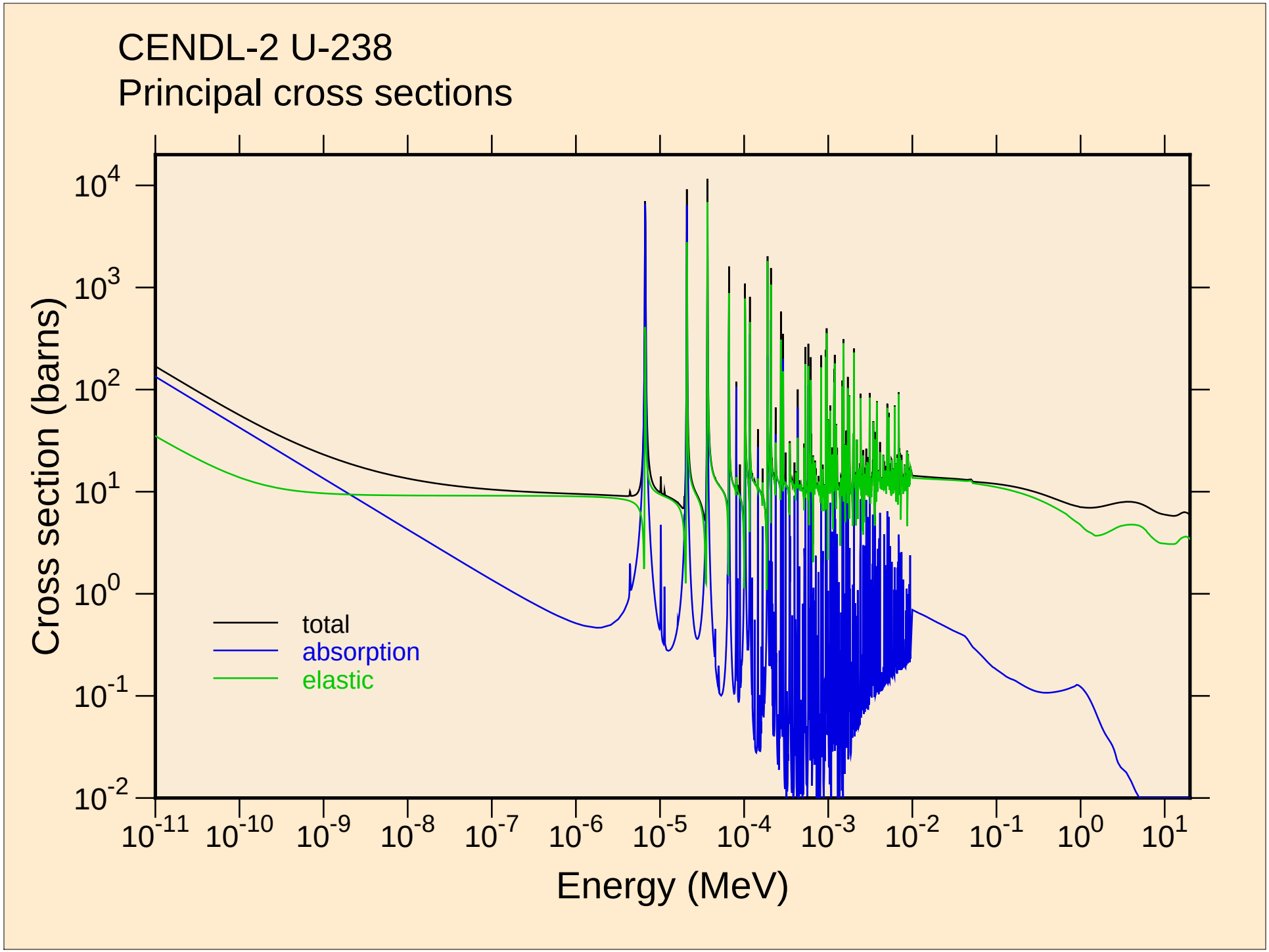
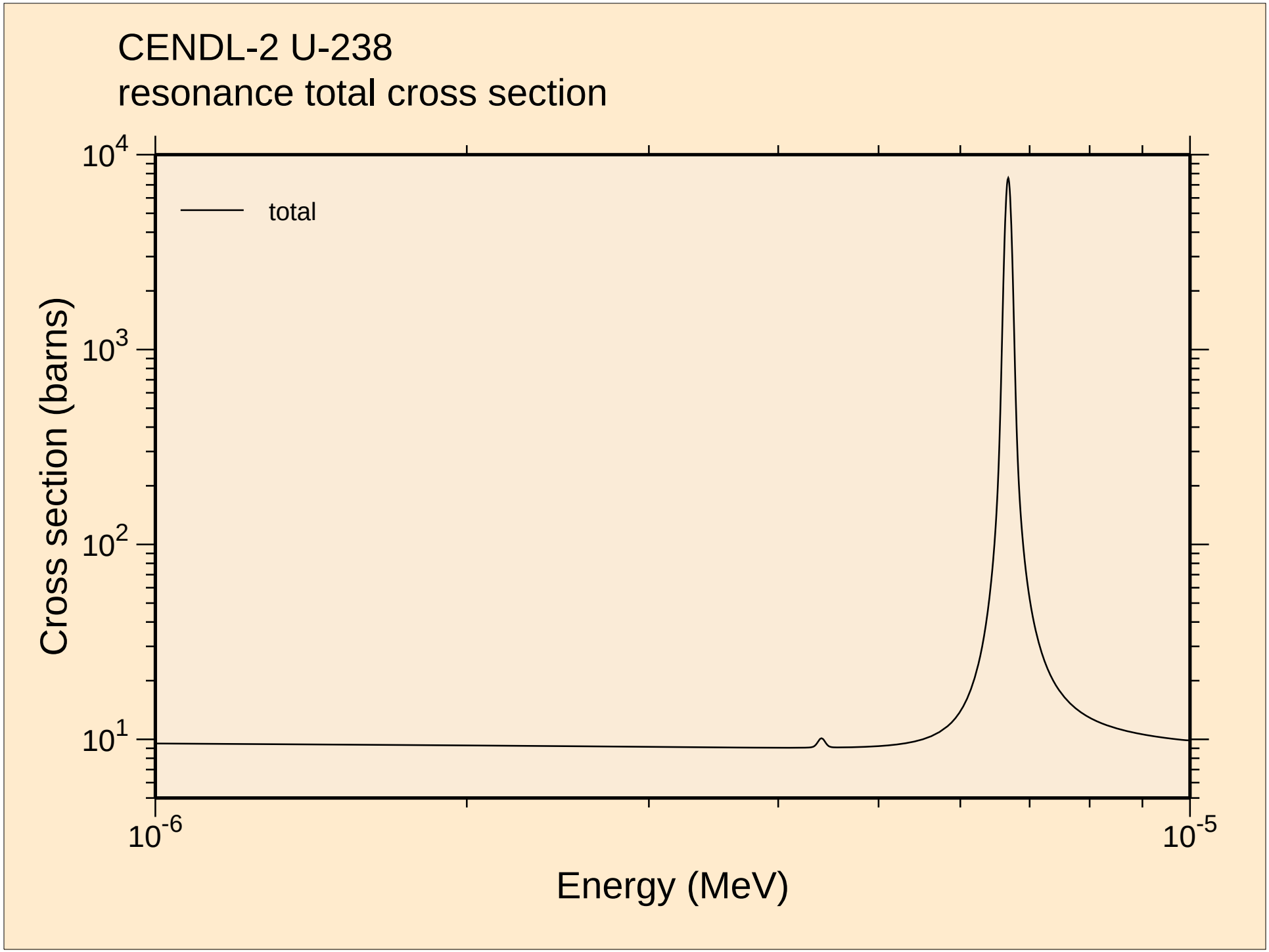
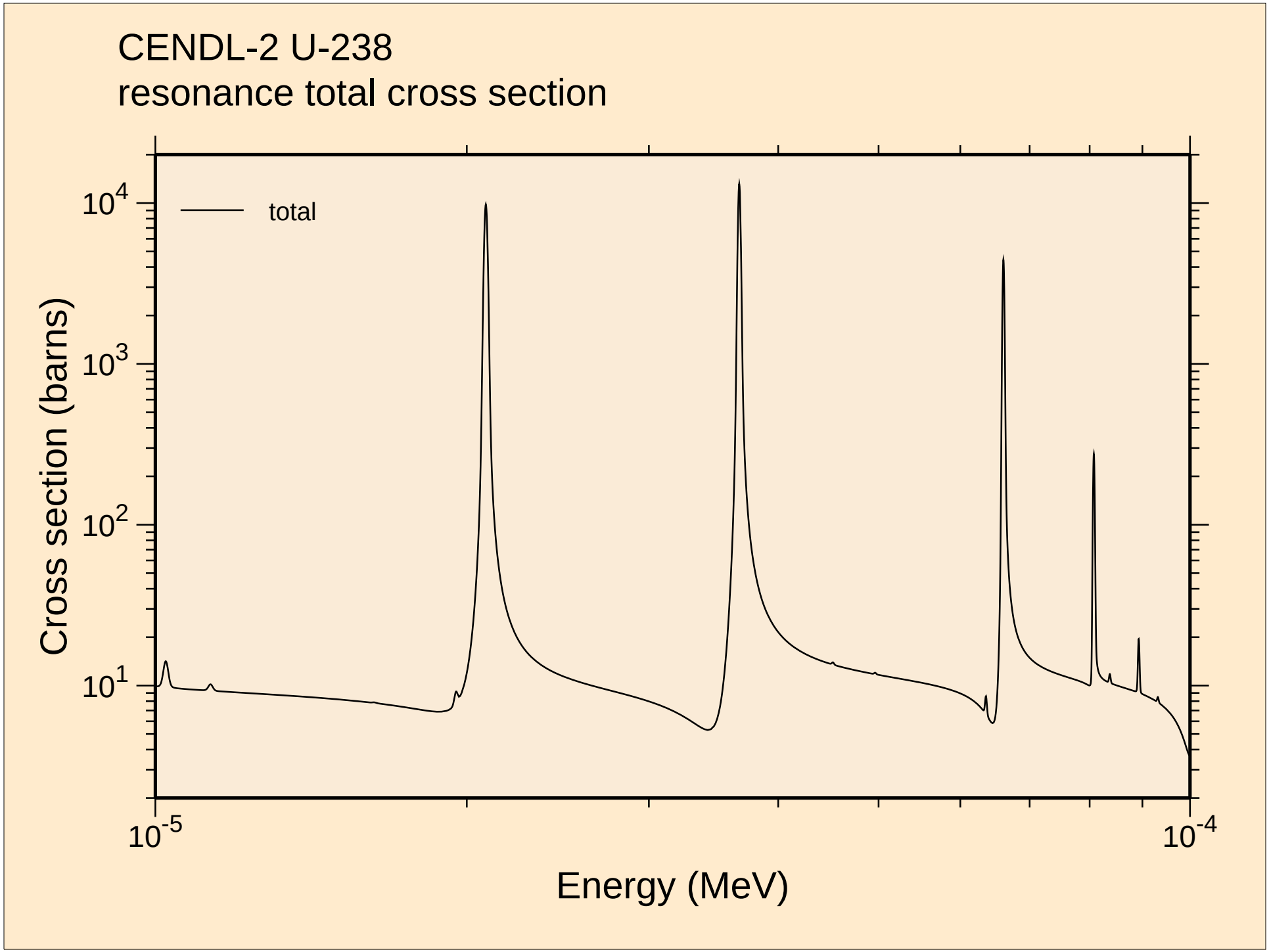
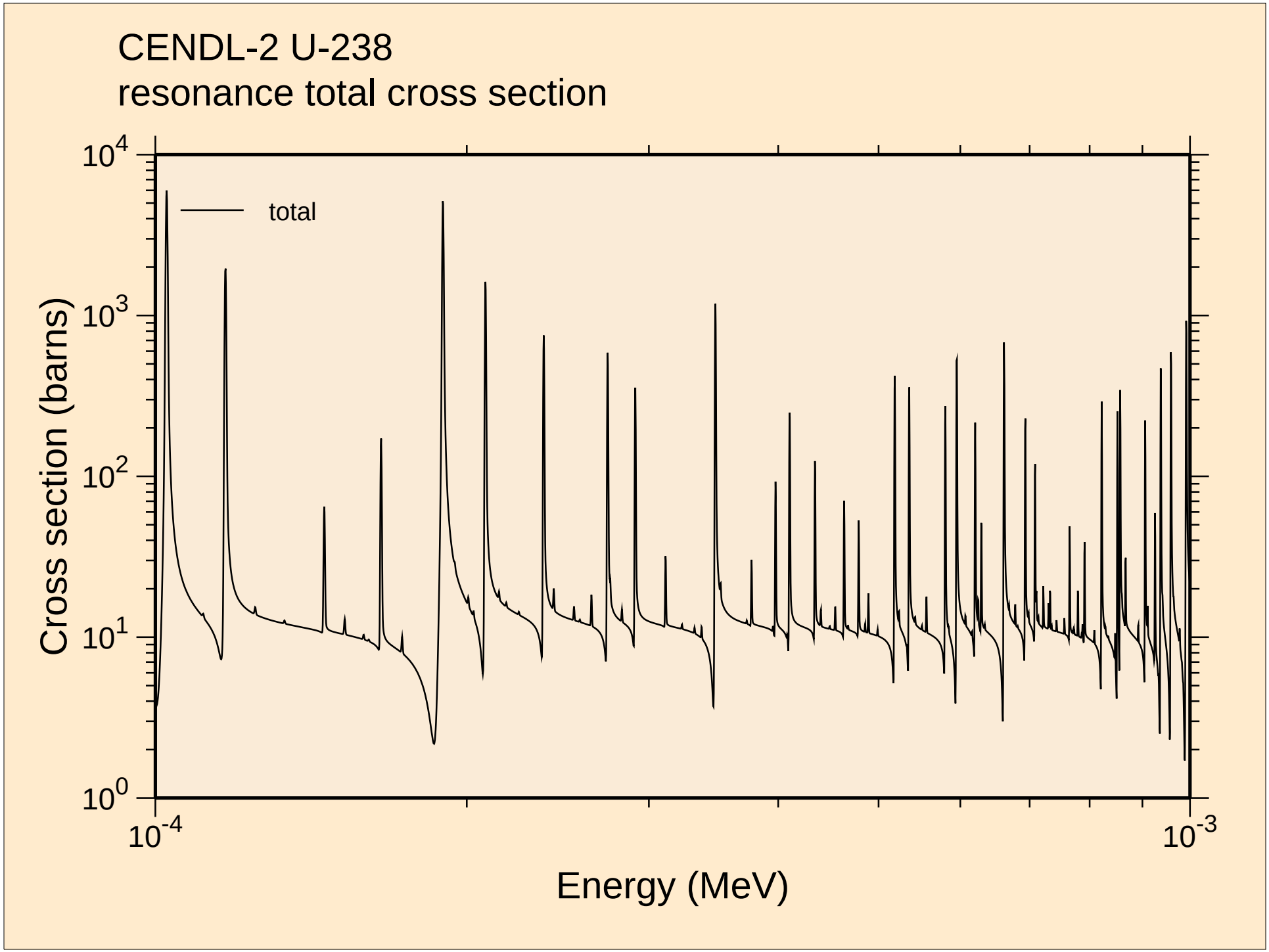
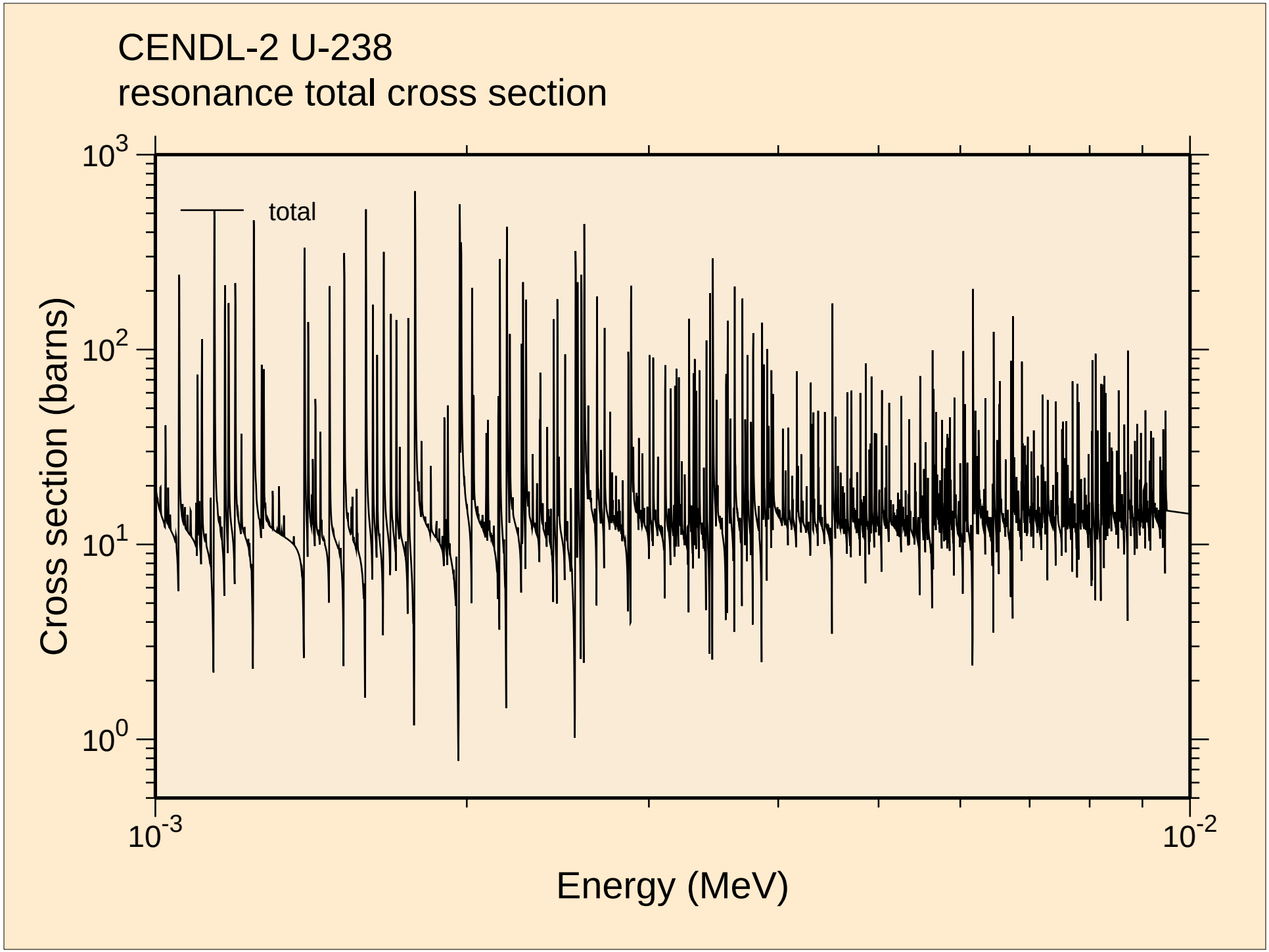
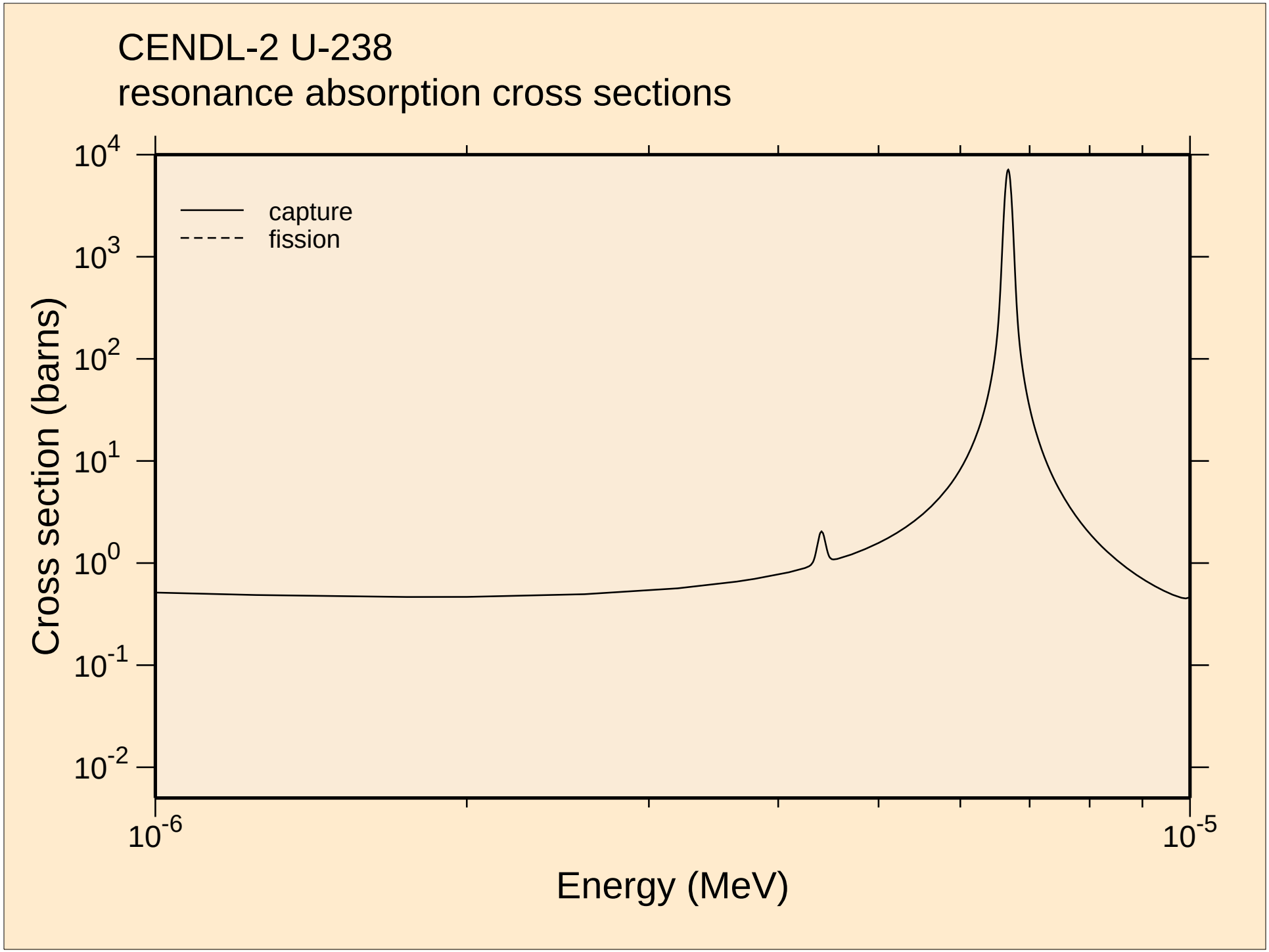

CENDL-2 U-238
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-11
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

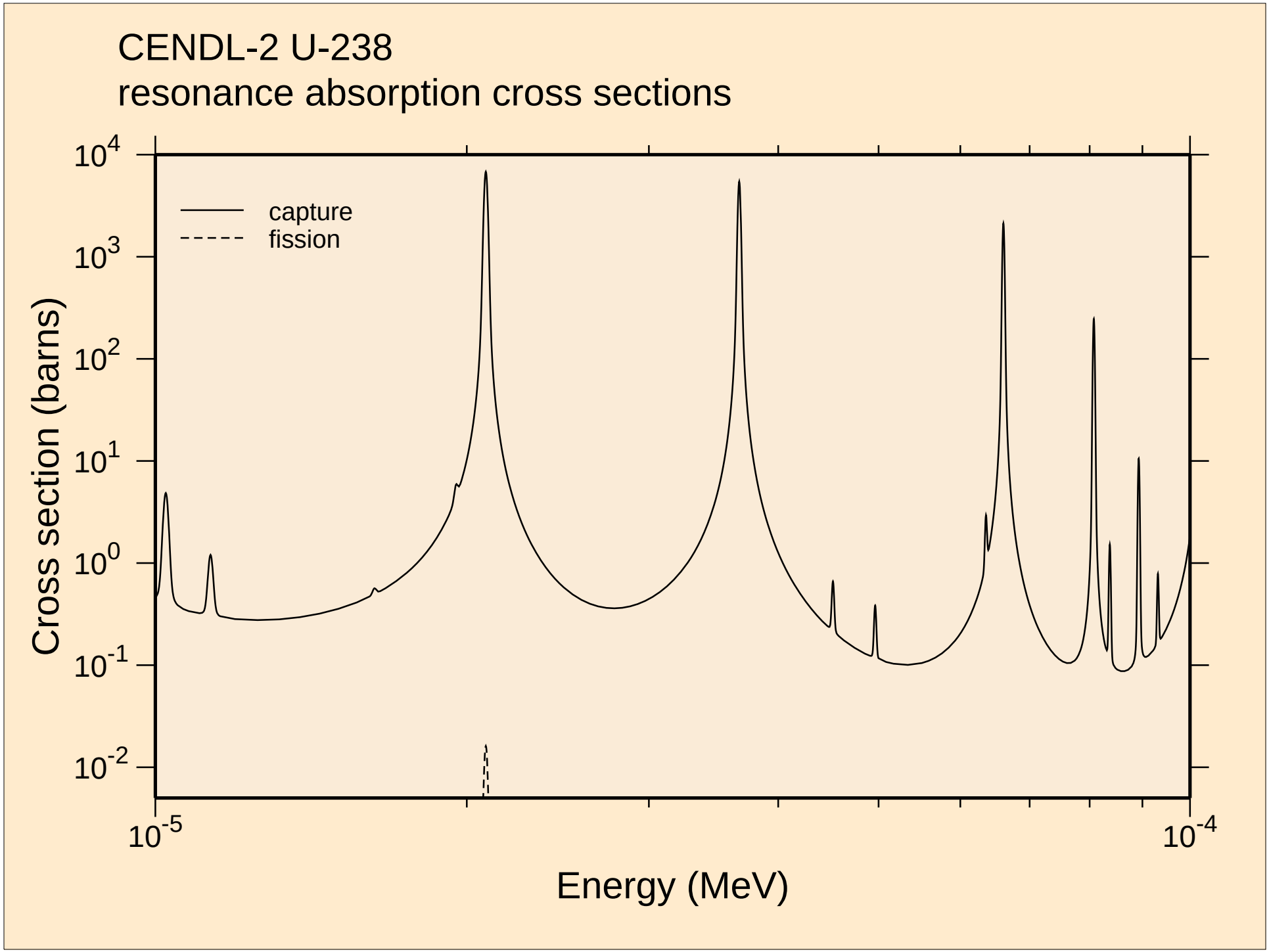

CENDL-2 U-238
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^{-6}
10^{-5}
Energy (MeV)

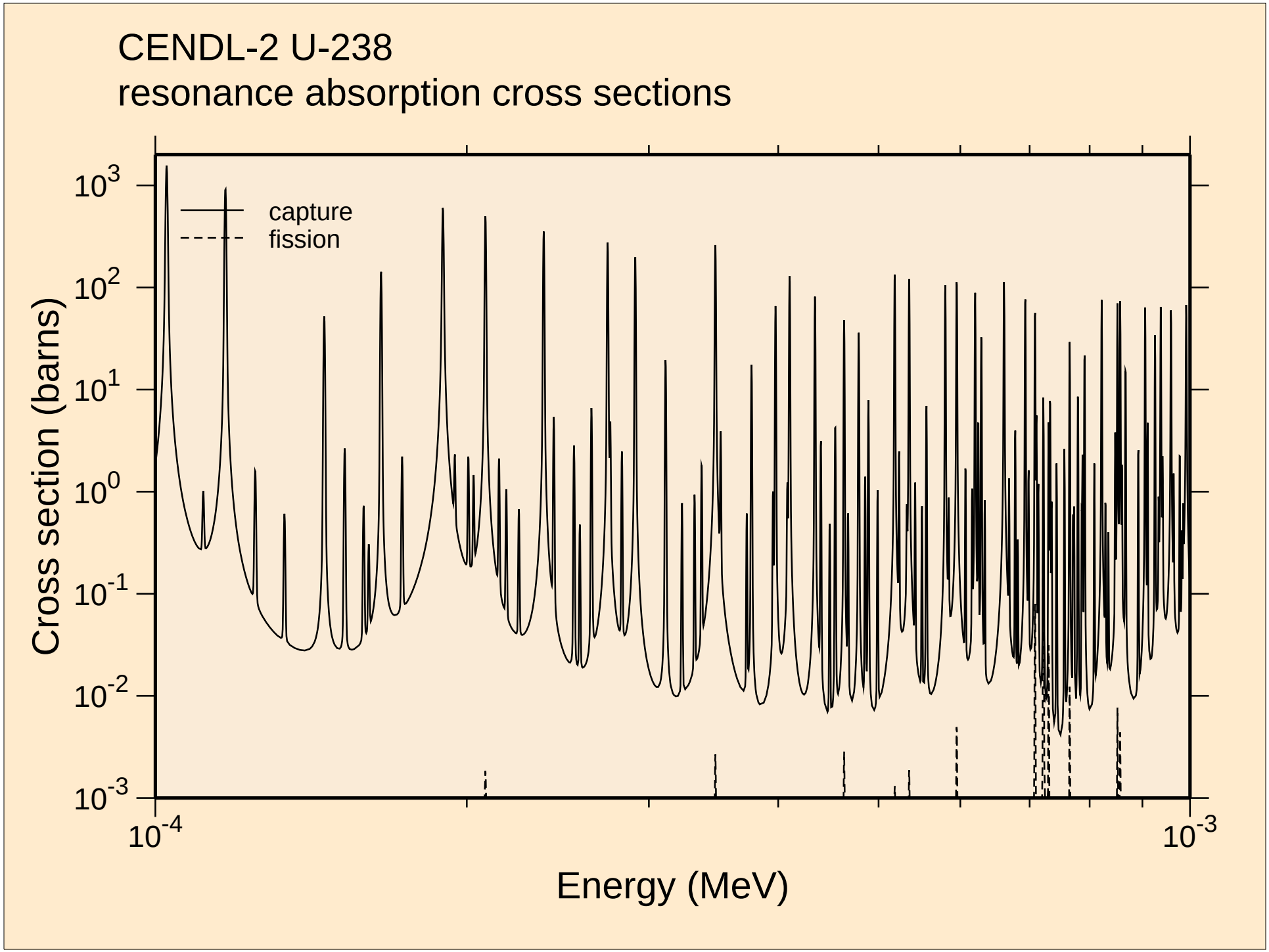

CENDL-2 U-238
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^{-5}
10^{-4}
Energy (MeV)

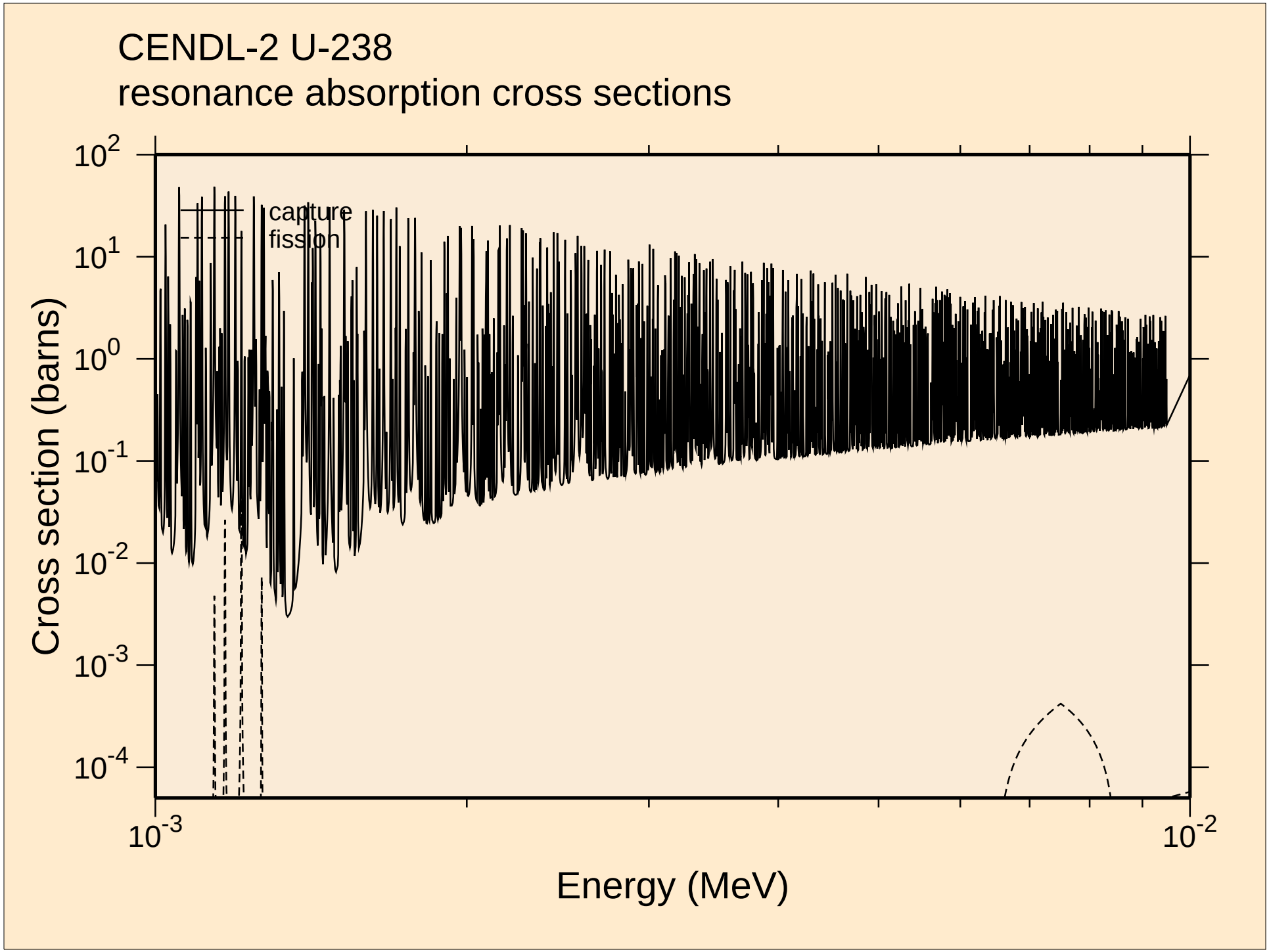

CENDL-2 U-238
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^{-4}
10^{-3}
Energy (MeV)

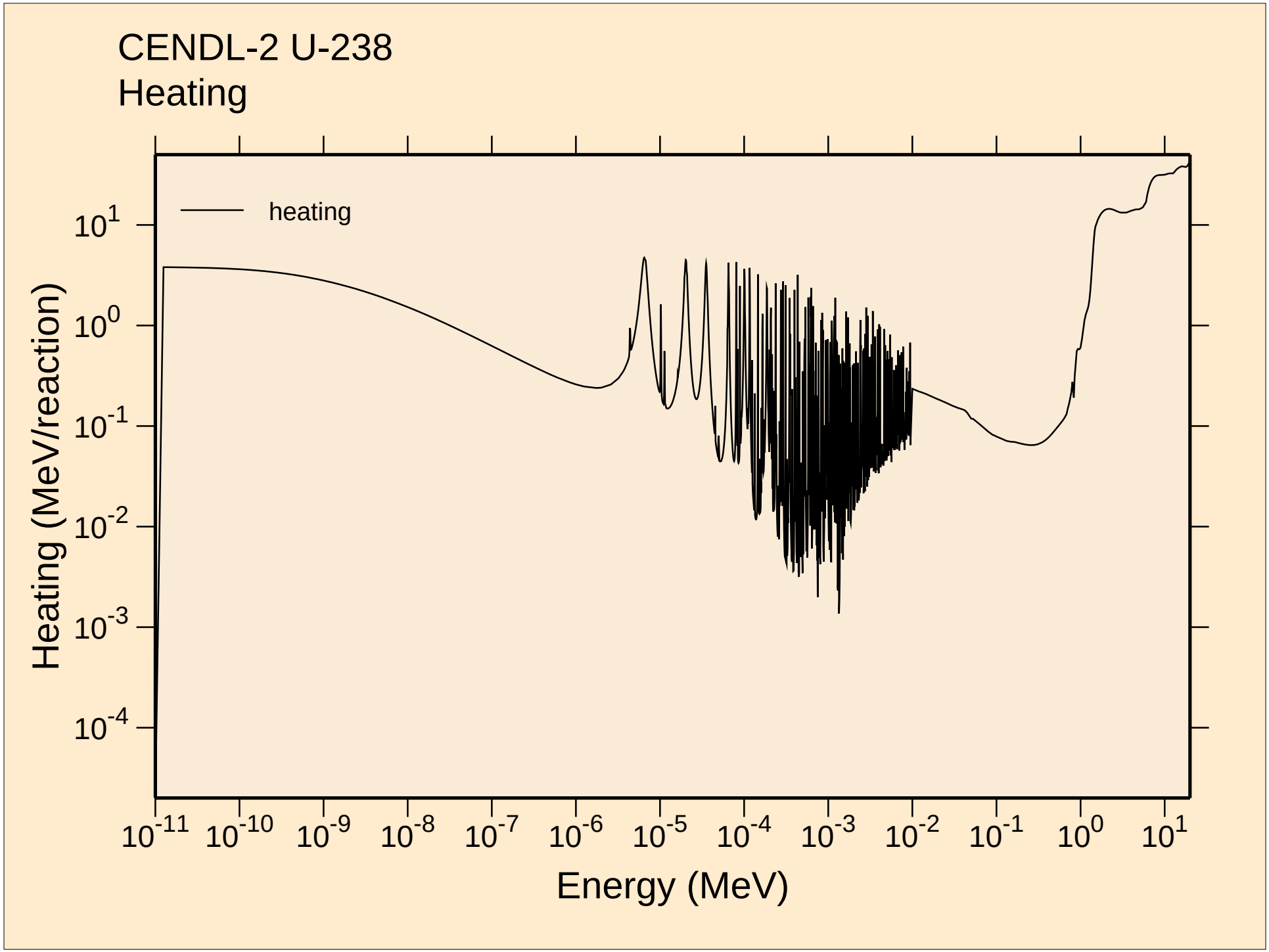

CENDL-2 U-238
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^{-3}
10^{-2}
Energy (MeV)

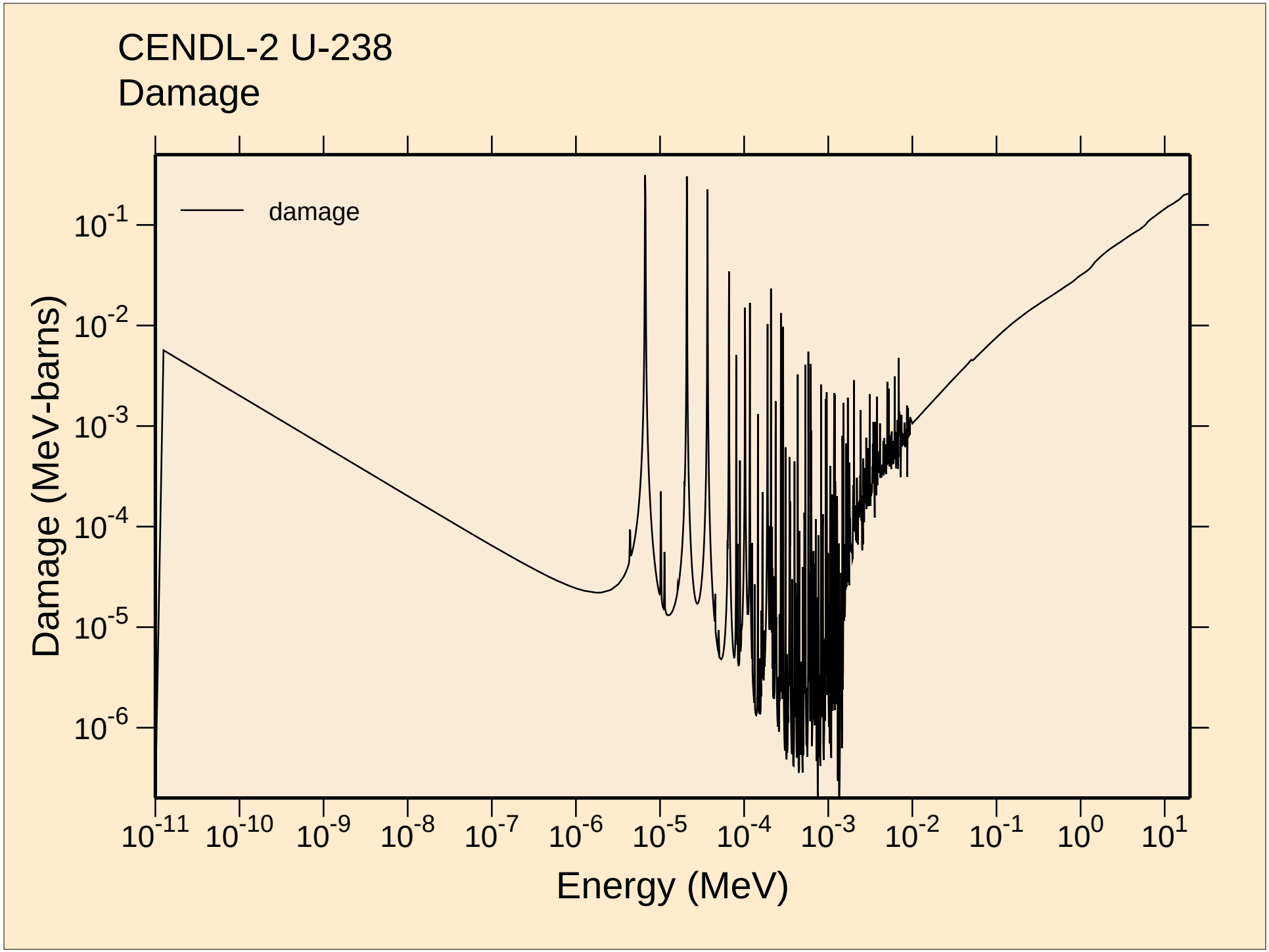

CENDL-2 U-238
resonance absorption cross sections
capture
fission
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-6
10^-5
Energy (MeV)

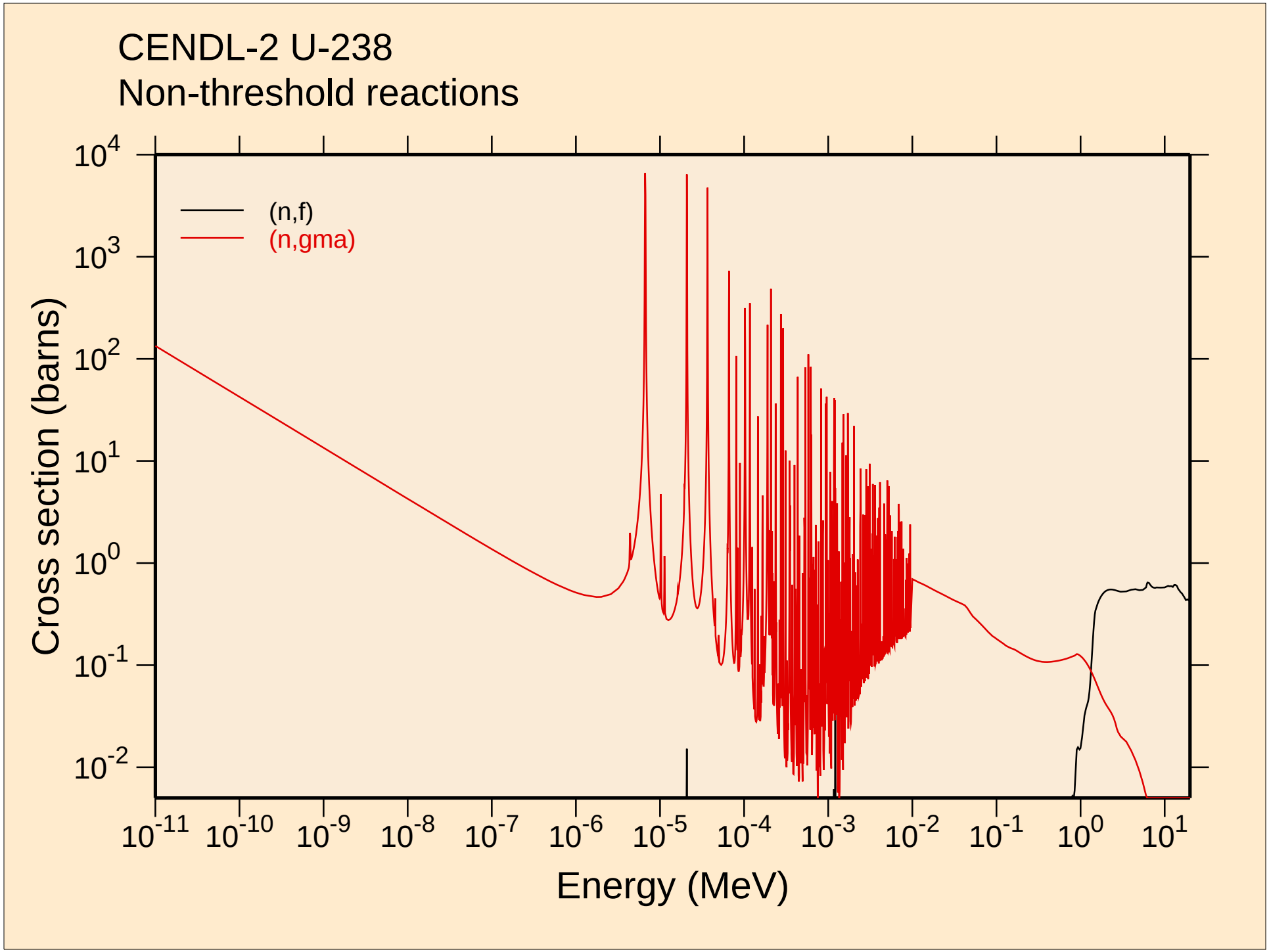

CENDL-2 U-238
resonance absorption cross sections
capture
fission
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-5
10^-4
Energy (MeV)

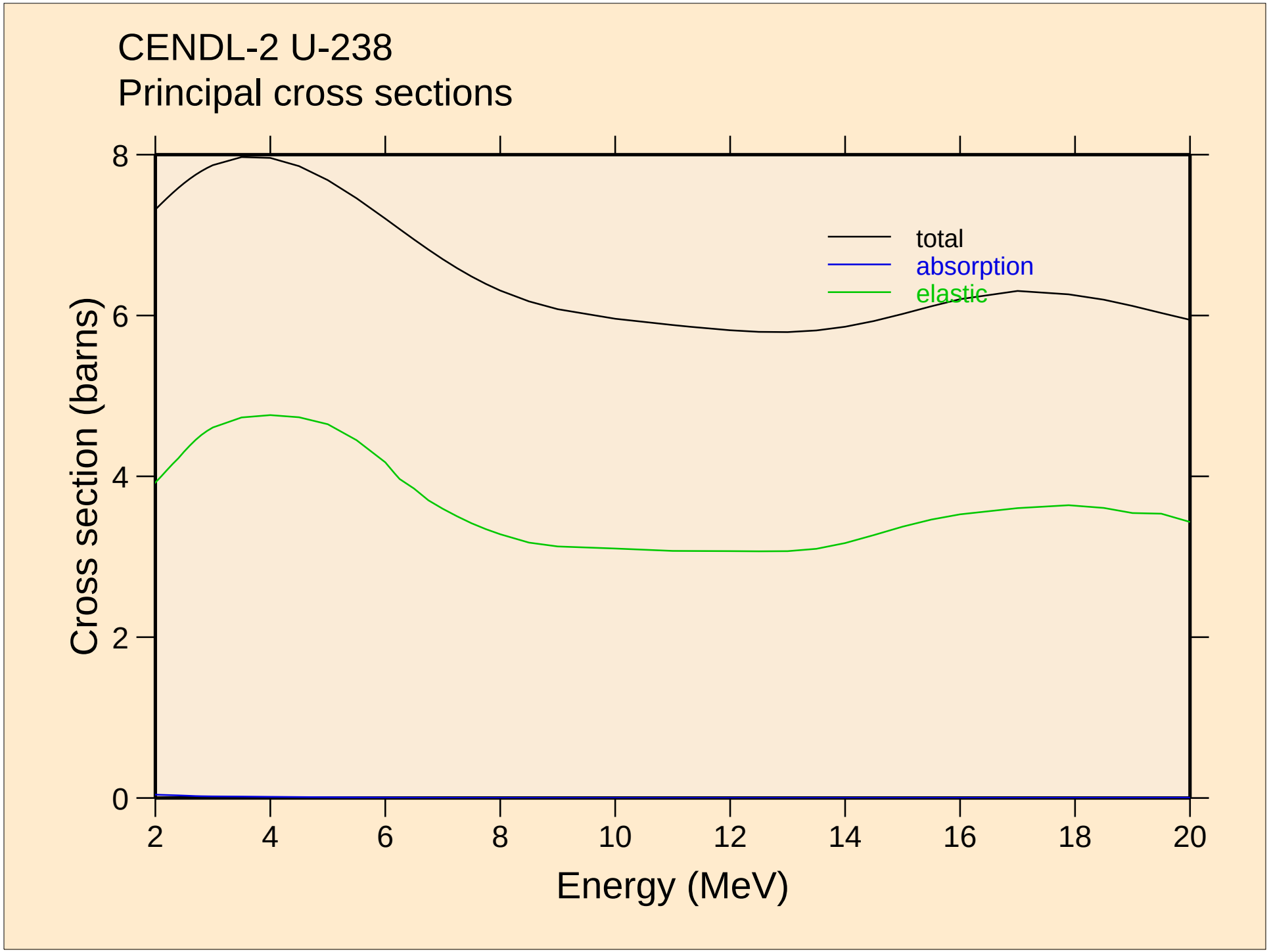

CENDL-2 U-238
resonance absorption cross sections
capture
fission
Cross section (barns)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-3}
Energy (MeV)

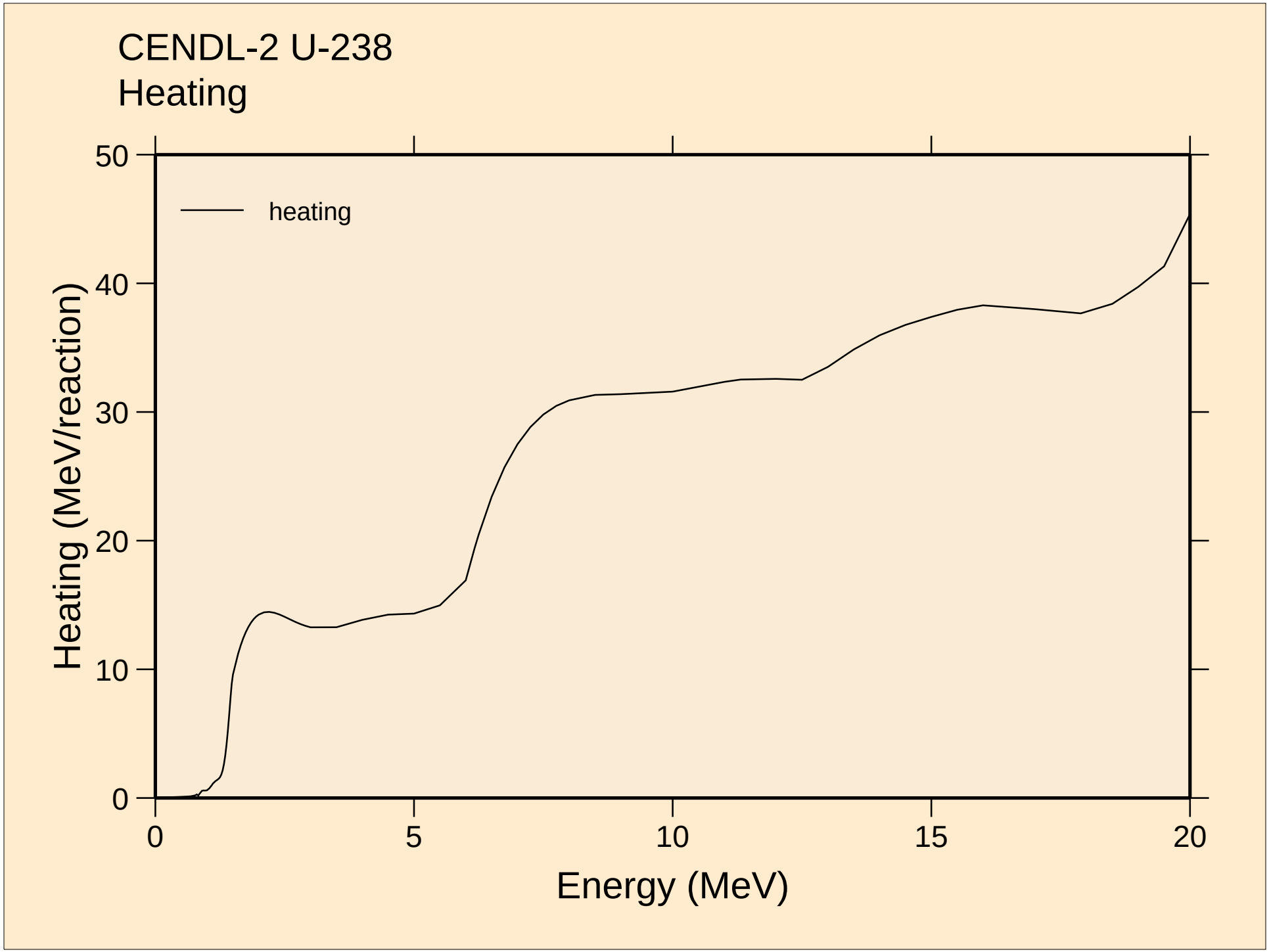

CENDL-2 U-238
resonance absorption cross sections
capture
fission
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-3}
10^{-2}
Energy (MeV)

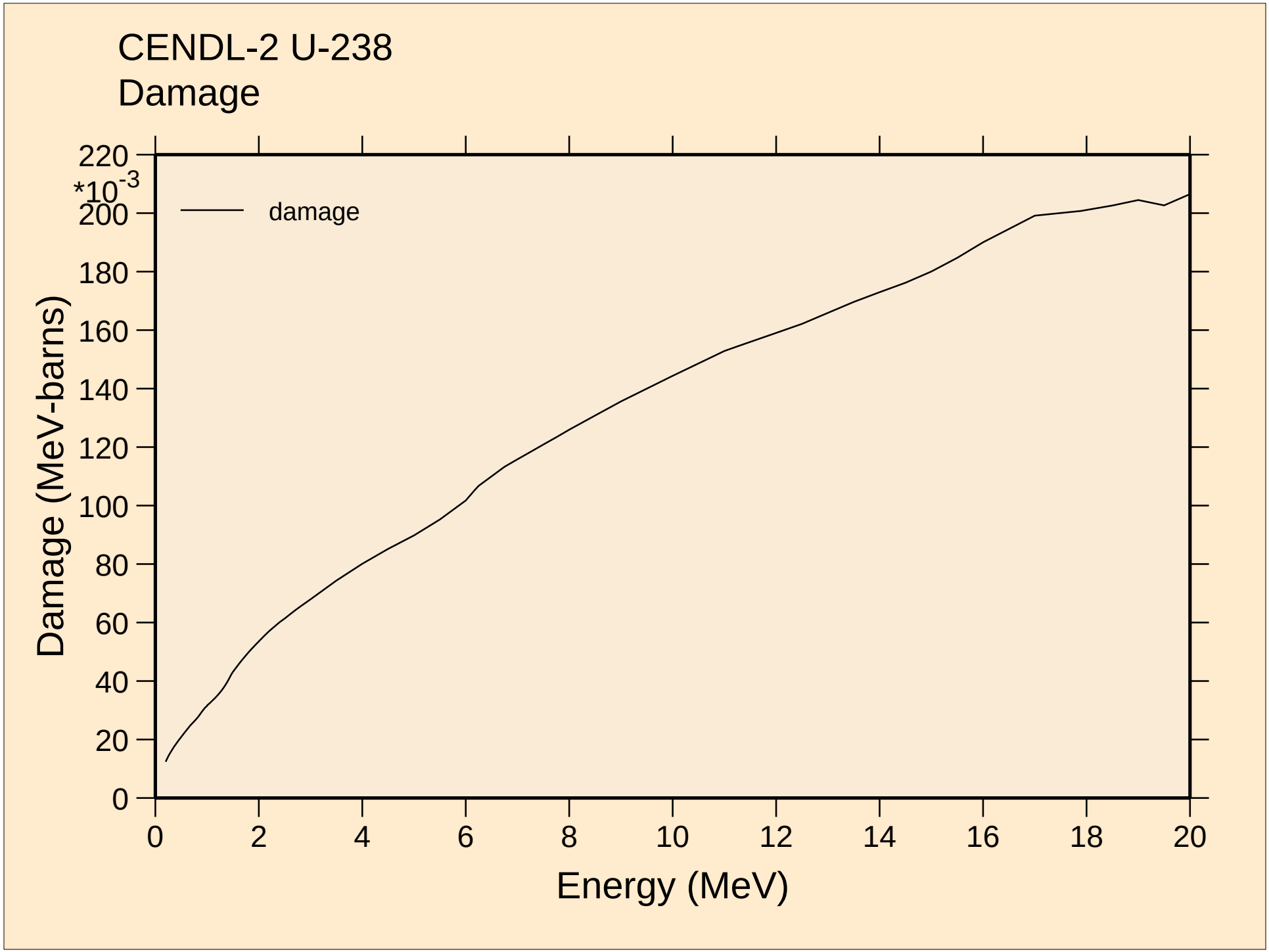

CENDL-2 U-238
Heating
heating
Heating (MeV/reaction)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}
Energy (MeV)

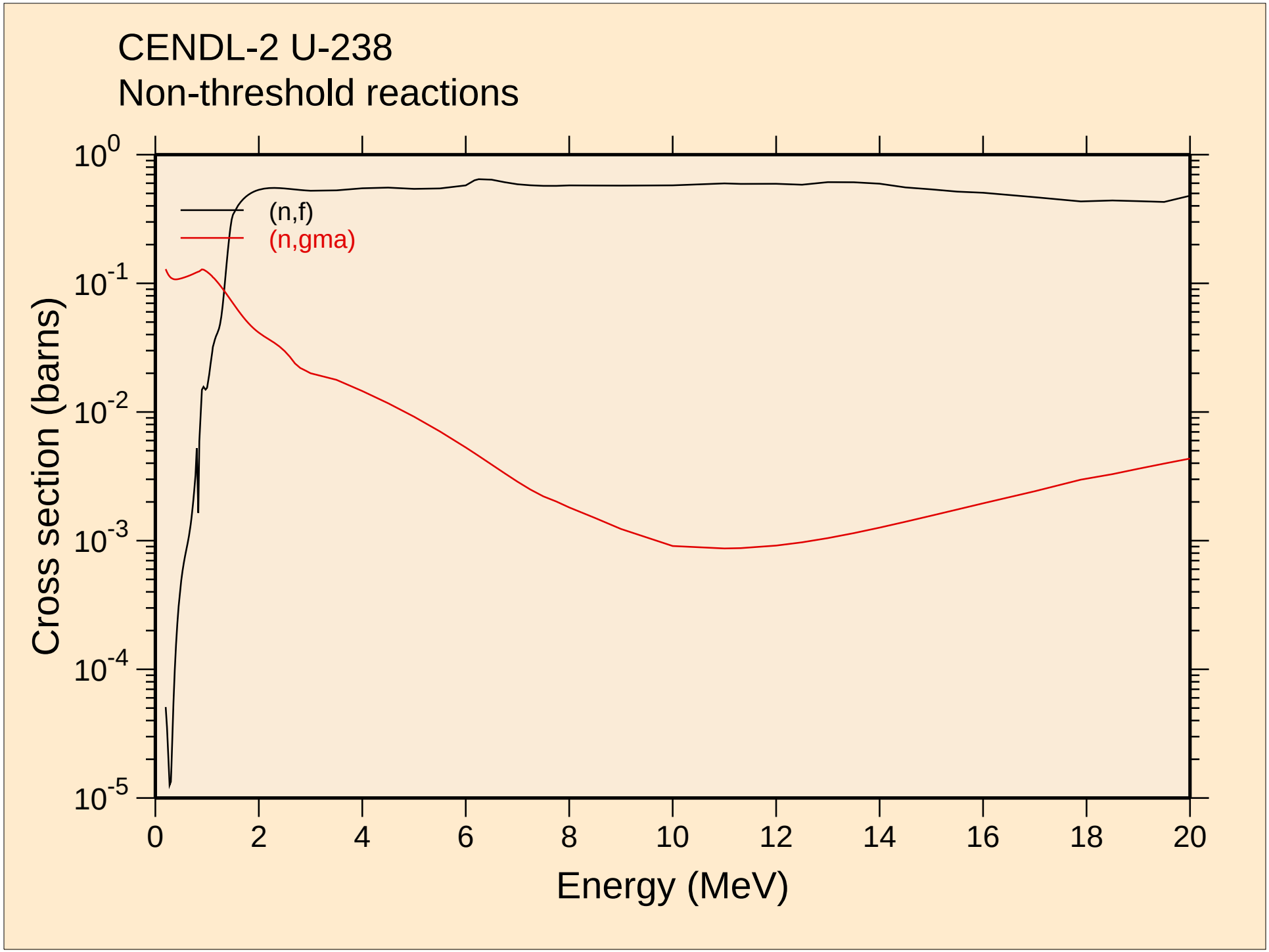

CENDL-2 U-238
Damage
damage
Damage (MeV-barns)
10-1
10-2
10-3
10-4
10-5
10-6
10-11 10-10 10-9 10-8 10-7 10-6 10-5 10-4 10-3 10-2 10-1 100 101
Energy (MeV)

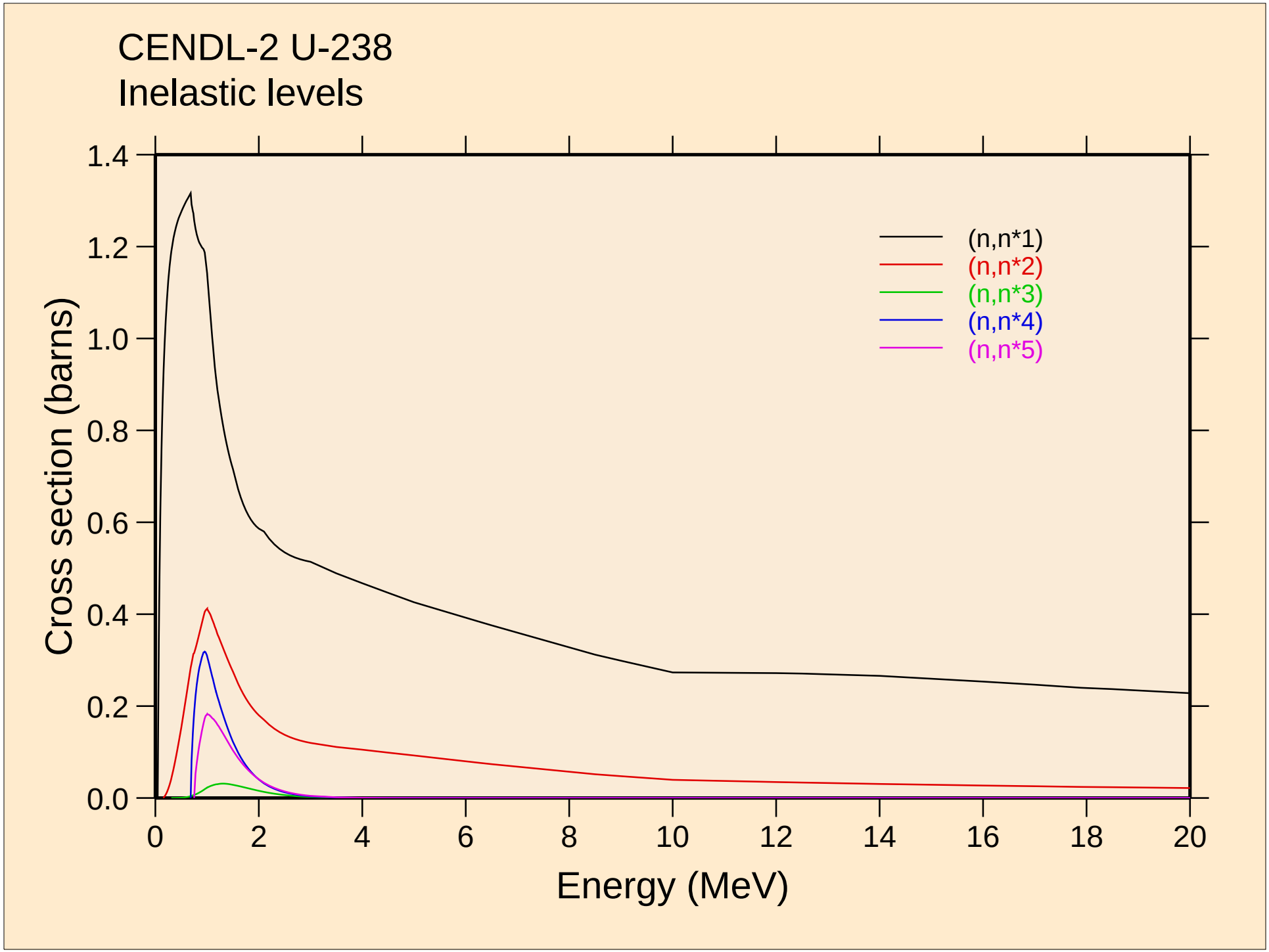

CENDL-2 U-238
Non-threshold reactions
(n,f)
(n,gma)
Cross section (barns)
Energy (MeV)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-11
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

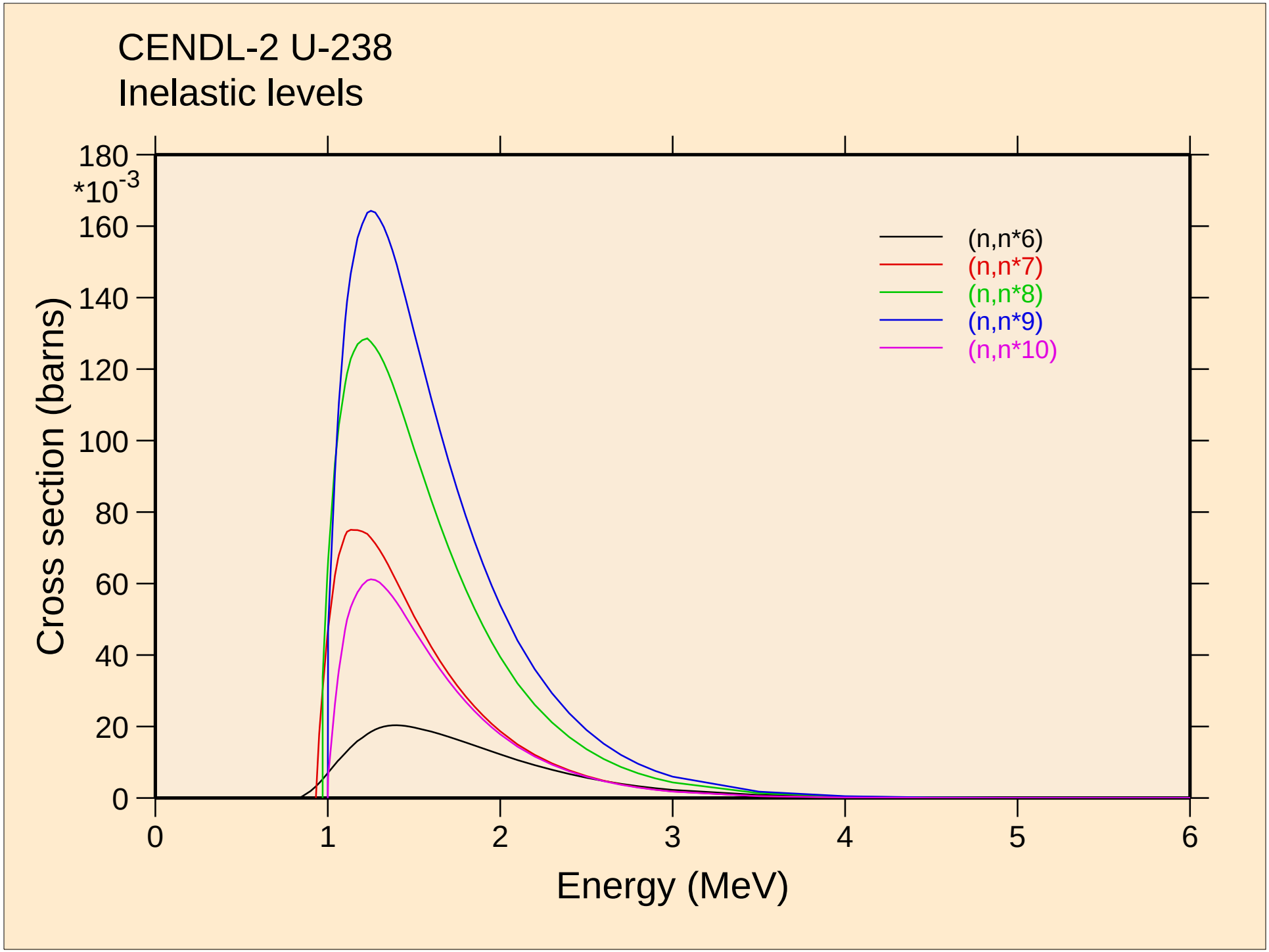

CENDL-2 U-238
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
0
2
4
6
8
2
4
6
8
10
12
14
16
18
20

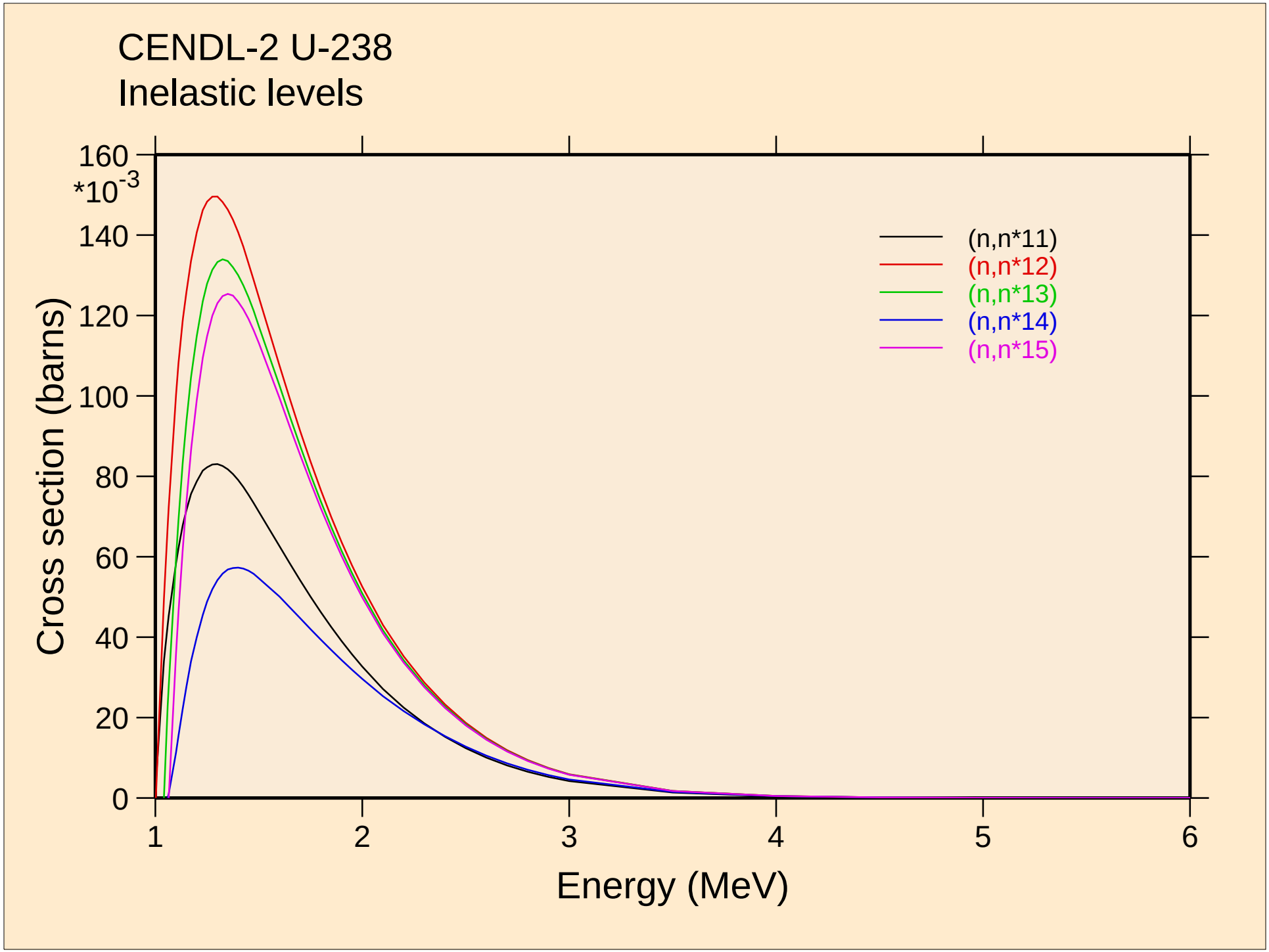

CENDL-2 U-238
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
10
20
30
40
50
0
5
10
15
20

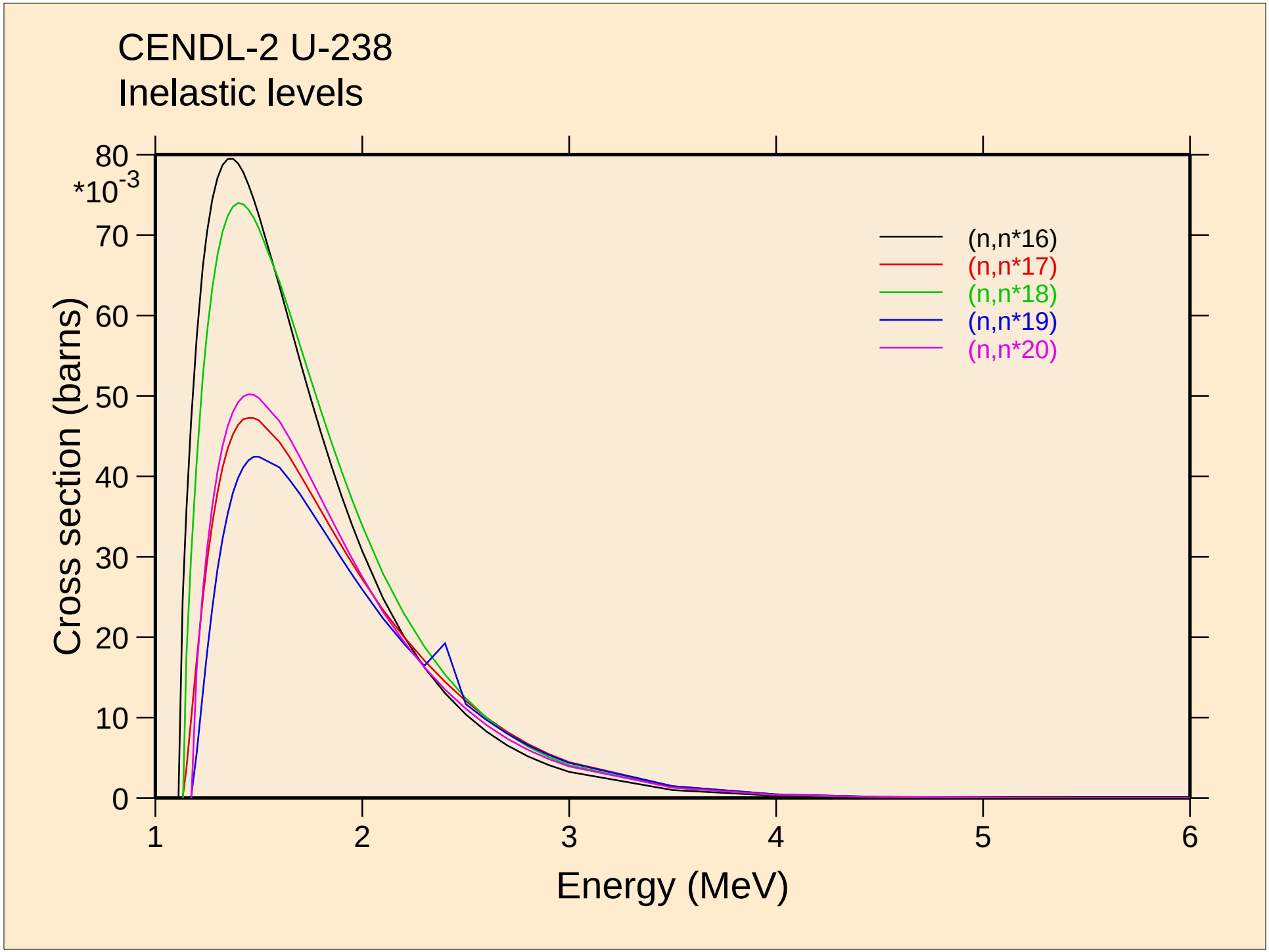

CENDL-2 U-238
Damage
*10-3
damage
Damage (MeV-barns)
220
200
180
160
140
120
100
80
60
40
20
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

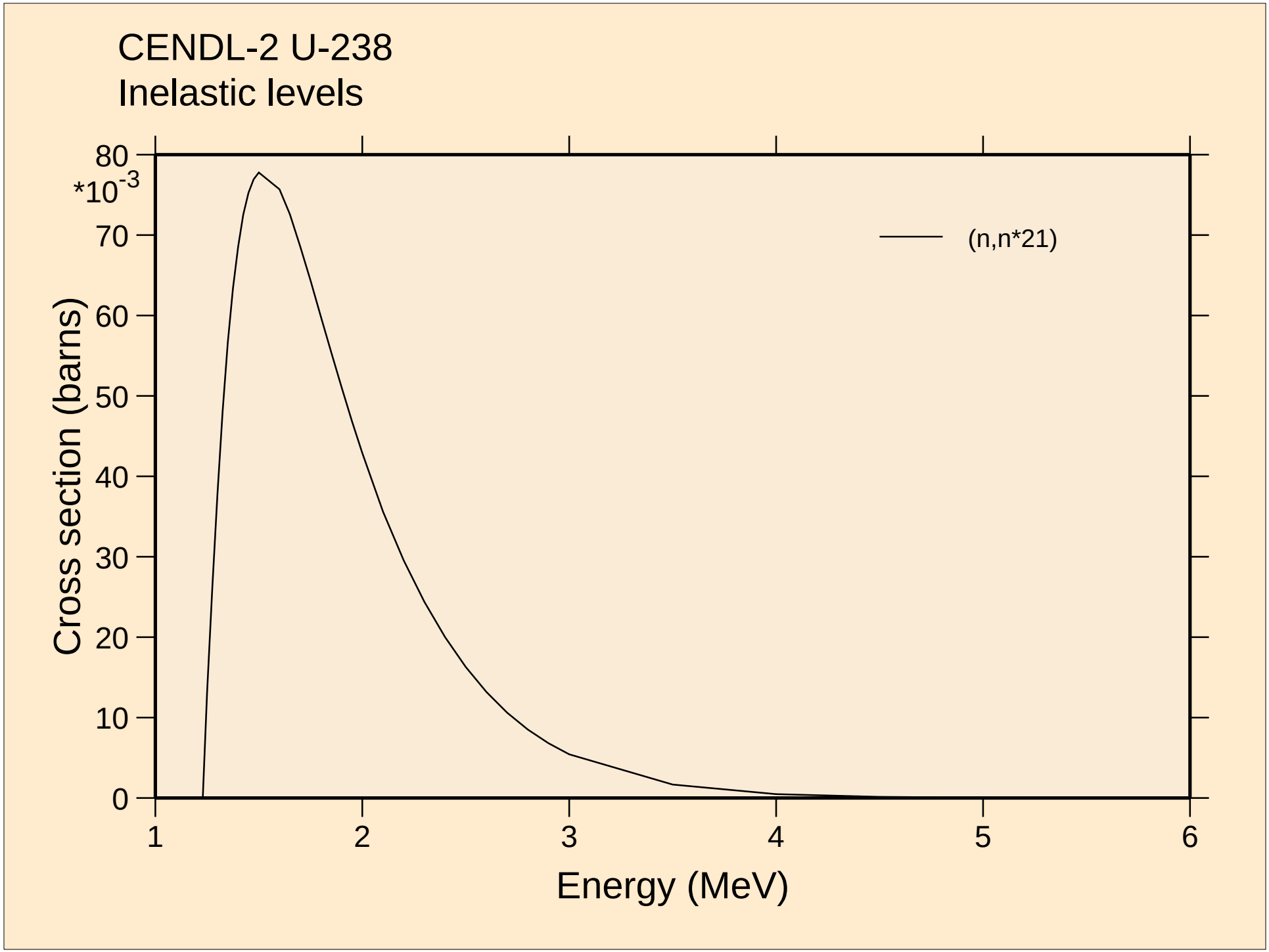

CENDL-2 U-238
Non-threshold reactions
(n,f)
(n,gma)
Cross section (barns)
Energy (MeV)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
0
2
4
6
8
10
12
14
16
18
20

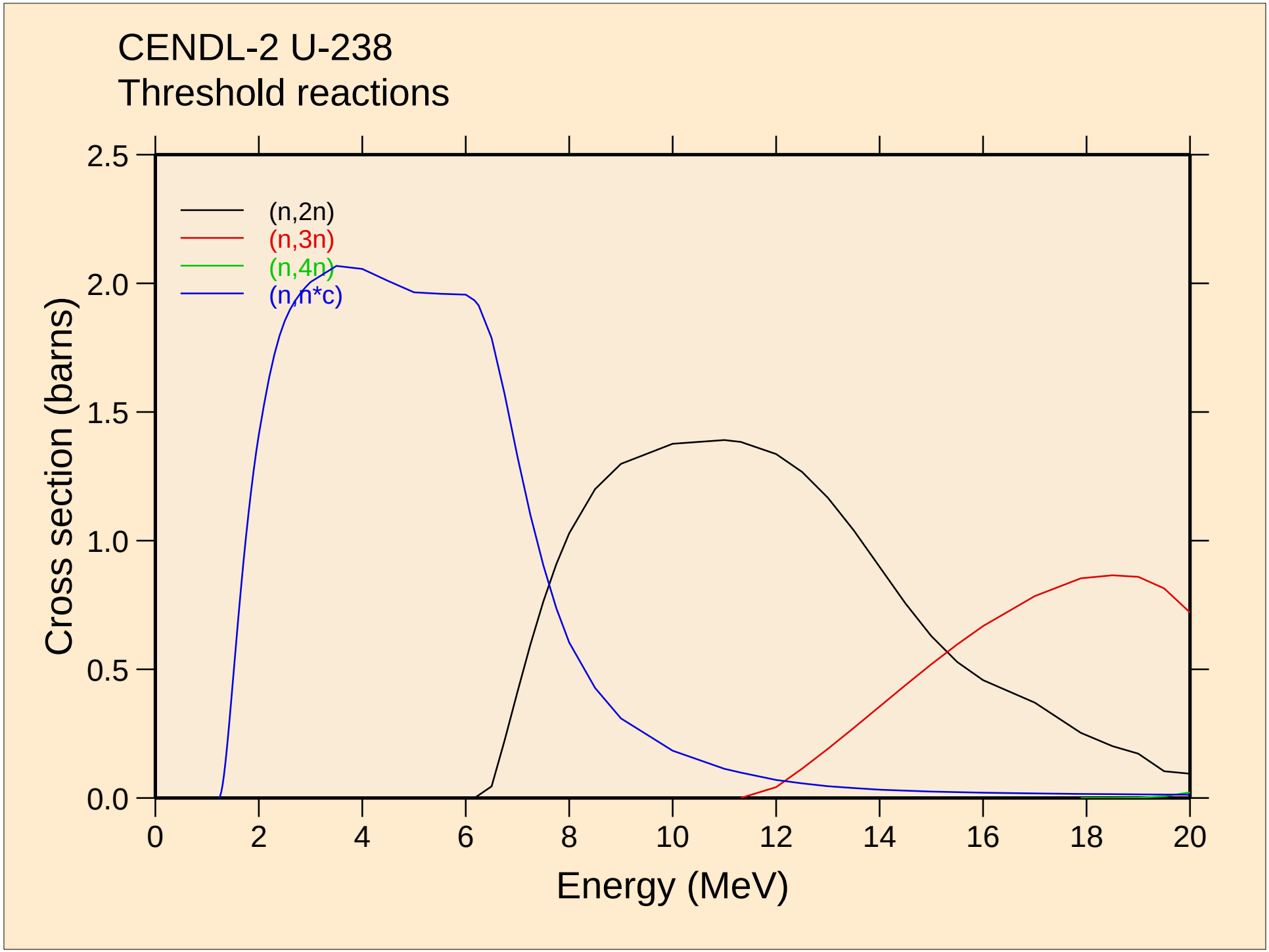

CENDL-2 U-238
Inelastic levels
Cross section (barns)
Energy (MeV)
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0
2
4
6
8
10
12
14
16
18
20

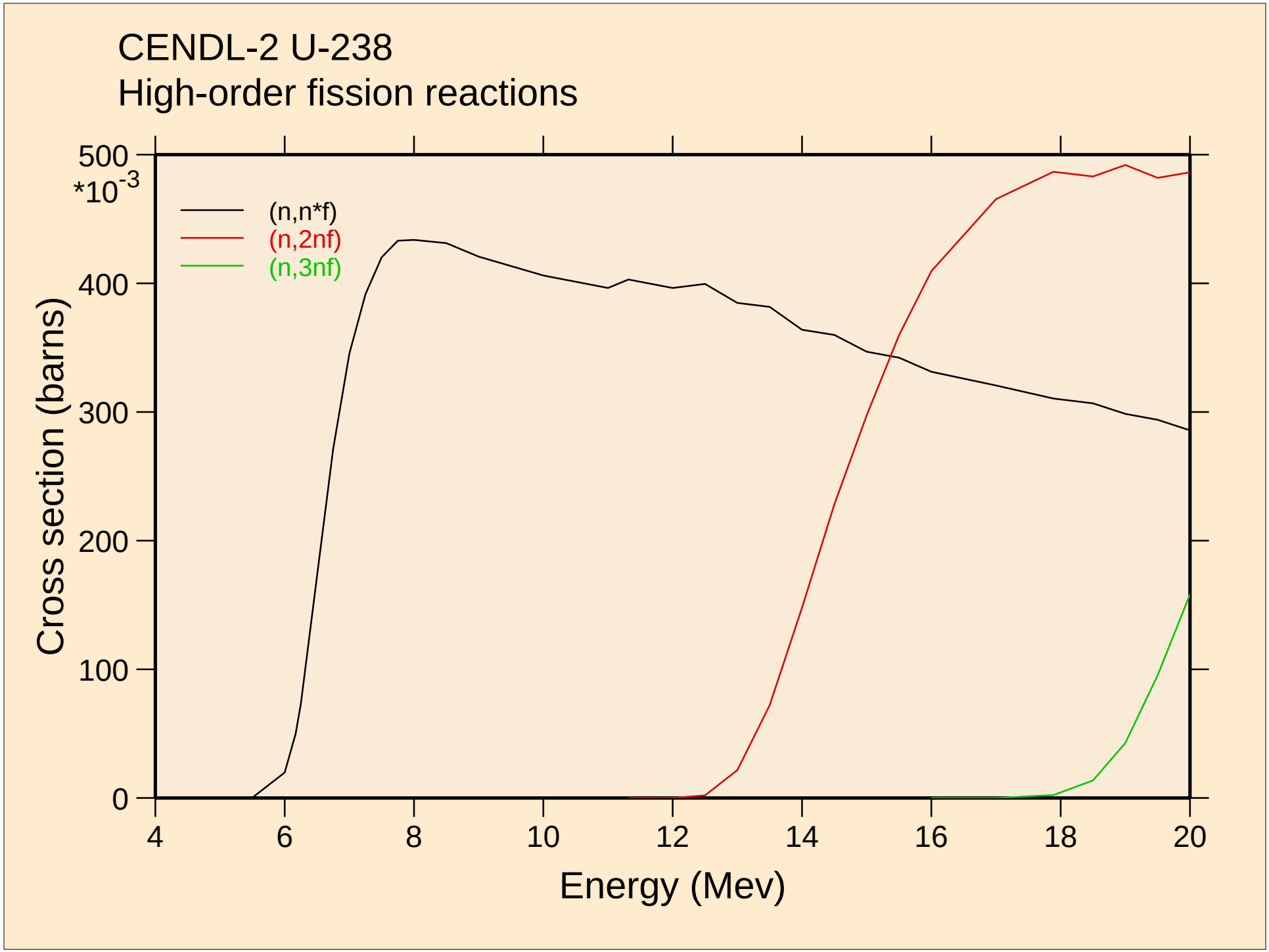

CENDL-2 U-238
Inelastic levels
Cross section (barns)
*10-3
180
160
140
120
100
80
60
40
20
0
0
1
2
3
4
5
6
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

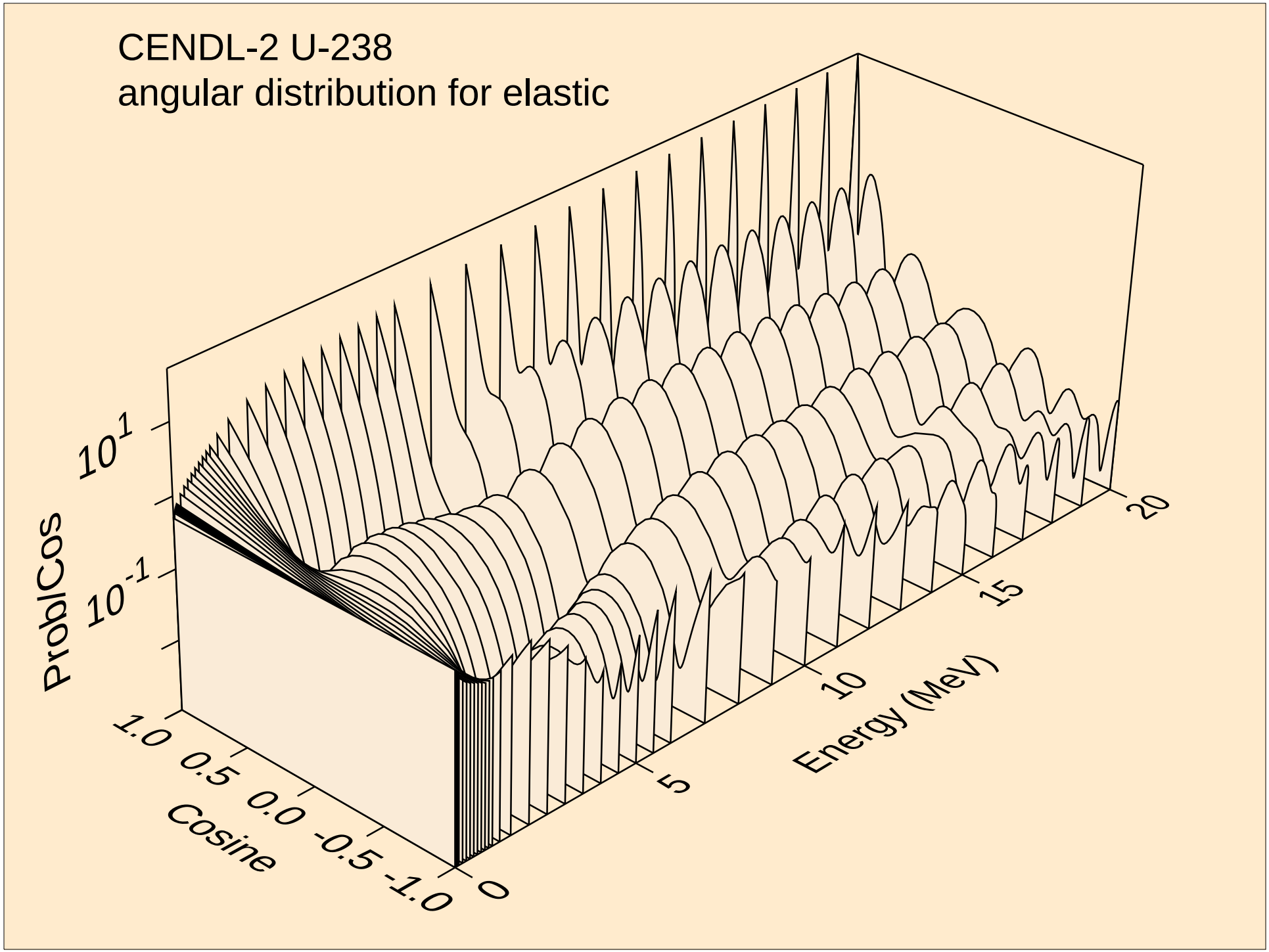

CENDL-2 U-238
Inelastic levels
Cross section (barns)
*10-3
160
140
120
100
80
60
40
20
0
1
2
3
4
5
6
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

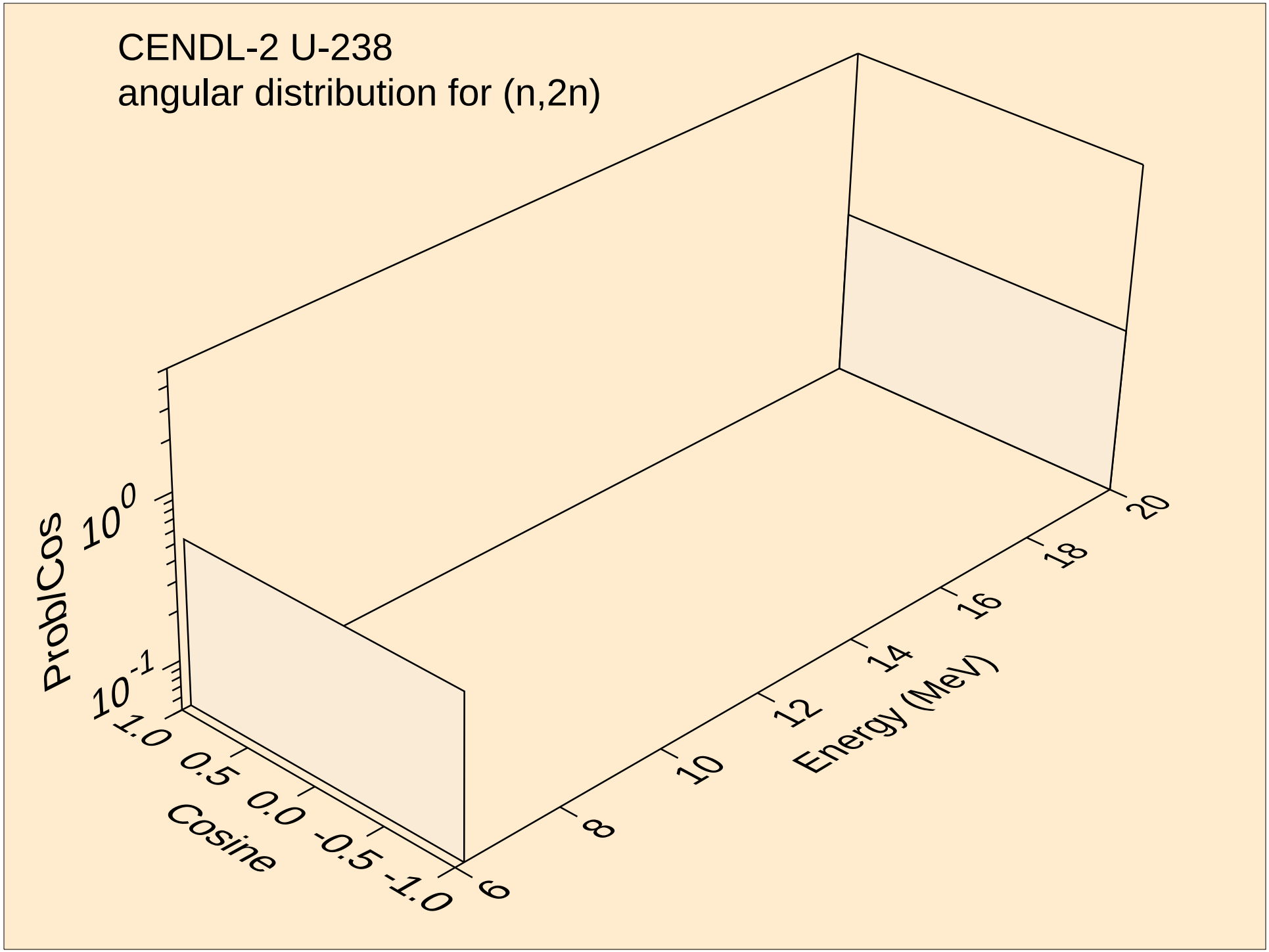

CENDL-2 U-238
Inelastic levels
Cross section (barns)
*10-3
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
Energy (MeV)
(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)

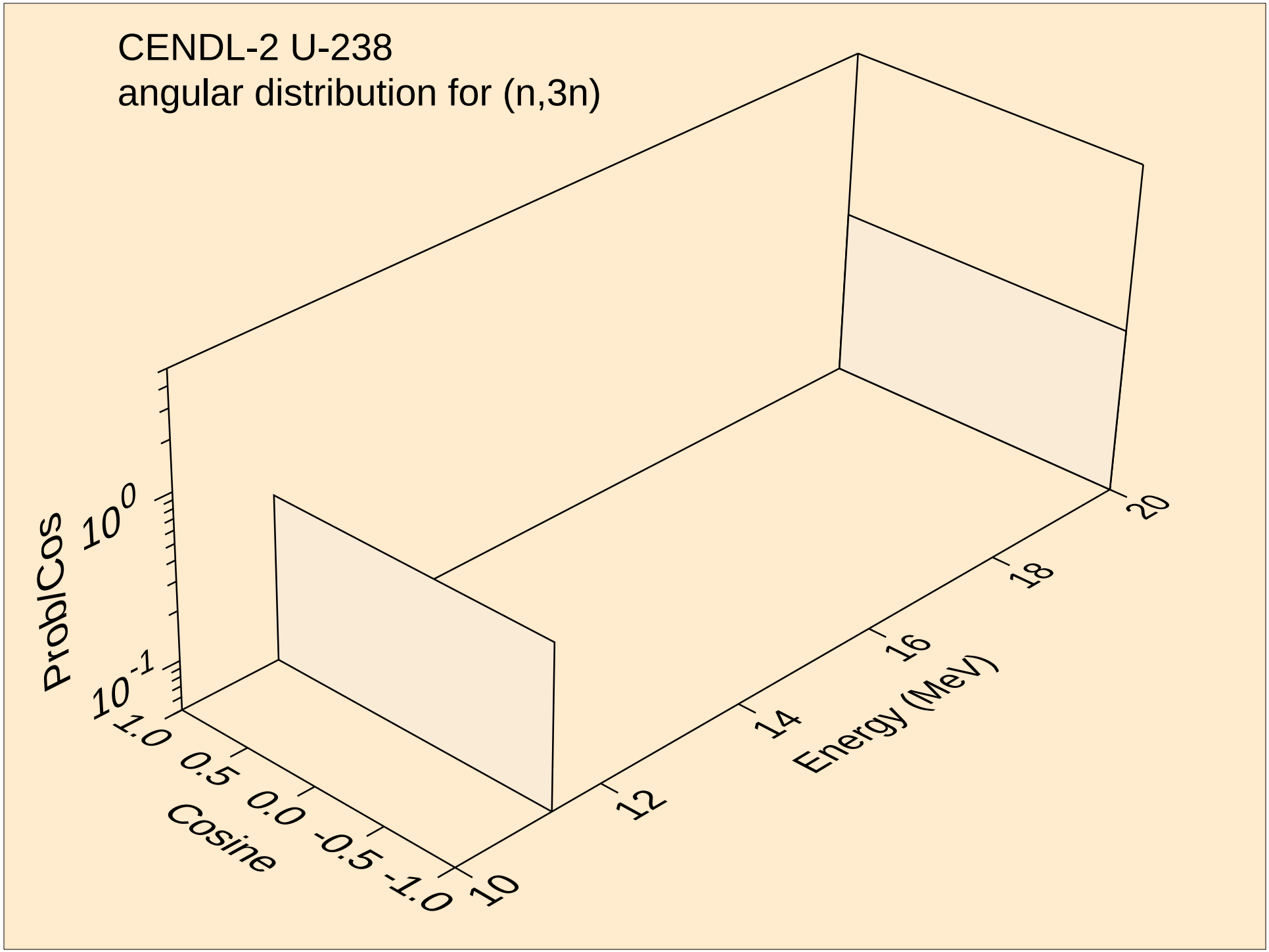

CENDL-2 U-238
Inelastic levels
Cross section (barns)
*10-3
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
Energy (MeV)
(n,n*21)

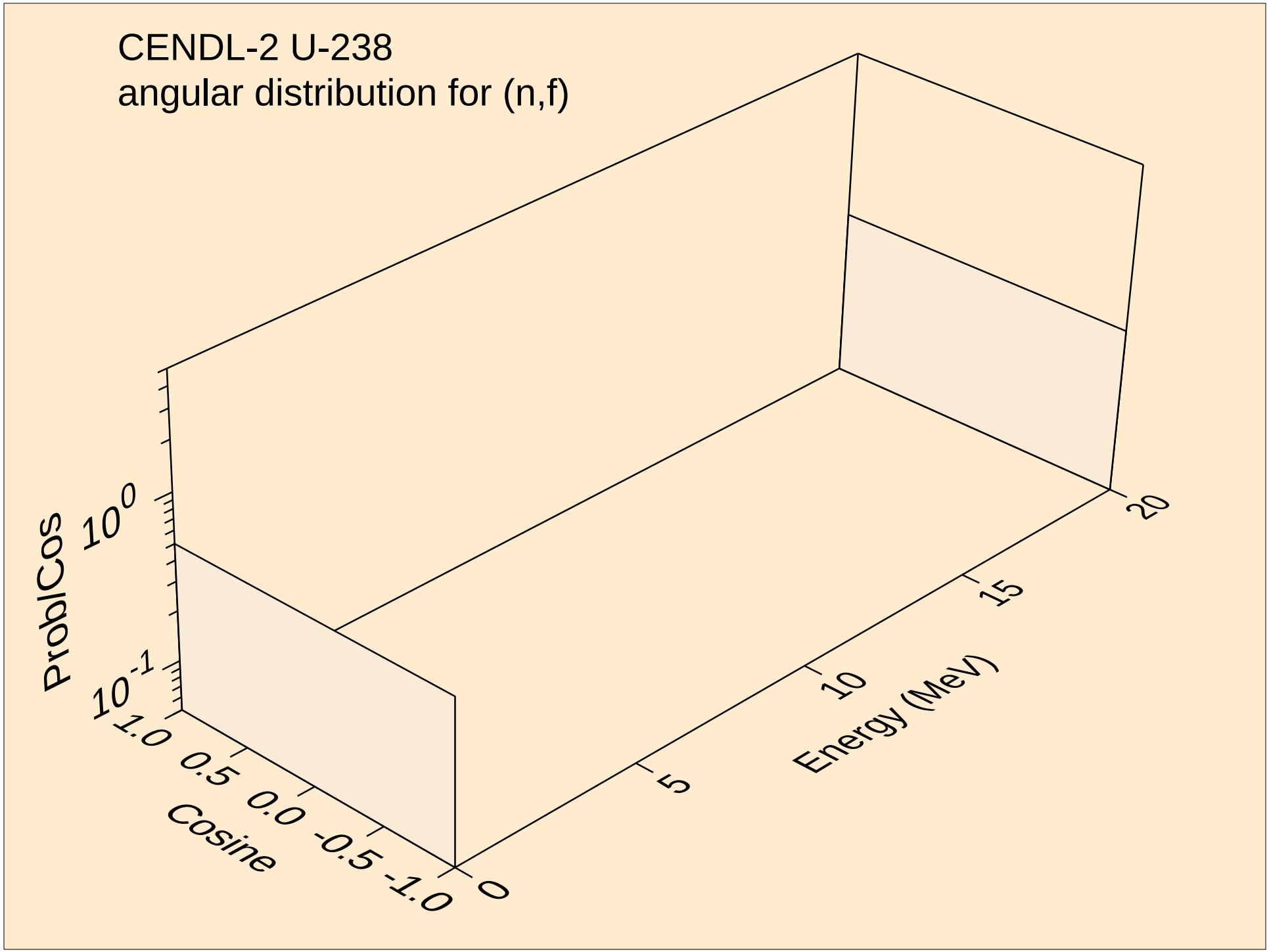

CENDL-2 U-238
Threshold reactions
(n,2n)
(n,3n)
(n,4n)
(n,n*c)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
0
2
4
6
8
10
12
14
16
18
20

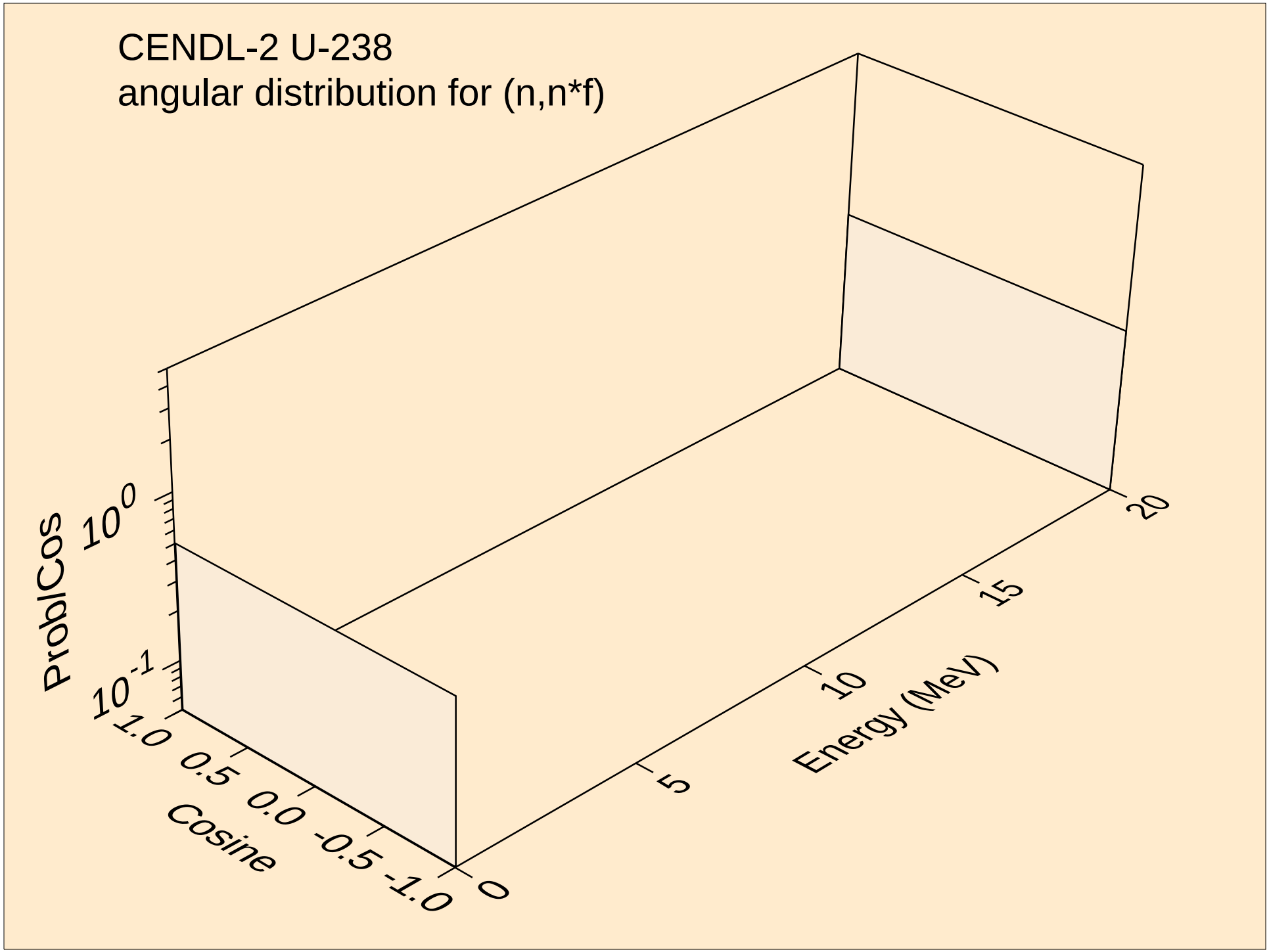

CENDL-2 U-238
High-order fission reactions
500
*10-3
400
300
200
100
0
Cross section (barns)
(n,n*f)
(n,2nf)
(n,3nf)
4
6
8
10
12
14
16
18
20
Energy (Mev)

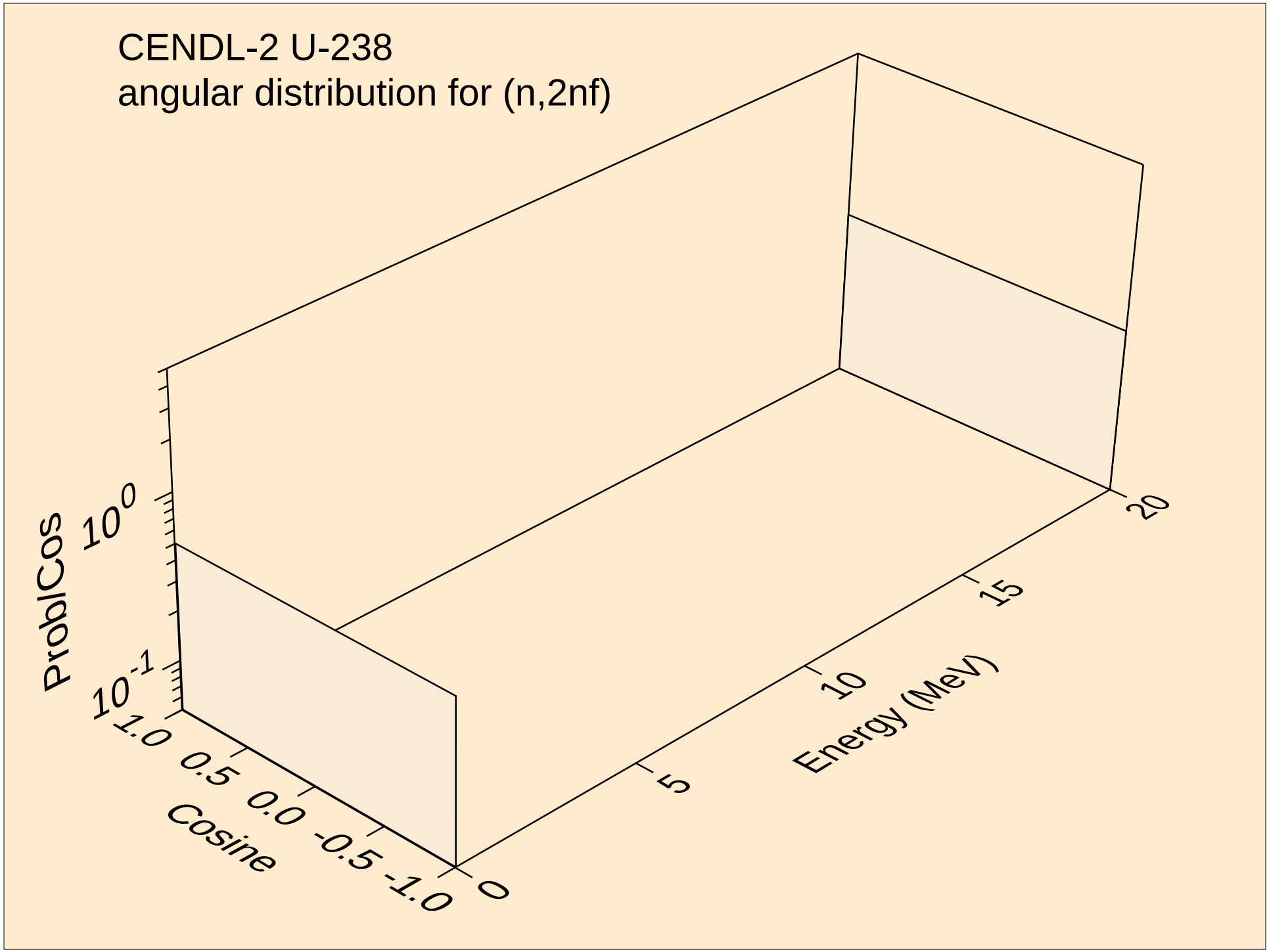

CENDL-2 U-238
angular distribution for elastic
ProbICos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

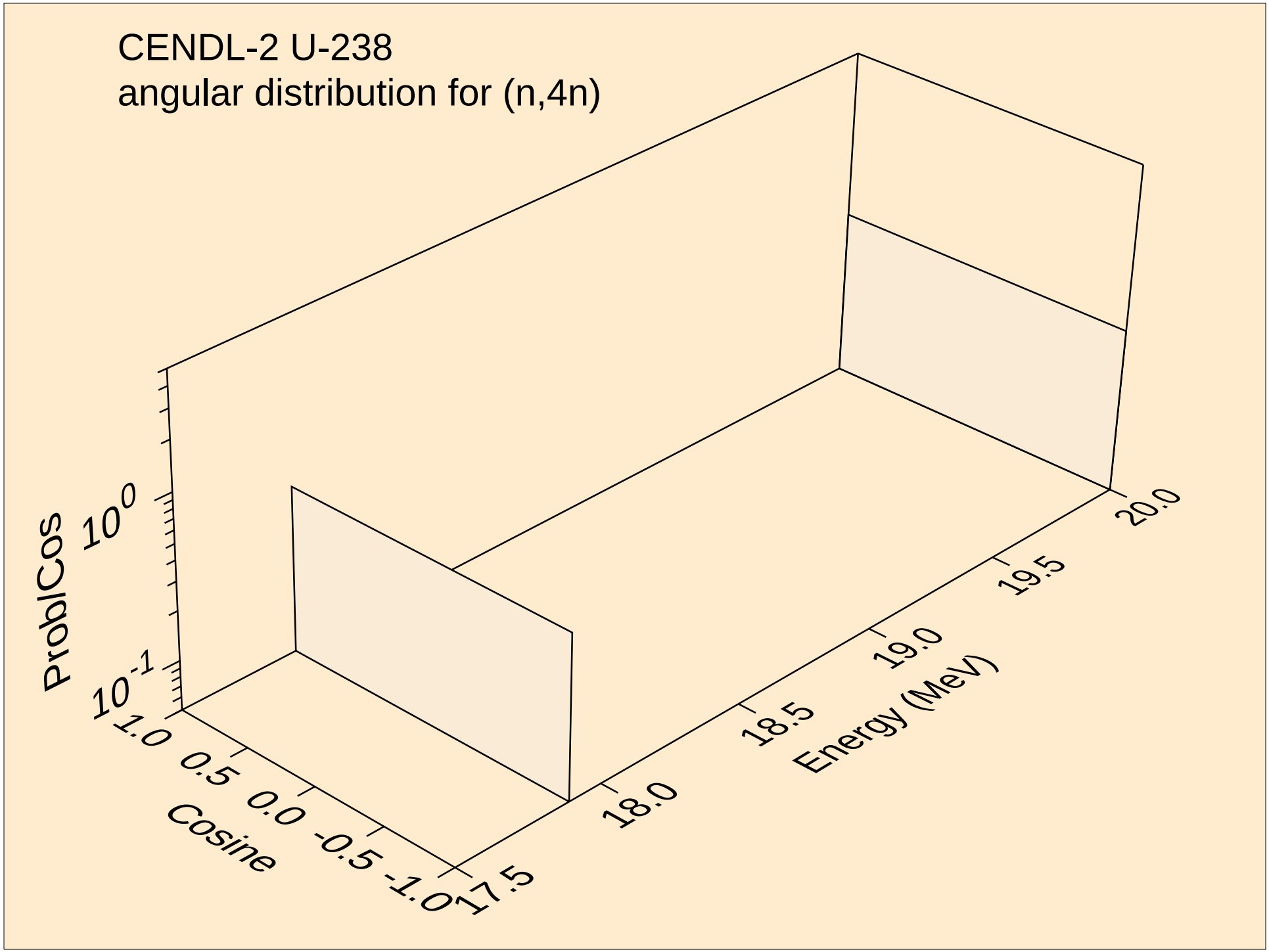

CENDL-2 U-238
angular distribution for (n,2n)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)

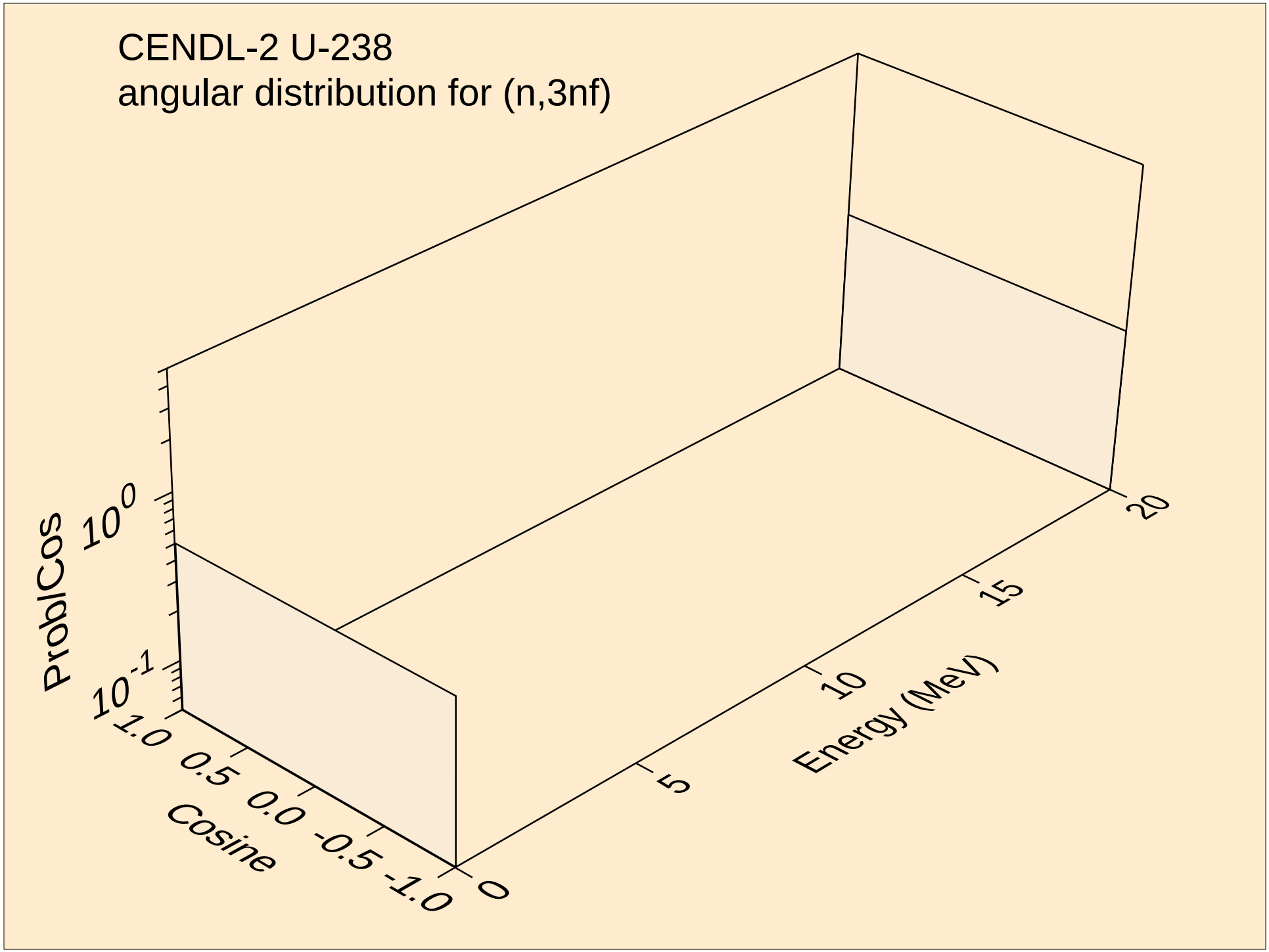

CENDL-2 U-238
angular distribution for (n,3n)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
10
12
14
16
18
20
Energy (MeV)

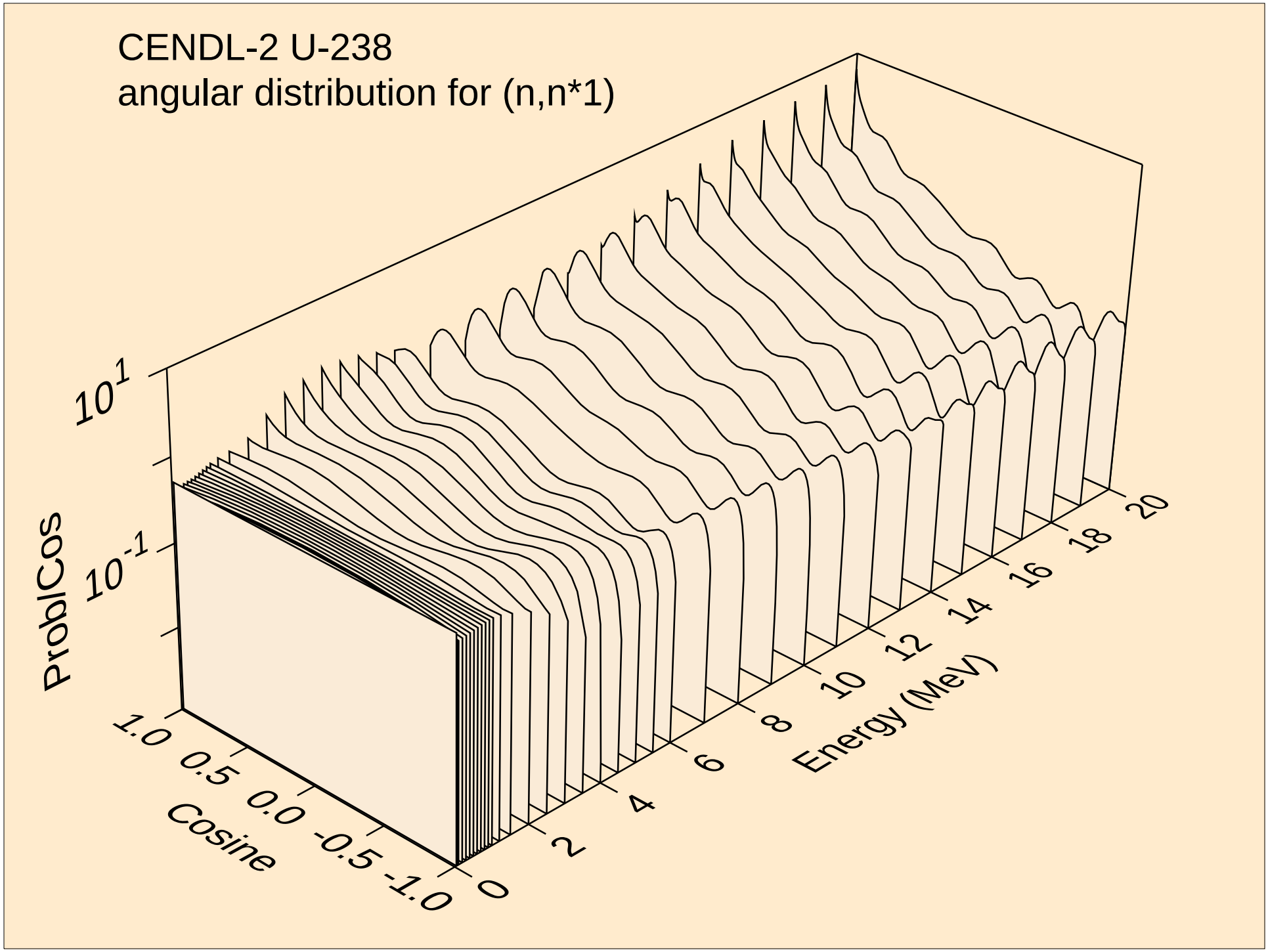

CENDL-2 U-238
angular distribution for (n,f)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

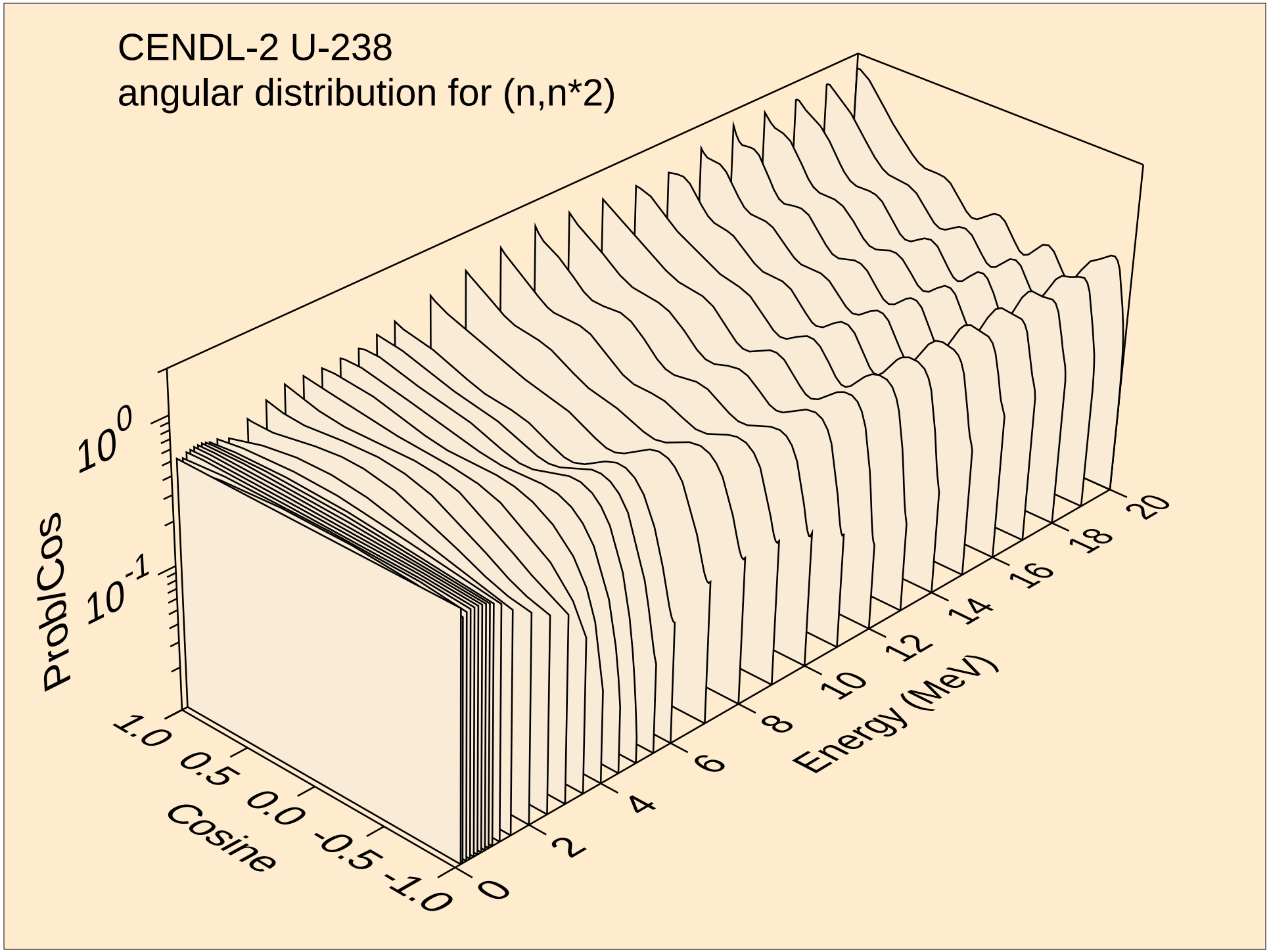

CENDL-2 U-238
angular distribution for (n,n*f)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

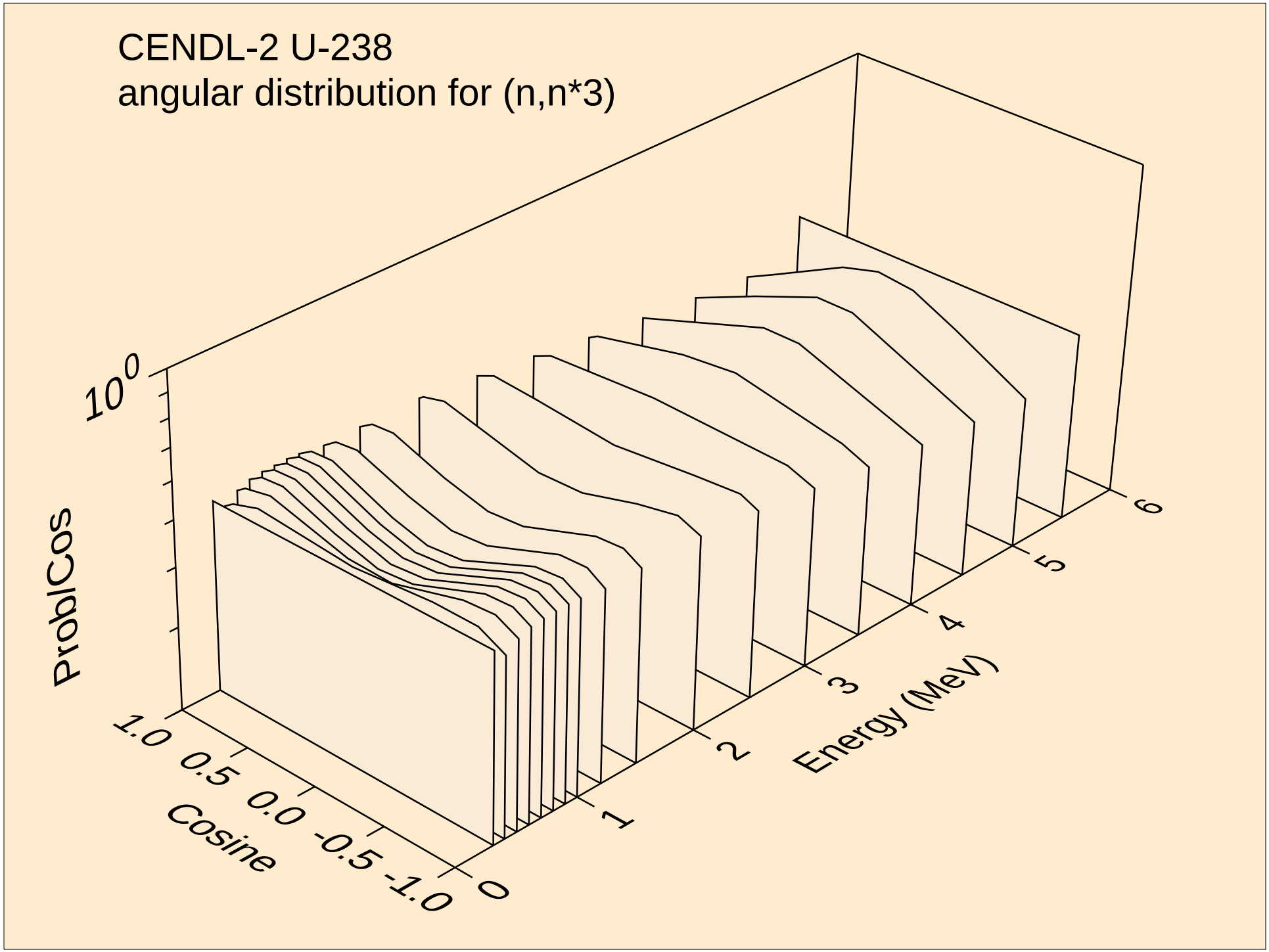

CENDL-2 U-238
angular distribution for (n,2nf)
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

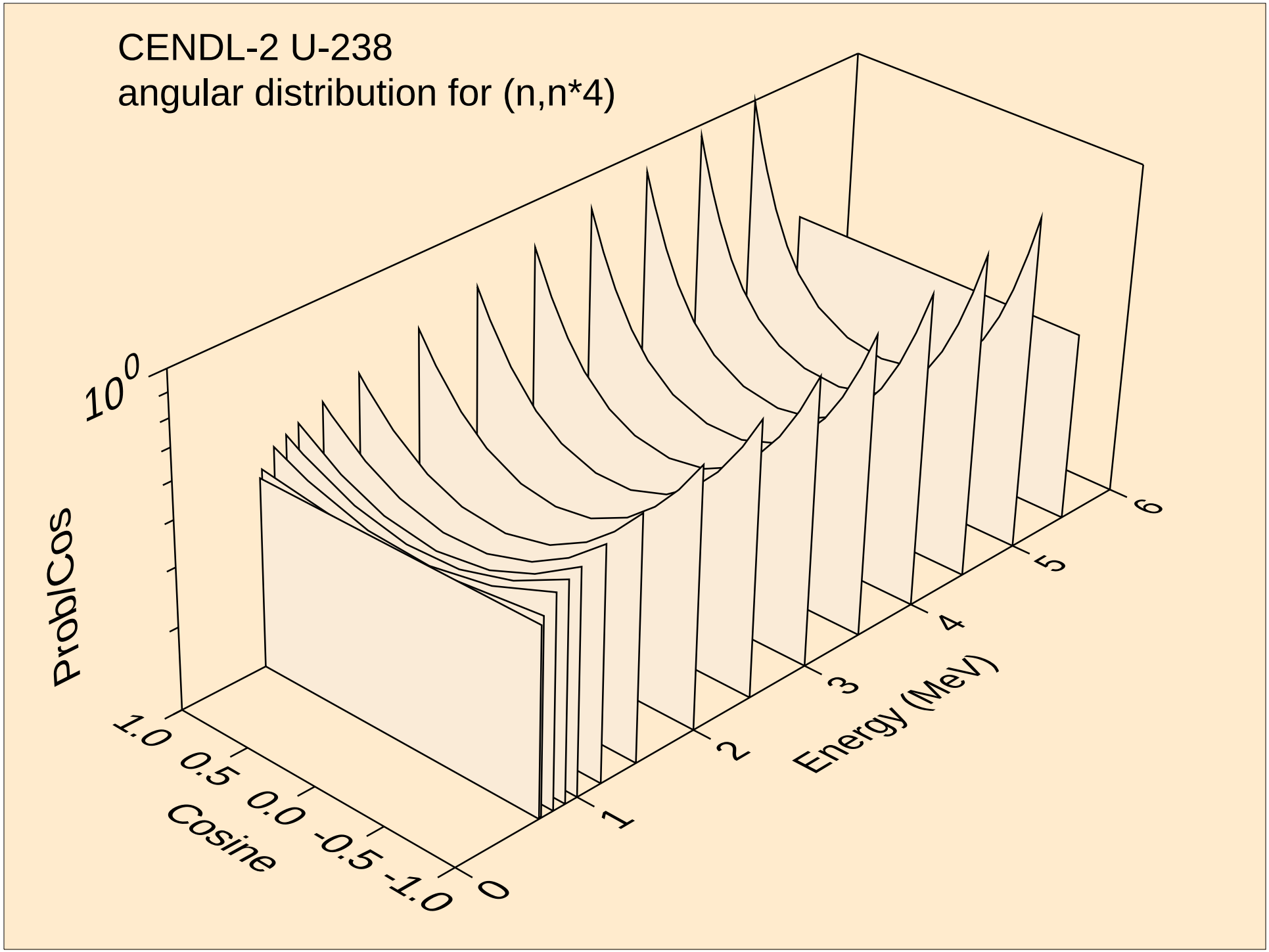

CENDL-2 U-238
angular distribution for (n,4n)
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
17.5
18.0
18.5
19.0
19.5
20.0
Energy (MeV)

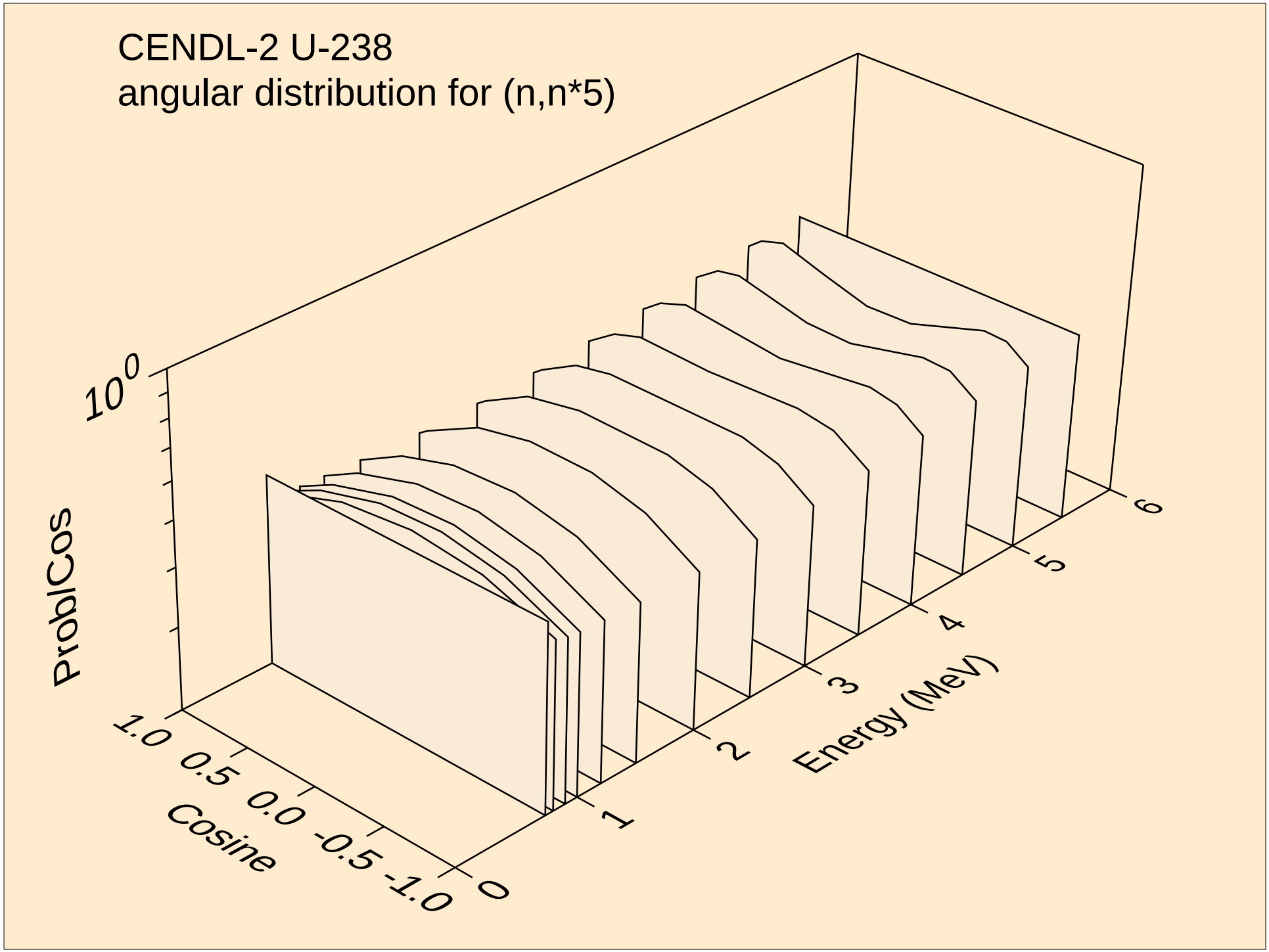

CENDL-2 U-238
angular distribution for (n,3nf)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

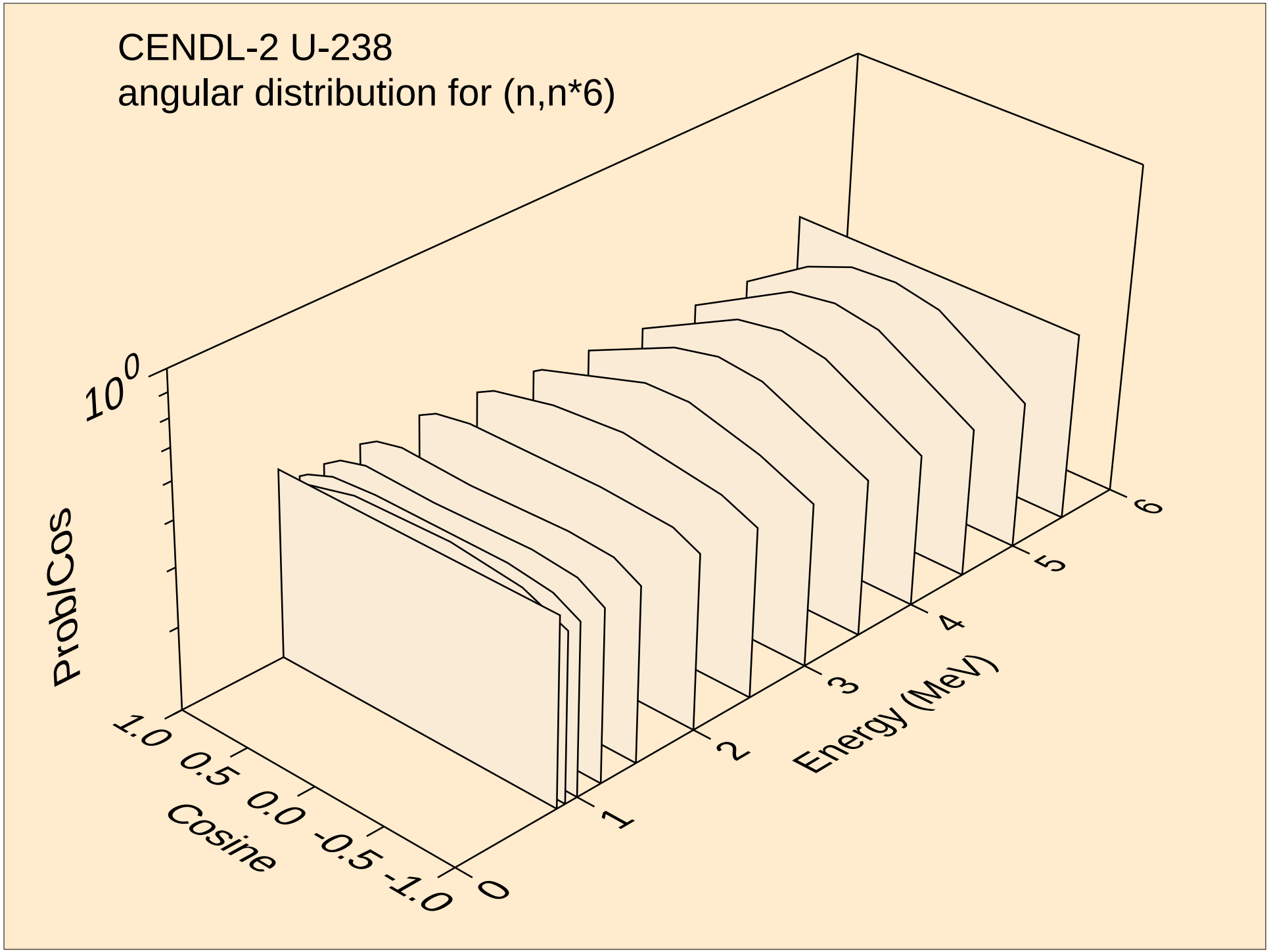

CENDL-2 U-238
angular distribution for (n,n*1)
ProblCos
10^{1}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

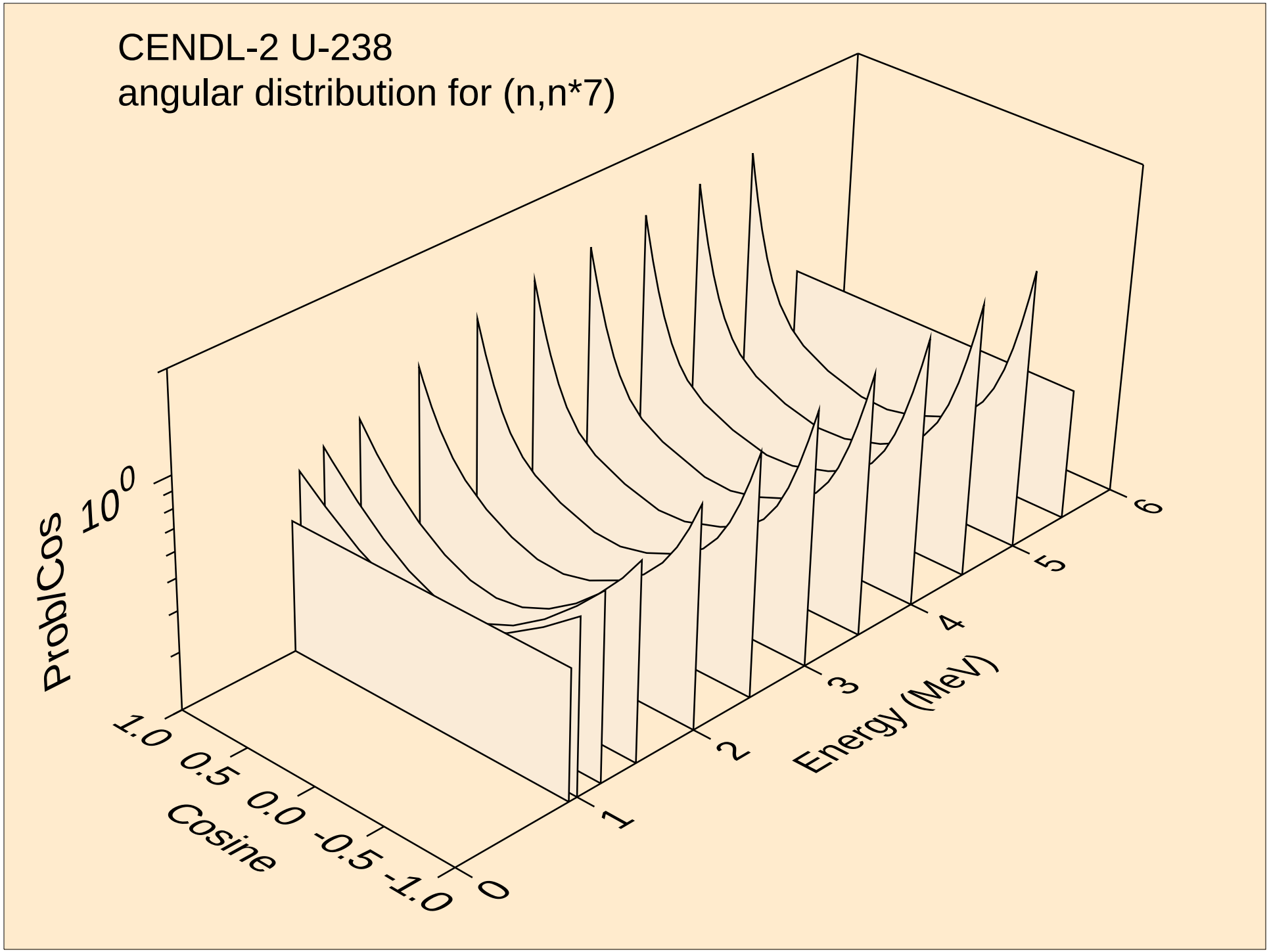

CENDL-2 U-238
angular distribution for (n,n*2)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

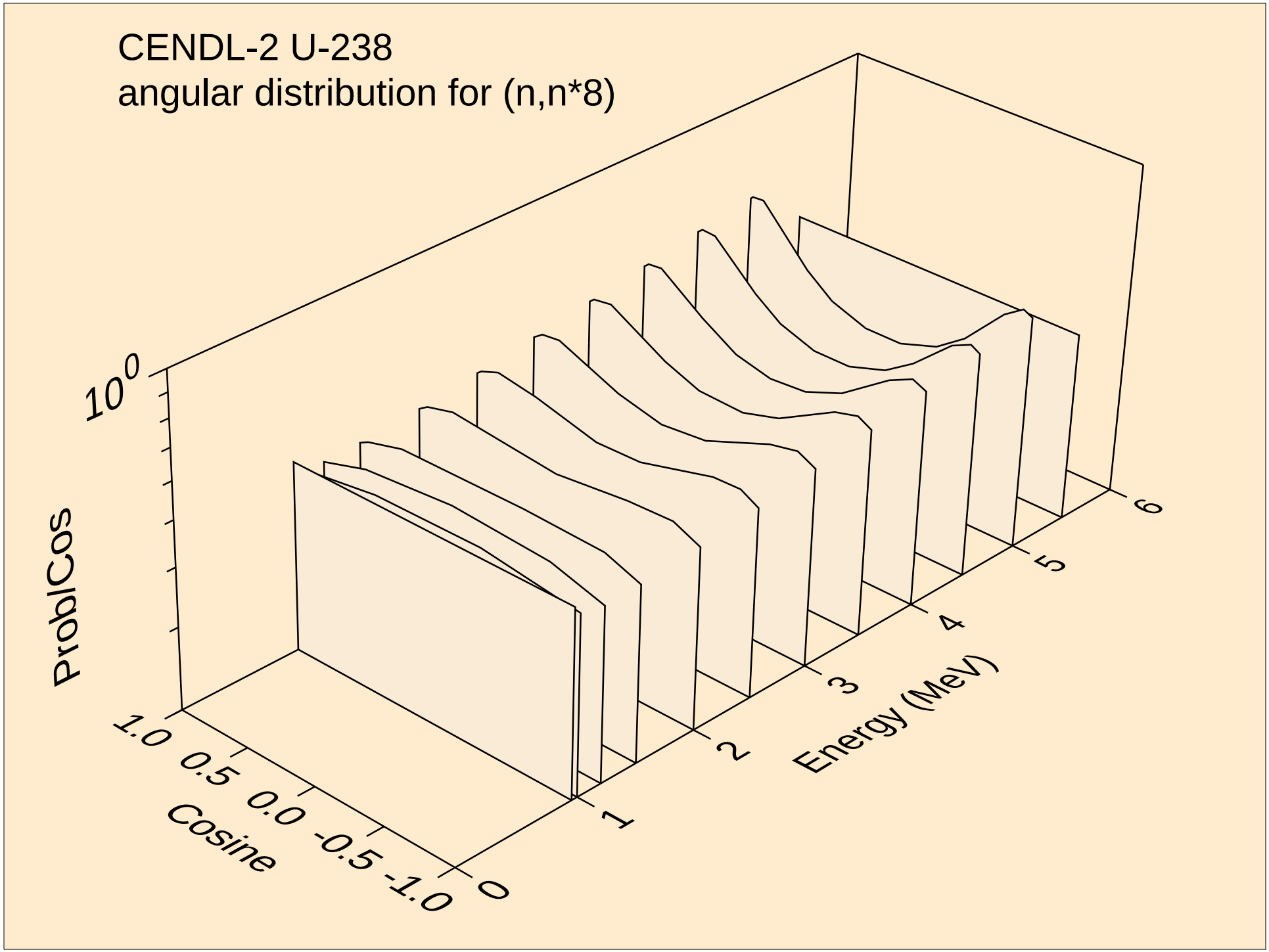

CENDL-2 U-238
angular distribution for (n,n*3)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

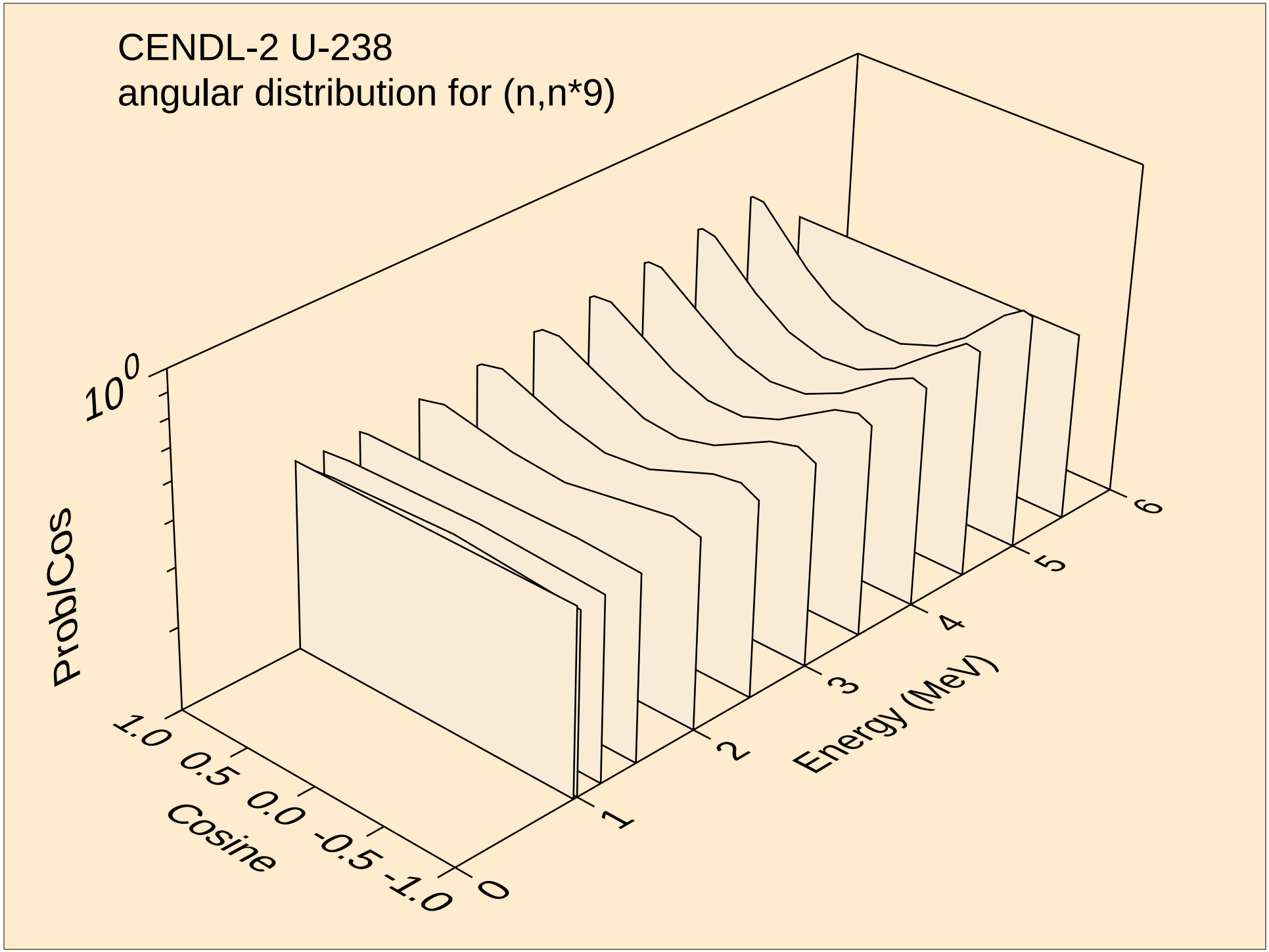

CENDL-2 U-238
angular distribution for (n,n*4)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

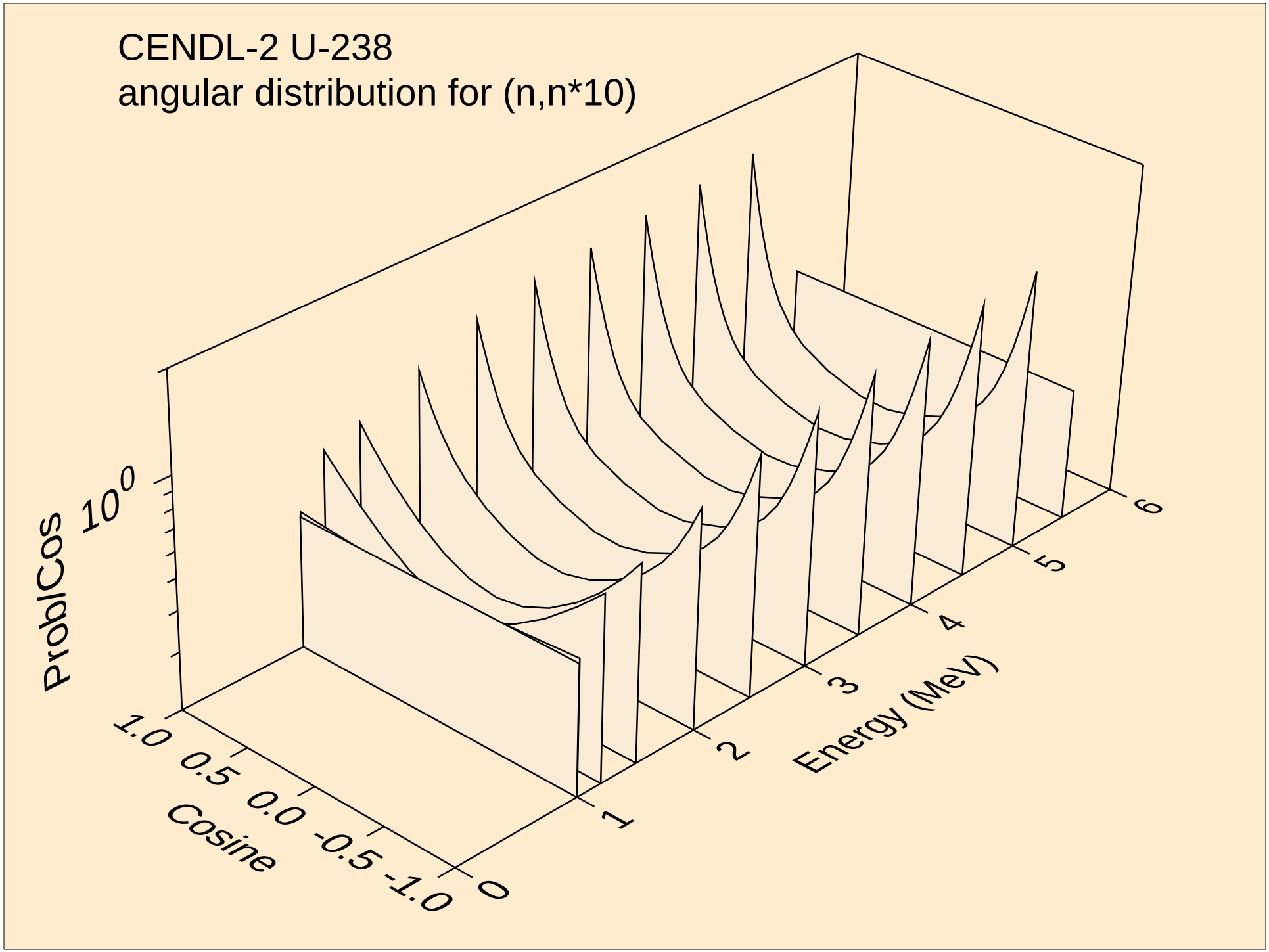

CENDL-2 U-238
angular distribution for (n,n*5)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

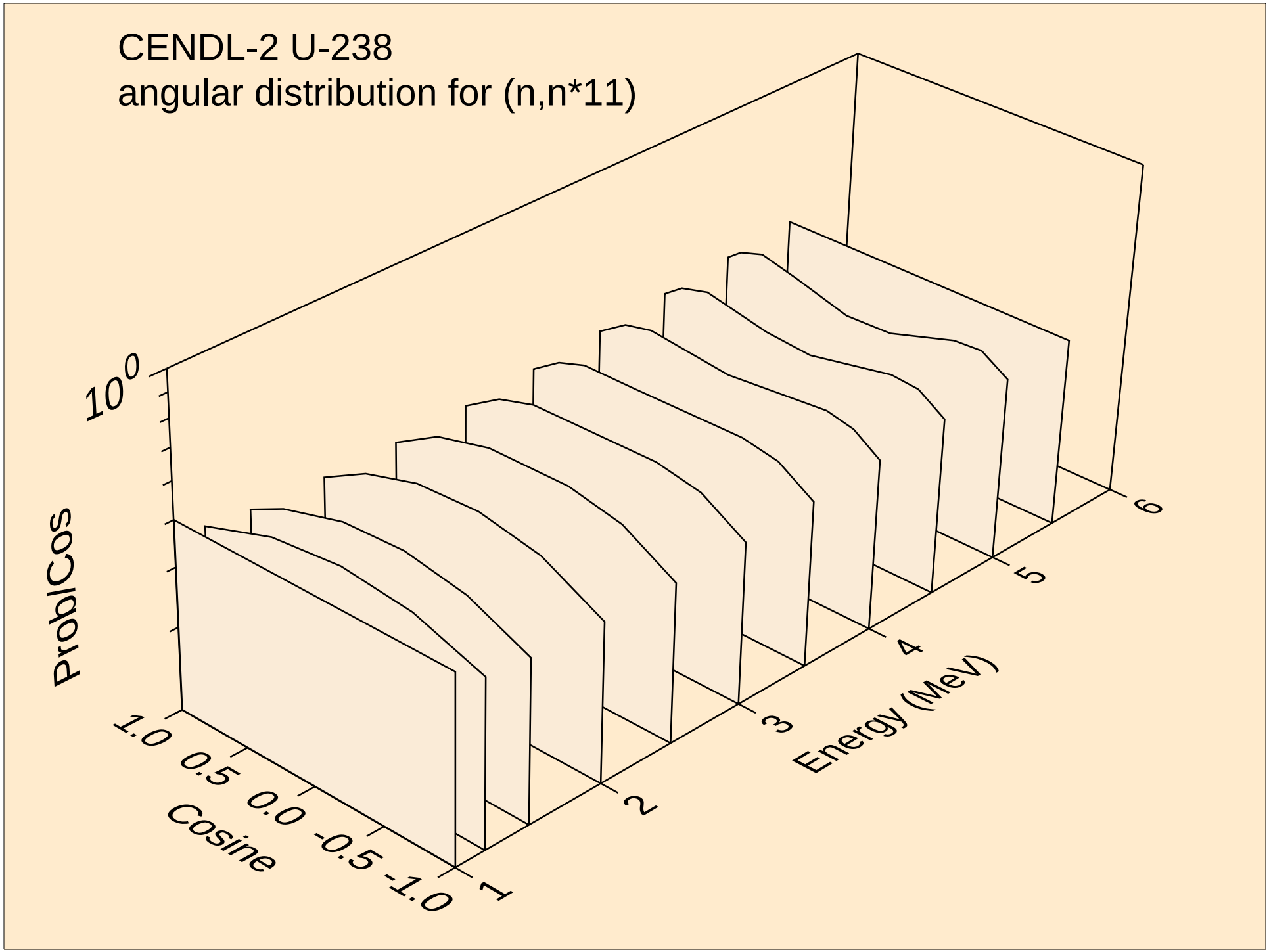

CENDL-2 U-238
angular distribution for (n,n*6)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

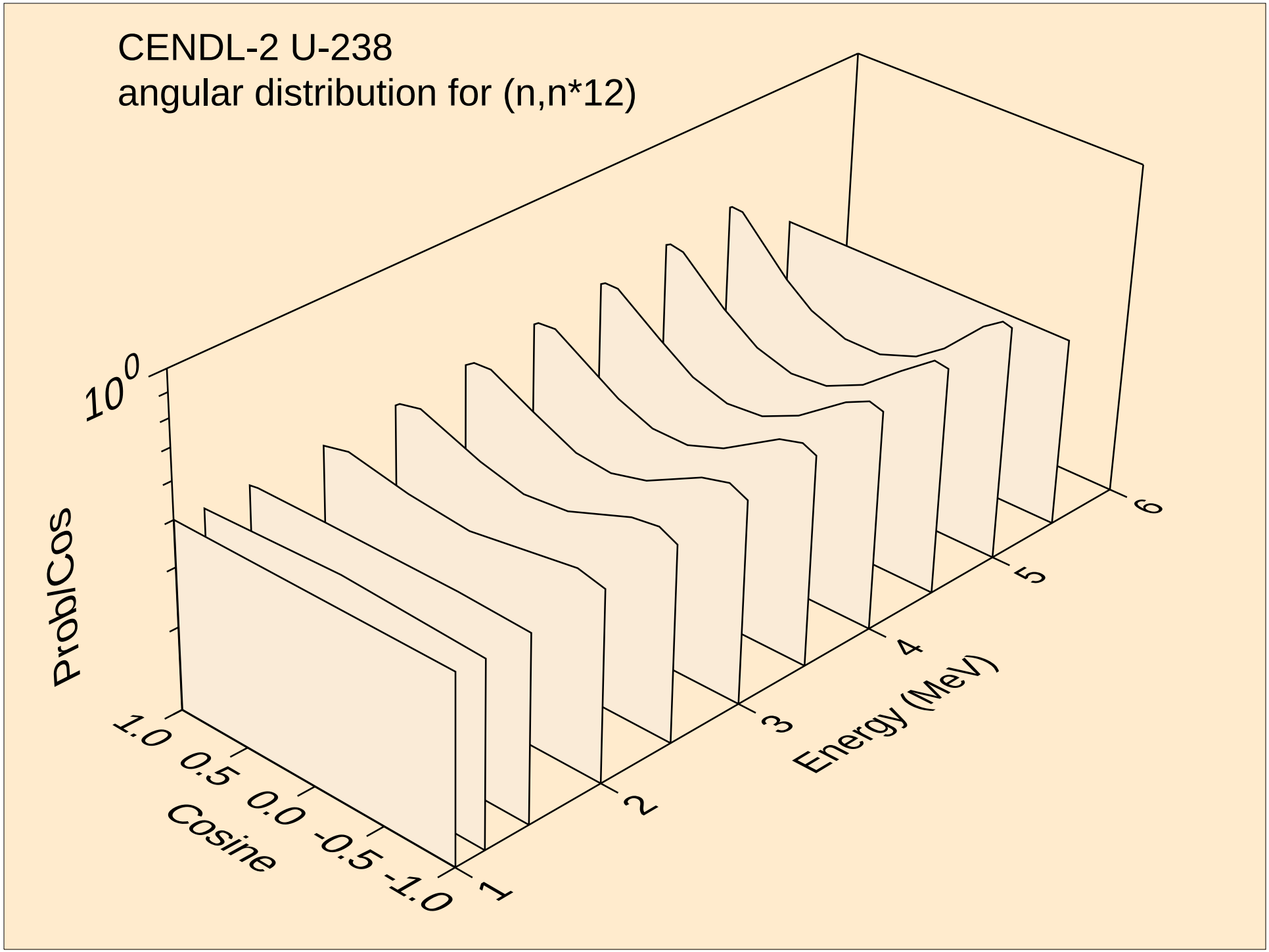

CENDL-2 U-238
angular distribution for (n,n*7)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

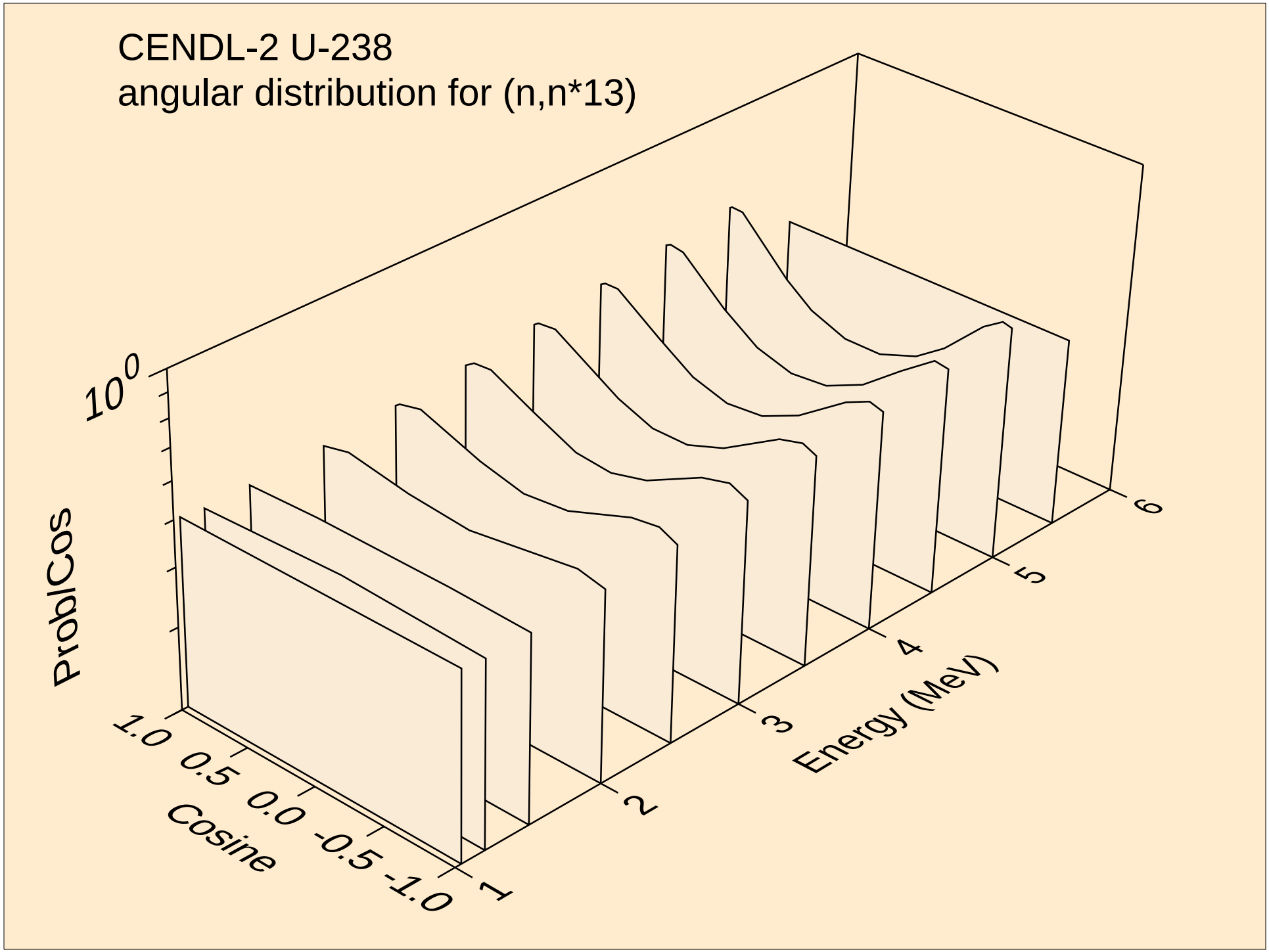

CENDL-2 U-238
angular distribution for (n,n*8)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

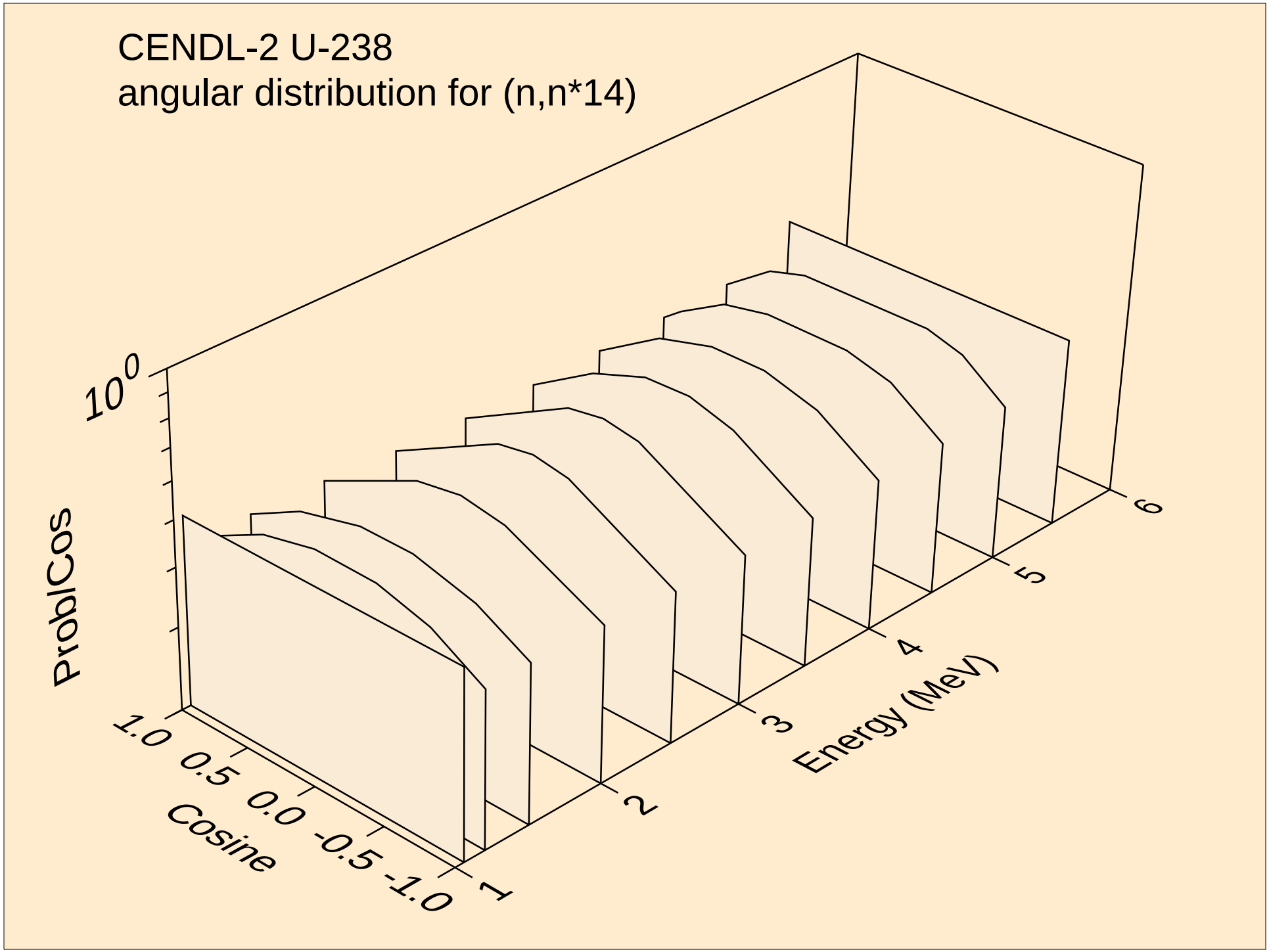

CENDL-2 U-238
angular distribution for (n,n*9)
10^0
Prob\Cos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

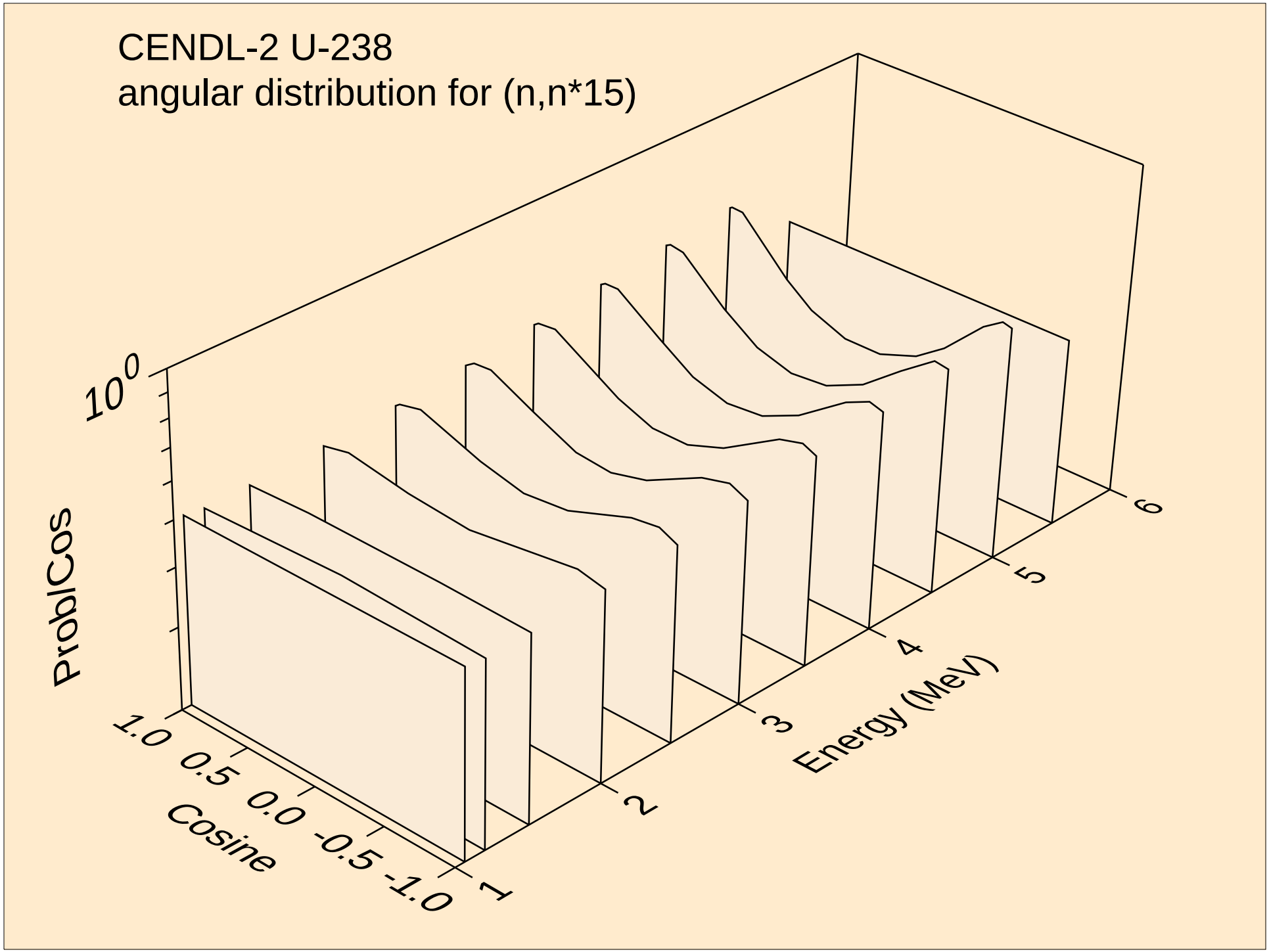

CENDL-2 U-238
angular distribution for (n,n*10)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
1
2
3
4
5
6
Energy (MeV)

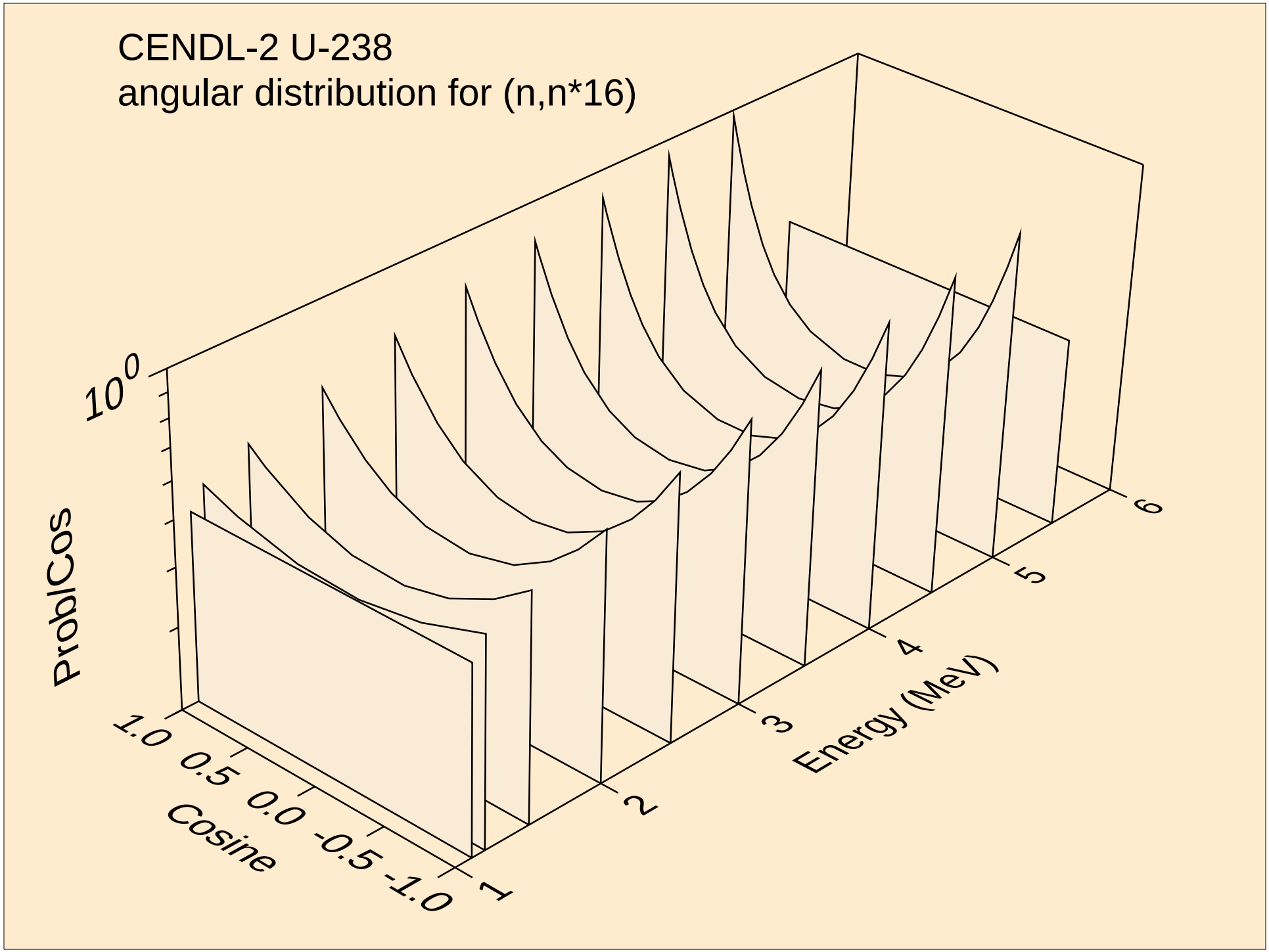

CENDL-2 U-238
angular distribution for (n,n*11)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

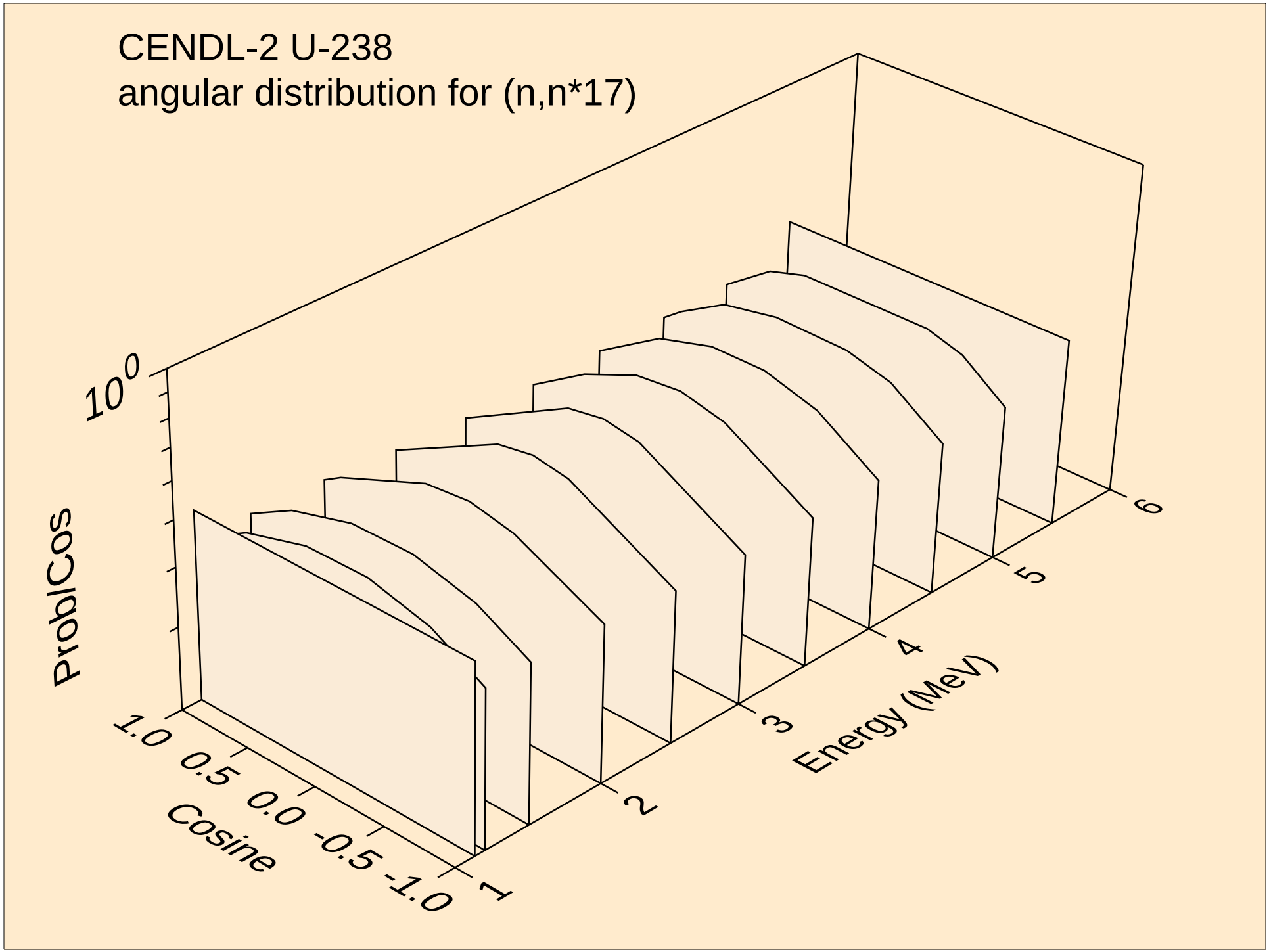

CENDL-2 U-238
angular distribution for (n,n*12)
10^0
Prob\Cos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

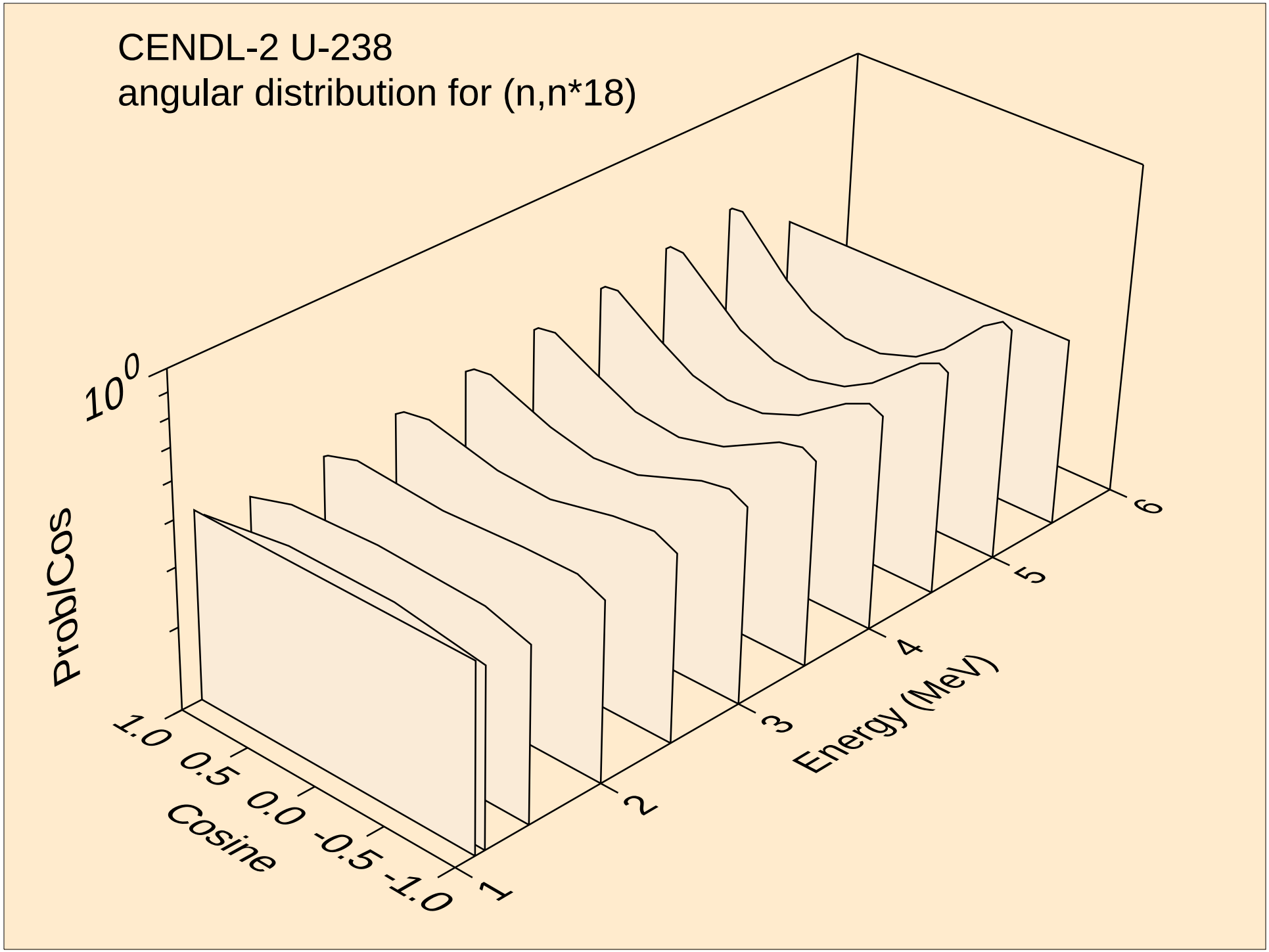

CENDL-2 U-238
angular distribution for (n,n*13)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

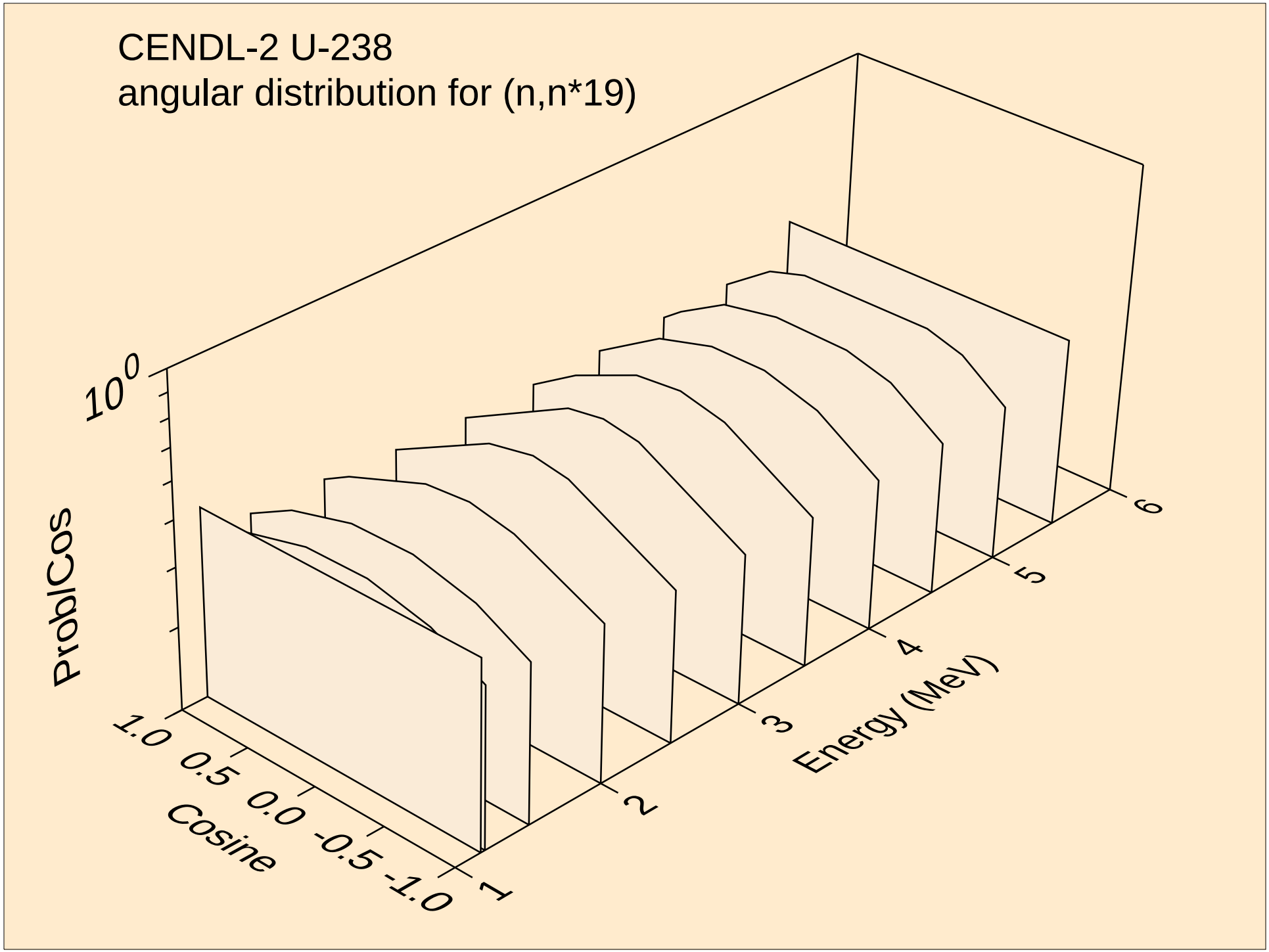

CENDL-2 U-238
angular distribution for (n,n*14)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

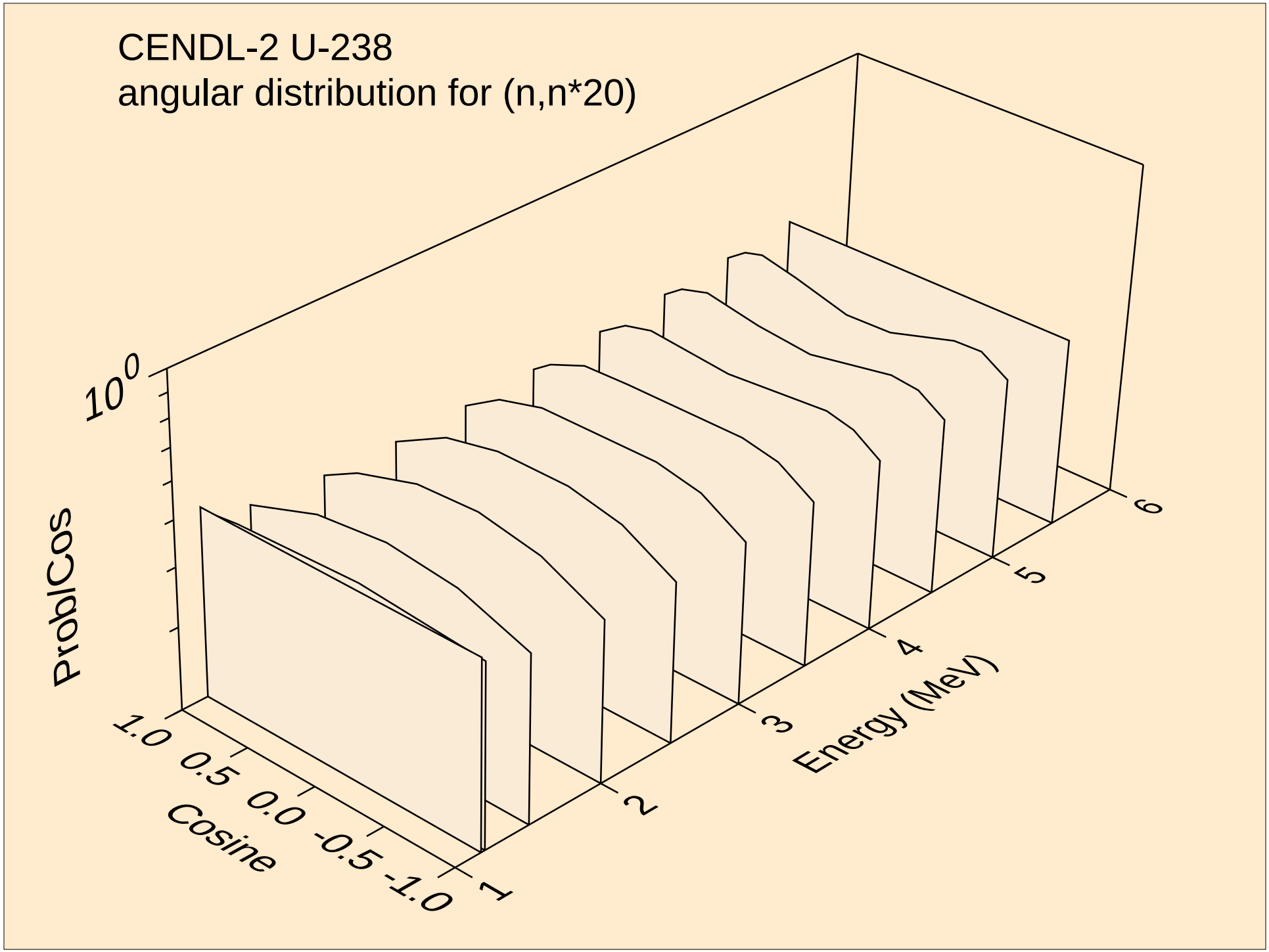

CENDL-2 U-238
angular distribution for (n,n*15)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

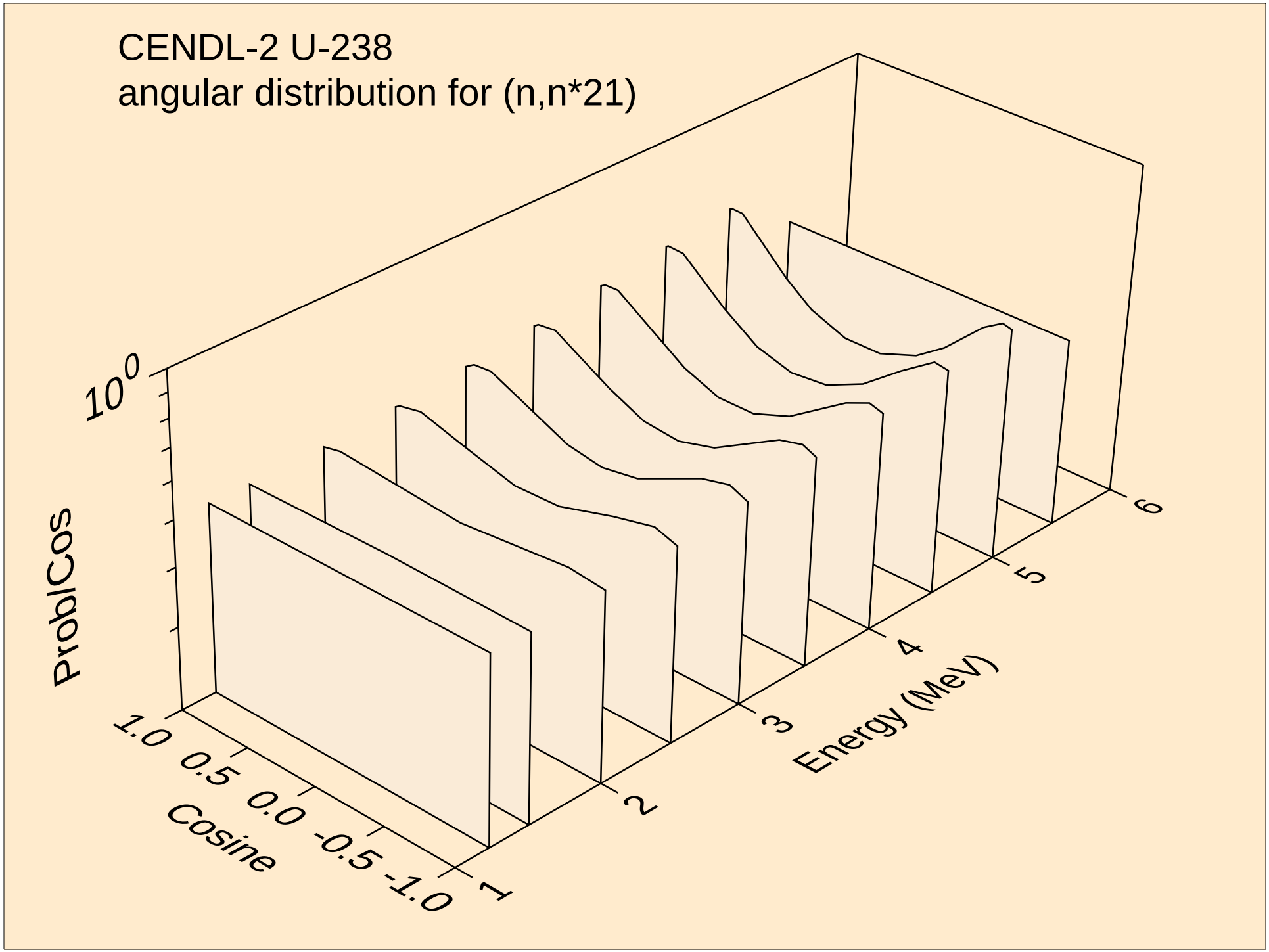

CENDL-2 U-238
angular distribution for (n,n*16)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

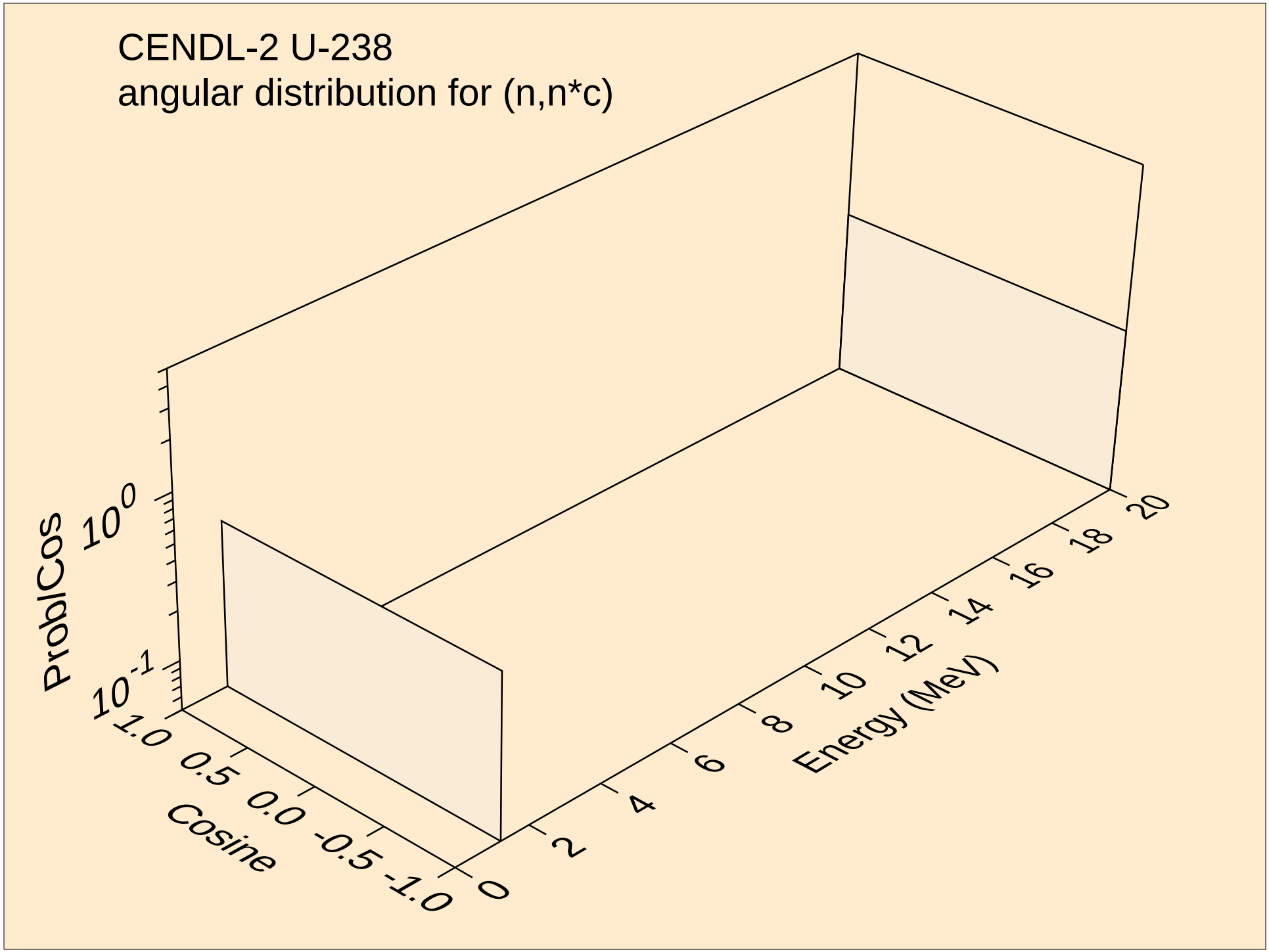

CENDL-2 U-238
angular distribution for (n,n*17)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

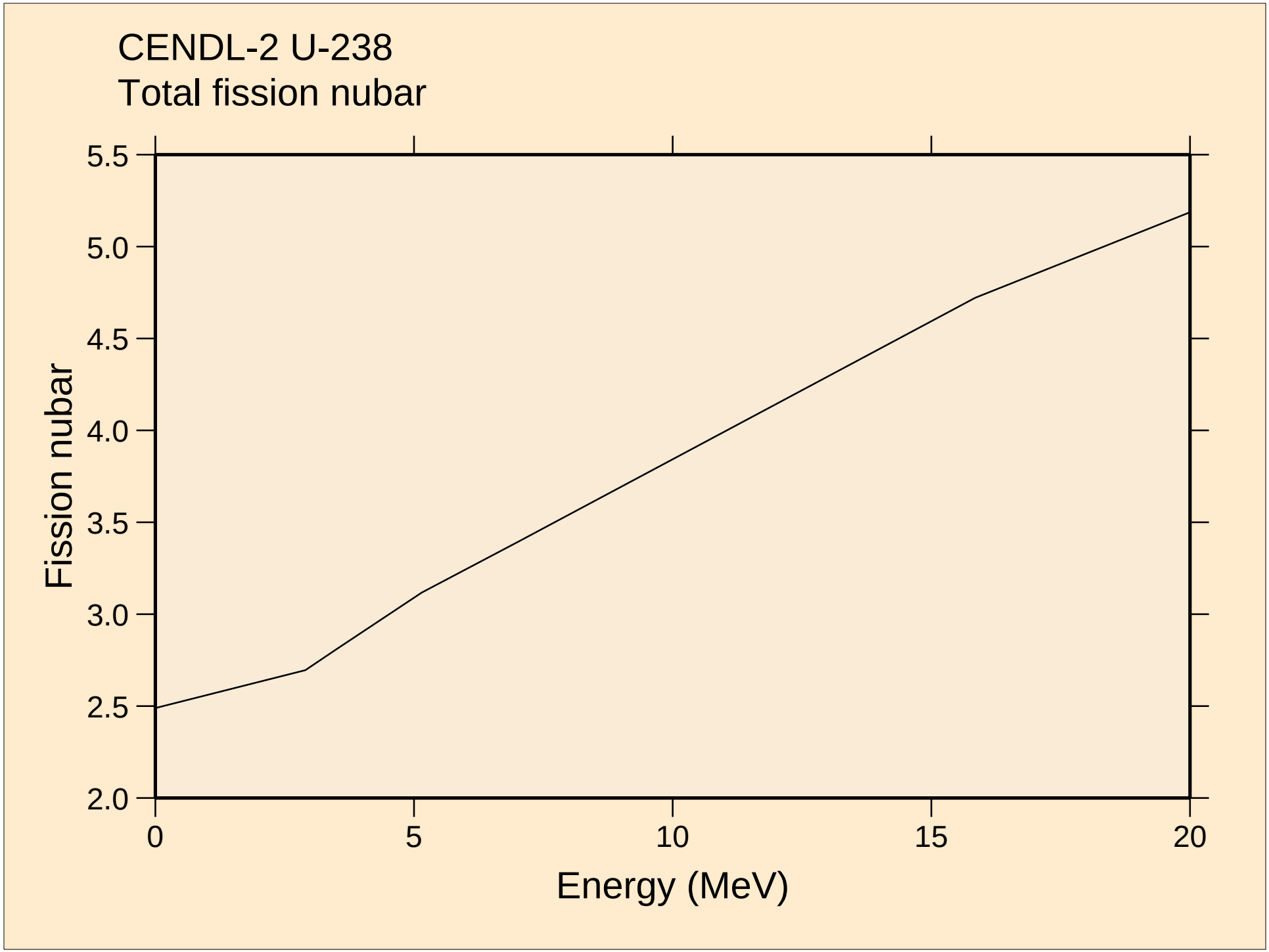

CENDL-2 U-238
angular distribution for (n,n*18)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

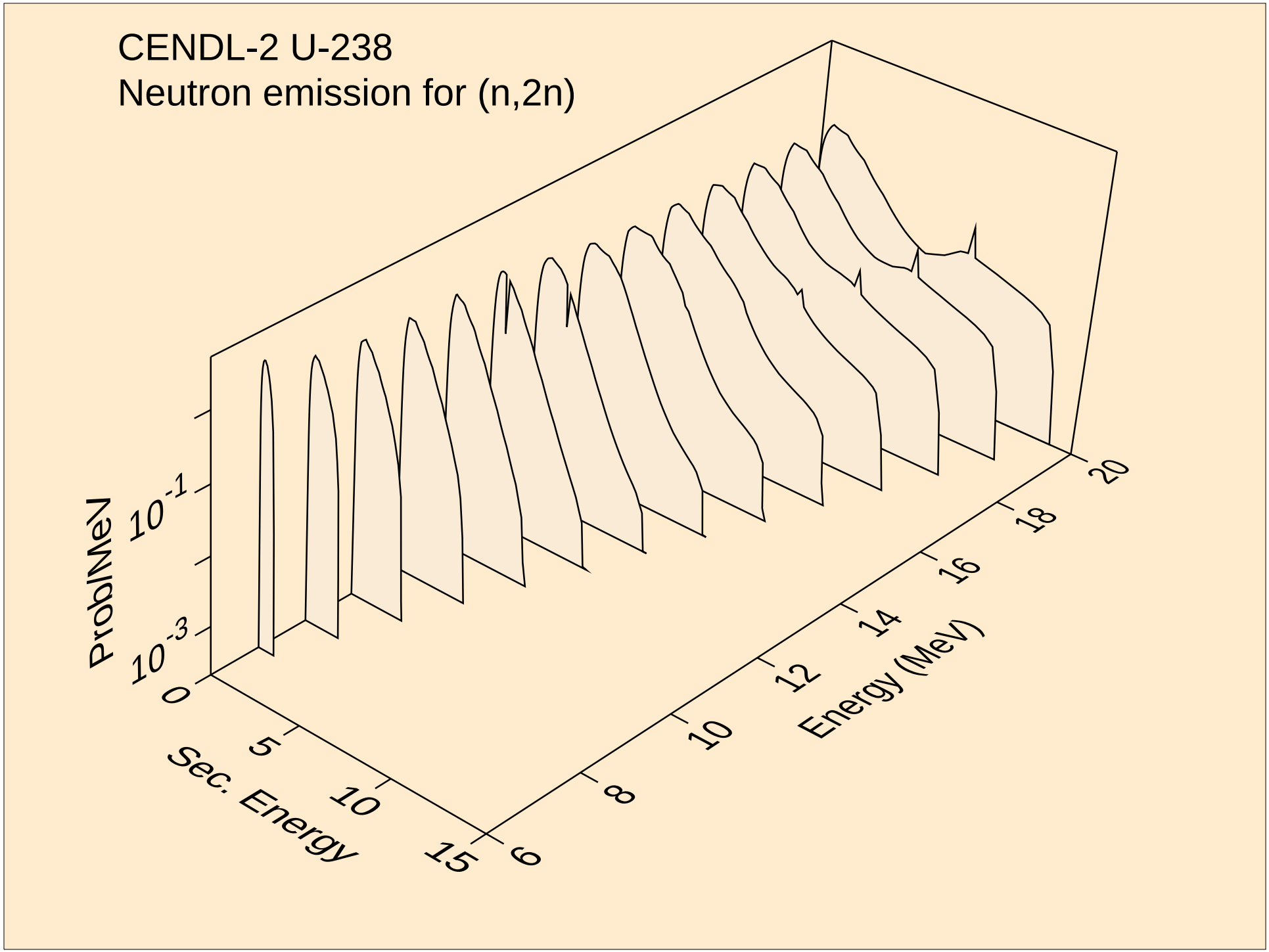

CENDL-2 U-238
angular distribution for (n,n*19)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

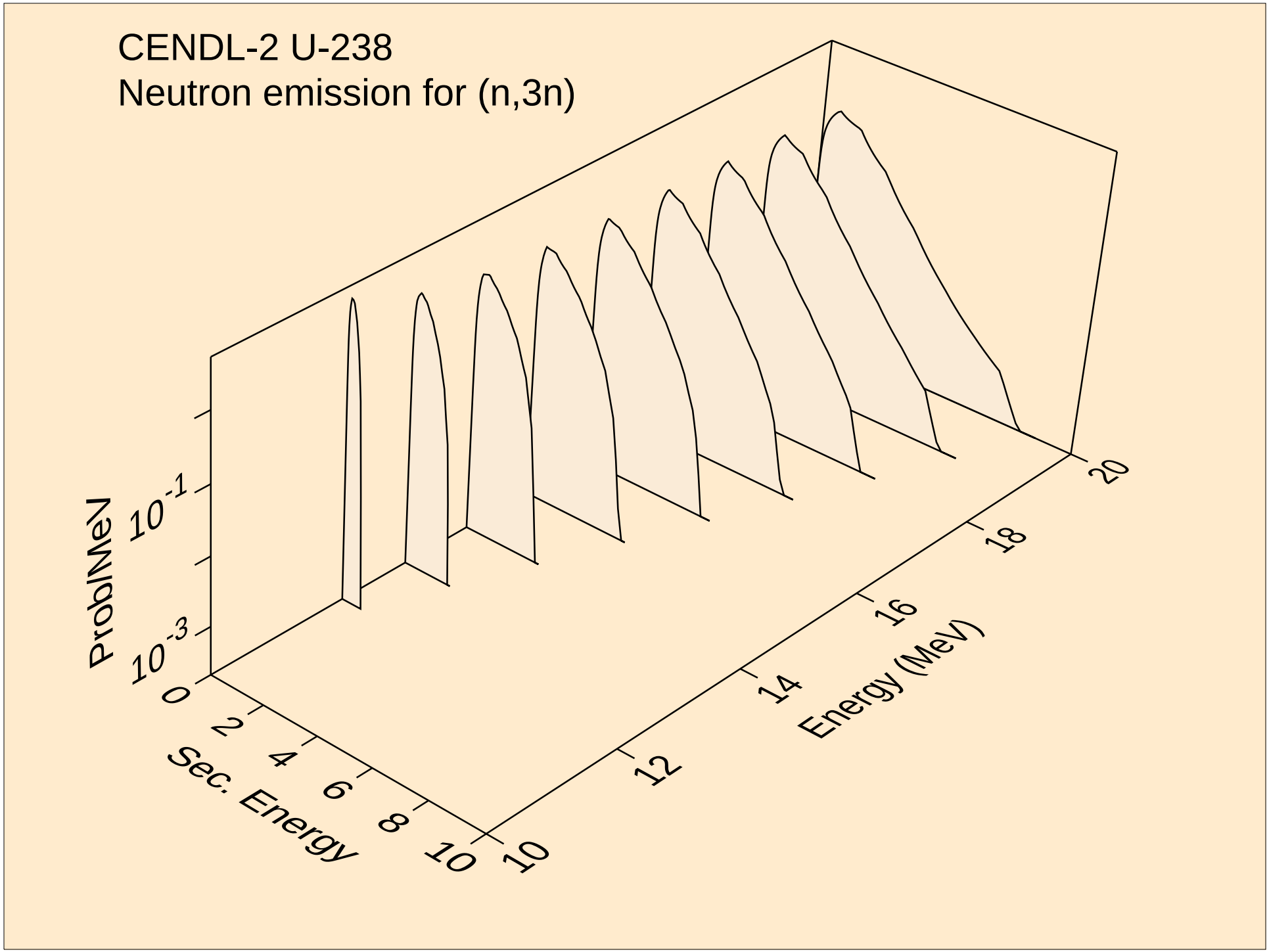

CENDL-2 U-238
angular distribution for (n,n*20)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

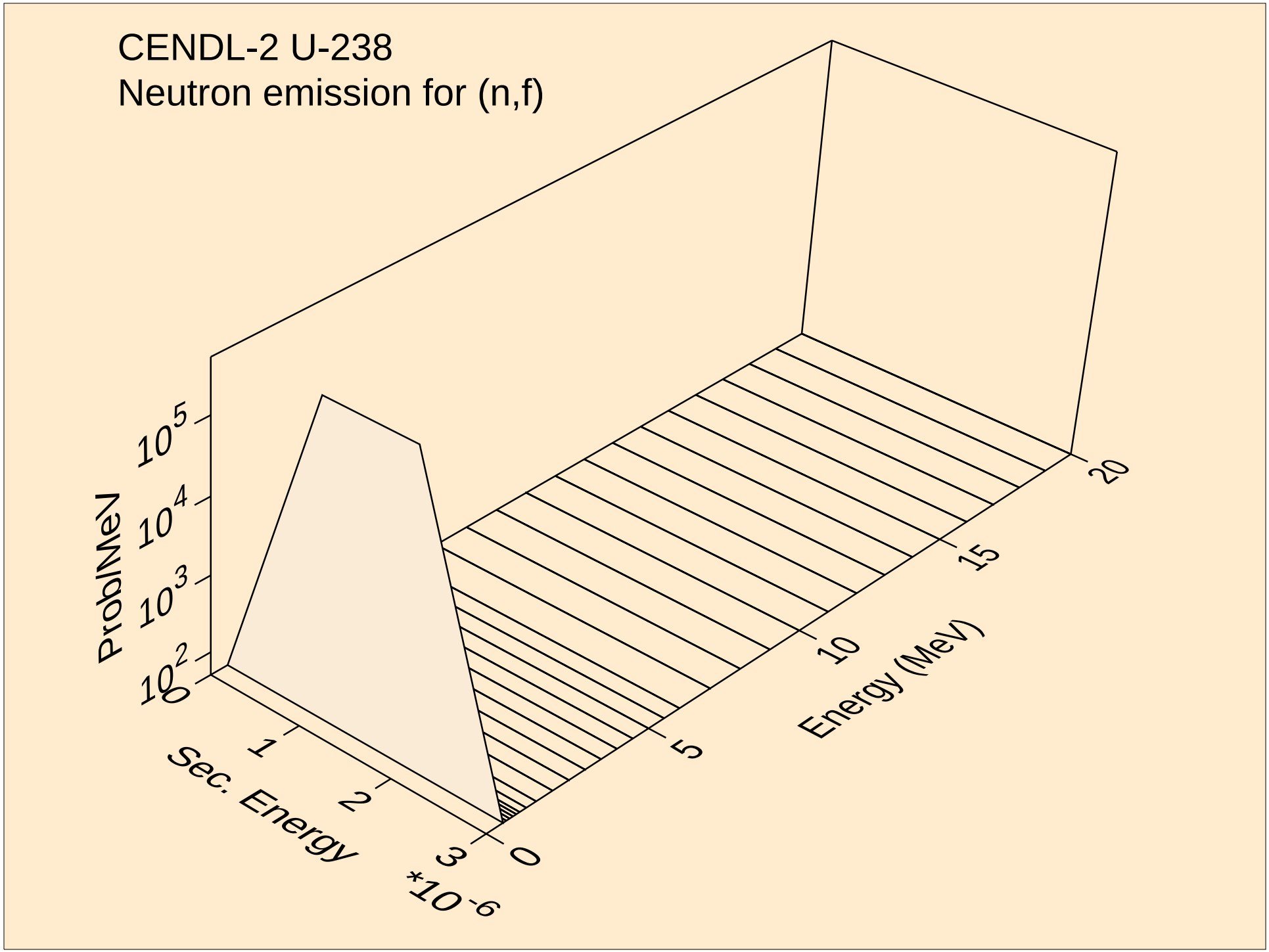

CENDL-2 U-238
angular distribution for (n,n*21)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
1
2
3
4
5
6
Energy (MeV)

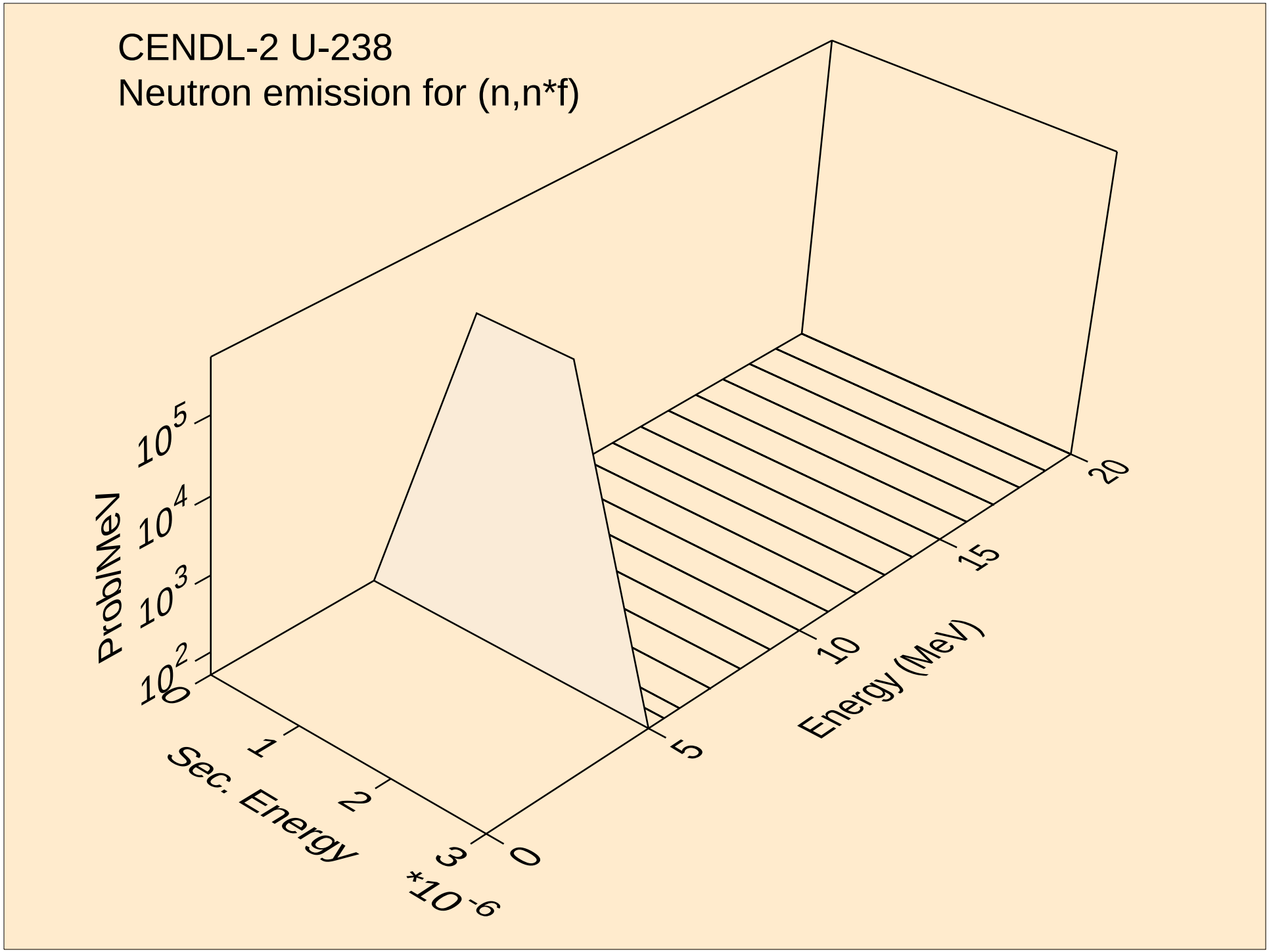

CENDL-2 U-238
angular distribution for (n,n*c)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

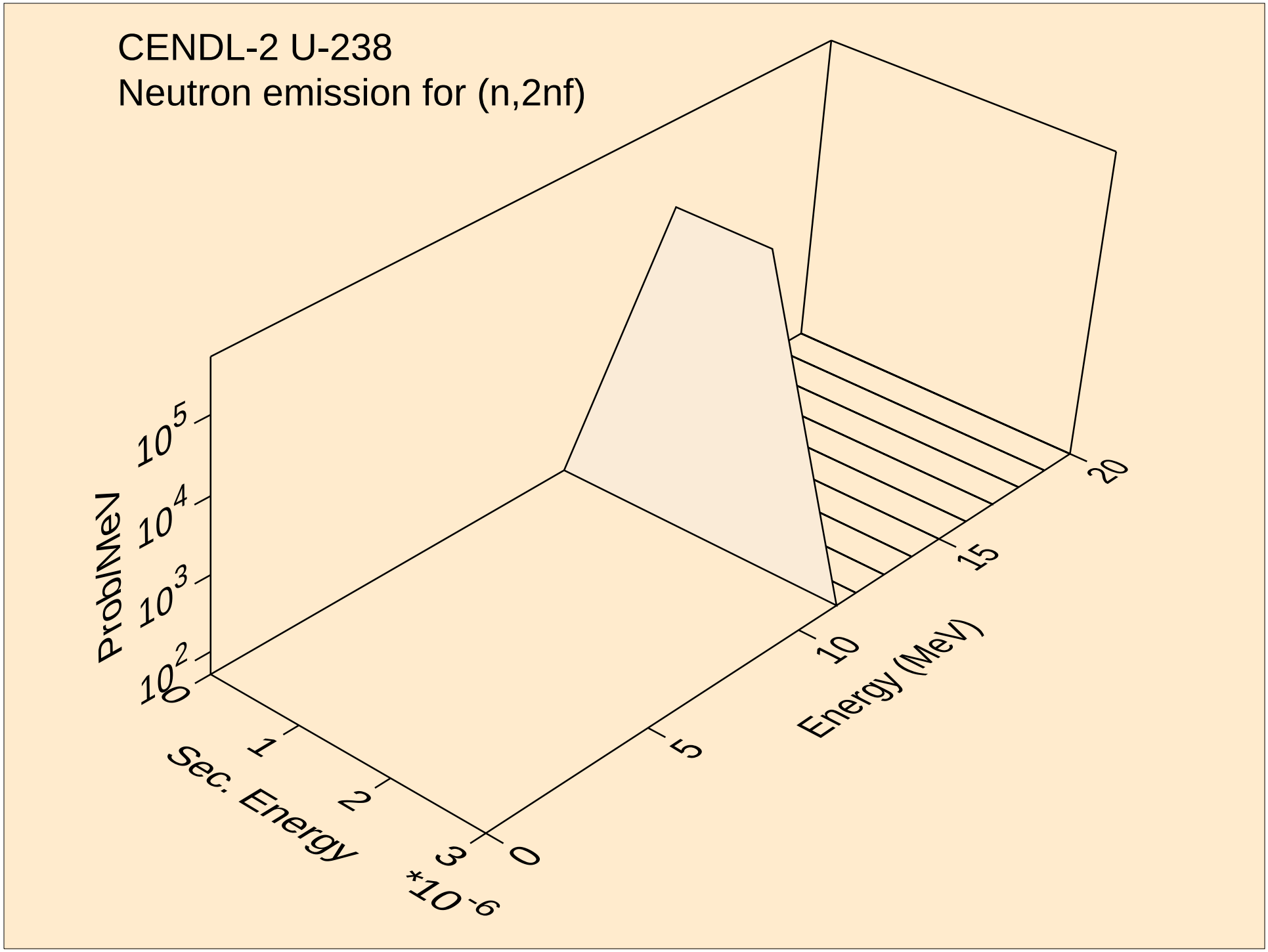

CENDL-2 U-238
Total fission nubar
Fission nubar
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
0
5
10
15
20
Energy (MeV)

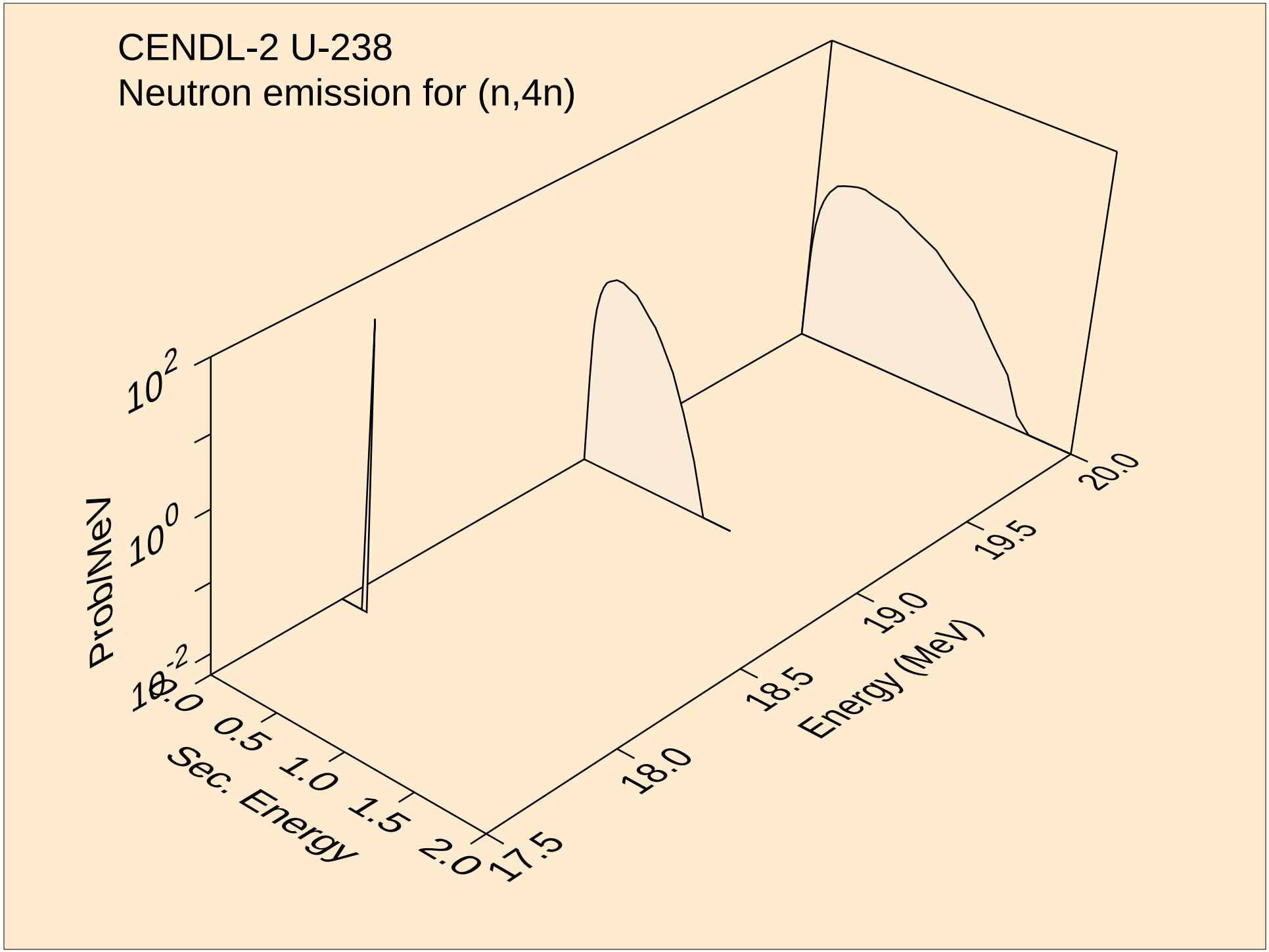

CENDL-2 U-238
Neutron emission for (n,2n)
Prob/MeV
10-1
10-3
0
5
10
15
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)

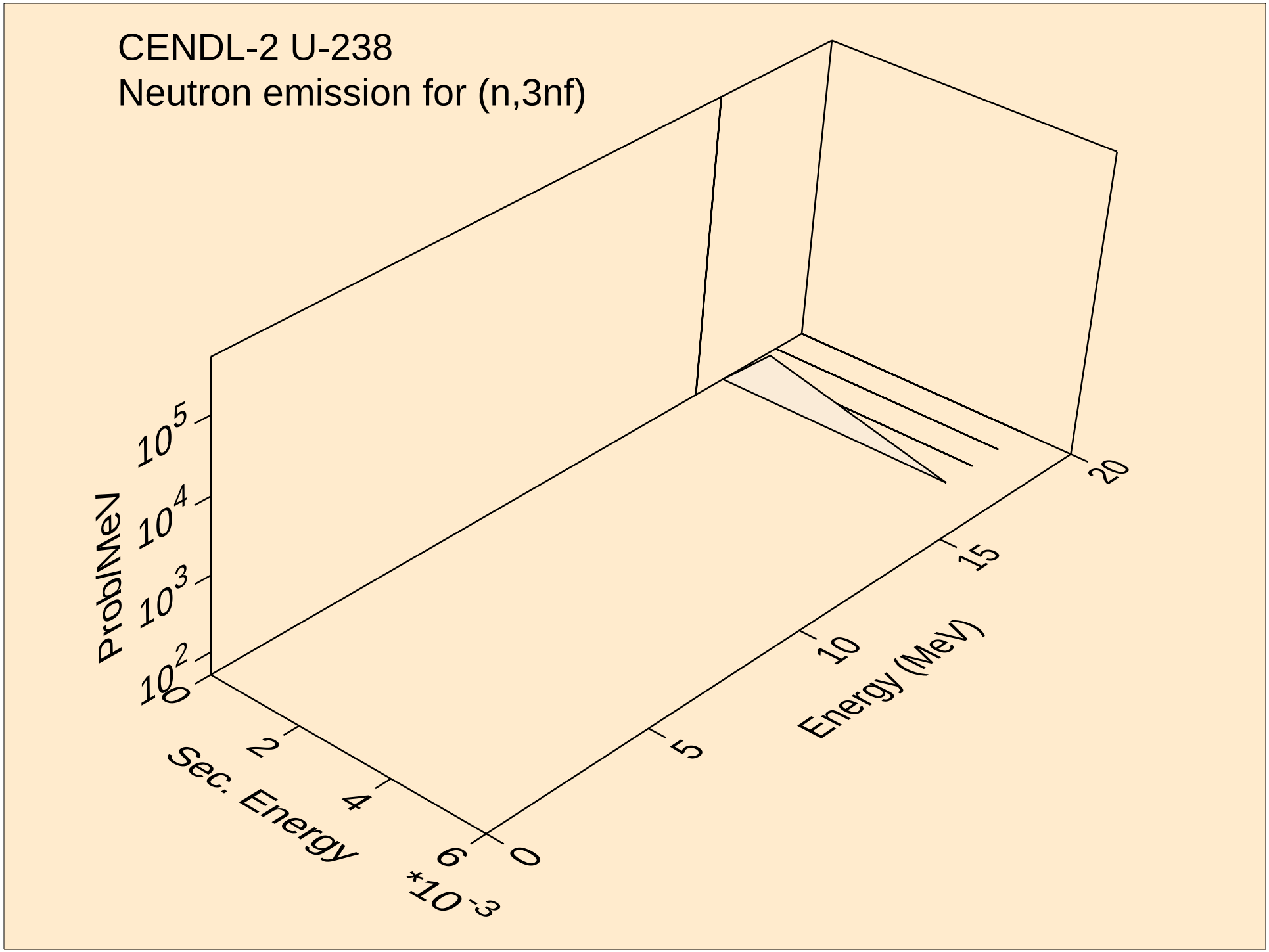

CENDL-2 U-238
Neutron emission for (n,3n)
Prob/MeV
10^-1
10^-3
0
2
4
6
8
10
Sec. Energy
10
12
14
16
18
20
Energy (MeV)

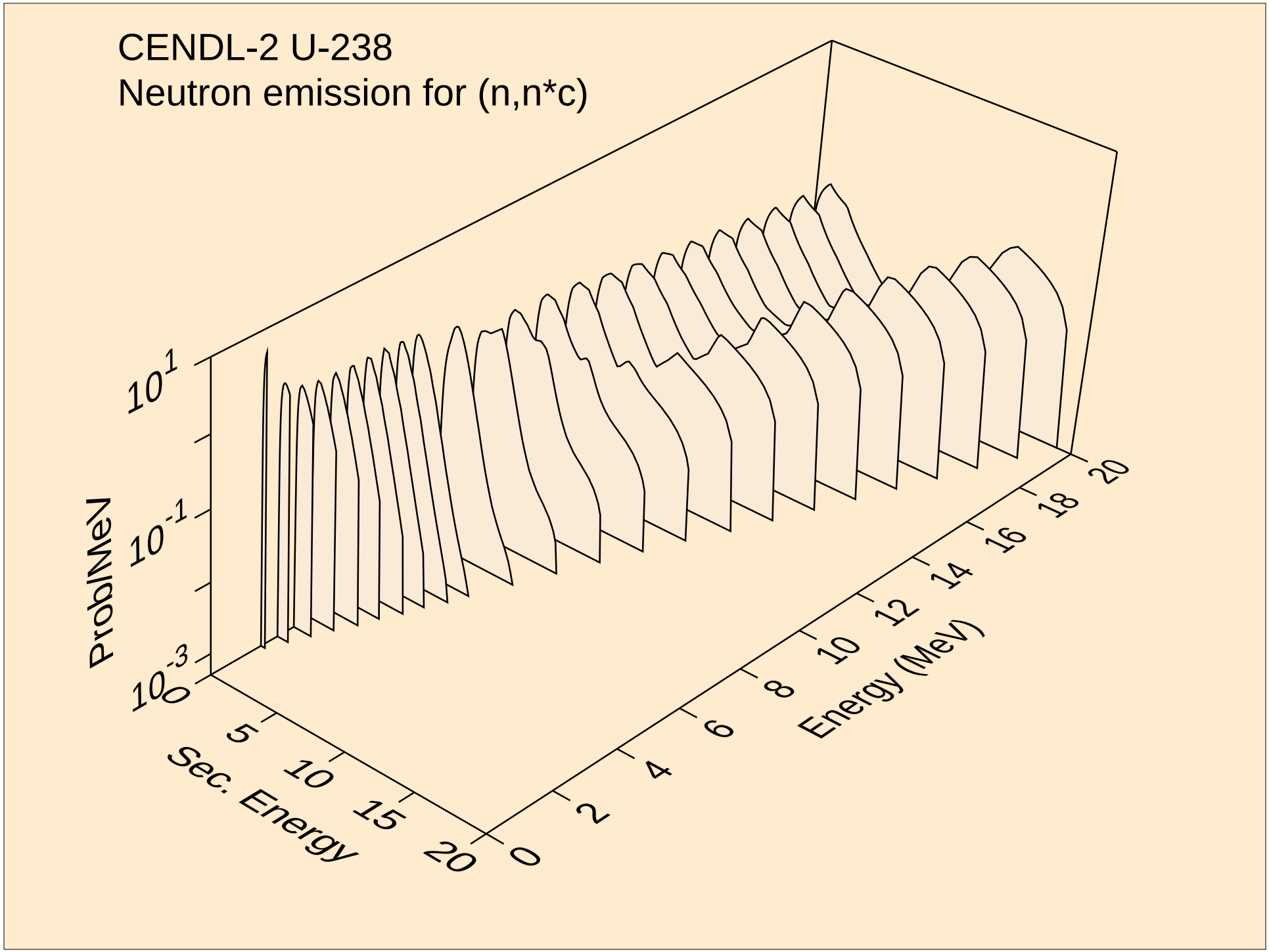

CENDL-2 U-238
Neutron emission for (n,f)
Prob/MeV
10^5
10^4
10^3
10^2
0
1
2
3
*10-6
Sec. Energy
5
10
15
20
Energy (MeV)


CENDL-2 U-238
Neutron emission for (n,n*f)
Prob/MeV
10^5
10^4
10^3
10^2
0
1
2
3
*10 -6
Sec. Energy
5
10
15
20
Energy (MeV)


CENDL-2 U-238
Neutron emission for (n,2nf)
Prob/MeV
10^5
10^4
10^3
10^2
0
1
2
3
*10-6
Sec. Energy
5
10
15
20
Energy (MeV)


CENDL-2 U-238
Neutron emission for (n,4n)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.5
1.0
1.5
2.0
Sec. Energy
17.5
18.0
18.5
19.0
19.5
20.0
Energy (MeV)


CENDL-2 U-238
Neutron emission for (n,3nf)
Prob/MeV
10^5
10^4
10^3
10^2
0
2
4
6
*10 -3
Sec. Energy
5
10
15
20
Energy (MeV)


CENDL-2 U-238
Neutron emission for (n,n*c)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)