

Program EVALPLOT  
(Version 2018-1)

by

Dermott E. Cullen  
(Present Contact Information)

Dermott E. Cullen  
1466 Hudson Way  
Livermore, CA 94550  
U.S.A.

Tele: 925-443-1911

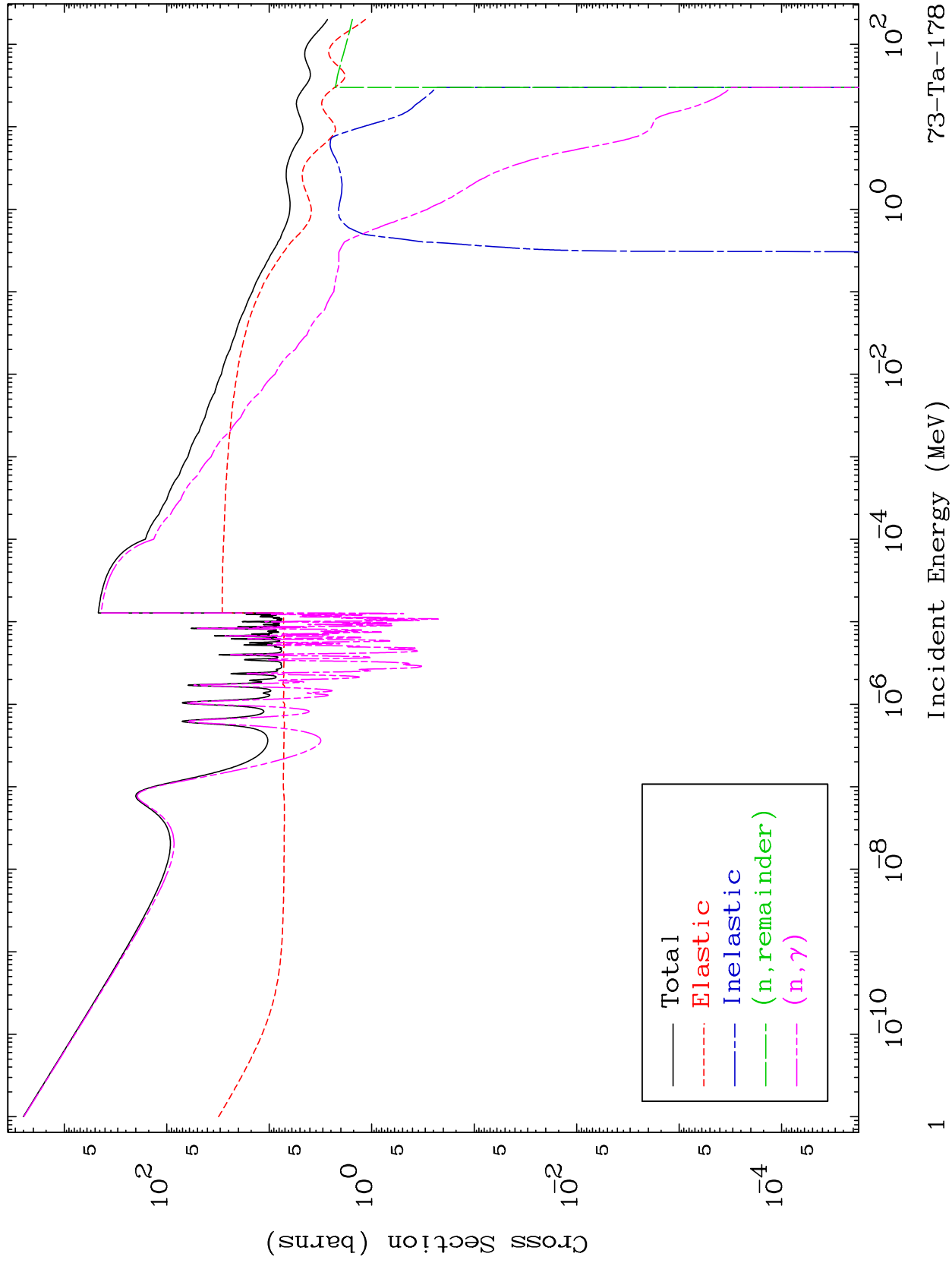
E.Mail:redcullen1@comcast.net  
Web:redcullen1.net/HOMEPAGE.NEW

Press Mouse Button to Start

MAT 7319

Major  
293 Kelvin Cross Sections

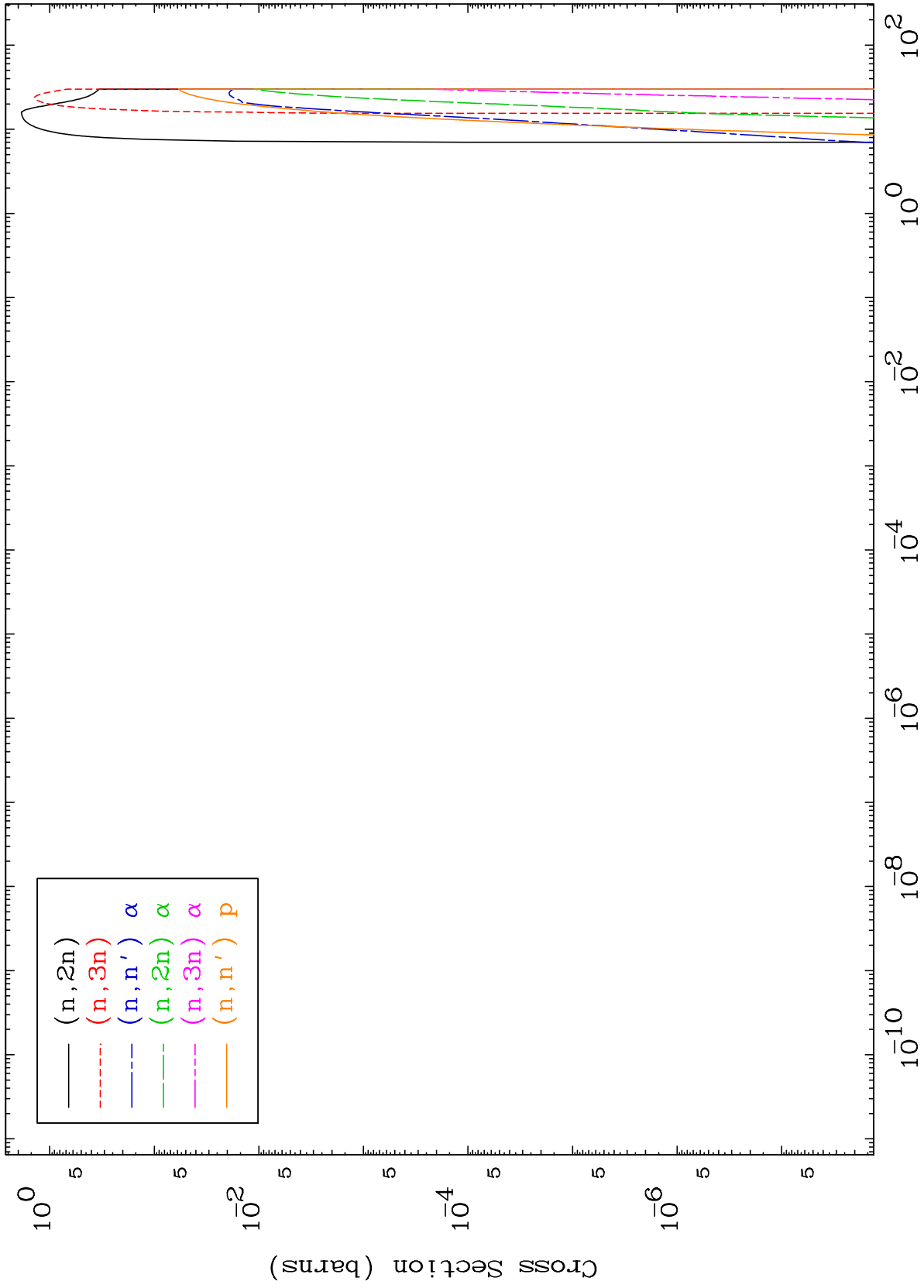
73-Ta-178



MAT 7319

Neutron Production  
293 Kelvin Cross Sections

73-Ta-178



2

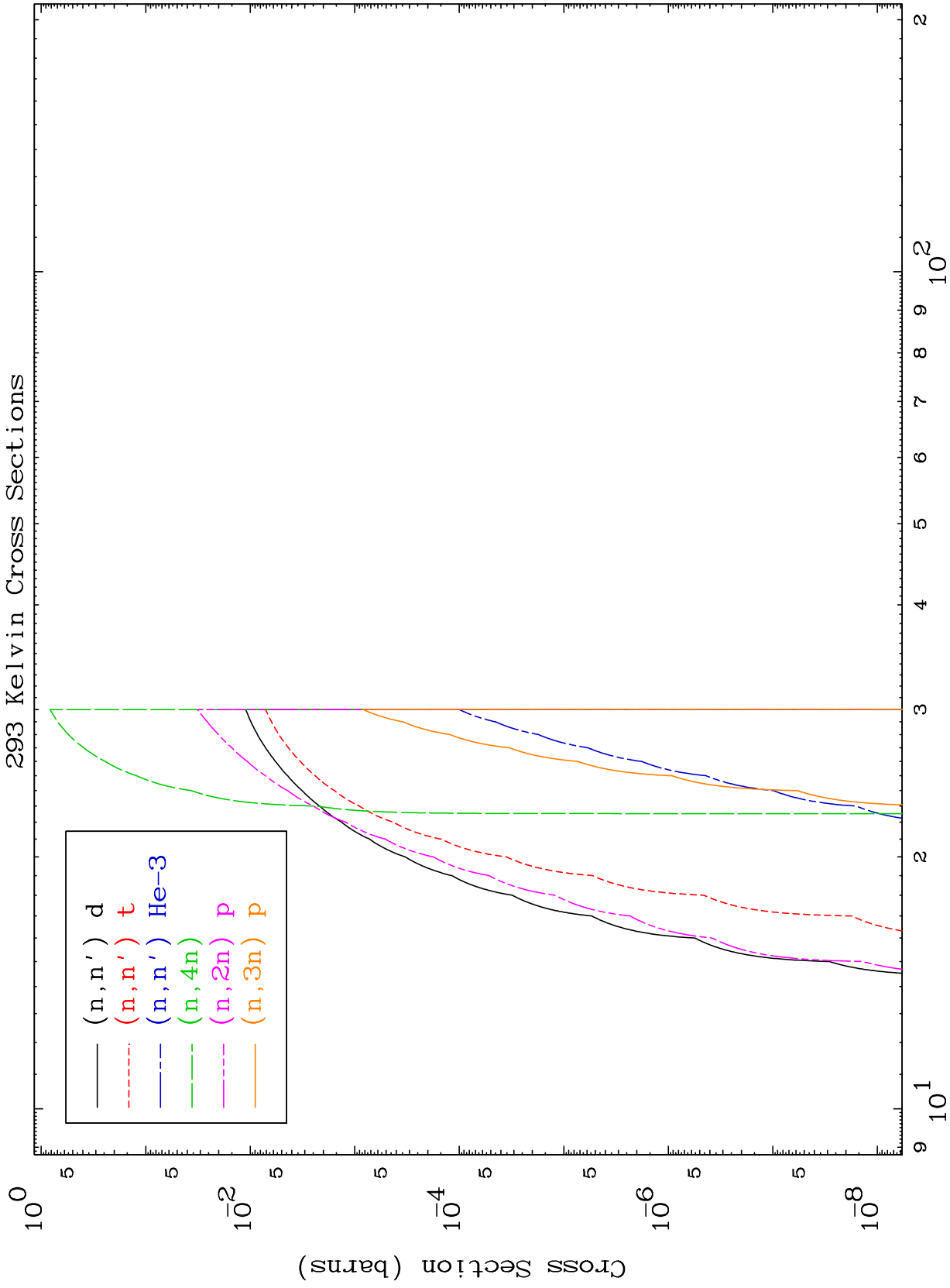
Incident Energy (MeV)

73-Ta-178

MAT 7319

Neutron Production  
293 Kelvin Cross Sections

73-Ta-178



3

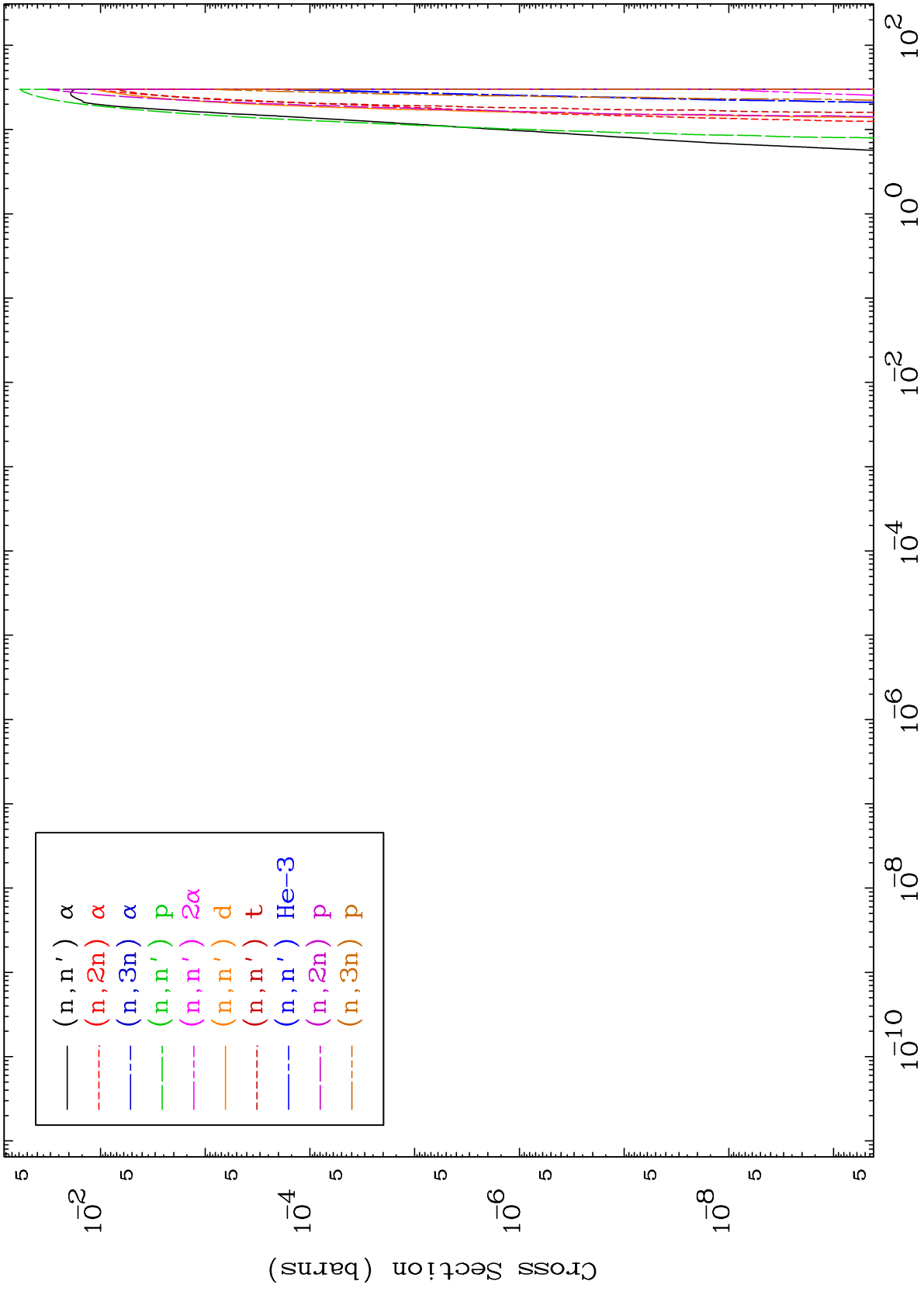
Incident Energy (MeV)

73-Ta-178

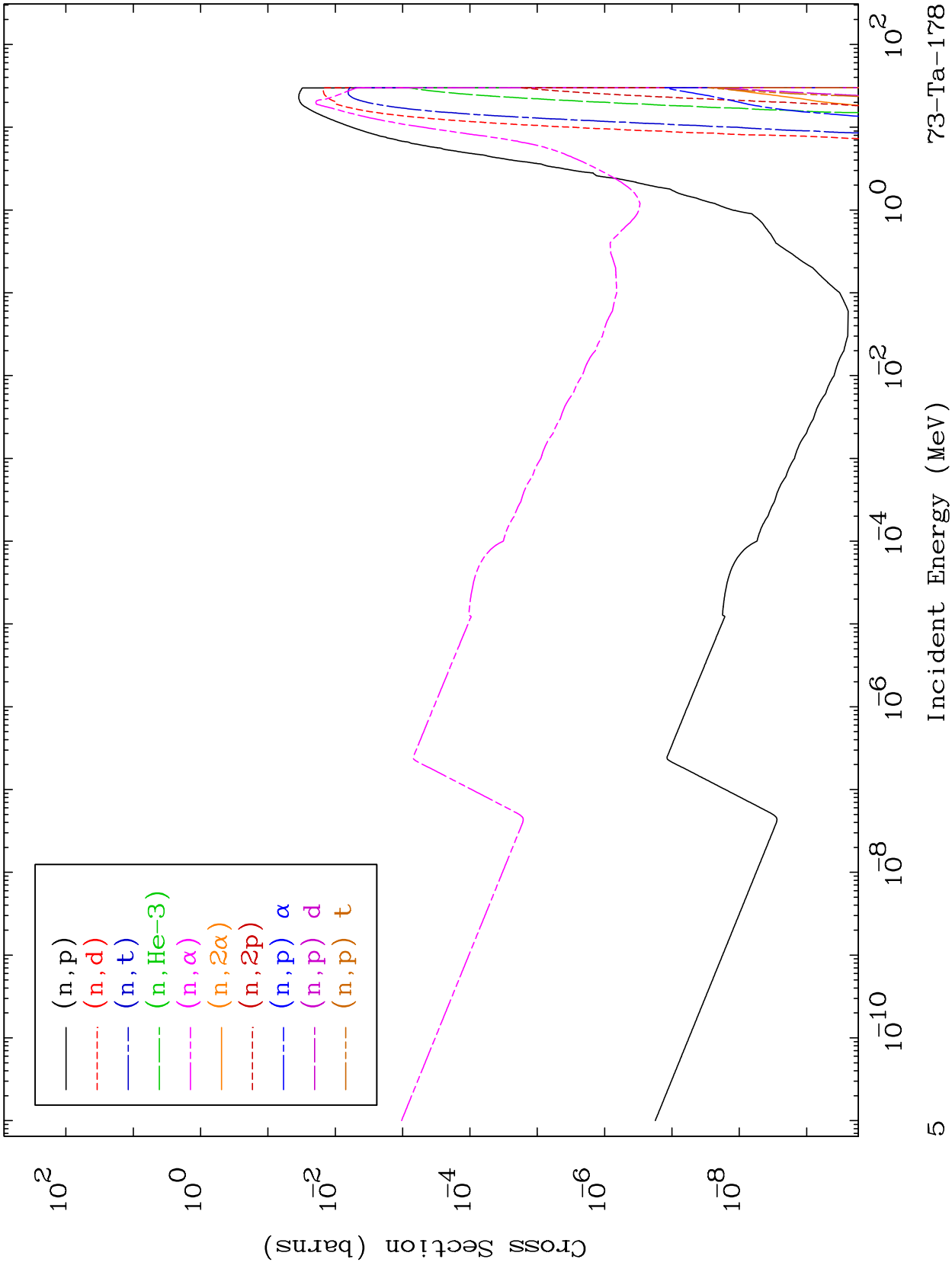
MAT 7319

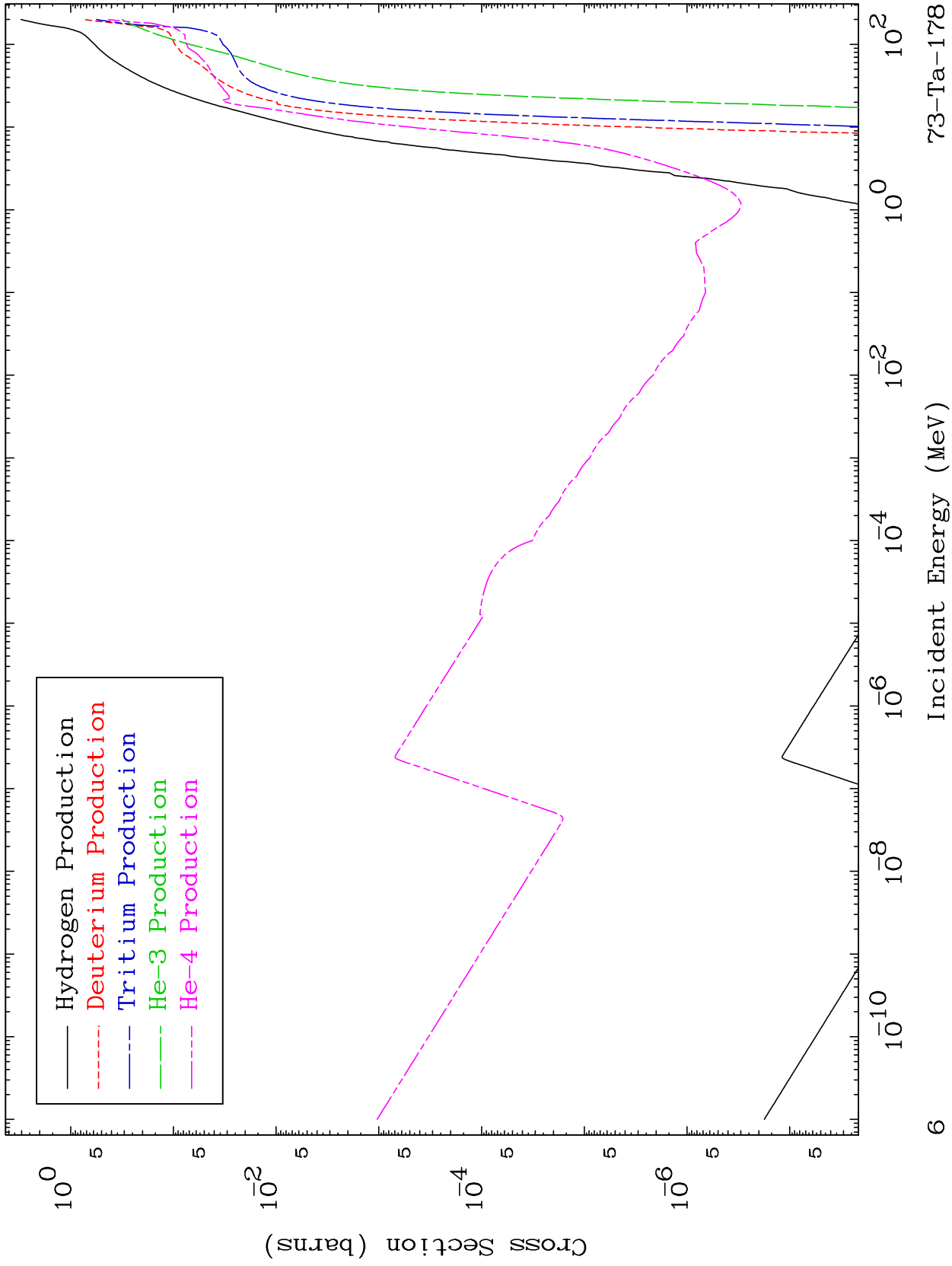
Charged Particle  
293 Kelvin Cross Sections

73-Ta-178



73-Ta-178

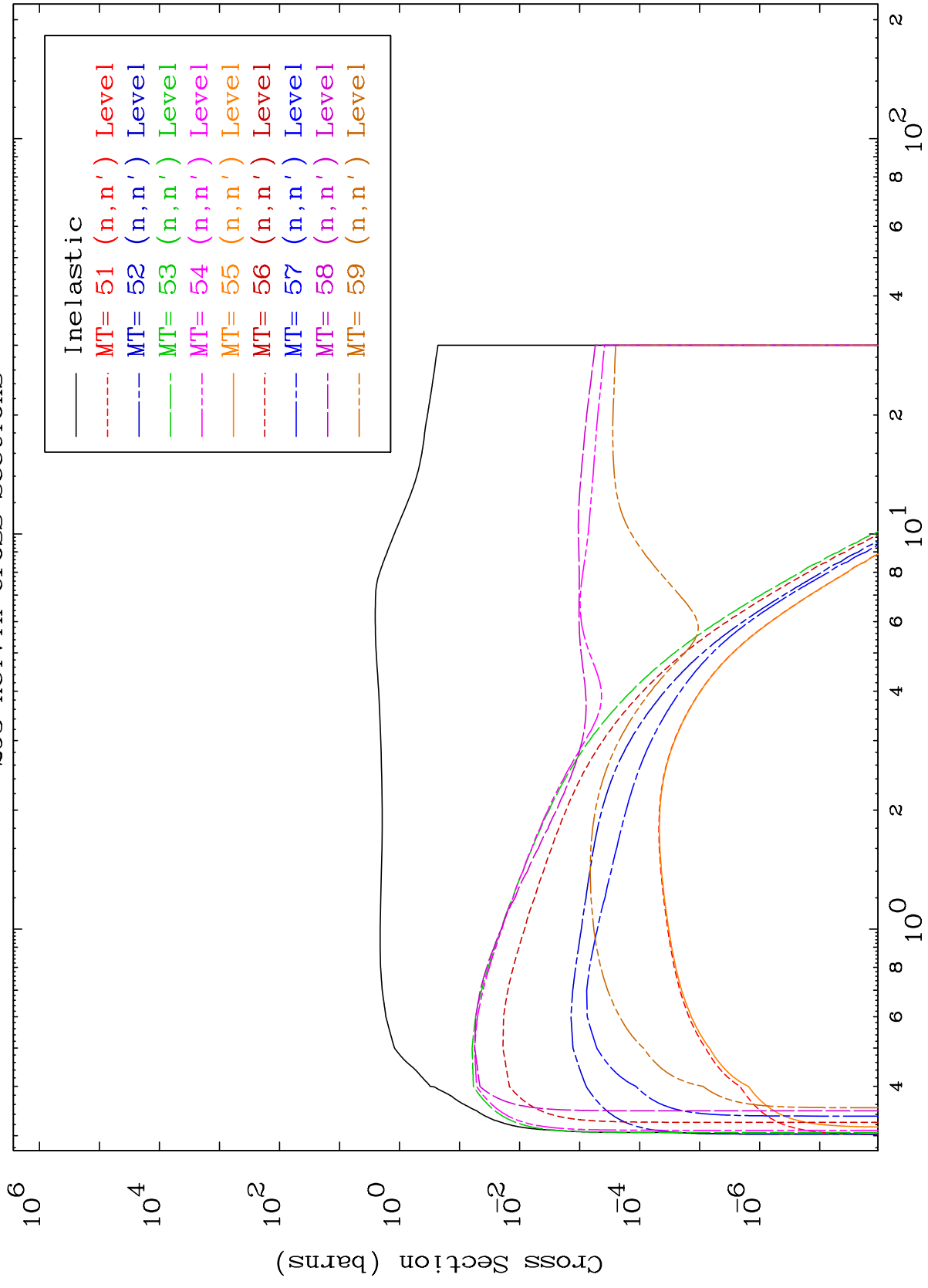




MAT 7319

(n,n') Level  
293 Kelvin Cross Sections

73-Ta-178



7

Incident Energy (MeV)

73-Ta-178

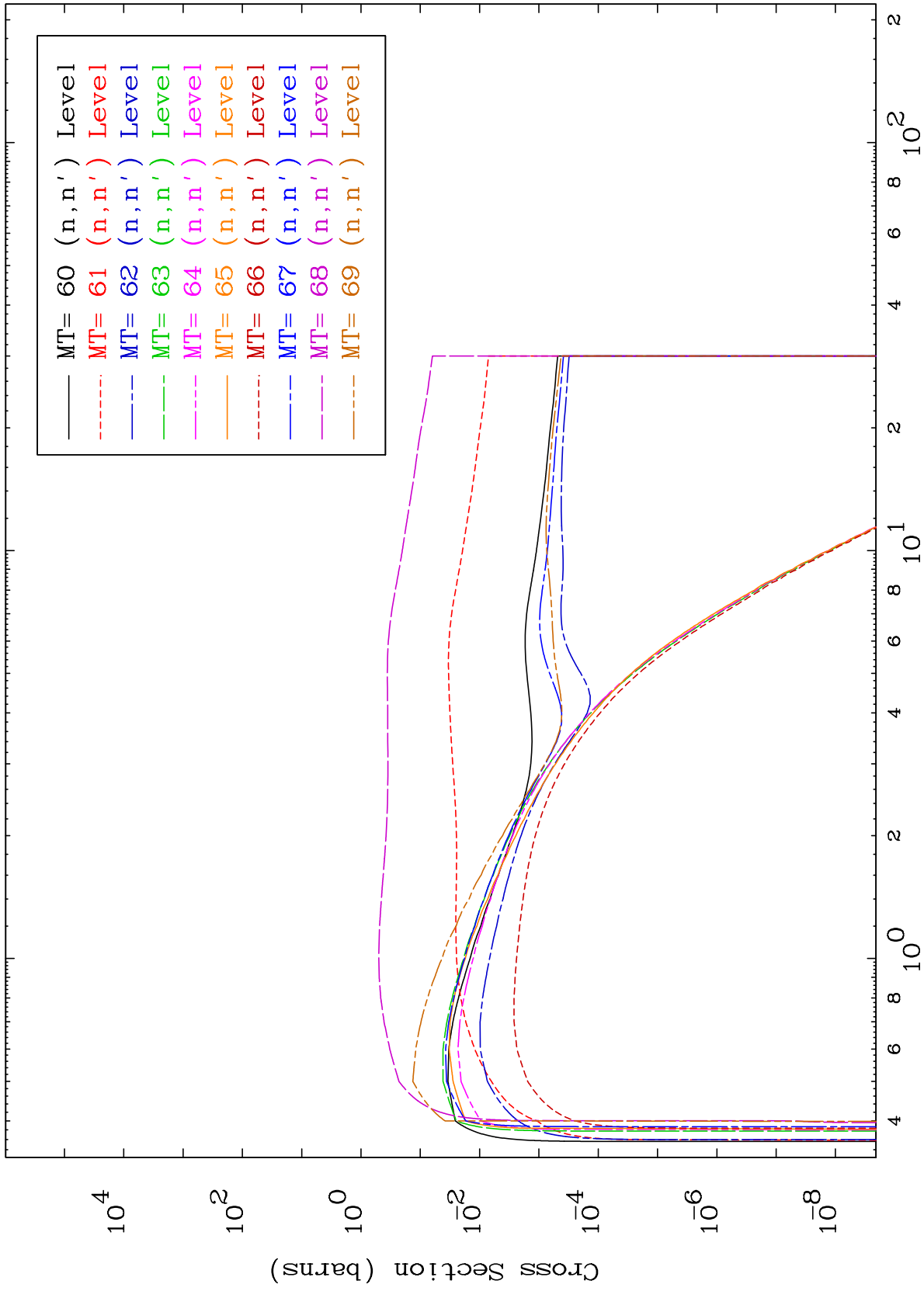


MAT 7319

(n,n') Level

73-Ta-178

293 Kelvin Cross Sections



8

Incident Energy (MeV)

73-Ta-178

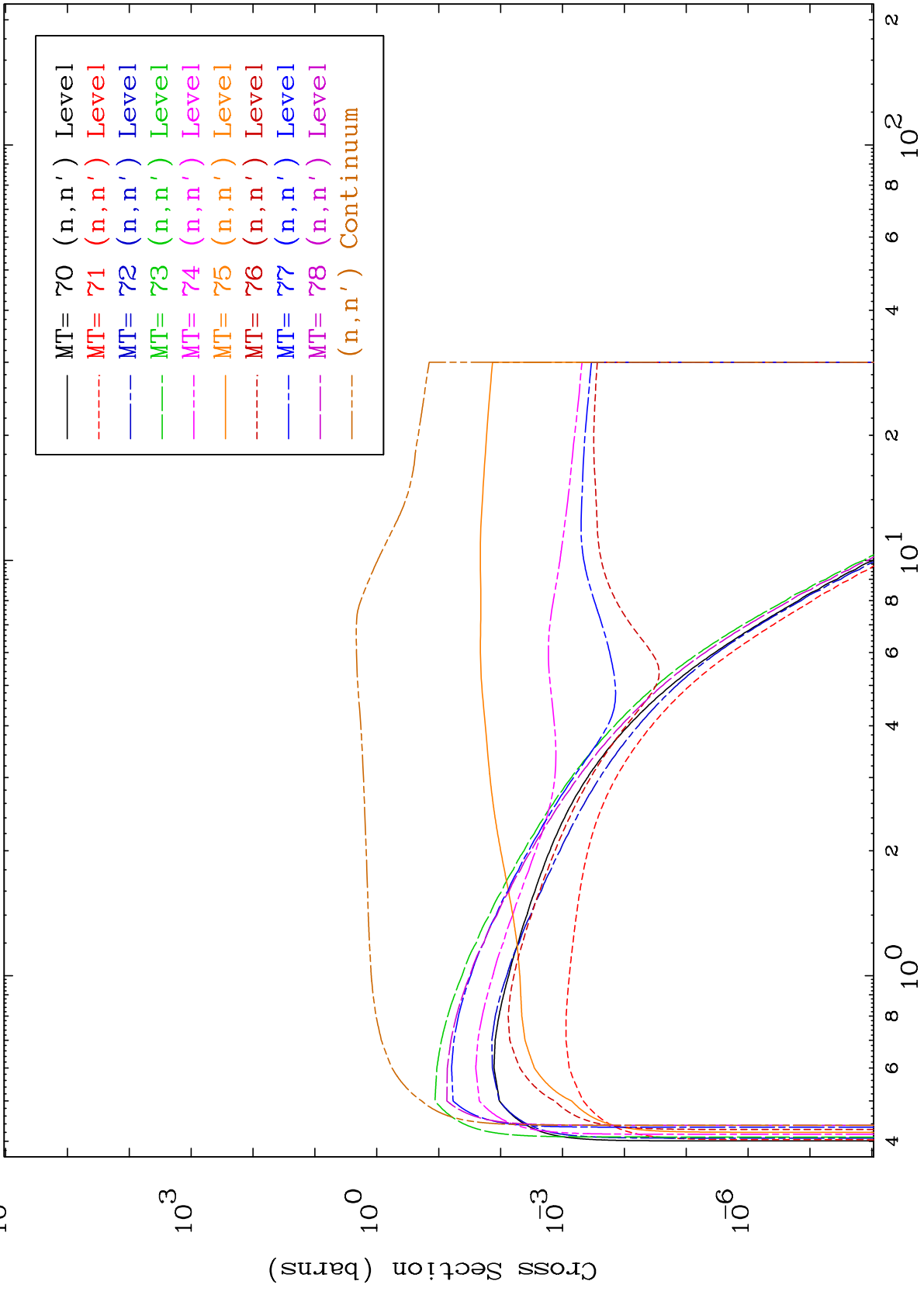
MAT 7319

(n,n') Level

73-Ta-178

293 Kelvin Cross Sections

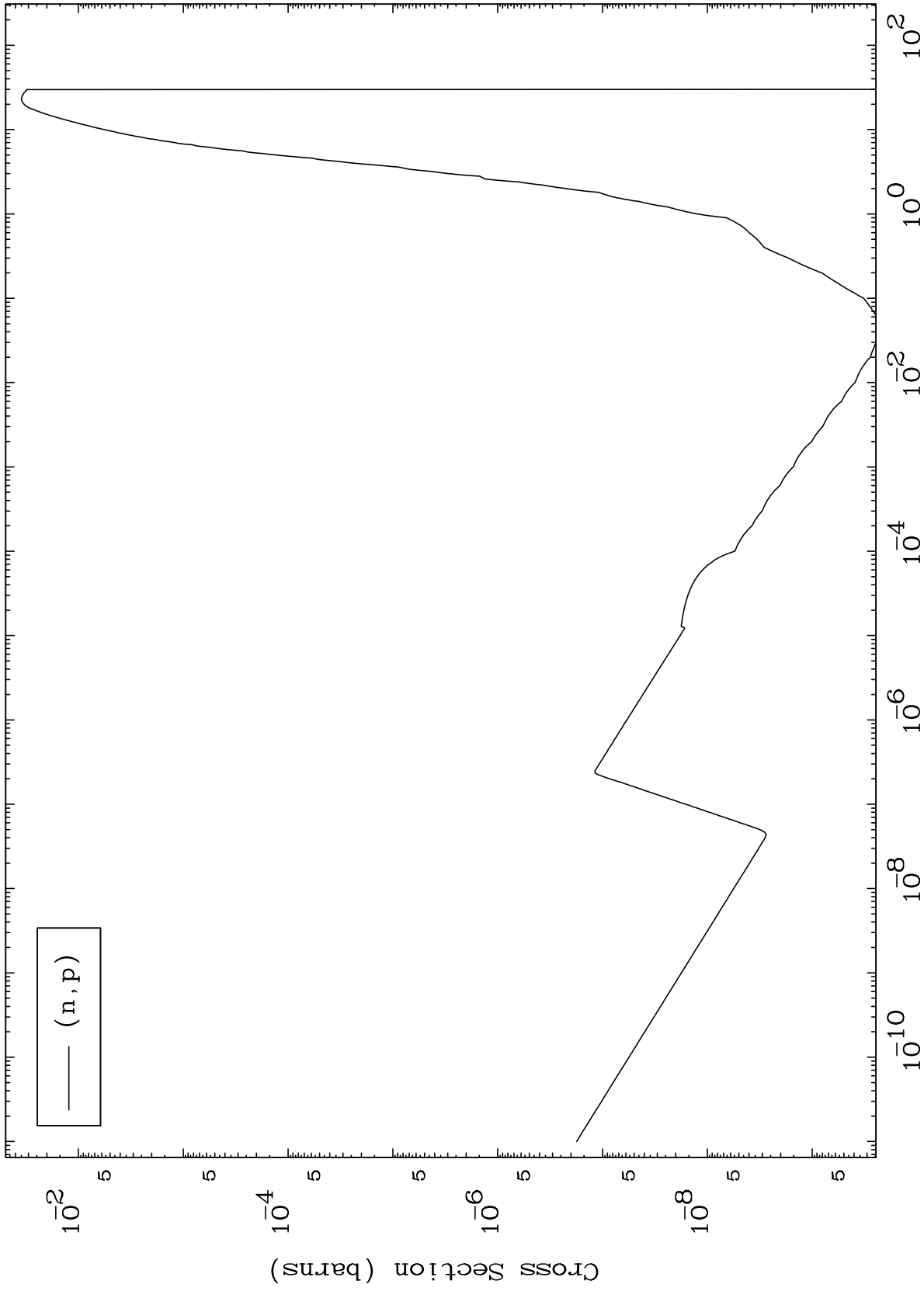
73-Ta-178



MAT 7319

(n,p) Levels  
293 Kelvin Cross Sections

<sup>73</sup>Ta-178



10

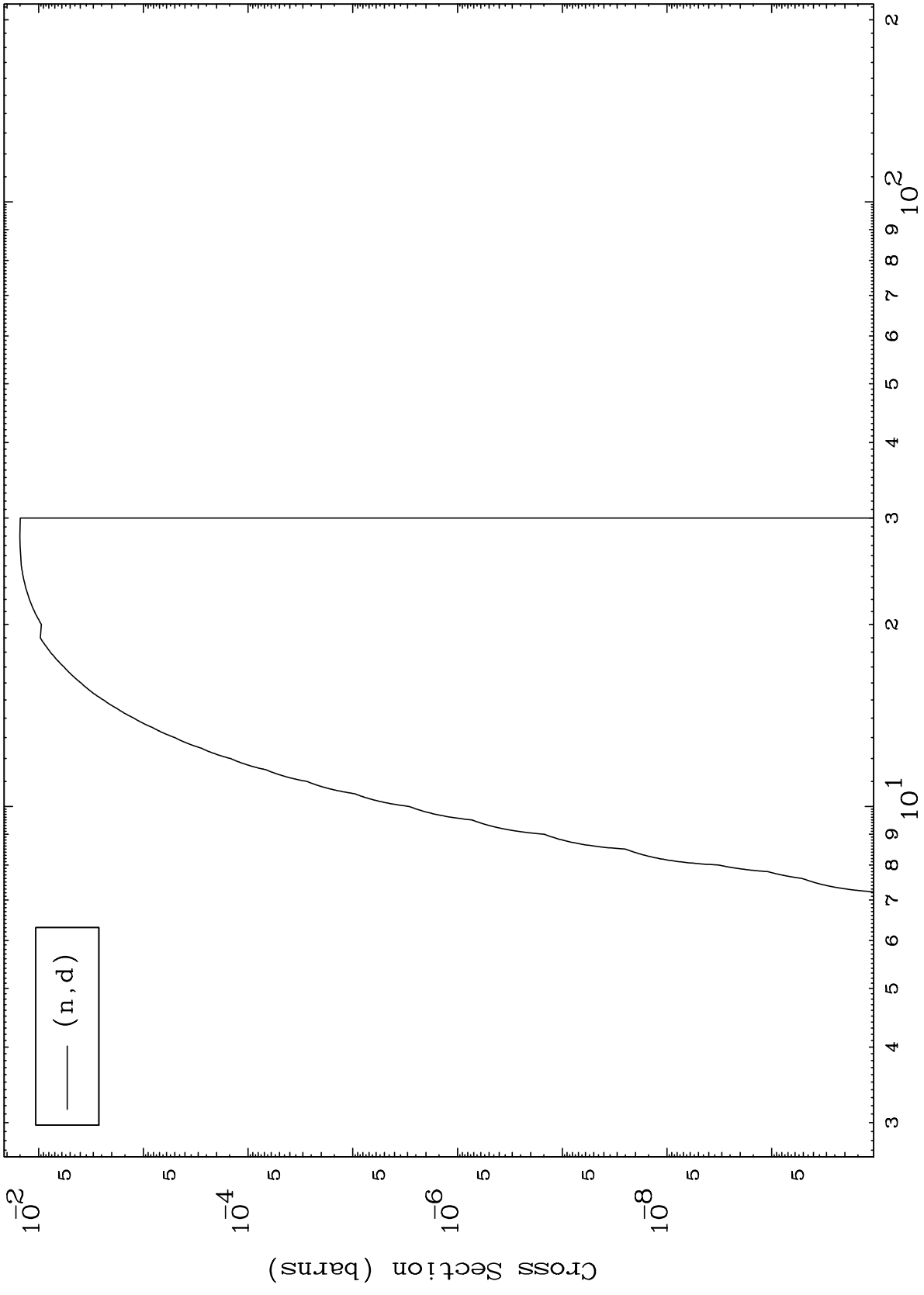
Incident Energy (MeV)

<sup>73</sup>Ta-178

MAT 7319

(n,d) Levels  
293 Kelvin Cross Sections

73-Ta-178



11

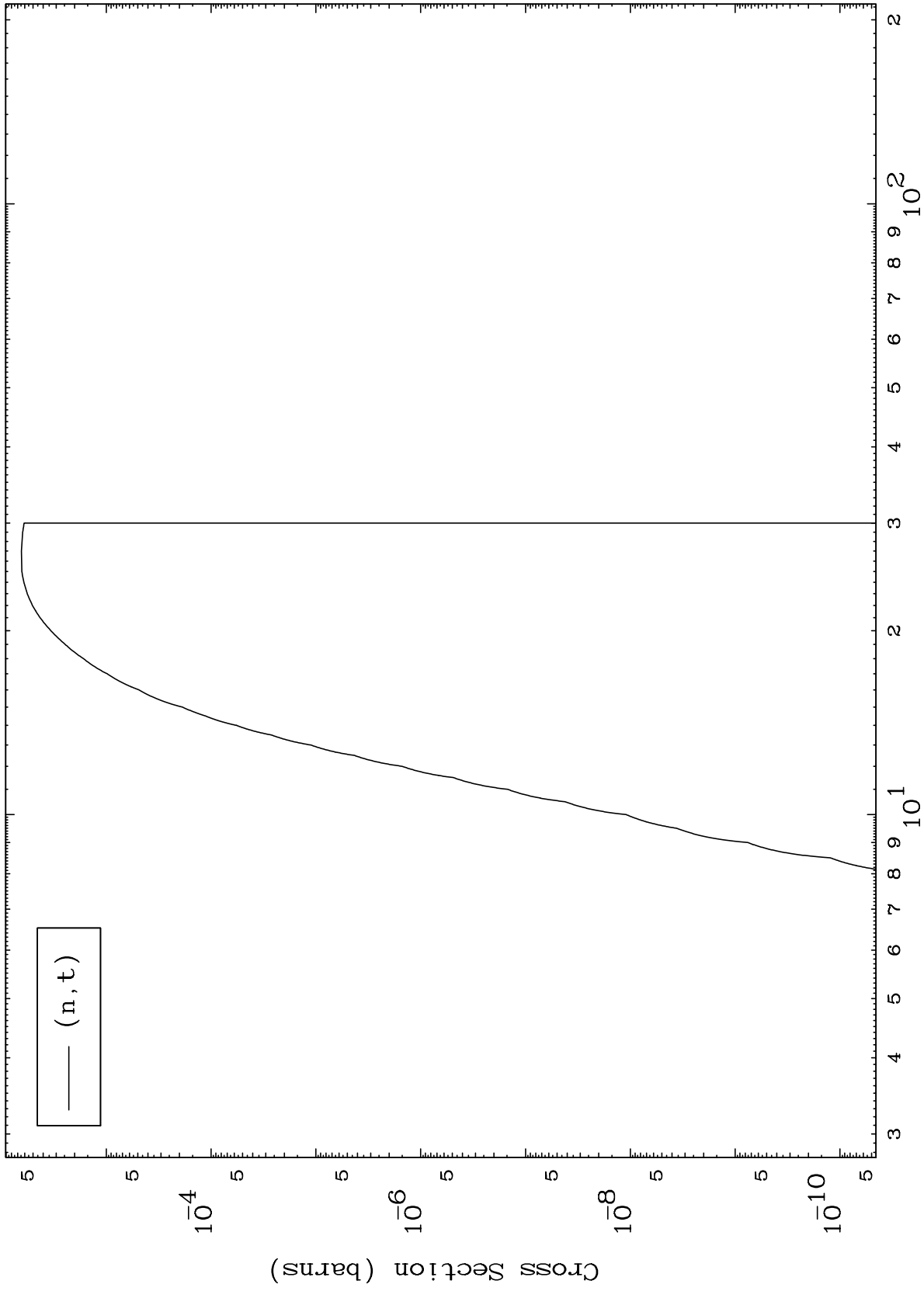
Incident Energy (MeV)

73-Ta-178

MAT 7319

(n,t) Levels  
293 Kelvin Cross Sections

73-Ta-178



12

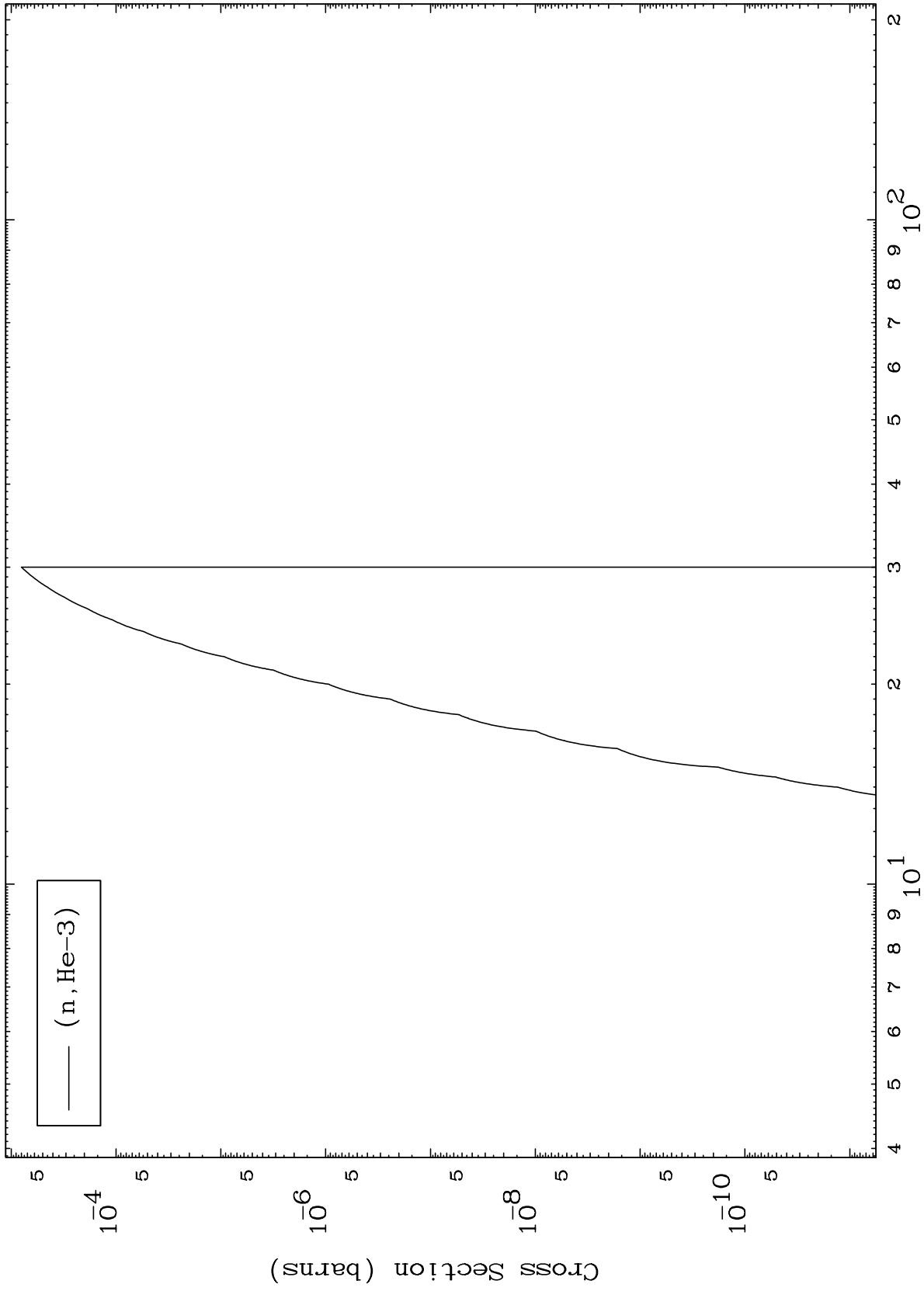
Incident Energy (MeV)

73-Ta-178

MAT 7319

(n,He3) Levels  
293 Kelvin Cross Sections

73-Ta-178



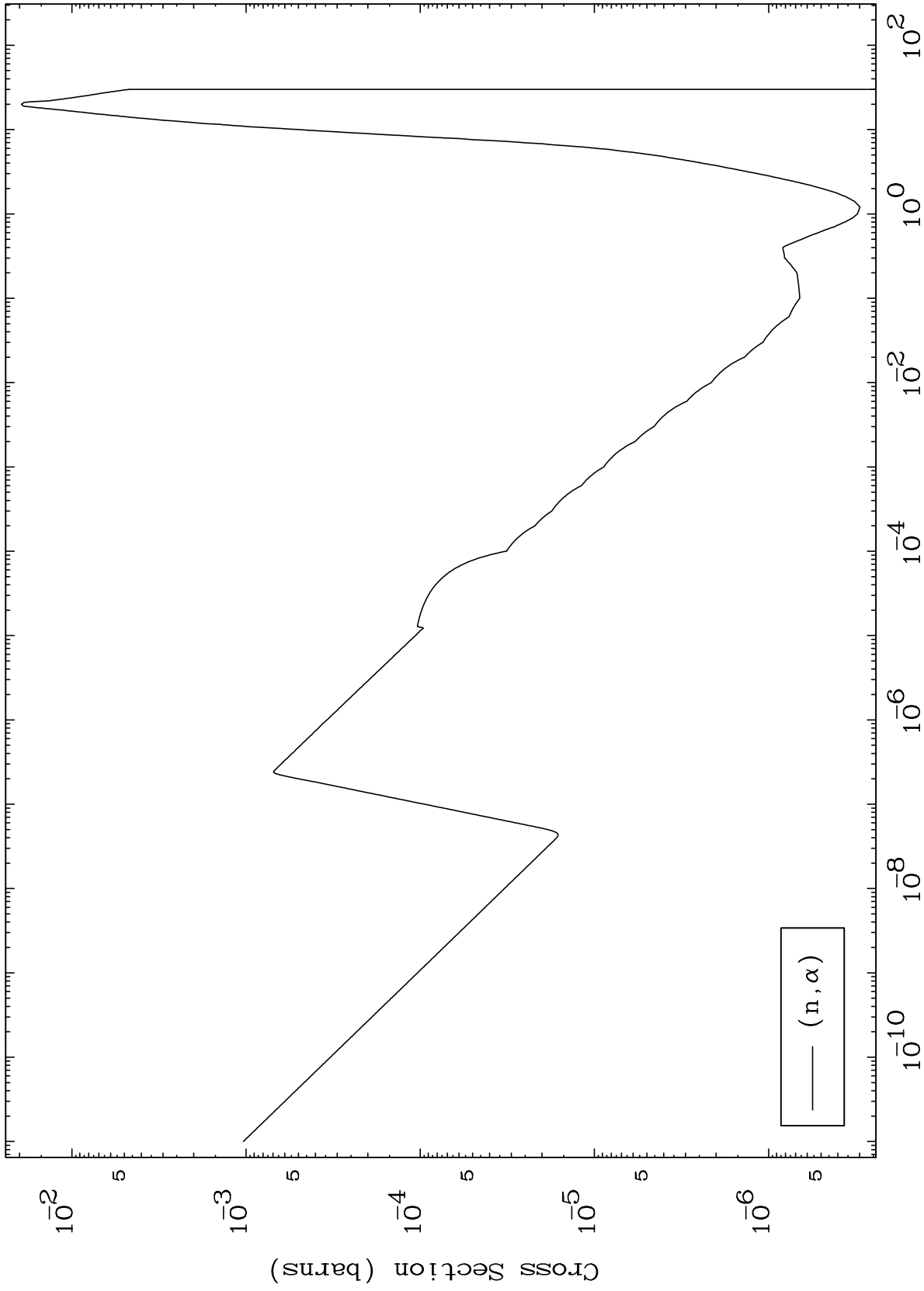
13

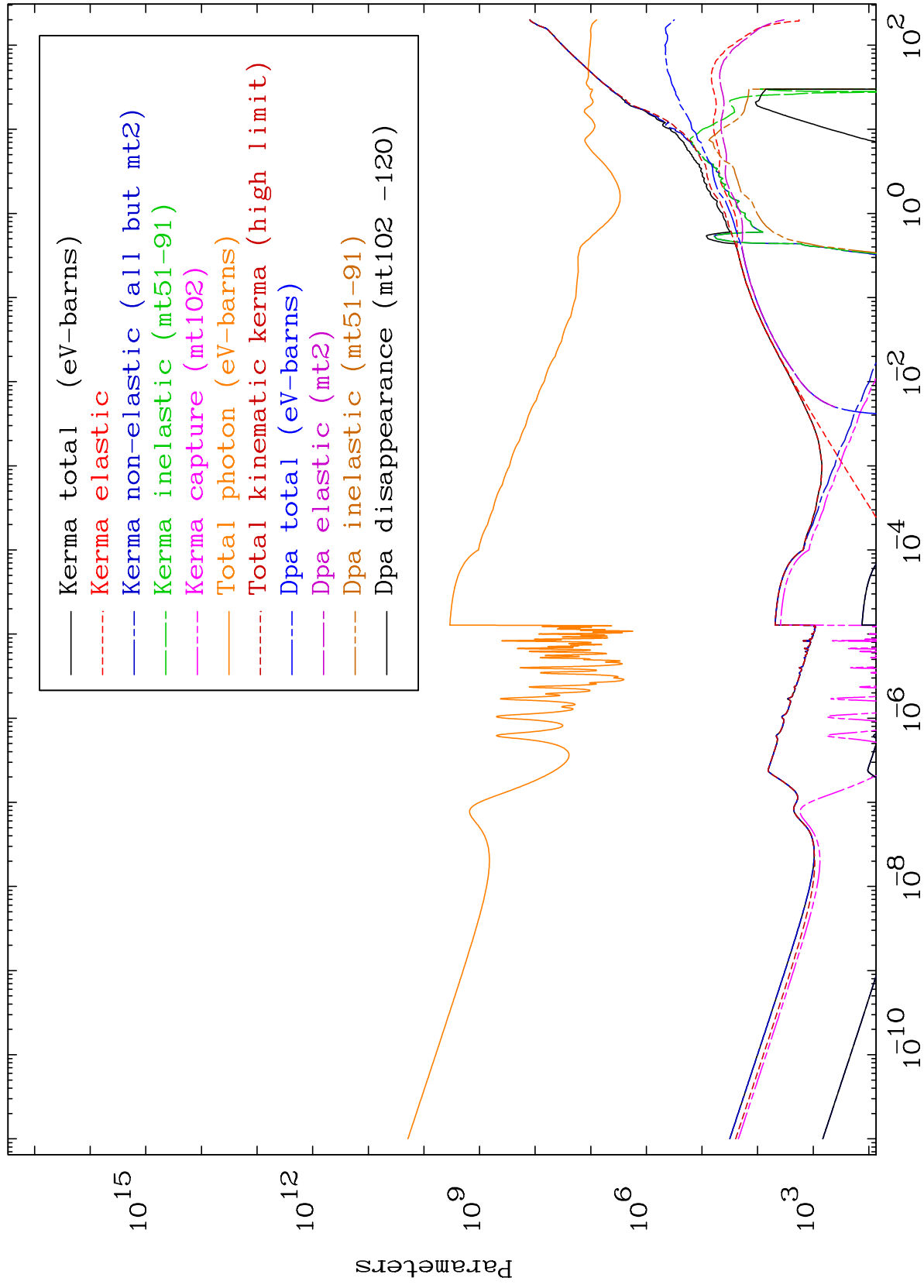
73-Ta-178

MAT 7319

(n,α) Levels  
293 Kelvin Cross Sections

73-Ta-178







MAT 7319

Elastic Legendre Coefficients

73-Ta-178



73-Ta-178

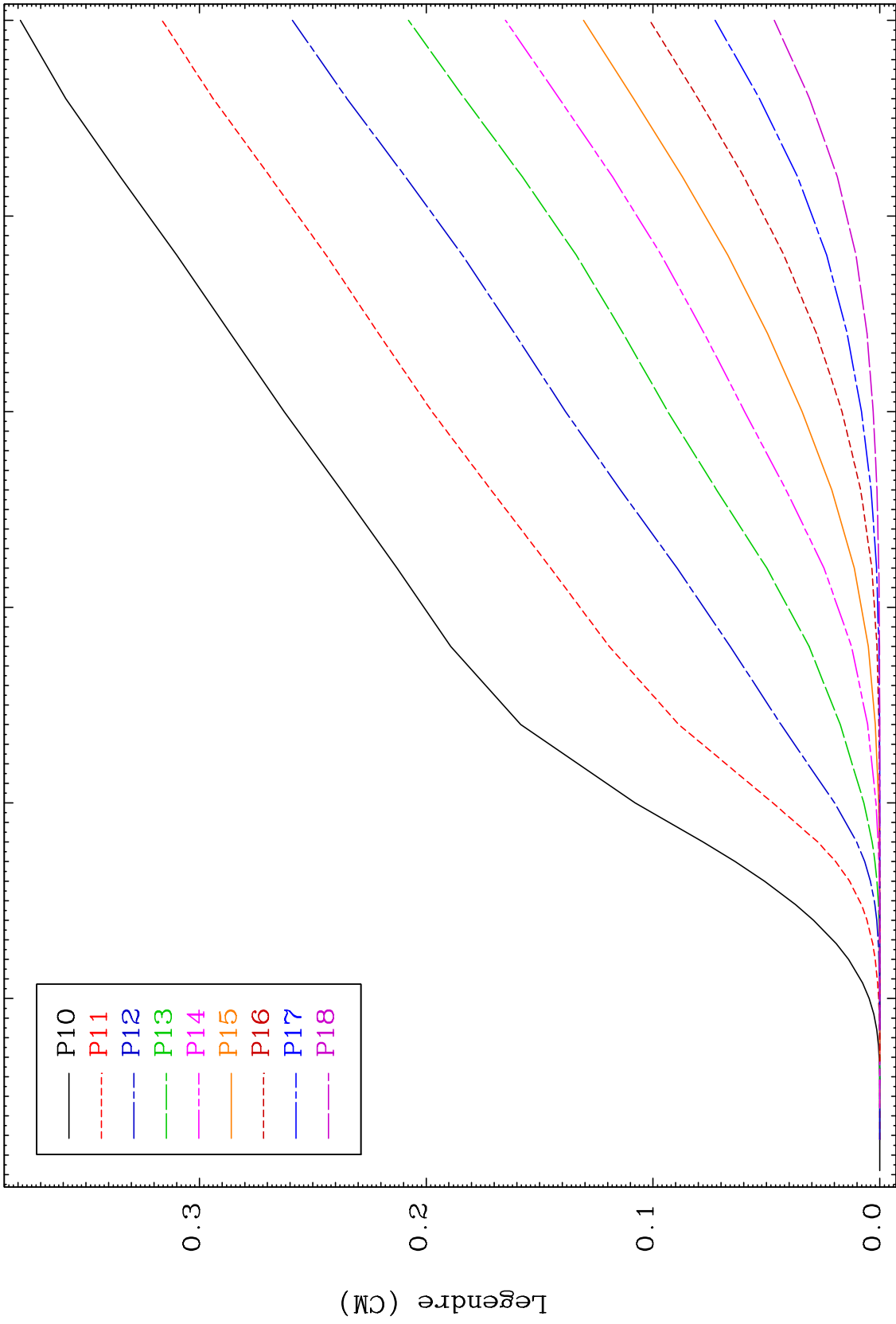
Incident Energy (MeV)

16

MAT 7319

Elastic Legendre Coefficients

<sup>73</sup>Ta-178



17

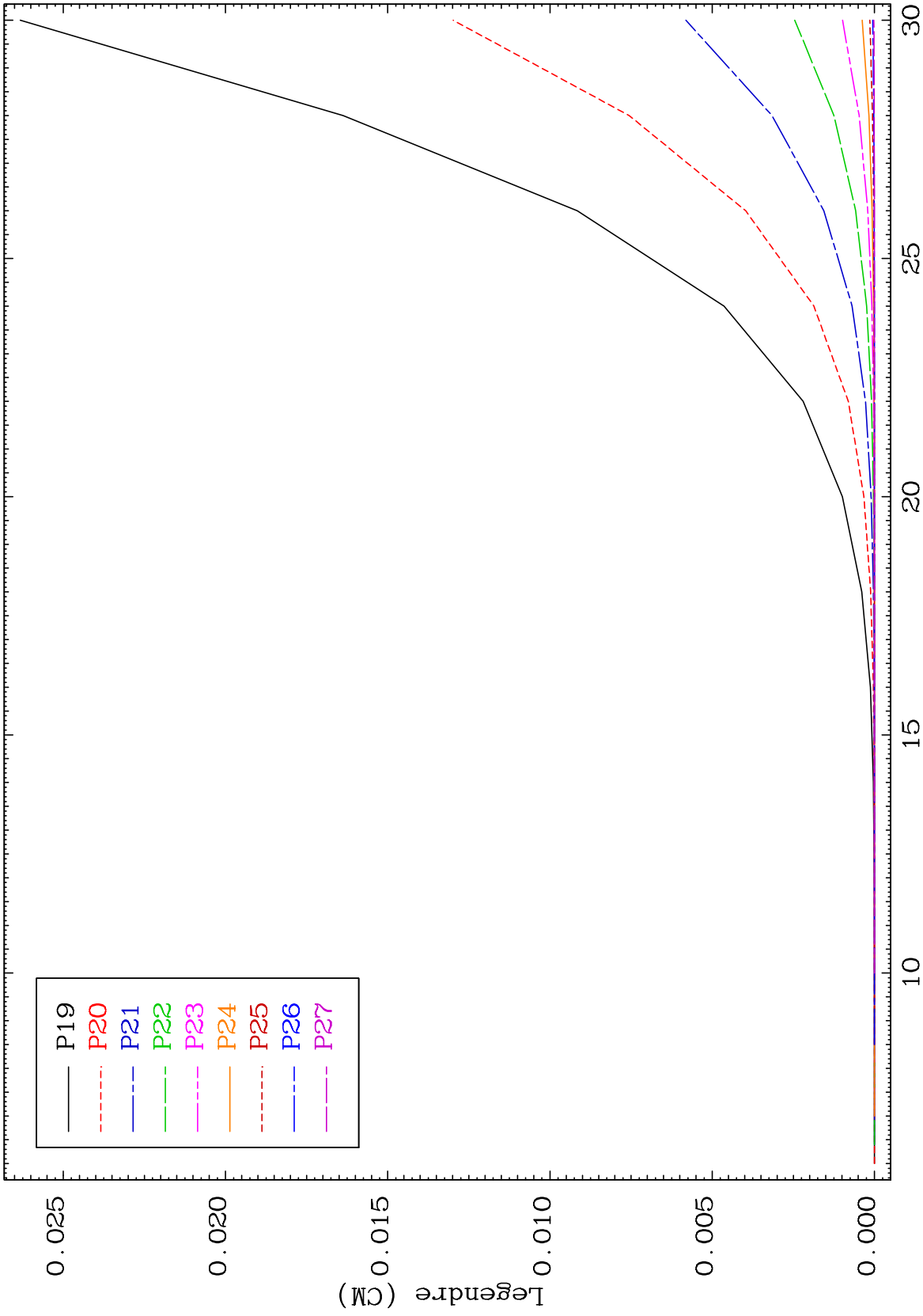
Incident Energy (MeV)

<sup>73</sup>Ta-178

MAT 7319

### Elastic Legendre Coefficients

73-Ta-178



18

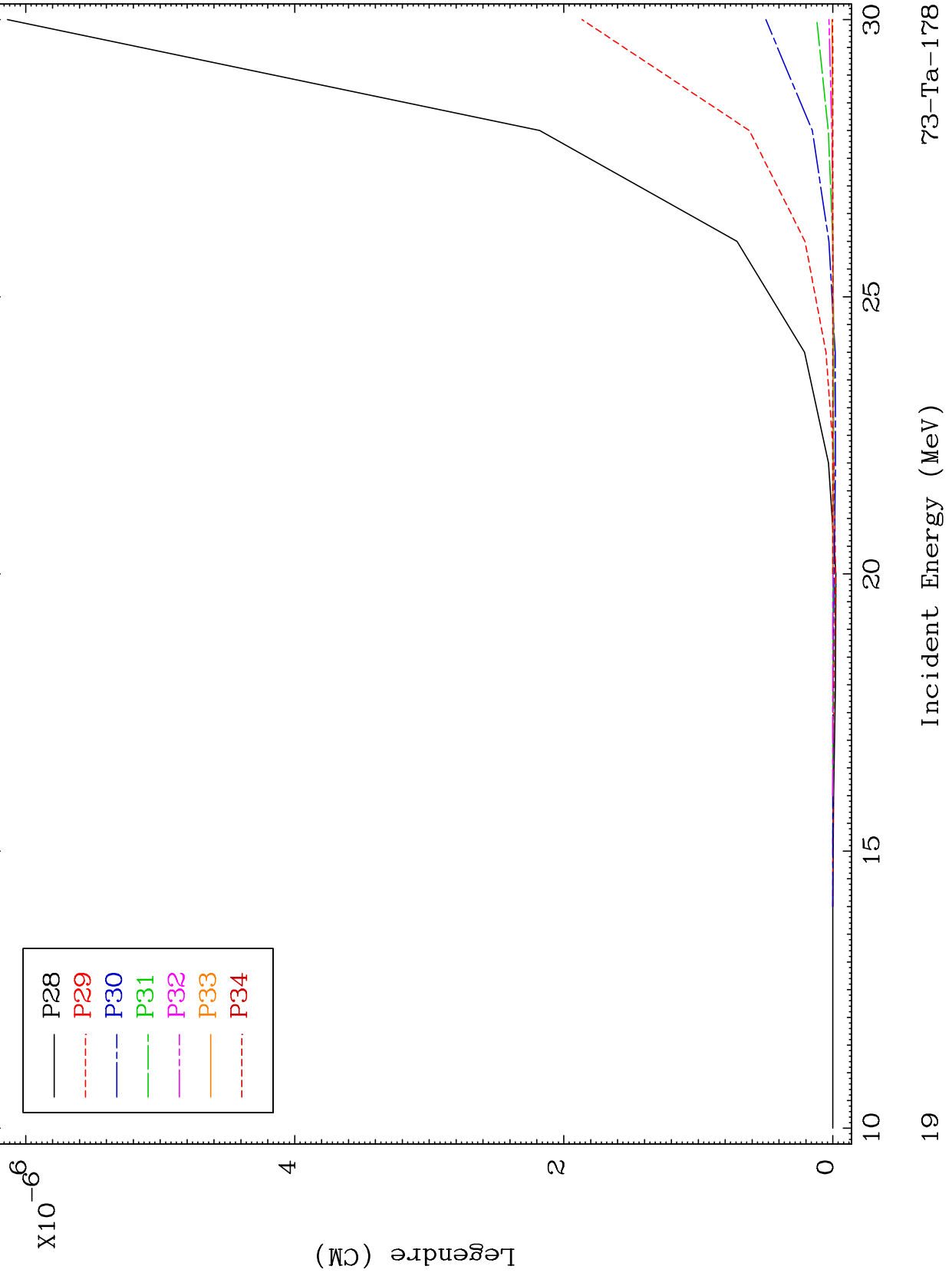
Incident Energy (MeV)

73-Ta-178

MAT 7319

Elastic Legendre Coefficients

<sup>73</sup>Ta-178



19

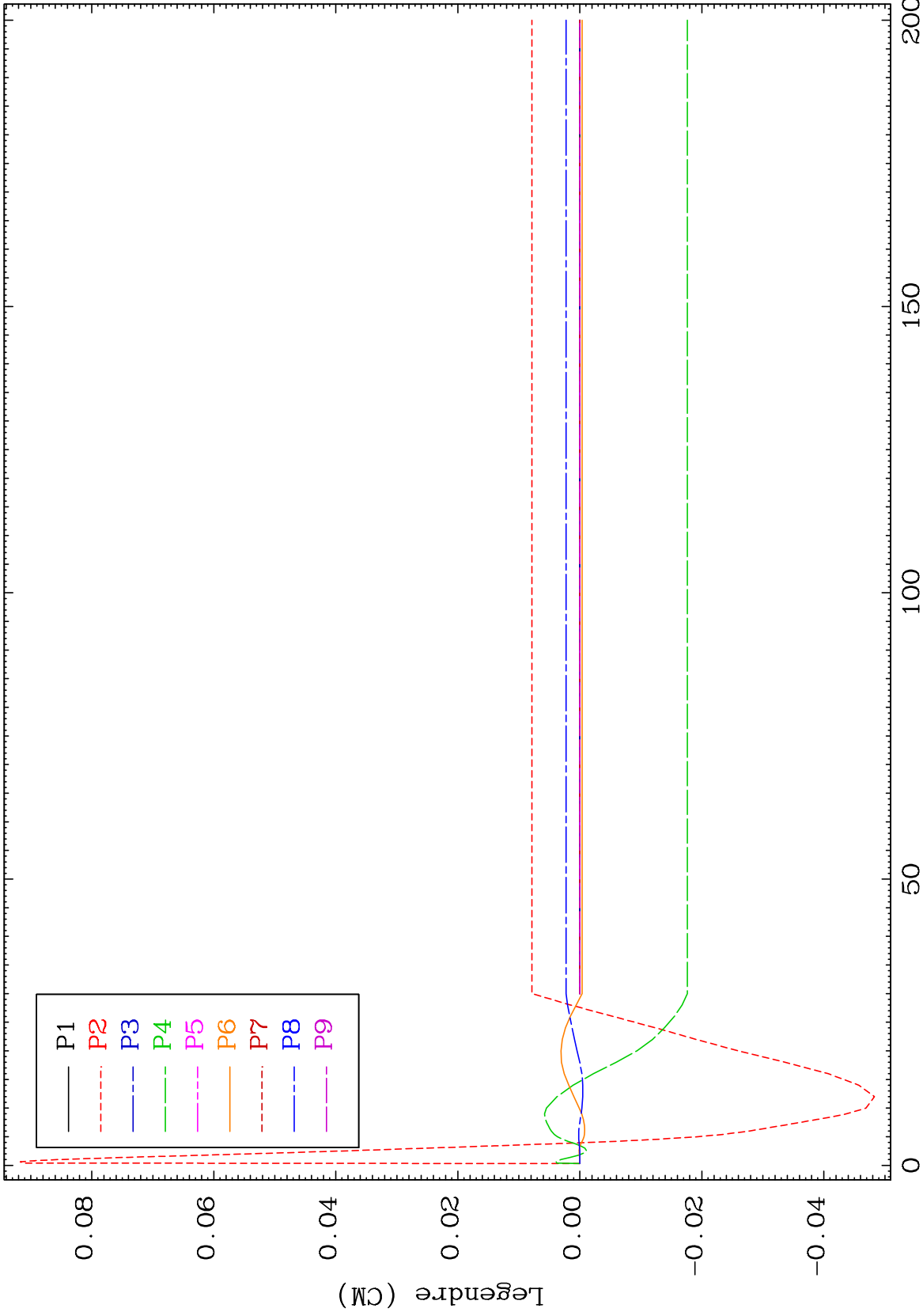
Incident Energy (MeV)

<sup>73</sup>Ta-178

MAT 7319

MT= 51 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

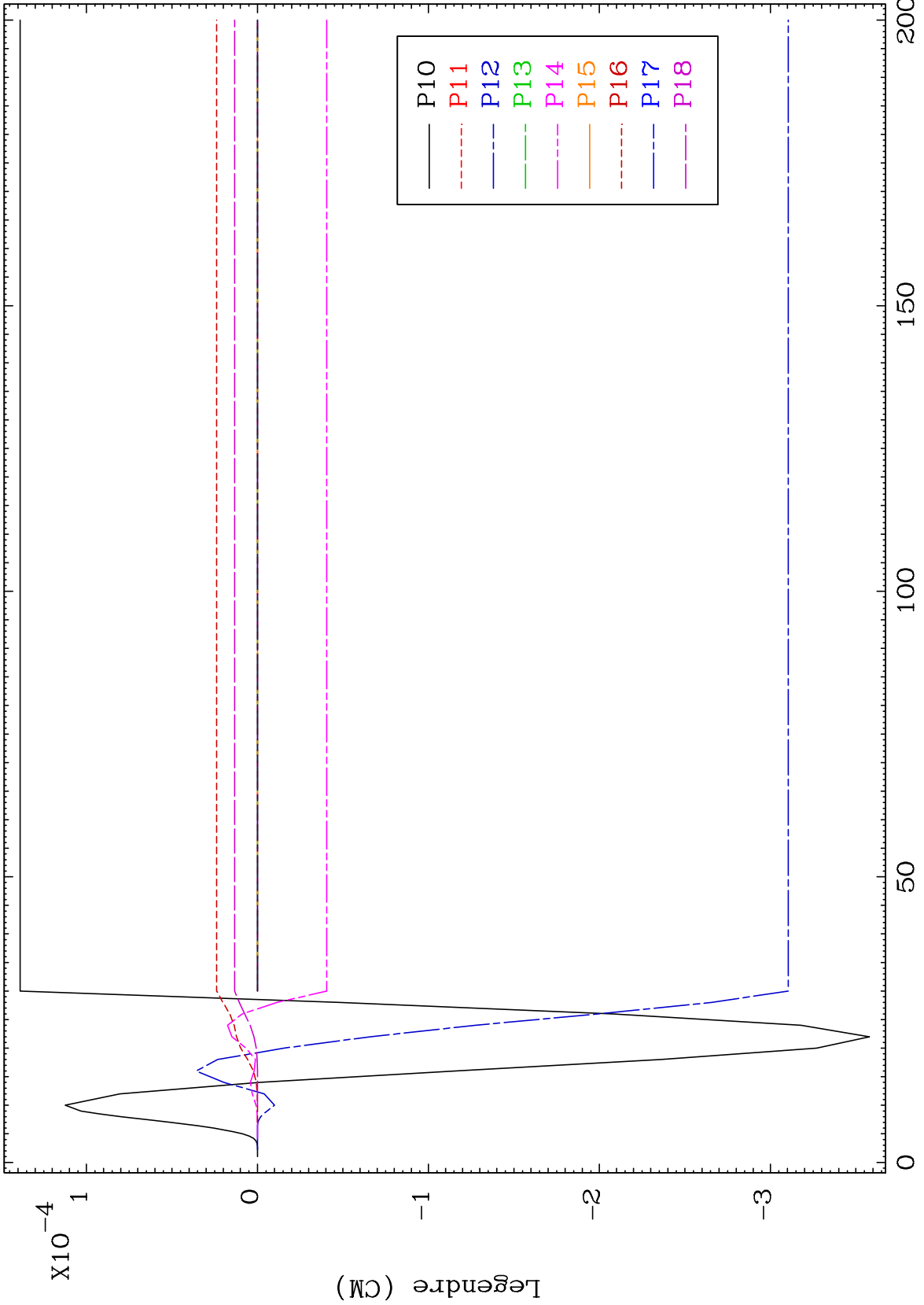
Incident Energy (MeV)

20

MAT 7319

MT= 51 (n,n') Level  
Legendre Coefficients

73-Ta-178



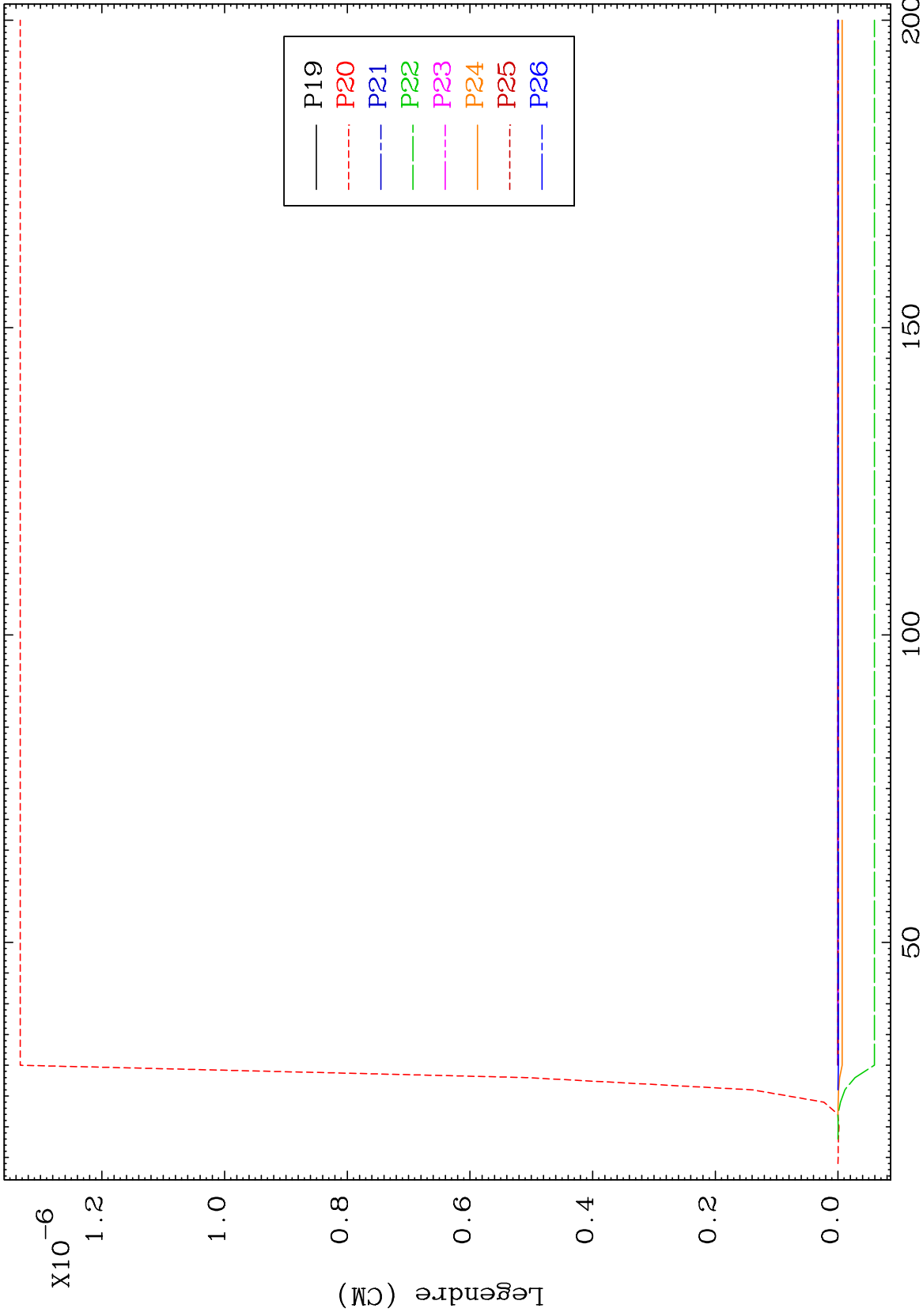
21

73-Ta-178

MAT 7319

MT= 51 (n,n') Level  
Legendre Coefficients

73-Ta-178



22

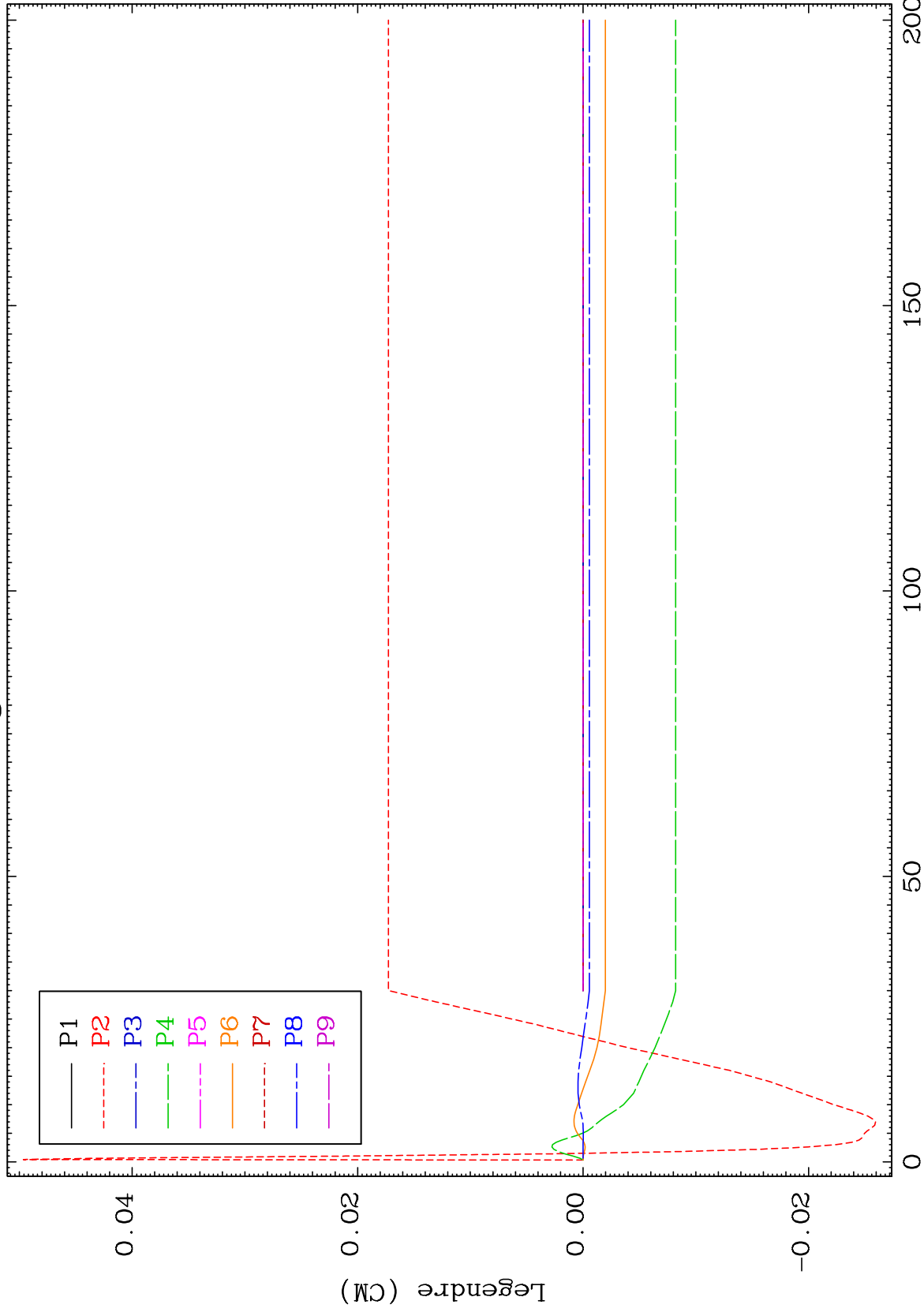
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 52 (n,n') Level  
Legendre Coefficients

73-Ta-178



23

Incident Energy (MeV)

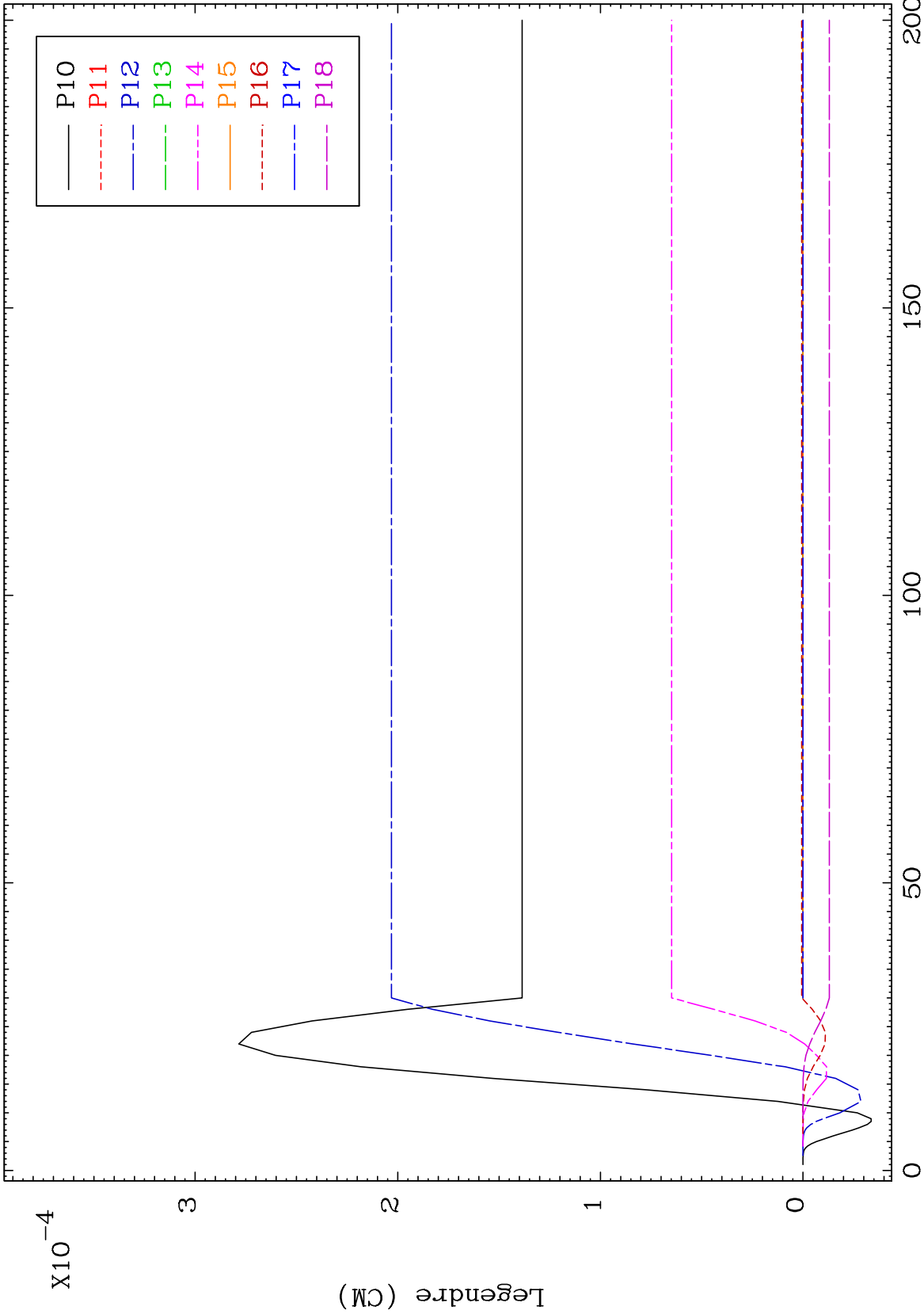
73-Ta-178



MAT 7319

MT= 52 (n,n') Level  
Legendre Coefficients

<sup>73</sup>Ta-178



24

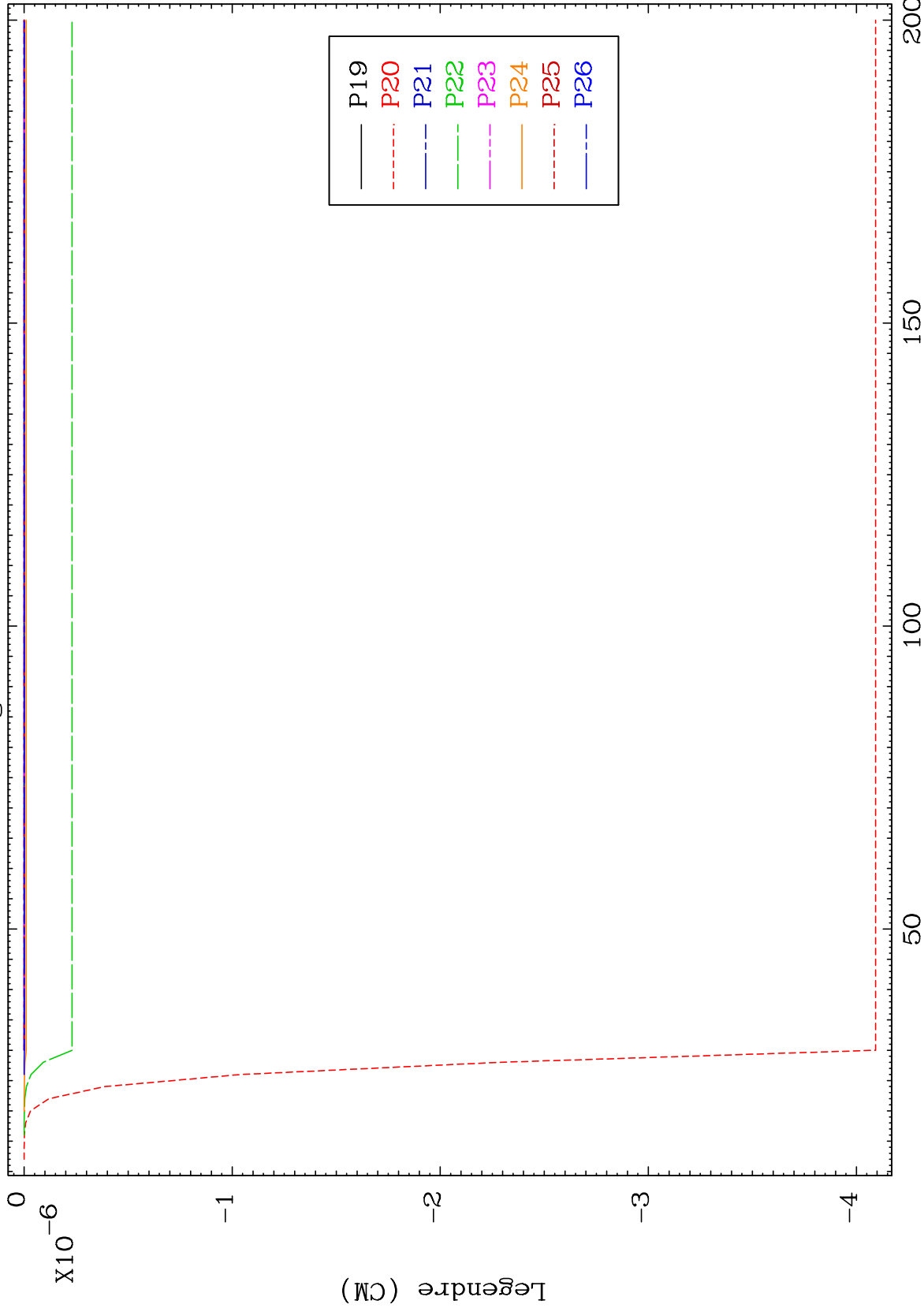
Incident Energy (MeV)

<sup>73</sup>Ta-178

MAT 7319

MT= 52 (n,n') Level  
Legendre Coefficients

73-Ta-178



25

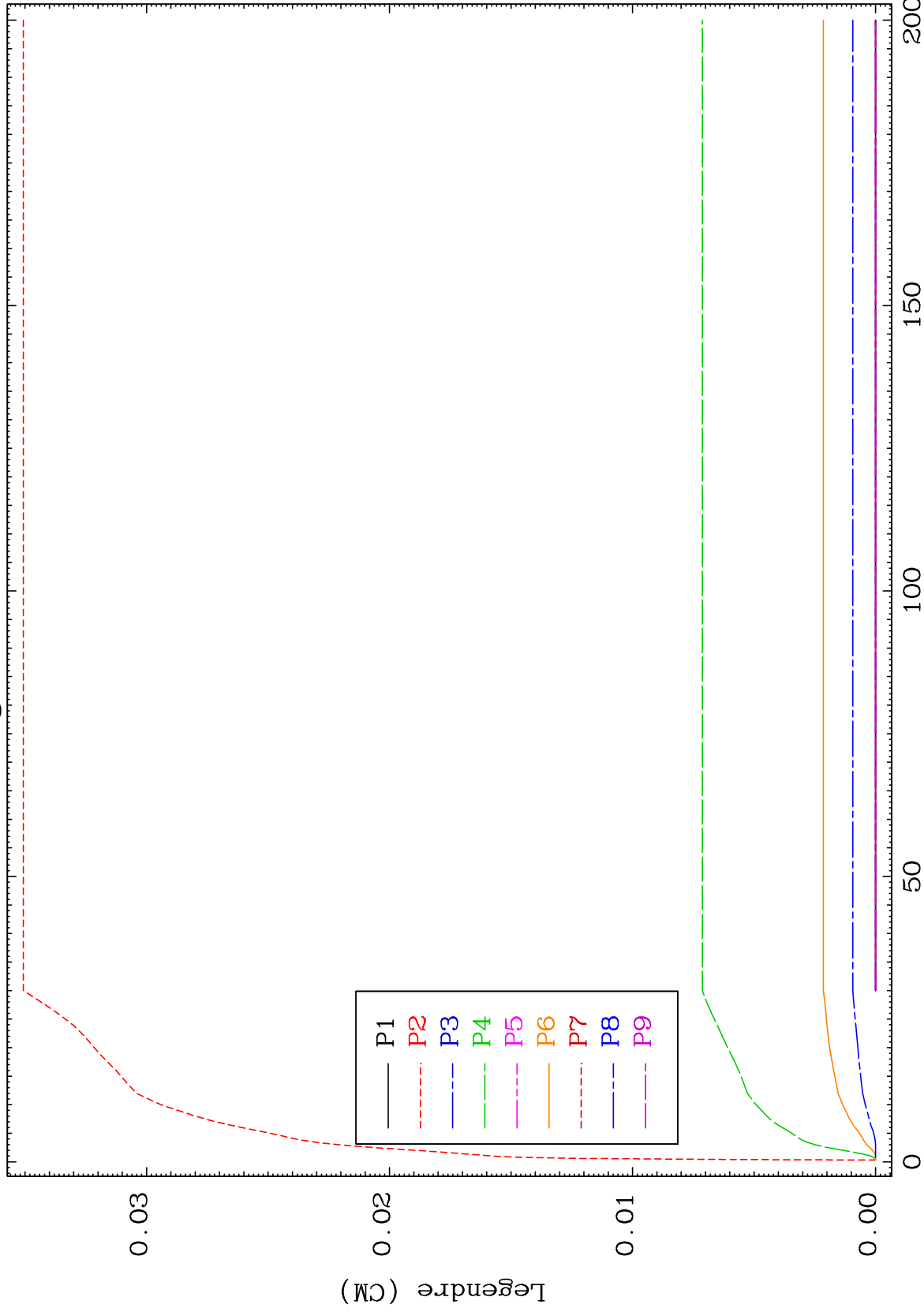
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 53 (n,n') Level  
Legendre Coefficients

73-Ta-178



26

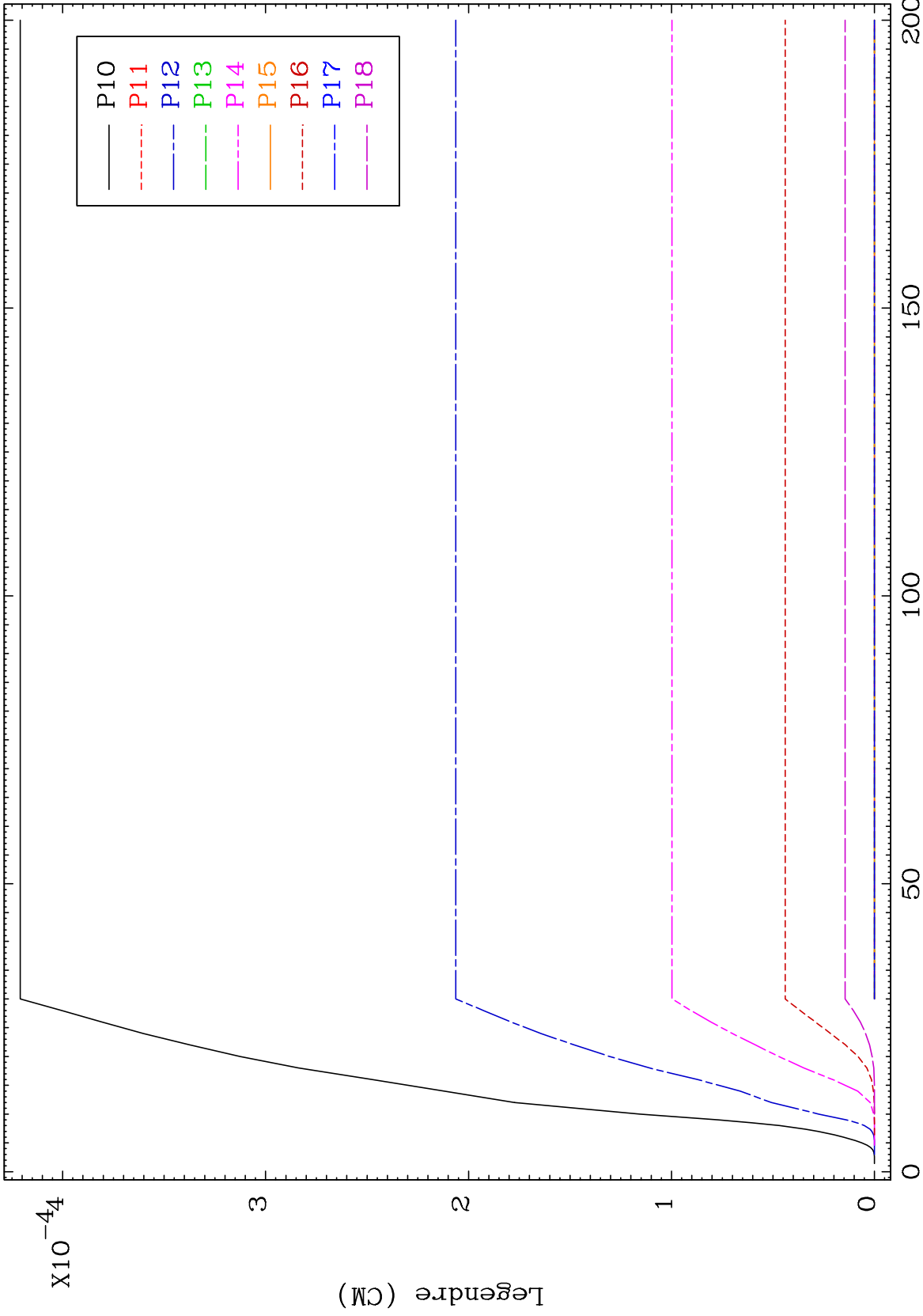
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 53 (n,n') Level  
Legendre Coefficients

73-Ta-178

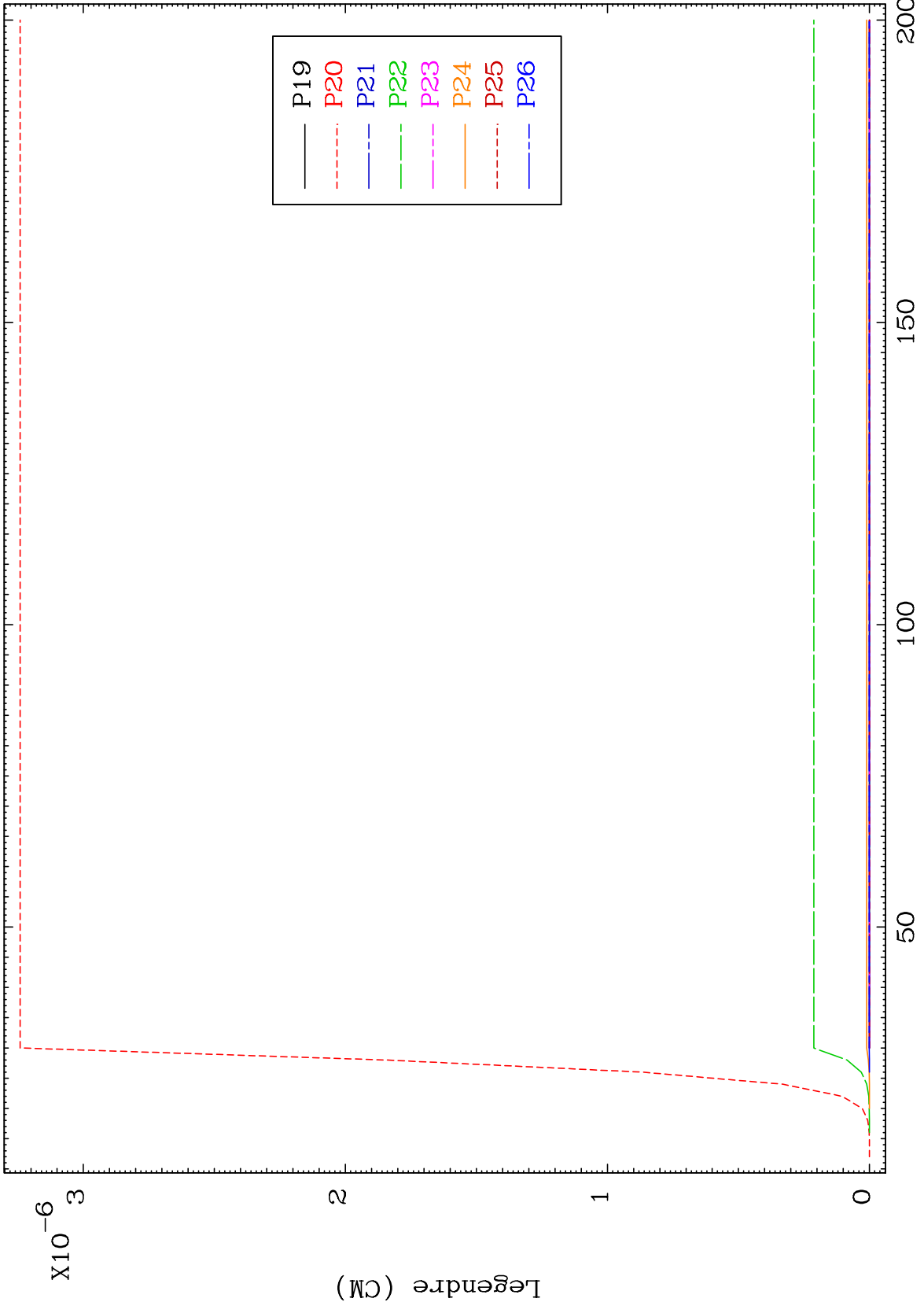


27

Incident Energy (MeV)

73-Ta-178

MAT 7319 MT= 53 (n,n') Level Legendre Coefficients 73-Ta-178

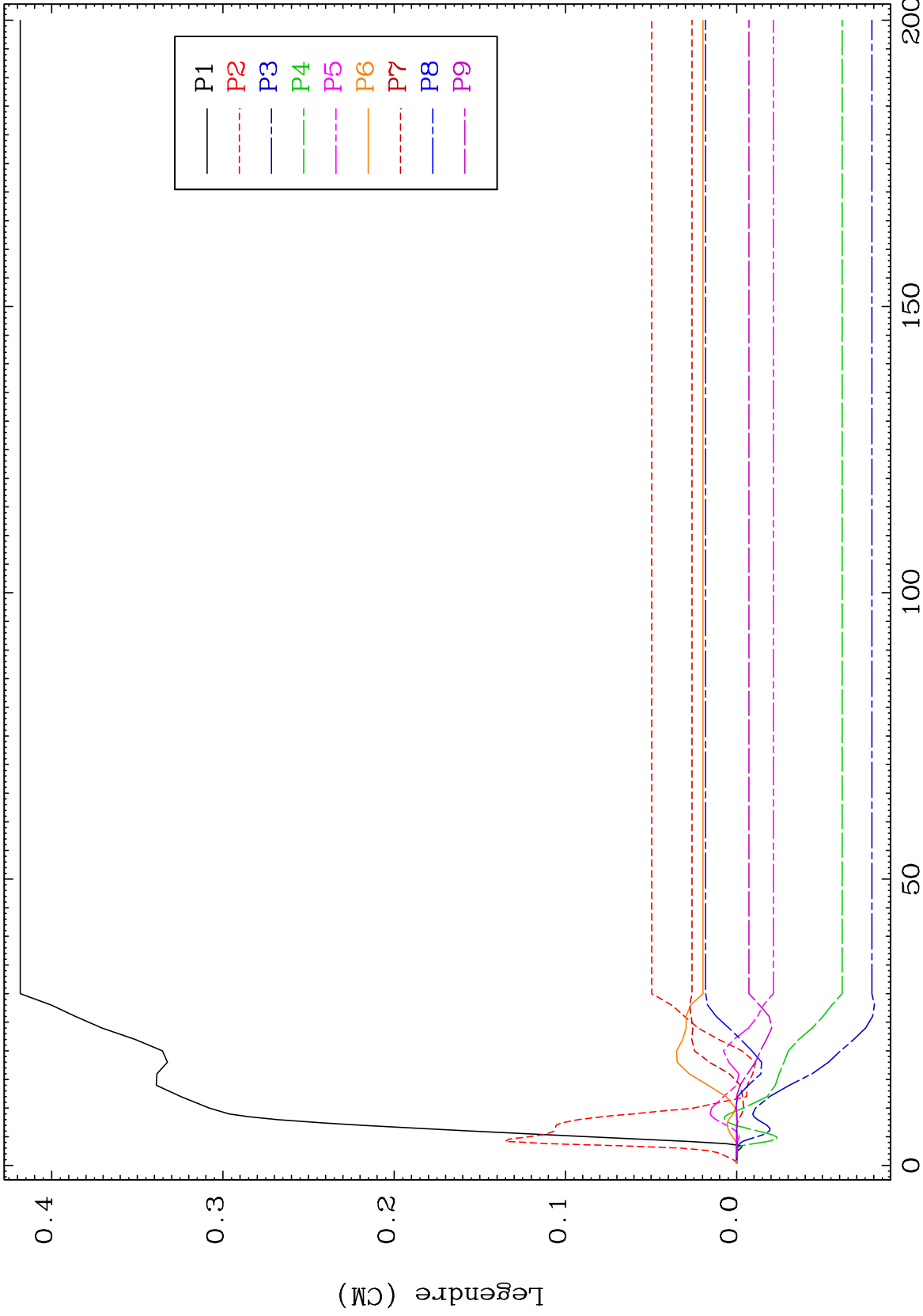


28 Incident Energy (MeV) 73-Ta-178

MAT 7319

MT= 54 (n,n') Level  
Legendre Coefficients

73-Ta-178



29

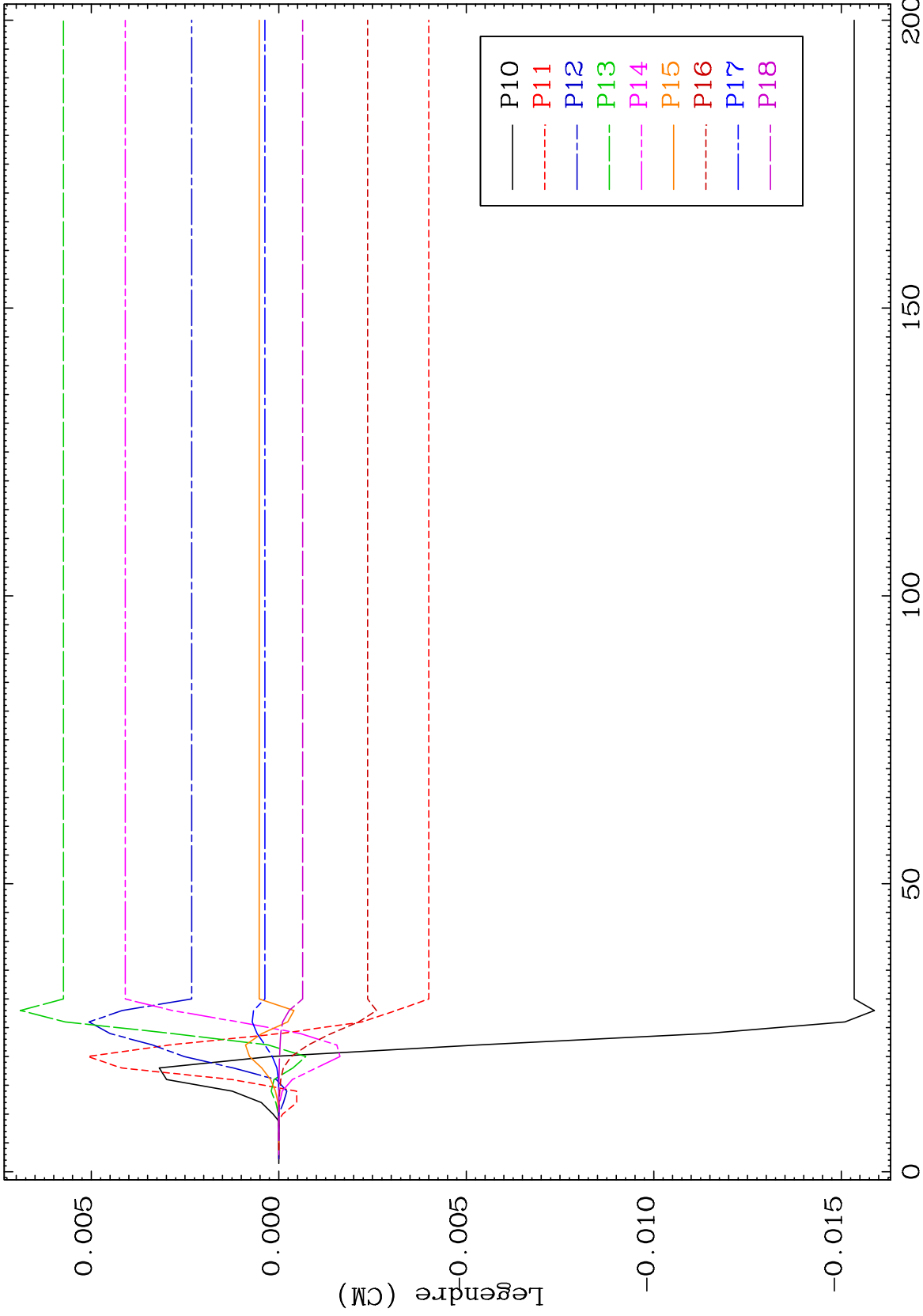
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 54 (n,n') Level  
Legendre Coefficients

73-Ta-178



30

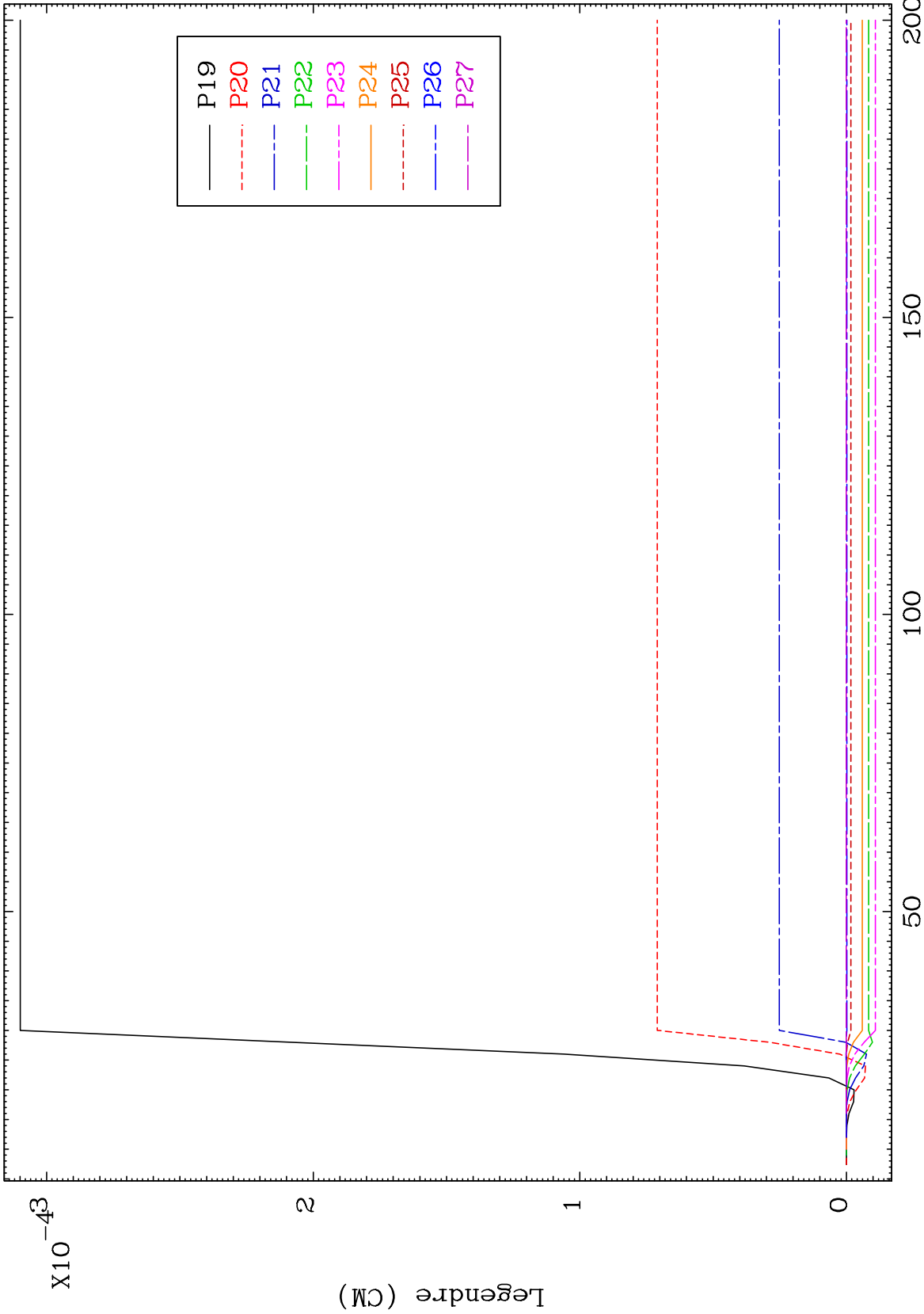
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 54 (n,n') Level  
Legendre Coefficients

73-Ta-178



31

Incident Energy (MeV)

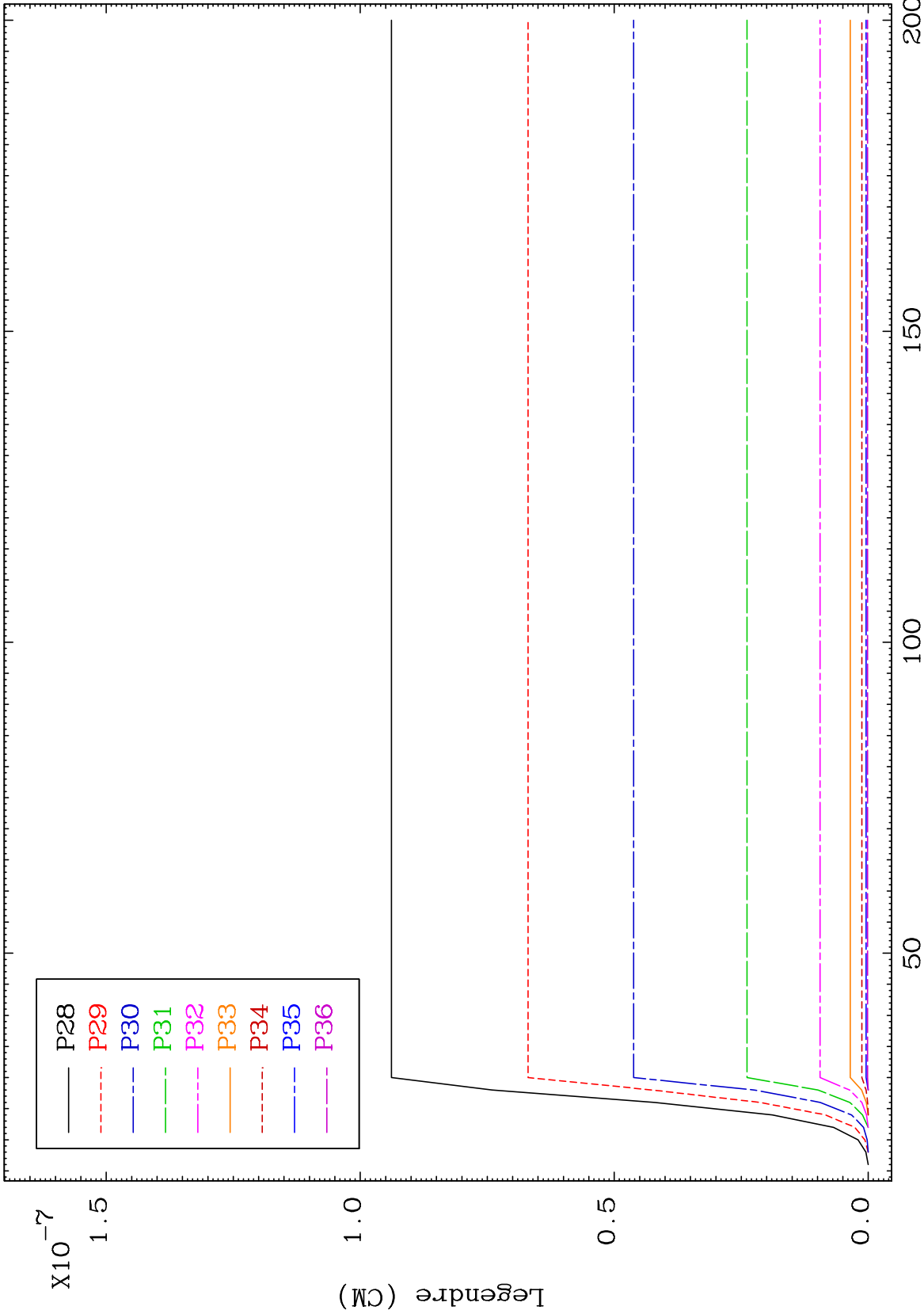
73-Ta-178



MAT 7319

MT= 54 (n,n') Level  
Legendre Coefficients

73-Ta-178



32

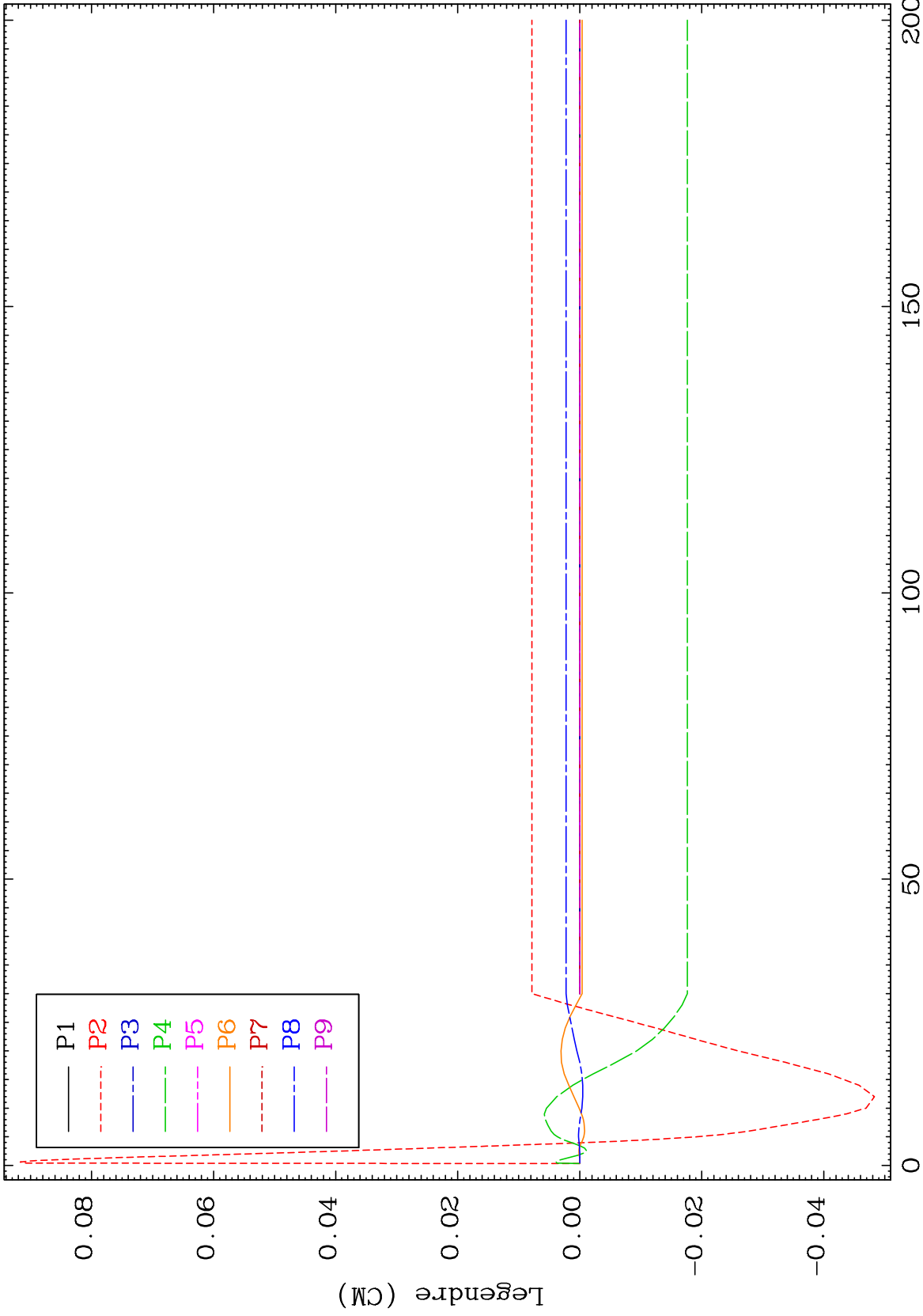
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 55 (n,n') Level  
Legendre Coefficients

73-Ta-178



33

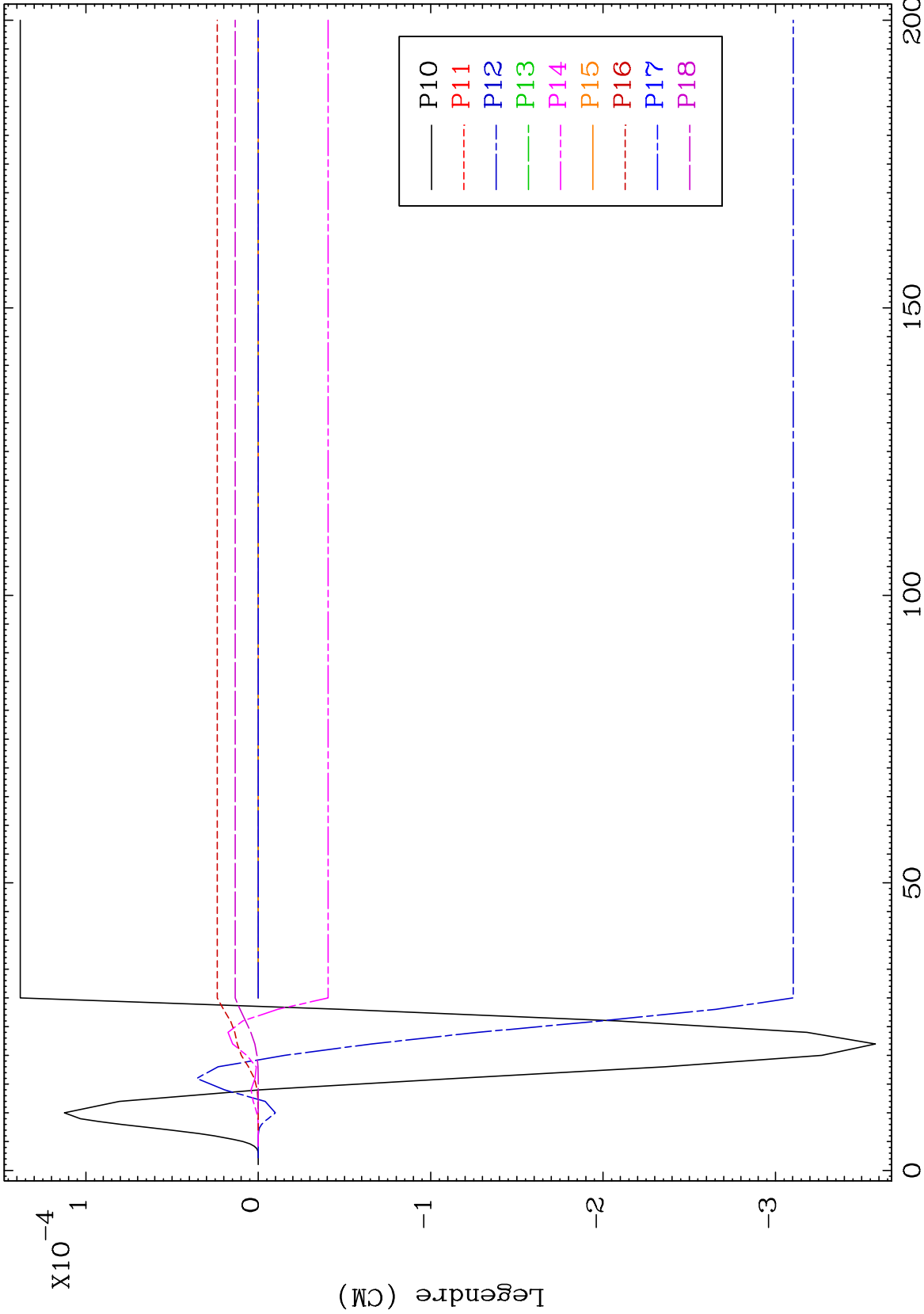
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 55 (n,n') Level  
Legendre Coefficients

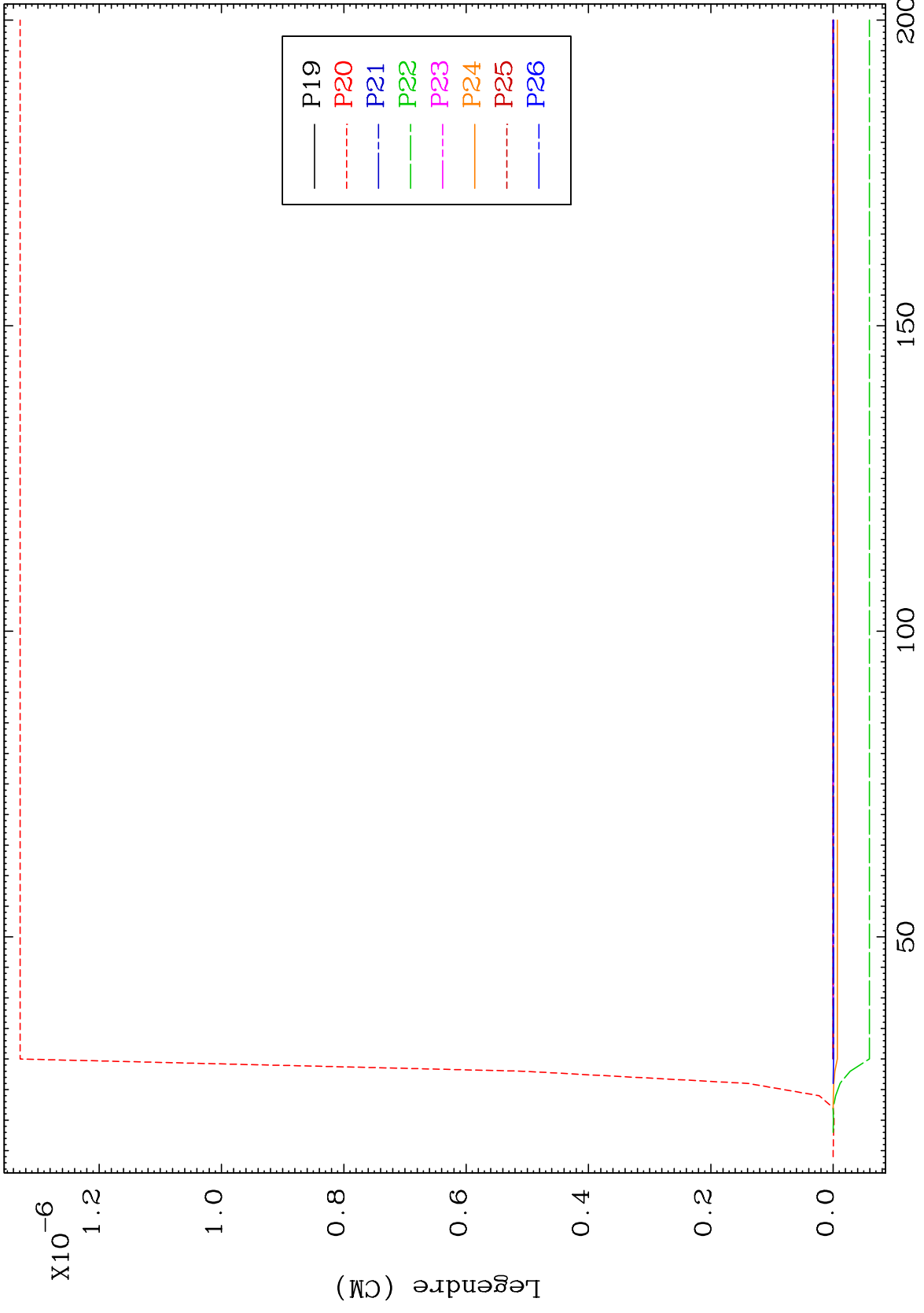
73-Ta-178



34

73-Ta-178

MAT 7319 MT= 55 (n,n') Level Legendre Coefficients 73-Ta-178

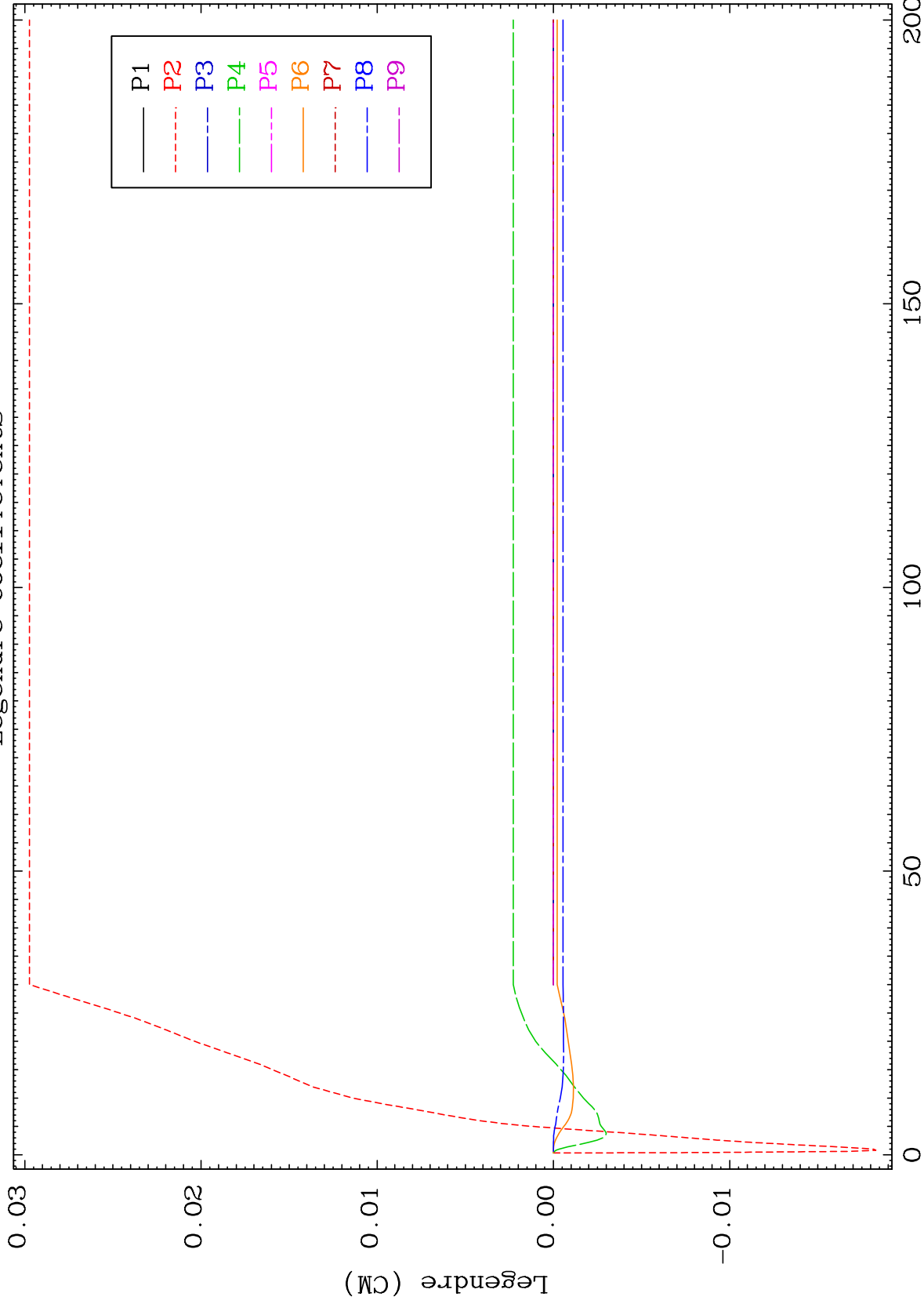


35 Incident Energy (MeV) 73-Ta-178

MAT 7319

MT= 56 (n,n') Level  
Legendre Coefficients

73-Ta-178



36

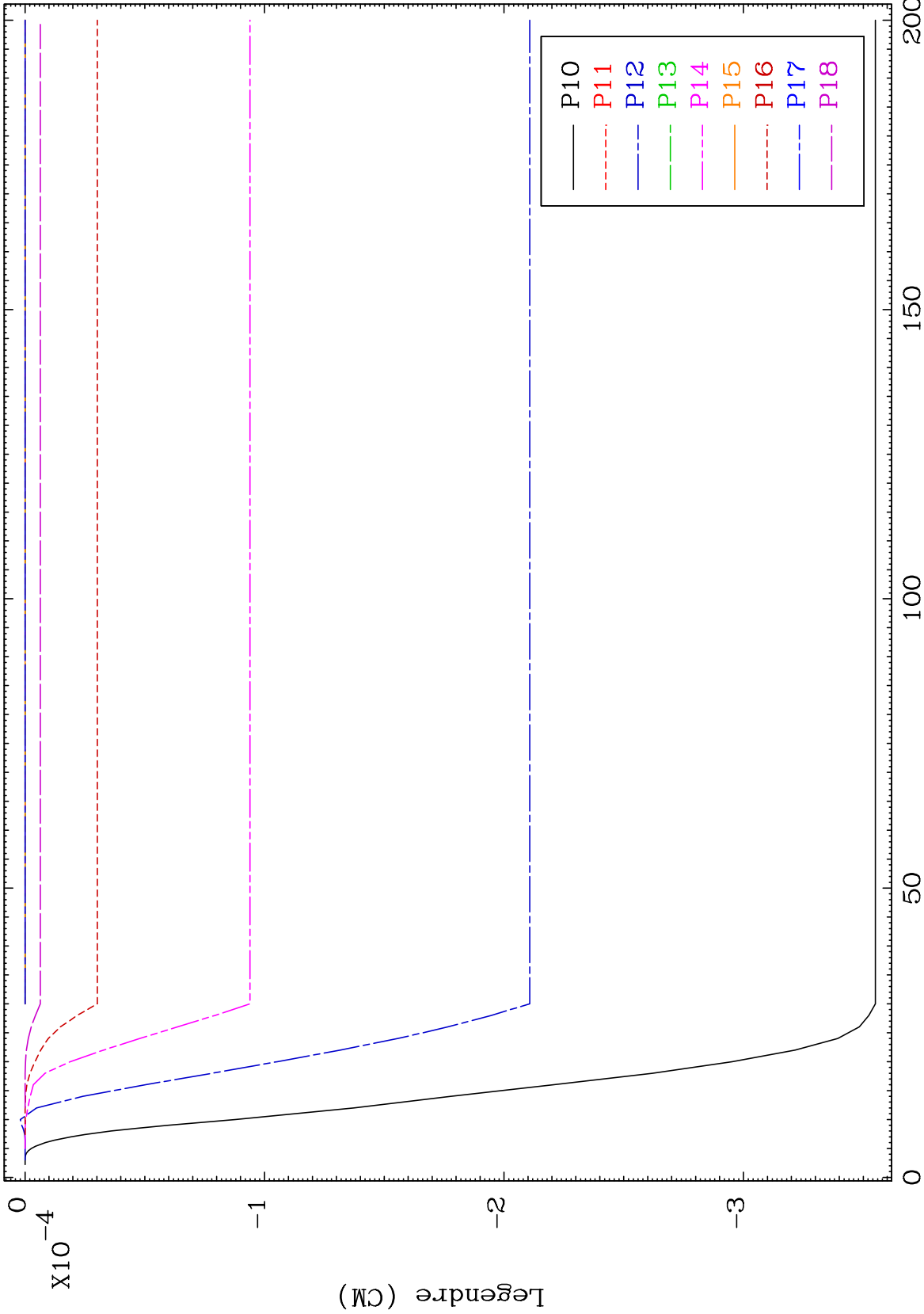
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 56 (n,n') Level  
Legendre Coefficients

73-Ta-178



37

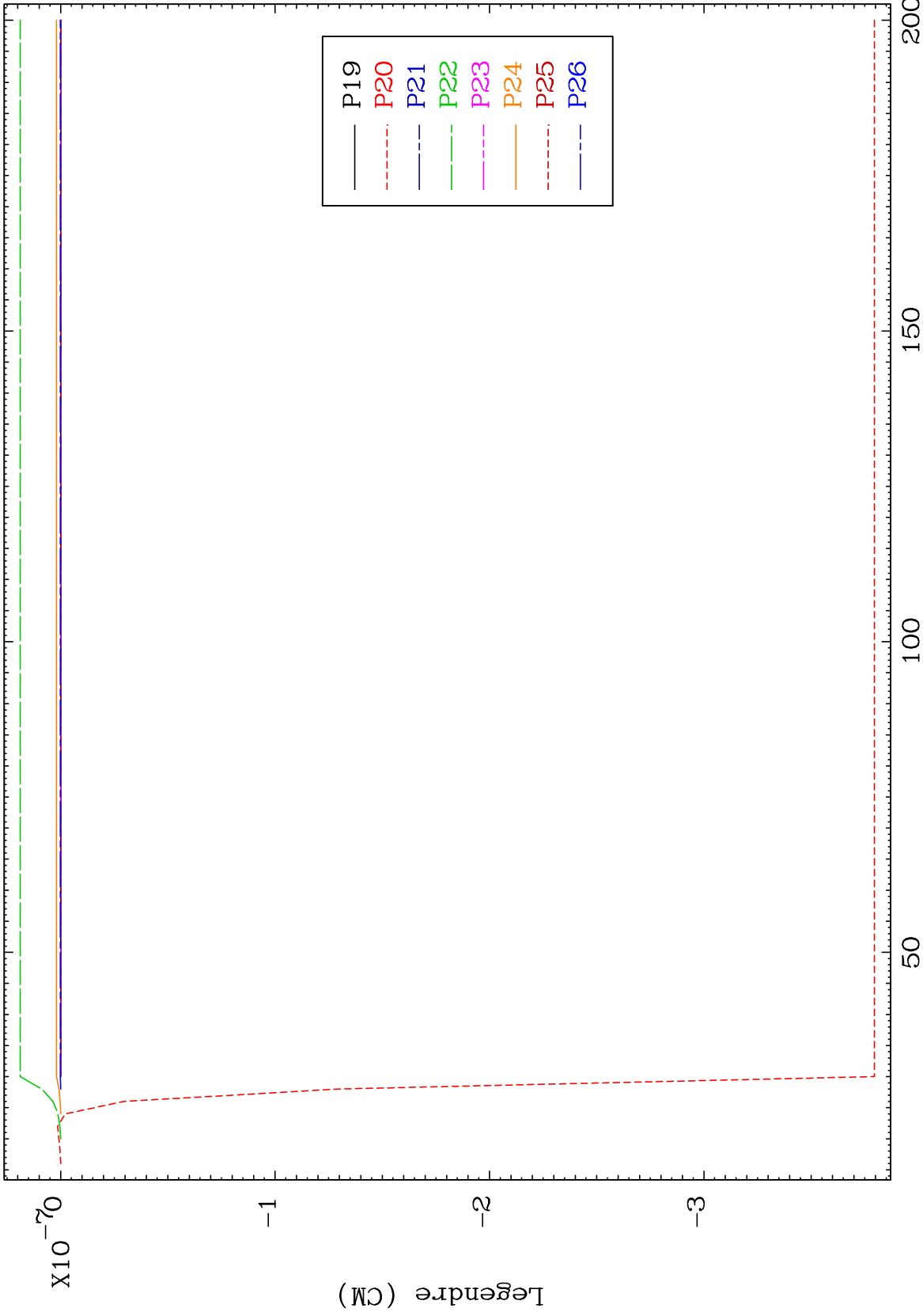
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 56 (n,n') Level  
Legendre Coefficients

73-Ta-178



38

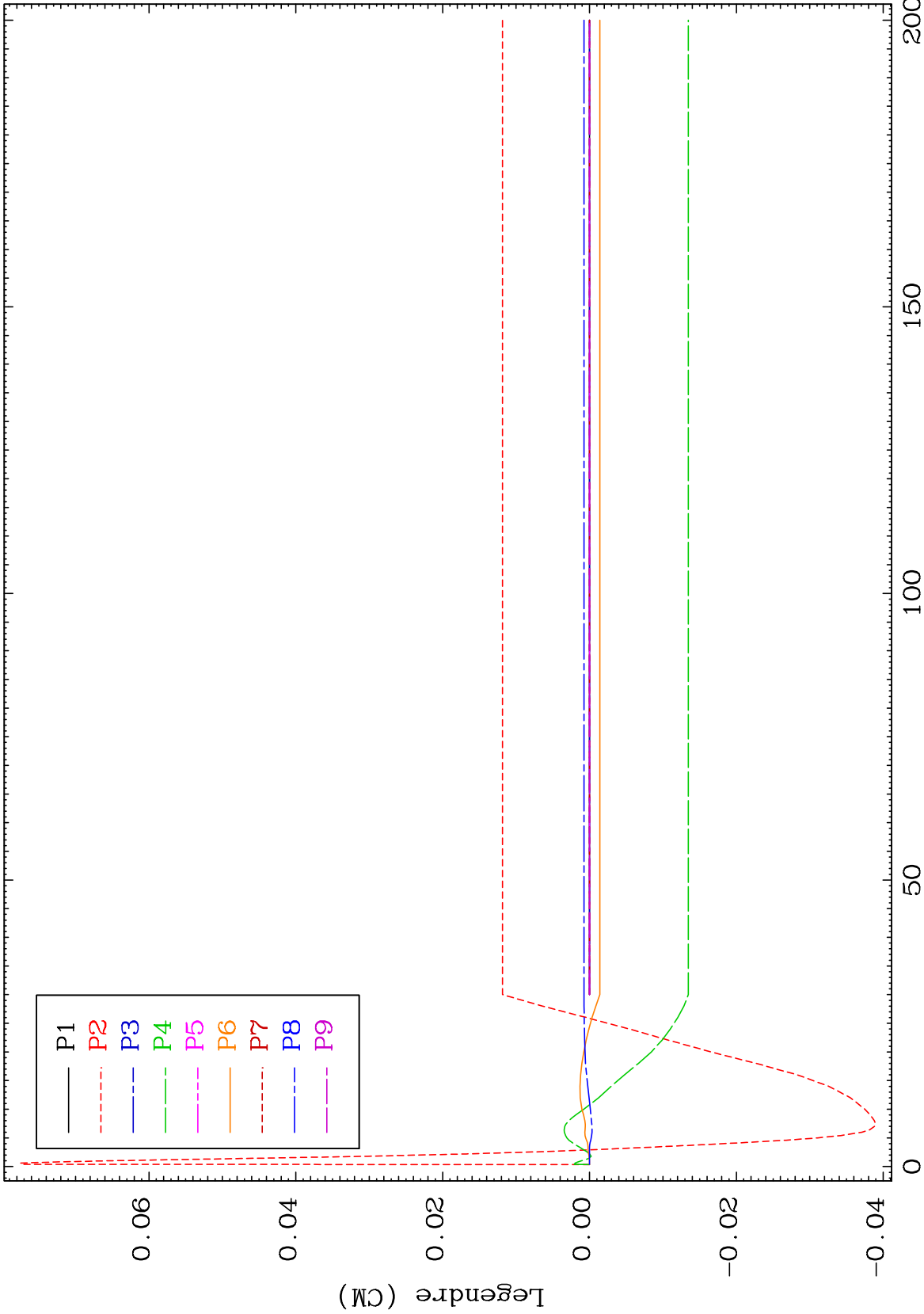
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 57 (n,n') Level  
Legendre Coefficients

73-Ta-178



39

Incident Energy (MeV)

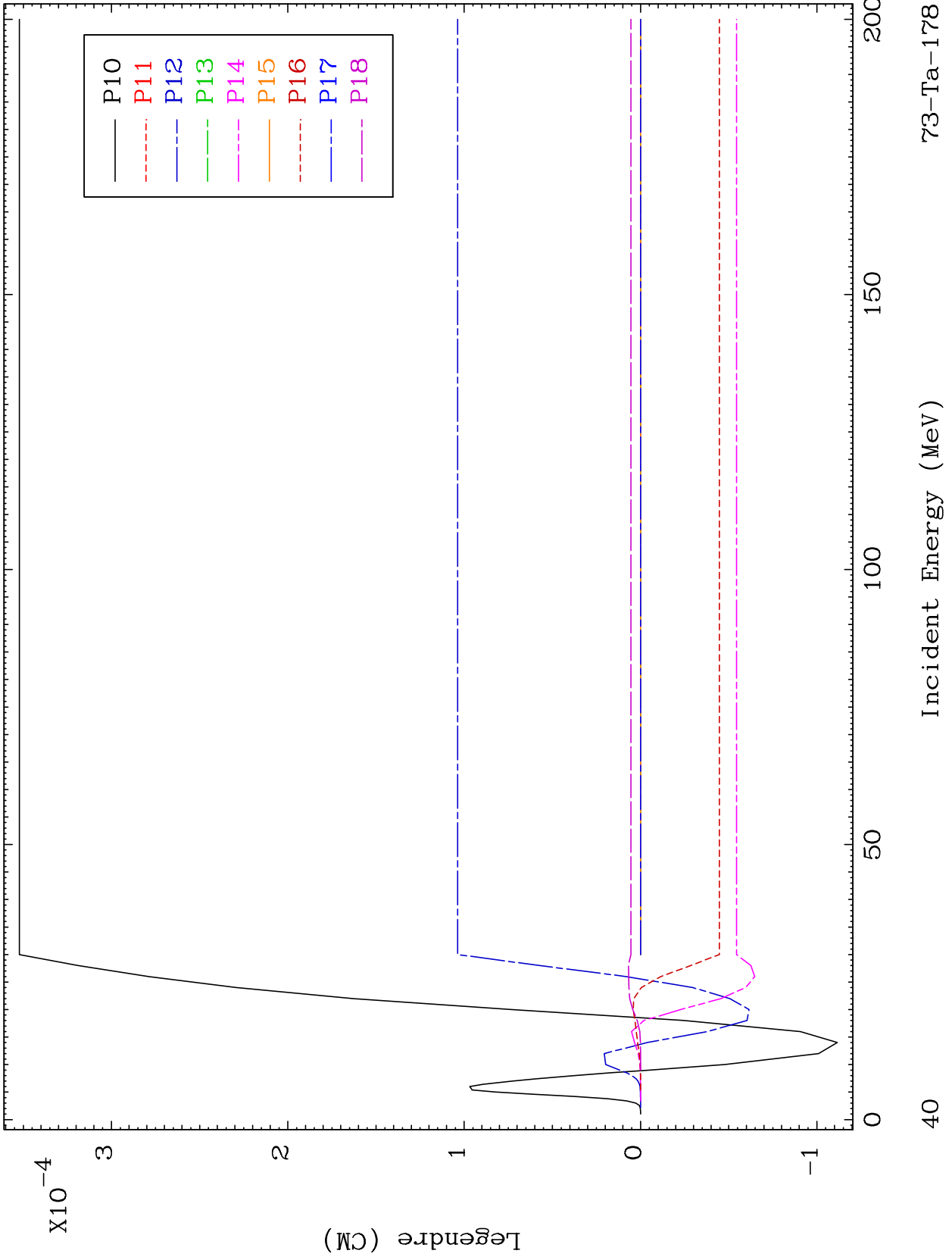
73-Ta-178



MAT 7319

MT= 57 (n,n') Level  
Legendre Coefficients

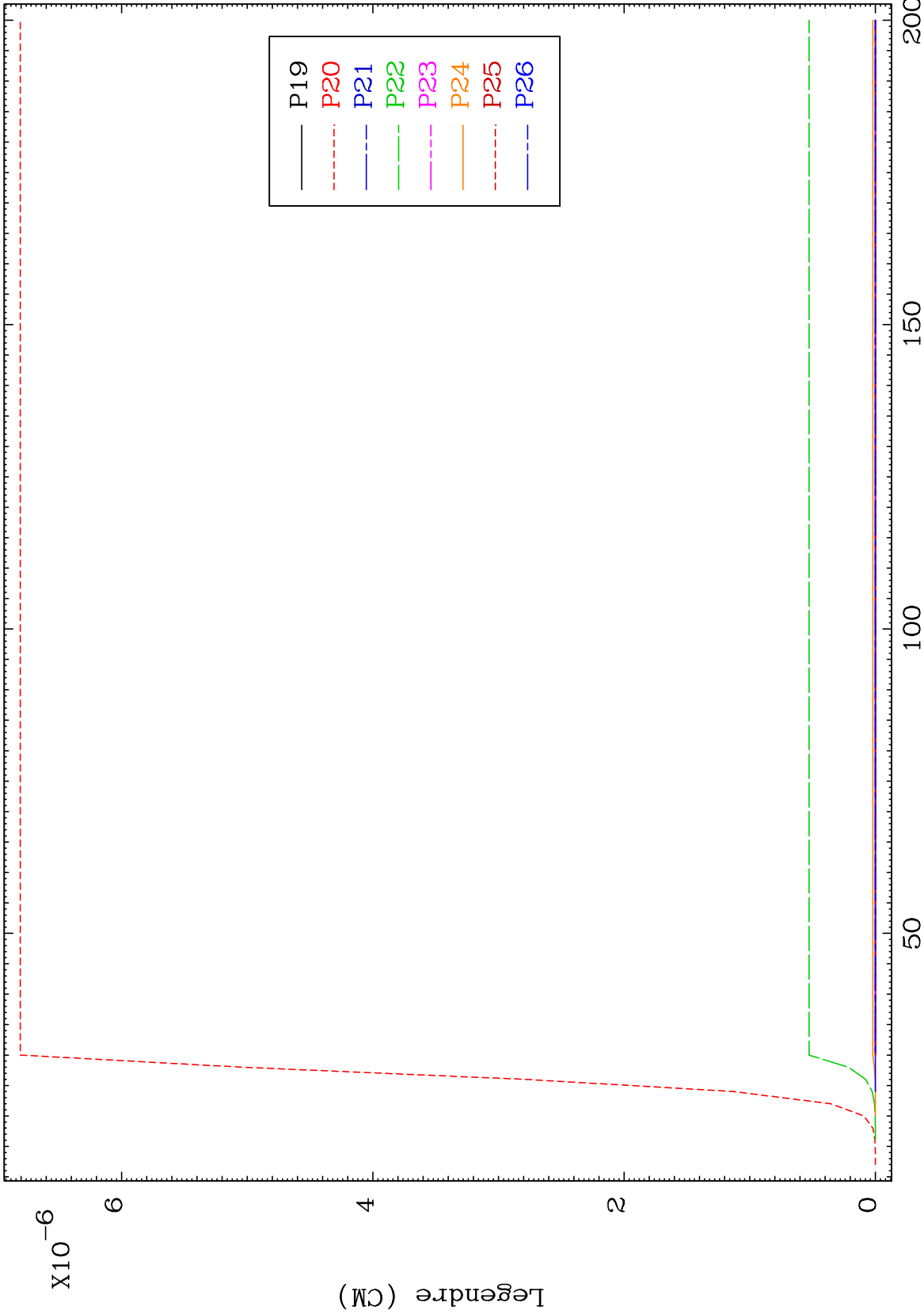
73-Ta-178



MAT 7319

MT= 57 (n,n') Level  
Legendre Coefficients

73-Ta-178



41

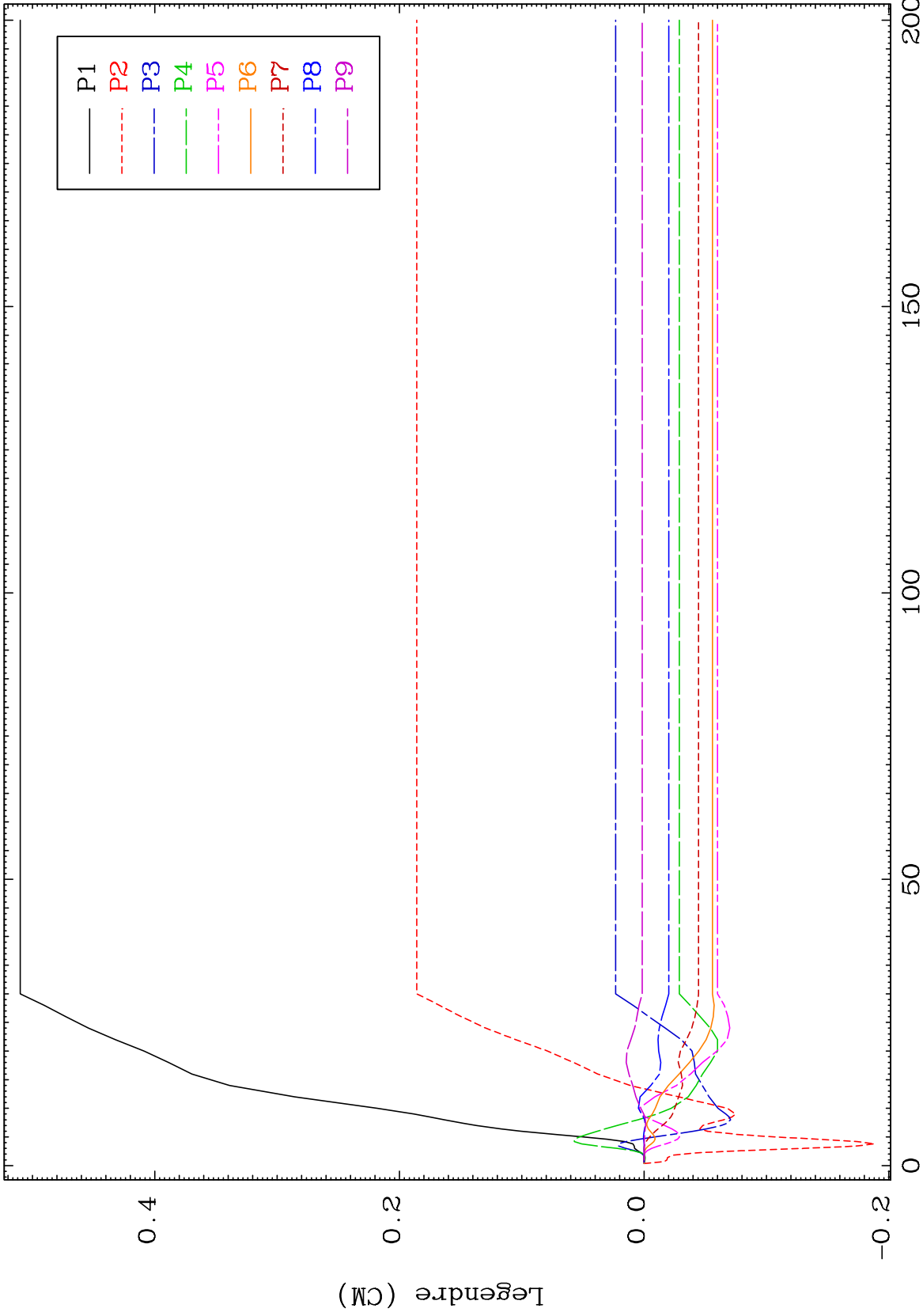
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 58 (n,n') Level  
Legendre Coefficients

73-Ta-178



42

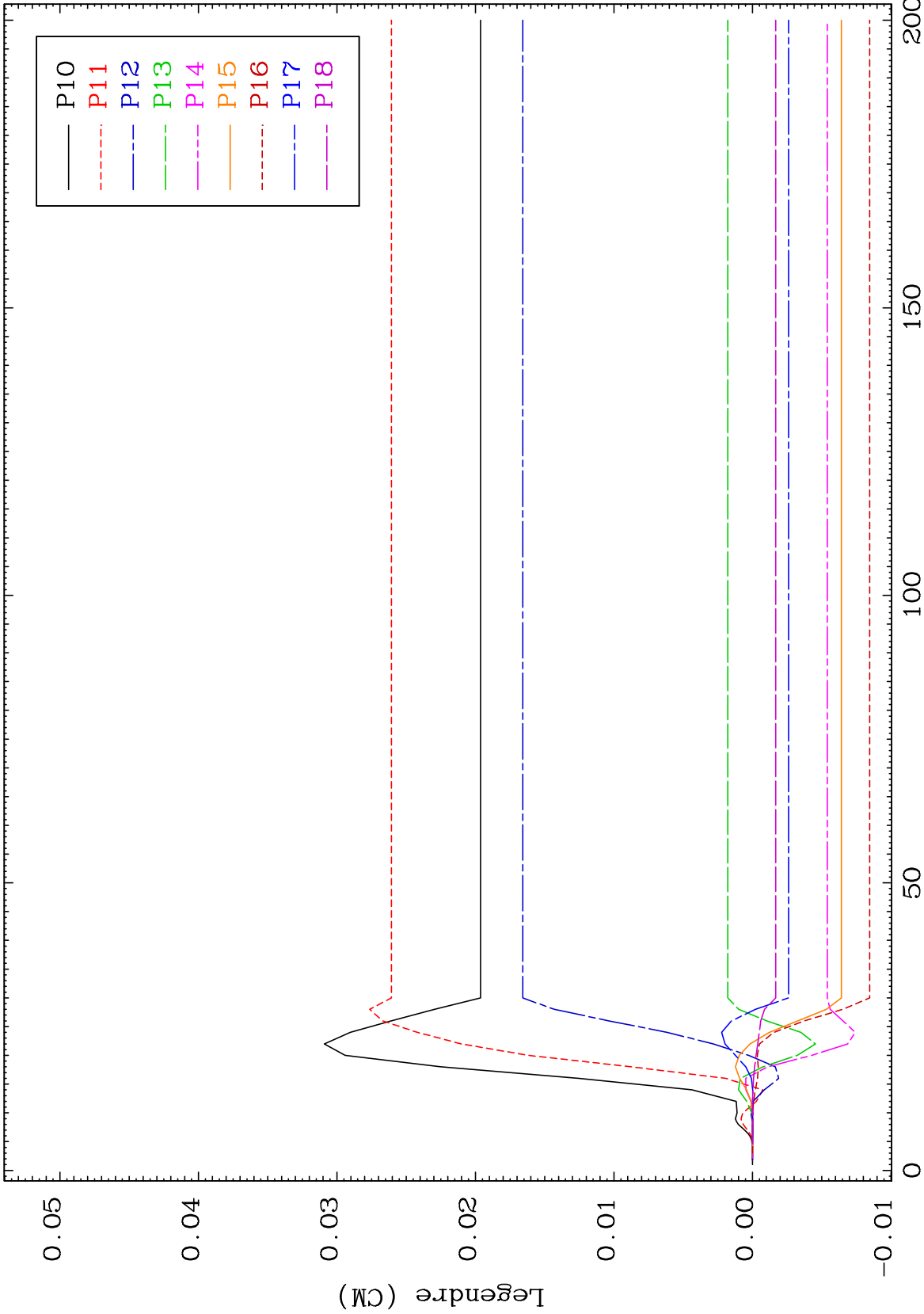
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 58 (n,n') Level  
Legendre Coefficients

73-Ta-178



43

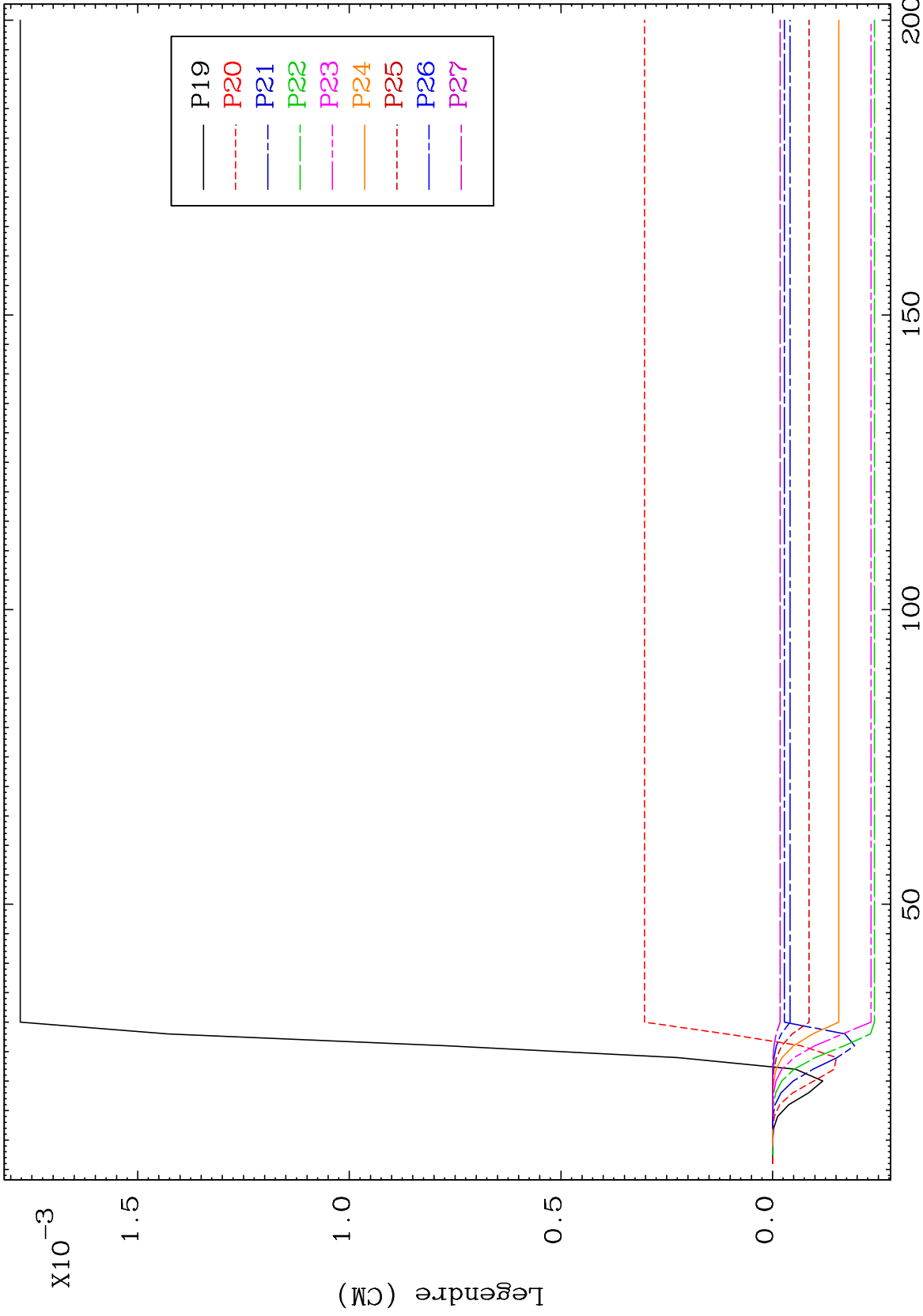
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 58 (n,n') Level  
Legendre Coefficients

73-Ta-178



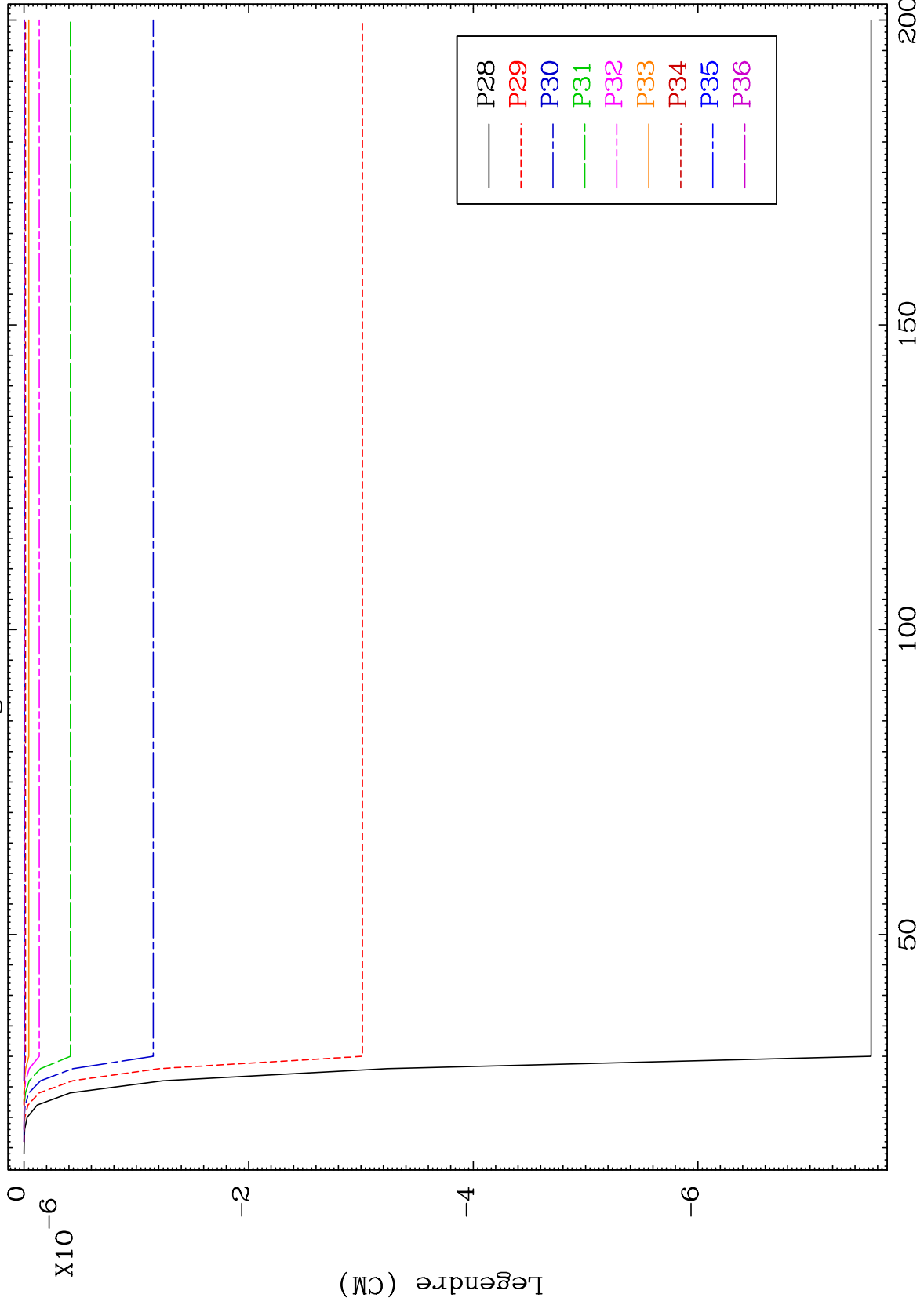
44

73-Ta-178

MAT 7319

MT= 58 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

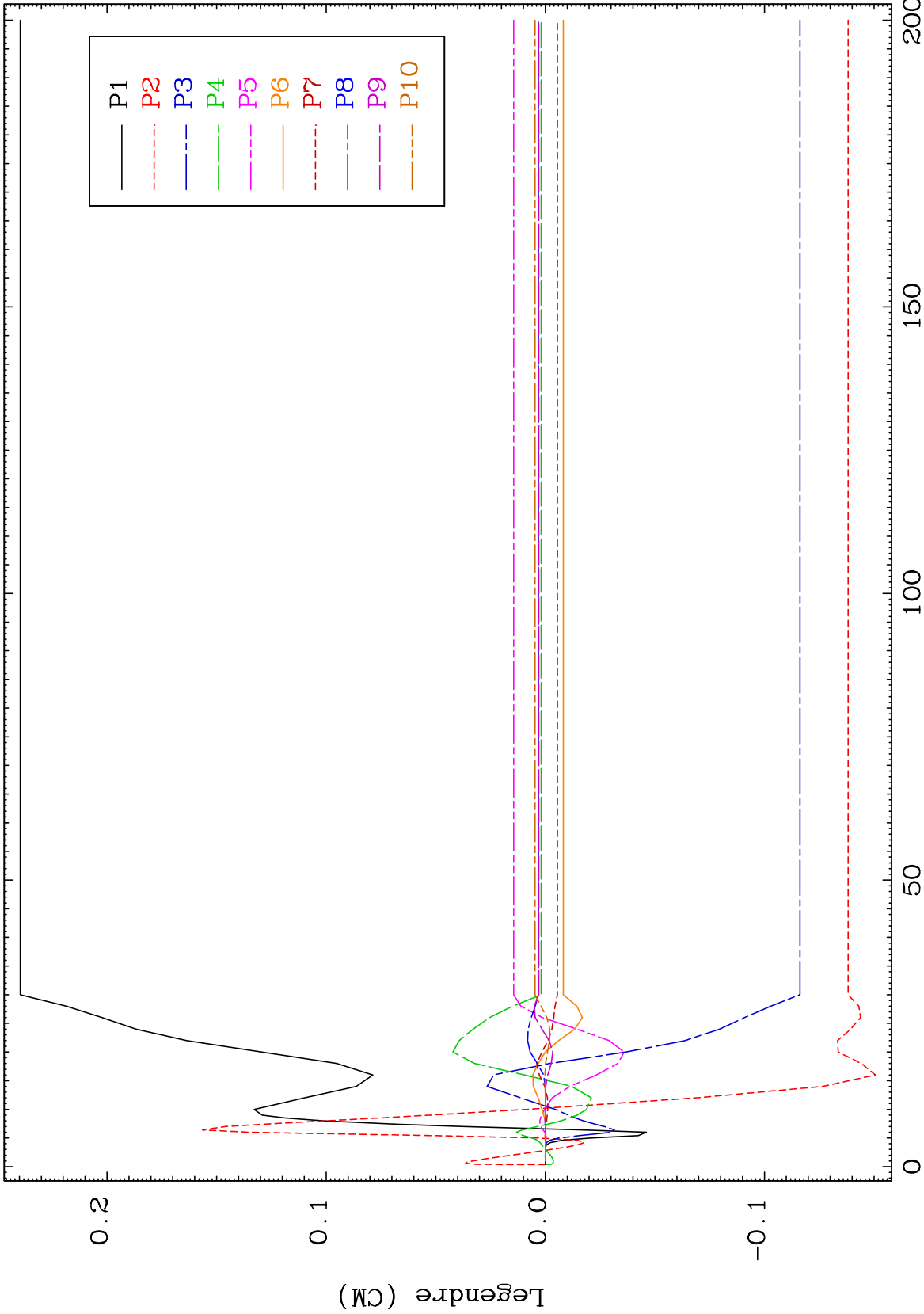
Incident Energy (MeV)

45

MAT 7319

MT= 59 (n,n') Level  
Legendre Coefficients

73-Ta-178



46

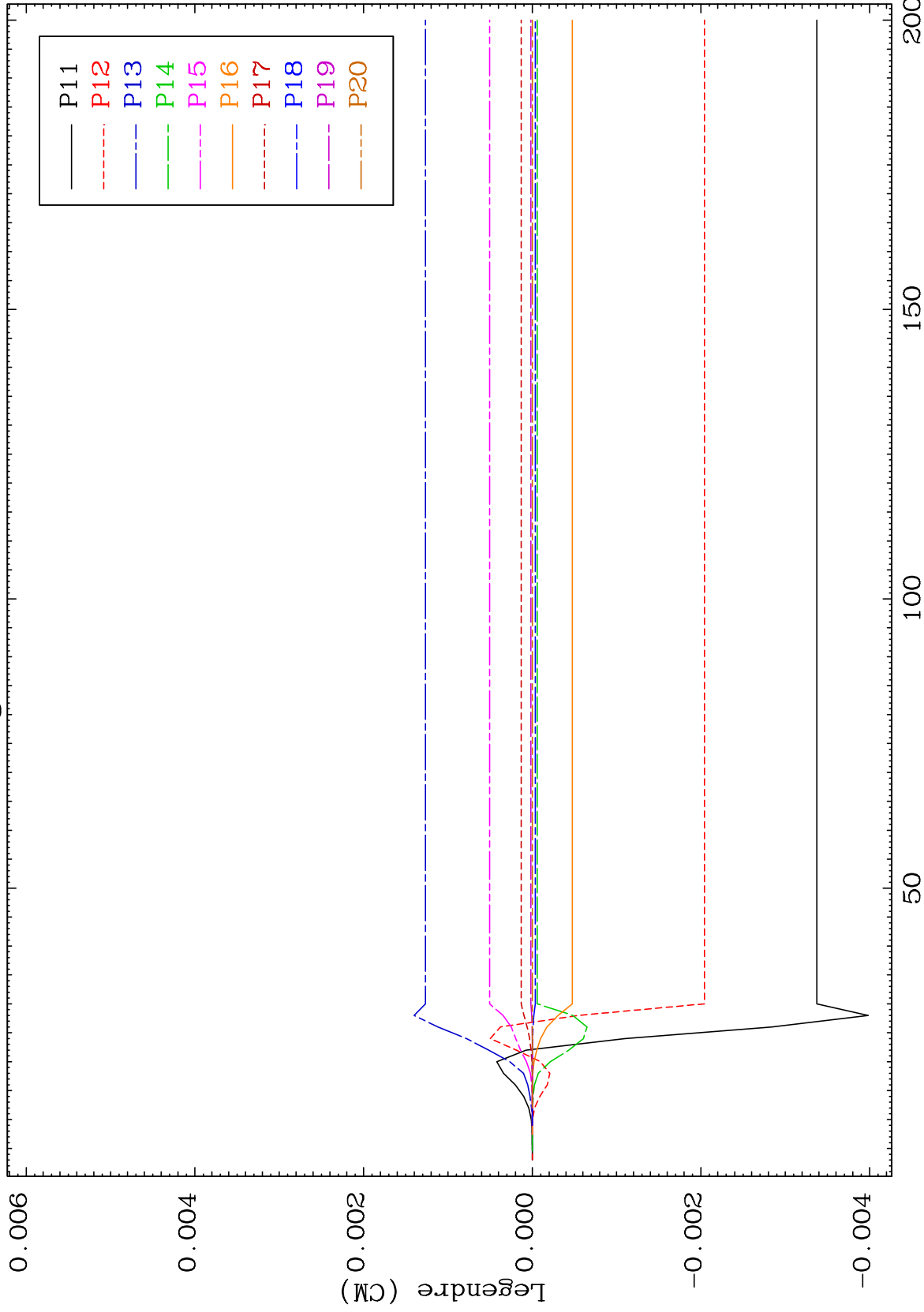
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 59 (n,n') Level  
Legendre Coefficients

73-Ta-178



47

Incident Energy (MeV)

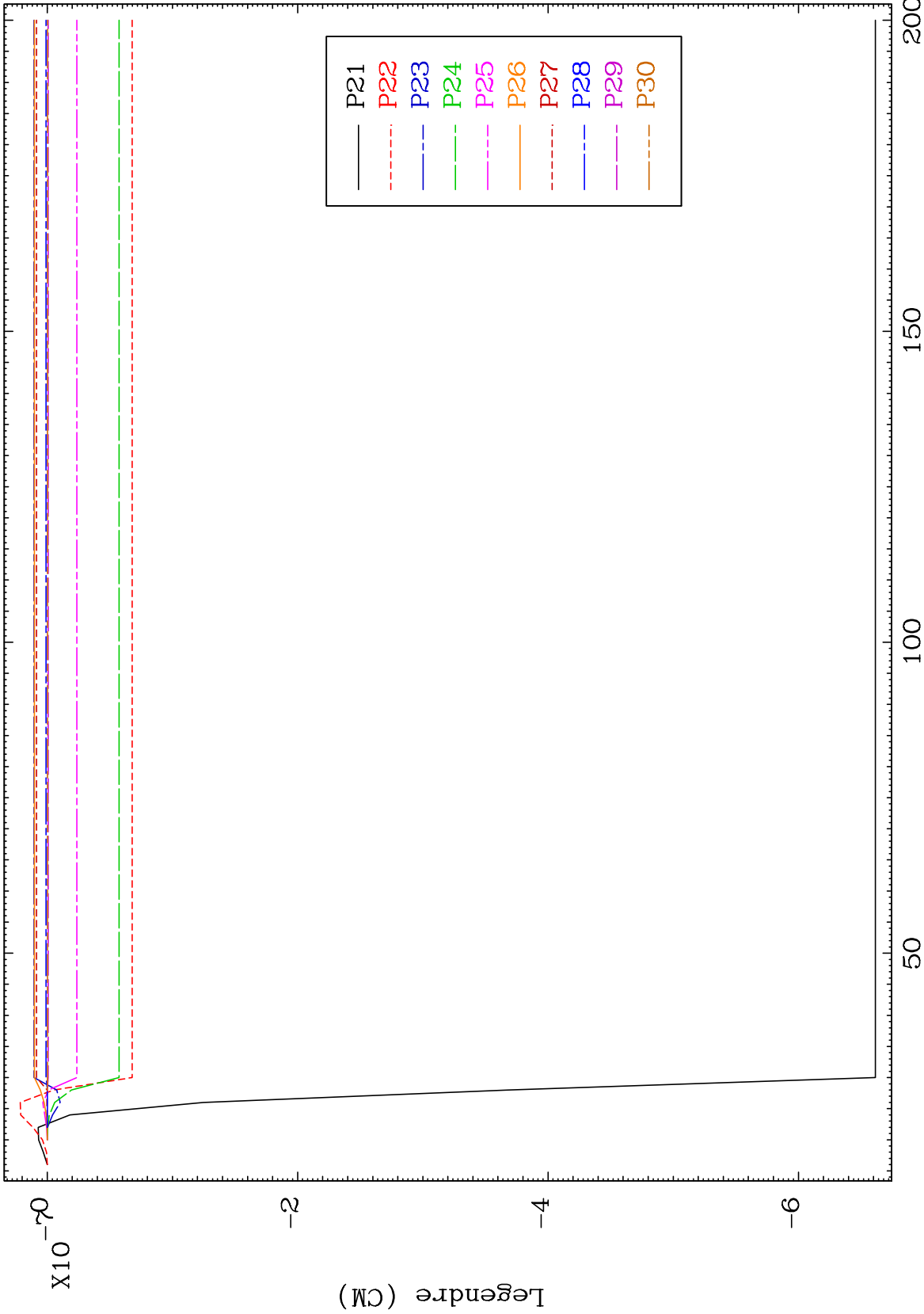
73-Ta-178



MAT 7319

MT= 59 (n,n') Level  
Legendre Coefficients

73-Ta-178



48

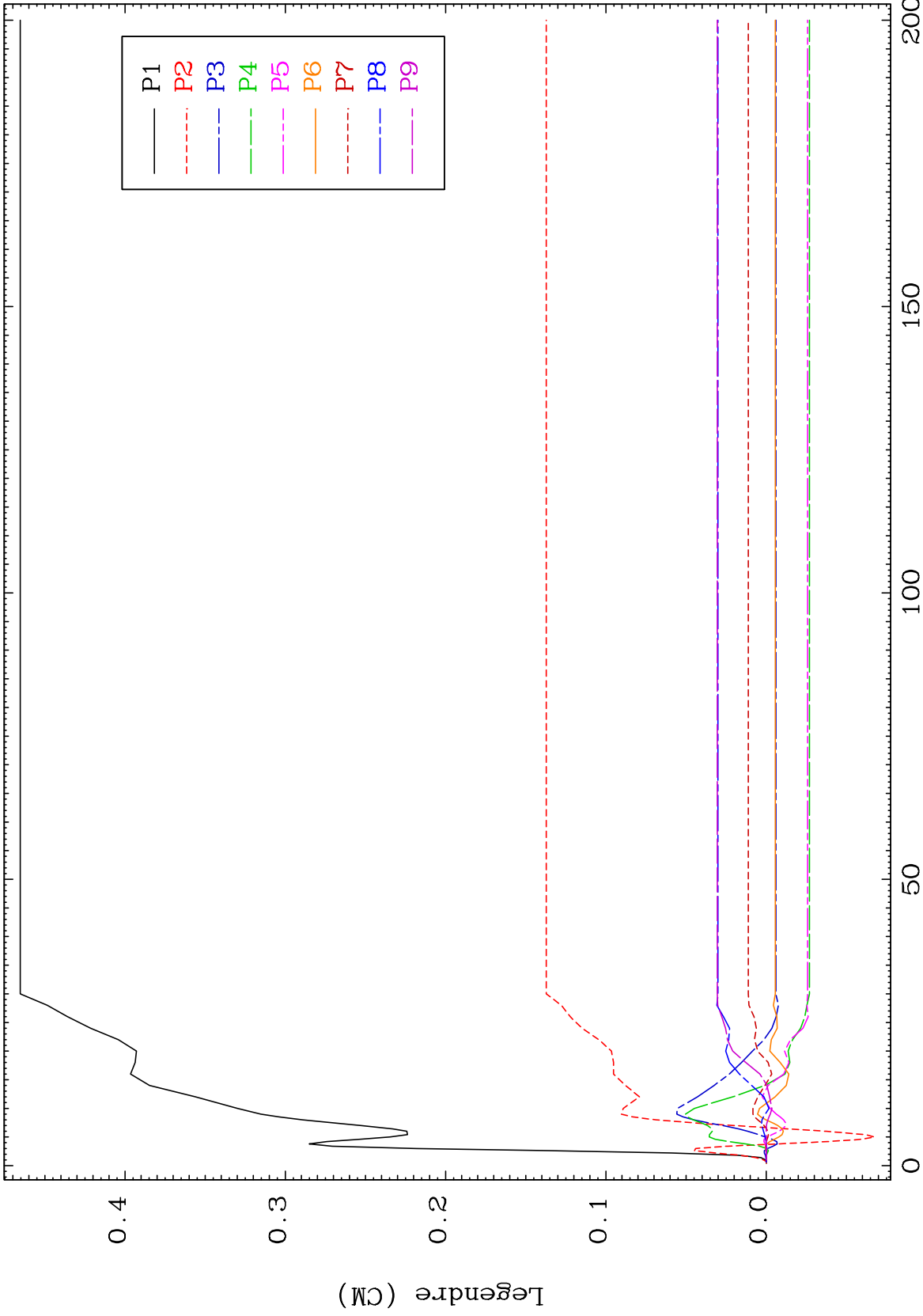
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 60 (n,n') Level  
Legendre Coefficients

73-Ta-178



49

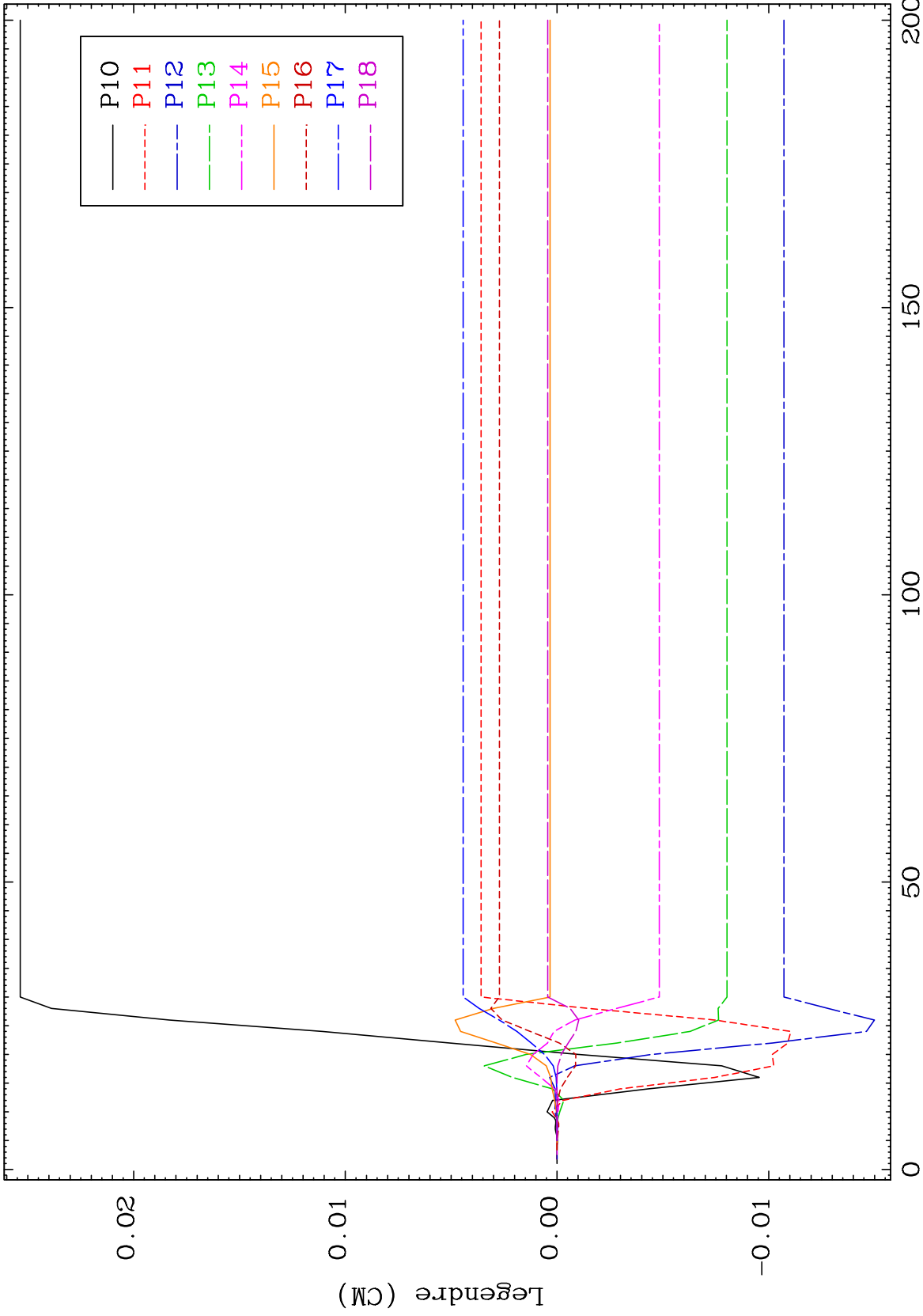
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 60 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

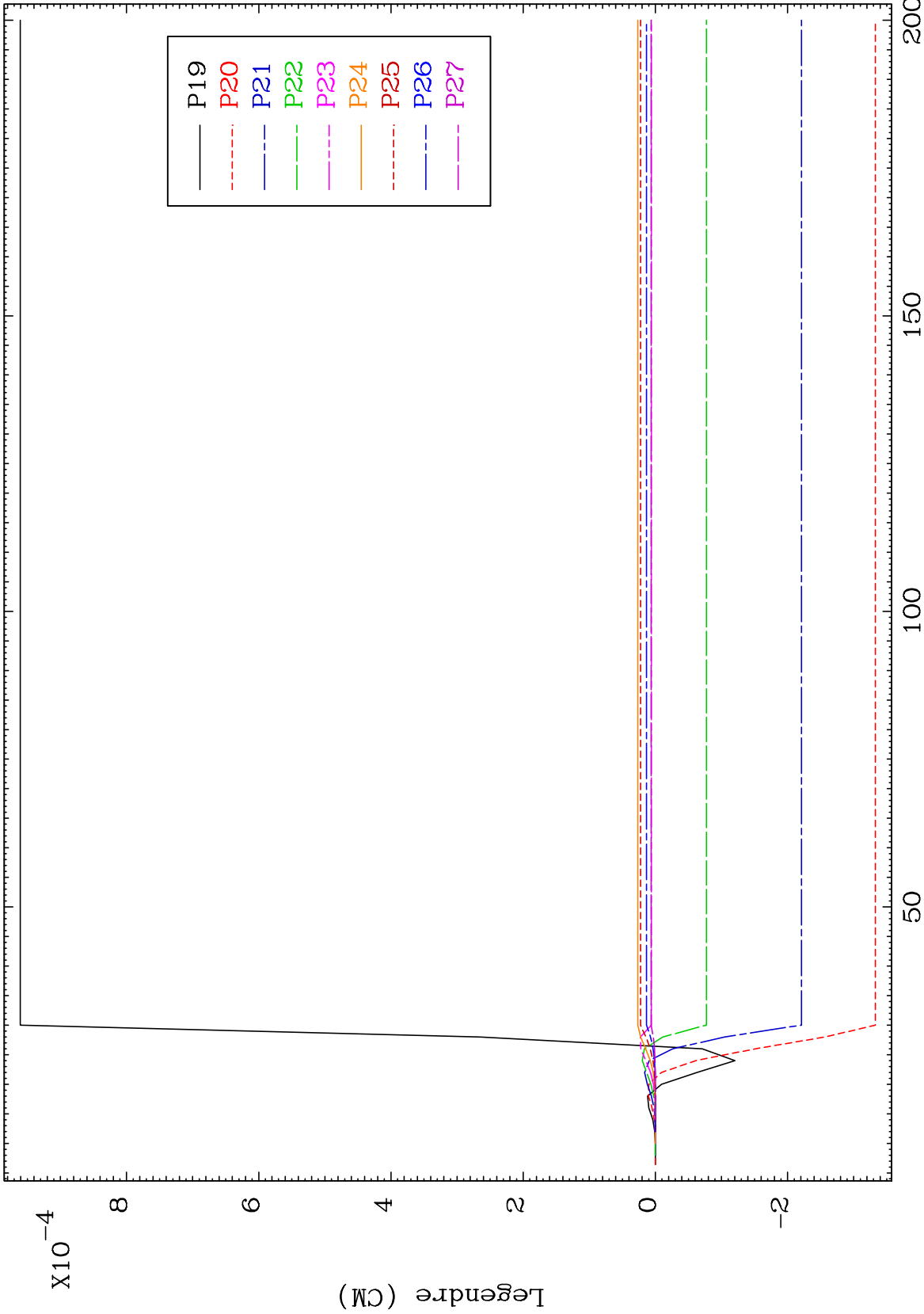
Incident Energy (MeV)

50

MAT 7319

MT= 60 (n,n') Level  
Legendre Coefficients

73-Ta-178



51

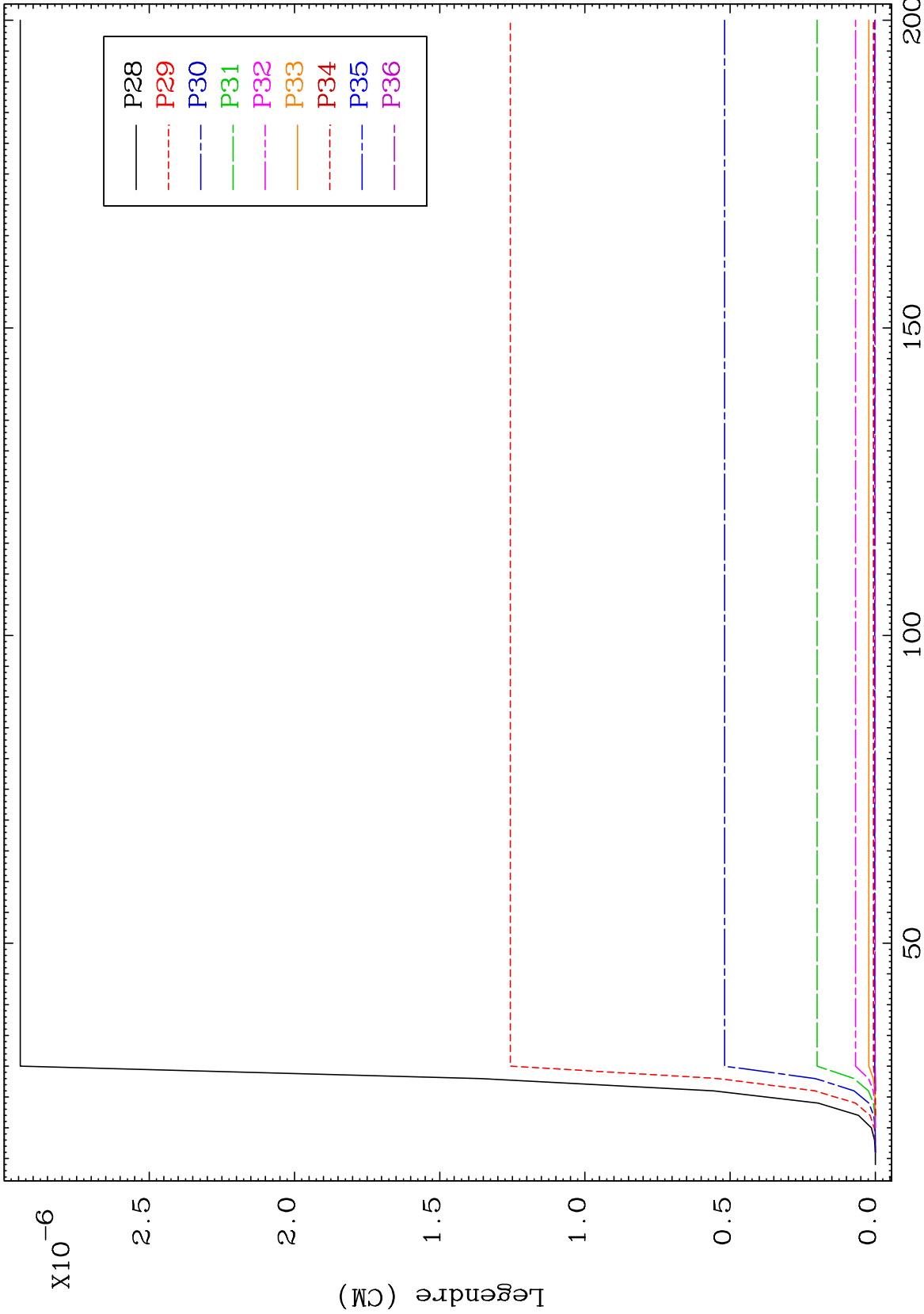
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 60 (n,n') Level  
Legendre Coefficients

73-Ta-178



52

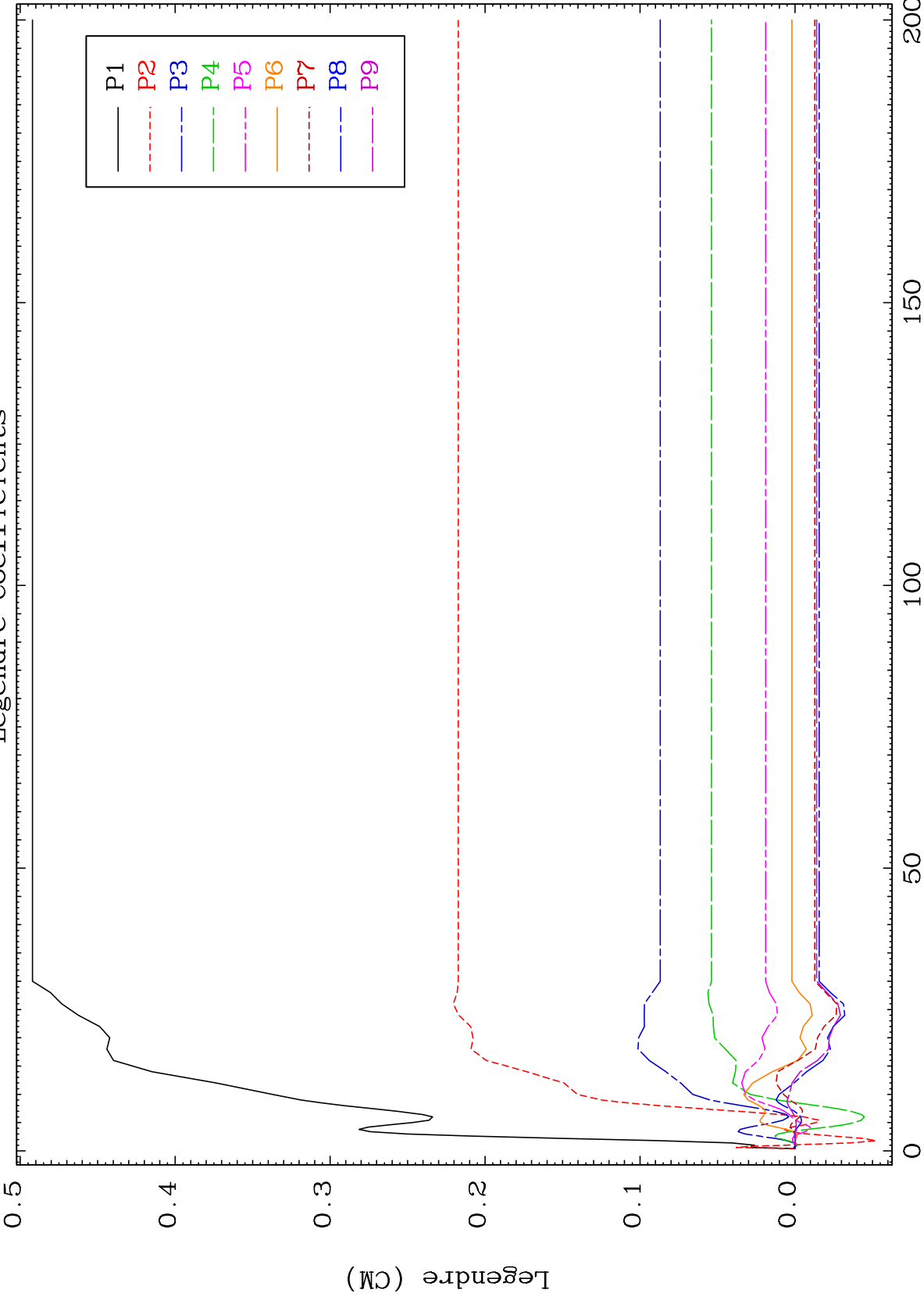
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 61 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

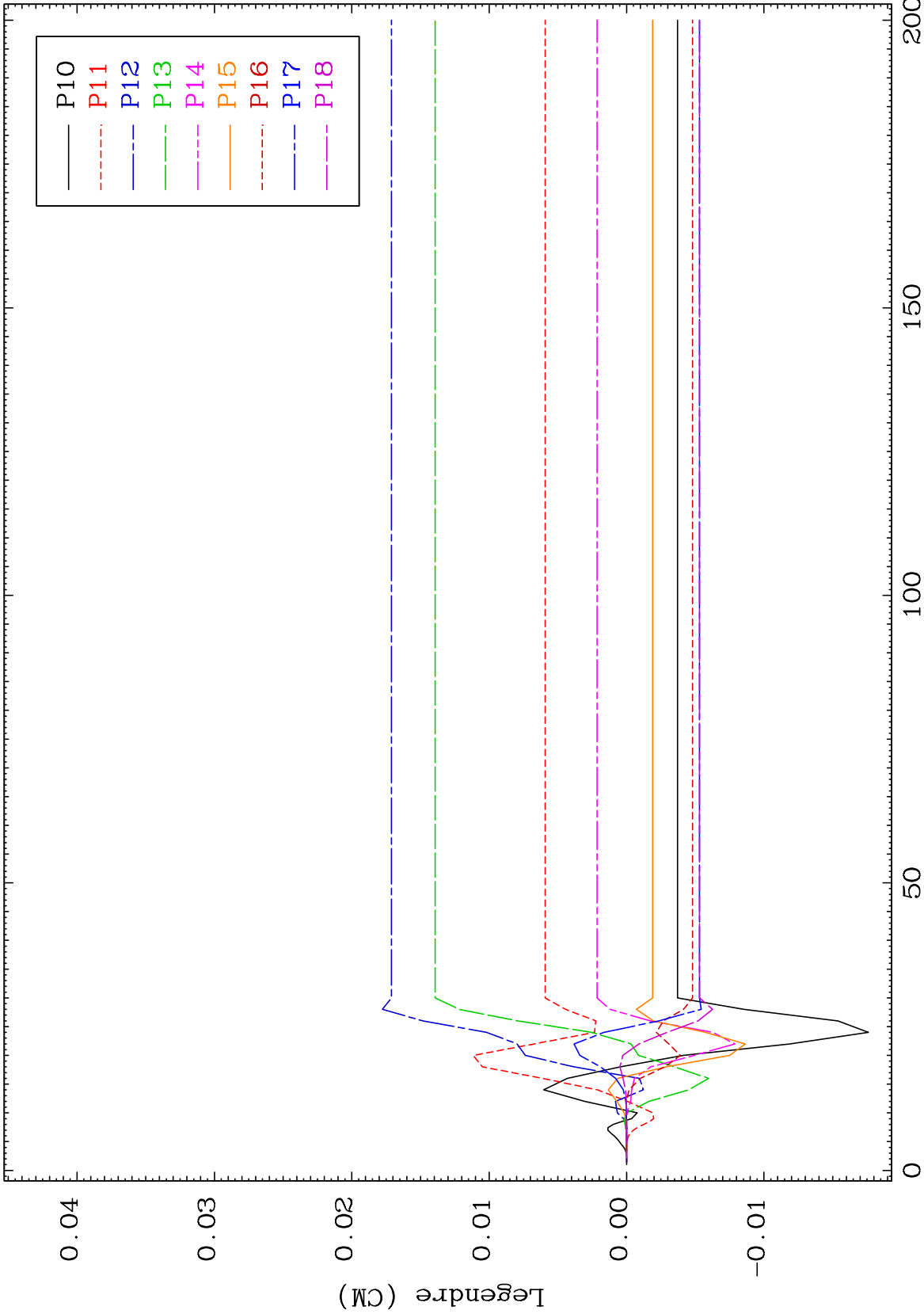
Incident Energy (MeV)

53

MAT 7319

MT= 61 (n,n') Level  
Legendre Coefficients

73-Ta-178



54

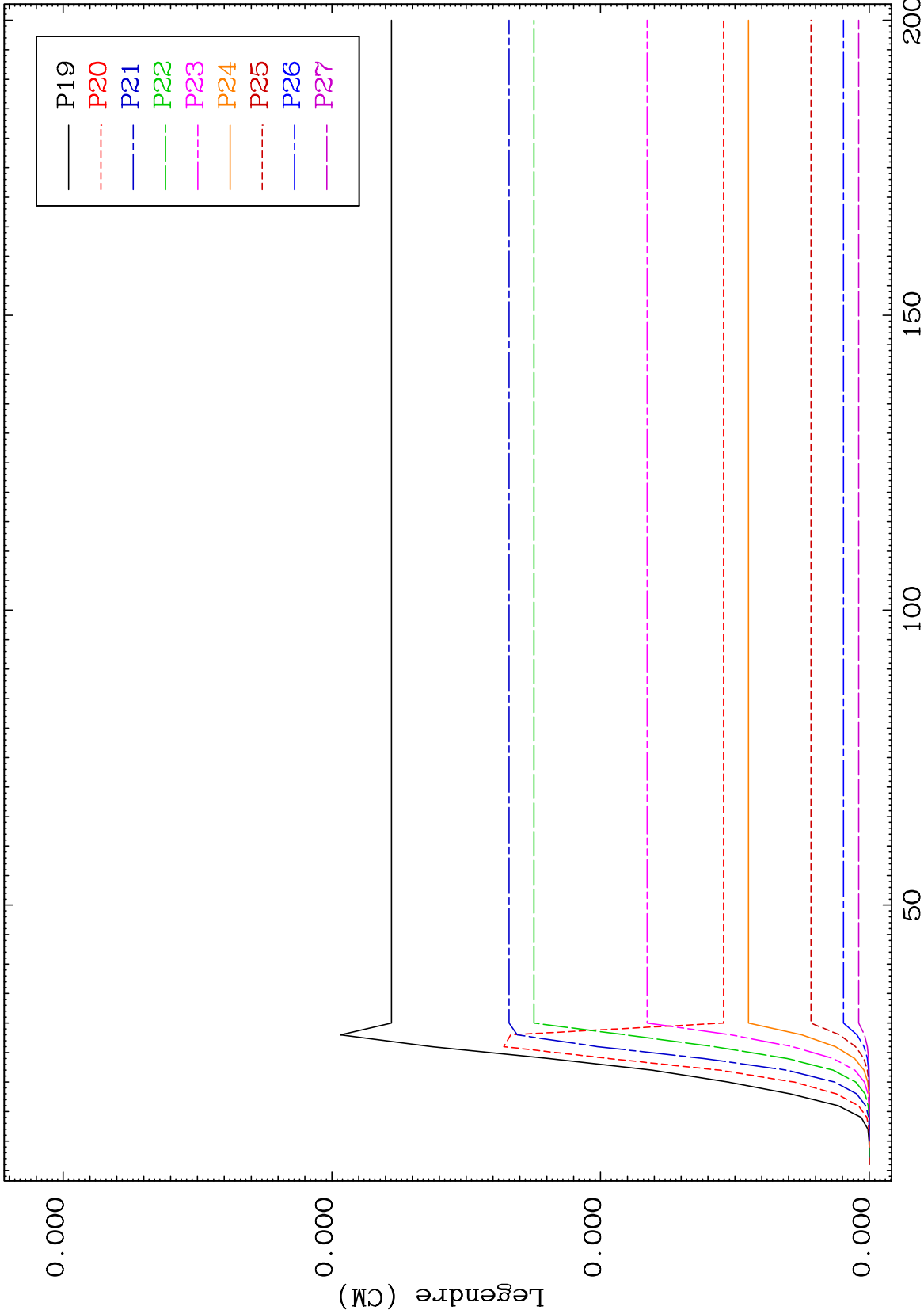
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 61 (n,n') Level  
Legendre Coefficients

73-Ta-178



55

Incident Energy (MeV)

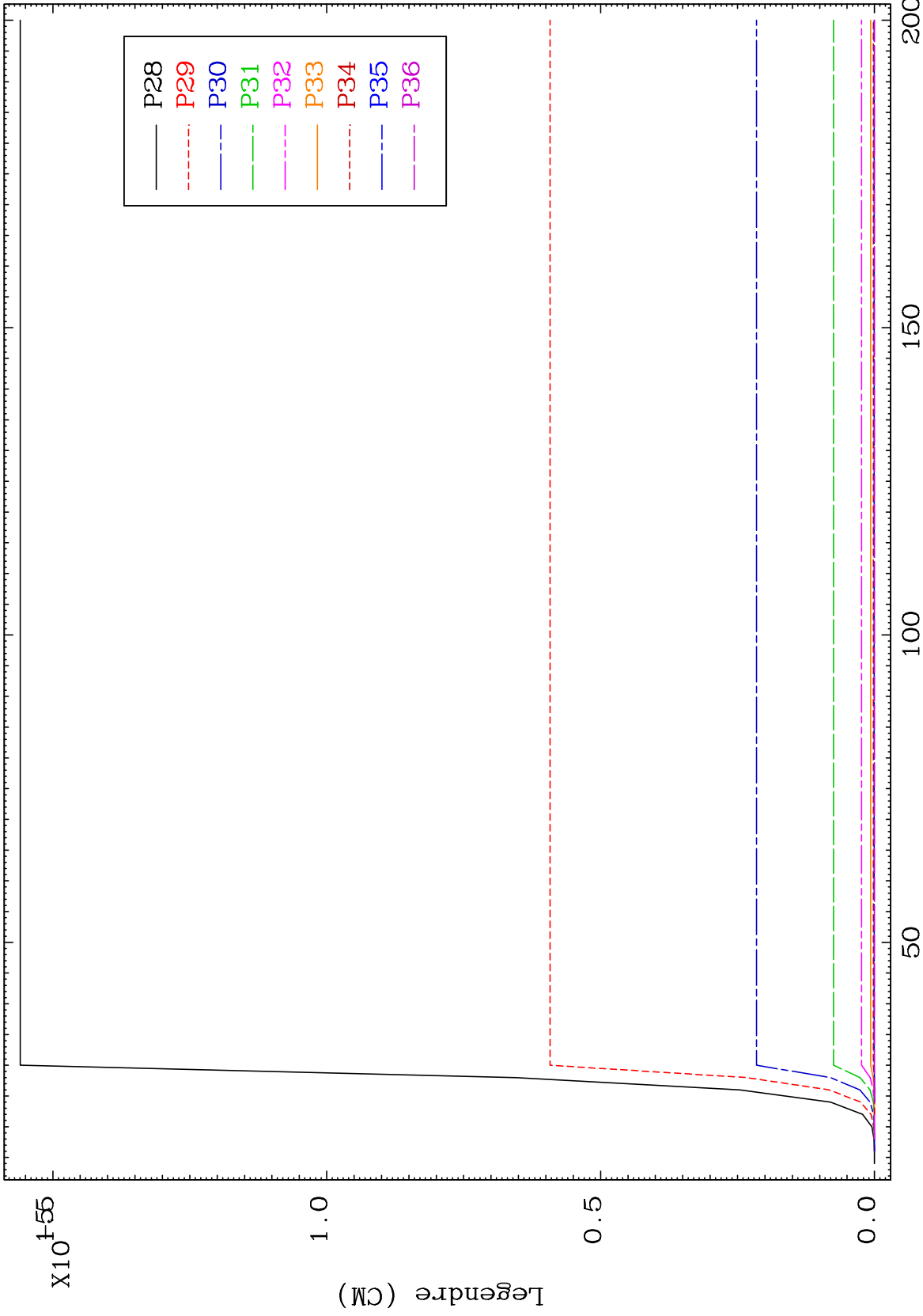
73-Ta-178



MAT 7319

MT= 61 (n,n') Level  
Legendre Coefficients

73-Ta-178



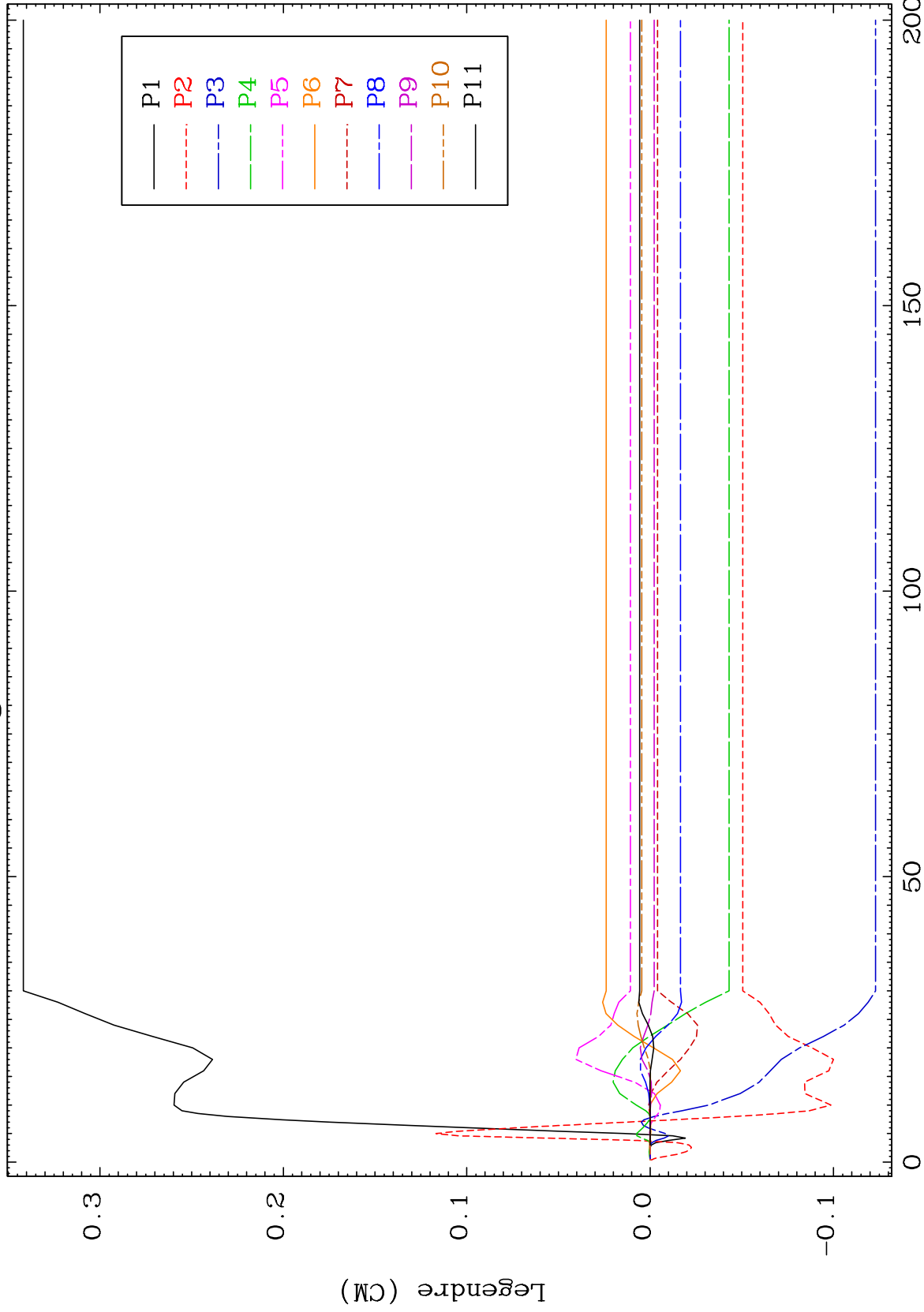
56

73-Ta-178

MAT 7319

MT= 62 (n,n') Level  
Legendre Coefficients

73-Ta-178



57

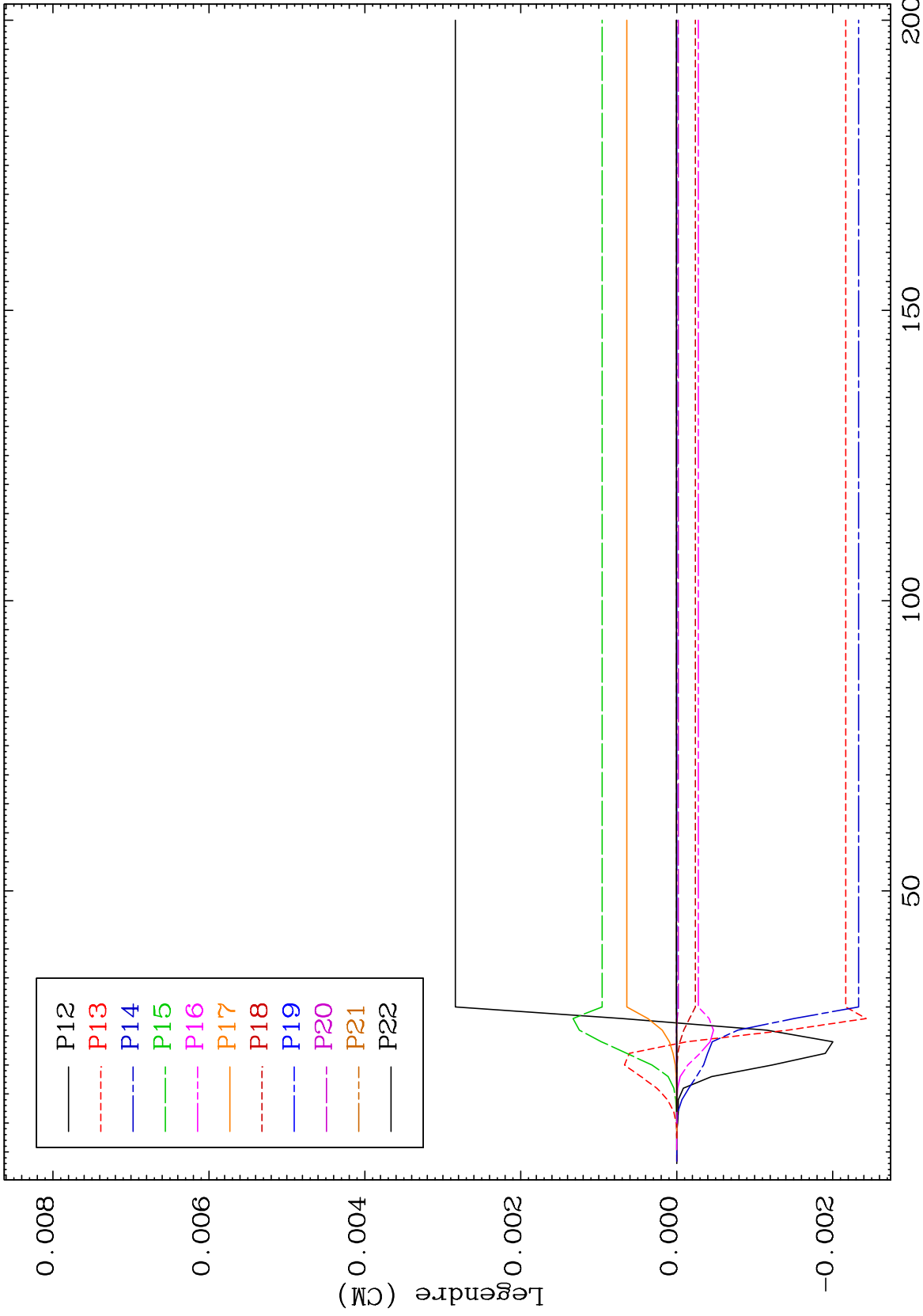
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 62 (n,n') Level  
Legendre Coefficients

73-Ta-178



58

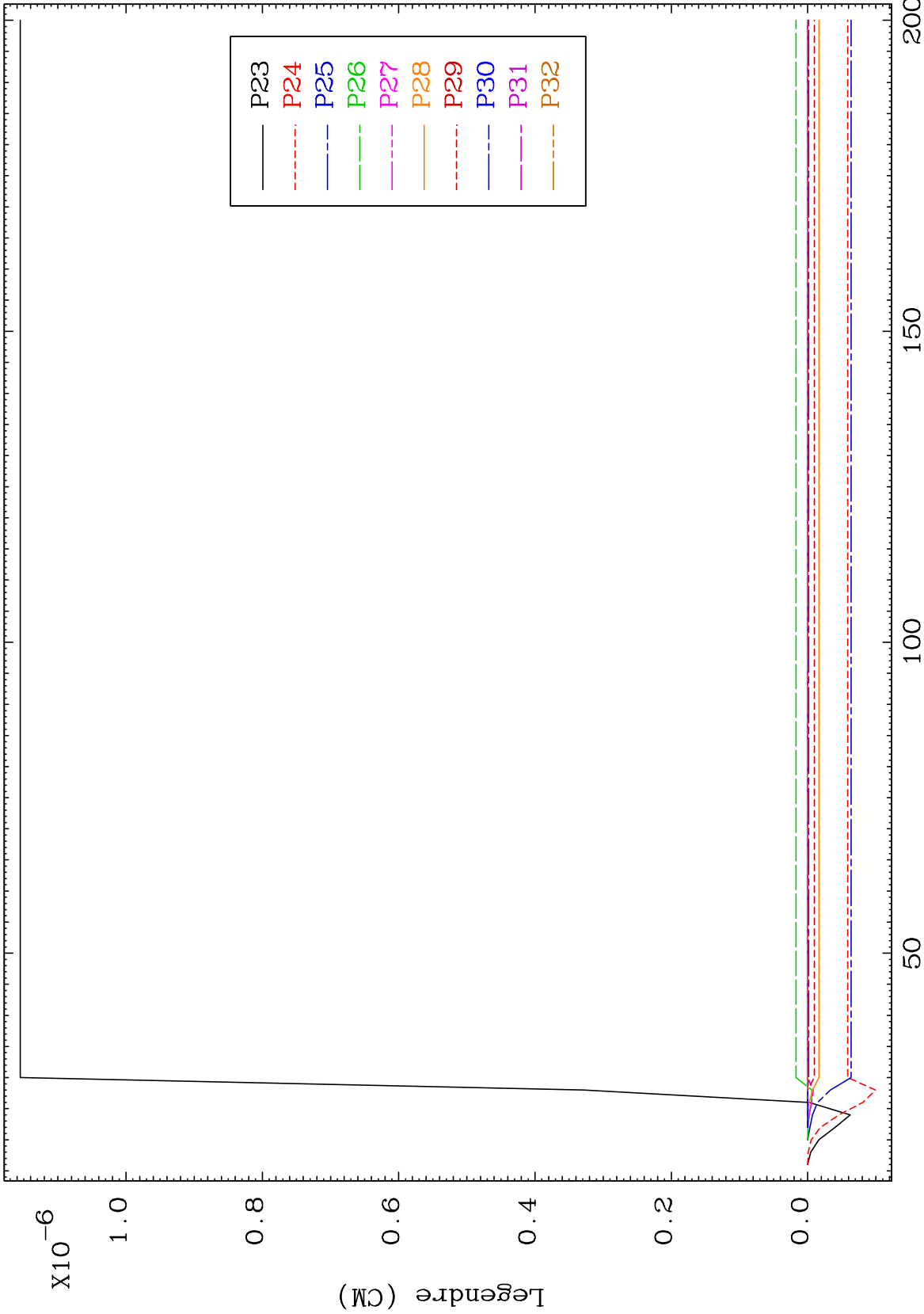
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 62 (n,n') Level  
Legendre Coefficients

73-Ta-178



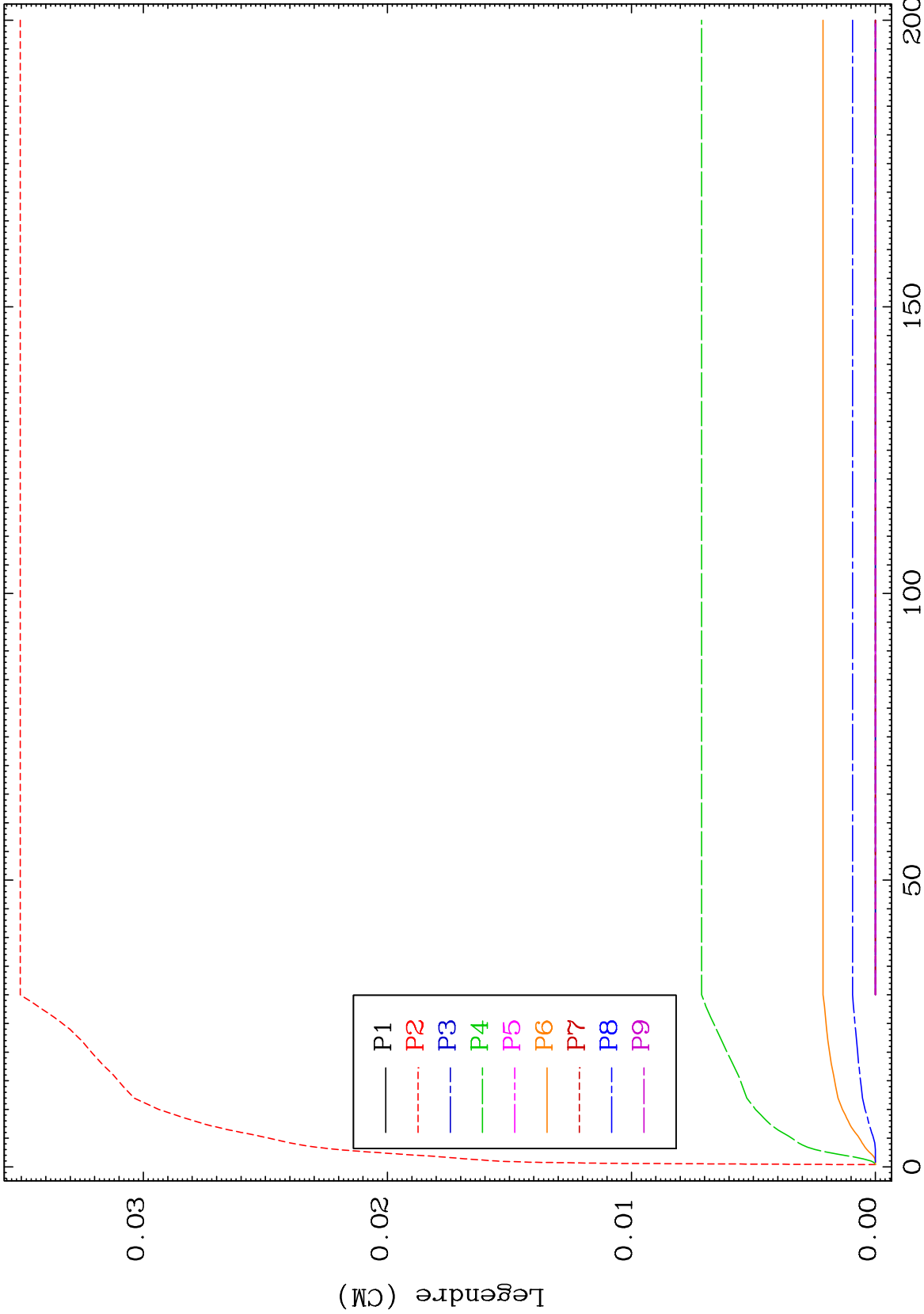
59

73-Ta-178

MAT 7319

MT= 63 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

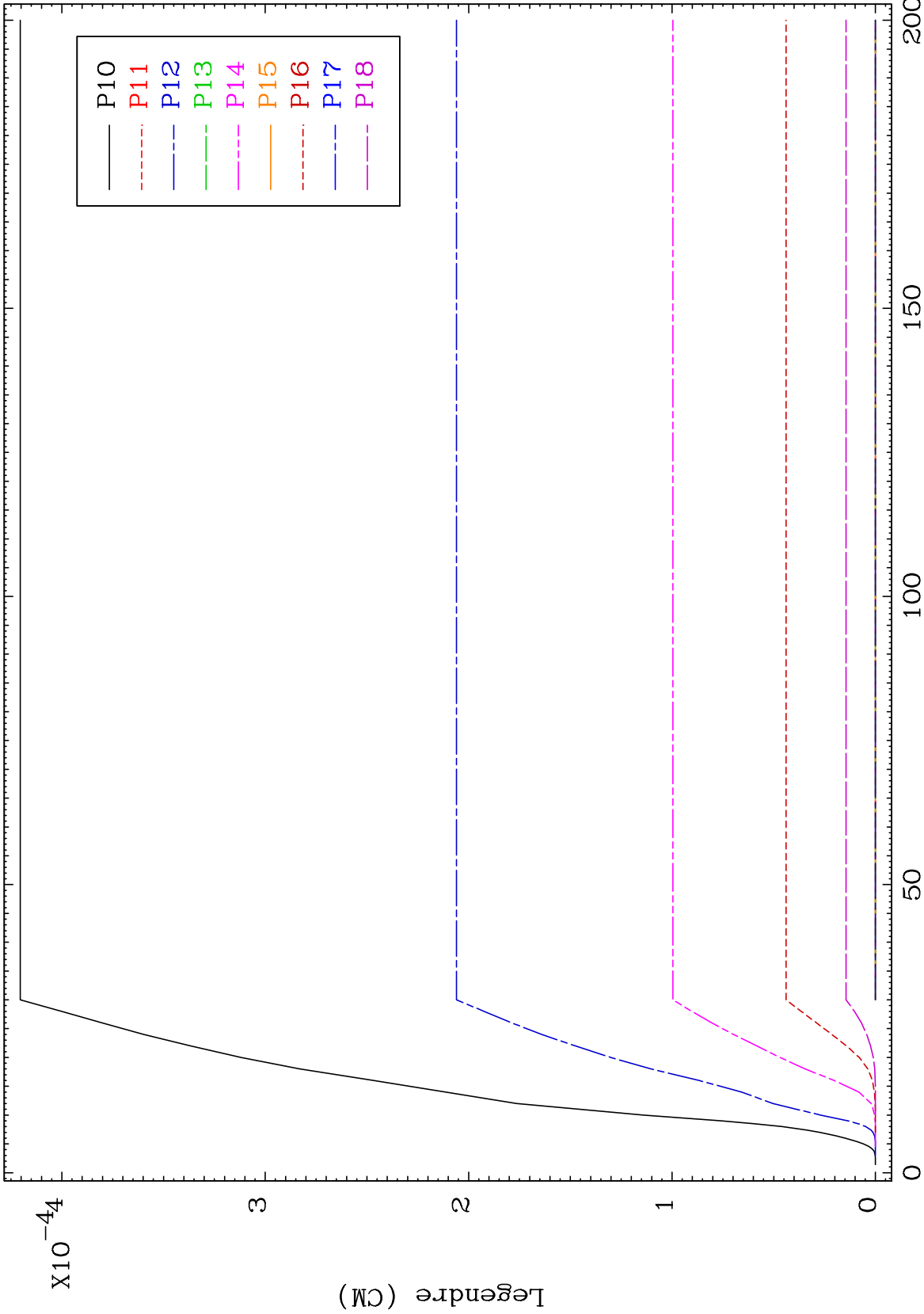
Incident Energy (MeV)

60

MAT 7319

MT= 63 (n,n') Level  
Legendre Coefficients

73-Ta-178

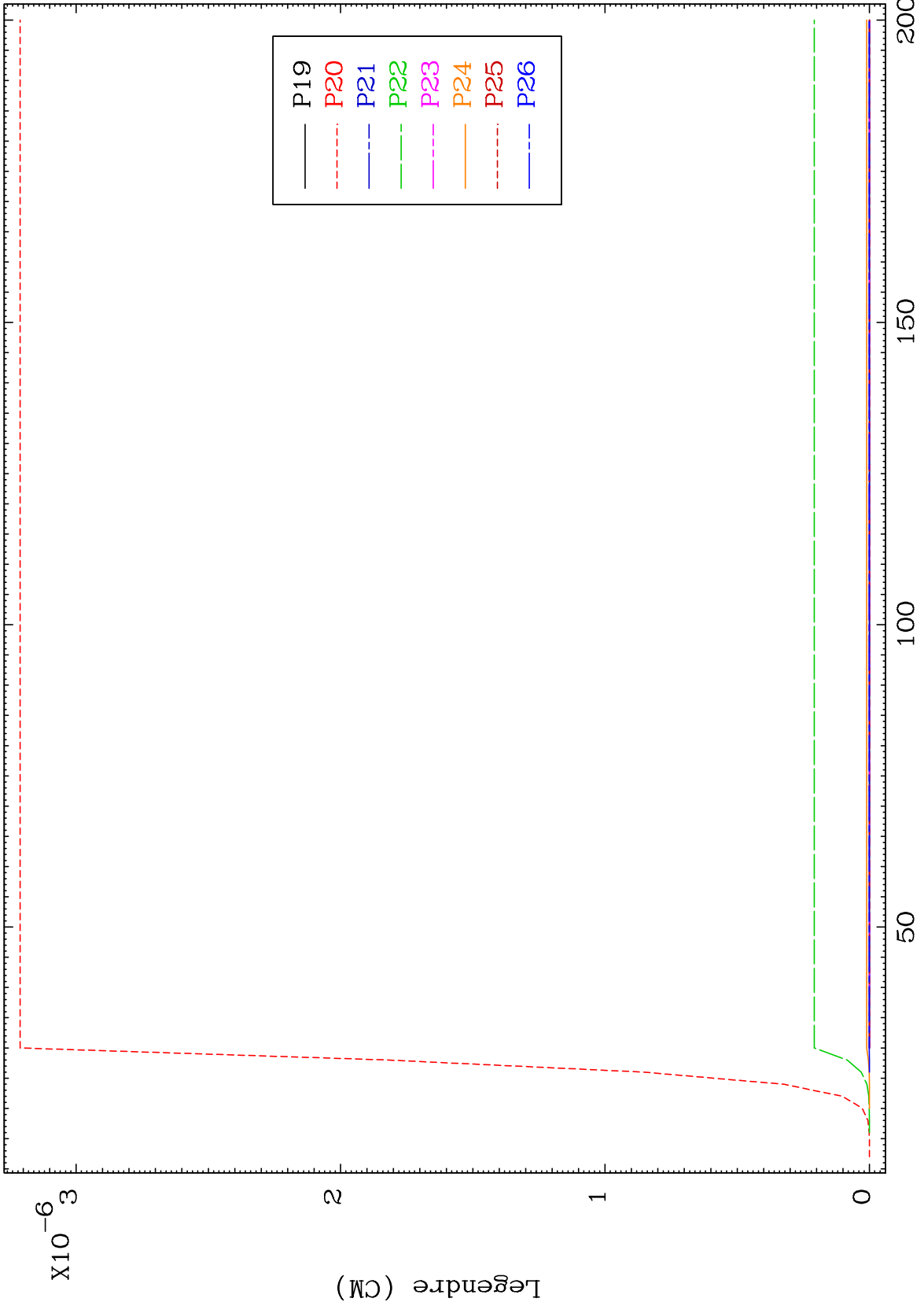


61

Incident Energy (MeV)

73-Ta-178

MAT 7319 MT= 63 (n,n') Level Legendre Coefficients 73-Ta-178

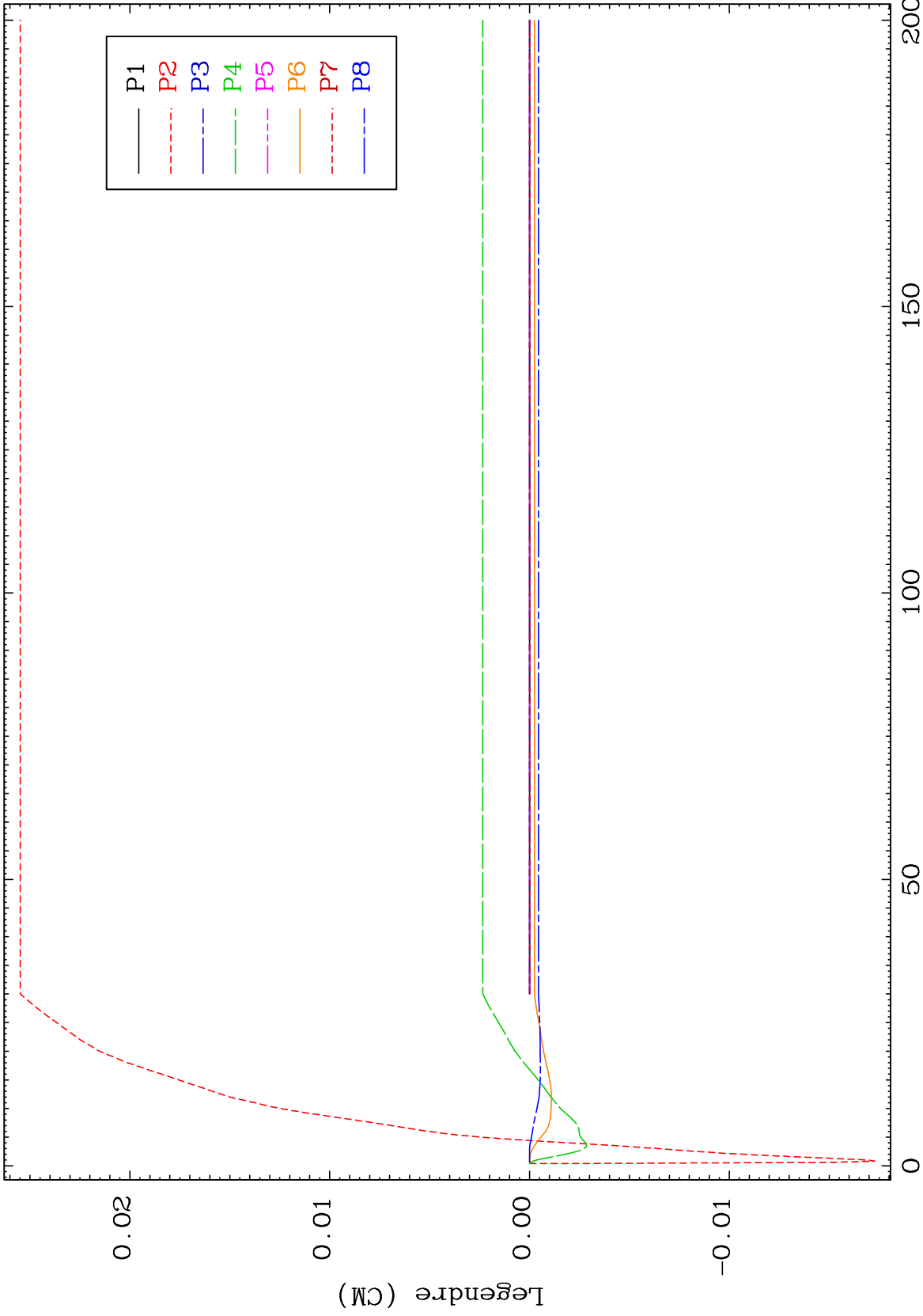


62 Incident Energy (MeV) 73-Ta-178

MAT 7319

MT= 64 (n,n') Level  
Legendre Coefficients

73-Ta-178



63

Incident Energy (MeV)

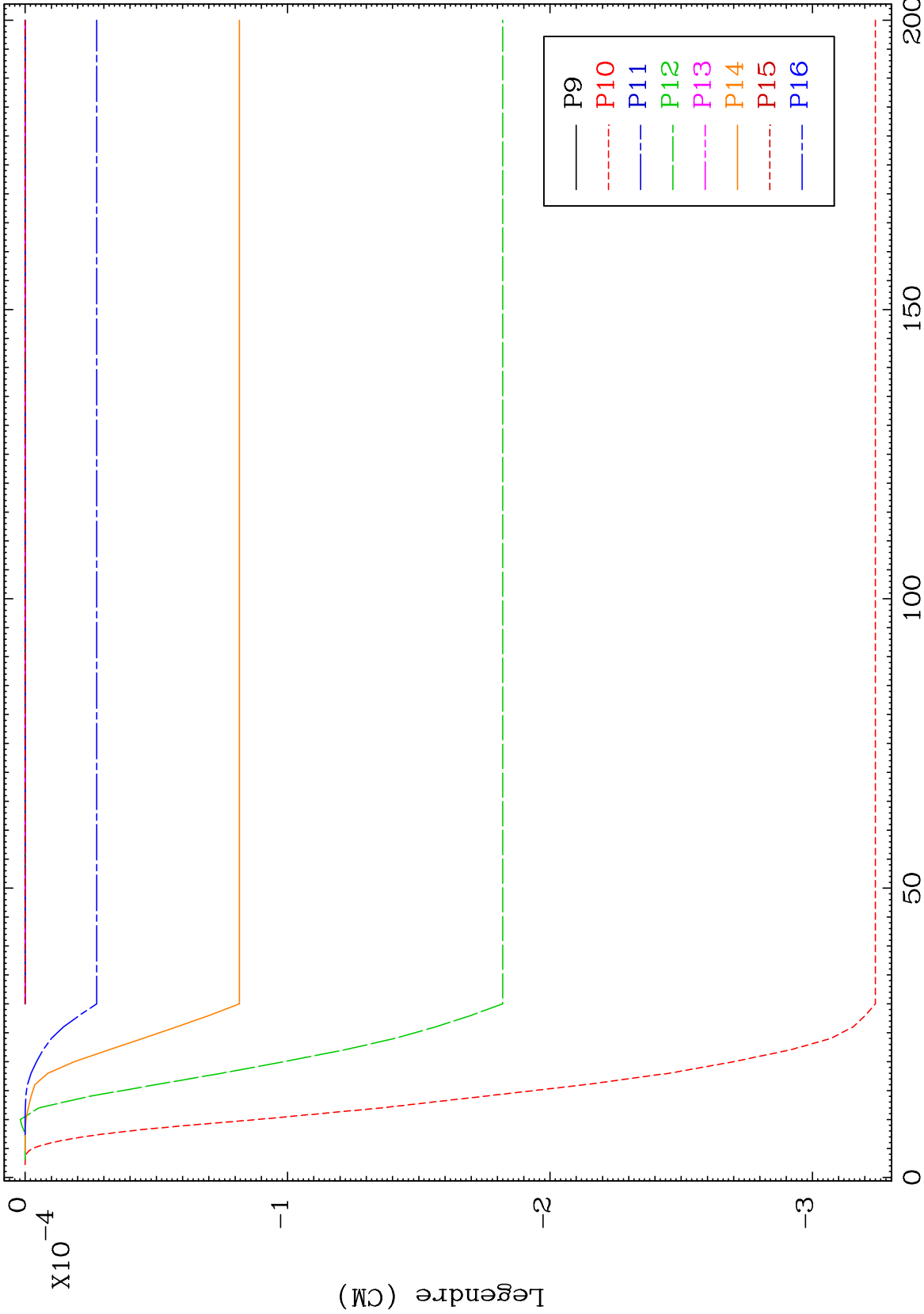
73-Ta-178



MAT 7319

MT= 64 (n,n') Level  
Legendre Coefficients

73-Ta-178



64

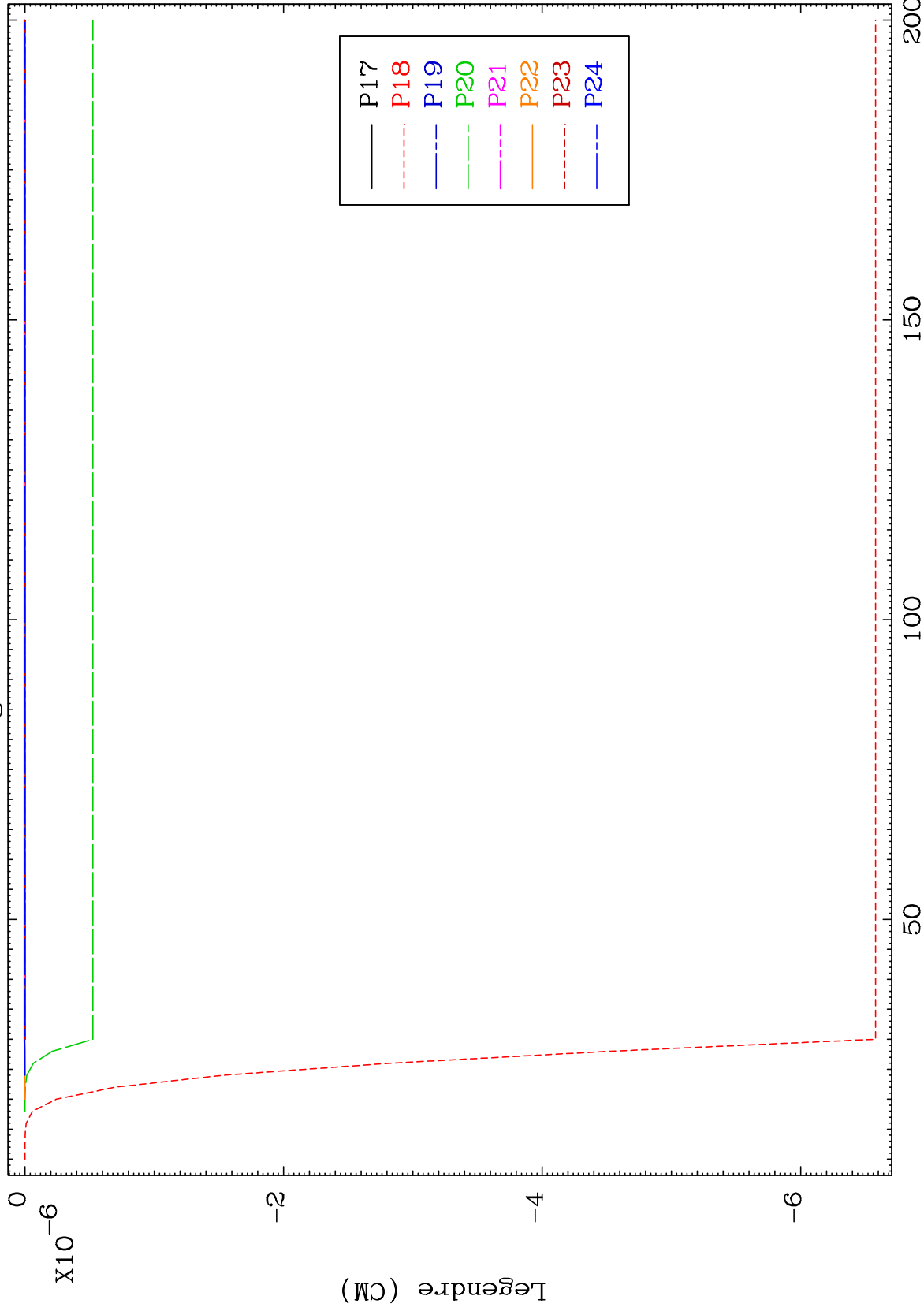
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 64 (n,n') Level  
Legendre Coefficients

73-Ta-178



65

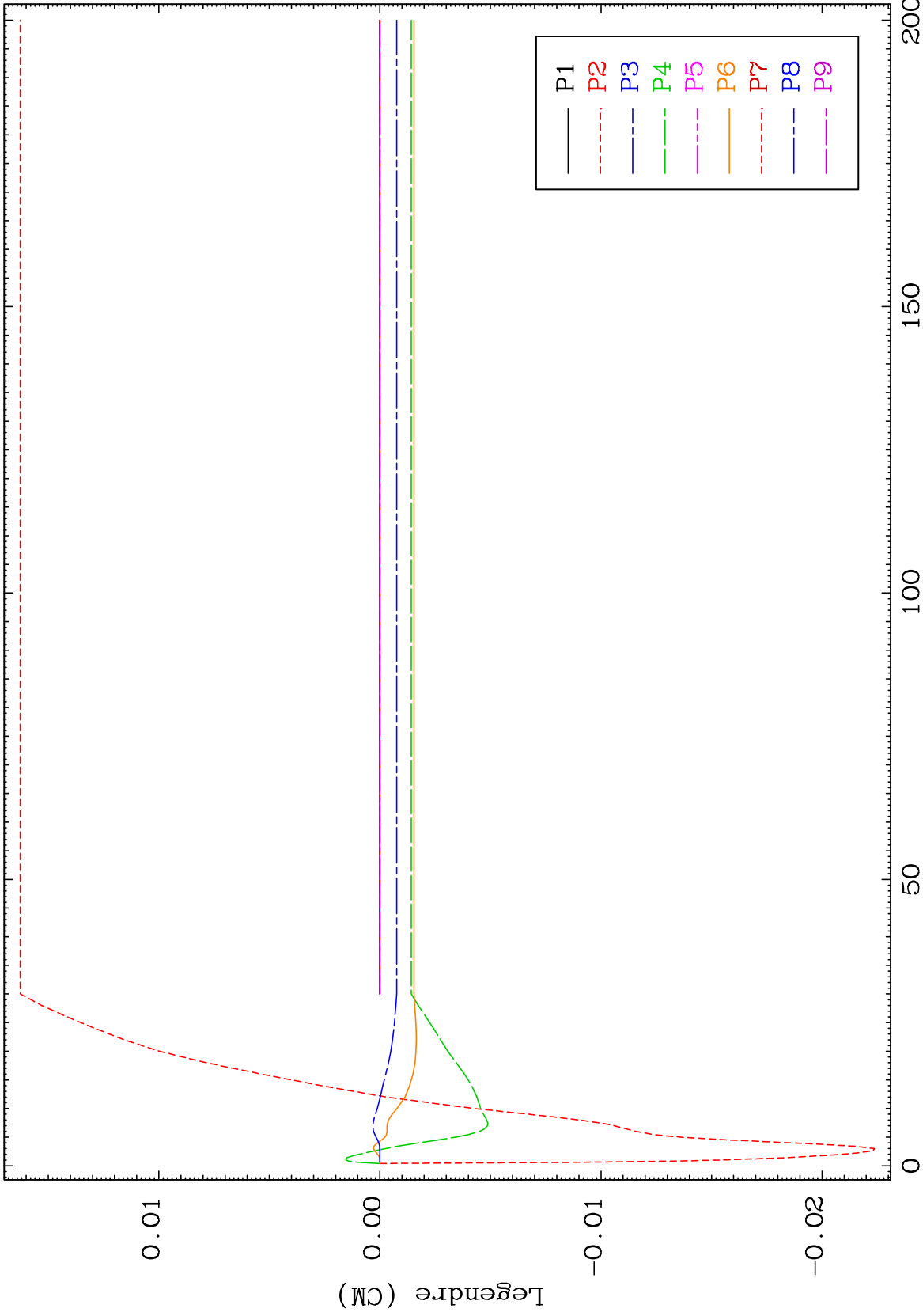
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 65 (n,n') Level  
Legendre Coefficients

73-Ta-178



66

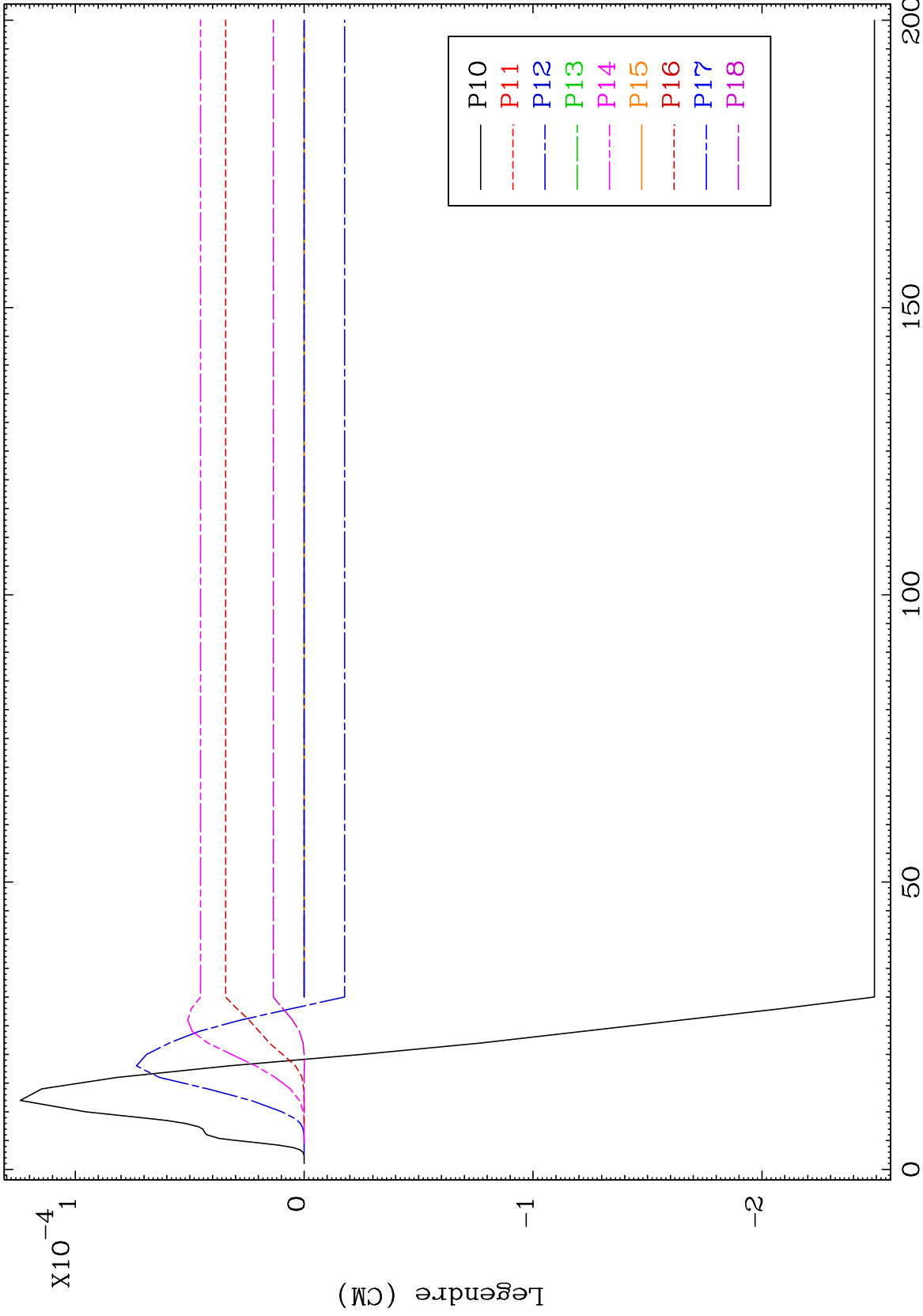
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 65 (n,n') Level  
Legendre Coefficients

73-Ta-178



67

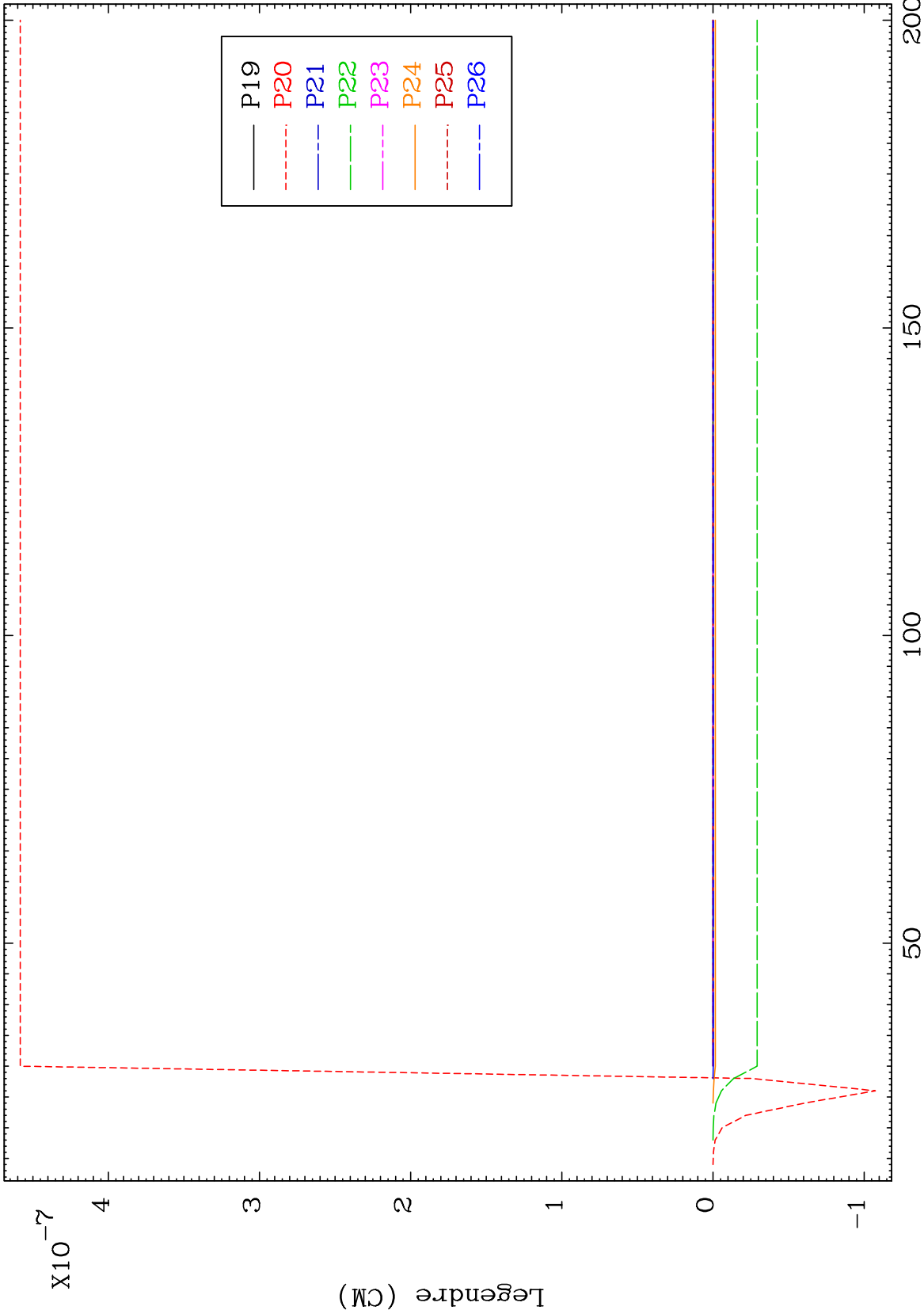
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 65 (n,n') Level  
Legendre Coefficients

73-Ta-178



68

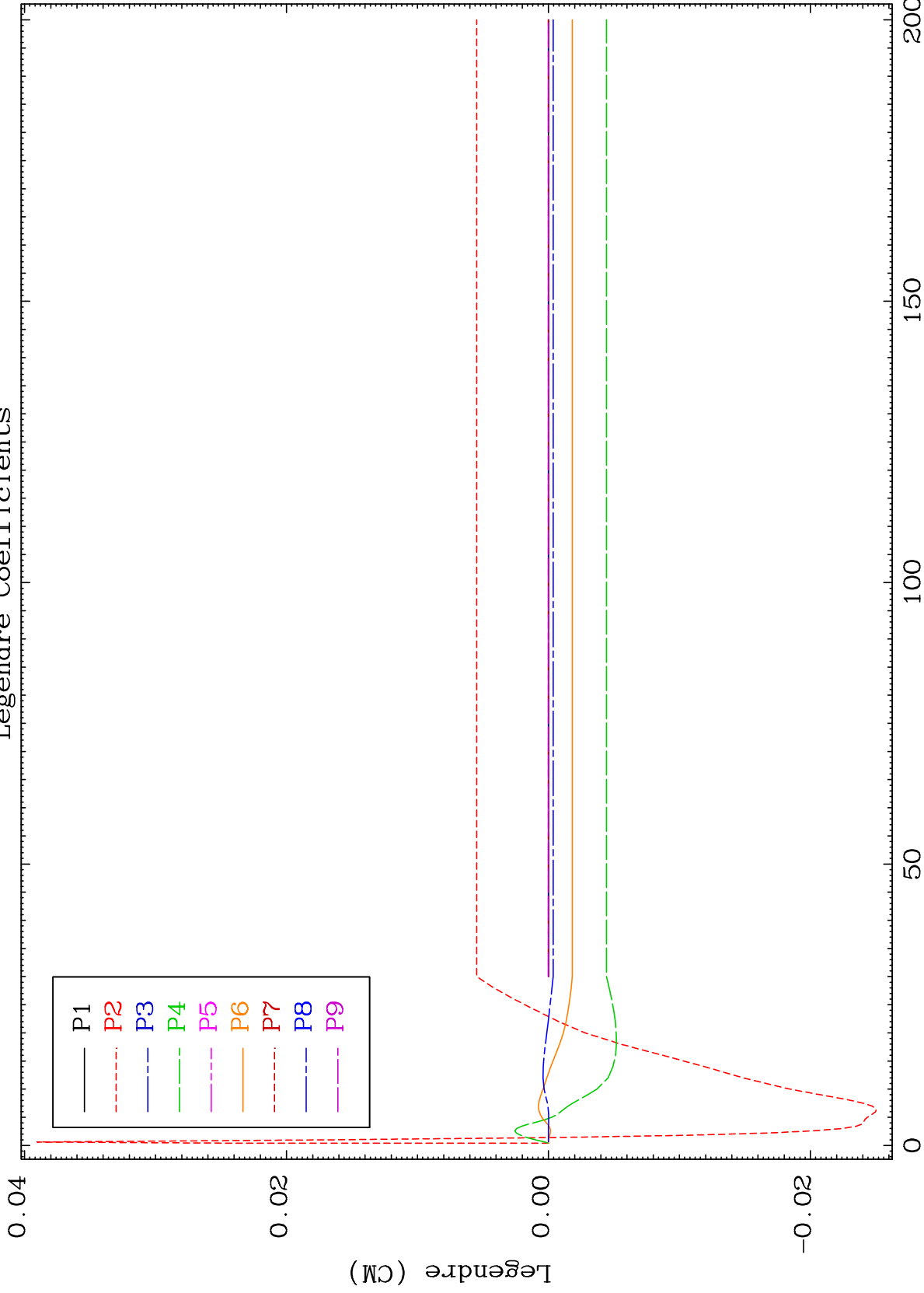
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 66 (n,n') Level  
Legendre Coefficients

73-Ta-178



69

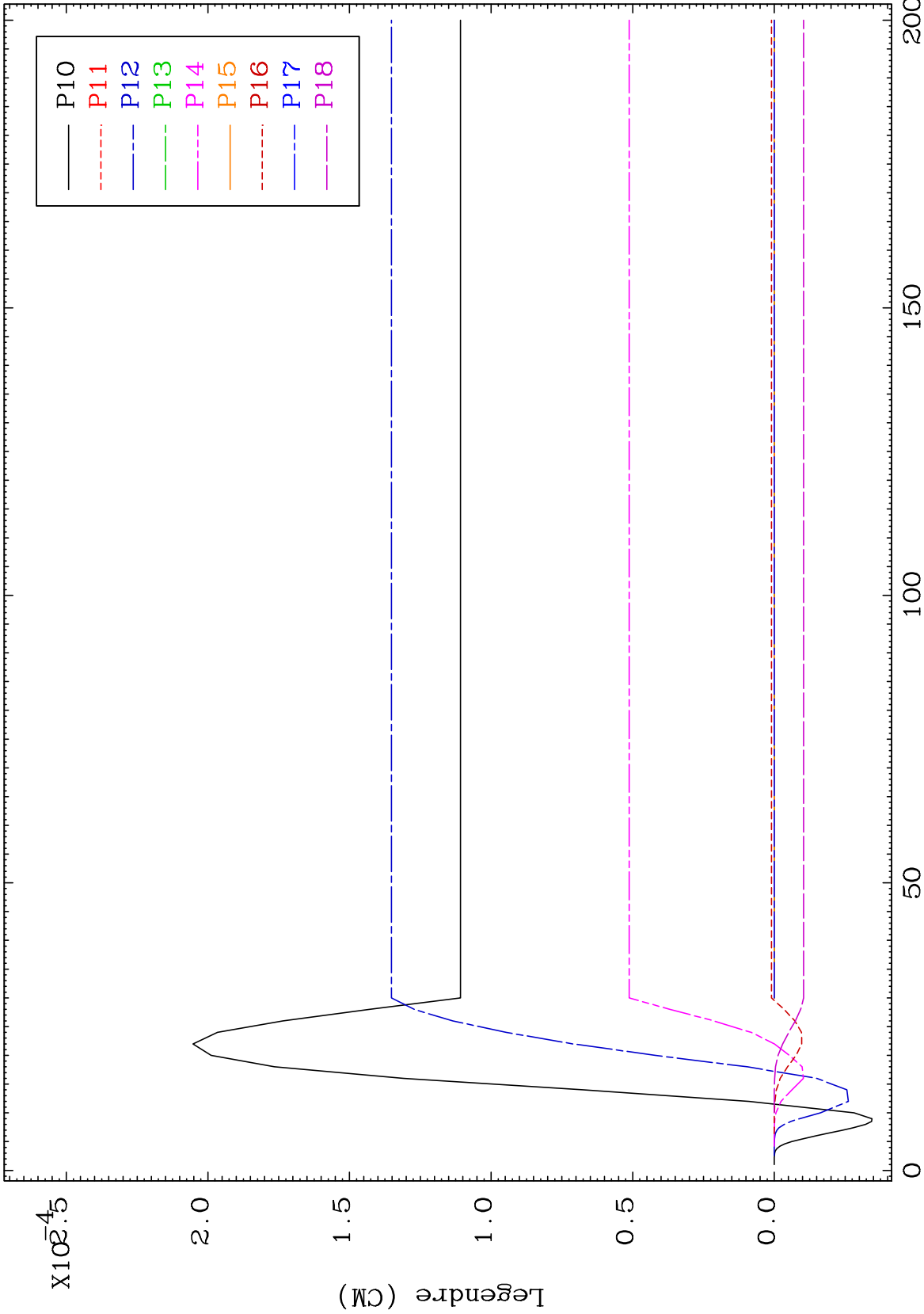
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 66 (n,n') Level  
Legendre Coefficients

73-Ta-178



70

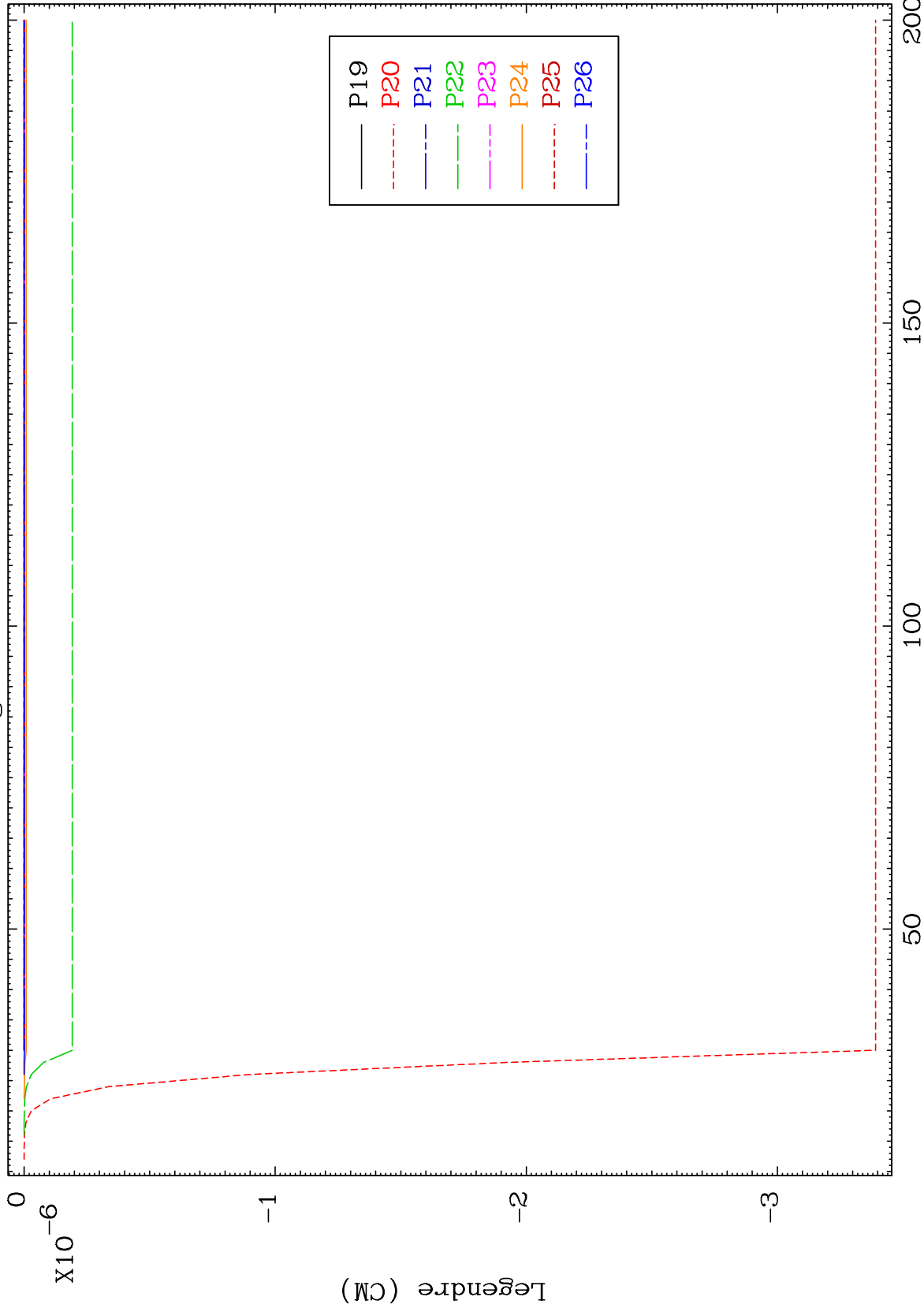
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 66 (n,n') Level  
Legendre Coefficients

73-Ta-178



71

Incident Energy (MeV)

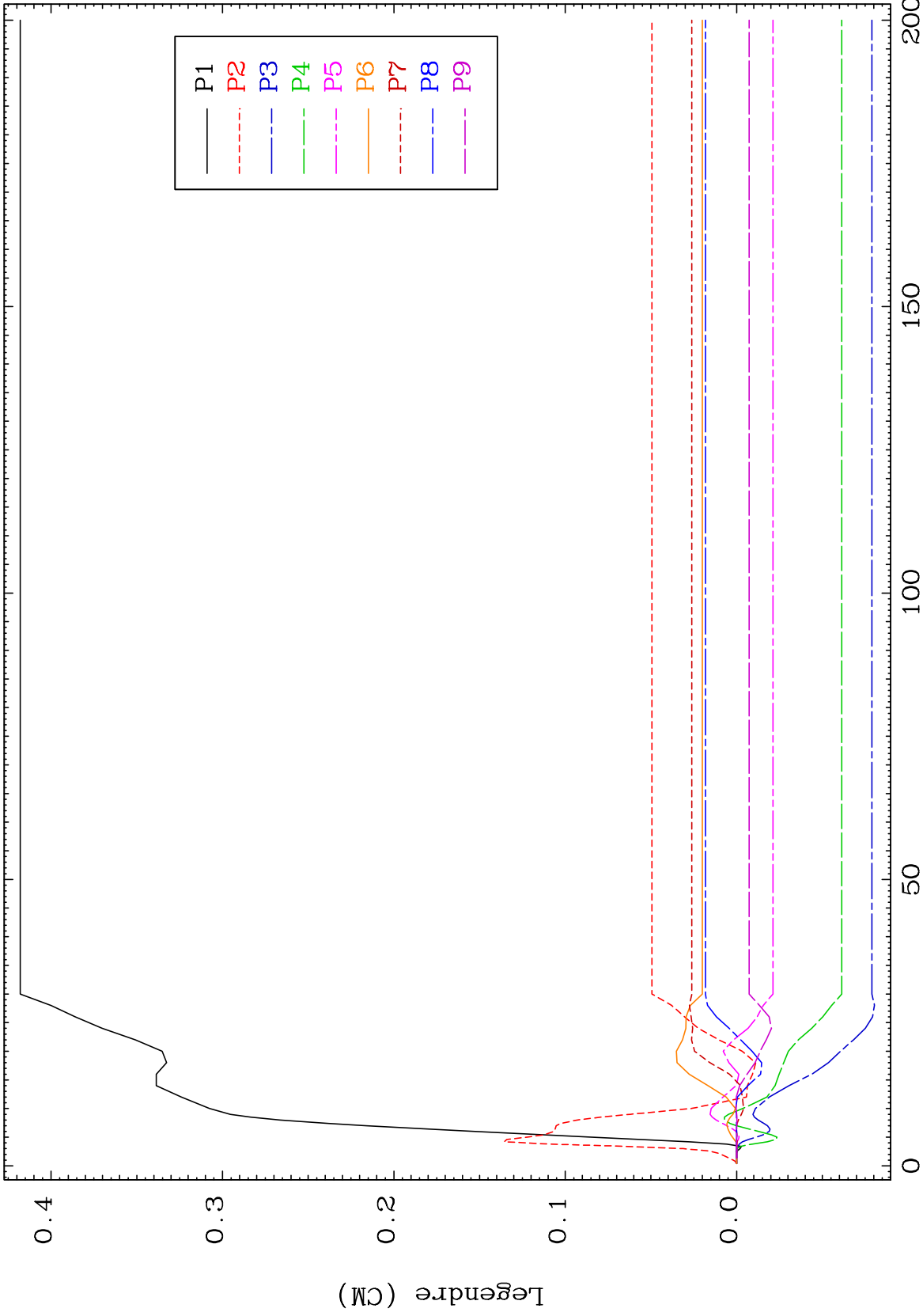
73-Ta-178



MAT 7319

MT= 67 (n,n') Level  
Legendre Coefficients

73-Ta-178



72

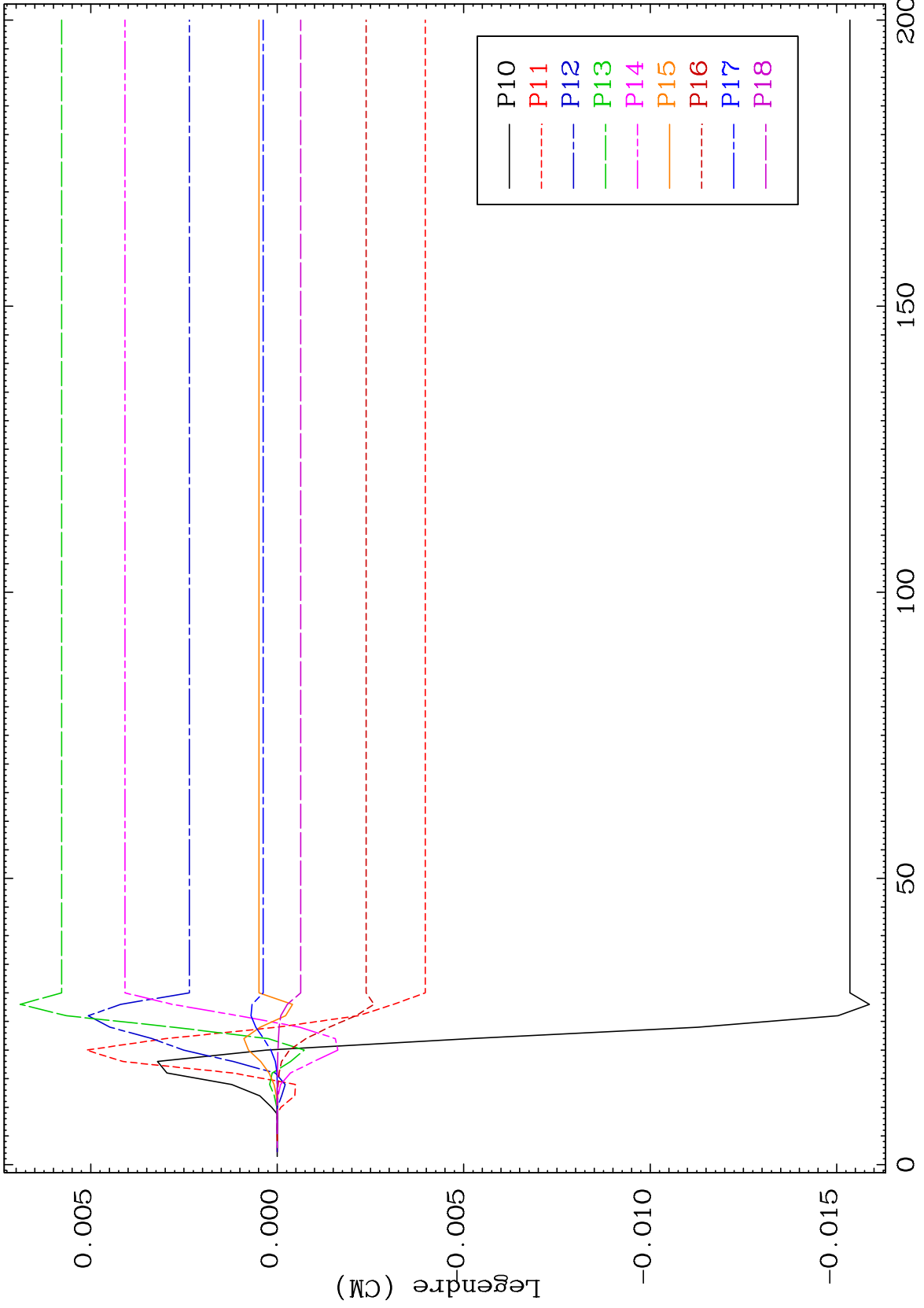
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 67 (n,n') Level  
Legendre Coefficients

73-Ta-178



73

Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 67 (n,n') Level  
Legendre Coefficients

73-Ta-178



74

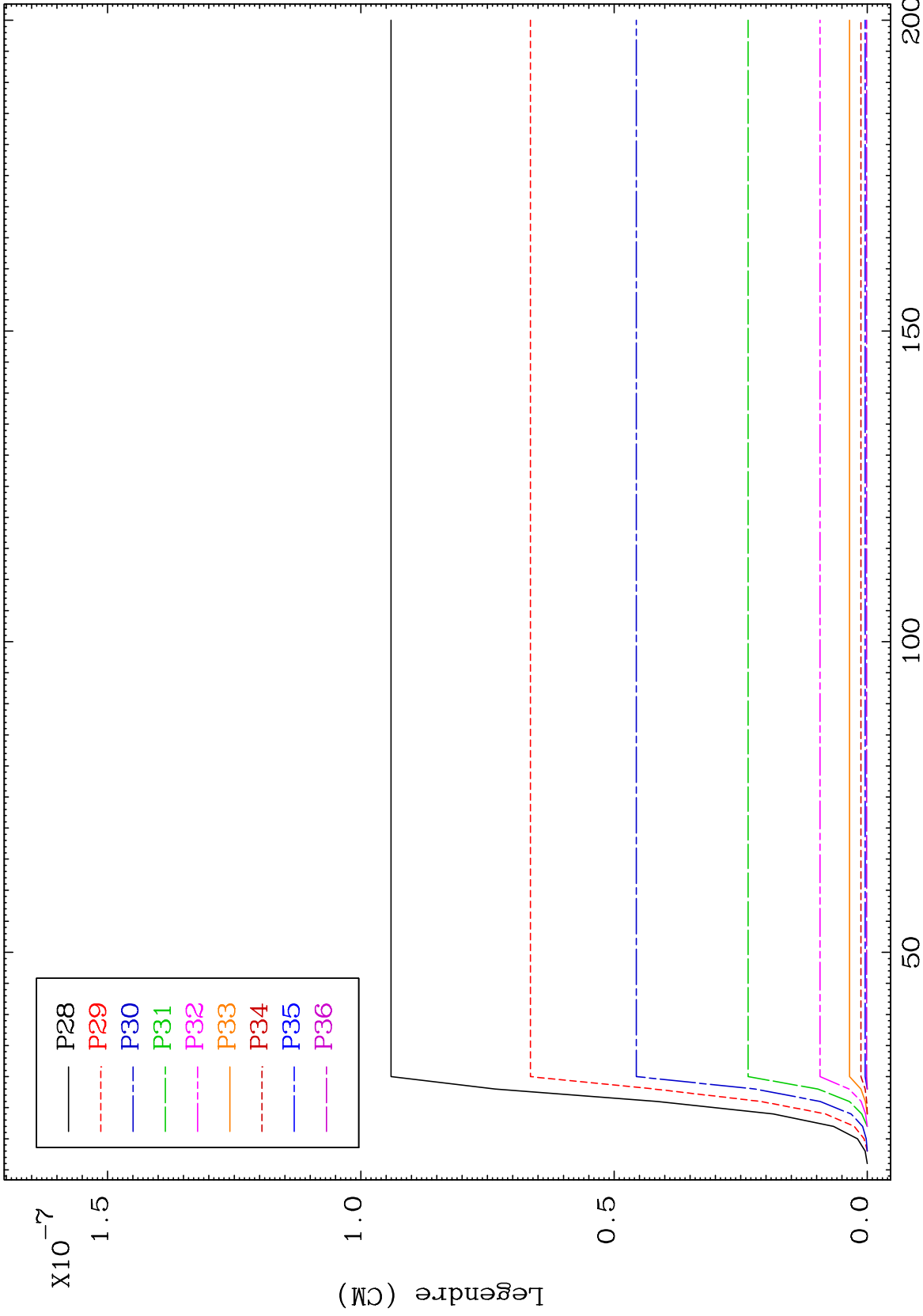
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 67 (n,n') Level  
Legendre Coefficients

73-Ta-178



75

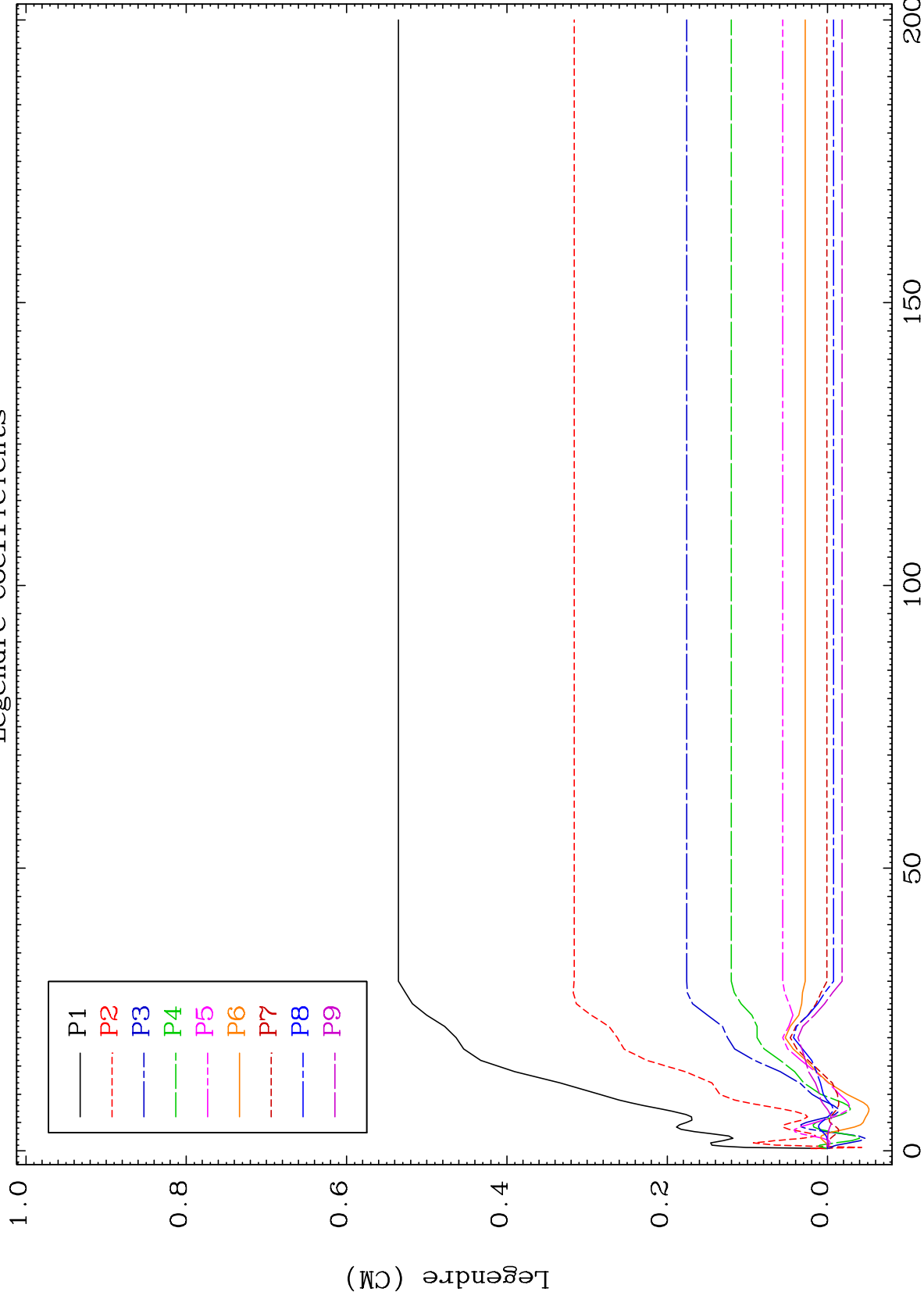
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 68 (n,n') Level  
Legendre Coefficients

73-Ta-178



76

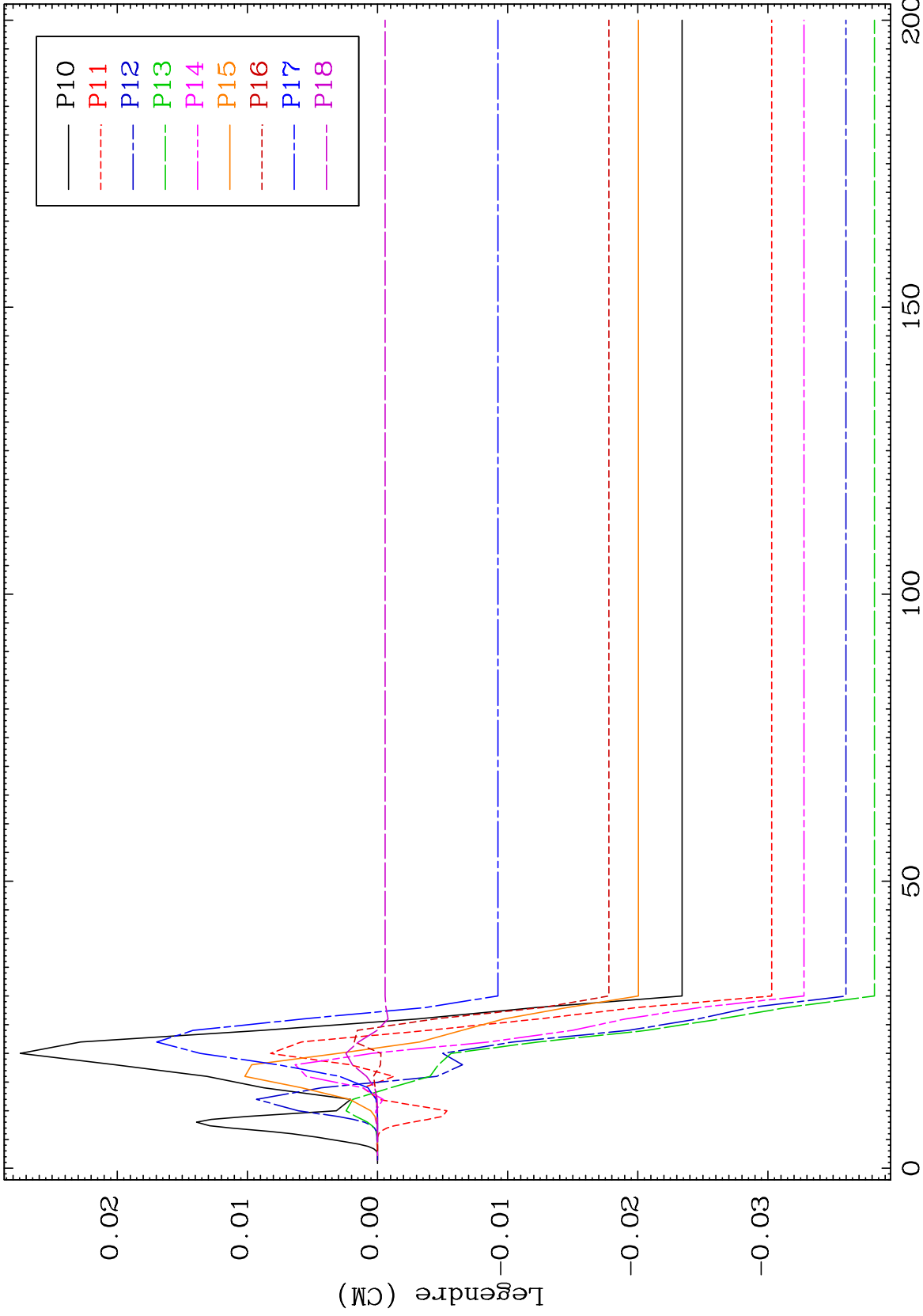
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 68 (n,n') Level  
Legendre Coefficients

73-Ta-178



77

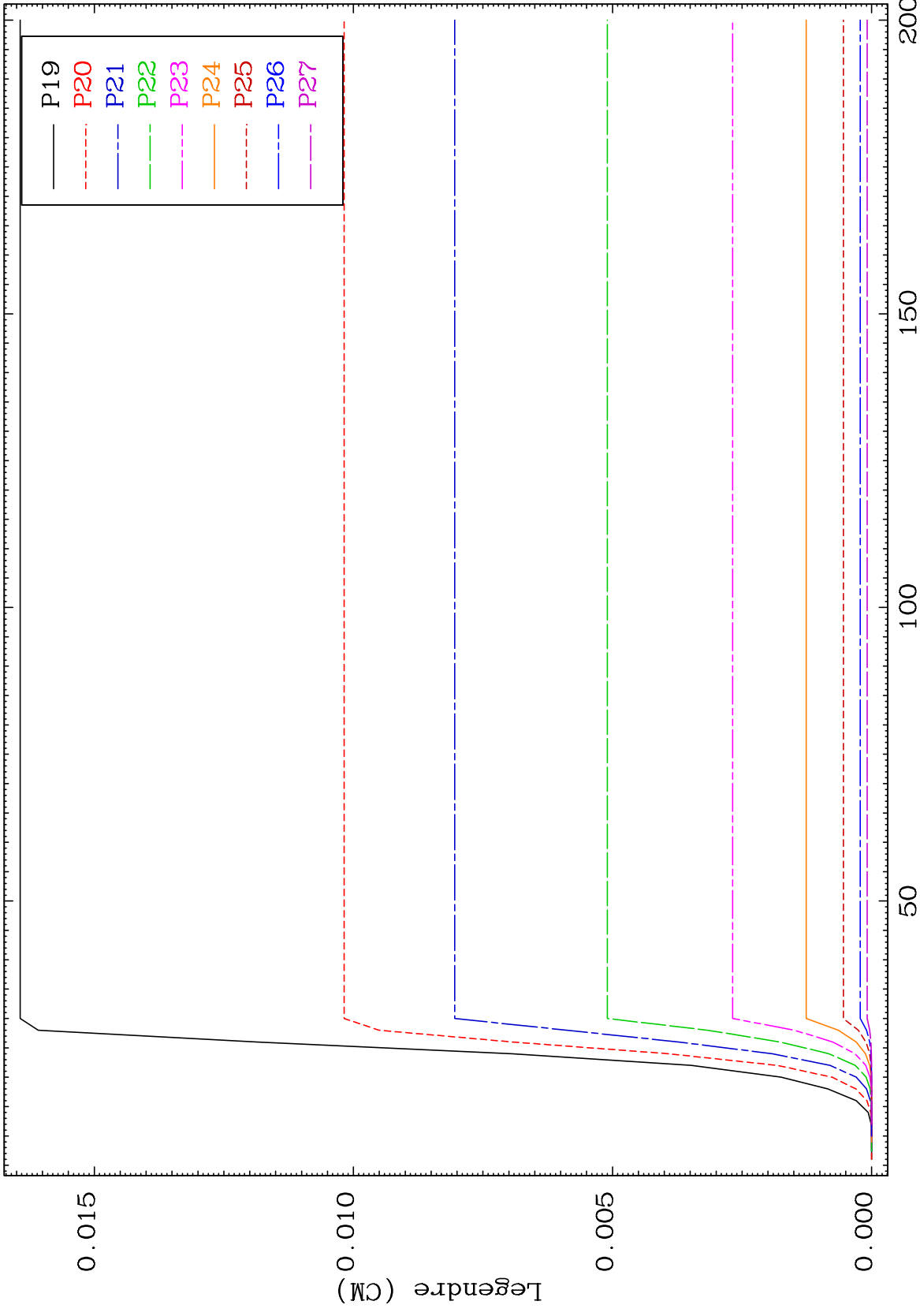
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 68 (n,n') Level  
Legendre Coefficients

73-Ta-178



78

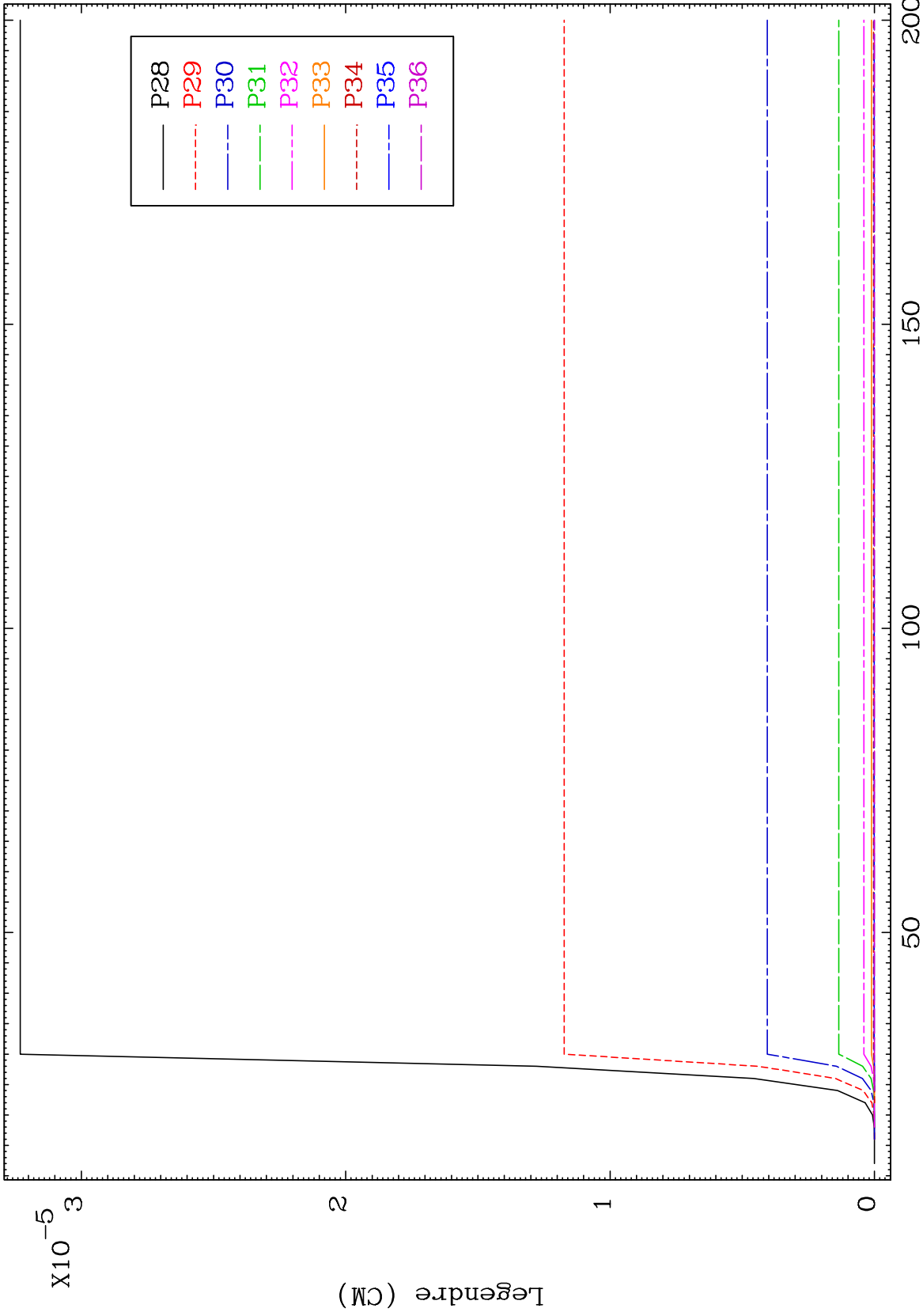
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 68 (n,n') Level  
Legendre Coefficients

73-Ta-178



79

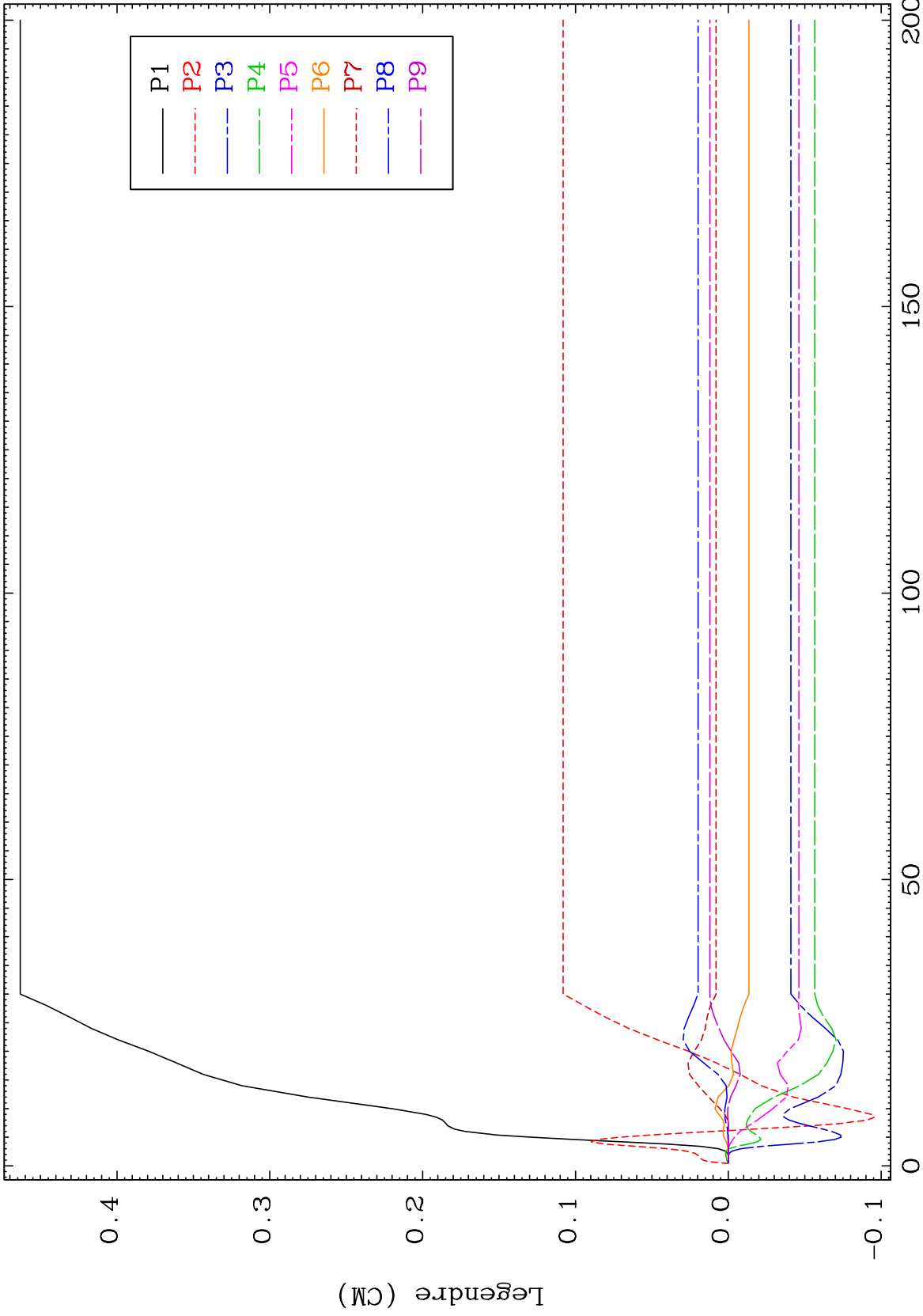
73-Ta-178



MAT 7319

MT= 69 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

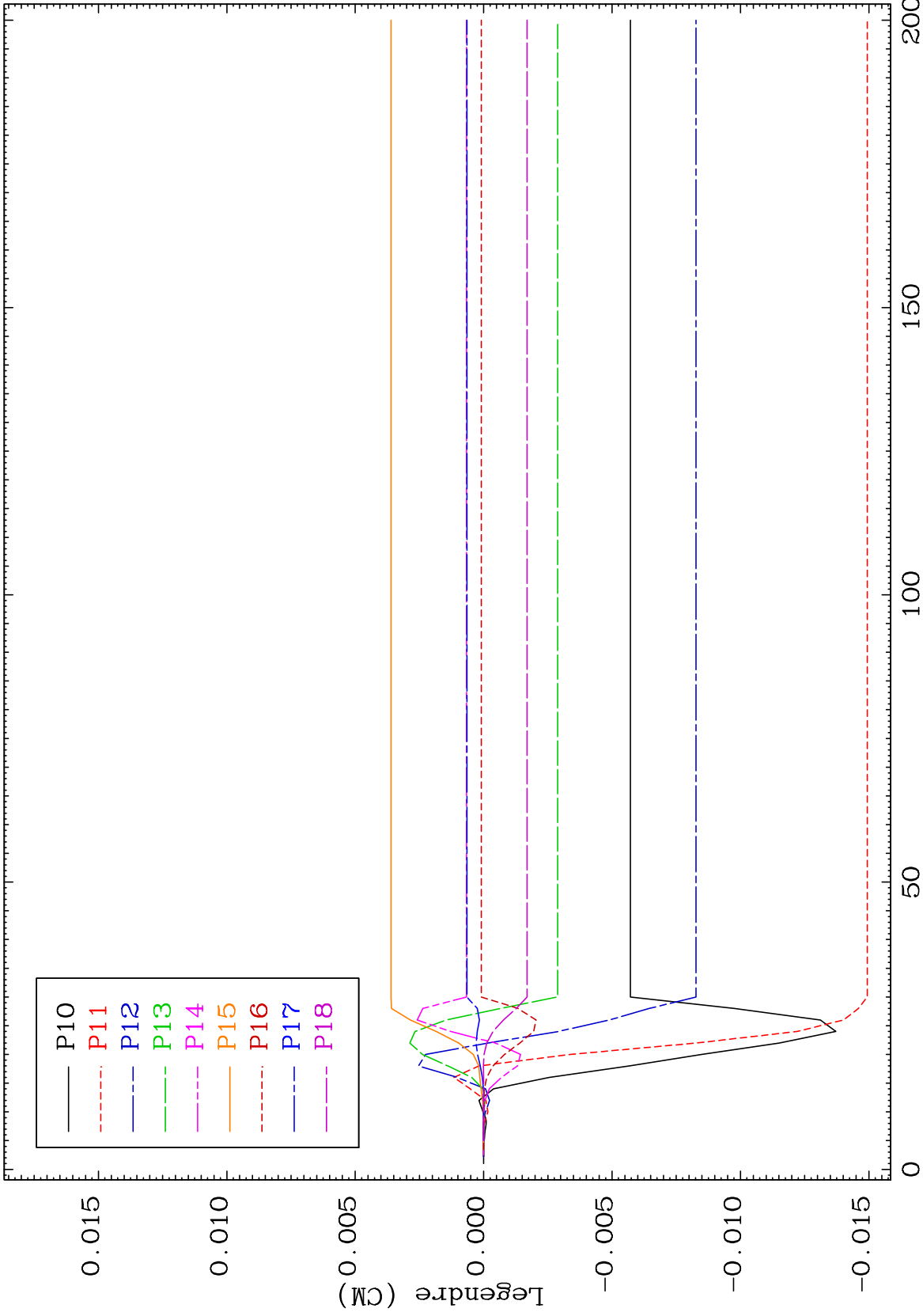
Incident Energy (MeV)

80

MAT 7319

MT= 69 (n,n') Level  
Legendre Coefficients

73-Ta-178



81

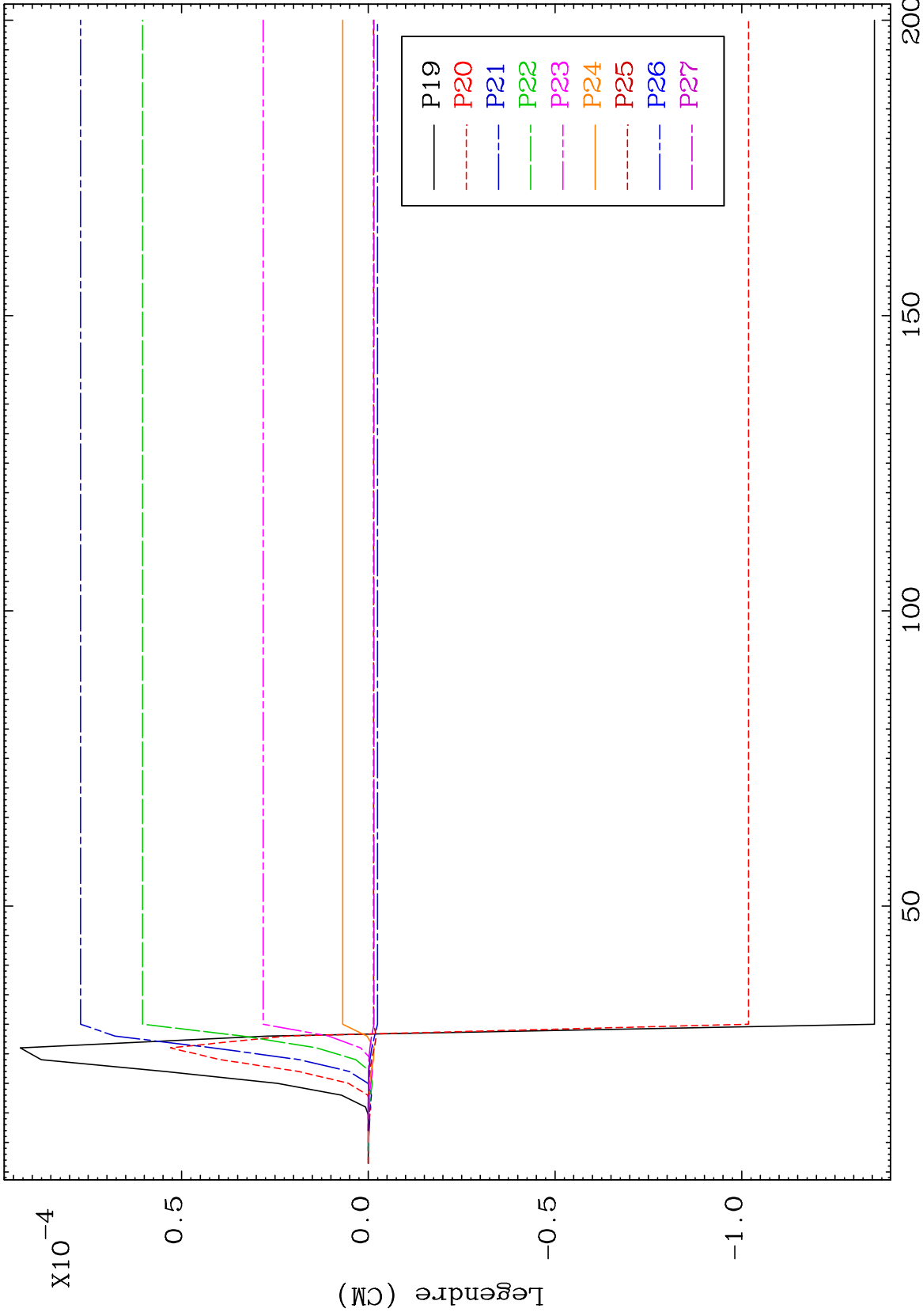
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 69 (n,n') Level  
Legendre Coefficients

73-Ta-178



82

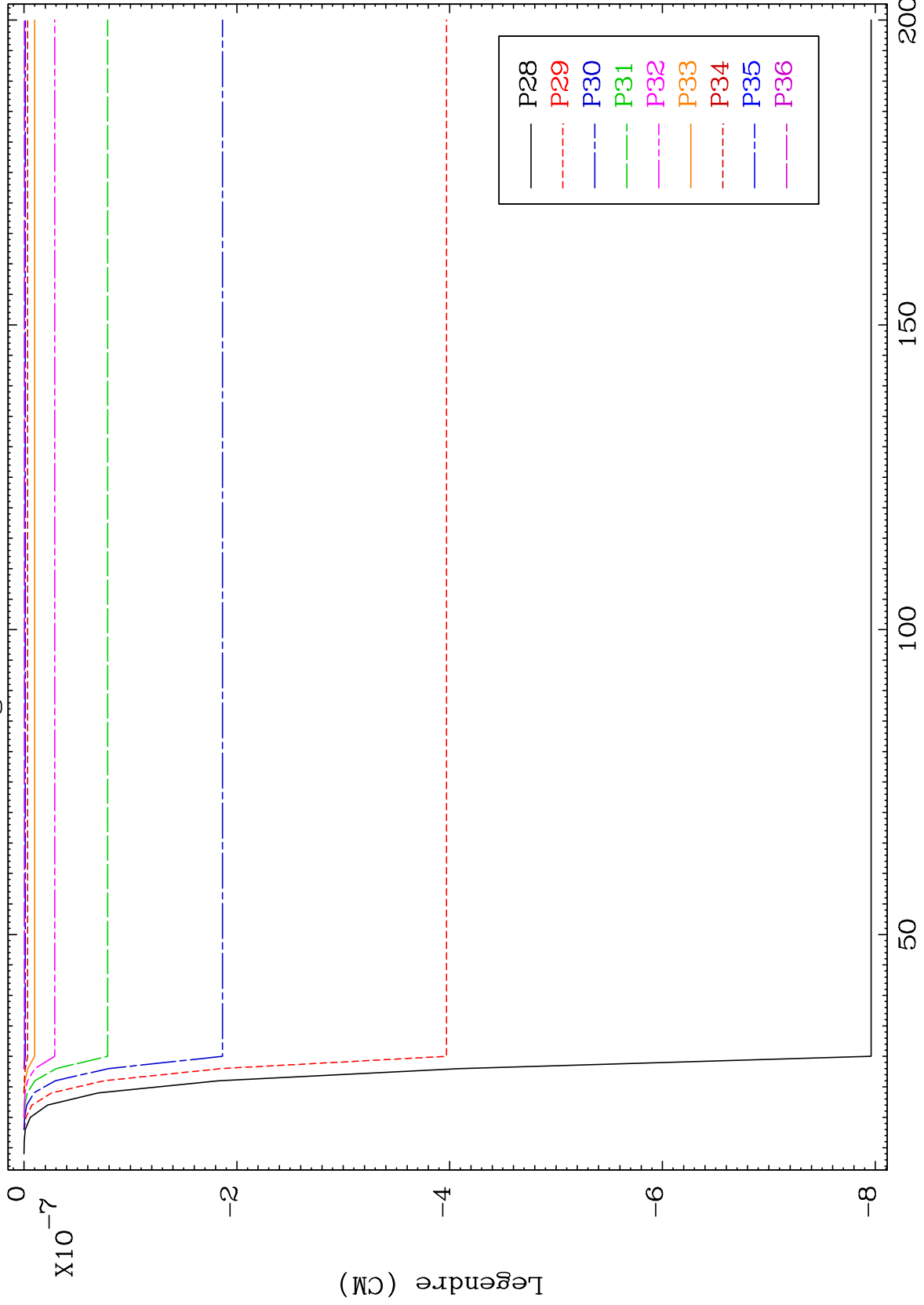
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 69 (n,n') Level  
Legendre Coefficients

73-Ta-178

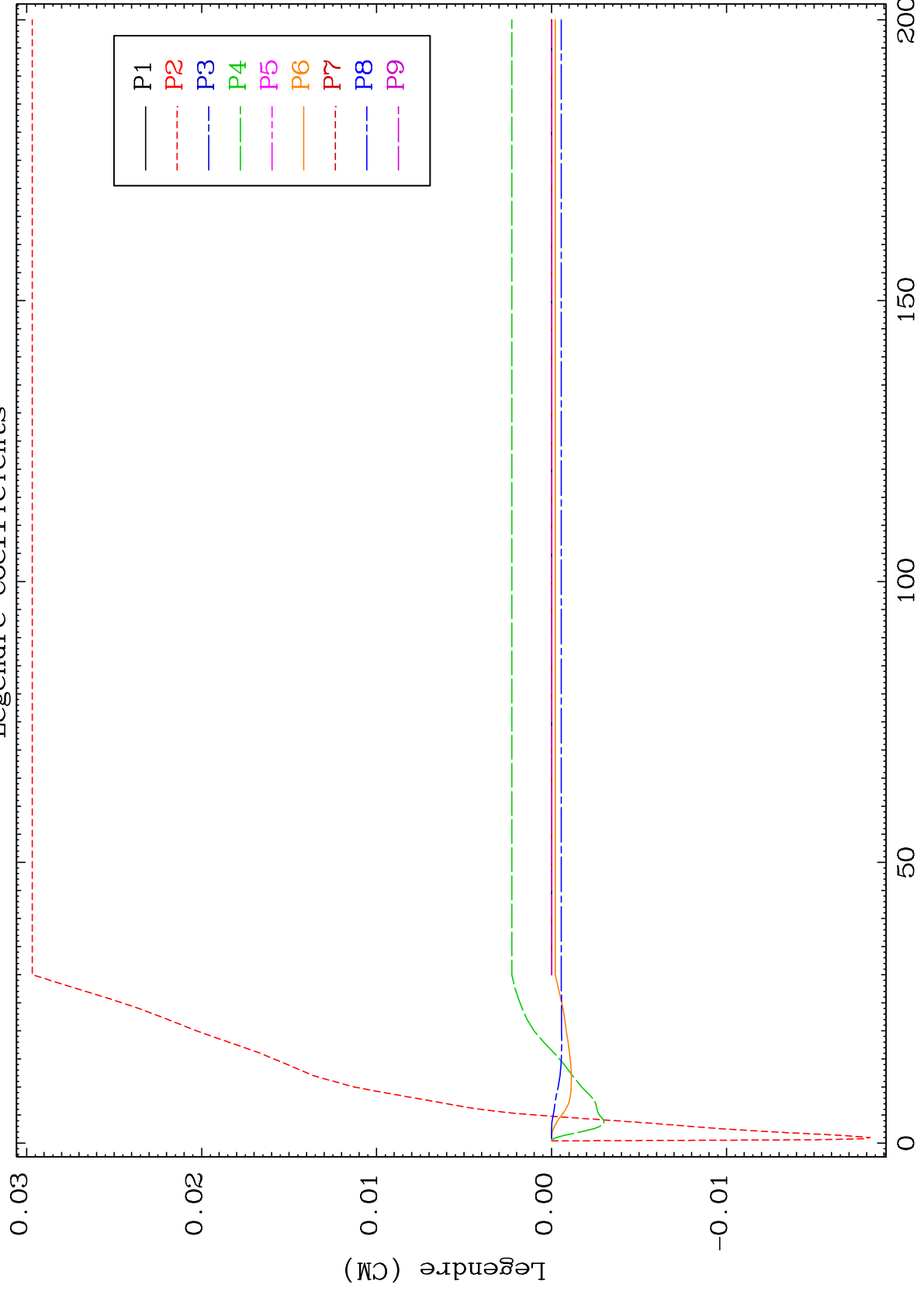


83

Incident Energy (MeV)

73-Ta-178

MAT 7319 MT= 70 (n,n') Level Legendre Coefficients 73-Ta-178

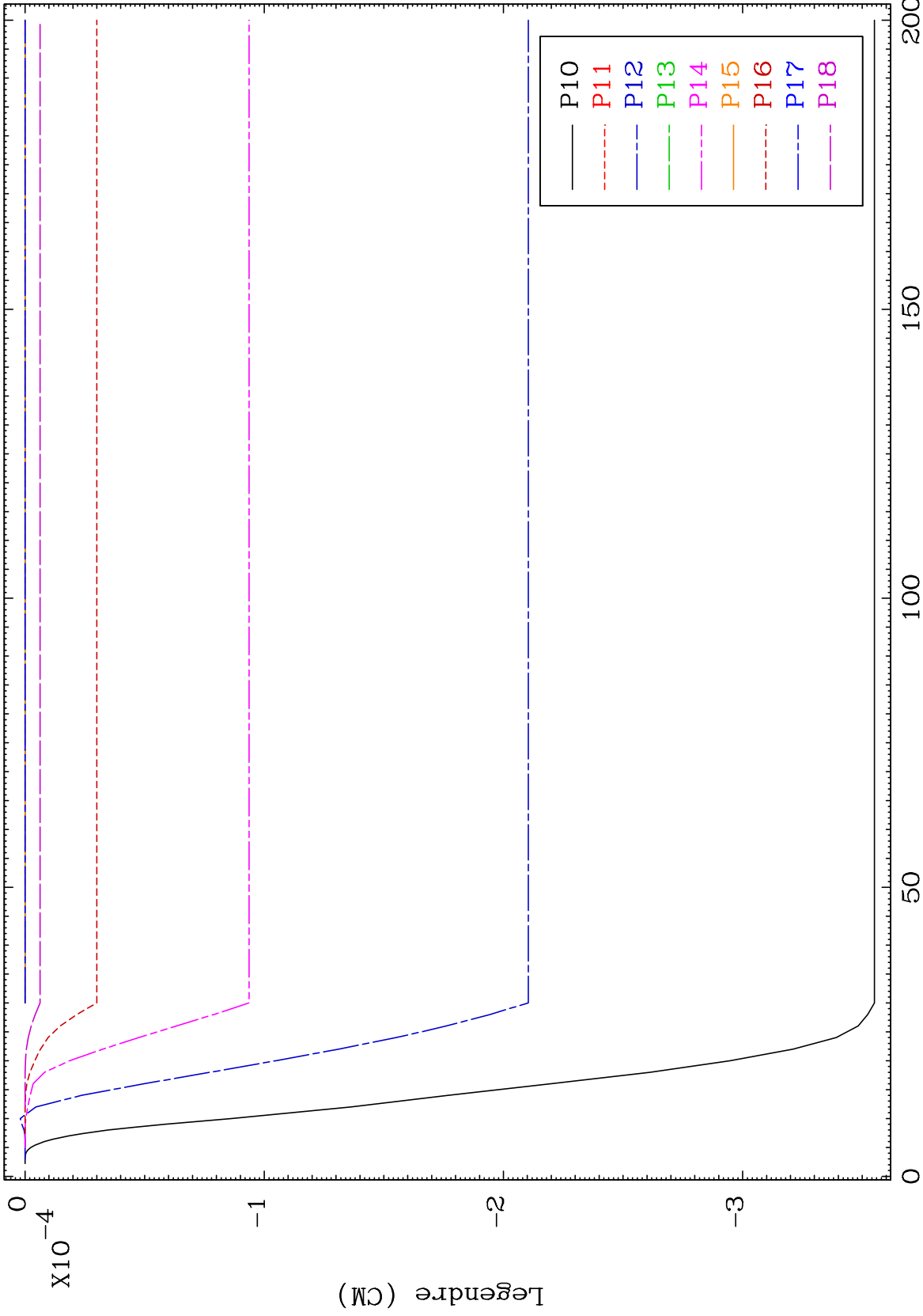


84 73-Ta-178

MAT 7319

MT= 70 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

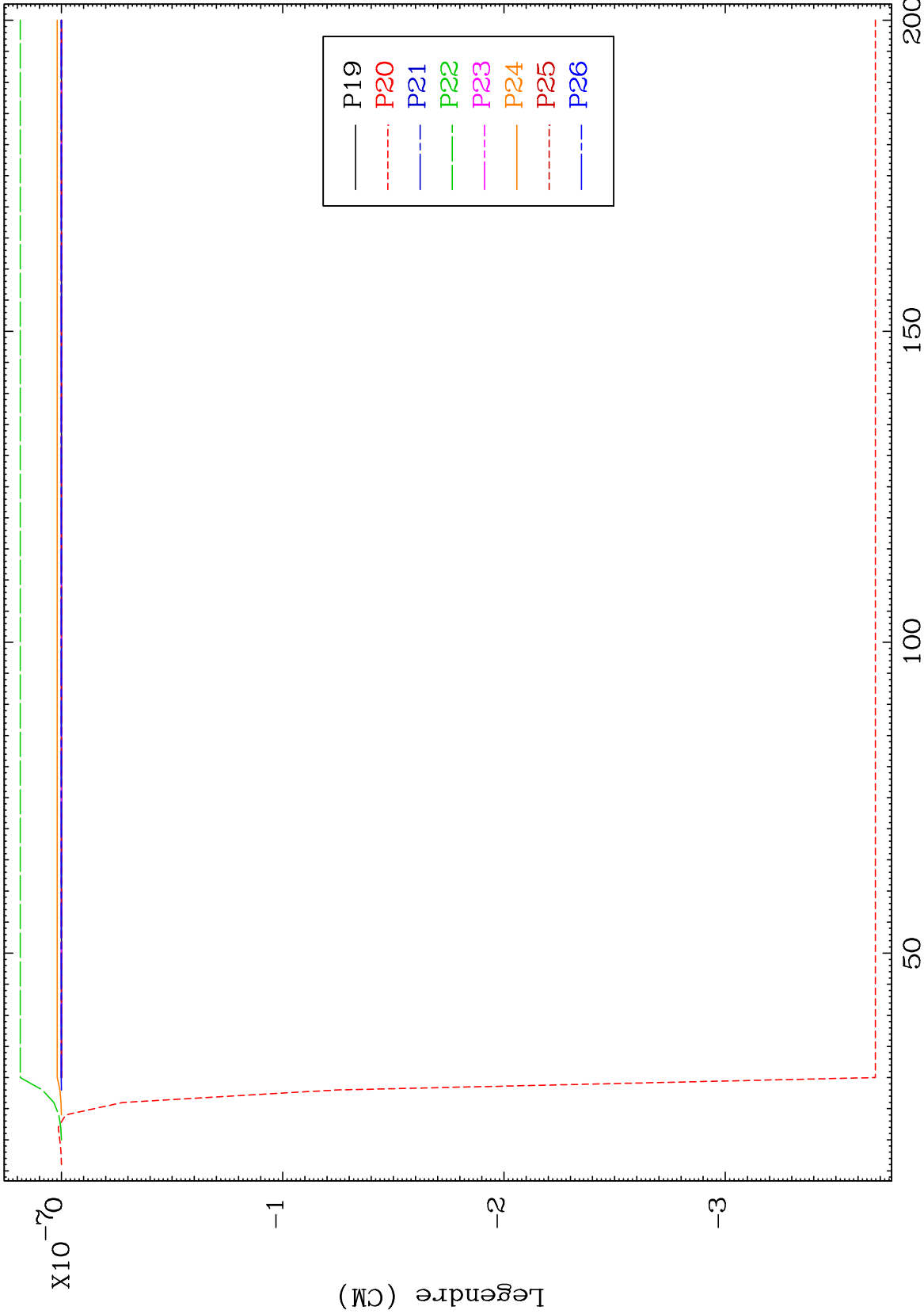
Incident Energy (MeV)

85

MAT 7319

MT= 70 (n,n') Level  
Legendre Coefficients

73-Ta-178



86

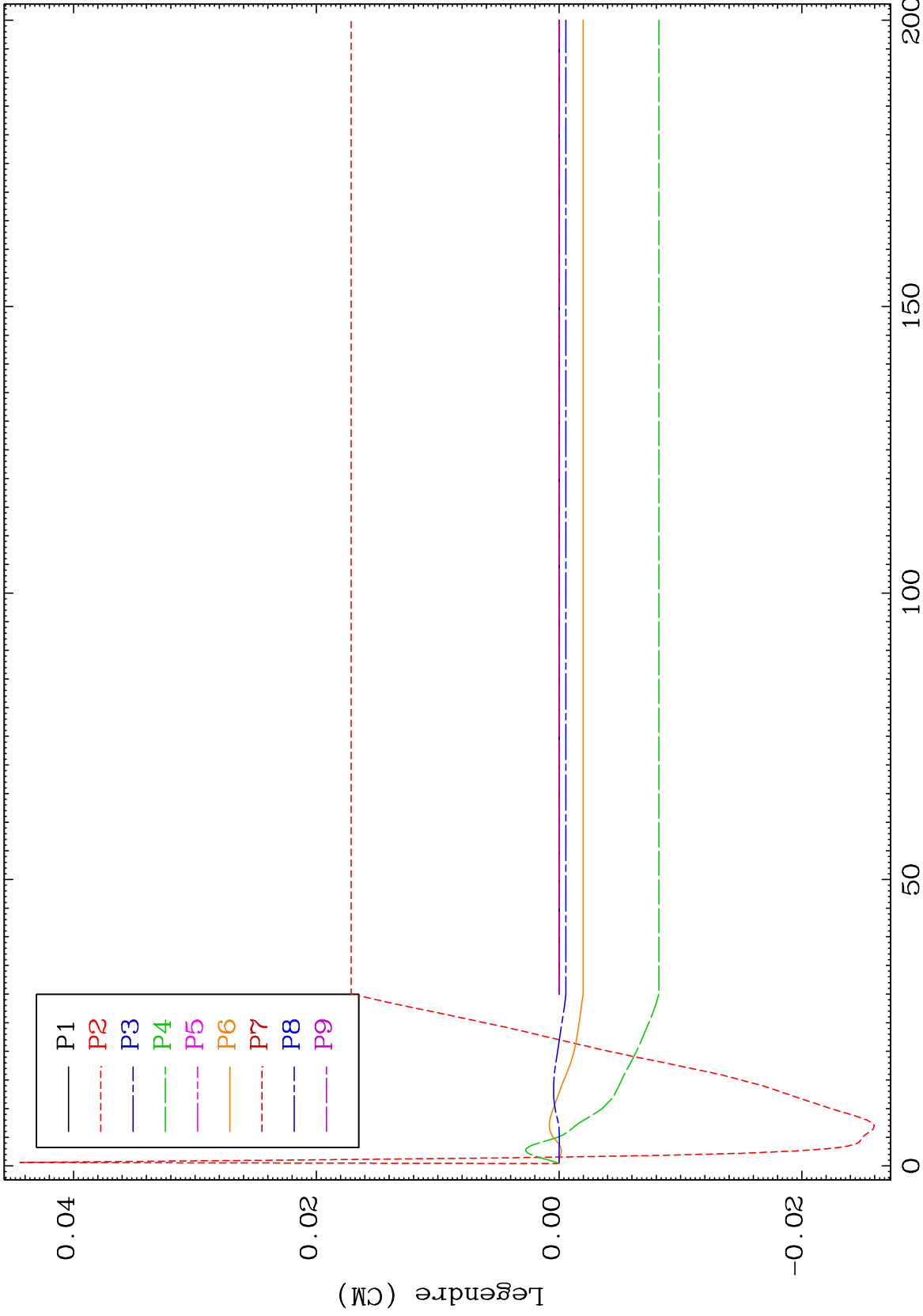
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 71 (n,n') Level  
Legendre Coefficients

<sup>73</sup>Ta-178



87

Incident Energy (MeV)

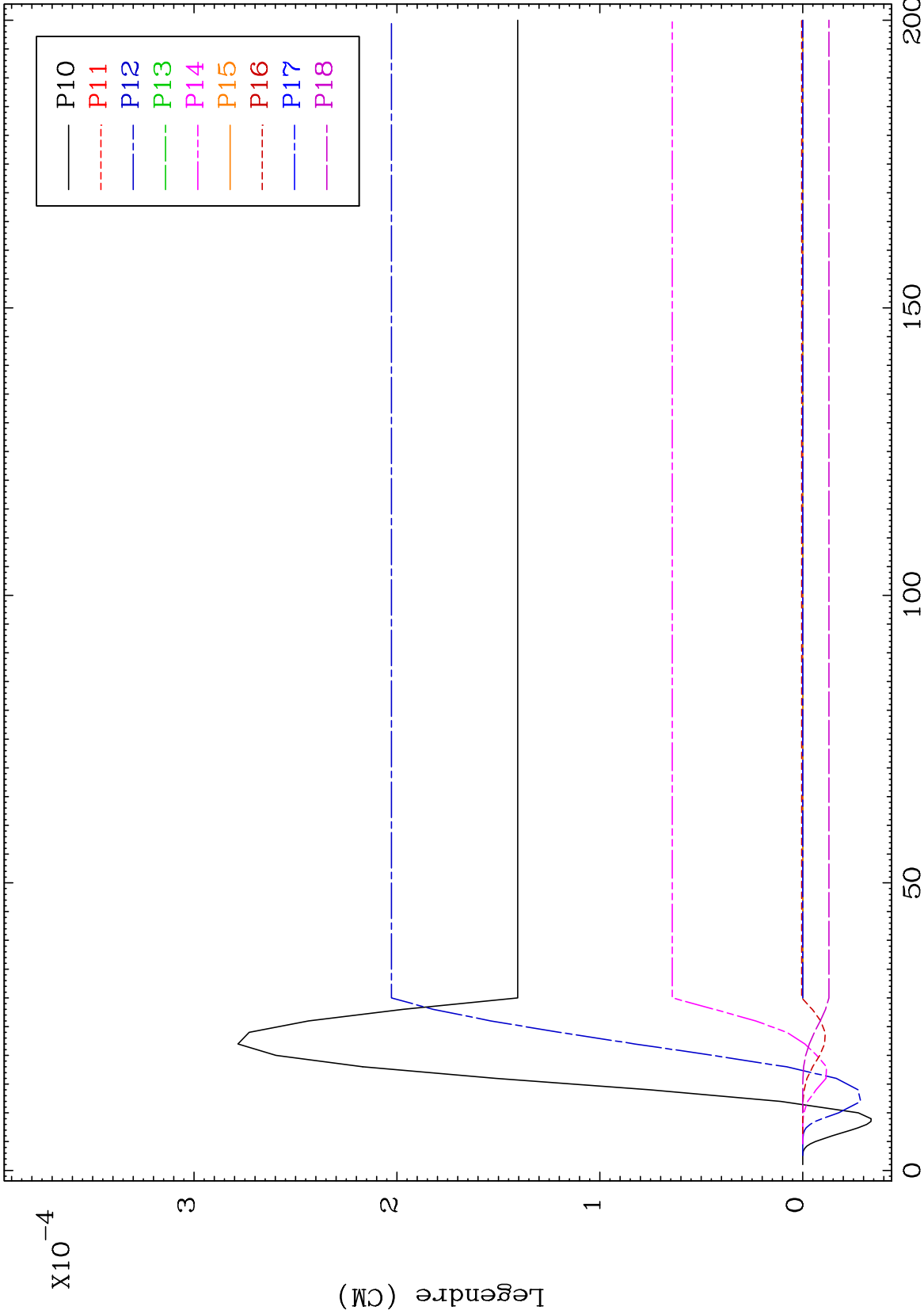
<sup>73</sup>Ta-178



MAT 7319

MT= 71 (n,n') Level  
Legendre Coefficients

<sup>73</sup>Ta-178



88

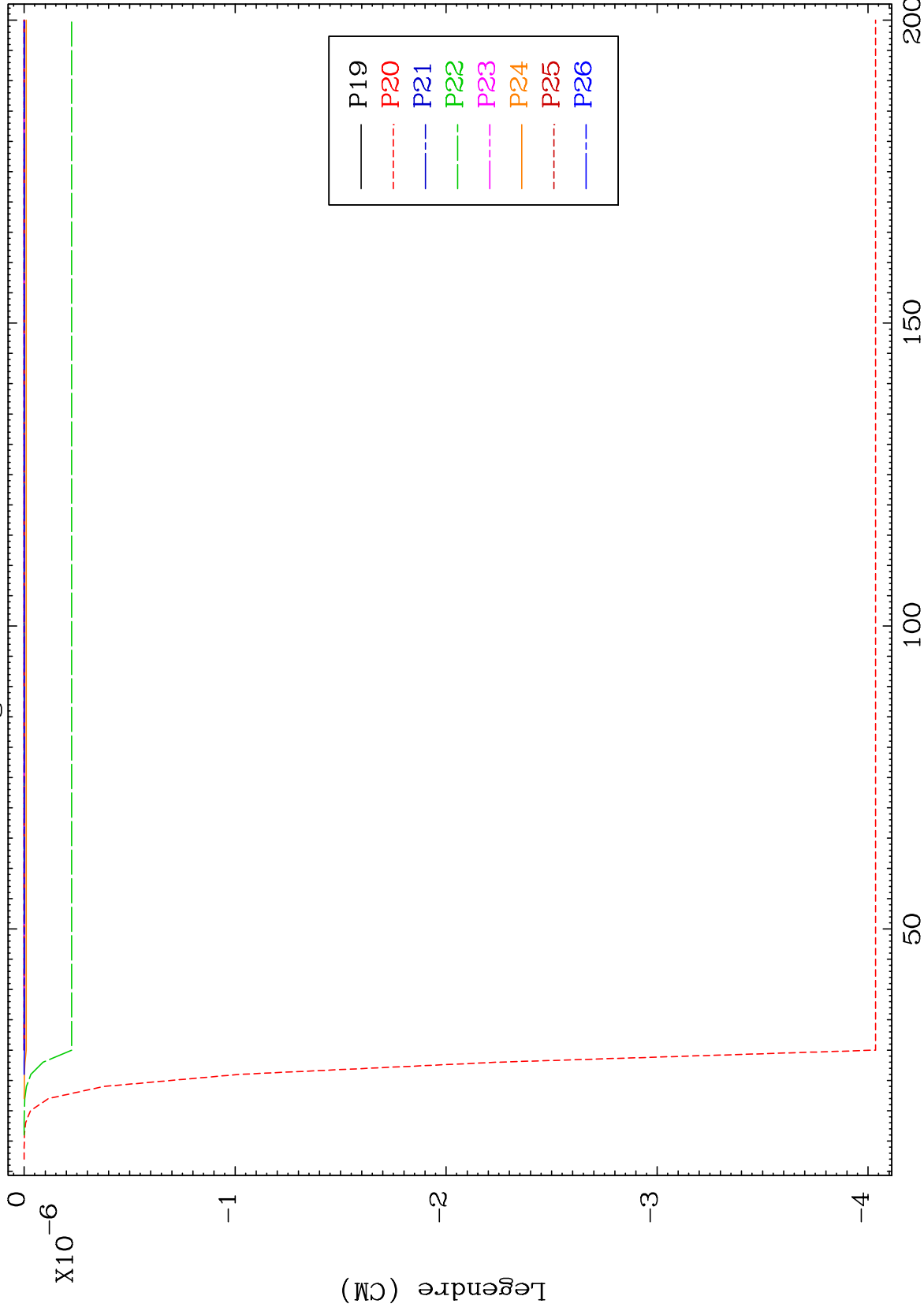
Incident Energy (MeV)

<sup>73</sup>Ta-178

MAT 7319

MT= 71 (n,n') Level  
Legendre Coefficients

73-Ta-178



89

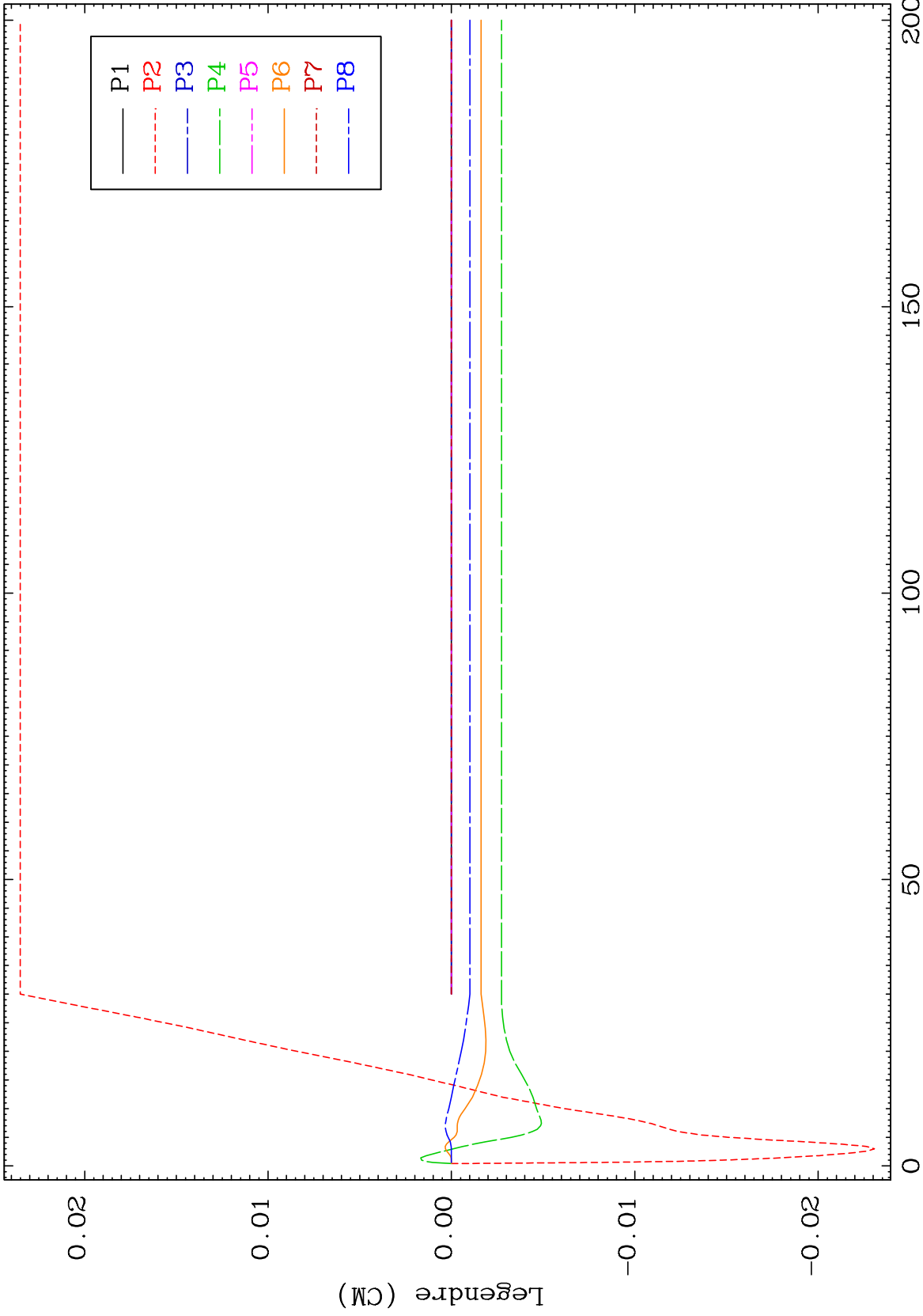
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 72 (n,n') Level  
Legendre Coefficients

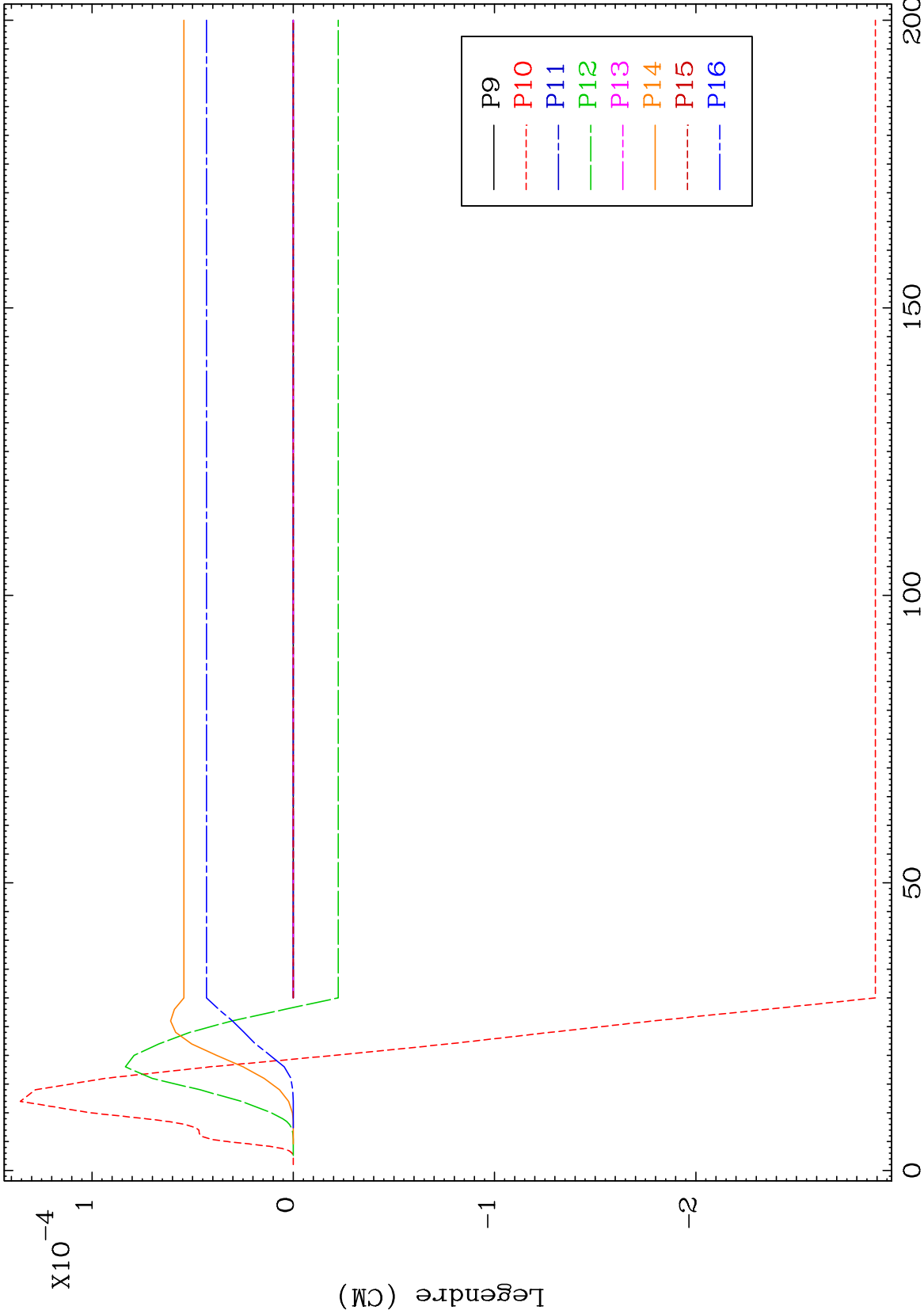
73-Ta-178



MAT 7319

MT= 72 (n,n') Level  
Legendre Coefficients

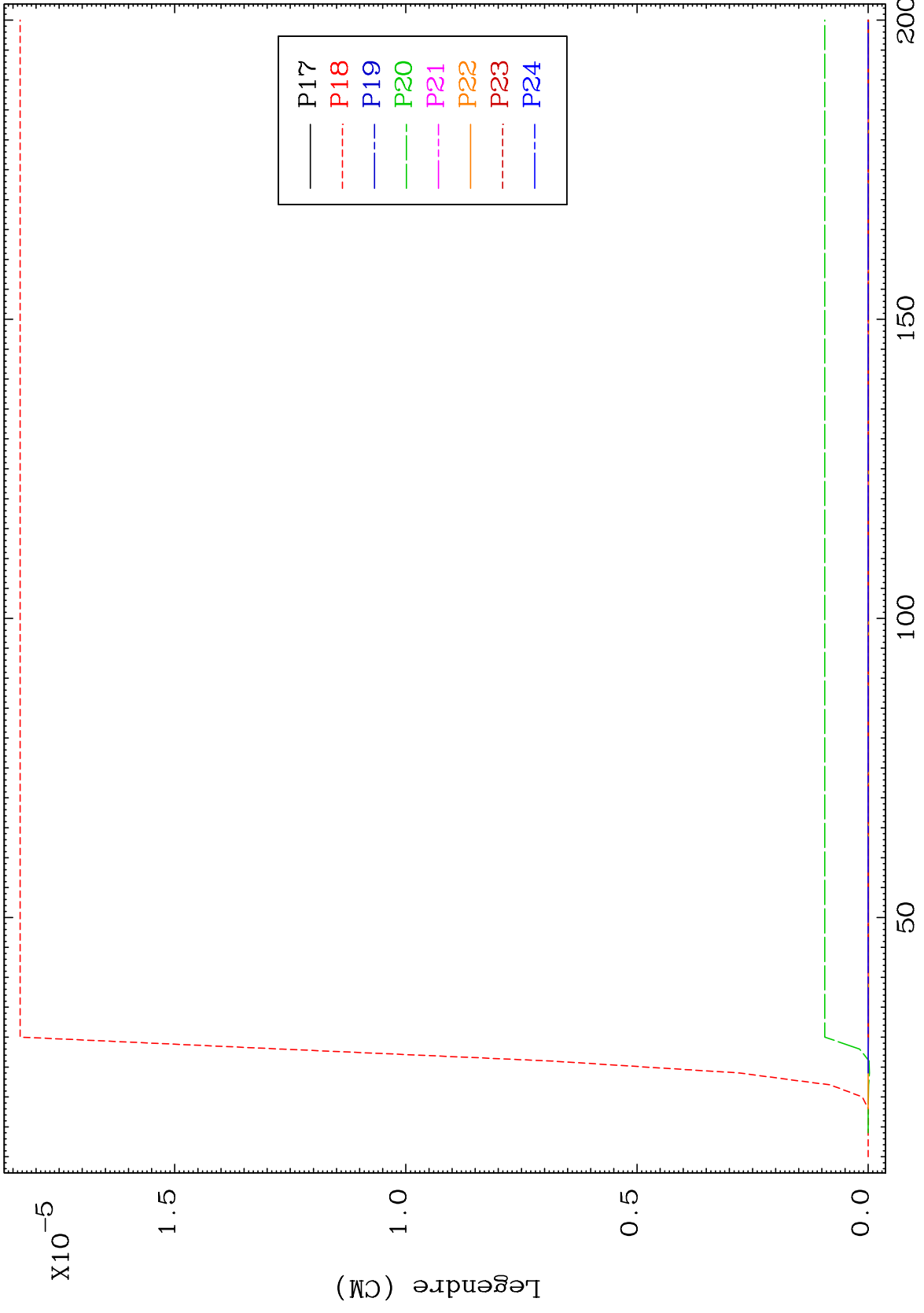
73-Ta-178



91

73-Ta-178

MAT 7319 MT= 72 (n,n') Level Legendre Coefficients 73-Ta-178

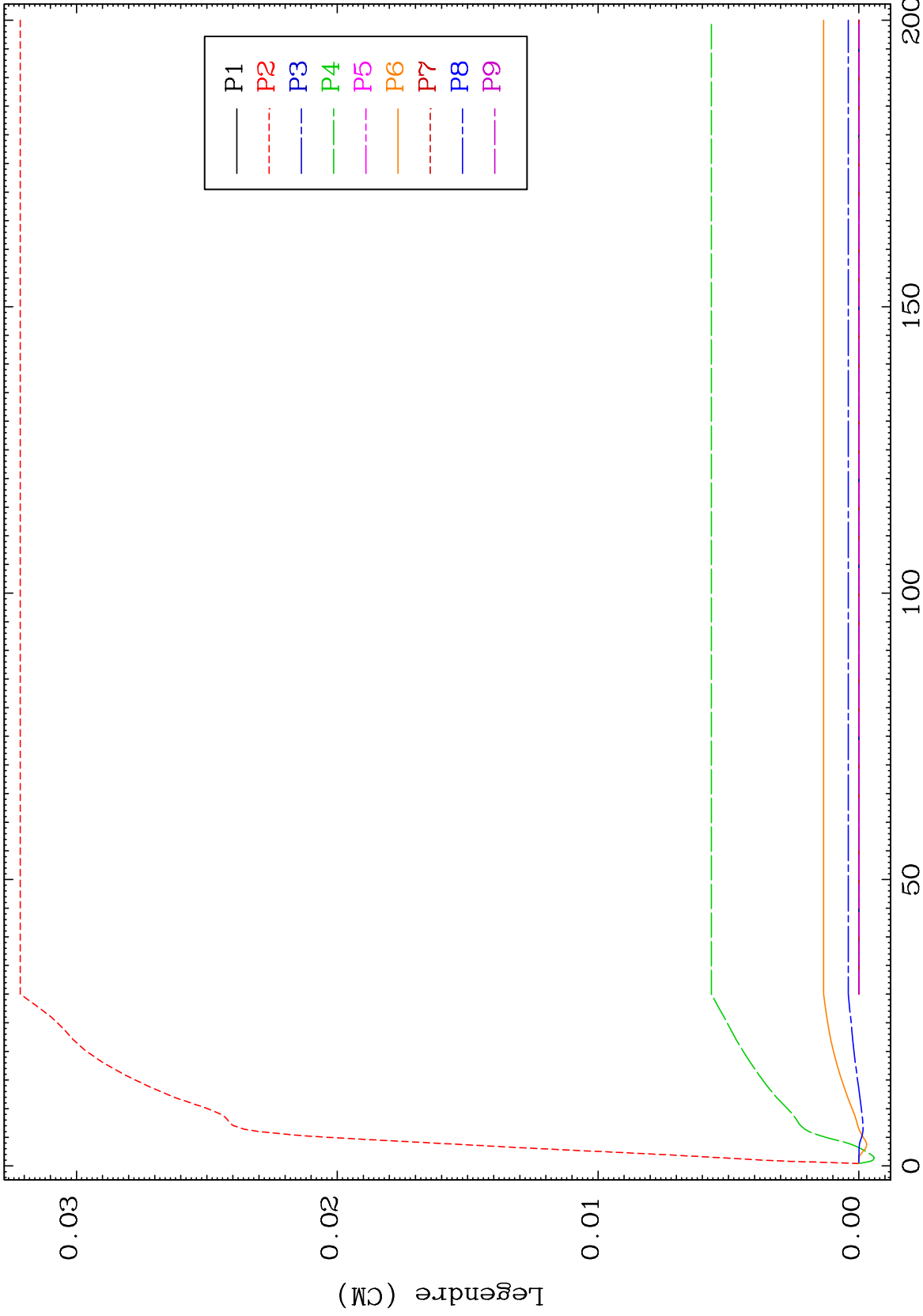


92 73-Ta-178

MAT 7319

MT= 73 (n,n') Level  
Legendre Coefficients

73-Ta-178



93

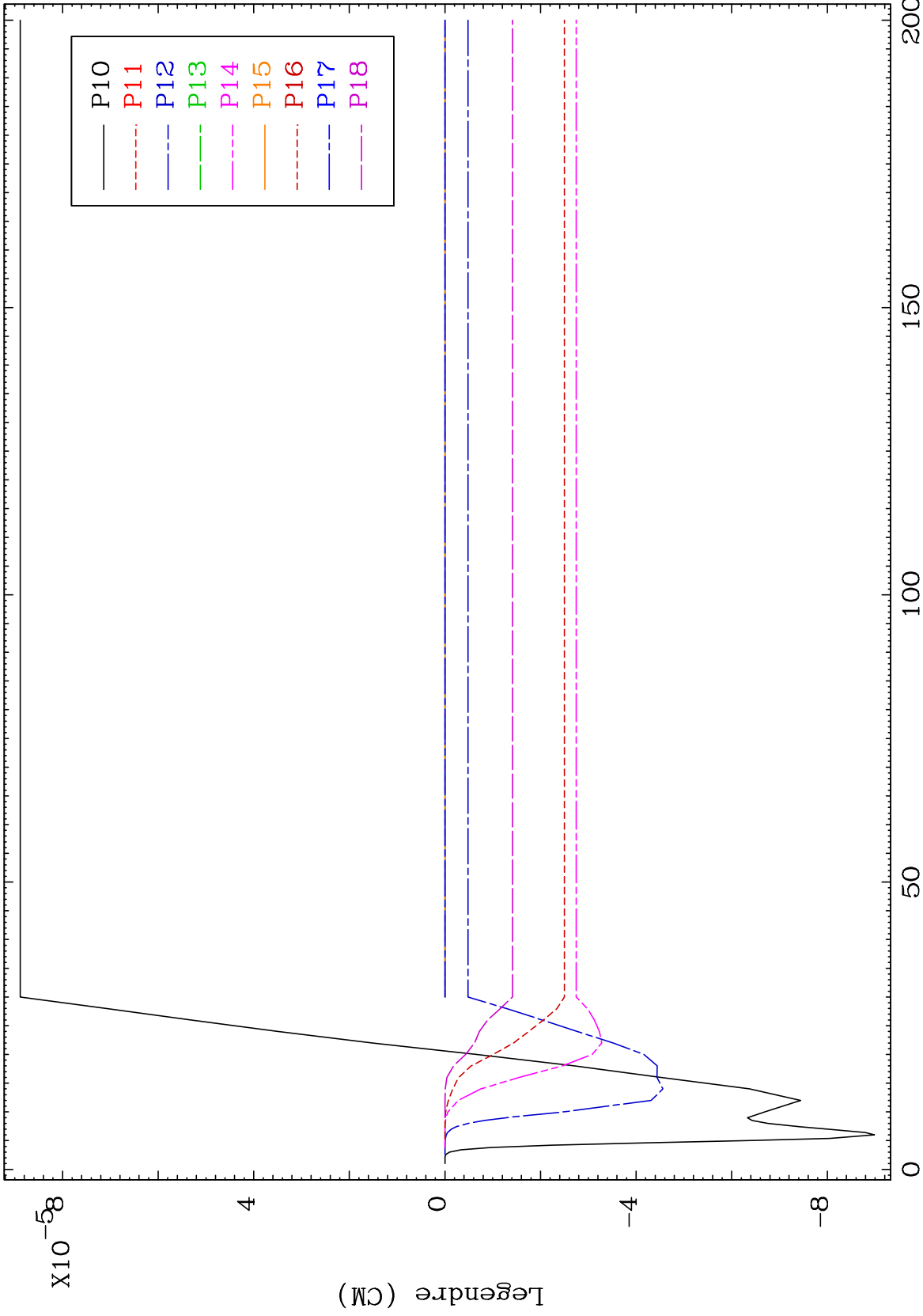
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 73 (n,n') Level  
Legendre Coefficients

73-Ta-178



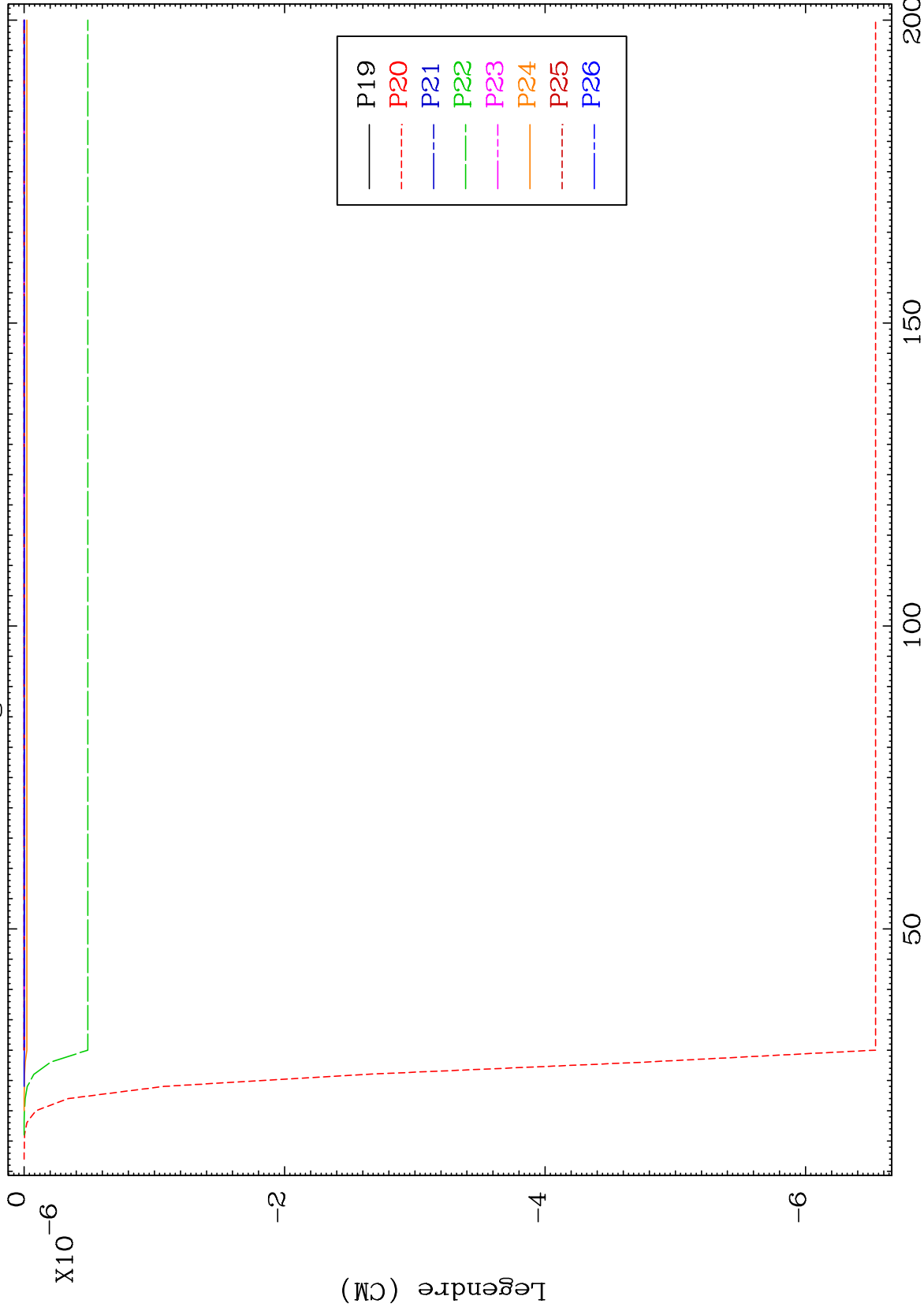
94

73-Ta-178

MAT 7319

MT= 73 (n,n') Level  
Legendre Coefficients

73-Ta-178



95

Incident Energy (MeV)

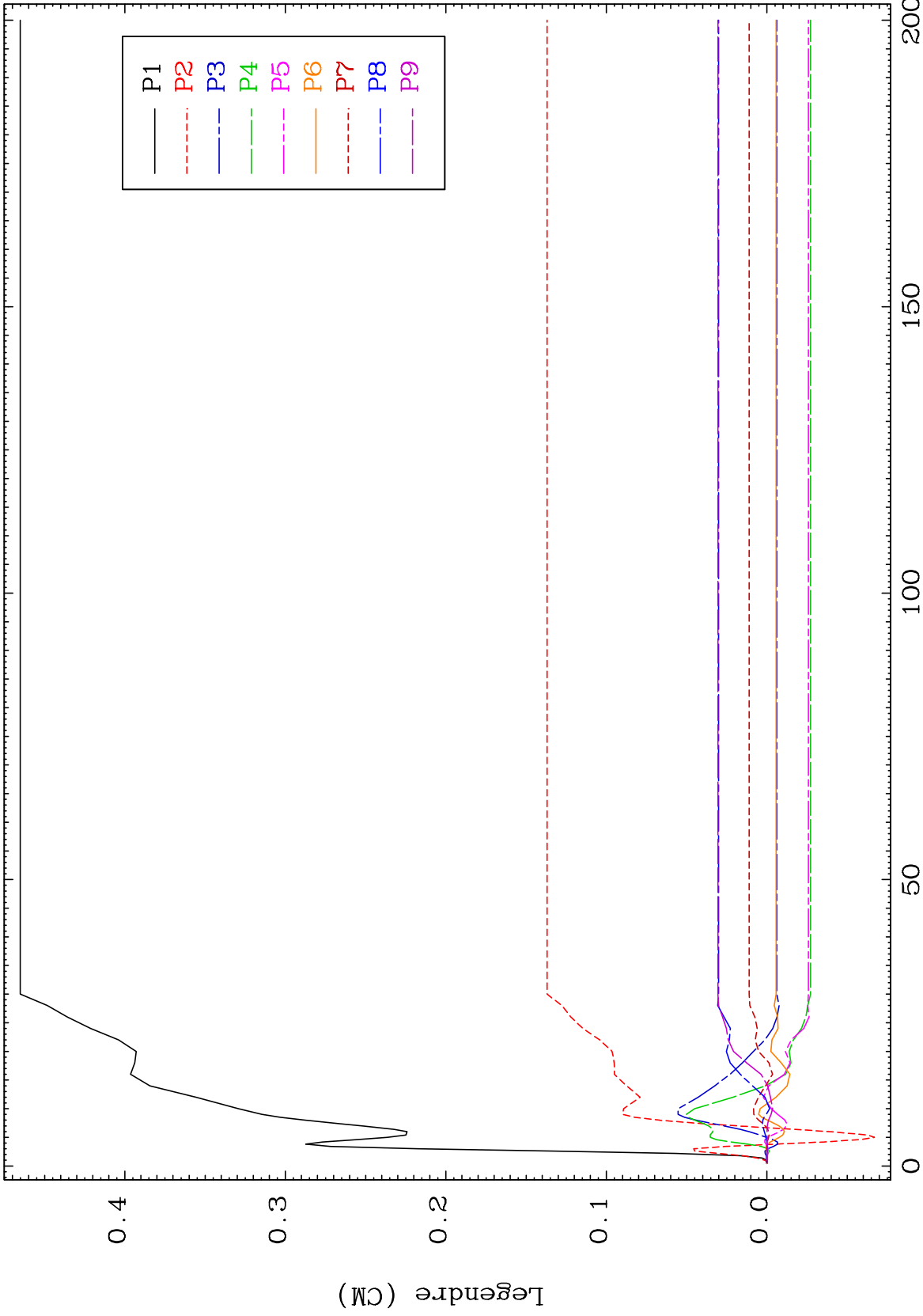
73-Ta-178



MAT 7319

MT= 74 (n,n') Level  
Legendre Coefficients

73-Ta-178



96

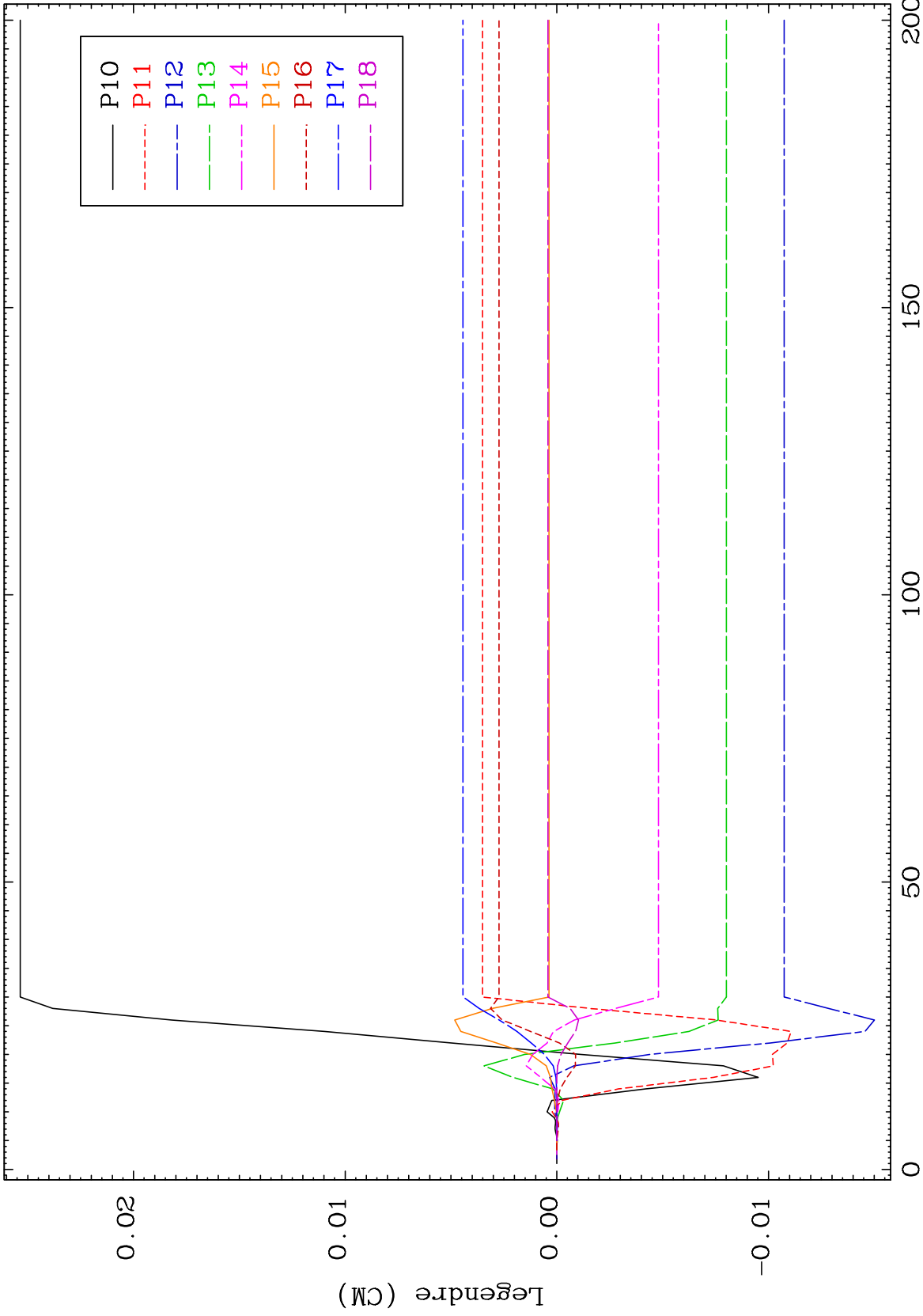
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 74 (n,n') Level  
Legendre Coefficients

73-Ta-178



97

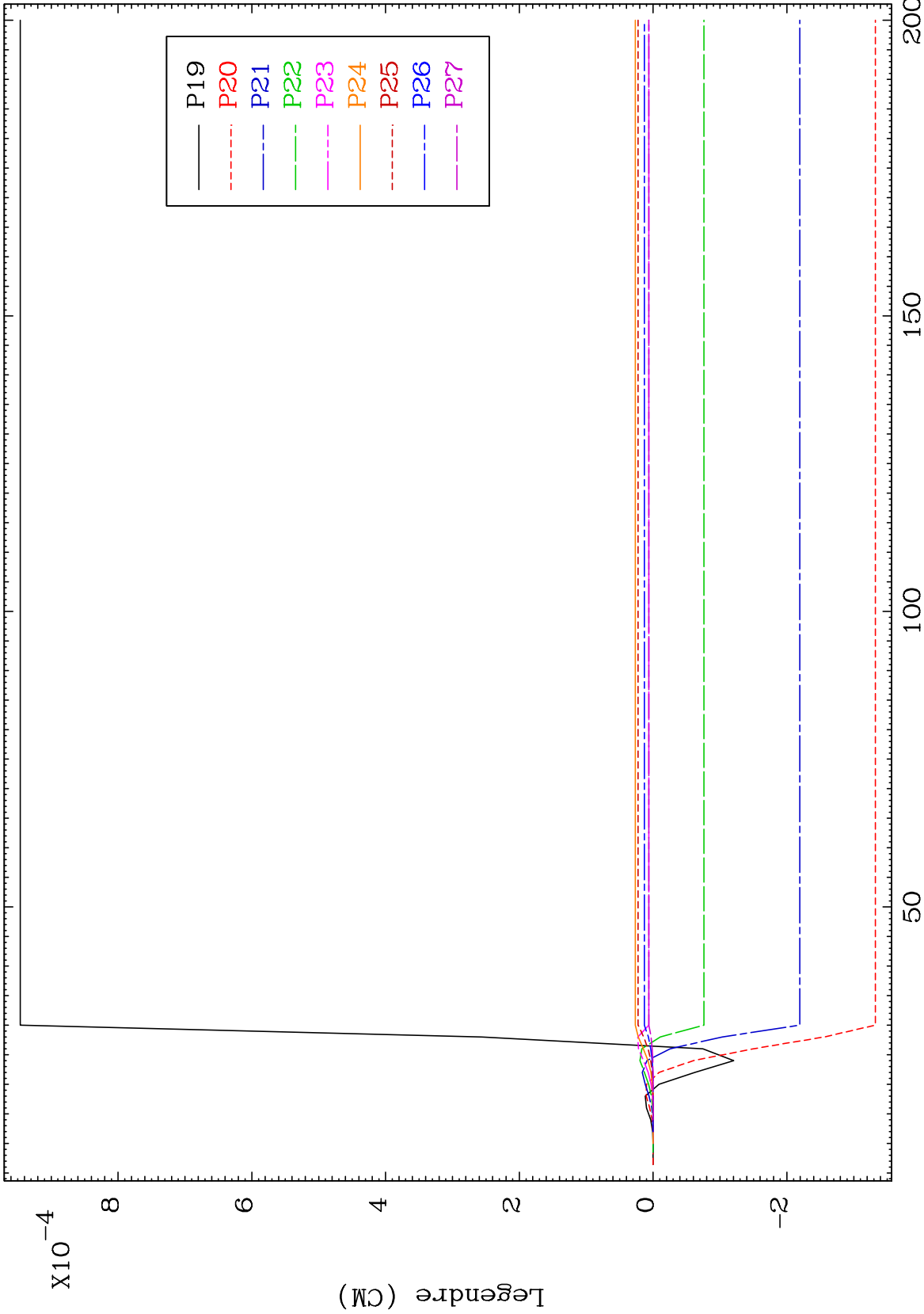
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 74 (n,n') Level  
Legendre Coefficients

73-Ta-178



98

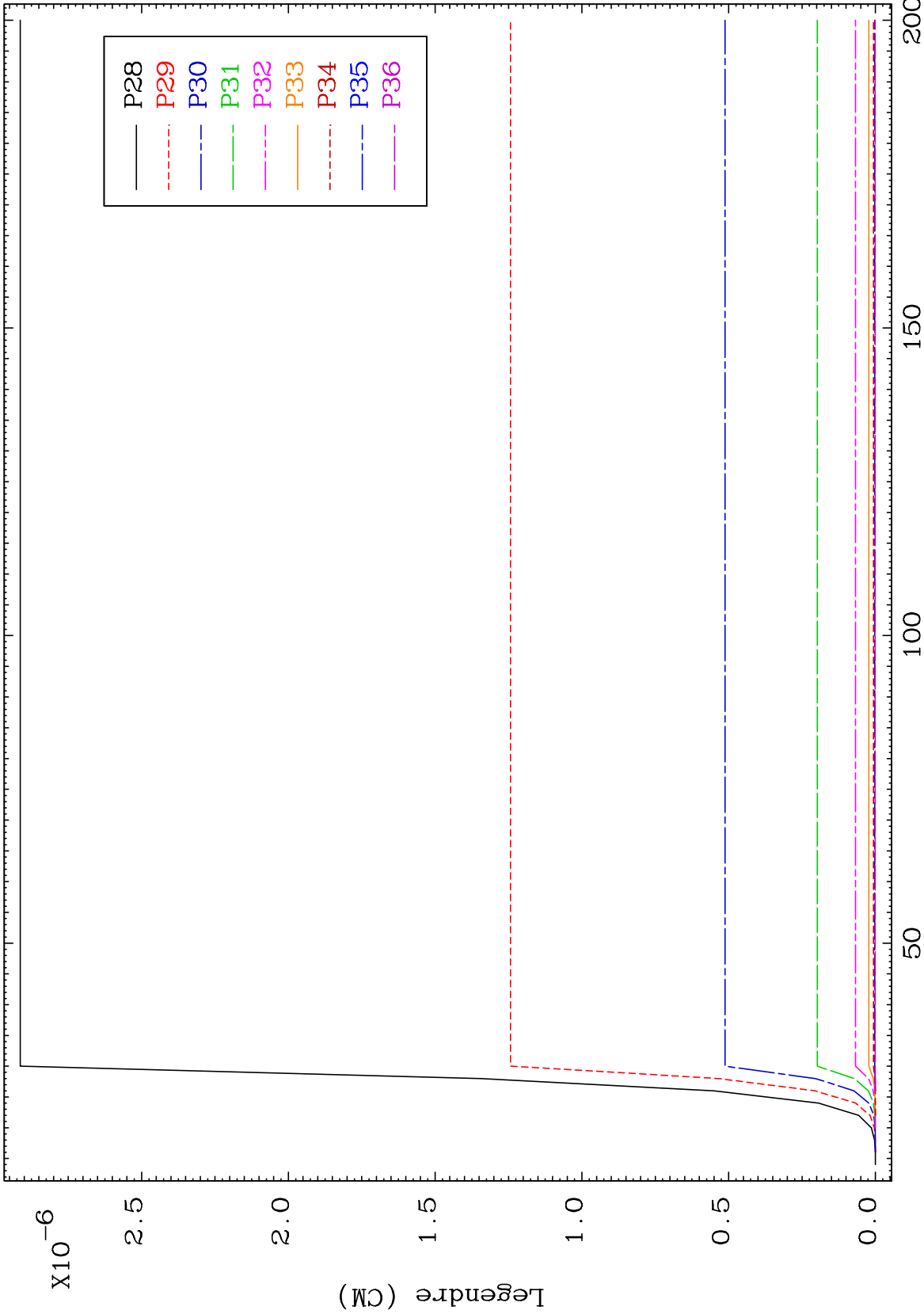
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 74 (n,n') Level  
Legendre Coefficients

73-Ta-178



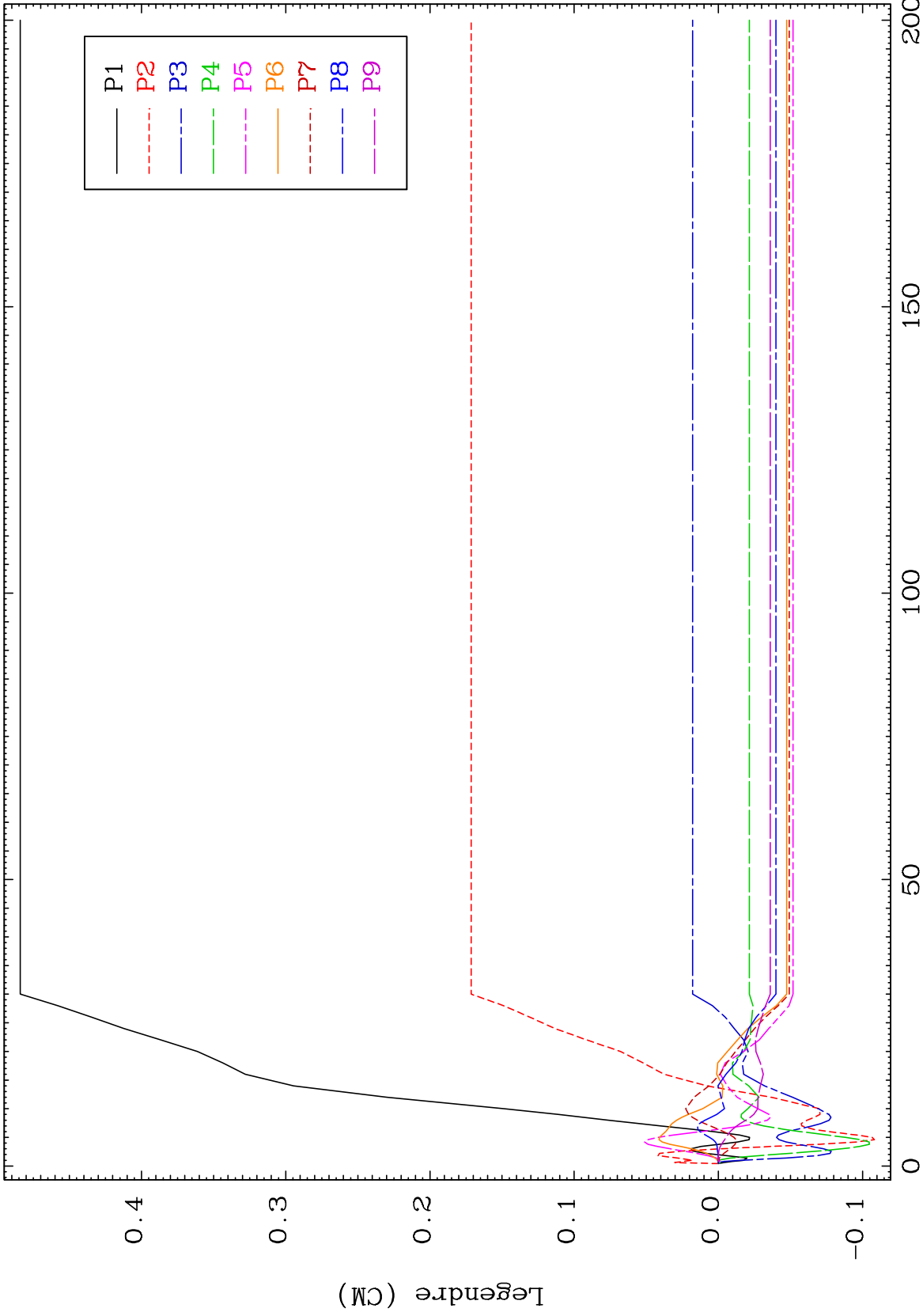
99

73-Ta-178

MAT 7319

MT= 75 (n,n') Level  
Legendre Coefficients

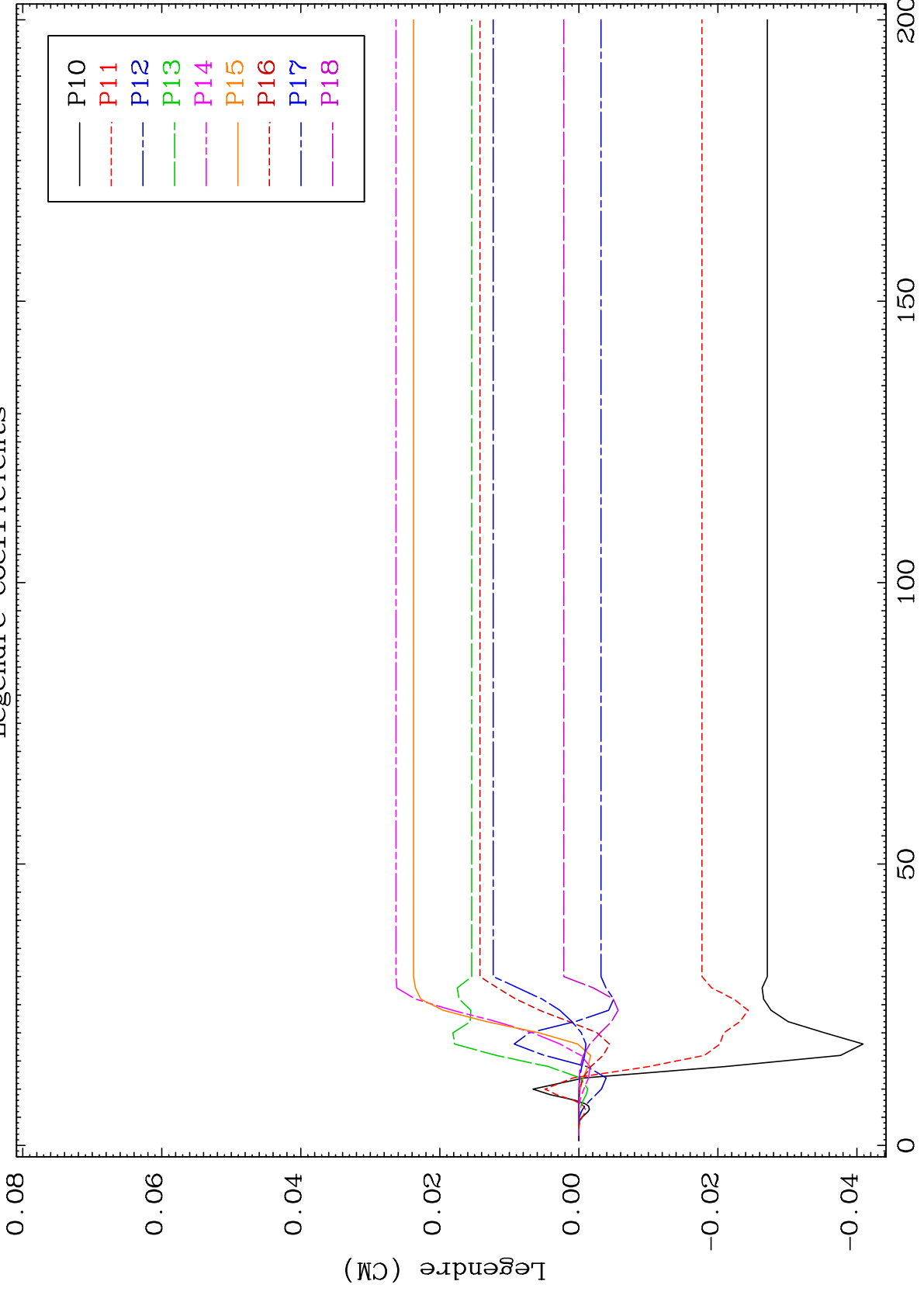
<sup>73</sup>Ta-178



<sup>73</sup>Ta-178

Incident Energy (MeV)

MAT 7319 MT= 75 (n,n') Level Legendre Coefficients 73-Ta-178

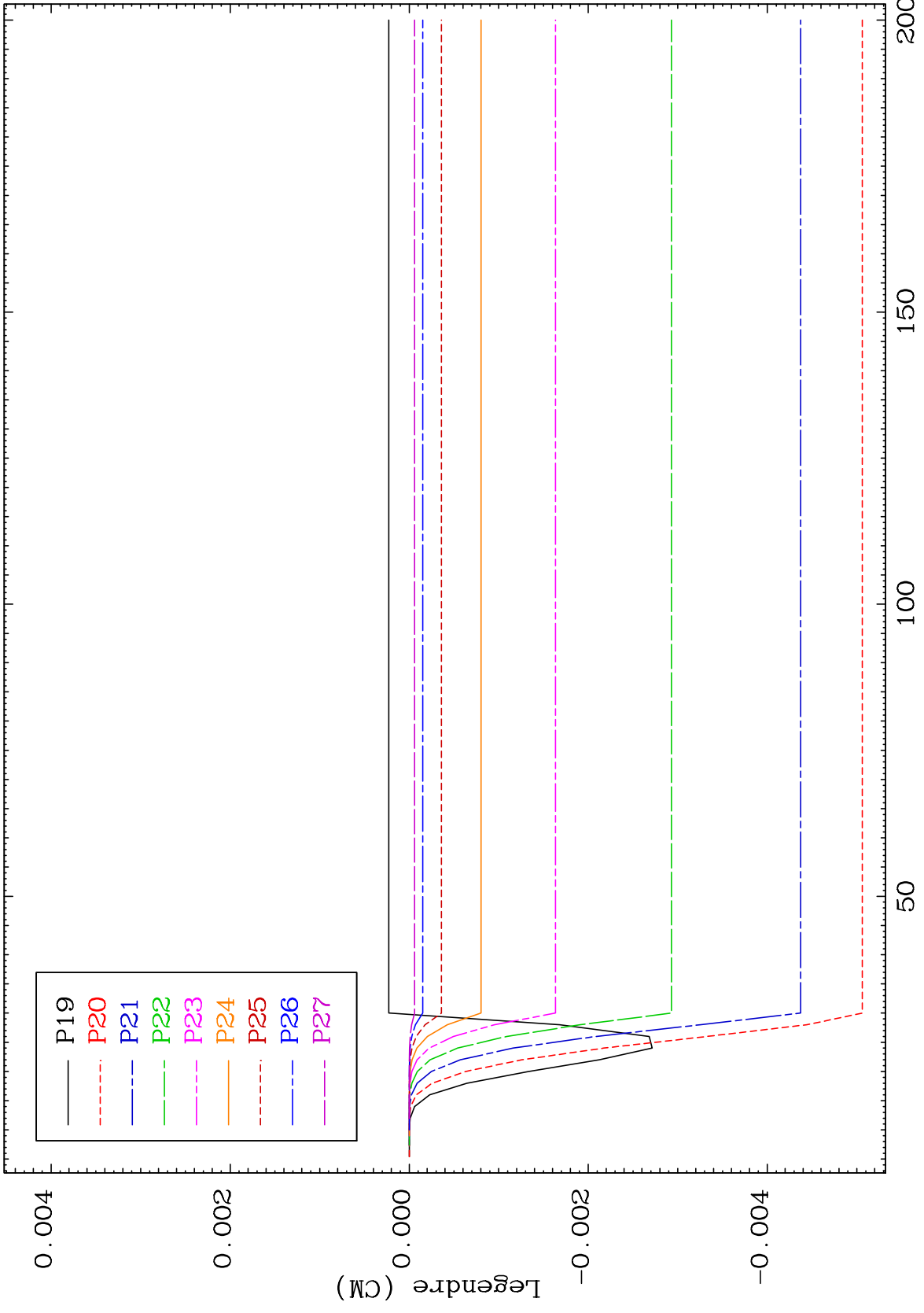


101 73-Ta-178

MAT 7319

MT= 75 (n,n') Level  
Legendre Coefficients

73-Ta-178



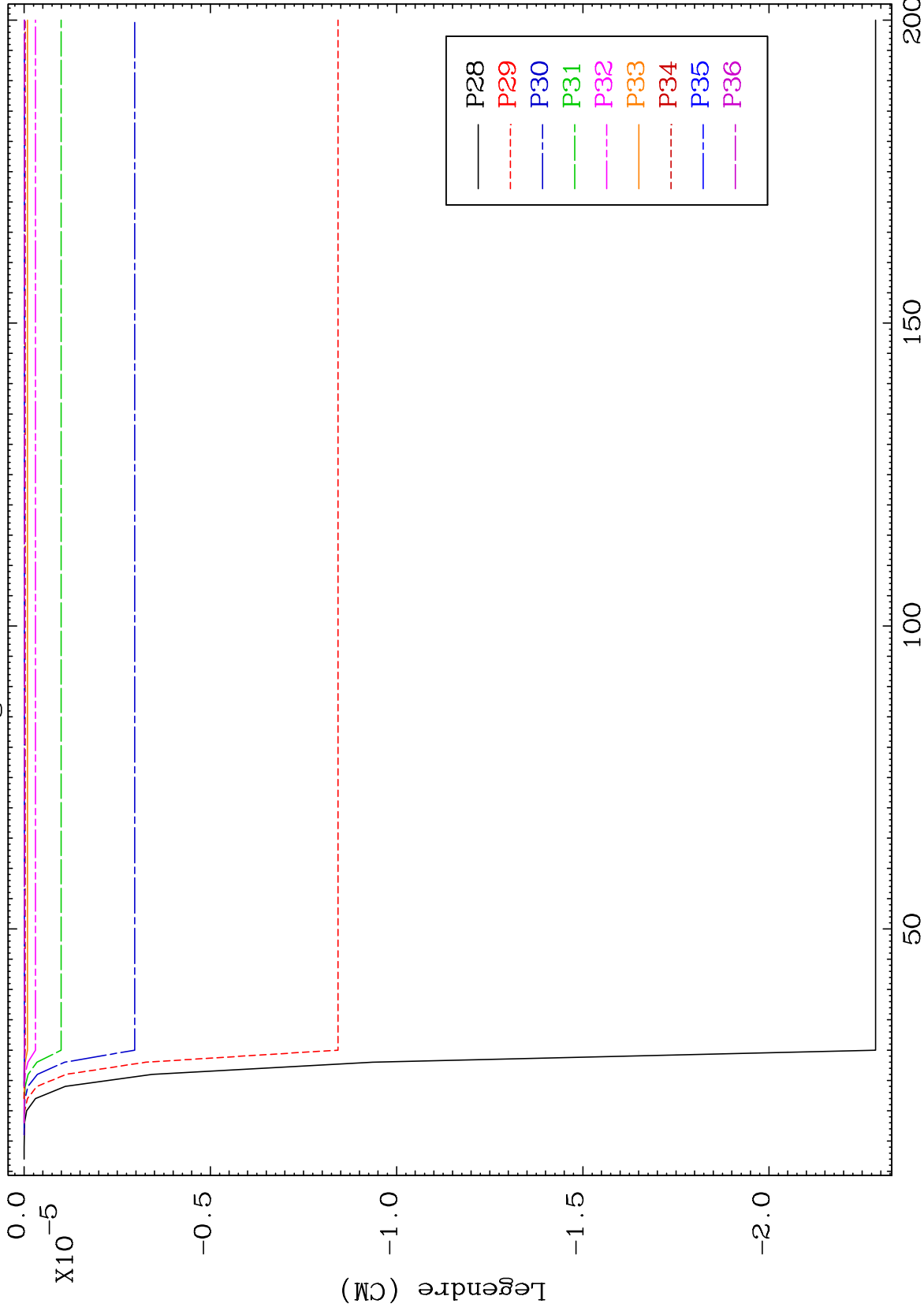
102

73-Ta-178

MAT 7319

MT= 75 (n,n') Level  
Legendre Coefficients

73-Ta-178



73-Ta-178

Incident Energy (MeV)

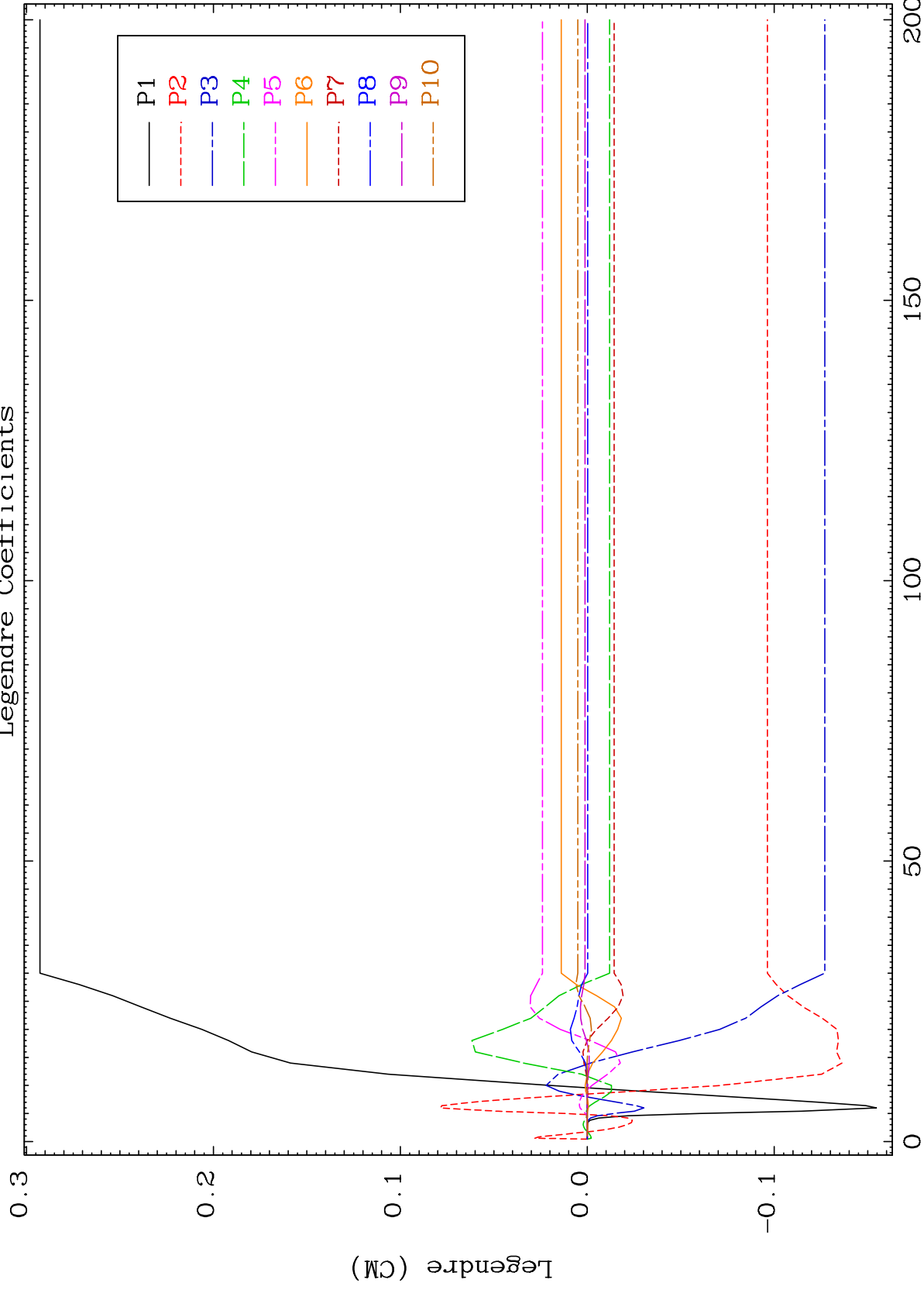
103



MAT 7319

MT= 76 (n,n') Level  
Legendre Coefficients

73-Ta-178



104

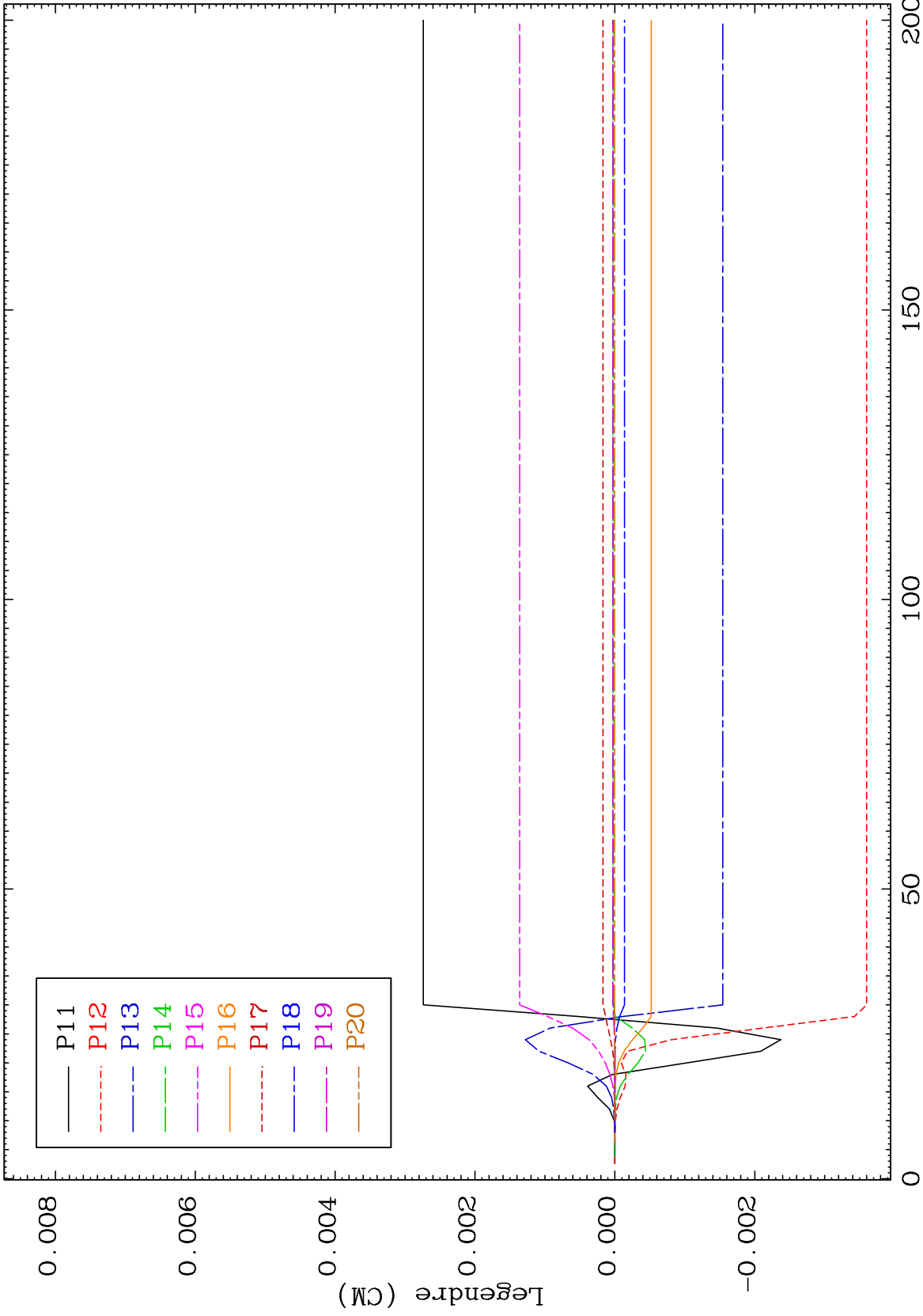
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 76 (n,n') Level  
Legendre Coefficients

73-Ta-178



105

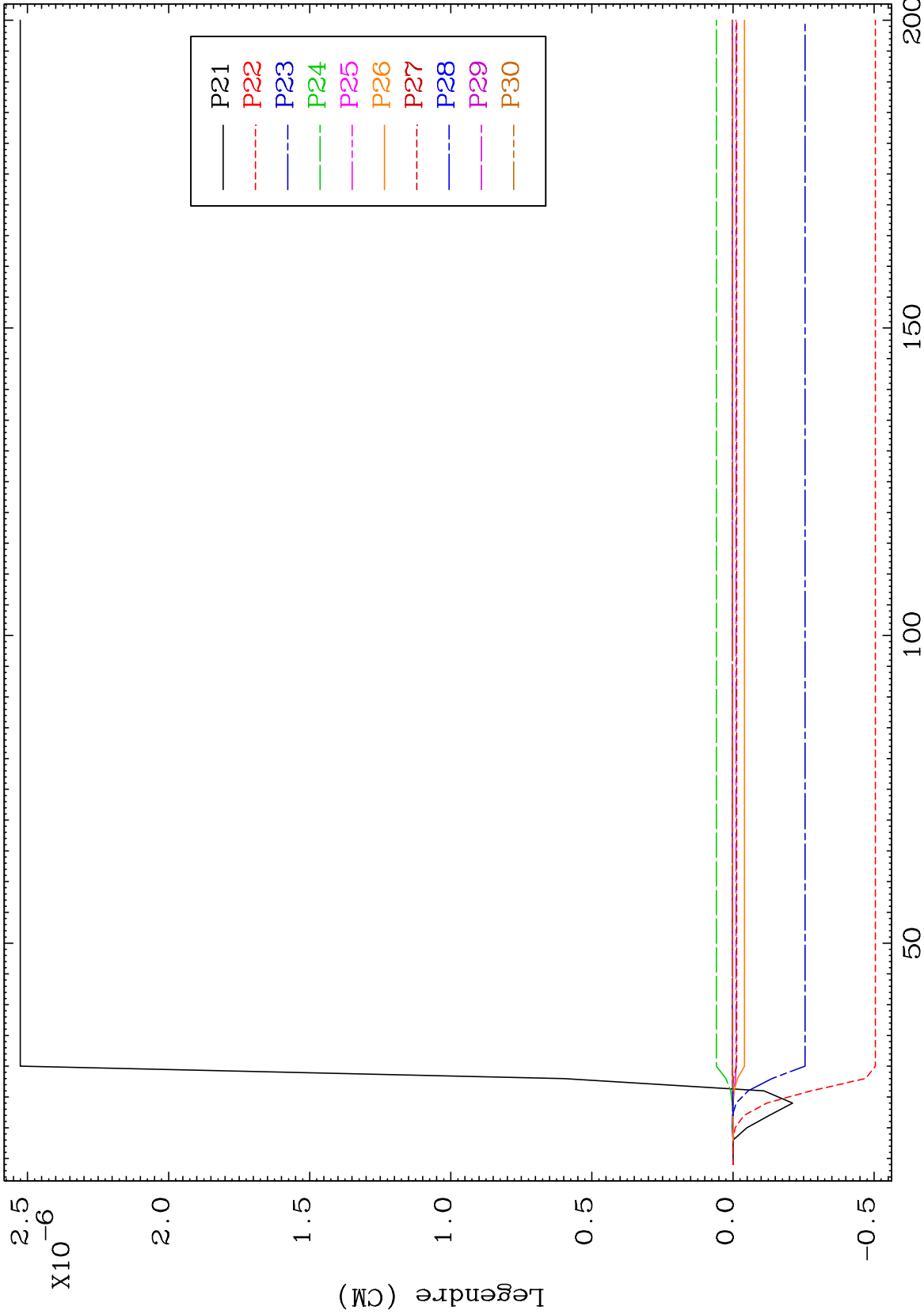
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 76 (n,n') Level  
Legendre Coefficients

73-Ta-178



106

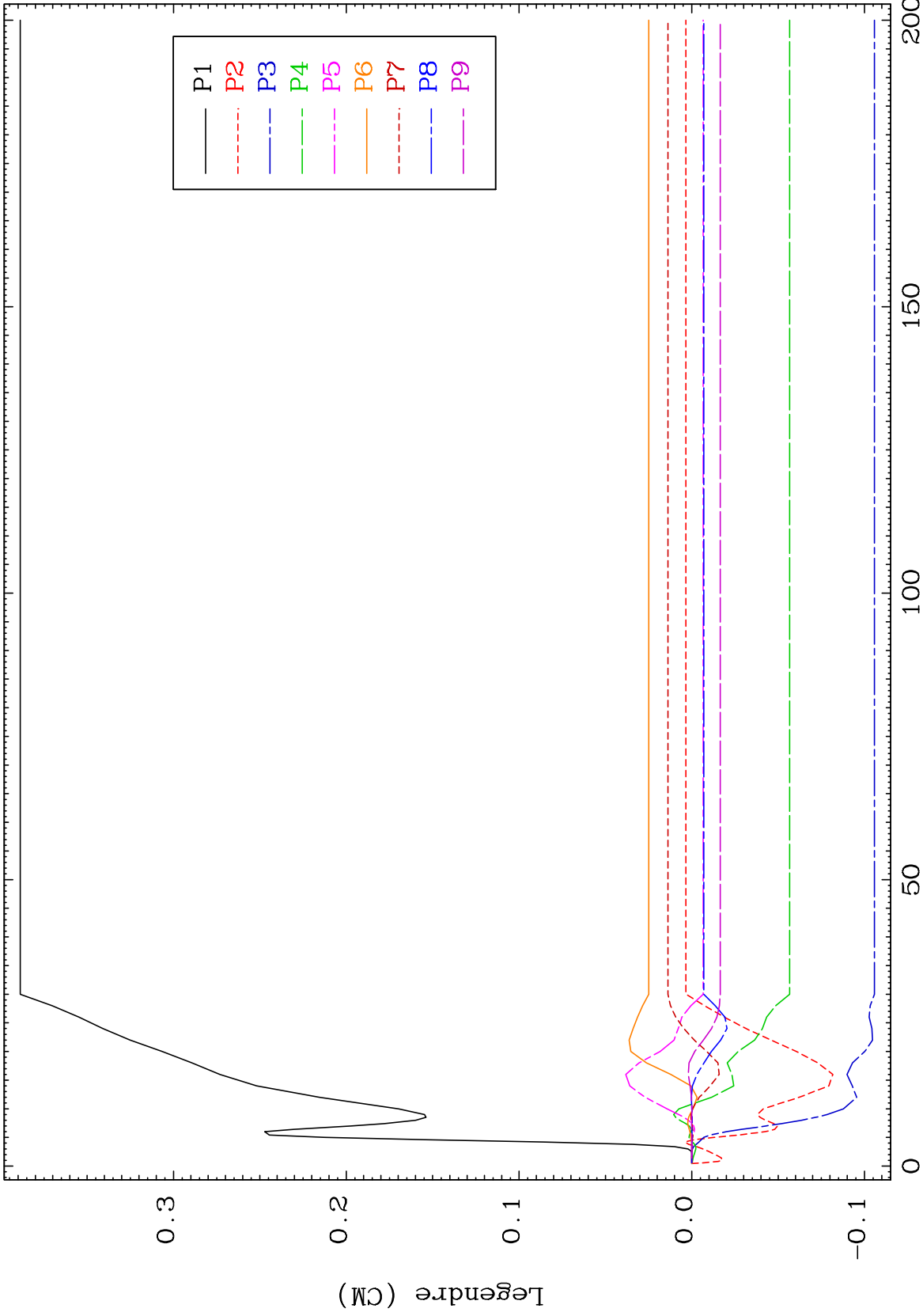
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 77 (n,n') Level  
Legendre Coefficients

73-Ta-178



107

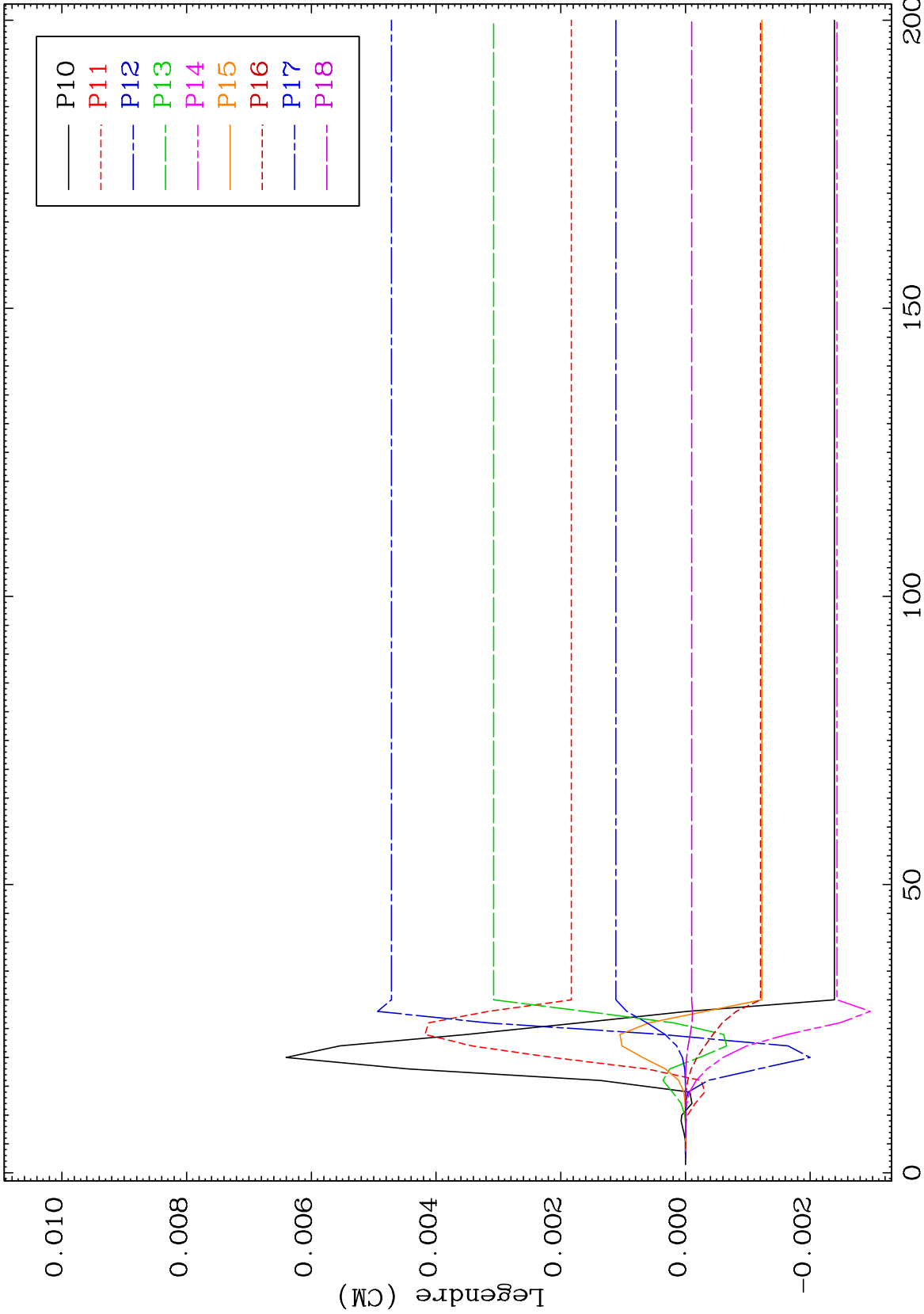
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 77 (n,n') Level  
Legendre Coefficients

73-Ta-178



108

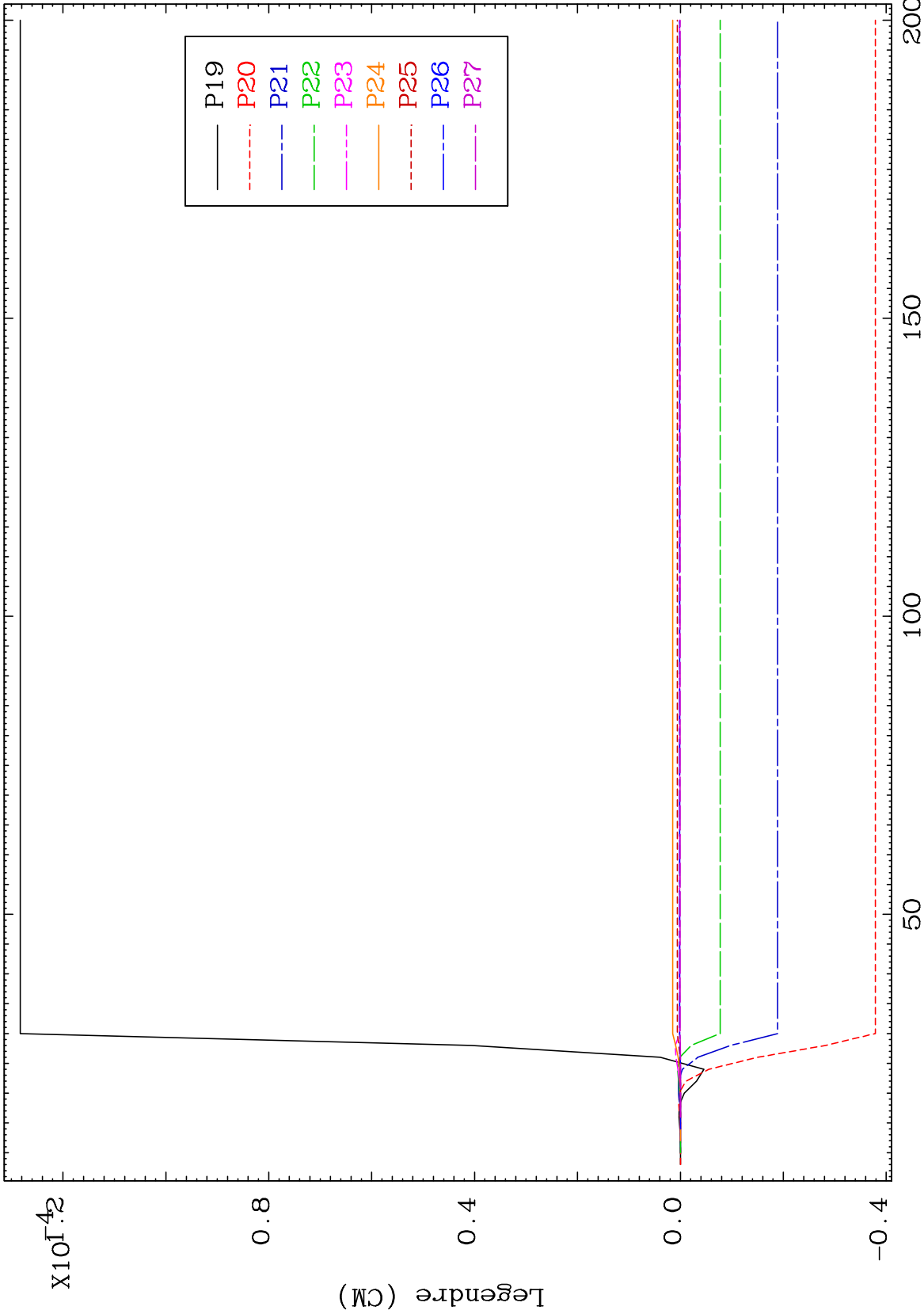
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 77 (n,n') Level  
Legendre Coefficients

73-Ta-178



109

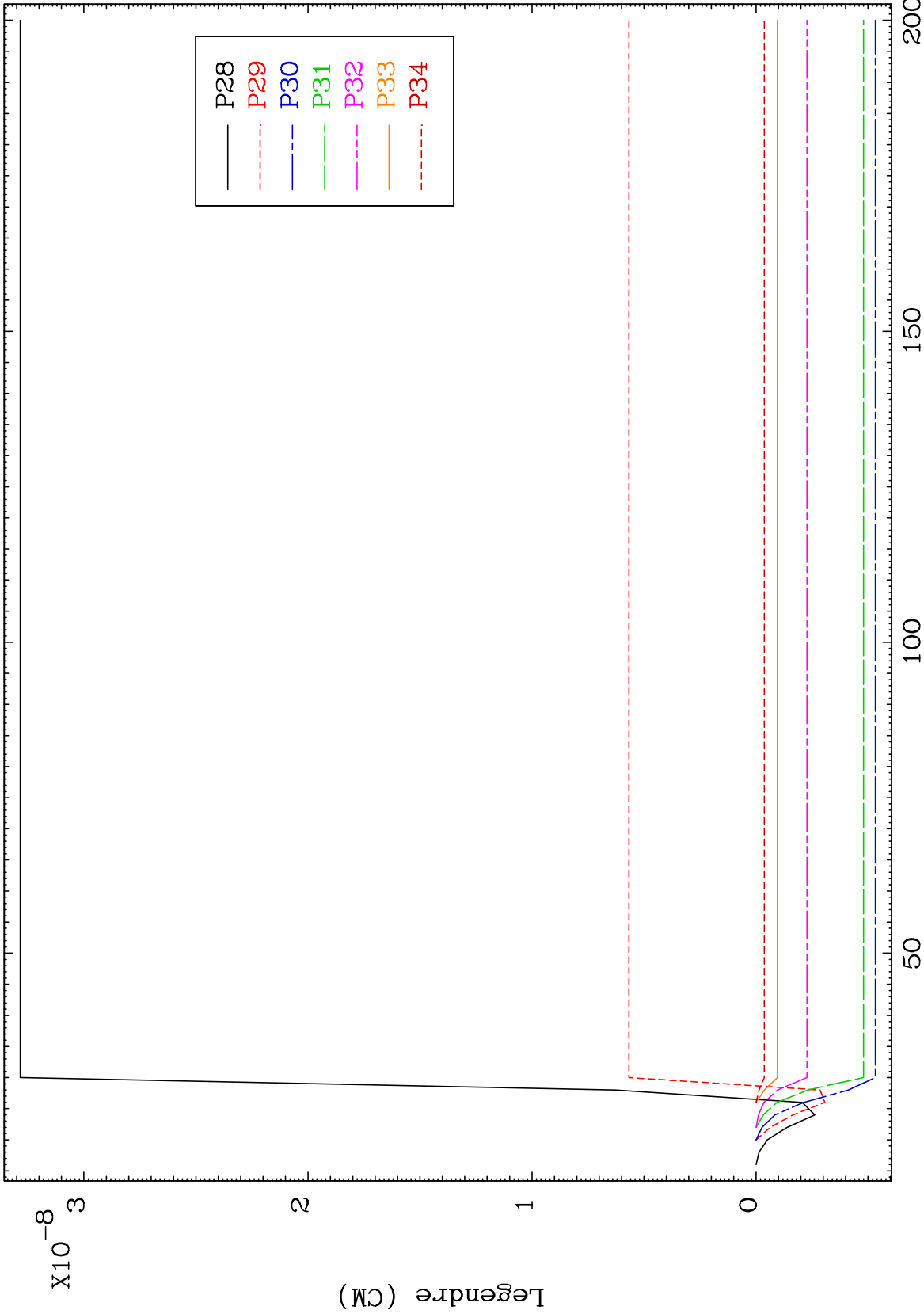
Incident Energy (MeV)

73-Ta-178

MAT 7319

MT= 77 (n,n') Level  
Legendre Coefficients

73-Ta-178



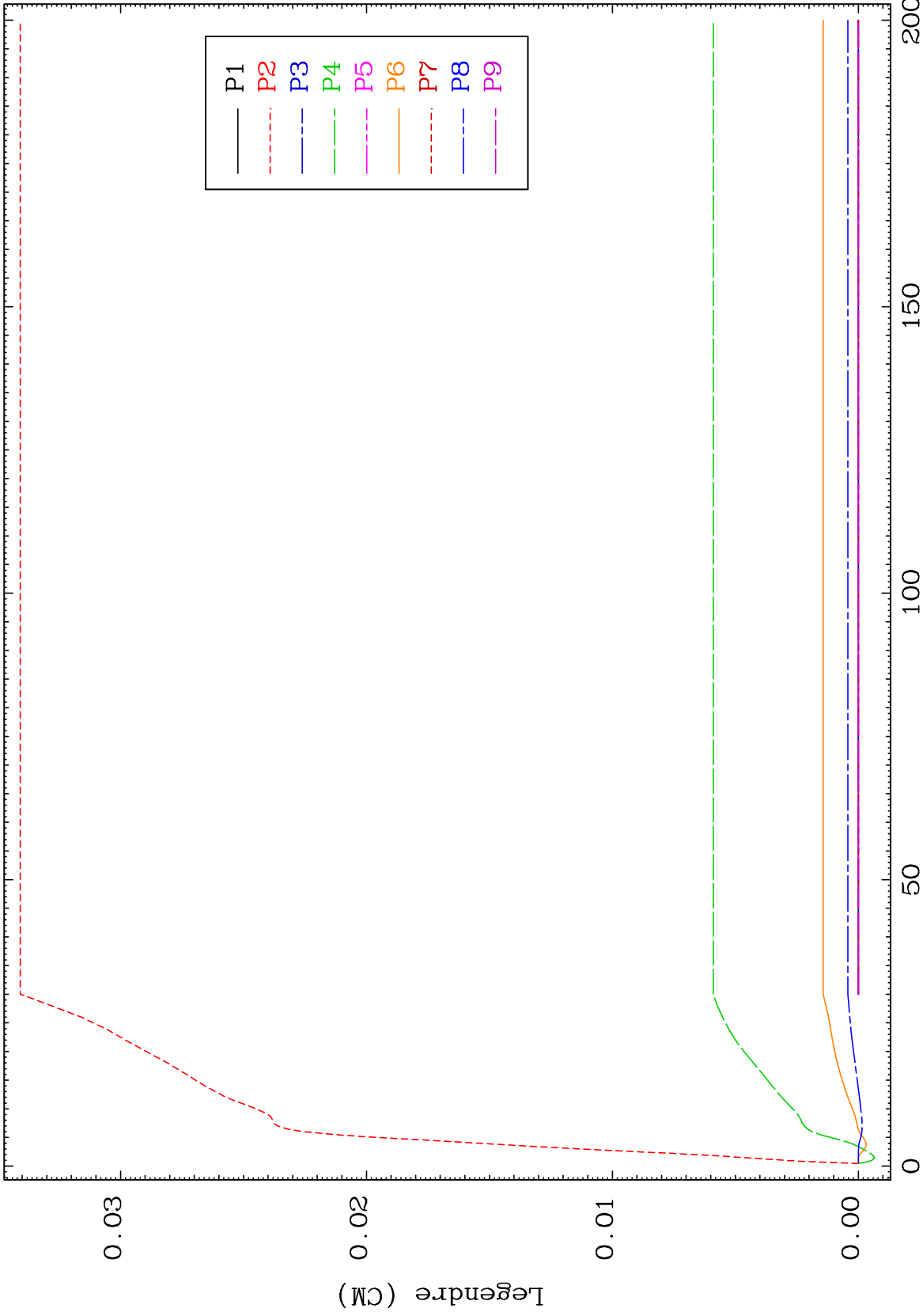
110

73-Ta-178

MAT 7319

MT= 78 (n,n') Level  
Legendre Coefficients

73-Ta-178



111

Incident Energy (MeV)

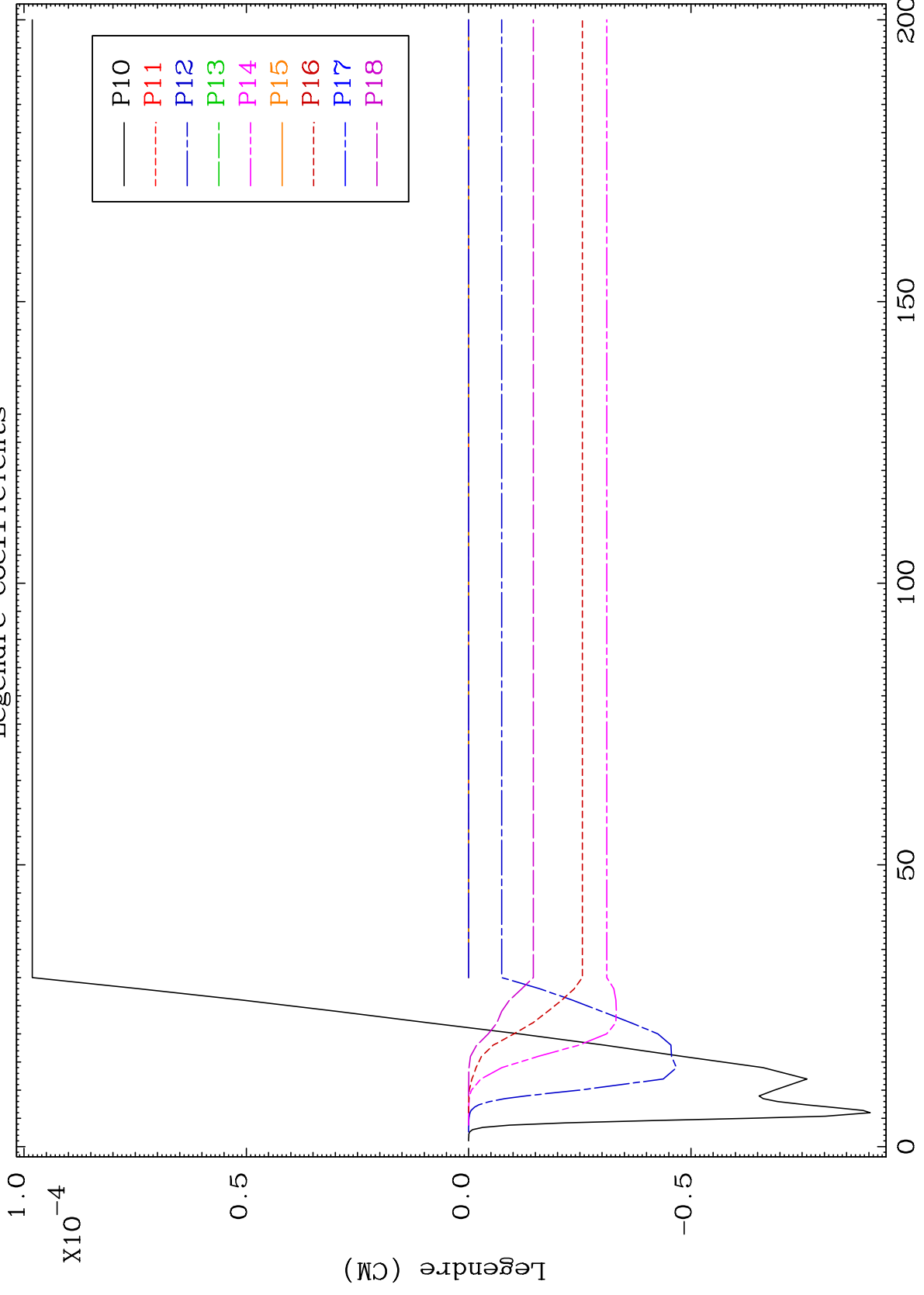
73-Ta-178



MAT 7319

MT= 78 (n,n') Level  
Legendre Coefficients

73-Ta-178

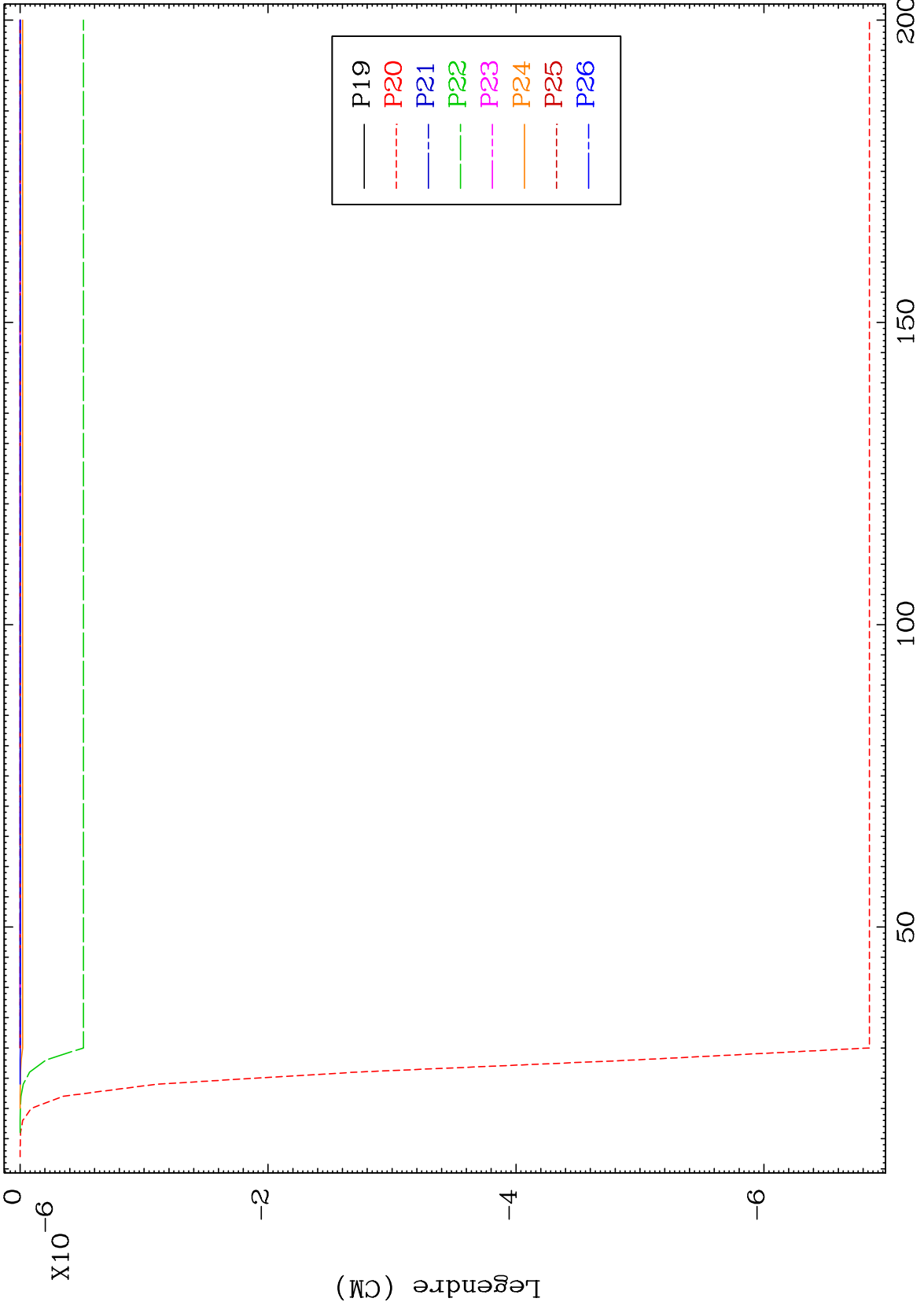


73-Ta-178

Incident Energy (MeV)

112

MAT 7319 MT= 78 (n,n') Level Legendre Coefficients 73-Ta-178

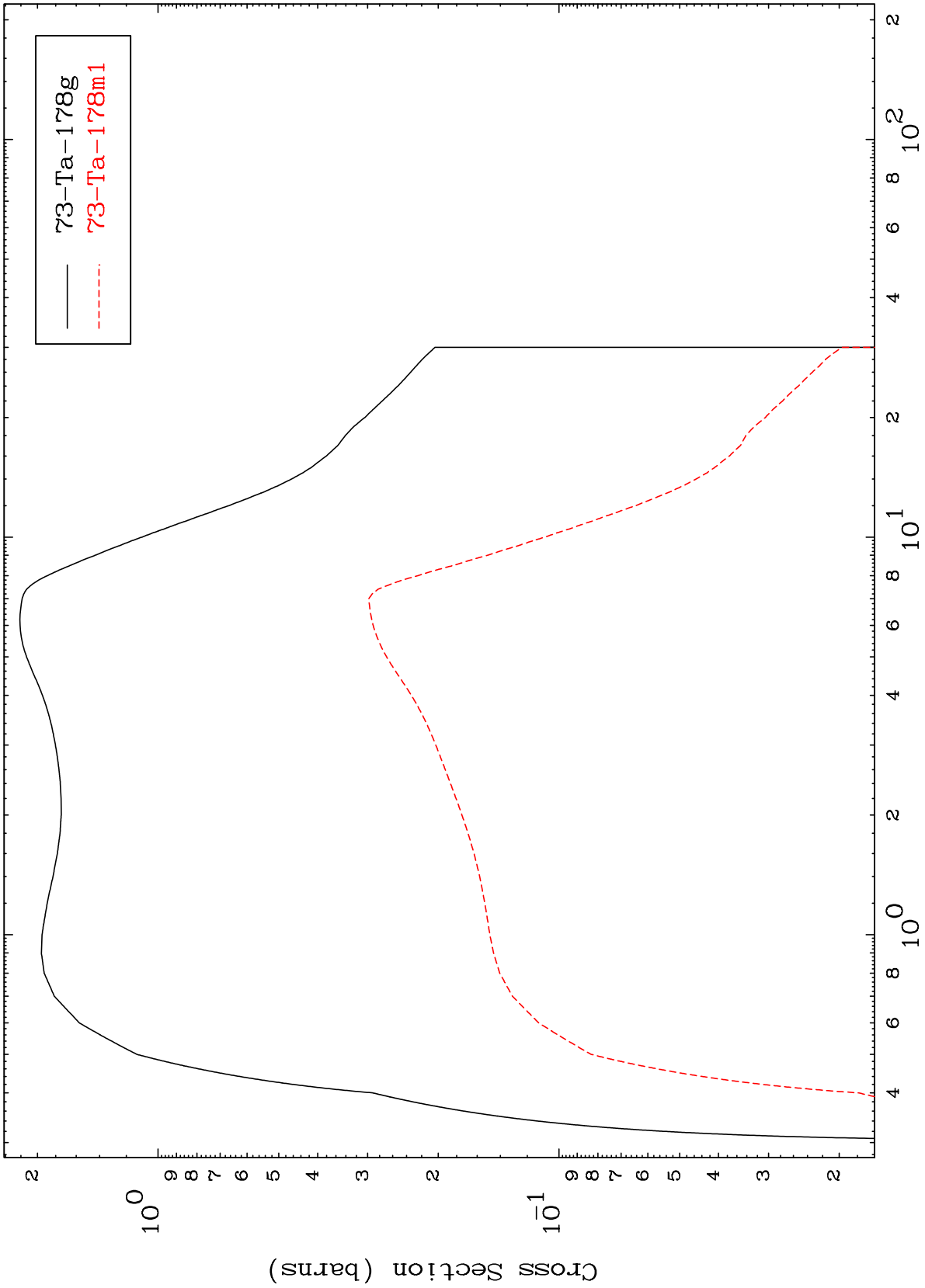


113 73-Ta-178

MAT 7319

<sup>73</sup>Ta-178

### Inelastic Radionuclide Production Cross Section



114

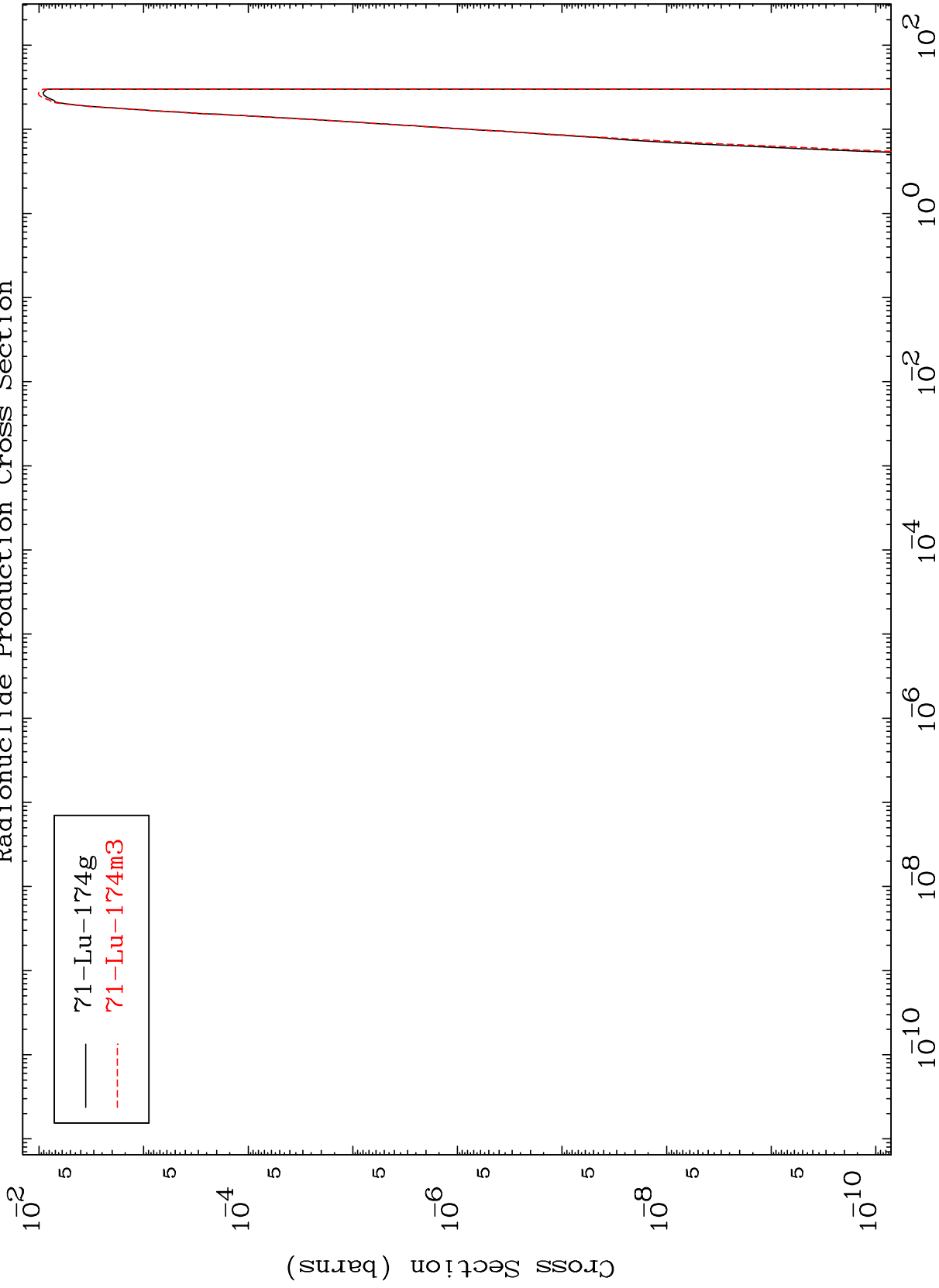
<sup>73</sup>Ta-178

MAT 7319

(n,n')  $\alpha$

<sup>73</sup>Ta-178

Radionuclide Production Cross Section



115

Incident Energy (MeV)

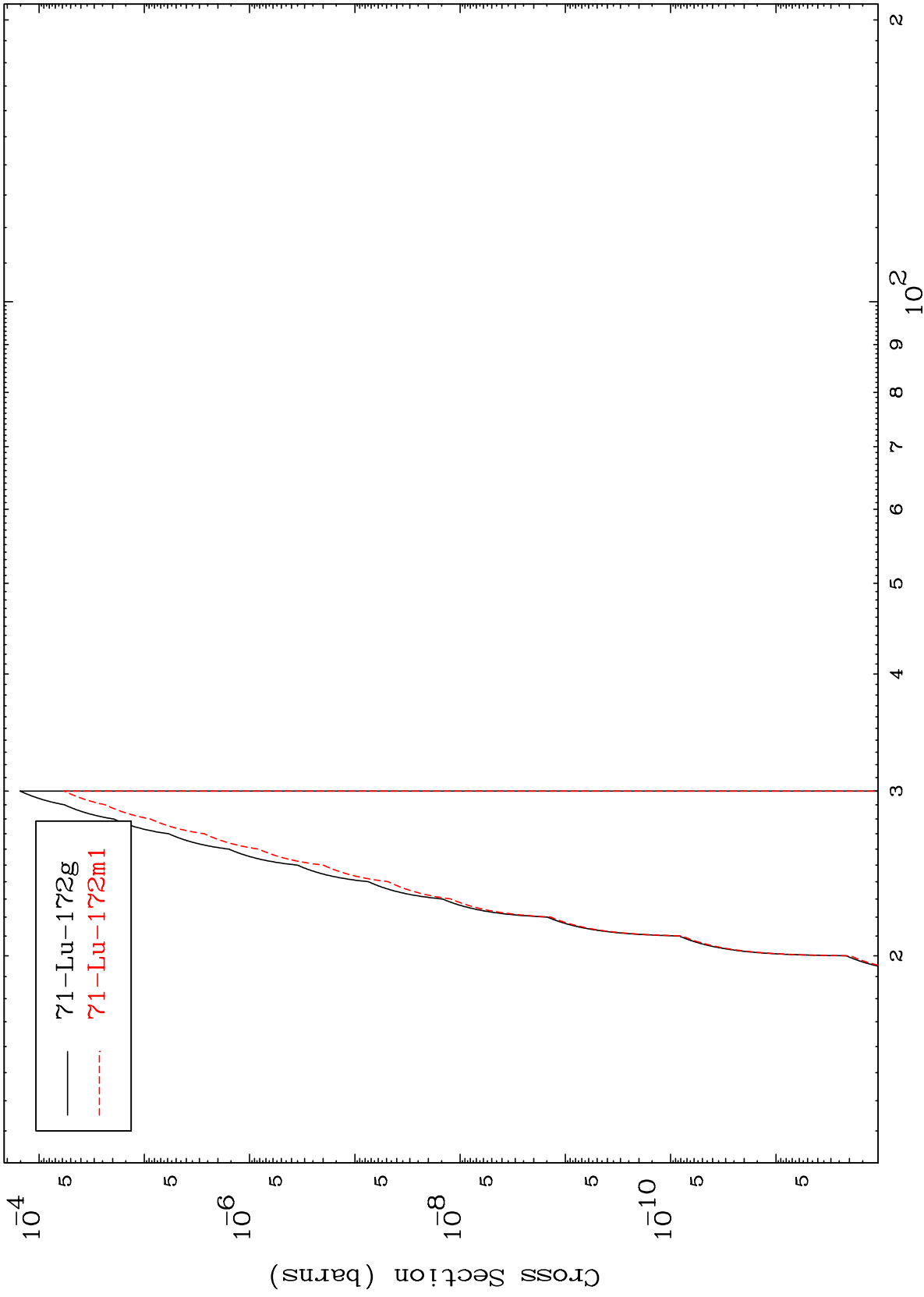
<sup>73</sup>Ta-178

MAT 7319

(n,3n)  $\alpha$

<sup>73</sup>Ta-178

Radionuclide Production Cross Section



116

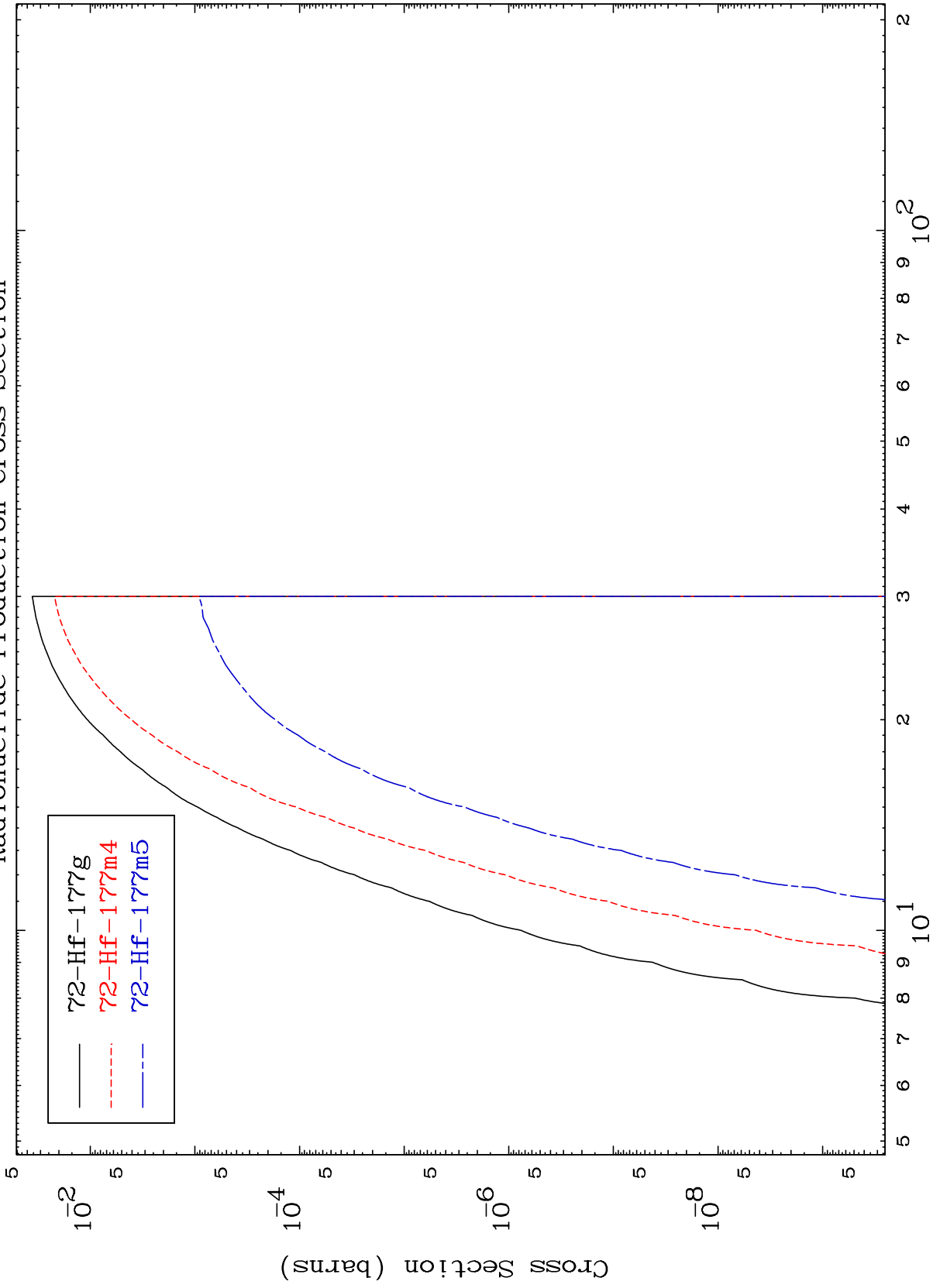
Incident Energy (MeV)

<sup>73</sup>Ta-178

MAT 7319

73-Ta-178

(n,n') p  
Radionuclide Production Cross Section



72-Hf-177g  
72-Hf-177m4  
72-Hf-177m5

117

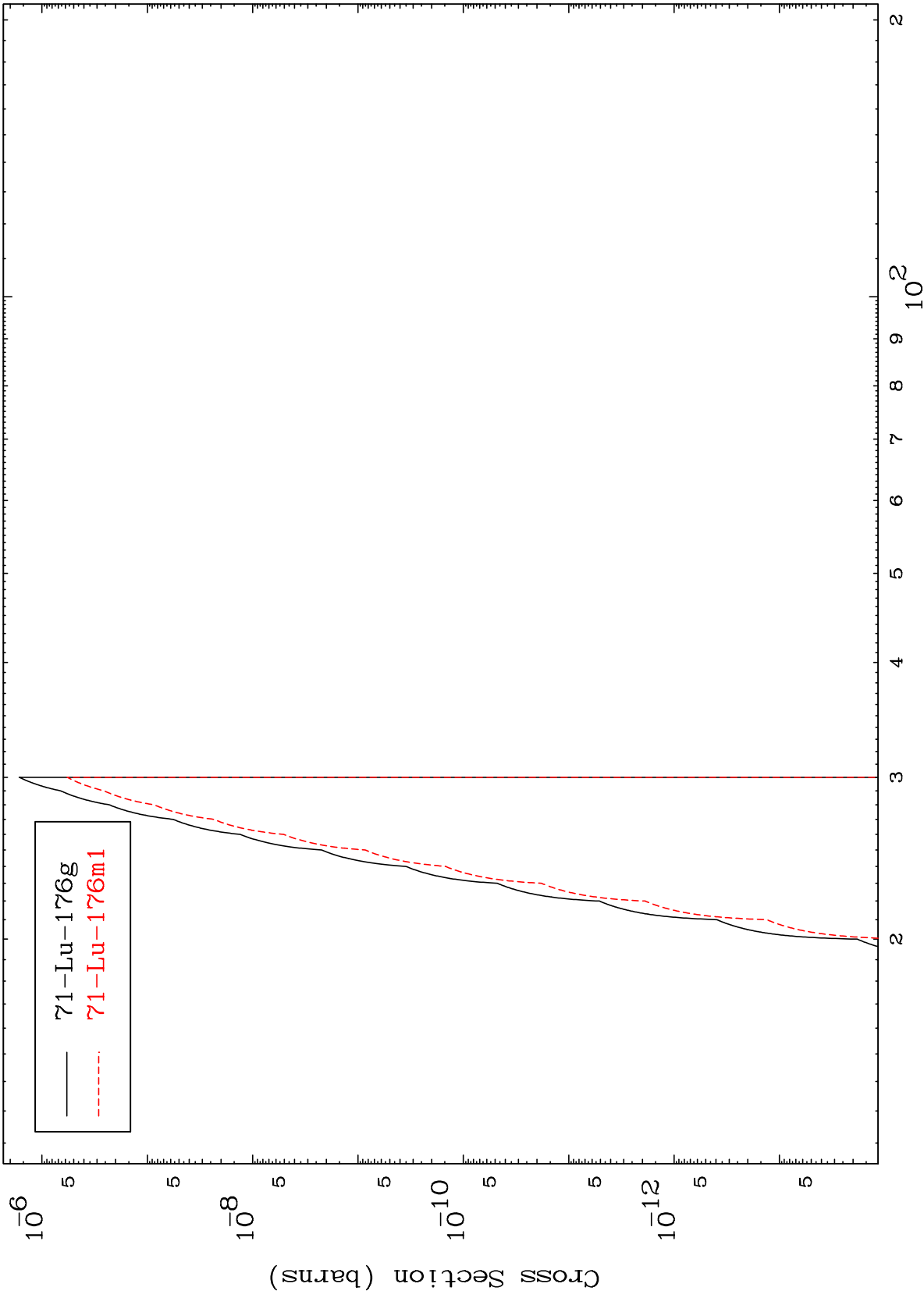
73-Ta-178

MAT 7319

(n,2n) p

73-Ta-178

Radionuclide Production Cross Section



118

Incident Energy (MeV)

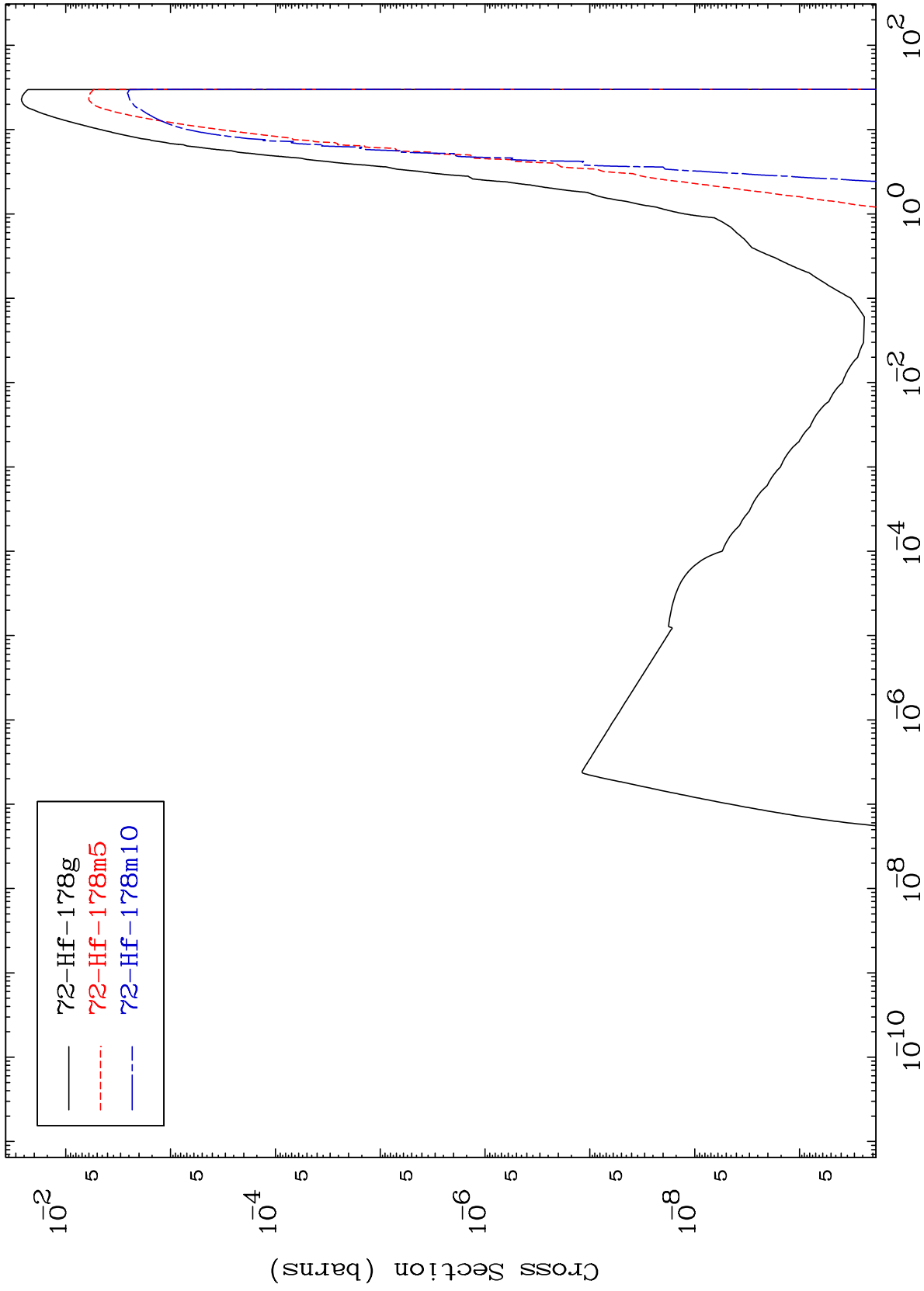
73-Ta-178

MAT 7319

(n,p)

<sup>73</sup>Ta-178

Radionuclide Production Cross Section



72-Hf-178g  
72-Hf-178m5  
72-Hf-178m10

119

Incident Energy (MeV)

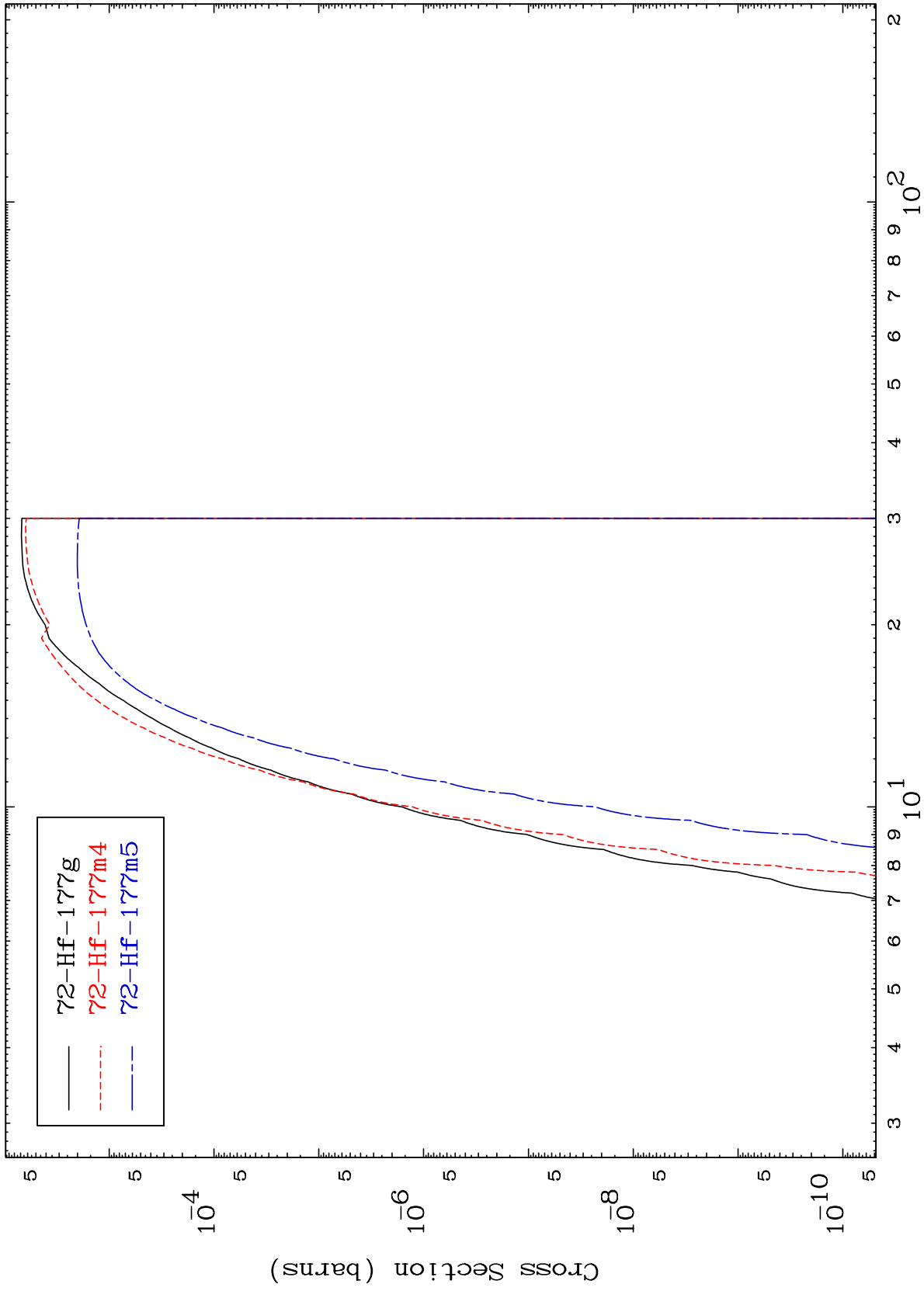
<sup>73</sup>Ta-178



MAT 7319

<sup>73</sup>Ta-178

(n,d)  
Radionuclide Production Cross Section



120

Incident Energy (MeV)

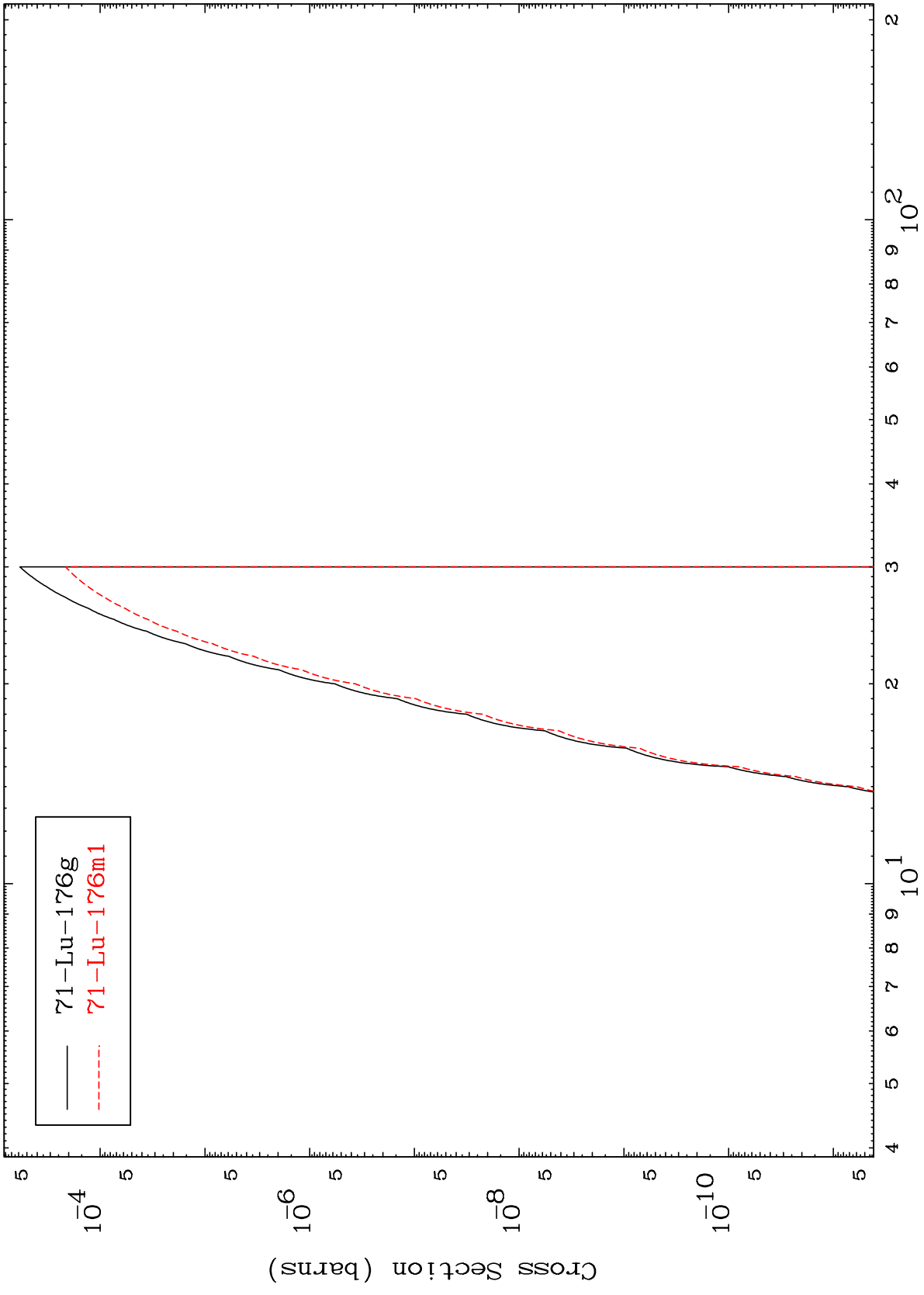
<sup>73</sup>Ta-178

MAT 7319

(n, He-3)

73-Ta-178

Radionuclide Production Cross Section



121

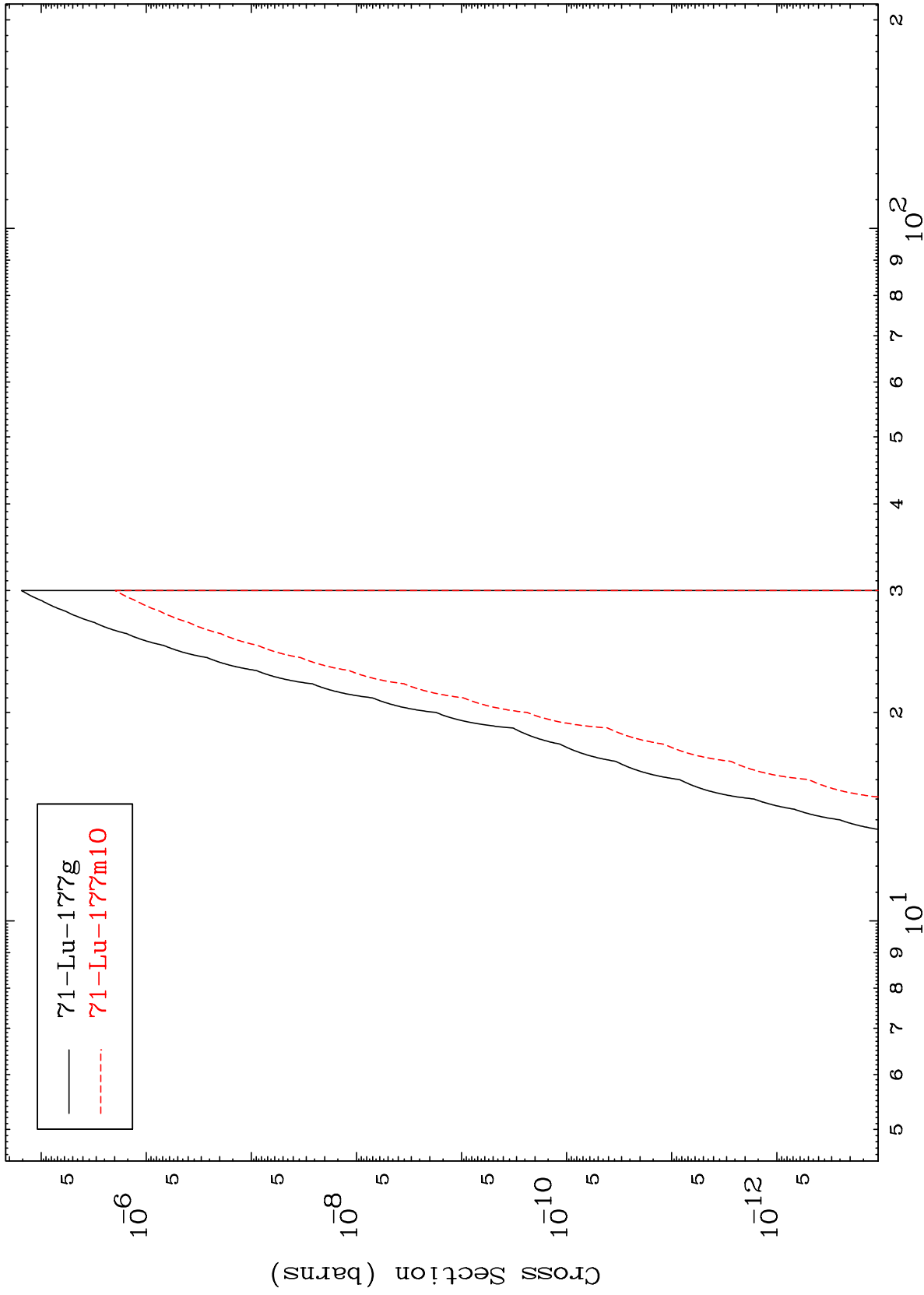
Incident Energy (MeV)

73-Ta-178

MAT 7319

73-Ta-178

Radionuclide Production Cross Section (n,2p)



122

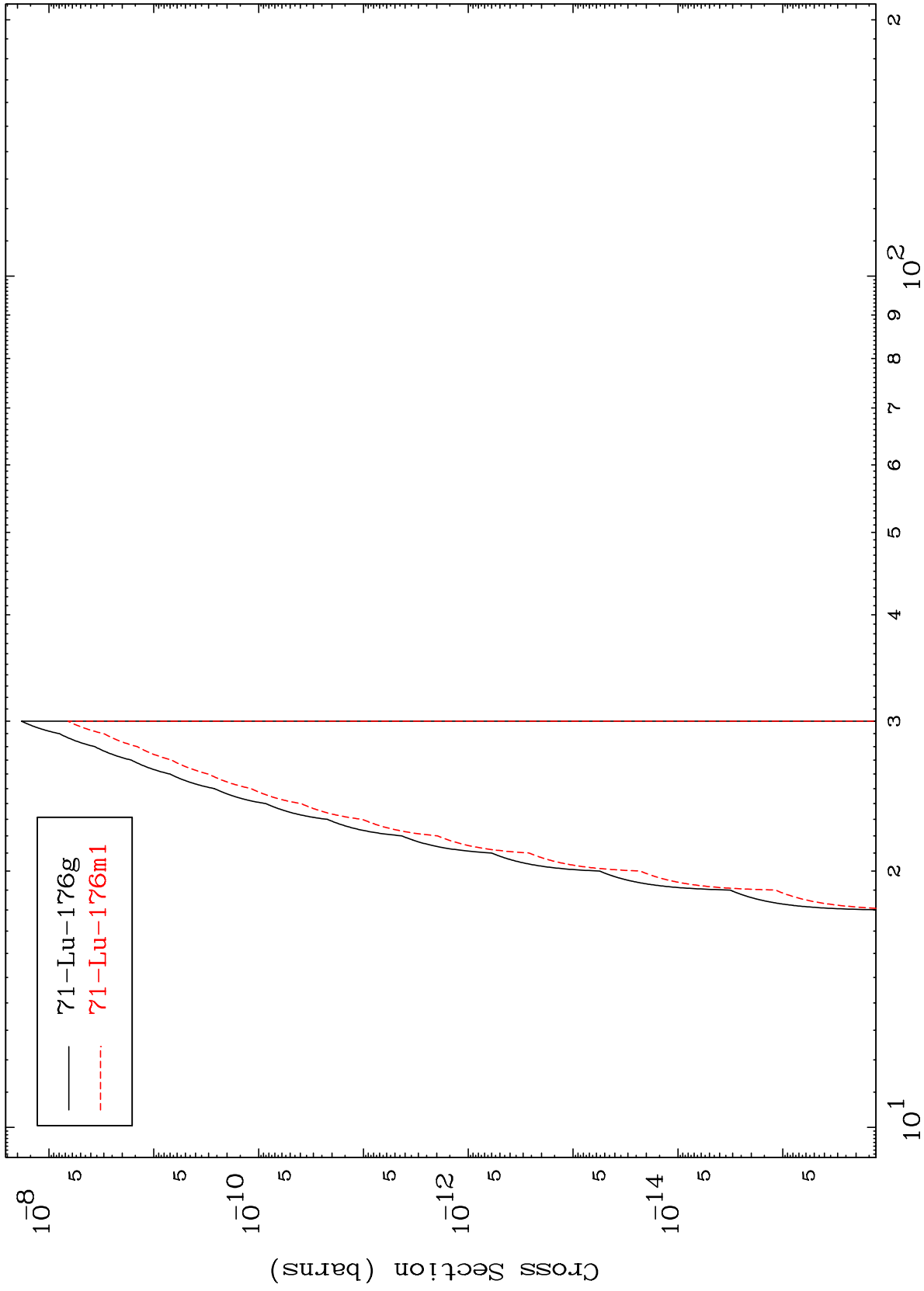
73-Ta-178

MAT 7319

(n,p) d

<sup>73</sup>Ta-178

Radionuclide Production Cross Section



123

Incident Energy (MeV)

<sup>73</sup>Ta-178