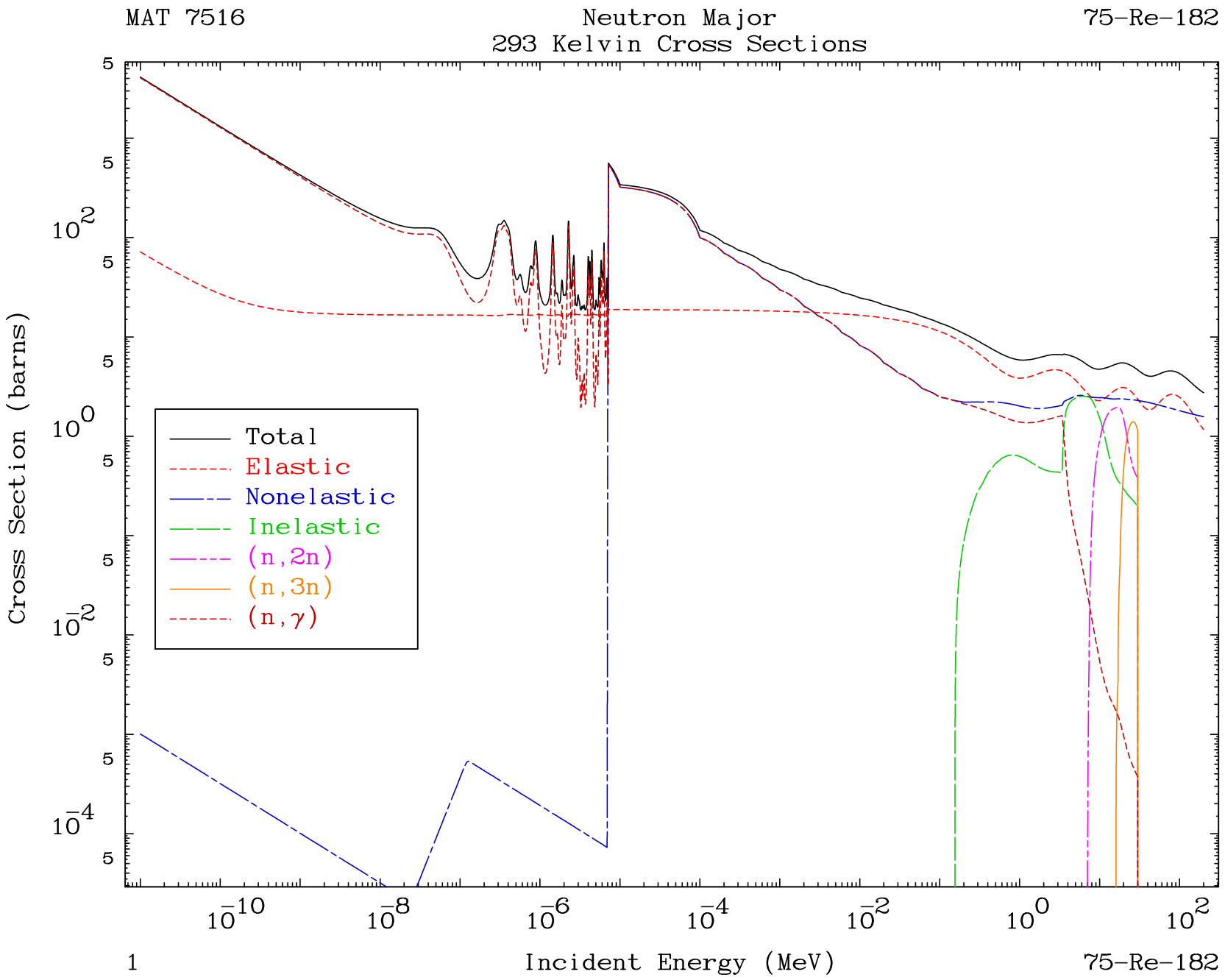
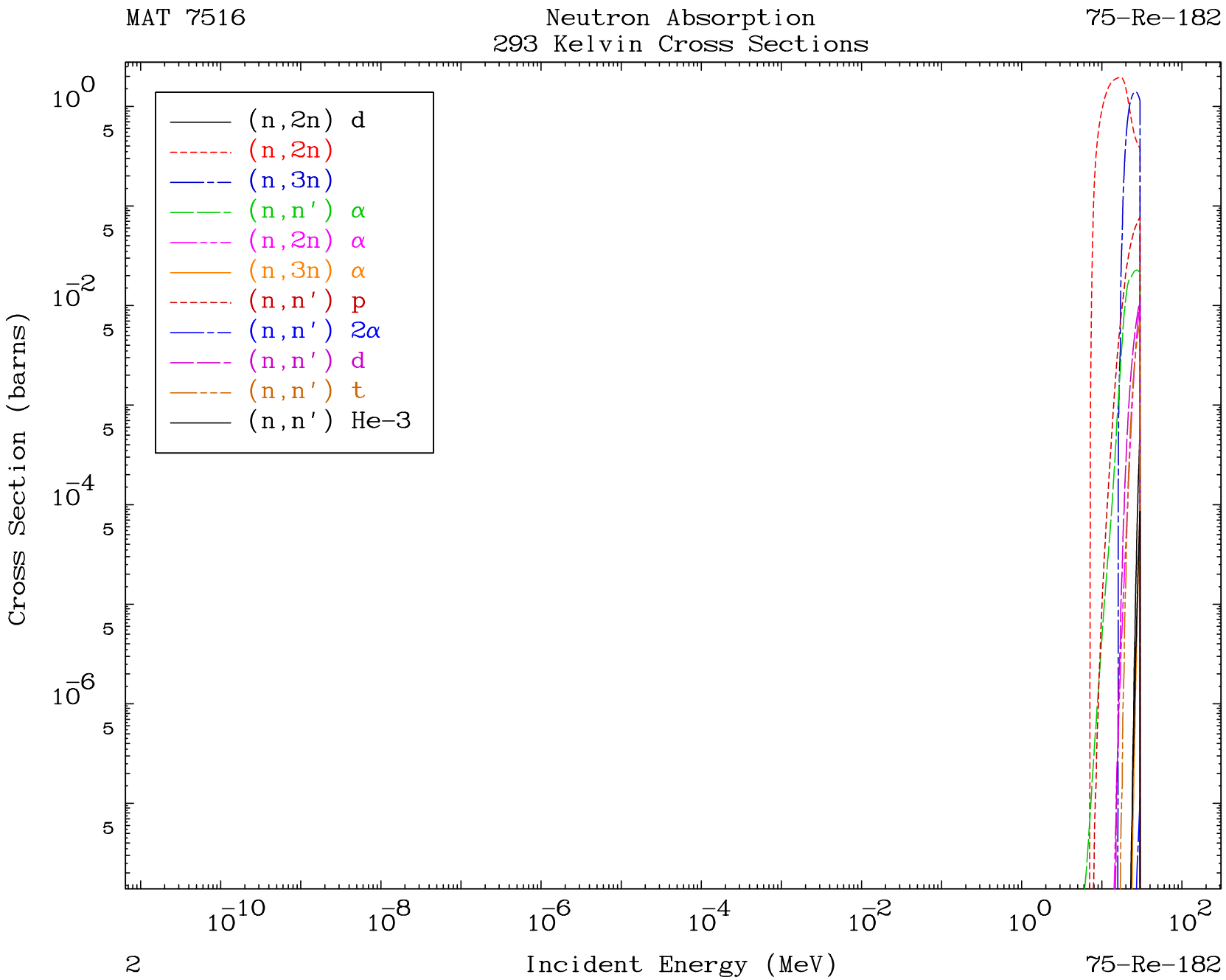
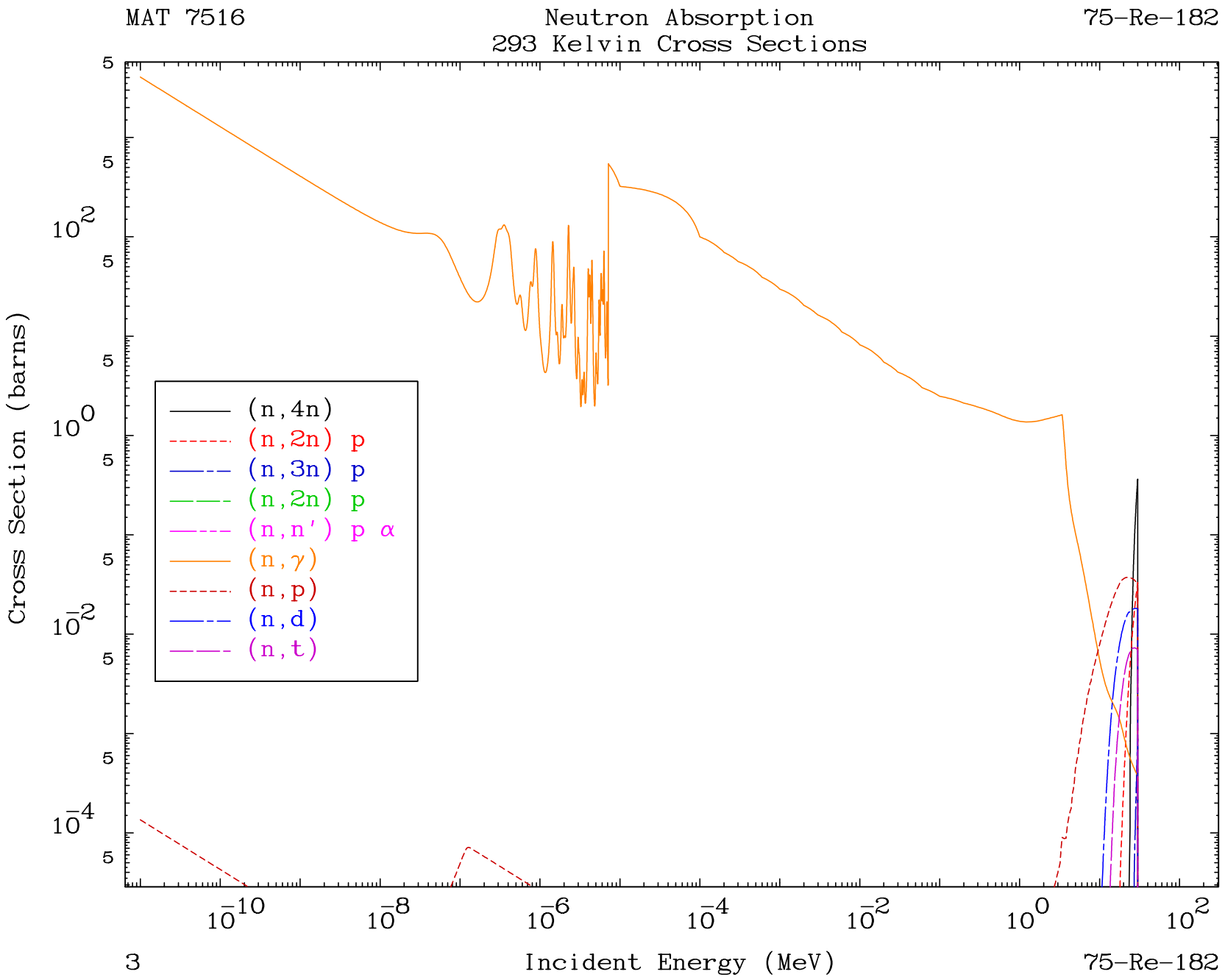
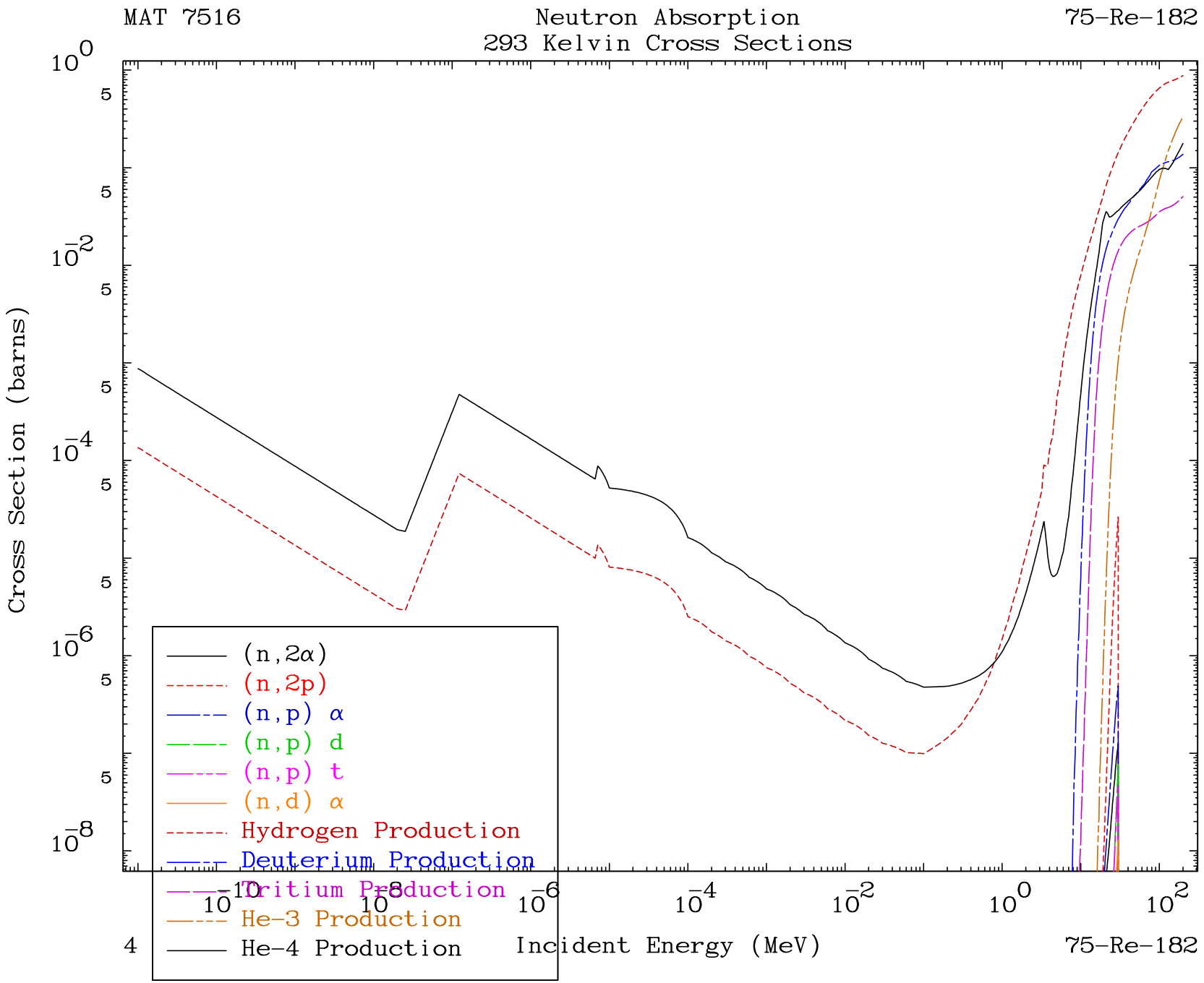
Program EVALPLOT
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

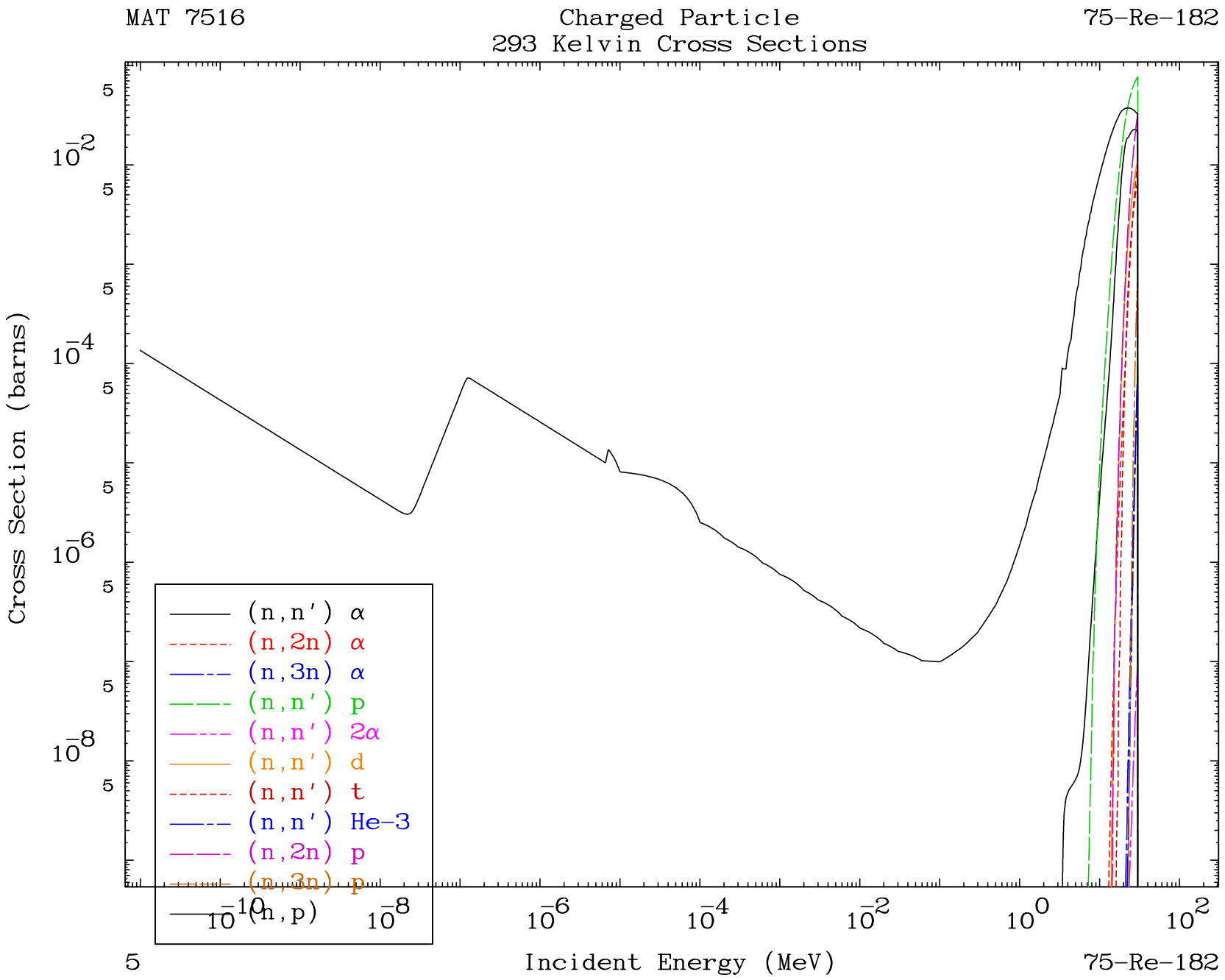
Press Mouse Button to Start

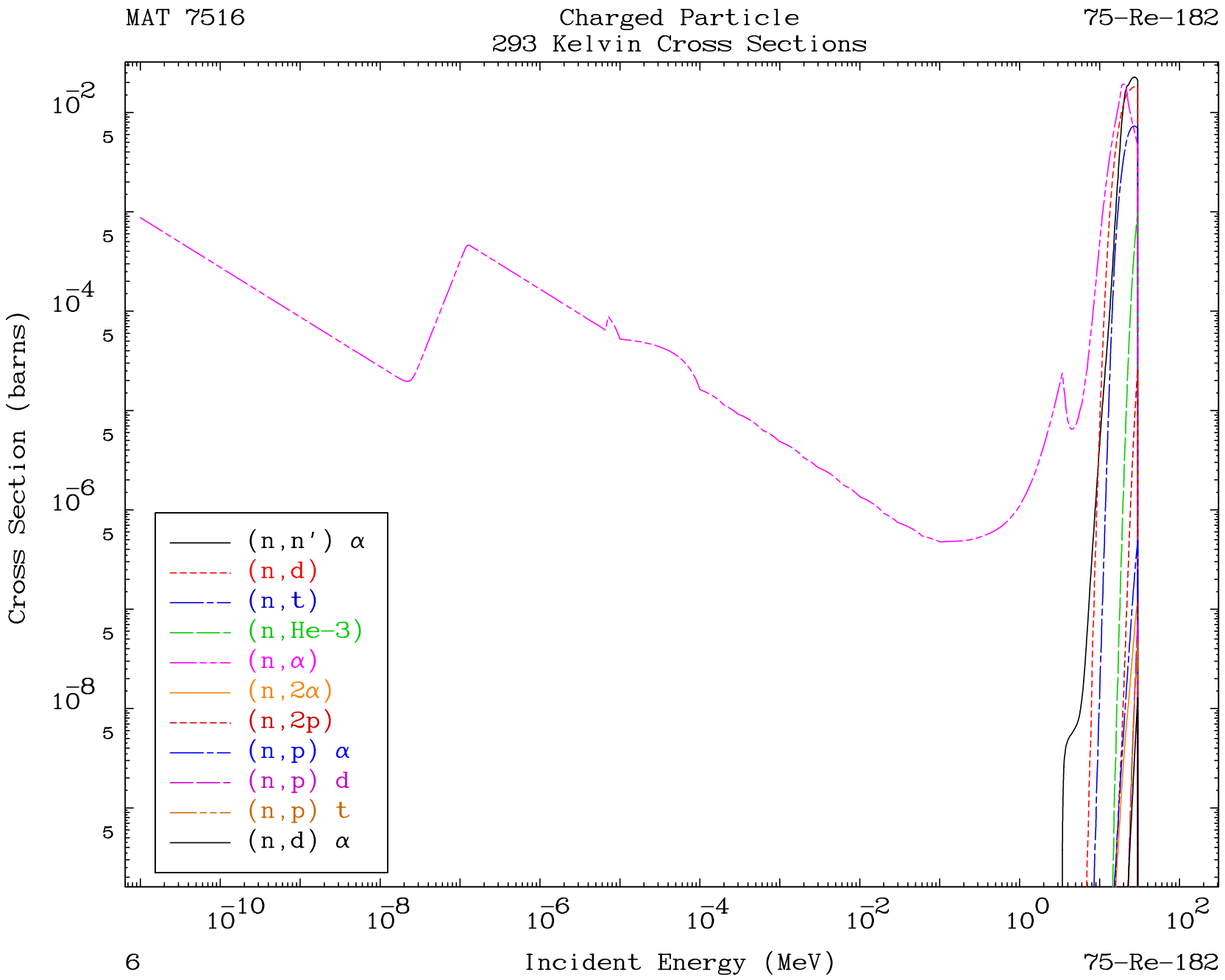

MAT 7516
Neutron Major
293 Kelvin Cross Sections
75-Re-182
Cross Section (barns)
Incident Energy (MeV)
Total
Elastic
Nonelastic
Inelastic
(n,2n)
(n,3n)
(n,γ)
1
75-Re-182

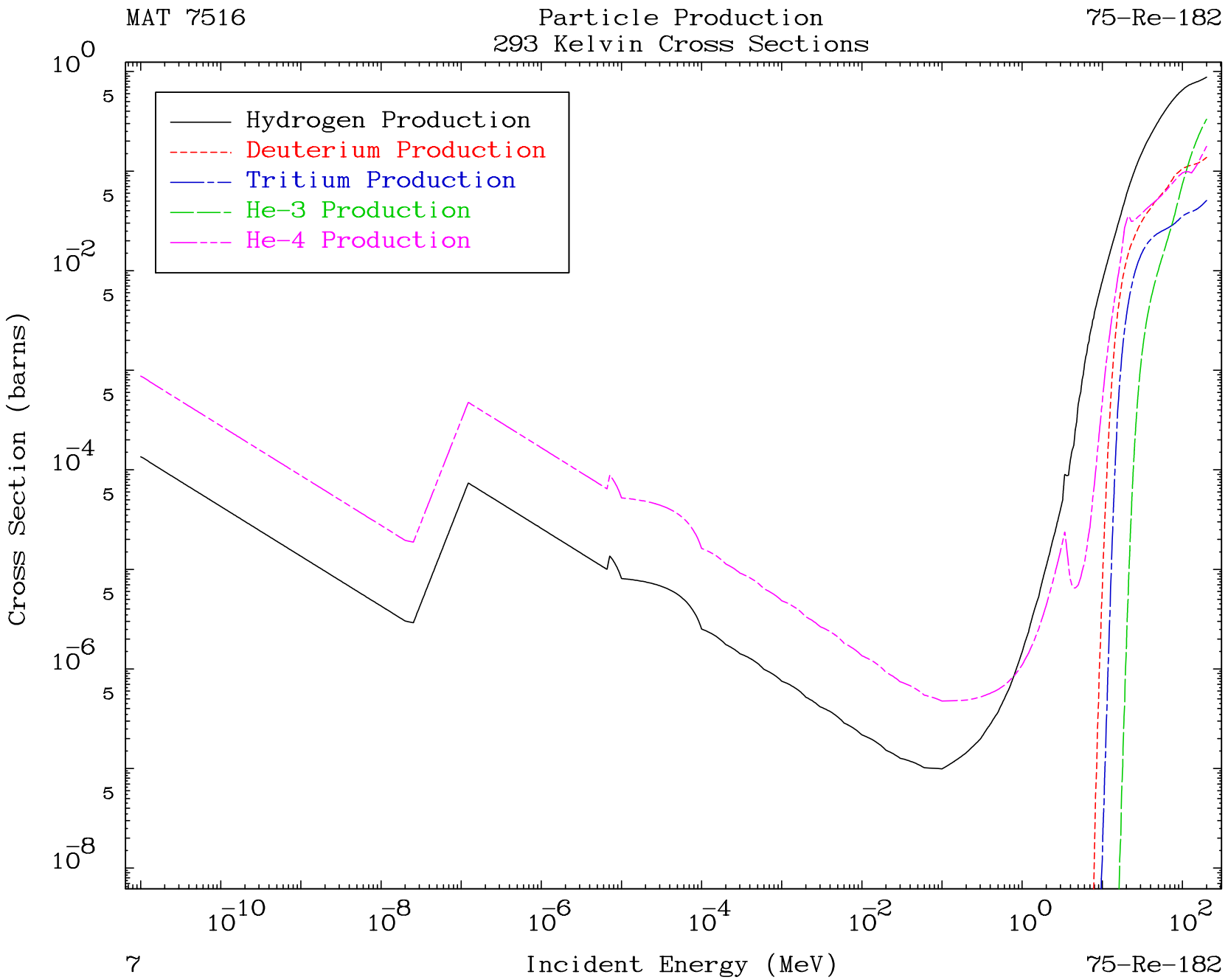

MAT 7516
Neutron Absorption
293 Kelvin Cross Sections
75-Re-182
(n,2n) d
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,n') d
(n,n') t
(n,n') He-3
Cross Section (barns)
Incident Energy (MeV)
2
75-Re-182

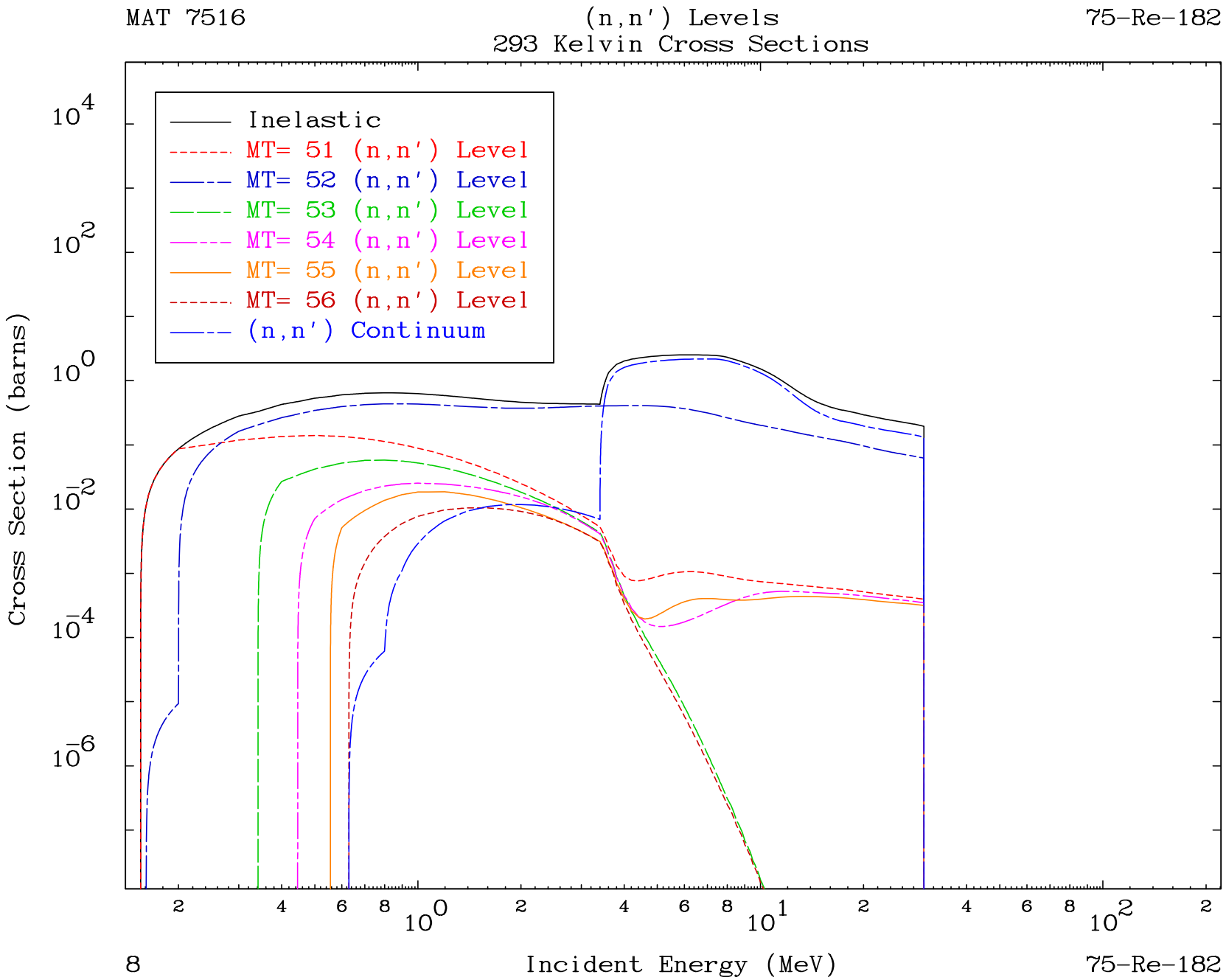

MAT 7516
Neutron Absorption
293 Kelvin Cross Sections
75-Re-182
Cross Section (barns)
Incident Energy (MeV)
(n,4n)
(n,2n) p
(n,3n) p
(n,2n) p
(n,n') p α
(n,γ)
(n,p)
(n,d)
(n,t)
3
75-Re-182

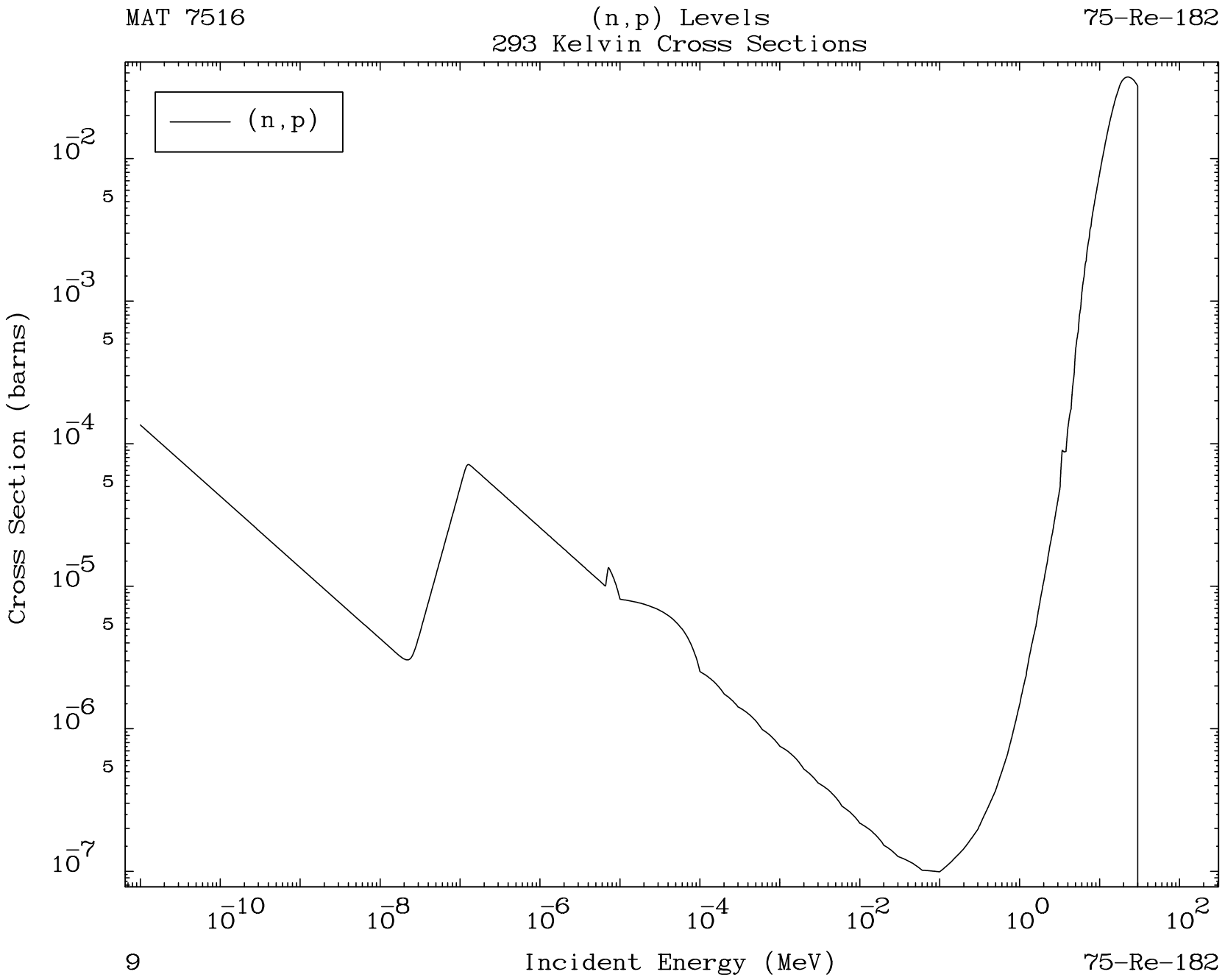

MAT 7516
Neutron Absorption
293 Kelvin Cross Sections
75-Re-182
Cross Section (barns)
Incident Energy (MeV)
75-Re-182
(n,2α)
(n,2p)
(n,p) α
(n,p) d
(n,p) t
(n,d) α
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production

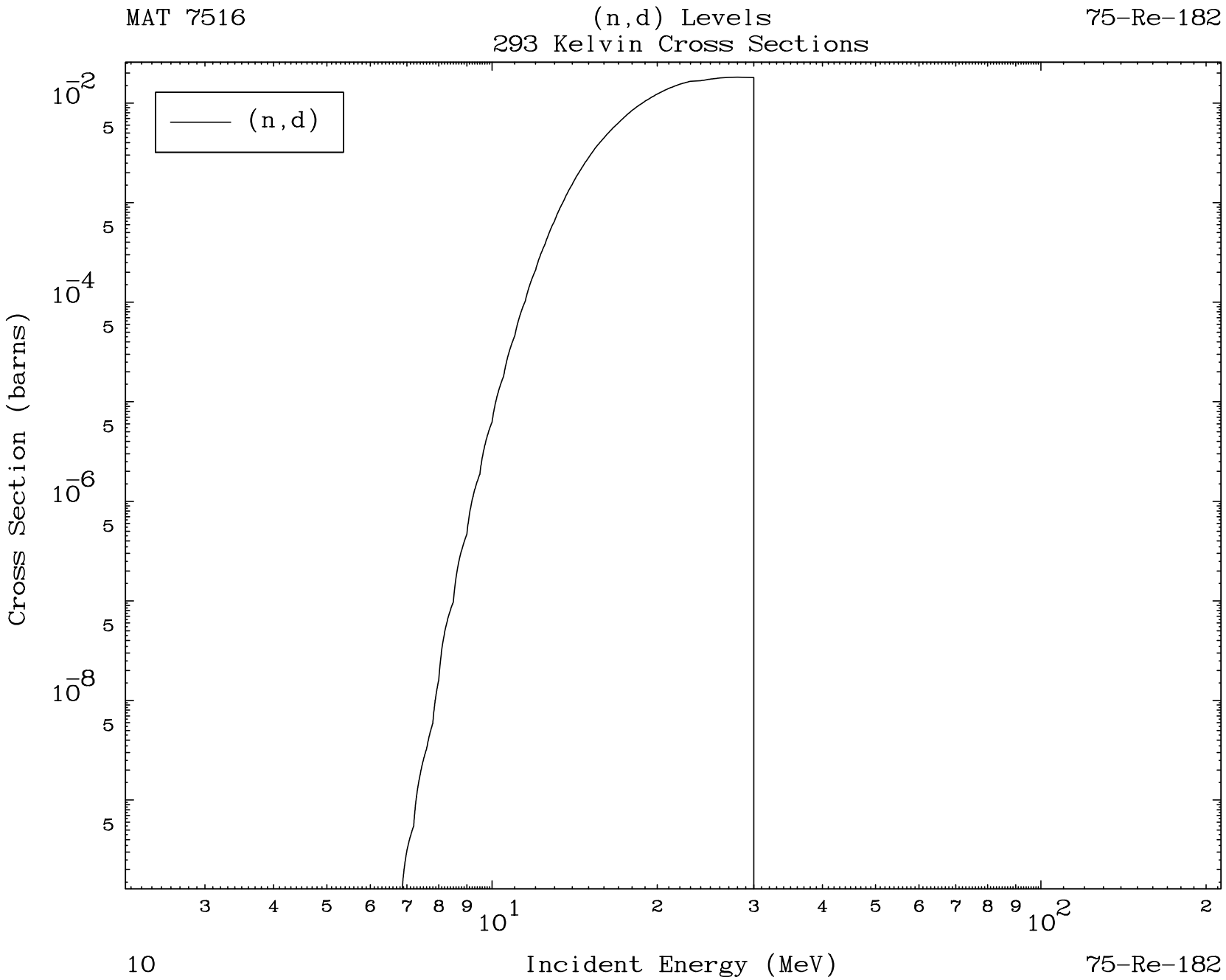

MAT 7516
Charged Particle
293 Kelvin Cross Sections
75-Re-182
Cross Section (barns)
Incident Energy (MeV)
75-Re-182
(n,n') α
(n,2n) α
(n,3n) α
(n,n') p
(n,n') 2α
(n,n') d
(n,n') t
(n,n') He-3
(n,2n) p
(n,3n) p
(n,p)

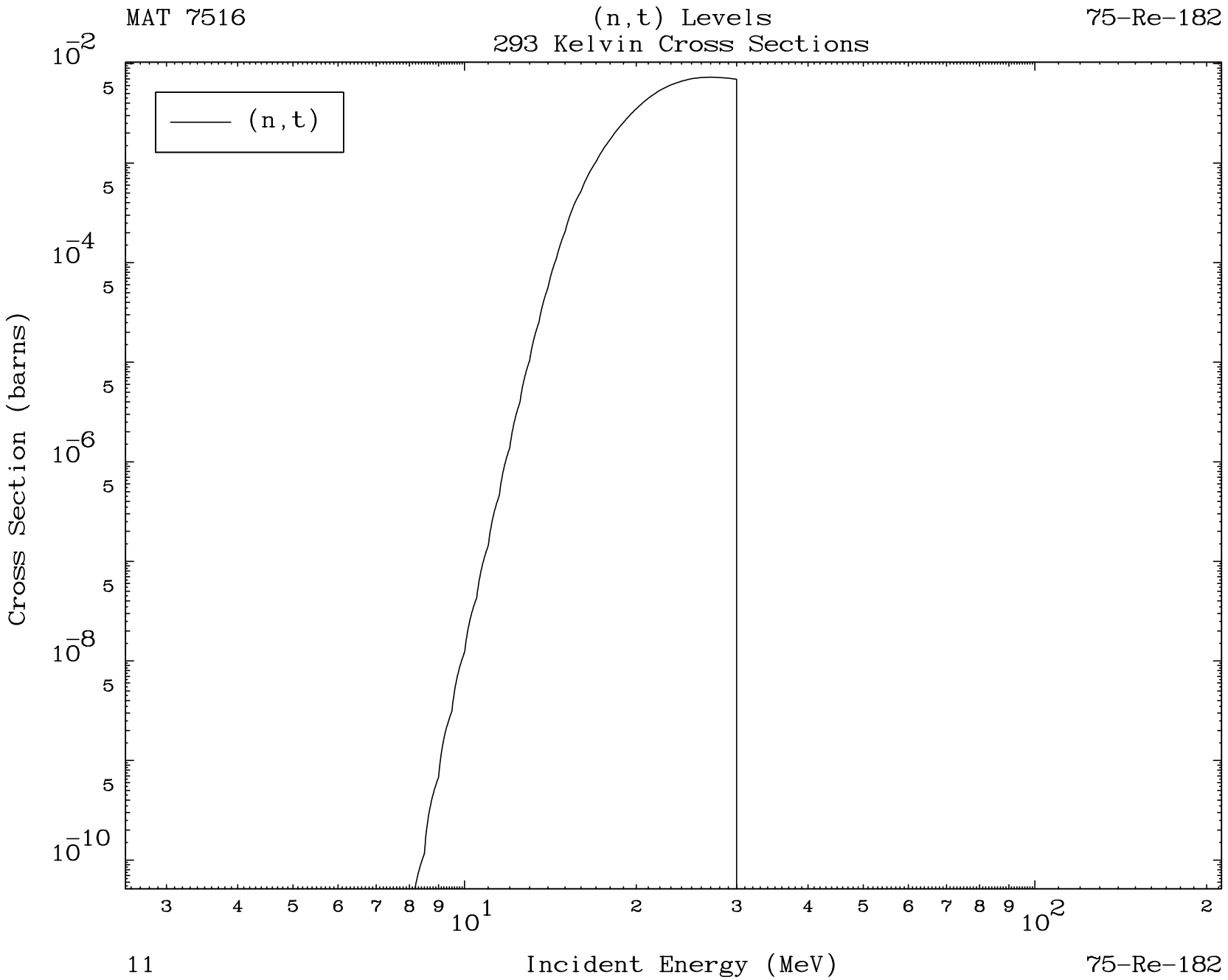

MAT 7516
Charged Particle
293 Kelvin Cross Sections
75-Re-182
Cross Section (barns)
Incident Energy (MeV)
(n,n') α
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,2p)
(n,p) α
(n,p) d
(n,p) t
(n,d) α
6
75-Re-182

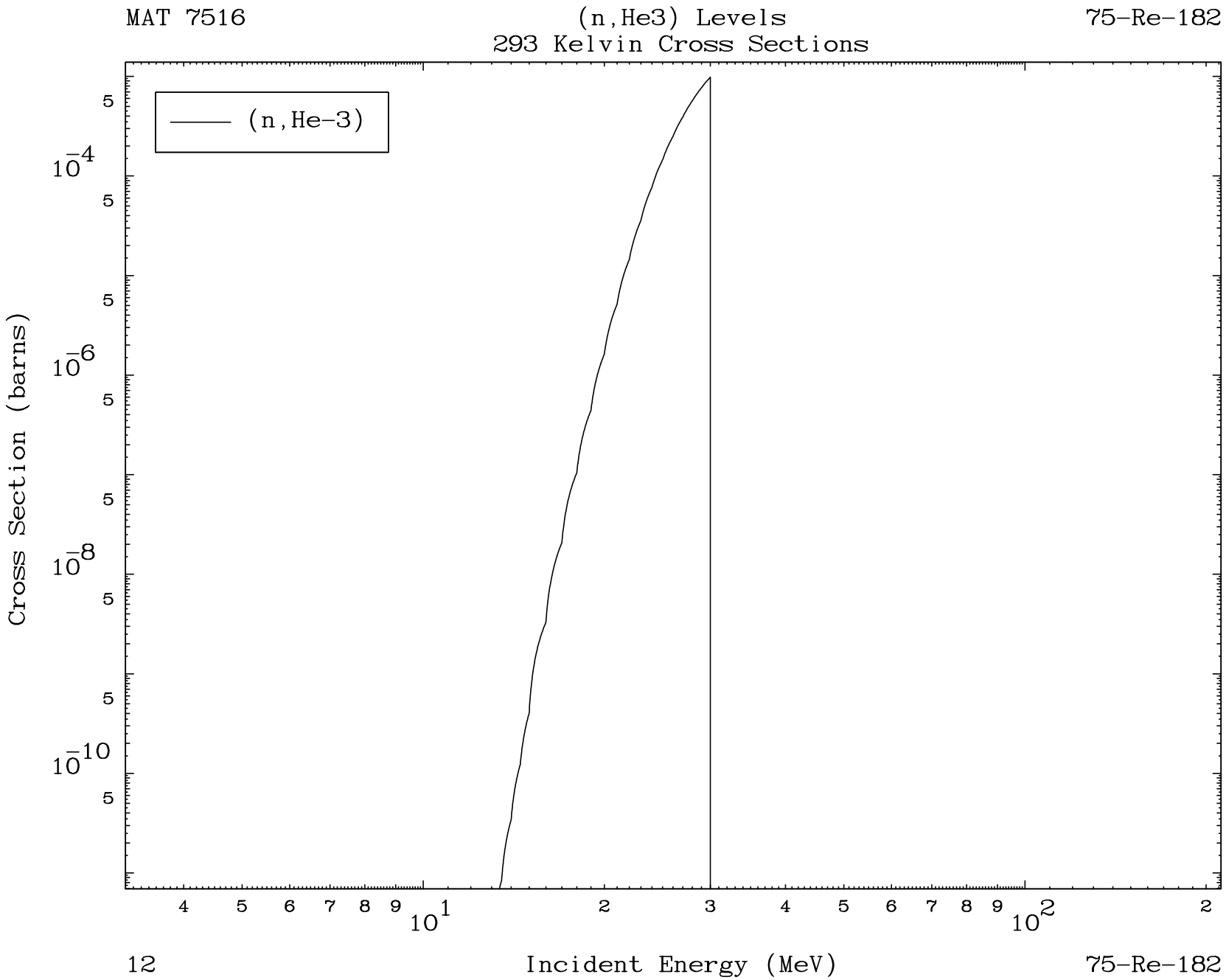

MAT 7516
Particle Production
293 Kelvin Cross Sections
75-Re-182
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
Cross Section (barns)
Incident Energy (MeV)
7
75-Re-182

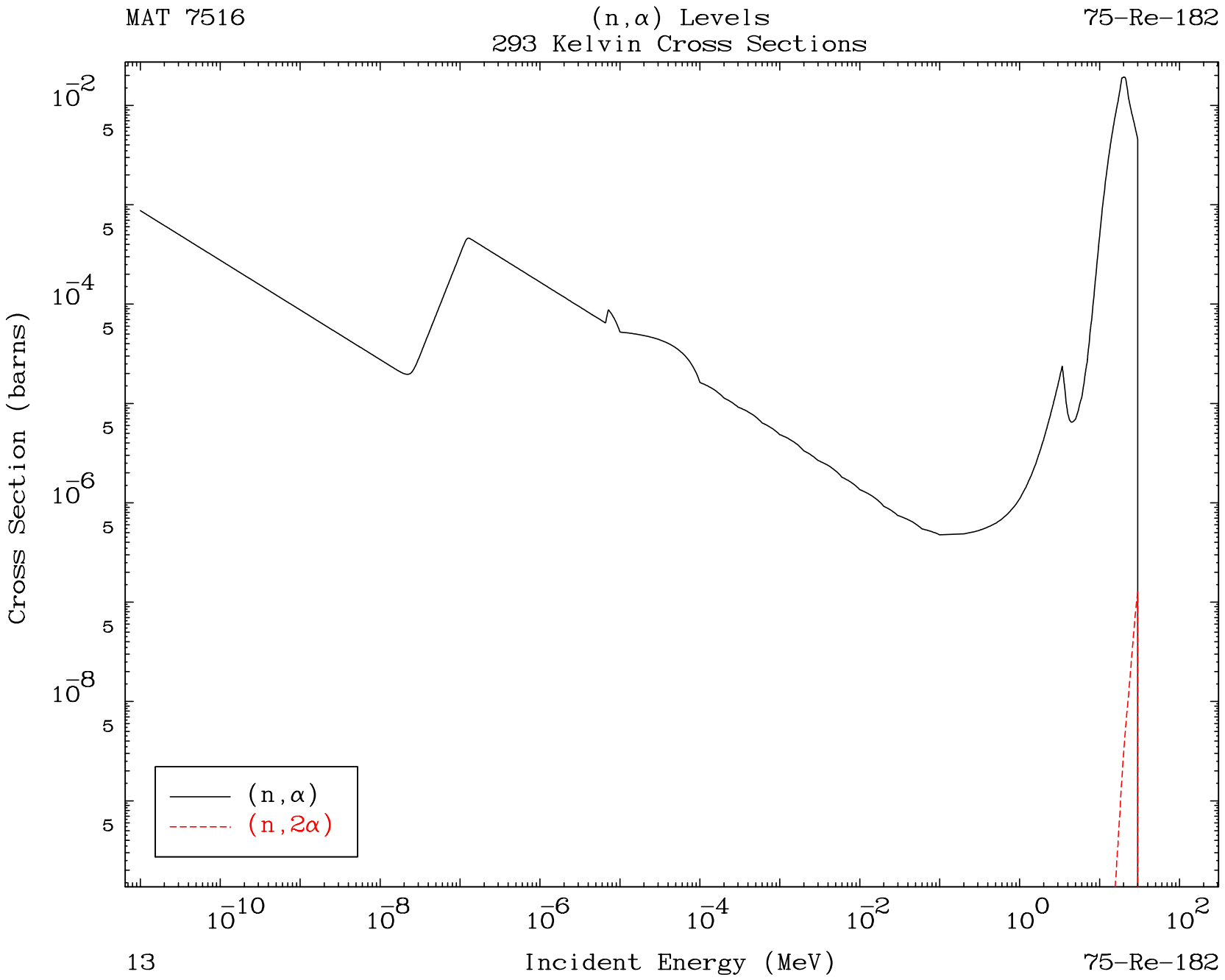

MAT 7516
(n,n') Levels
75-Re-182
293 Kelvin Cross Sections
Inelastic
MT= 51 (n,n') Level
MT= 52 (n,n') Level
MT= 53 (n,n') Level
MT= 54 (n,n') Level
MT= 55 (n,n') Level
MT= 56 (n,n') Level
(n,n') Continuum
Cross Section (barns)
Incident Energy (MeV)
8
75-Re-182

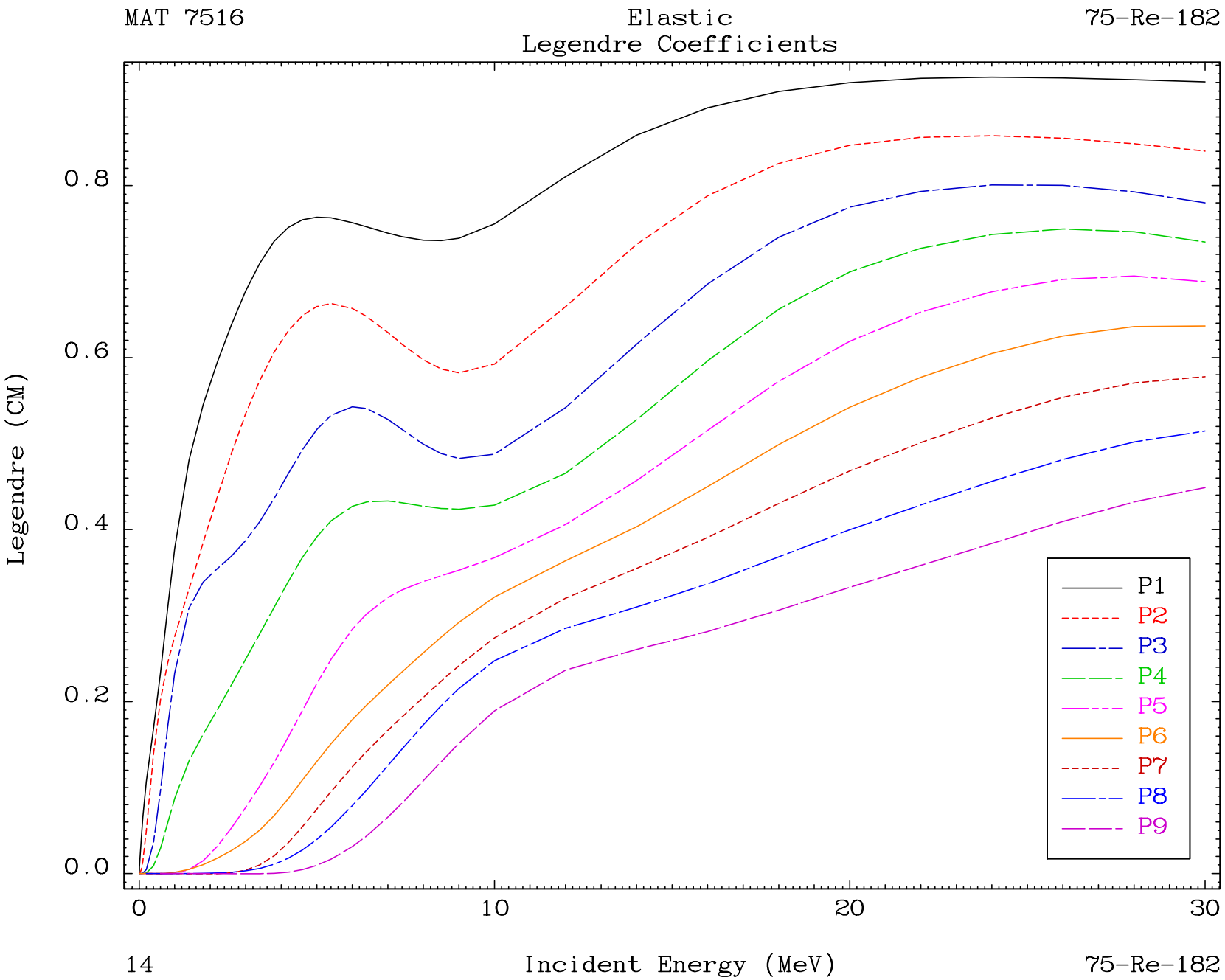

MAT 7516
(n,p) Levels
75-Re-182
293 Kelvin Cross Sections
(n,p)
Cross Section (barns)
10-2
5
10-3
5
10-4
5
10-5
5
10-6
5
10-7
10-10
10-8
10-6
10-4
10-2
100
102
9
Incident Energy (MeV)
75-Re-182

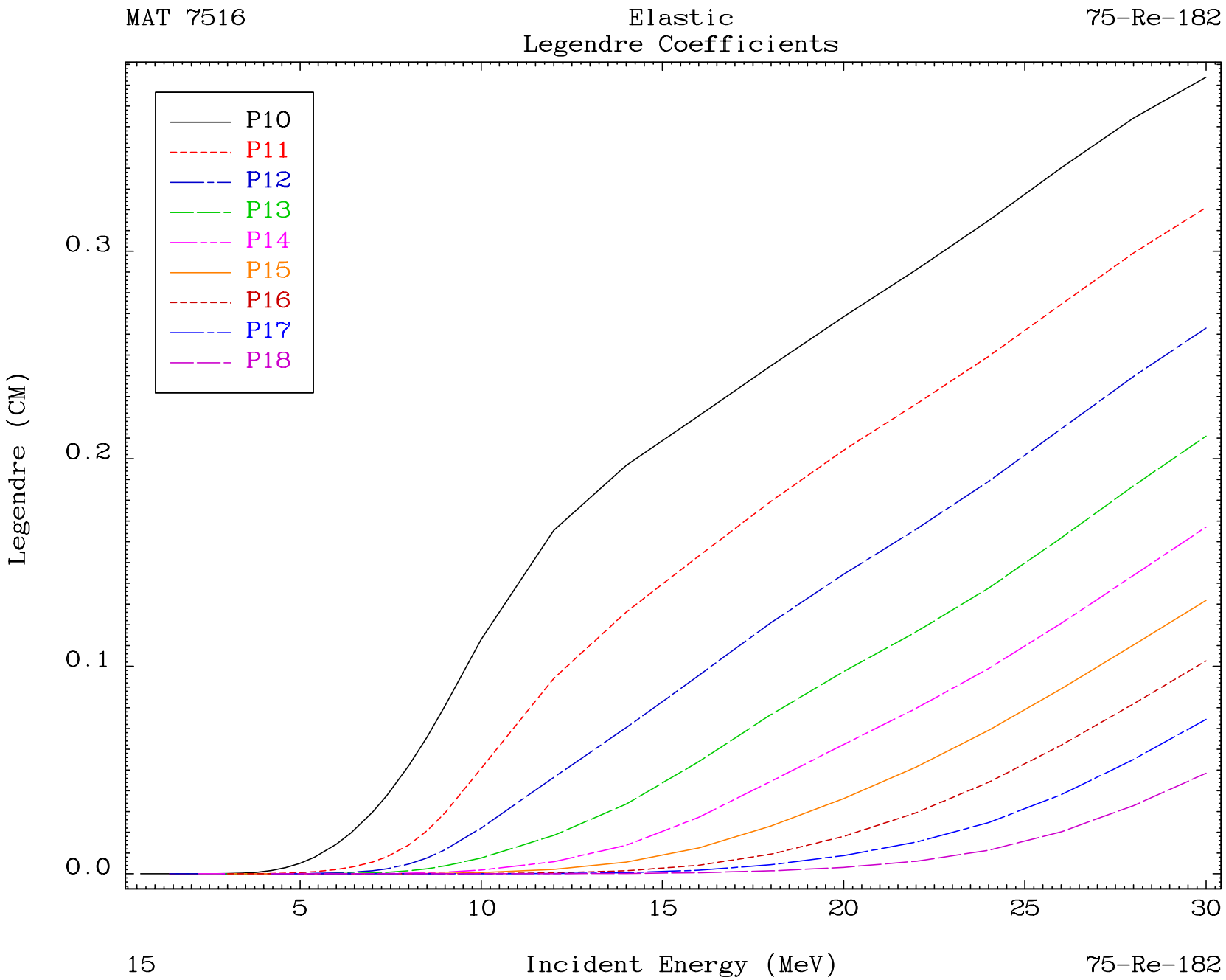

MAT 7516
(n,d) Levels
75-Re-182
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
10^-2
10^-4
10^-6
10^-8
3 4 5 6 7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
10
Incident Energy (MeV)
75-Re-182

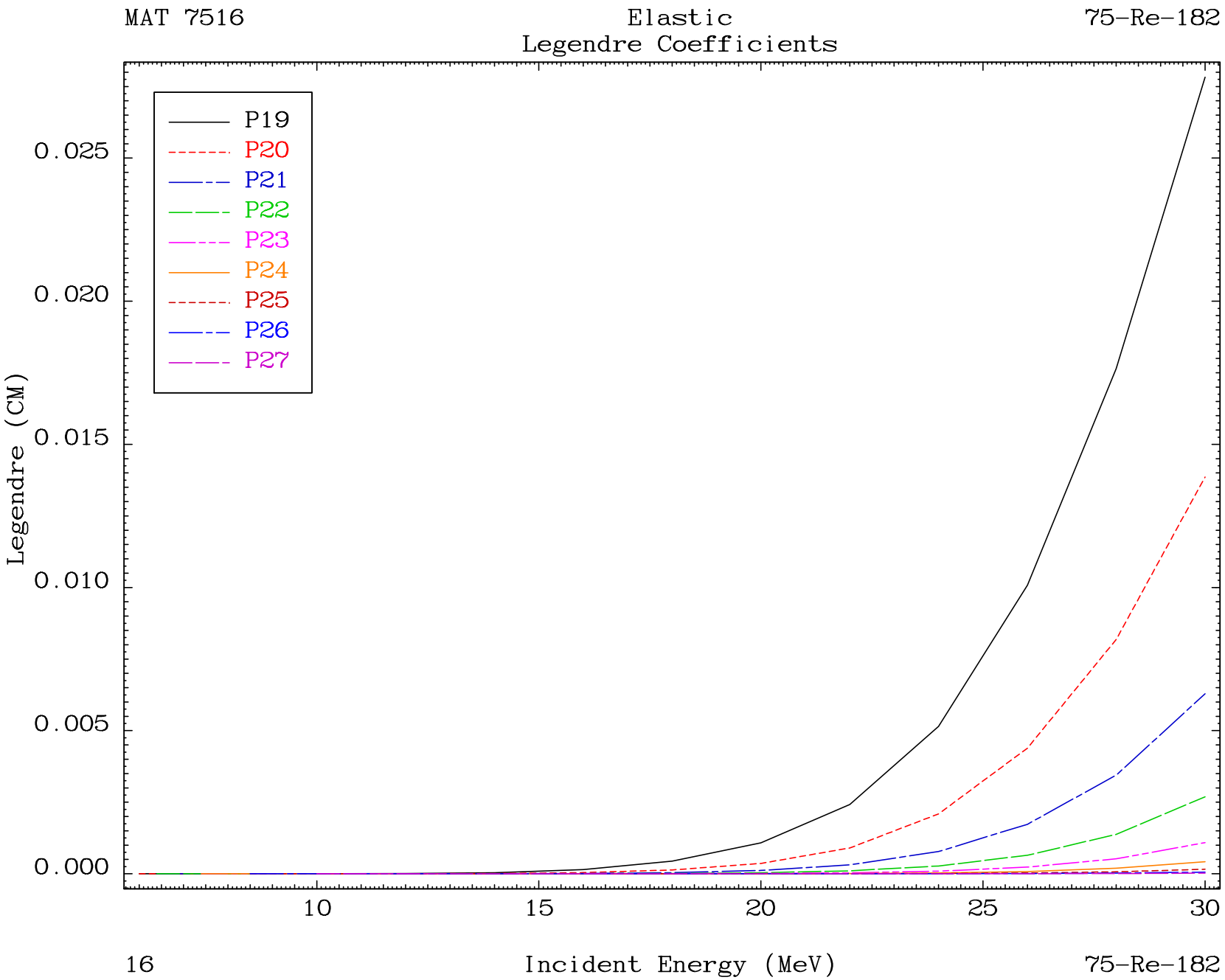

MAT 7516
(n,t) Levels
75-Re-182
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
Incident Energy (MeV)
11
75-Re-182

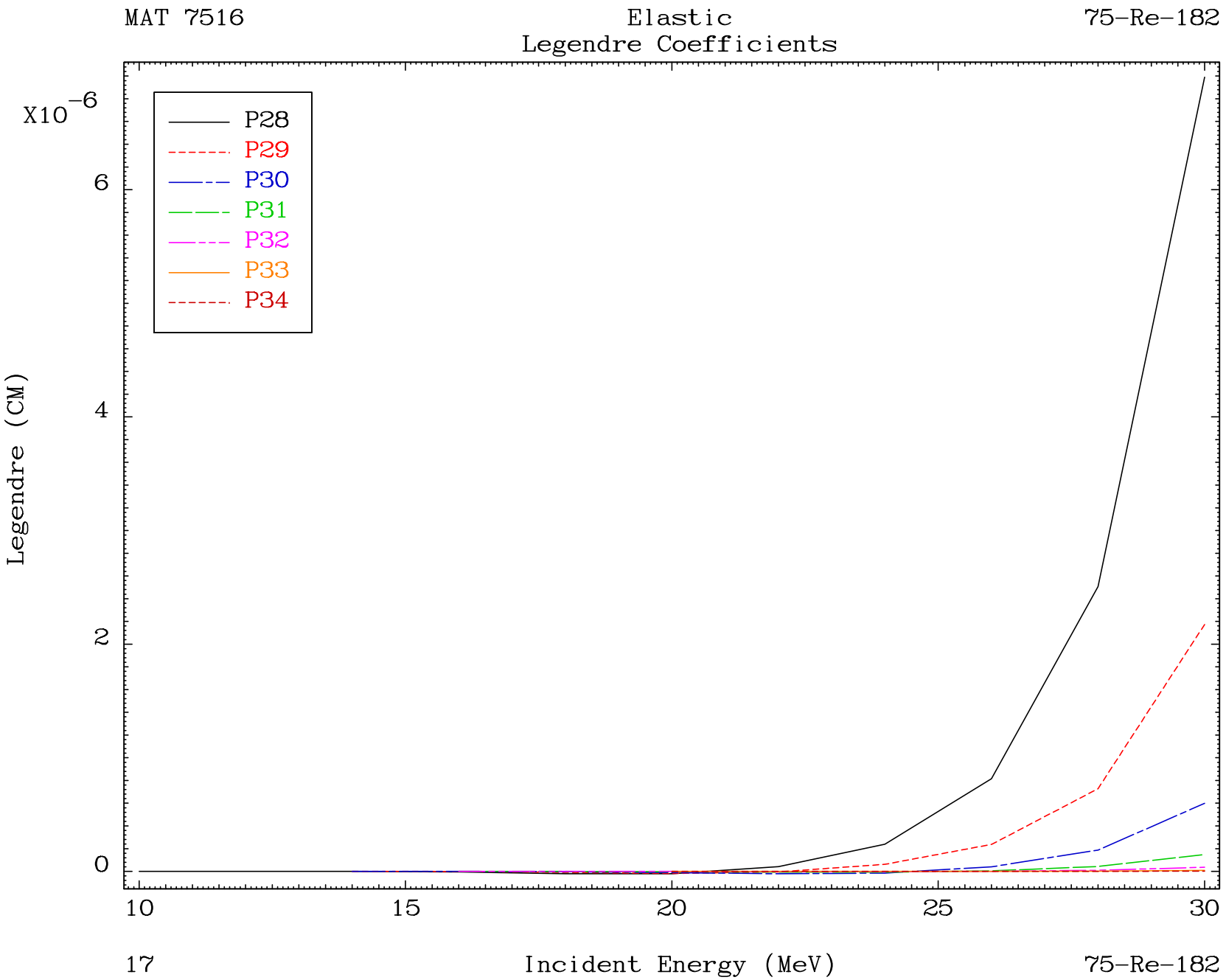

MAT 7516
(n,He3) Levels
75-Re-182
293 Kelvin Cross Sections
(n,He-3)
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
5
4 5 6 7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
Incident Energy (MeV)
12
75-Re-182

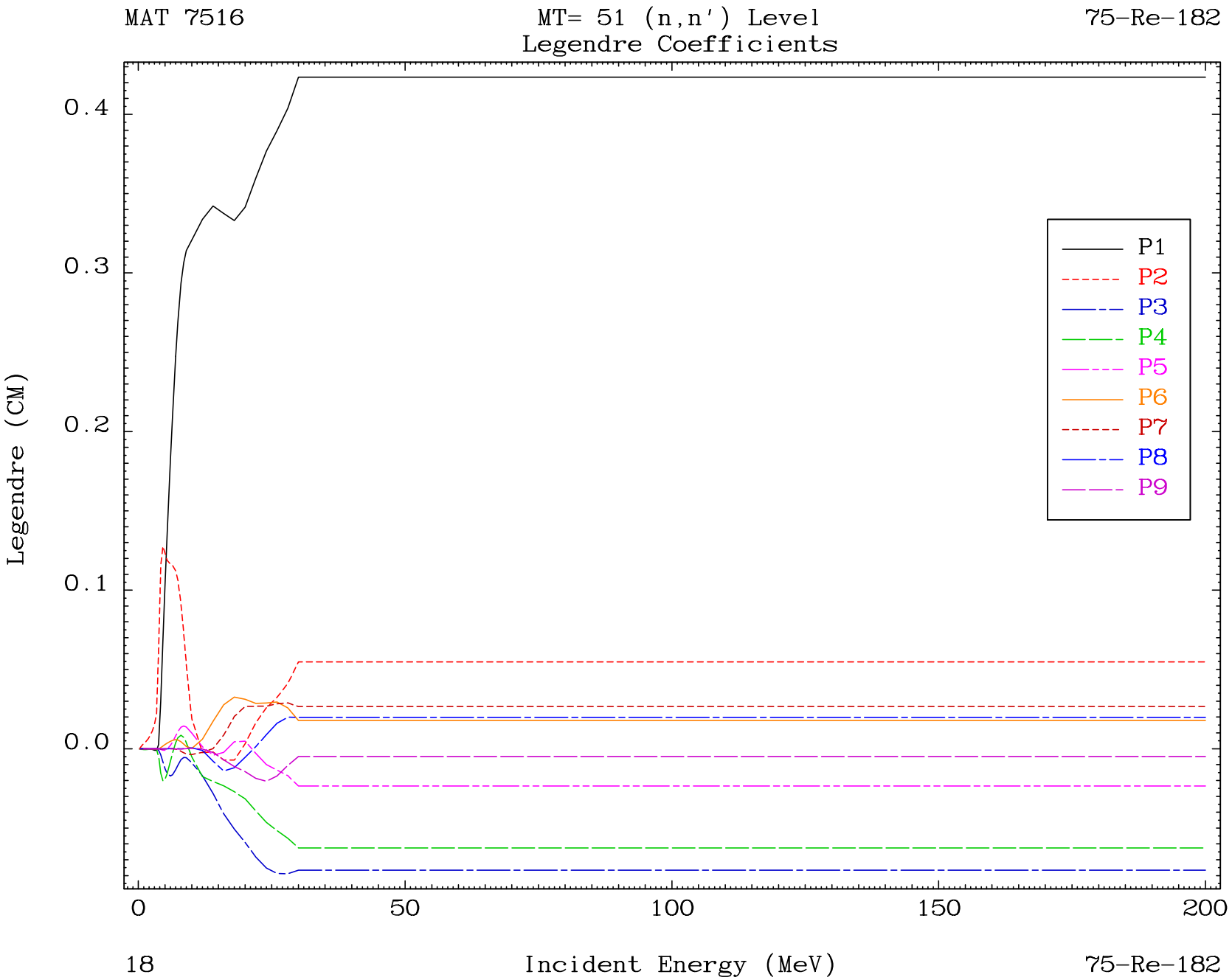

MAT 7516
(n,α) Levels
293 Kelvin Cross Sections
75-Re-182
Cross Section (barns)
10-2
5
10-4
5
10-6
5
10-8
5
(n,α)
(n,2α)
10-10
10-8
10-6
10-4
10-2
100
102
13
Incident Energy (MeV)
75-Re-182

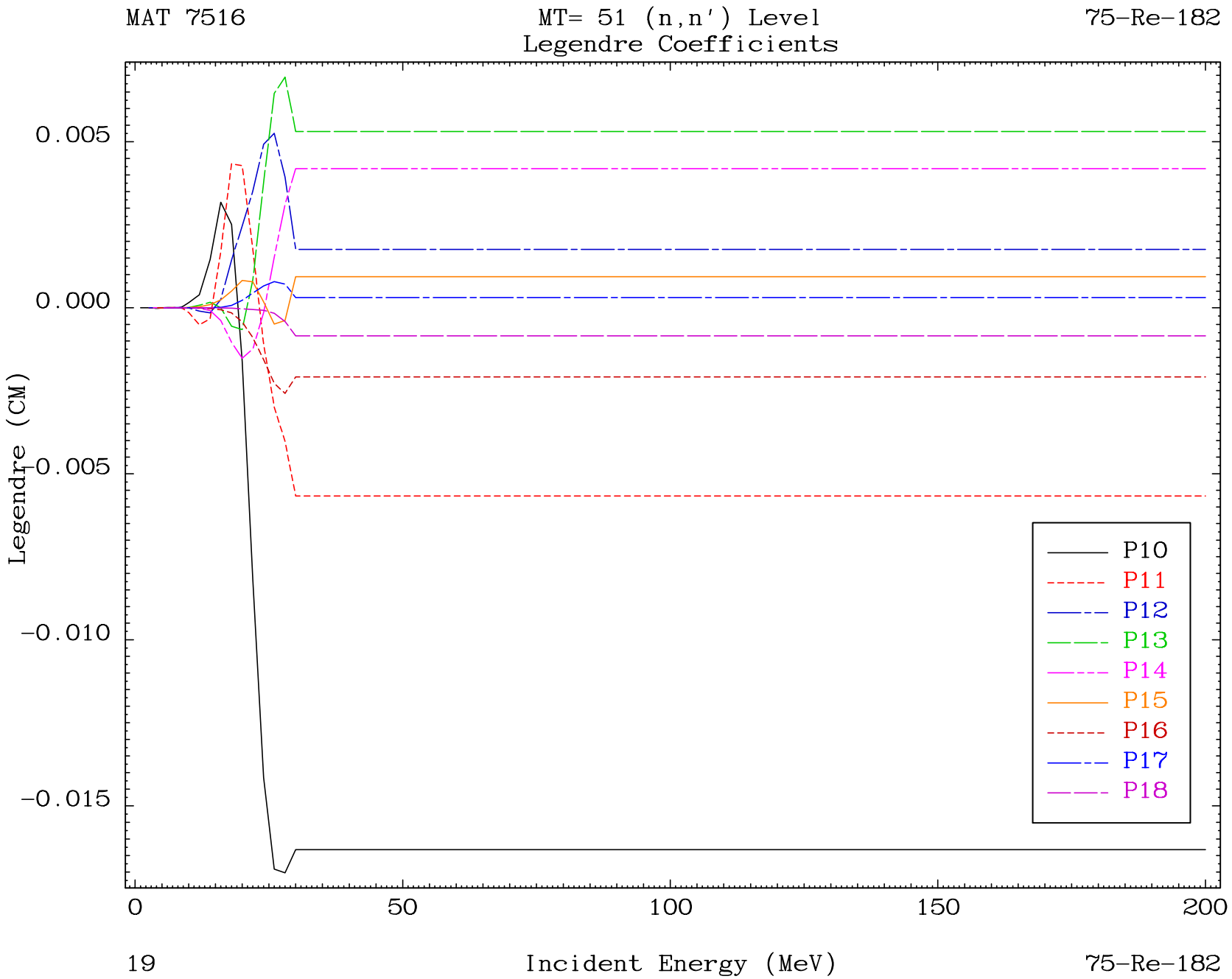

MAT 7516
Elastic
Legendre Coefficients
75-Re-182
Legendre (CM)
0.0
0.2
0.4
0.6
0.8
0
10
20
30
14
Incident Energy (MeV)
75-Re-182
P1
P2
P3
P4
P5
P6
P7
P8
P9

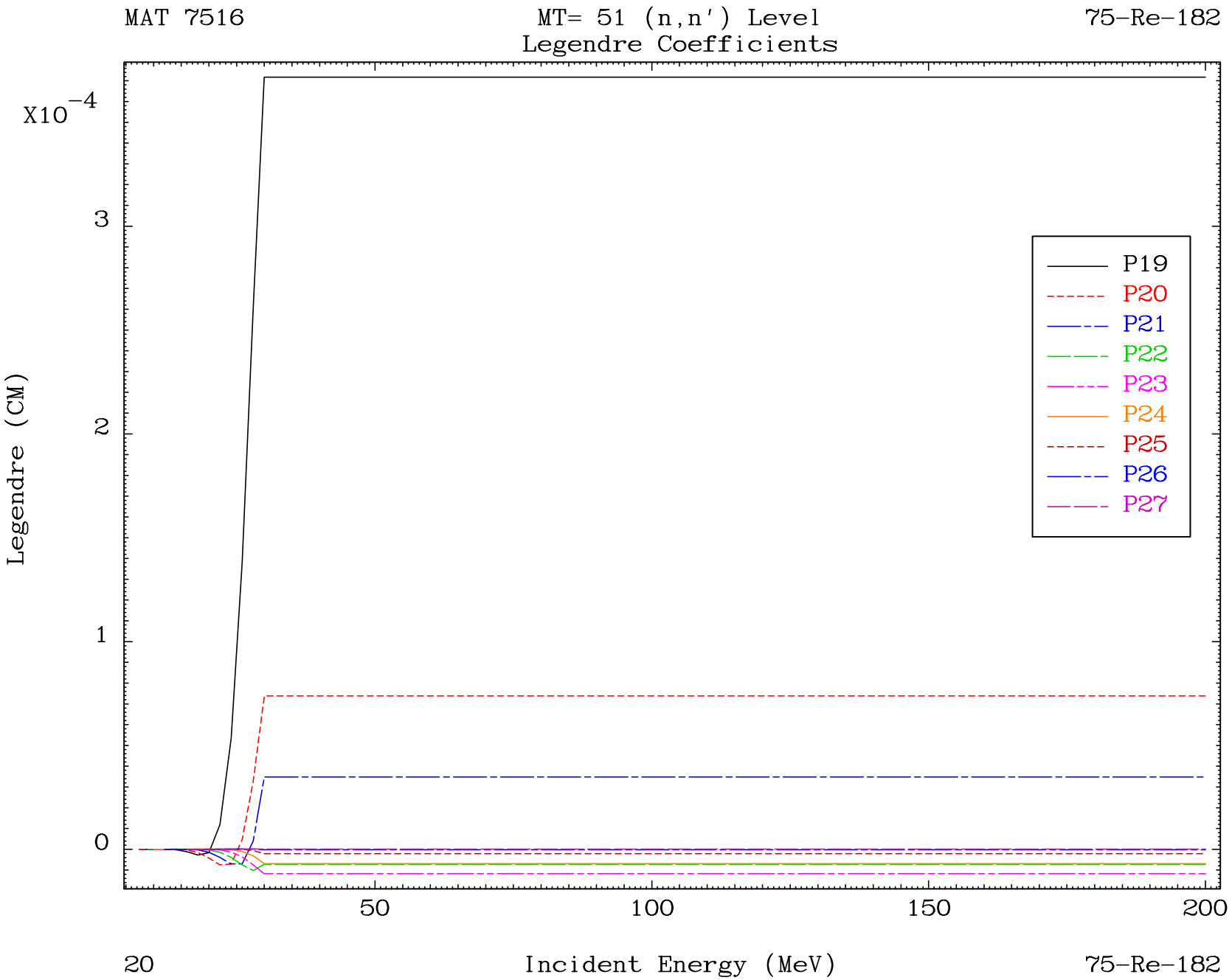

MAT 7516
Elastic
Legendre Coefficients
75-Re-182
P10
P11
P12
P13
P14
P15
P16
P17
P18
Legendre (CM)
0.0
0.1
0.2
0.3
5
10
15
20
25
30
15
Incident Energy (MeV)
75-Re-182

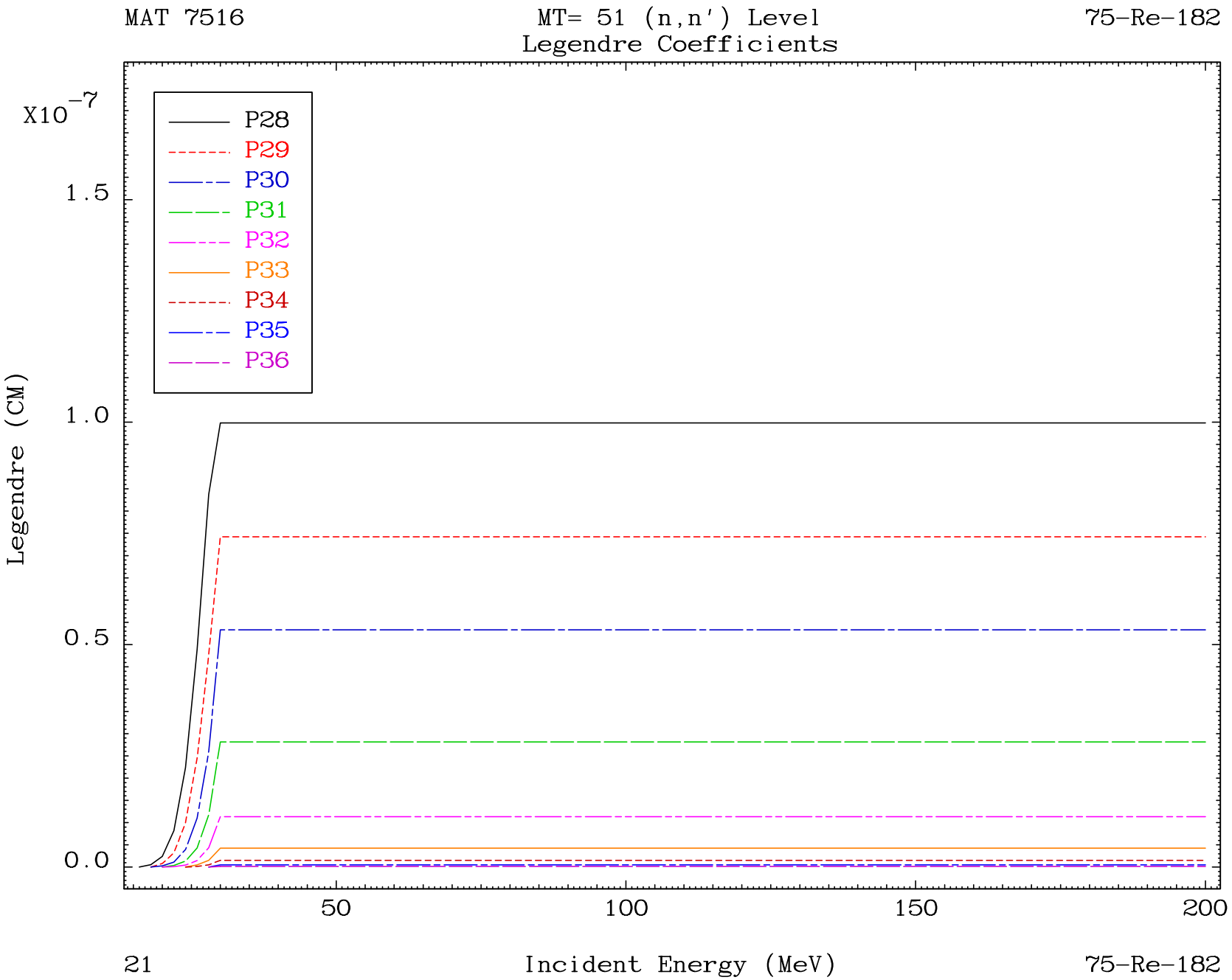

MAT 7516
Elastic
Legendre Coefficients
75-Re-182
P19
P20
P21
P22
P23
P24
P25
P26
P27
0.025
0.020
0.015
0.010
0.005
0.000
Legendre (CM)
10
15
20
25
30
16
Incident Energy (MeV)
75-Re-182

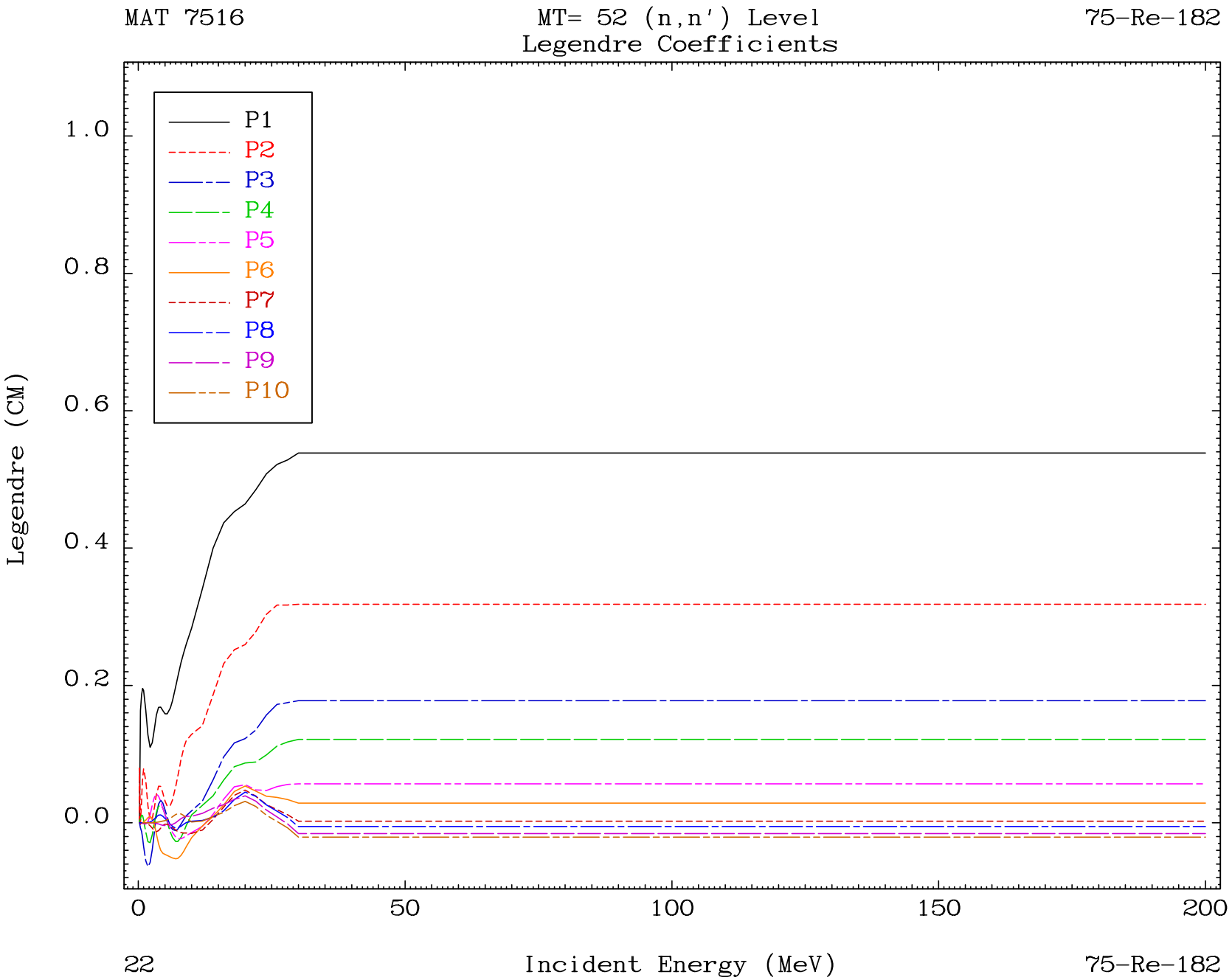

MAT 7516
Elastic
Legendre Coefficients
75-Re-182
X10 −6
6
4
2
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
10
15
20
25
30
17
Incident Energy (MeV)
75-Re-182

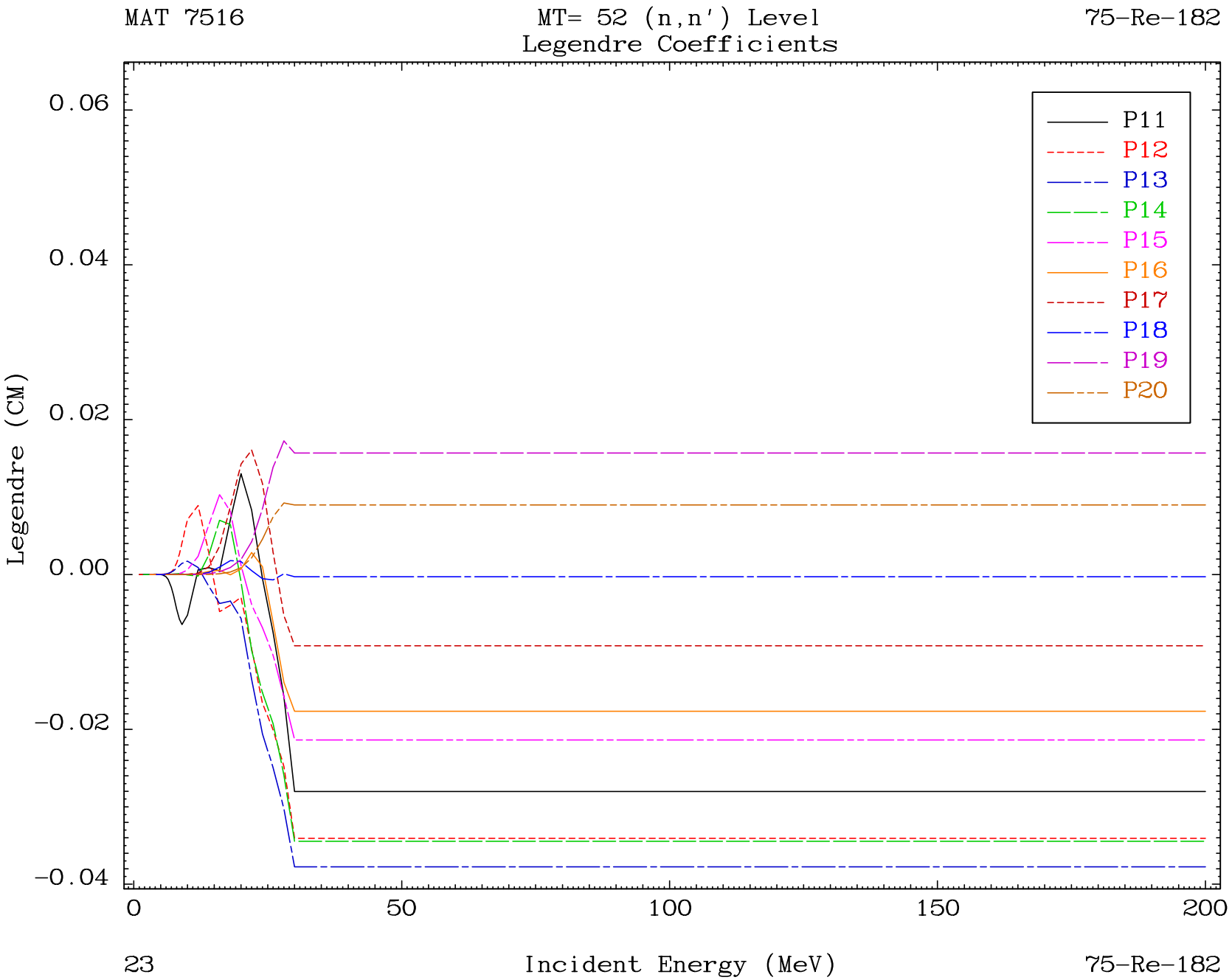

MAT 7516
MT= 51 (n,n') Level
Legendre Coefficients
75-Re-182
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
Incident Energy (MeV)
18
75-Re-182
P1
P2
P3
P4
P5
P6
P7
P8
P9

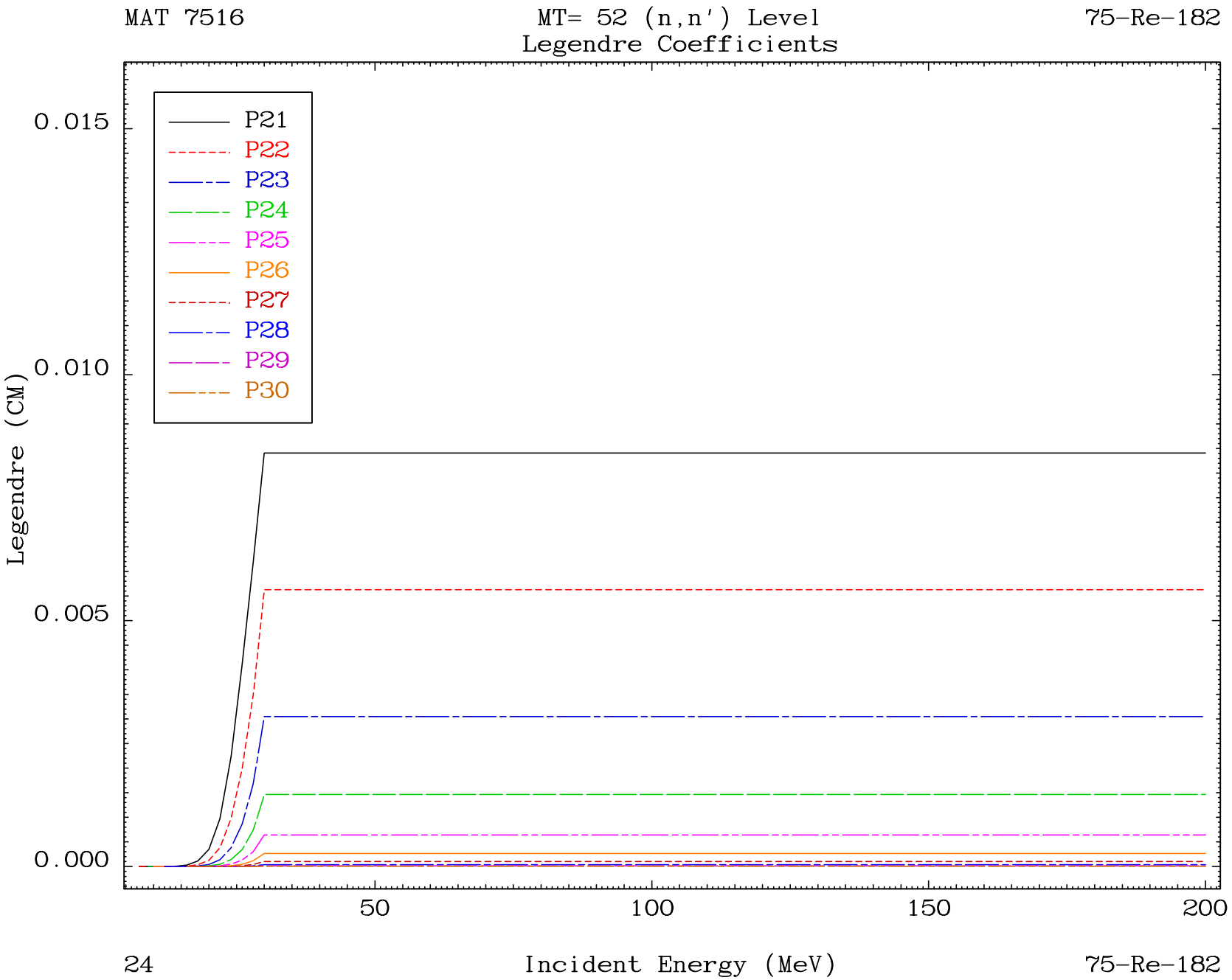

MAT 7516
MT= 51 (n,n') Level
Legendre Coefficients
75-Re-182
0.005
0.000
-0.005
-0.010
-0.015
Legendre (CM)
0
50
100
150
200
Incident Energy (MeV)
19
75-Re-182
P10
P11
P12
P13
P14
P15
P16
P17
P18

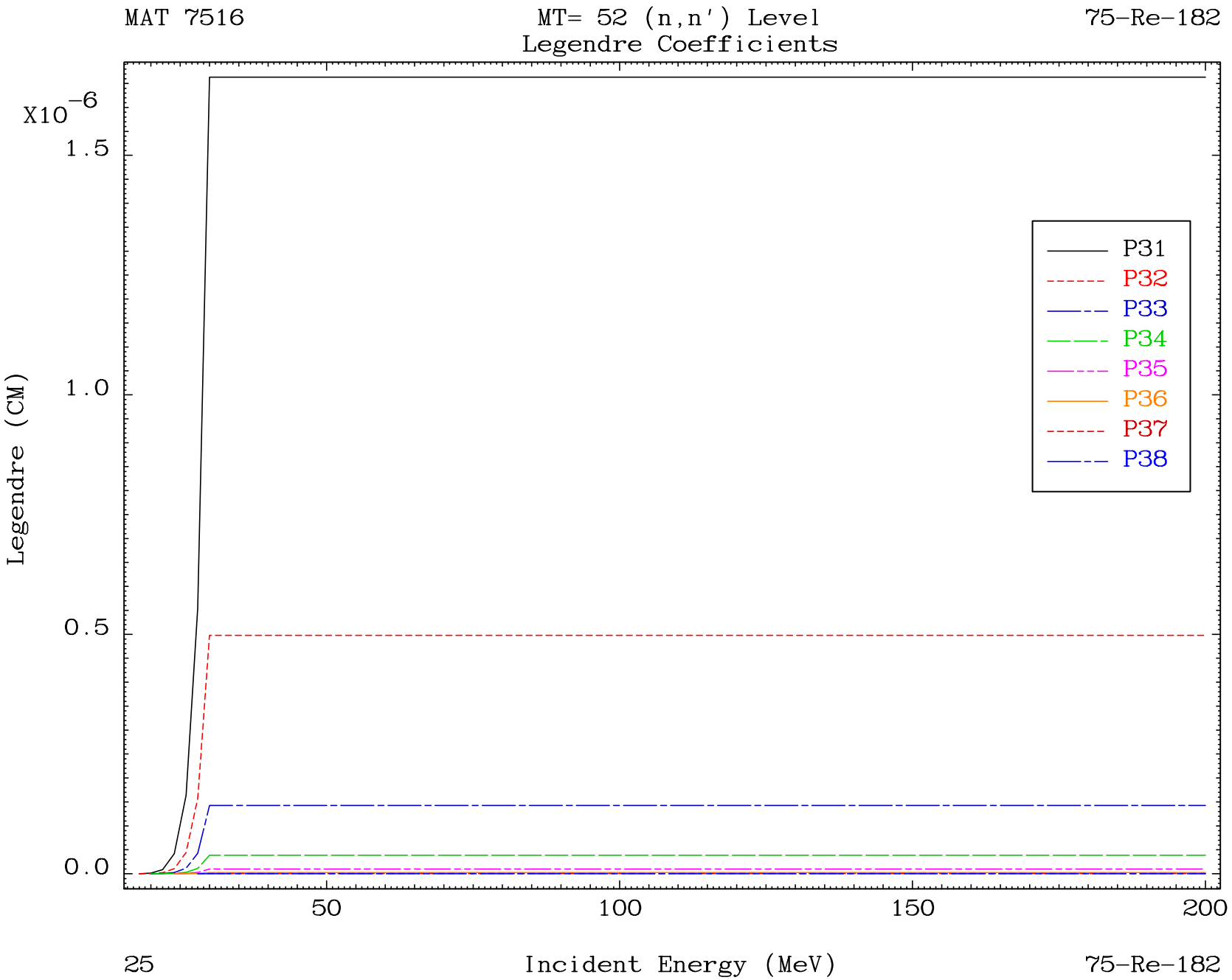

MAT 7516
MT= 51 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-4
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
20
50
100
150
200
Incident Energy (MeV)
75-Re-182

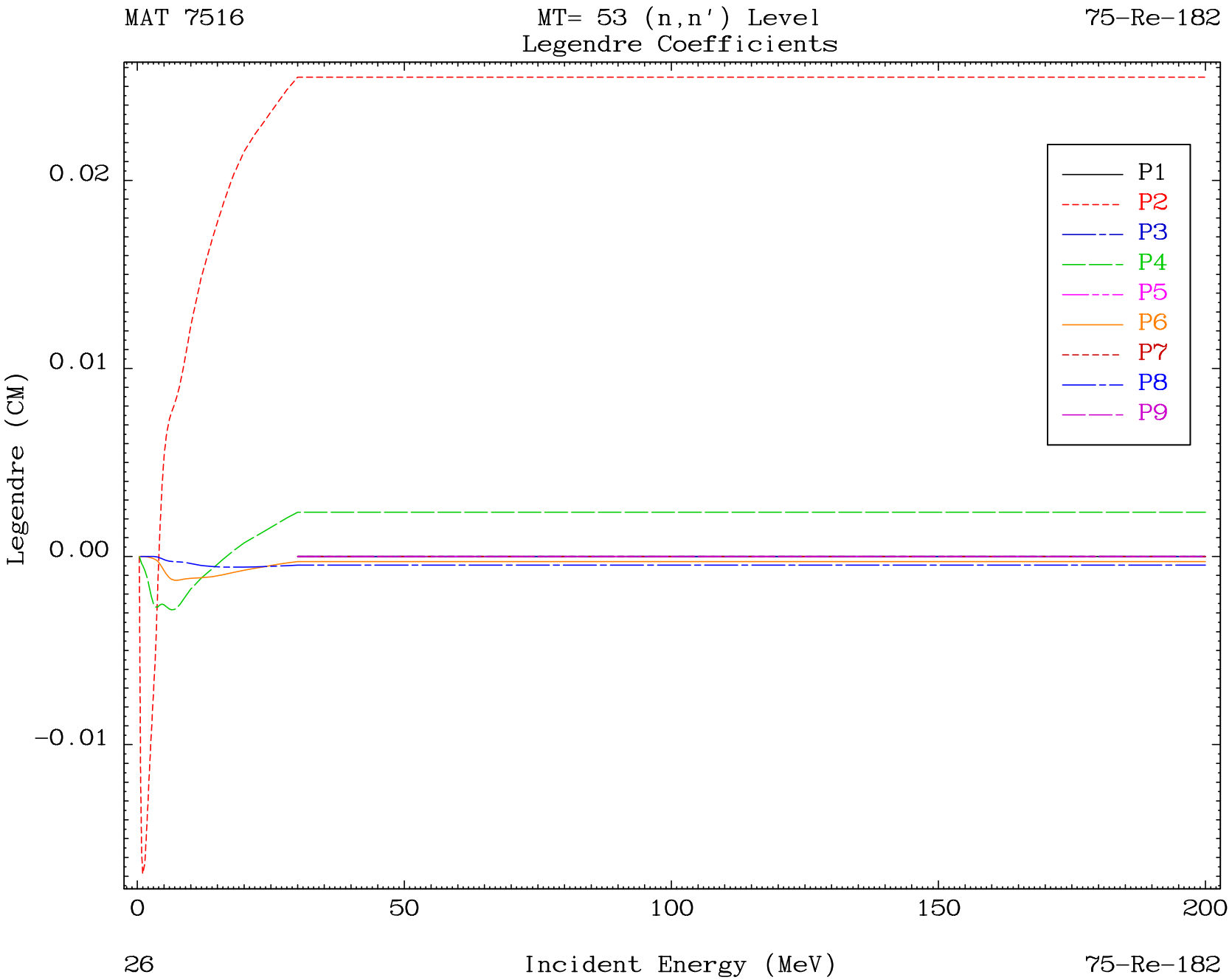

MAT 7516
MT= 51 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-7
1.5
1.0
0.5
0.0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
P35
P36
50
100
150
200
21
Incident Energy (MeV)
75-Re-182

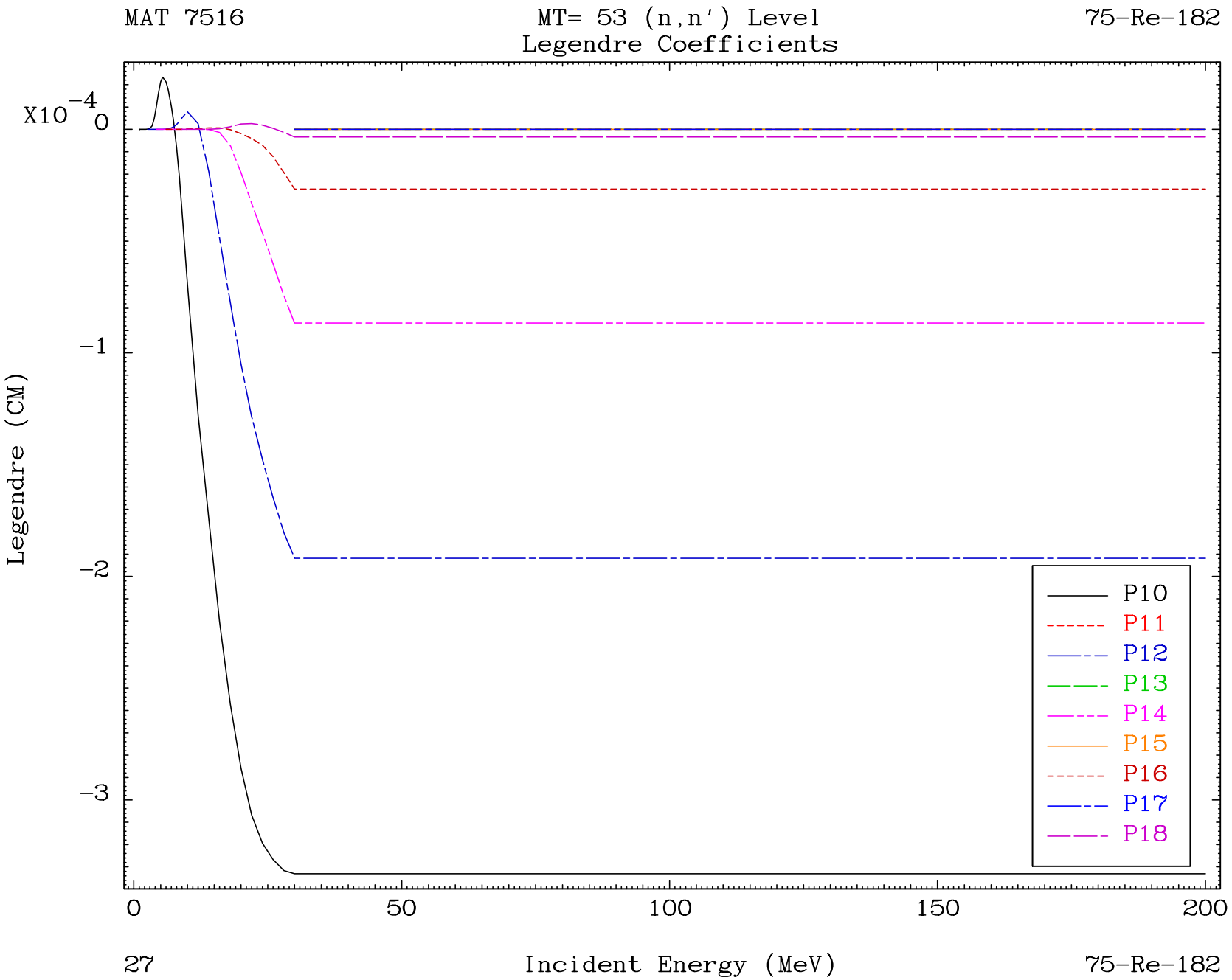

MAT 7516
MT= 52 (n,n') Level
Legendre Coefficients
75-Re-182
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
0
50
100
150
200
22
Incident Energy (MeV)
75-Re-182

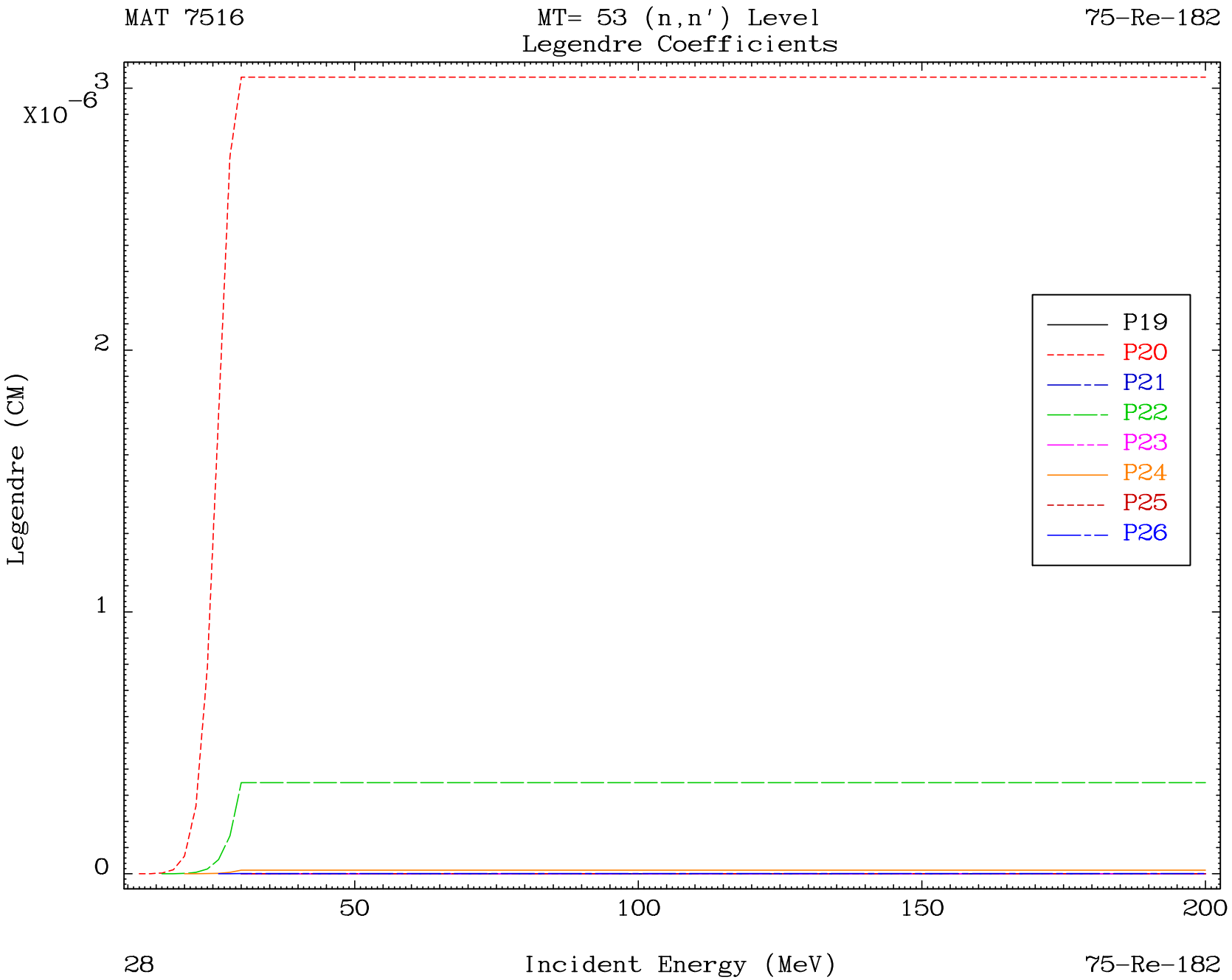

MAT 7516
MT= 52 (n,n') Level
Legendre Coefficients
75-Re-182
0.06
0.04
0.02
0.00
-0.02
-0.04
Legendre (CM)
0
50
100
150
200
23
Incident Energy (MeV)
75-Re-182
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20

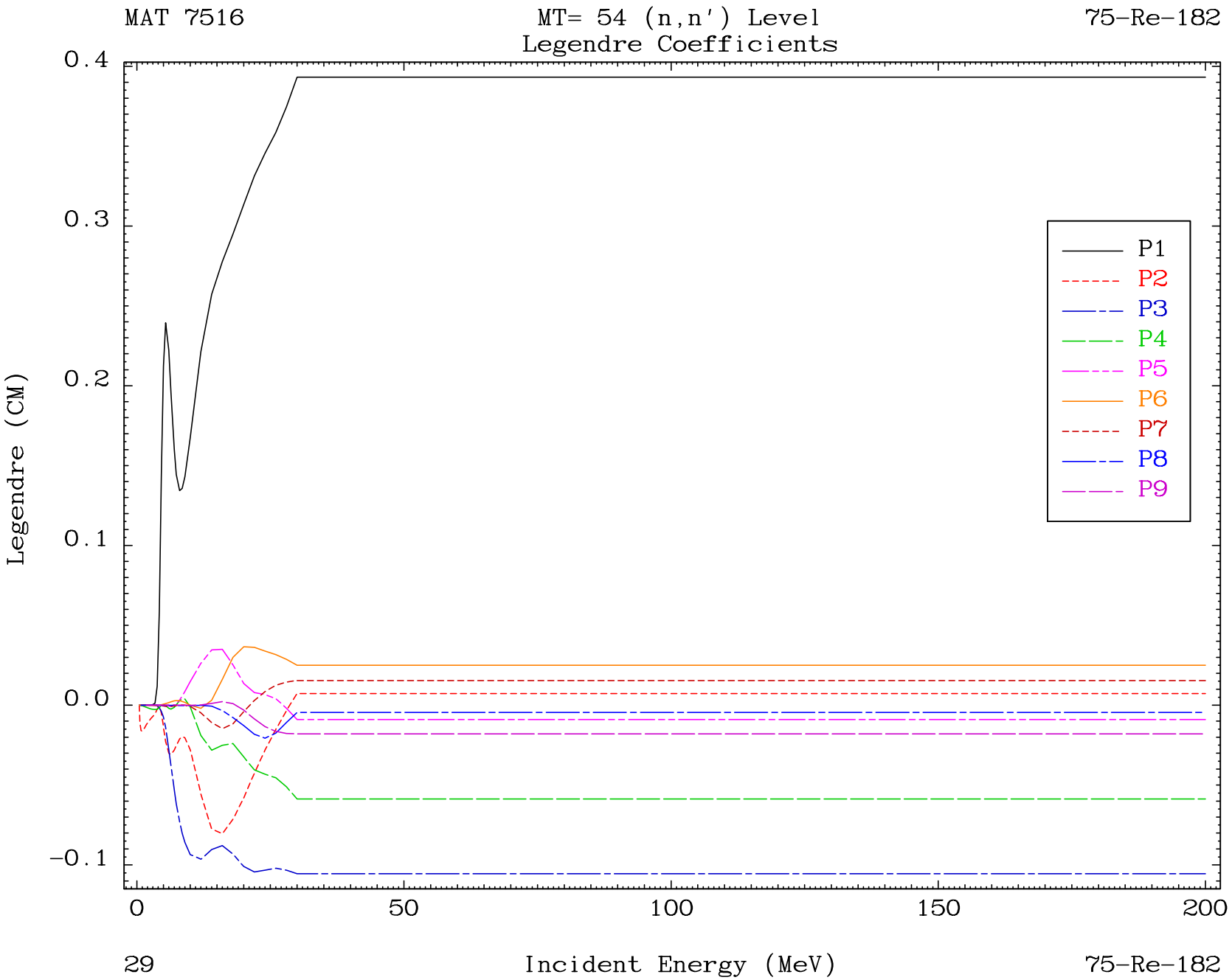

MAT 7516
MT= 52 (n,n') Level
Legendre Coefficients
75-Re-182
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
0.015
0.010
0.005
0.000
Legendre (CM)
50
100
150
200
24
Incident Energy (MeV)
75-Re-182

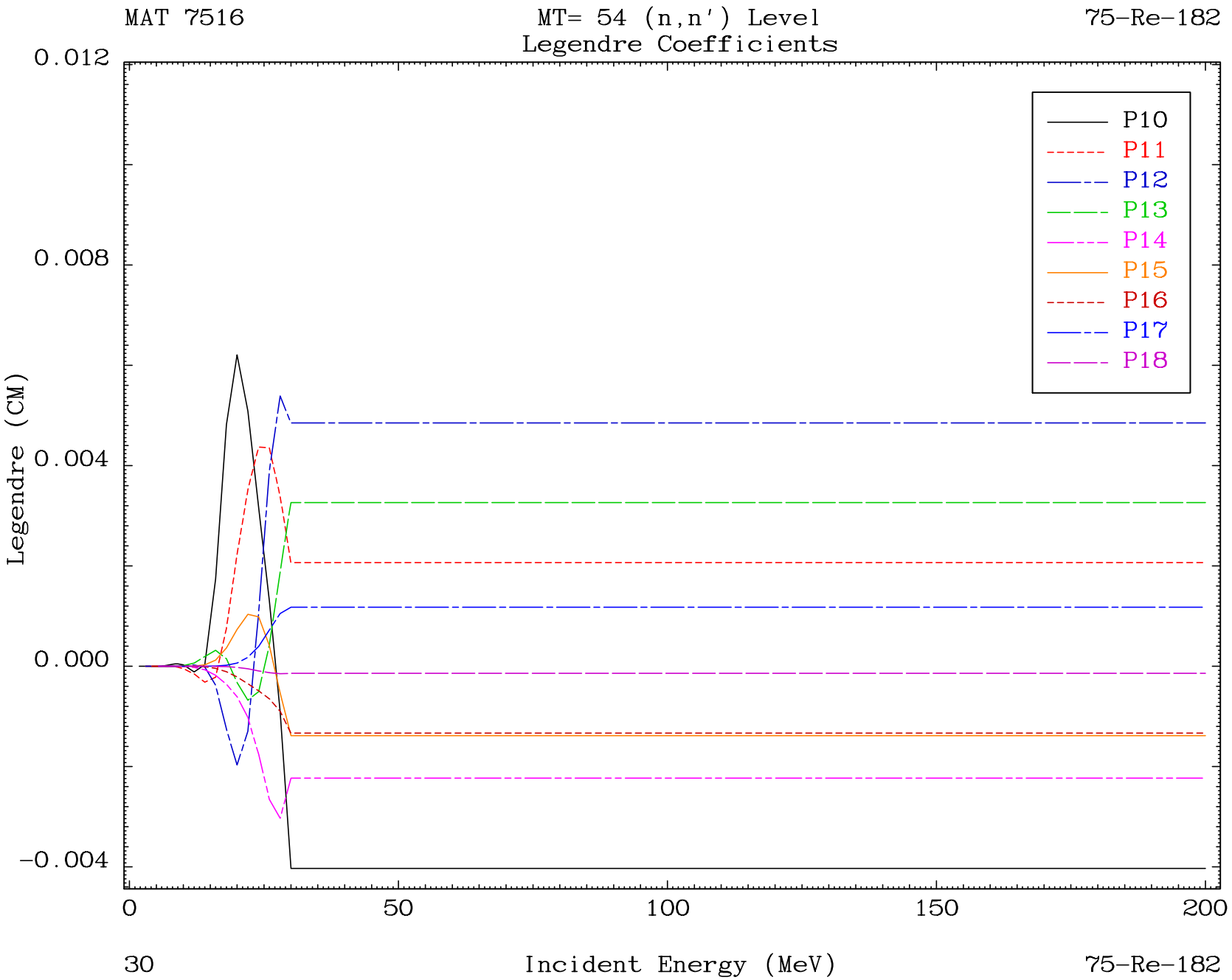

MAT 7516
MT= 52 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-6
1.5
1.0
0.5
0.0
Legendre (CM)
P31
P32
P33
P34
P35
P36
P37
P38
50
100
150
200
25
Incident Energy (MeV)
75-Re-182

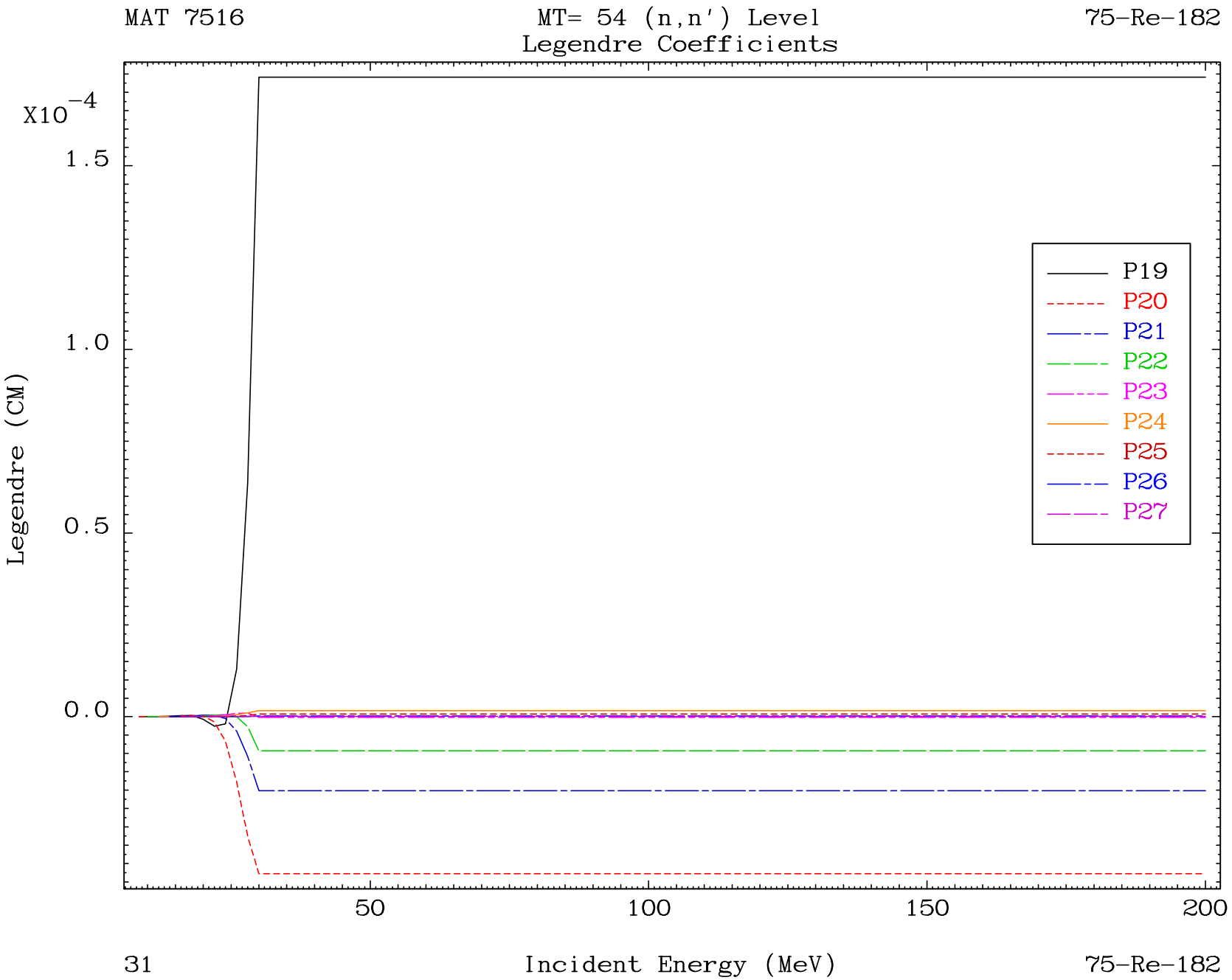

MAT 7516
MT= 53 (n,n') Level
Legendre Coefficients
75-Re-182
0.02
0.01
0.00
-0.01
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
26
Incident Energy (MeV)
75-Re-182

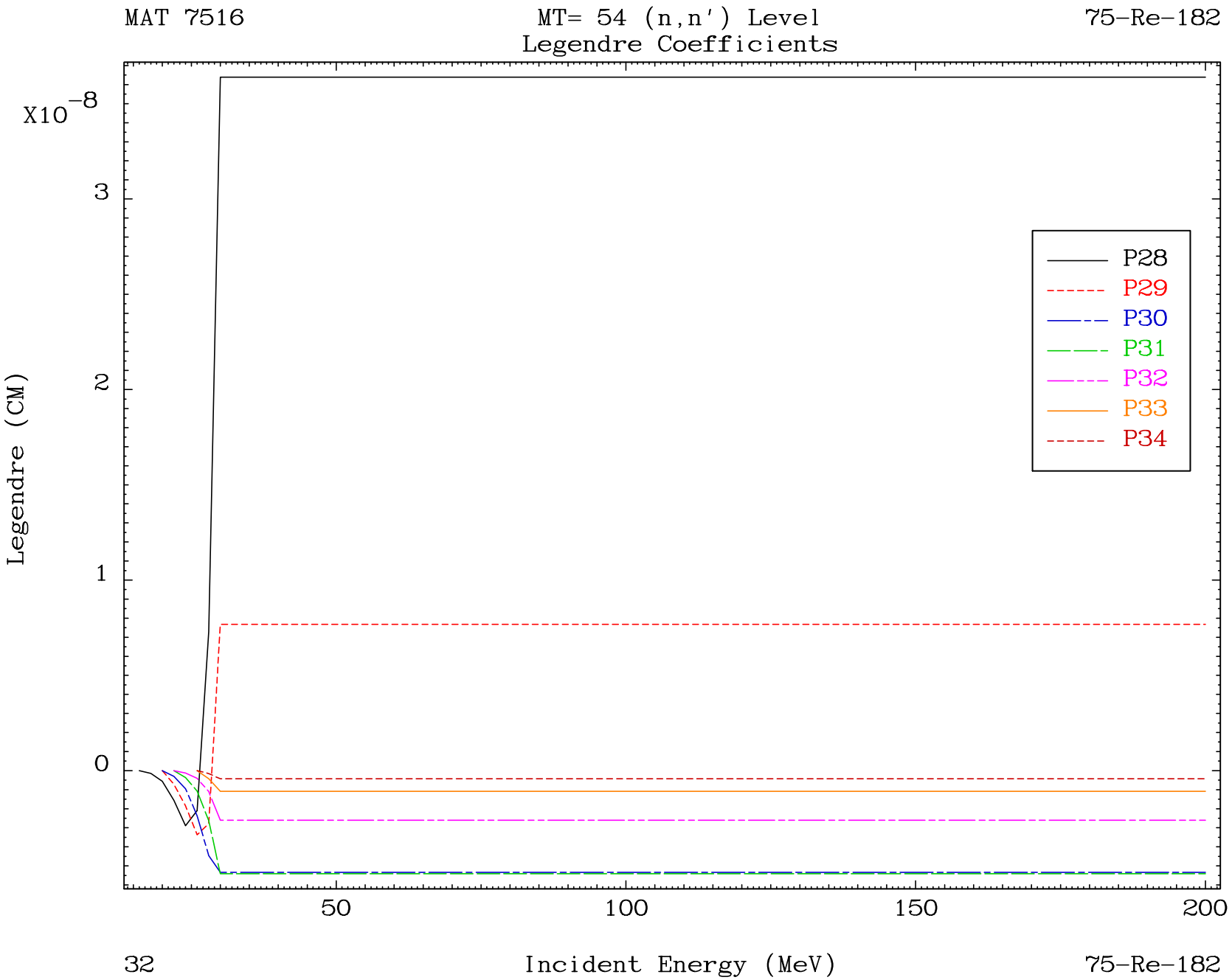

MAT 7516
MT= 53 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-4
0
-1
-2
-3
Legendre (CM)
0
50
100
150
200
27
Incident Energy (MeV)
75-Re-182
P10
P11
P12
P13
P14
P15
P16
P17
P18

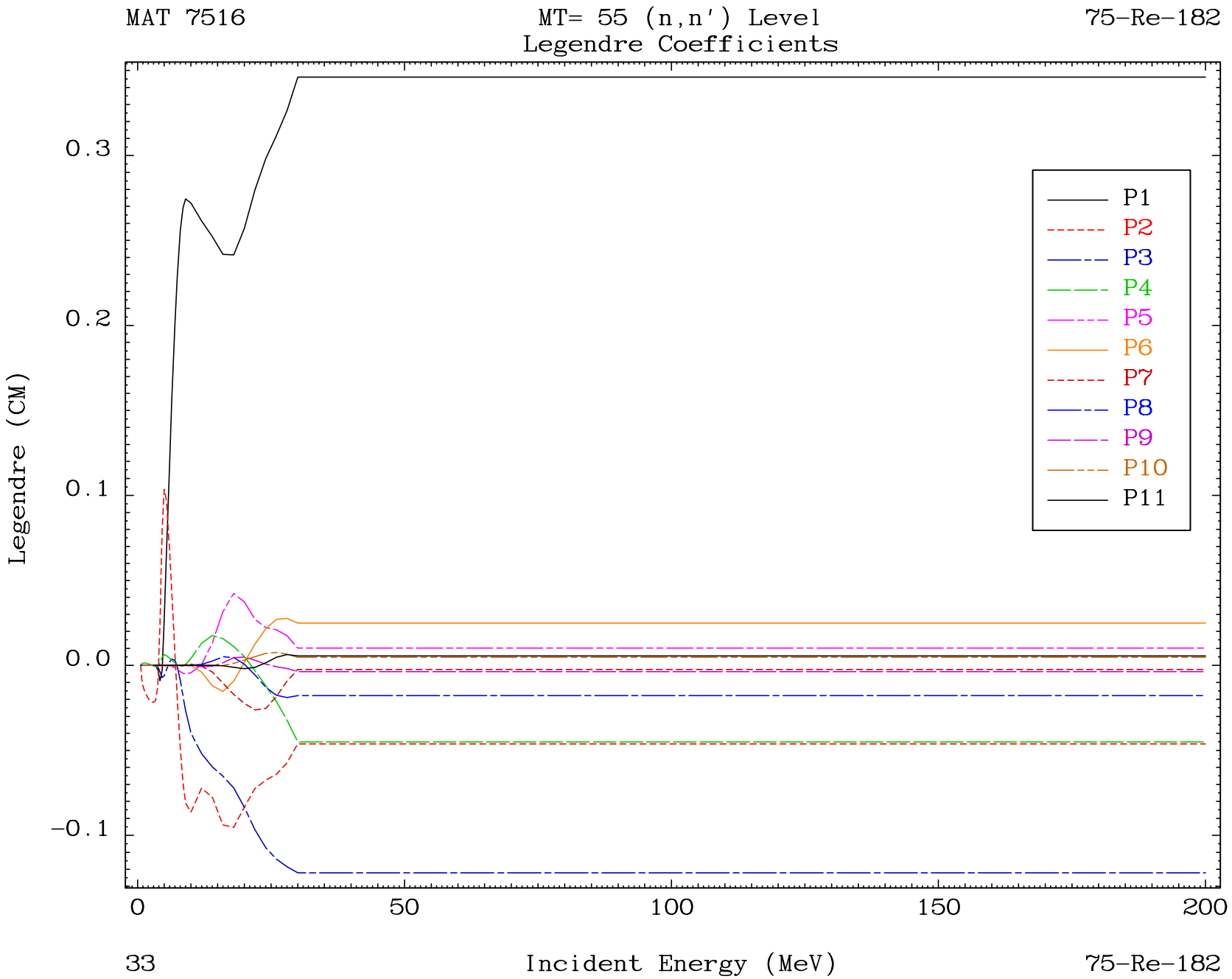

MAT 7516
MT= 53 (n,n') Level
Legendre Coefficients
75-Re-182
X10 -6
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
50
100
150
200
28
Incident Energy (MeV)
75-Re-182

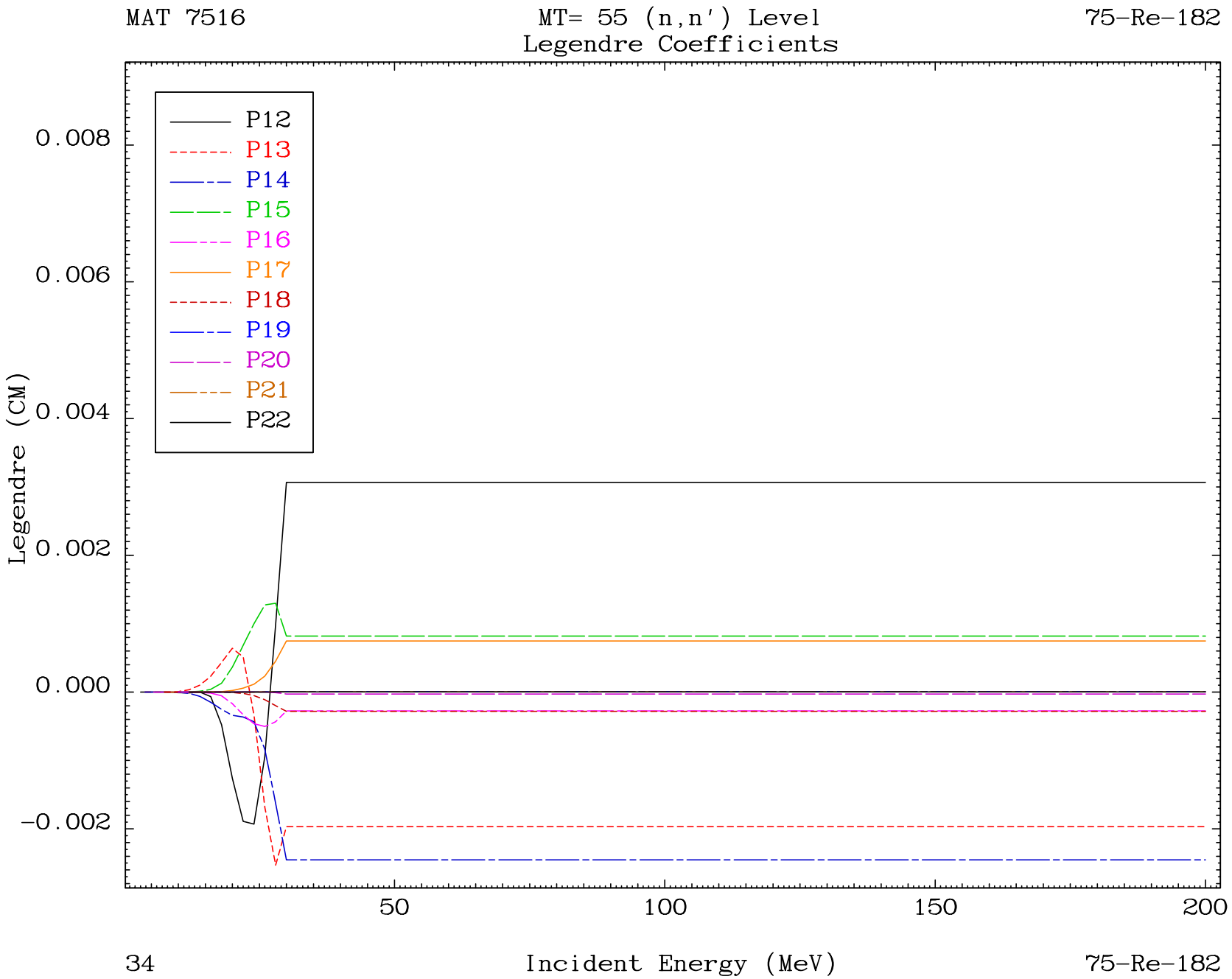

MAT 7516
MT= 54 (n,n') Level
Legendre Coefficients
75-Re-182
0.4
0.3
0.2
0.1
0.0
-0.1
Legendre (CM)
0
50
100
150
200
29
Incident Energy (MeV)
75-Re-182
P1
P2
P3
P4
P5
P6
P7
P8
P9

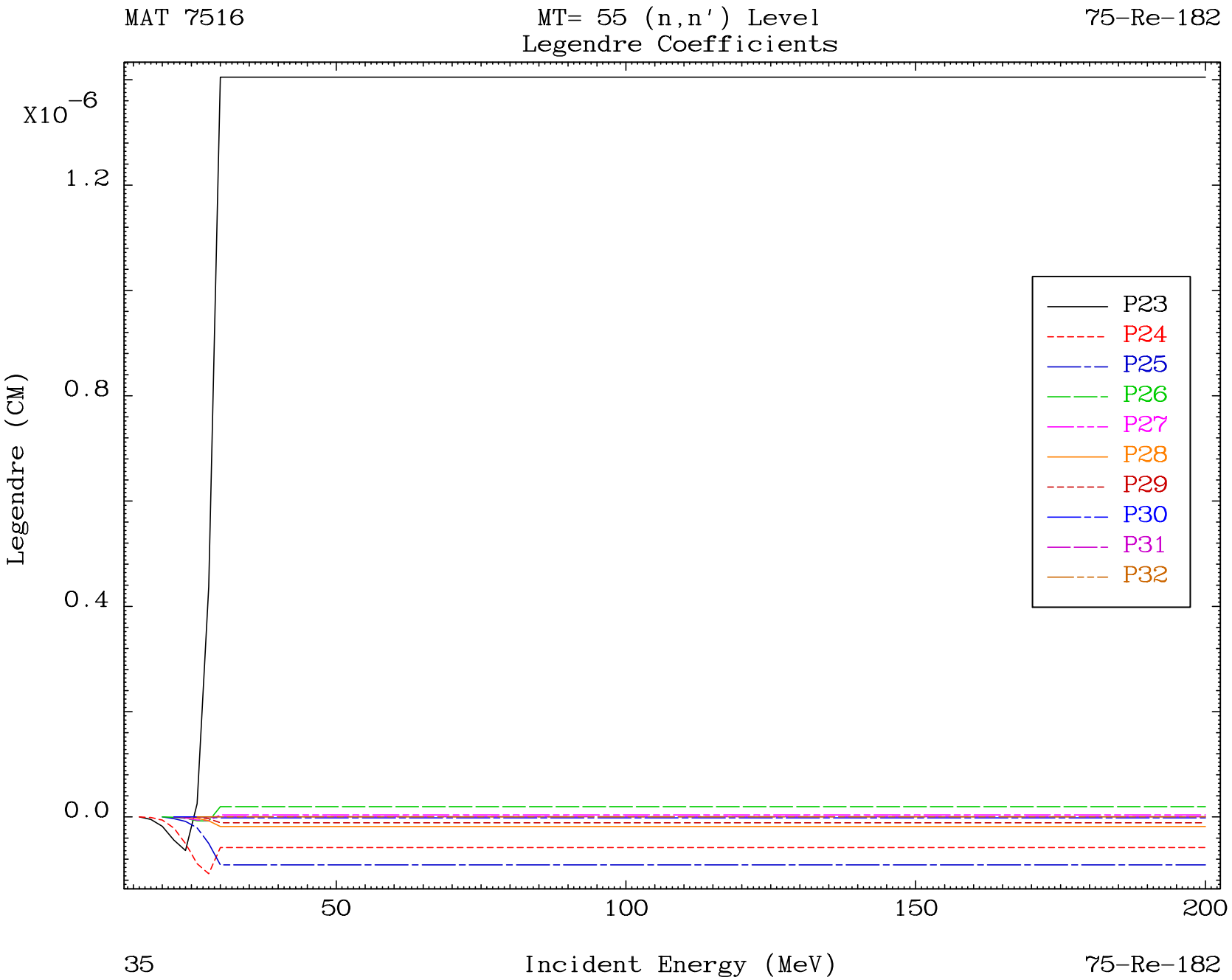

MAT 7516
MT= 54 (n,n') Level
Legendre Coefficients
75-Re-182
0.012
0.008
0.004
0.000
-0.004
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
0
50
100
150
200
30
Incident Energy (MeV)
75-Re-182

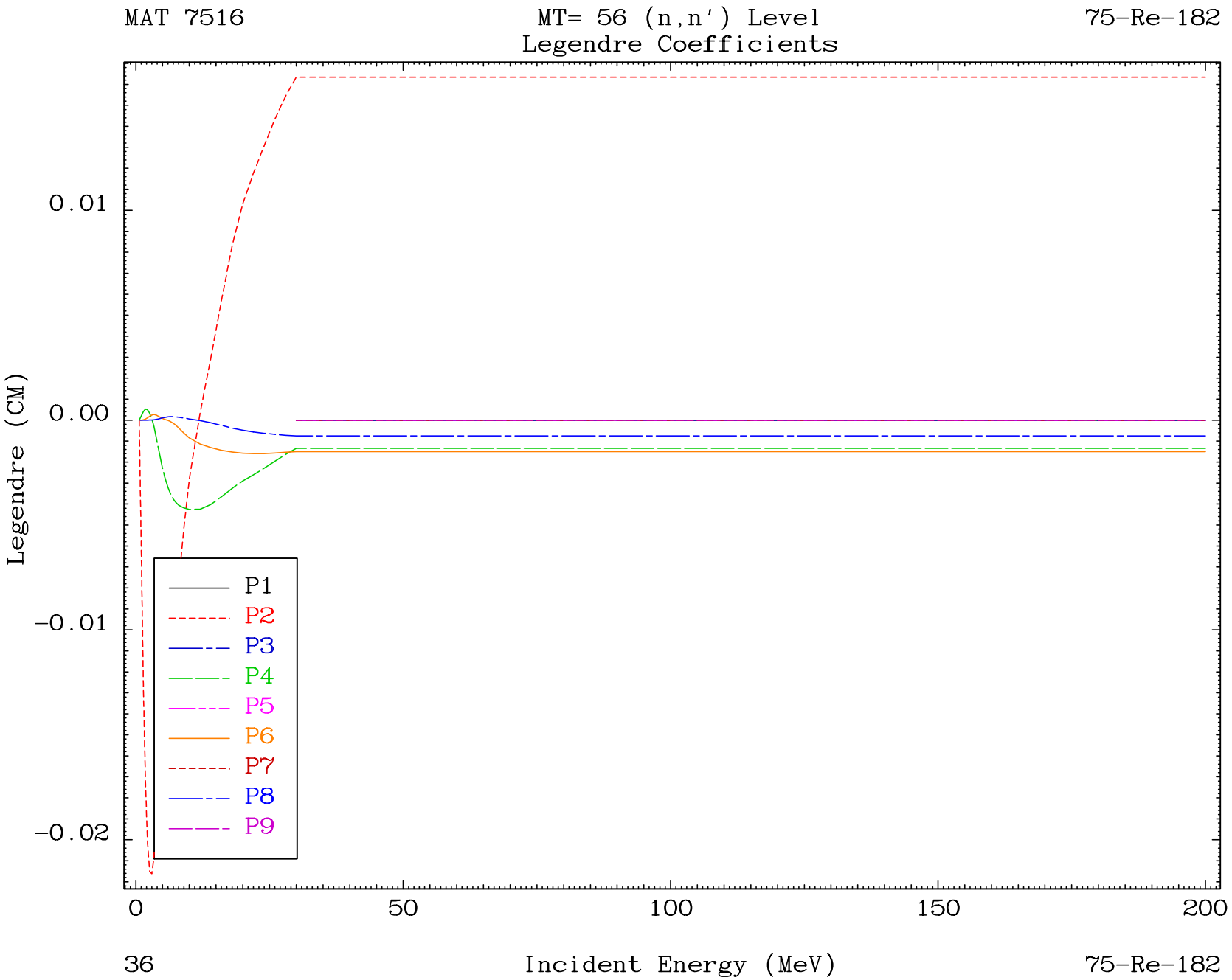

MAT 7516
MT= 54 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-4
1.5
1.0
0.5
0.0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
50
100
150
200
31
Incident Energy (MeV)
75-Re-182

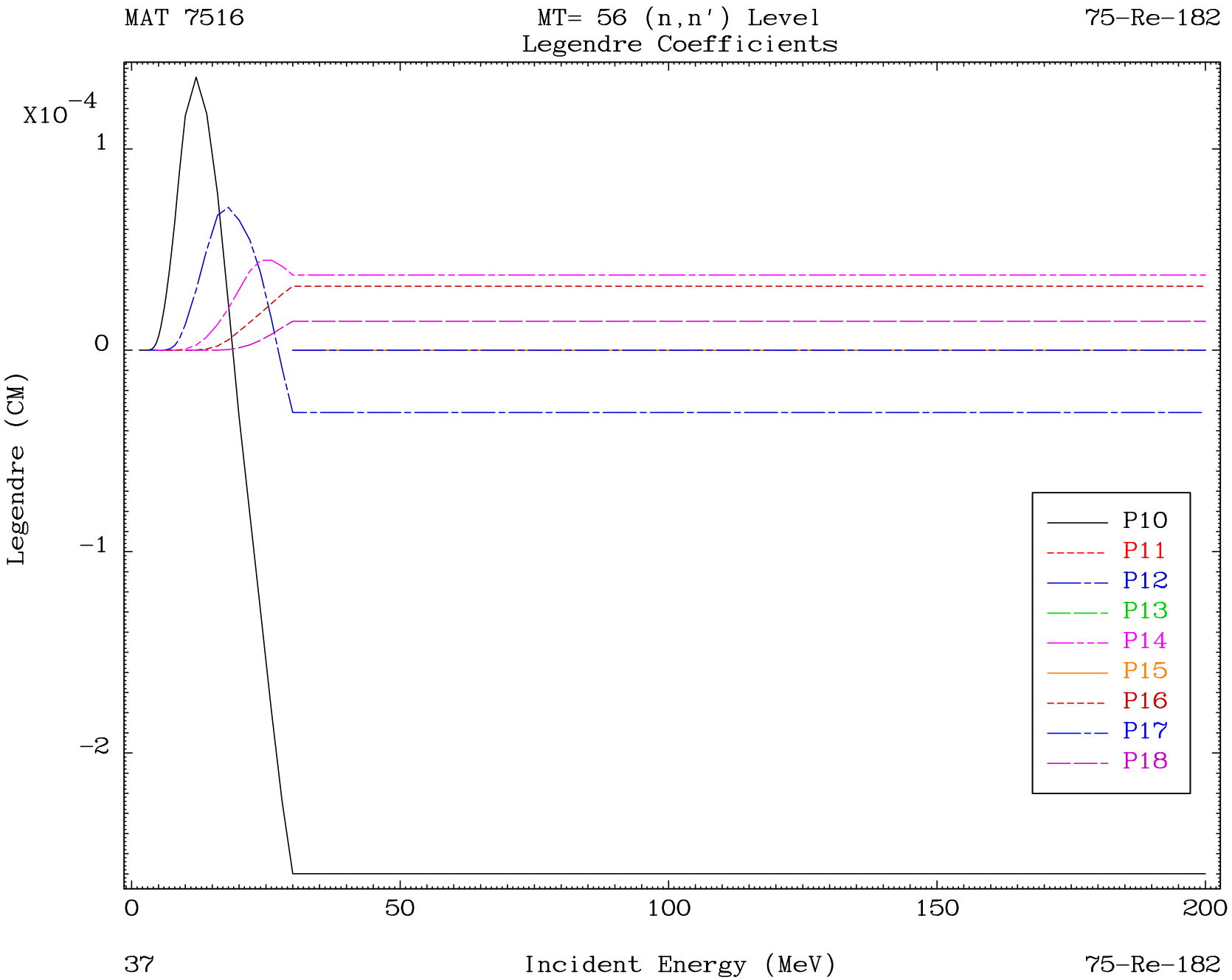

MAT 7516
MT= 54 (n,n') Level
Legendre Coefficients
75-Re-182
X10 -8
3
2
1
0
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
50
100
150
200
32
Incident Energy (MeV)
75-Re-182

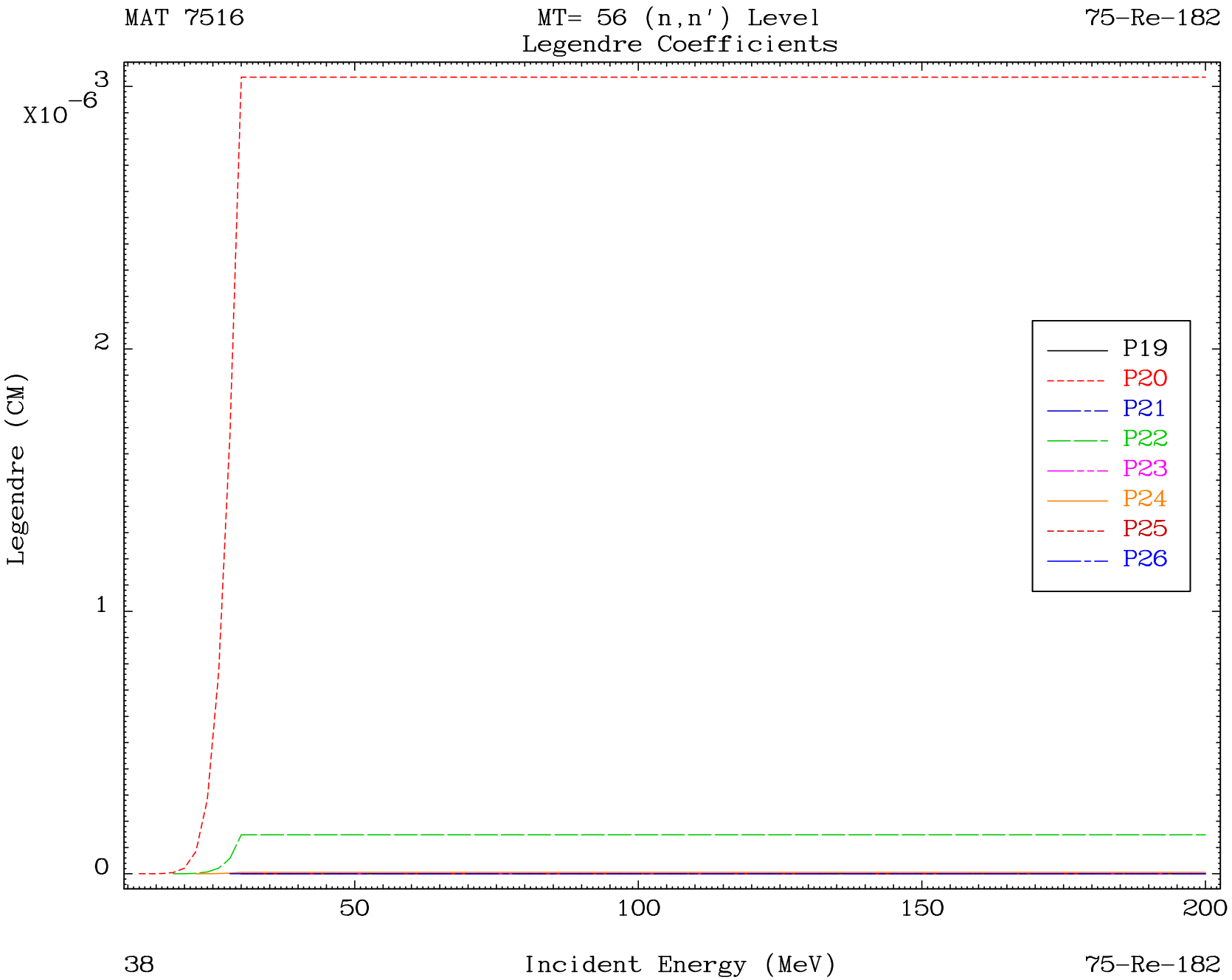

MAT 7516
MT= 55 (n,n') Level
Legendre Coefficients
75-Re-182
Legendre (CM)
0.3
0.2
0.1
0.0
-0.1
0
50
100
150
200
33
Incident Energy (MeV)
75-Re-182
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

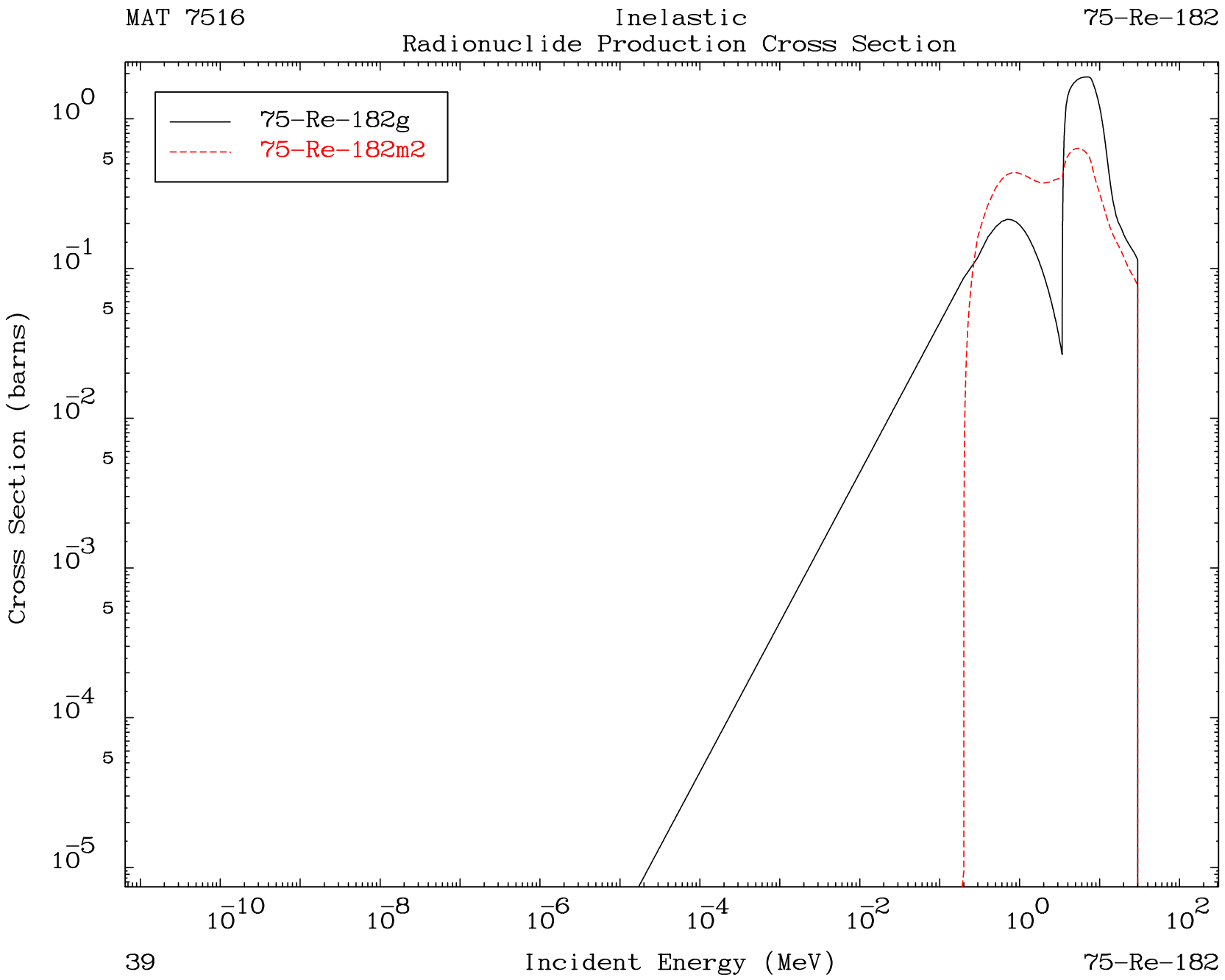

MAT 7516
MT= 55 (n,n') Level
Legendre Coefficients
75-Re-182
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.008
0.006
0.004
0.002
0.000
-0.002
Legendre (CM)
50
100
150
200
34
Incident Energy (MeV)
75-Re-182

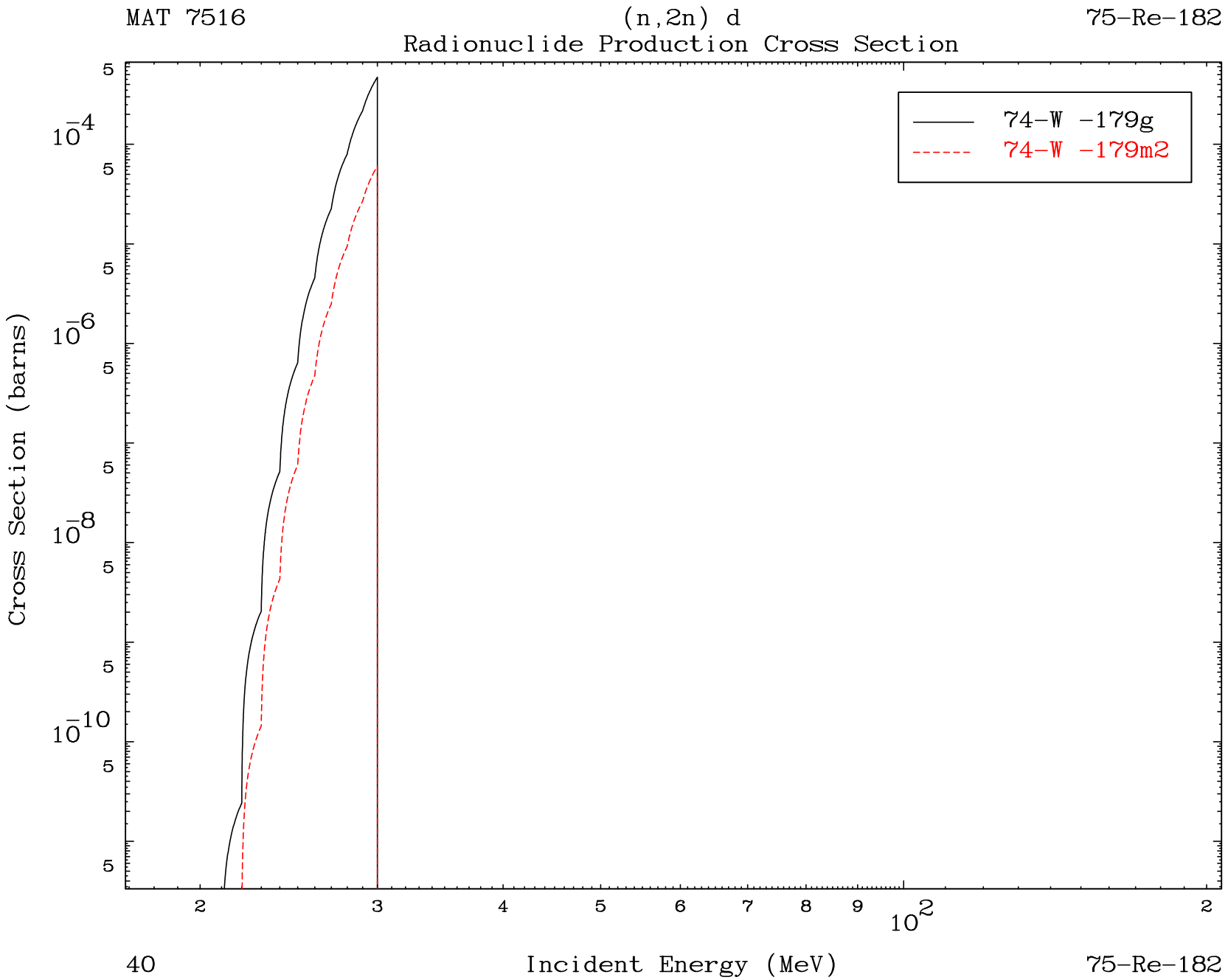

MAT 7516
MT= 55 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-6
1.2
0.8
0.4
0.0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
35
Incident Energy (MeV)
75-Re-182

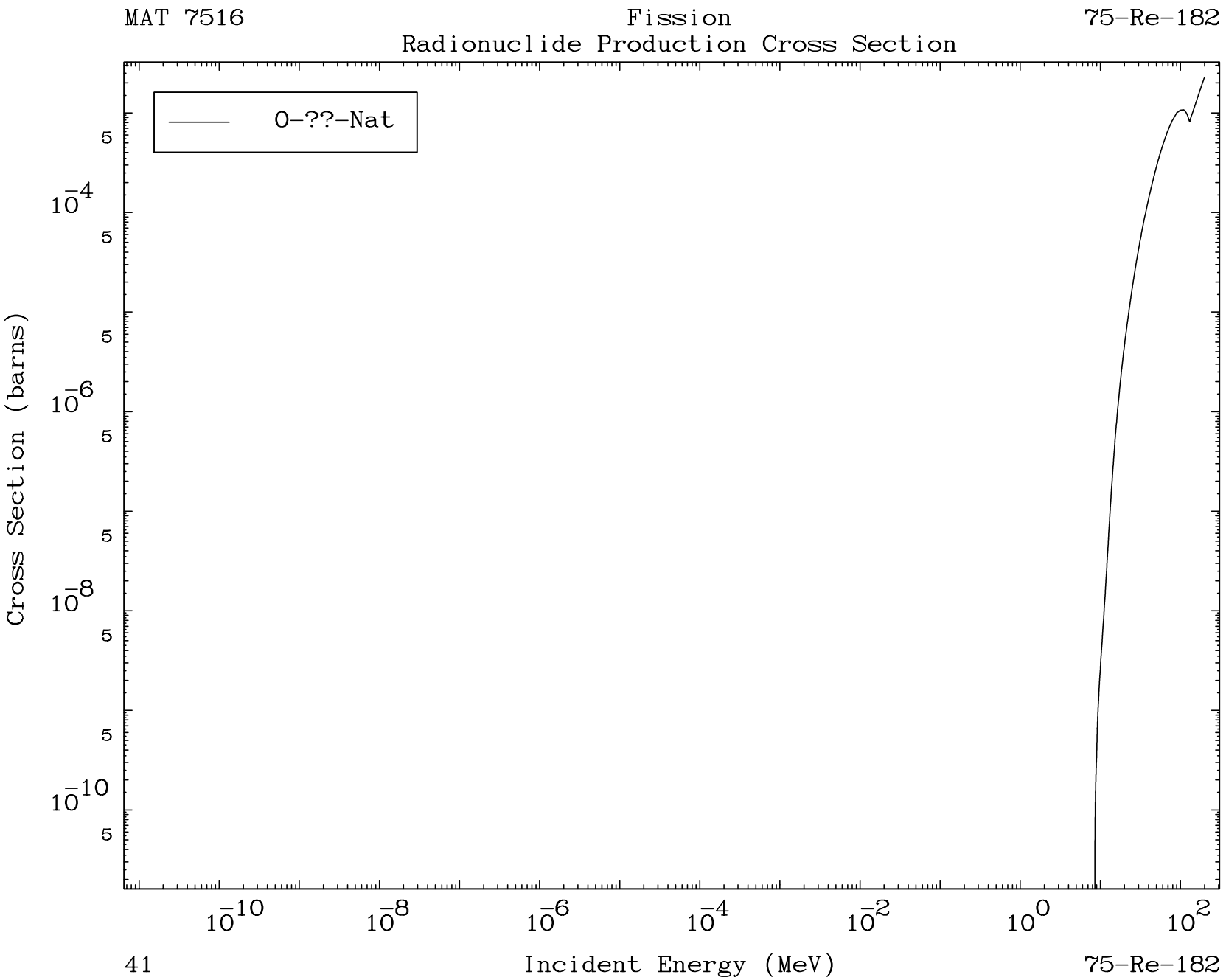

MAT 7516
MT= 56 (n,n') Level
Legendre Coefficients
75-Re-182
0.01
0.00
-0.01
-0.02
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
0
50
100
150
200
36
Incident Energy (MeV)
75-Re-182

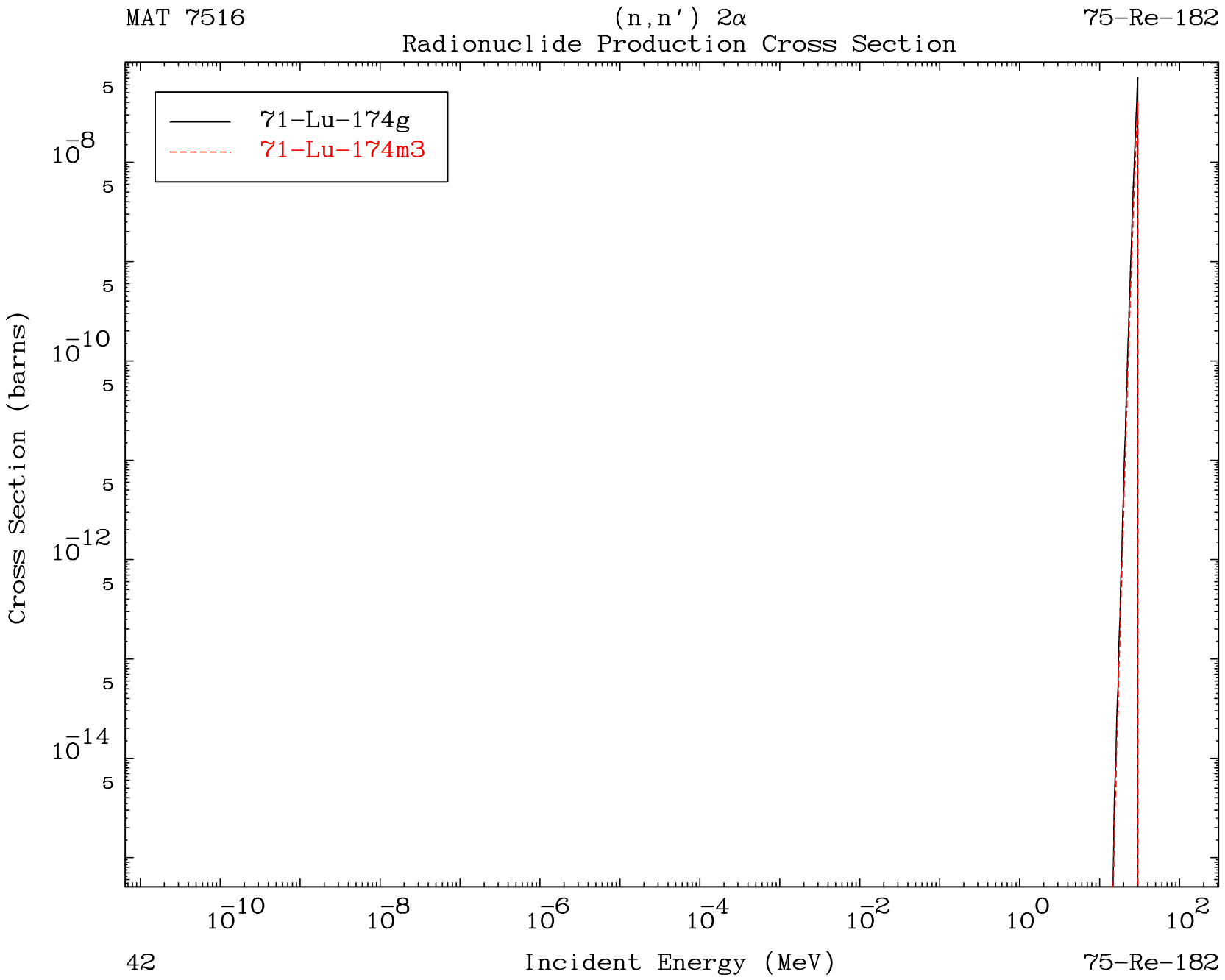

MAT 7516
MT= 56 (n,n') Level
Legendre Coefficients
75-Re-182
X10^-4
1
0
-1
-2
Legendre (CM)
0
50
100
150
200
37
Incident Energy (MeV)
75-Re-182
P10
P11
P12
P13
P14
P15
P16
P17
P18

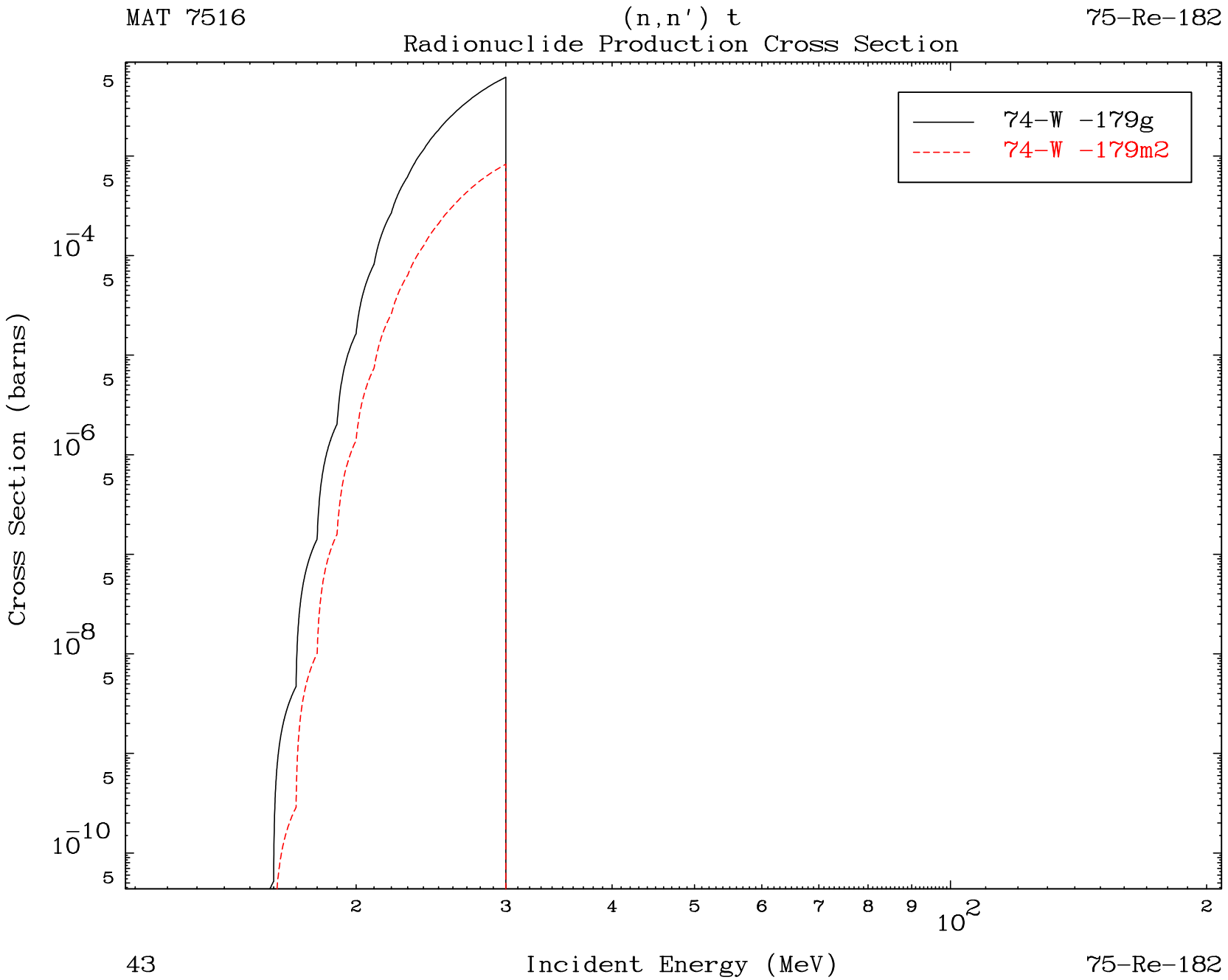

MAT 7516
MT= 56 (n,n') Level
Legendre Coefficients
75-Re-182
X10 -6
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
50
100
150
200
38
Incident Energy (MeV)
75-Re-182

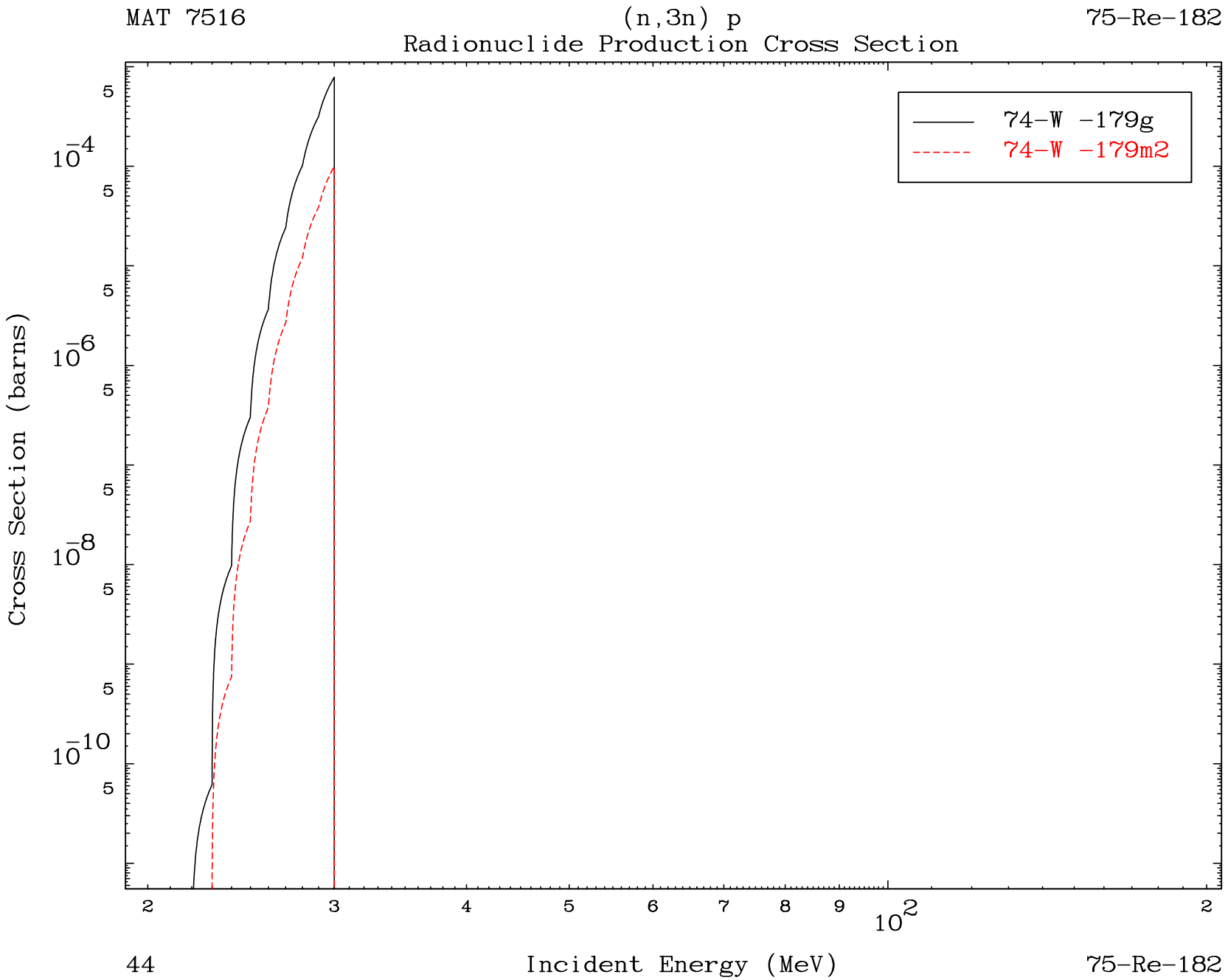

MAT 7516
Inelastic
75-Re-182
Radionuclide Production Cross Section
75-Re-182g
75-Re-182m2
Cross Section (barns)
Incident Energy (MeV)
39
75-Re-182

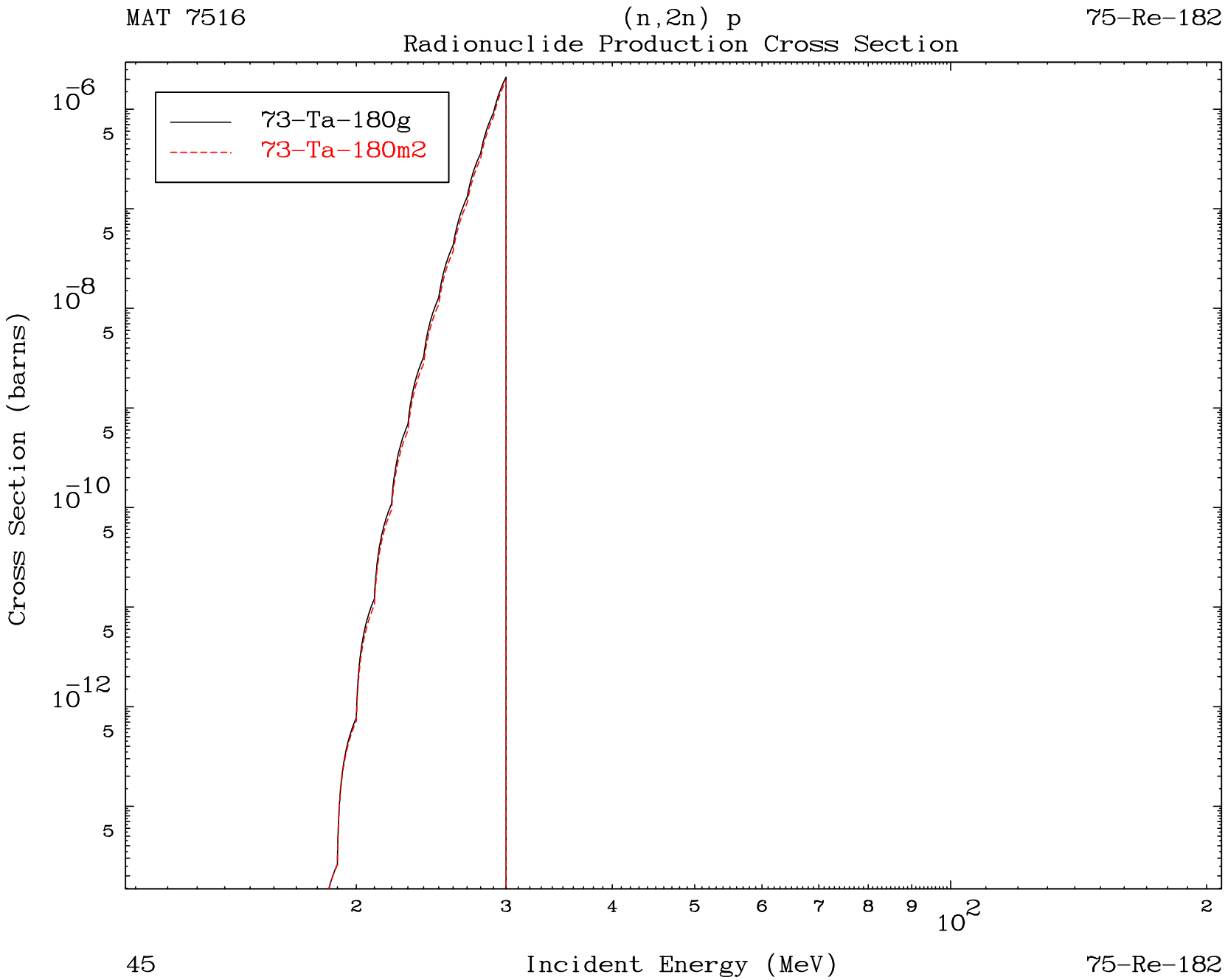

MAT 7516
(n,2n) d
75-Re-182
Radionuclide Production Cross Section
74-W -179g
74-W -179m2
Cross Section (barns)
Incident Energy (MeV)
40
75-Re-182

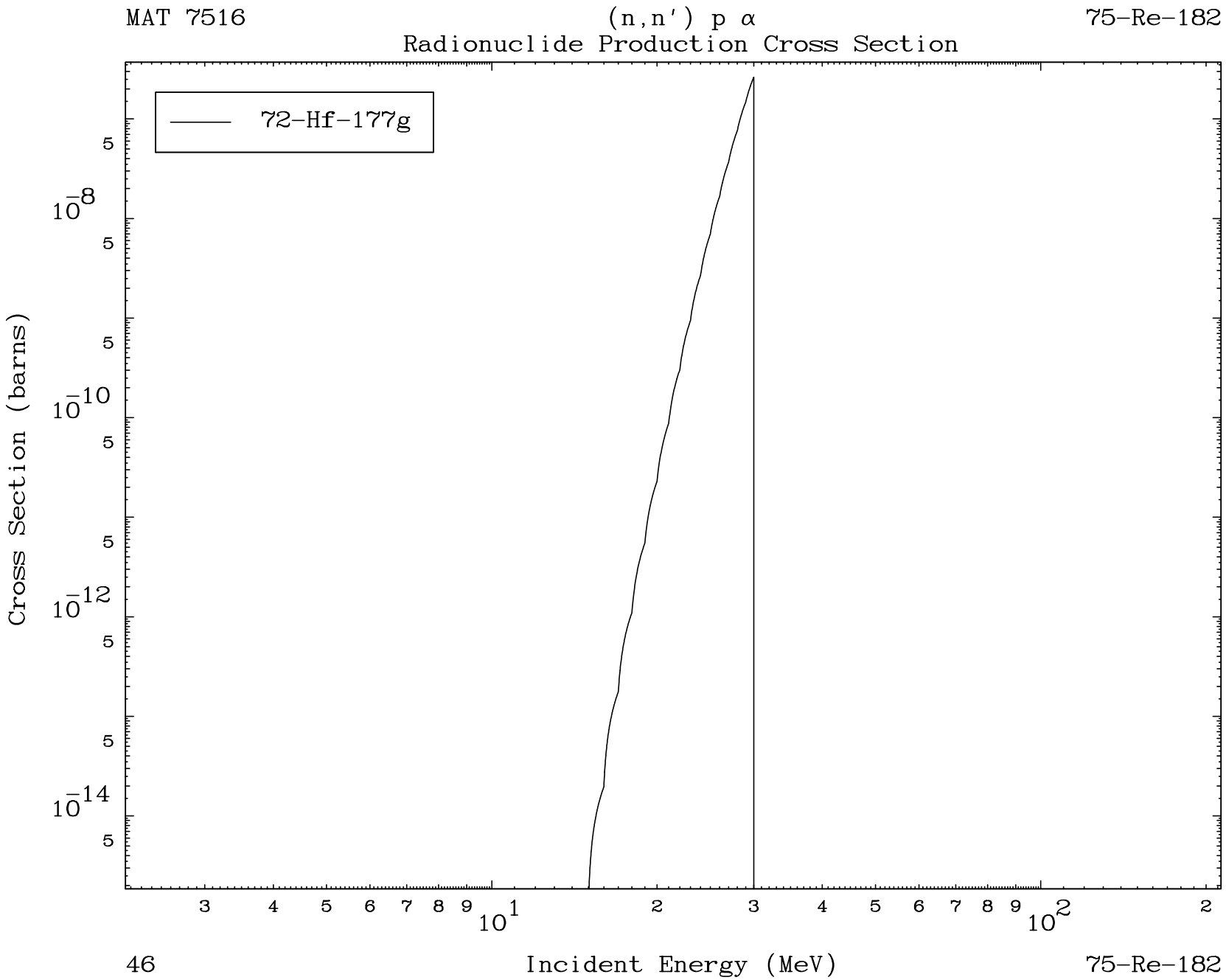

MAT 7516
Fission
75-Re-182
Radionuclide Production Cross Section
0-??-Nat
Cross Section (barns)
Incident Energy (MeV)
41
75-Re-182

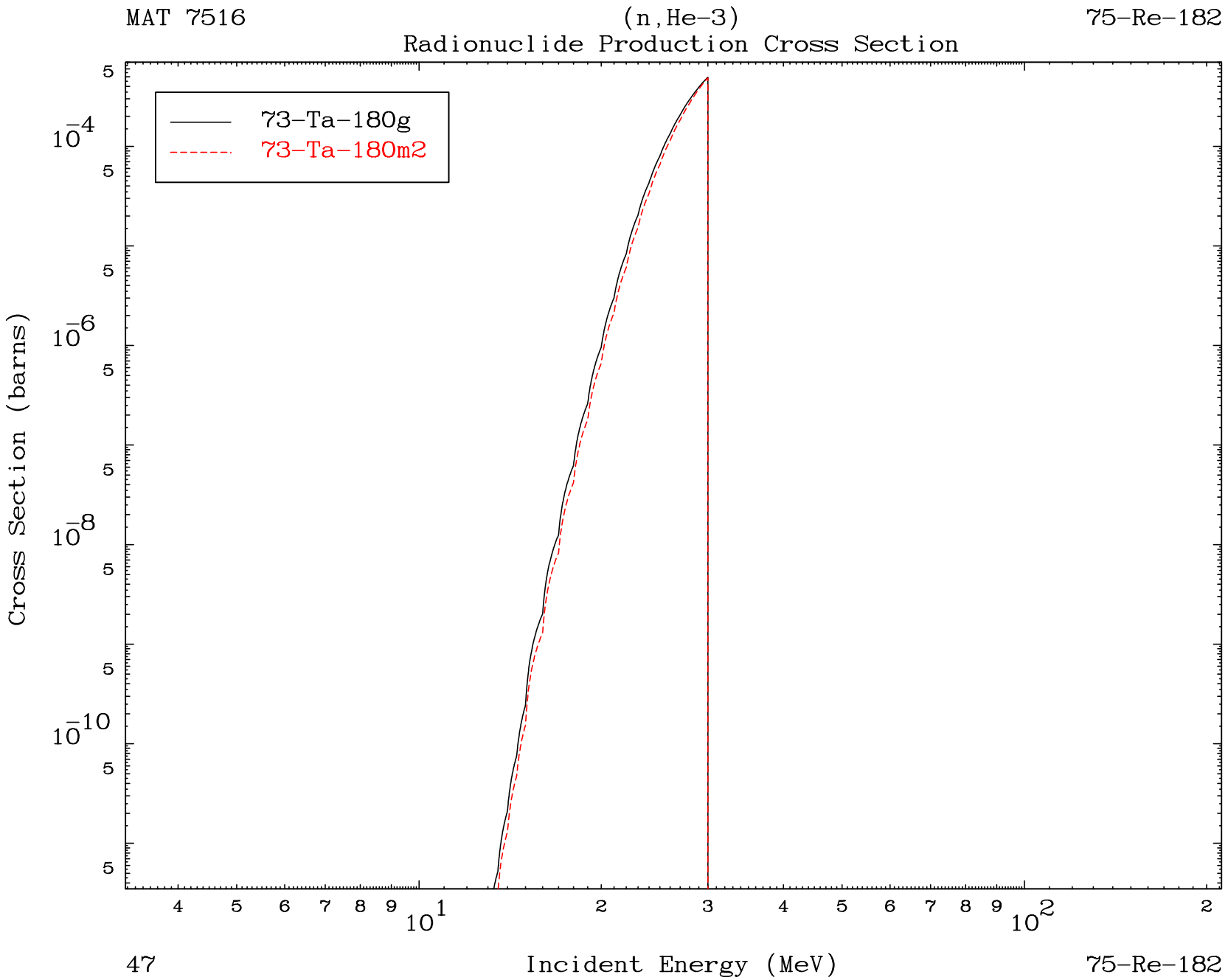

MAT 7516
(n,n') 2α
75-Re-182
Radionuclide Production Cross Section
71-Lu-174g
71-Lu-174m3
Cross Section (barns)
Incident Energy (MeV)
42
75-Re-182

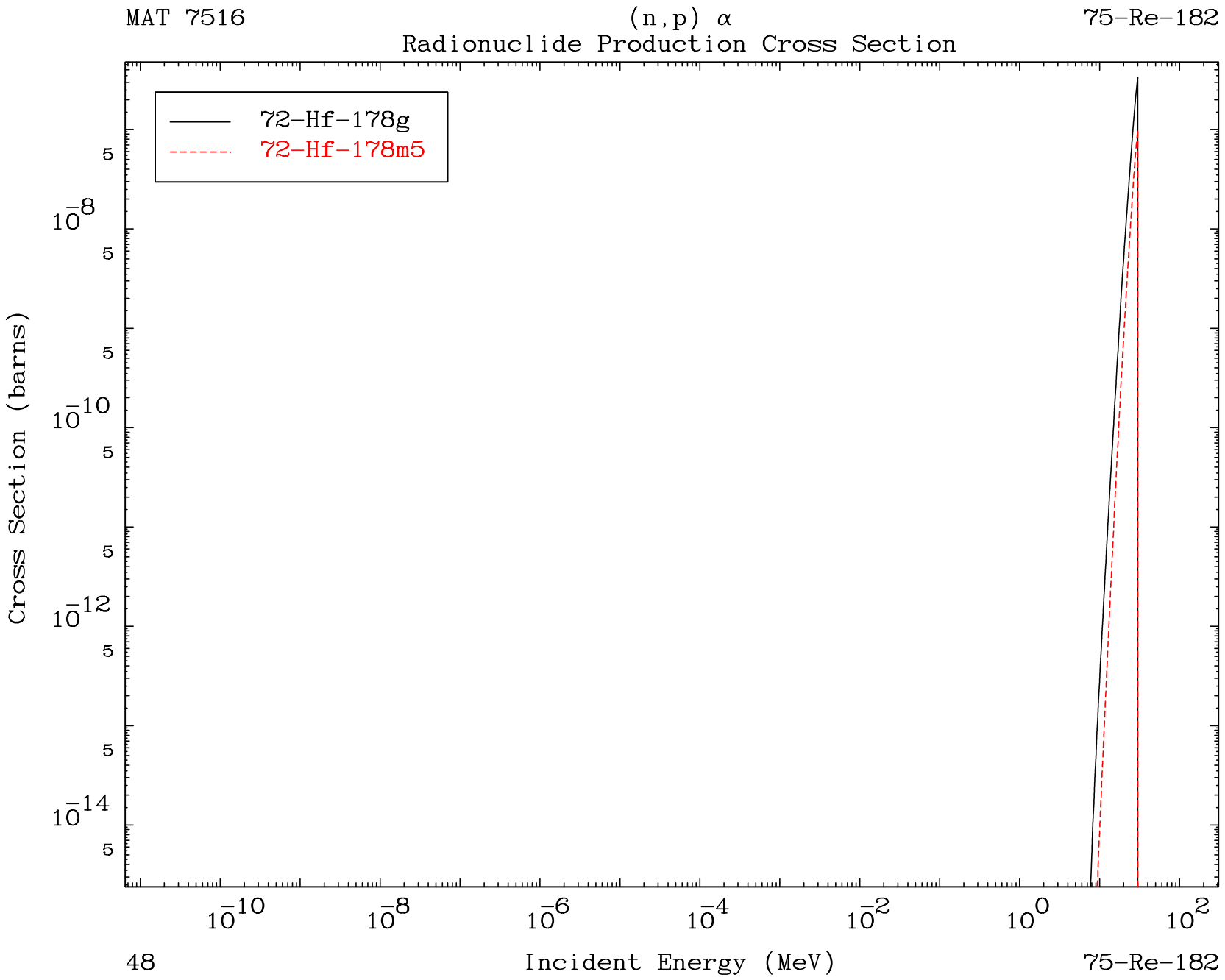

MAT 7516
(n,n') t
75-Re-182
Radionuclide Production Cross Section
74-W -179g
74-W -179m2
Cross Section (barns)
Incident Energy (MeV)
43
75-Re-182

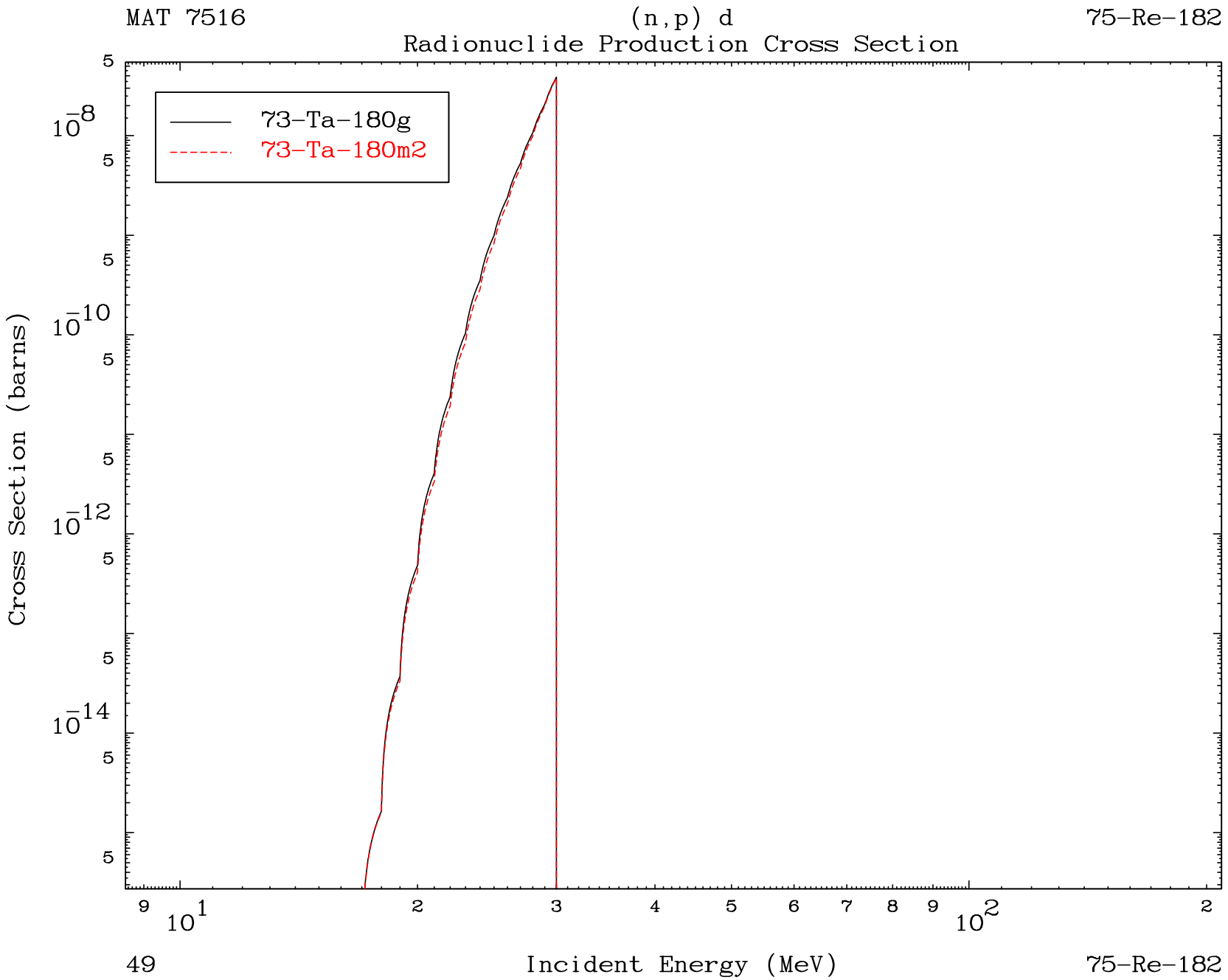

MAT 7516
(n,3n) p
75-Re-182
Radionuclide Production Cross Section
74-W -179g
74-W -179m2
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
2
3
4
5
6
7
8
9
10^2
2
44
Incident Energy (MeV)
75-Re-182

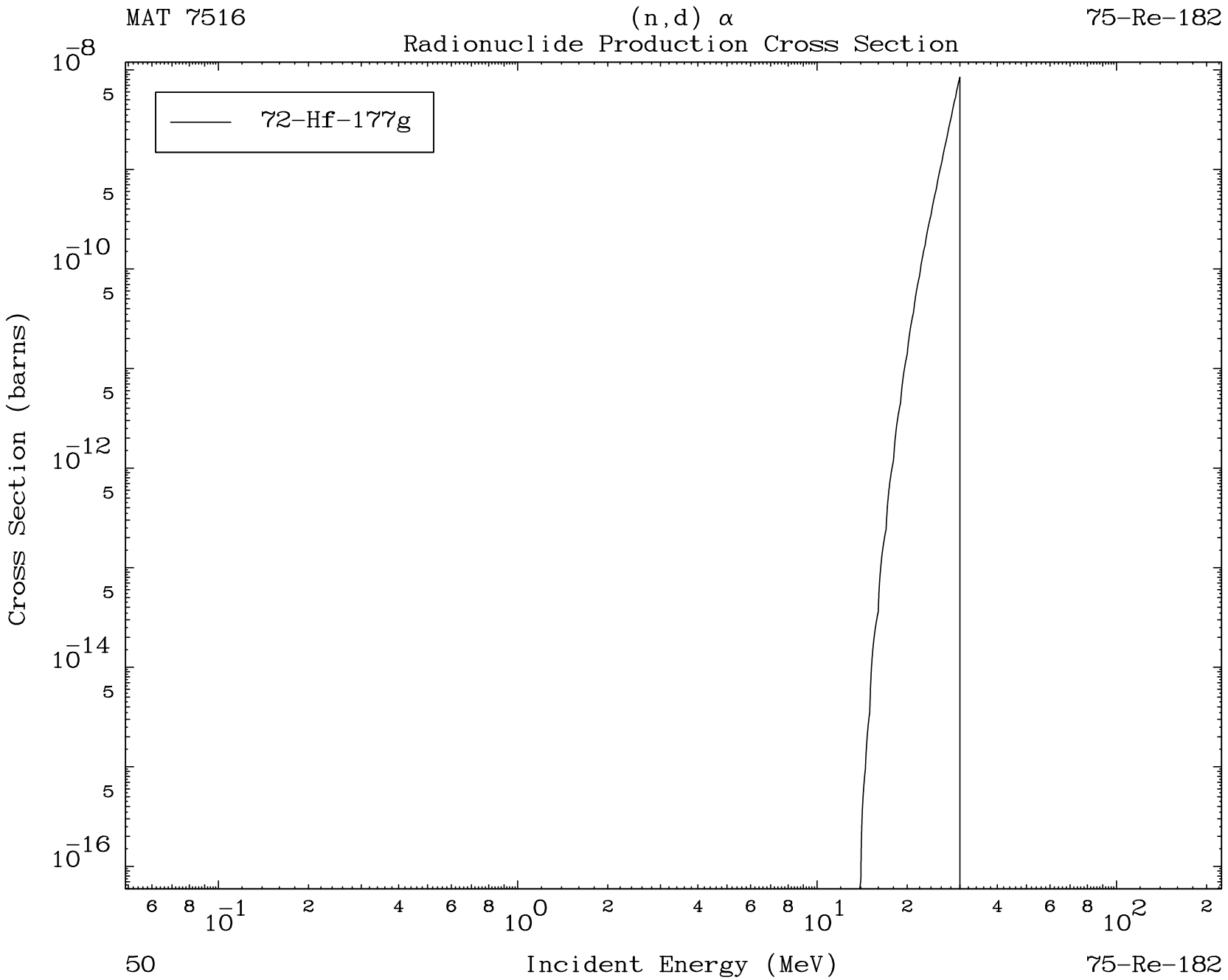

MAT 7516
(n,2n) p
75-Re-182
Radionuclide Production Cross Section
73-Ta-180g
73-Ta-180m2
Cross Section (barns)
10^-6
10^-8
10^-10
10^-12
5
2
3
4
5
6
7
8
9
10^2
2
45
Incident Energy (MeV)
75-Re-182


MAT 7516
(n,n') p α
75-Re-182
Radionuclide Production Cross Section
72-Hf-177g
Cross Section (barns)
10^-8
10^-10
10^-12
10^-14
5
3 4 5 6 7 8 9 10^1 2 3 4 5 6 7 8 9 10^2 2
46
Incident Energy (MeV)
75-Re-182


MAT 7516
(n,He-3)
75-Re-182
Radionuclide Production Cross Section
73-Ta-180g
73-Ta-180m2
Cross Section (barns)
Incident Energy (MeV)
47
75-Re-182


MAT 7516
(n,p) α
75-Re-182
Radionuclide Production Cross Section
72-Hf-178g
72-Hf-178m5
Cross Section (barns)
10-8
10-10
10-12
10-14
5
10-10
10-8
10-6
10-4
10-2
100
102
48
Incident Energy (MeV)
75-Re-182


MAT 7516
(n,p) d
75-Re-182
Radionuclide Production Cross Section
73-Ta-180g
73-Ta-180m2
Cross Section (barns)
Incident Energy (MeV)
49
75-Re-182


MAT 7516
(n,d) α
75-Re-182
Radionuclide Production Cross Section
72-Hf-177g
Cross Section (barns)
Incident Energy (MeV)
50
75-Re-182