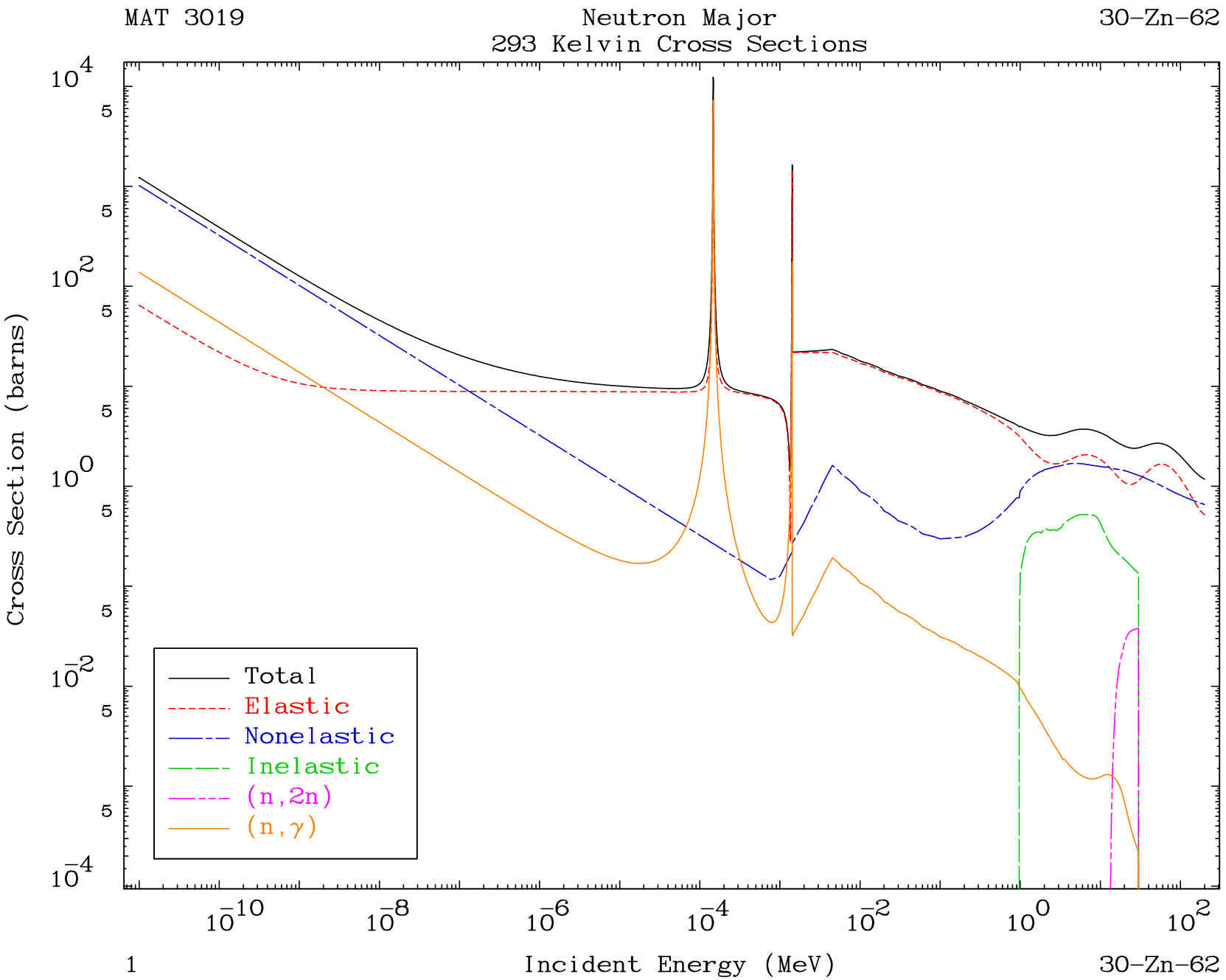
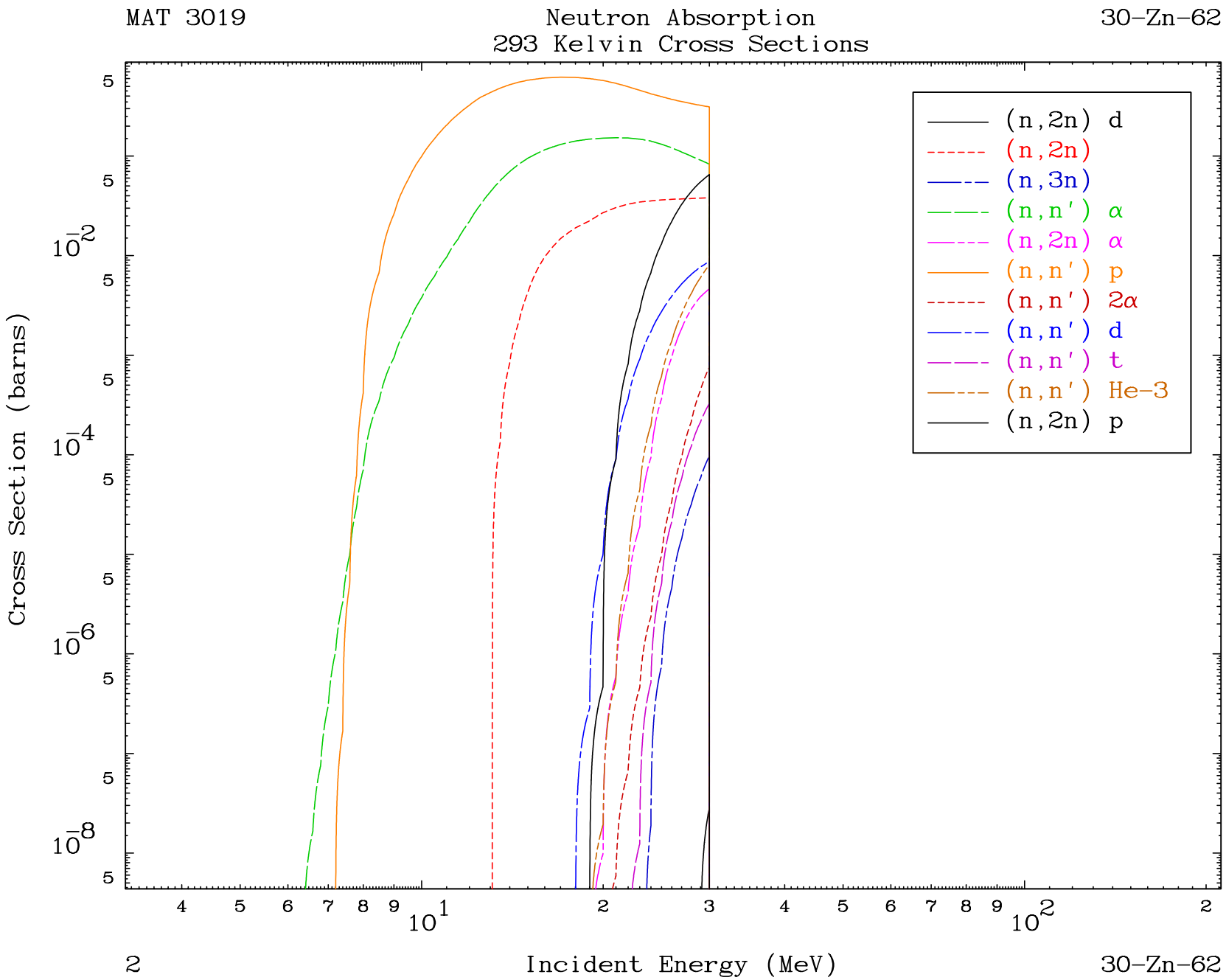
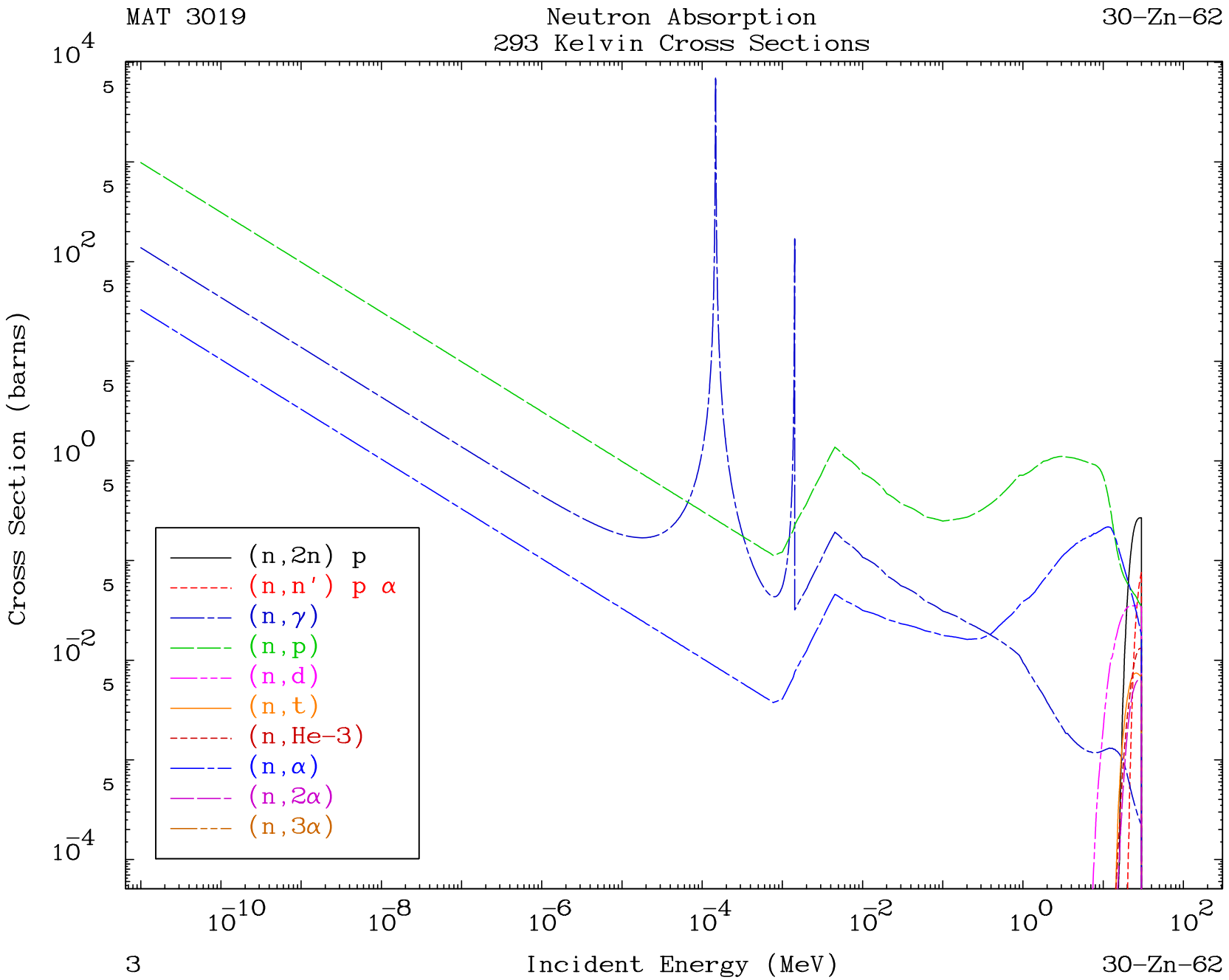
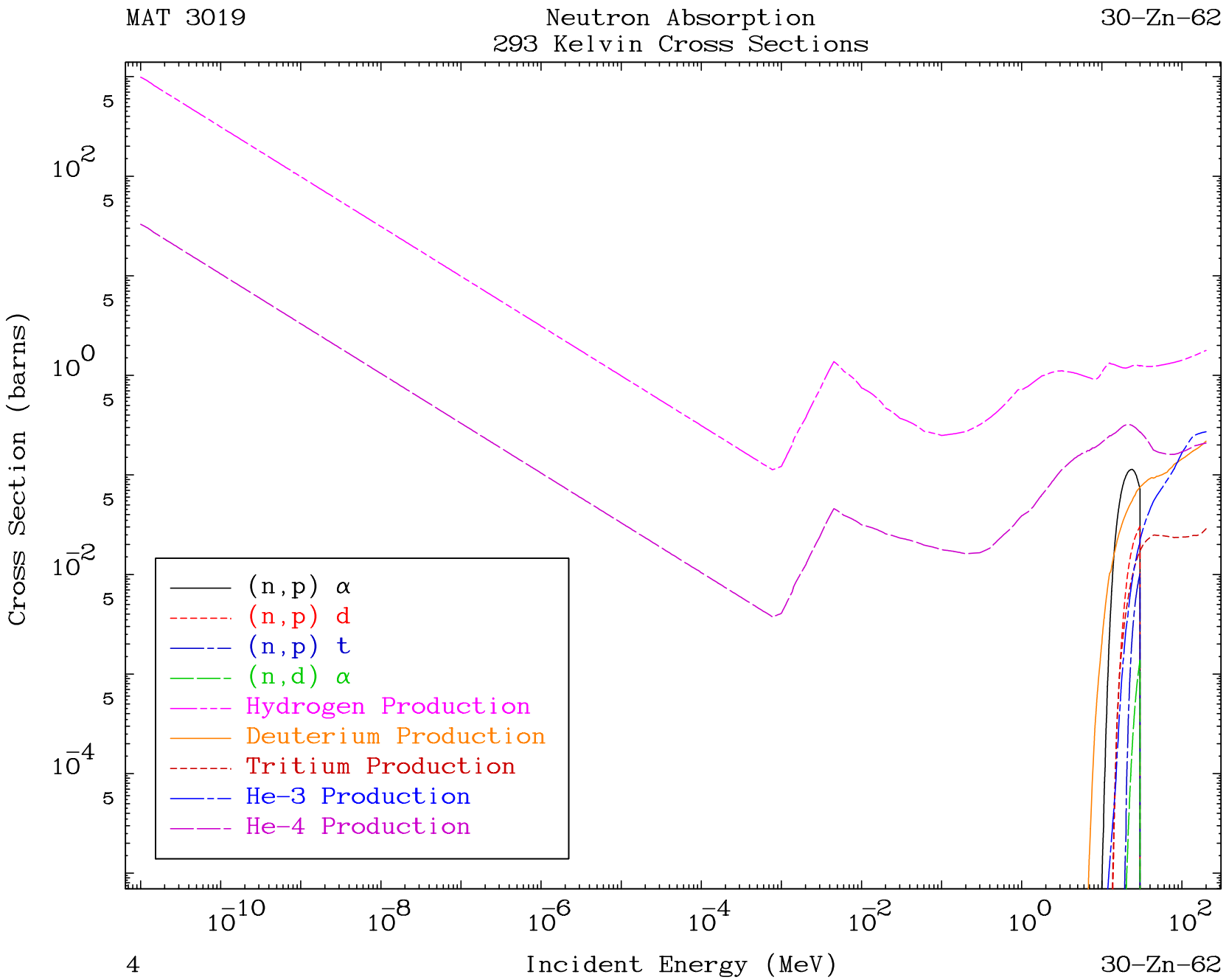
Program EVALPLOT
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

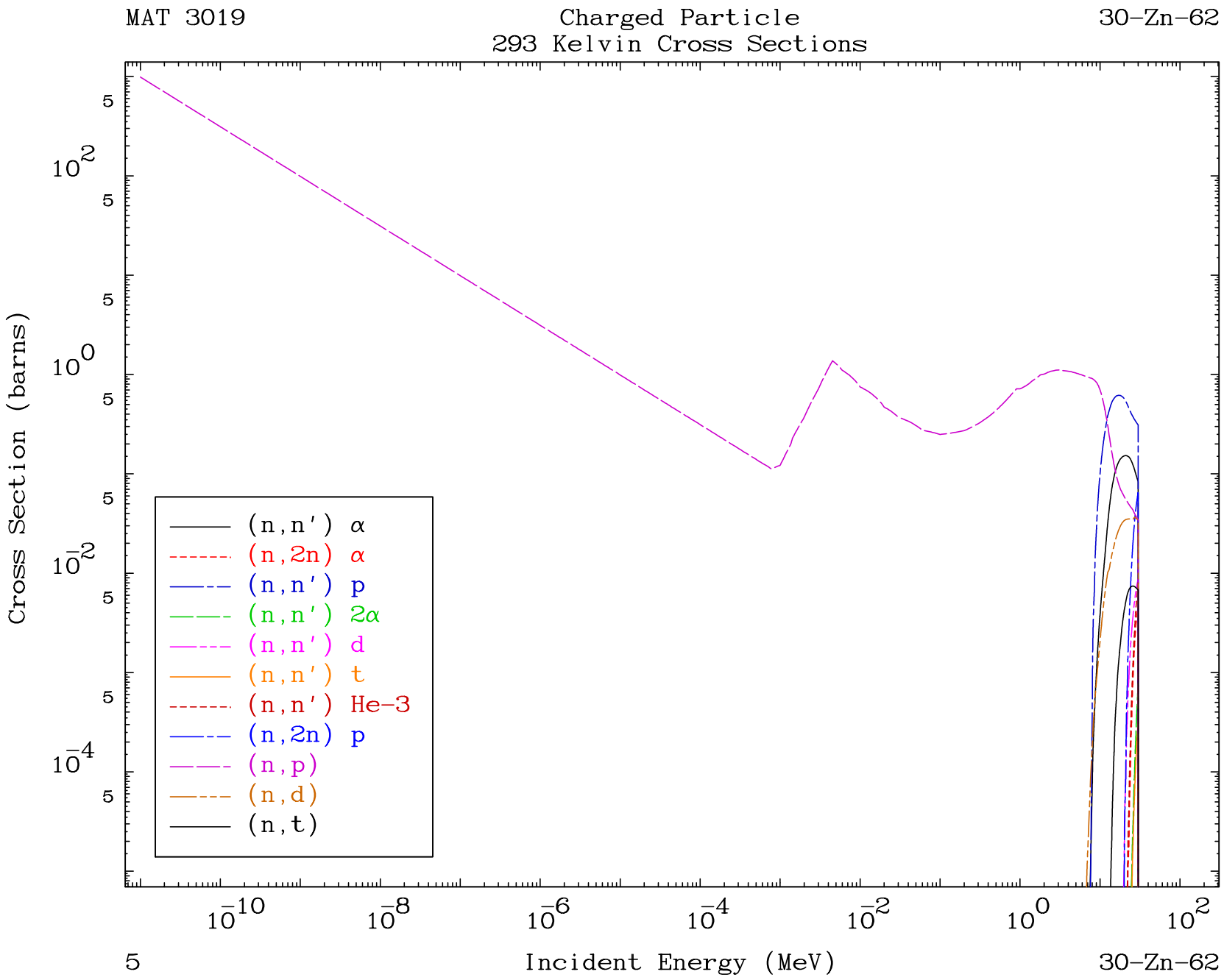
Press Mouse Button to Start

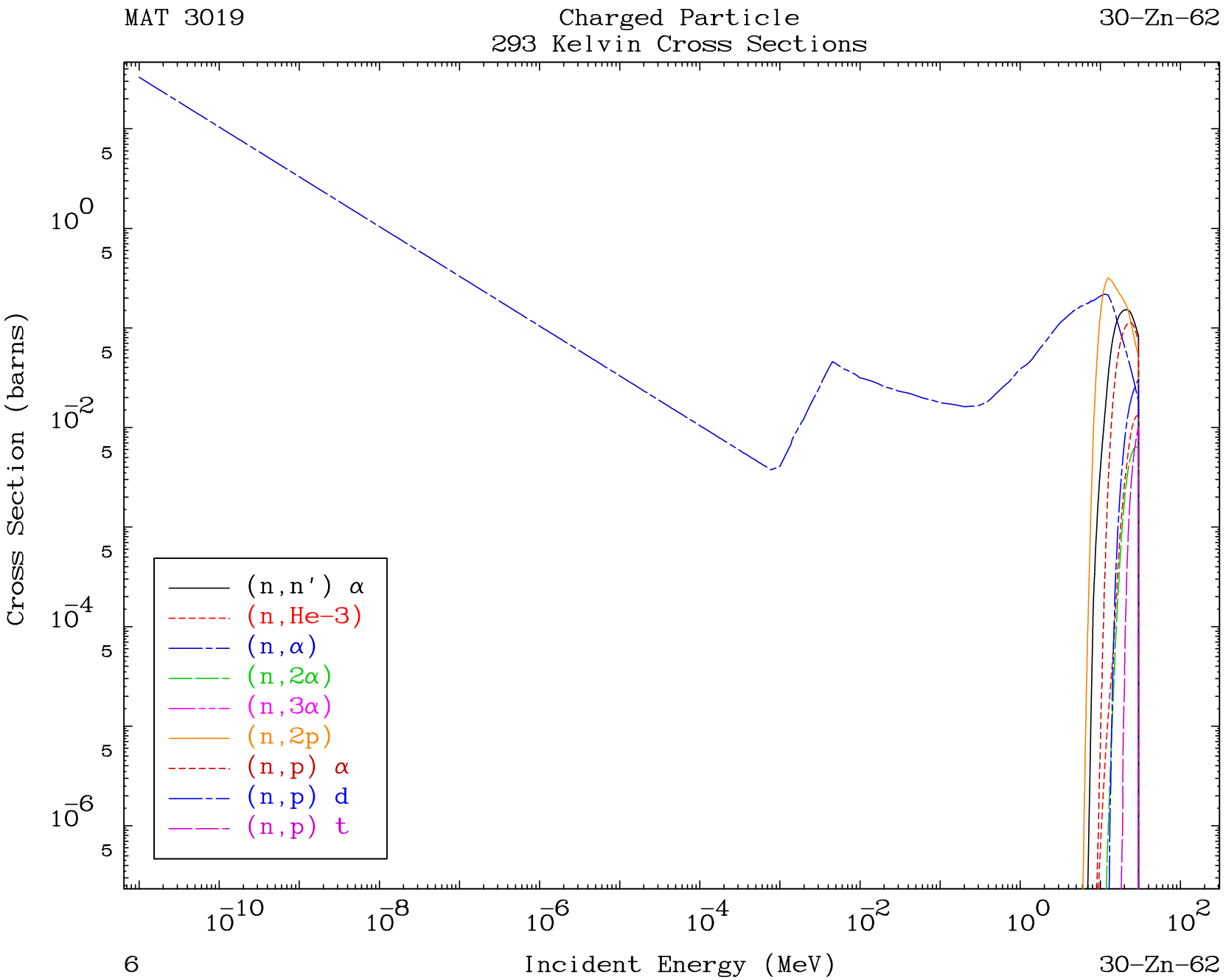

MAT 3019
Neutron Major
293 Kelvin Cross Sections
30-Zn-62
Cross Section (barns)
Incident Energy (MeV)
Total
Elastic
Nonelastic
Inelastic
(n,2n)
(n,γ)
1
30-Zn-62

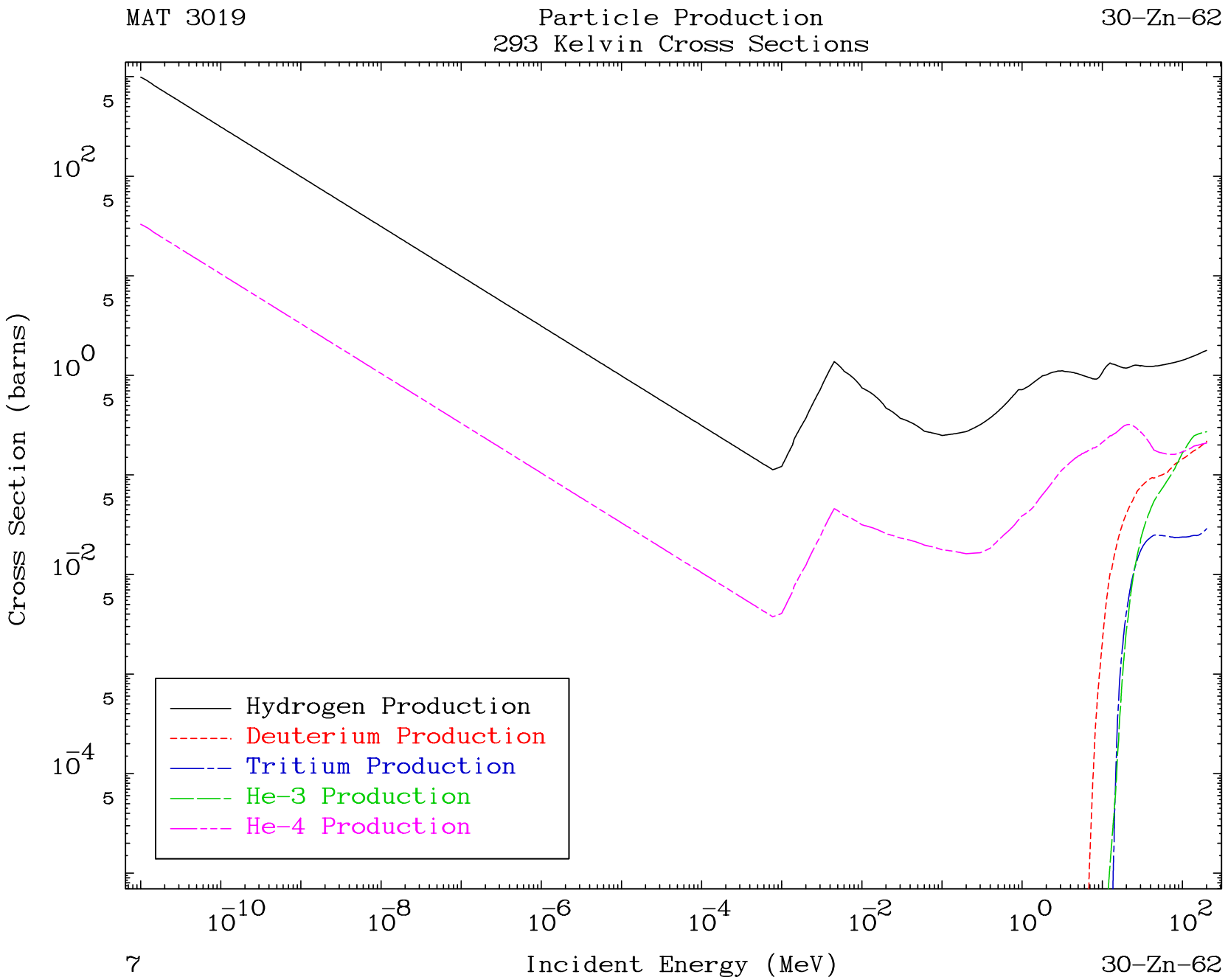

MAT 3019
Neutron Absorption
293 Kelvin Cross Sections
30-Zn-62
Cross Section (barns)
Incident Energy (MeV)
30-Zn-62
(n,2n) d
(n,2n)
(n,3n)
(n,n') α
(n,2n) α
(n,n') p
(n,n') 2α
(n,n') d
(n,n') t
(n,n') He-3
(n,2n) p

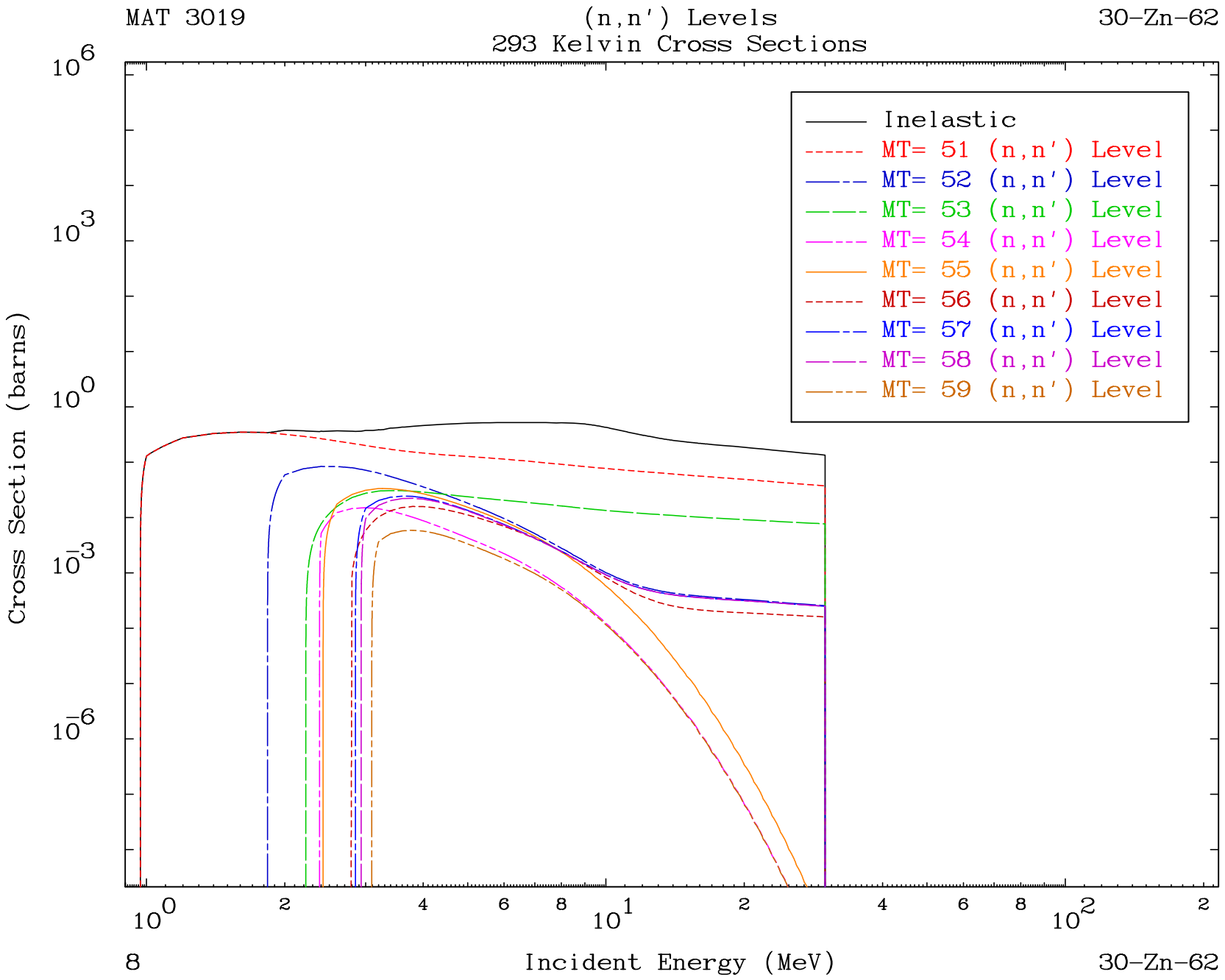

MAT 3019
Neutron Absorption
293 Kelvin Cross Sections
30-Zn-62
Cross Section (barns)
Incident Energy (MeV)
(n,2n) p
(n,n') p α
(n,γ)
(n,p)
(n,d)
(n,t)
(n,He-3)
(n,α)
(n,2α)
(n,3α)
3
30-Zn-62

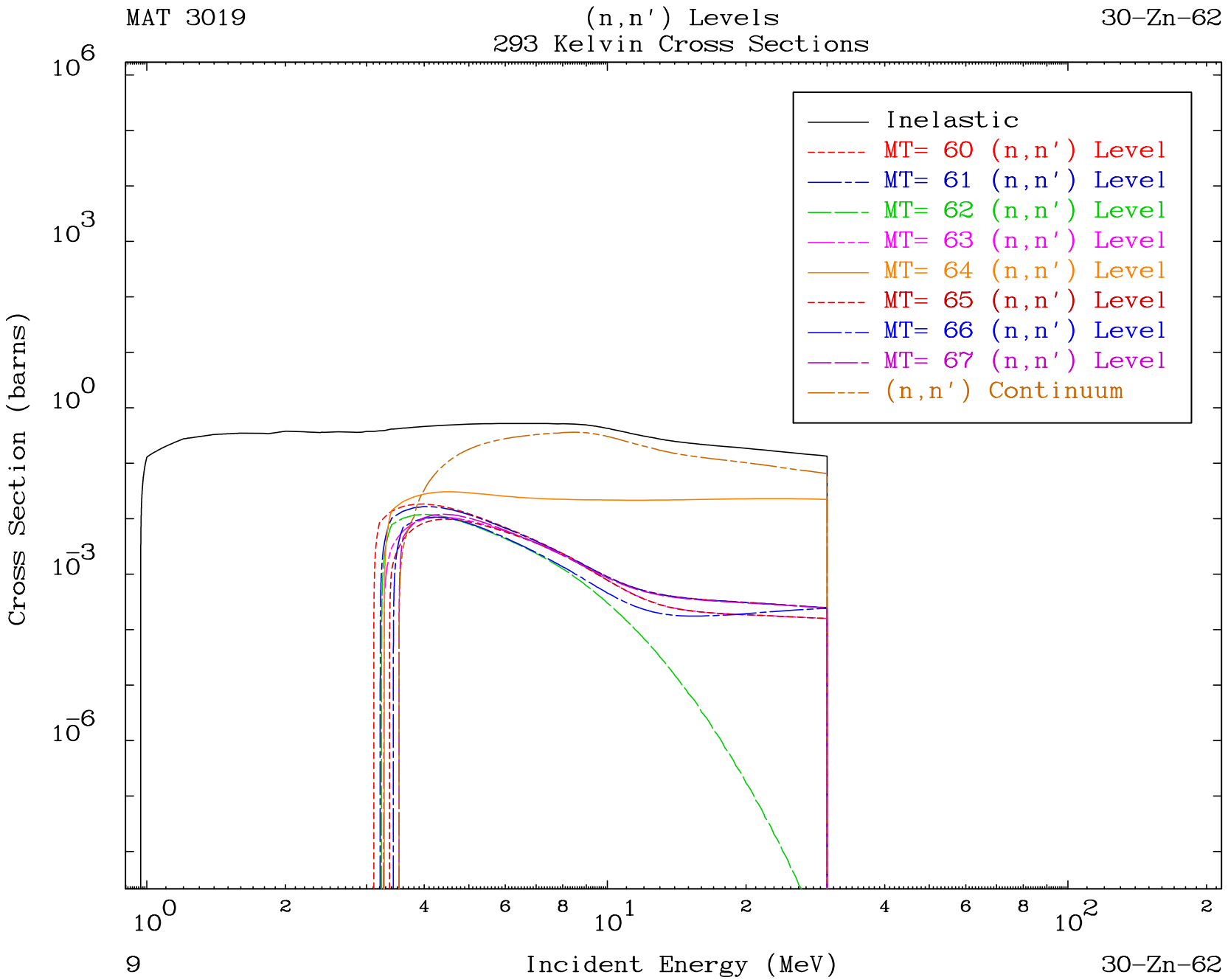

MAT 3019
Neutron Absorption
293 Kelvin Cross Sections
30-Zn-62
Cross Section (barns)
Incident Energy (MeV)
(n,p) α
(n,p) d
(n,p) t
(n,d) α
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
4
30-Zn-62

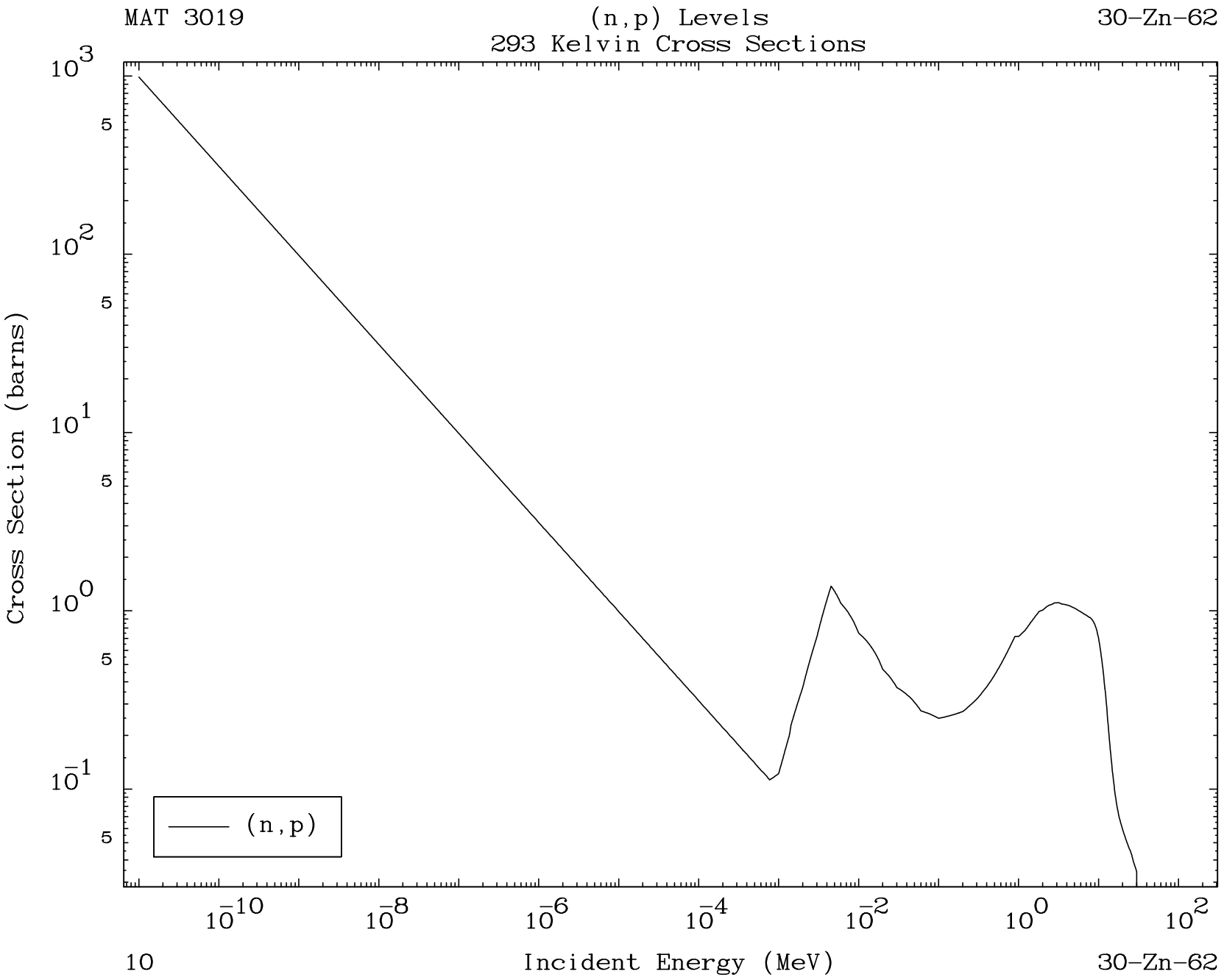

MAT 3019
Charged Particle
30-Zn-62
293 Kelvin Cross Sections
Cross Section (barns)
Incident Energy (MeV)
30-Zn-62
5
(n,n') α
(n,2n) α
(n,n') p
(n,n') 2α
(n,n') d
(n,n') t
(n,n') He-3
(n,2n) p
(n,p)
(n,d)
(n,t)

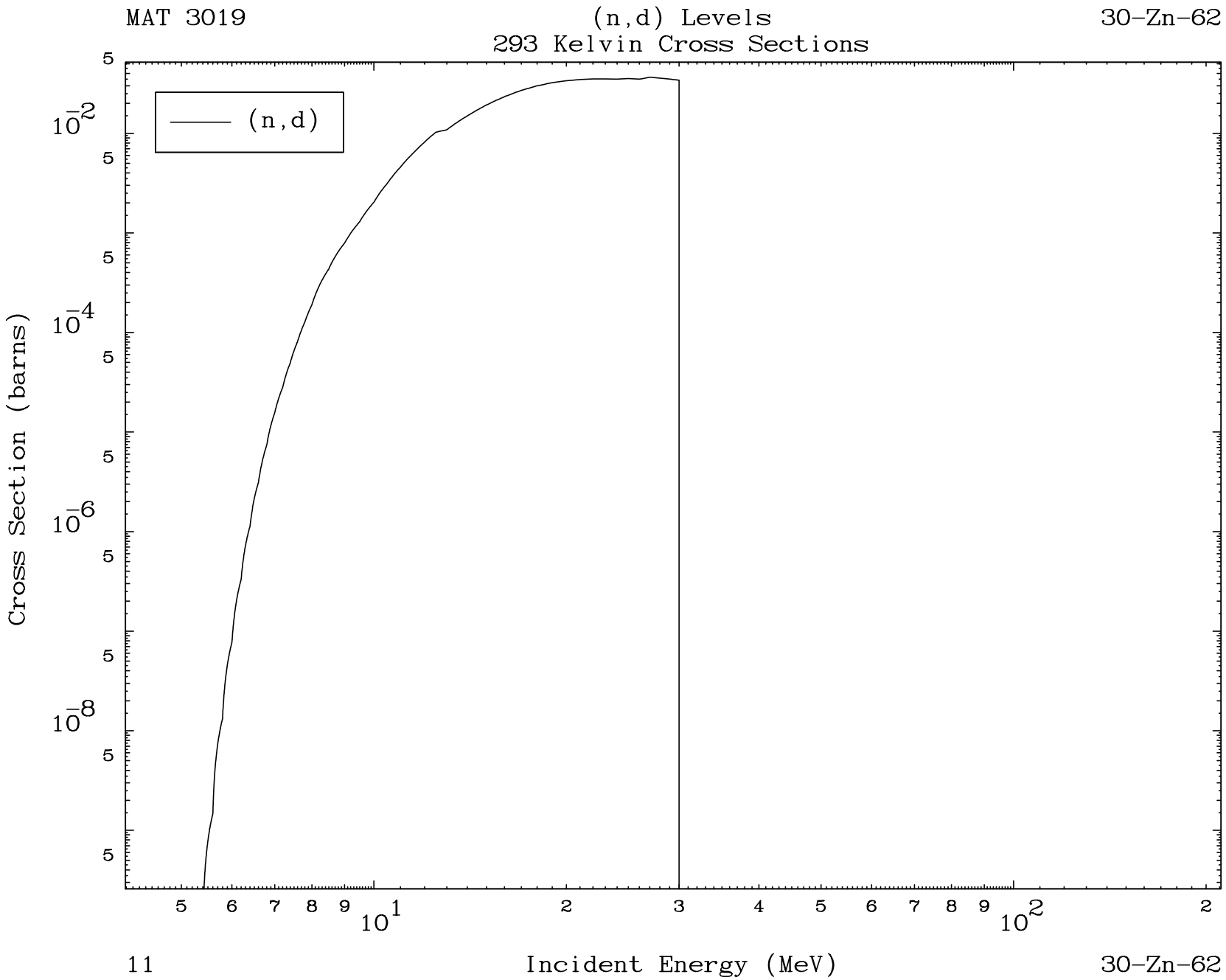

MAT 3019
Charged Particle
30-Zn-62
293 Kelvin Cross Sections
Cross Section (barns)
Incident Energy (MeV)
(n,n') α
(n,He-3)
(n,α)
(n,2α)
(n,3α)
(n,2p)
(n,p) α
(n,p) d
(n,p) t
6
30-Zn-62

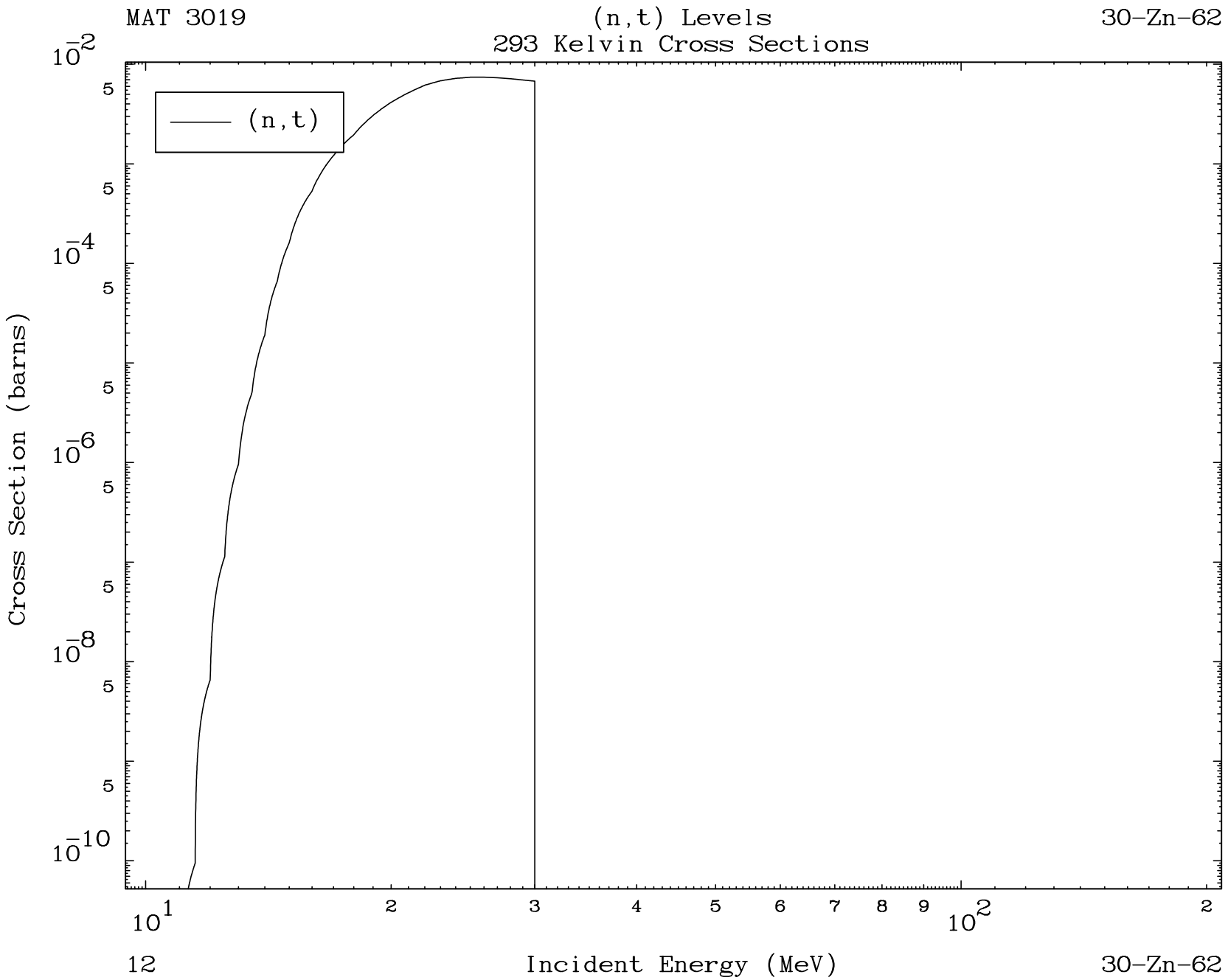

MAT 3019
Particle Production
293 Kelvin Cross Sections
30-Zn-62
Cross Section (barns)
10^2
10^0
10^-2
10^-4
5
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
Hydrogen Production
Deuterium Production
Tritium Production
He-3 Production
He-4 Production
7
30-Zn-62

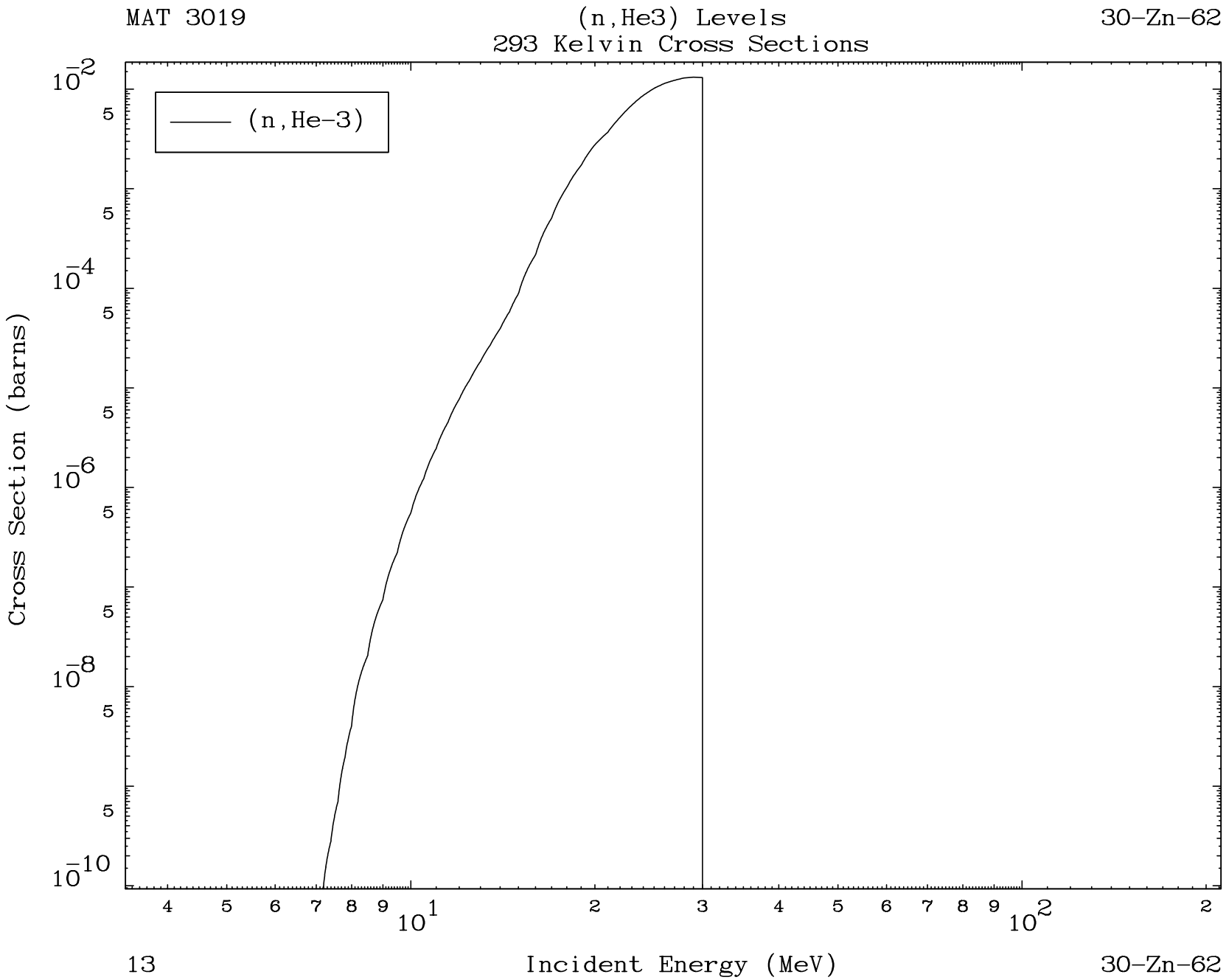

MAT 3019
(n,n') Levels
293 Kelvin Cross Sections
30-Zn-62
Inelastic
MT= 51 (n,n') Level
MT= 52 (n,n') Level
MT= 53 (n,n') Level
MT= 54 (n,n') Level
MT= 55 (n,n') Level
MT= 56 (n,n') Level
MT= 57 (n,n') Level
MT= 58 (n,n') Level
MT= 59 (n,n') Level
Cross Section (barns)
Incident Energy (MeV)
30-Zn-62
8

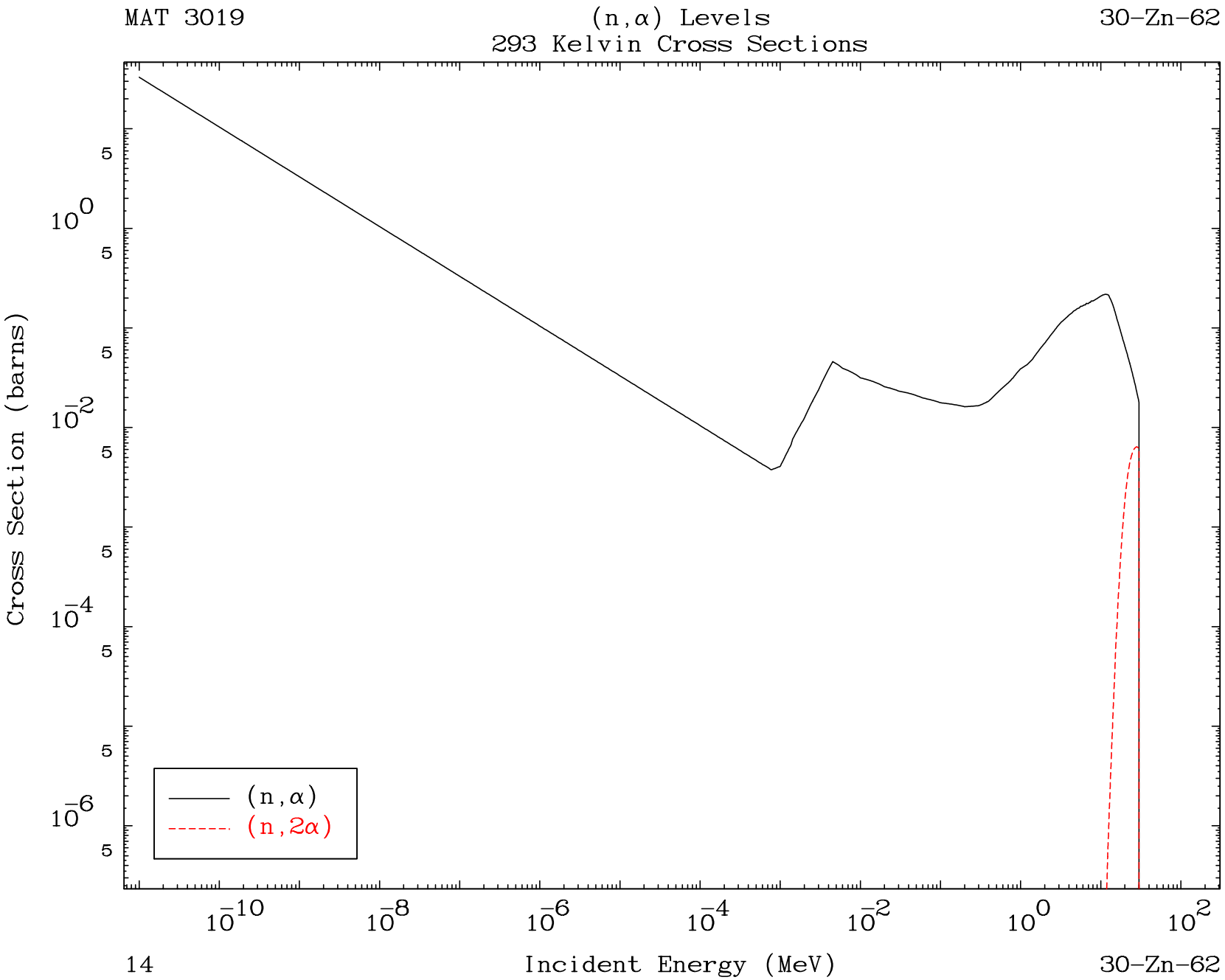

MAT 3019
(n,n') Levels
293 Kelvin Cross Sections
30-Zn-62
Cross Section (barns)
Incident Energy (MeV)
Inelastic
MT= 60 (n,n') Level
MT= 61 (n,n') Level
MT= 62 (n,n') Level
MT= 63 (n,n') Level
MT= 64 (n,n') Level
MT= 65 (n,n') Level
MT= 66 (n,n') Level
MT= 67 (n,n') Level
(n,n') Continuum
9
30-Zn-62

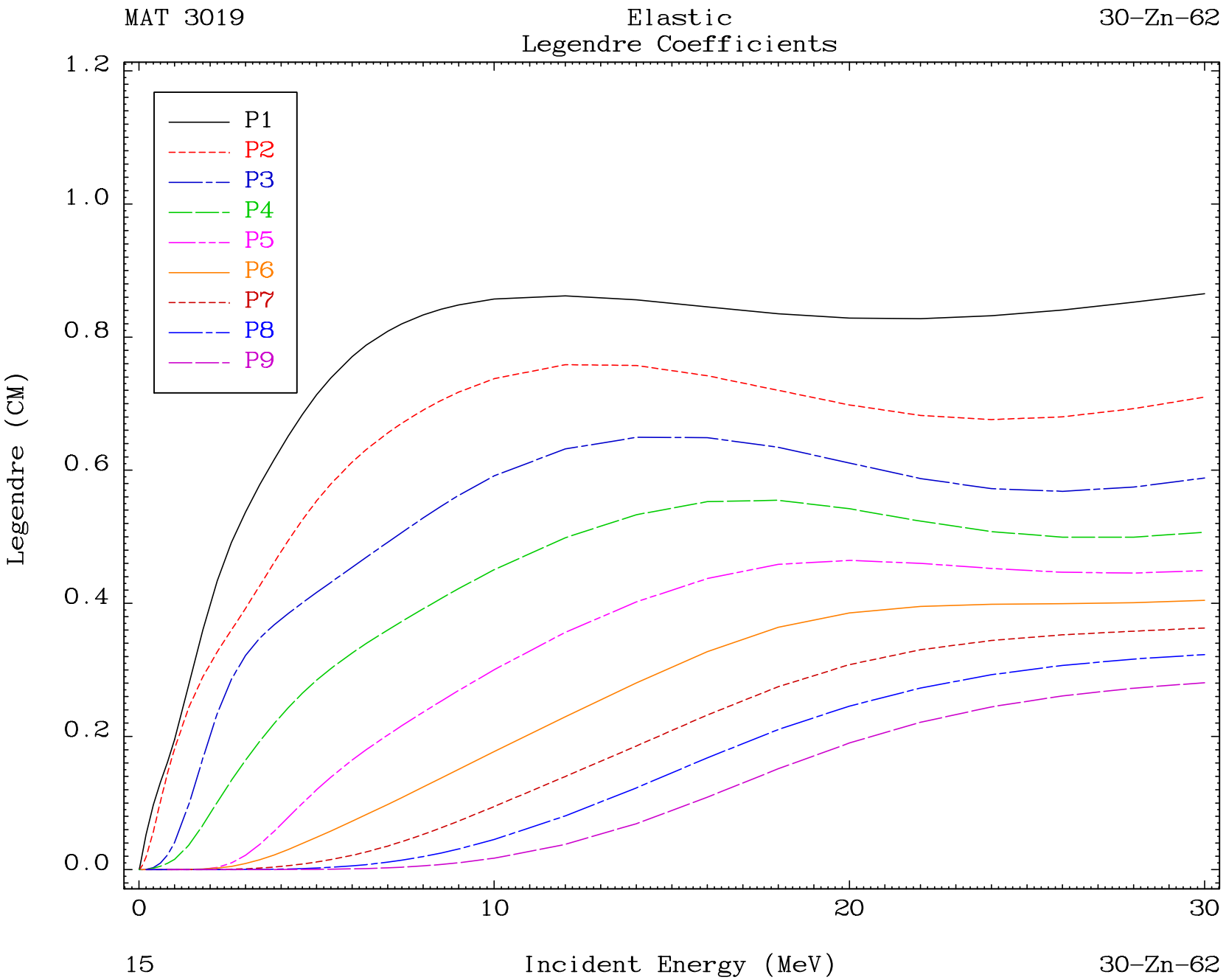

MAT 3019
(n,p) Levels
30-Zn-62
293 Kelvin Cross Sections
Cross Section (barns)
10^3
5
10^2
5
10^1
5
10^0
5
10^-1
5
(n,p)
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
10
Incident Energy (MeV)
30-Zn-62

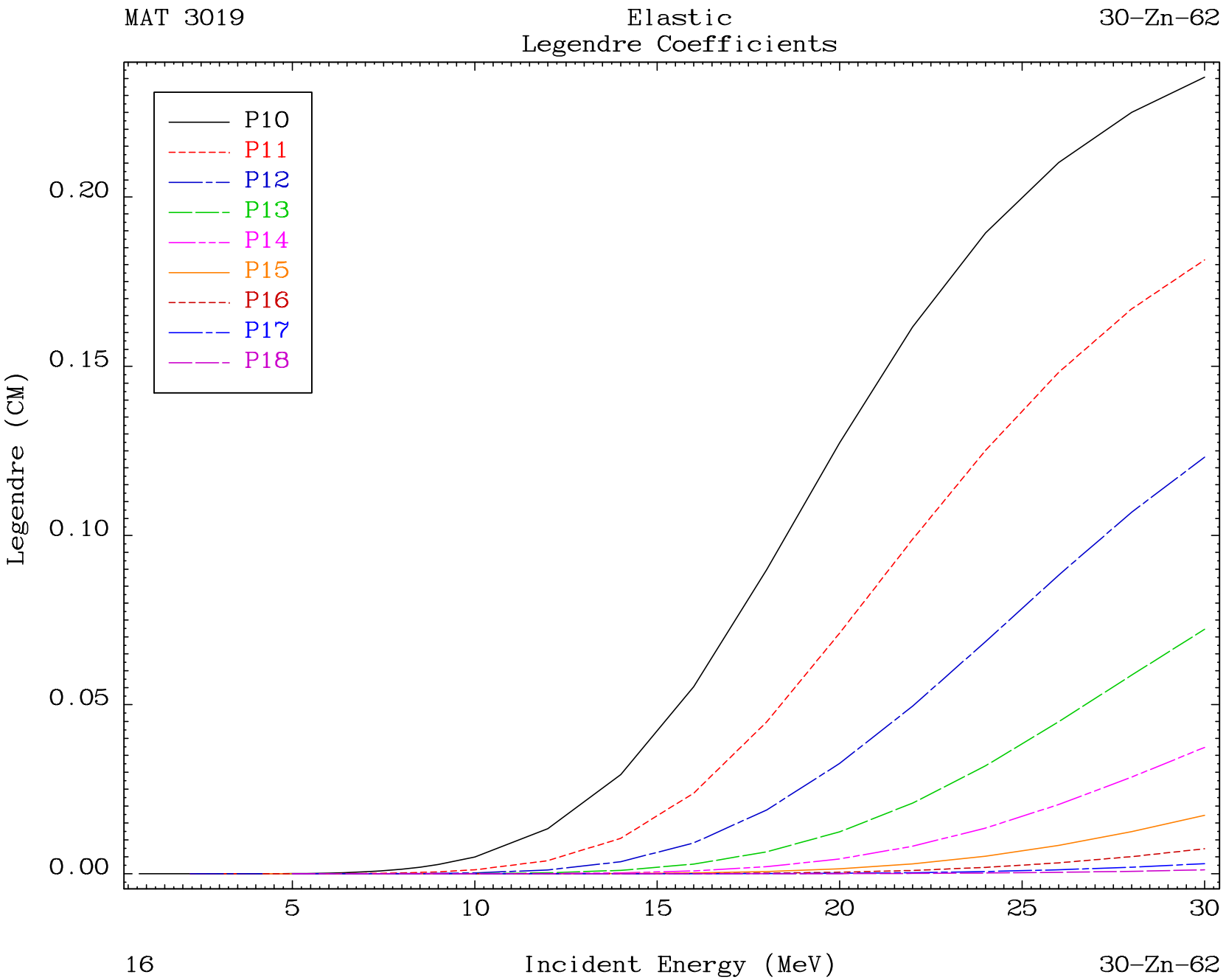

MAT 3019
(n,d) Levels
30-Zn-62
293 Kelvin Cross Sections
(n,d)
Cross Section (barns)
Incident Energy (MeV)
11
30-Zn-62

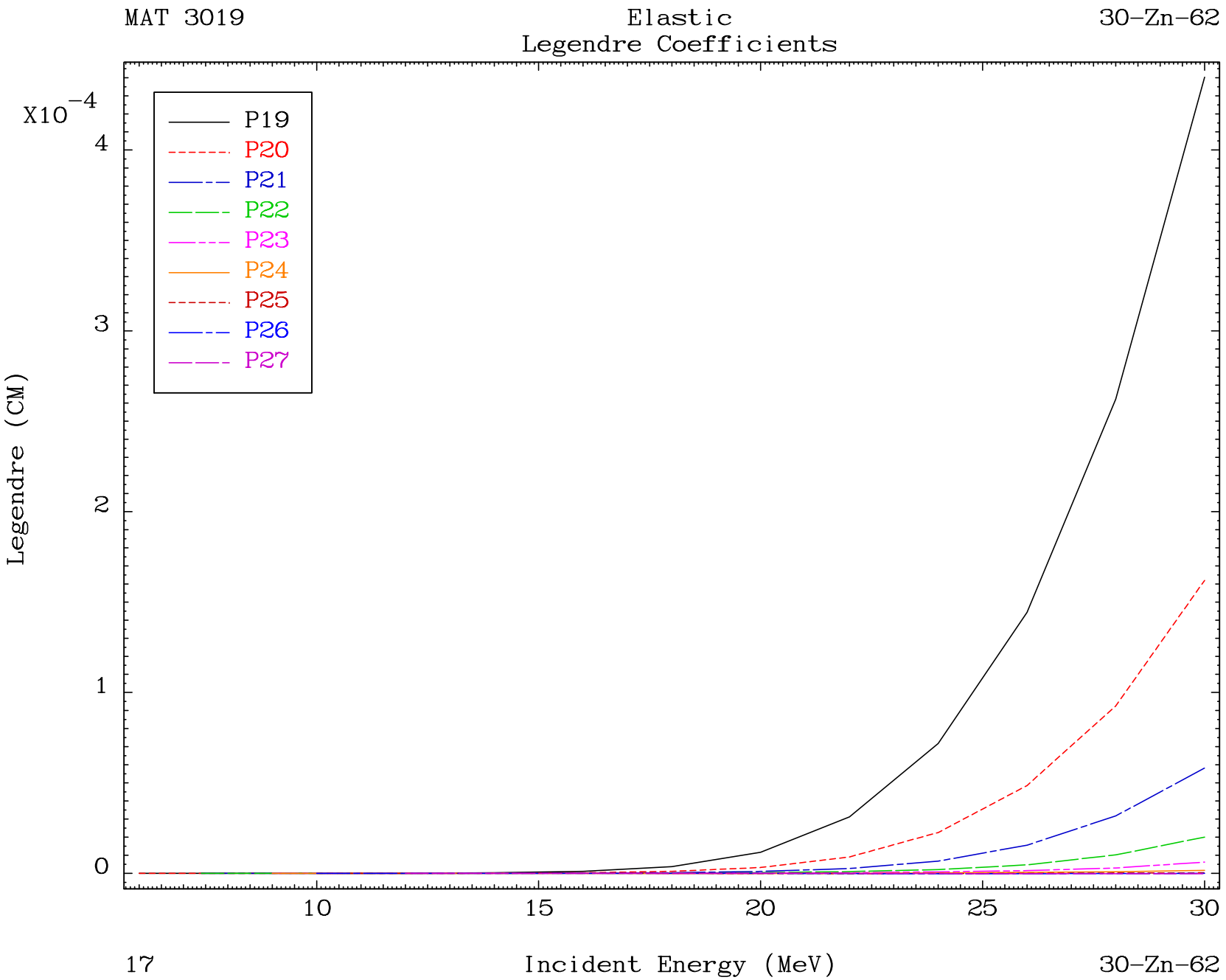

MAT 3019
(n,t) Levels
30-Zn-62
293 Kelvin Cross Sections
(n,t)
Cross Section (barns)
Incident Energy (MeV)
12
30-Zn-62

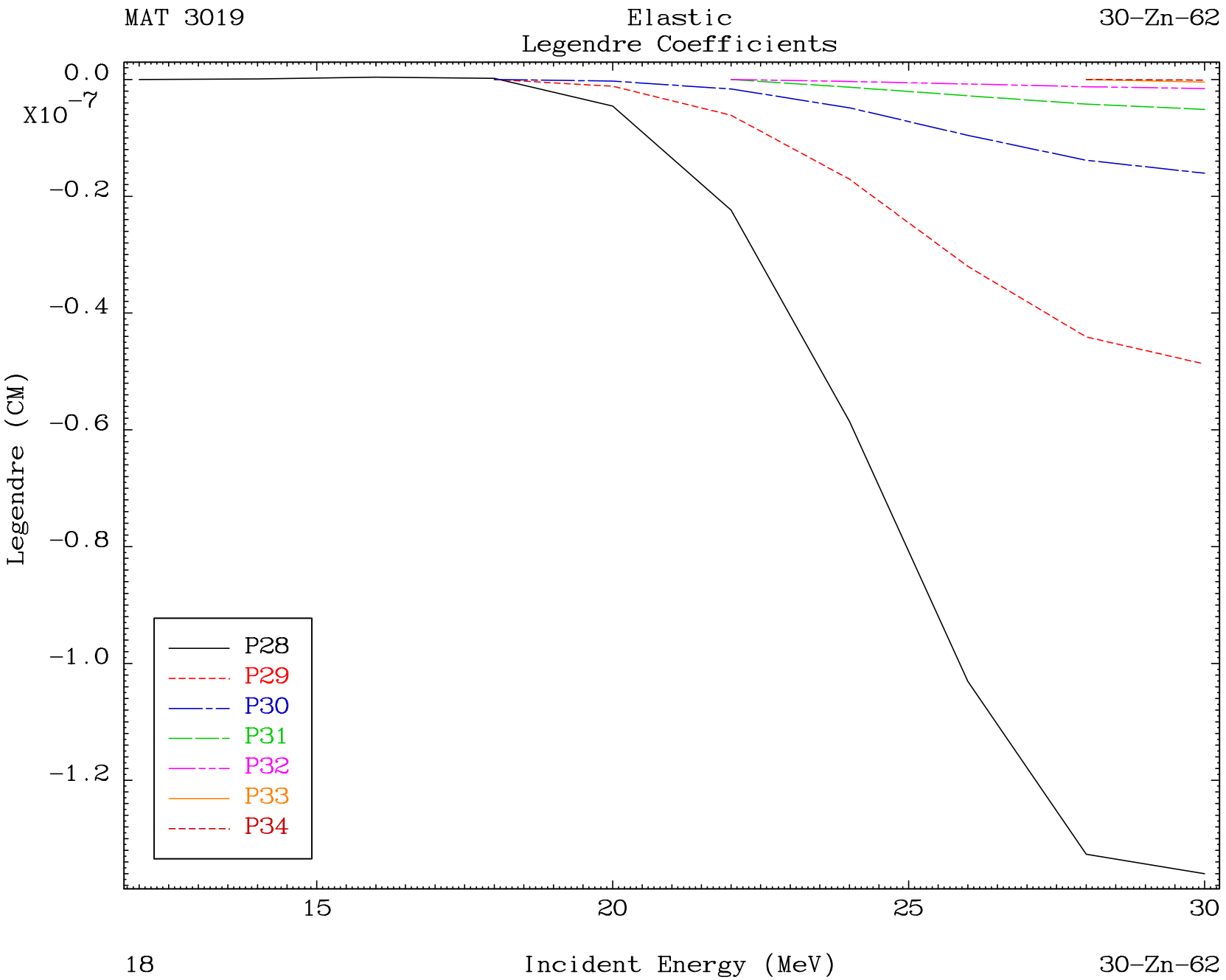

MAT 3019
(n,He3) Levels
30-Zn-62
293 Kelvin Cross Sections
(n,He-3)
Cross Section (barns)
Incident Energy (MeV)
13
30-Zn-62

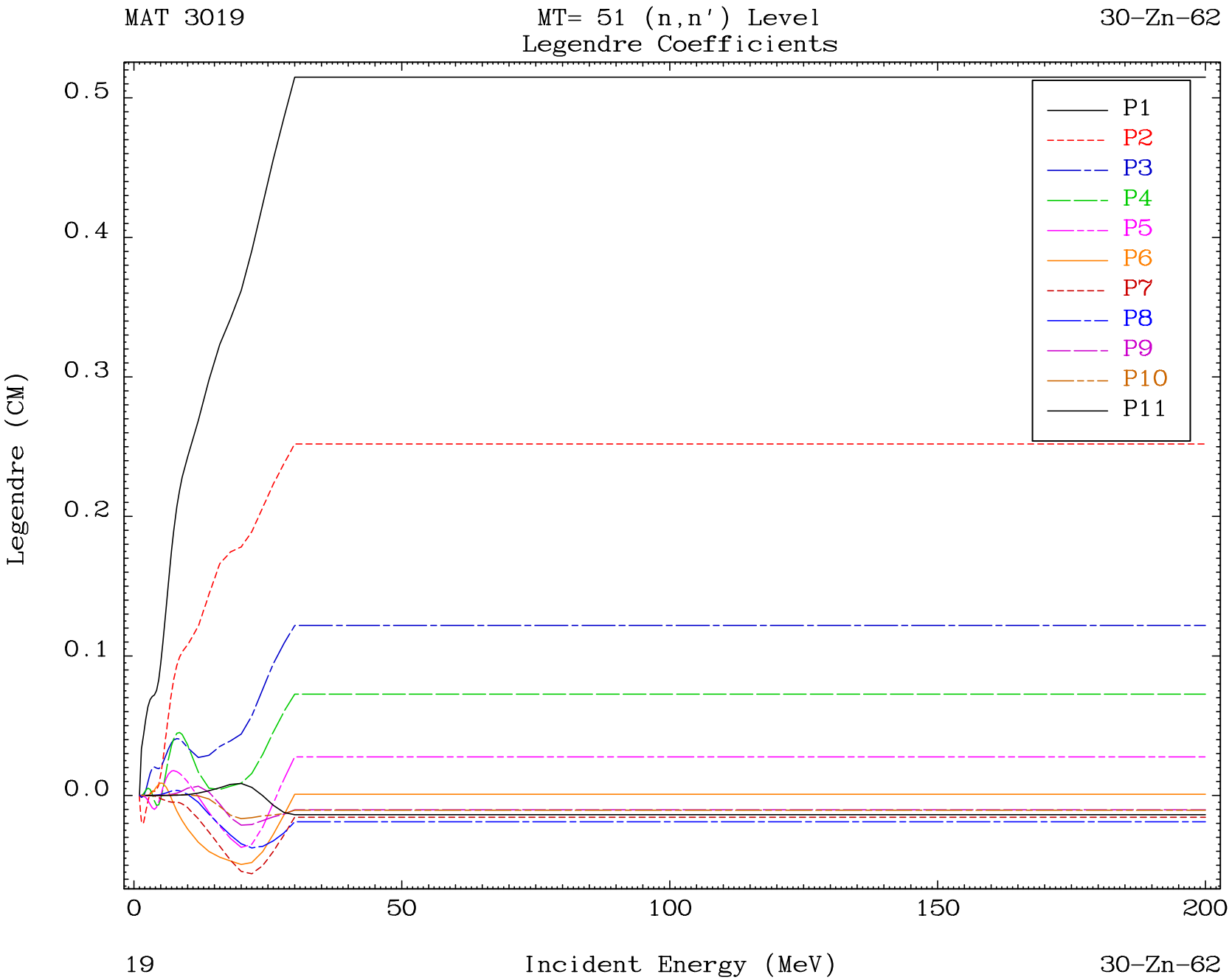

MAT 3019
(n,α) Levels
30-Zn-62
293 Kelvin Cross Sections
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
5
10^-10
10^-8
10^-6
10^-4
10^-2
10^0
10^2
Incident Energy (MeV)
(n,α)
(n,2α)
14
30-Zn-62

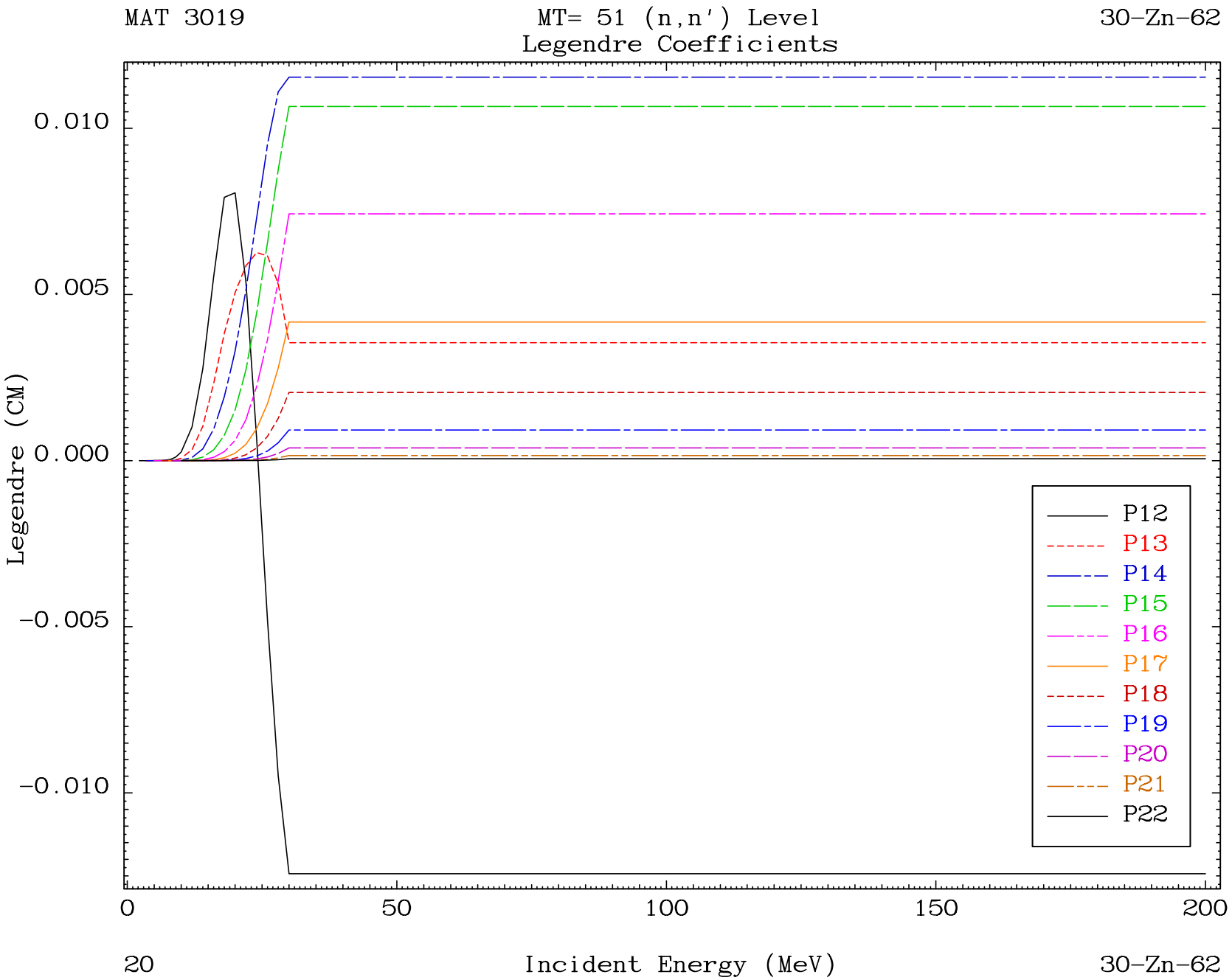

MAT 3019
Elastic
Legendre Coefficients
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
Legendre (CM)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
15
Incident Energy (MeV)
30-Zn-62

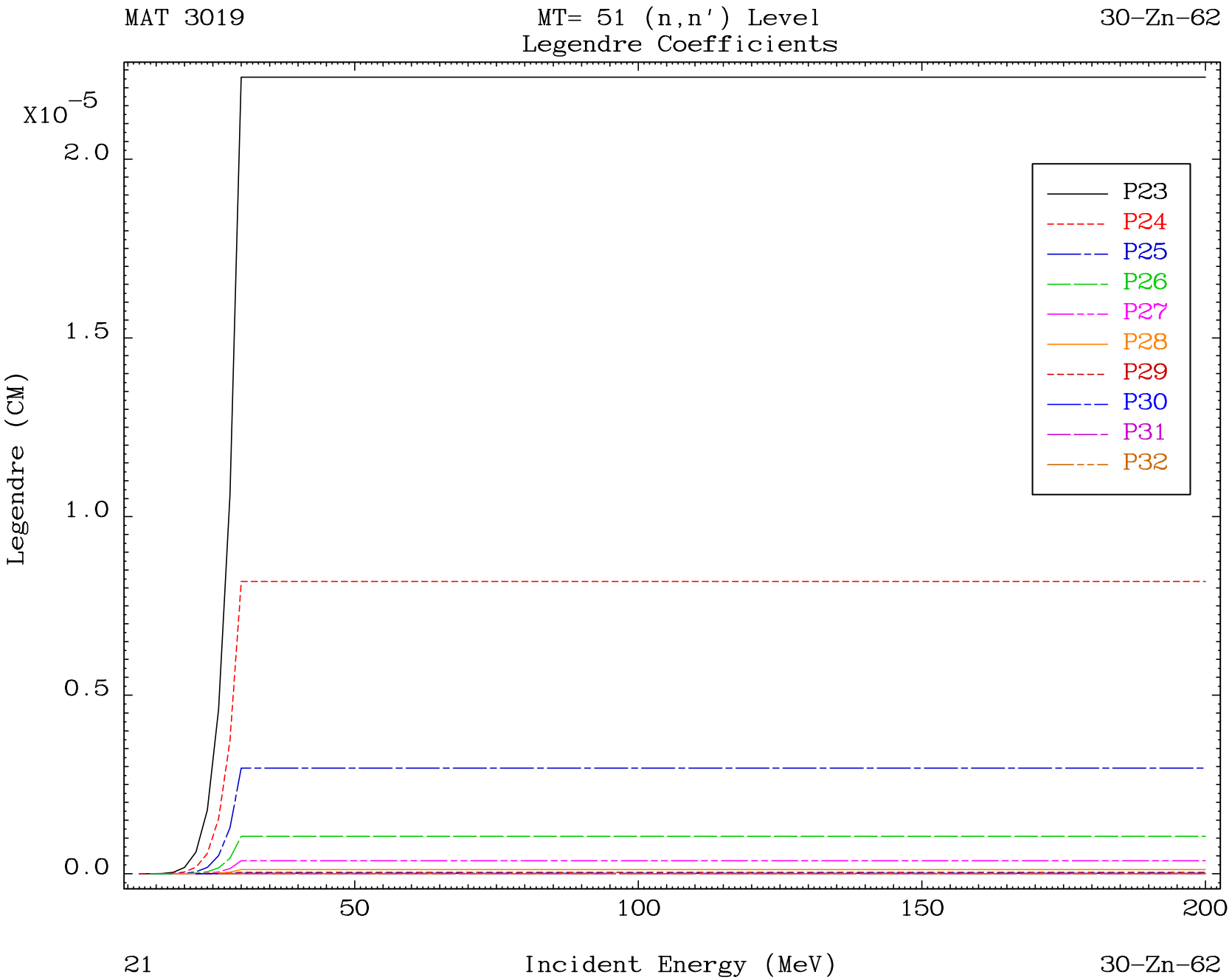

MAT 3019
Elastic
Legendre Coefficients
30-Zn-62
P10
P11
P12
P13
P14
P15
P16
P17
P18
0.20
0.15
0.10
0.05
0.00
Legendre (CM)
5
10
15
20
25
30
16
Incident Energy (MeV)
30-Zn-62

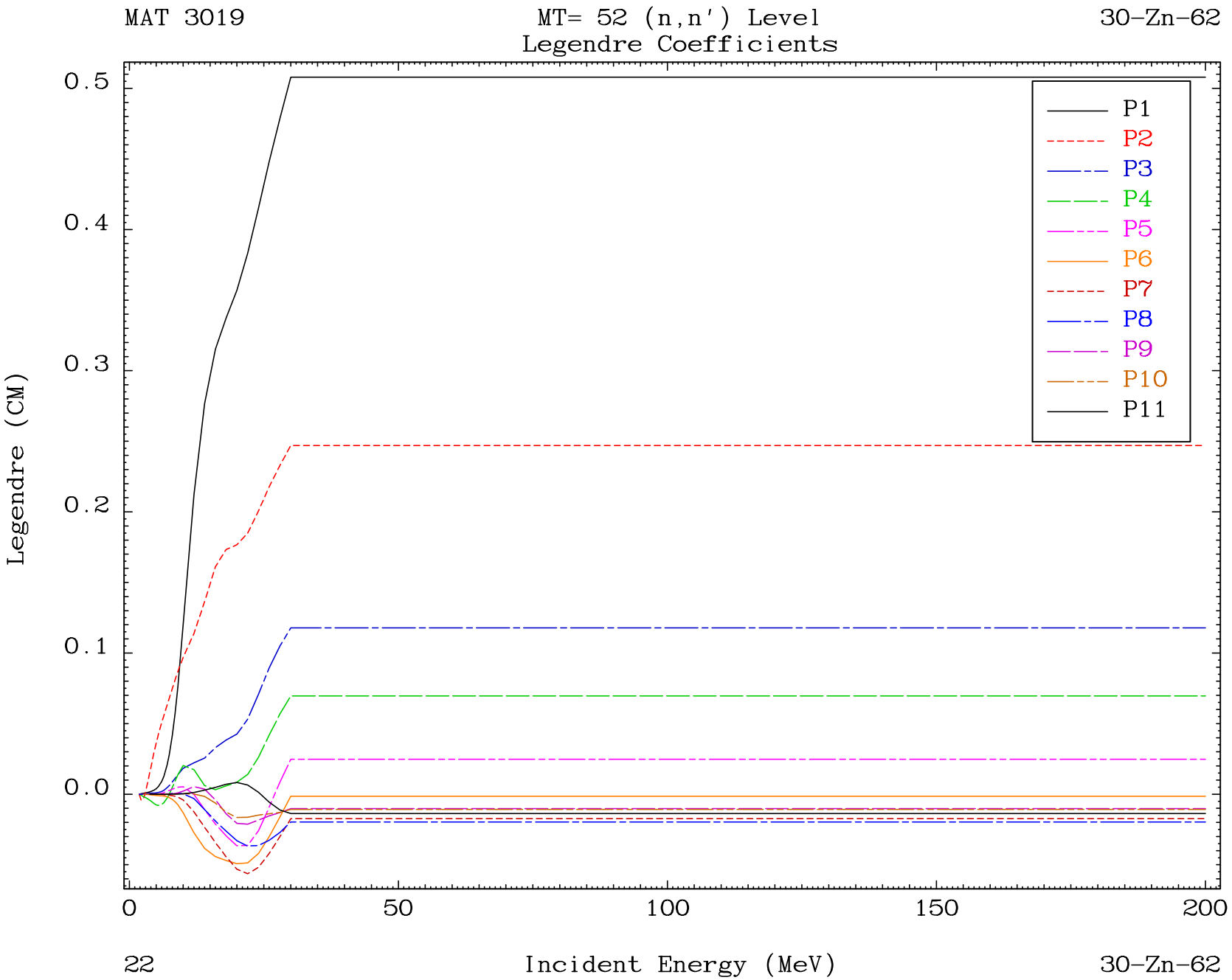

MAT 3019
Elastic
Legendre Coefficients
30-Zn-62
X10^-4
4
3
2
1
0
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
P27
10
15
20
25
30
17
Incident Energy (MeV)
30-Zn-62

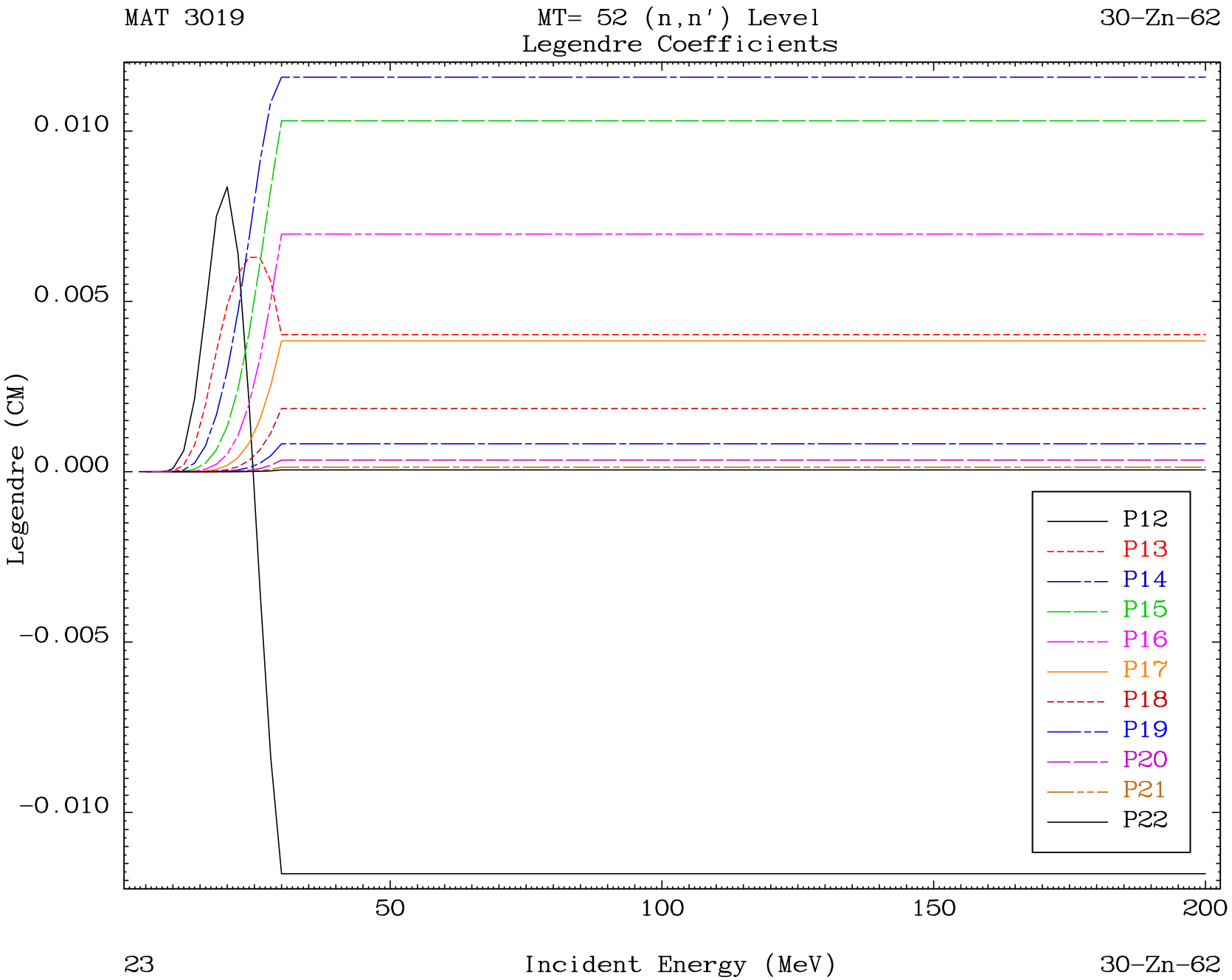

MAT 3019
Elastic
Legendre Coefficients
30-Zn-62
0.0
X10^-7
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
Legendre (CM)
P28
P29
P30
P31
P32
P33
P34
15
20
25
30
18
Incident Energy (MeV)
30-Zn-62

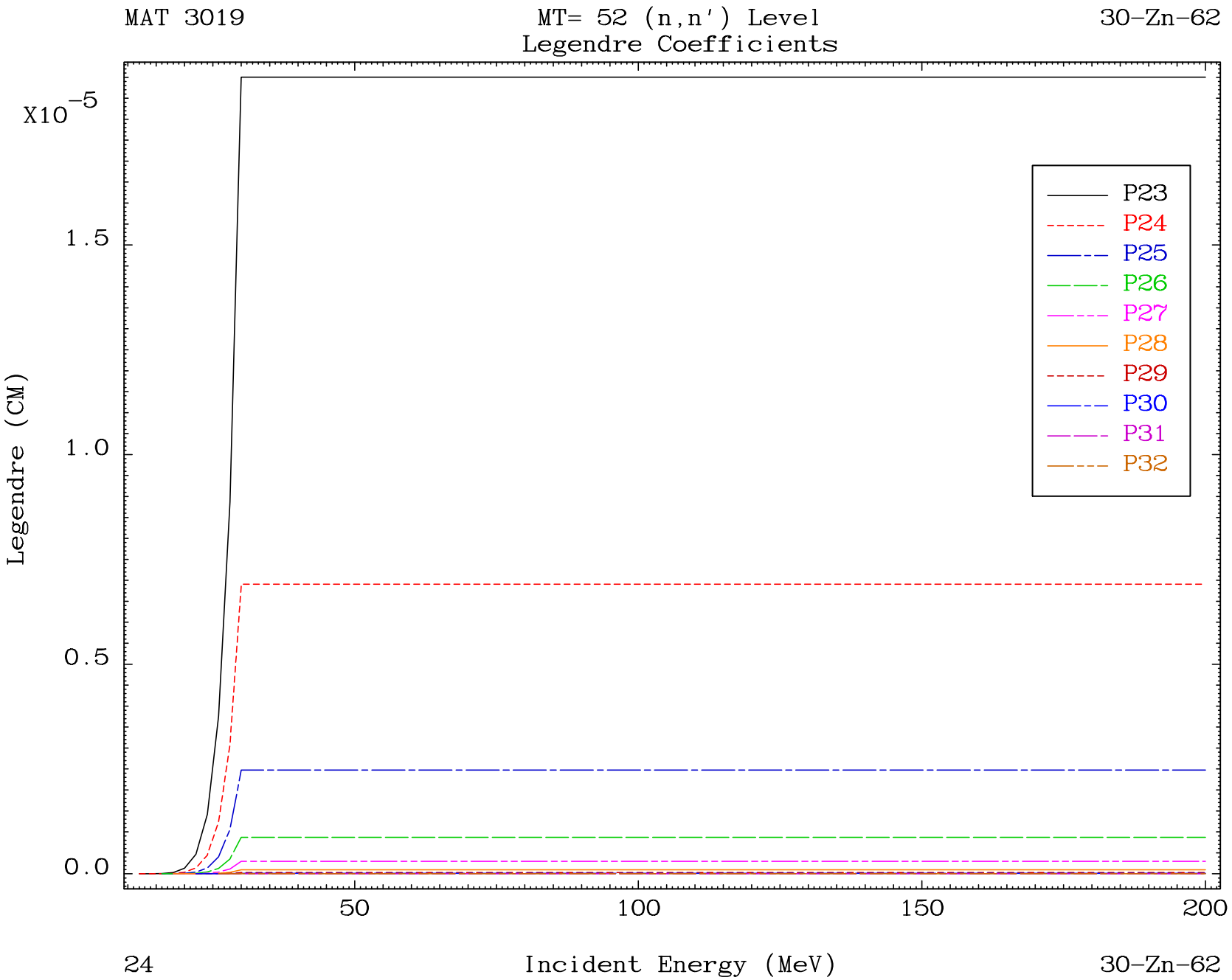

MAT 3019
MT= 51 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
19
Incident Energy (MeV)
30-Zn-62

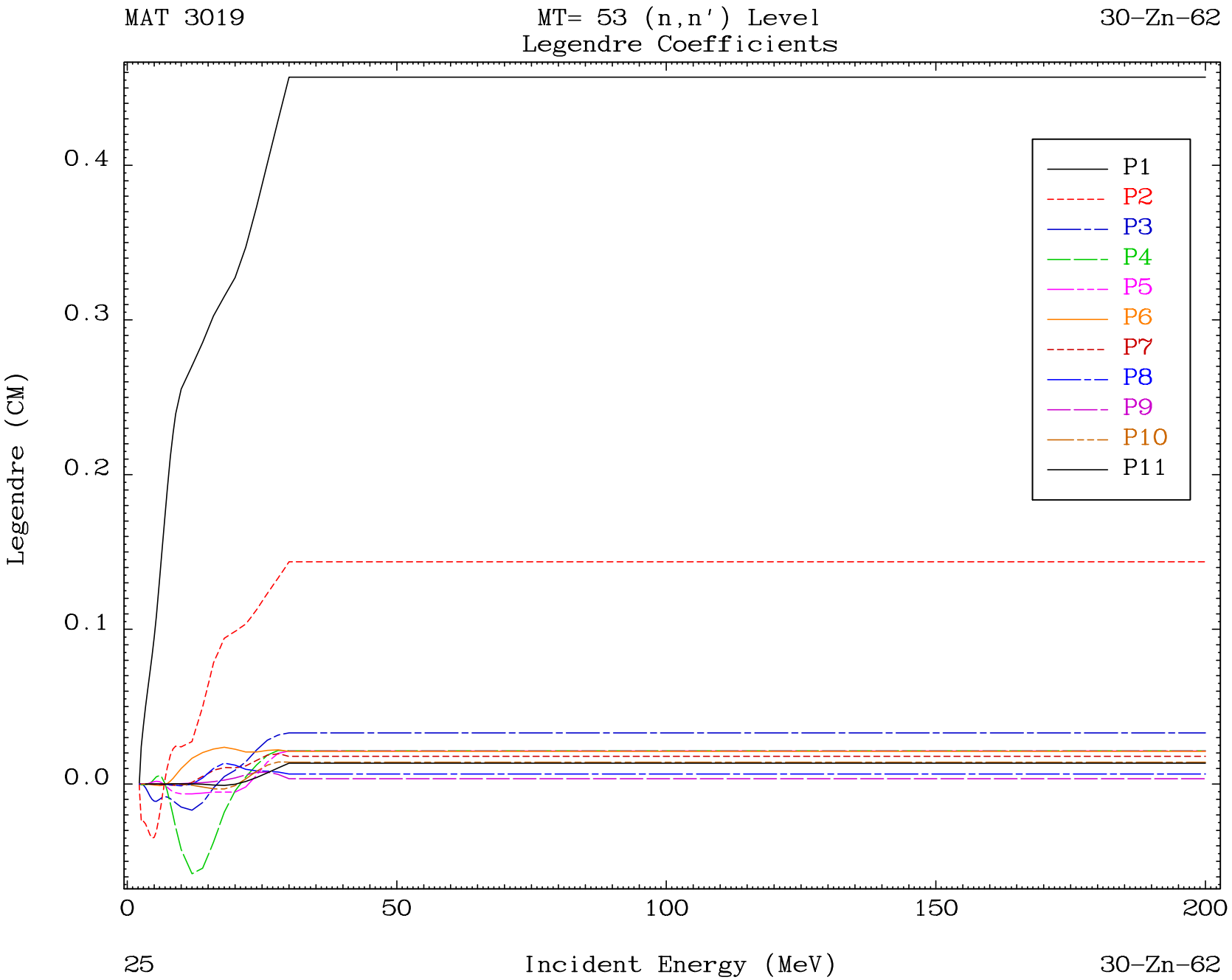

MAT 3019
MT= 51 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
0
50
100
150
200
20
Incident Energy (MeV)
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22

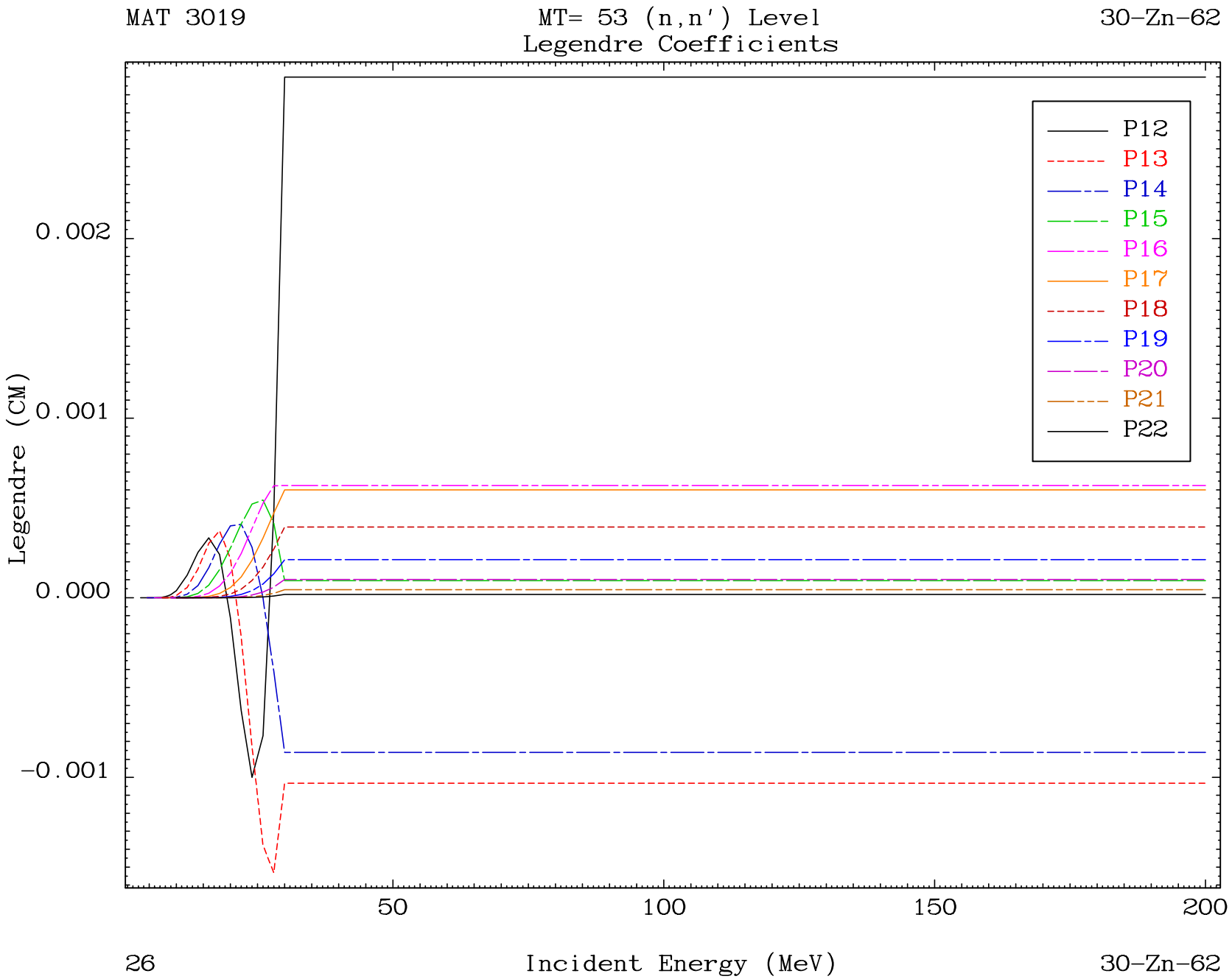

MAT 3019
MT= 51 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-5
2.0
1.5
1.0
0.5
0.0
Legendre (CM)
50
100
150
200
21
Incident Energy (MeV)
30-Zn-62
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32

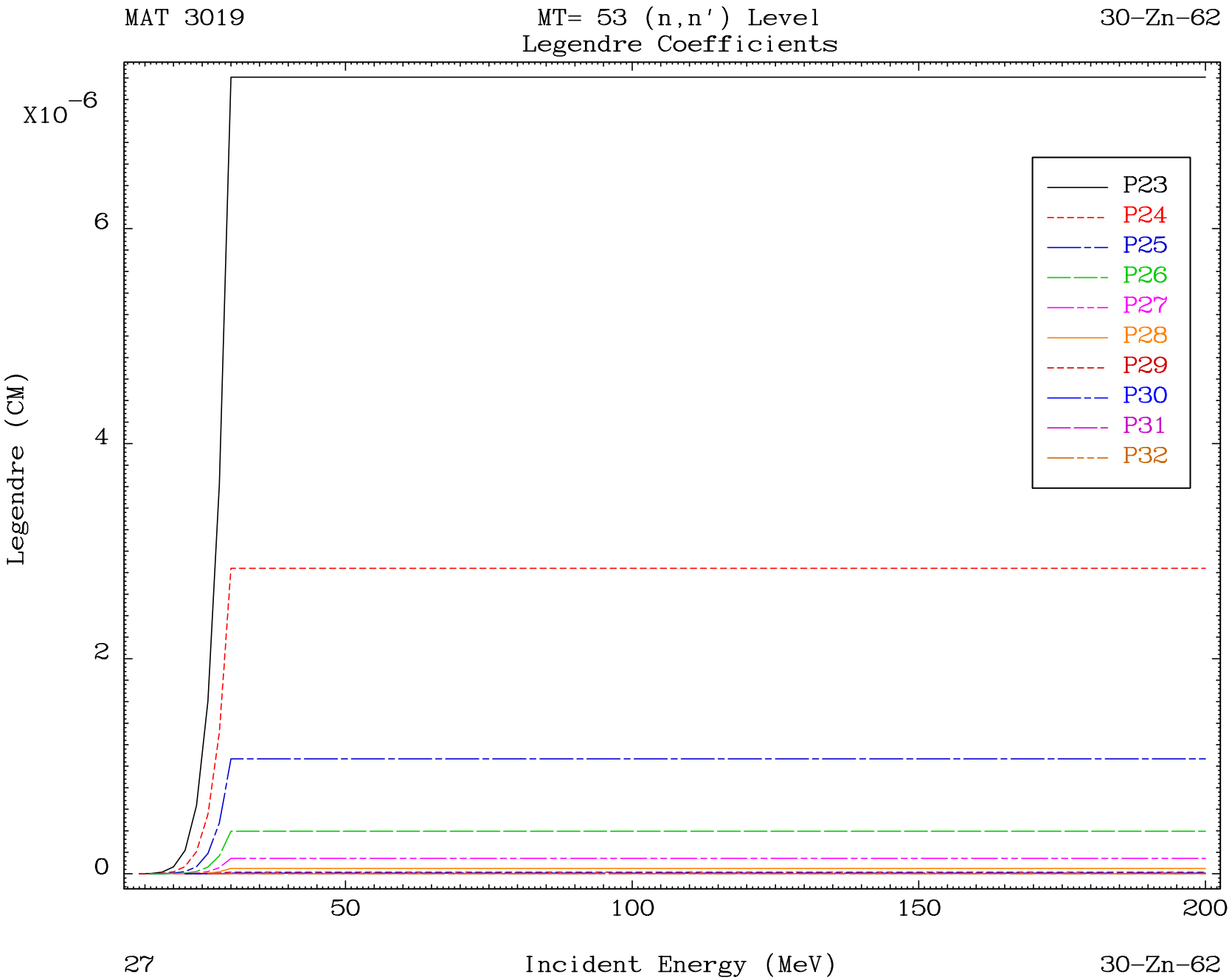

MAT 3019
MT= 52 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.5
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
22
Incident Energy (MeV)
30-Zn-62

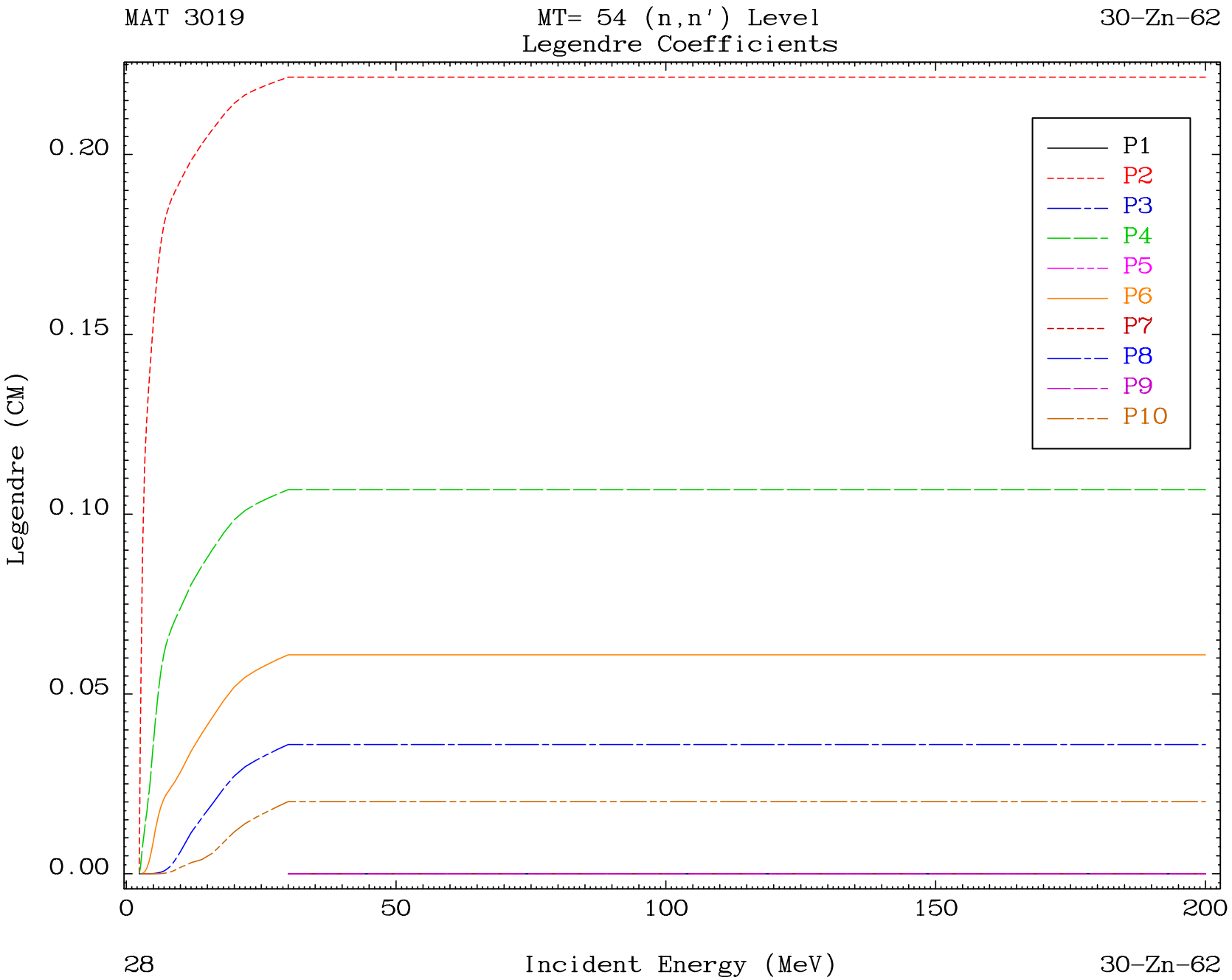

MAT 3019
MT= 52 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
50
100
150
200
Incident Energy (MeV)
23
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22

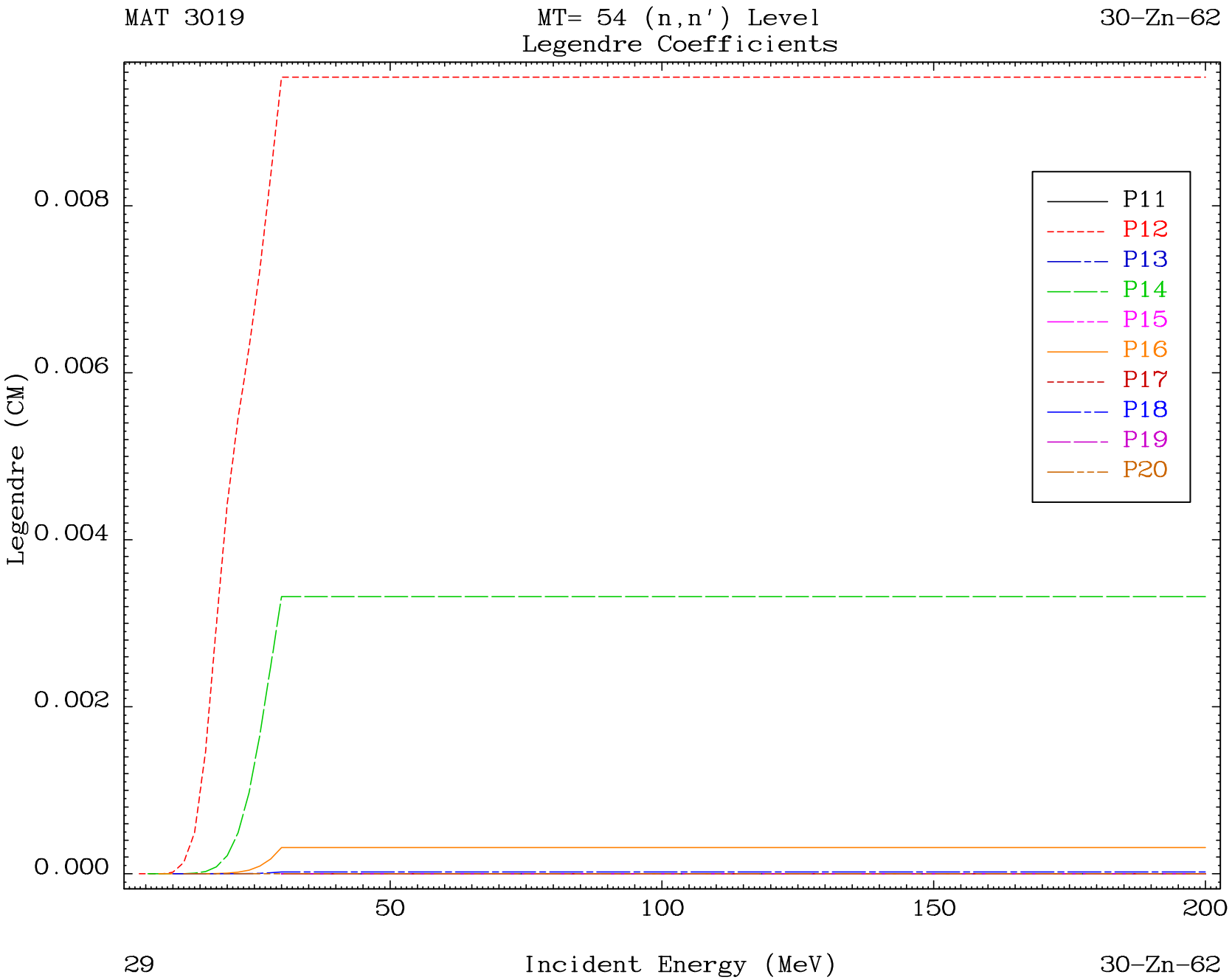

MAT 3019
MT= 52 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-5
1.5
1.0
0.5
0.0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
24
Incident Energy (MeV)
30-Zn-62

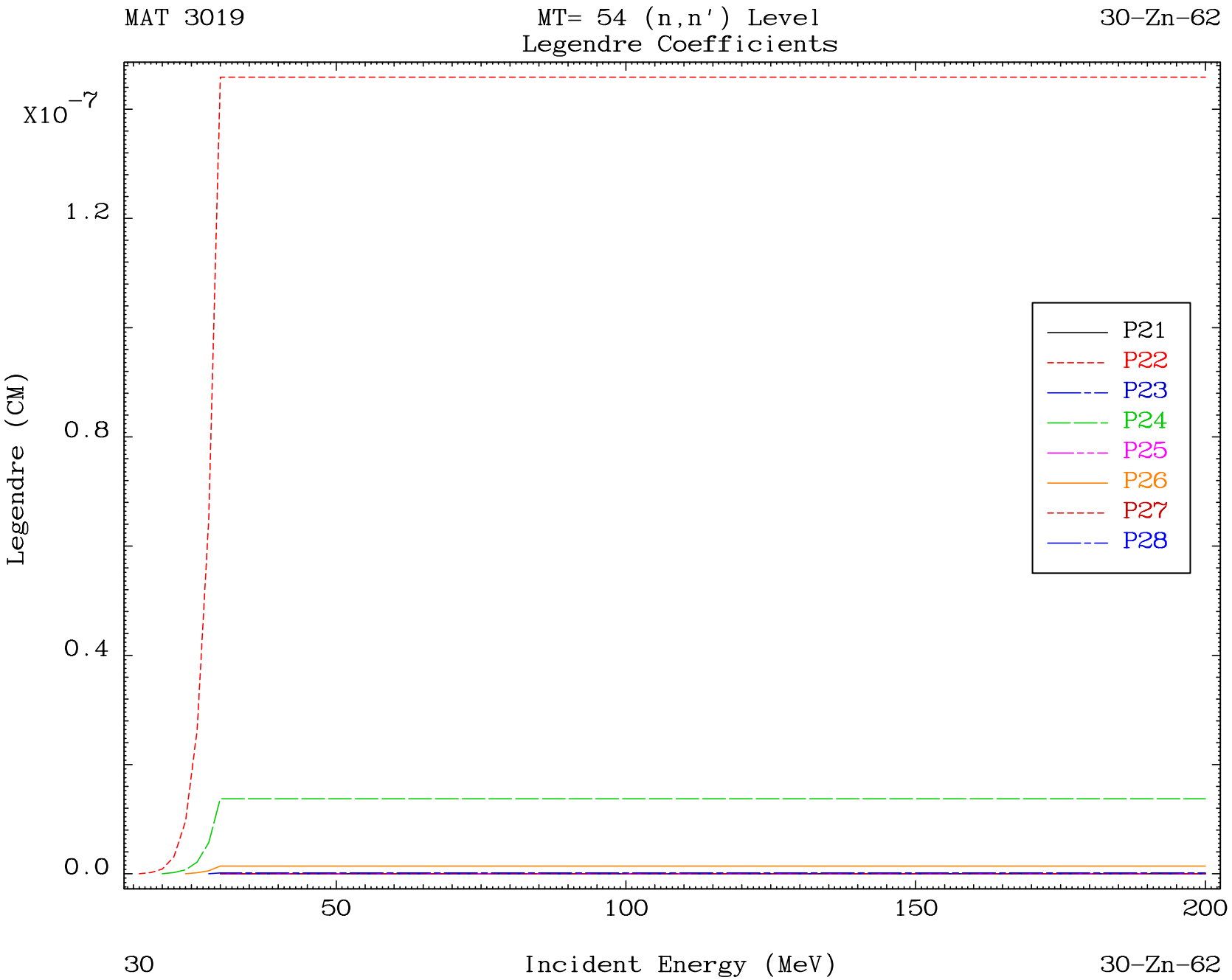

MAT 3019
MT= 53 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
0
50
100
150
200
25
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

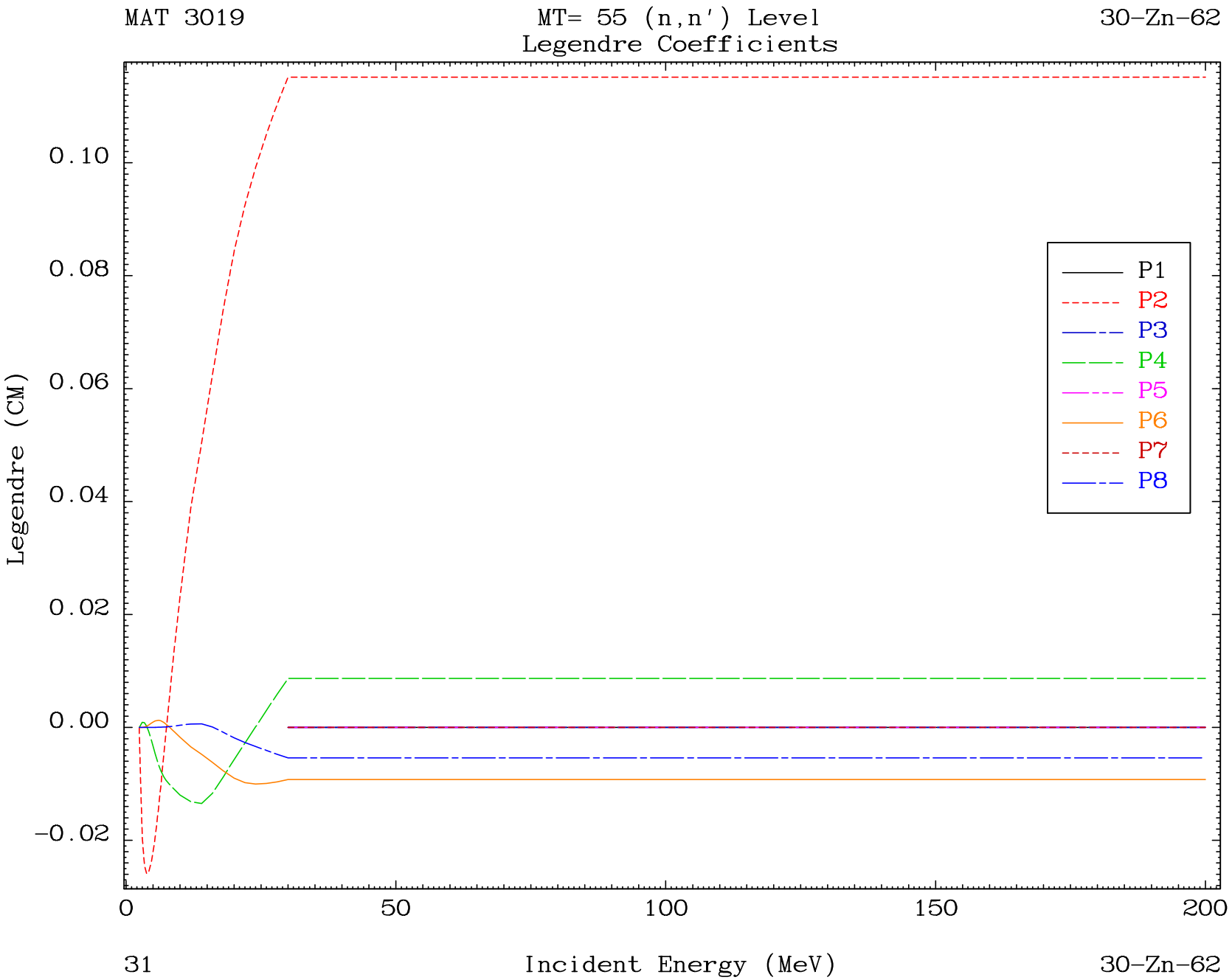

MAT 3019
MT= 53 (n,n') Level
Legendre Coefficients
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.002
0.001
0.000
-0.001
Legendre (CM)
50
100
150
200
26
Incident Energy (MeV)
30-Zn-62

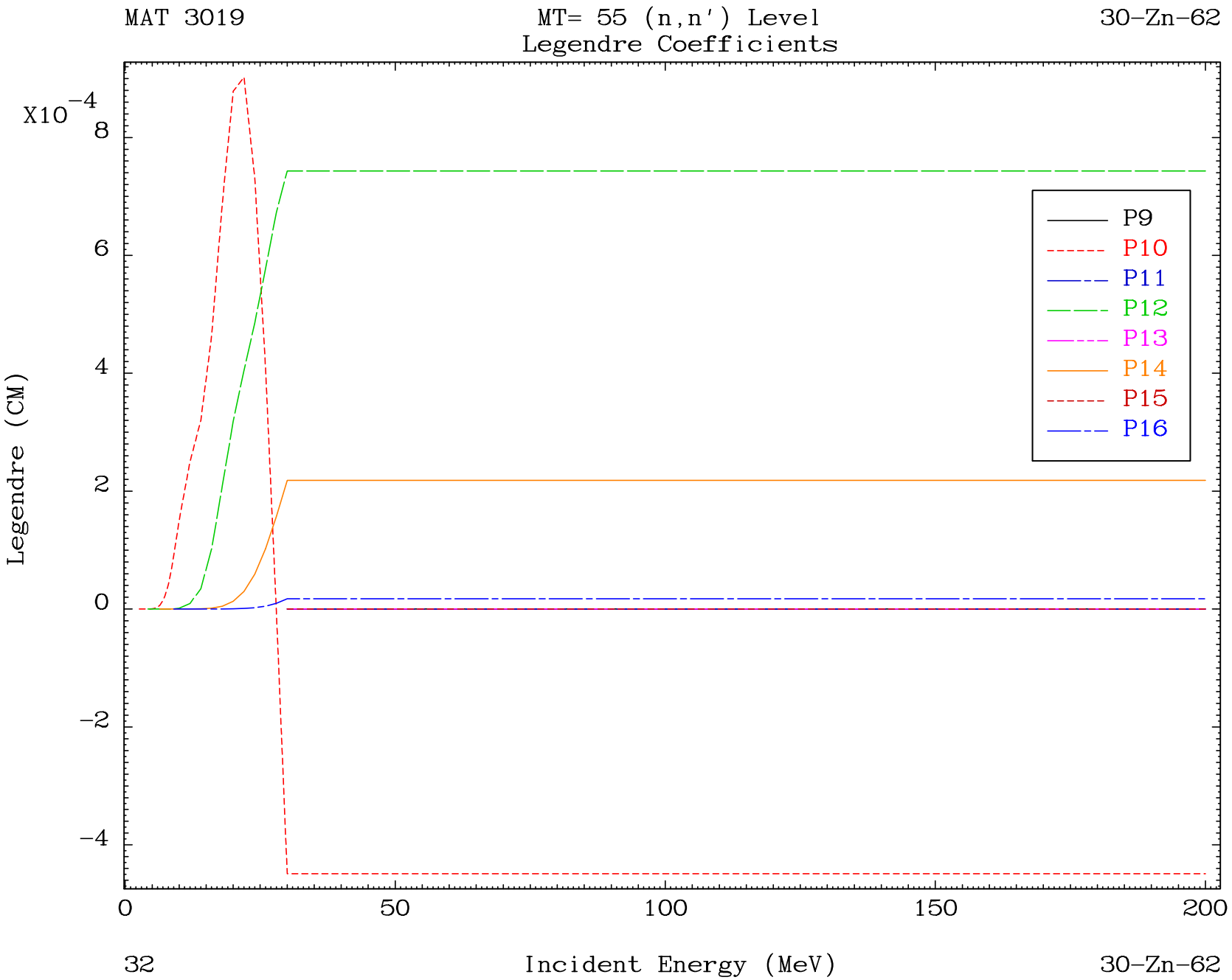

MAT 3019
MT= 53 (n,n') Level
Legendre Coefficients
30-Zn-62
X10^-6
6
4
2
0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
27
Incident Energy (MeV)
30-Zn-62

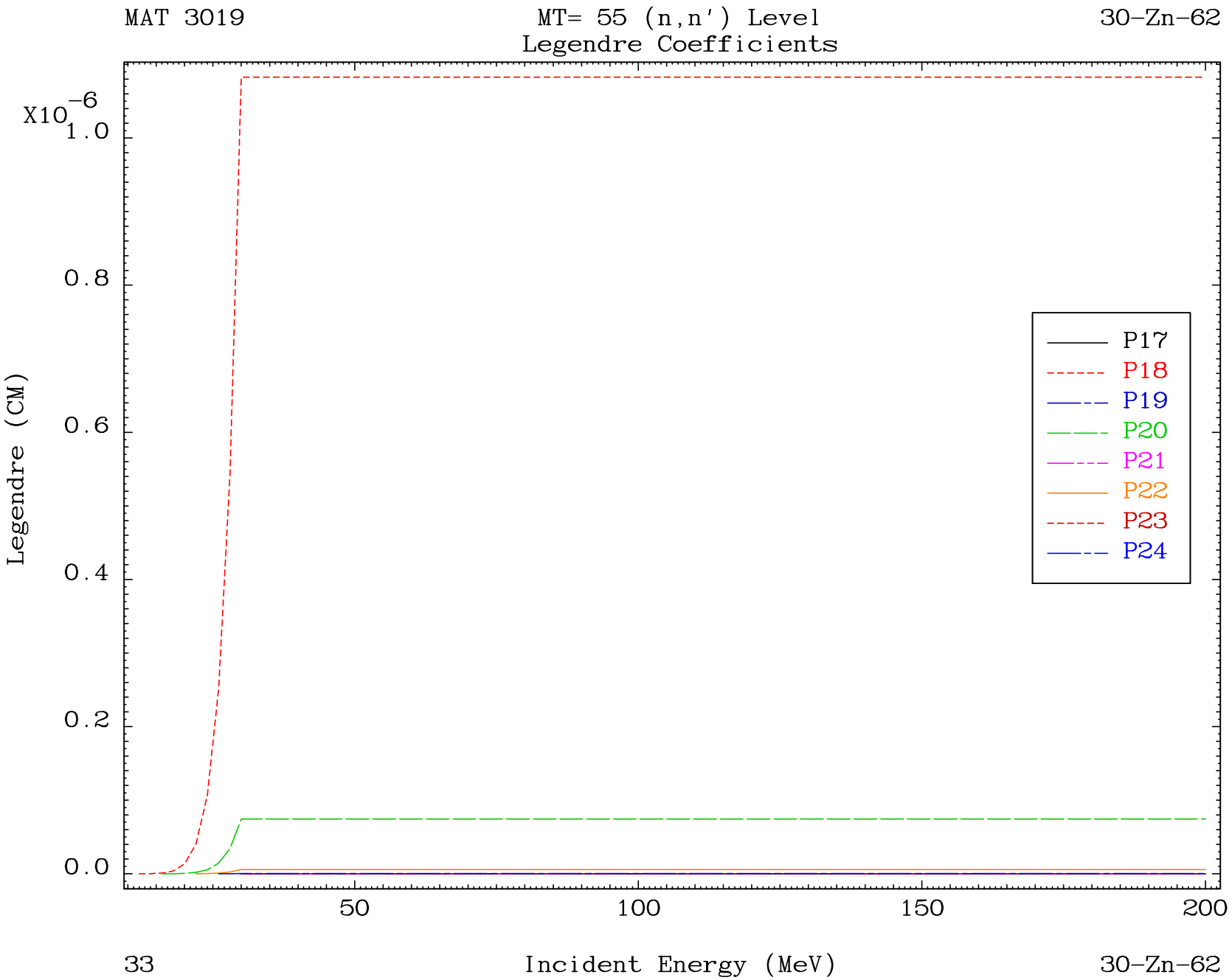

MAT 3019
MT= 54 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.20
0.15
0.10
0.05
0.00
0
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
28
Incident Energy (MeV)
30-Zn-62

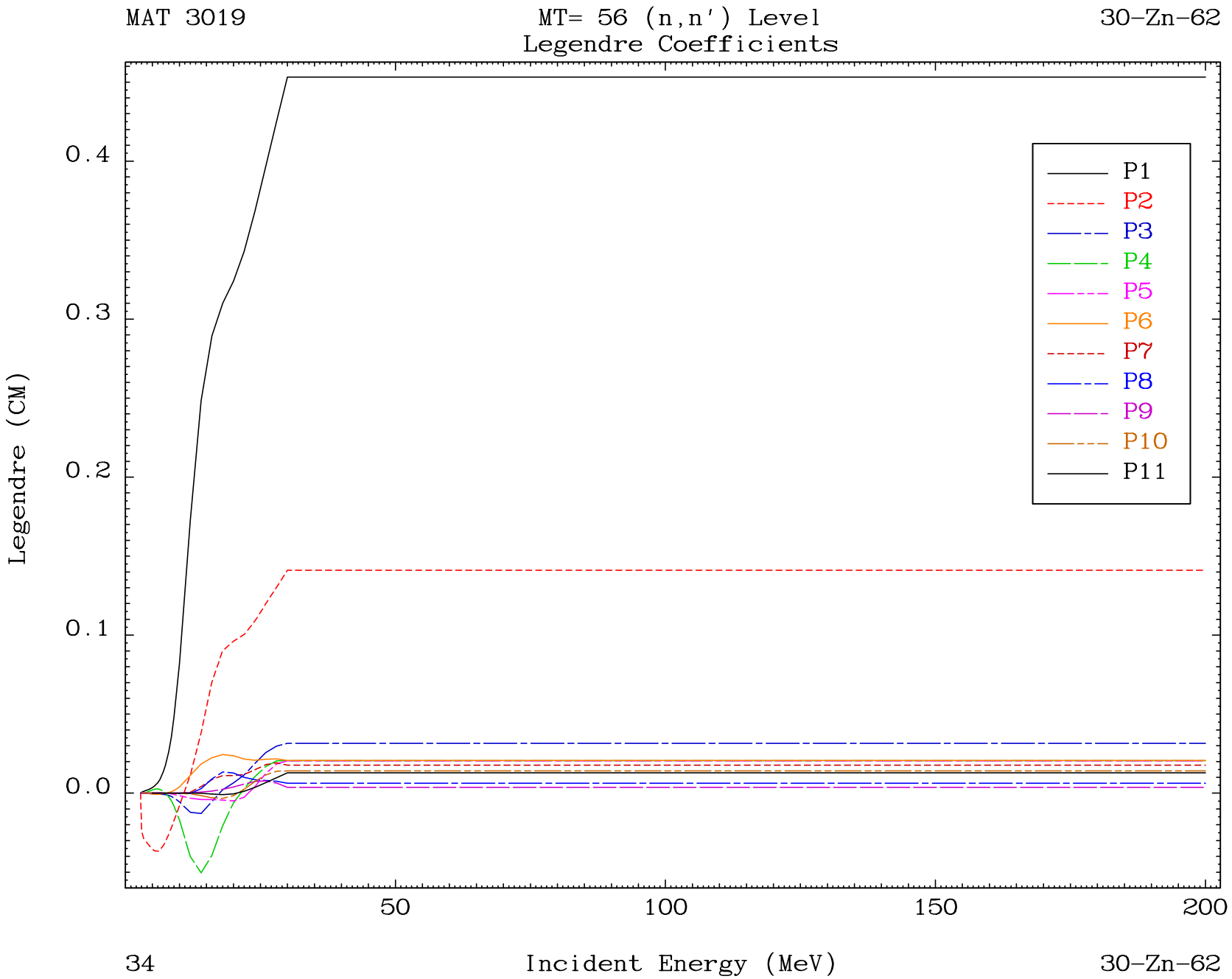

MAT 3019
MT= 54 (n,n') Level
Legendre Coefficients
30-Zn-62
0.008
0.006
0.004
0.002
0.000
Legendre (CM)
50
100
150
200
29
Incident Energy (MeV)
30-Zn-62
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20

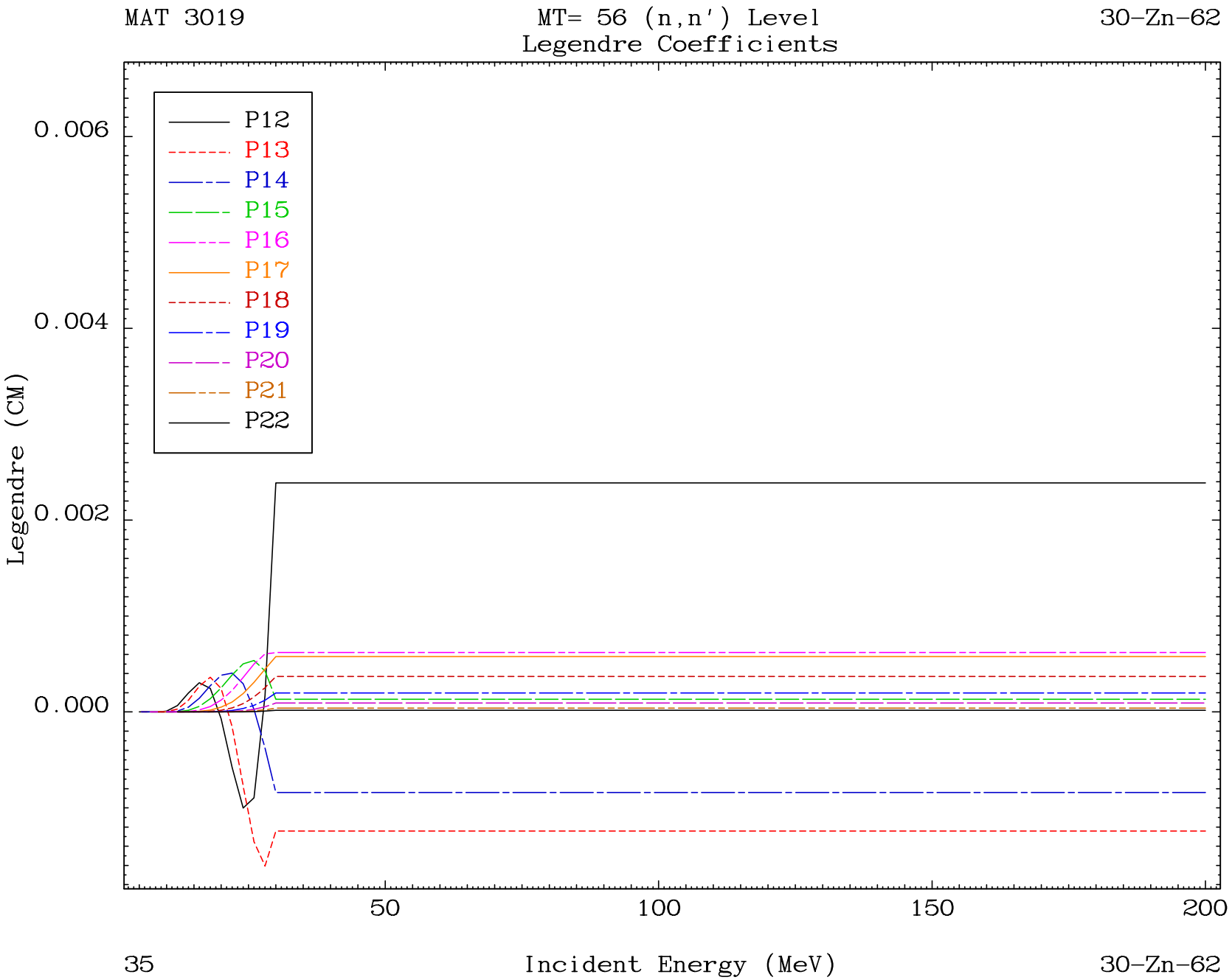

MAT 3019
MT= 54 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-7
1.2
0.8
0.4
0.0
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
50
100
150
200
30
Incident Energy (MeV)
30-Zn-62

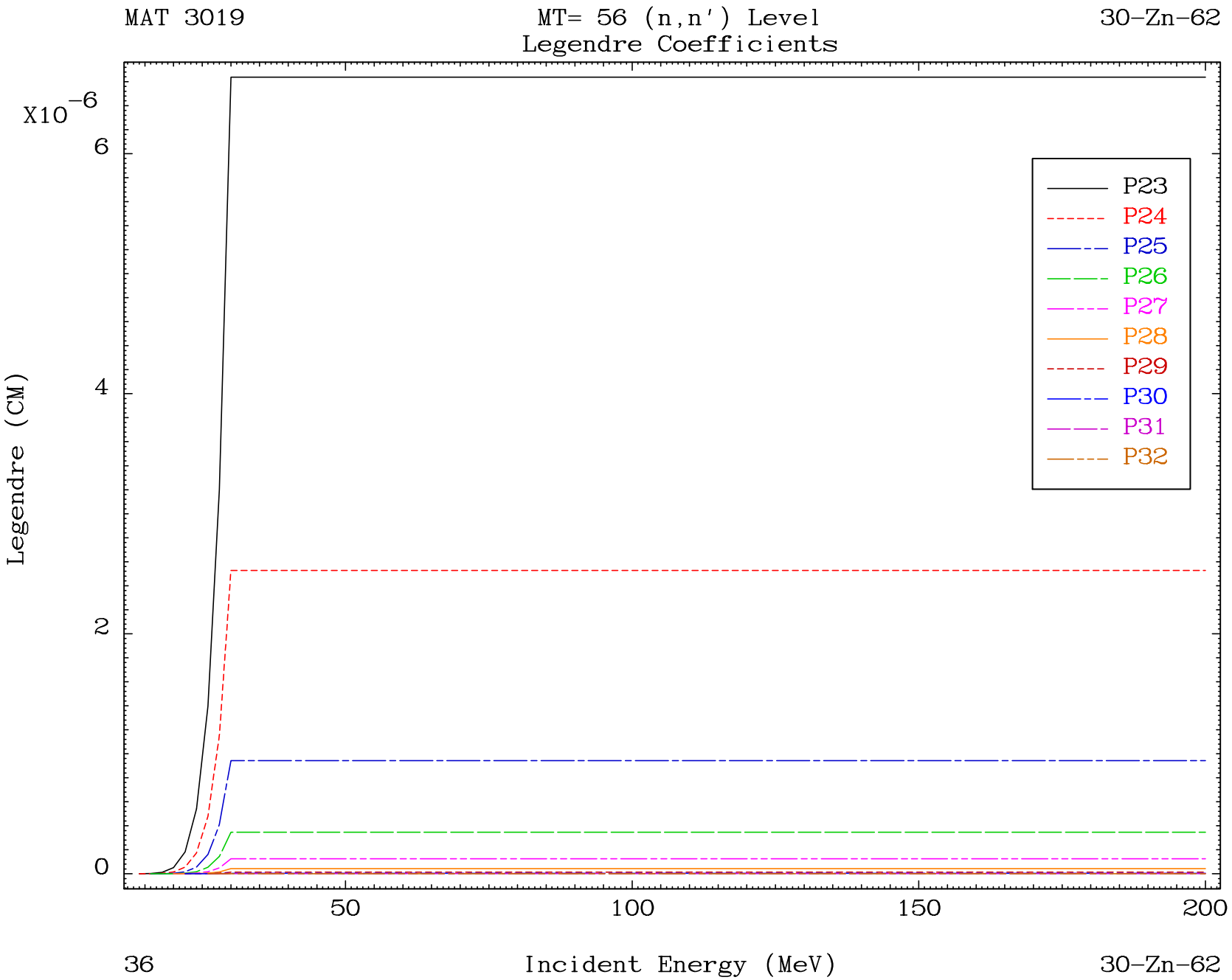

MAT 3019
MT= 55 (n,n') Level
Legendre Coefficients
30-Zn-62
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
Legendre (CM)
0
50
100
150
200
Incident Energy (MeV)
P1
P2
P3
P4
P5
P6
P7
P8
31
30-Zn-62

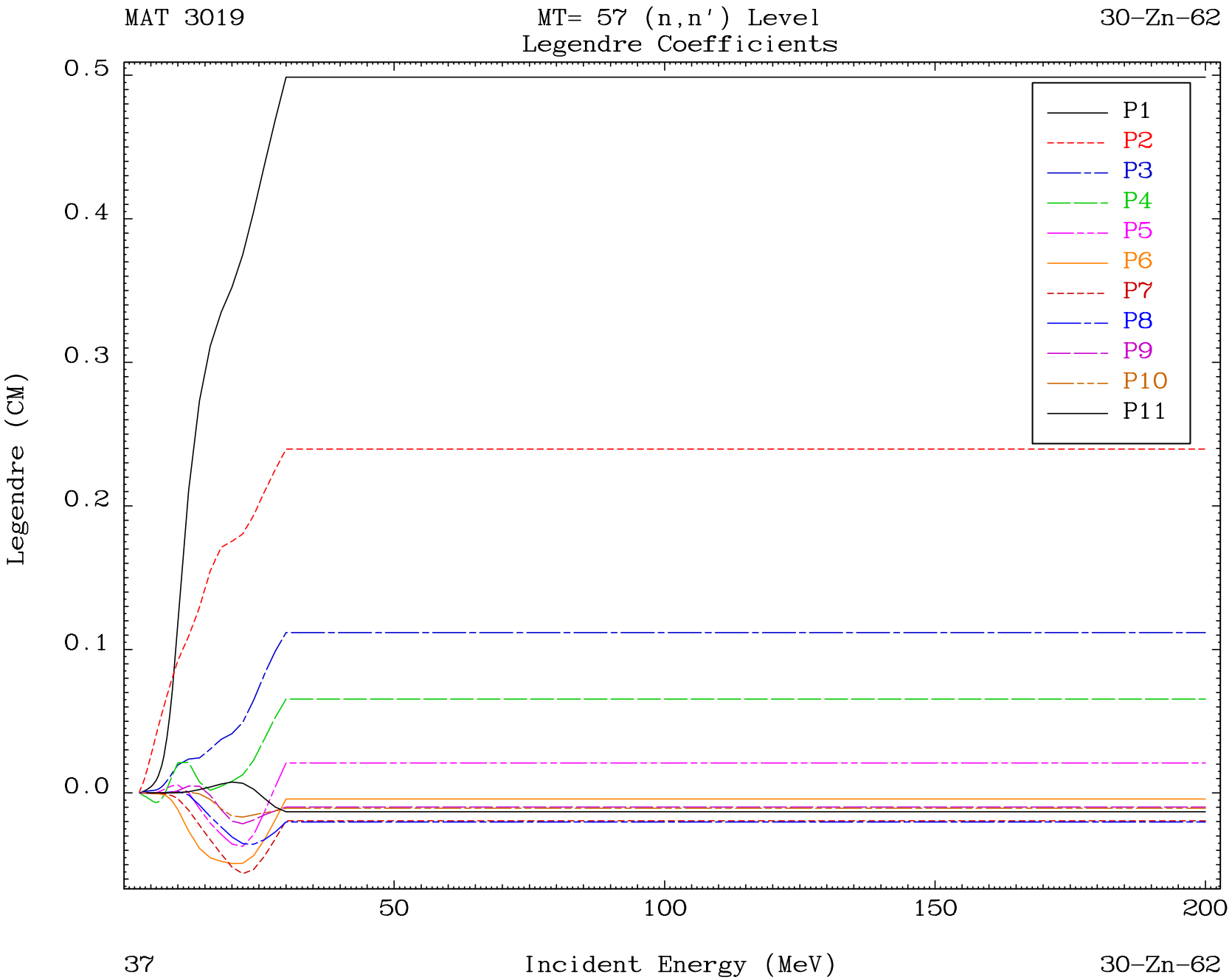

MAT 3019
MT= 55 (n,n') Level
Legendre Coefficients
30-Zn-62
X10^-4
8
6
4
2
0
-2
-4
Legendre (CM)
P9
P10
P11
P12
P13
P14
P15
P16
0
50
100
150
200
32
Incident Energy (MeV)
30-Zn-62

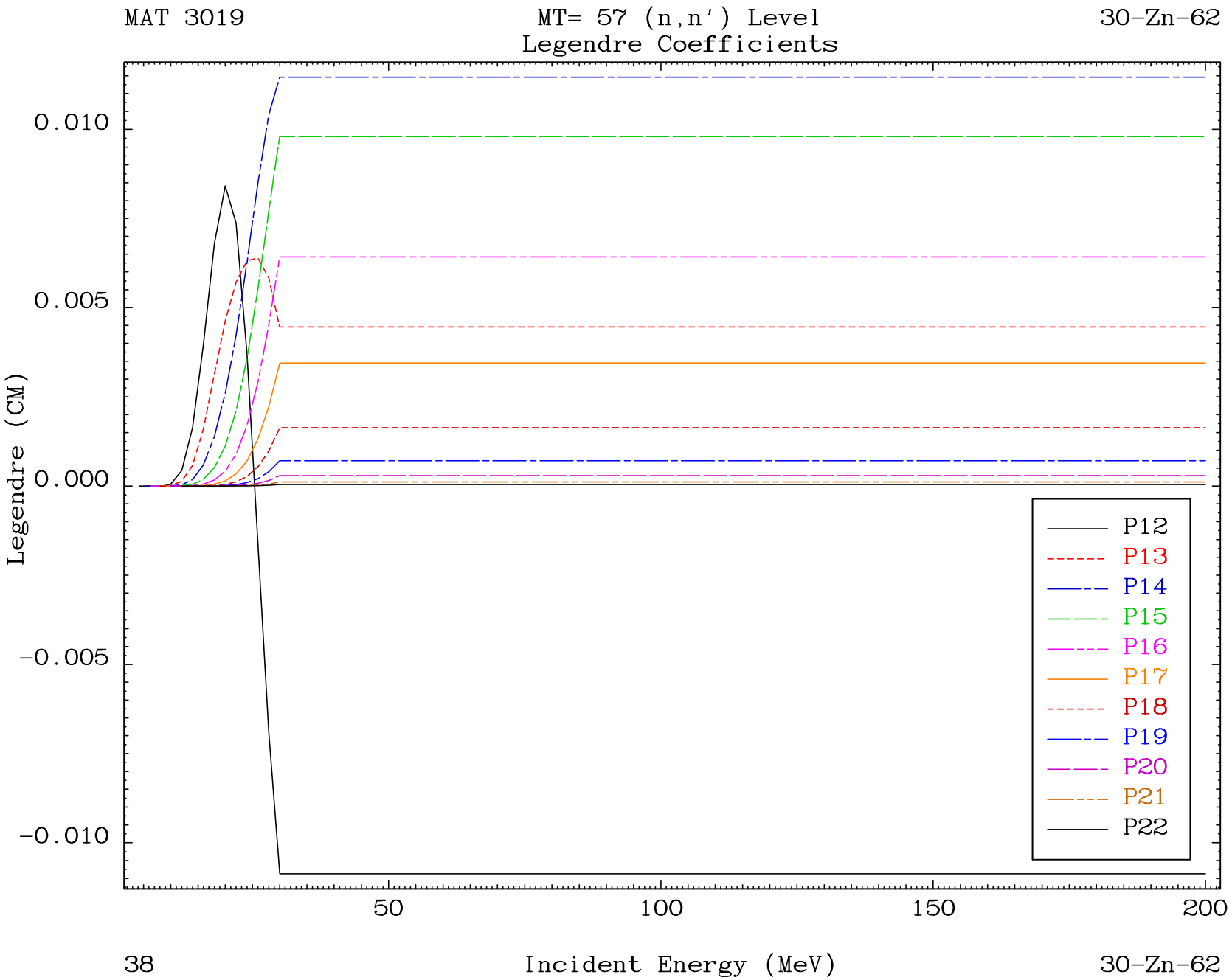

MAT 3019
MT= 55 (n,n') Level
Legendre Coefficients
30-Zn-62
X10^-6
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P17
P18
P19
P20
P21
P22
P23
P24
50
100
150
200
33
Incident Energy (MeV)
30-Zn-62

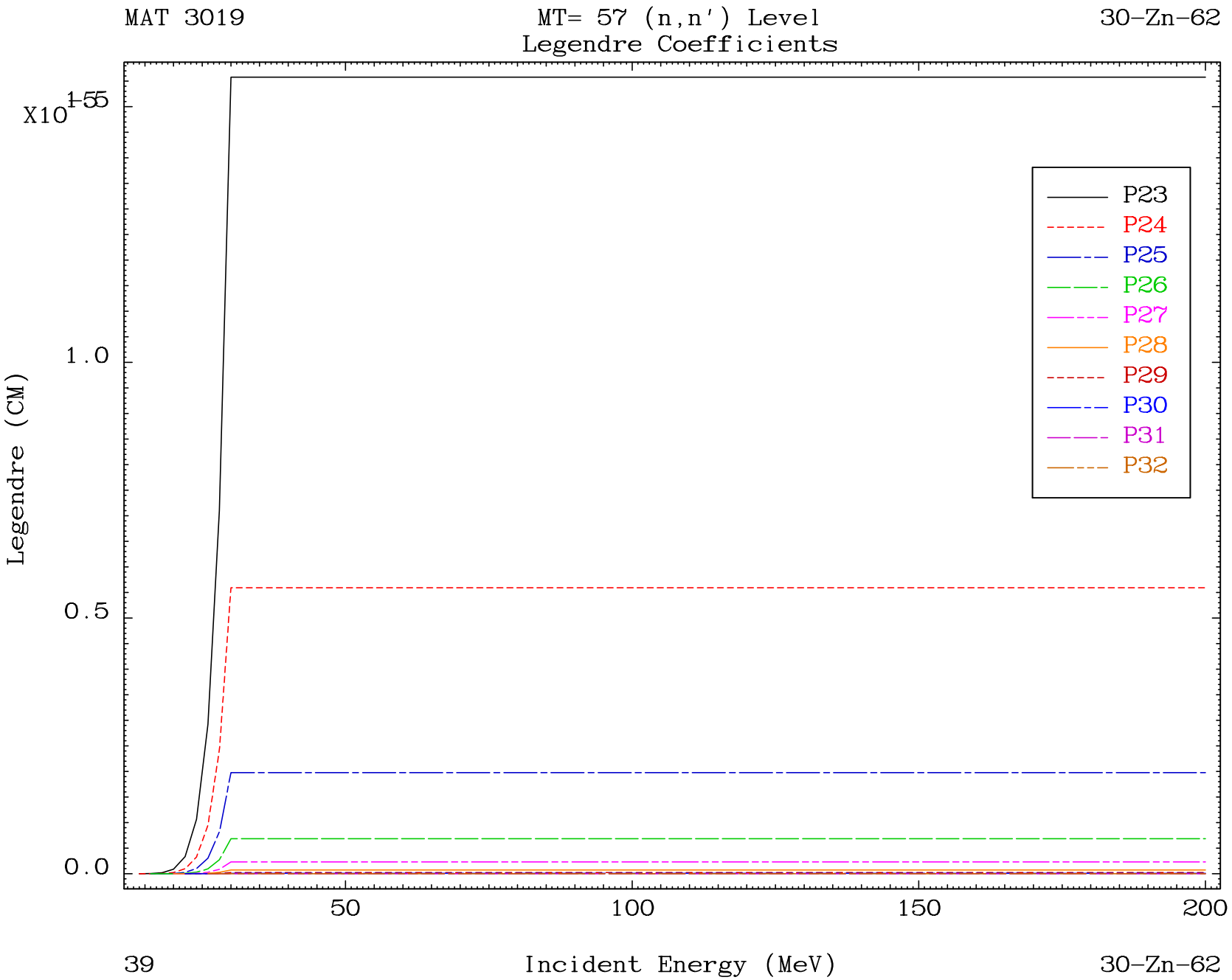

MAT 3019
MT= 56 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
50
100
150
200
34
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

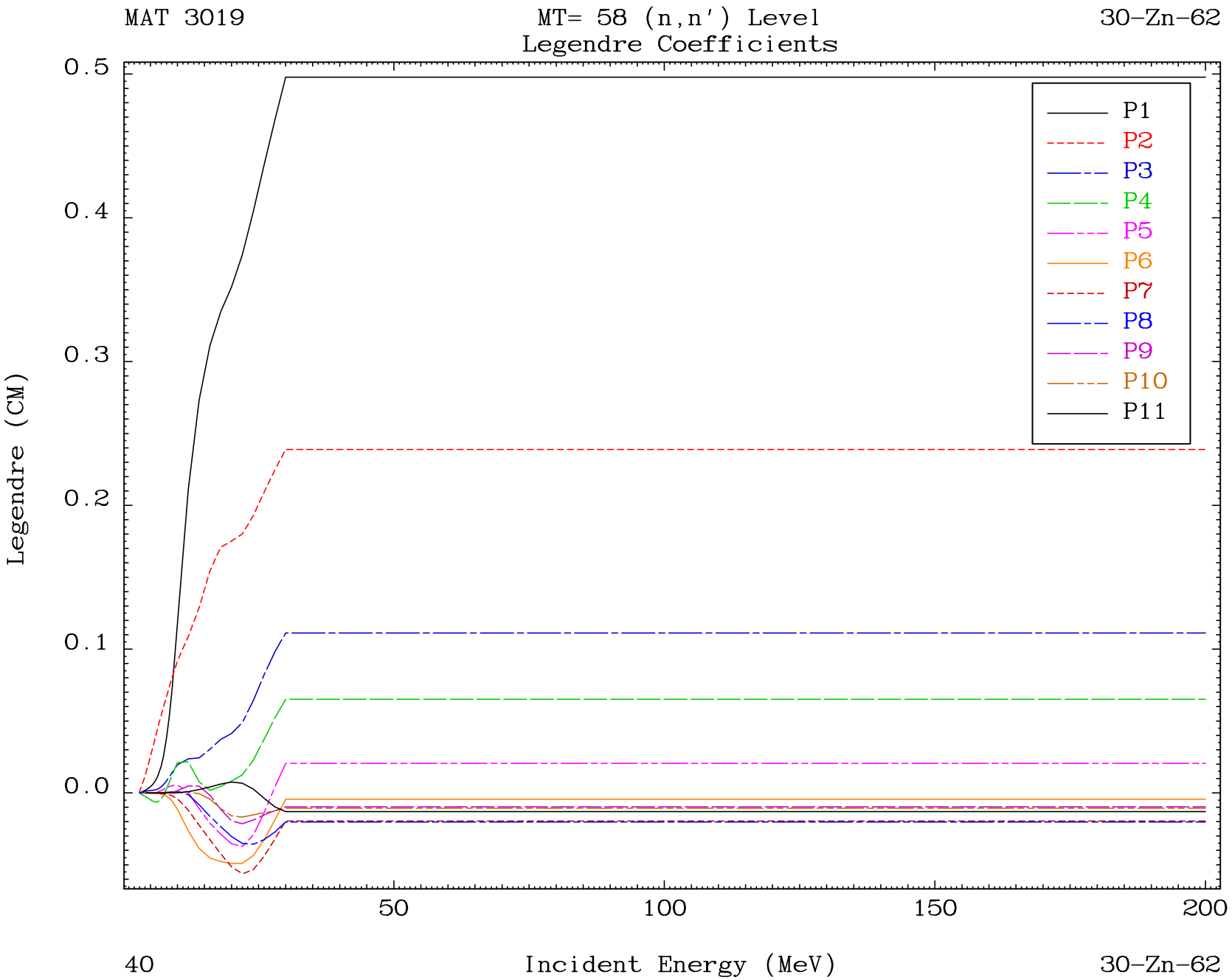

MAT 3019
MT= 56 (n,n') Level
Legendre Coefficients
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.006
0.004
0.002
0.000
Legendre (CM)
50
100
150
200
35
Incident Energy (MeV)
30-Zn-62

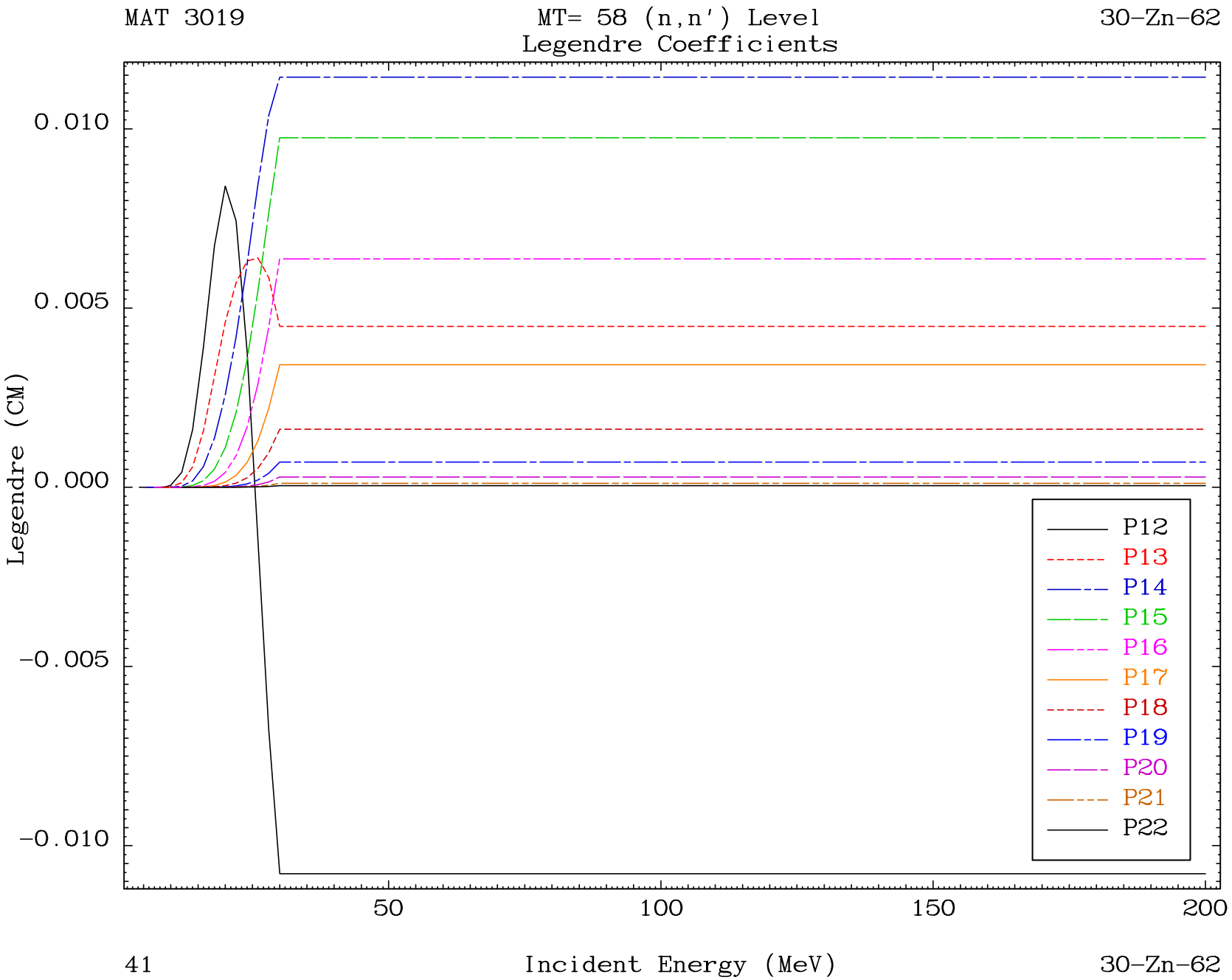

MAT 3019
MT= 56 (n,n') Level
Legendre Coefficients
30-Zn-62
X10^-6
6
4
2
0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
36
Incident Energy (MeV)
30-Zn-62


MAT 3019
MT= 57 (n,n') Level
Legendre Coefficients
30-Zn-62
0.5
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
50
100
150
200
37
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

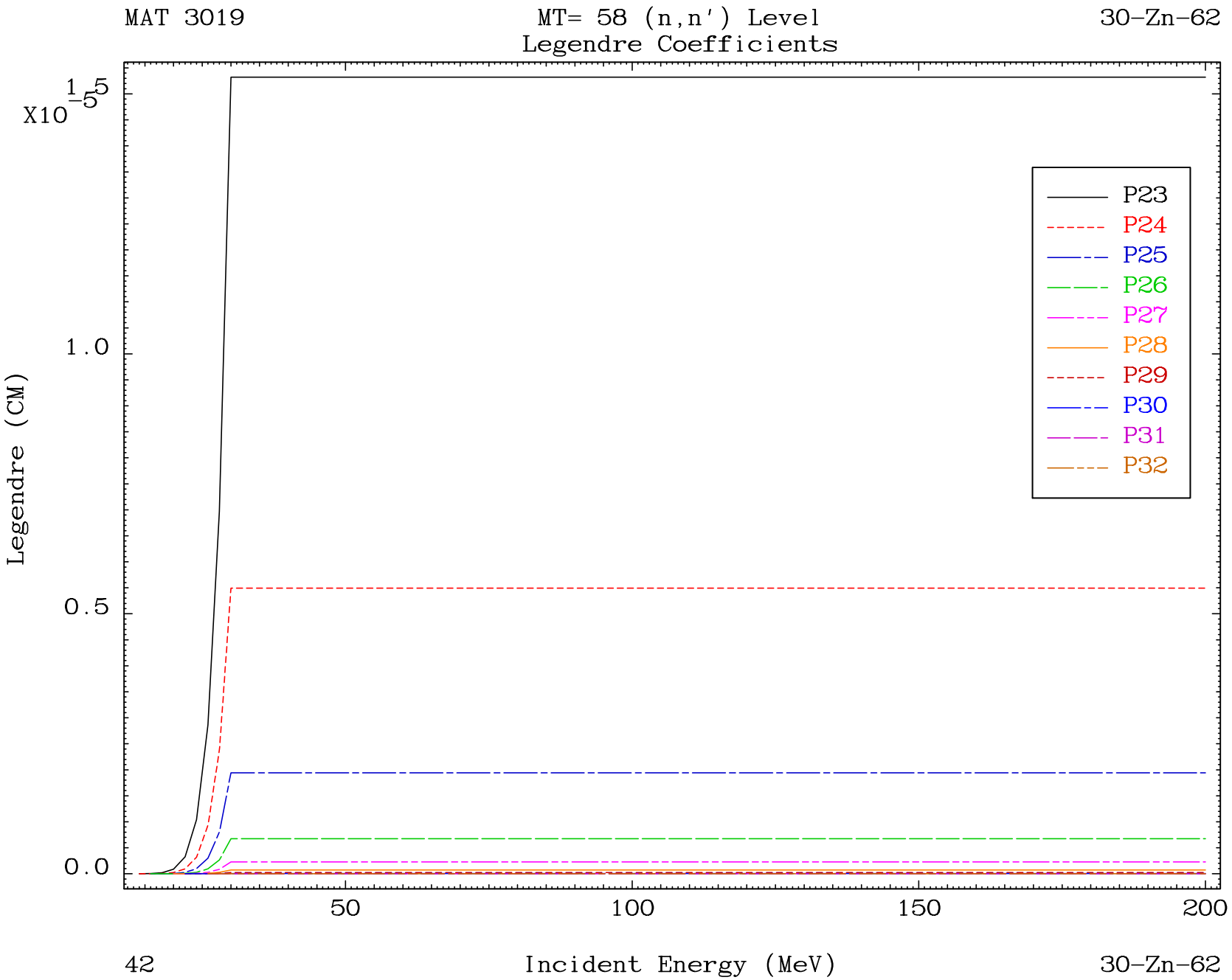

MAT 3019
MT= 57 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
50
100
150
200
38
Incident Energy (MeV)
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22

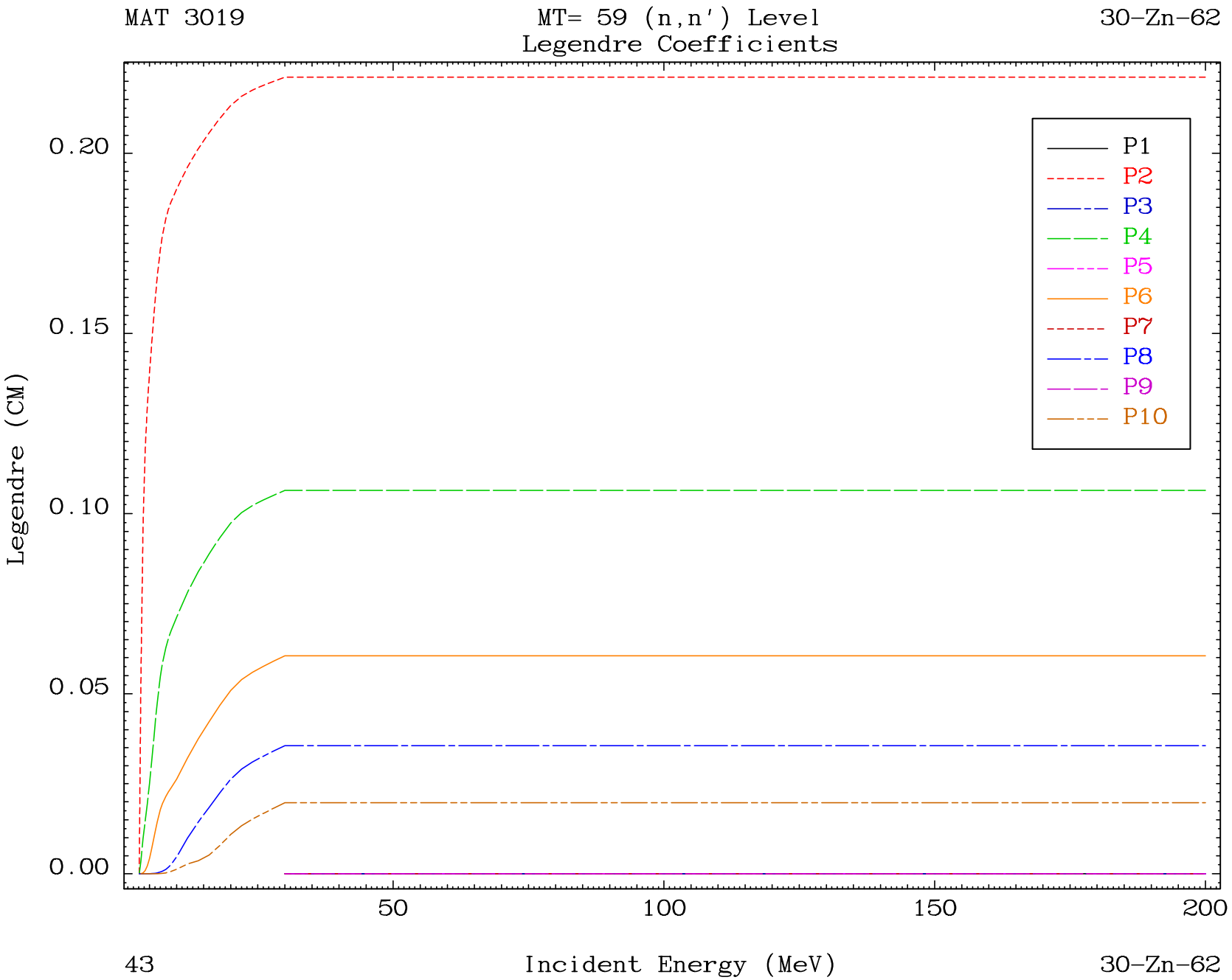

MAT 3019
MT= 57 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-5
1.5
1.0
0.5
0.0
Legendre (CM)
50
100
150
200
39
Incident Energy (MeV)
30-Zn-62
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32


MAT 3019
MT= 58 (n,n') Level
Legendre Coefficients
30-Zn-62
0.5
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
40
50
100
150
200
Incident Energy (MeV)
30-Zn-62

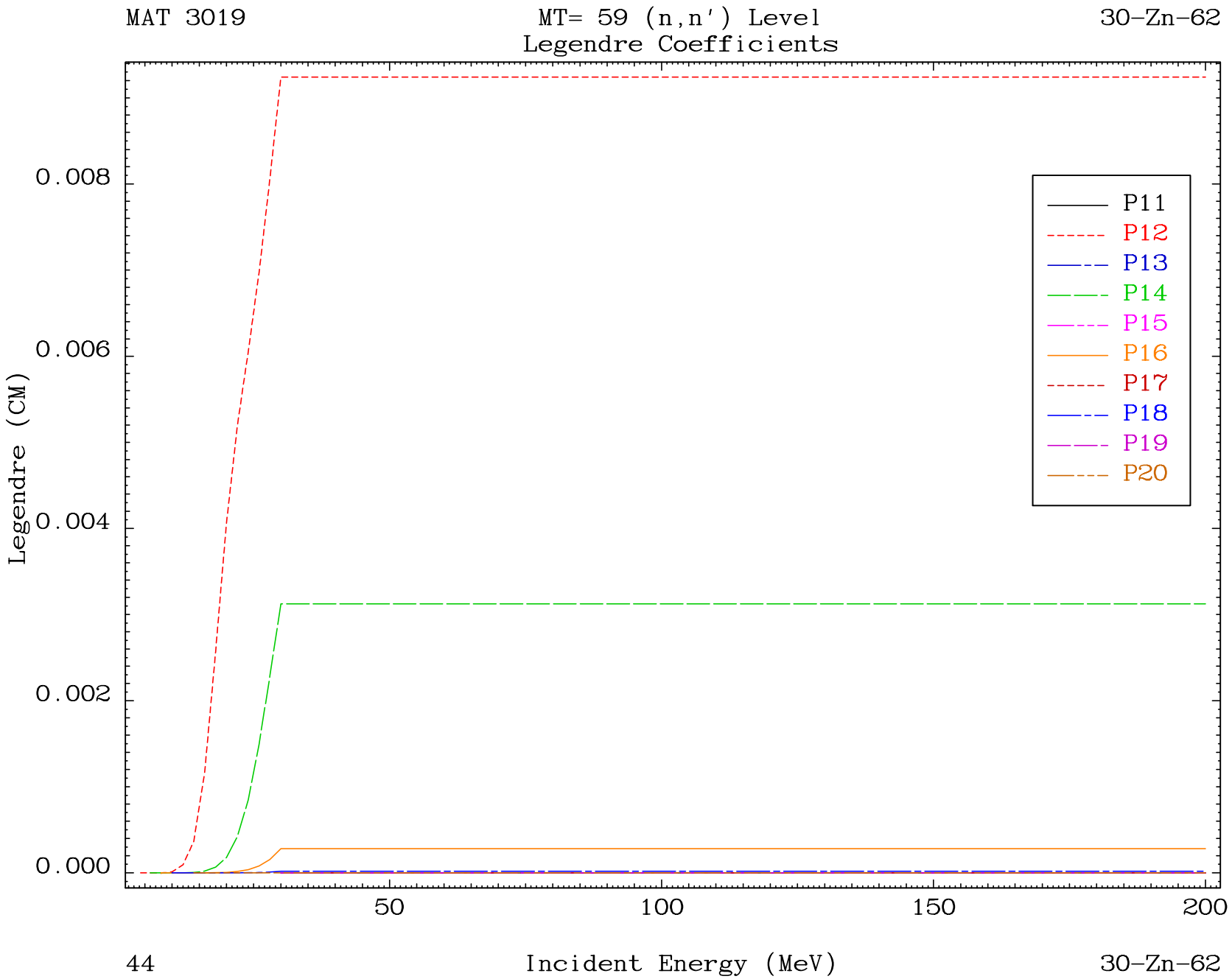

MAT 3019
MT= 58 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
50
100
150
200
Incident Energy (MeV)
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22

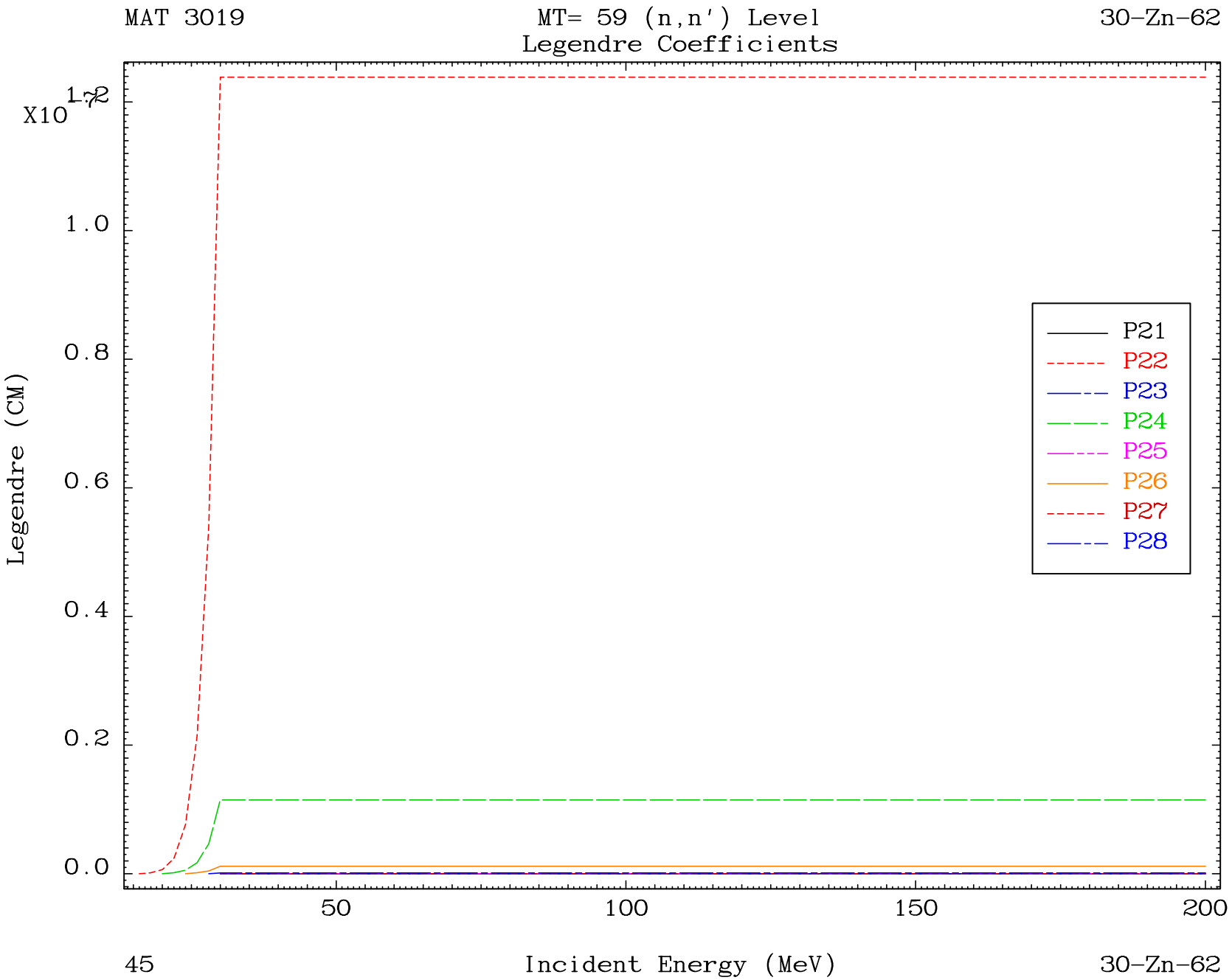
30-Zn-62

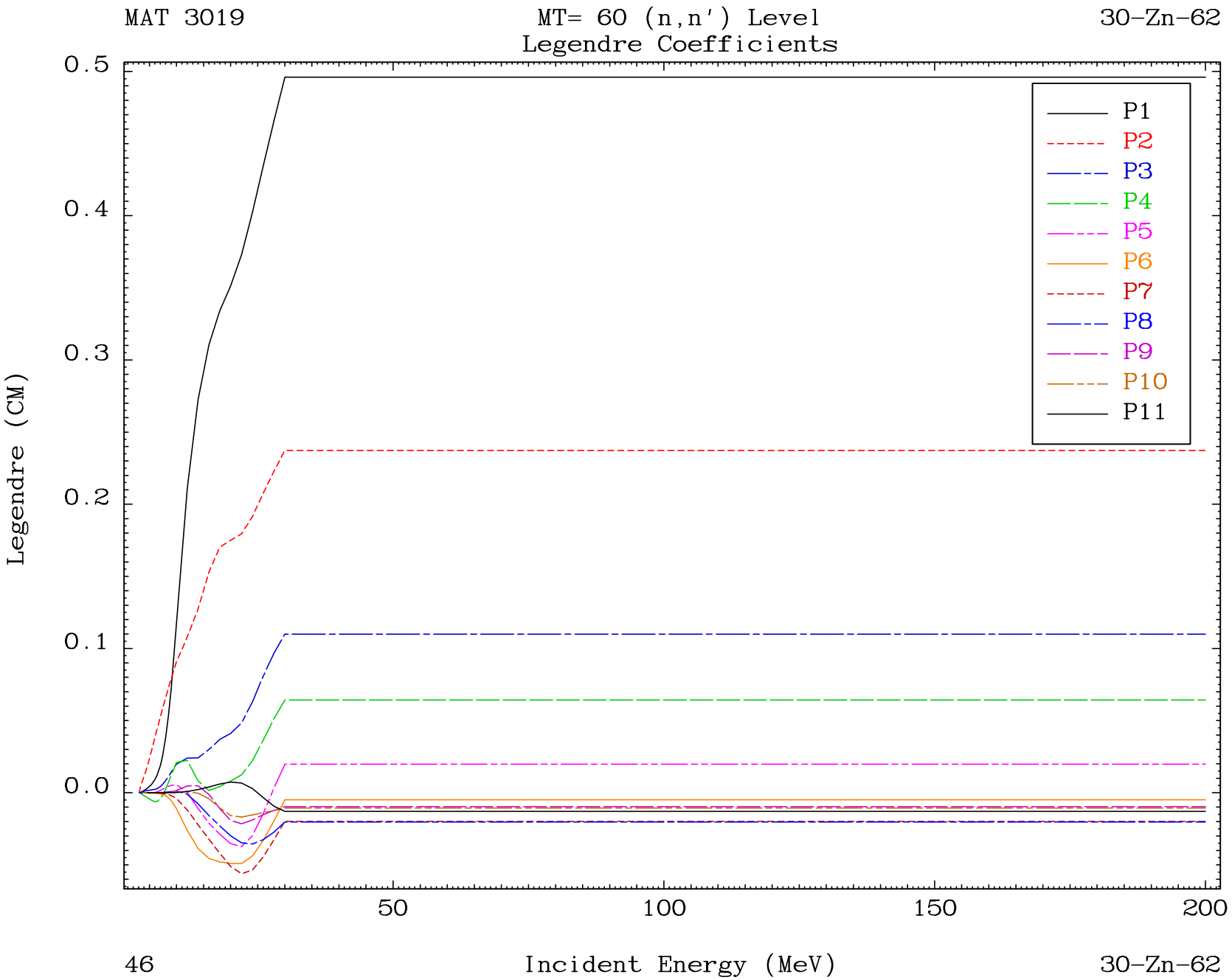

MAT 3019
MT= 58 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-5
1.5
1.0
0.5
0.0
Legendre (CM)
50
100
150
200
42
Incident Energy (MeV)
30-Zn-62
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32

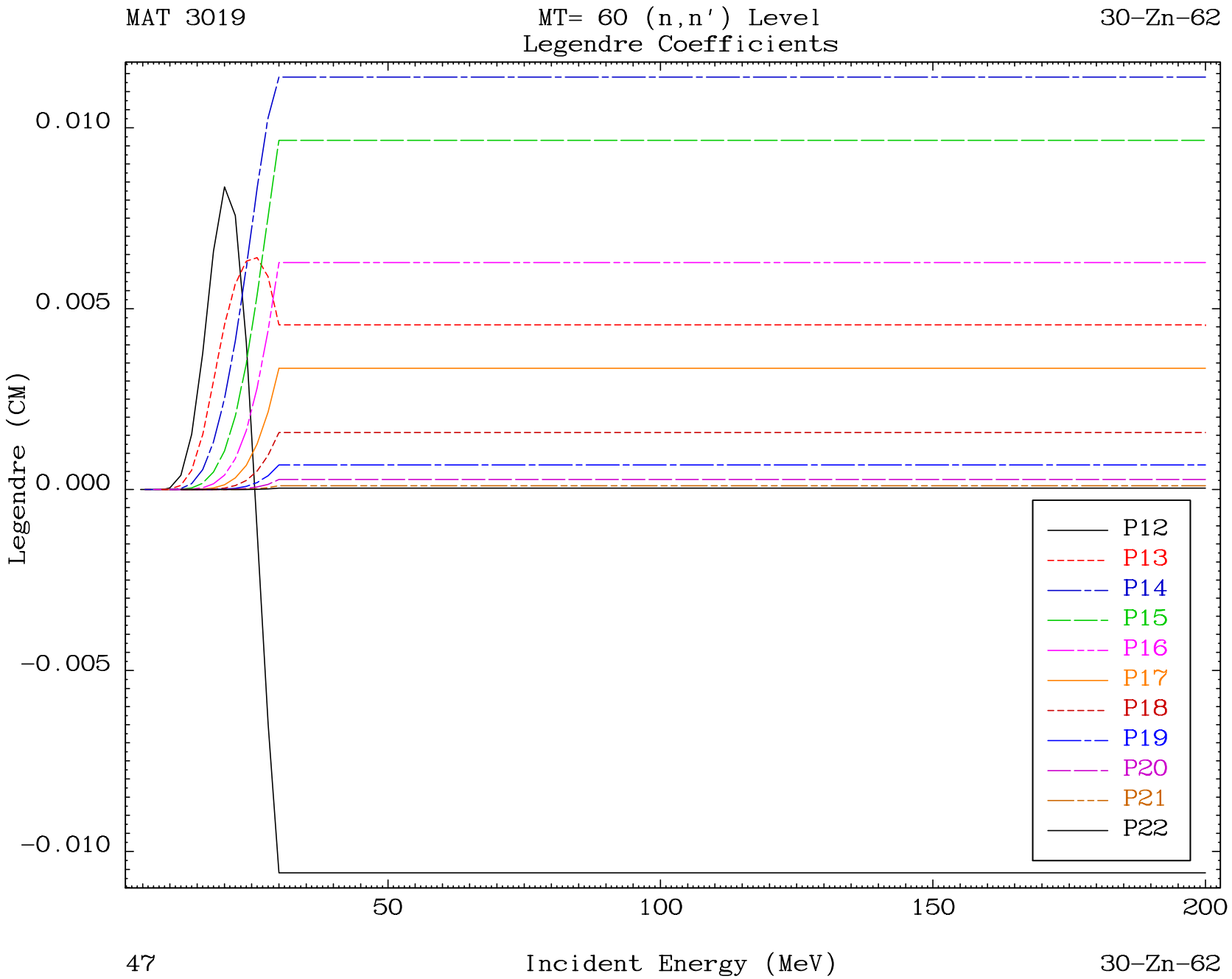

MAT 3019
MT= 59 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.20
0.15
0.10
0.05
0.00
50
100
150
200
Incident Energy (MeV)
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10

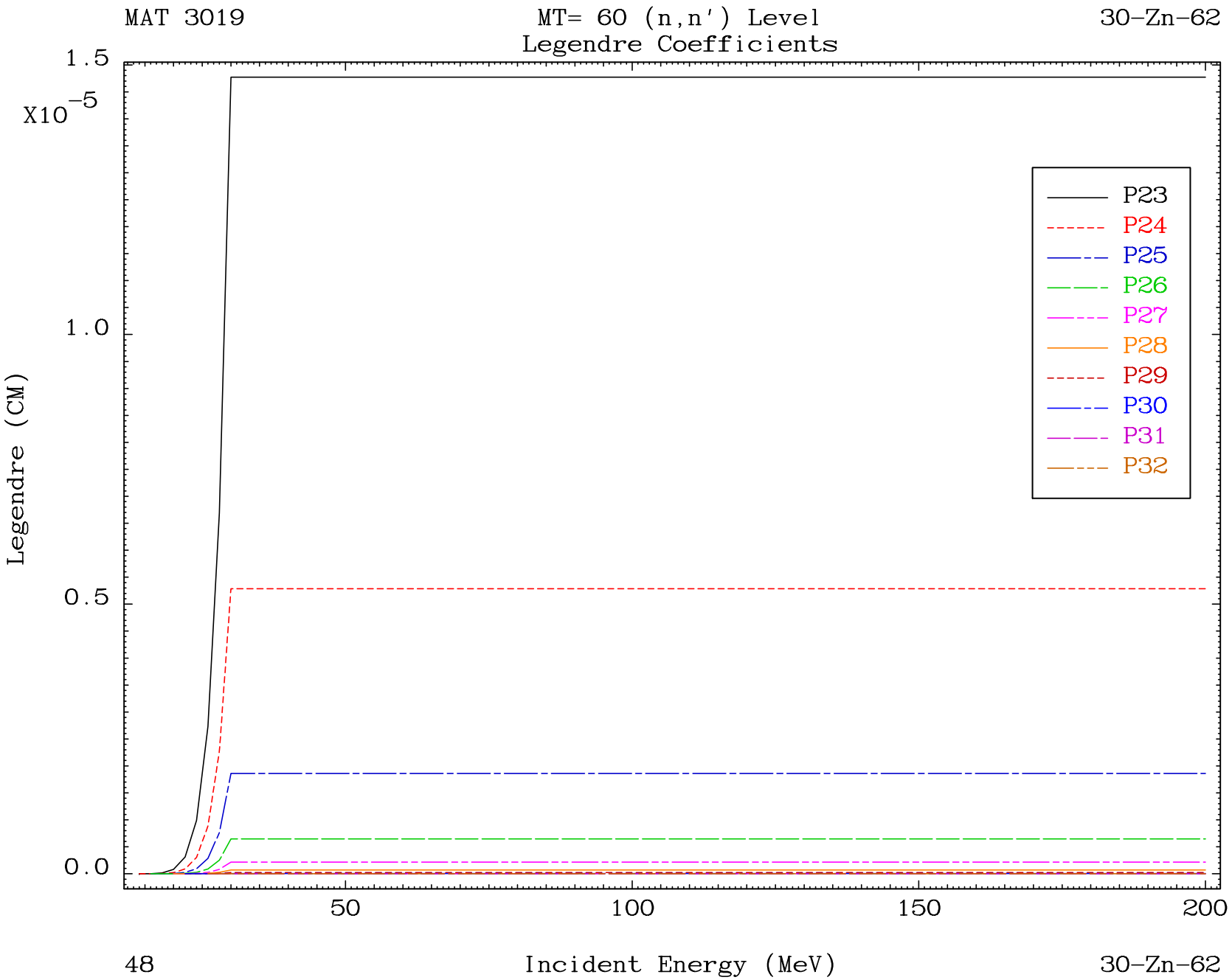
30-Zn-62

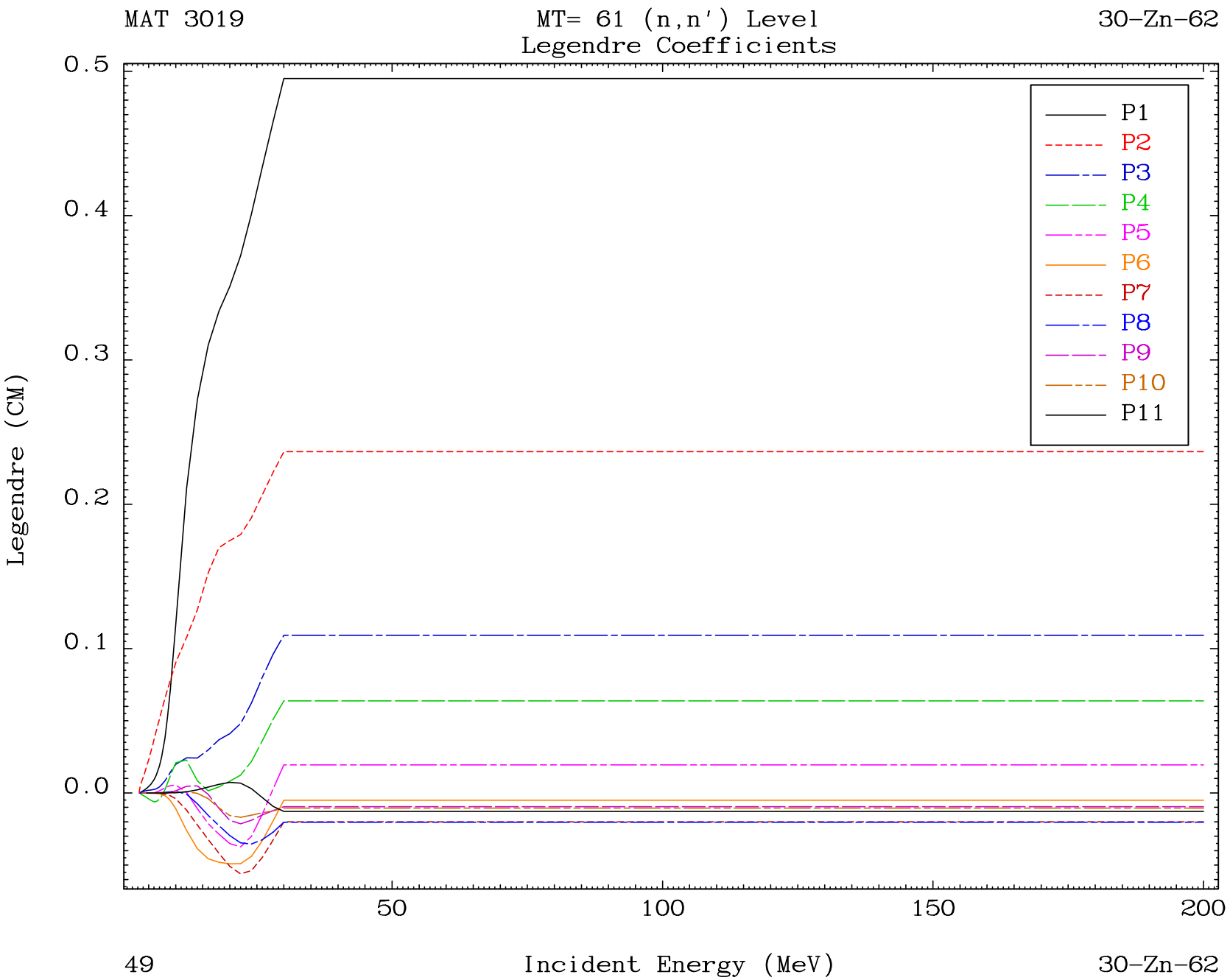

MAT 3019
MT= 59 (n,n') Level
Legendre Coefficients
30-Zn-62
0.008
0.006
0.004
0.002
0.000
Legendre (CM)
50
100
150
200
44
Incident Energy (MeV)
30-Zn-62
P11
P12
P13
P14
P15
P16
P17
P18
P19
P20

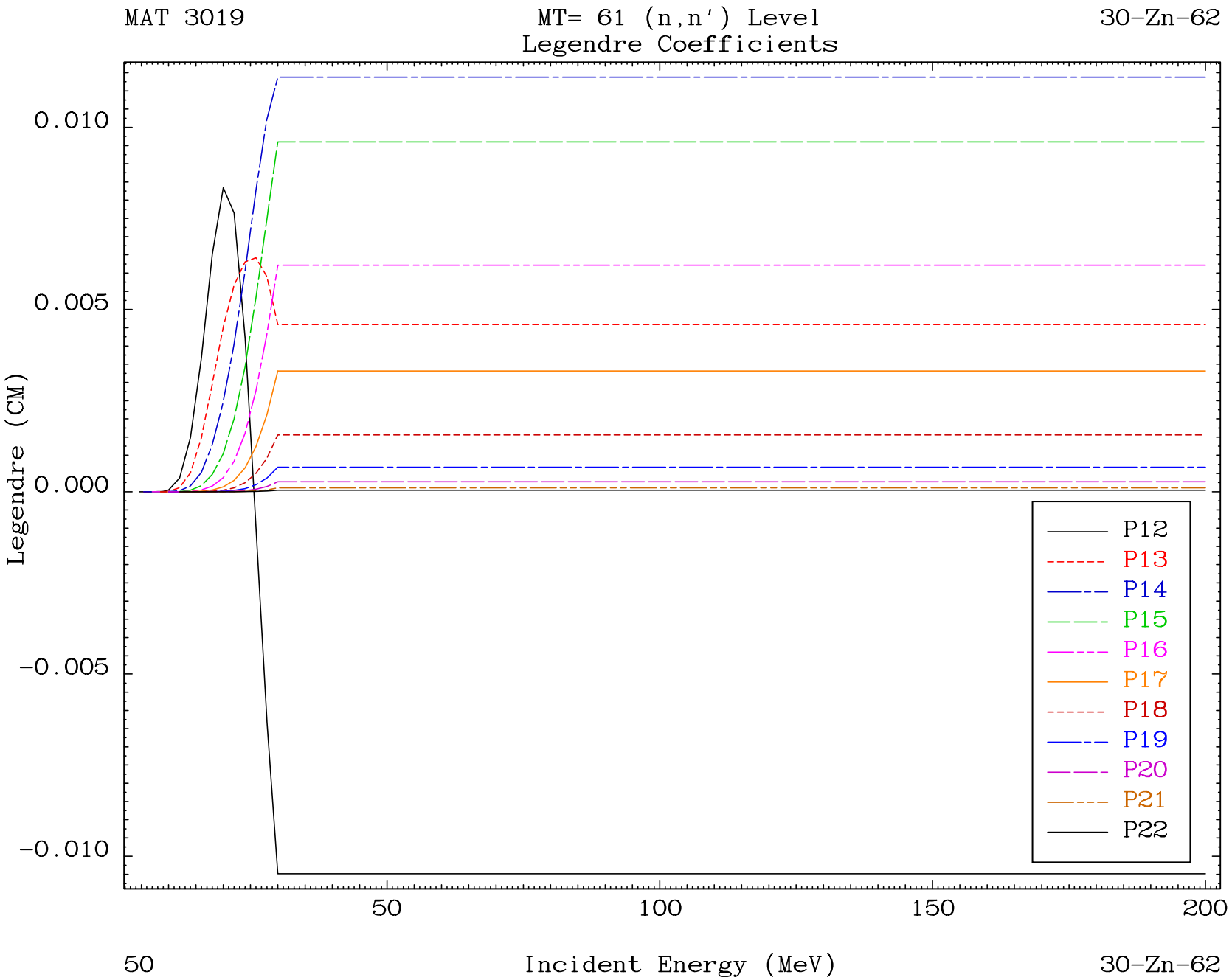

MAT 3019
MT= 59 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-2
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P21
P22
P23
P24
P25
P26
P27
P28
50
100
150
200
45
Incident Energy (MeV)
30-Zn-62

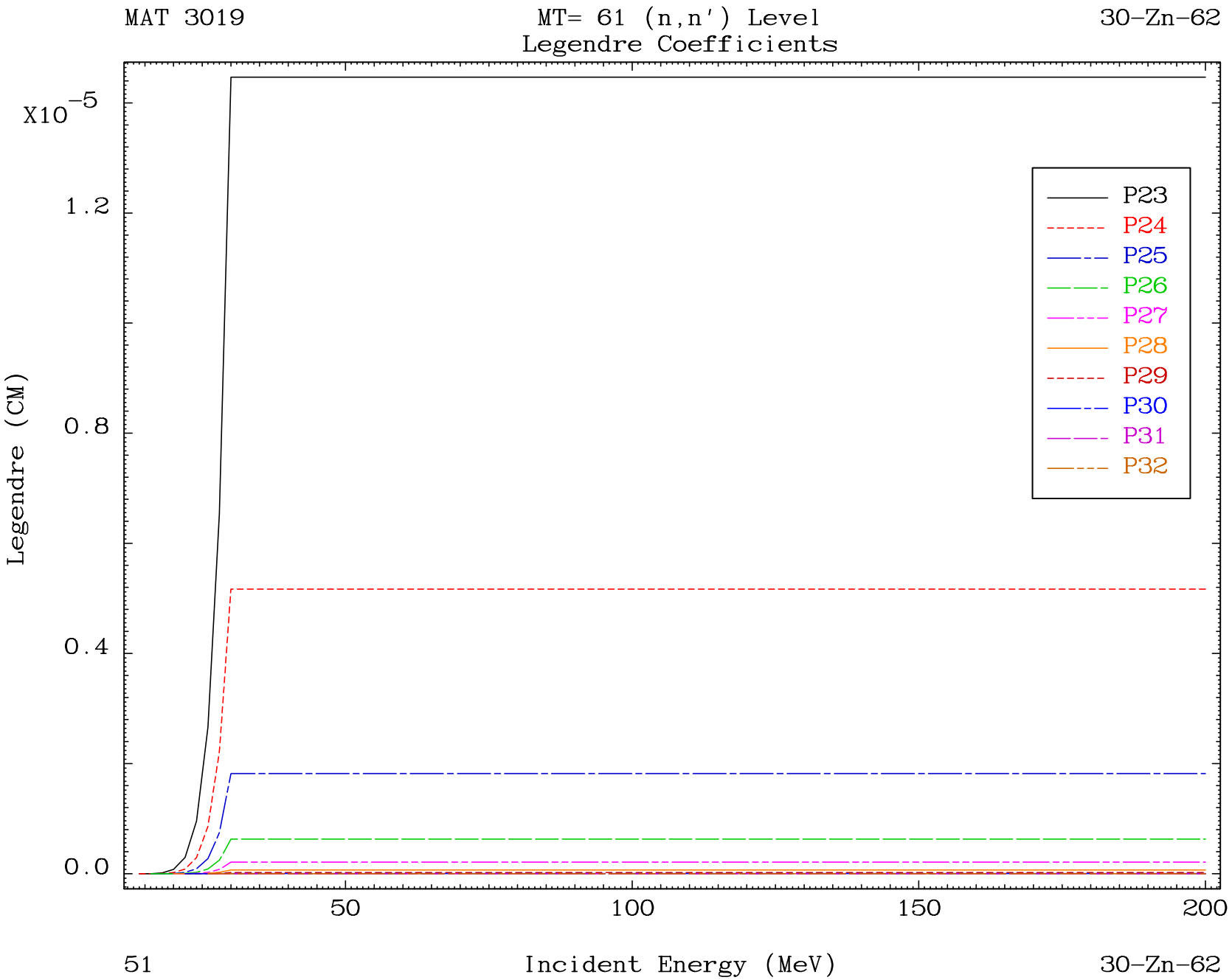

MAT 3019
MT= 60 (n,n') Level
Legendre Coefficients
30-Zn-62
0.5
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
46
Incident Energy (MeV)
30-Zn-62

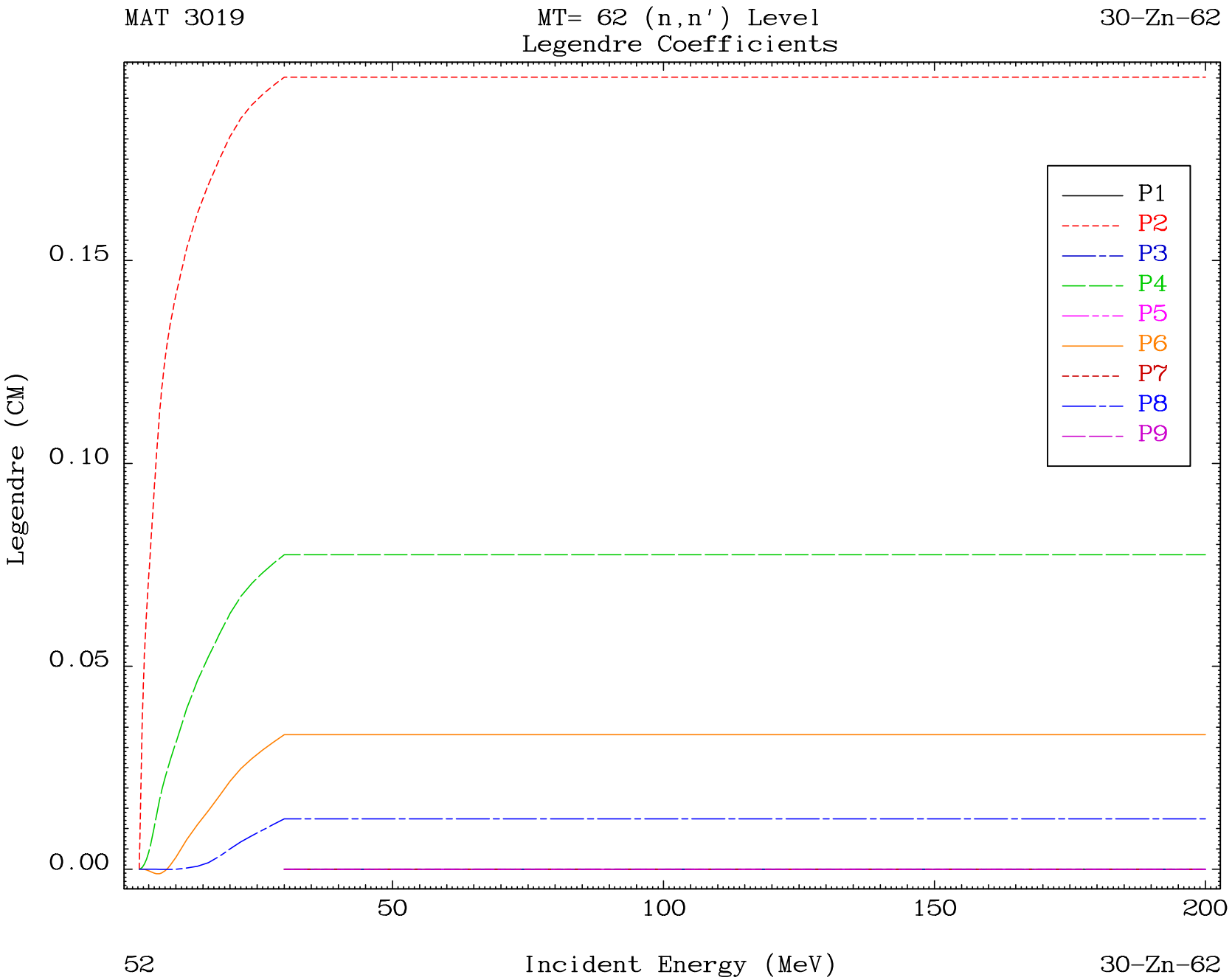

MAT 3019
MT= 60 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
50
100
150
200
47
Incident Energy (MeV)
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22

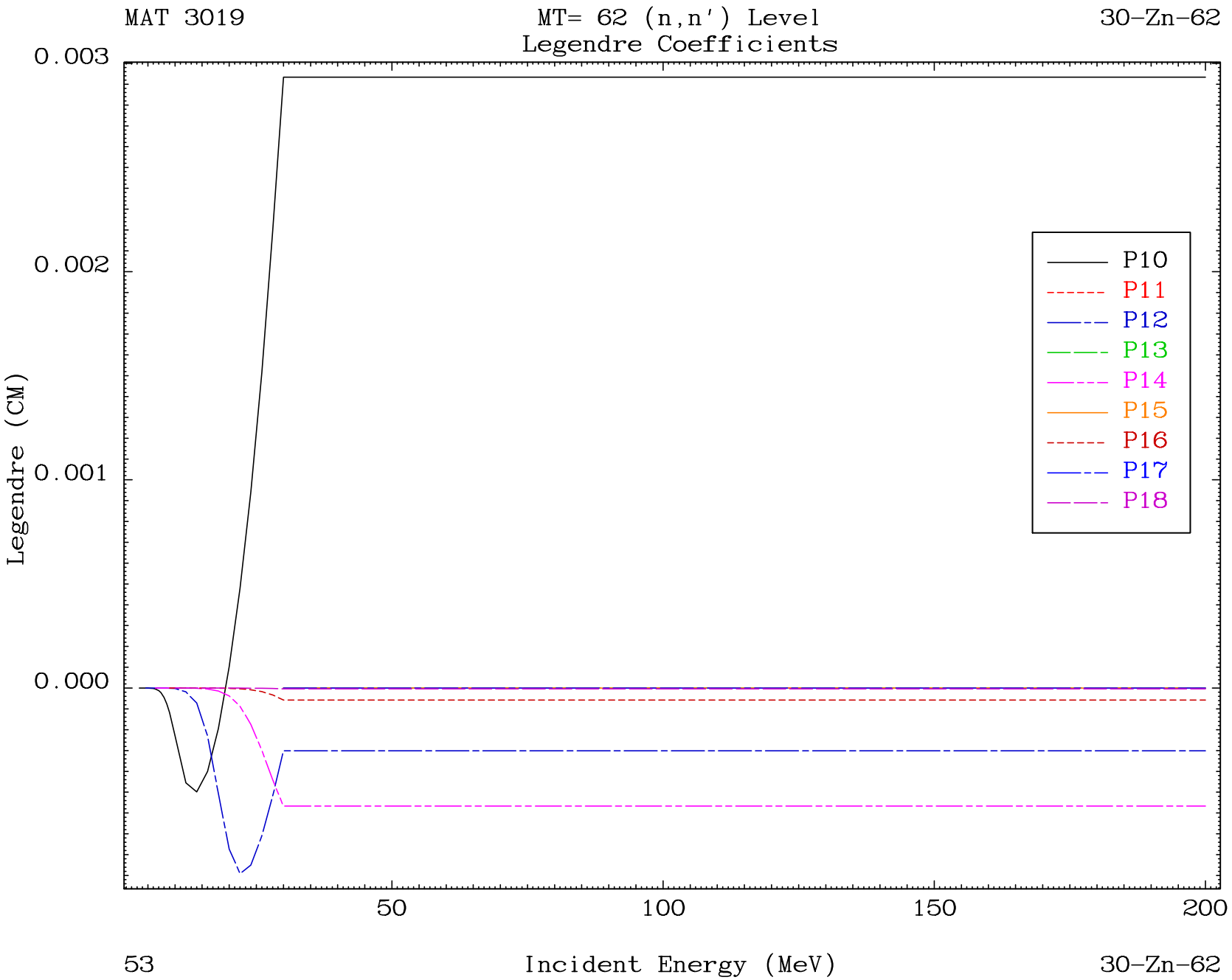

MAT 3019
MT= 60 (n,n') Level
Legendre Coefficients
30-Zn-62
1.5
X10-5
1.0
0.5
0.0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
48
Incident Energy (MeV)
30-Zn-62

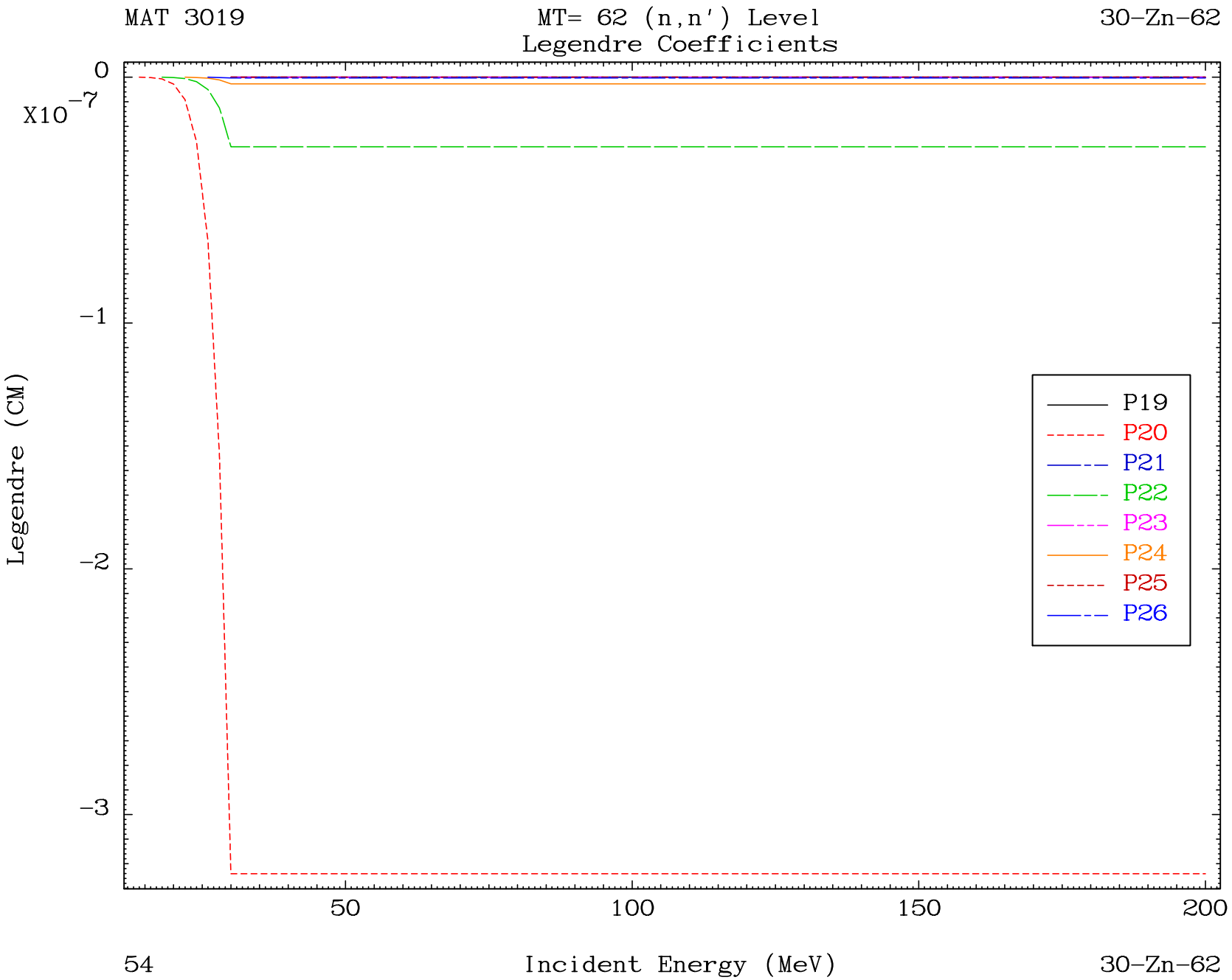

MAT 3019
MT= 61 (n,n') Level
Legendre Coefficients
30-Zn-62
0.5
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
50
100
150
200
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
49
Incident Energy (MeV)
30-Zn-62

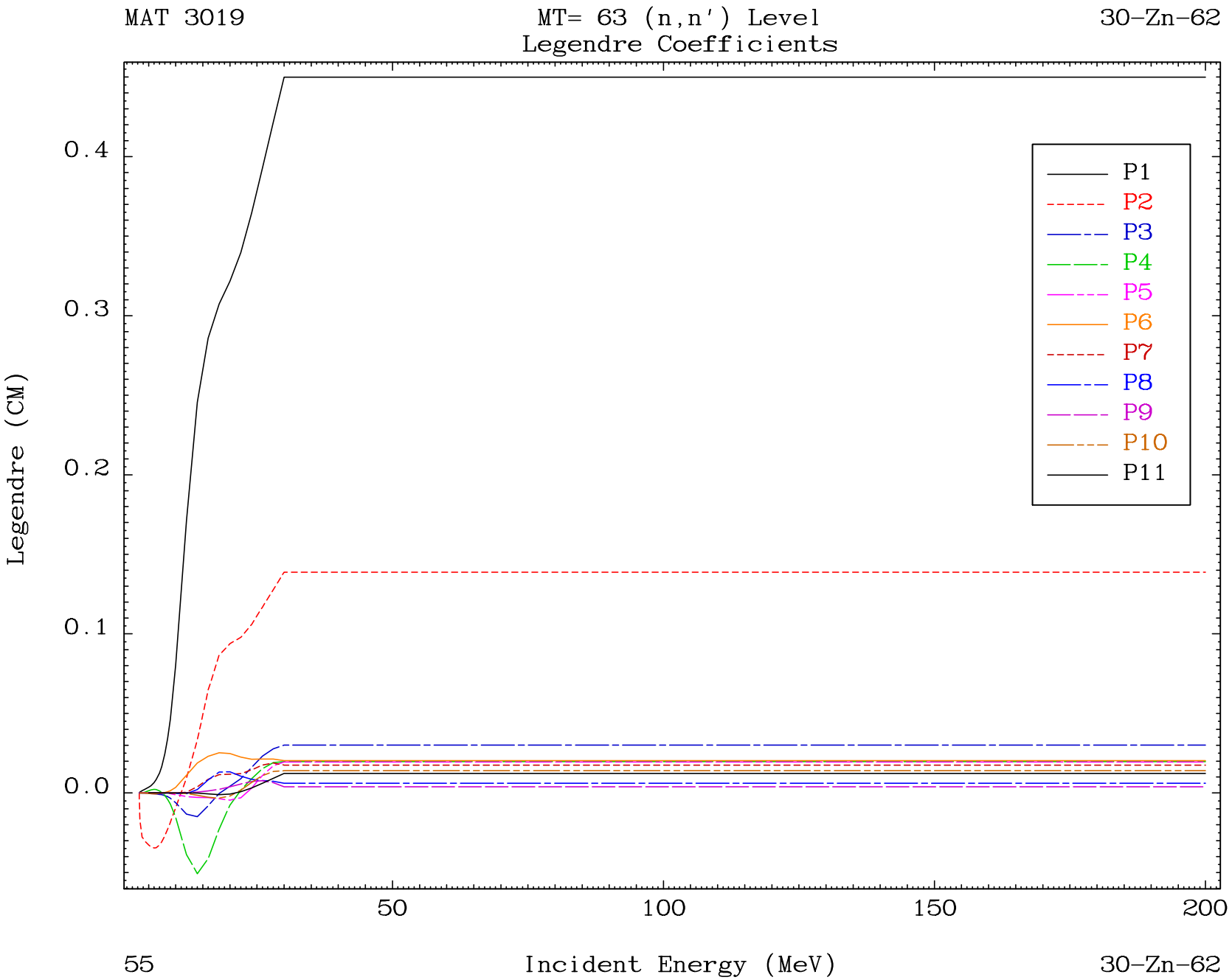

MAT 3019
MT= 61 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
50
100
150
200
50
Incident Energy (MeV)
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22

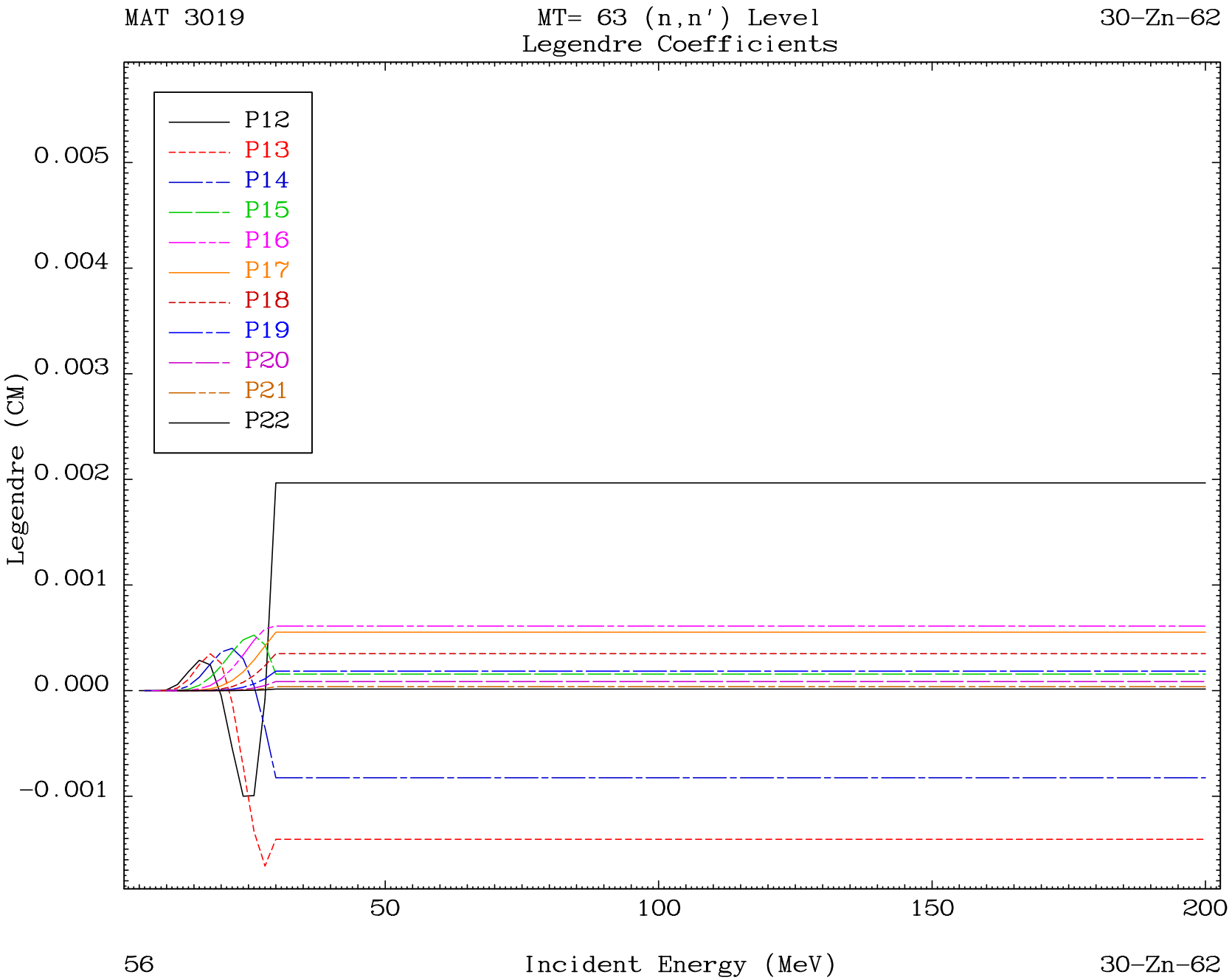

MAT 3019
MT= 61 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-5
1.2
0.8
0.4
0.0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
51
Incident Energy (MeV)
30-Zn-62

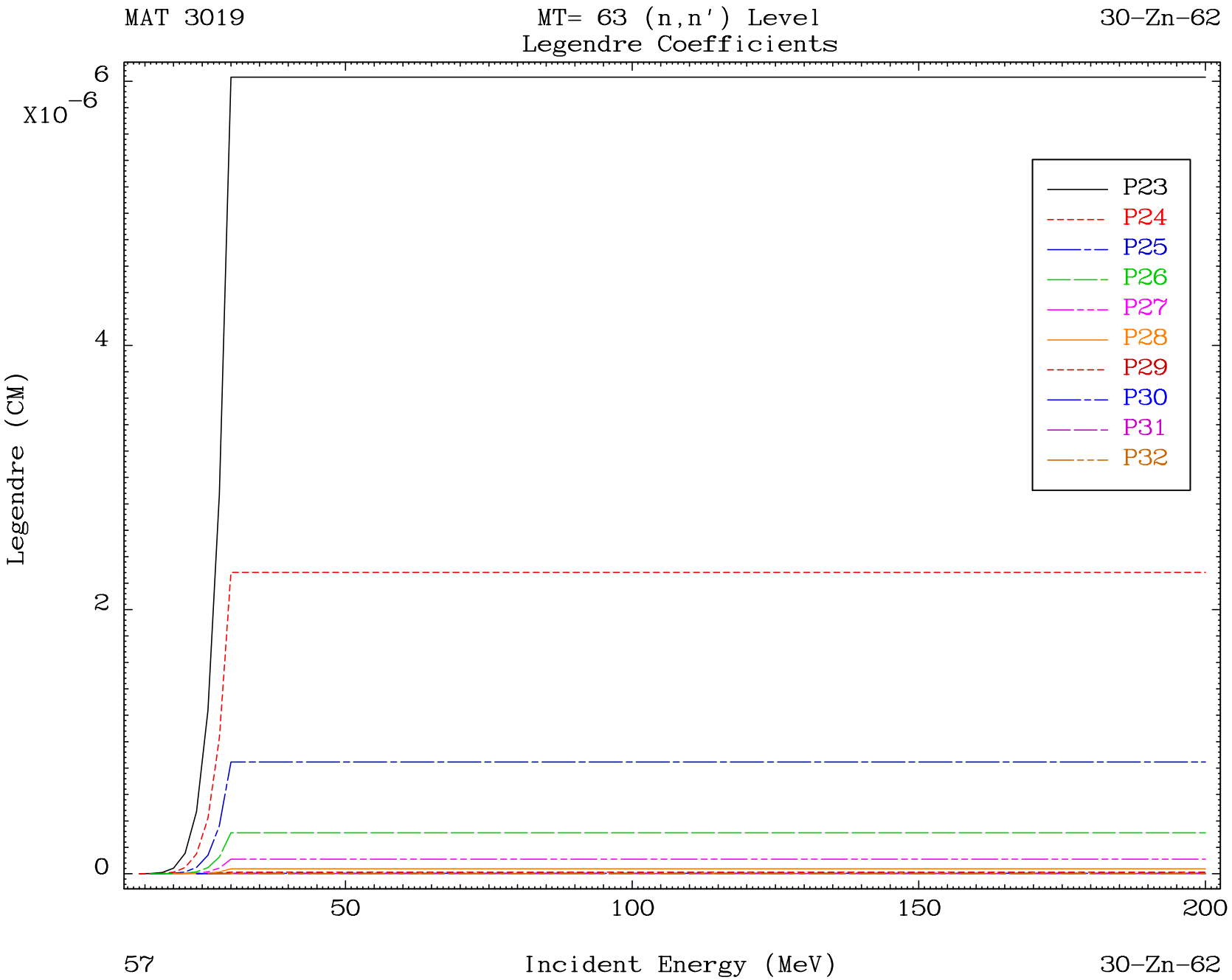

MAT 3019
MT= 62 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.15
0.10
0.05
0.00
50
100
150
200
52
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9

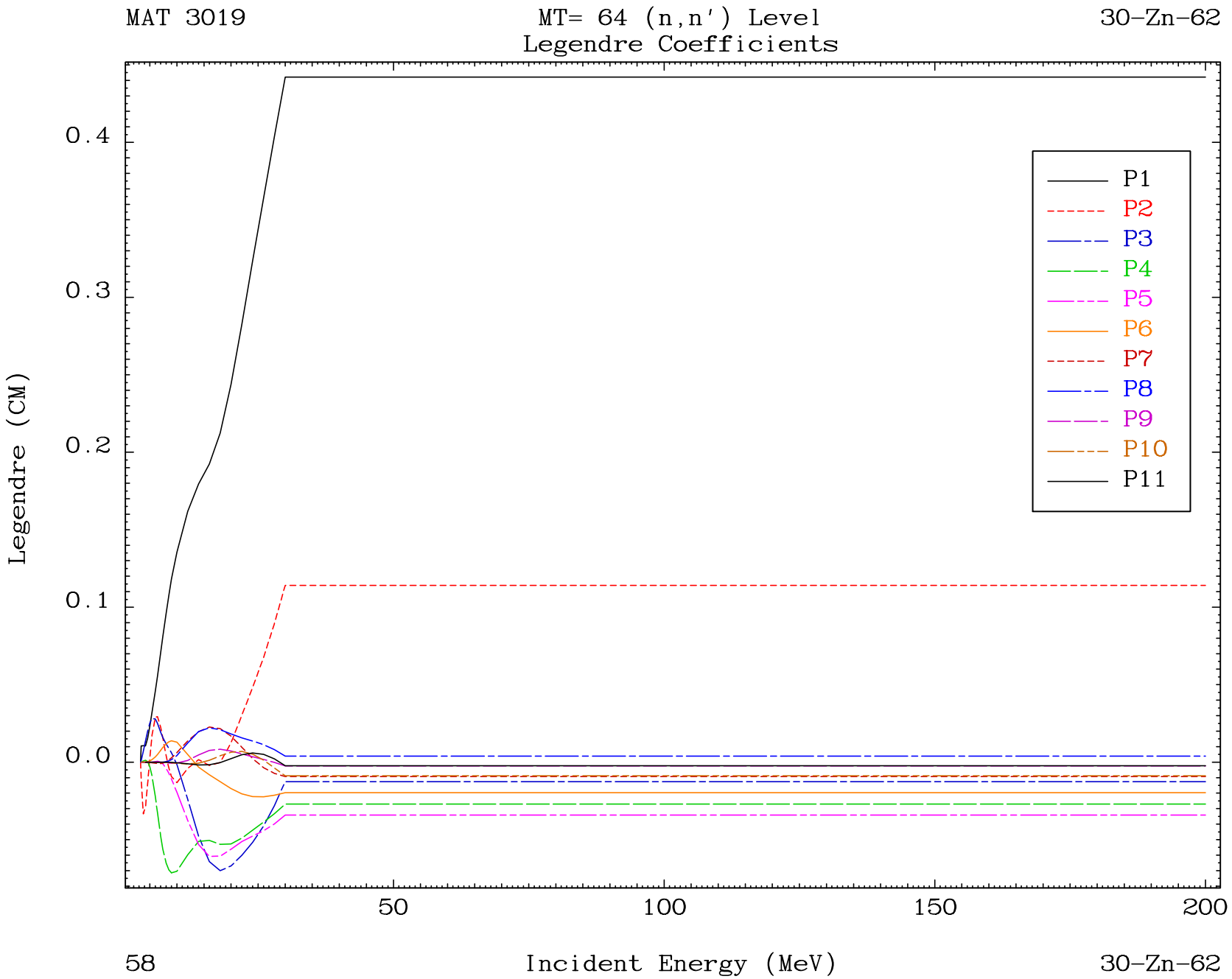

MAT 3019
MT= 62 (n,n') Level
Legendre Coefficients
30-Zn-62
0.003
0.002
0.001
0.000
Legendre (CM)
P10
P11
P12
P13
P14
P15
P16
P17
P18
50
100
150
200
53
Incident Energy (MeV)
30-Zn-62

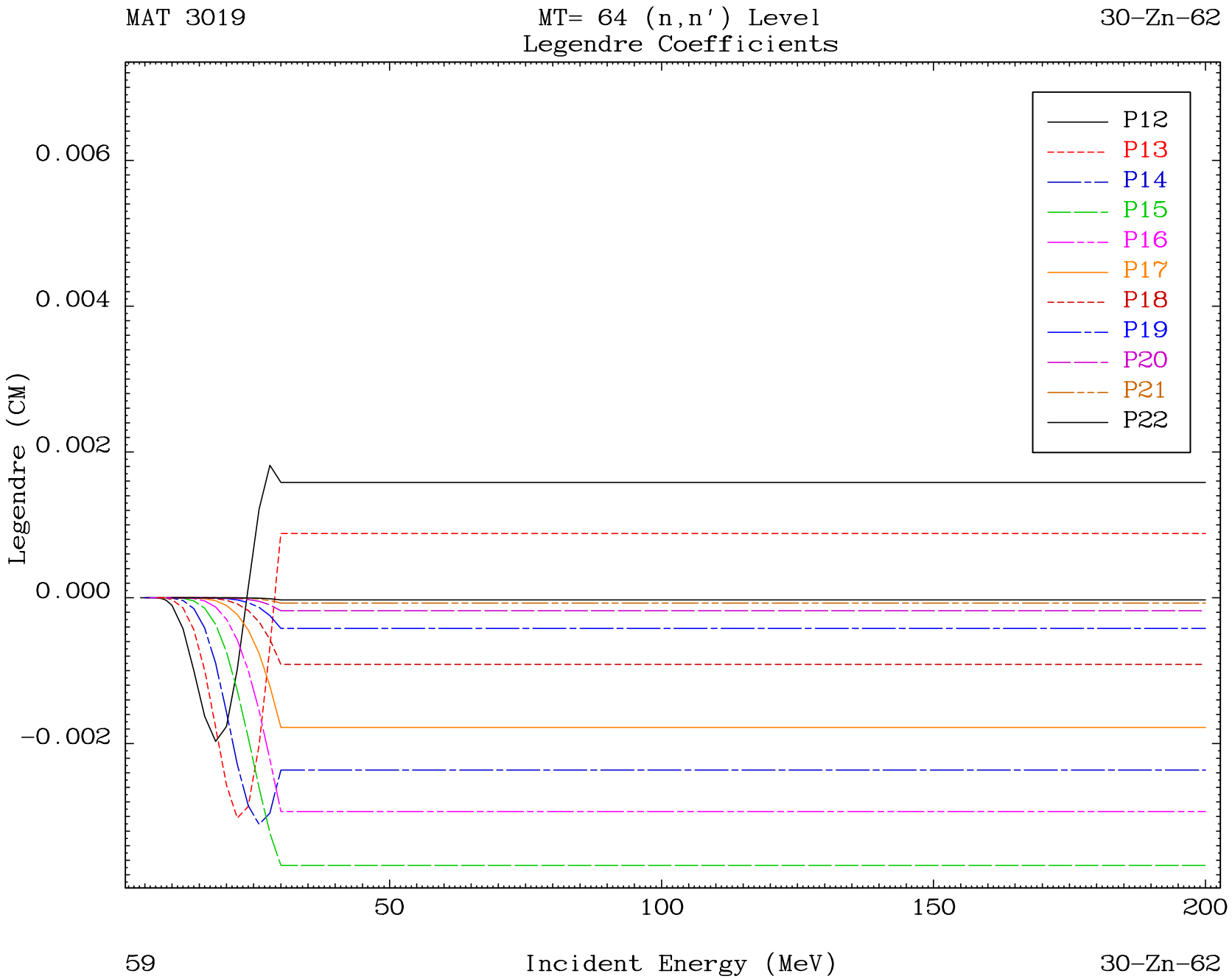

MAT 3019
MT= 62 (n,n') Level
Legendre Coefficients
30-Zn-62
0
X10-7
-1
-2
-3
Legendre (CM)
P19
P20
P21
P22
P23
P24
P25
P26
50
100
150
200
54
Incident Energy (MeV)
30-Zn-62

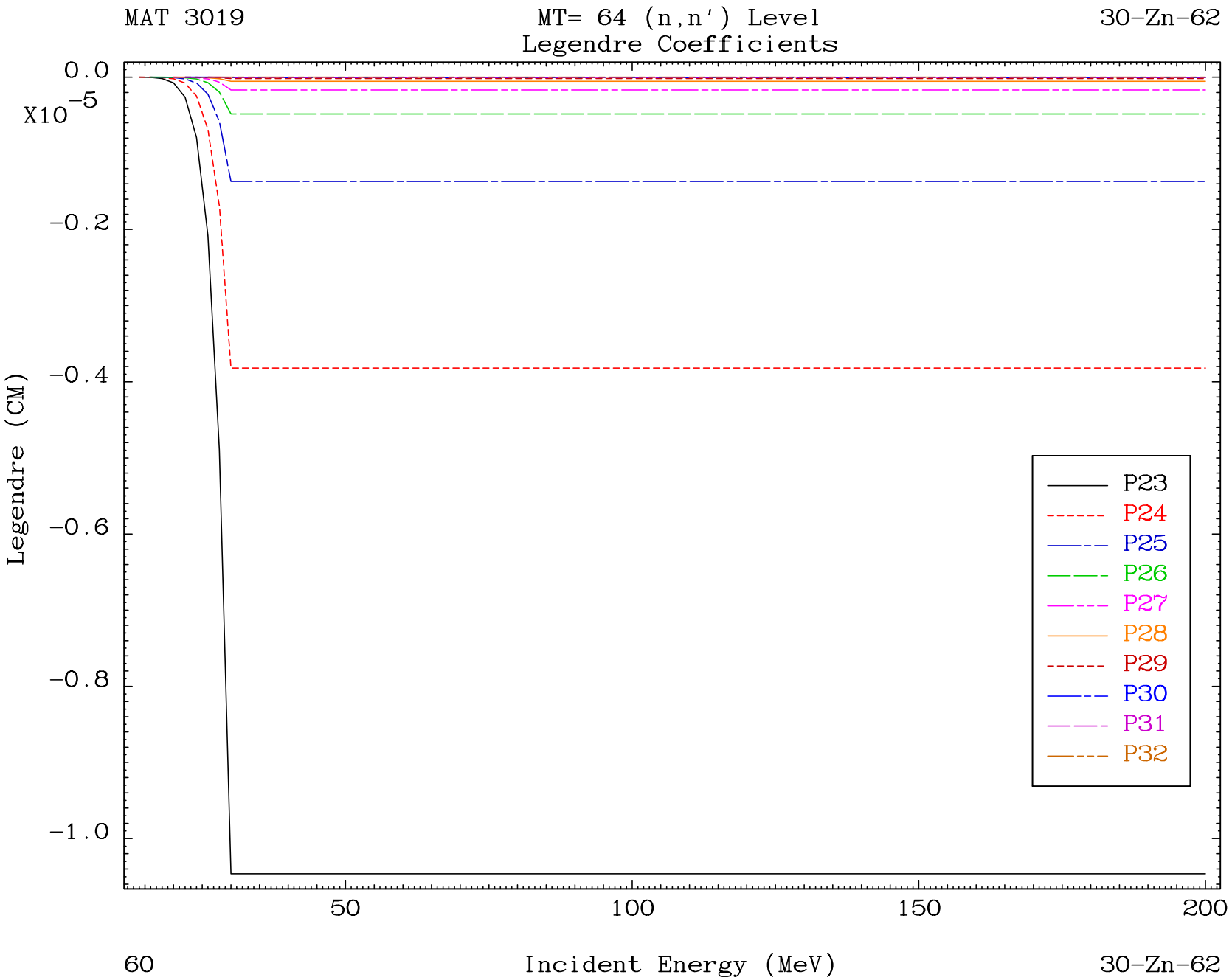

MAT 3019
MT= 63 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
50
100
150
200
55
Incident Energy (MeV)
30-Zn-62

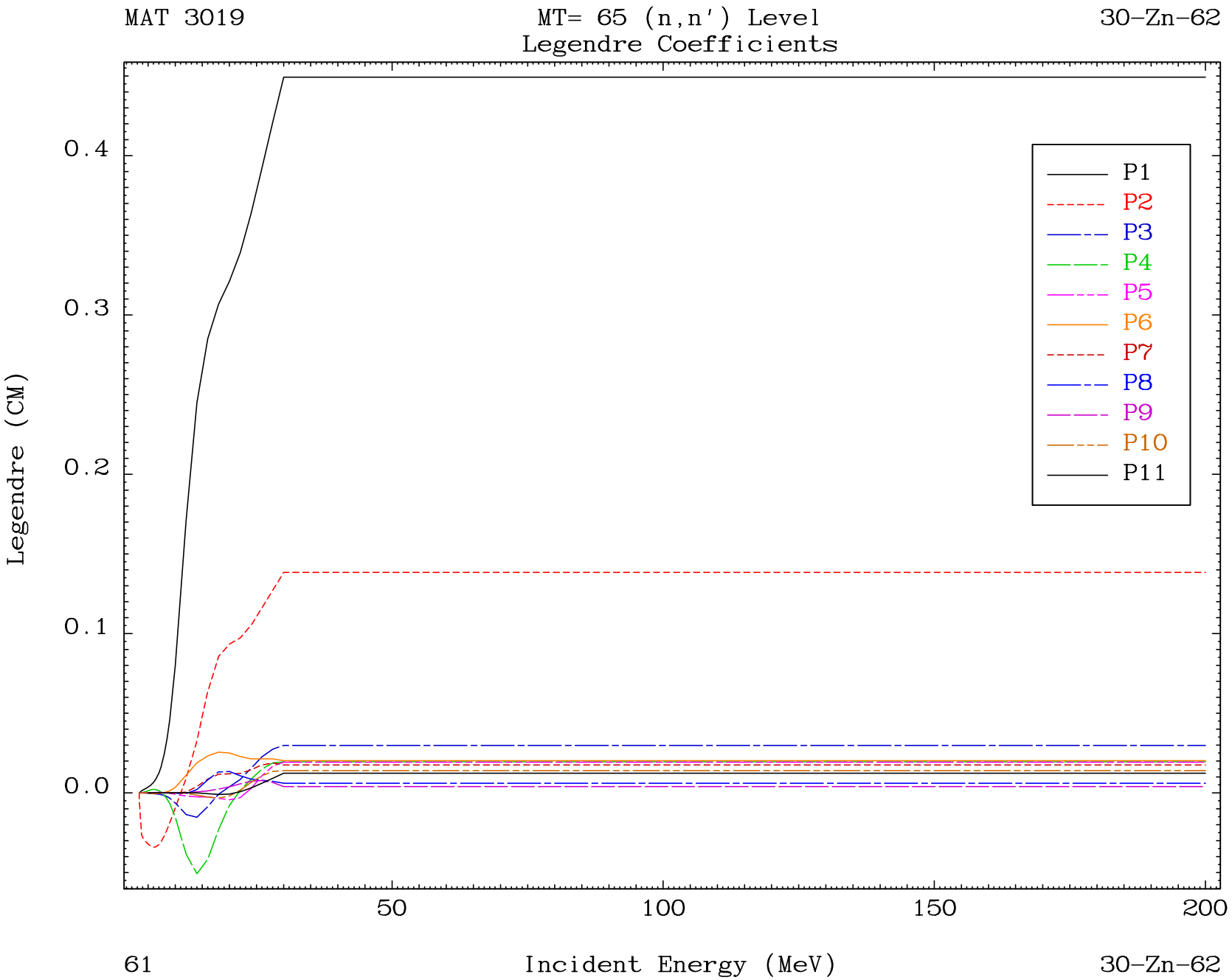

MAT 3019
MT= 63 (n,n') Level
Legendre Coefficients
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.005
0.004
0.003
0.002
0.001
0.000
-0.001
Legendre (CM)
50
100
150
200
56
Incident Energy (MeV)
30-Zn-62

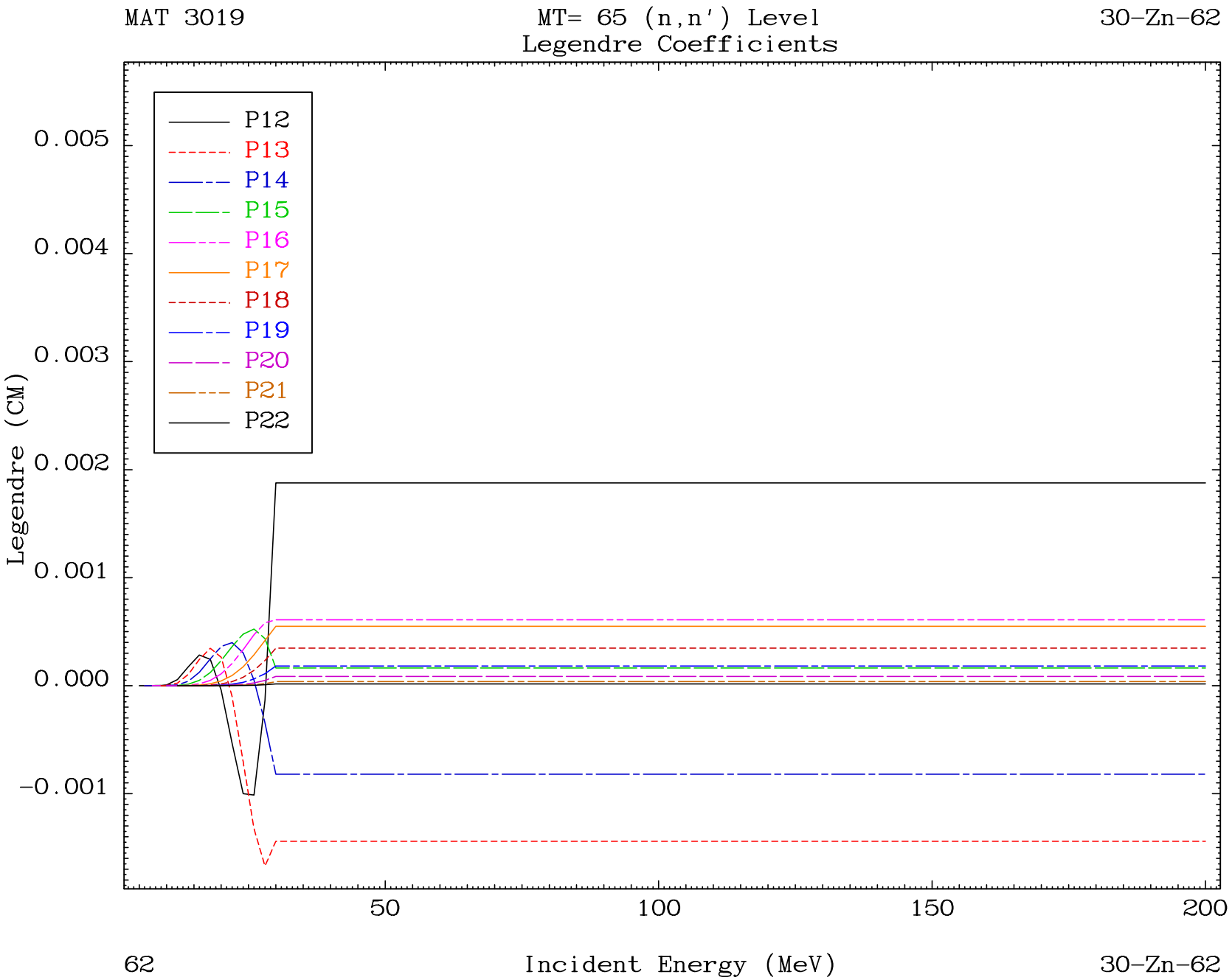

MAT 3019
MT= 63 (n,n') Level
Legendre Coefficients
30-Zn-62
X10 -6
6
4
2
0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
57
Incident Energy (MeV)
30-Zn-62

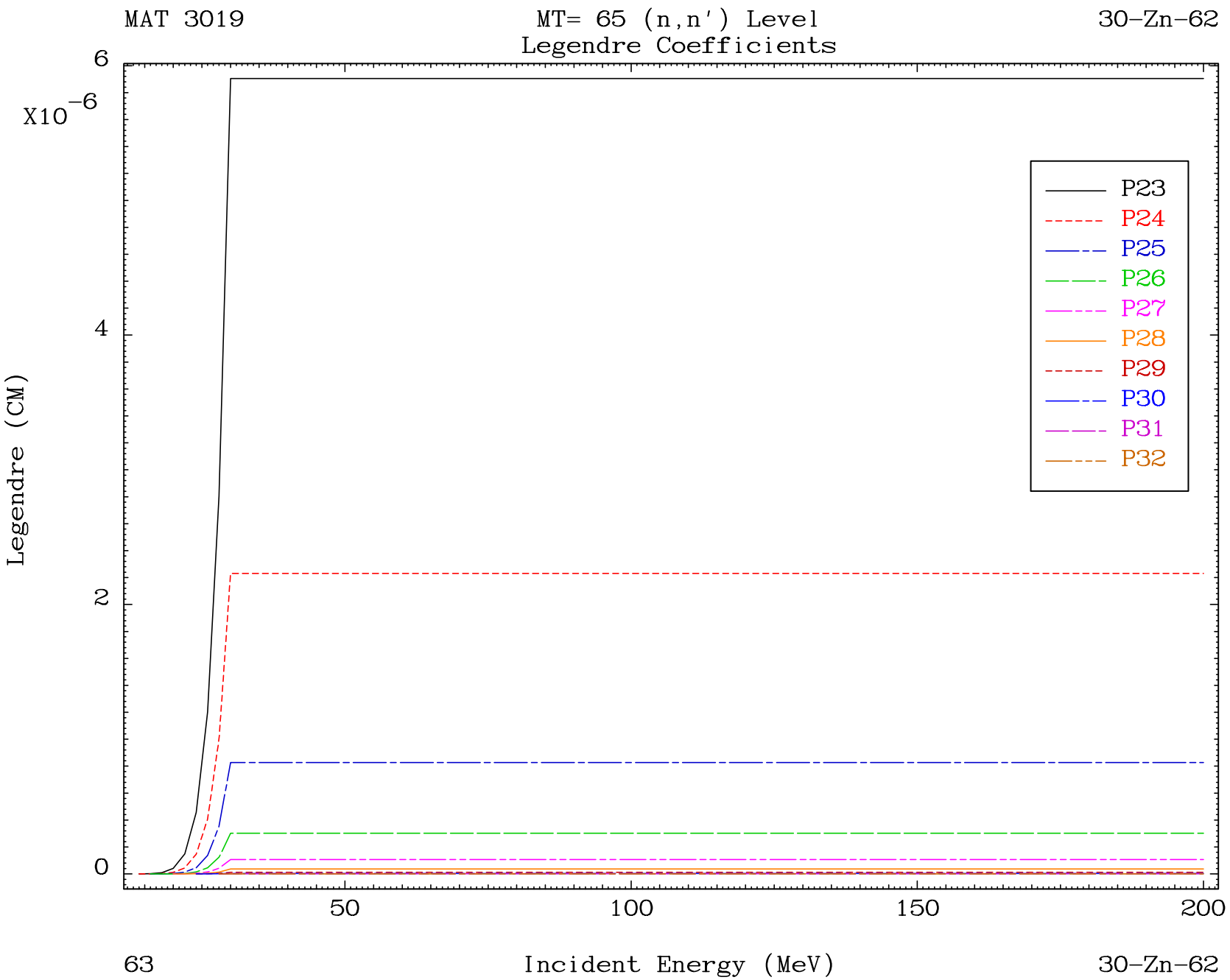

MAT 3019
MT= 64 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
50
100
150
200
58
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

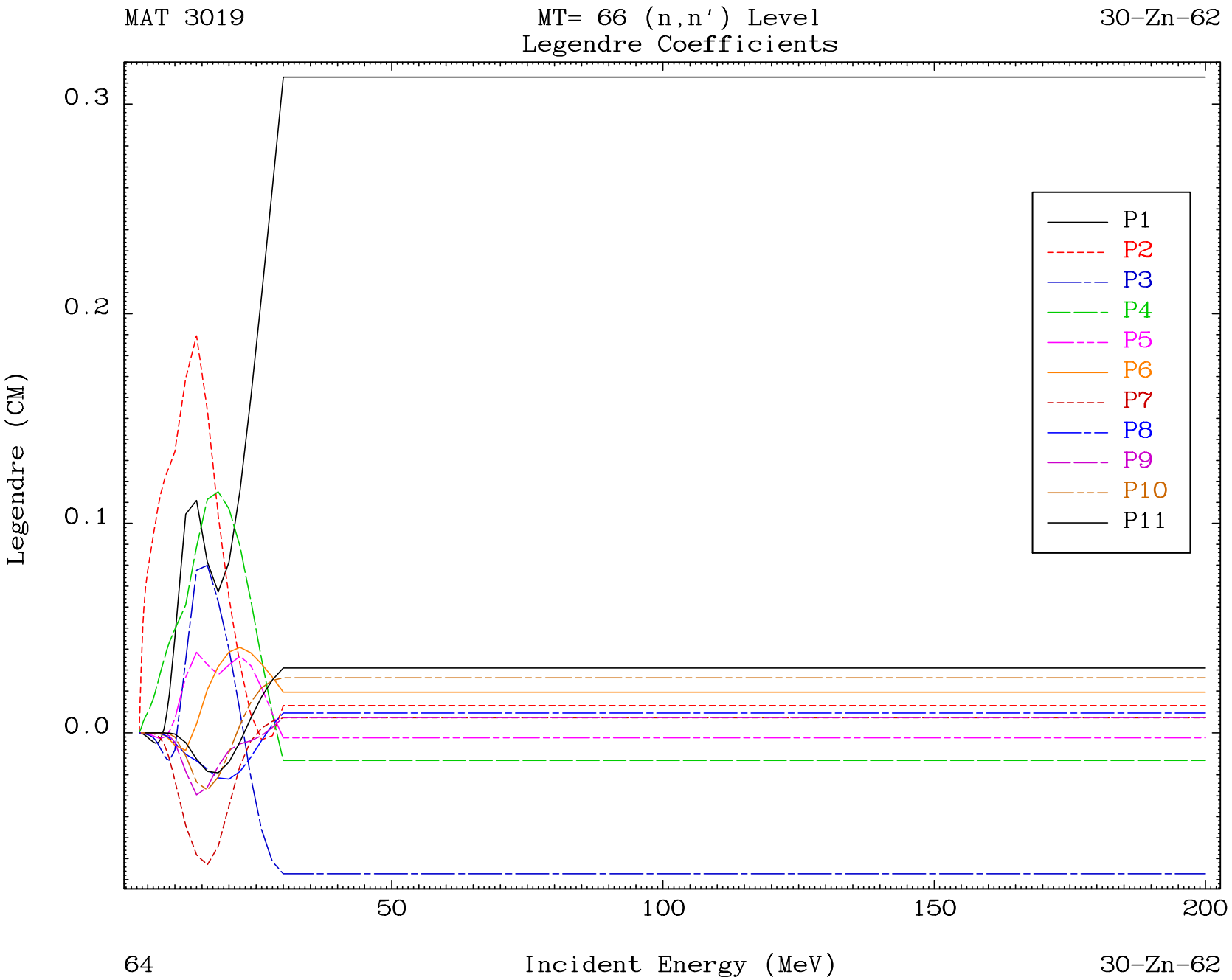

MAT 3019
MT= 64 (n,n') Level
Legendre Coefficients
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.006
0.004
0.002
0.000
-0.002
Legendre (CM)
50
100
150
200
59
Incident Energy (MeV)
30-Zn-62

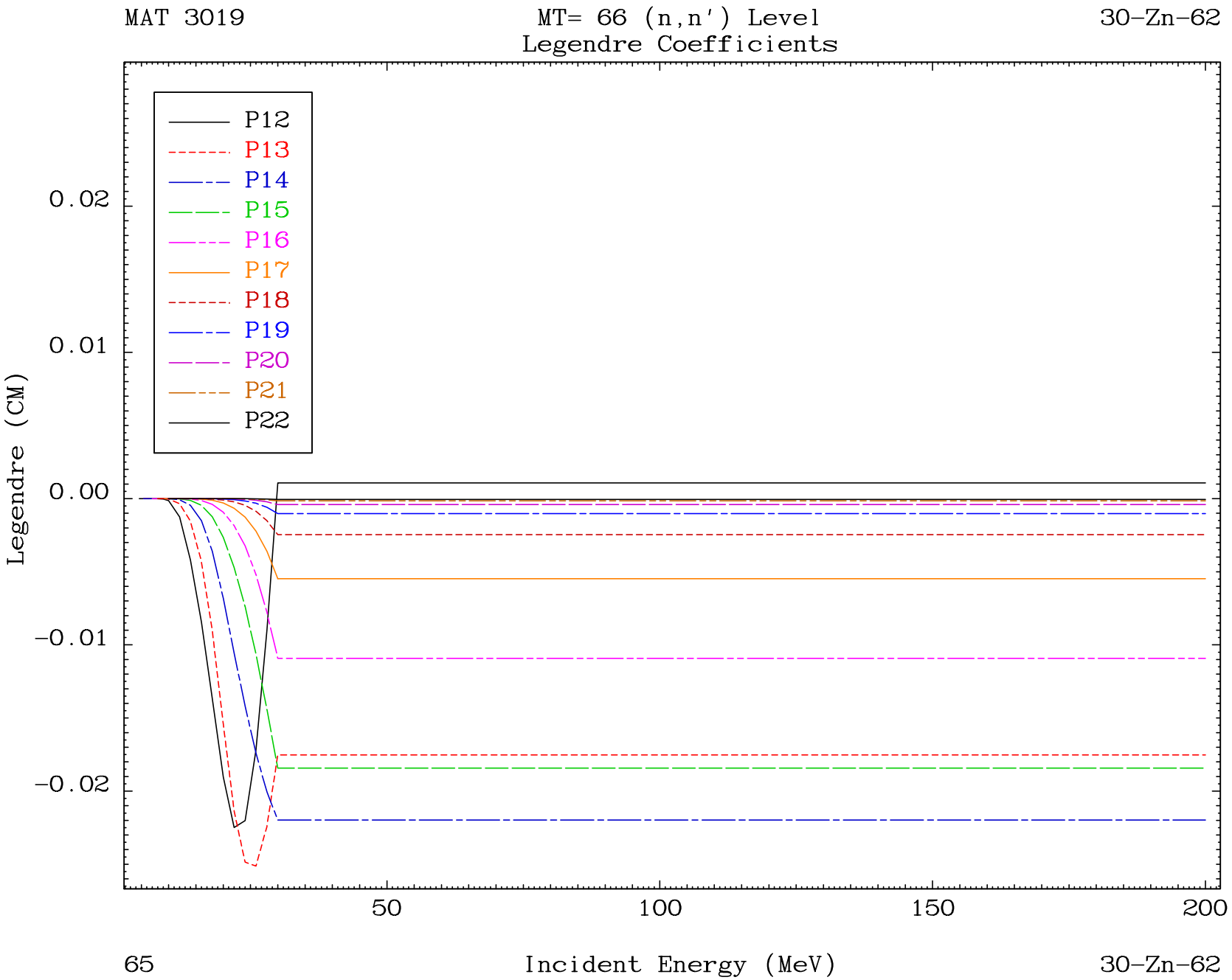

MAT 3019
MT= 64 (n,n') Level
Legendre Coefficients
30-Zn-62
0.0
X10^-5
-0.2
-0.4
-0.6
-0.8
-1.0
Legendre (CM)
50
100
150
200
60
Incident Energy (MeV)
30-Zn-62
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32

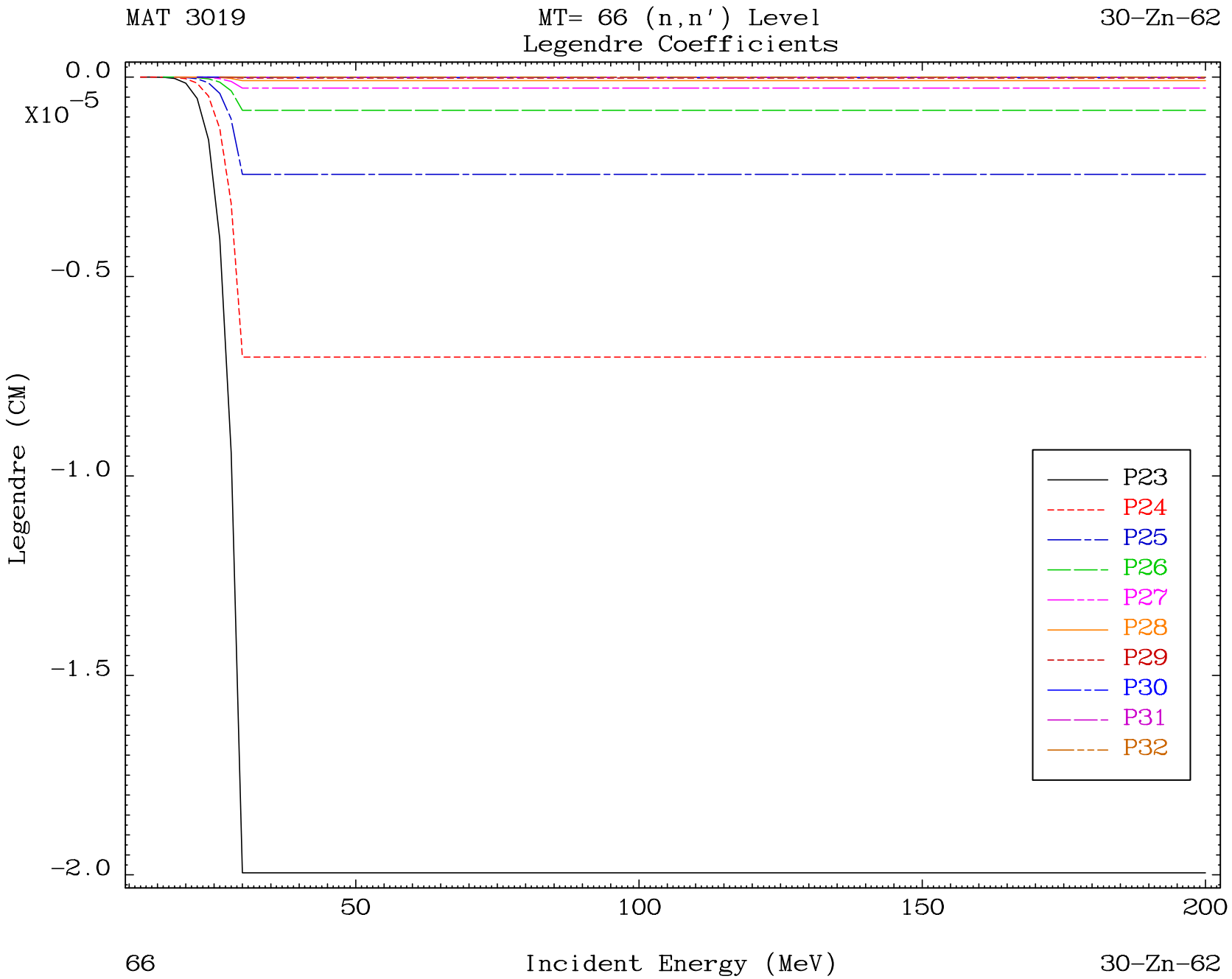

MAT 3019
MT= 65 (n,n') Level
Legendre Coefficients
30-Zn-62
Legendre (CM)
0.4
0.3
0.2
0.1
0.0
50
100
150
200
Incident Energy (MeV)
61
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

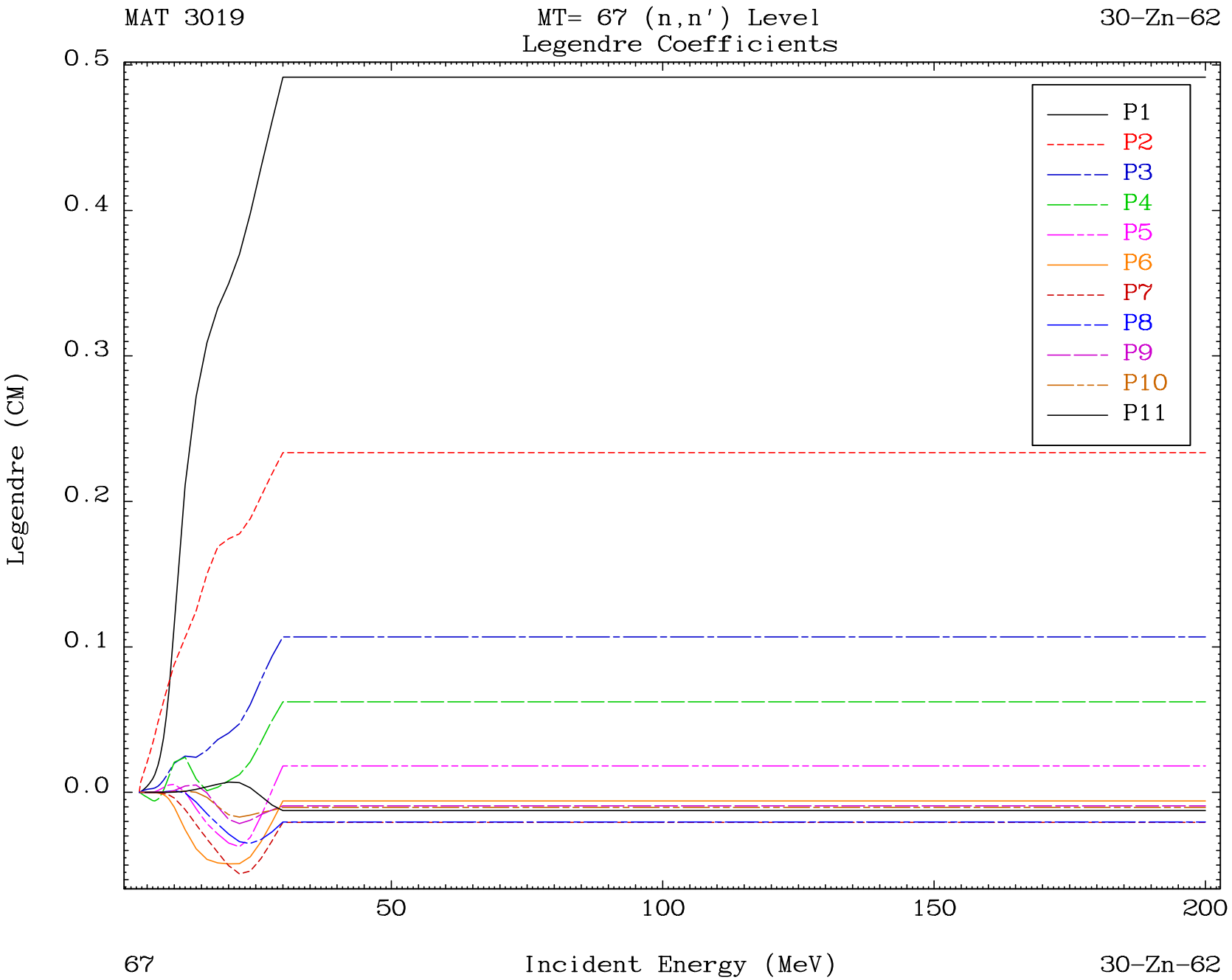

MAT 3019
MT= 65 (n,n') Level
Legendre Coefficients
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.005
0.004
0.003
0.002
0.001
0.000
-0.001
Legendre (CM)
50
100
150
200
62
Incident Energy (MeV)
30-Zn-62

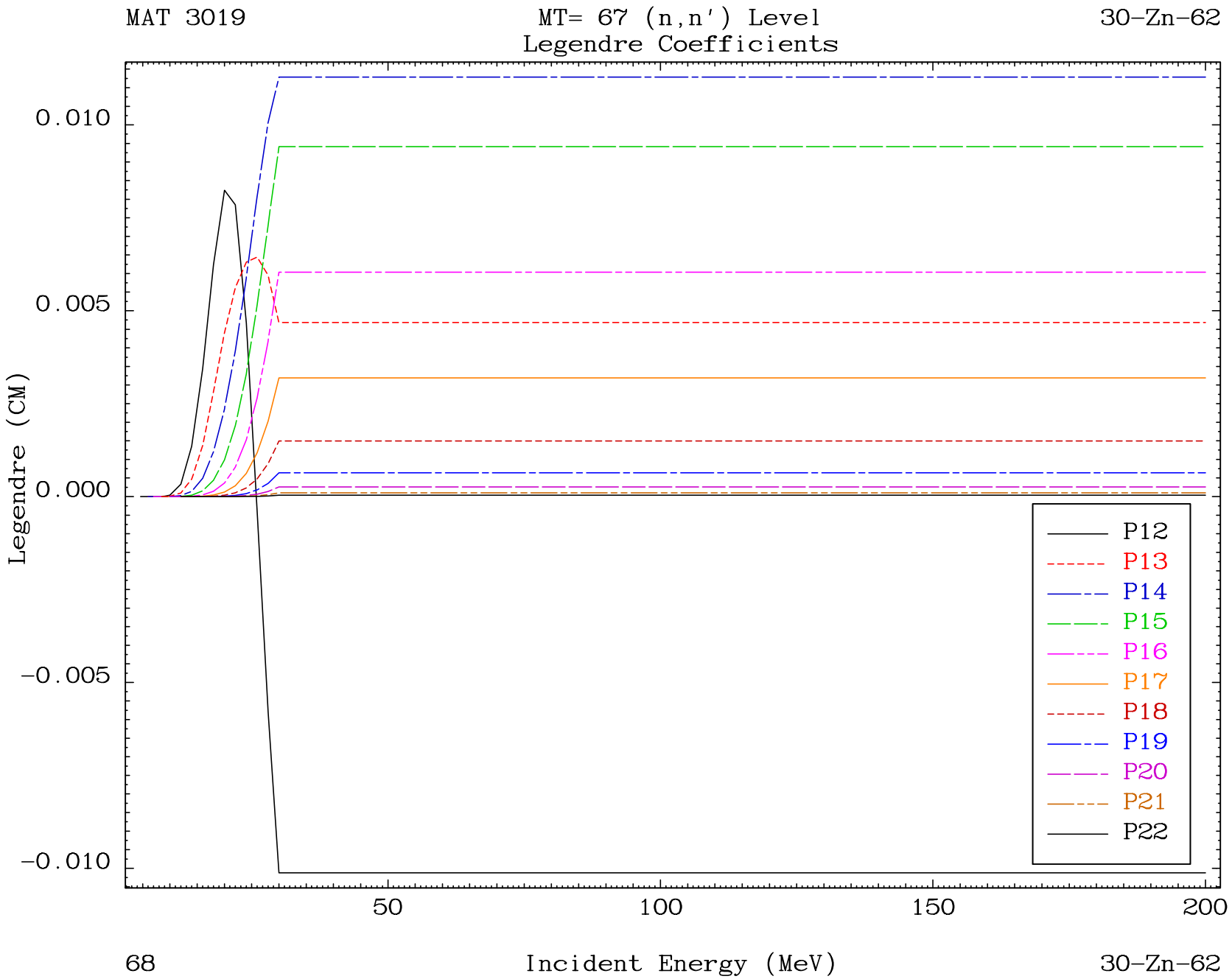

MAT 3019
MT= 65 (n,n') Level
Legendre Coefficients
30-Zn-62
X10^-6
6
4
2
0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
63
Incident Energy (MeV)
30-Zn-62

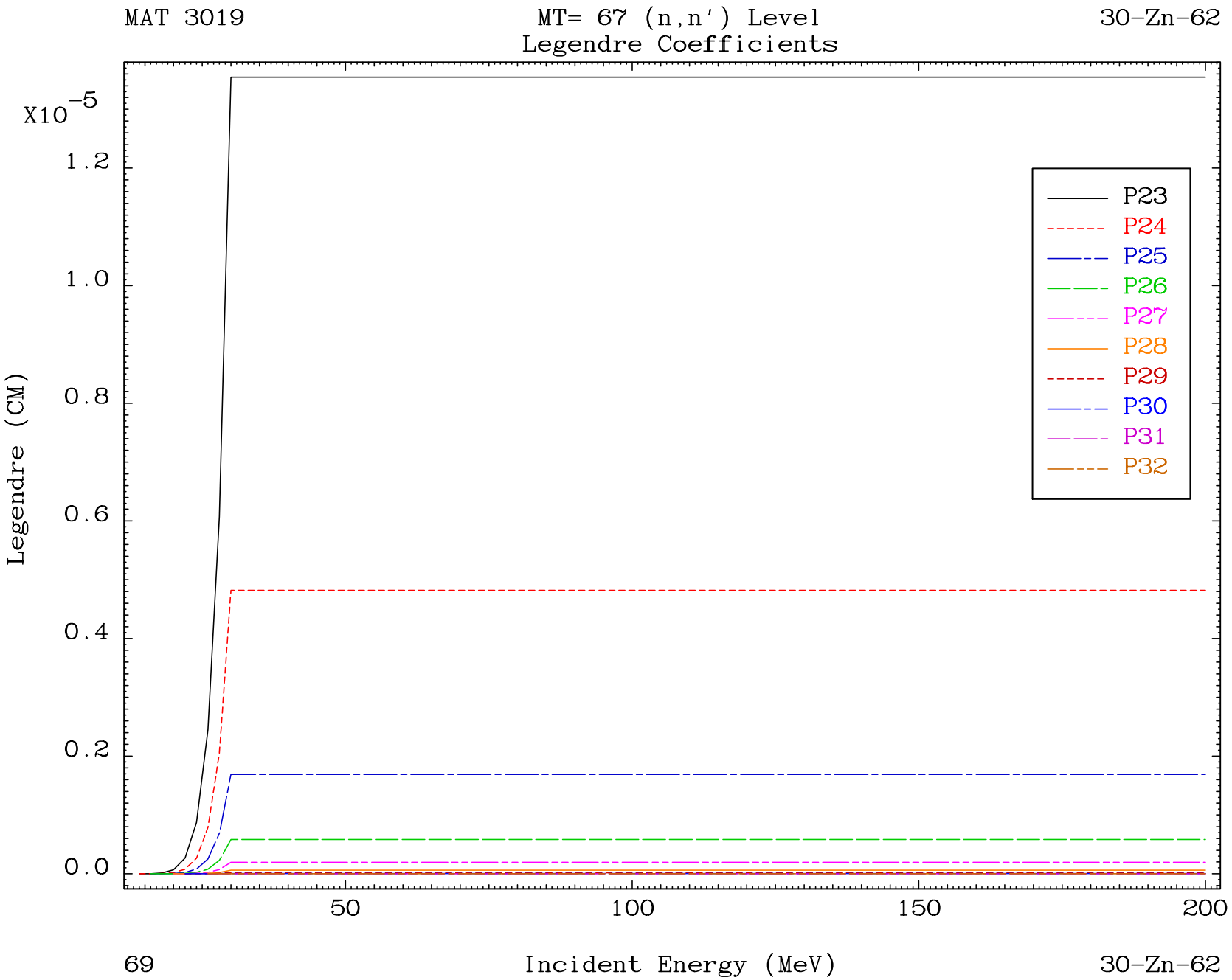

MAT 3019
MT= 66 (n,n') Level
Legendre Coefficients
30-Zn-62
0.3
0.2
0.1
0.0
Legendre (CM)
50
100
150
200
64
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11

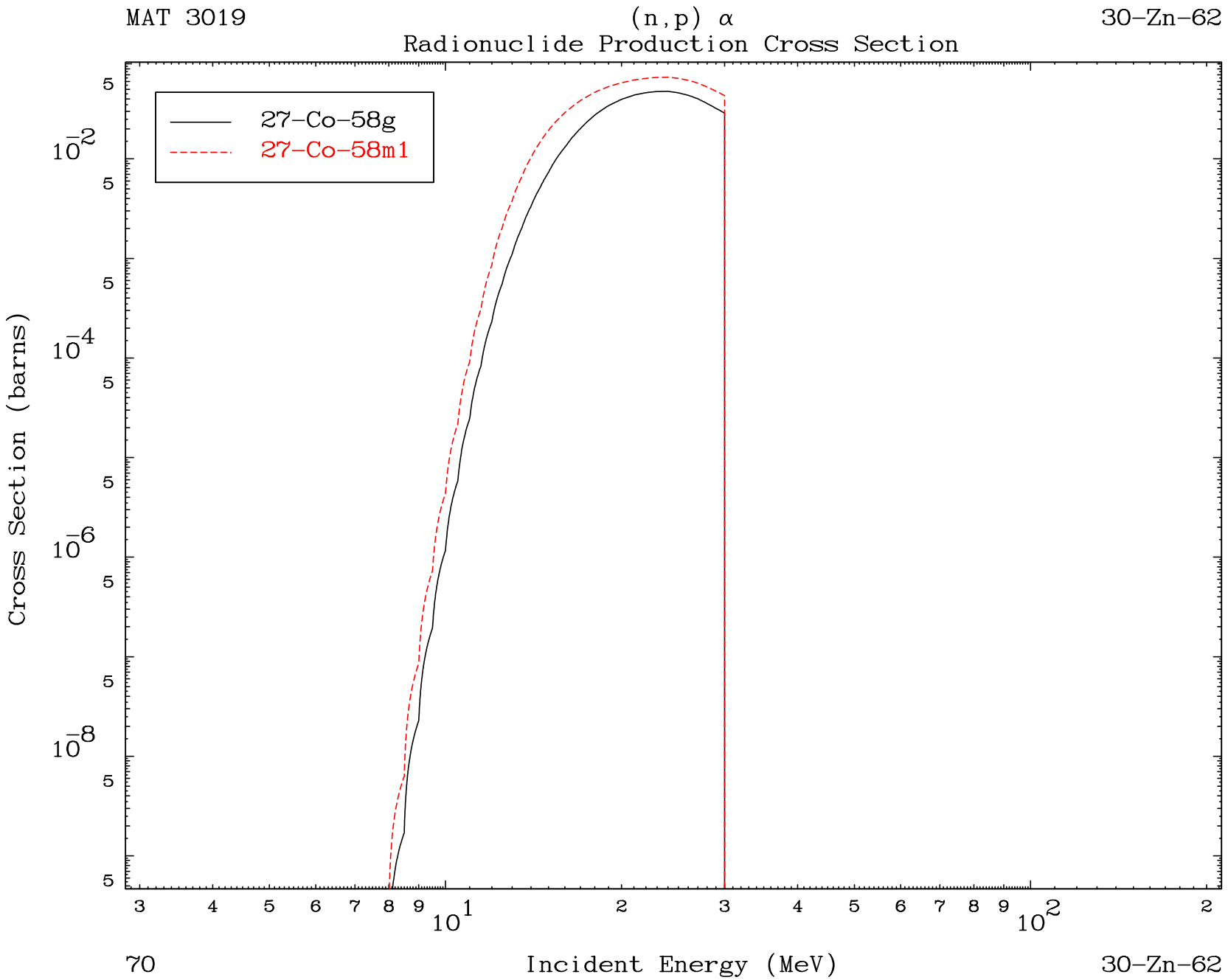

MAT 3019
MT= 66 (n,n') Level
Legendre Coefficients
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
0.02
0.01
0.00
-0.01
-0.02
Legendre (CM)
50
100
150
200
65
Incident Energy (MeV)
30-Zn-62


MAT 3019
MT= 66 (n,n') Level
Legendre Coefficients
30-Zn-62
0.0
X10^-5
-0.5
-1.0
-1.5
-2.0
Legendre (CM)
50
100
150
200
66
Incident Energy (MeV)
30-Zn-62
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32


MAT 3019
MT= 67 (n,n') Level
Legendre Coefficients
30-Zn-62
0.5
0.4
0.3
0.2
0.1
0.0
Legendre (CM)
50
100
150
200
67
Incident Energy (MeV)
30-Zn-62
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11


MAT 3019
MT= 67 (n,n') Level
Legendre Coefficients
30-Zn-62
0.010
0.005
0.000
-0.005
-0.010
Legendre (CM)
50
100
150
200
68
Incident Energy (MeV)
30-Zn-62
P12
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22


MAT 3019
MT= 67 (n,n') Level
Legendre Coefficients
30-Zn-62
X10-5
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Legendre (CM)
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
50
100
150
200
69
Incident Energy (MeV)
30-Zn-62


MAT 3019
(n,p) α
30-Zn-62
Radionuclide Production Cross Section
27-Co-58g
27-Co-58m1
Cross Section (barns)
Incident Energy (MeV)
70
30-Zn-62