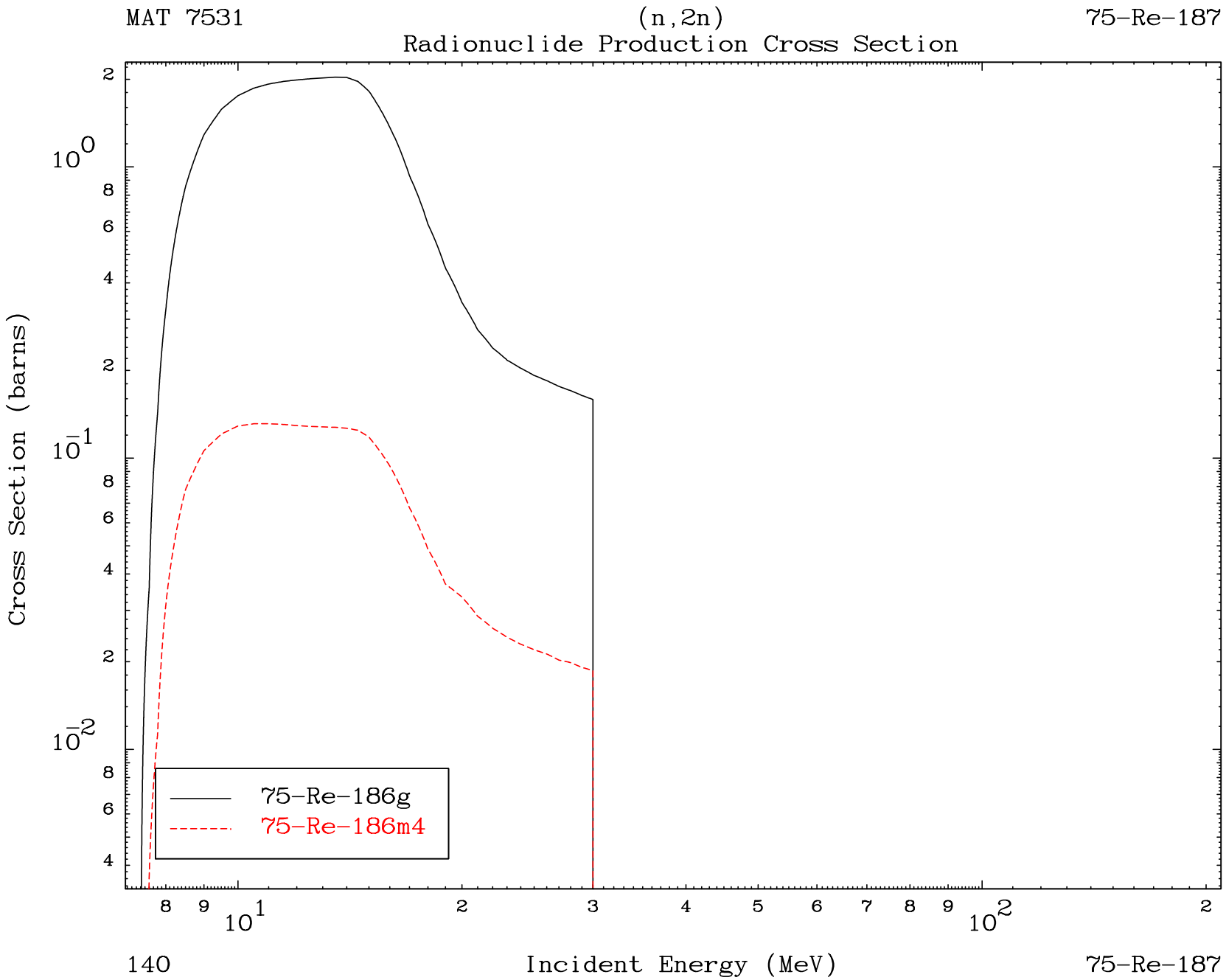

MAT 7531
960.2 keV (n,n') Level
Legendre Coefficients
75-Re-187
X10 −5
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
135
Incident Energy (MeV)
75-Re-187

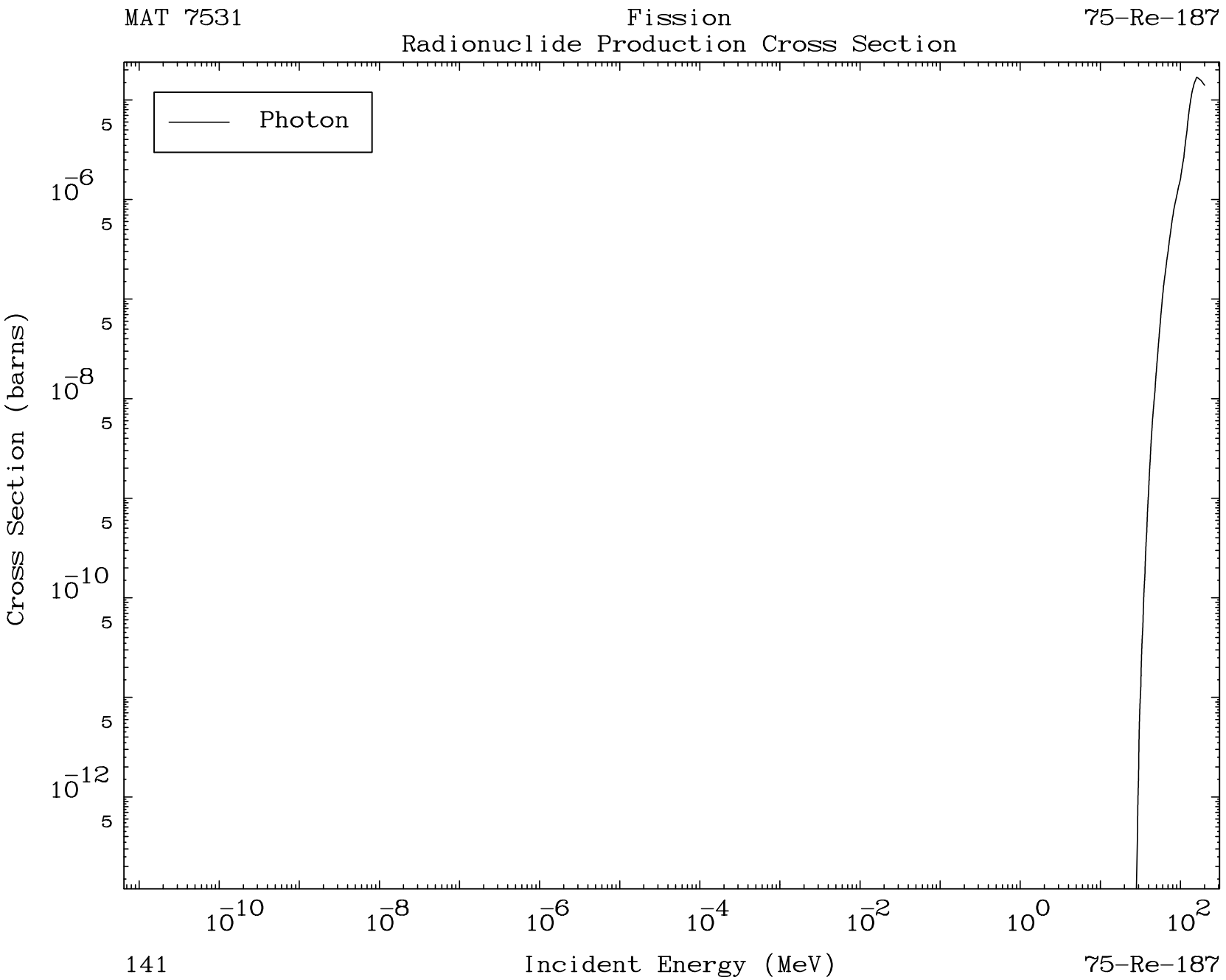

MAT 7531
969.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
136
Incident Energy (MeV)
75-Re-187

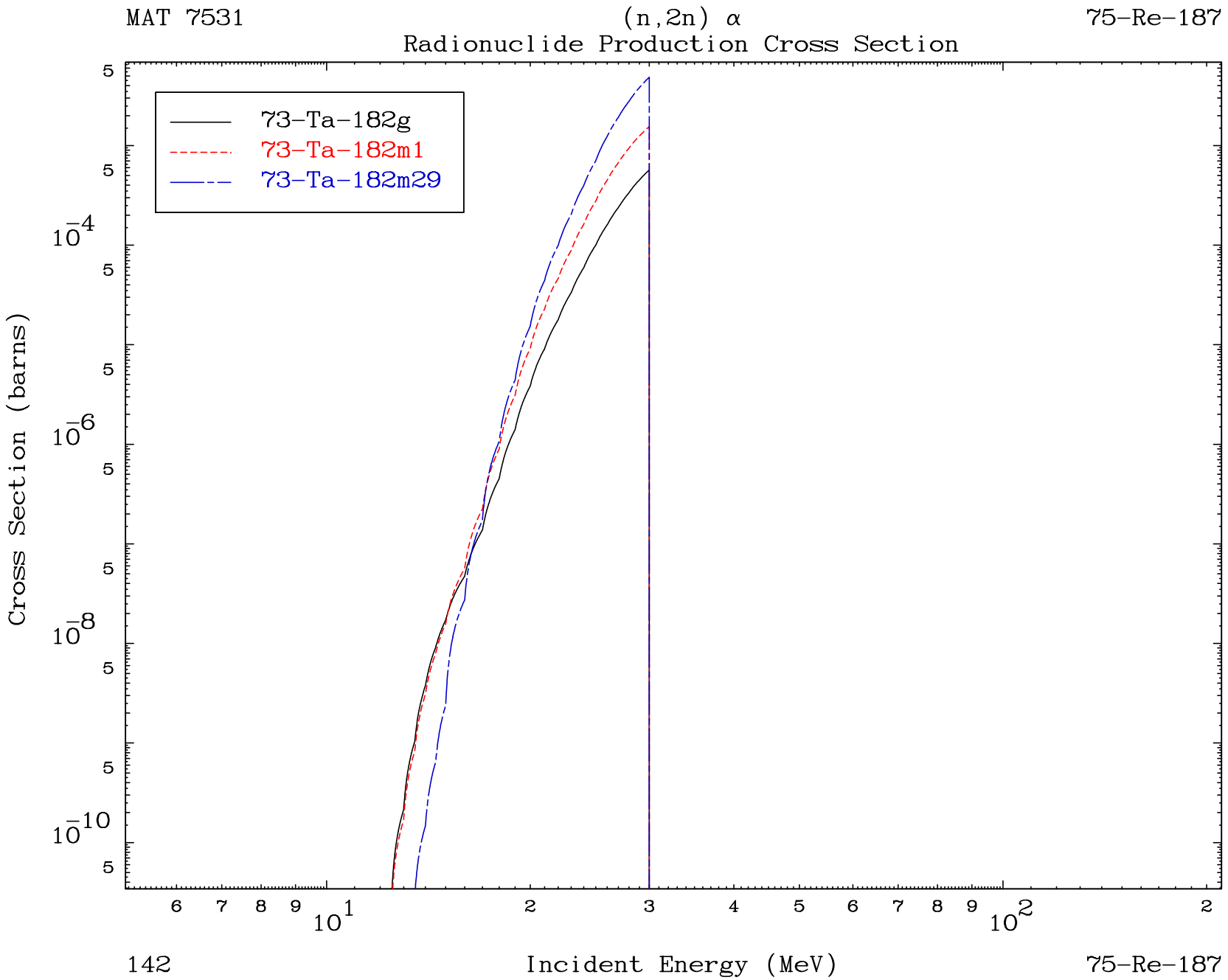

MAT 7531
969.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
137
Incident Energy (MeV)
75-Re-187

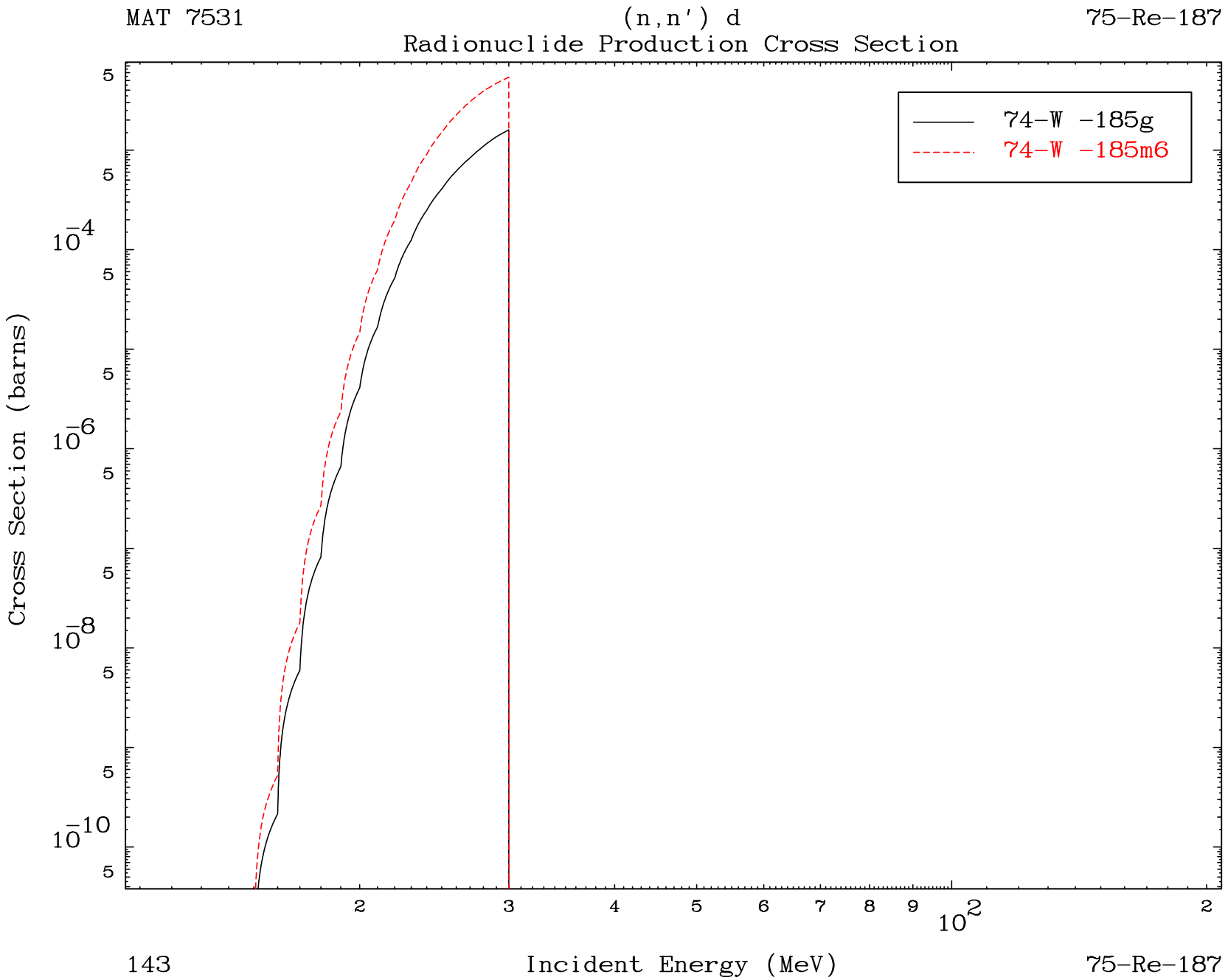

MAT 7531
969.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.006
0.004
0.002
0.000
-0.002
-0.004
Legendre (CM)
50
100
150
200
138
Incident Energy (MeV)
75-Re-187

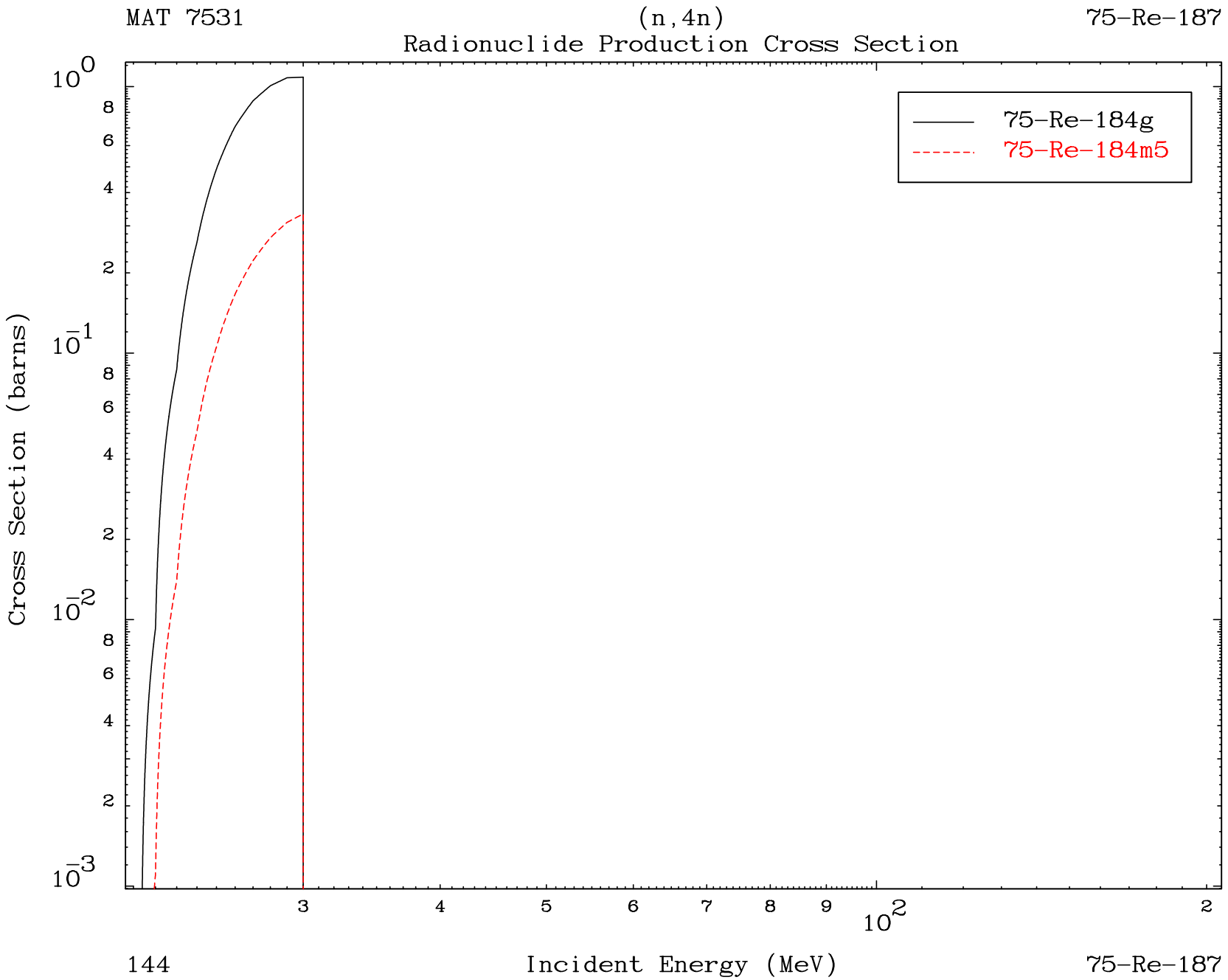

MAT 7531
969.3 keV (n,n') Level
Legendre Coefficients
75-Re-187
0.0
X10^-5
-0.5
-1.0
-1.5
-2.0
Legendre (CM)
50
100
150
200
139
Incident Energy (MeV)
75-Re-187
P28
P29
P30
P31
P32
P33
P34
P35
P36

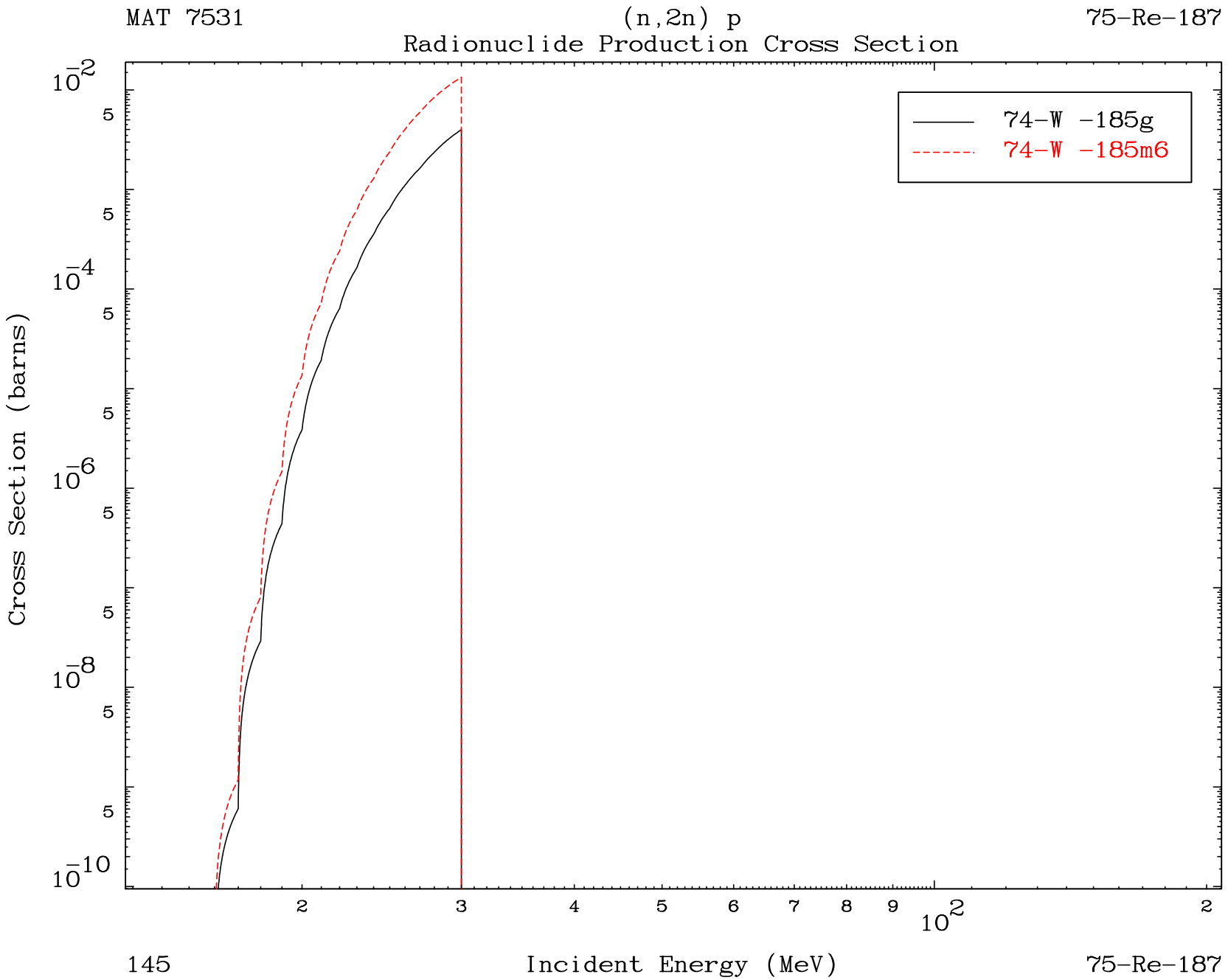

MAT 7531
(n,2n)
75-Re-187
Radionuclide Production Cross Section
Cross Section (barns)
10^0
10^-1
10^-2
75-Re-186g
75-Re-186m4
10^1
10^2
140
Incident Energy (MeV)
75-Re-187

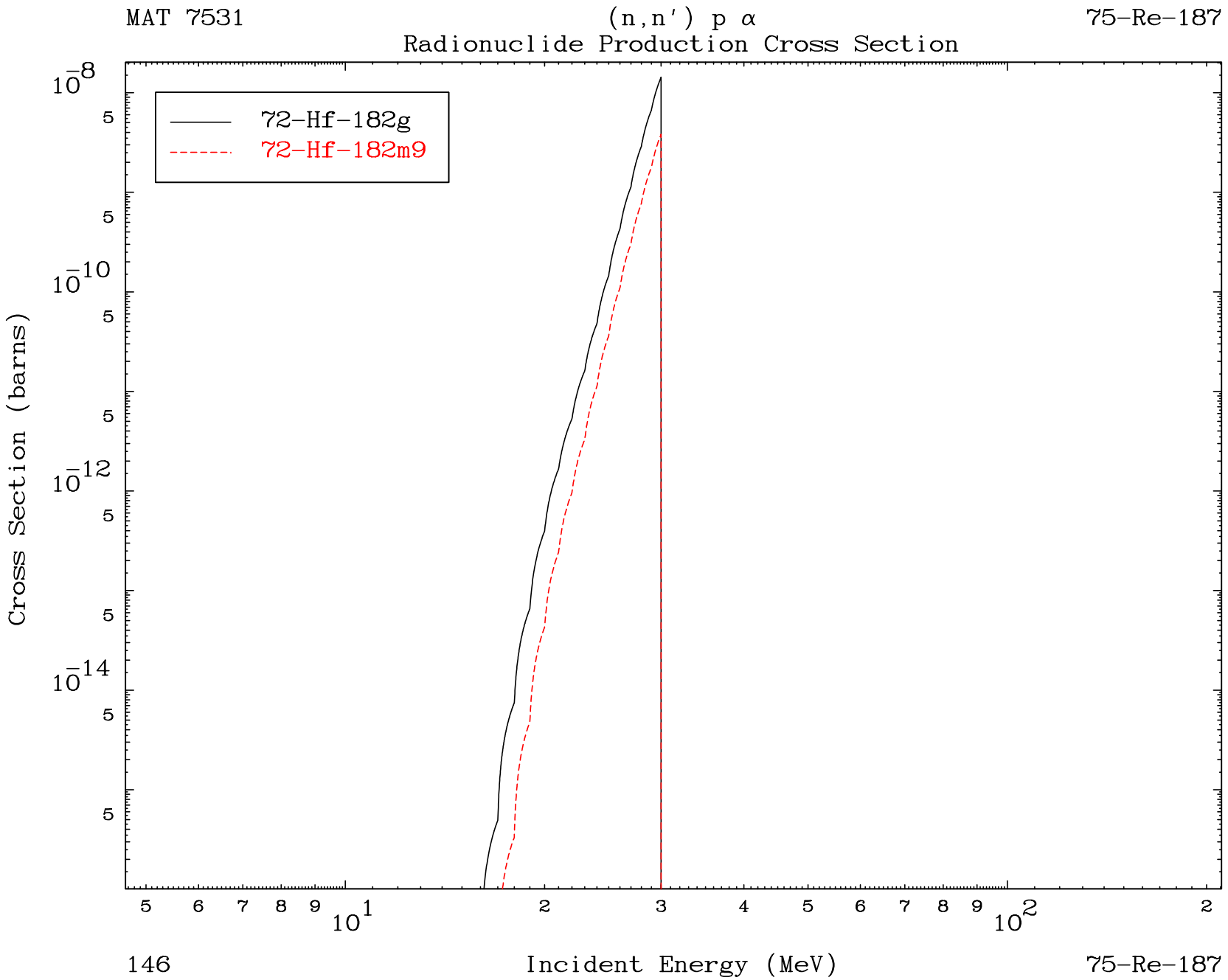

MAT 7531
Fission
75-Re-187
Radionuclide Production Cross Section
Photon
Cross Section (barns)
10^{-6}
10^{-8}
10^{-10}
10^{-12}
5
10^{-10}
10^{-8}
10^{-6}
10^{-4}
10^{-2}
10^{0}
10^{2}
141
Incident Energy (MeV)
75-Re-187

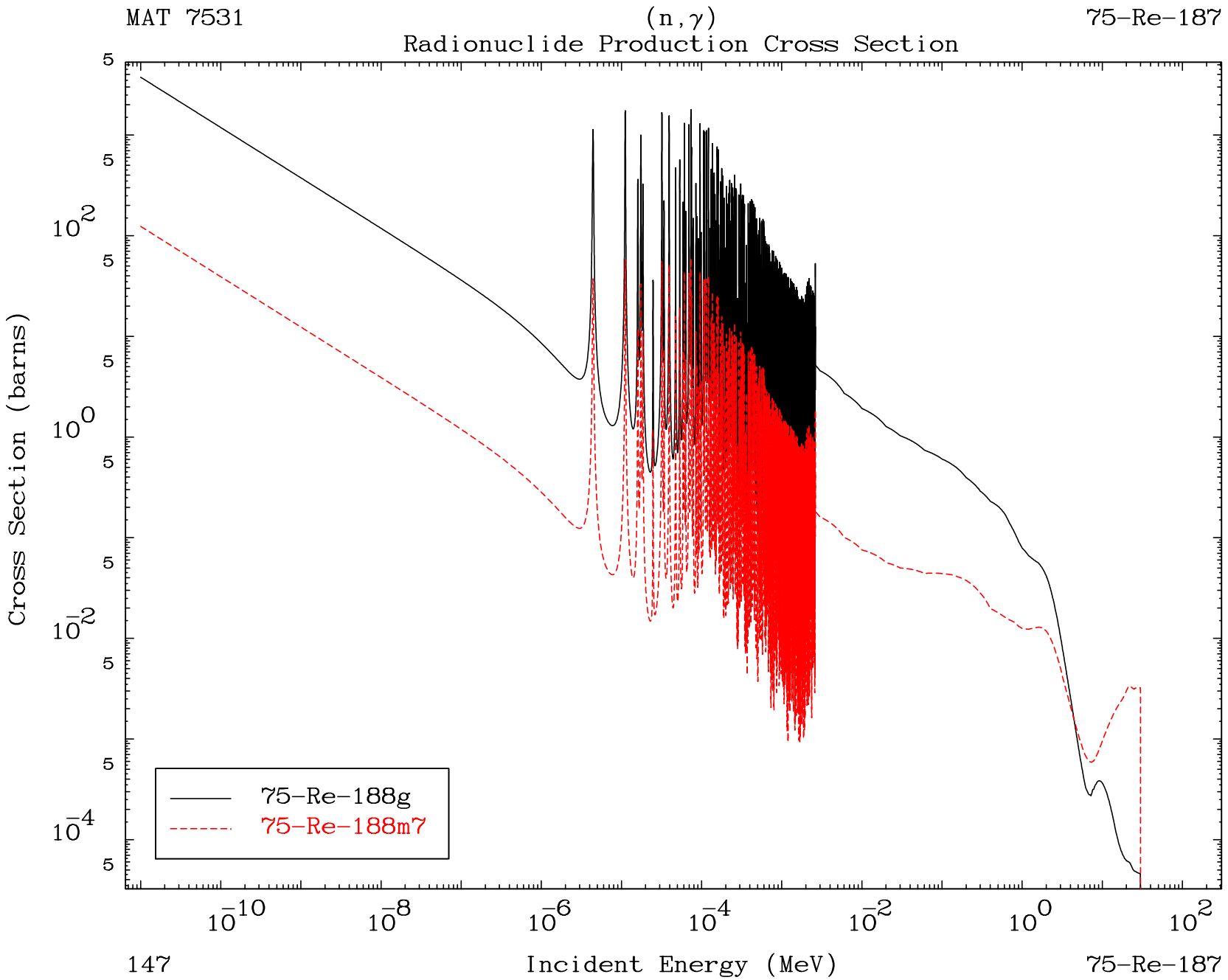

MAT 7531
(n,2n) α
75-Re-187
Radionuclide Production Cross Section
73-Ta-182g
73-Ta-182m1
73-Ta-182m29
Cross Section (barns)
Incident Energy (MeV)
142
75-Re-187

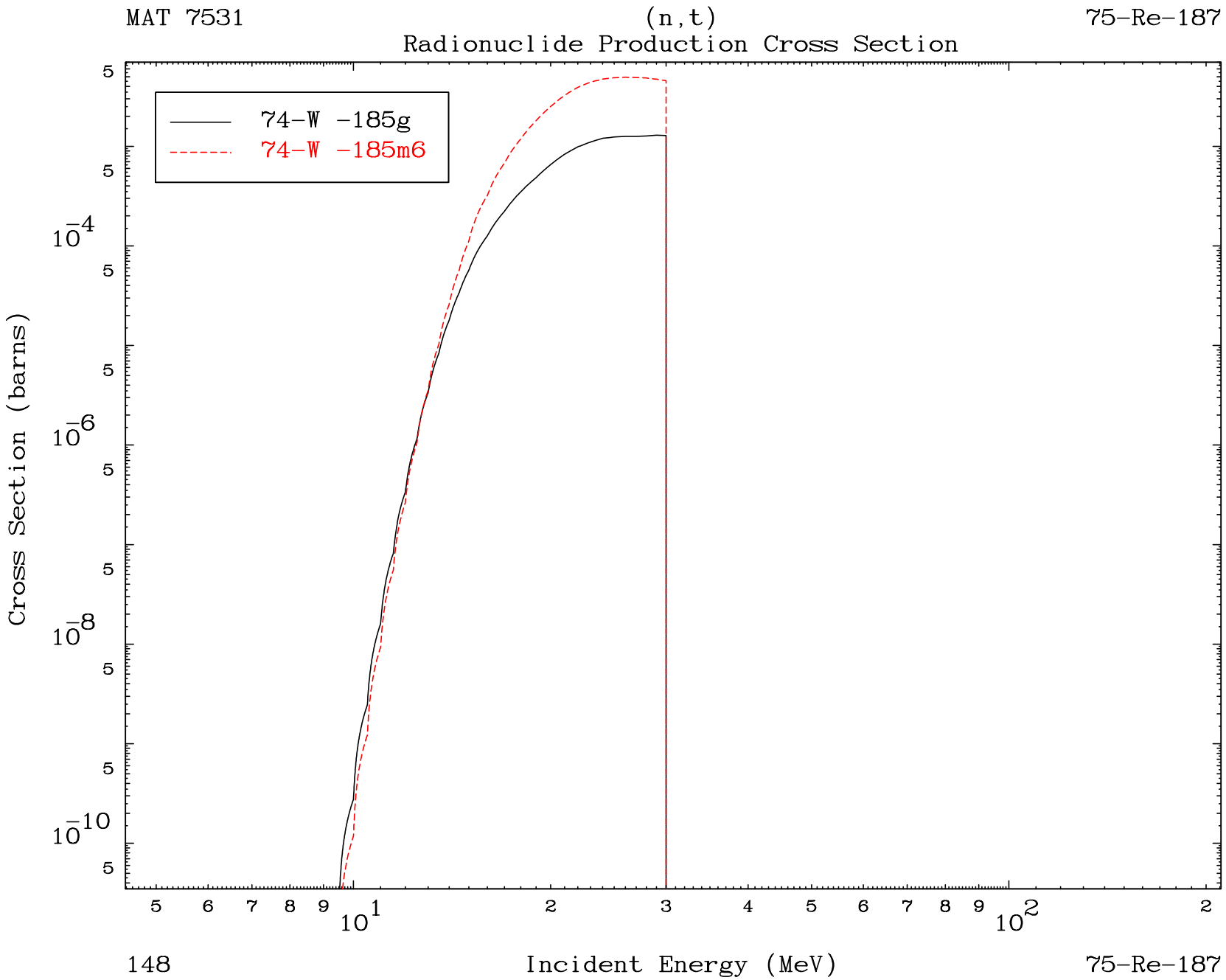

MAT 7531
(n,n') d
75-Re-187
Radionuclide Production Cross Section
74-W -185g
74-W -185m6
Cross Section (barns)
10-4
10-6
10-8
10-10
2
3
4
5
6
7
8
9
10 2
2
143
Incident Energy (MeV)
75-Re-187


MAT 7531
(n,4n)
75-Re-187
Radionuclide Production Cross Section
75-Re-184g
75-Re-184m5
Cross Section (barns)
Incident Energy (MeV)
144
75-Re-187


MAT 7531
(n,2n) p
75-Re-187
Radionuclide Production Cross Section
74-W -185g
74-W -185m6
Cross Section (barns)
Incident Energy (MeV)
145
75-Re-187


MAT 7531
(n,n') p α
75-Re-187
Radionuclide Production Cross Section
72-Hf-182g
72-Hf-182m9
Cross Section (barns)
Incident Energy (MeV)
146
75-Re-187


MAT 7531
(n,γ)
75-Re-187
Radionuclide Production Cross Section
Cross Section (barns)
Incident Energy (MeV)
147
75-Re-187
75-Re-188g
75-Re-188m7


MAT 7531
(n,t)
75-Re-187
Radionuclide Production Cross Section
74-W -185g
74-W -185m6
Cross Section (barns)
Incident Energy (MeV)
148
75-Re-187