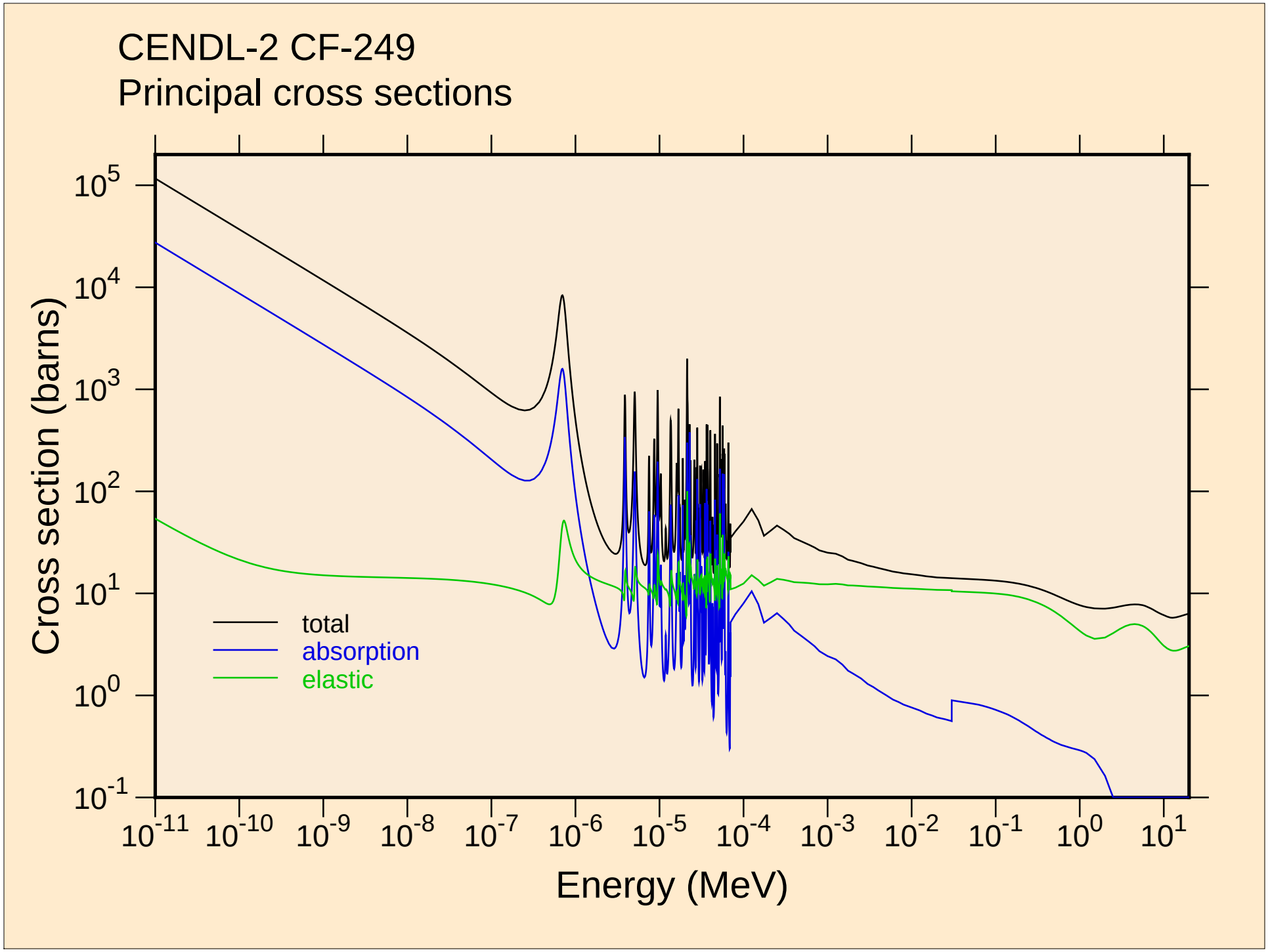
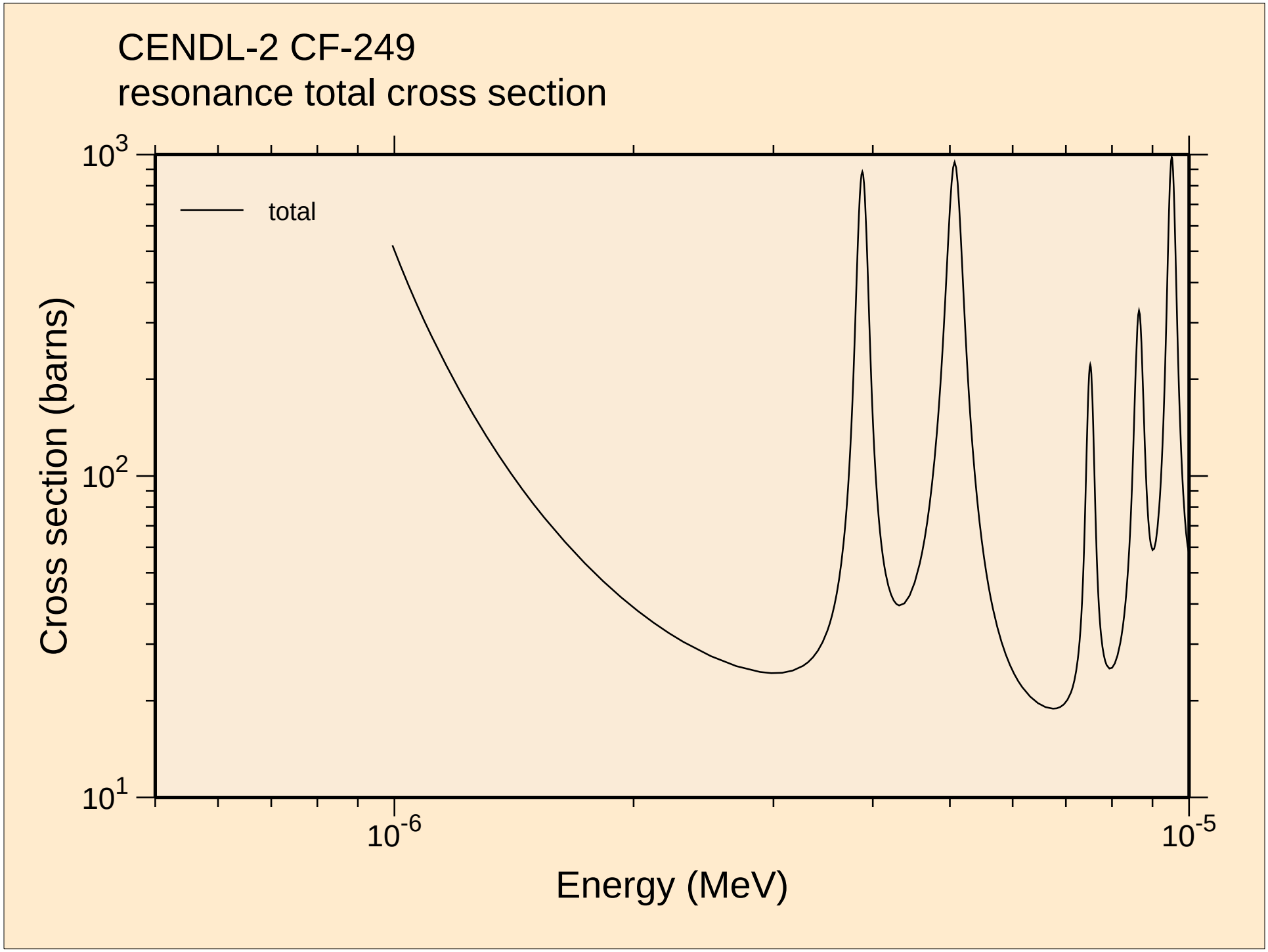
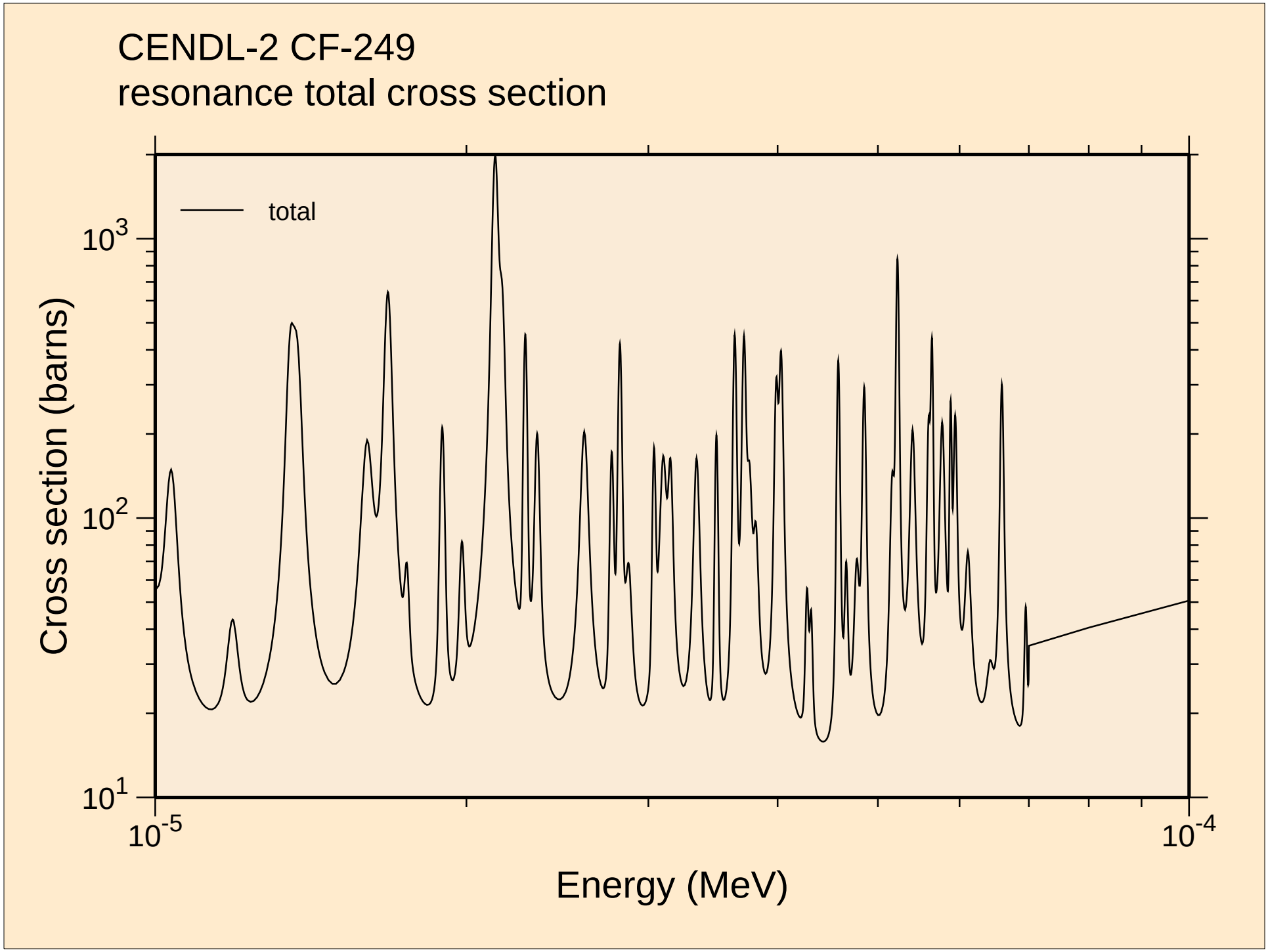
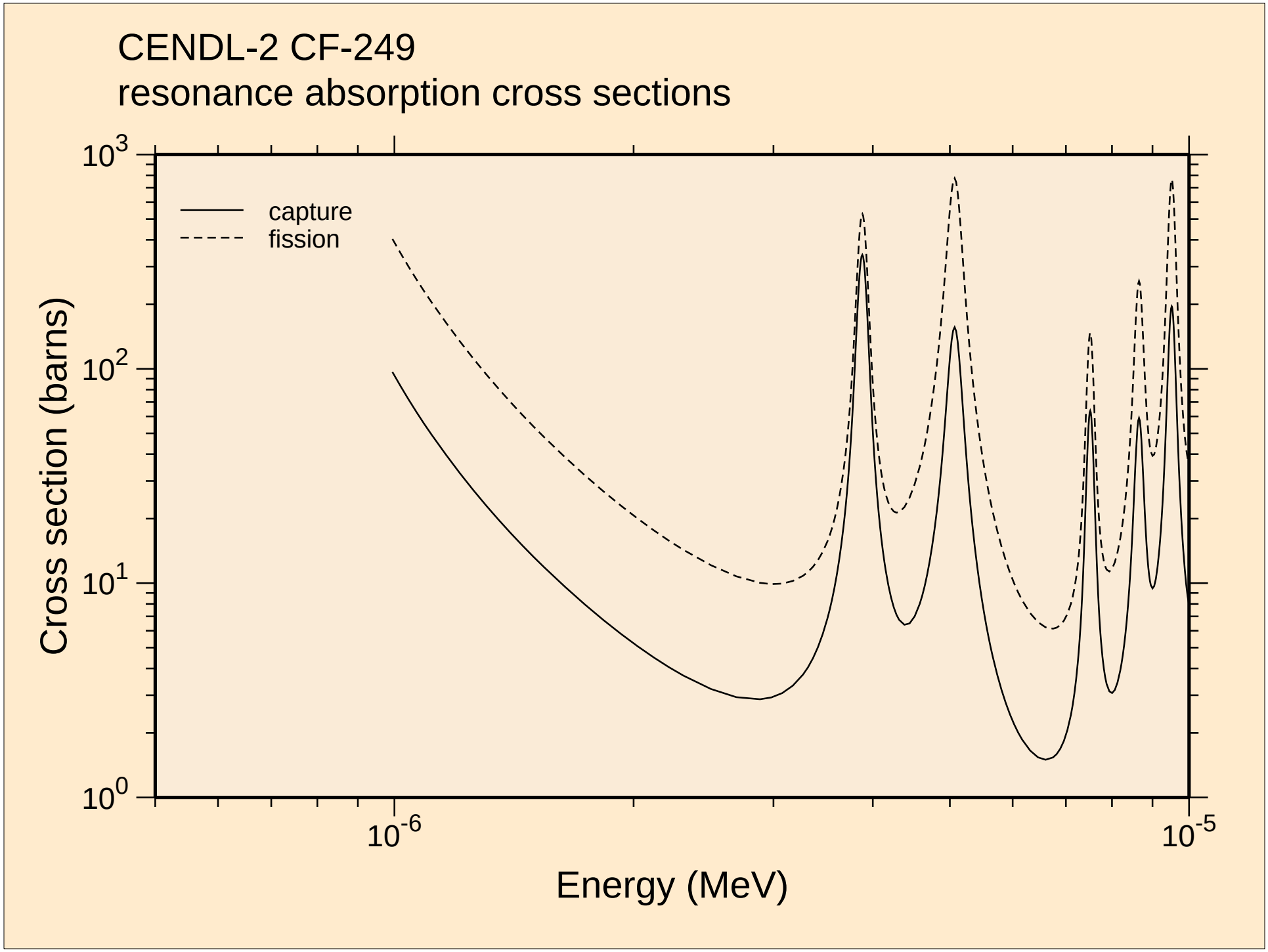
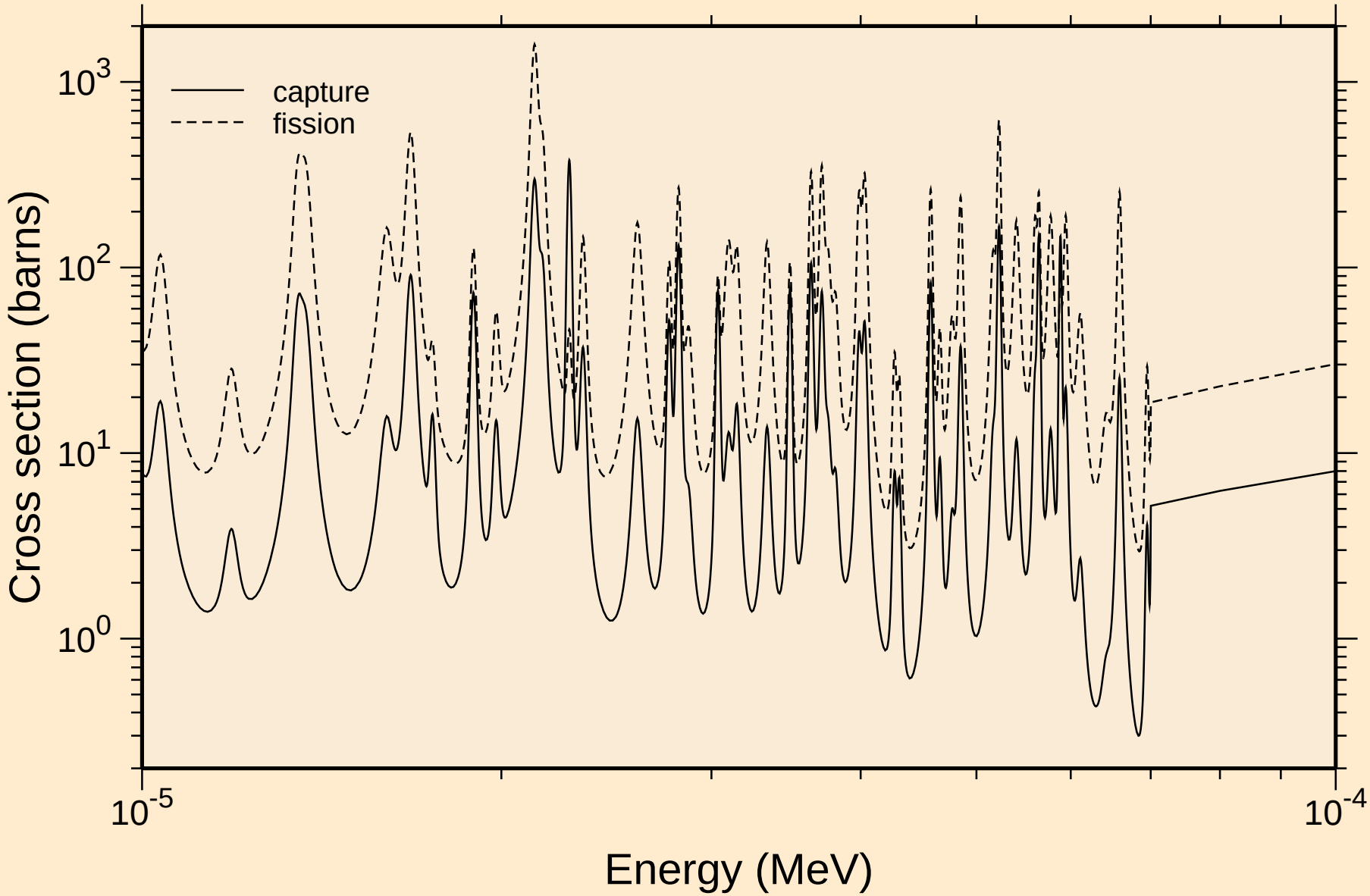

CENDL-2 CF-249
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
10^{5}
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-11}
10^{-10}
10^{-9}
10^{-8}
10^{-7}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
10^{0}
10^{1}

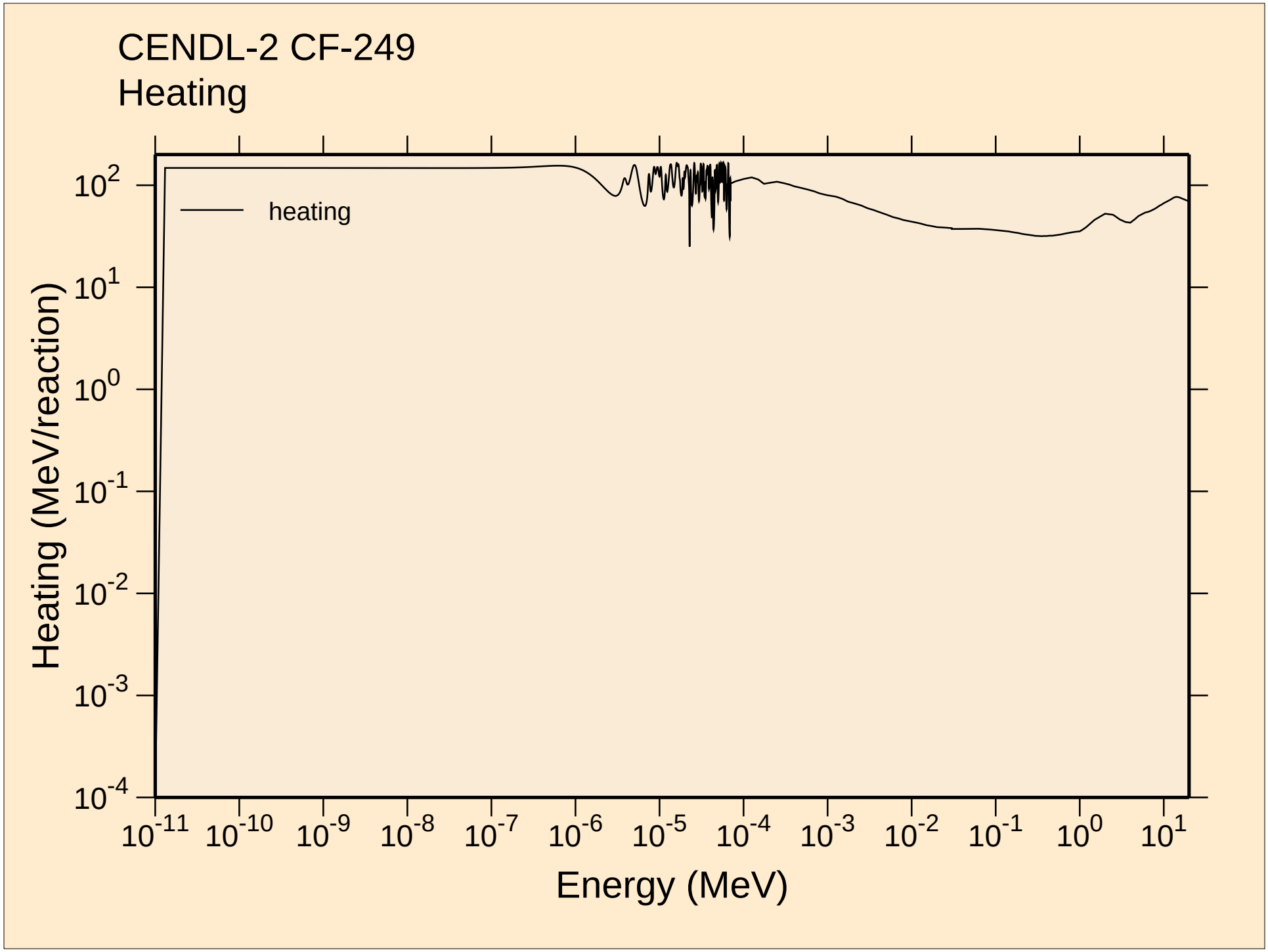

CENDL-2 CF-249
resonance total cross section
total
Cross section (barns)
Energy (MeV)
10^3
10^2
10^1
10^-6
10^-5

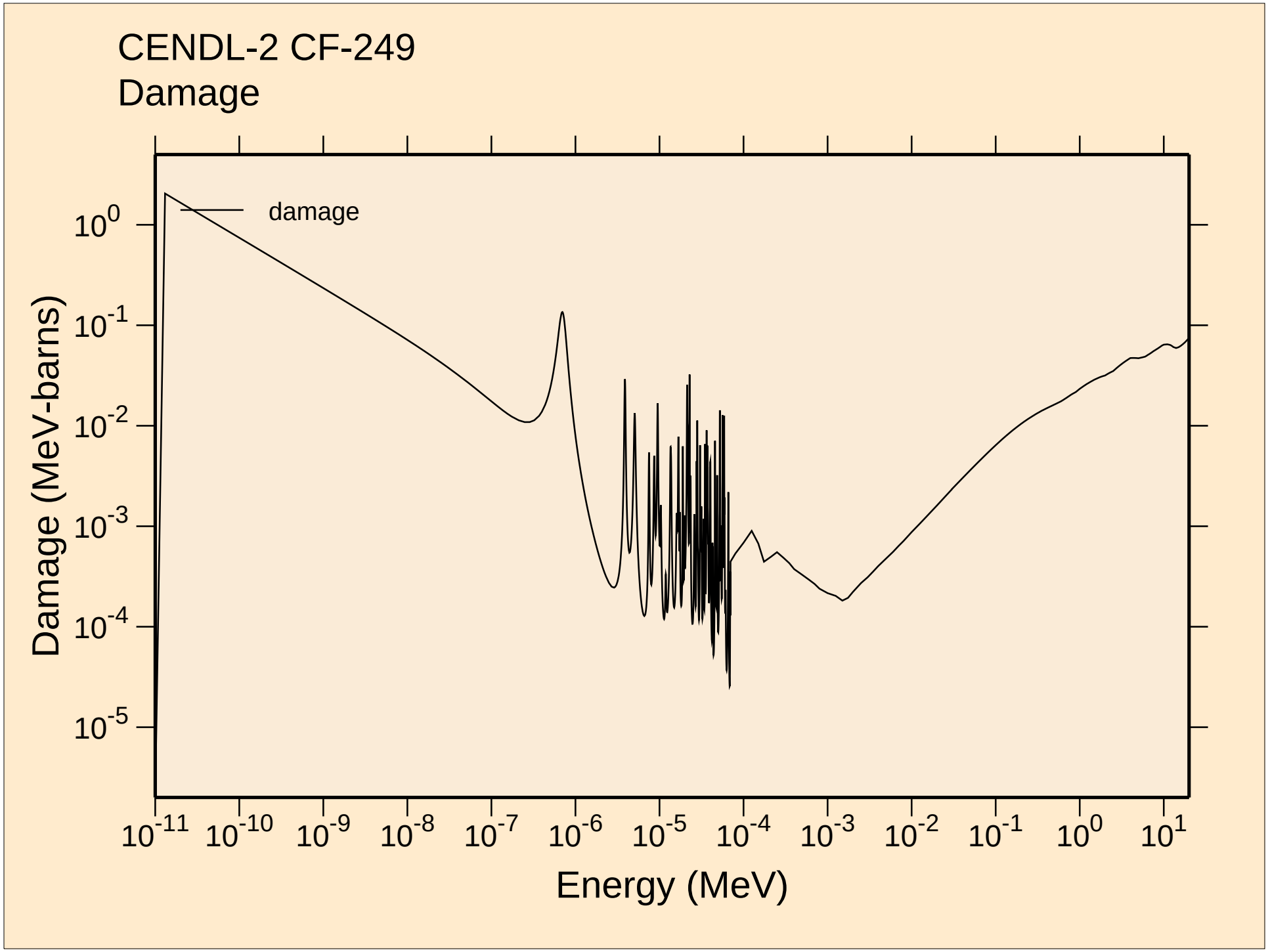

CENDL-2 CF-249
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^{-5}
10^{-4}
Energy (MeV)

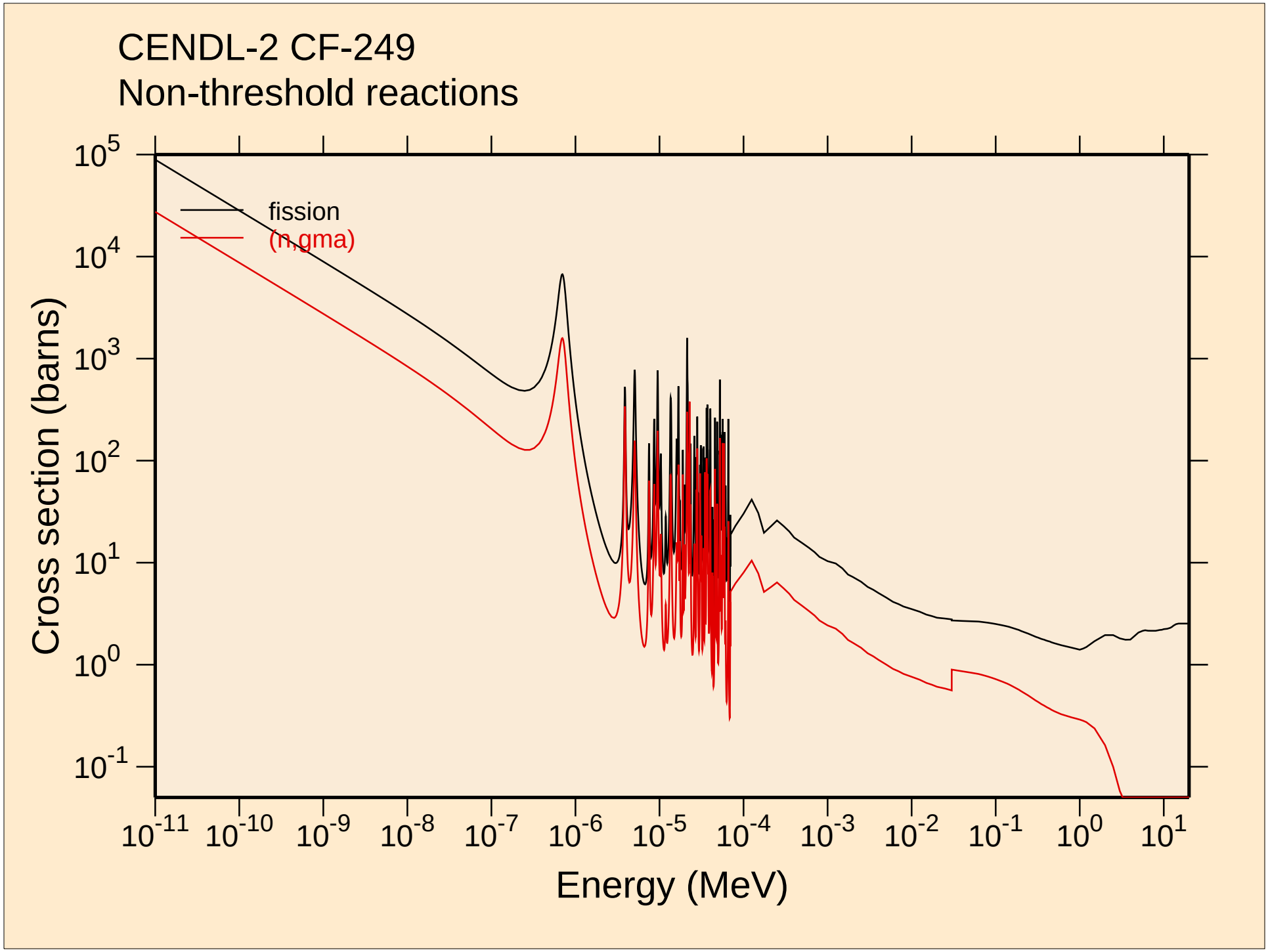

CENDL-2 CF-249
resonance absorption cross sections
capture
fission
Cross section (barns)
Energy (MeV)
10^3
10^2
10^1
10^0
10^{-6}
10^{-5}

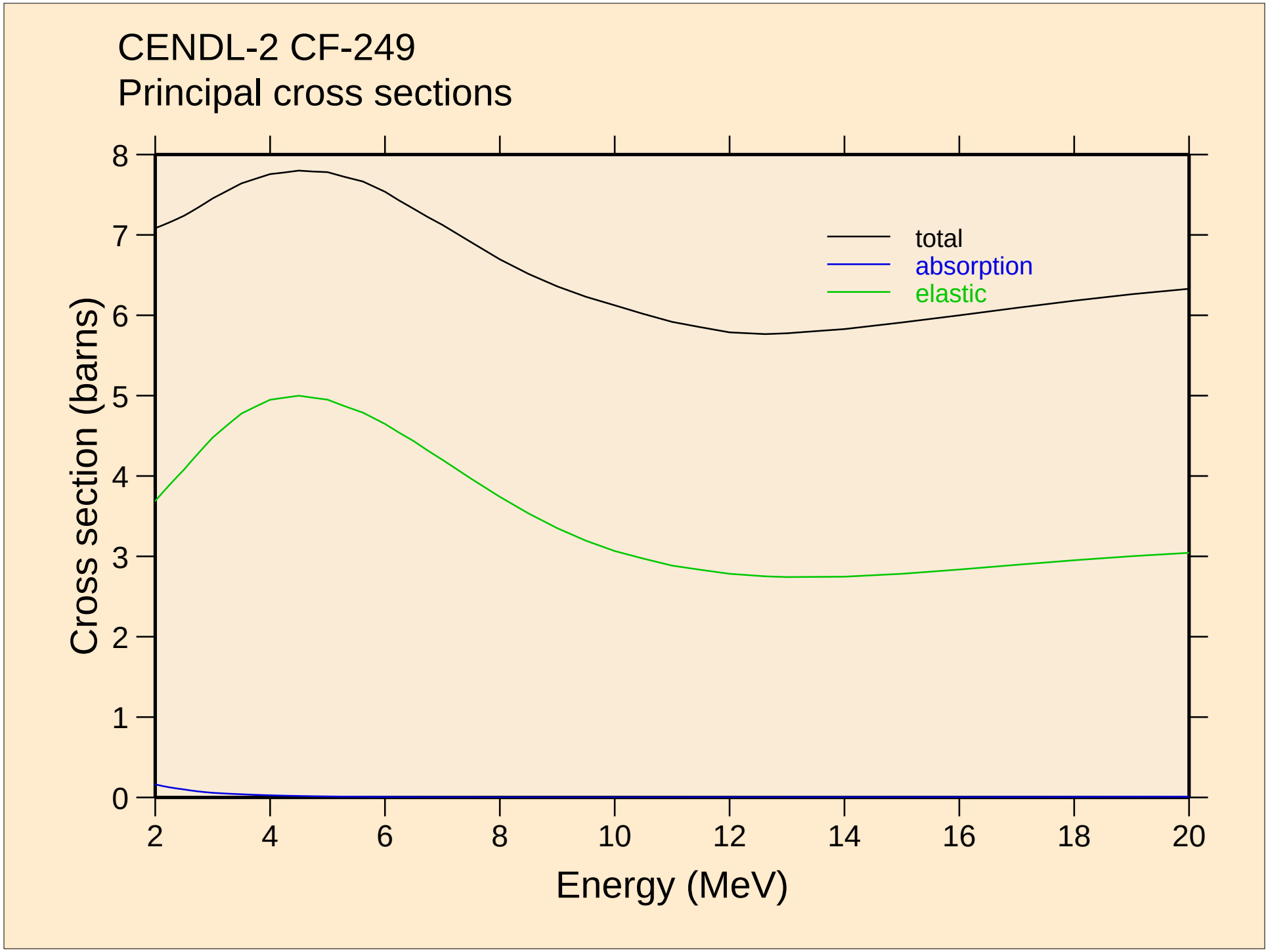
CENDL-2 CF-249
resonance absorption cross sections

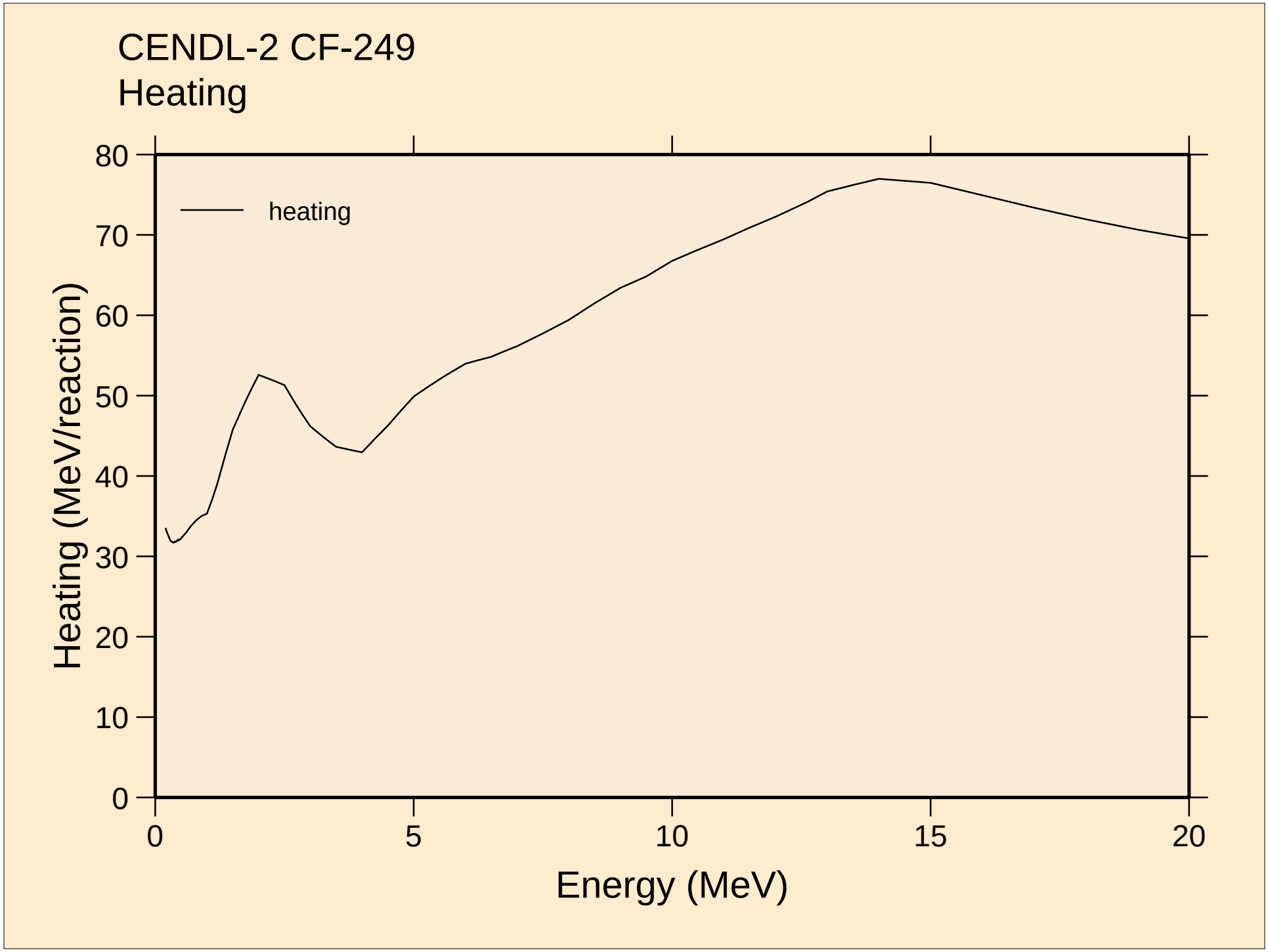


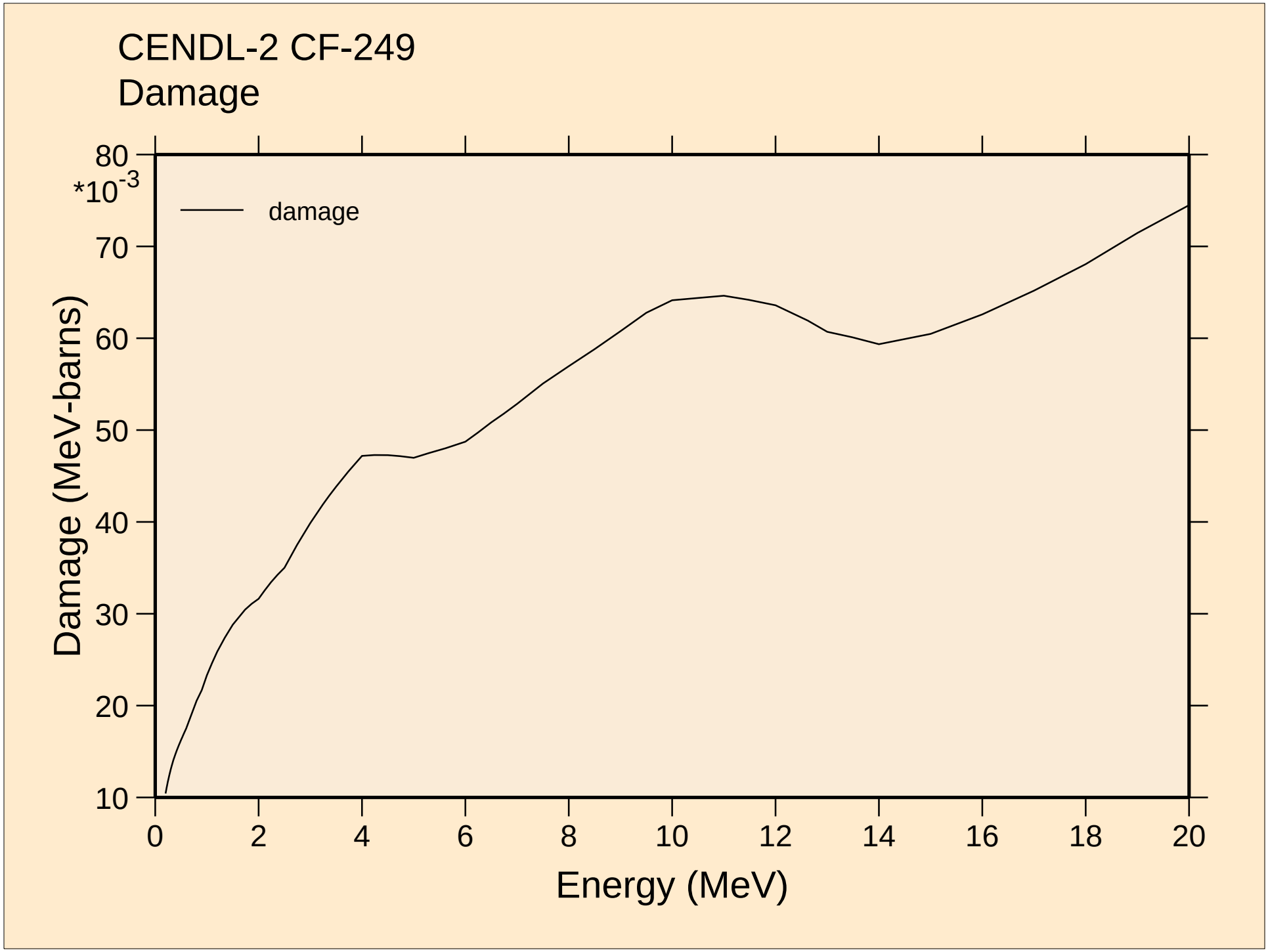

CENDL-2 CF-249
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

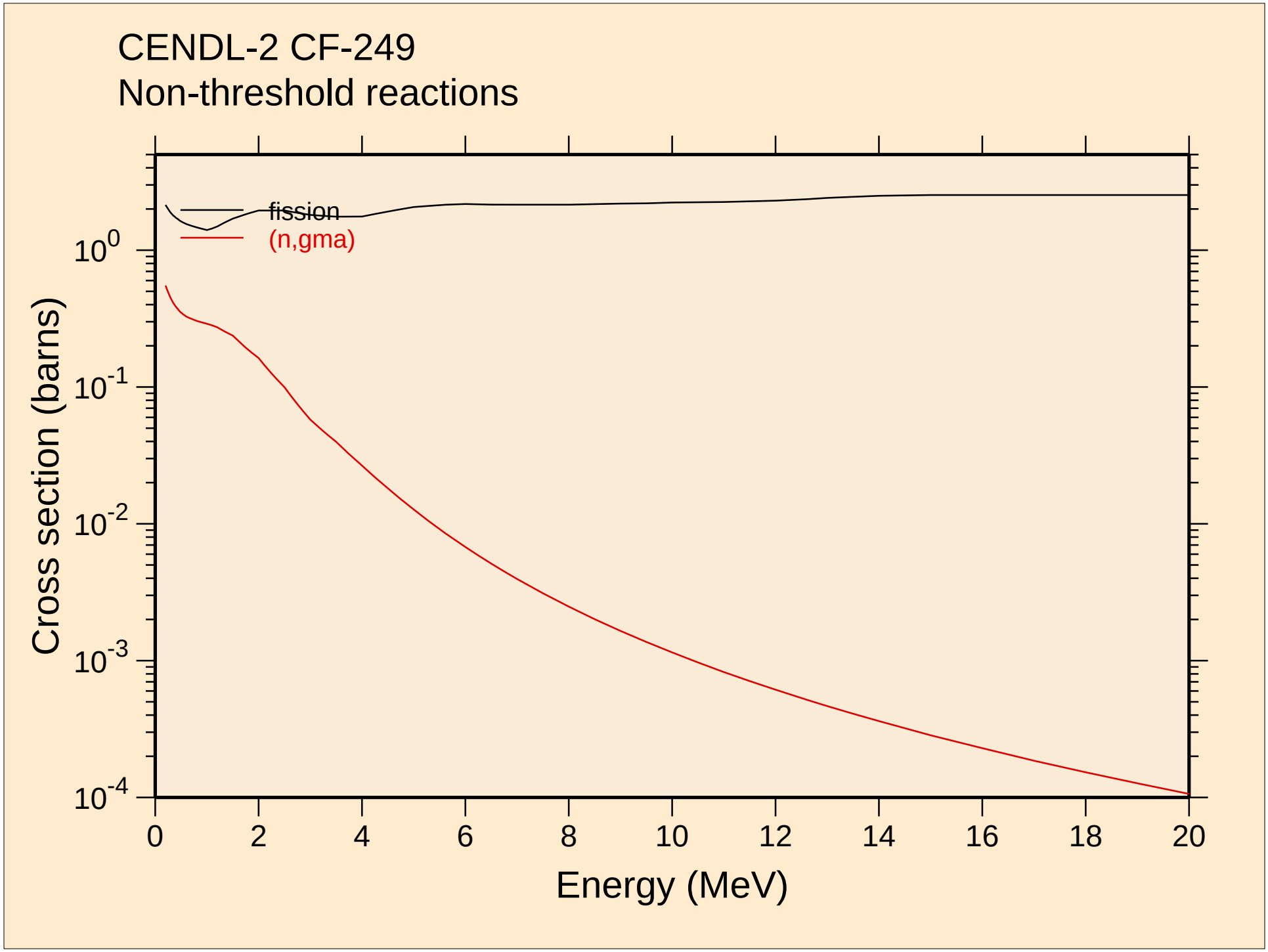

CENDL-2 CF-249
Damage
damage
Damage (MeV-barns)
Energy (MeV)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}

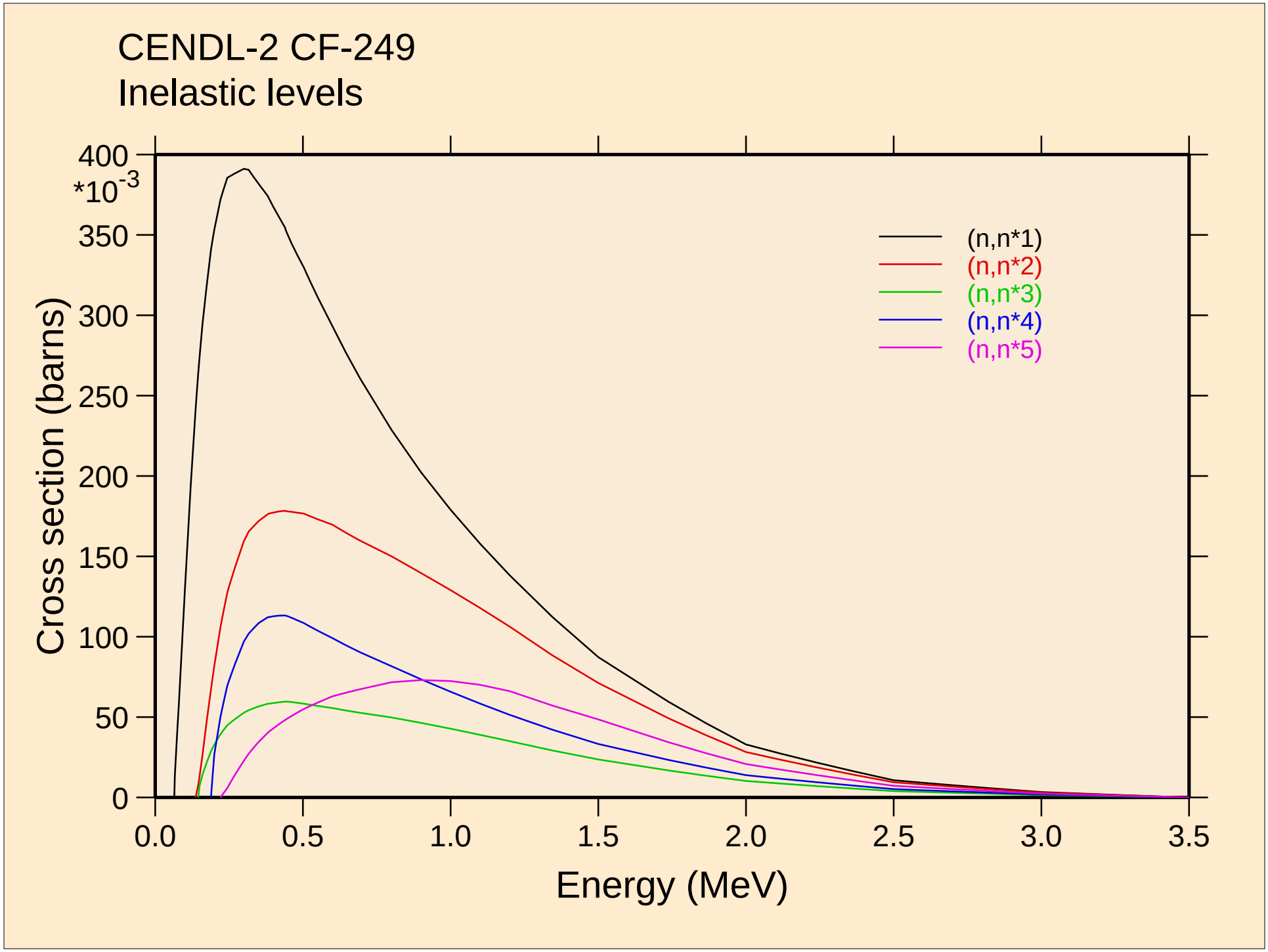

CENDL-2 CF-249
Non-threshold reactions
fission
(n,gma)
Cross section (barns)
Energy (MeV)
10^{5}
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}

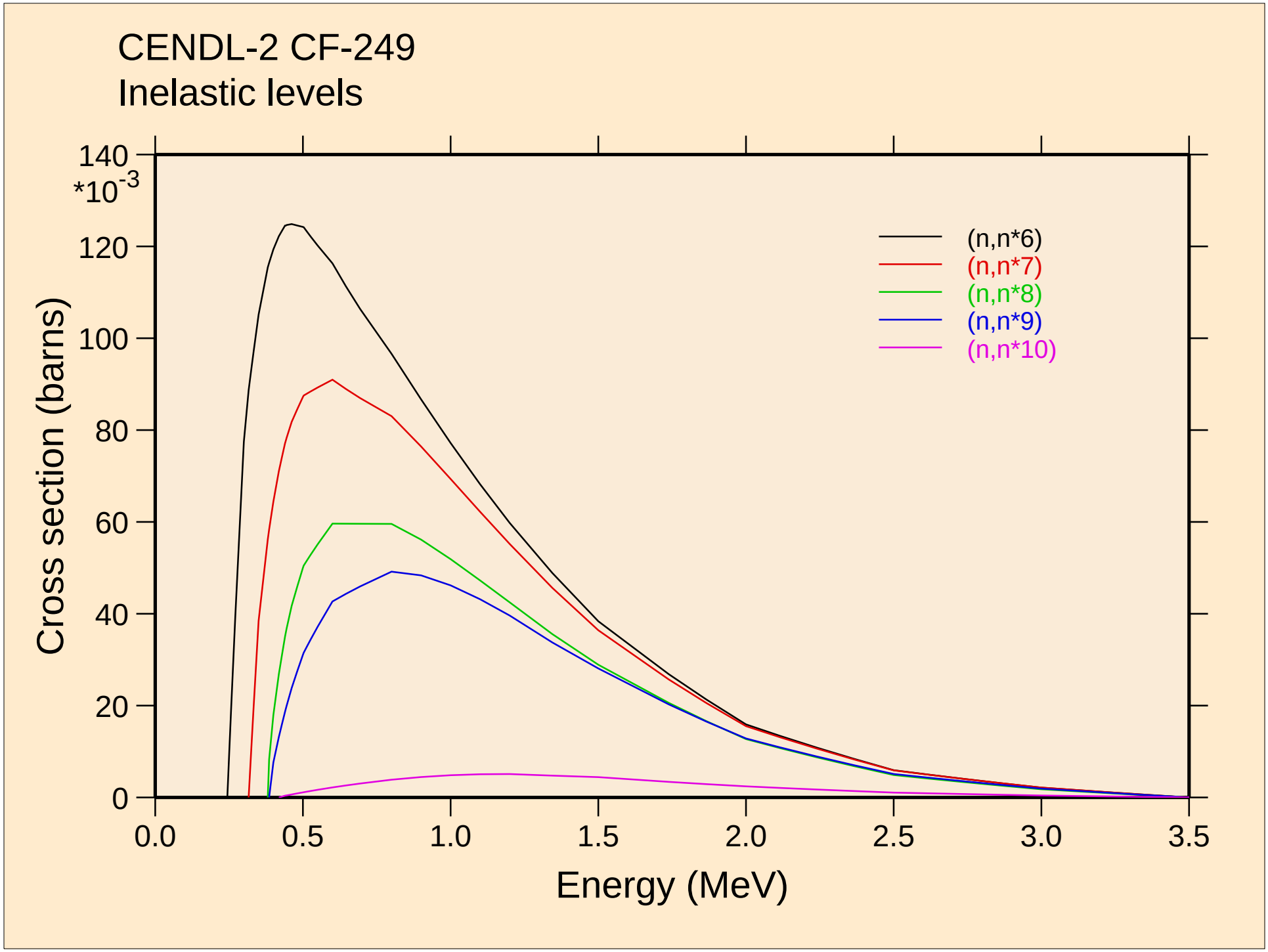

CENDL-2 CF-249
Principal cross sections
total
absorption
elastic
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
6
7
8
2
4
6
8
10
12
14
16
18
20

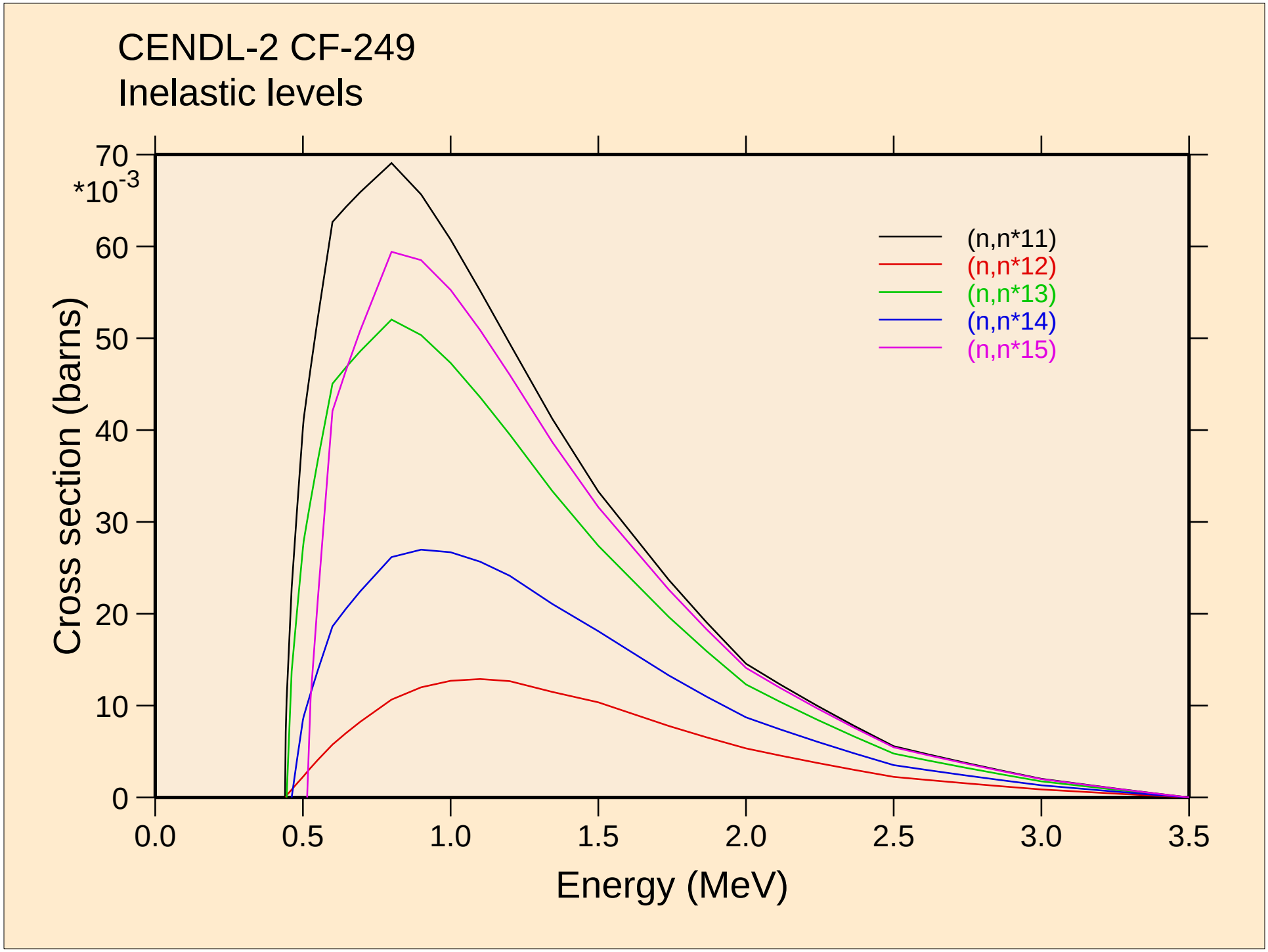

CENDL-2 CF-249
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
10
20
30
40
50
60
70
80
0
5
10
15
20

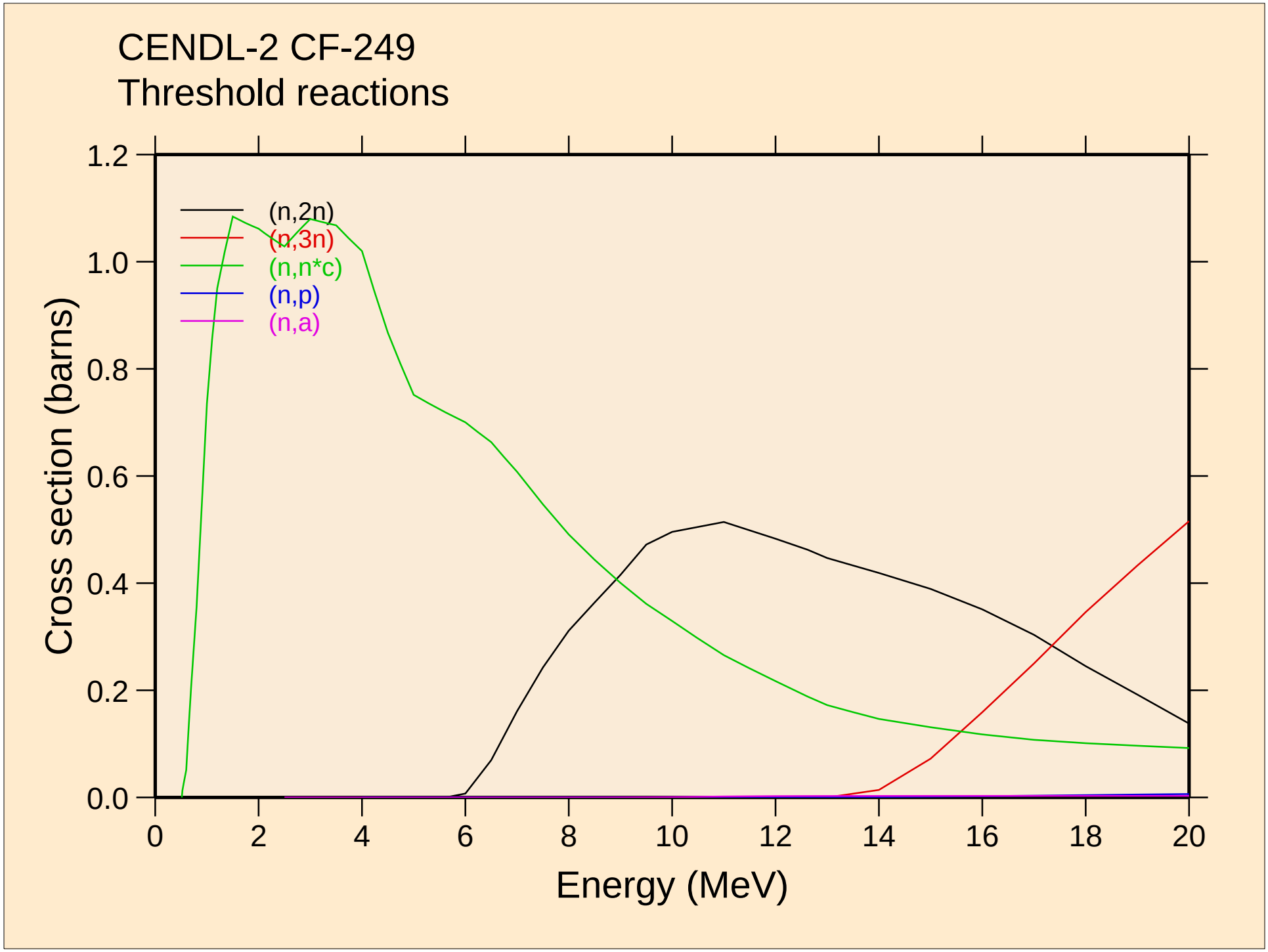

CENDL-2 CF-249
Damage
damage
*10-3
80
70
60
50
40
30
20
10
Damage (MeV-barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

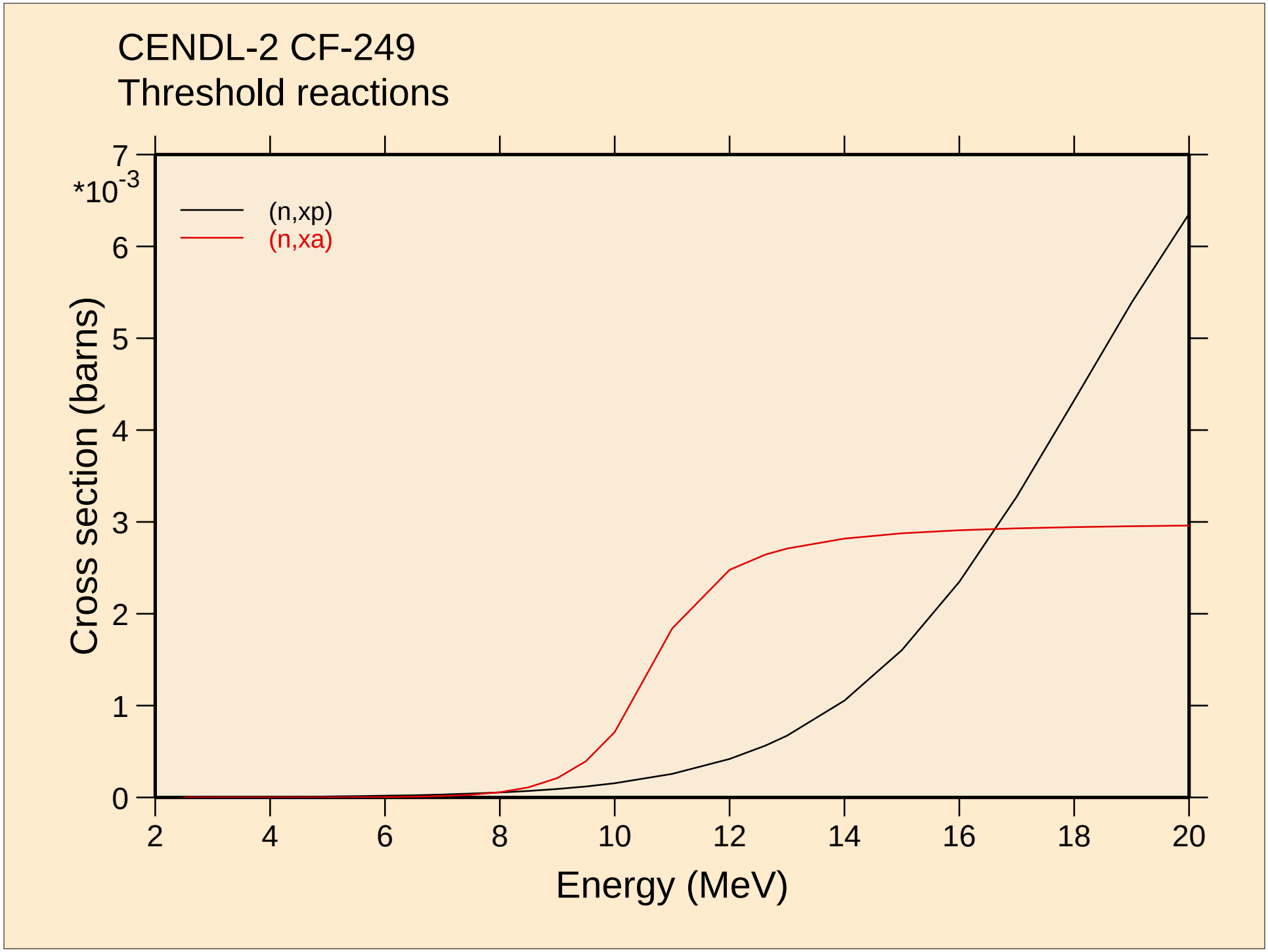

CENDL-2 CF-249
Non-threshold reactions
fission
(n,gma)
Cross section (barns)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

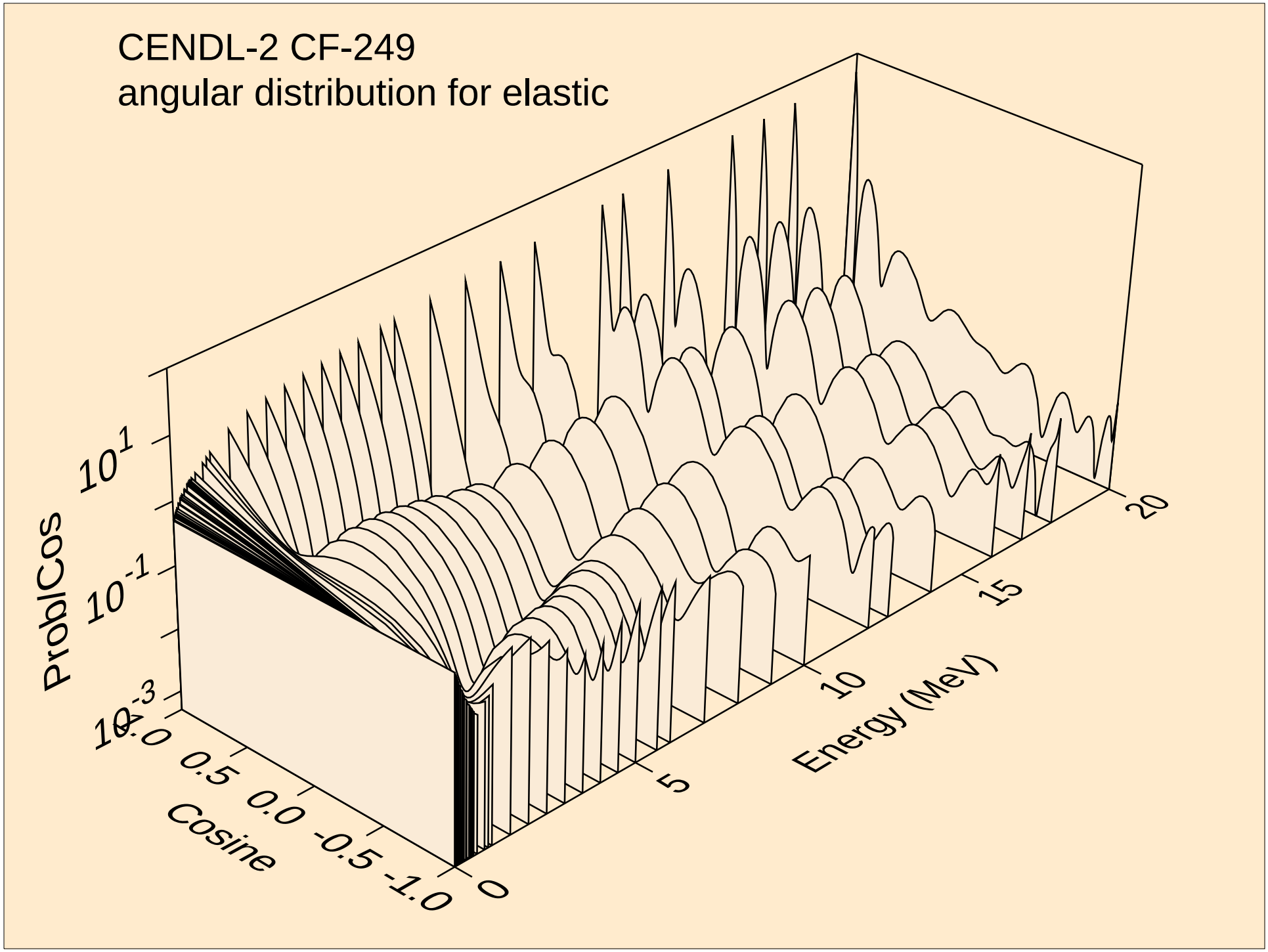

CENDL-2 CF-249
Inelastic levels
Cross section (barns)
*10-3
400
350
300
250
200
150
100
50
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Energy (MeV)
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

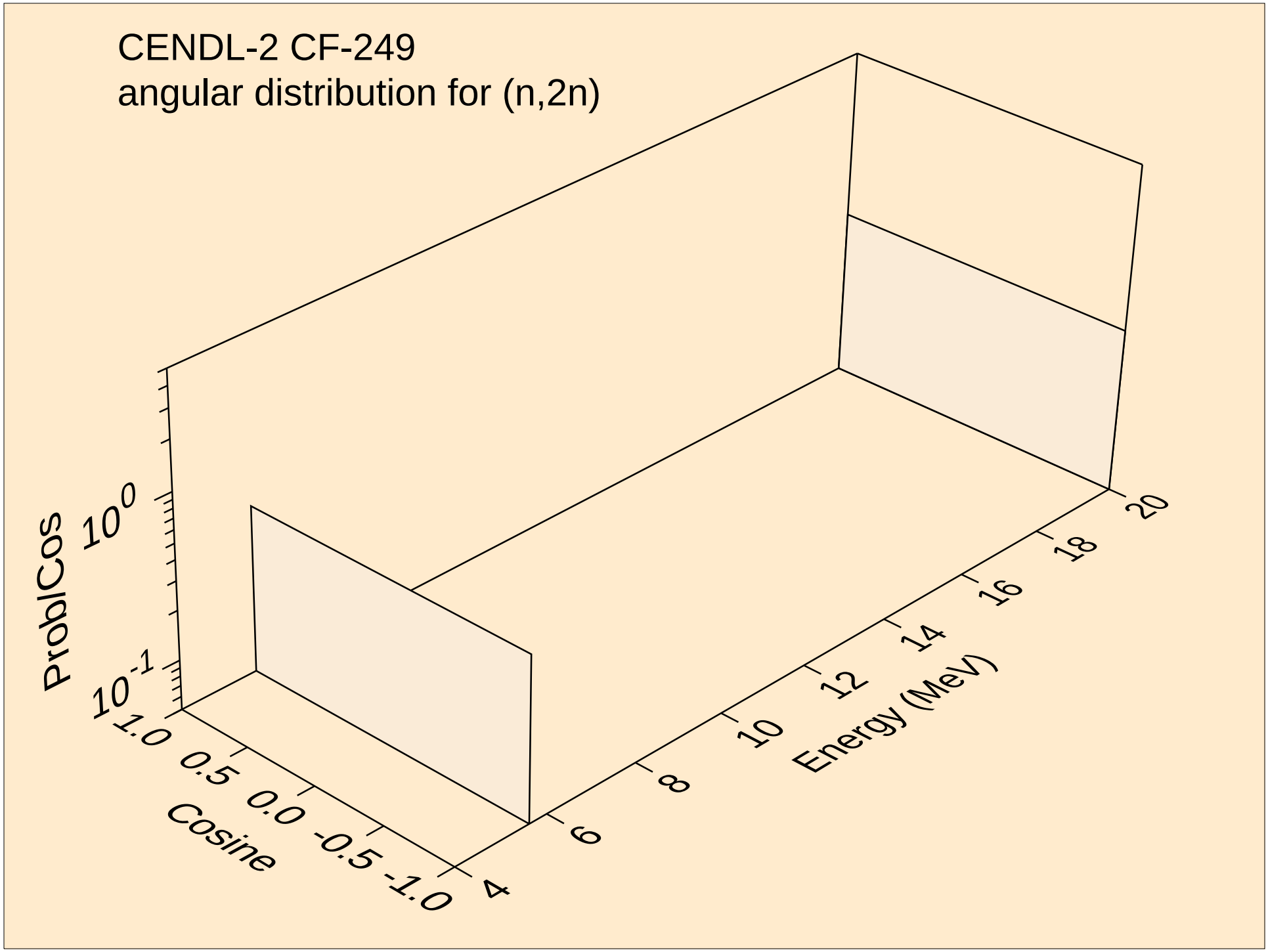

CENDL-2 CF-249
Inelastic levels
140
*10-3
120
100
80
60
40
20
0
Cross section (barns)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

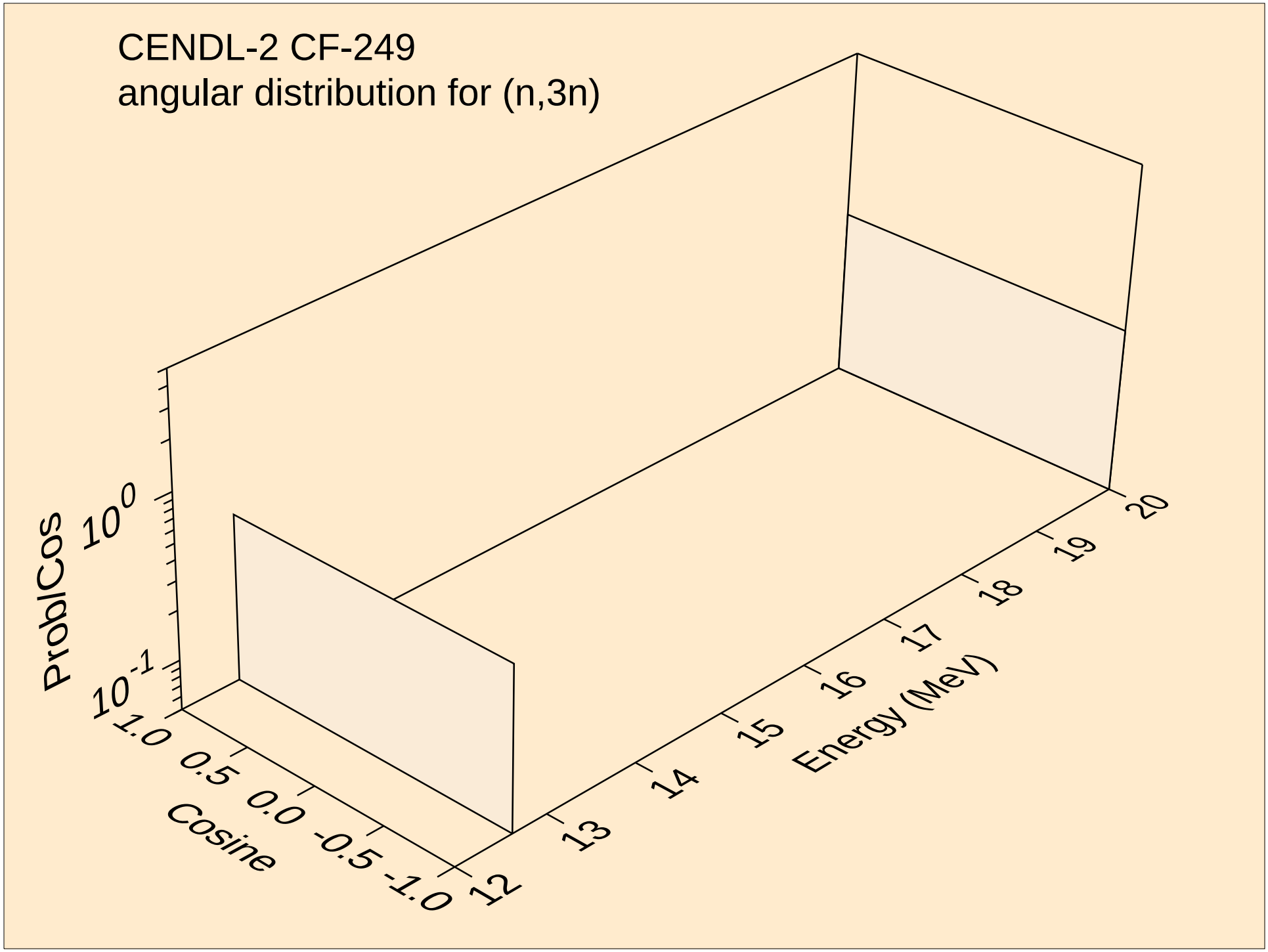

CENDL-2 CF-249
Inelastic levels
70
*10-3
60
50
40
30
20
10
0
Cross section (barns)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

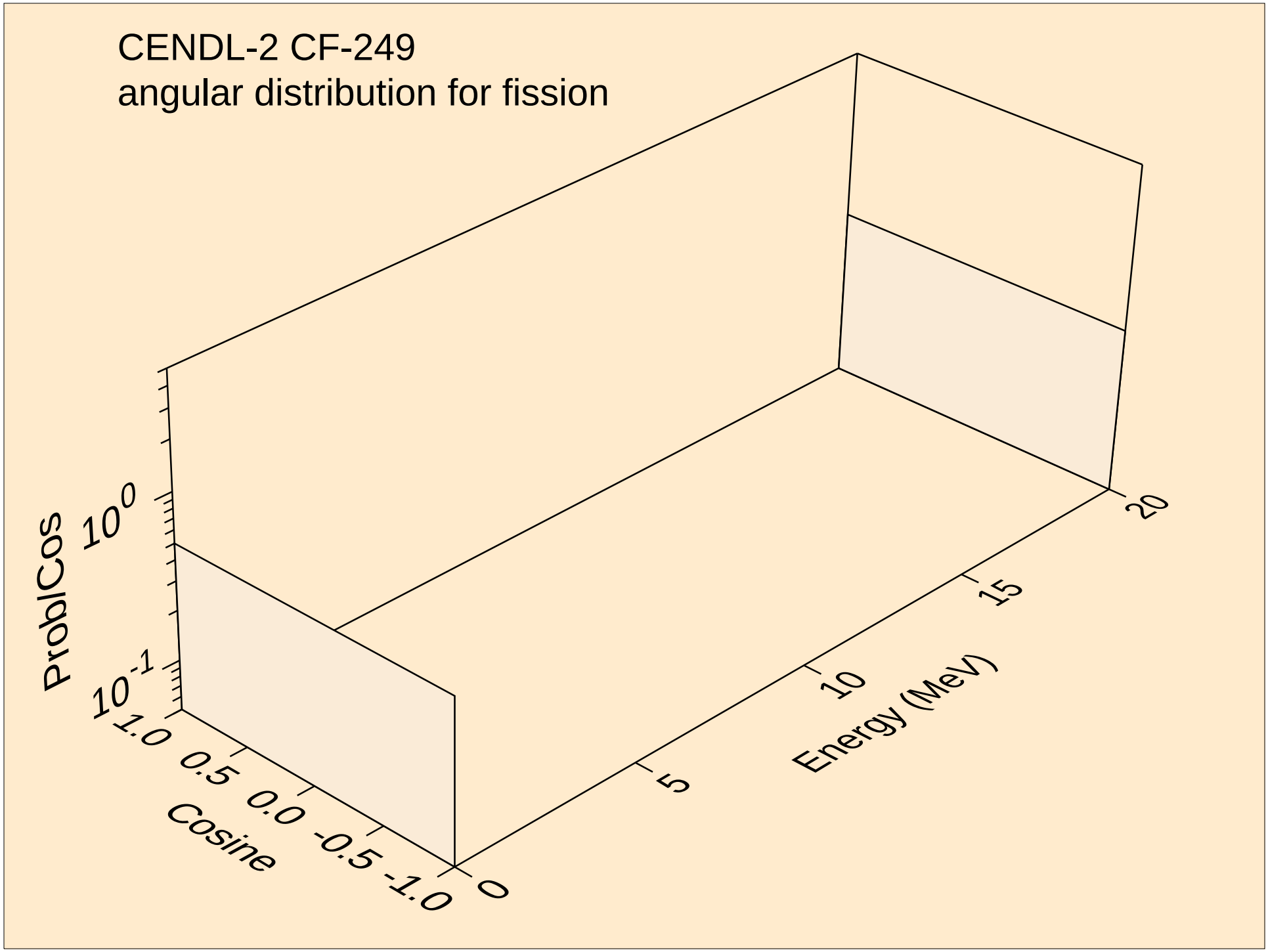

CENDL-2 CF-249
Threshold reactions
(n,2n)
(n,3n)
(n,n*c)
(n,p)
(n,a)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
2
4
6
8
10
12
14
16
18
20

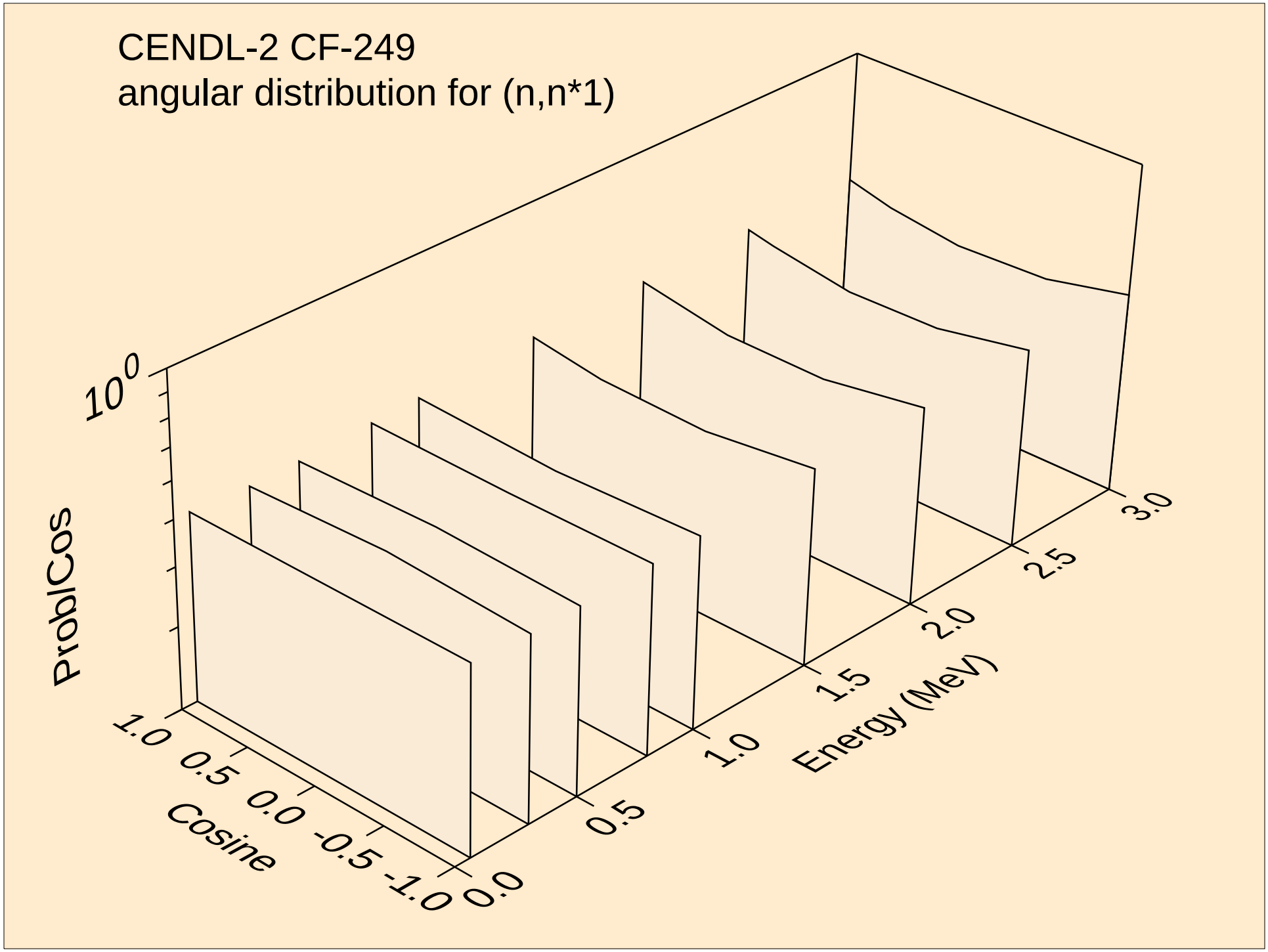

CENDL-2 CF-249
Threshold reactions
(n,xp)
(n,xa)
*10-3
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
6
7
2
4
6
8
10
12
14
16
18
20

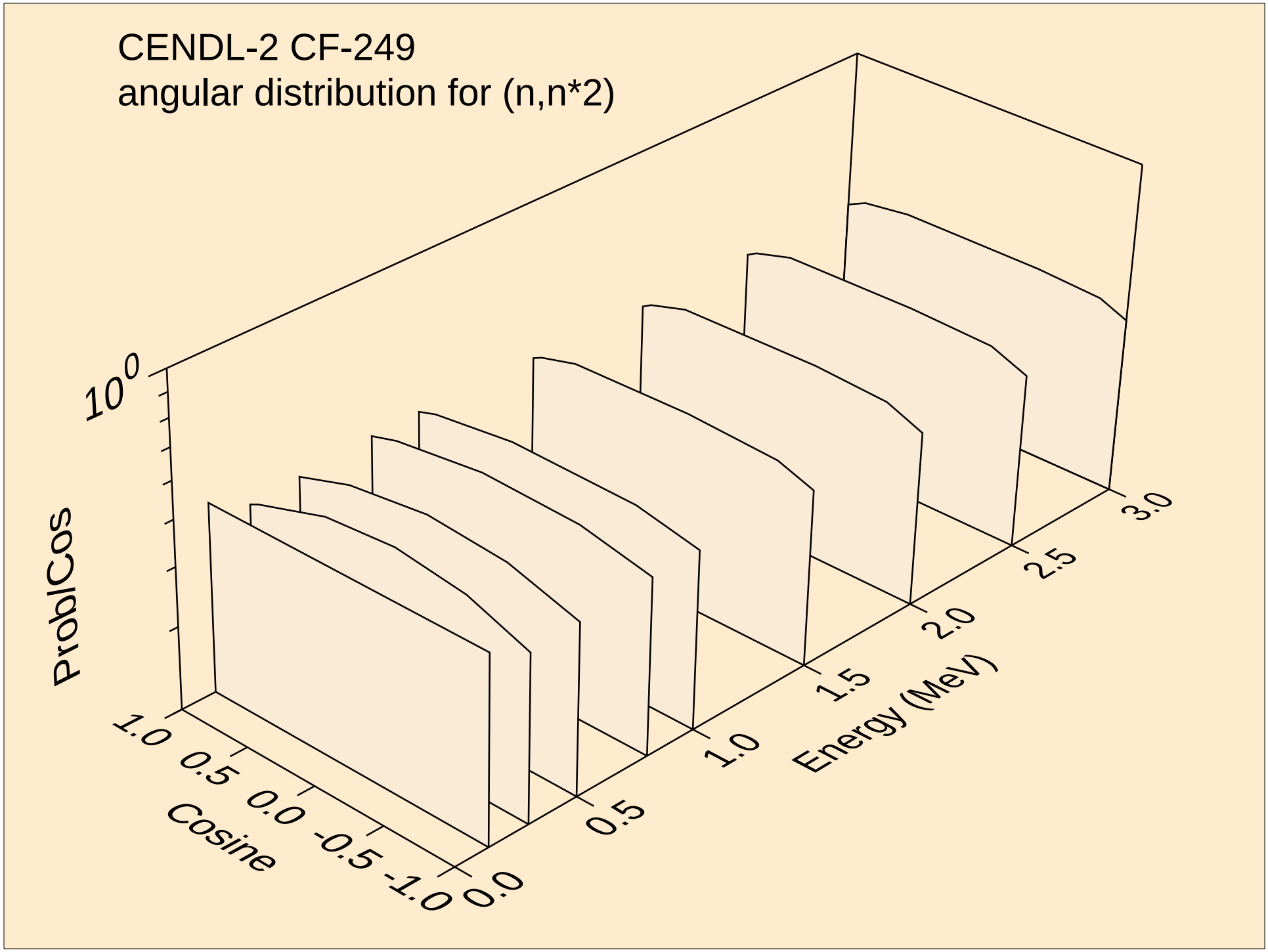

CENDL-2 CF-249
angular distribution for elastic
ProblCos
10^{1}
10^{-1}
10^{-3}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

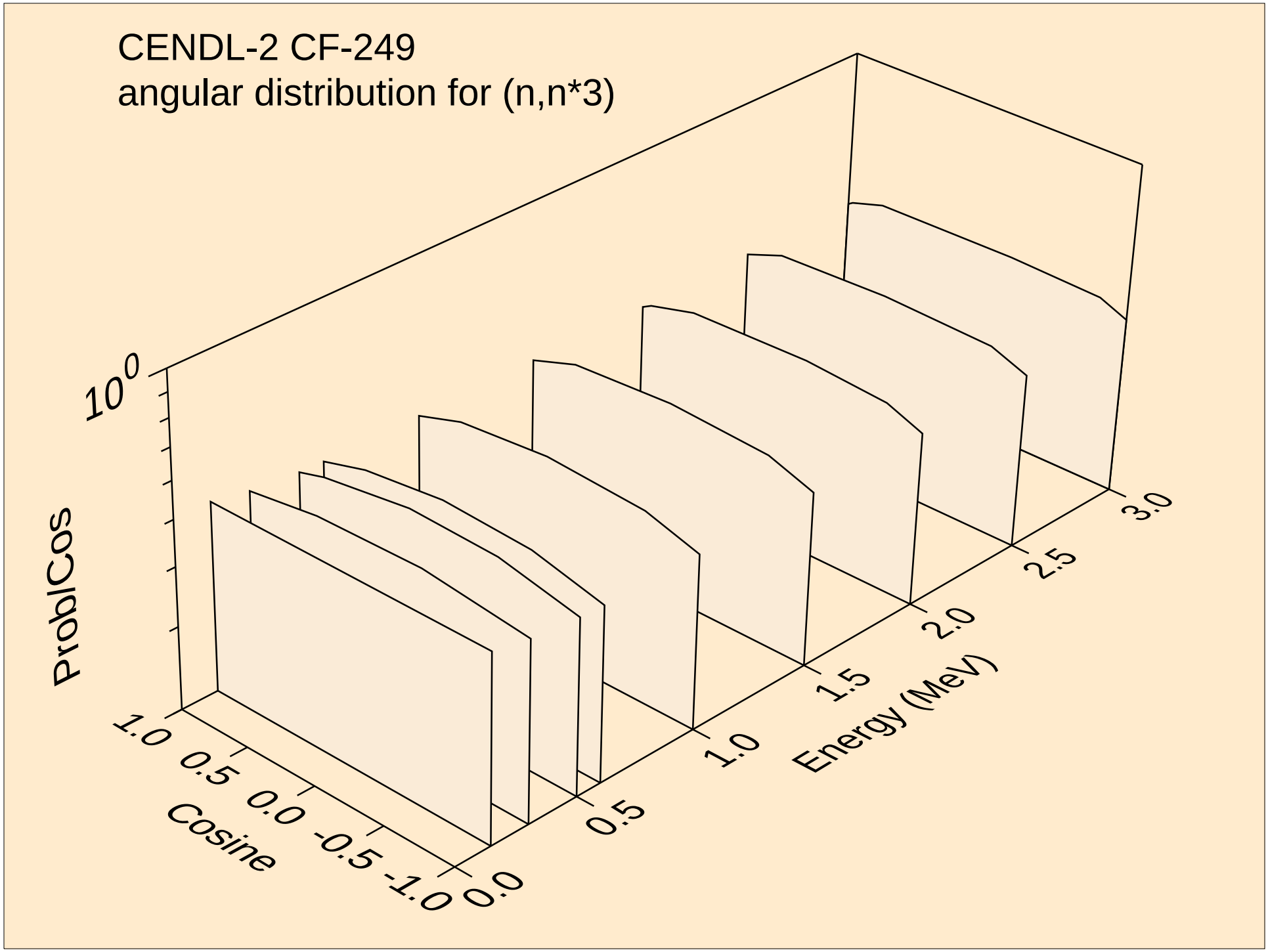

CENDL-2 CF-249
angular distribution for (n,2n)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

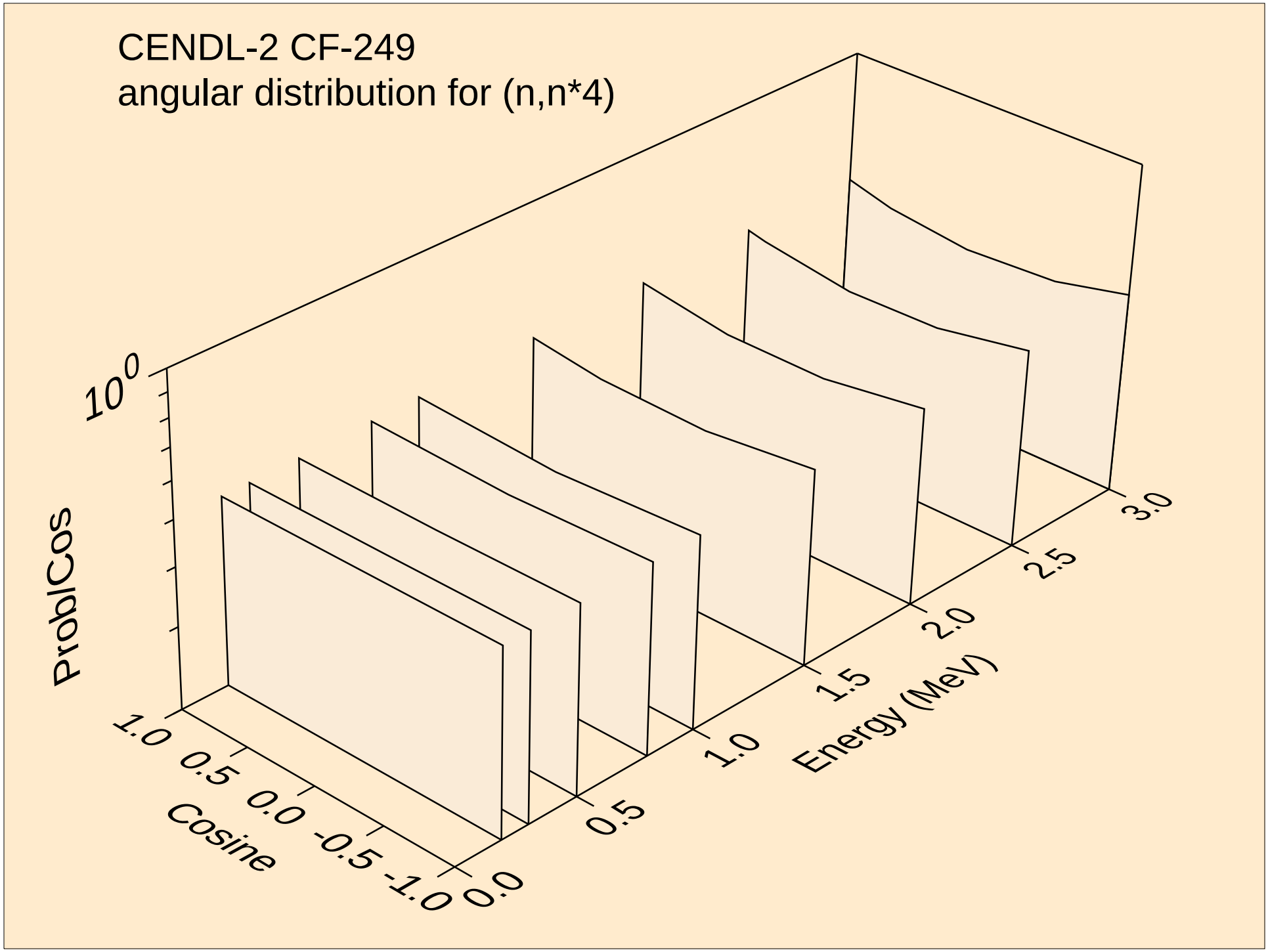

CENDL-2 CF-249
angular distribution for (n,3n)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
12
13
14
15
16
17
18
19
20
Energy (MeV)

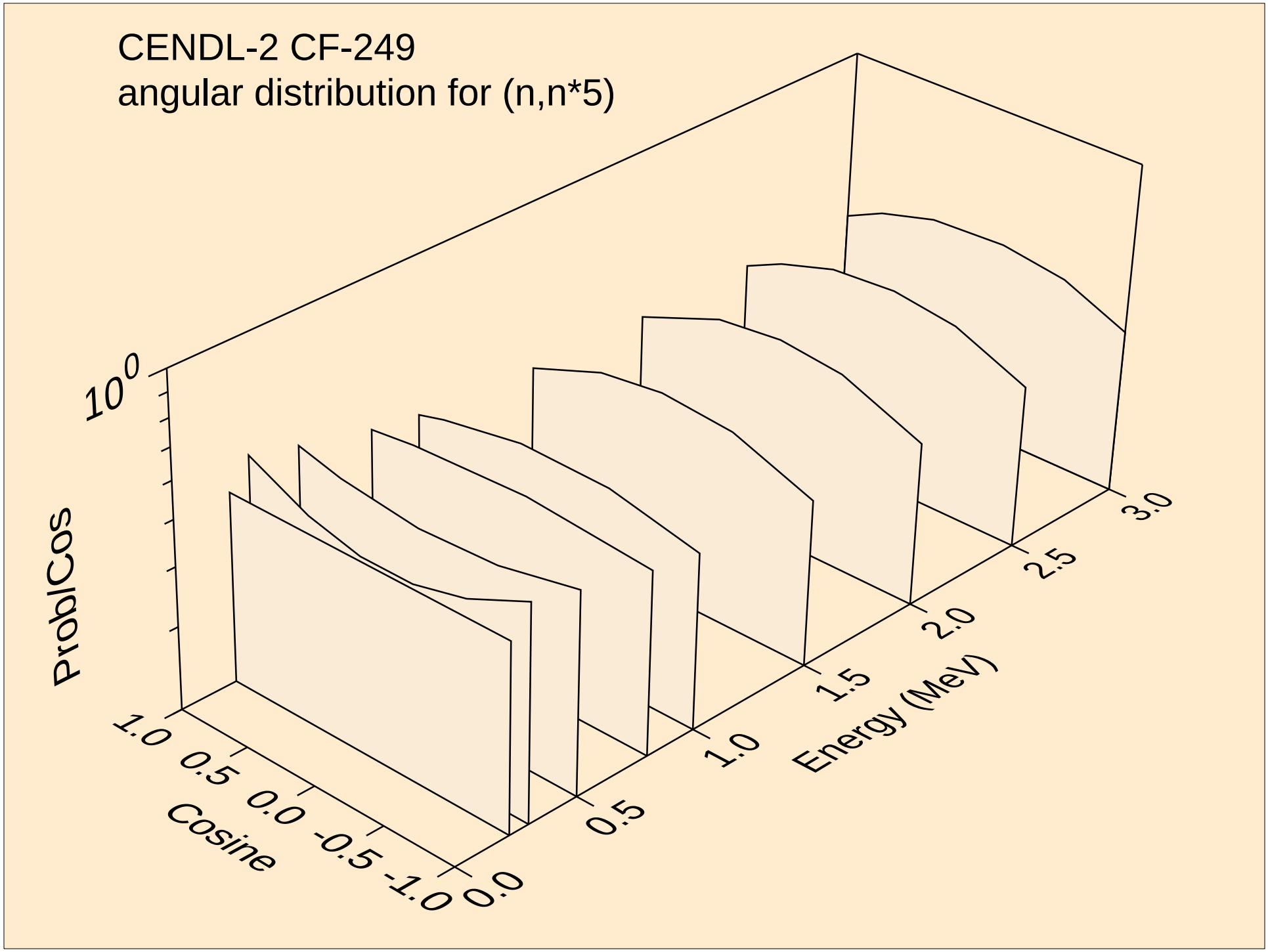

CENDL-2 CF-249
angular distribution for fission
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

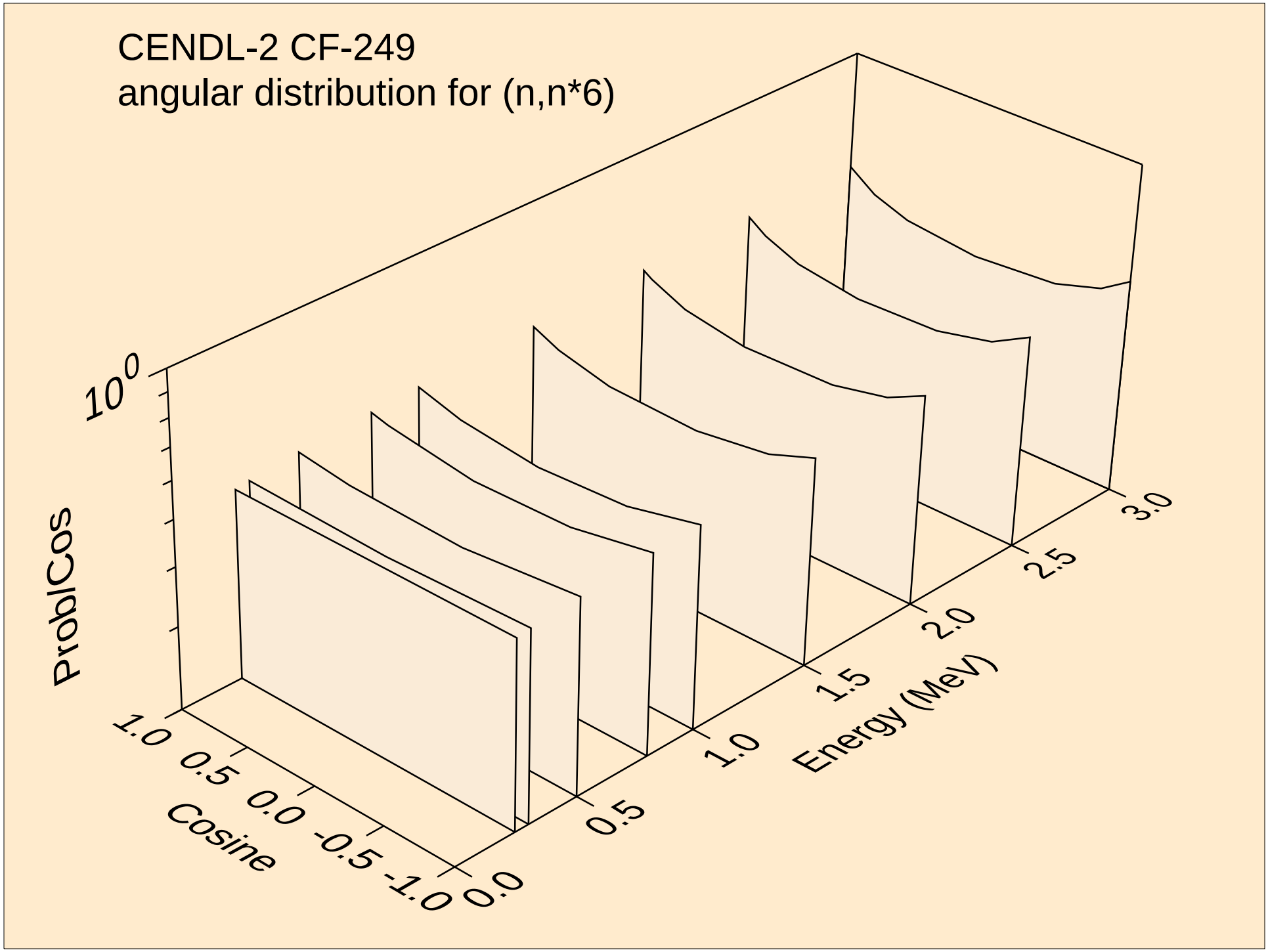

CENDL-2 CF-249
angular distribution for (n,n*1)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

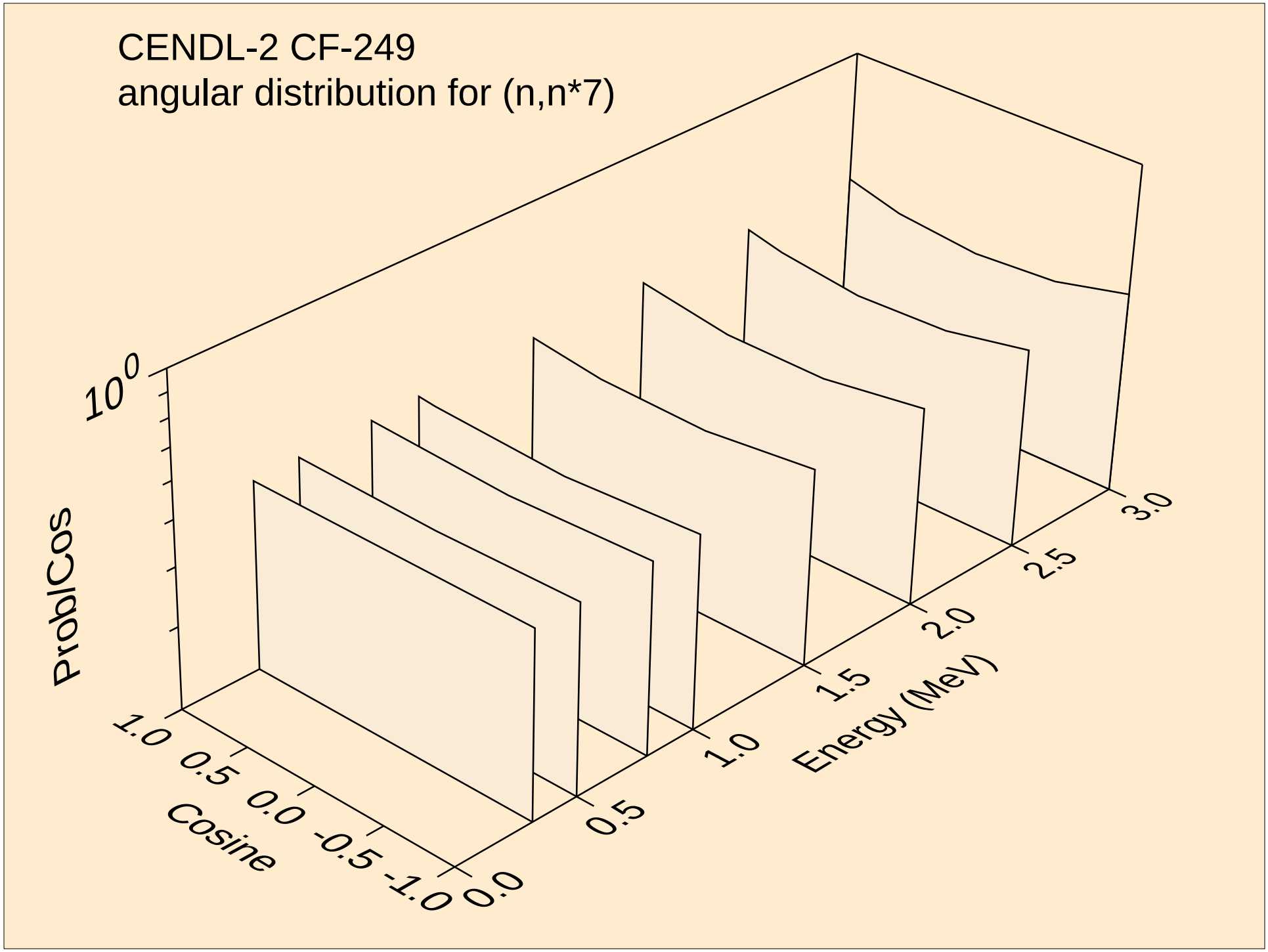

CENDL-2 CF-249
angular distribution for (n,n*2)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

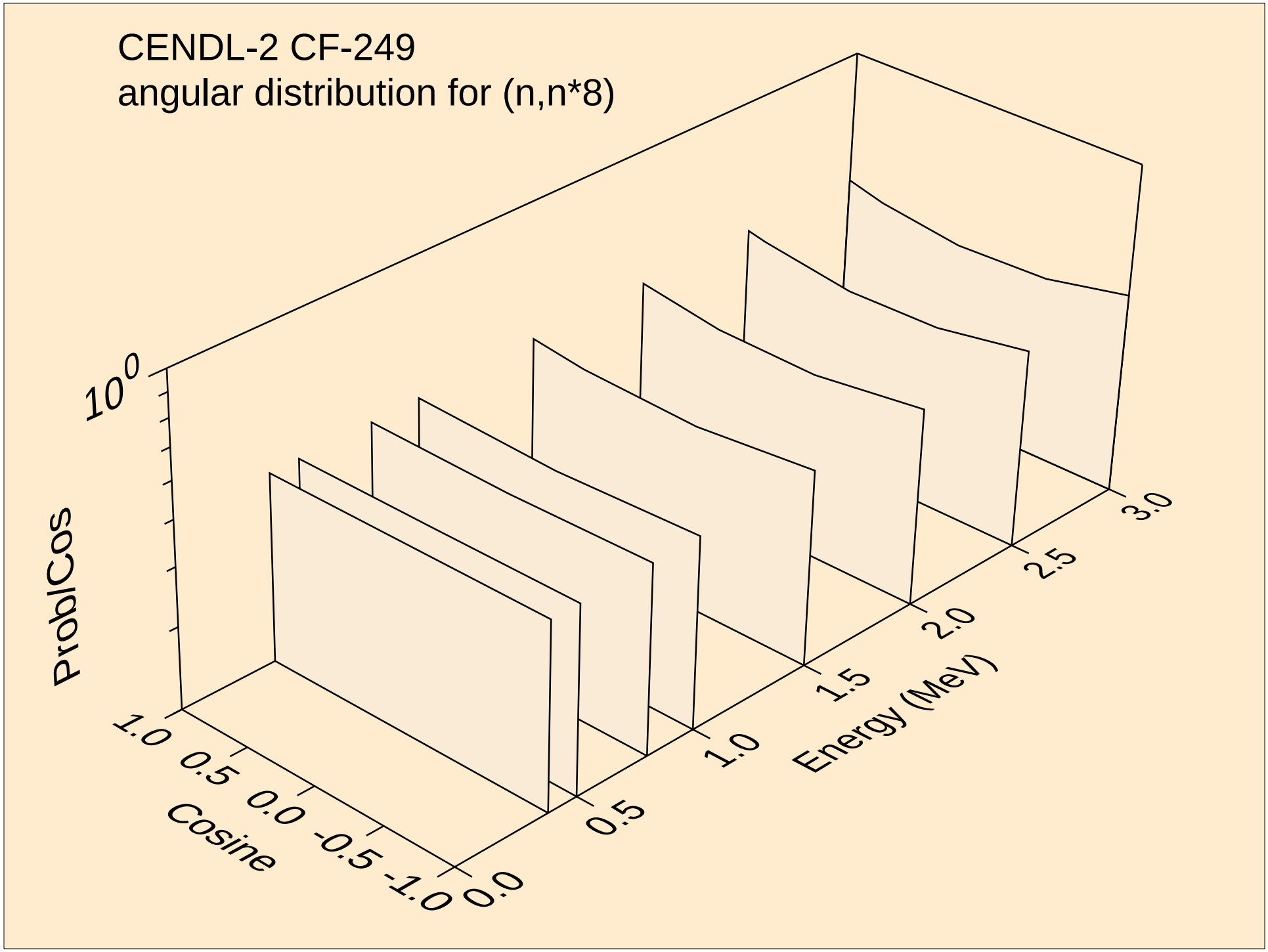

CENDL-2 CF-249
angular distribution for (n,n*3)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

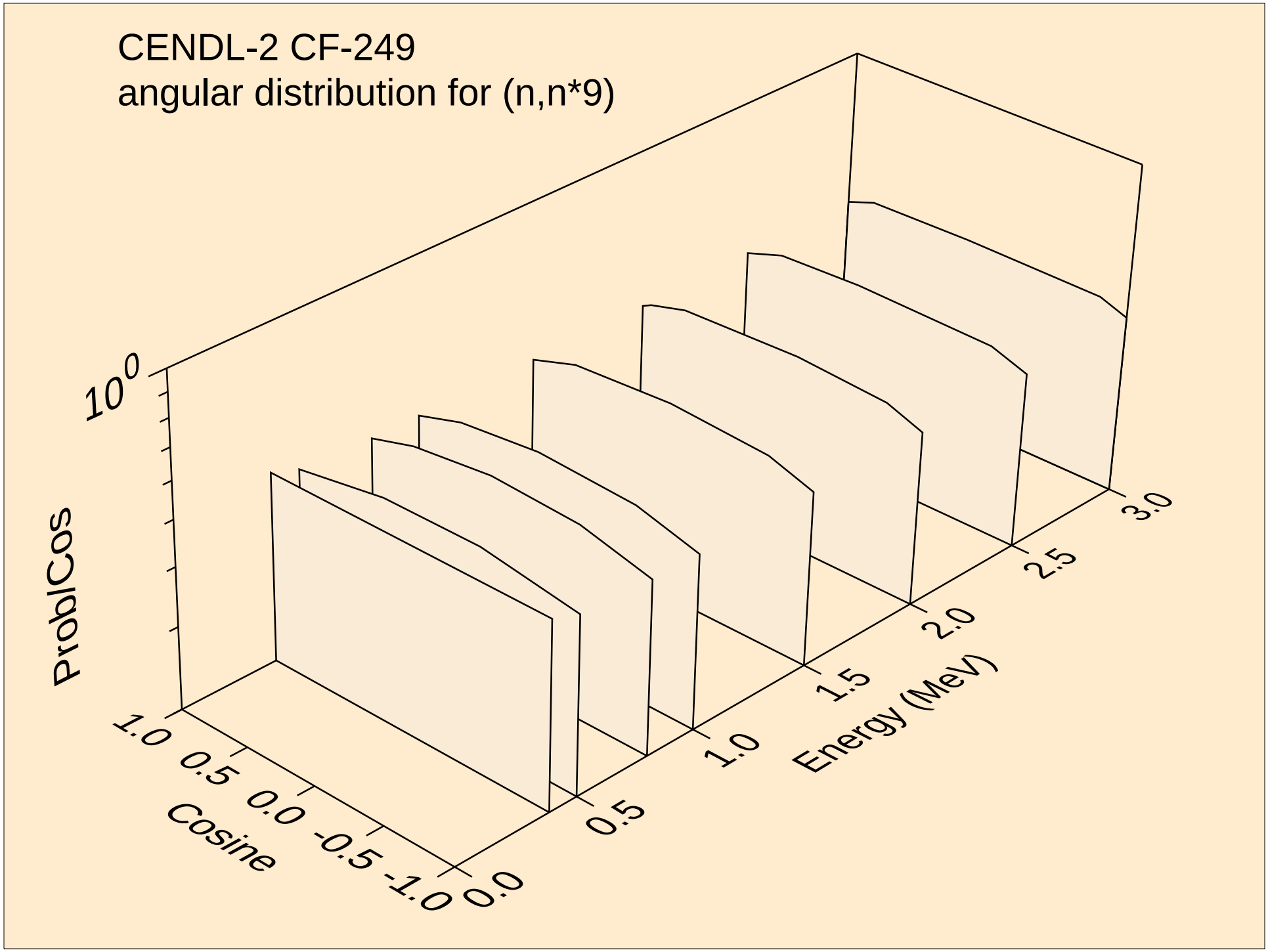

CENDL-2 CF-249
angular distribution for (n,n*4)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

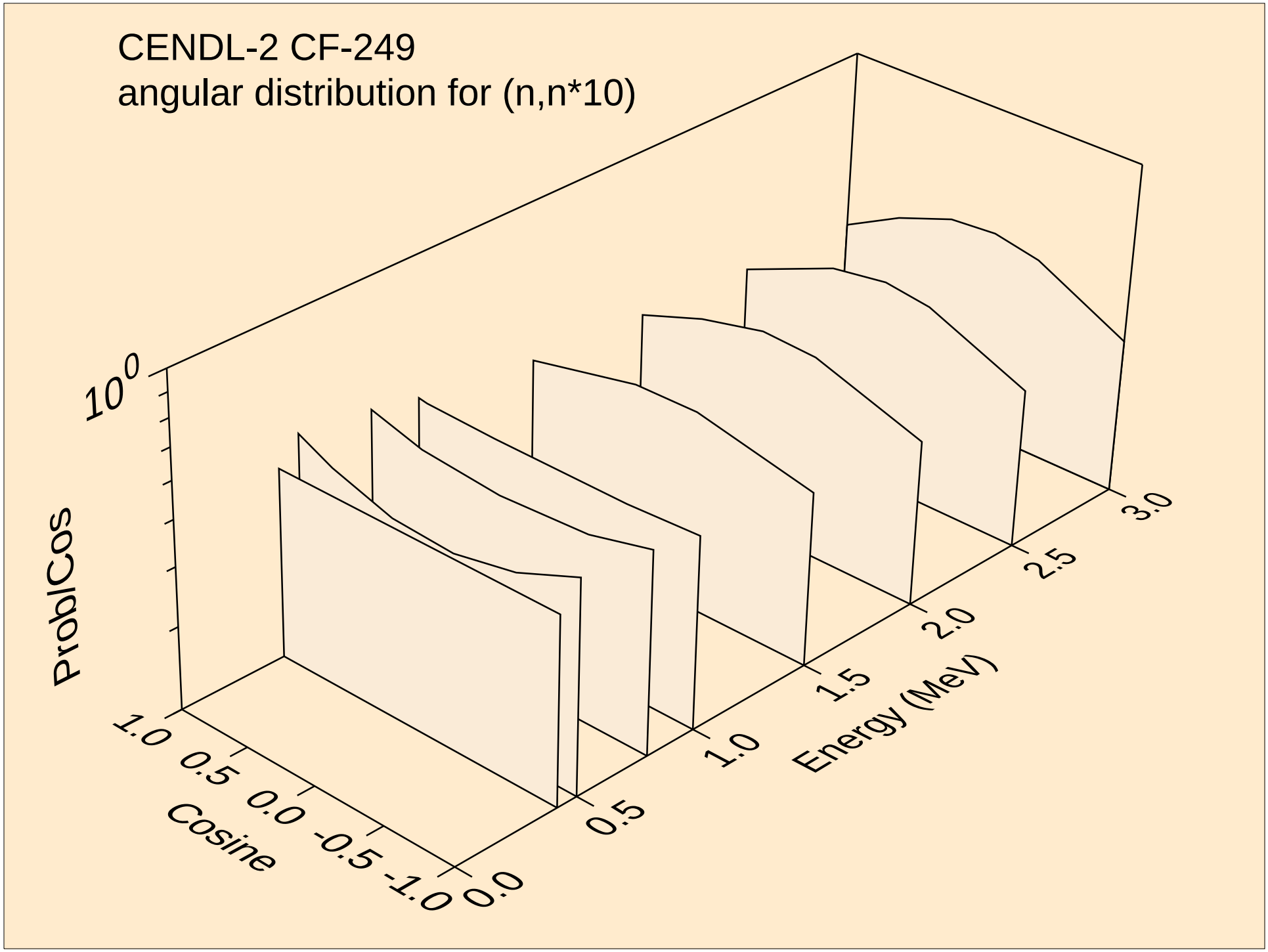

CENDL-2 CF-249
angular distribution for (n,n*5)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

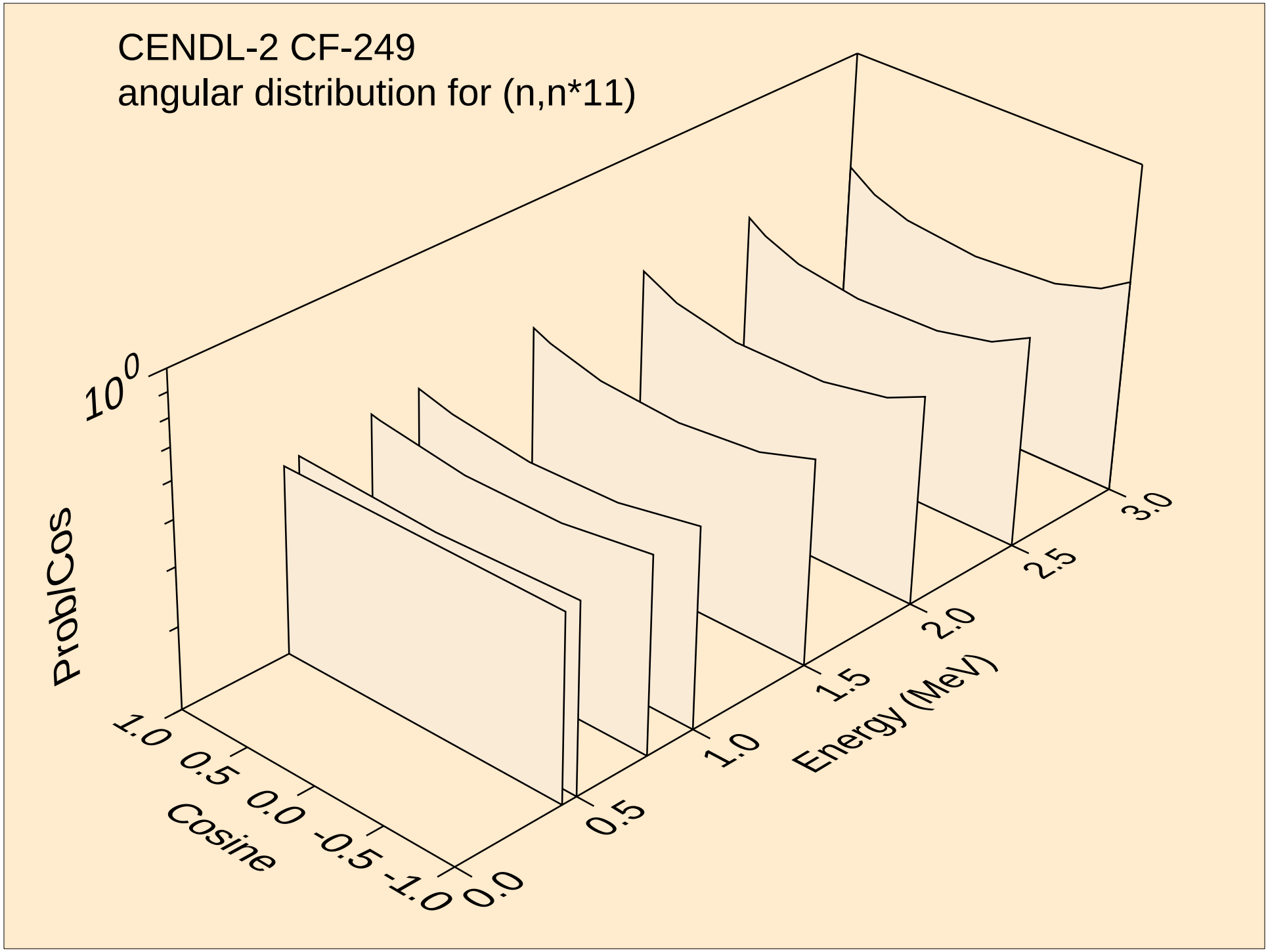

CENDL-2 CF-249
angular distribution for (n,n*6)
10^0
Prob/Cos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

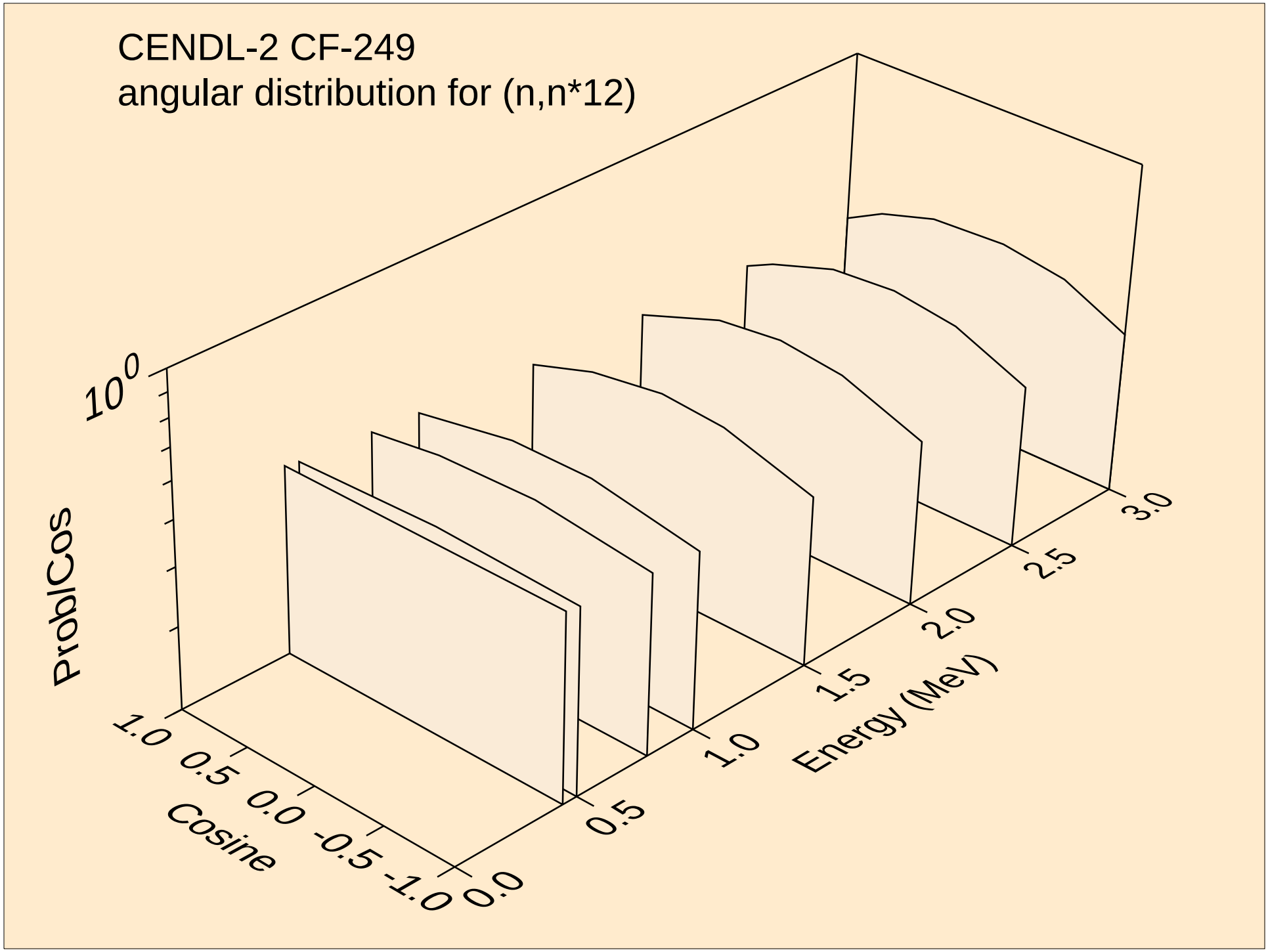

CENDL-2 CF-249
angular distribution for (n,n*7)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

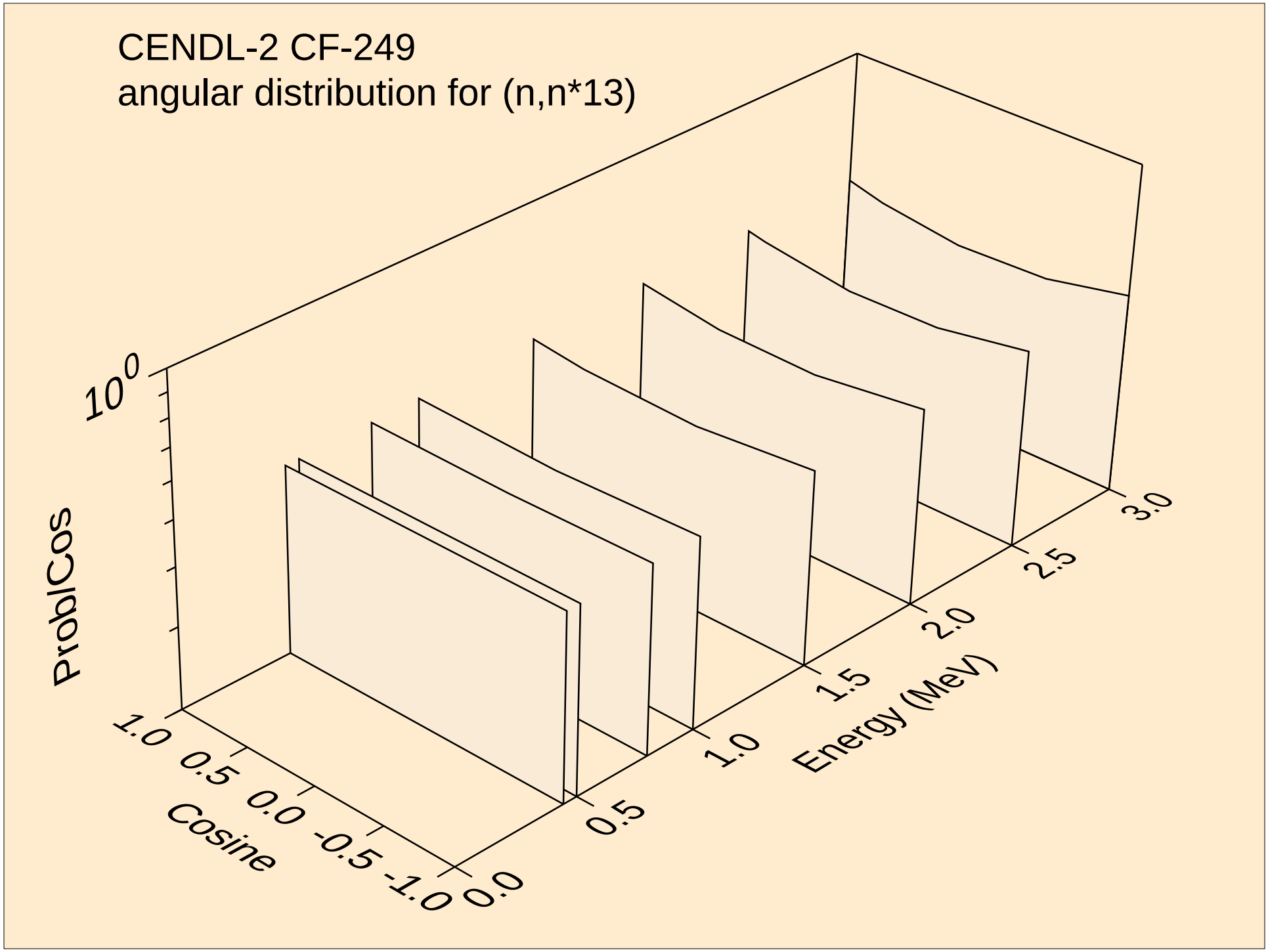

CENDL-2 CF-249
angular distribution for (n,n*8)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

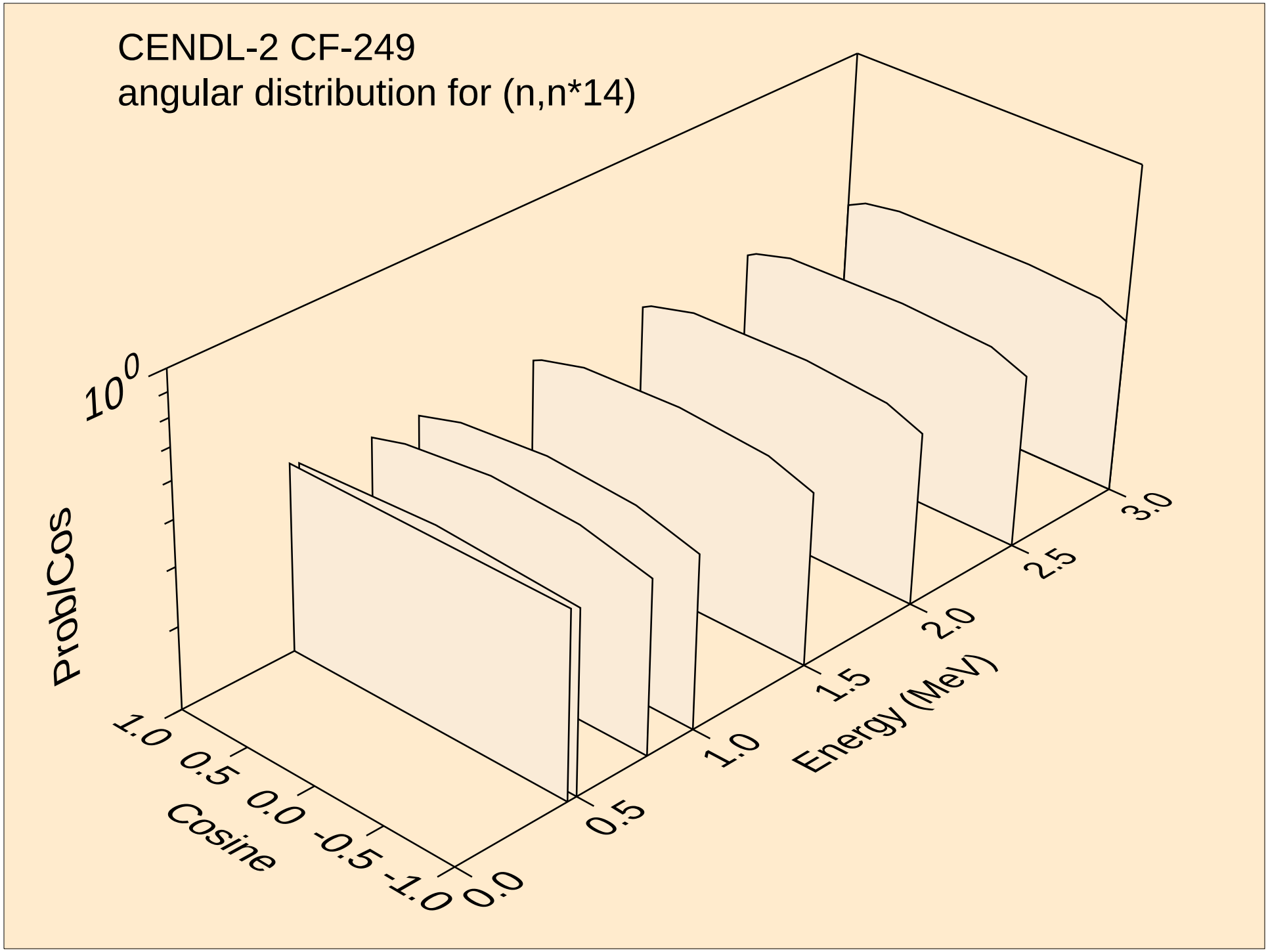

CENDL-2 CF-249
angular distribution for (n,n*9)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

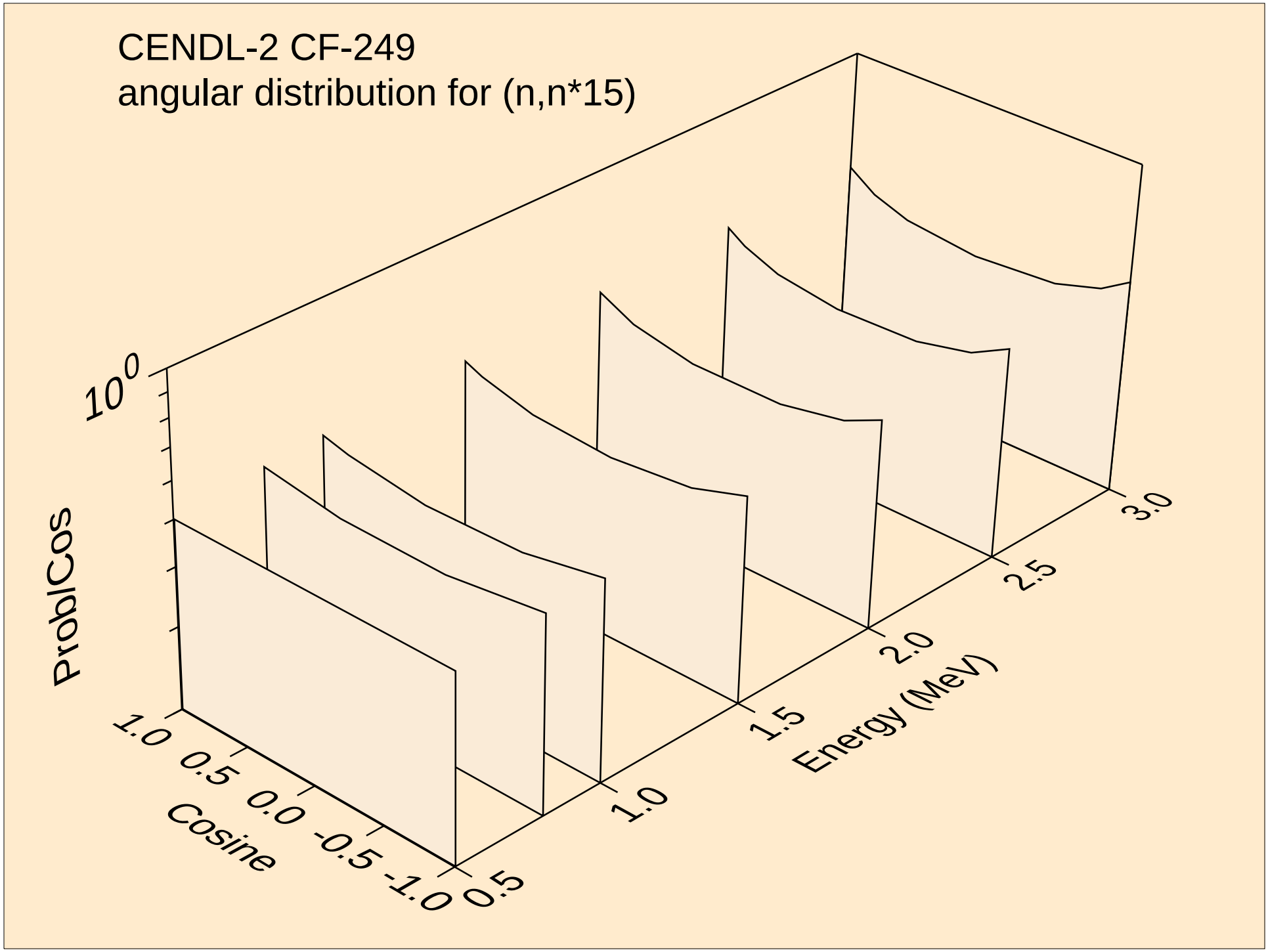

CENDL-2 CF-249
angular distribution for (n,n*10)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

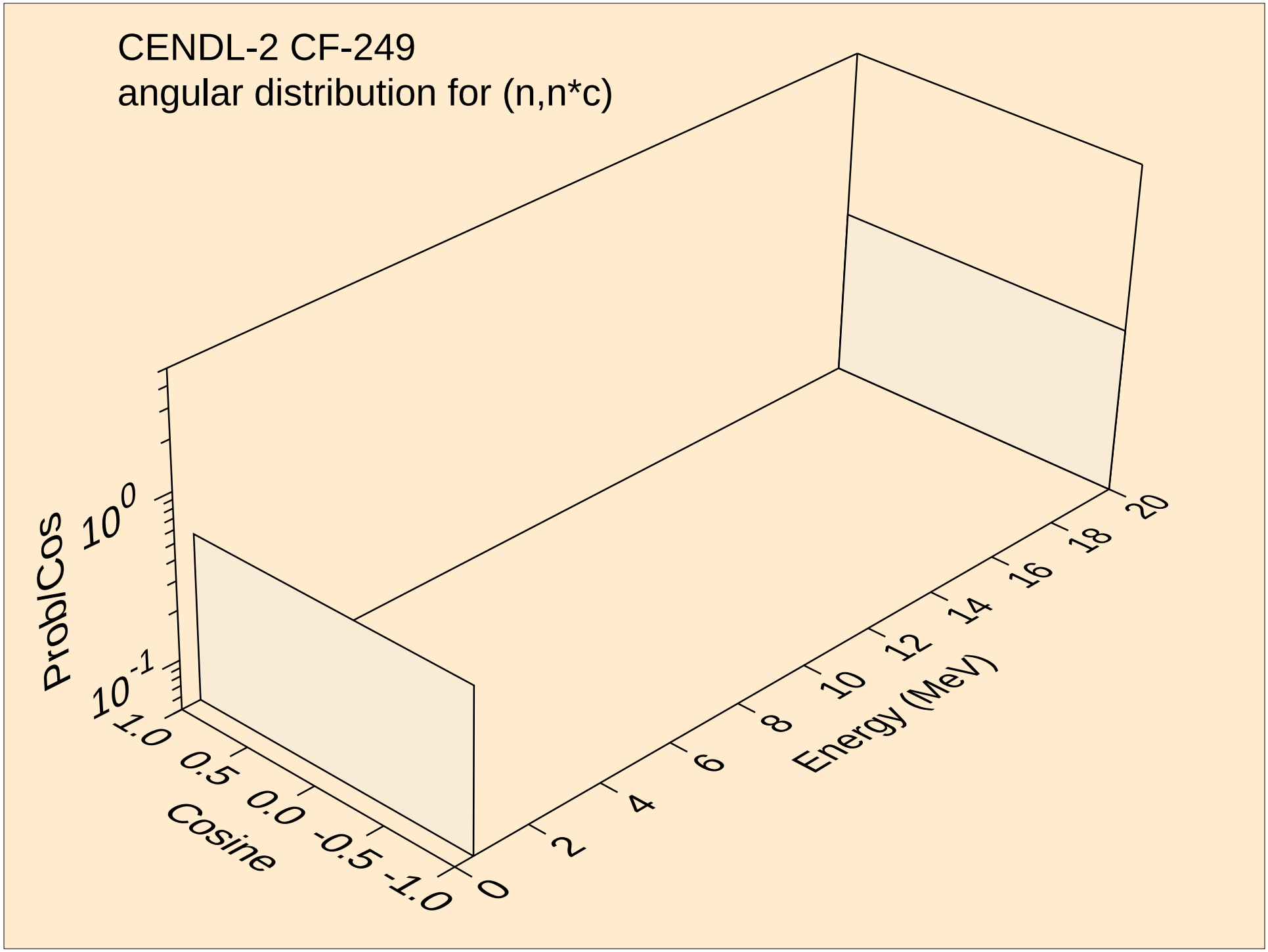

CENDL-2 CF-249
angular distribution for (n,n*11)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

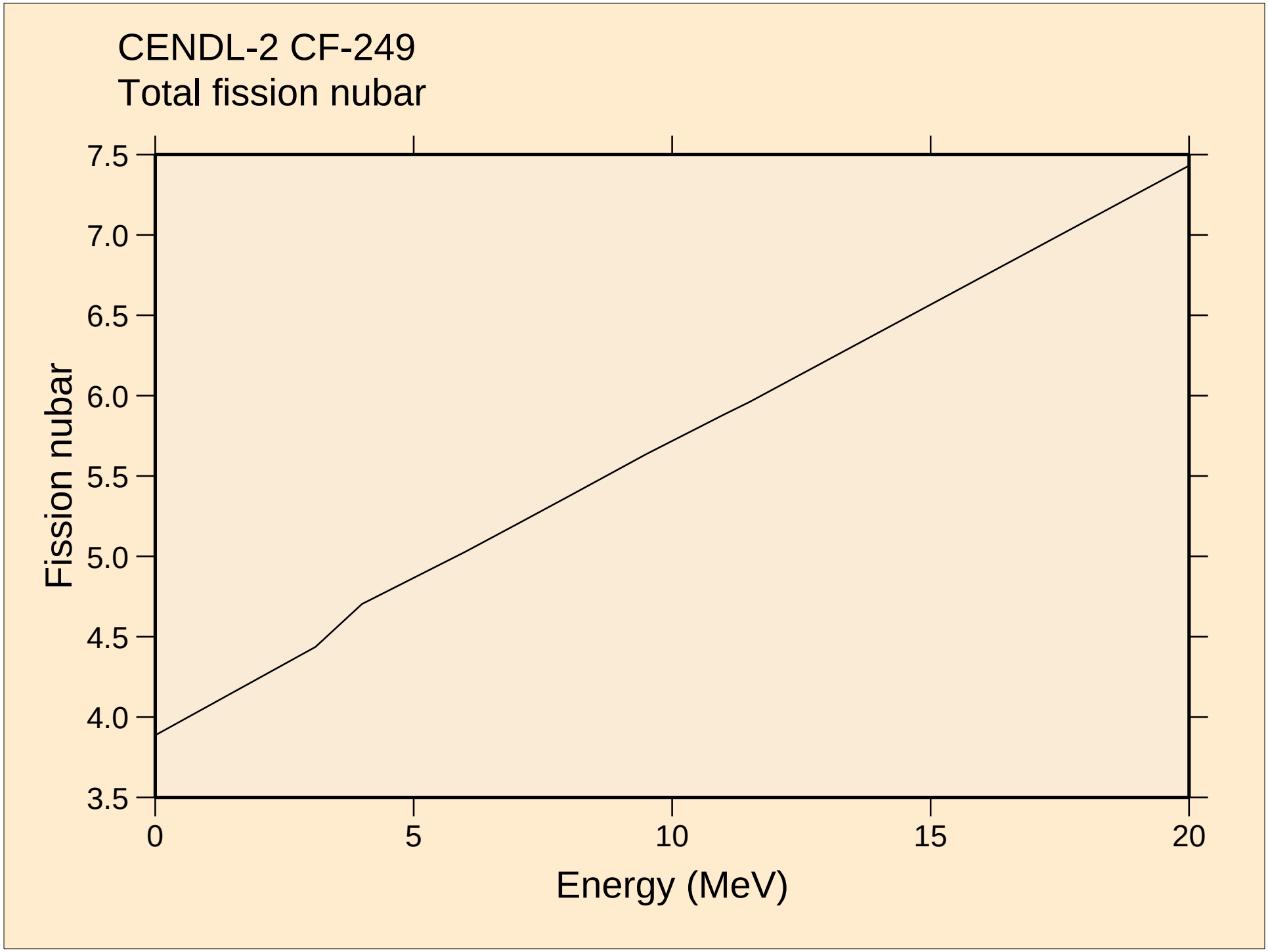

CENDL-2 CF-249
angular distribution for (n,n*12)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

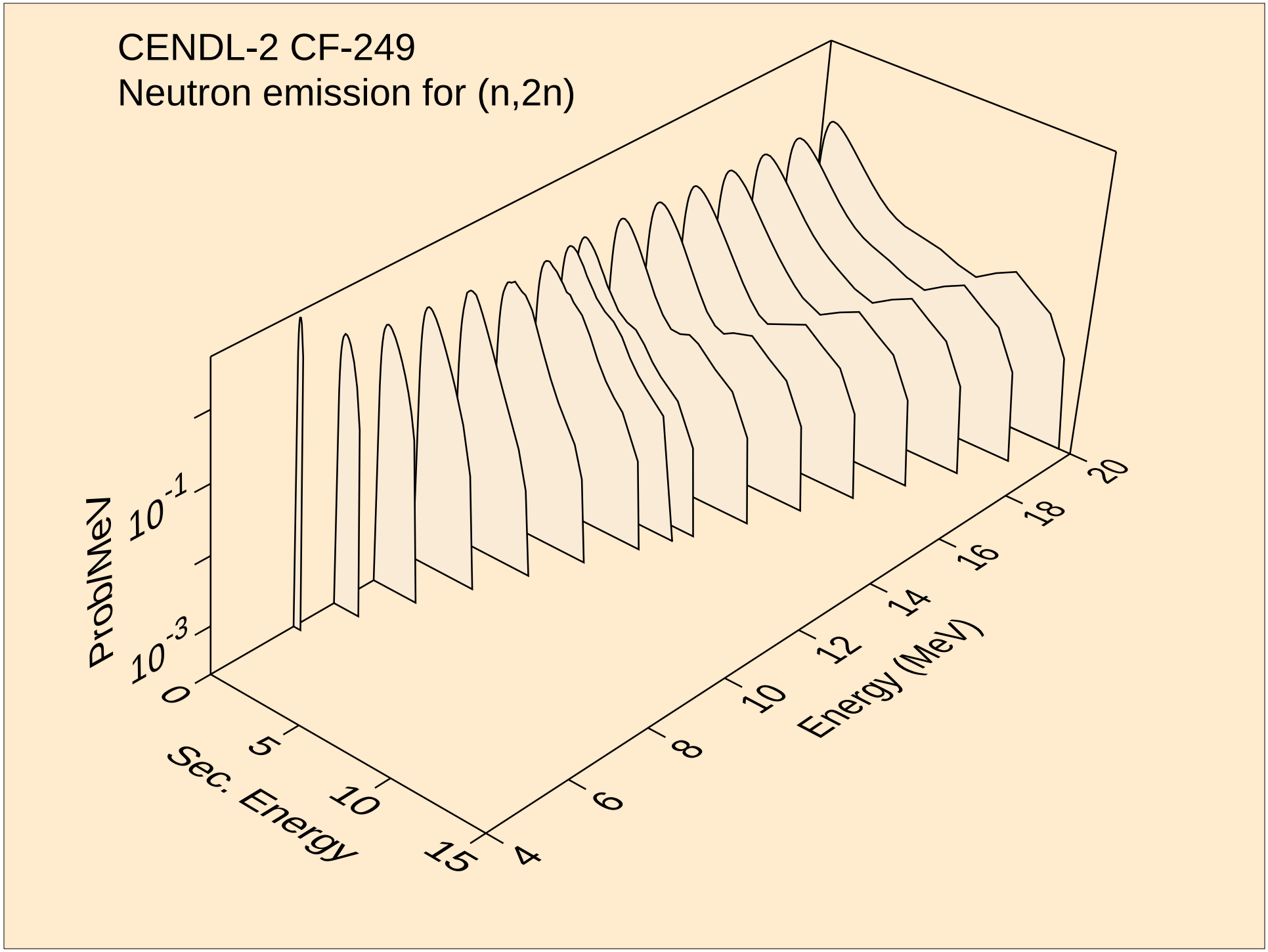

CENDL-2 CF-249
angular distribution for (n,n*13)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

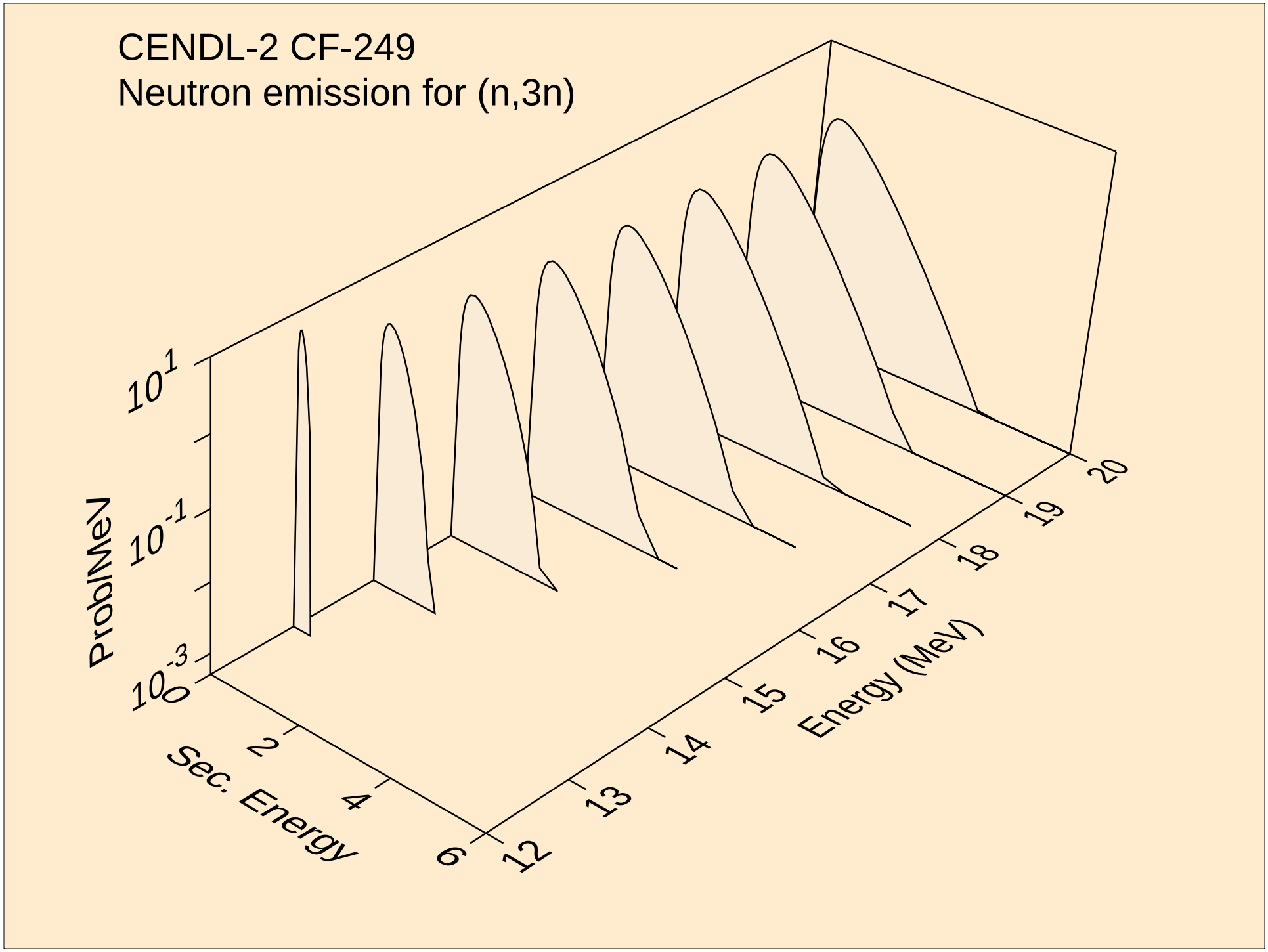

CENDL-2 CF-249
angular distribution for (n,n*14)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

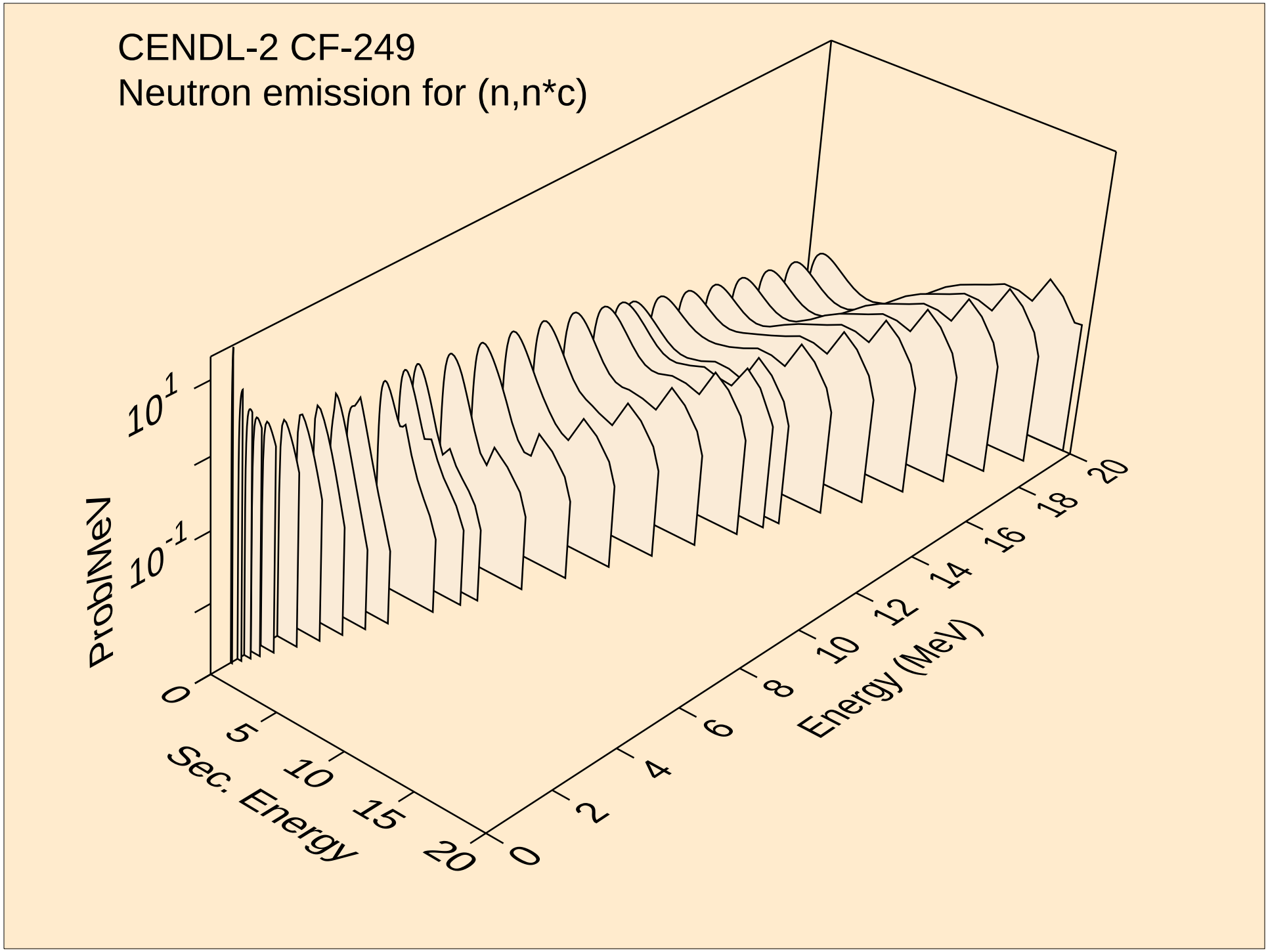

CENDL-2 CF-249
angular distribution for (n,n*15)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)

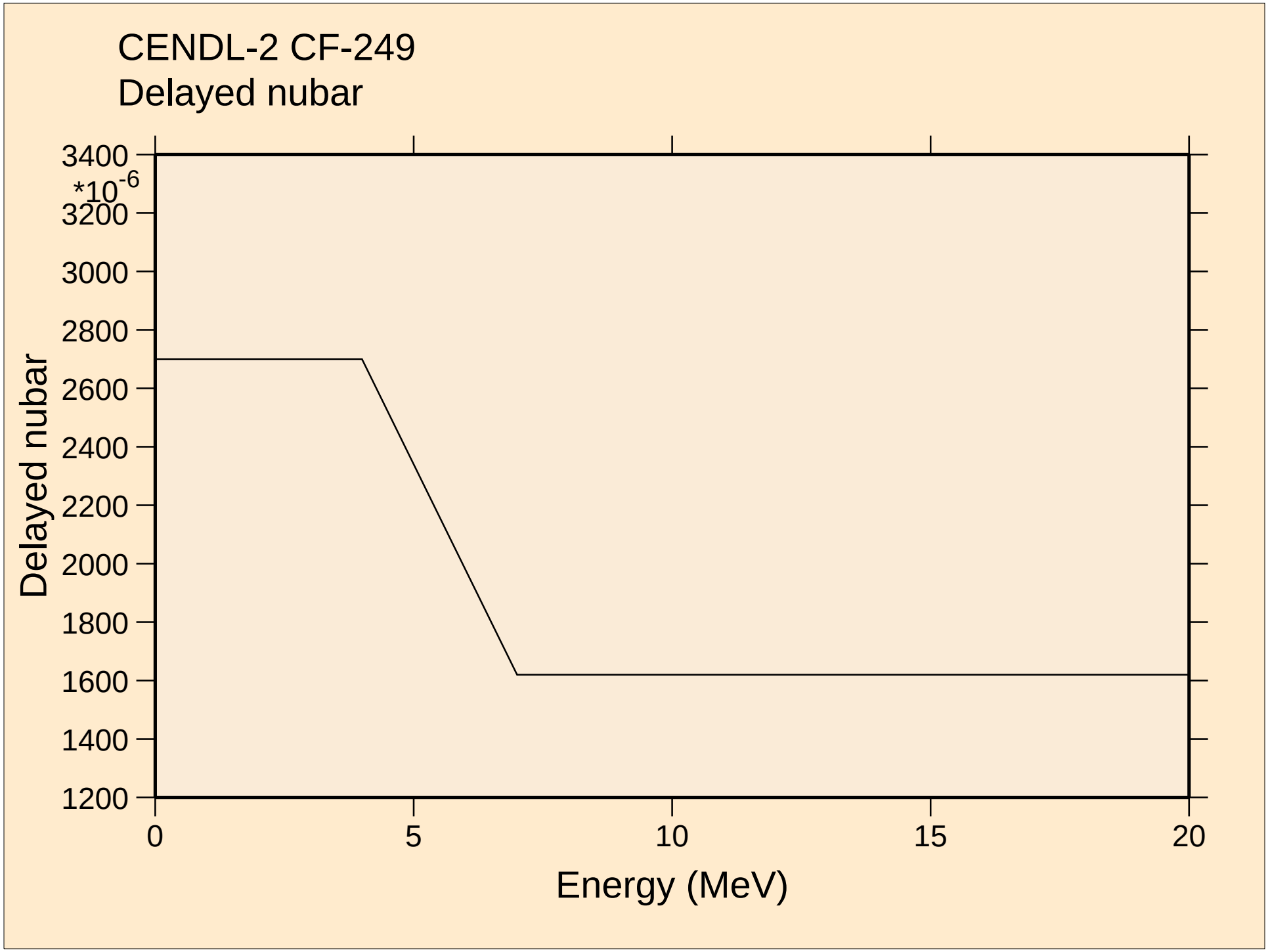

CENDL-2 CF-249
angular distribution for (n,n*c)
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

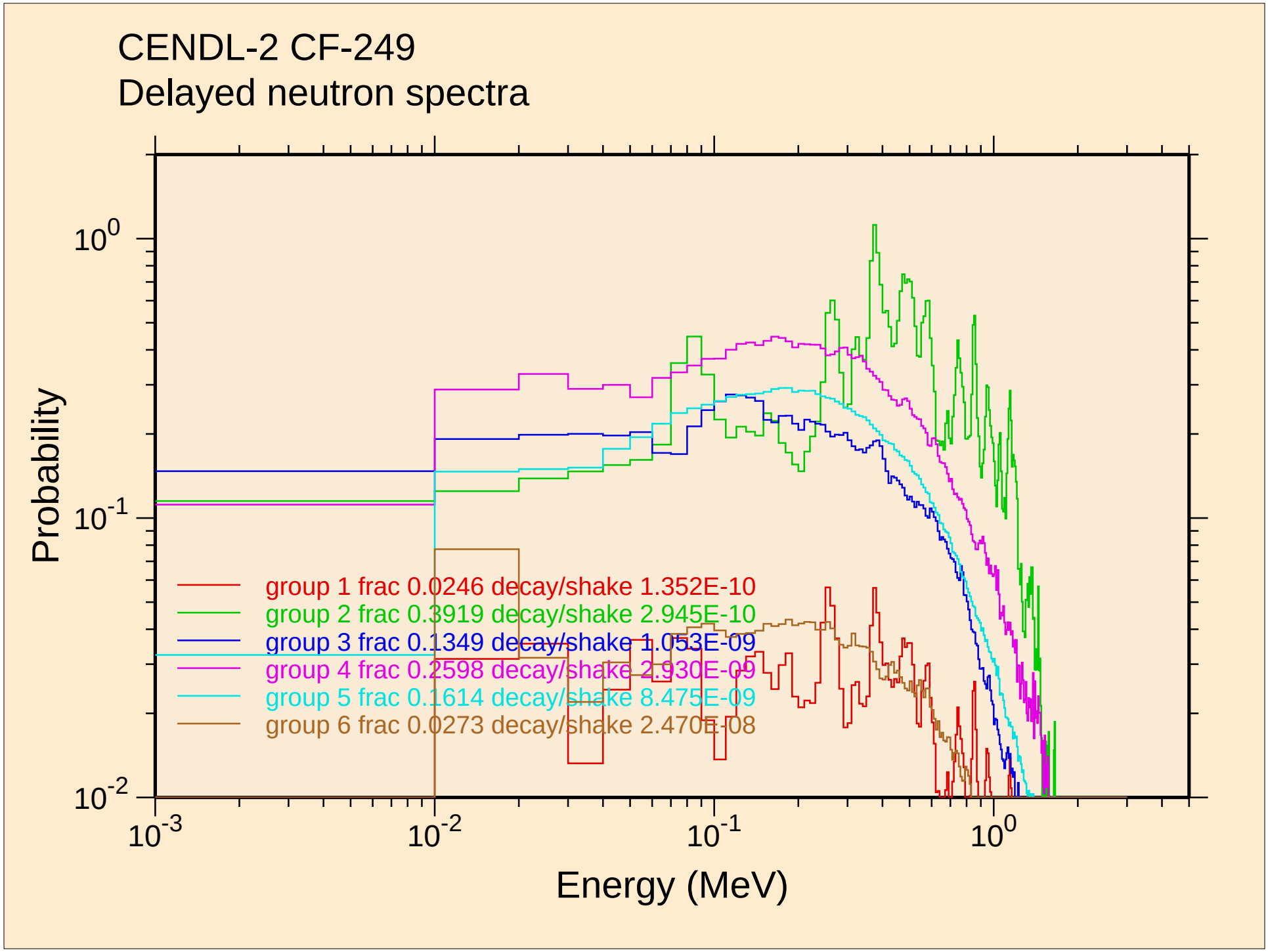

CENDL-2 CF-249
Total fission nubar
Fission nubar
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
0
5
10
15
20
Energy (MeV)


CENDL-2 CF-249
Neutron emission for (n,2n)
Prob/MeV
10^{-1}
10^{-3}
0
5
10
15
Sec. Energy
4
6
8
10
12
14
16
18
20
Energy (MeV)


CENDL-2 CF-249
Neutron emission for (n,3n)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
Sec. Energy
0
2
4
6
Energy (MeV)
12
13
14
15
16
17
18
19
20


CENDL-2 CF-249
Neutron emission for (n,n*c)
Prob/MeV
10^{1}
10^{-1}
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)


CENDL-2 CF-249
Delayed nubar
3400
*10-6
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
Delayed nubar
0
5
10
15
20
Energy (MeV)


CENDL-2 CF-249
Delayed neutron spectra
Probability
Energy (MeV)
10^0
10^{-1}
10^{-2}
10^{-3}
10^{-2}
10^{-1}
10^0
group 1 frac 0.0246 decay/shake 1.352E-10
group 2 frac 0.3919 decay/shake 2.945E-10
group 3 frac 0.1349 decay/shake 1.053E-09
group 4 frac 0.2598 decay/shake 2.930E-09
group 5 frac 0.1614 decay/shake 8.475E-09
group 6 frac 0.0273 decay/shake 2.470E-08