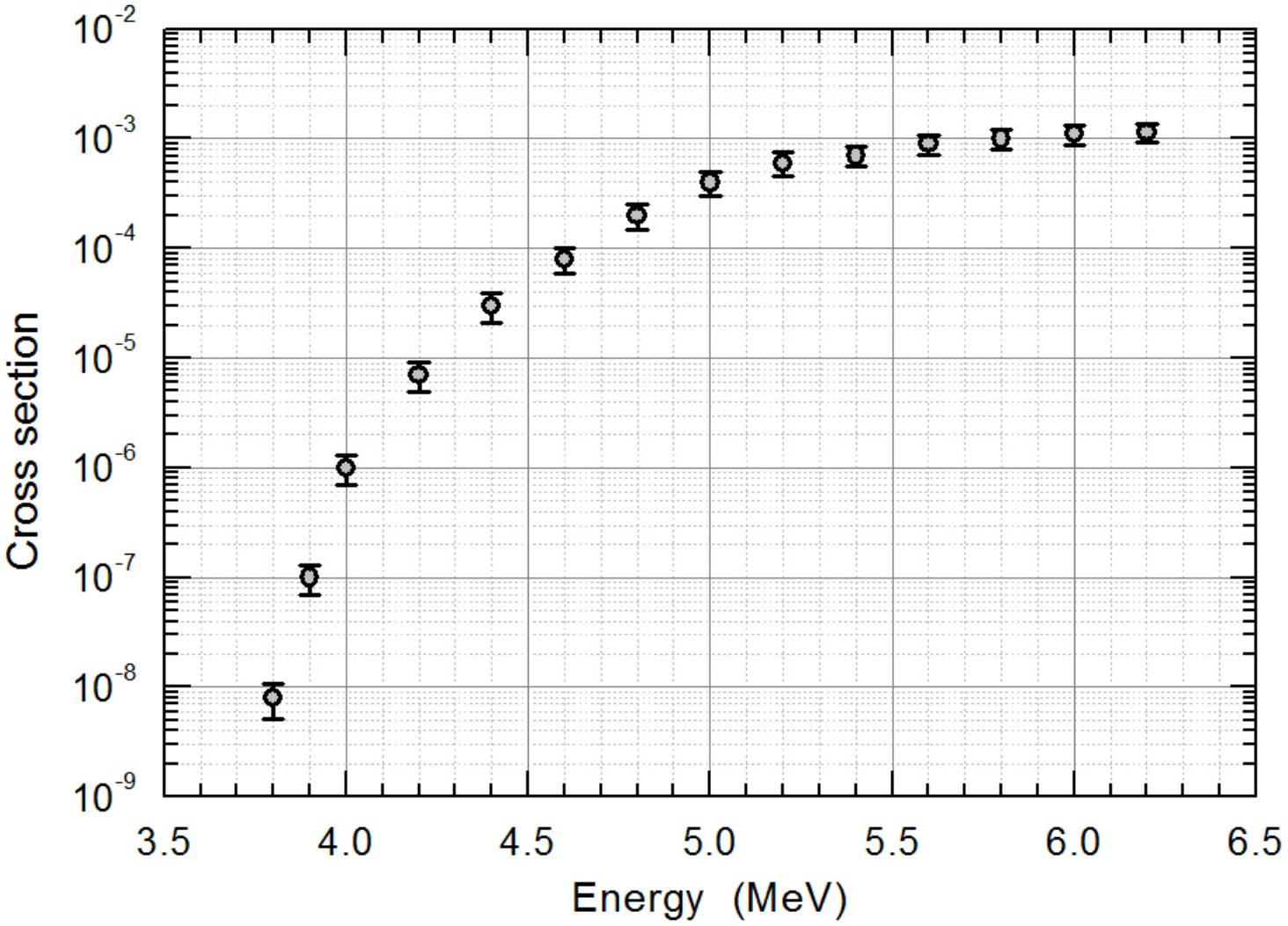
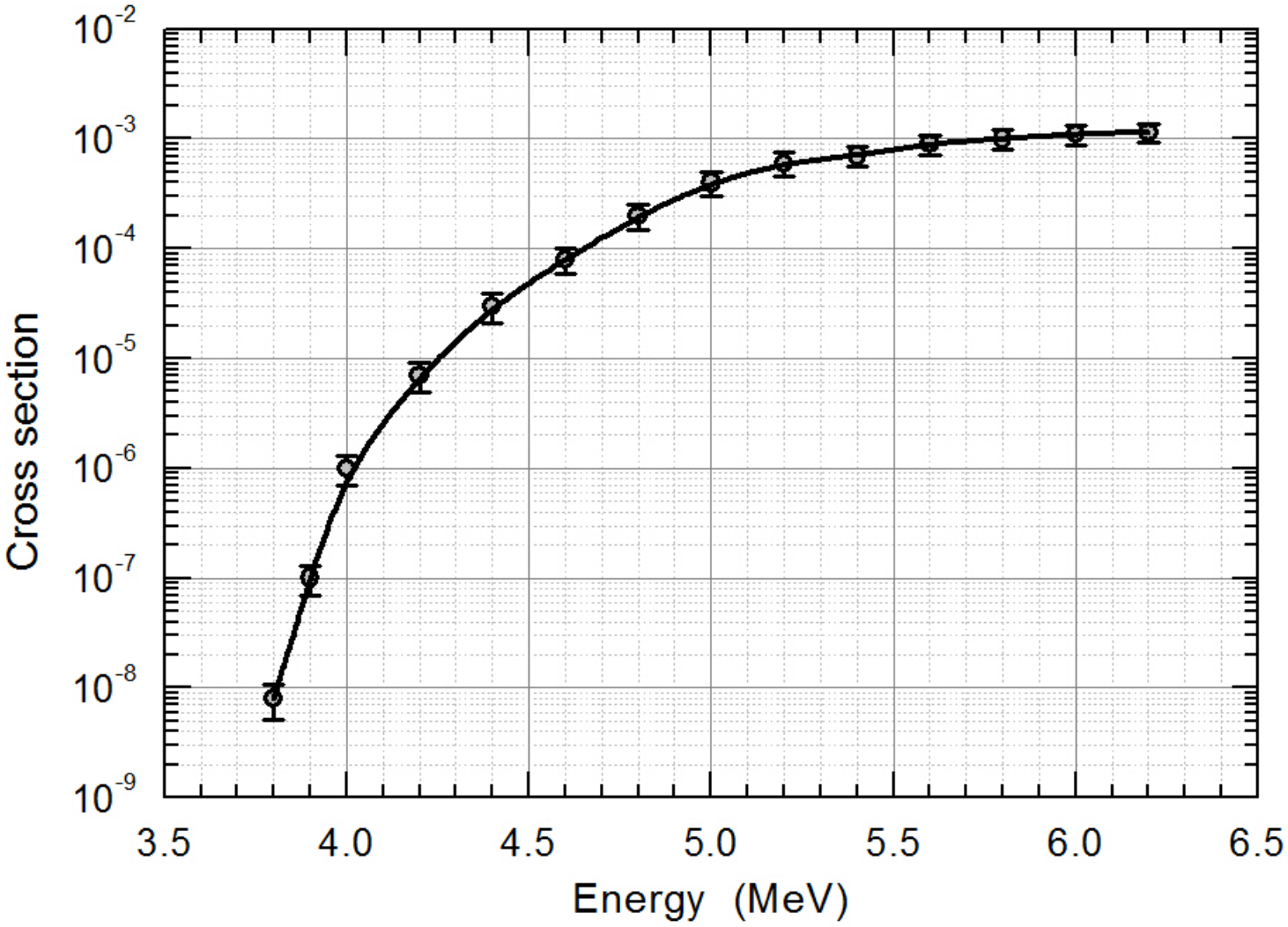
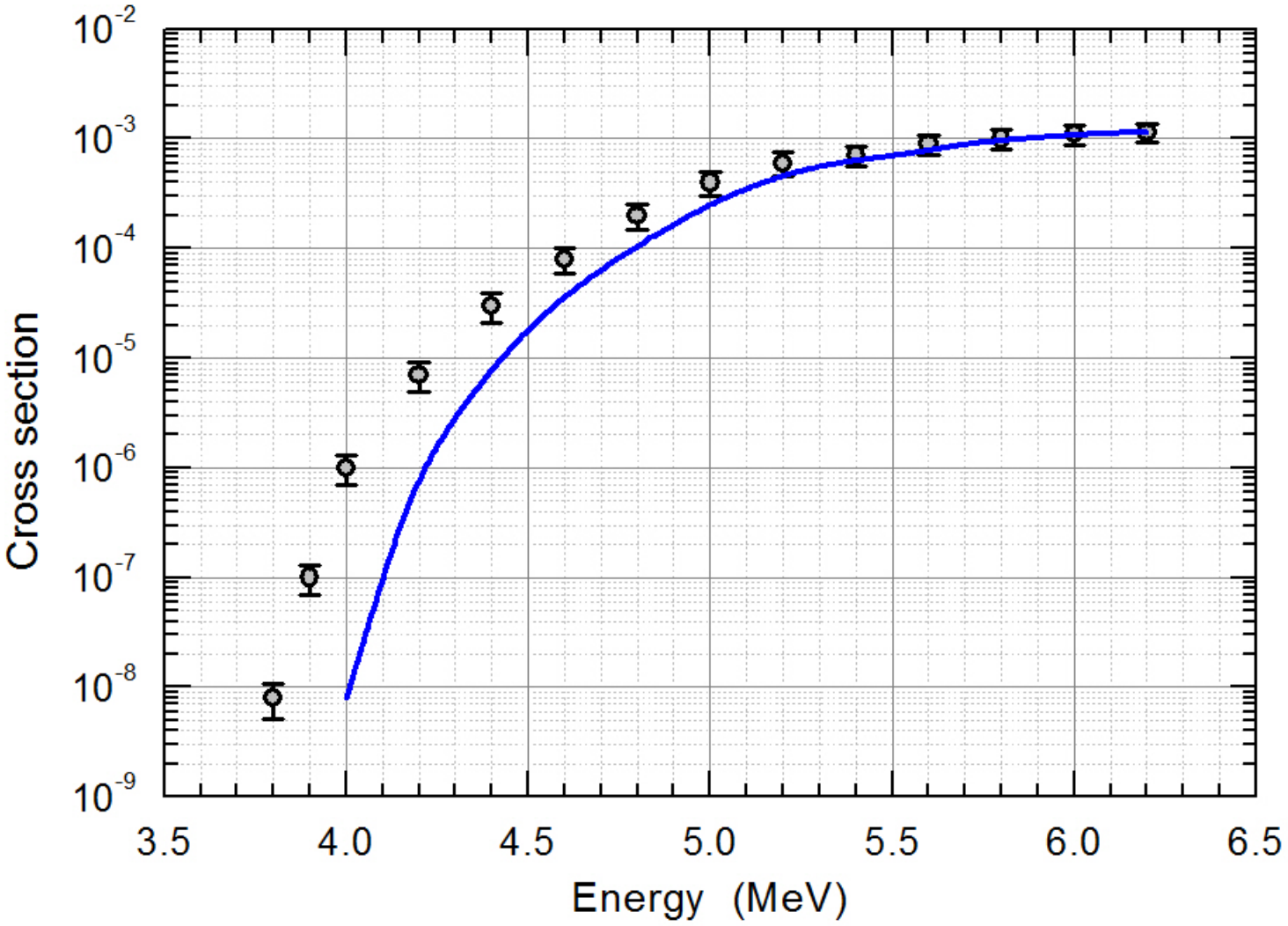
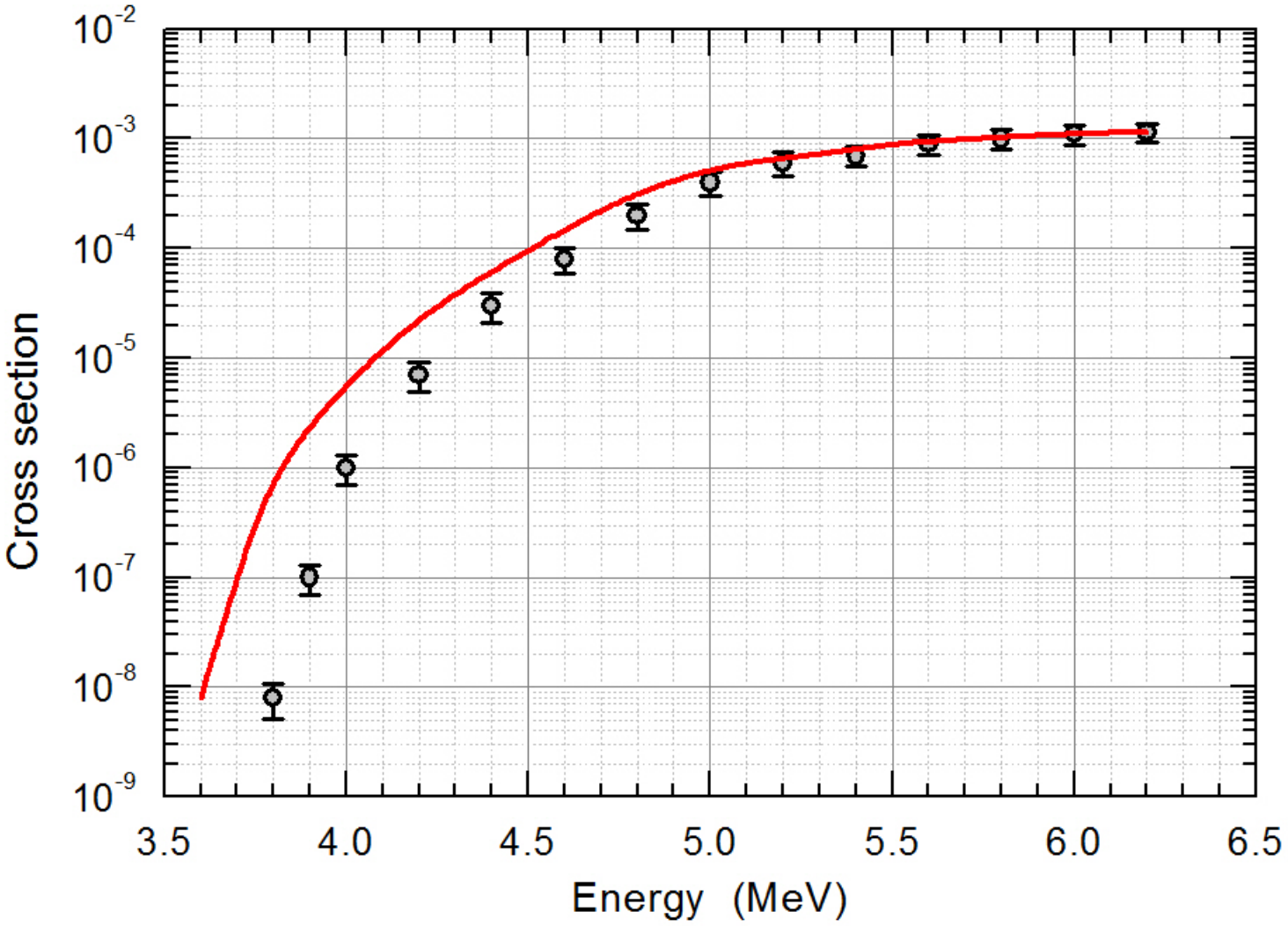
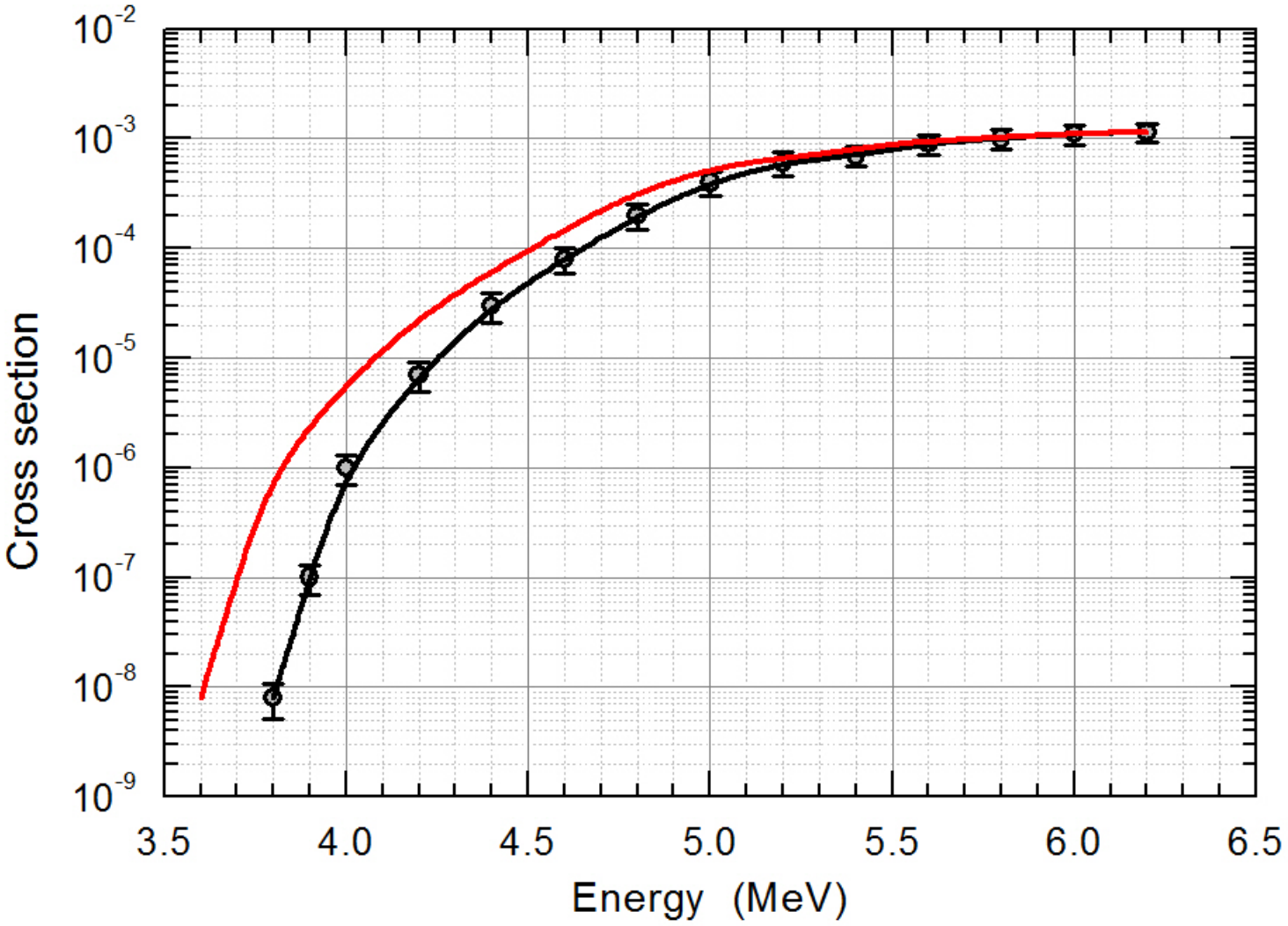
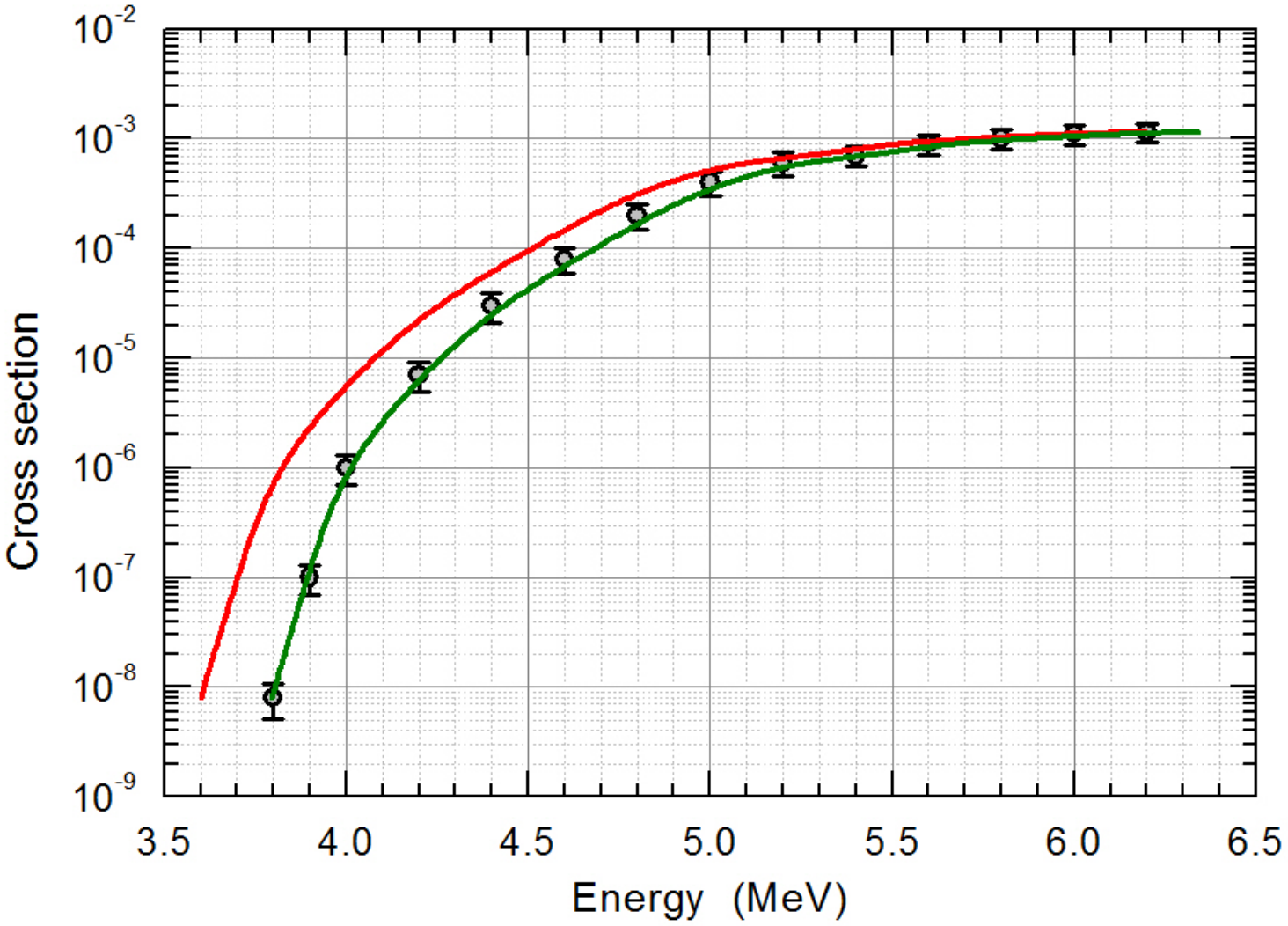

Cross section
$10^{-2}$
$10^{-3}$
$10^{-4}$
$10^{-5}$
$10^{-6}$
$10^{-7}$
$10^{-8}$
$10^{-9}$
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)

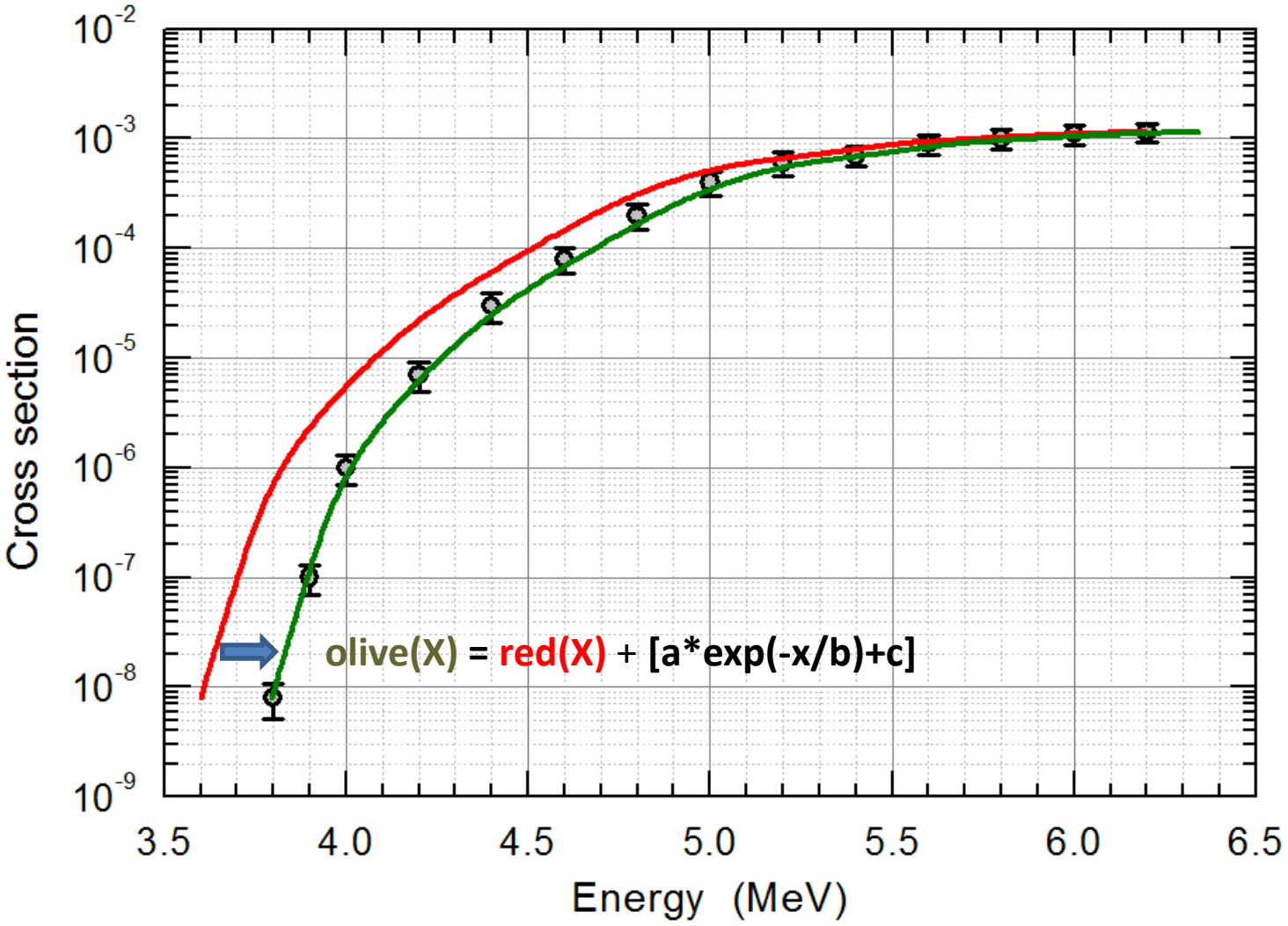

Cross section
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)

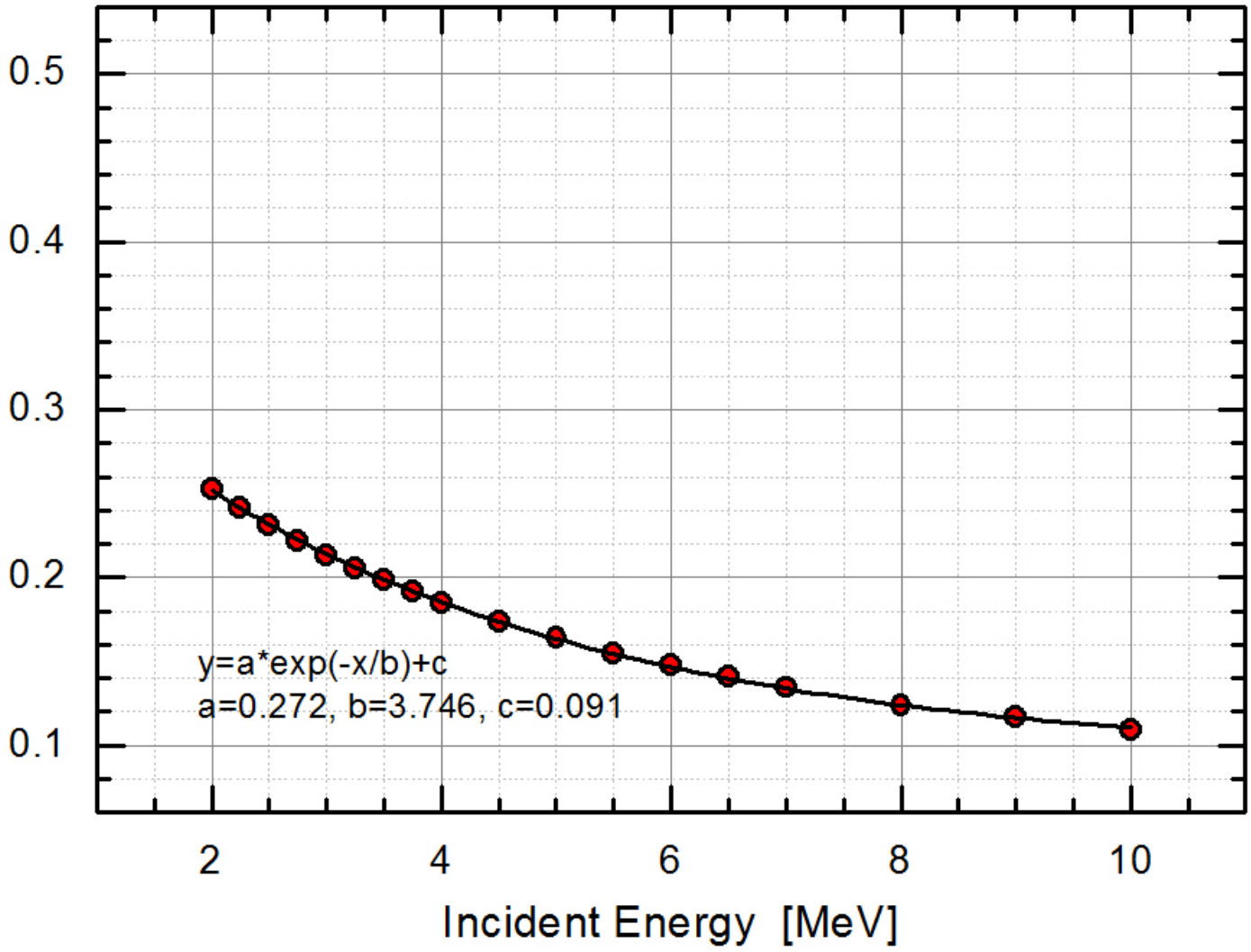

Cross section
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)

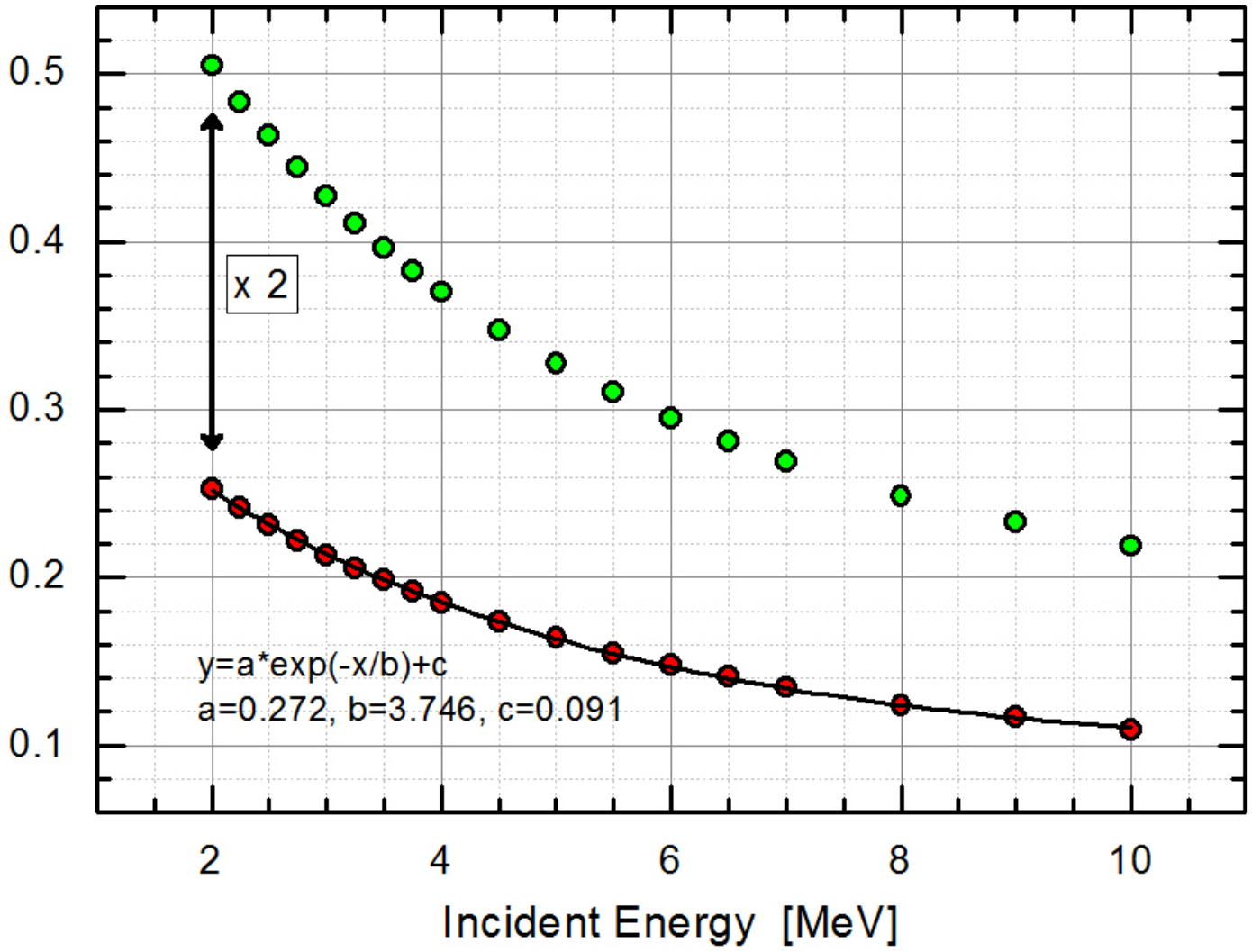

Cross section
$10^{-2}$
$10^{-3}$
$10^{-4}$
$10^{-5}$
$10^{-6}$
$10^{-7}$
$10^{-8}$
$10^{-9}$
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)

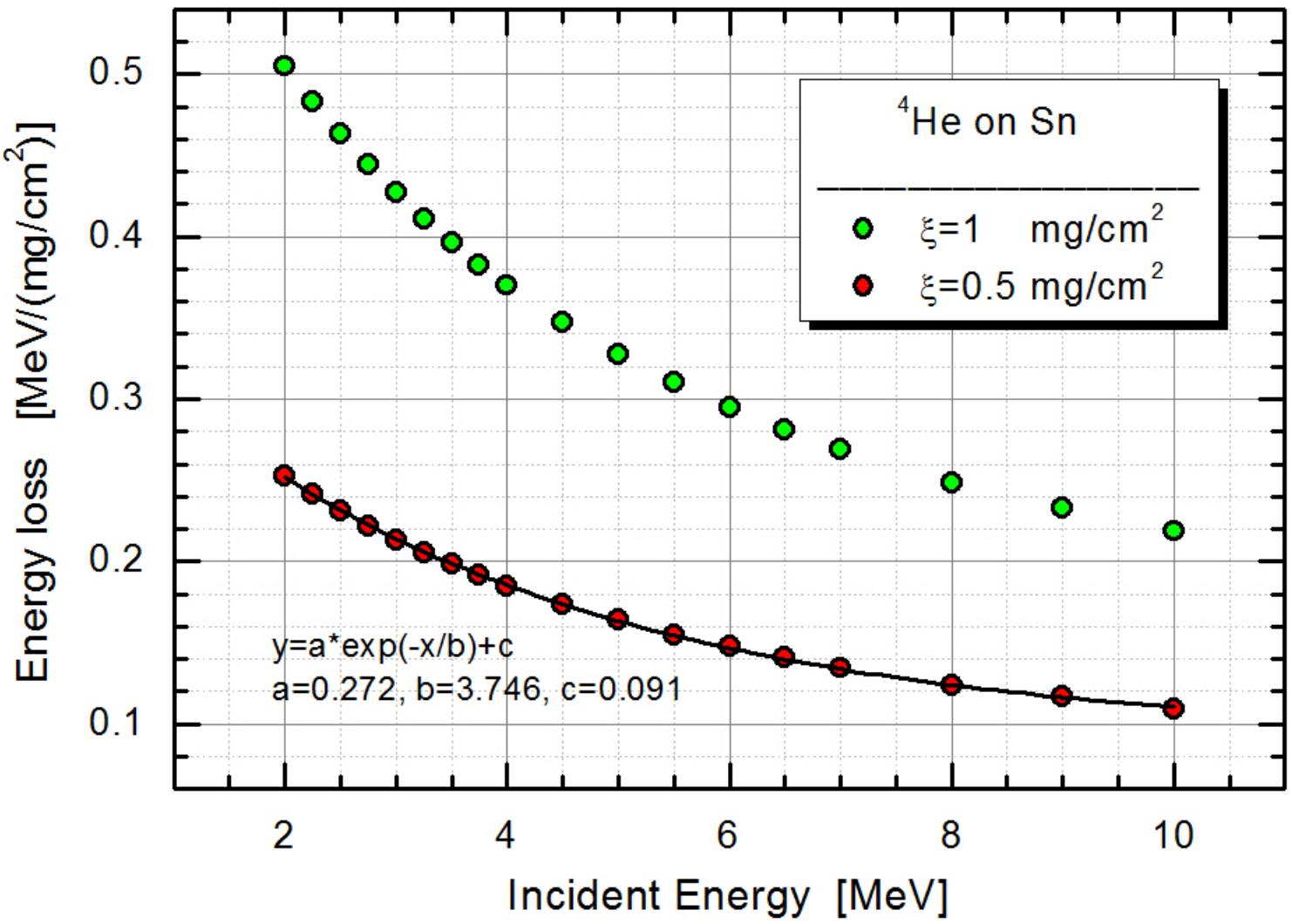

Cross section
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)


Cross section
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)


Cross section
10^-2
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
10^-9
3.5
4.0
4.5
5.0
5.5
6.0
6.5
Energy (MeV)
olive(X) = red(X) + [a*exp(-x/b)+c]


0.5
0.4
0.3
0.2
0.1
y=a*exp(-x/b)+c
a=0.272, b=3.746, c=0.091
2
4
6
8
10
Incident Energy [MeV]


0.5
0.4
0.3
0.2
0.1
x 2
y=a*exp(-x/b)+c
a=0.272, b=3.746, c=0.091
2
4
6
8
10
Incident Energy [MeV]


Energy loss [MeV/(mg/cm$^2$)]
0.5
0.4
0.3
0.2
0.1
2
4
6
8
10
Incident Energy [MeV]
$^4$He on Sn
ξ=1 mg/cm$^2$
ξ=0.5 mg/cm$^2$
y=a*exp(-x/b)+c
a=0.272, b=3.746, c=0.091

$Energy^{CALC} = Energy^{EXP} - (\Delta E/2)$

Effective beam energy = Incident beam energy - (Energy Loss in target / 2)

$$E_{eff} = E_{proj} - \Delta E/2$$

$$E_{c.m.} = E_{eff} * (m_{target}/(m_{proj.}+m_{target}))$$

**In EXFOR !**

| | |
|---|---|
| EN-CM | Incident projectile energy relative to target |
| EN | Energy of incident projectile, laboratory system |

| EN | DATA 1 | DATA 2 | DATA 3 | DATA-ERR 1 | DATA-ERR 2 | DATA-ERR 3 |
|---|---|---|---|---|---|---|
| MEV | MB | MB | MB | MB | MB | MB |
| 7.5 | | | 24.0 | | | 2.0 |
| 8.0 | 122.0 | 61.0 | 183.0 | 10.0 | 7.0 | 13.0 |
| 8.5 | 193.0 | 113.0 | 306.0 | 15.0 | 12.0 | 22.0 |
| 9.0 | 293.0 | 157.0 | 450.0 | 23.0 | 21.0 | 32.0 |

| EN | Energy of incident projectile, laboratory system |
|---|---|

**SAMPLE**

**Target-metal foils, enriched isotopes Zr-90, thickness 2-3 mg/cm**2.**

Request #12011
Results: Reactions: 6 Datasets: 12

# Data Selection

Retrieve ● Selected ○ Unselected ○ All Reset

**Output:** ☑ X4+ ☑ EXFOR ☑ Bibliography ☐ TAB ☐ C4 ☐ PlotC4

**Plot:** ☐ Quick-plot (cross-sections only) ☐ Advanced plot [how-to] using ☐ C5 and ☐ converting ratios to cross sections using [IAEA-standards,2006]

Narrow Energy (optional), eV: Min: ☐ Max: ☐

☐ Apply ▾ Data re-normalization (for advanced users, results in: C4, TAB and Plots)

| | n | Display | Year | Author-1 | Energy range,eV | | Points | Reference | Subentry#P | NSR-Key |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1) | 42-MO-92(A,G)44-RU-96,,SIG C4: MF3 MT102 | | | | | | | | |
| | | Quantity: [CS] Cross section | | | | | | | | |
| g | 1 | Info X4+ X4± T4 Cov | 2009 | P.Demetriou+ | 7.34e6 | 1.04e7 | 28 | + S,AIP-1090,293,2009 | O1761002 | |
| | 2) | 42-MO-92(A,N)44-RU-95,,SIG C4: MF3 MT4 | | | | | | | | |
| | | Quantity: [CS] Cross section | | | | | | | | |
| | 2 | Info X4+ X4± T4 Cov | 2008 | W.Rapp+ | 9.11e6 | 1.10e7 | 6 | + J,PR/C,78,025804,2008 | O1694002 | 2008RA19 |
| | 3 | Info X4+ X4± T4 Cov | 1995 | F.-O.Denzler+ | 1.18e7 | 2.68e7 | 26 | + J,RCA,68,13,1995 | D4016002 | 1995DE61 |
| | 4 | Info X4+ X4± T4 Cov | 1991 | V.N.Levkovskij | 8.40e6 | 4.61e7 | 41 | + B,LEVKOVSKIJ,,1991 | A0510511 | |
| | 5 | Info X4+ X4± T4 Cov | 1965 | R.A.Esterlund+ | 9.00e6 | 2.65e7 | 12 | + J,NP,69,(2),401,196507 | R0048002 | |

Request #12013
Results: Reactions: 4 Datasets: 16

# Data Selection

Retrieve ● Selected ○ Unselected ○ All Reset

**Output:** ☑ X4+ ☑ EXFOR ☑ Bibliography ☐ TAB ☐ C4 ☐ PlotC4

**Plot:** ☐ Quick-plot (cross-sections only) ☐ Advanced plot [how-to] using ☐ C5 and ☐ converting ratios to cross sections using [IAEA-standards,2006]

Narrow Energy (optional), eV: Min: ☐ Max: ☐

☐ Apply ▾ Data re-normalization (for advanced users, results in: C4, TAB and Plots)

| | n | Display | Year | Author-1 | Energy range,eV | | Points | Reference | Subentry#P | NSR-Key |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1) | 29-CU-65(A,G)31-GA-69,,SIG C4: MF3 MT102 | | | | | | | | |
| | | Quantity: [CS] Cross section | | | | | | | | |
| g | 1 | Info X4+ X4± T4 Cov | 2009 | P.Demetriou+ | 4.88e6 | 7.61e6 | 9 | + S,AIP-1090,293,2009 | O1761004 | |
| | 2) | 29-CU-65(A,N)31-GA-68,,SIG C4: MF3 MT4 | | | | | | | | |
| | | Quantity: [CS] Cross section | | | | | | | | |
| | 2 | Info X4+ X4± T4 Cov | 2012 | F.Szelecsenyi+ | 8.50e6 | 3.63e7 | 17 | + J,RCA,100,5,2012 | D4276002 | 2012SZ01 |
| g | 3 | Info X4+ X4± T4 Cov | 2006 | B.P.Singh+ | 8.95e6 | 3.82e7 | 8 | + J,NIM/A,562,717,2006 | D6012009 | 2006SI18 |