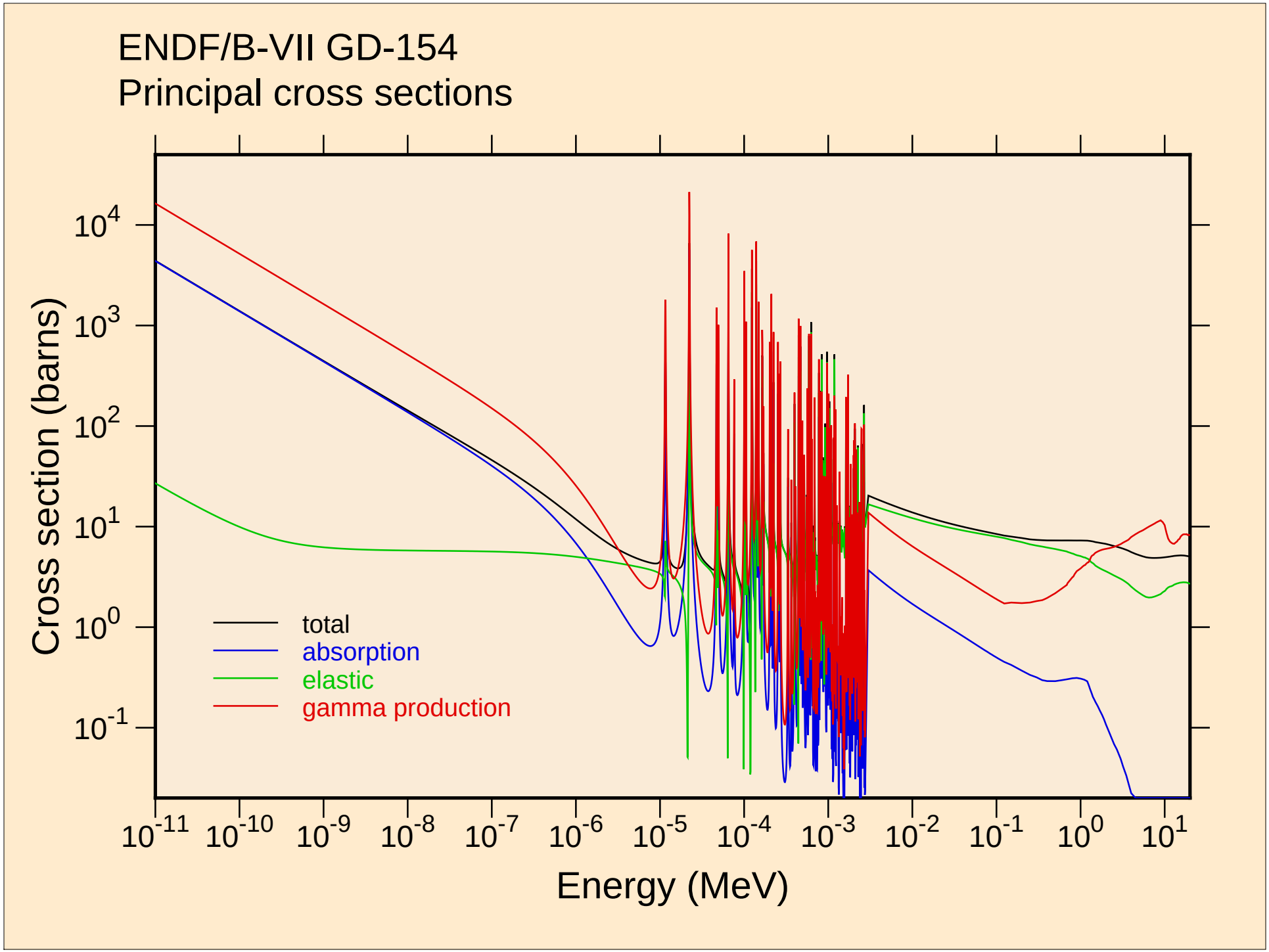
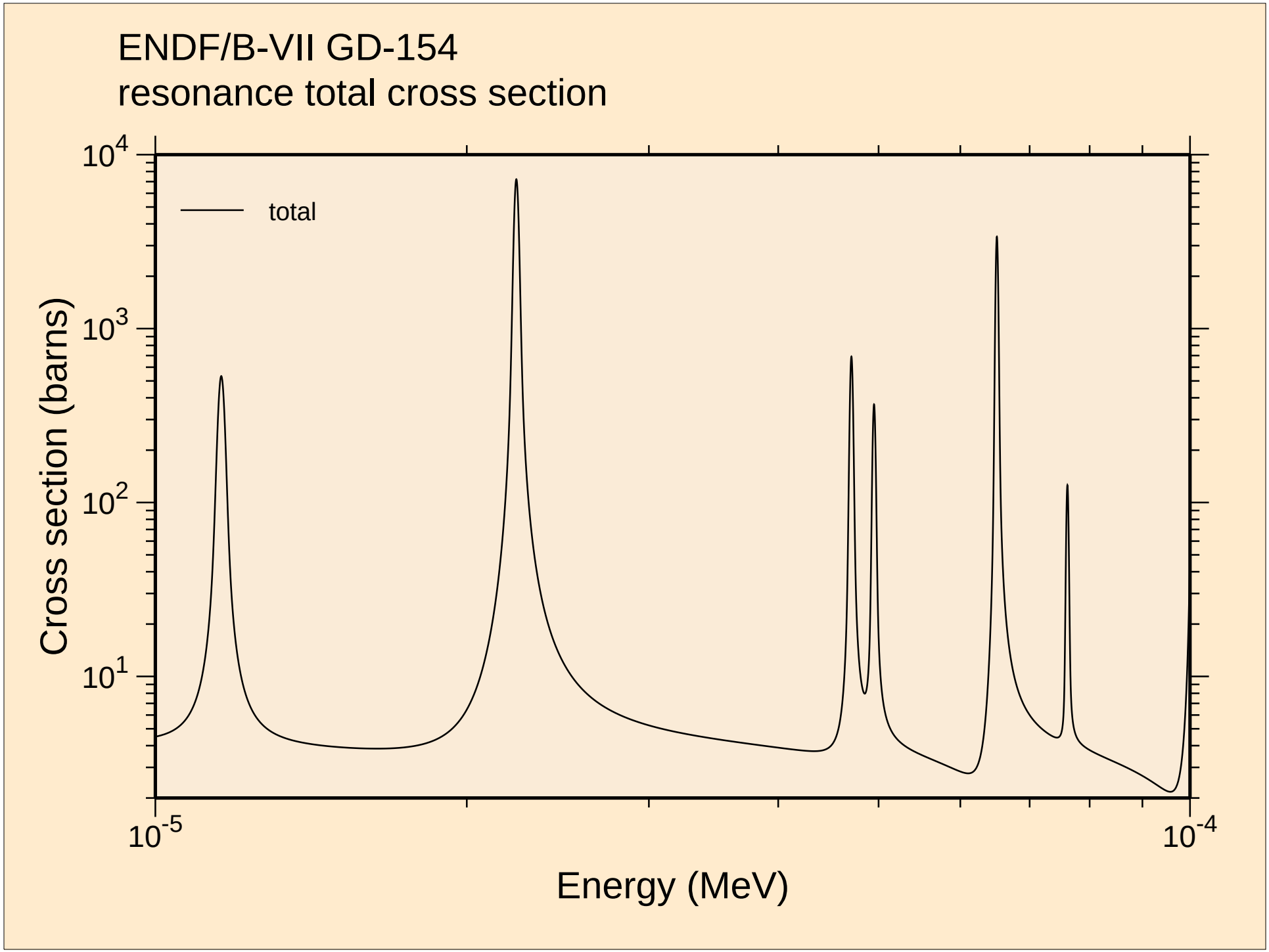
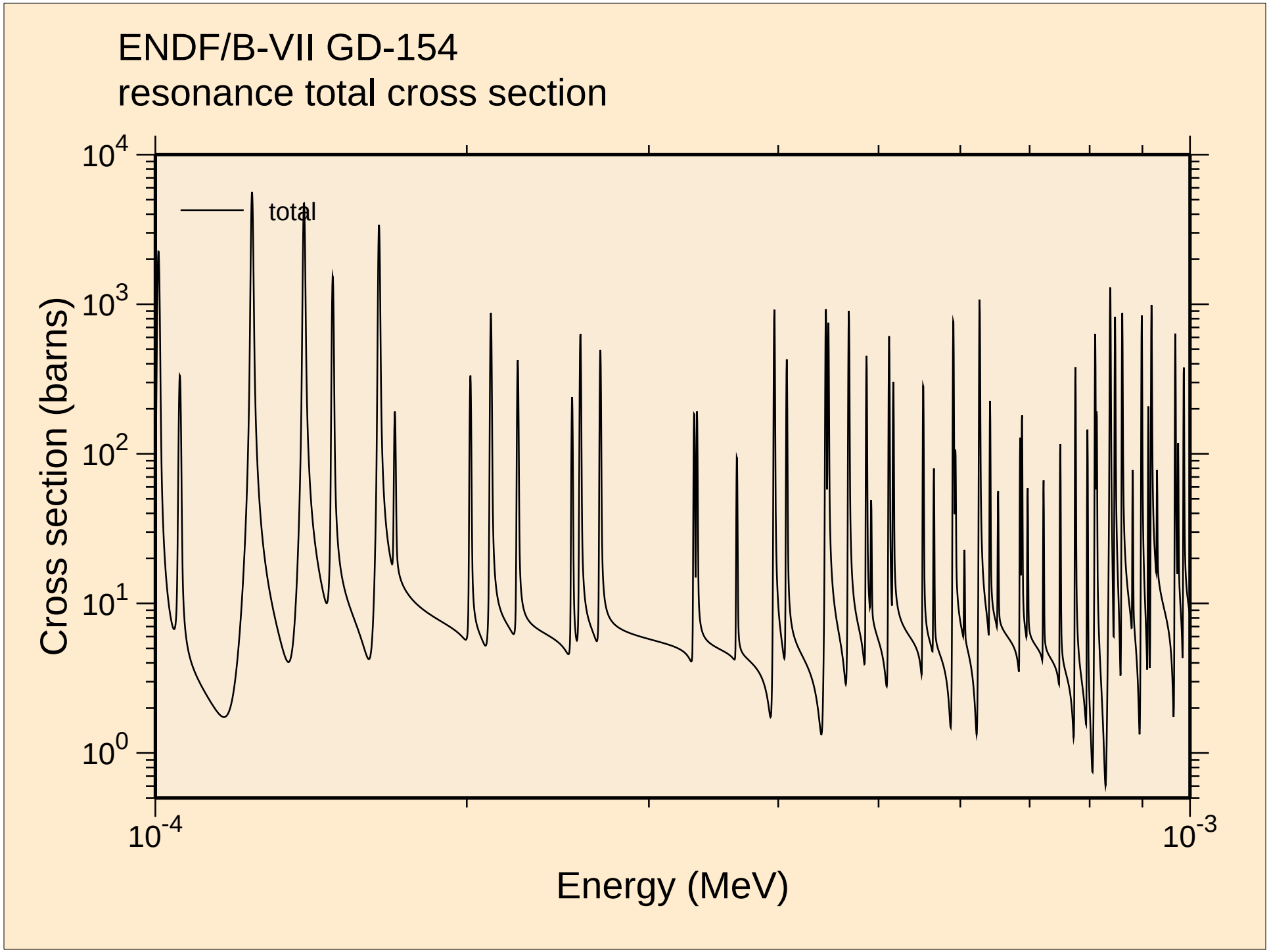
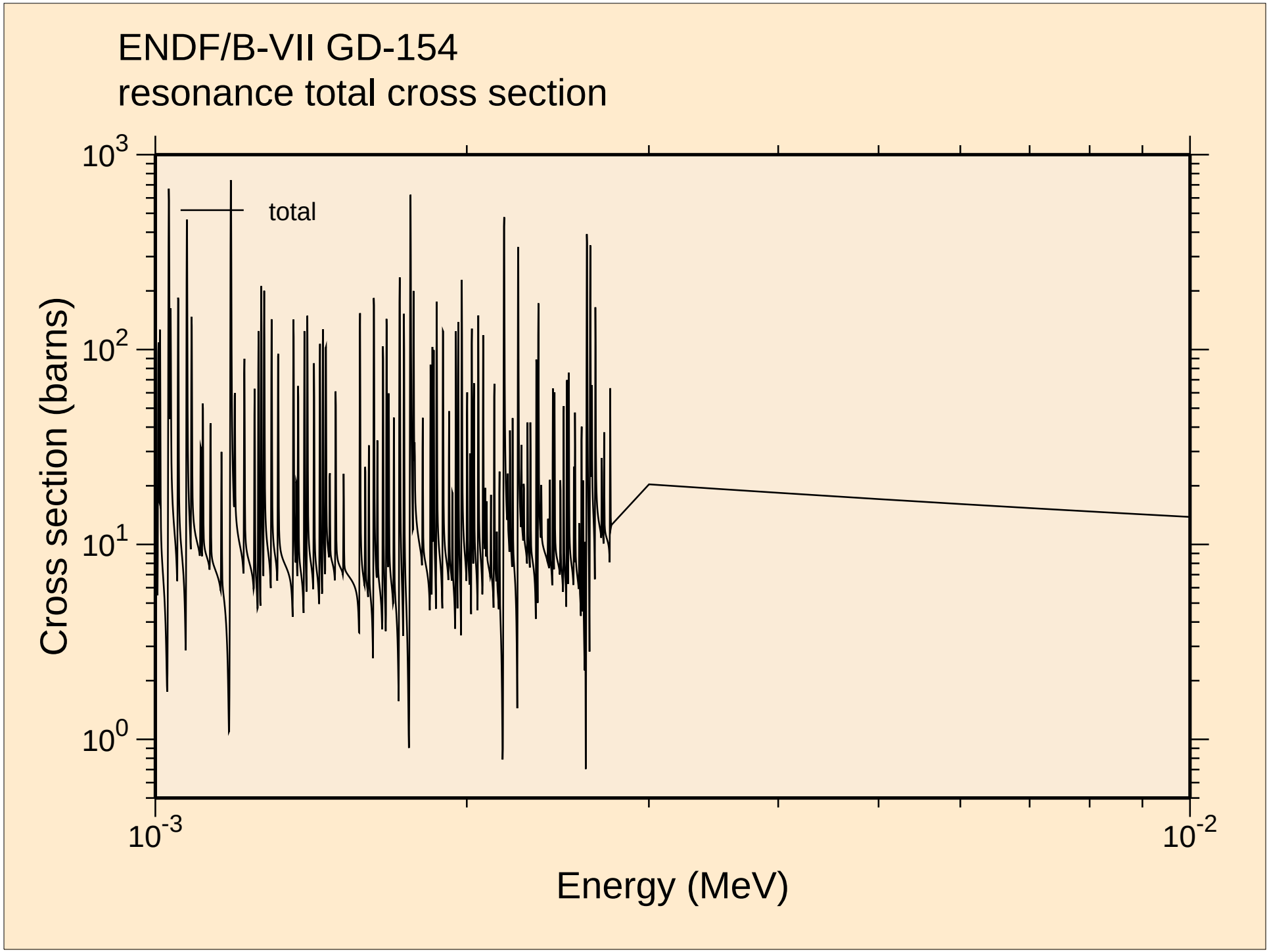
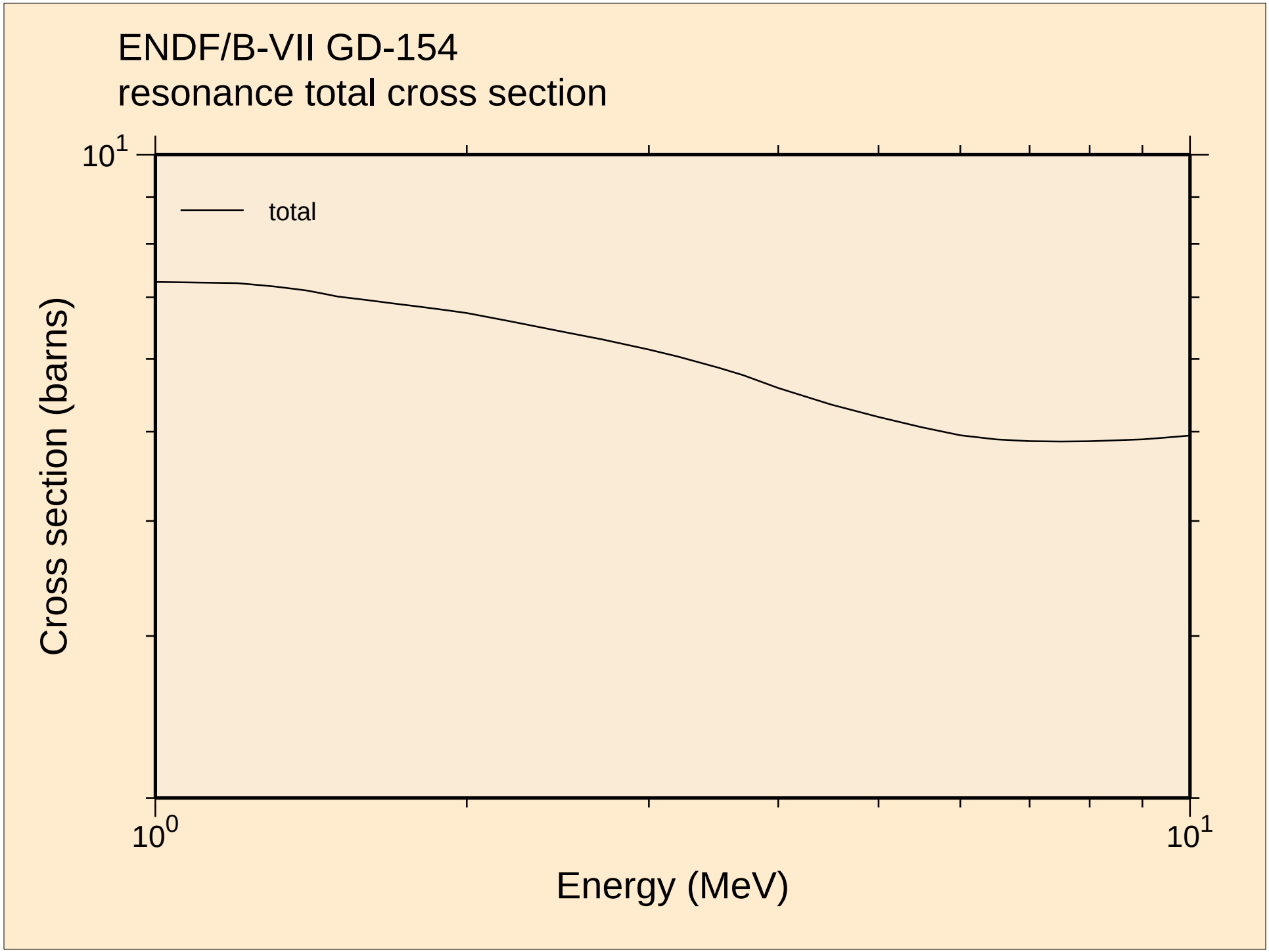
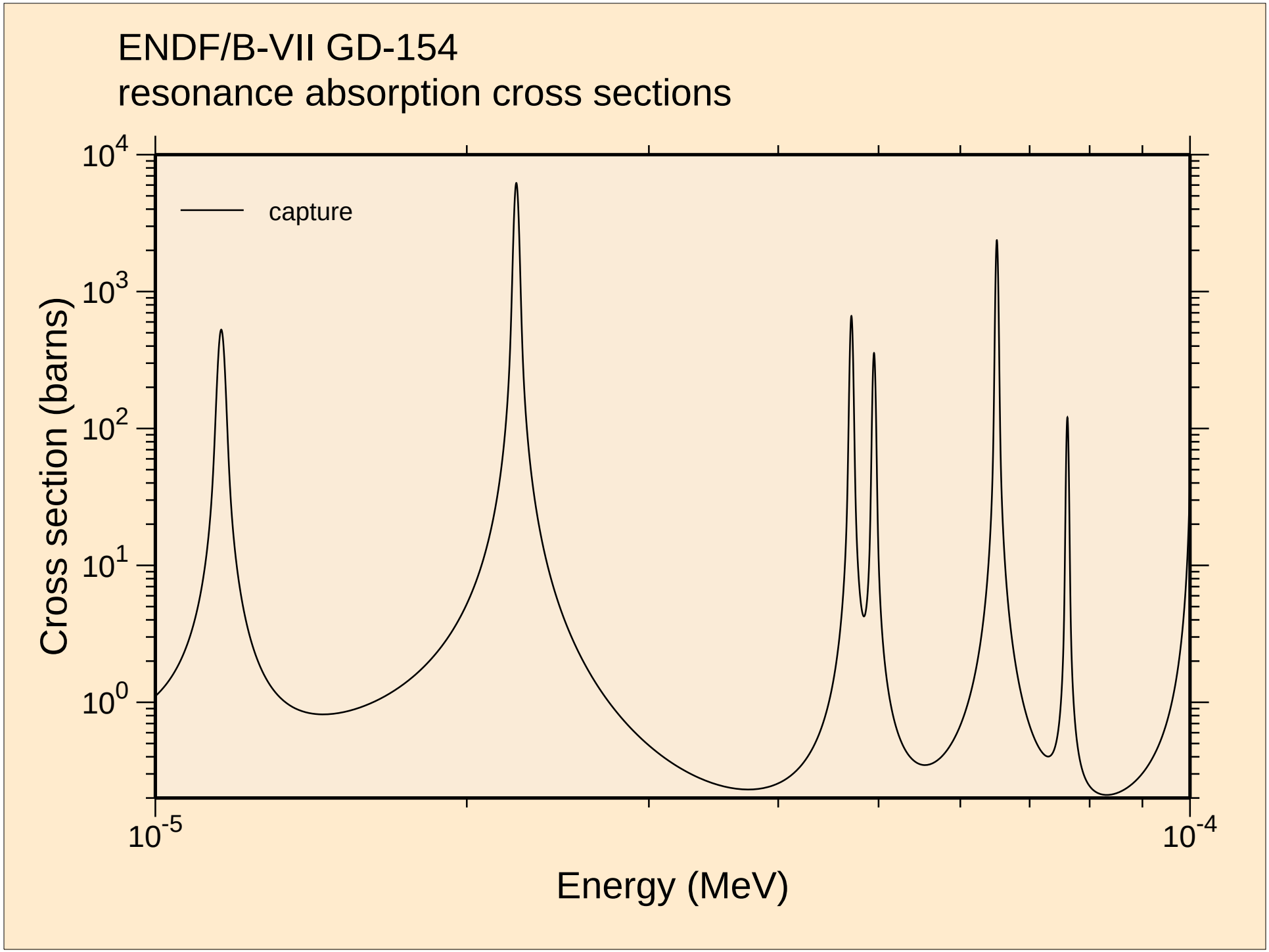

ENDF/B-VII GD-154
Principal cross sections
Cross section (barns)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
total
absorption
elastic
gamma production
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}
Energy (MeV)

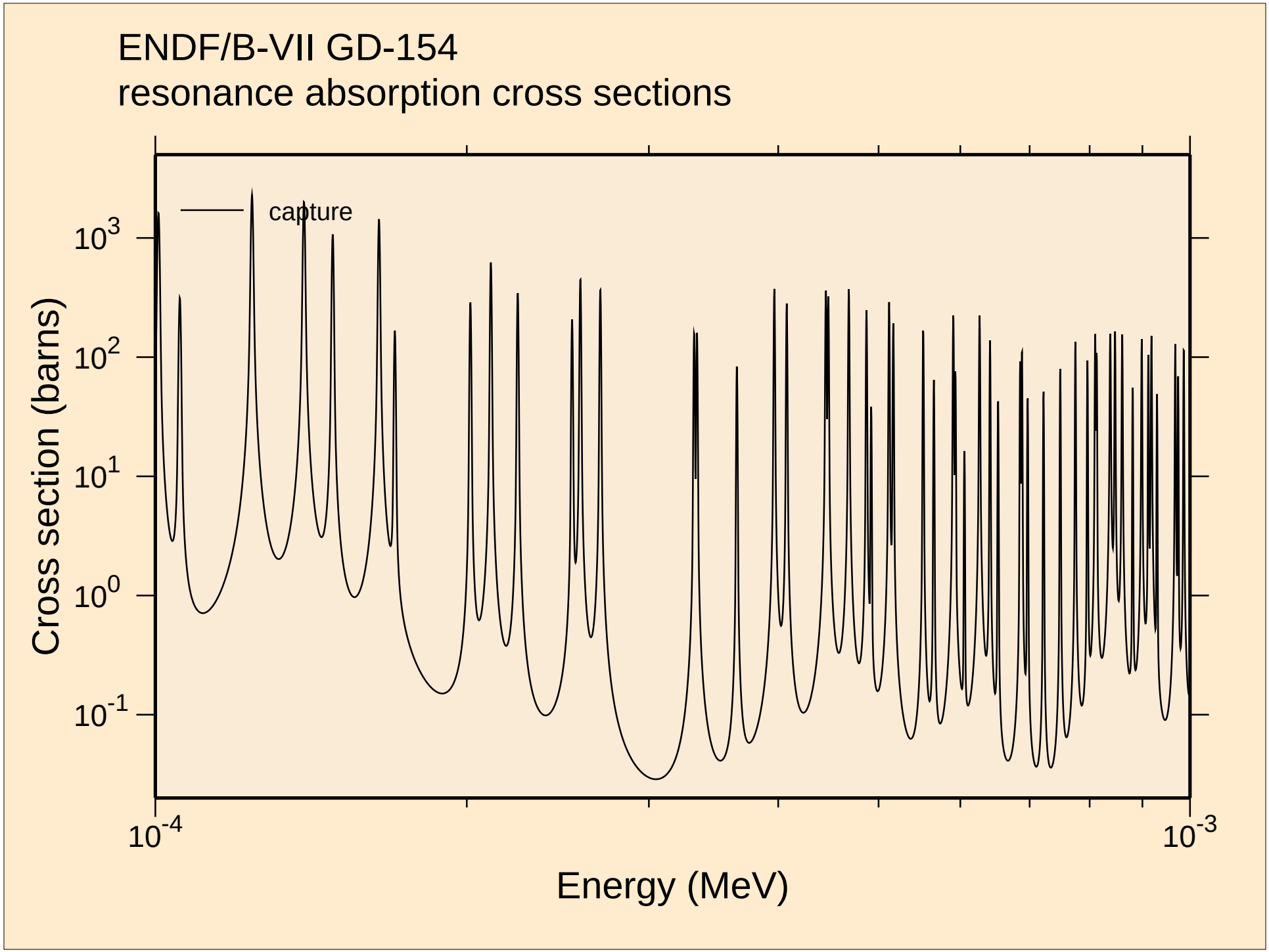

ENDF/B-VII GD-154
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^{-5}
10^{-4}
Energy (MeV)

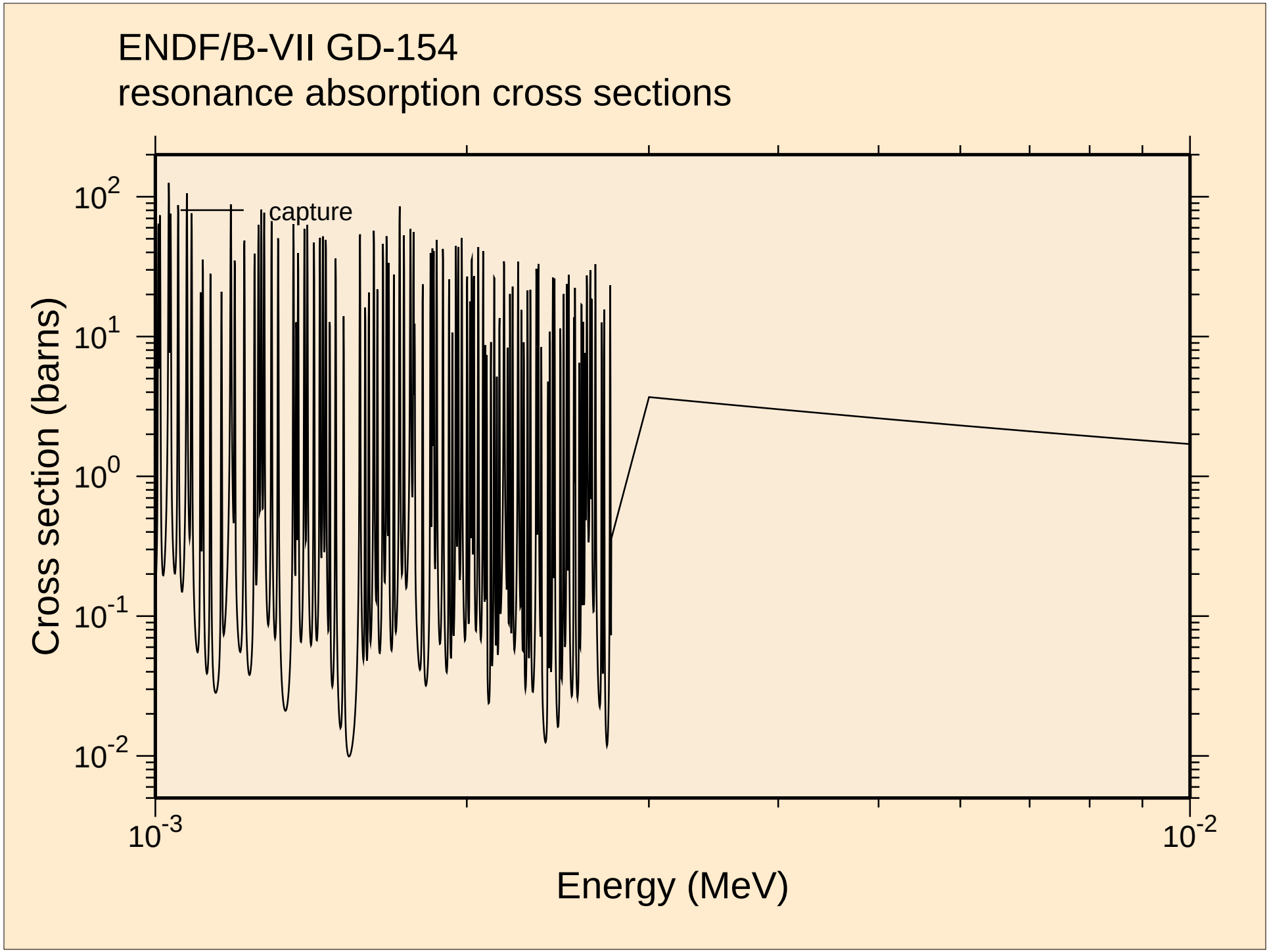

ENDF/B-VII GD-154
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^{-4}
10^{-3}
Energy (MeV)

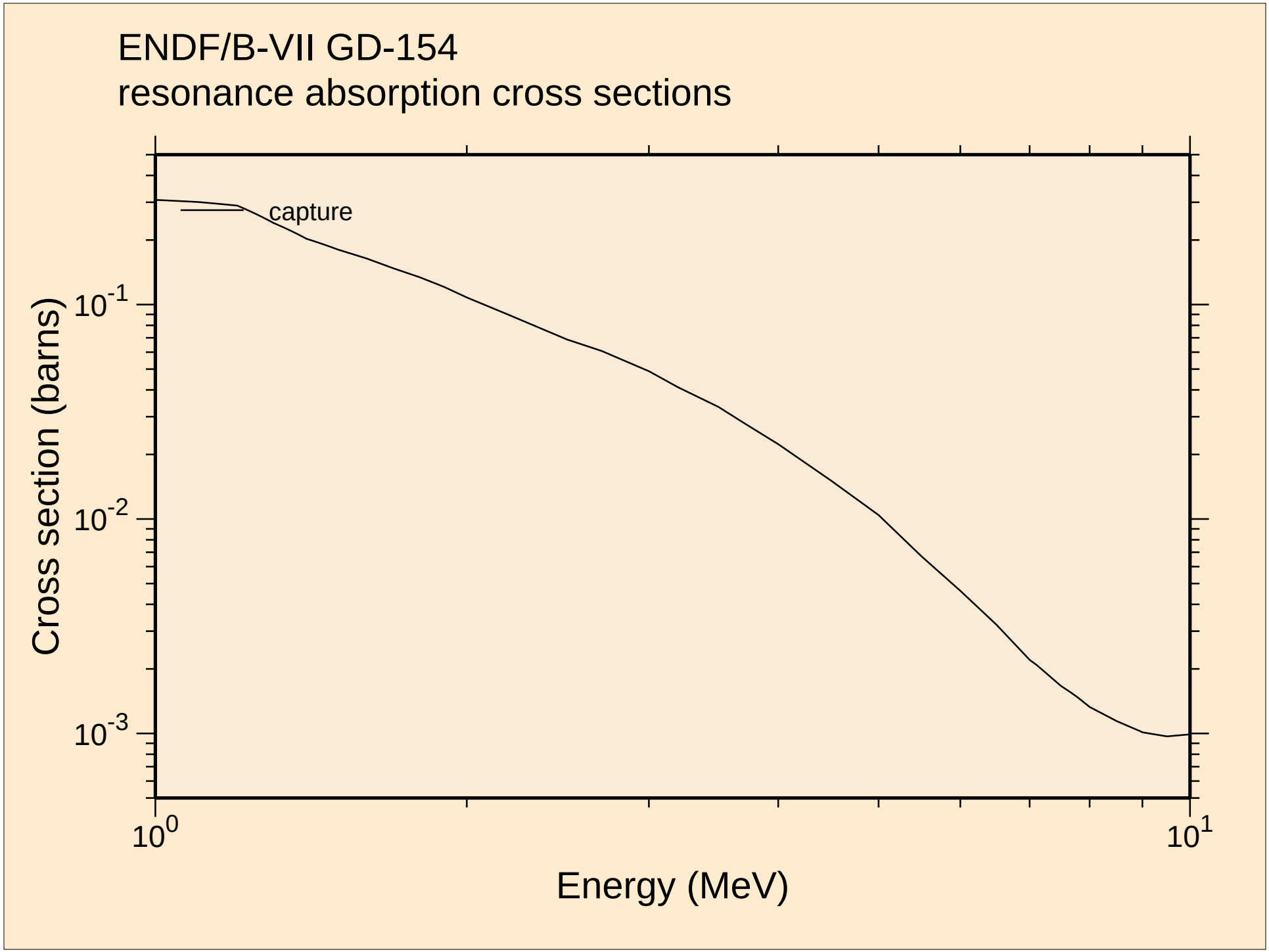

ENDF/B-VII GD-154
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^{-3}
10^{-2}
Energy (MeV)


ENDF/B-VII GD-154
resonance total cross section
10^1
total
Cross section (barns)
10^0
10^1
Energy (MeV)

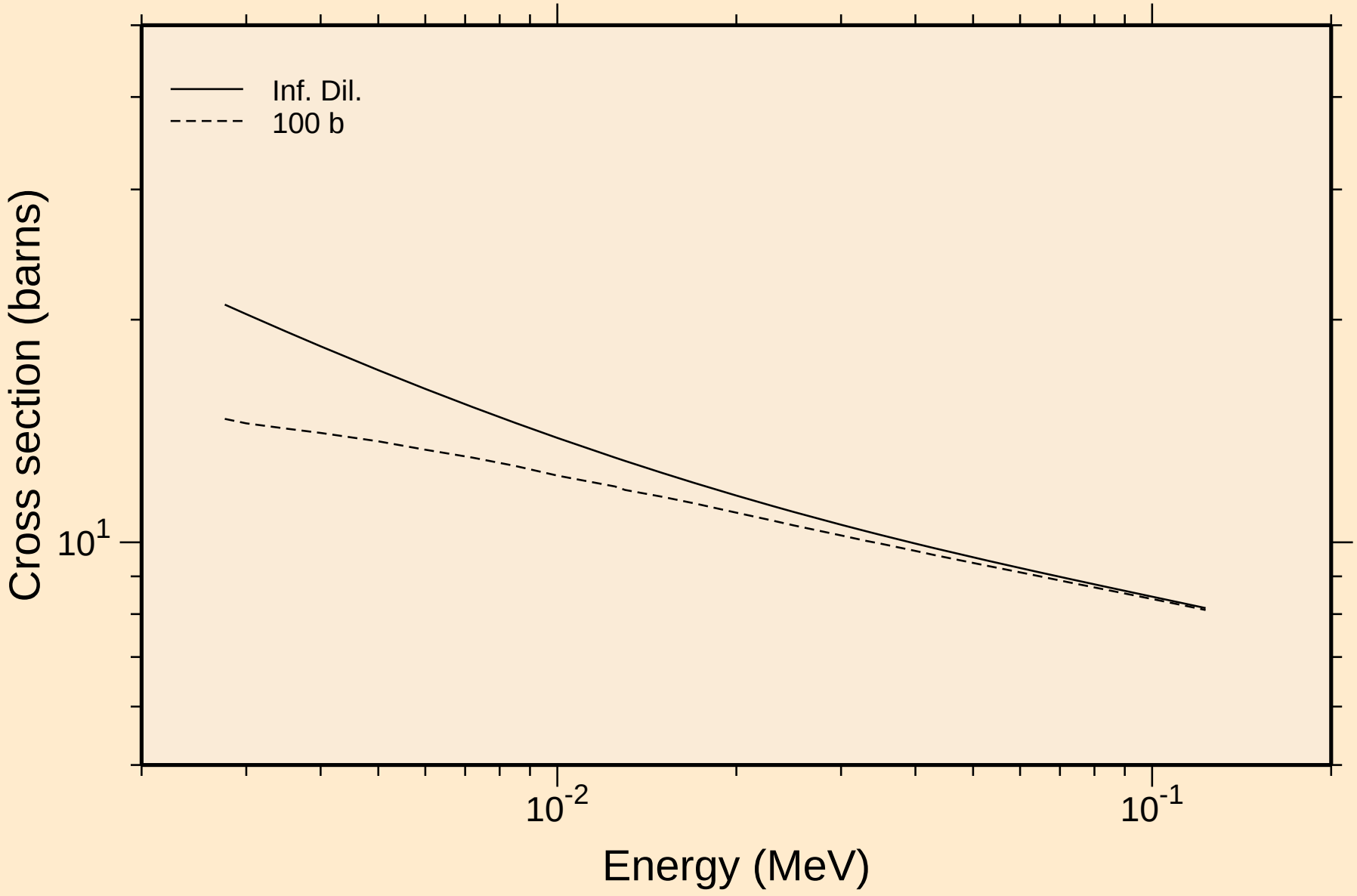

ENDF/B-VII GD-154
resonance absorption cross sections
capture
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^{-5}
10^{-4}
Energy (MeV)


ENDF/B-VII GD-154
resonance absorption cross sections
capture
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-4
10^-3
Energy (MeV)

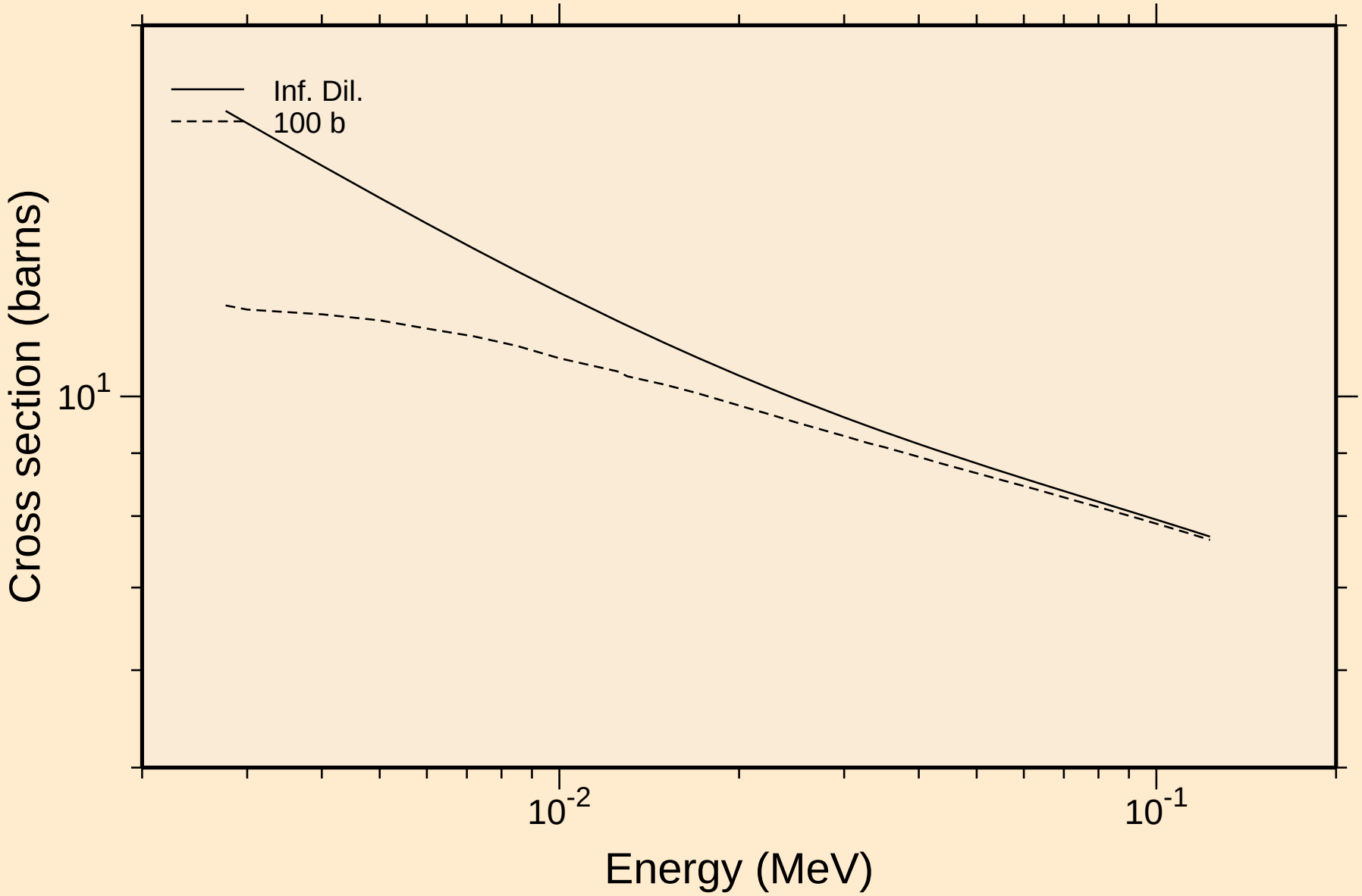

ENDF/B-VII GD-154
resonance absorption cross sections
capture
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-2}
Energy (MeV)


ENDF/B-VII GD-154
resonance absorption cross sections
capture
Cross section (barns)
10-1
10-2
10-3
100
101
Energy (MeV)

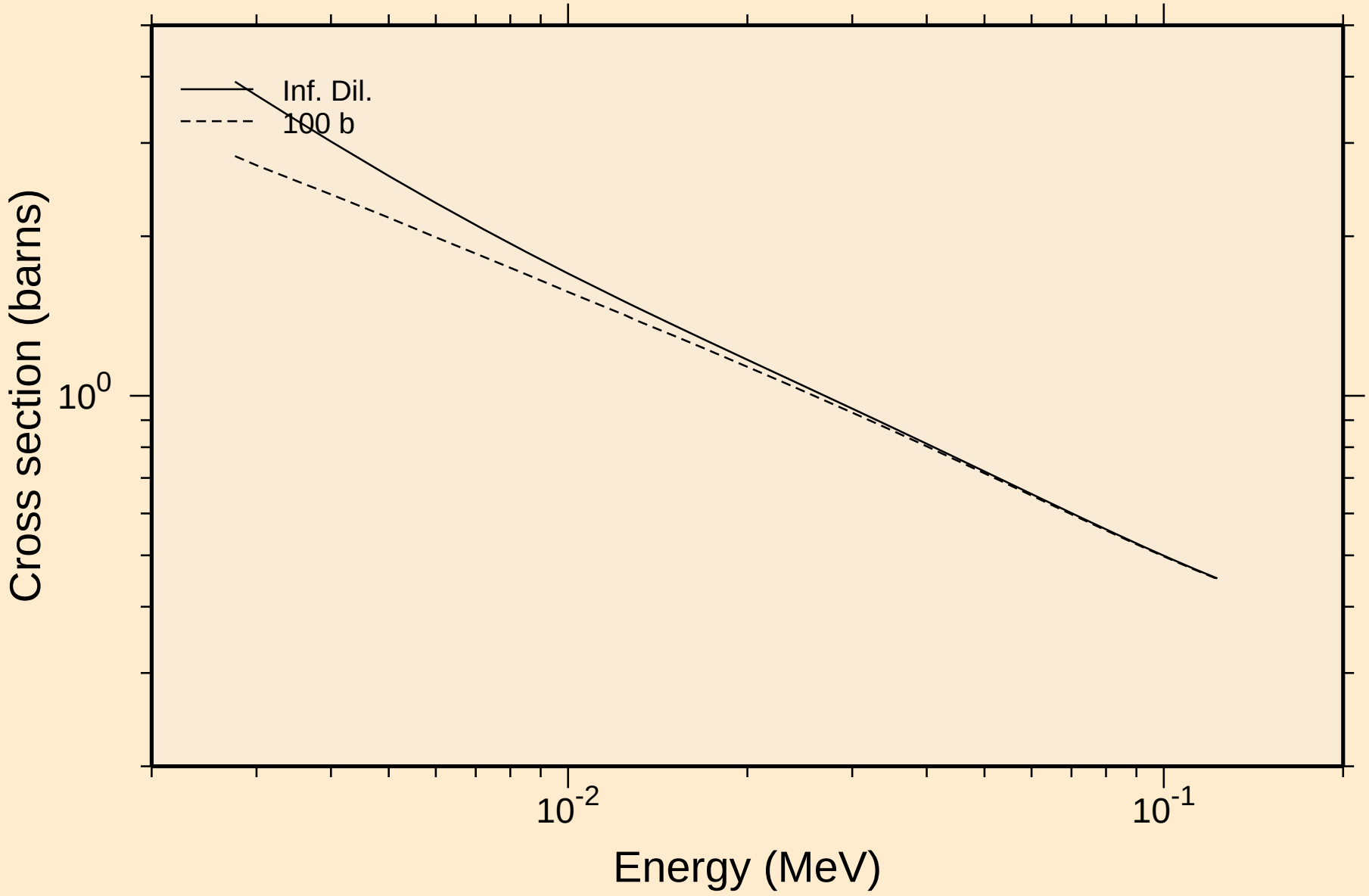
ENDF/B-VII GD-154
UR total cross section

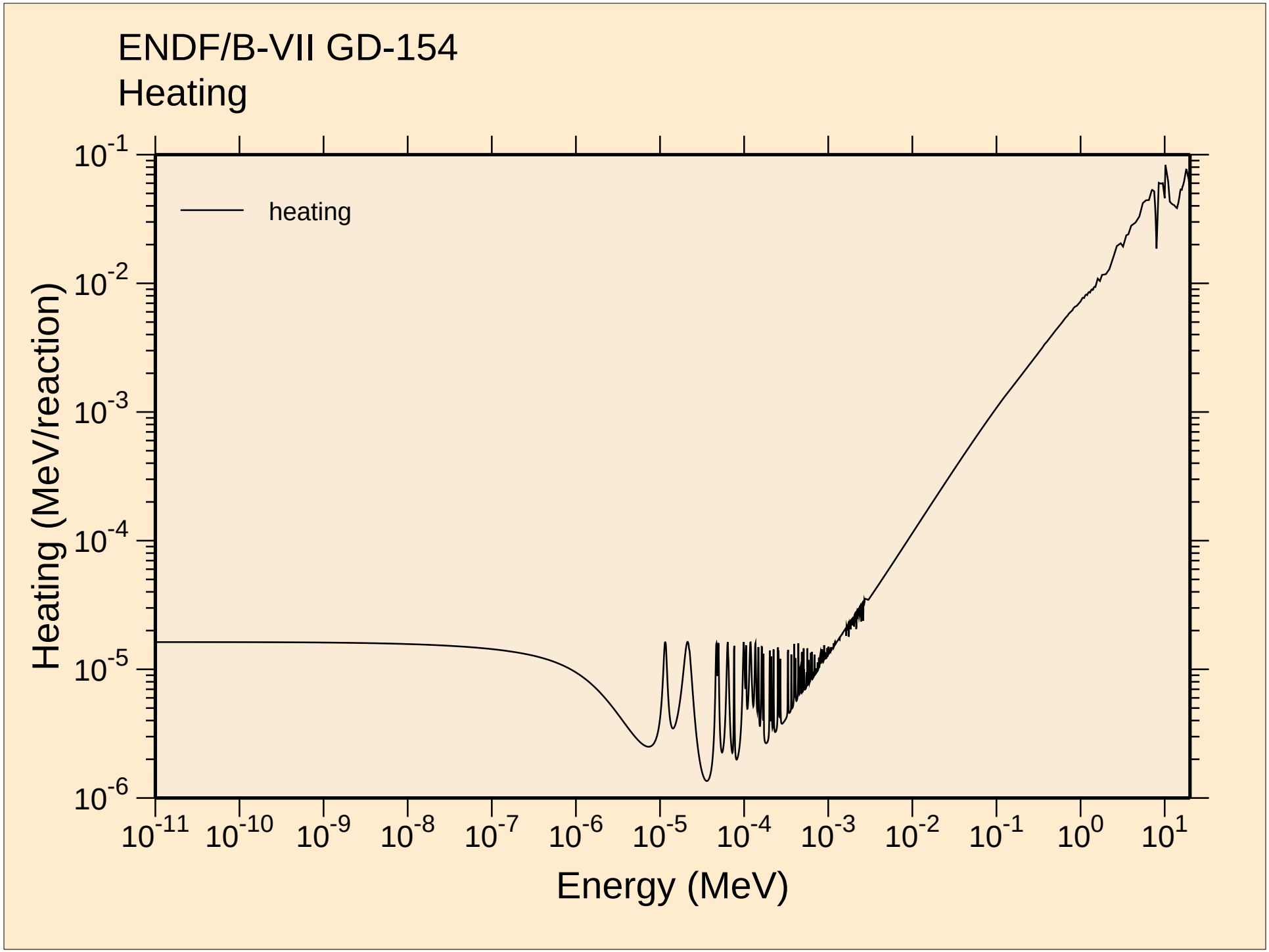


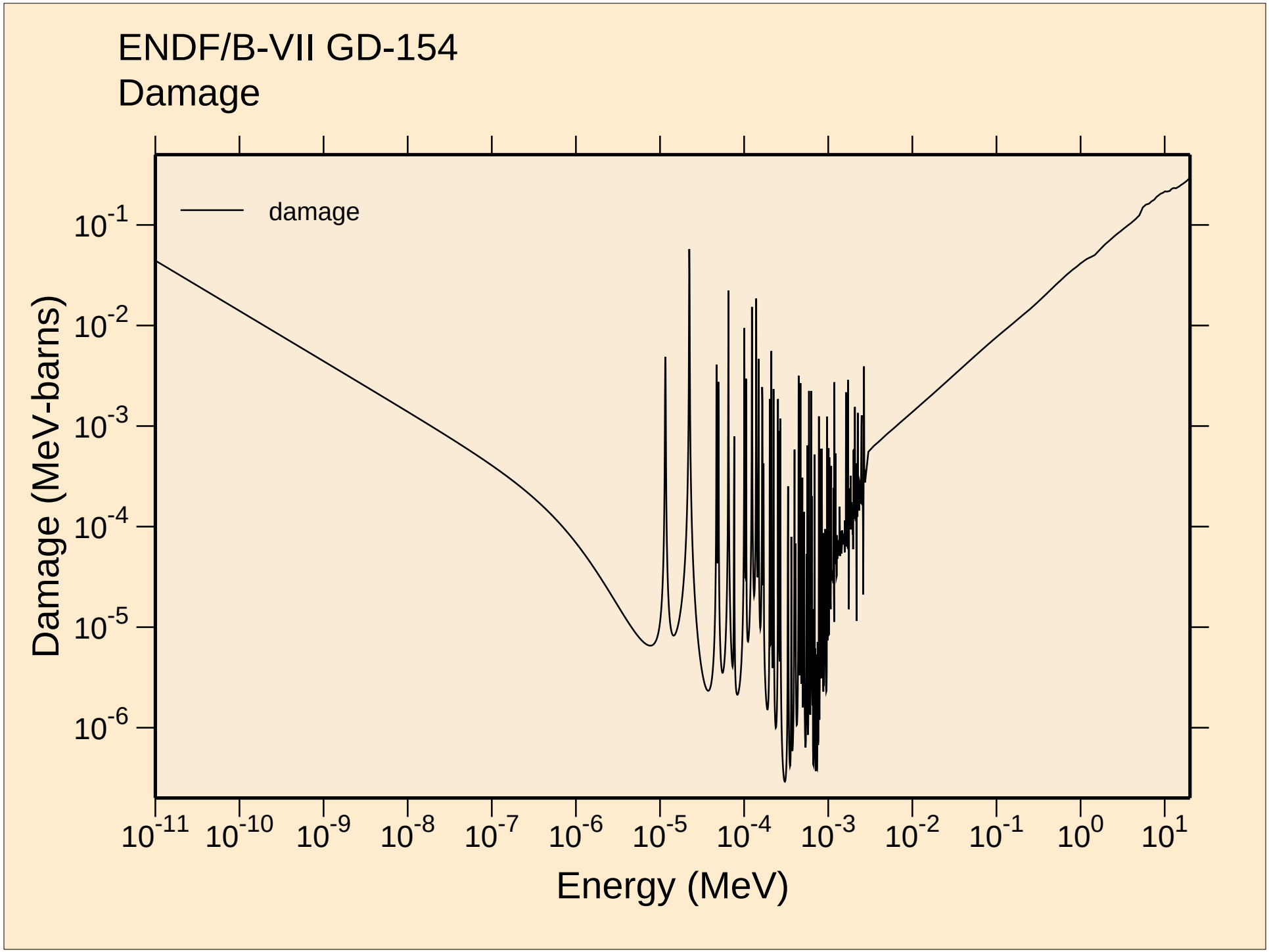
ENDF/B-VII GD-154
UR elastic cross section

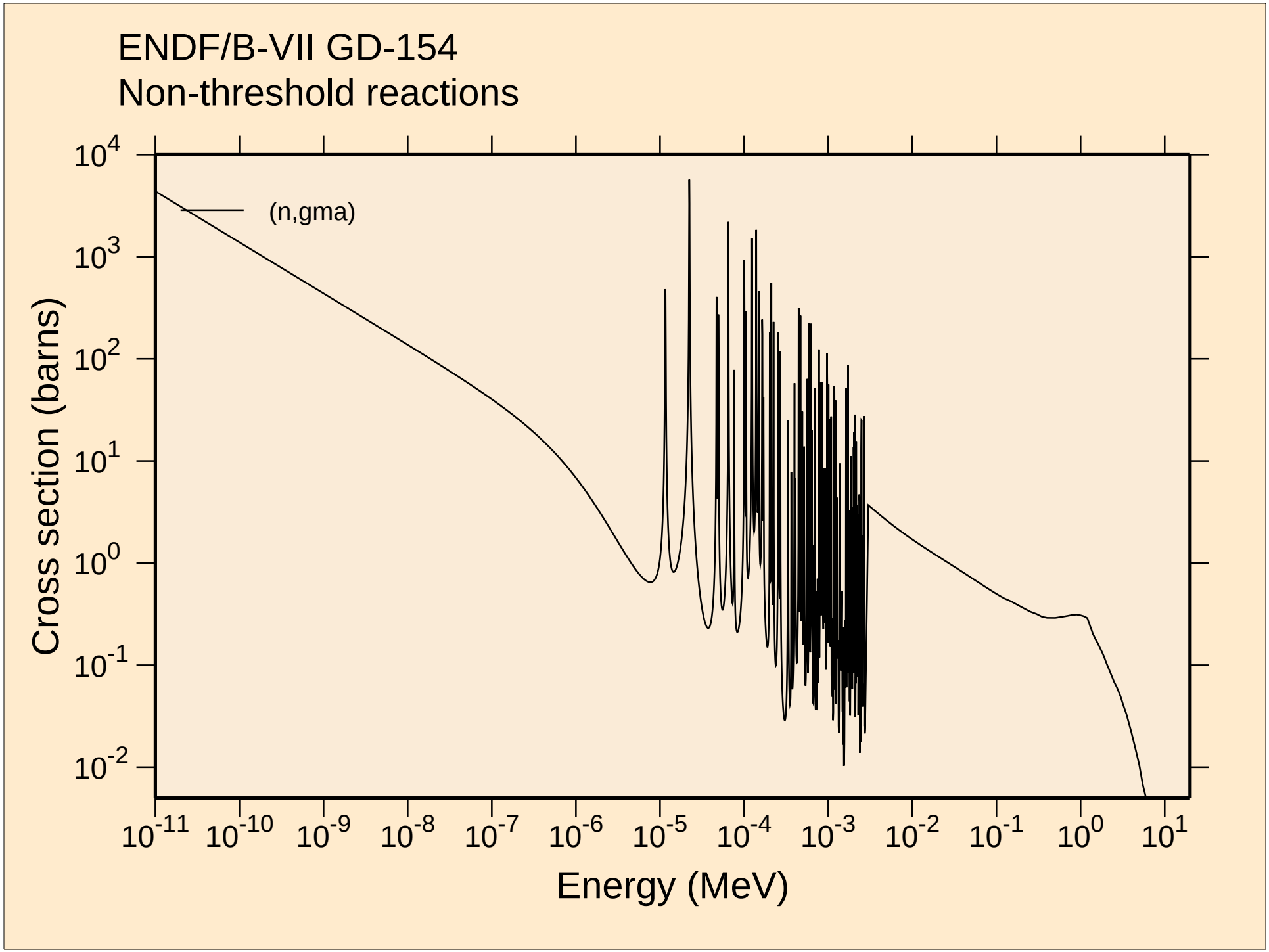


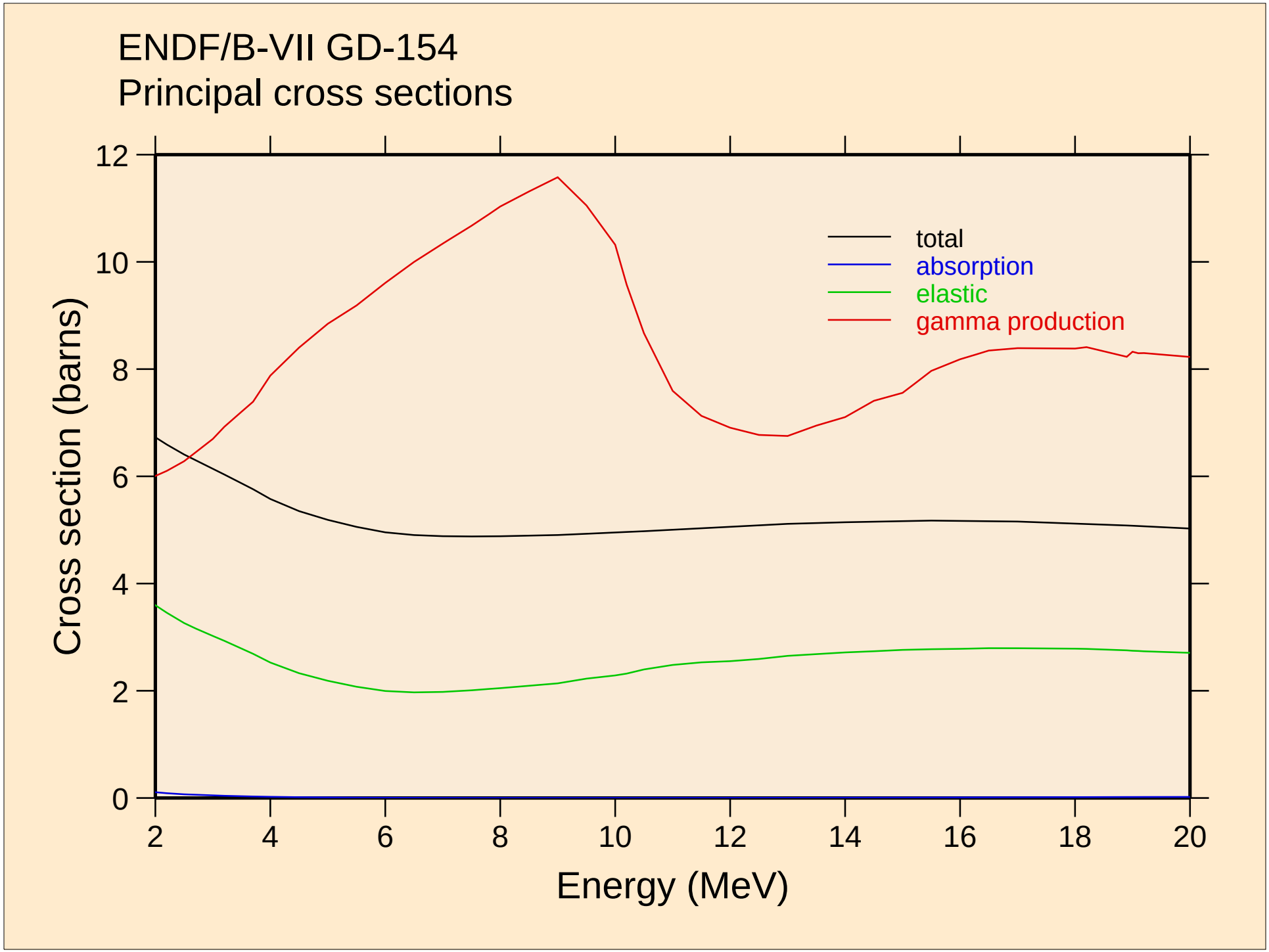
ENDF/B-VII GD-154
UR capture cross section

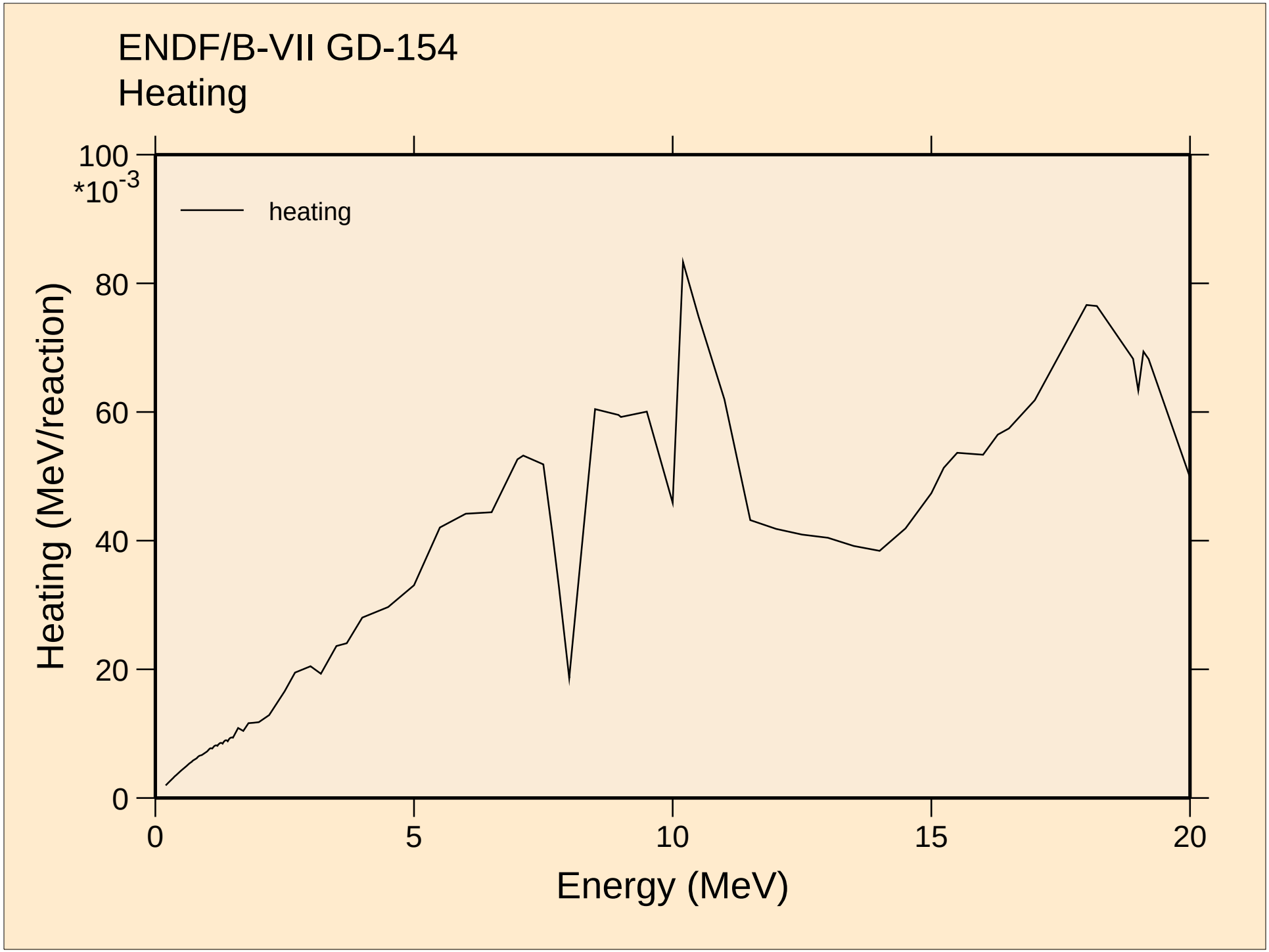


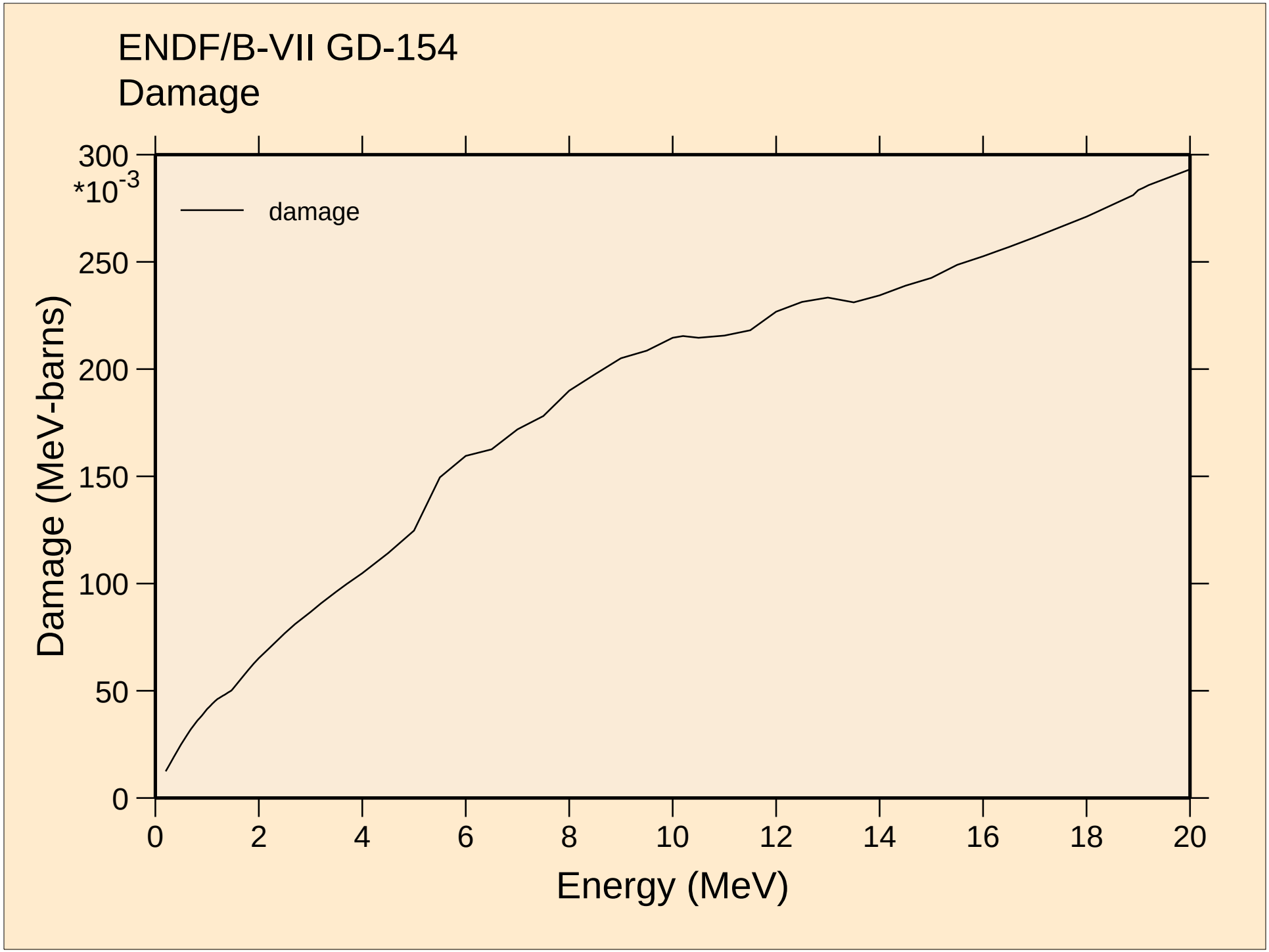

ENDF/B-VII GD-154
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10-1
10-2
10-3
10-4
10-5
10-6
10-11 10-10 10-9 10-8 10-7 10-6 10-5 10-4 10-3 10-2 10-1 100 101

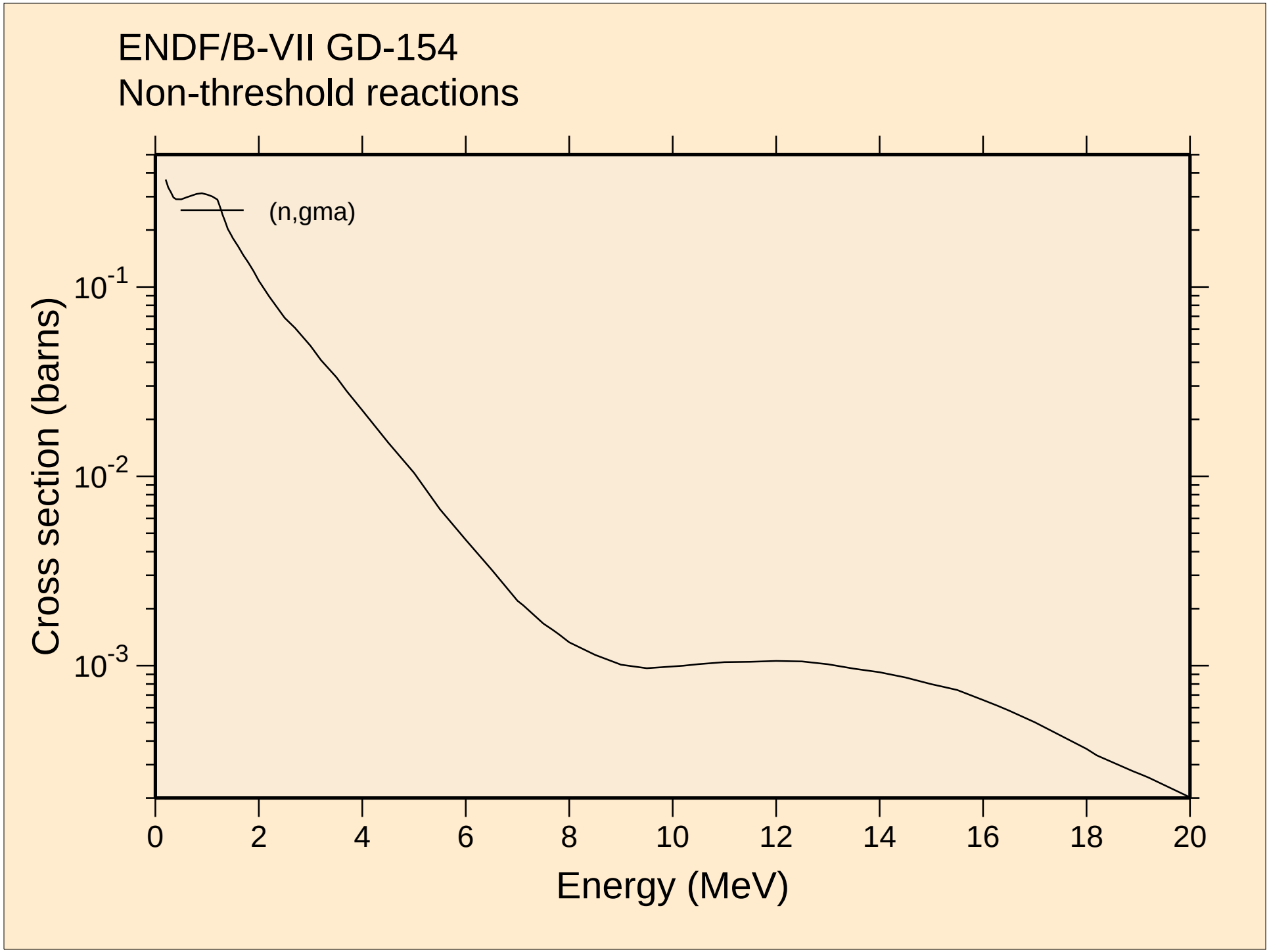

ENDF/B-VII GD-154
Damage
damage
Damage (MeV-barns)
10-1
10-2
10-3
10-4
10-5
10-6
10-11 10-10 10-9 10-8 10-7 10-6 10-5 10-4 10-3 10-2 10-1 100 101
Energy (MeV)

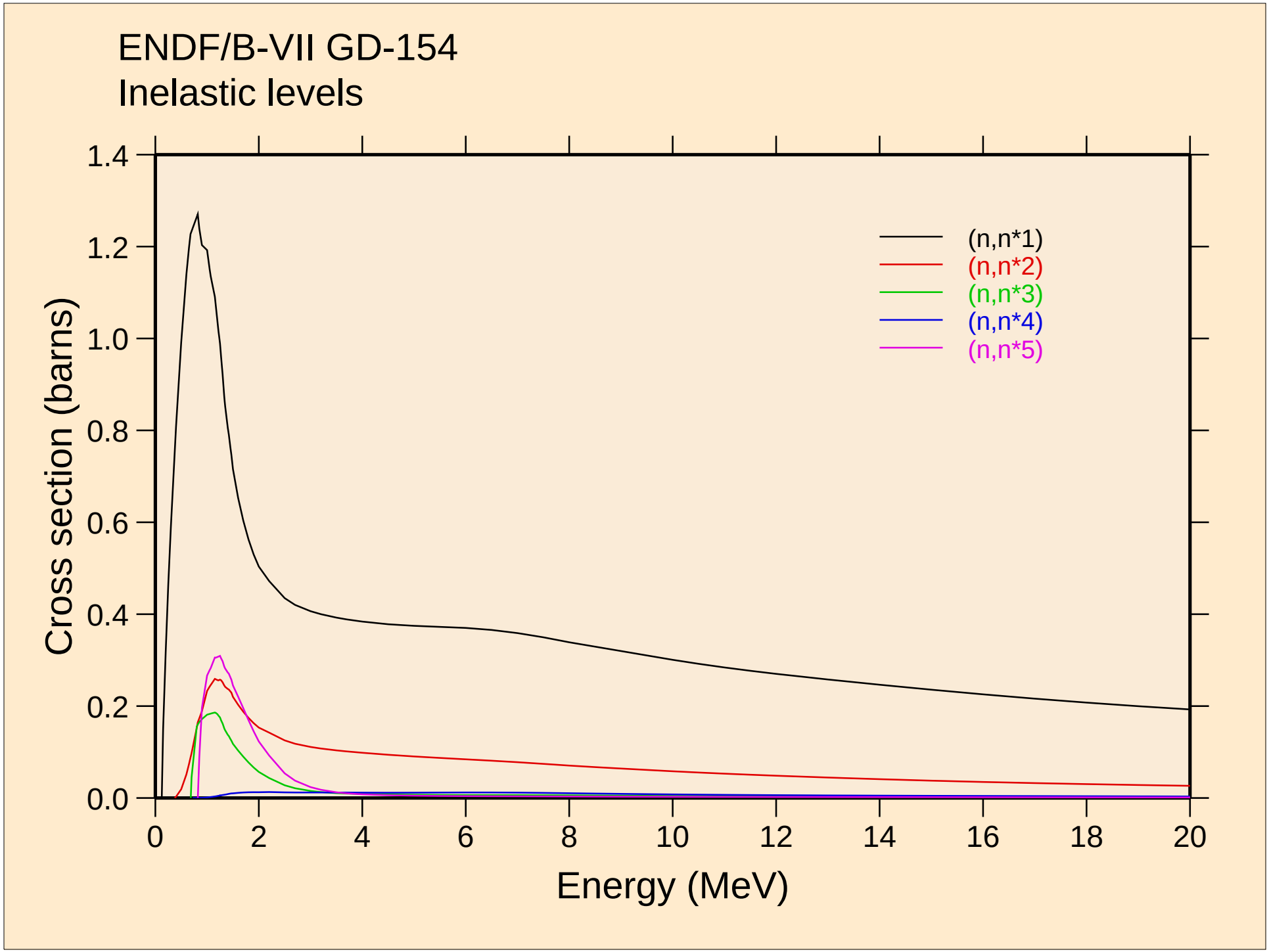

ENDF/B-VII GD-154
Non-threshold reactions
(n,gma)
Cross section (barns)
Energy (MeV)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-11
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

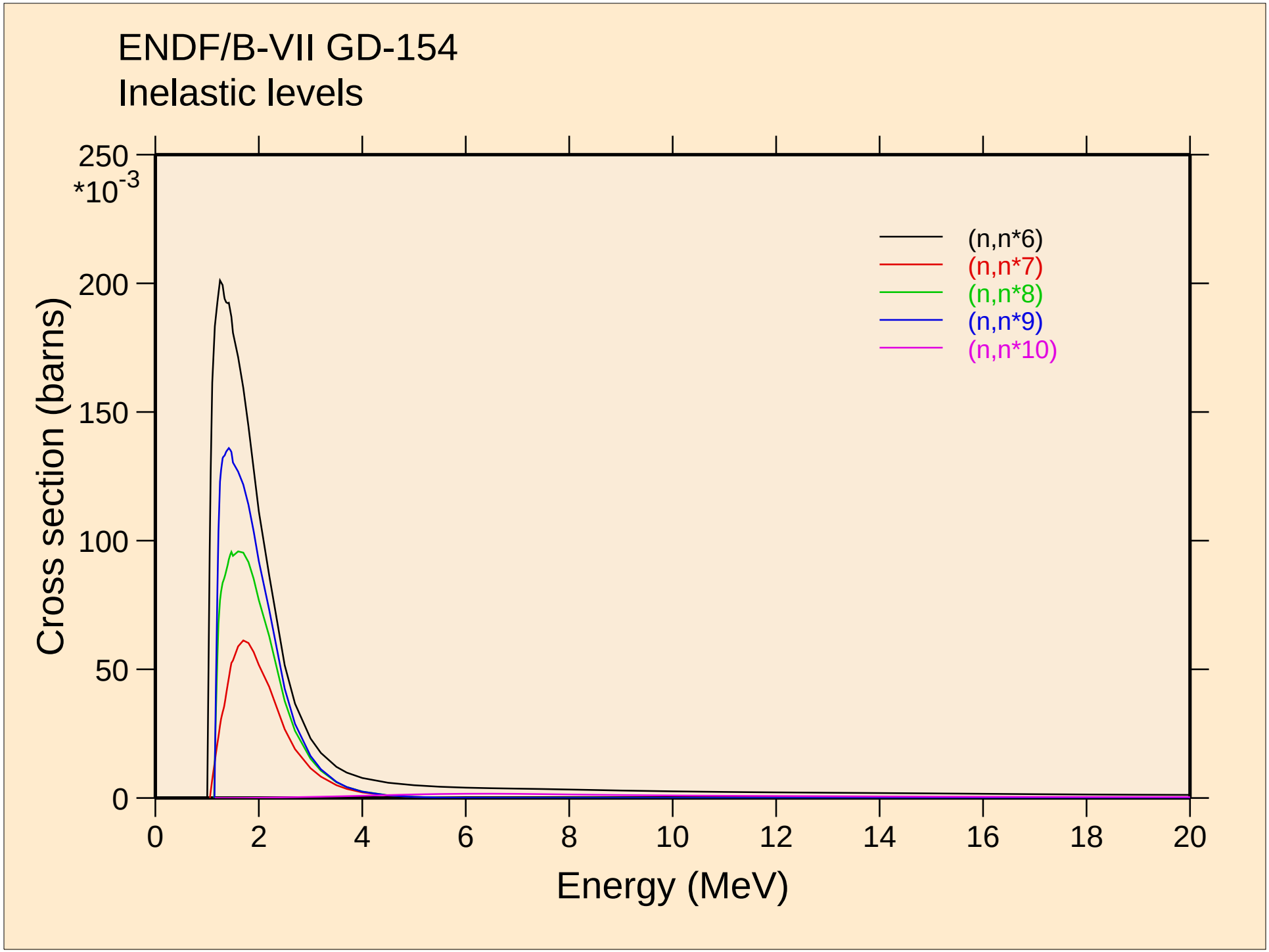

ENDF/B-VII GD-154
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production
0
2
4
6
8
10
12
2
4
6
8
10
12
14
16
18
20

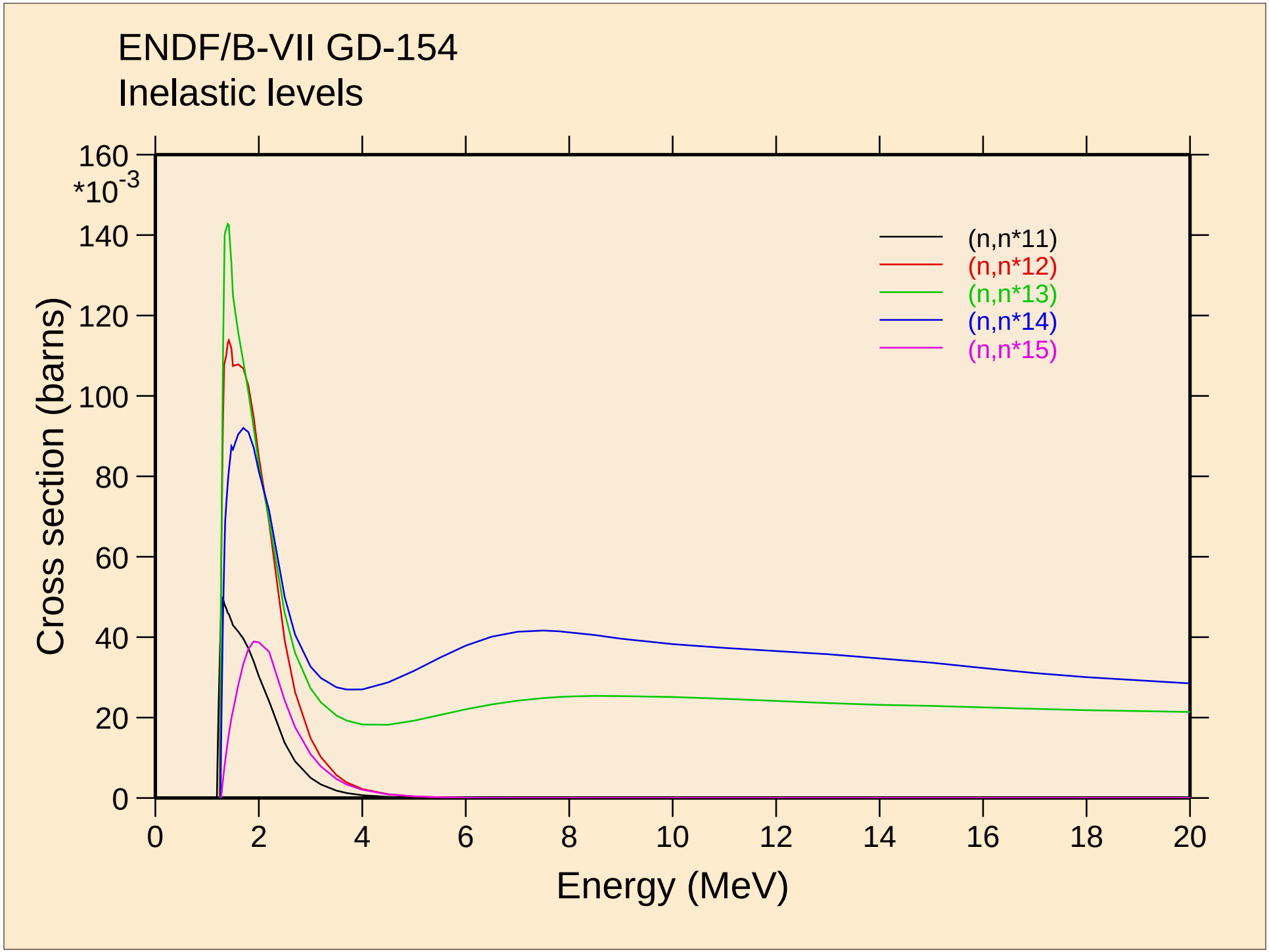

ENDF/B-VII GD-154
Heating
100
*10-3
heating
80
60
40
20
0
Heating (MeV/reaction)
0
5
10
15
20
Energy (MeV)

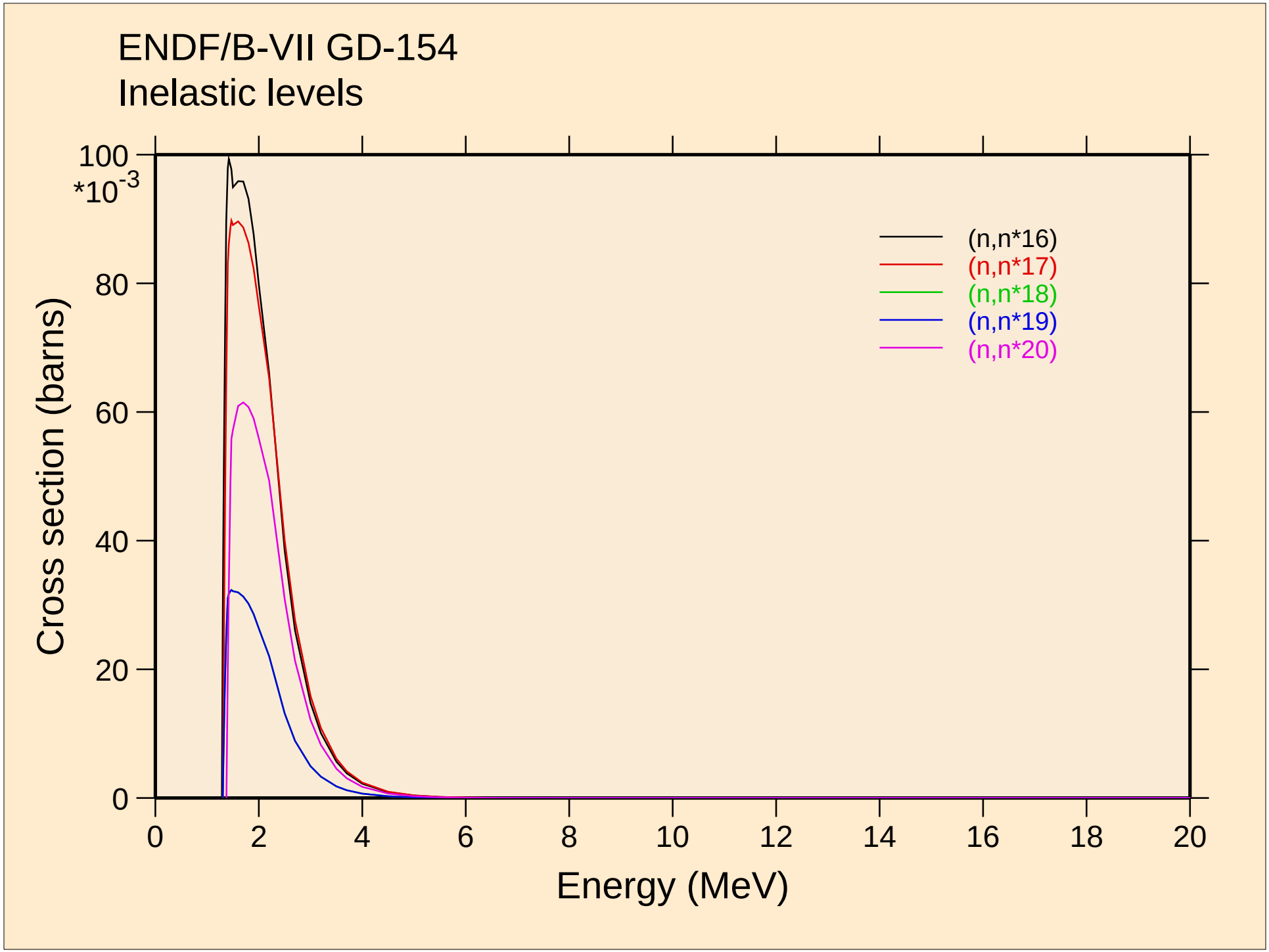

ENDF/B-VII GD-154
Damage
300
*10-3
250
200
150
100
50
0
damage
Damage (MeV-barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

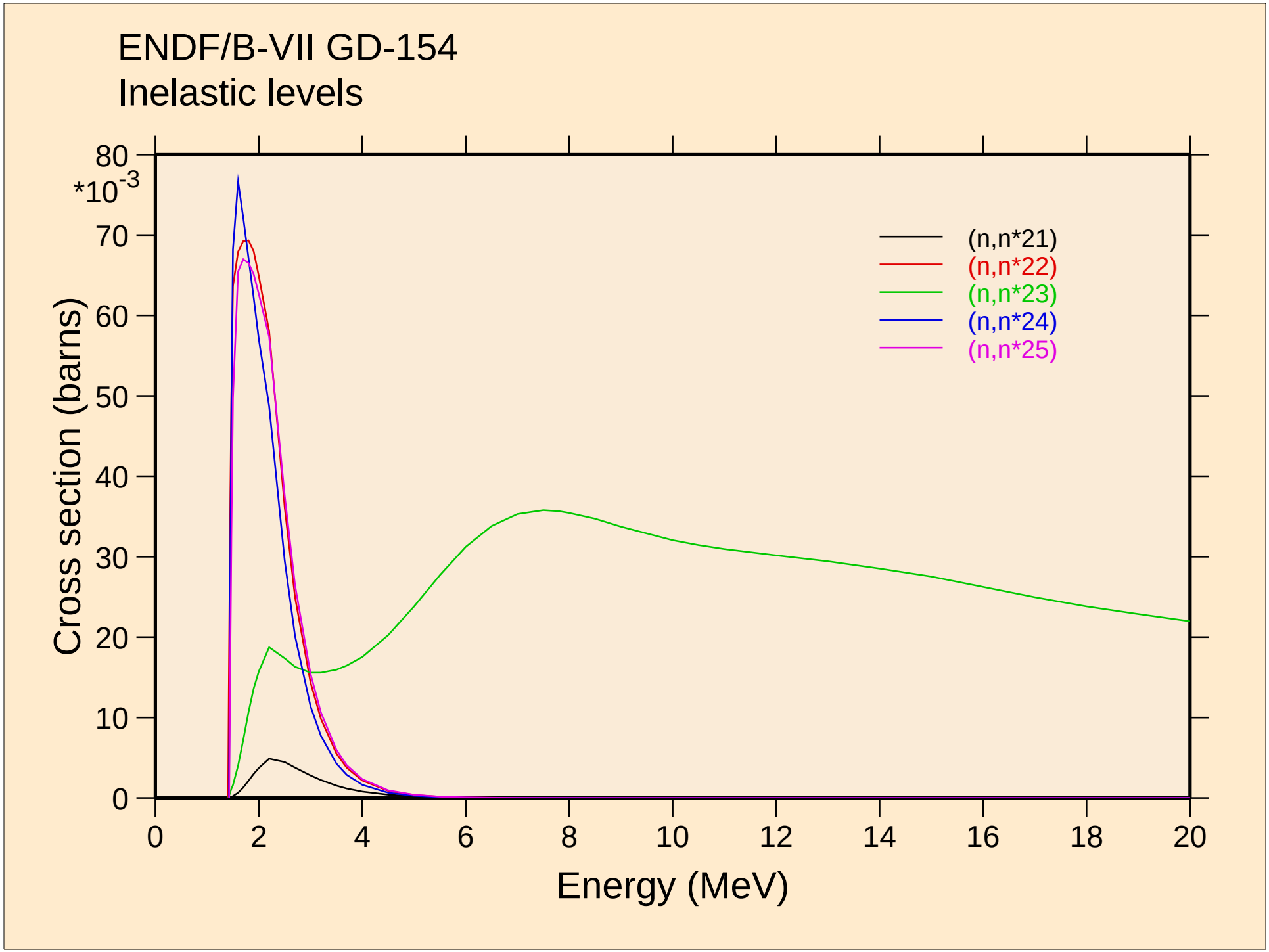

ENDF/B-VII GD-154
Non-threshold reactions
(n,gma)
Cross section (barns)
10-1
10-2
10-3
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

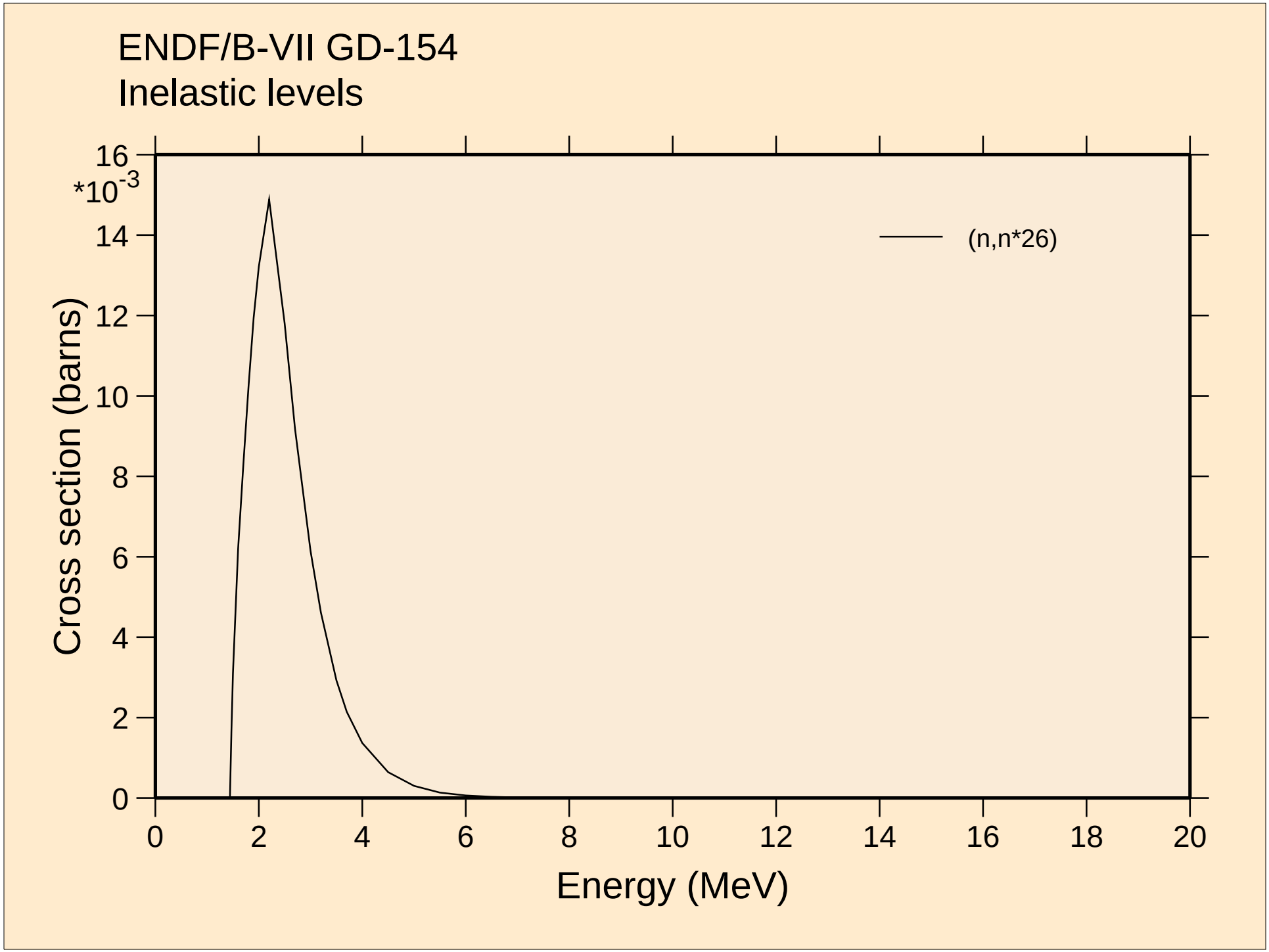

ENDF/B-VII GD-154
Inelastic levels
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0
2
4
6
8
10
12
14
16
18
20
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

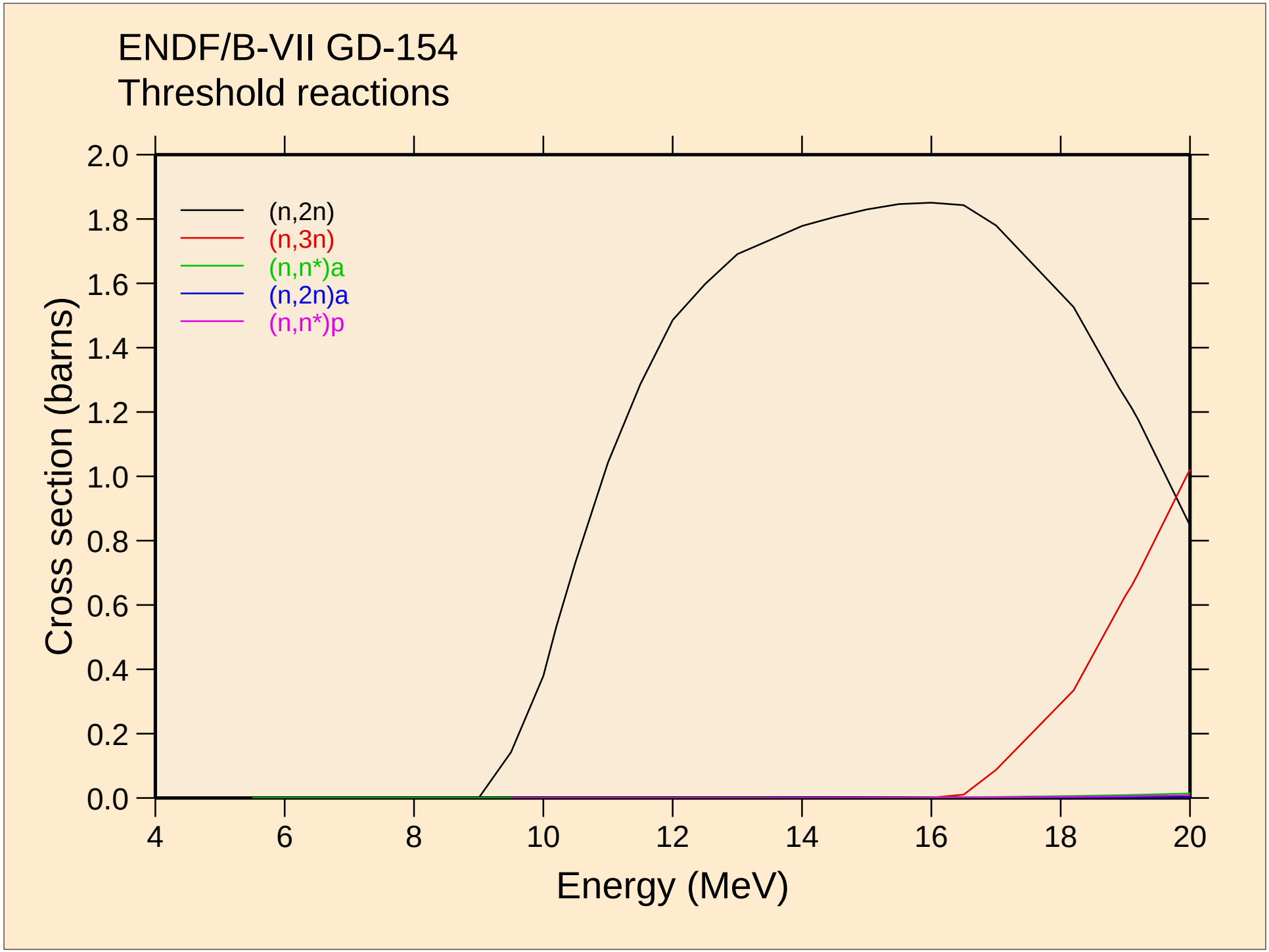

ENDF/B-VII GD-154
Inelastic levels
250
*10-3
200
150
100
50
0
Cross section (barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

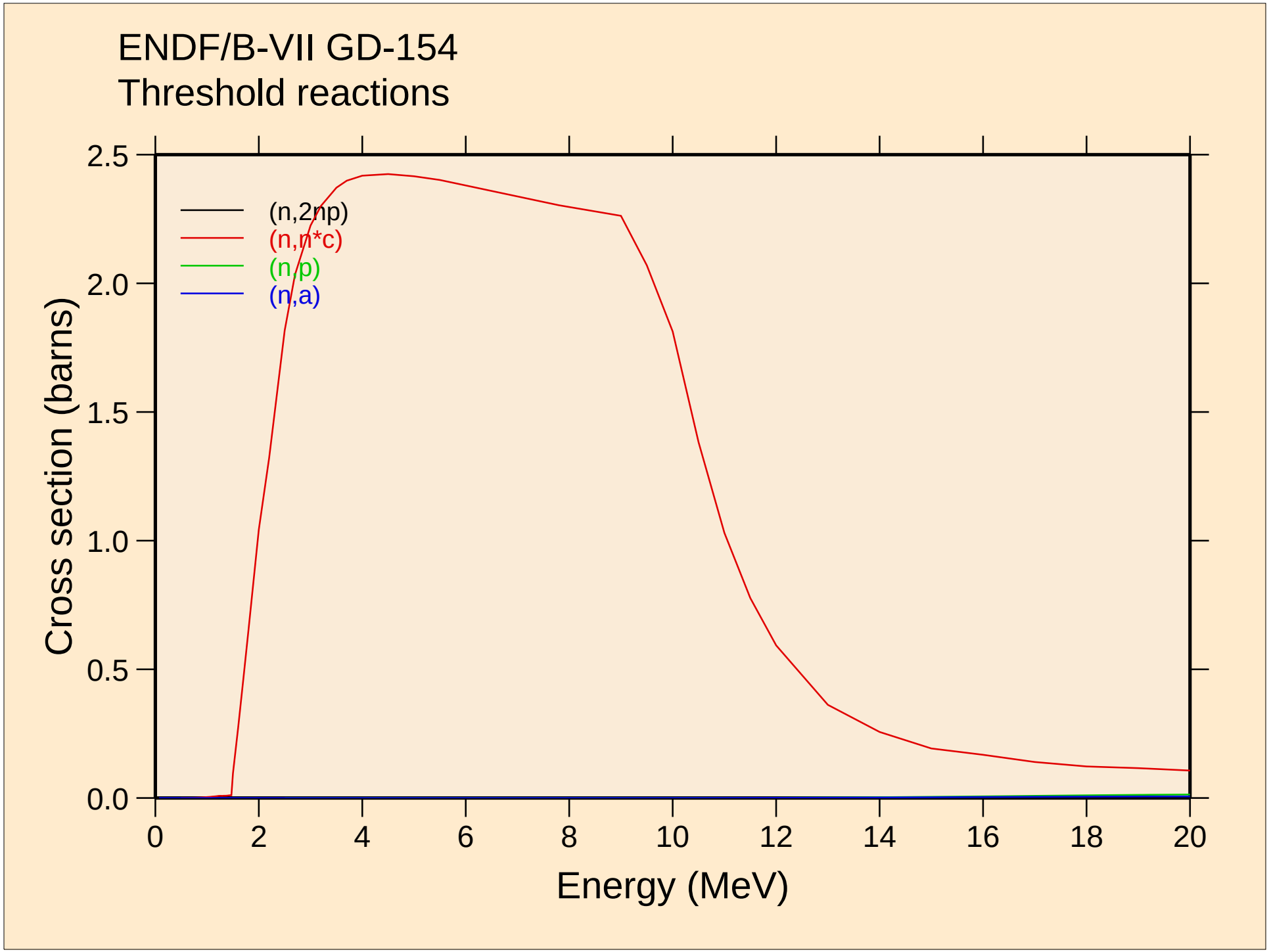

ENDF/B-VII GD-154
Inelastic levels
Cross section (barns)
*10-3
160
140
120
100
80
60
40
20
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

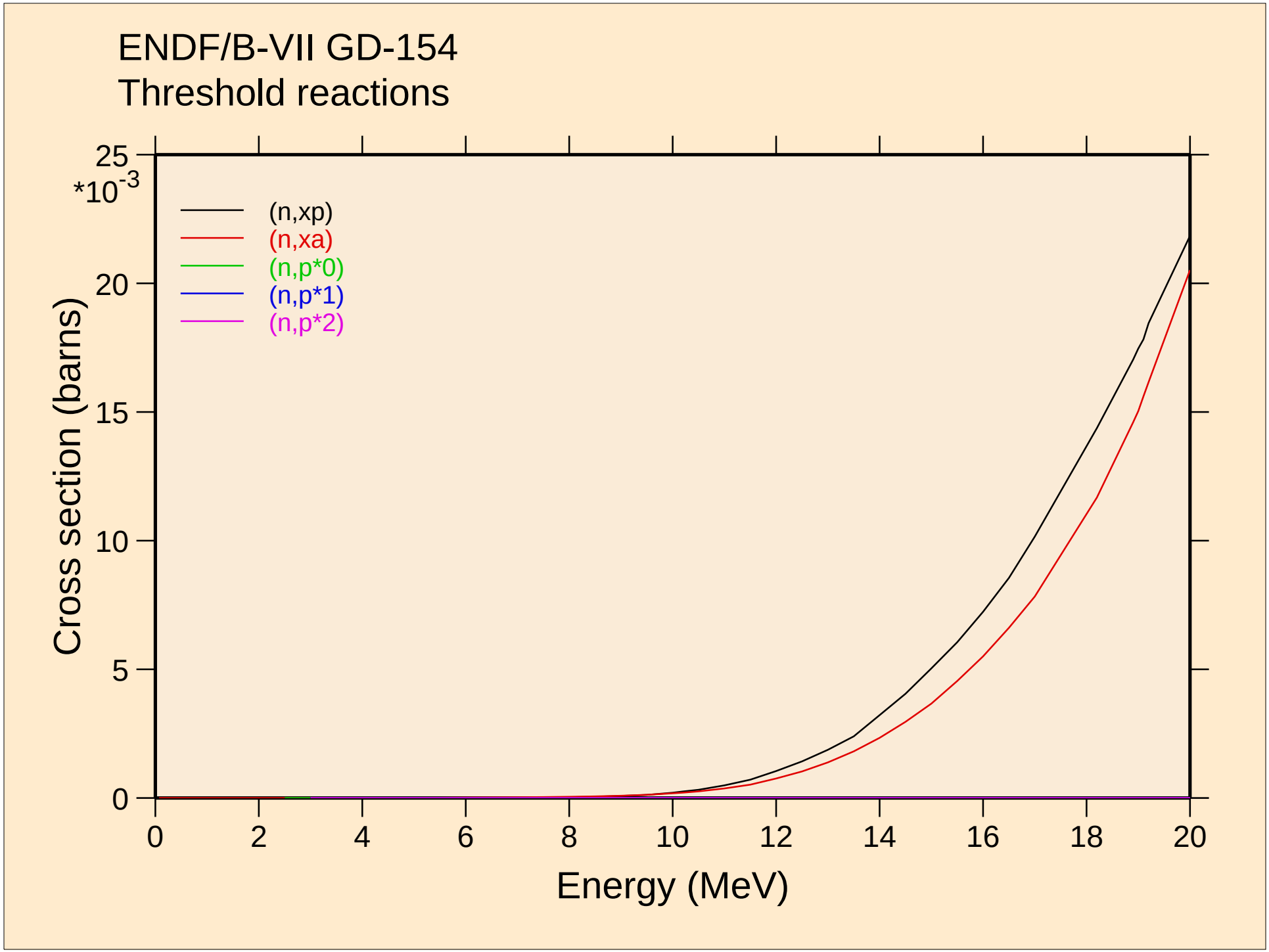

ENDF/B-VII GD-154
Inelastic levels
100
*10-3
80
60
40
20
0
Cross section (barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)

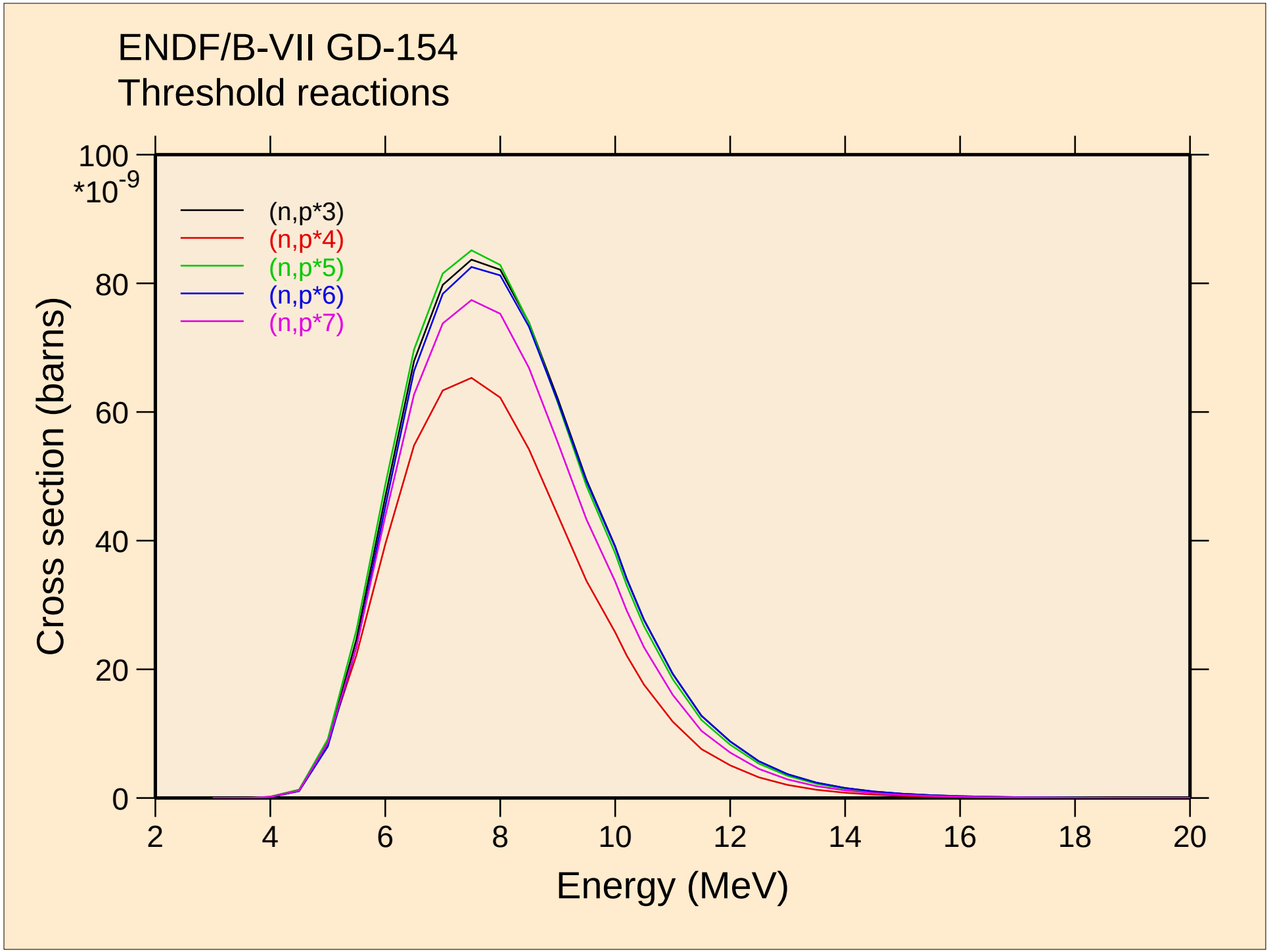

ENDF/B-VII GD-154
Inelastic levels
Cross section (barns)
*10-3
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*21)
(n,n*22)
(n,n*23)
(n,n*24)
(n,n*25)

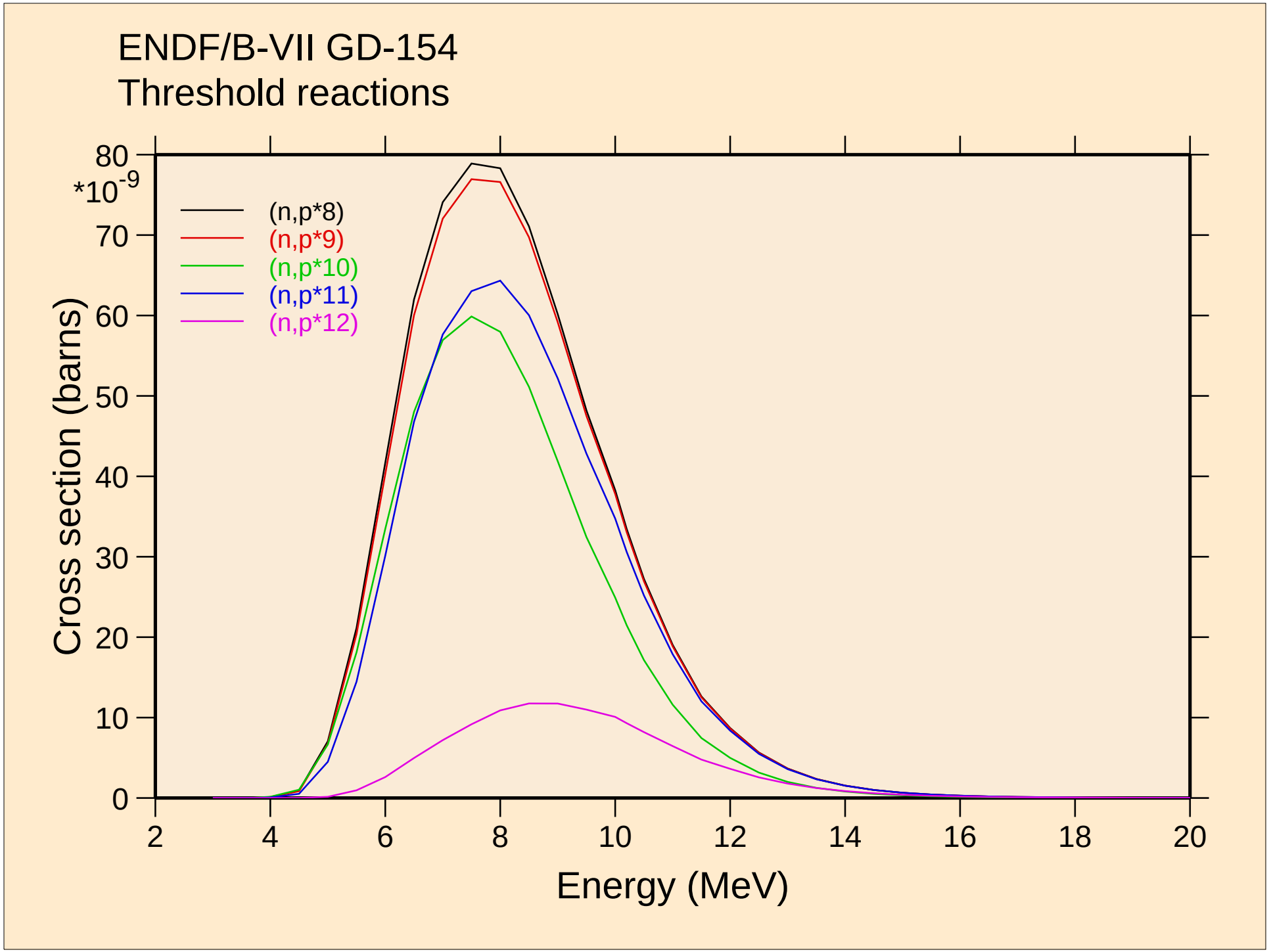

ENDF/B-VII GD-154
Inelastic levels
16
*10-3
14
12
10
8
6
4
2
0
Cross section (barns)
(n,n*26)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

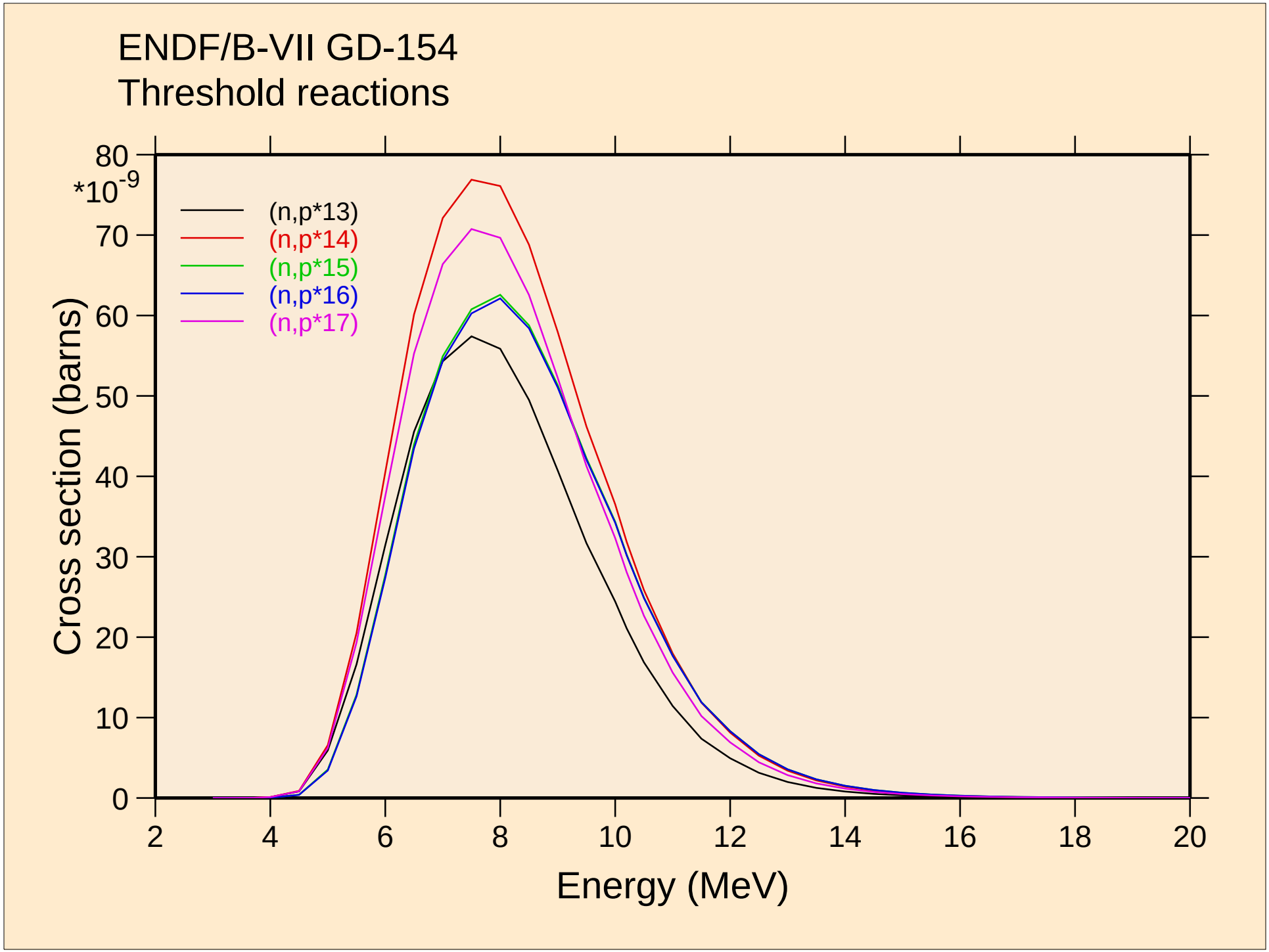

ENDF/B-VII GD-154
Threshold reactions
(n,2n)
(n,3n)
(n,n*)a
(n,2n)a
(n,n*)p
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
4
6
8
10
12
14
16
18
20

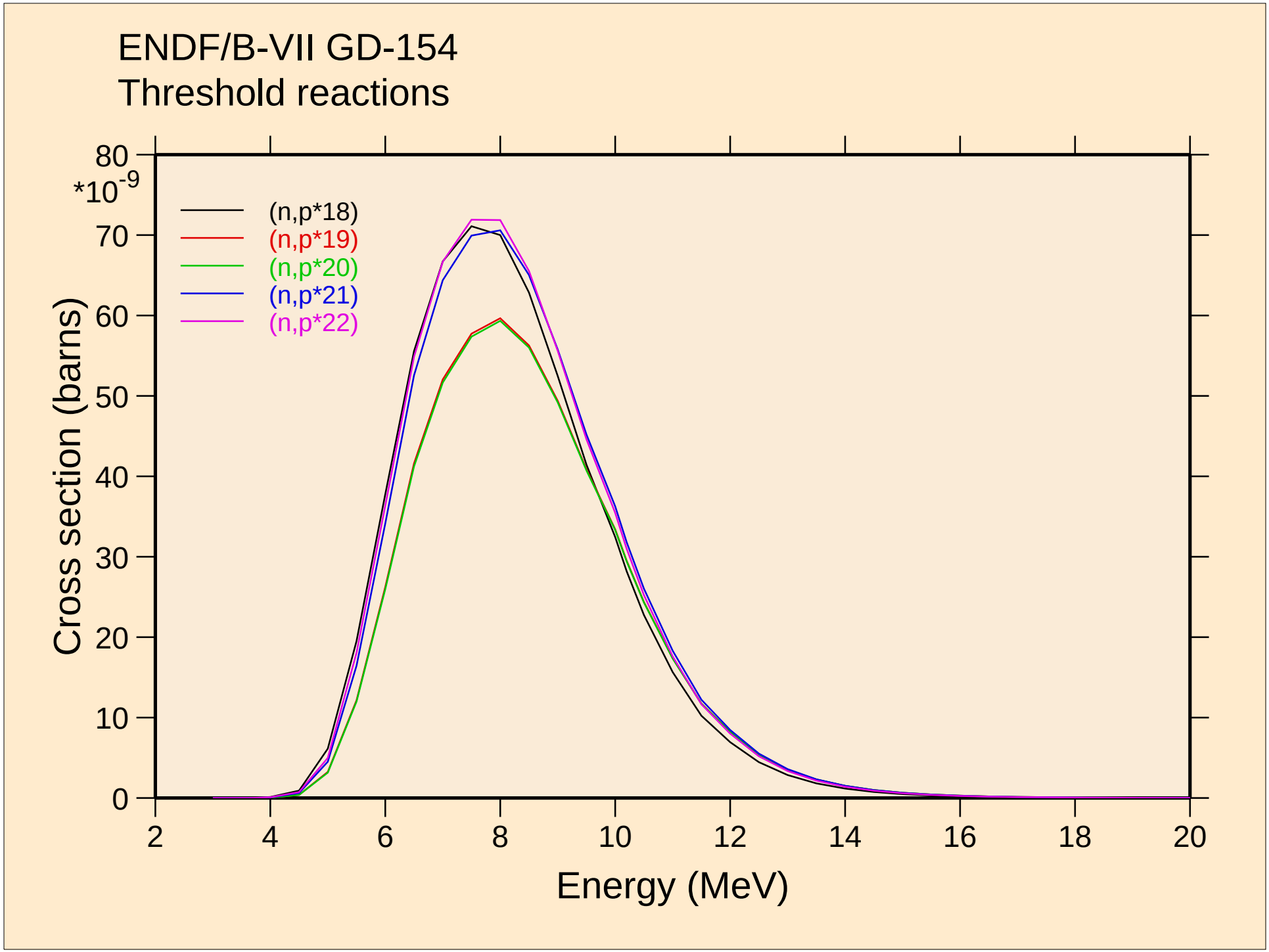

ENDF/B-VII GD-154
Threshold reactions
(n,2np)
(n,n*c)
(n,p)
(n,a)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
0
2
4
6
8
10
12
14
16
18
20

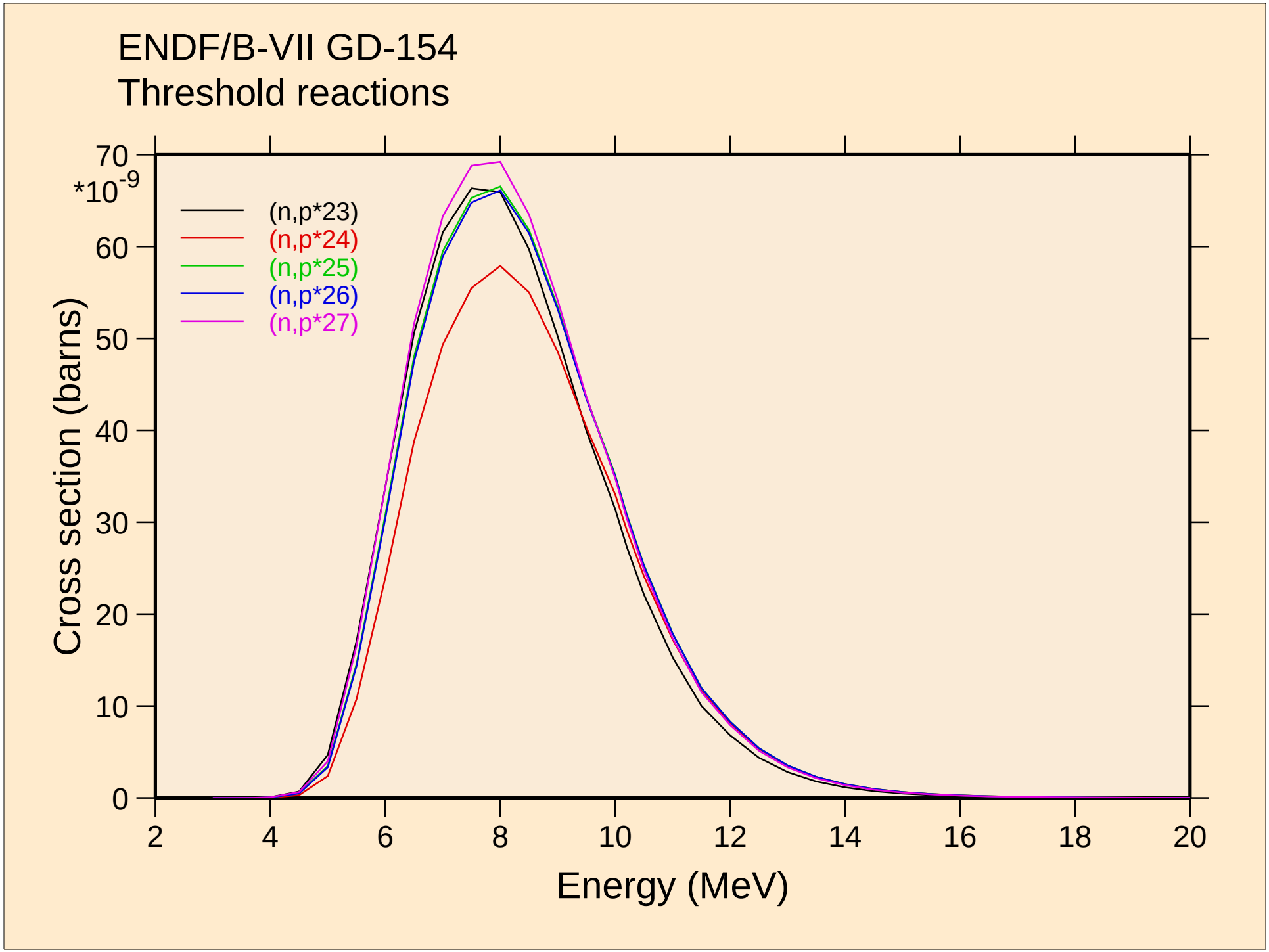

ENDF/B-VII GD-154
Threshold reactions
*10-3
25
20
15
10
5
0
Cross section (barns)
(n,xp)
(n,xa)
(n,p*0)
(n,p*1)
(n,p*2)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

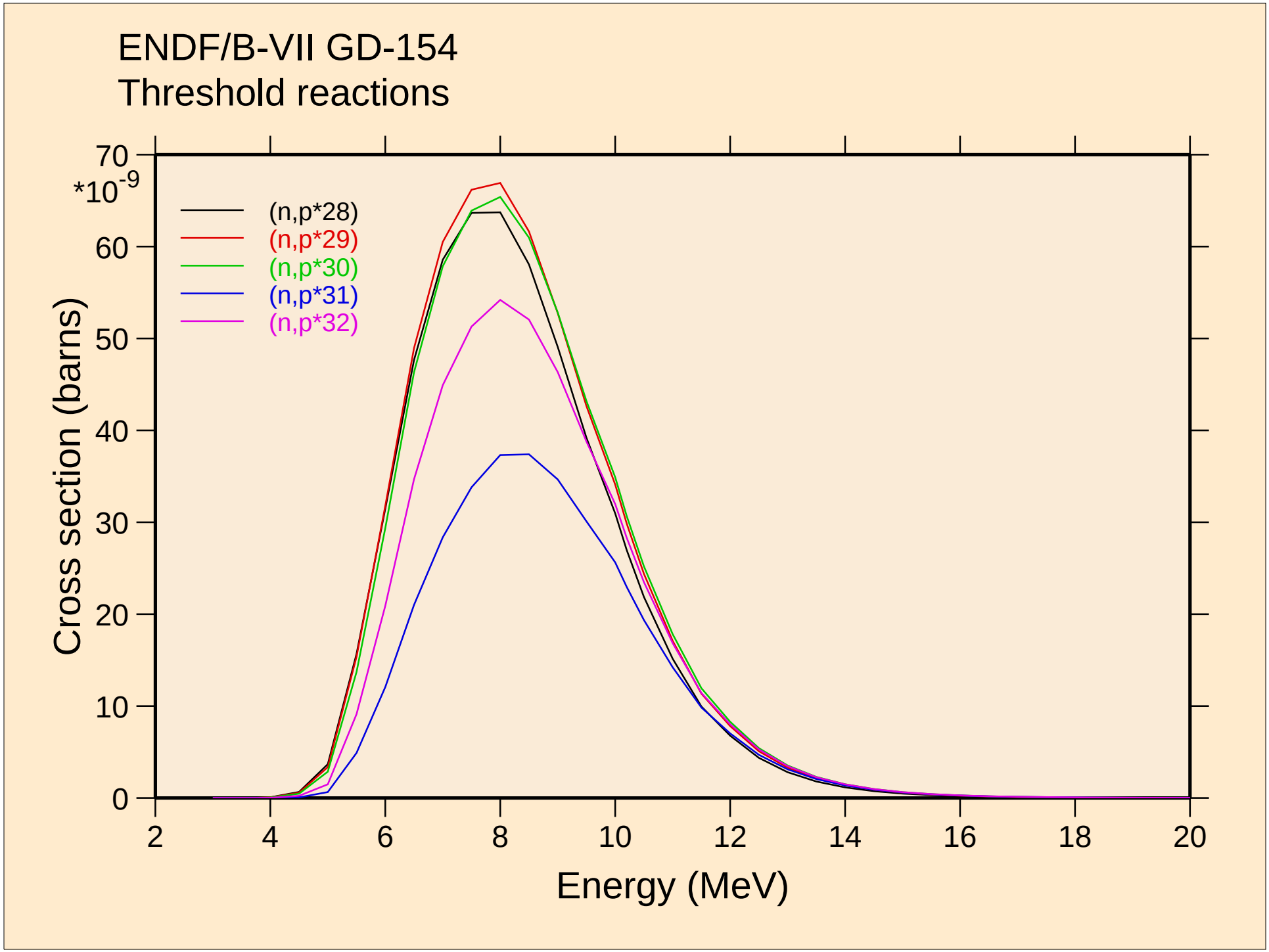

ENDF/B-VII GD-154
Threshold reactions
100
*10-9
80
60
40
20
0
Cross section (barns)
(n,p*3)
(n,p*4)
(n,p*5)
(n,p*6)
(n,p*7)
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

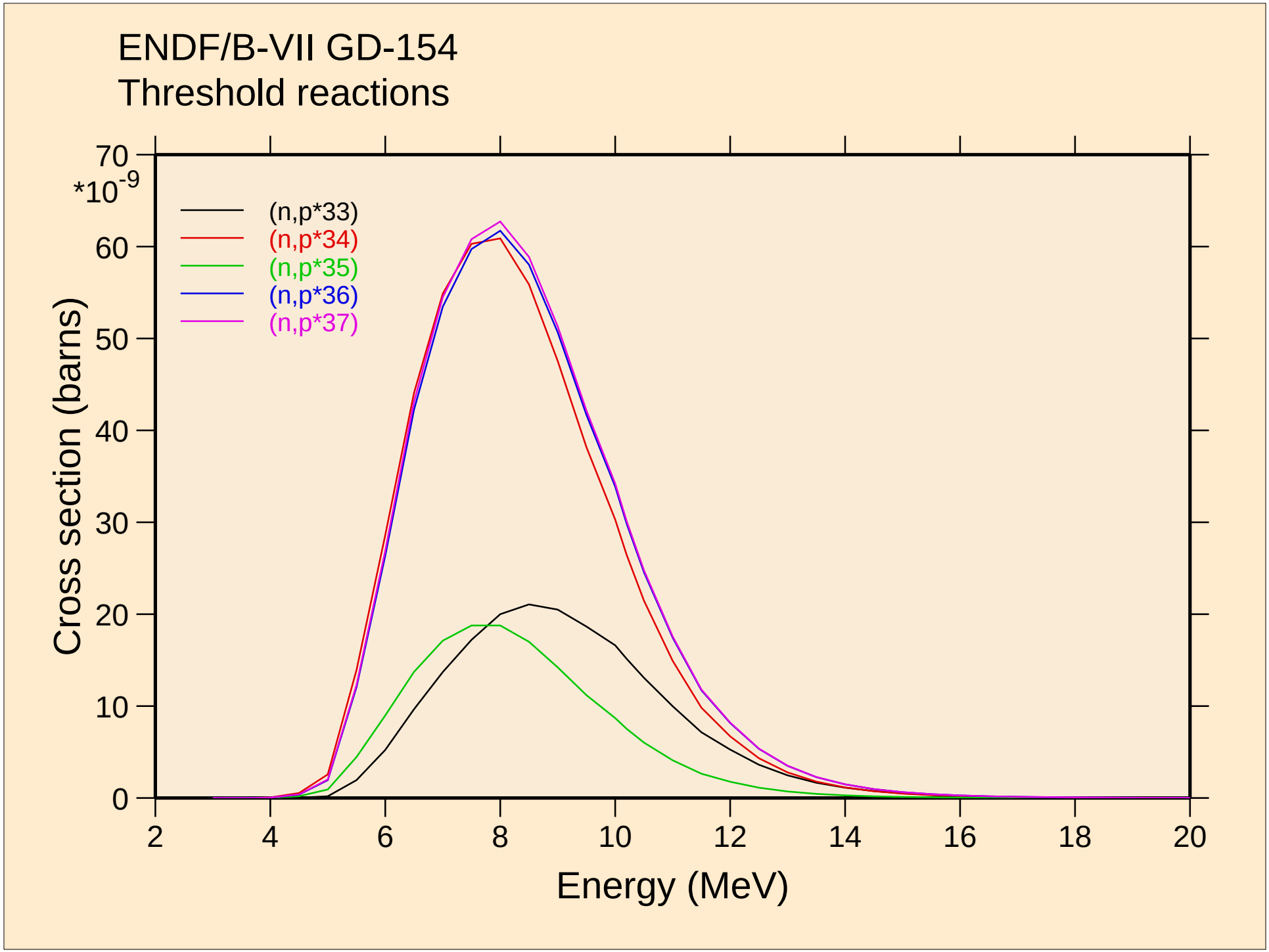

ENDF/B-VII GD-154
Threshold reactions
*10-9
Cross section (barns)
Energy (MeV)
(n,p*8)
(n,p*9)
(n,p*10)
(n,p*11)
(n,p*12)
0
10
20
30
40
50
60
70
80
2
4
6
8
10
12
14
16
18
20

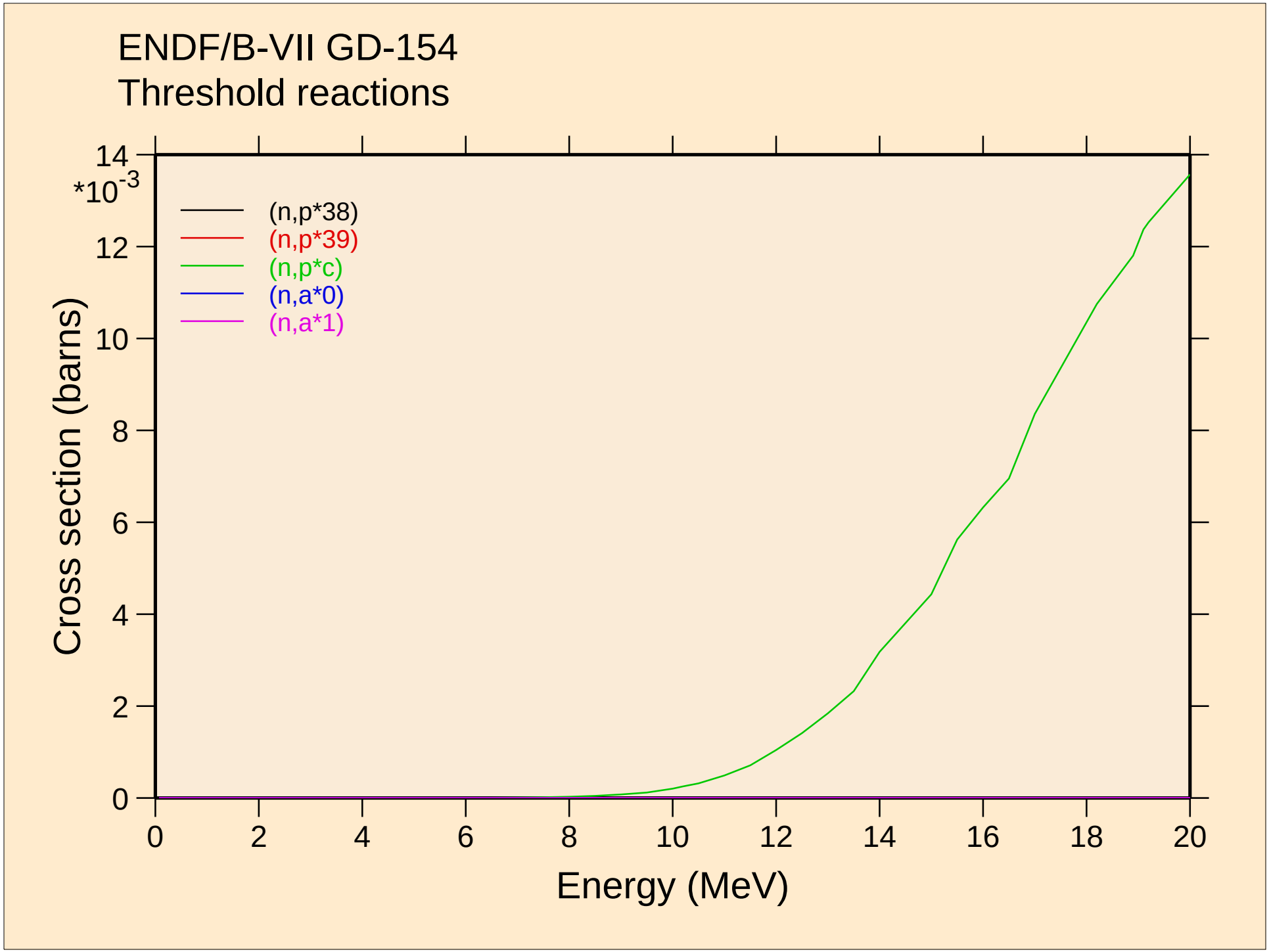

ENDF/B-VII GD-154
Threshold reactions
*10-9
Cross section (barns)
Energy (MeV)
(n,p*13)
(n,p*14)
(n,p*15)
(n,p*16)
(n,p*17)
0
10
20
30
40
50
60
70
80
2
4
6
8
10
12
14
16
18
20

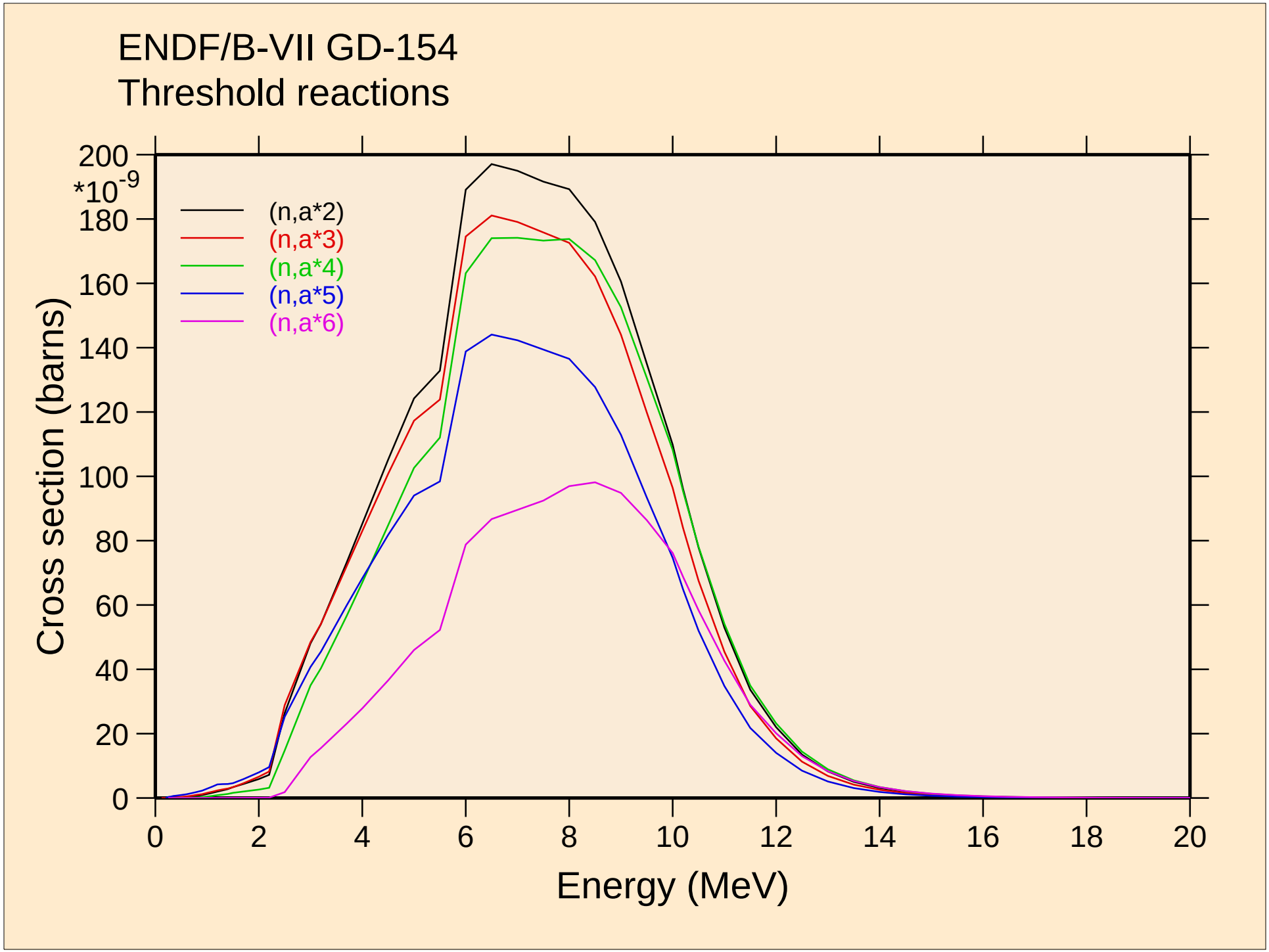

ENDF/B-VII GD-154
Threshold reactions
*10-9
Cross section (barns)
Energy (MeV)
(n,p*18)
(n,p*19)
(n,p*20)
(n,p*21)
(n,p*22)
0
10
20
30
40
50
60
70
80
2
4
6
8
10
12
14
16
18
20

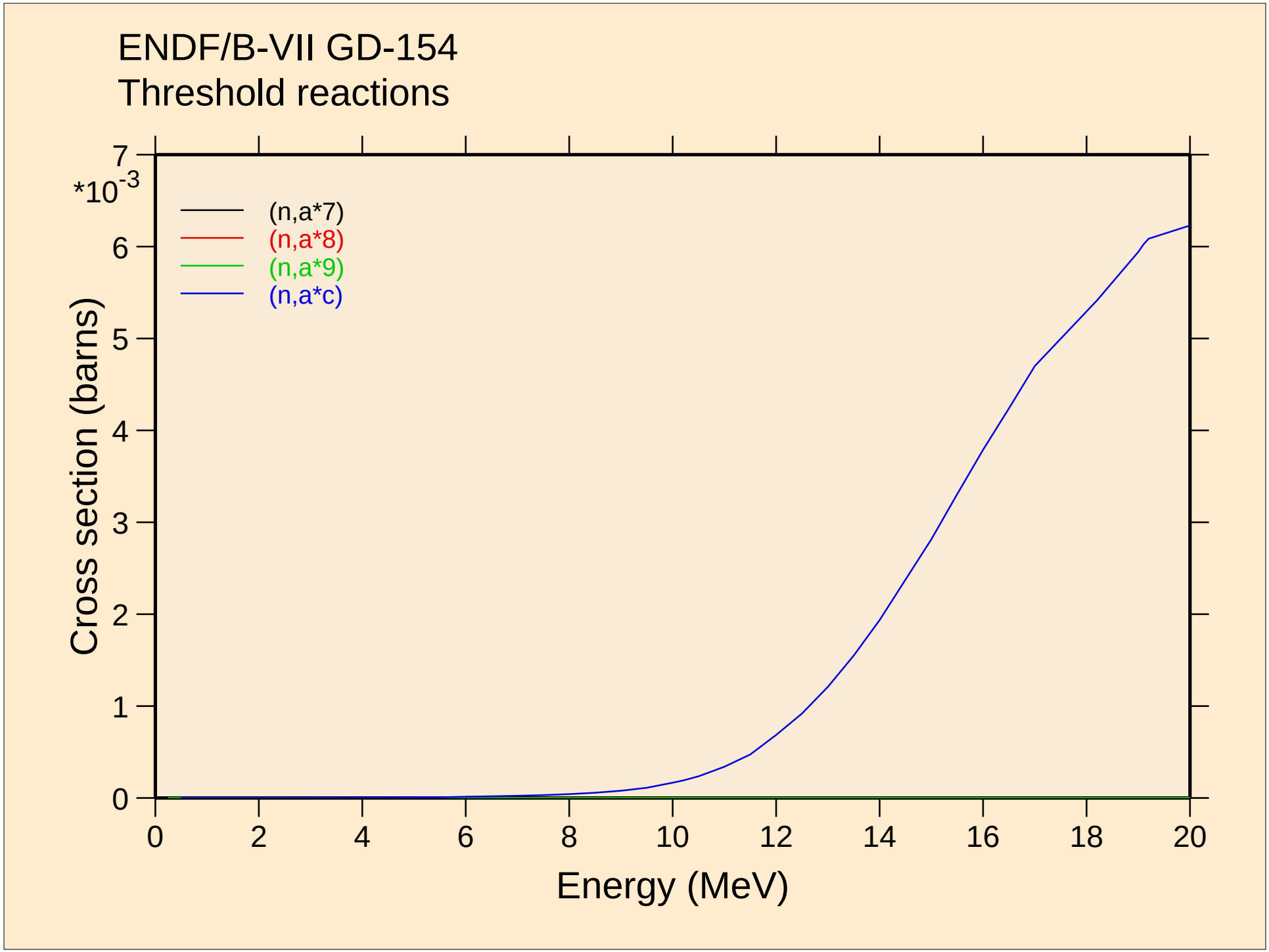

ENDF/B-VII GD-154
Threshold reactions
*10-9
Cross section (barns)
Energy (MeV)
(n,p*23)
(n,p*24)
(n,p*25)
(n,p*26)
(n,p*27)
0
10
20
30
40
50
60
70
2
4
6
8
10
12
14
16
18
20

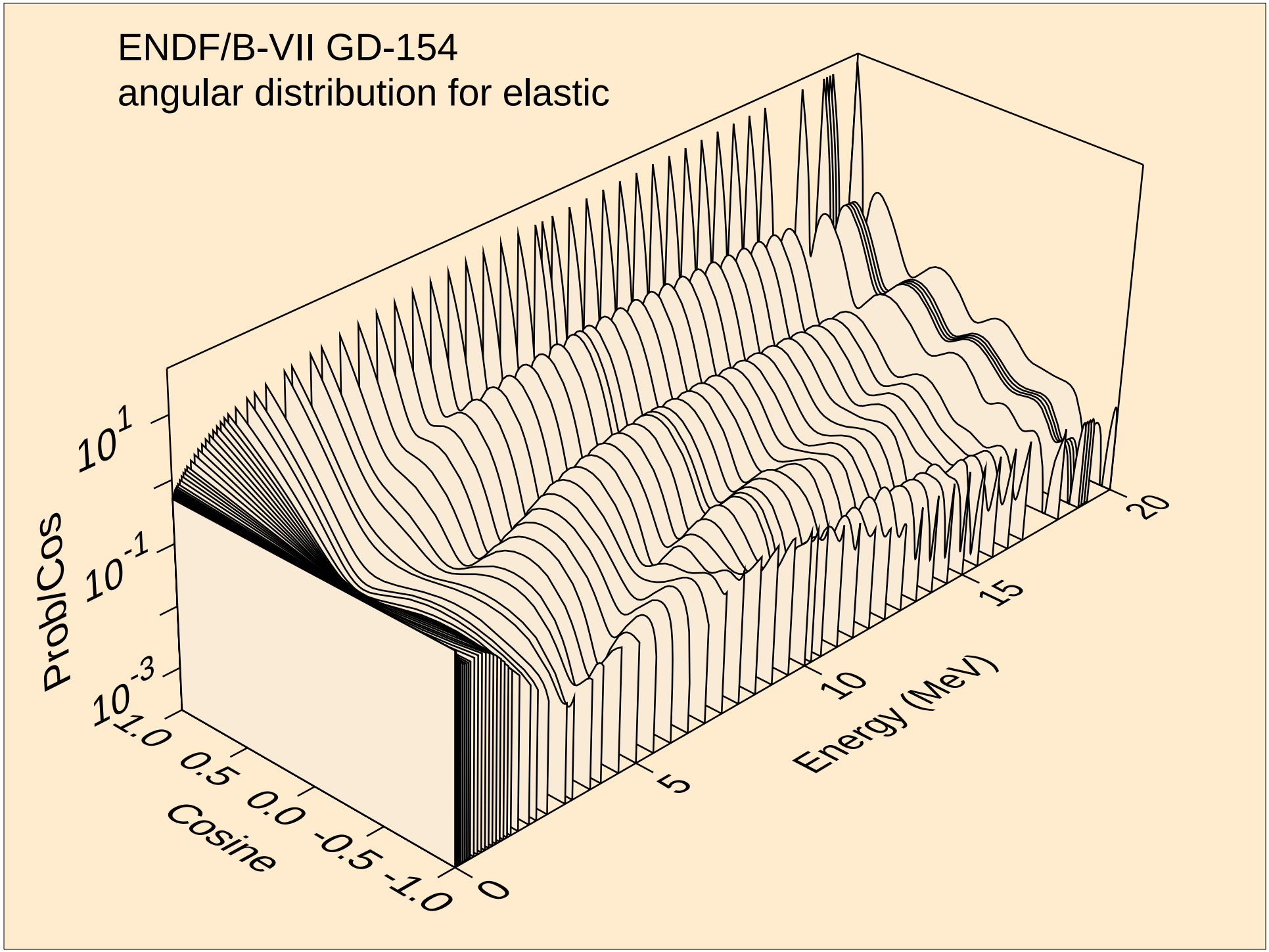

ENDF/B-VII GD-154
Threshold reactions
*10-9
Cross section (barns)
Energy (MeV)
(n,p*28)
(n,p*29)
(n,p*30)
(n,p*31)
(n,p*32)
0
10
20
30
40
50
60
70
2
4
6
8
10
12
14
16
18
20

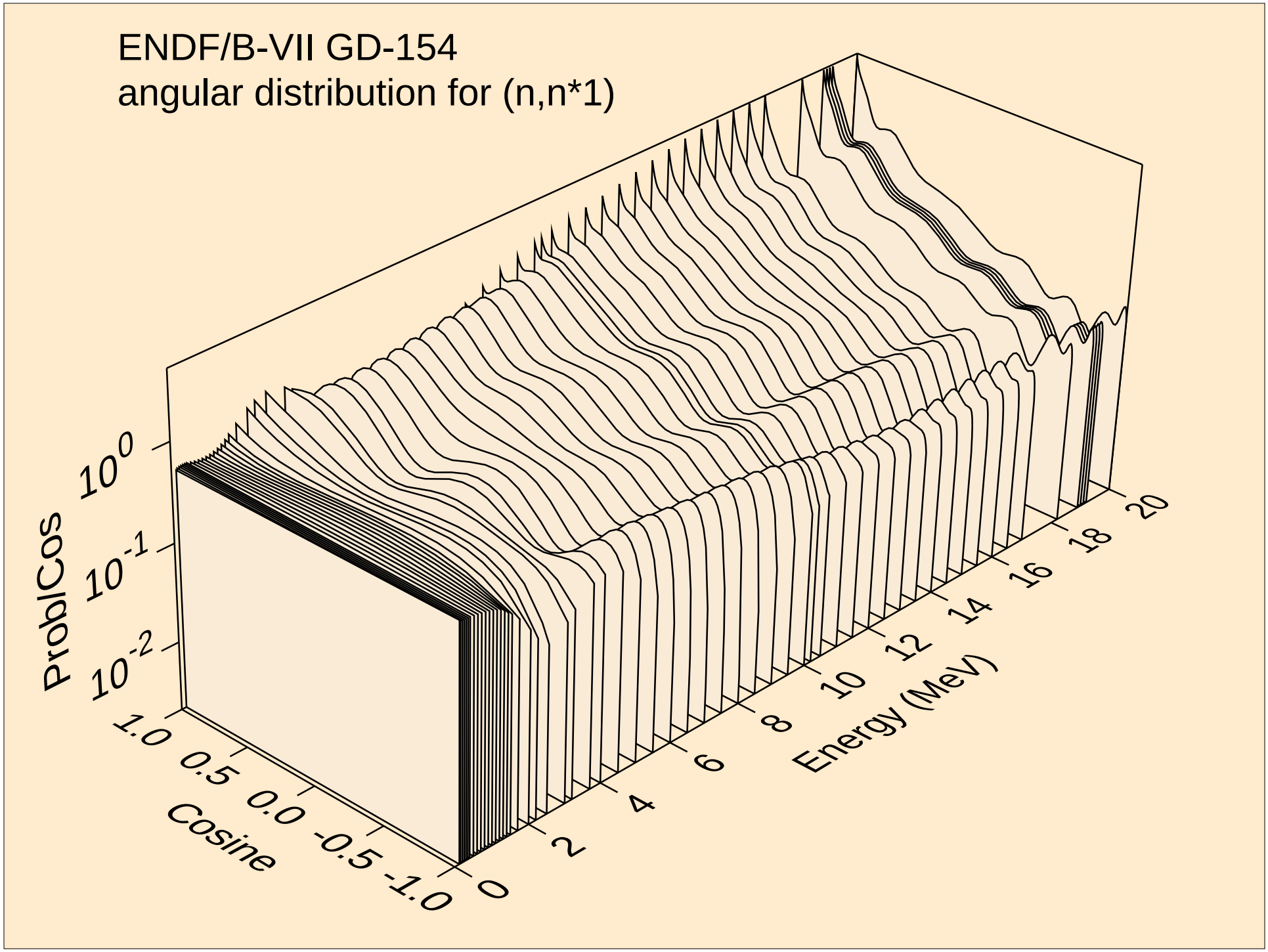

ENDF/B-VII GD-154
Threshold reactions
*10-9
Cross section (barns)
Energy (MeV)
(n,p*33)
(n,p*34)
(n,p*35)
(n,p*36)
(n,p*37)
0
10
20
30
40
50
60
70
2
4
6
8
10
12
14
16
18
20

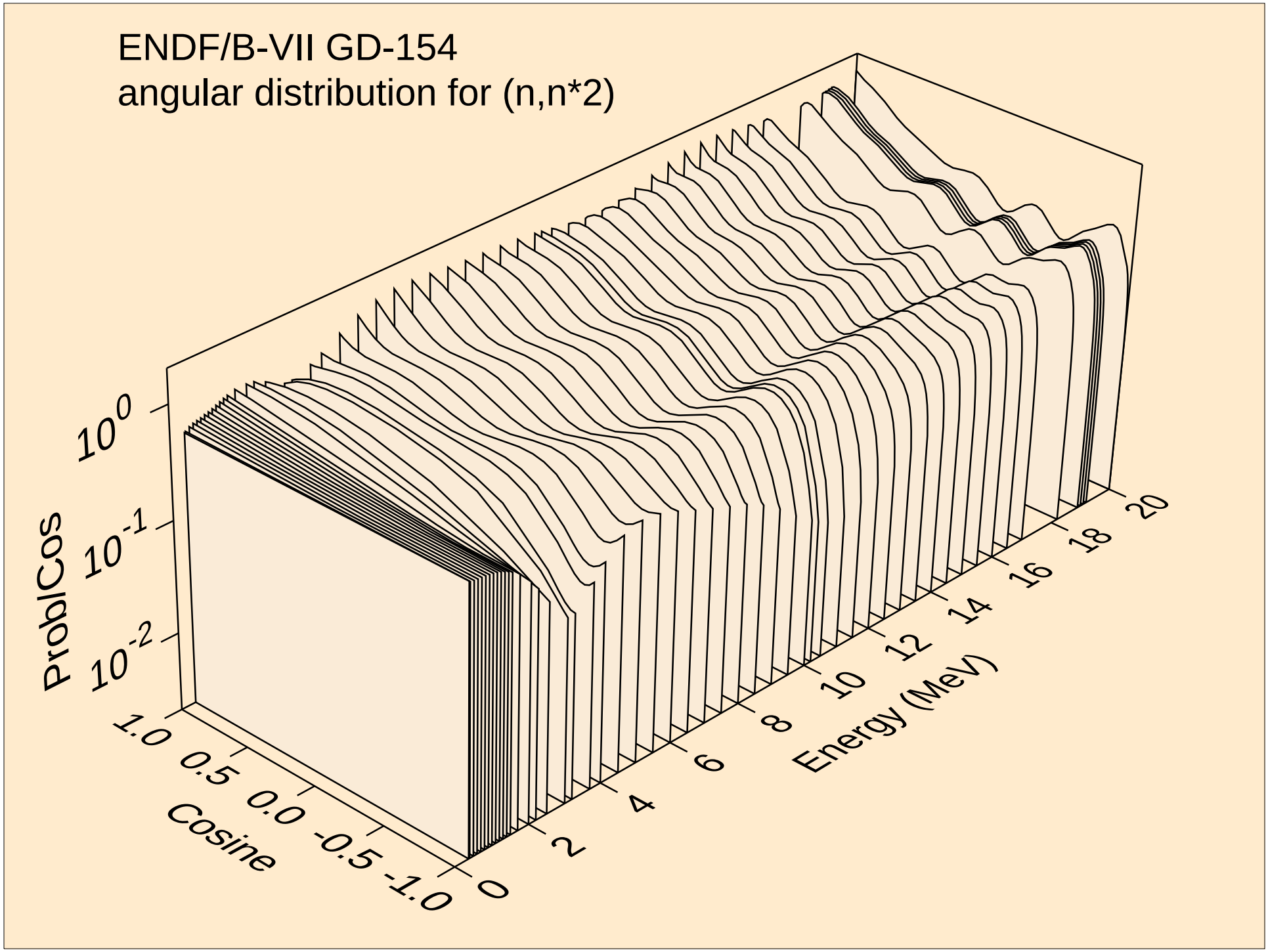

ENDF/B-VII GD-154
Threshold reactions
*10-3
Cross section (barns)
Energy (MeV)
(n,p*38)
(n,p*39)
(n,p*c)
(n,a*0)
(n,a*1)
0
2
4
6
8
10
12
14
16
18
20

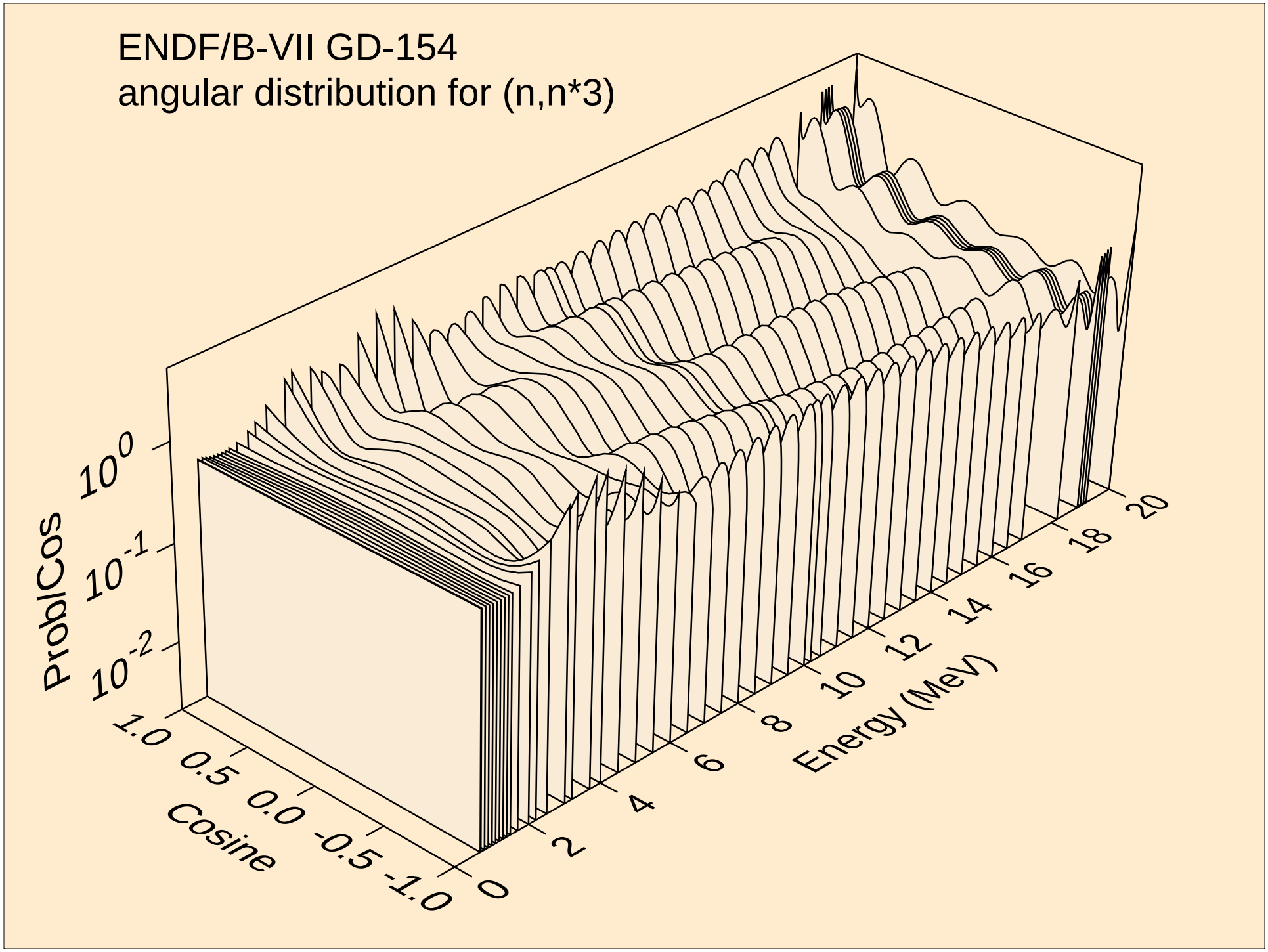

ENDF/B-VII GD-154
Threshold reactions
Cross section (barns)
*10-9
200
180
160
140
120
100
80
60
40
20
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,a*2)
(n,a*3)
(n,a*4)
(n,a*5)
(n,a*6)

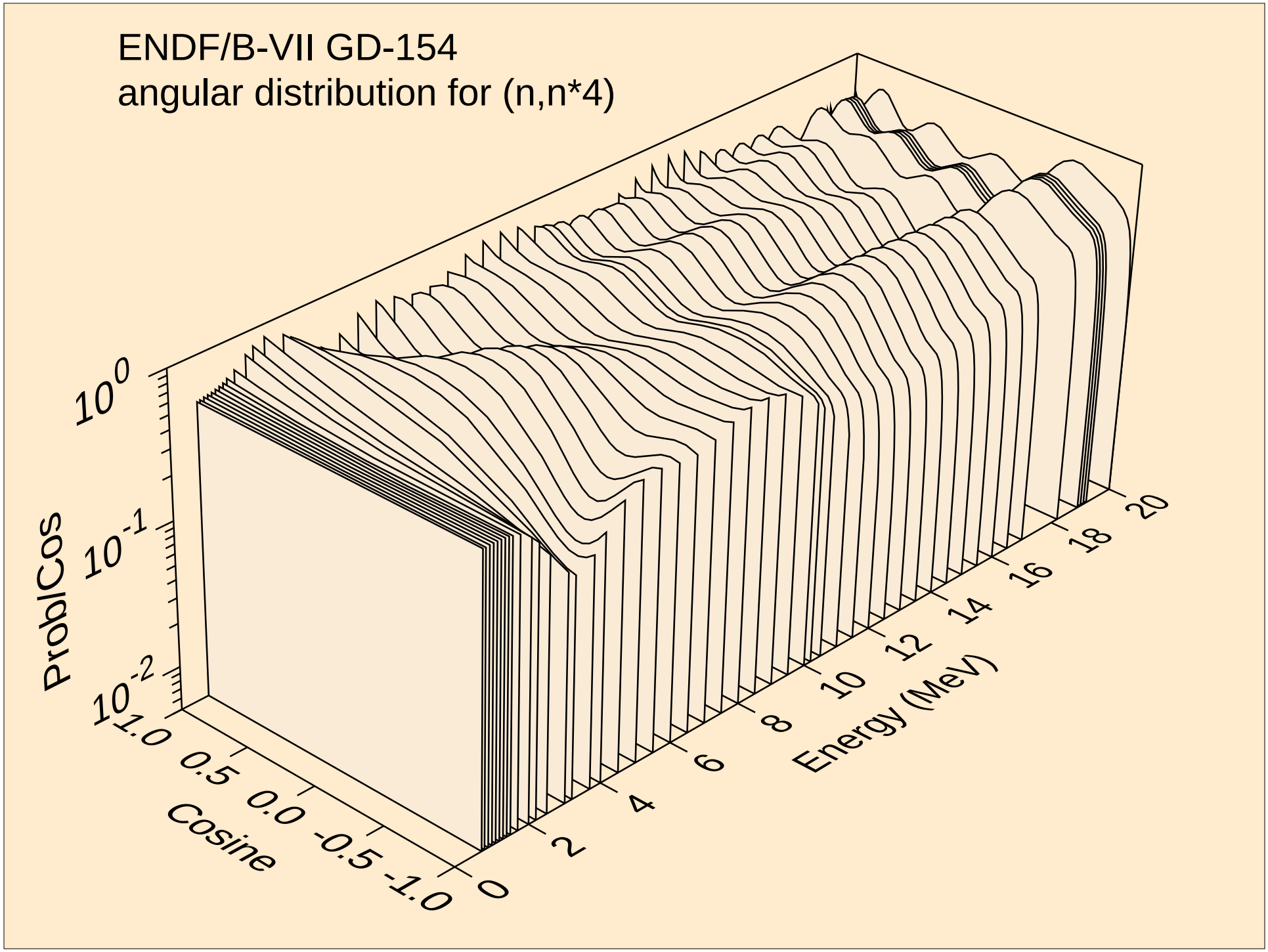

ENDF/B-VII GD-154
Threshold reactions
*10-3
Cross section (barns)
(n,a*7)
(n,a*8)
(n,a*9)
(n,a*c)
0
1
2
3
4
5
6
7
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

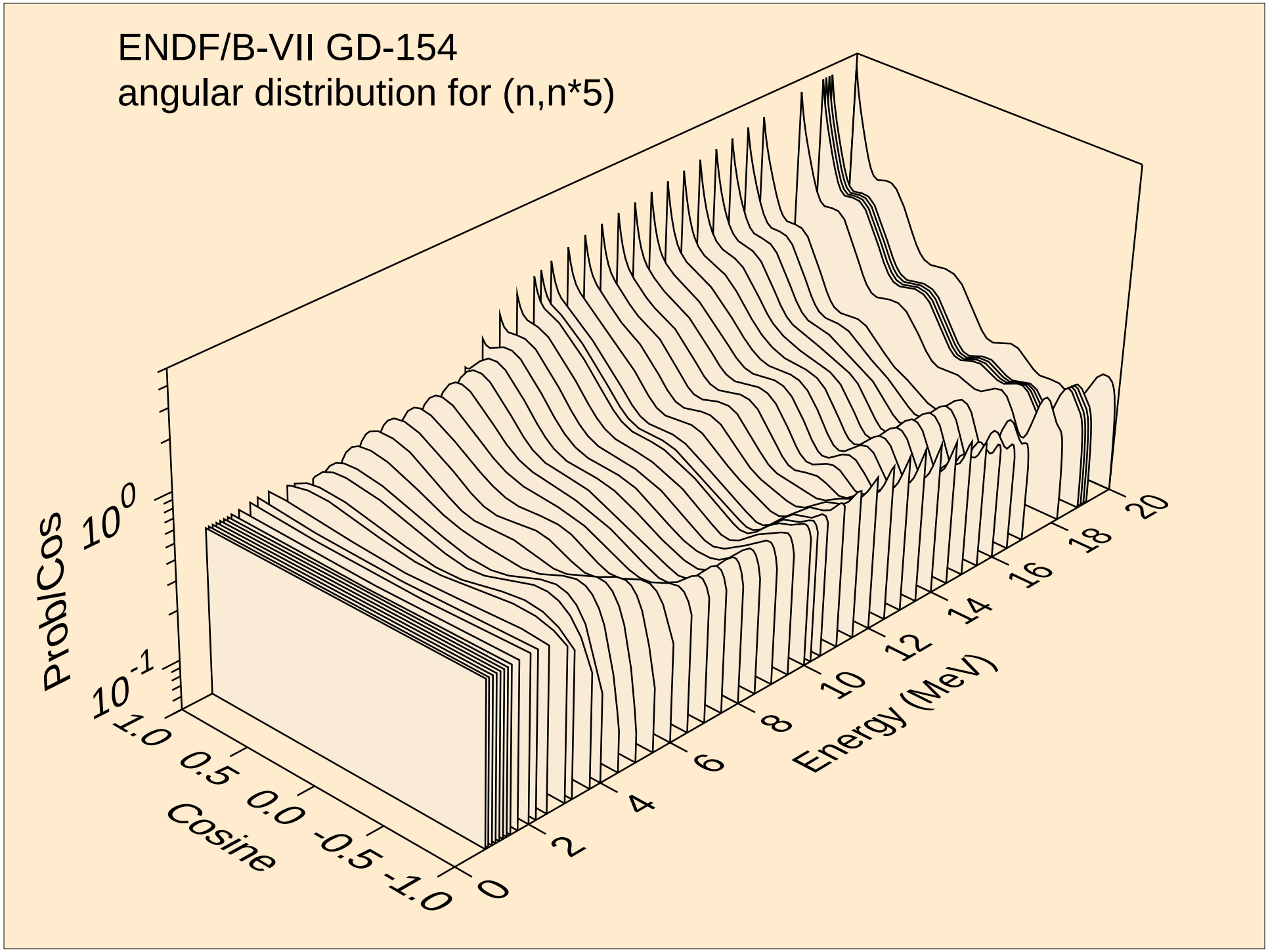

ENDF/B-VII GD-154
angular distribution for elastic
ProbICos
10^{1}
10^{-1}
10^{-3}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

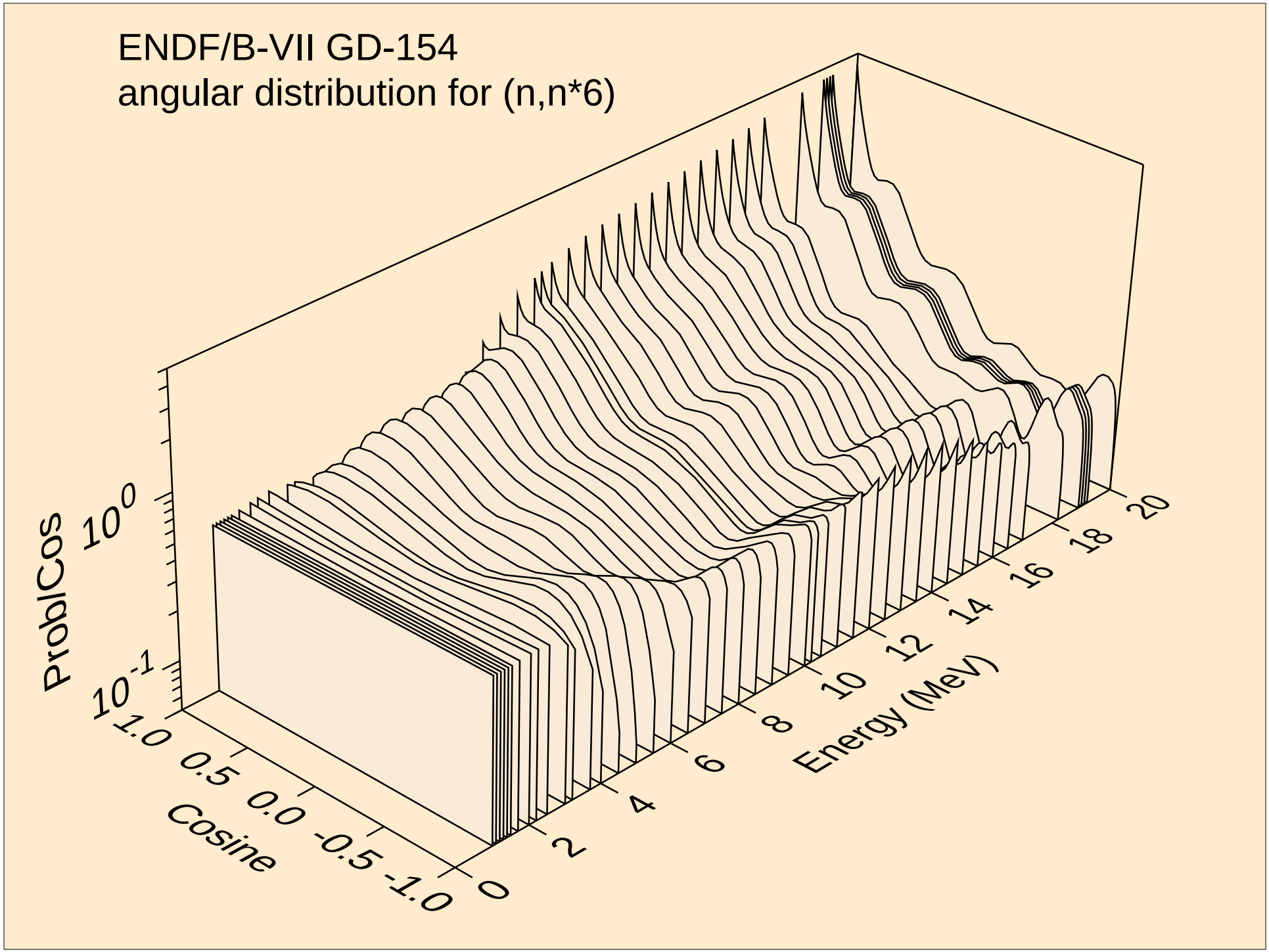

ENDF/B-VII GD-154
angular distribution for (n,n*1)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

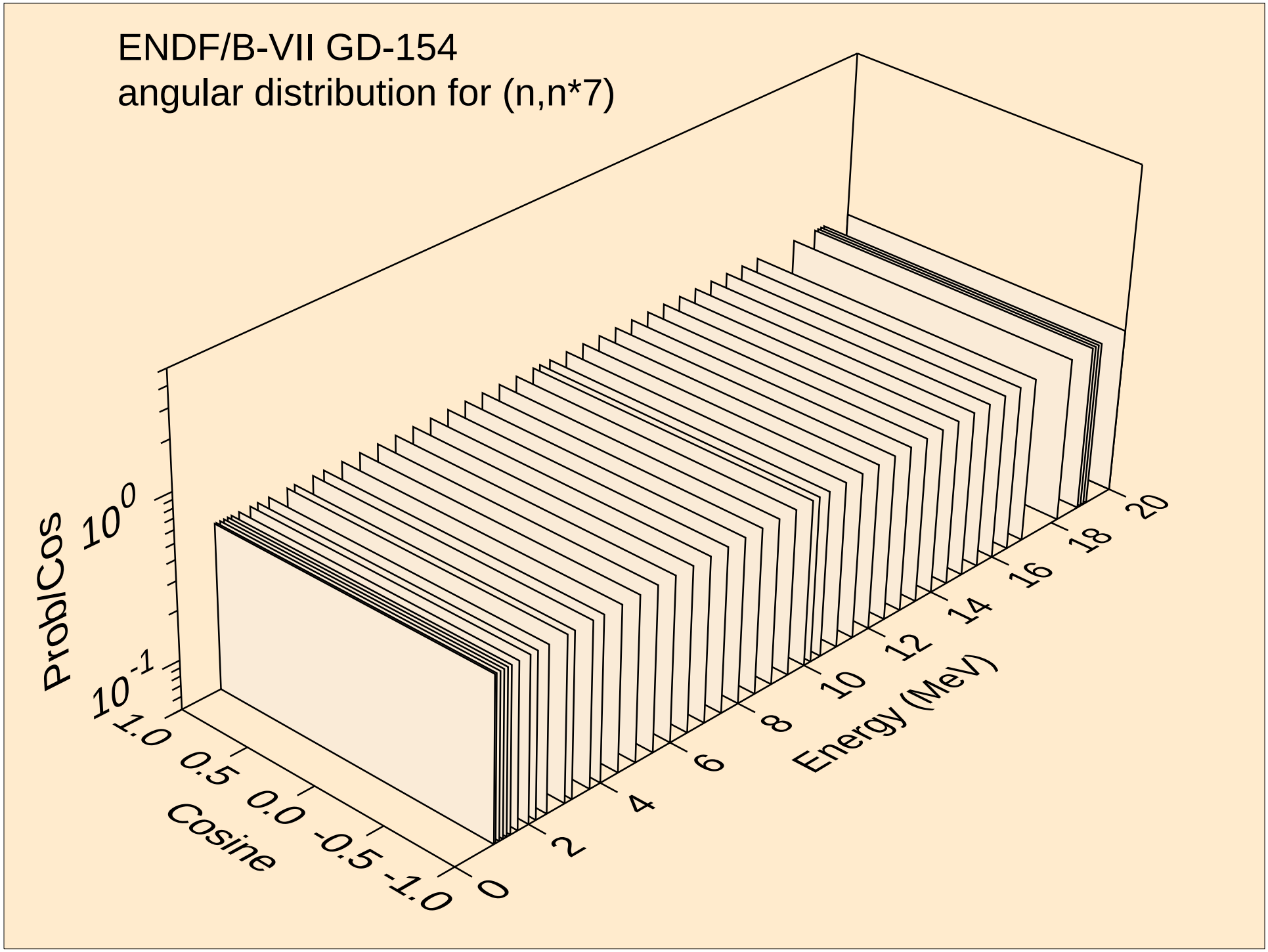

ENDF/B-VII GD-154
angular distribution for (n,n*2)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

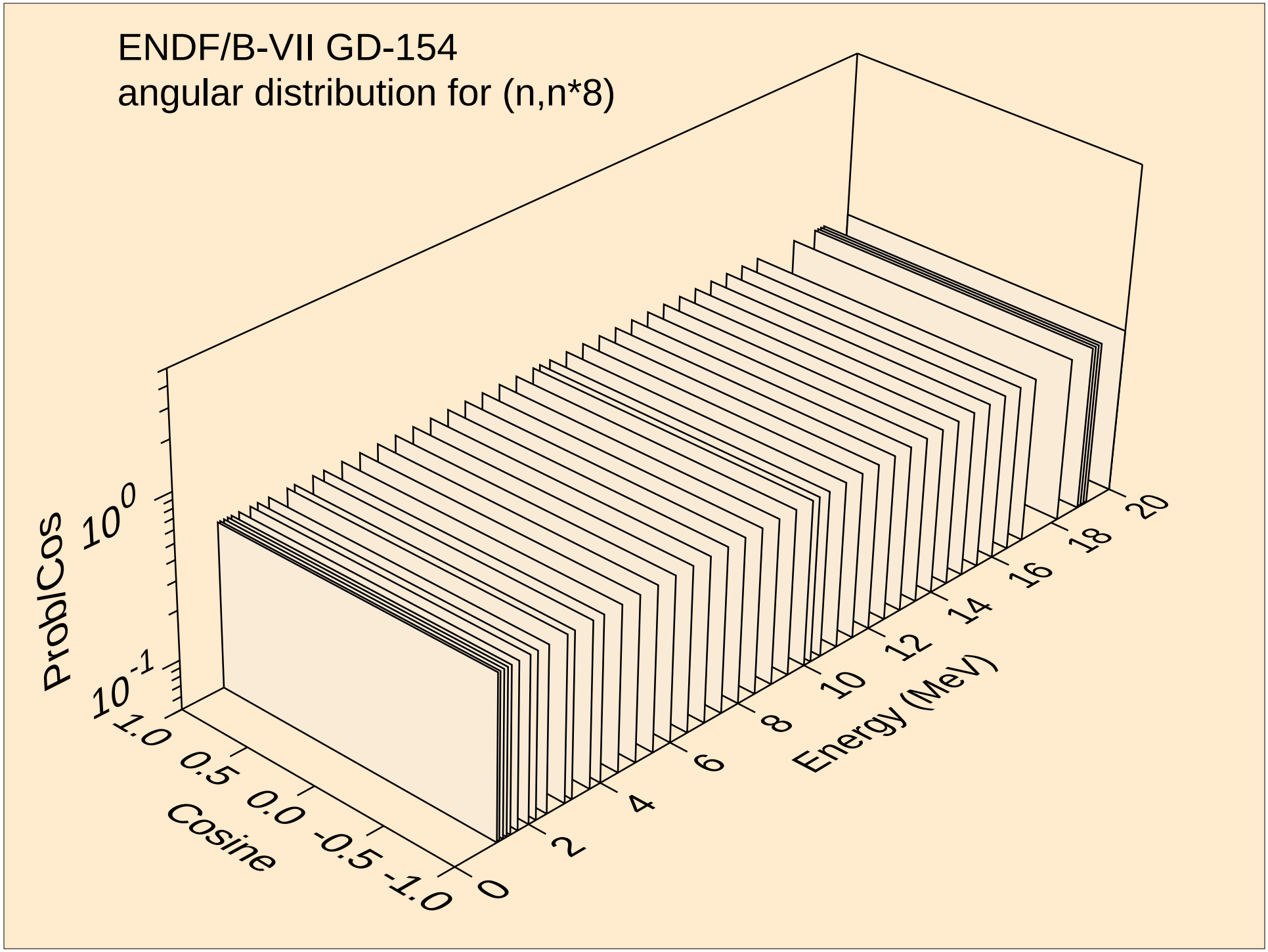

ENDF/B-VII GD-154
angular distribution for (n,n*3)
ProbICos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

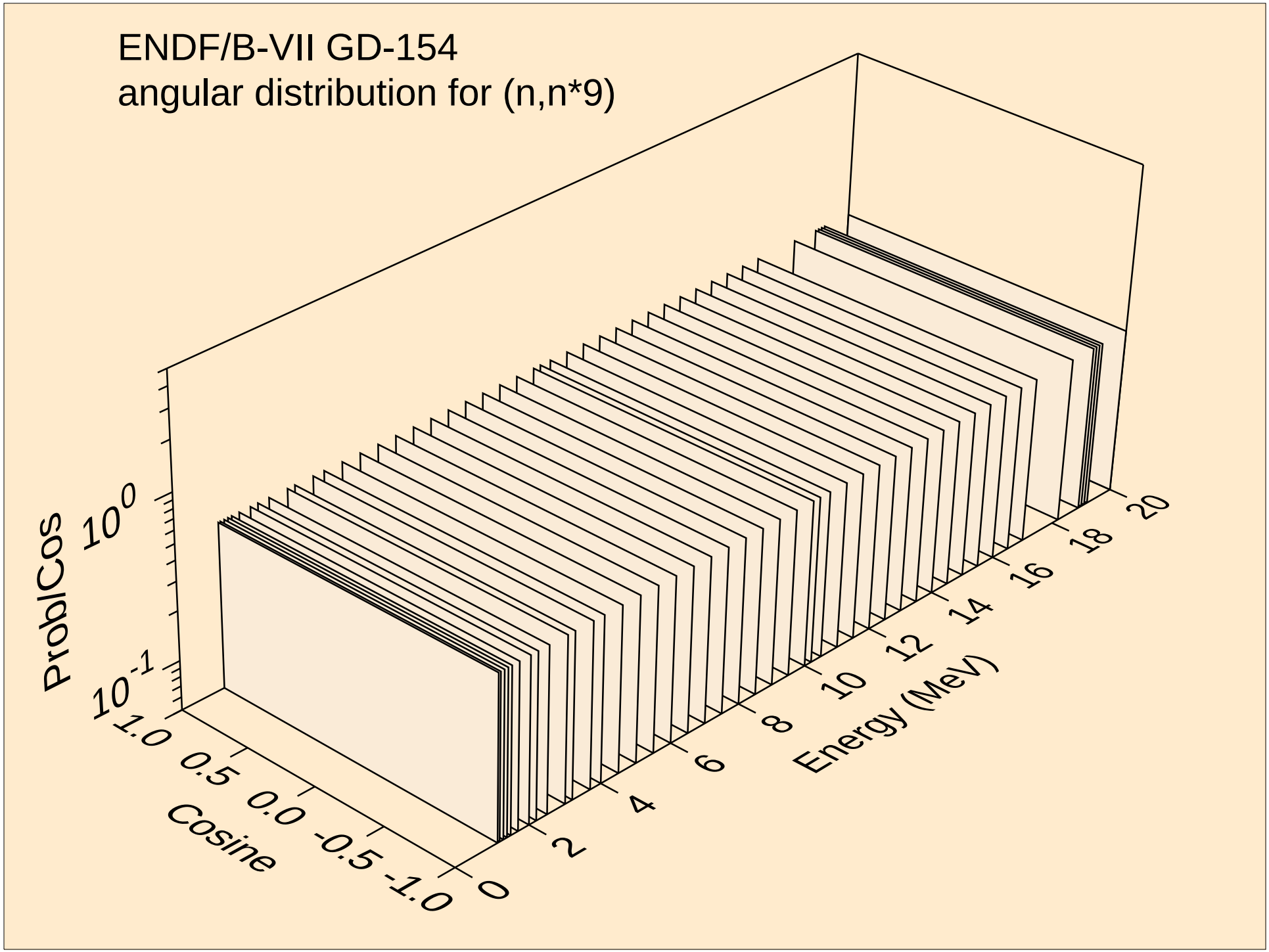

ENDF/B-VII GD-154
angular distribution for (n,n*4)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

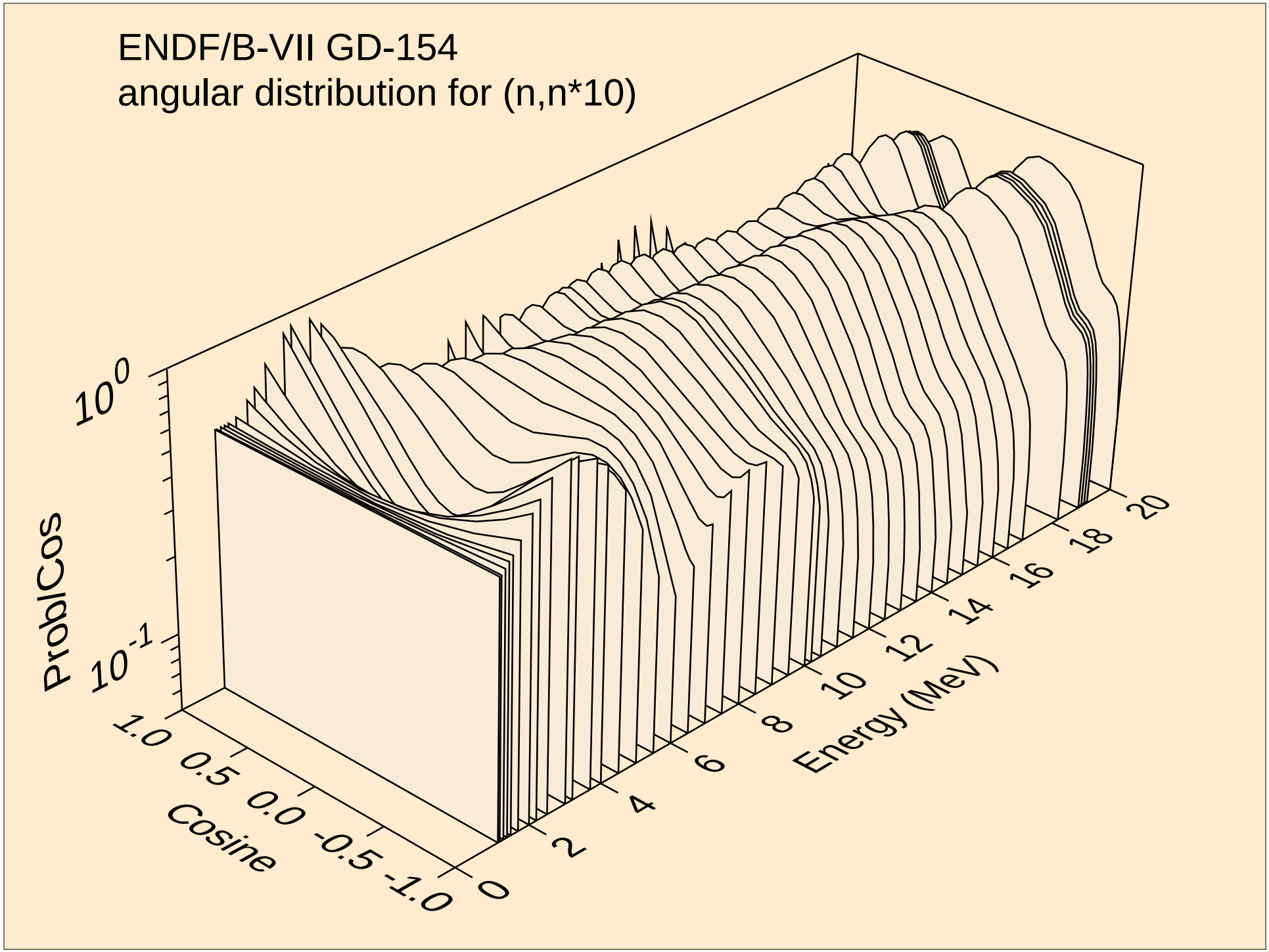

ENDF/B-VII GD-154
angular distribution for (n,n*5)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

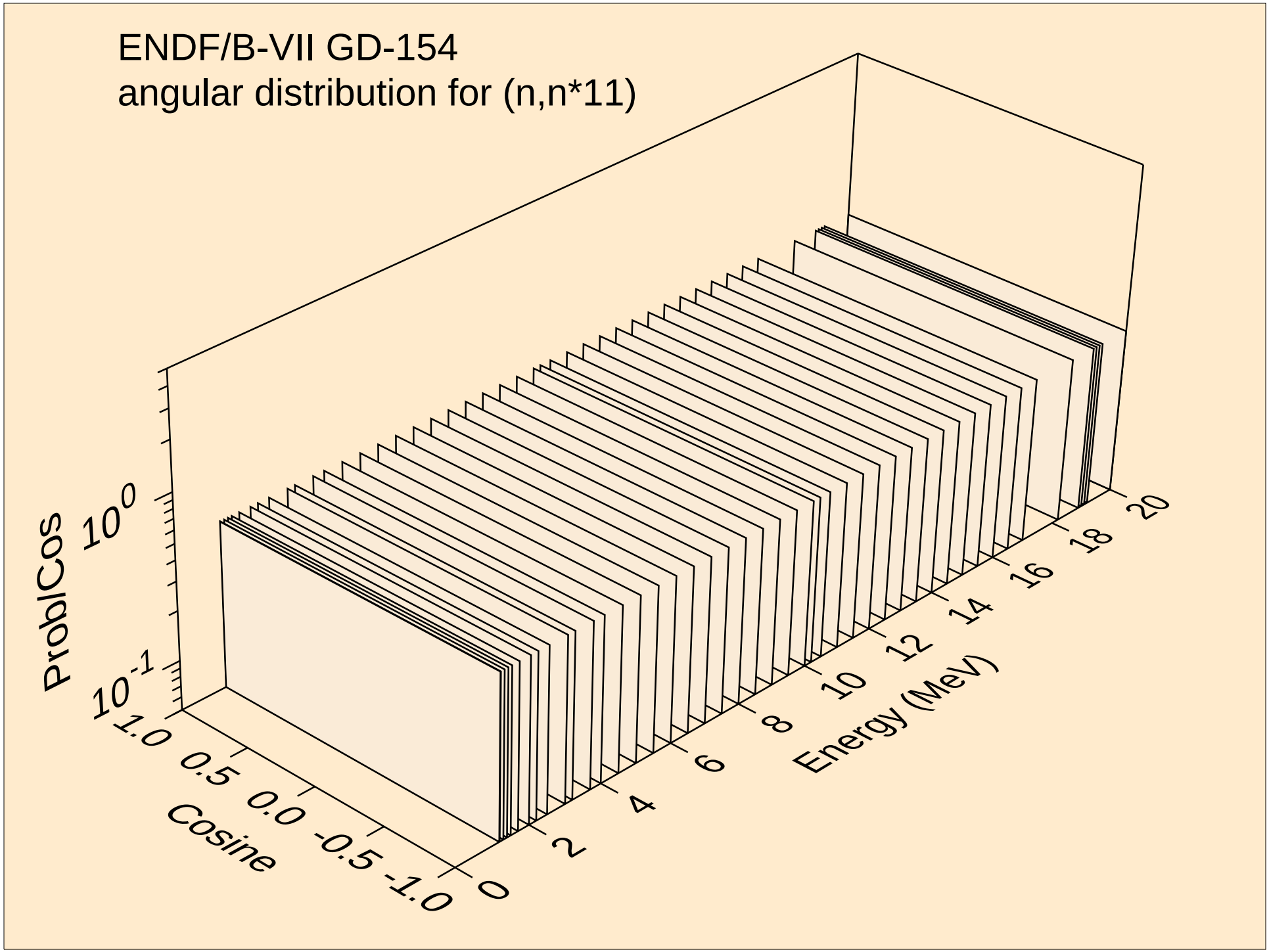

ENDF/B-VII GD-154
angular distribution for (n,n*6)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

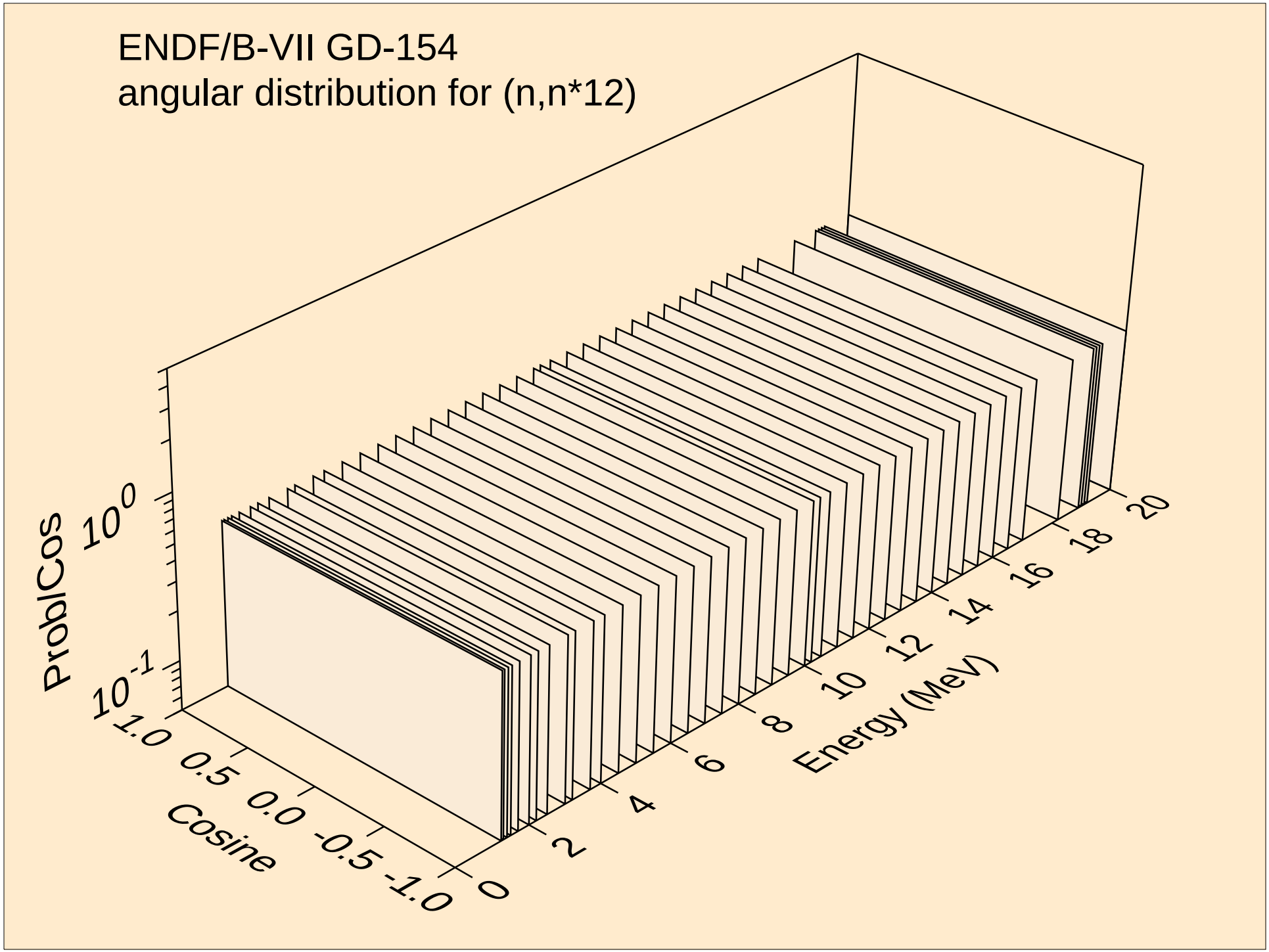

ENDF/B-VII GD-154
angular distribution for (n,n*7)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

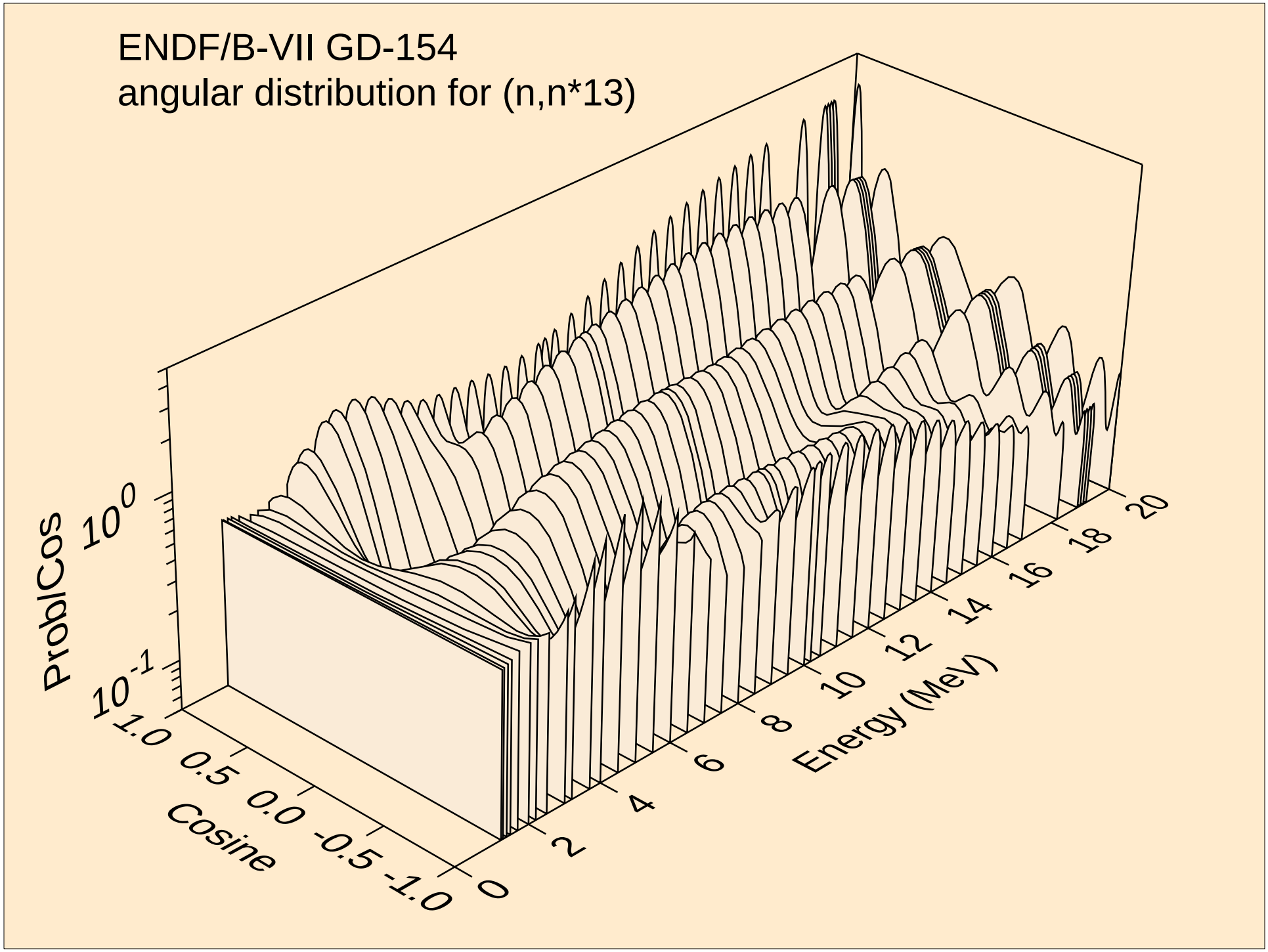

ENDF/B-VII GD-154
angular distribution for (n,n*8)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

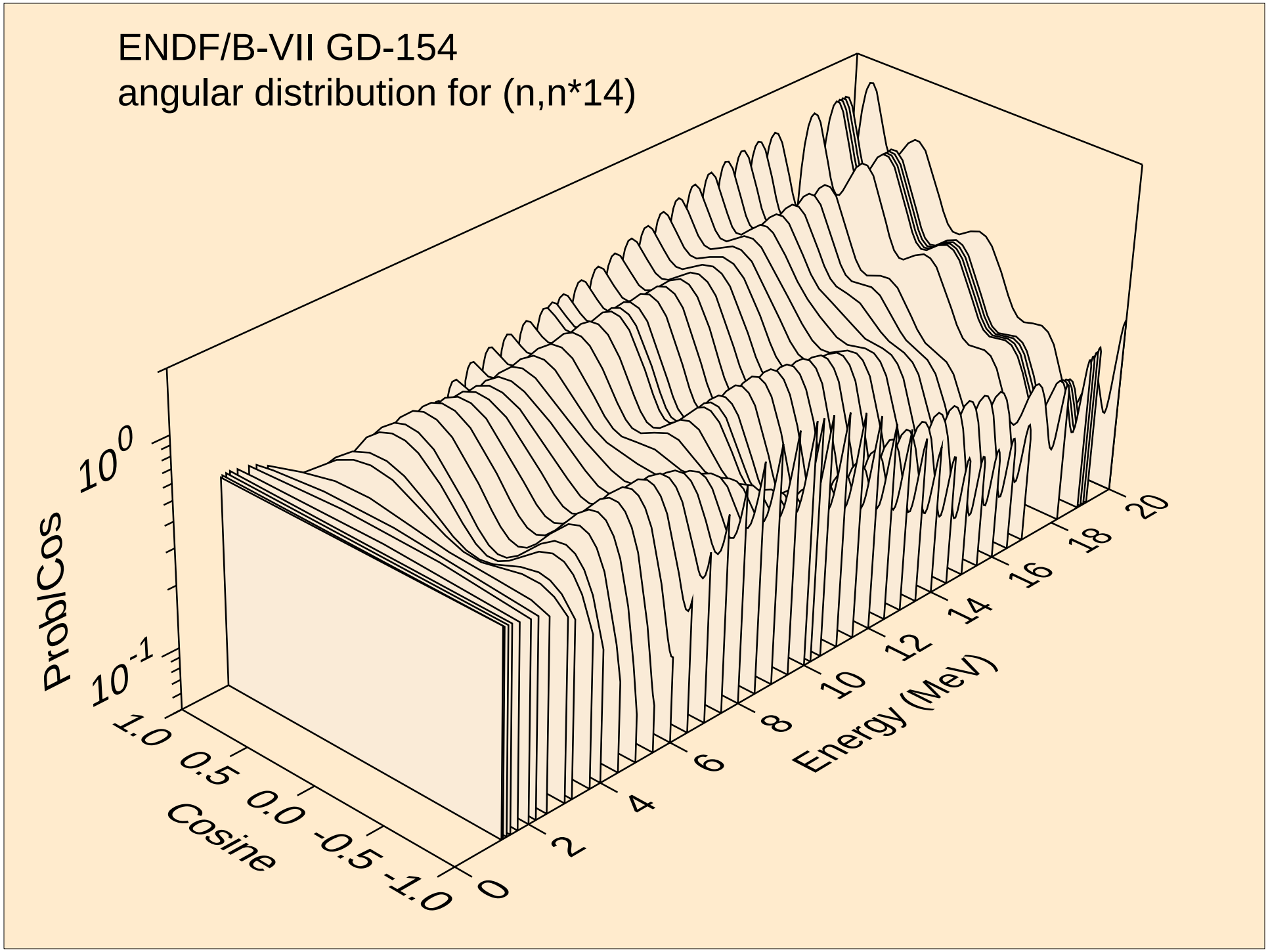

ENDF/B-VII GD-154
angular distribution for (n,n*9)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

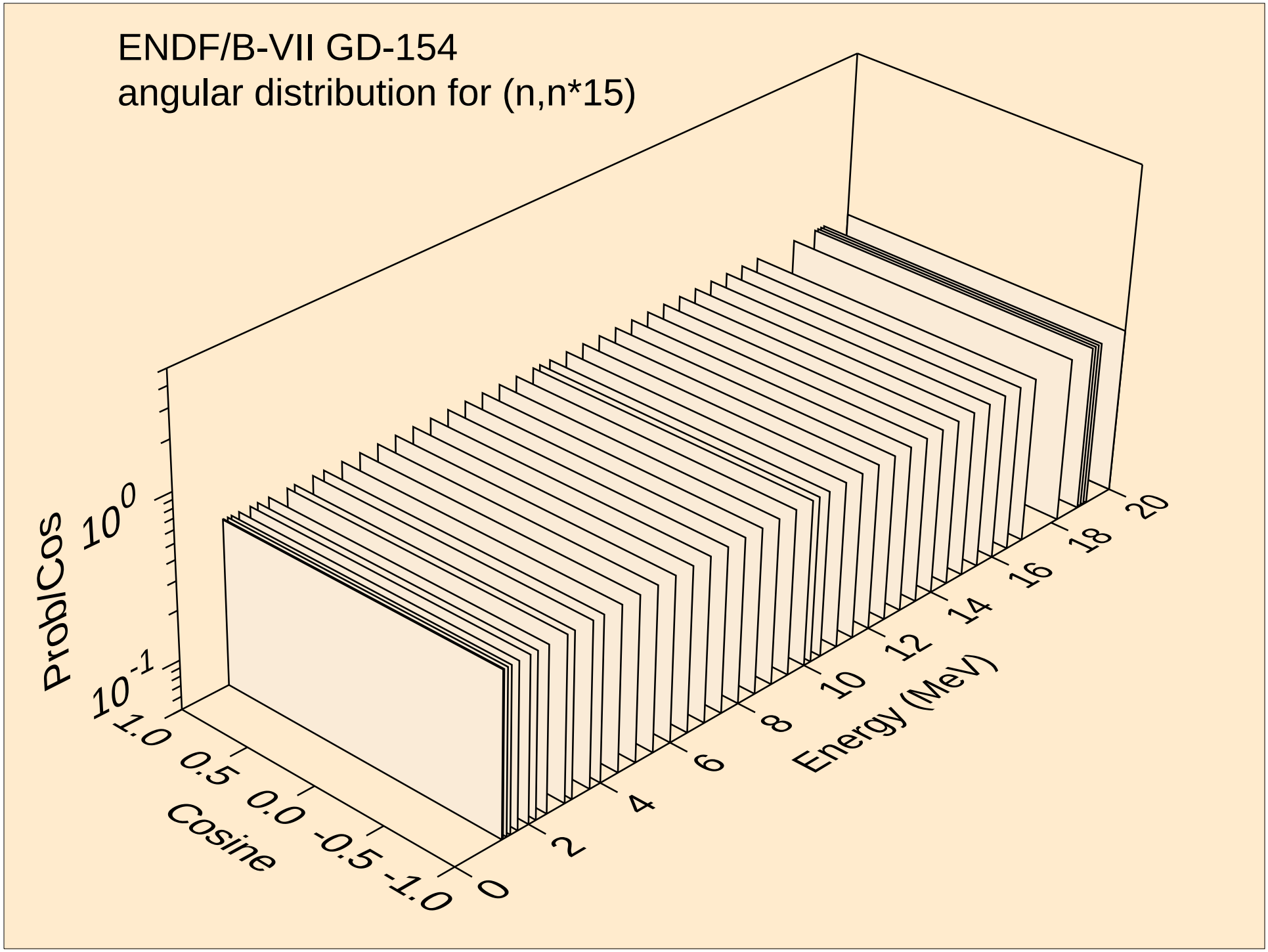

ENDF/B-VII GD-154
angular distribution for (n,n*10)
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

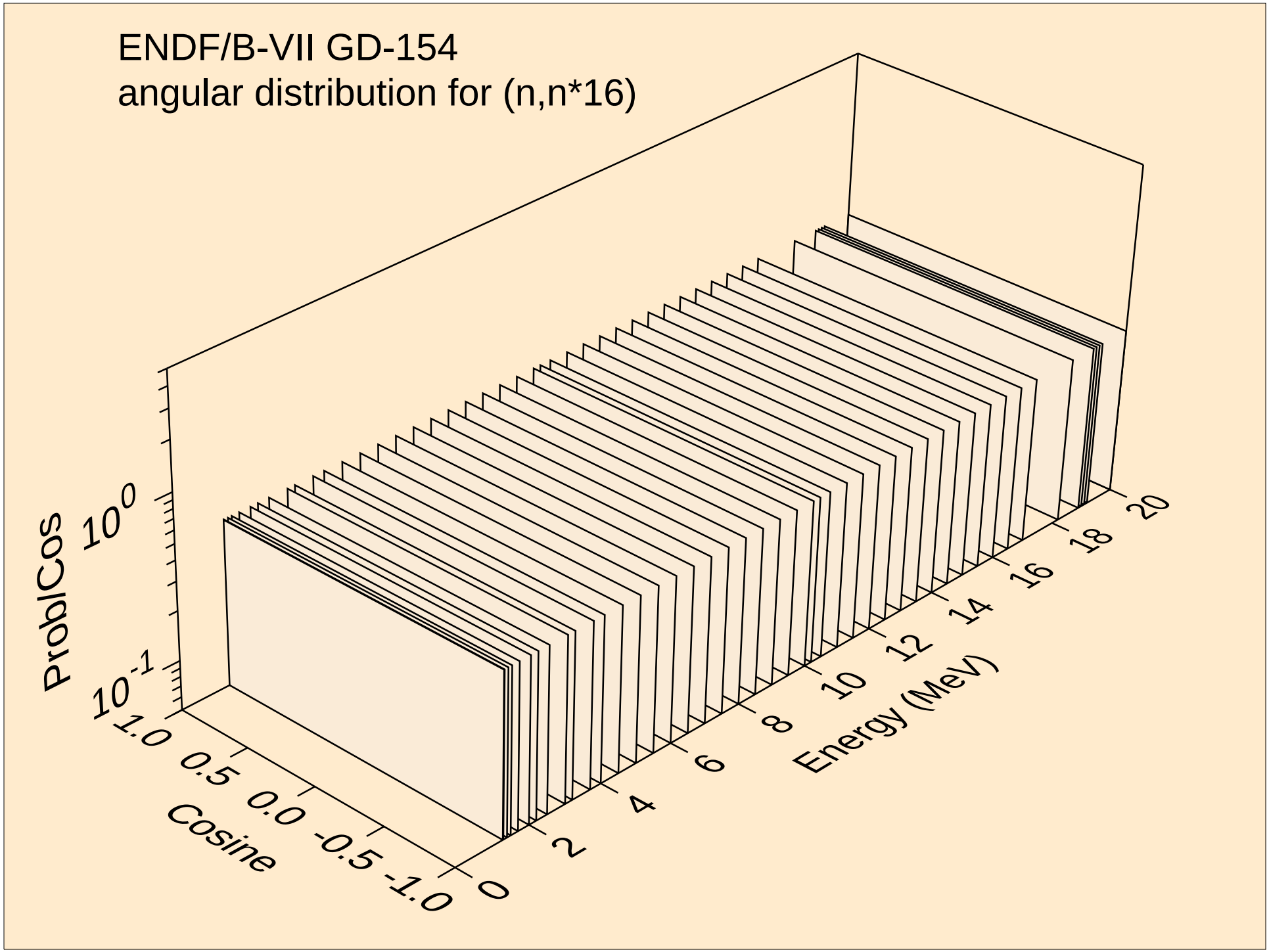

ENDF/B-VII GD-154
angular distribution for (n,n*11)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

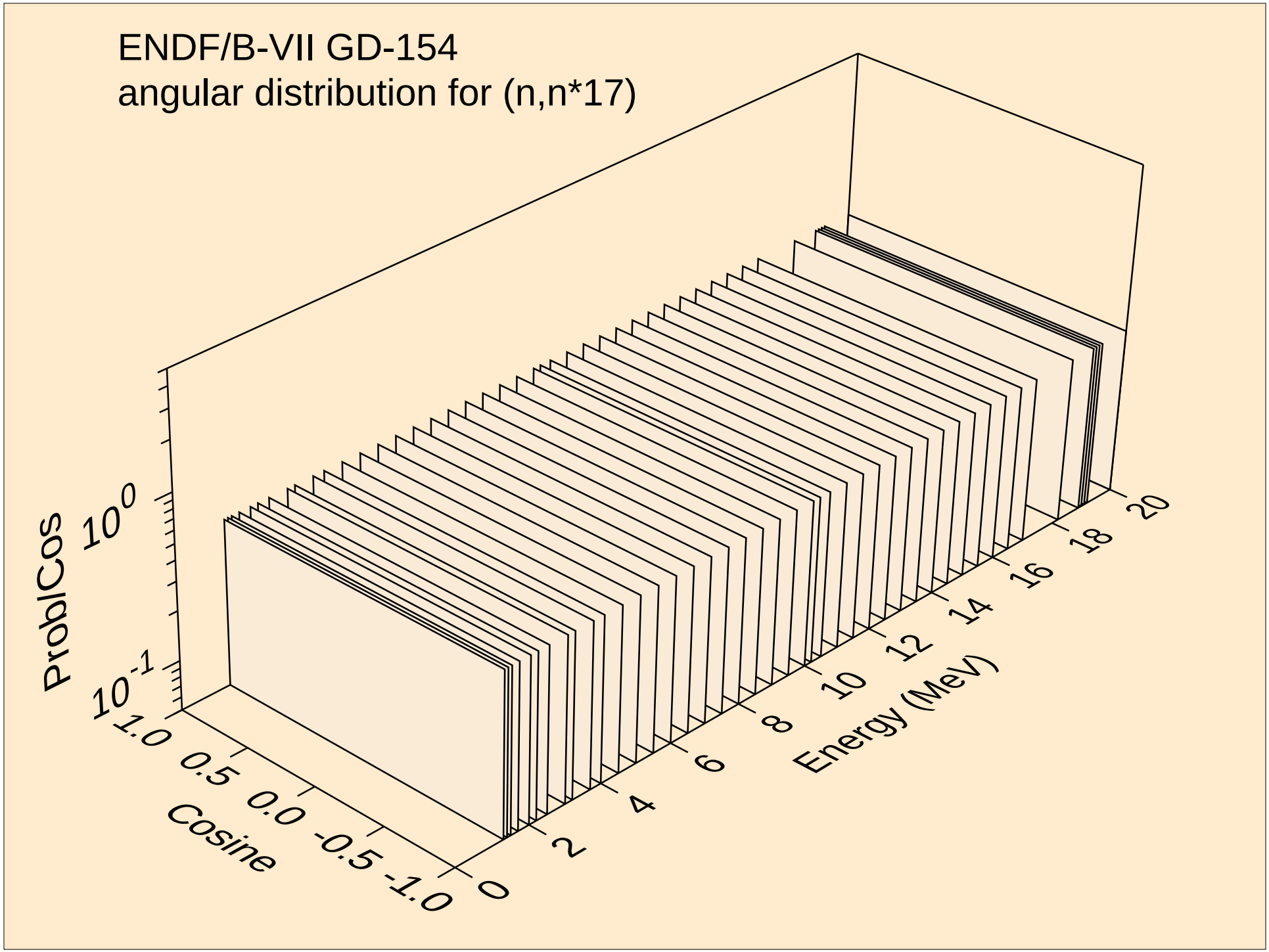

ENDF/B-VII GD-154
angular distribution for (n,n*12)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

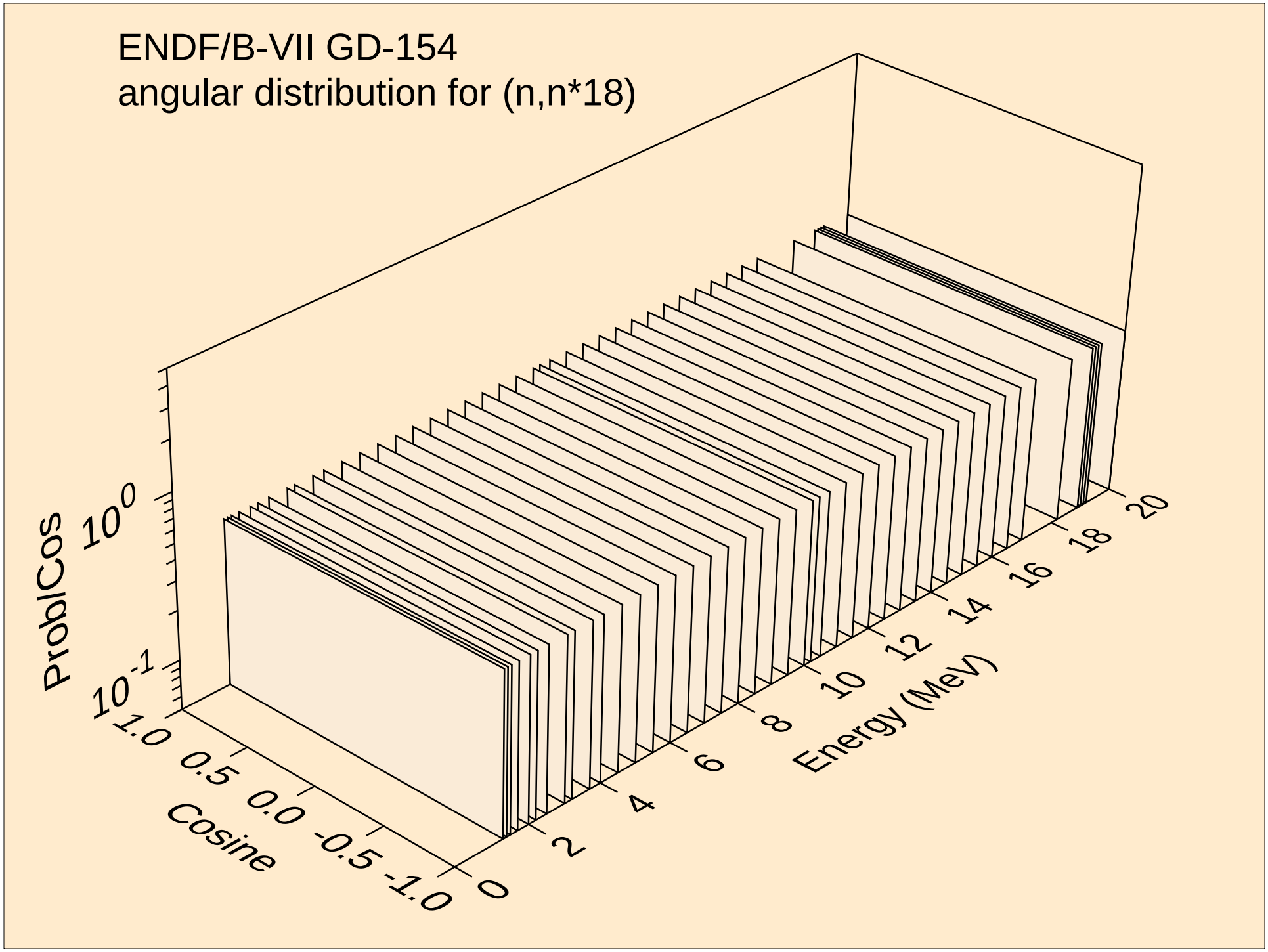

ENDF/B-VII GD-154
angular distribution for (n,n*13)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

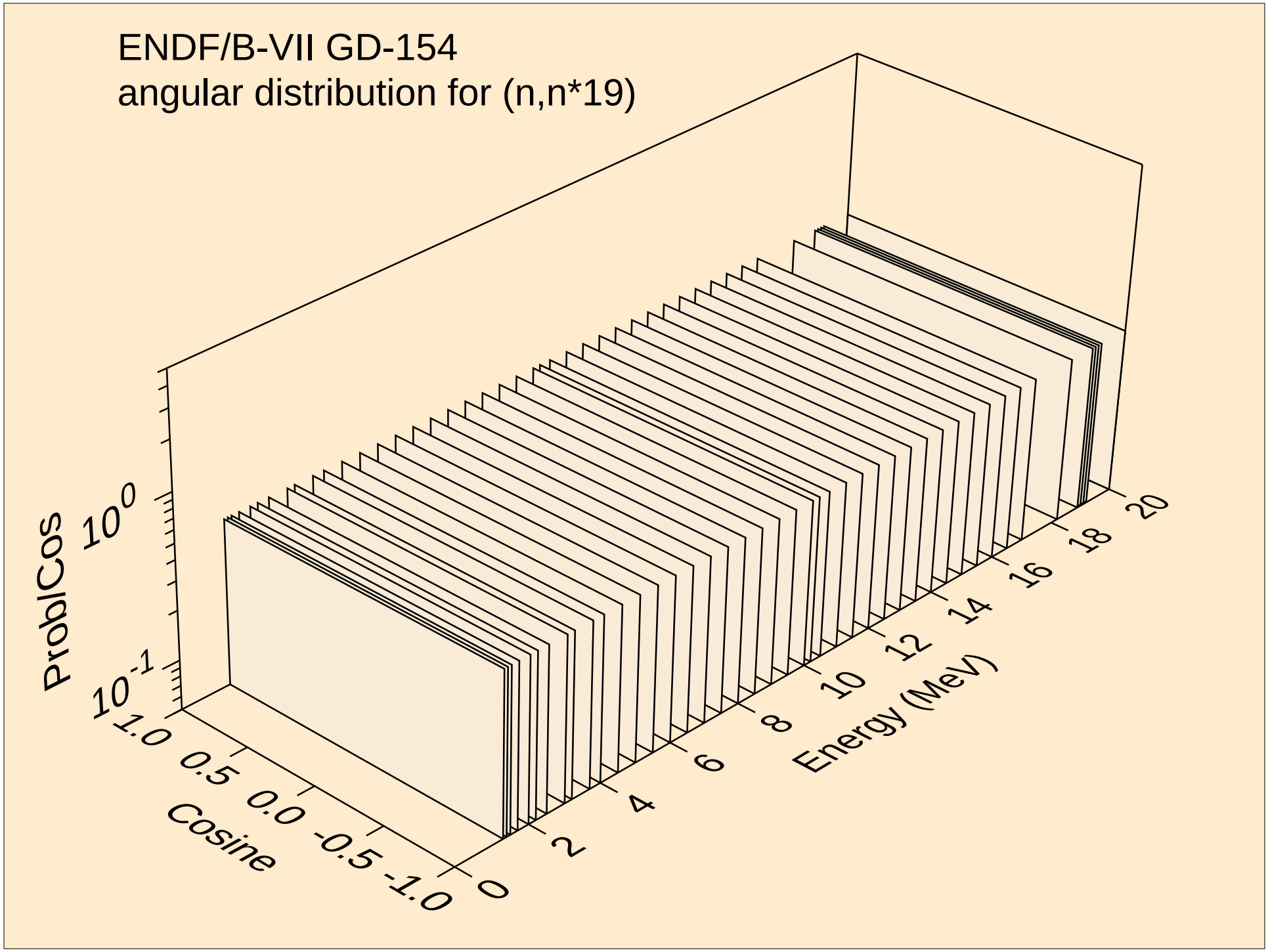

ENDF/B-VII GD-154
angular distribution for (n,n*14)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

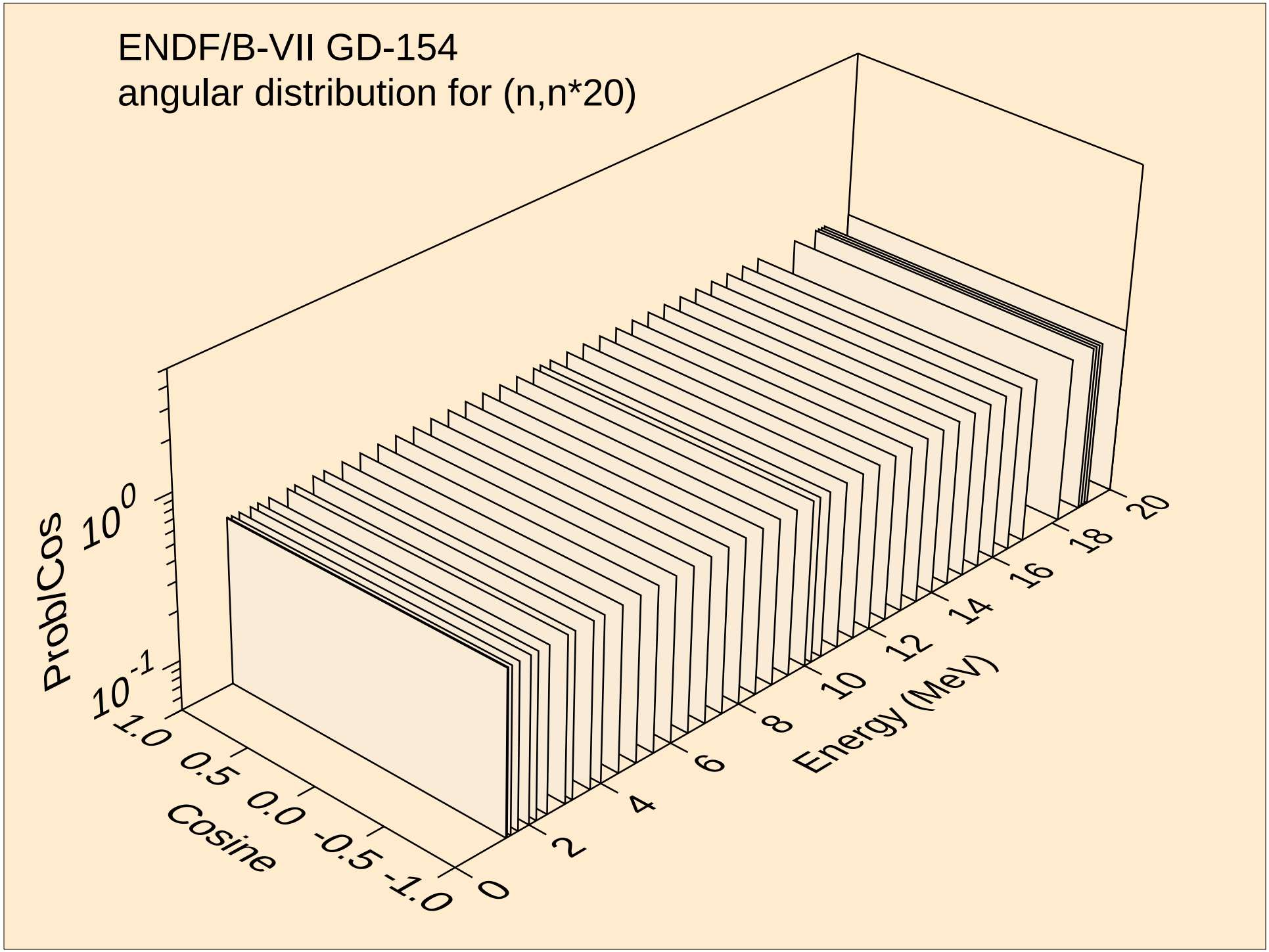

ENDF/B-VII GD-154
angular distribution for (n,n*15)
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

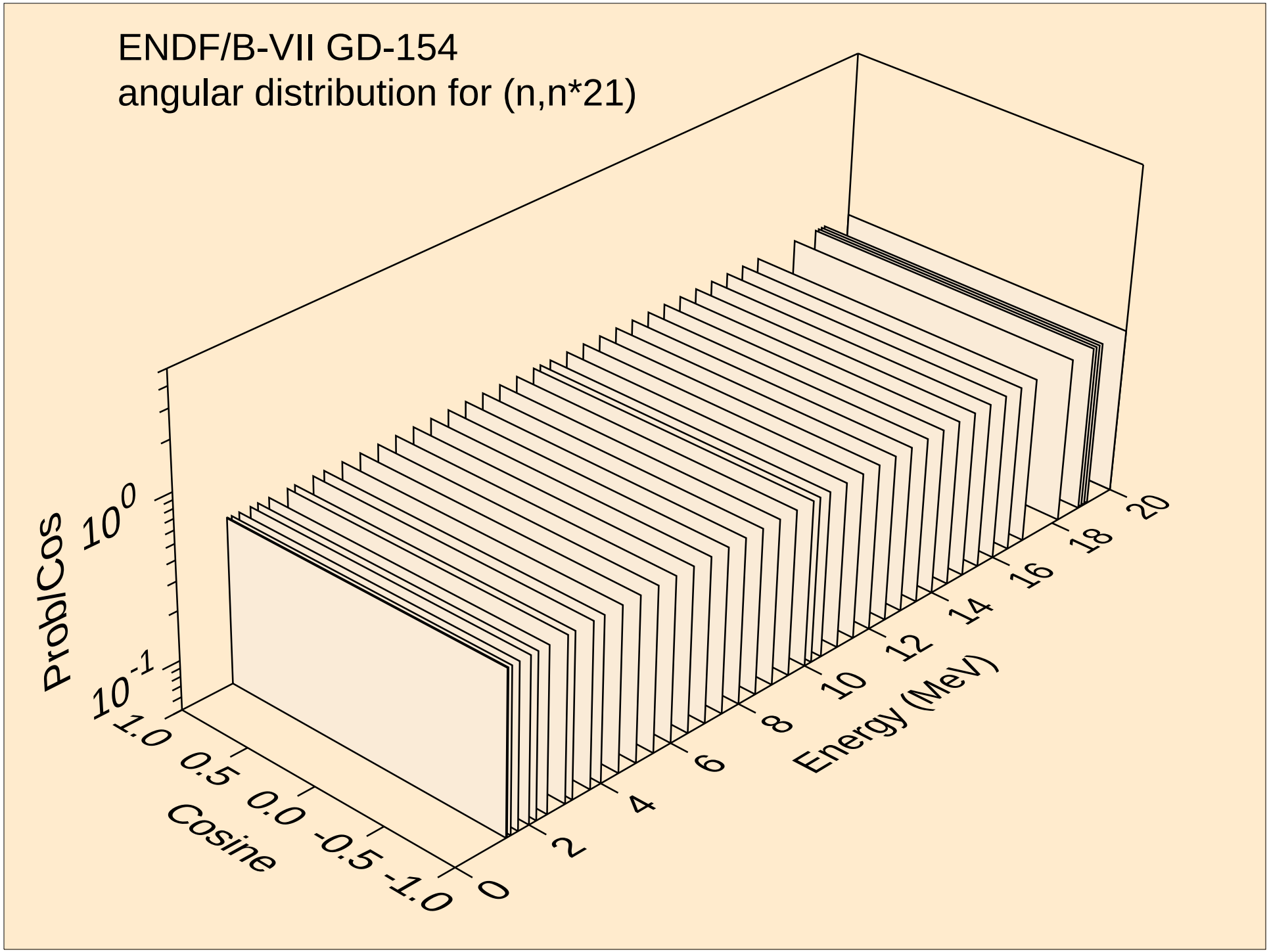

ENDF/B-VII GD-154
angular distribution for (n,n*16)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

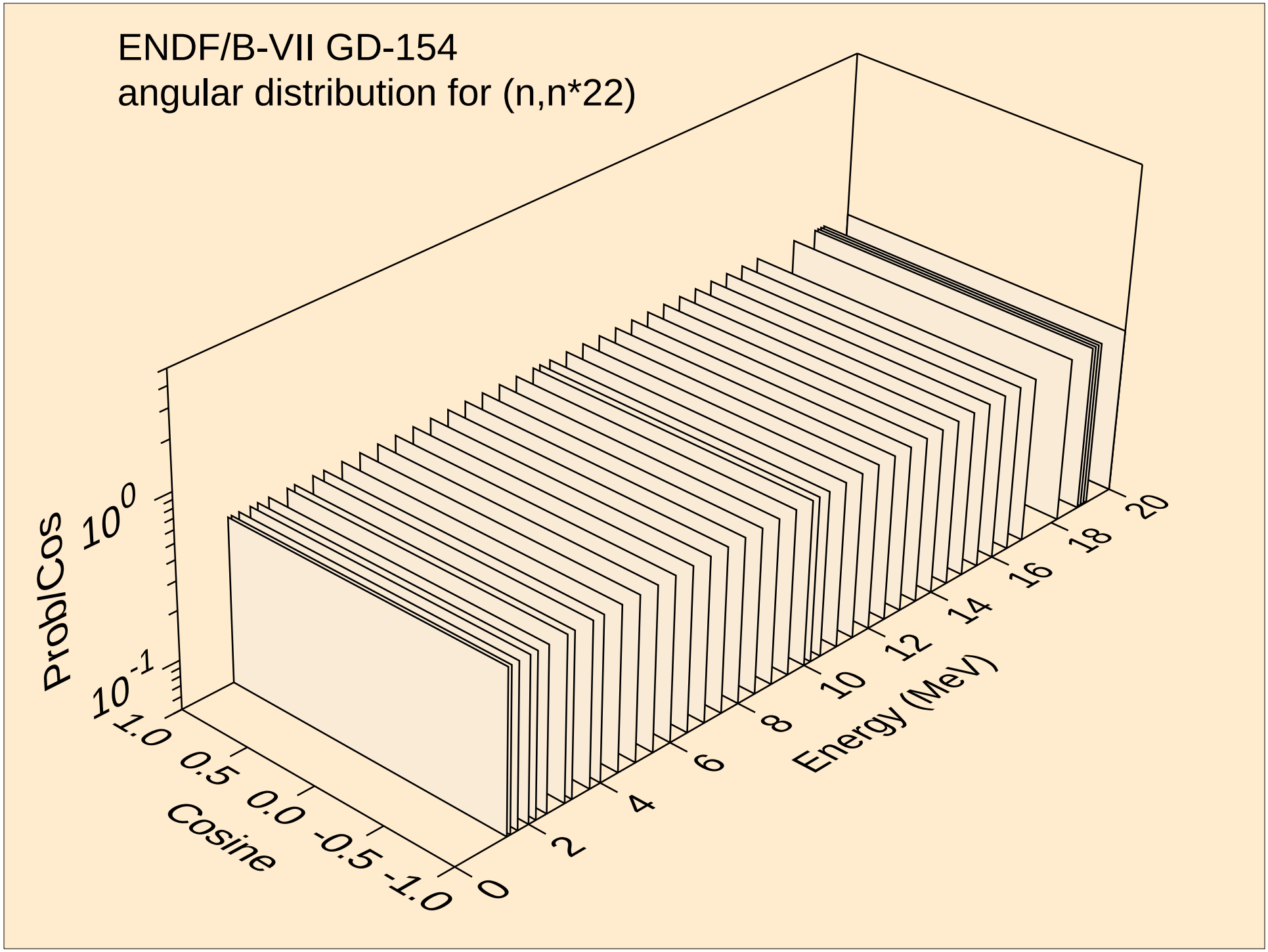

ENDF/B-VII GD-154
angular distribution for (n,n*17)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

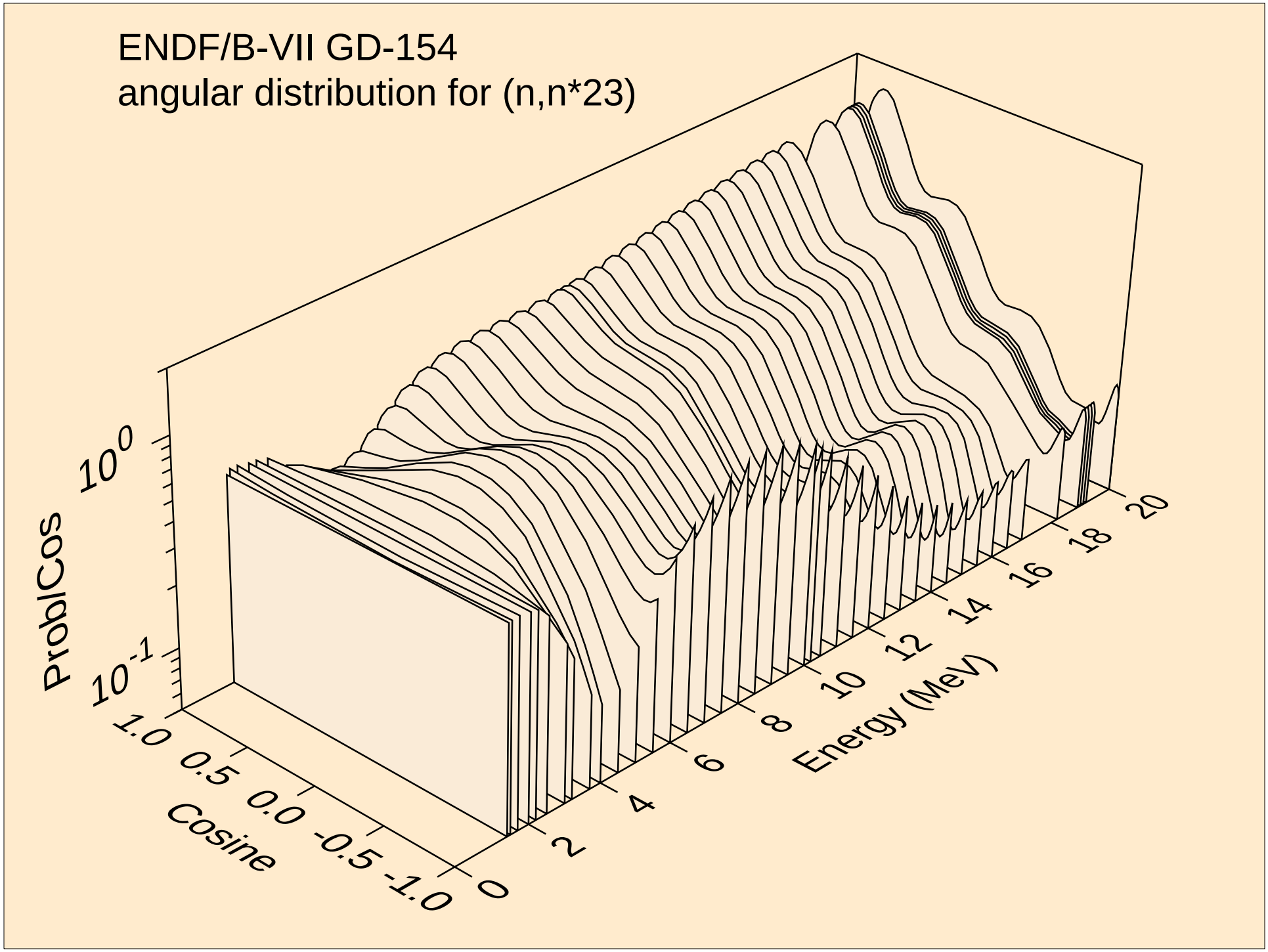

ENDF/B-VII GD-154
angular distribution for (n,n*18)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

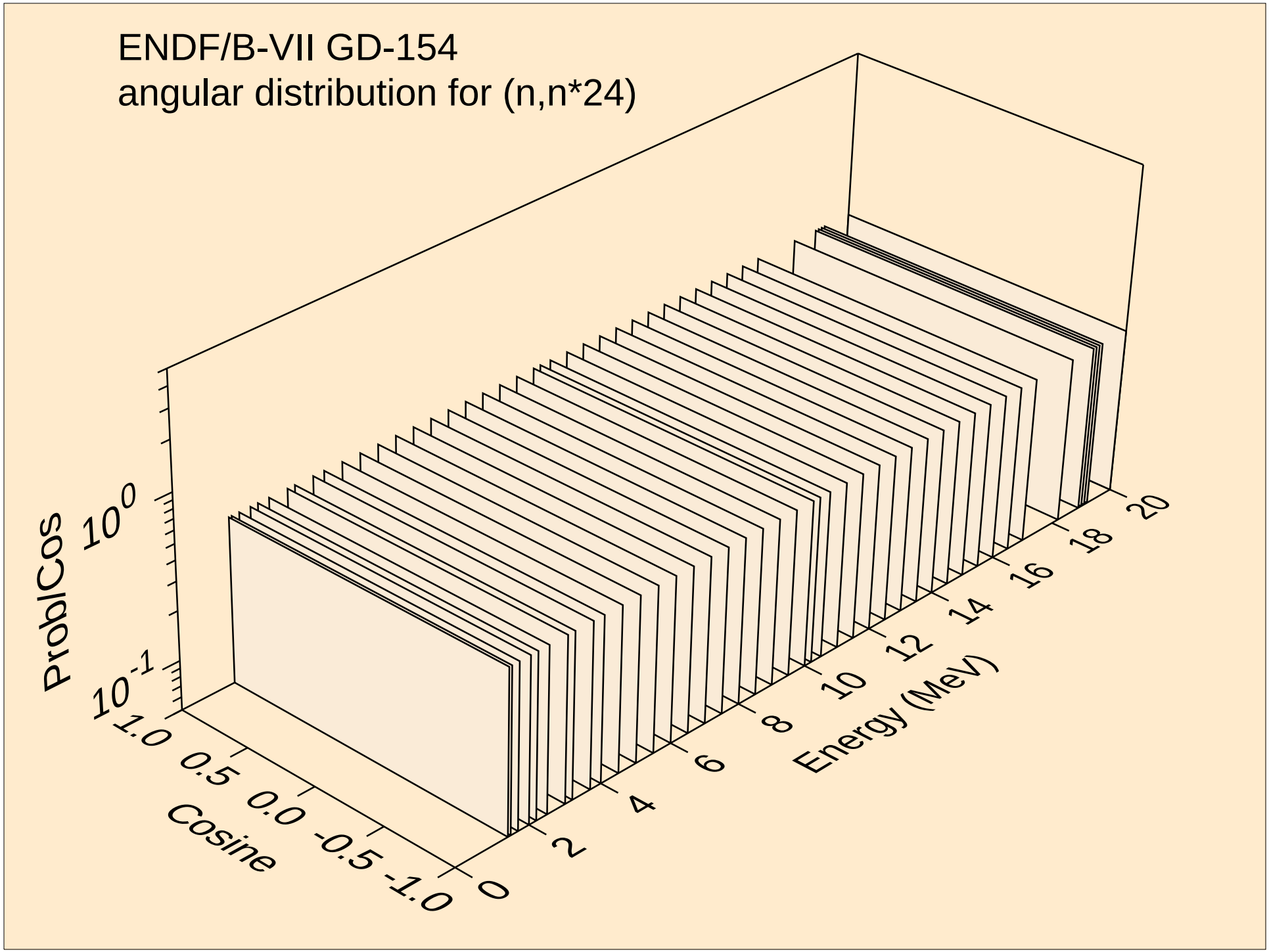

ENDF/B-VII GD-154
angular distribution for (n,n*19)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

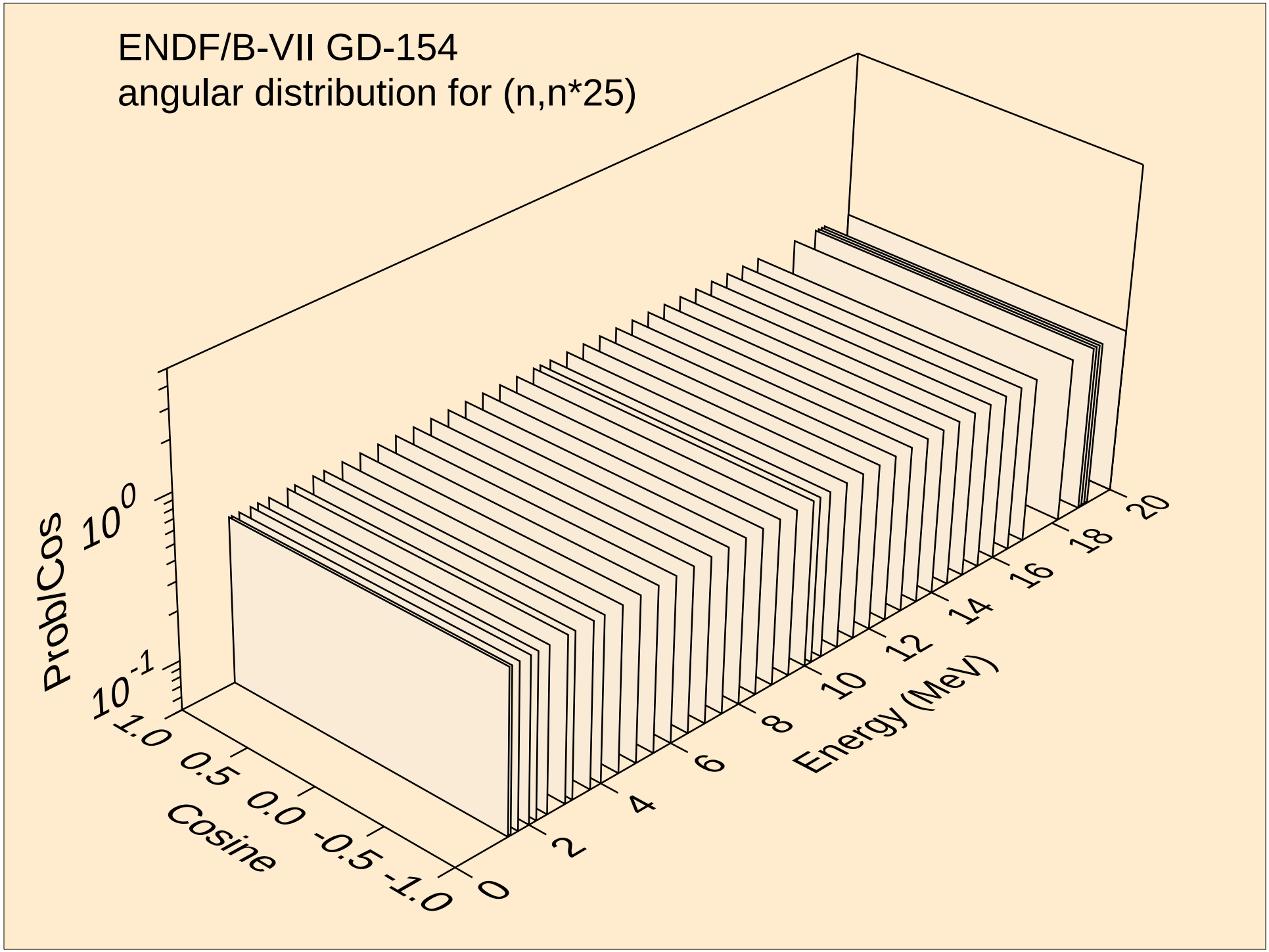

ENDF/B-VII GD-154
angular distribution for (n,n*20)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

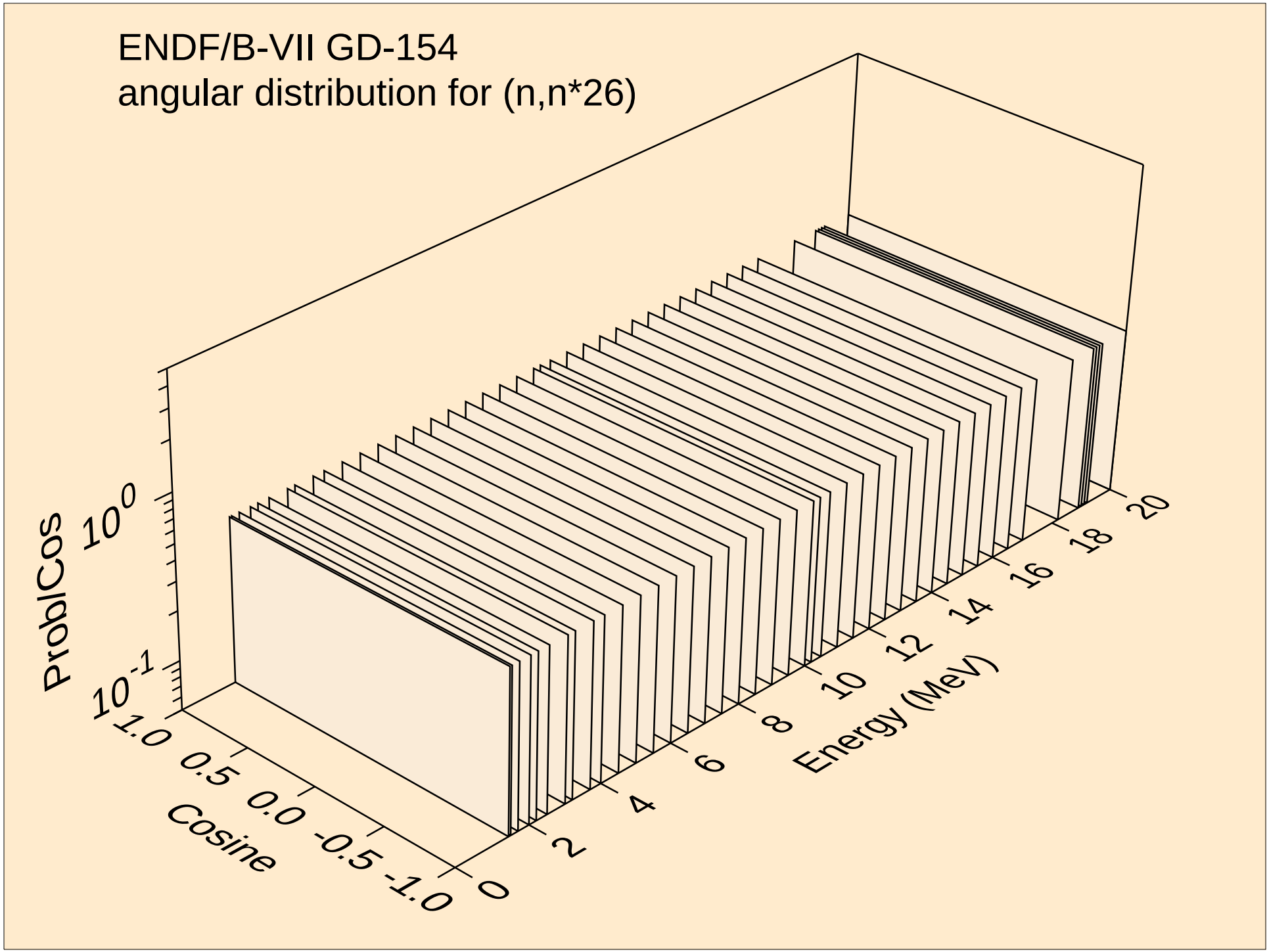

ENDF/B-VII GD-154
angular distribution for (n,n*21)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

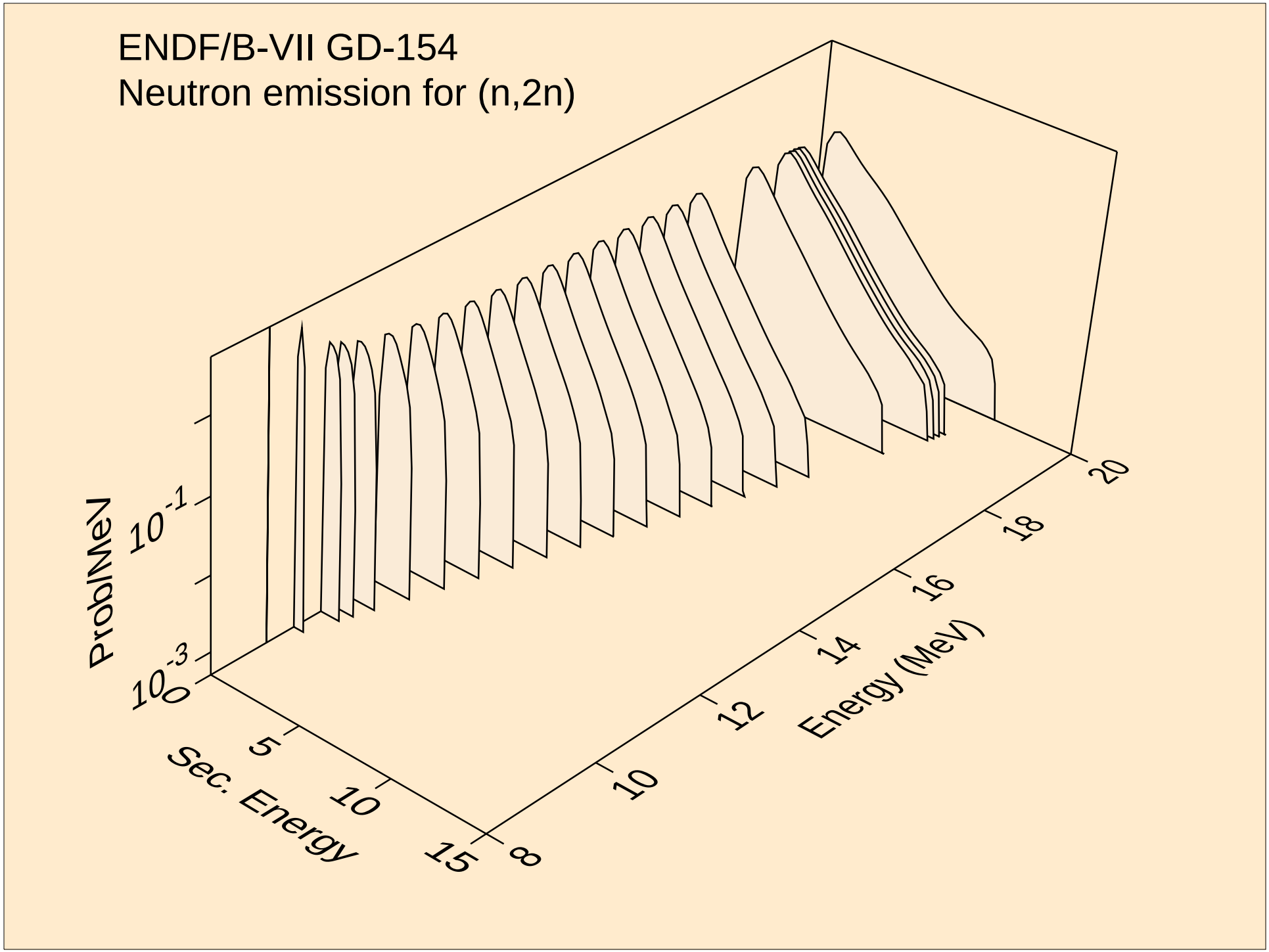

ENDF/B-VII GD-154
angular distribution for (n,n*22)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

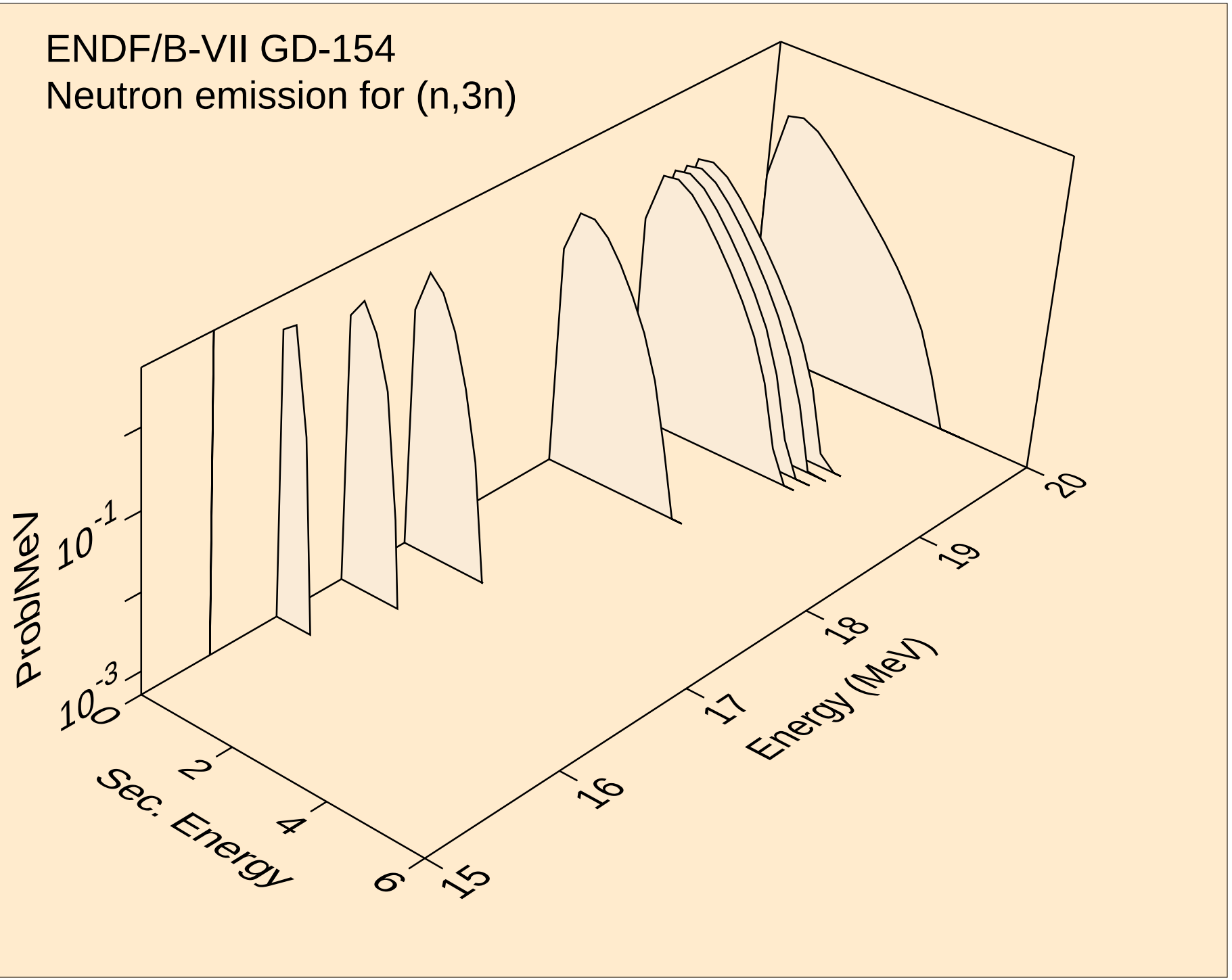

ENDF/B-VII GD-154
angular distribution for (n,n*23)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

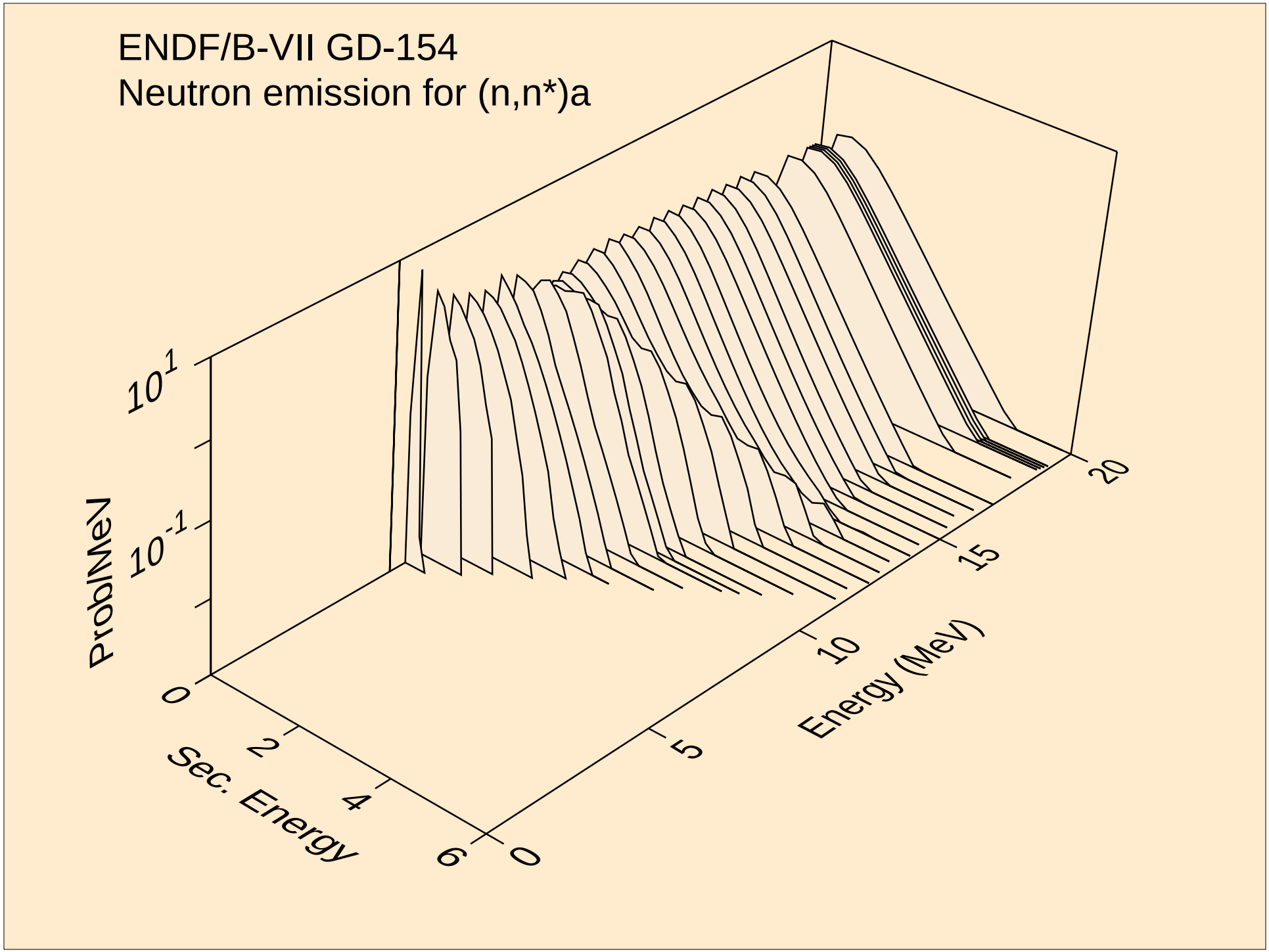

ENDF/B-VII GD-154
angular distribution for (n,n*24)
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

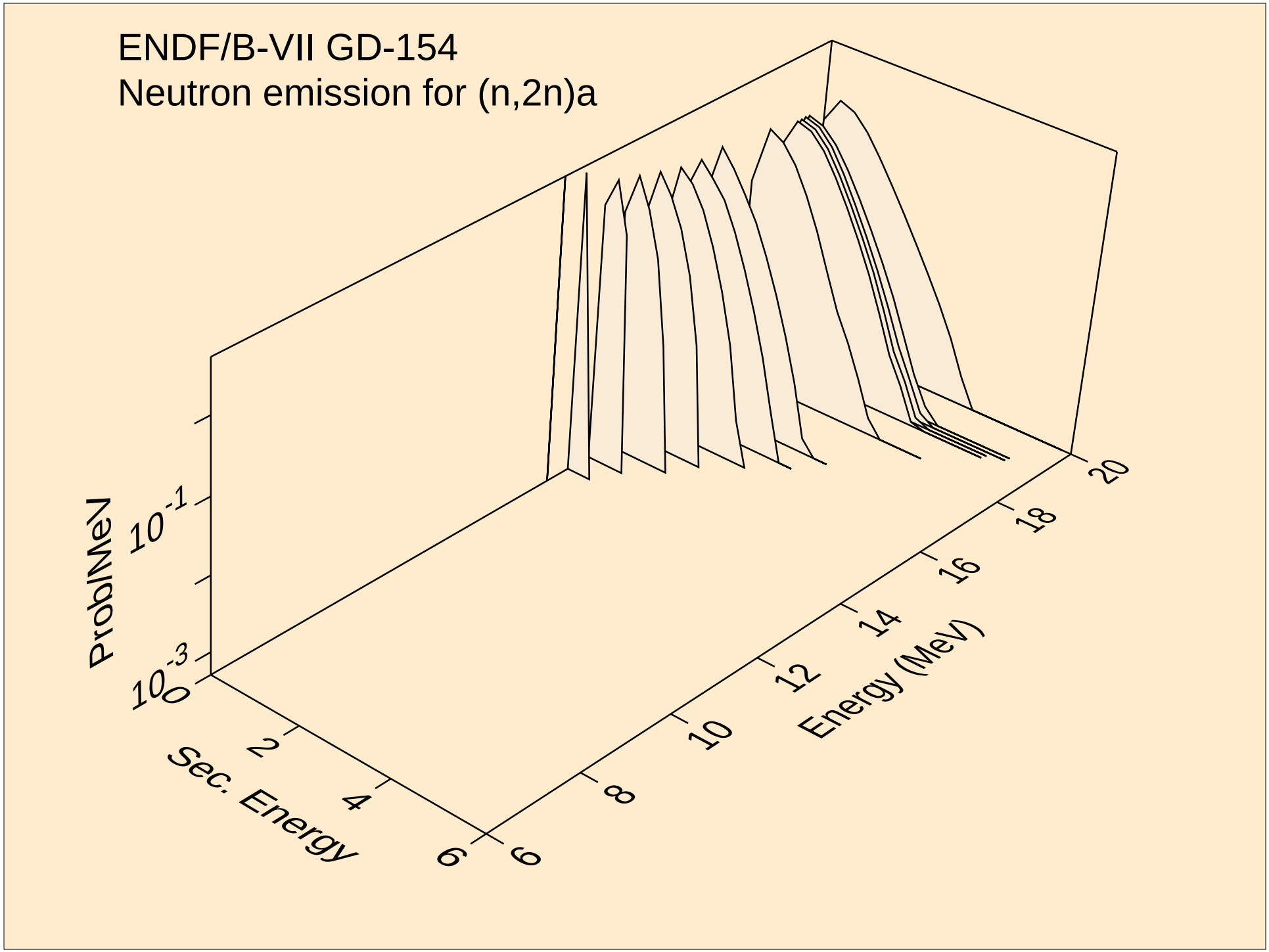

ENDF/B-VII GD-154
angular distribution for (n,n*25)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

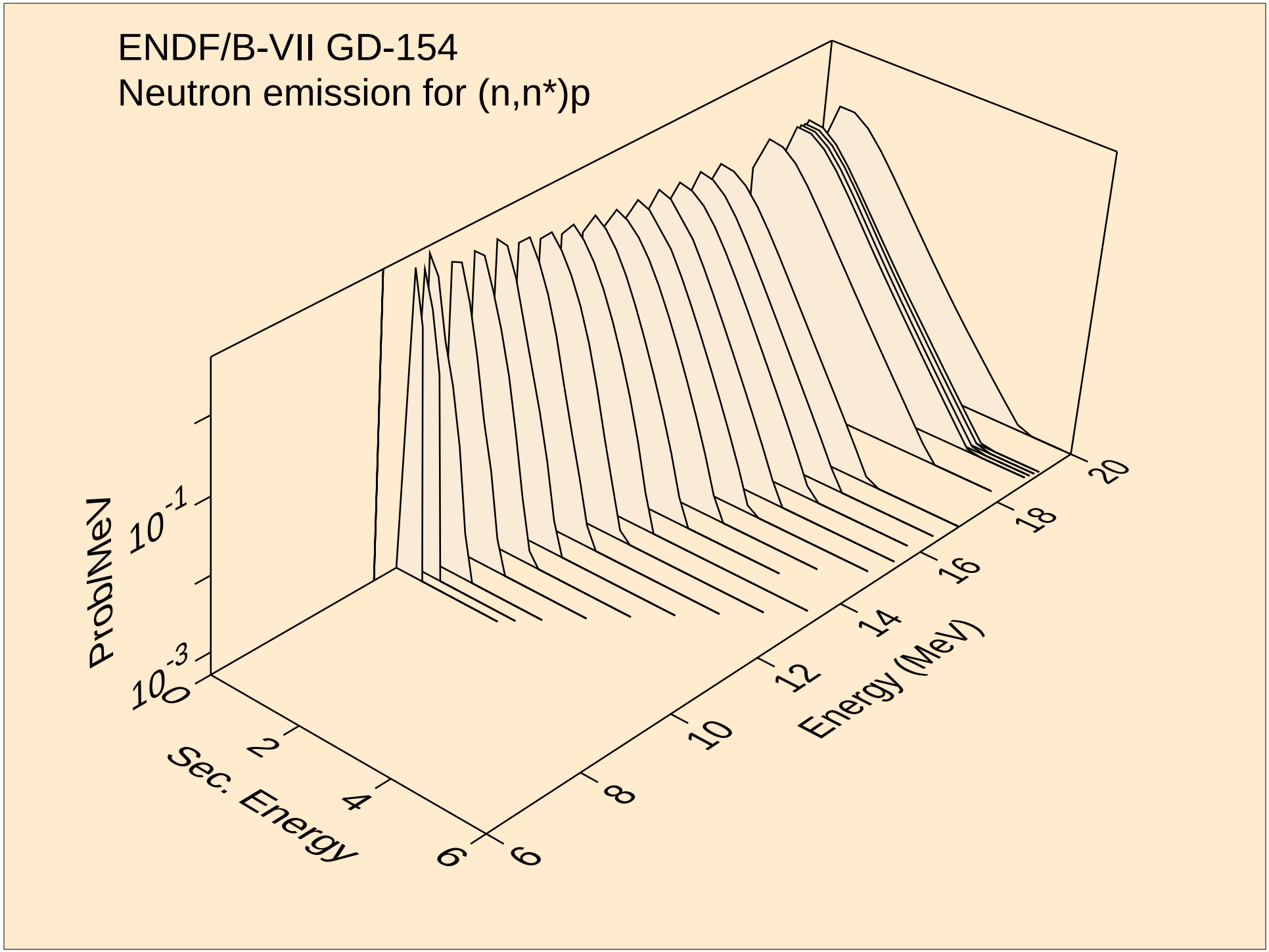

ENDF/B-VII GD-154
angular distribution for (n,n*26)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

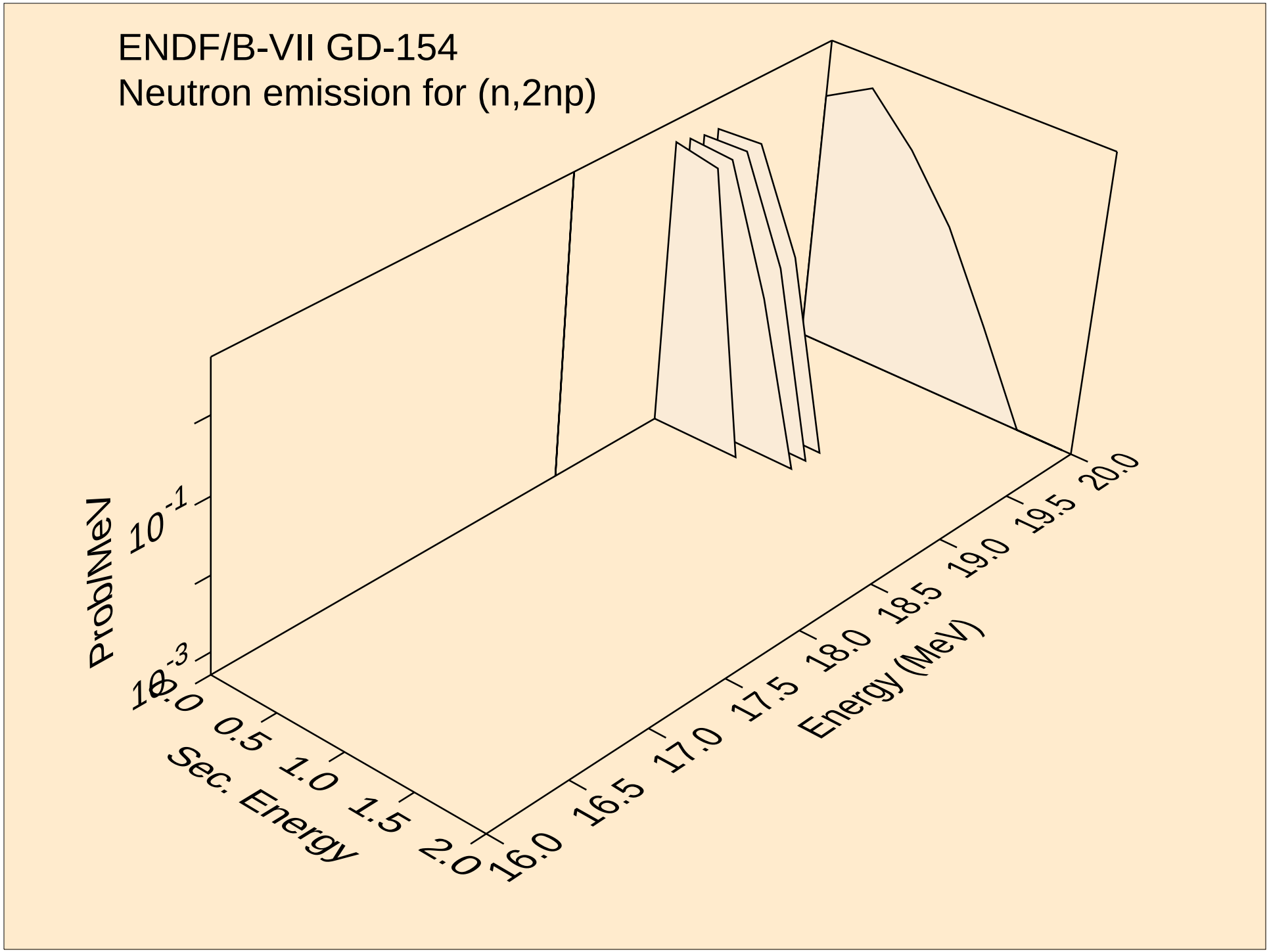

ENDF/B-VII GD-154
Neutron emission for (n,2n)
Prob/MeV
10^-1
10^-3
0
5
10
15
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)

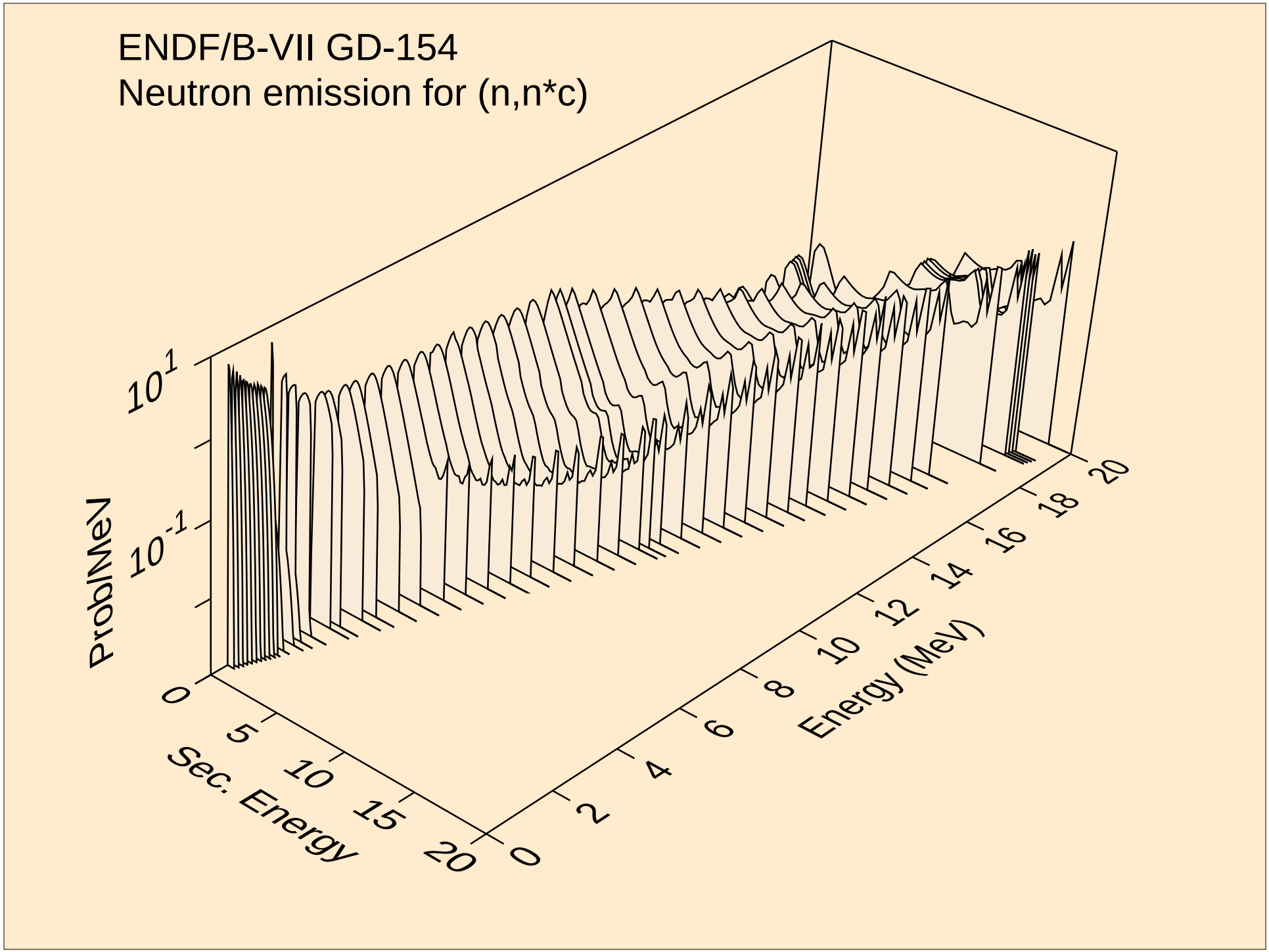

ENDF/B-VII GD-154
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
15
16
17
18
19
20
Energy (MeV)

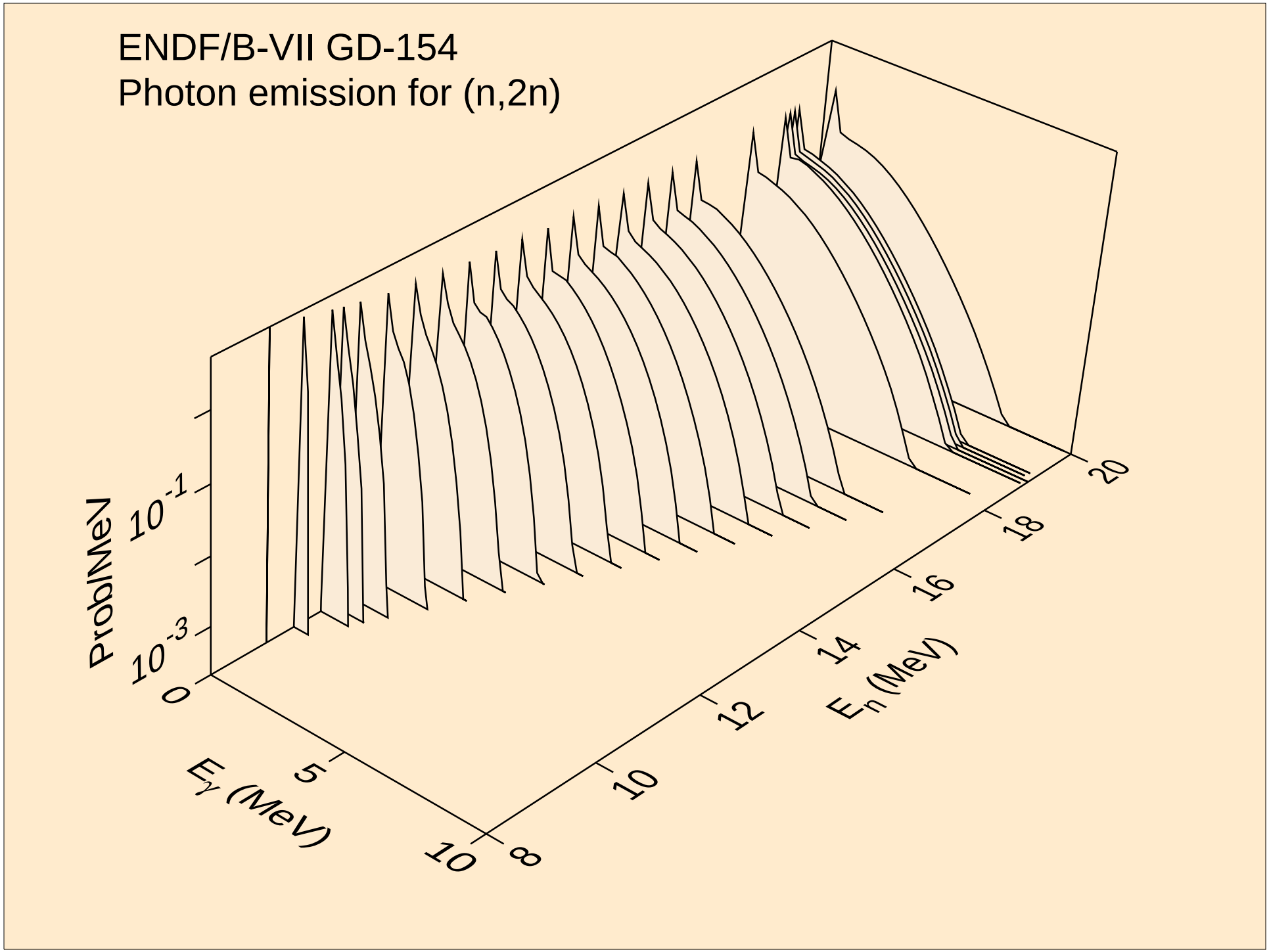

ENDF/B-VII GD-154
Neutron emission for (n,n*)a
Prob/MeV
10^{1}
10^{-1}
0
2
4
6
Sec. Energy
0
5
10
15
20
Energy (MeV)

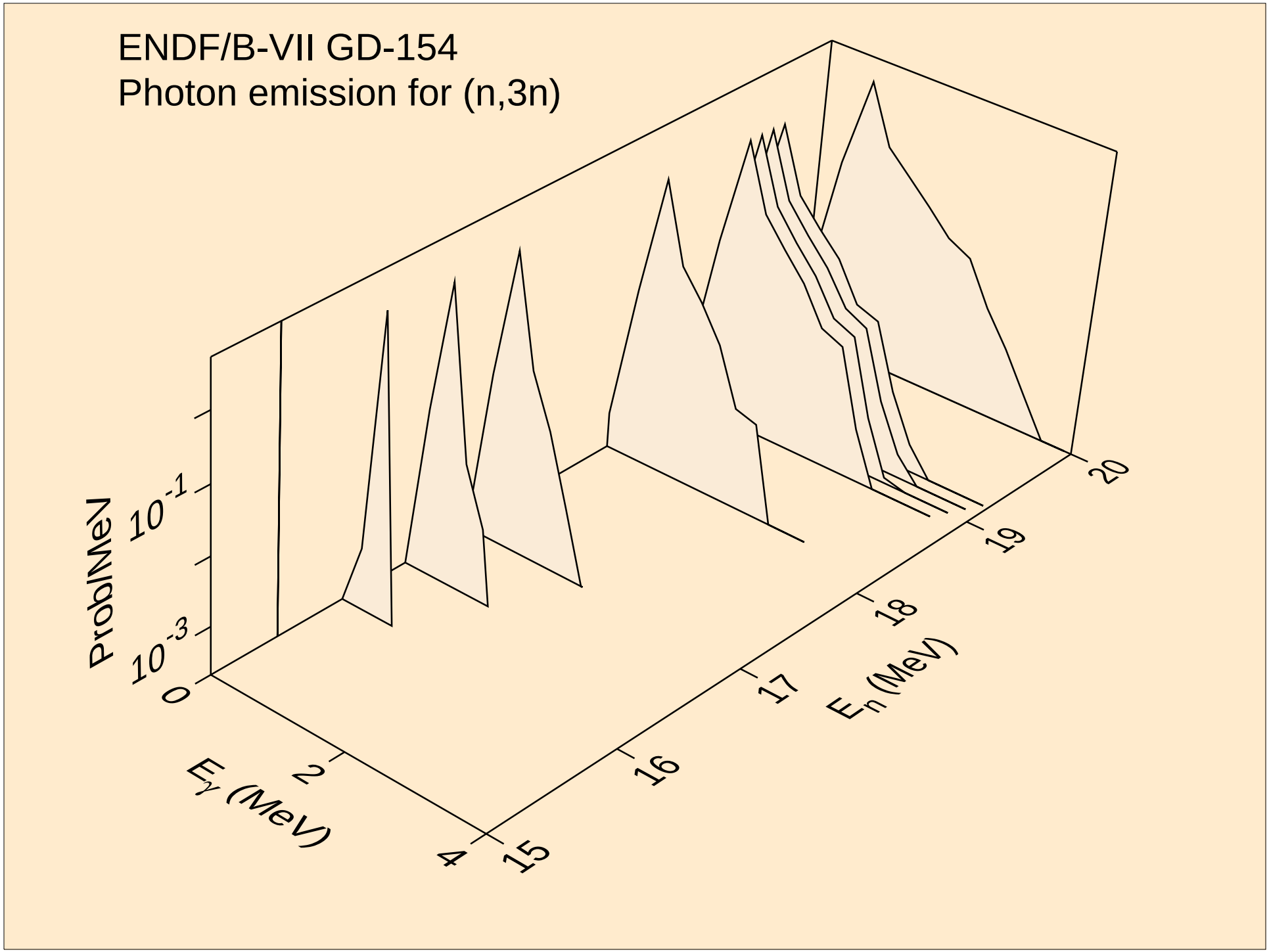

ENDF/B-VII GD-154
Neutron emission for (n,2n)a
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)

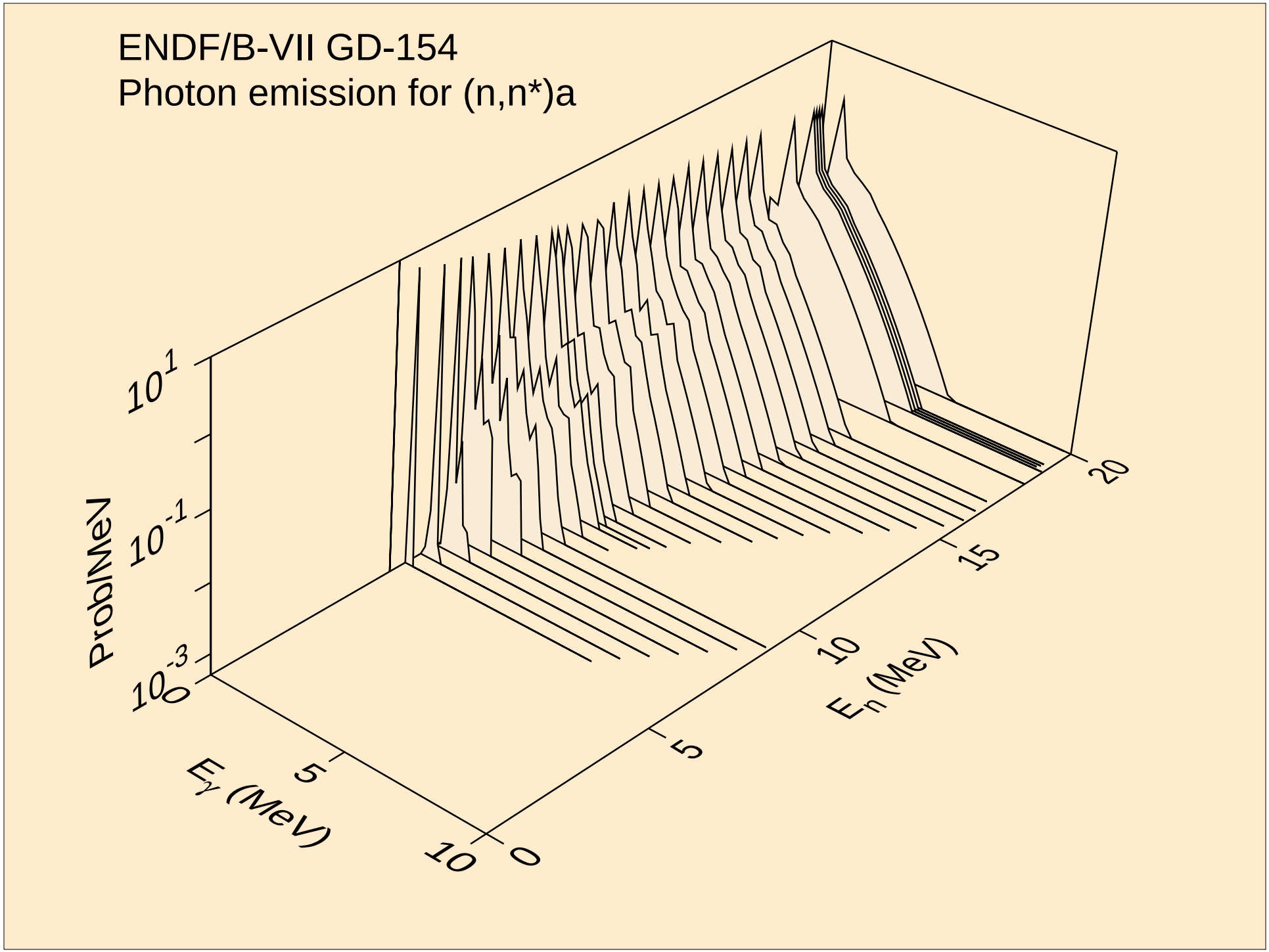

ENDF/B-VII GD-154
Neutron emission for (n,n*)p
Prob/MeV
10^-1
10^-3
0
2
4
6
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)

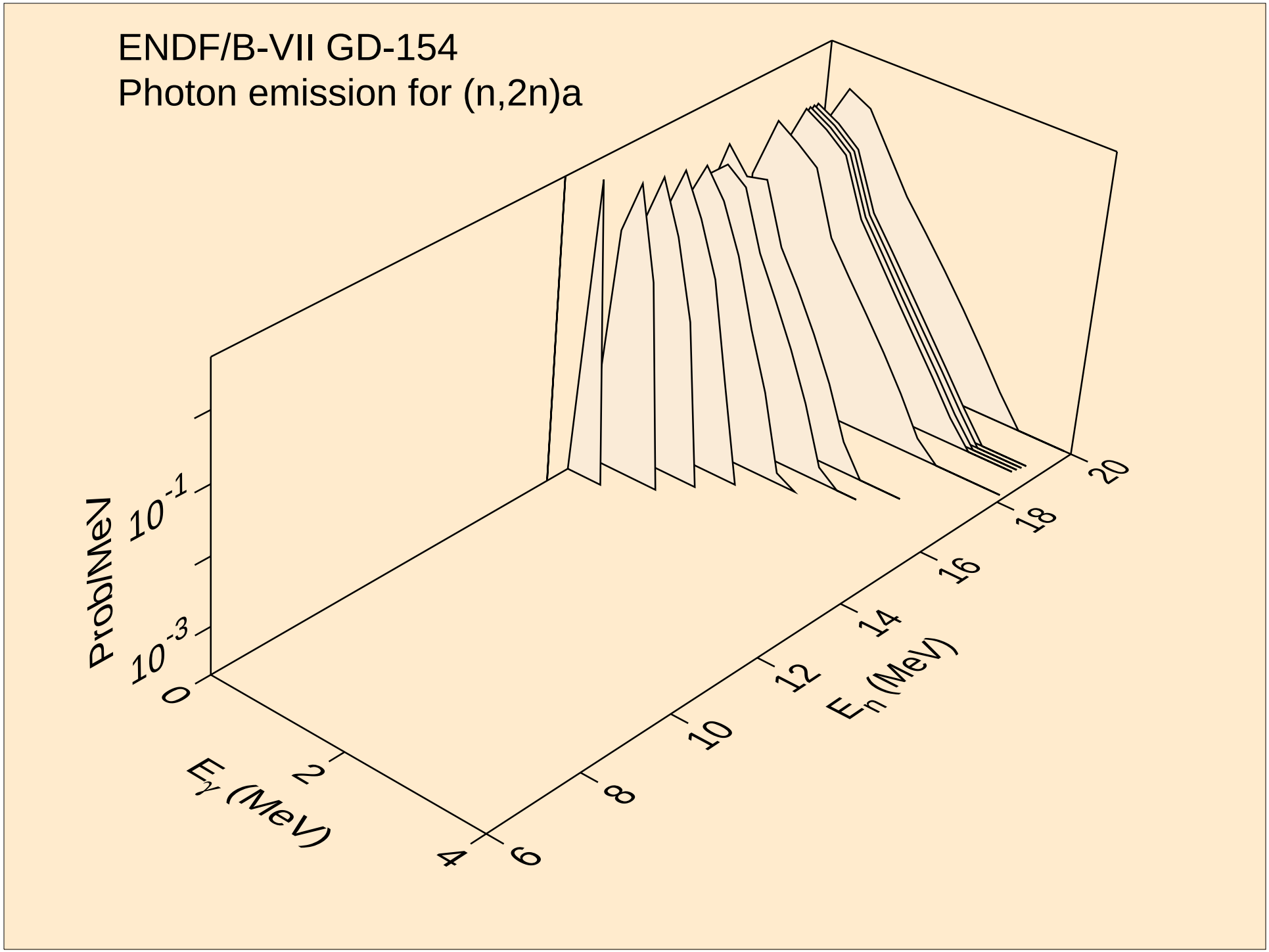

ENDF/B-VII GD-154
Neutron emission for (n,2np)
Prob/MeV
10-1
10-3
0.0
0.5
1.0
1.5
2.0
Sec. Energy
16.0
16.5
17.0
17.5
18.0
18.5
19.0
19.5
20.0
Energy (MeV)

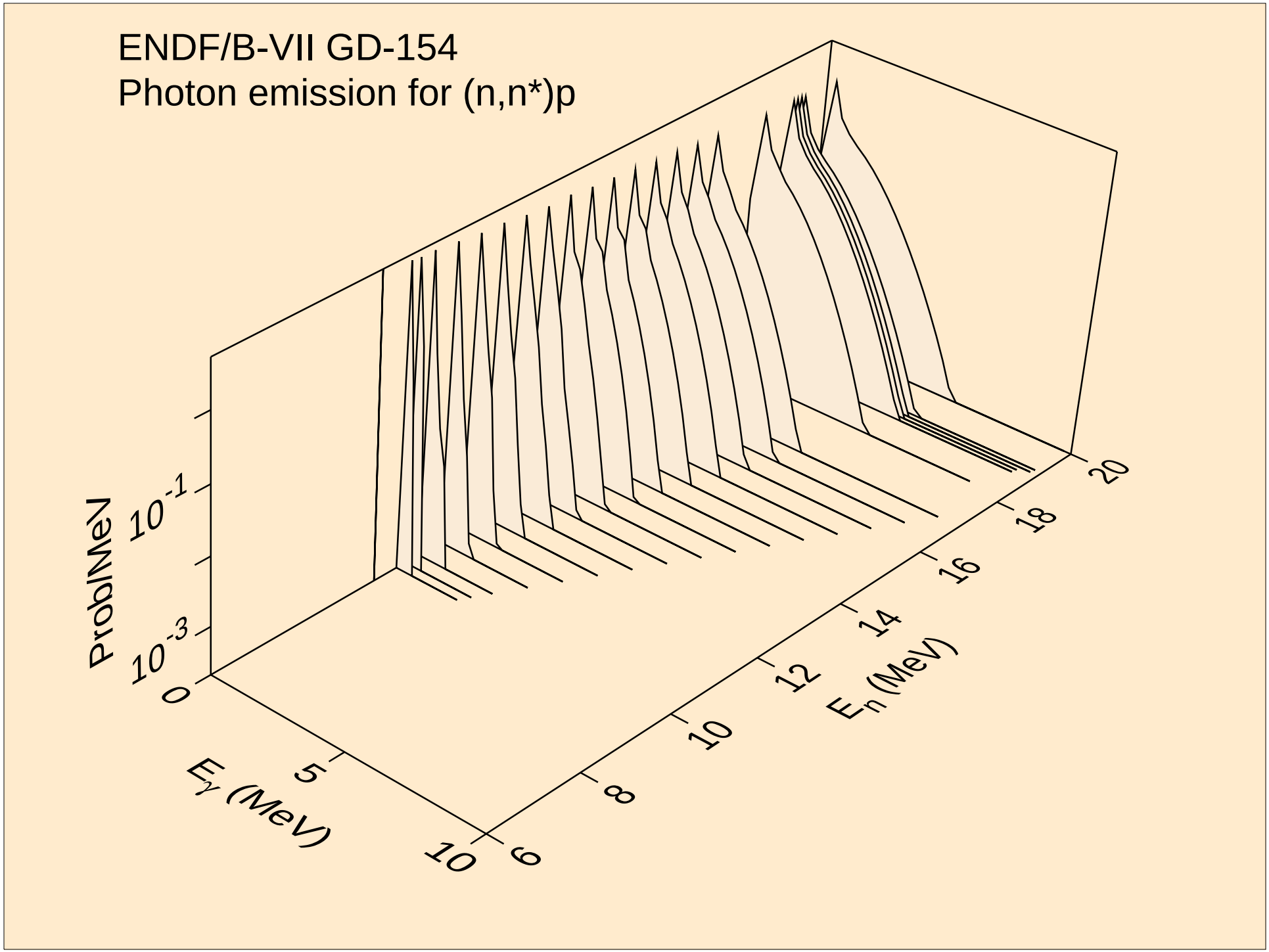

ENDF/B-VII GD-154
Neutron emission for (n,n*c)
Prob/MeV
10^{1}
10^{-1}
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

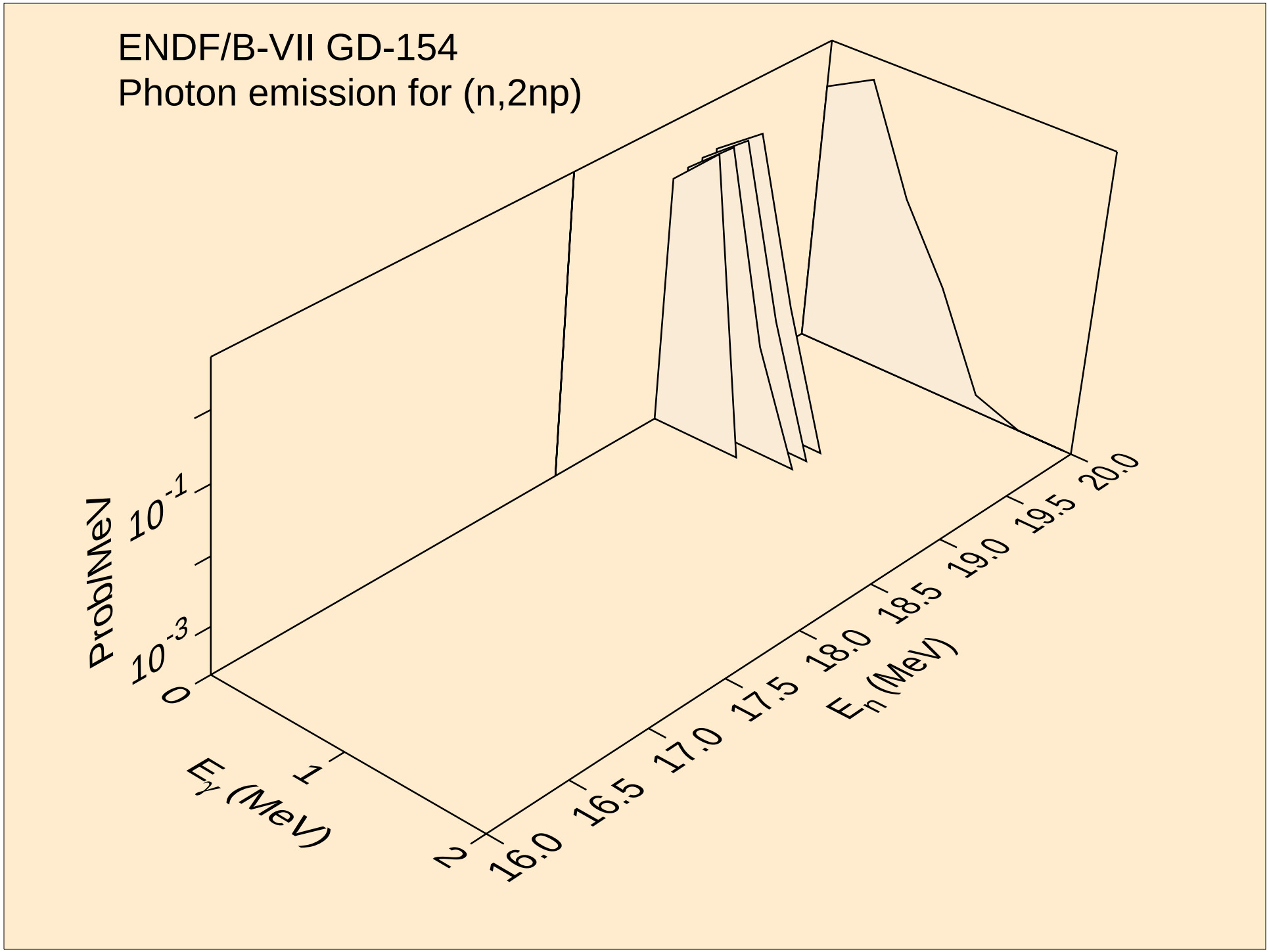

ENDF/B-VII GD-154
Photon emission for (n,2n)
Prob/MeV
10^-1
10^-3
0
Eγ (MeV)
5
10
8
10
12
14
16
18
20
En (MeV)

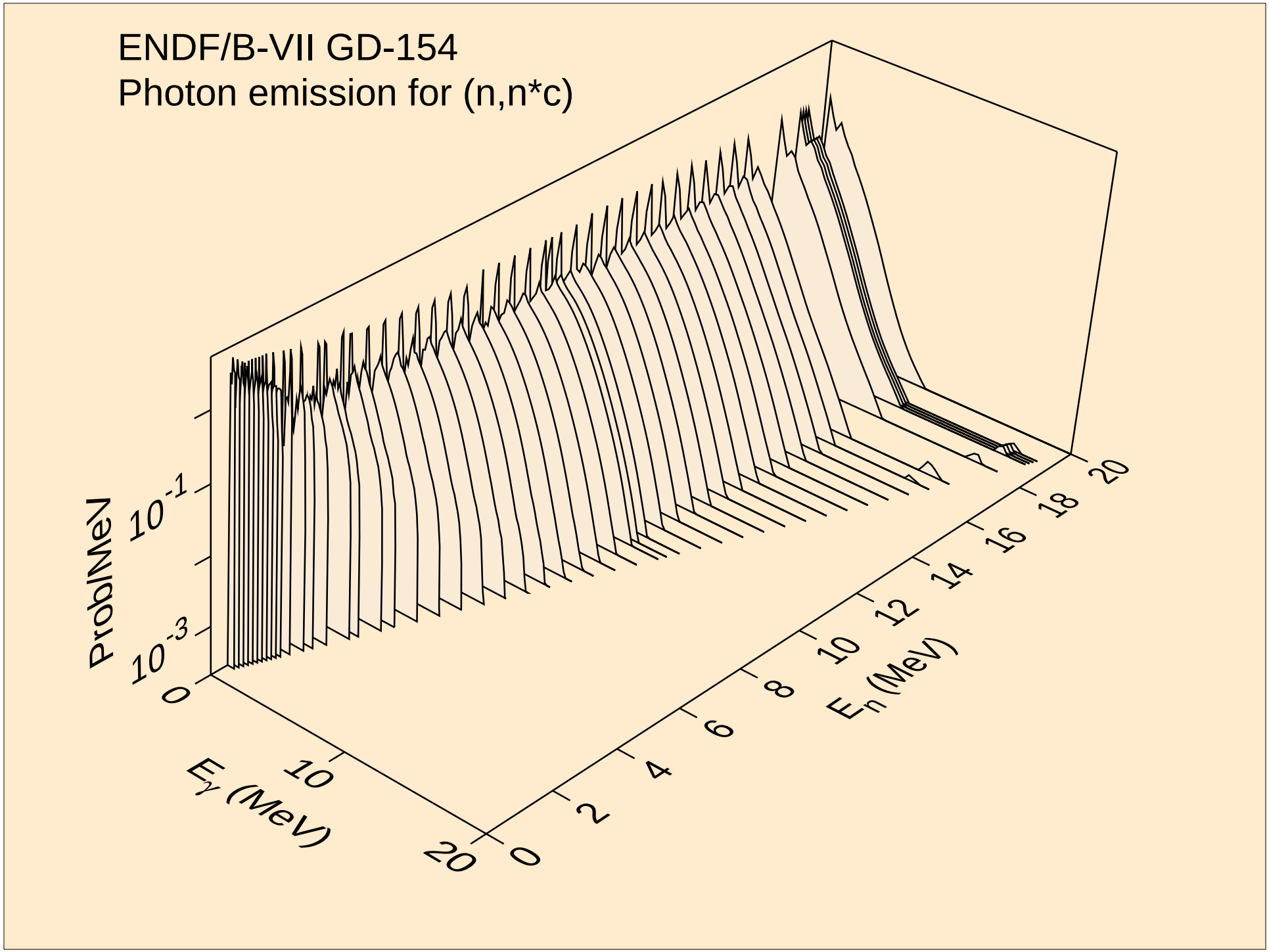

ENDF/B-VII GD-154
Photon emission for (n,3n)
Prob/MeV
10^-1
10^-3
0
2
4
Eγ (MeV)
15
16
17
18
19
20
En (MeV)

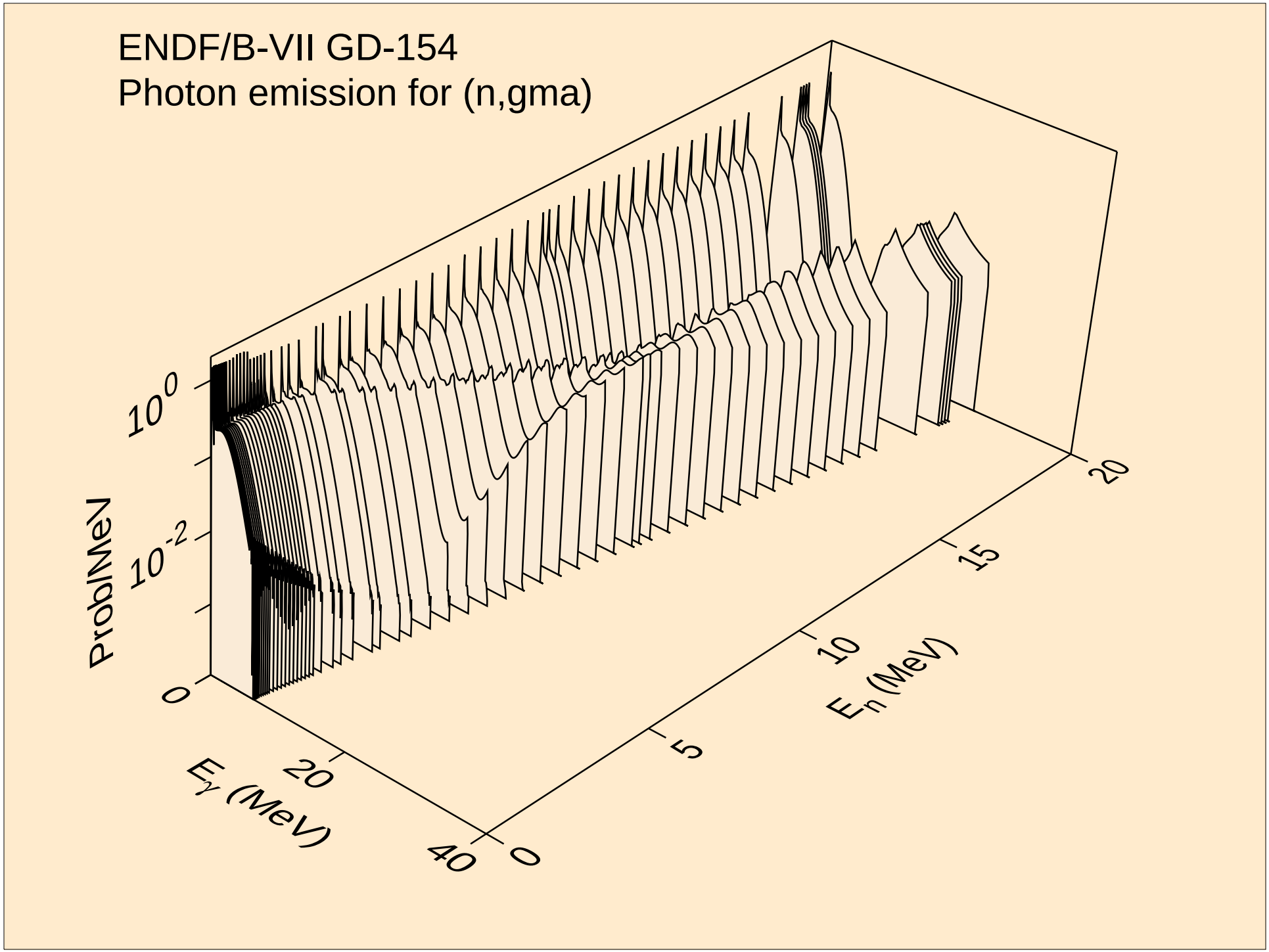

ENDF/B-VII GD-154
Photon emission for (n,n*)a
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
5
10
E_γ (MeV)
0
5
10
15
20
E_n (MeV)

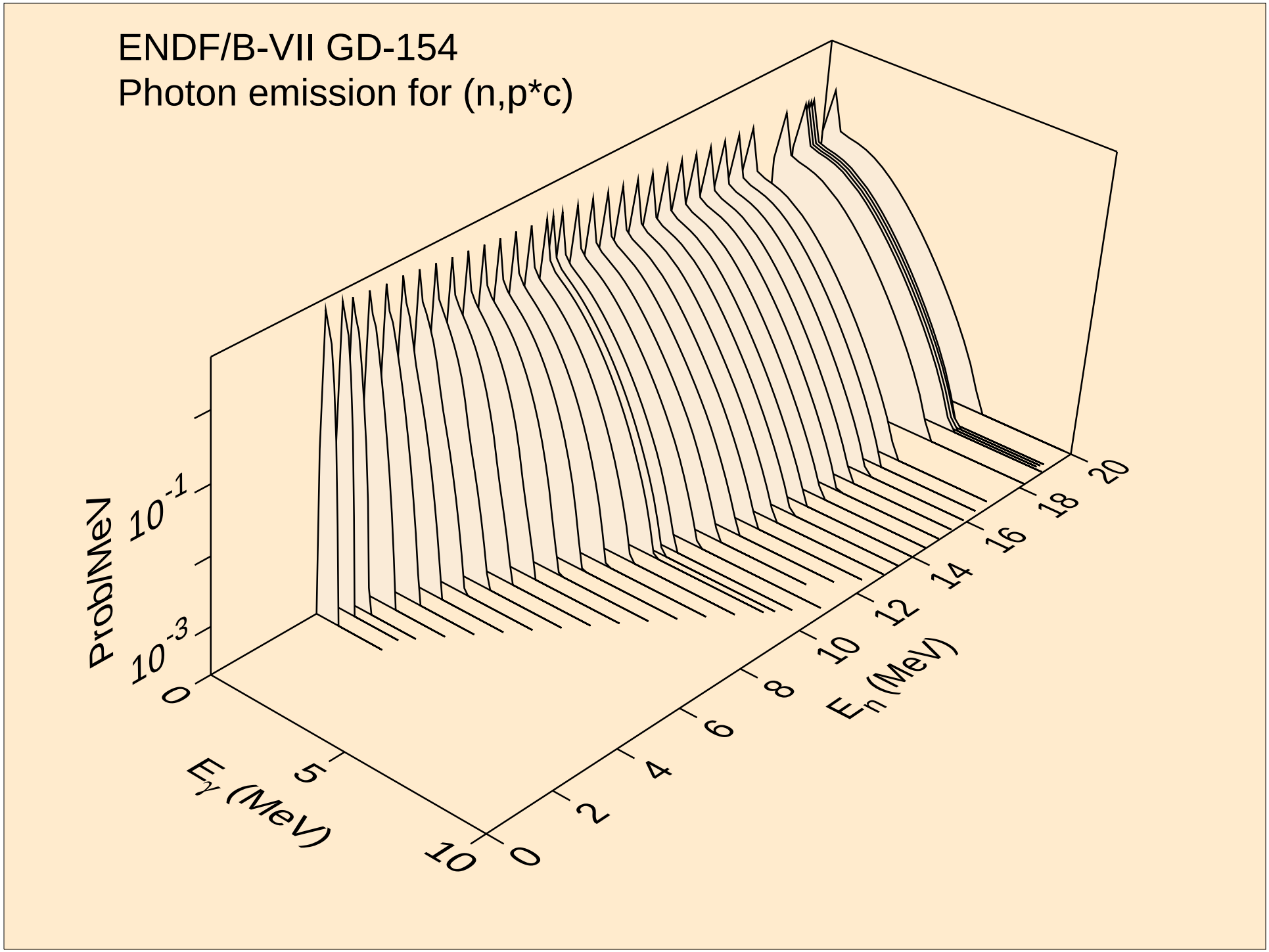

ENDF/B-VII GD-154
Photon emission for (n,2n)a
Prob/MeV
10^-1
10^-3
0
2
4
E_γ (MeV)
6
8
10
12
14
16
18
20
E_n (MeV)

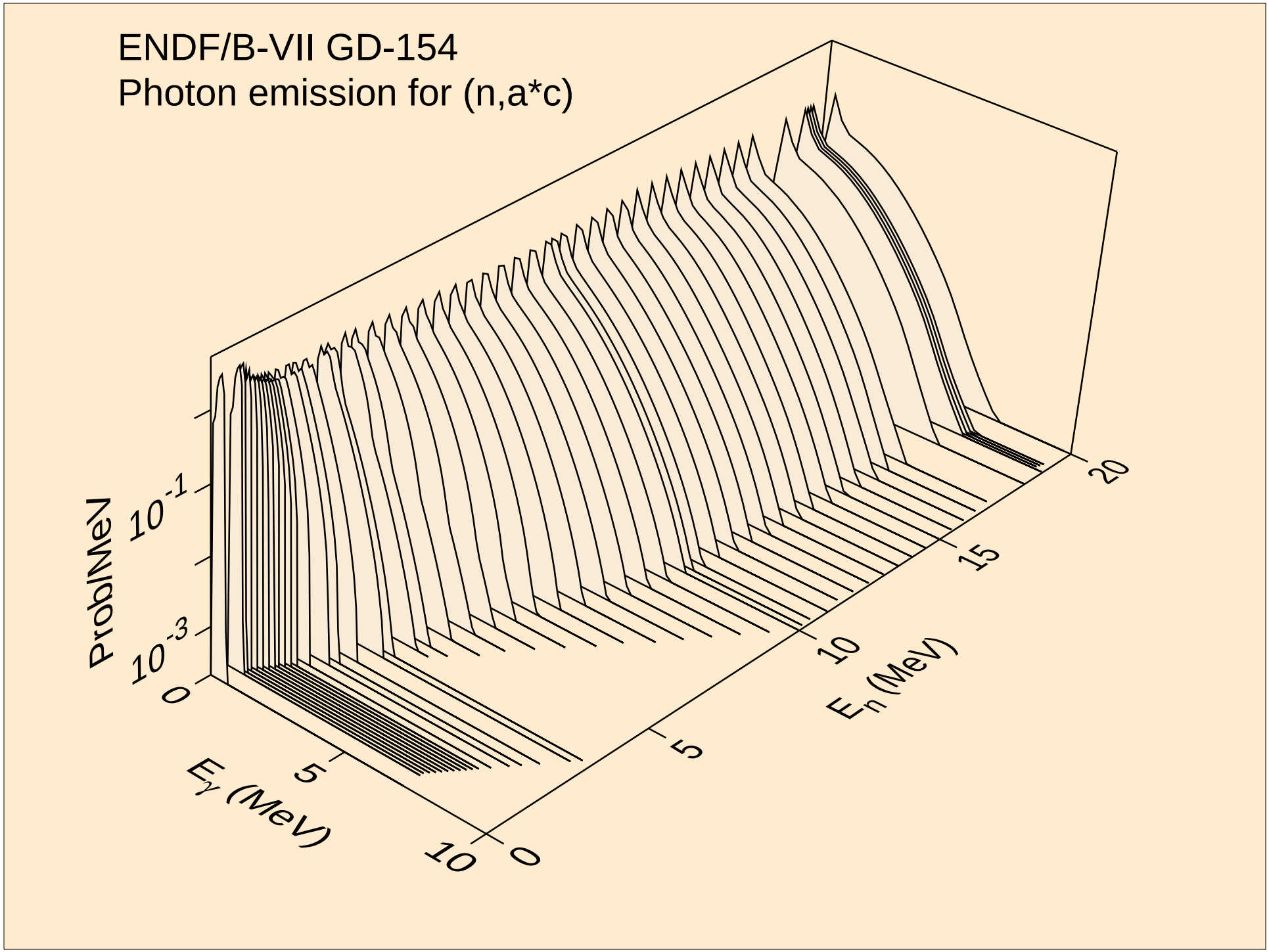

ENDF/B-VII GD-154
Photon emission for (n,n*)p
Prob/MeV
10^-1
10^-3
0
5
10
Eγ (MeV)
6
8
10
12
14
16
18
20
En (MeV)

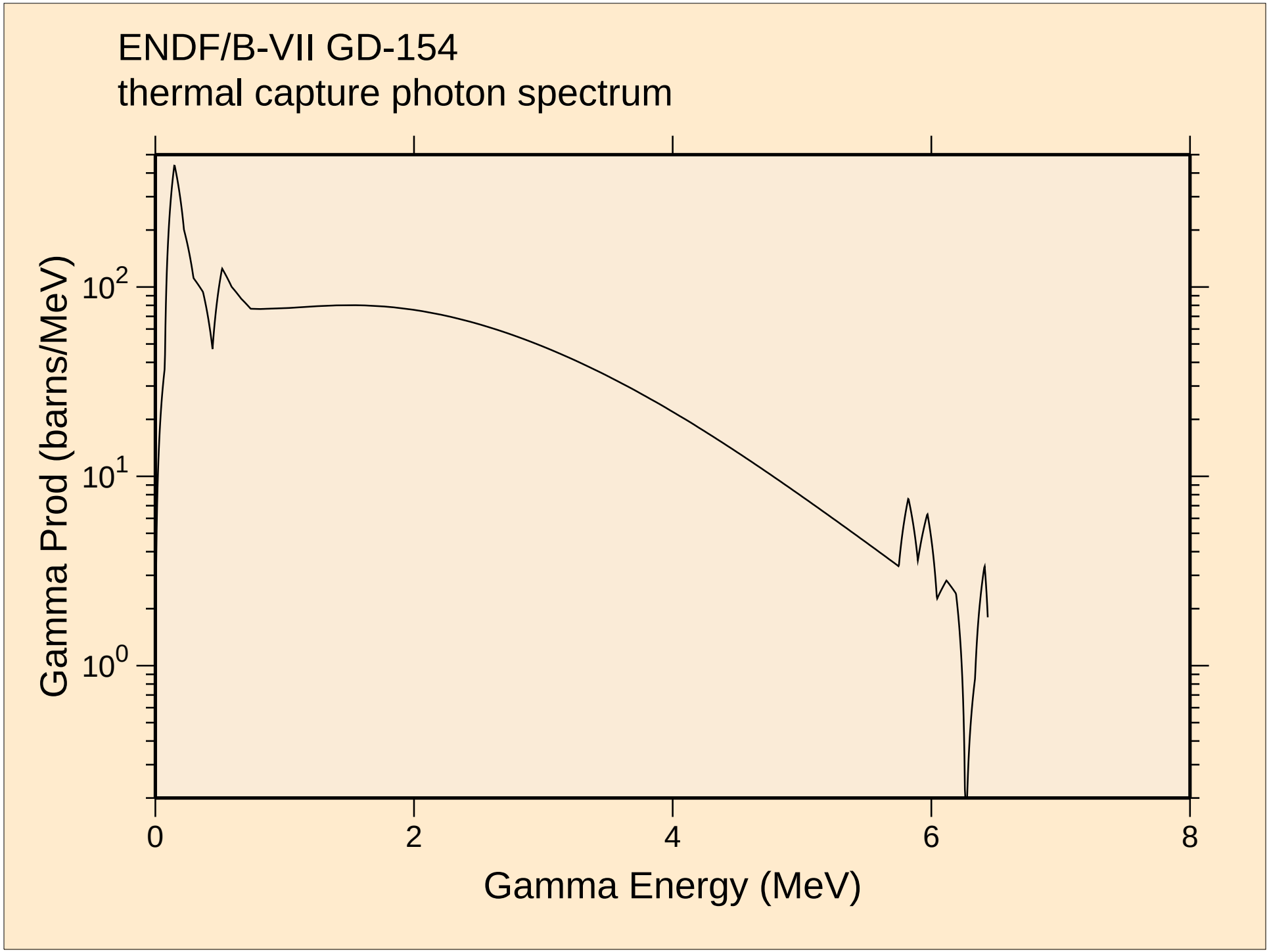

ENDF/B-VII GD-154
Photon emission for (n,2np)
Prob/MeV
10-1
10-3
0
1
2
Eγ (MeV)
16.0
16.5
17.0
17.5
18.0
18.5
19.0
19.5
20.0
En (MeV)

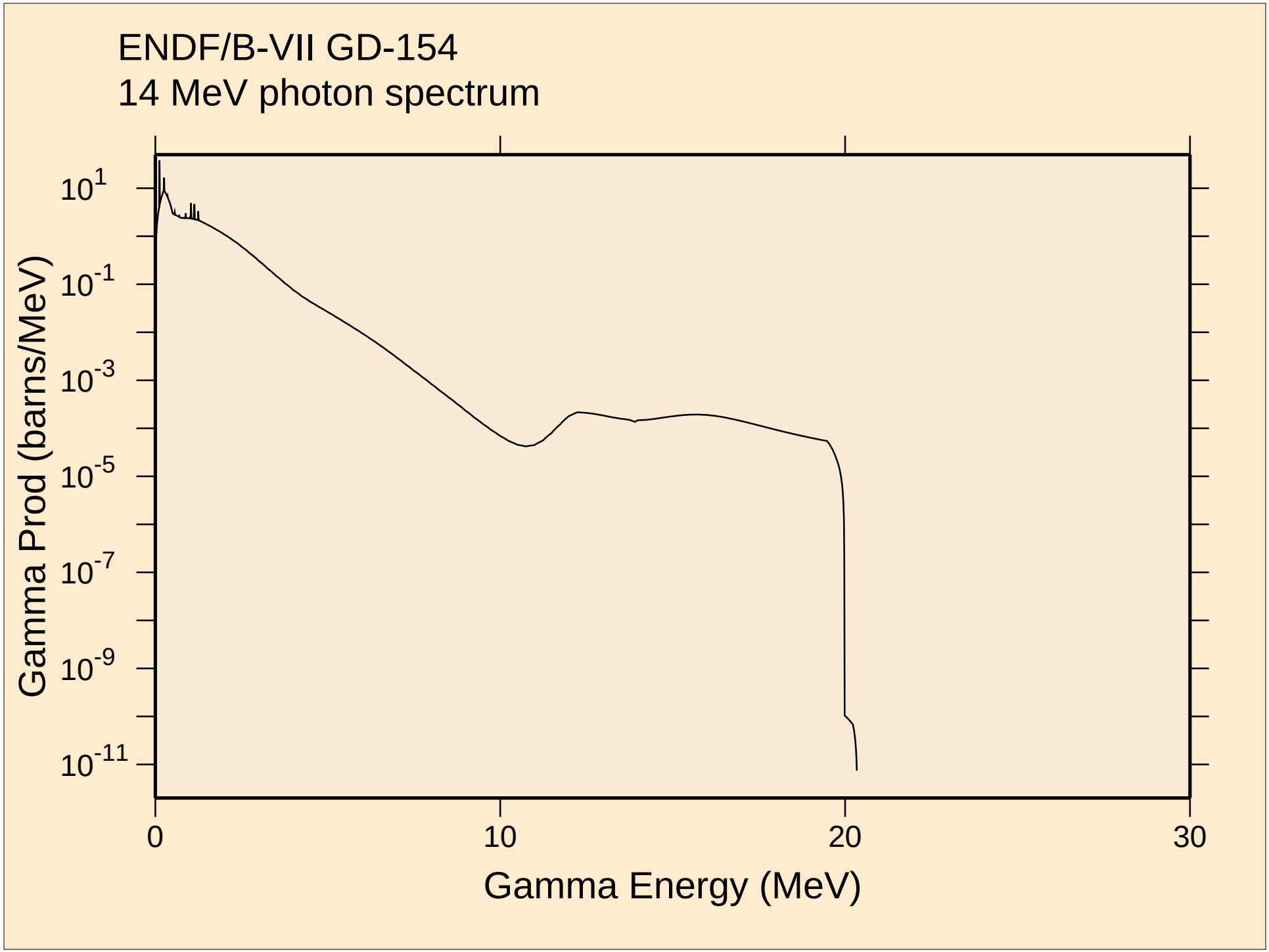

ENDF/B-VII GD-154
Photon emission for (n,n*c)
Prob/MeV
10^-1
10^-3
0
Eγ (MeV)
10
20
0
2
4
6
8
10
12
14
16
18
20
En (MeV)

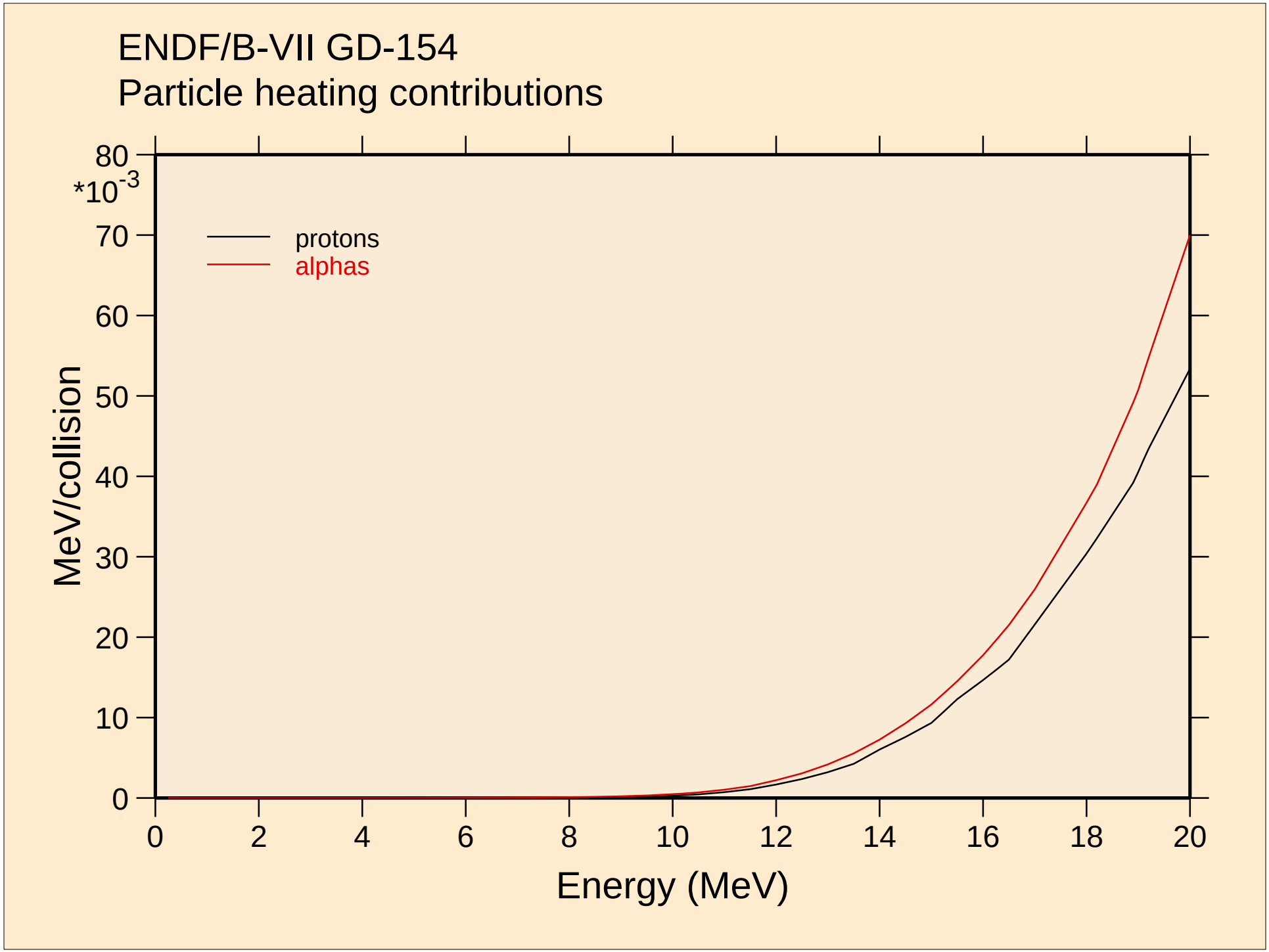

ENDF/B-VII GD-154
Photon emission for (n,gma)
Prob/MeV
10^0
10^{-2}
0
E_γ (MeV)
20
40
0
5
10
15
20
E_n (MeV)

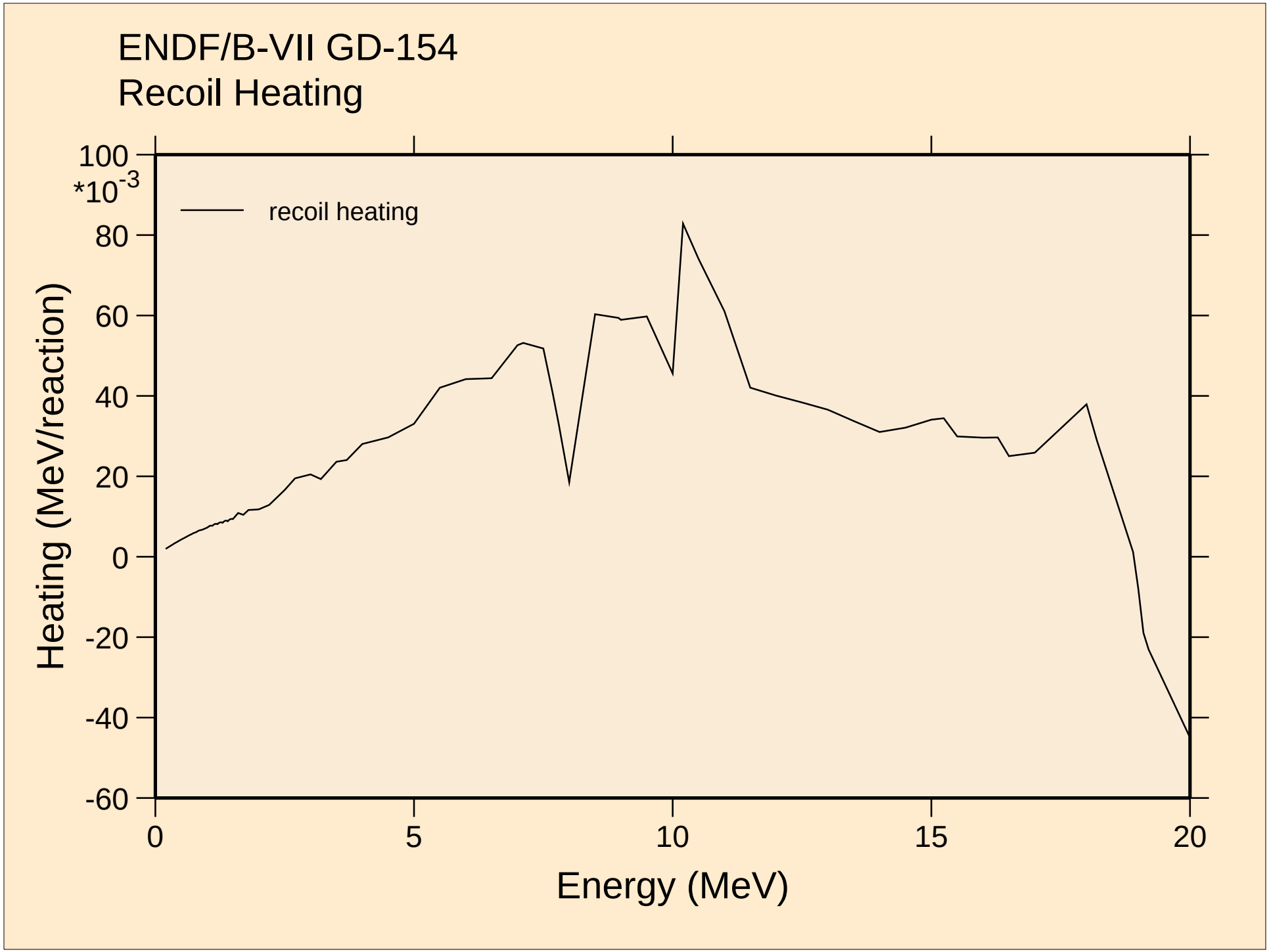

ENDF/B-VII GD-154
Photon emission for (n,p*c)
Prob/MeV
10^-1
10^-3
0
E_γ (MeV)
5
10
0
2
4
6
8
10
12
14
16
18
20
E_n (MeV)

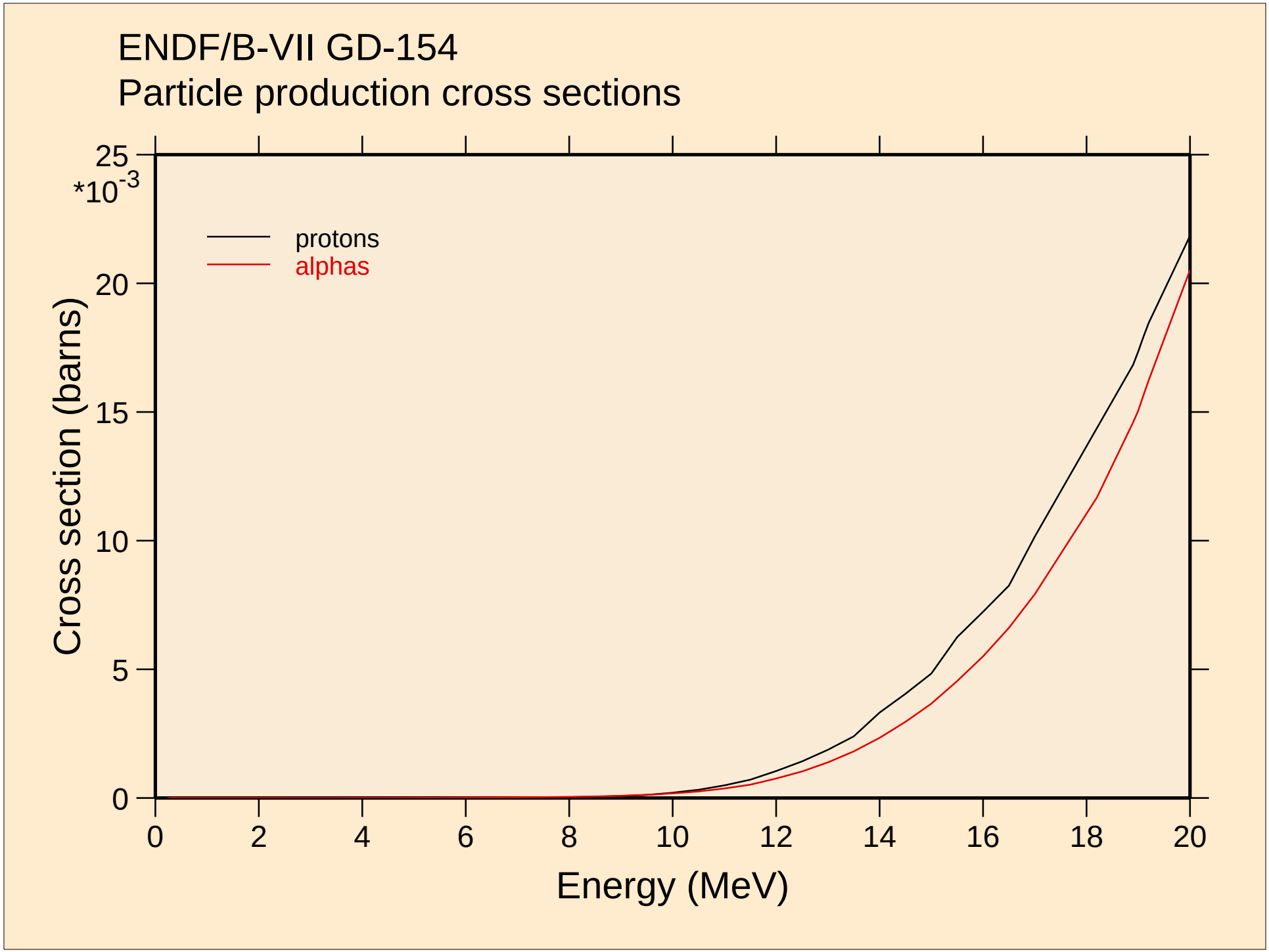

ENDF/B-VII GD-154
Photon emission for (n,a*c)
Prob/MeV
10-1
10-3
0
Eγ (MeV)
5
10
0
5
10
15
20
En (MeV)

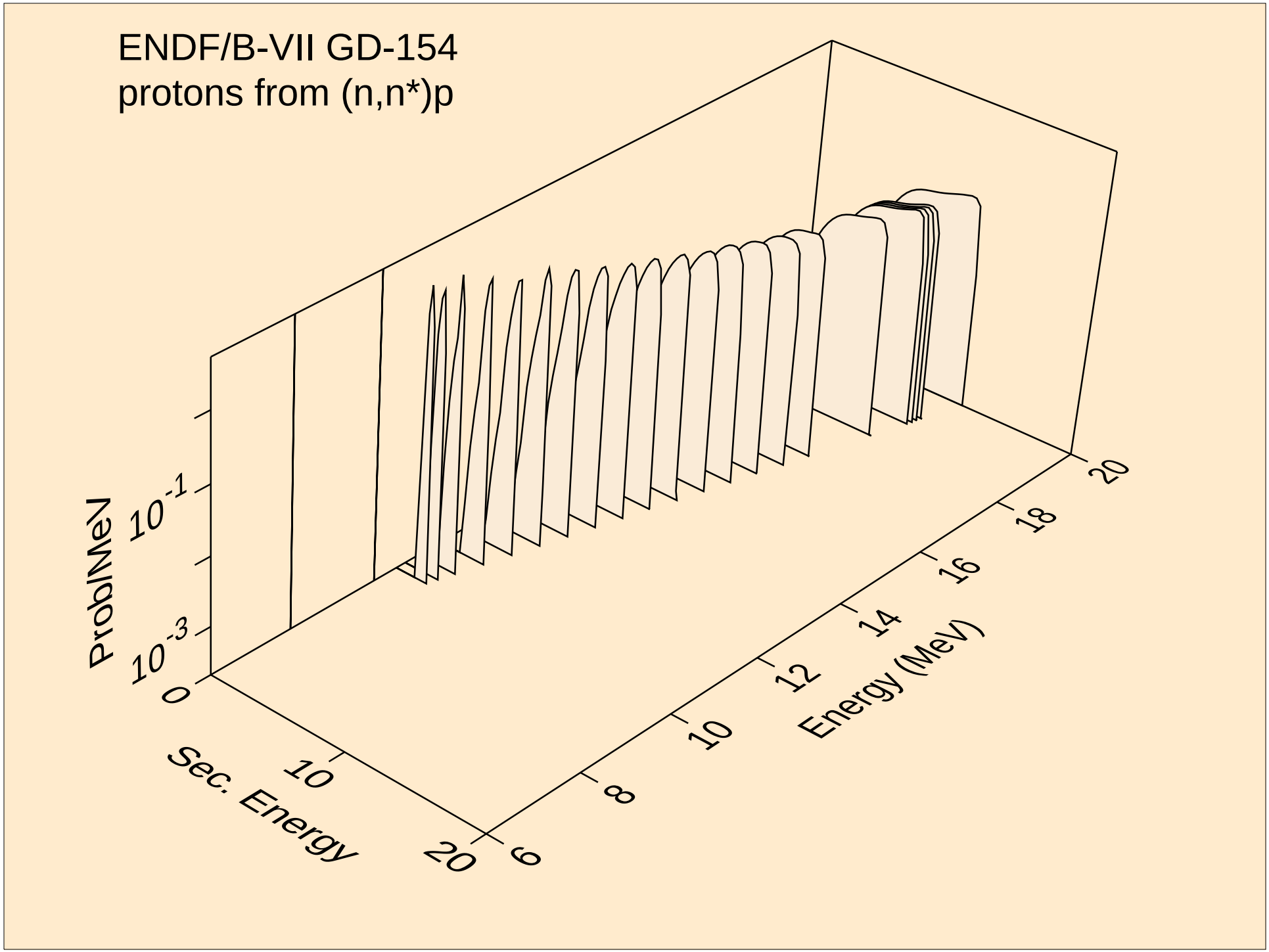

ENDF/B-VII GD-154
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^2
10^1
10^0
0
2
4
6
8
Gamma Energy (MeV)

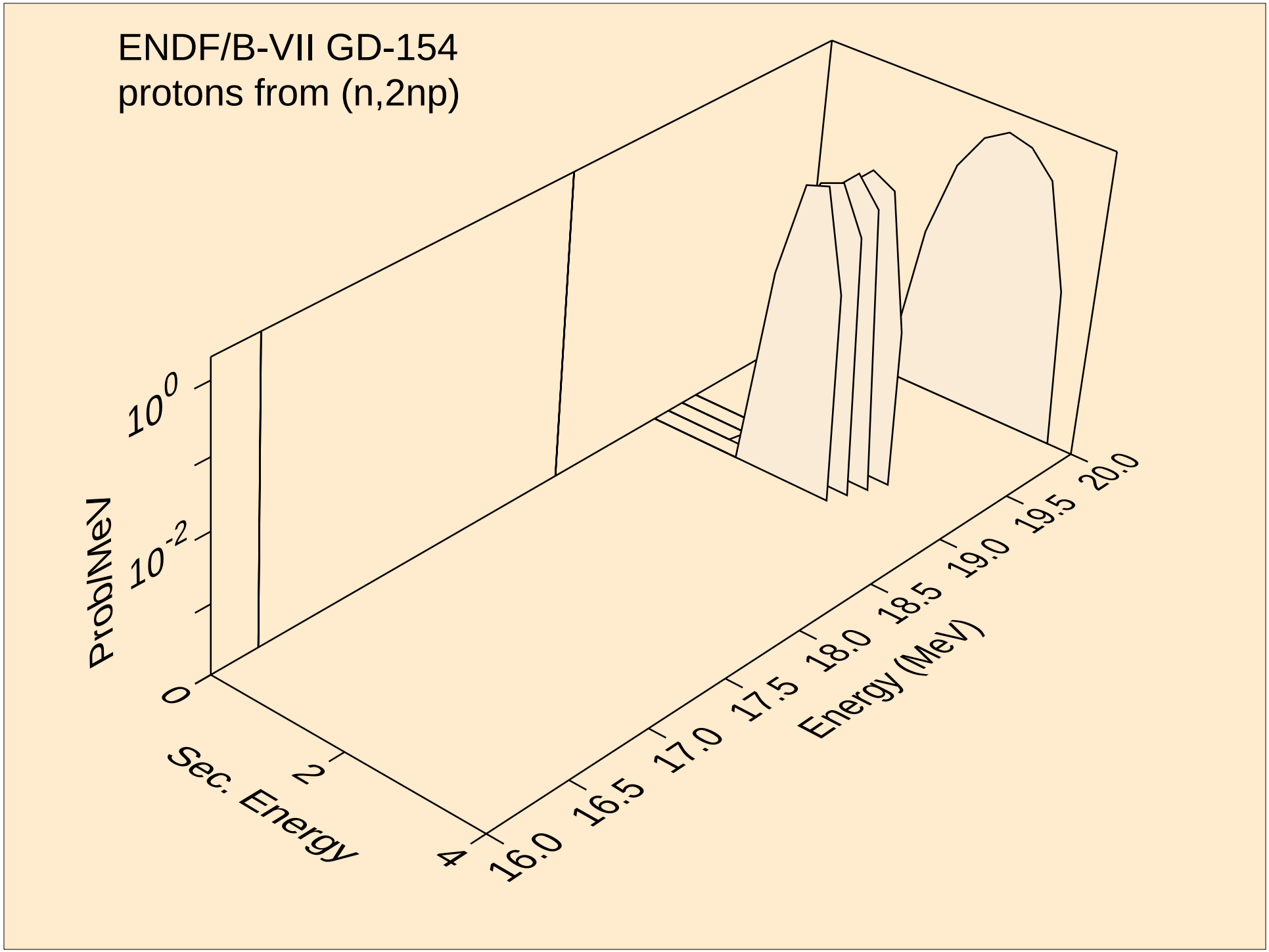

ENDF/B-VII GD-154
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^1
10^-1
10^-3
10^-5
10^-7
10^-9
10^-11
0
10
20
30
Gamma Energy (MeV)

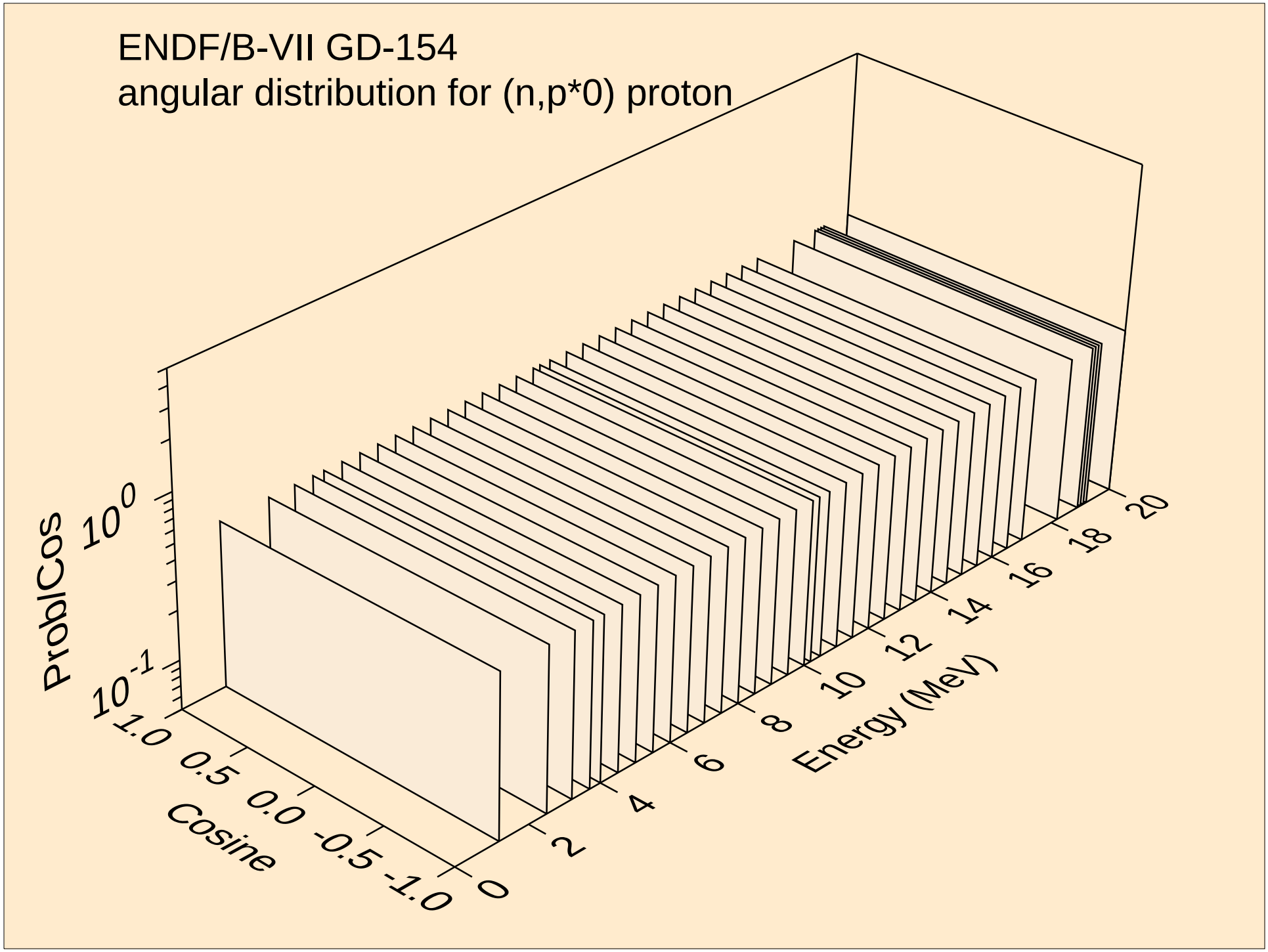

ENDF/B-VII GD-154
Particle heating contributions
*10-3
MeV/collision
protons
alphas
0
10
20
30
40
50
60
70
80
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

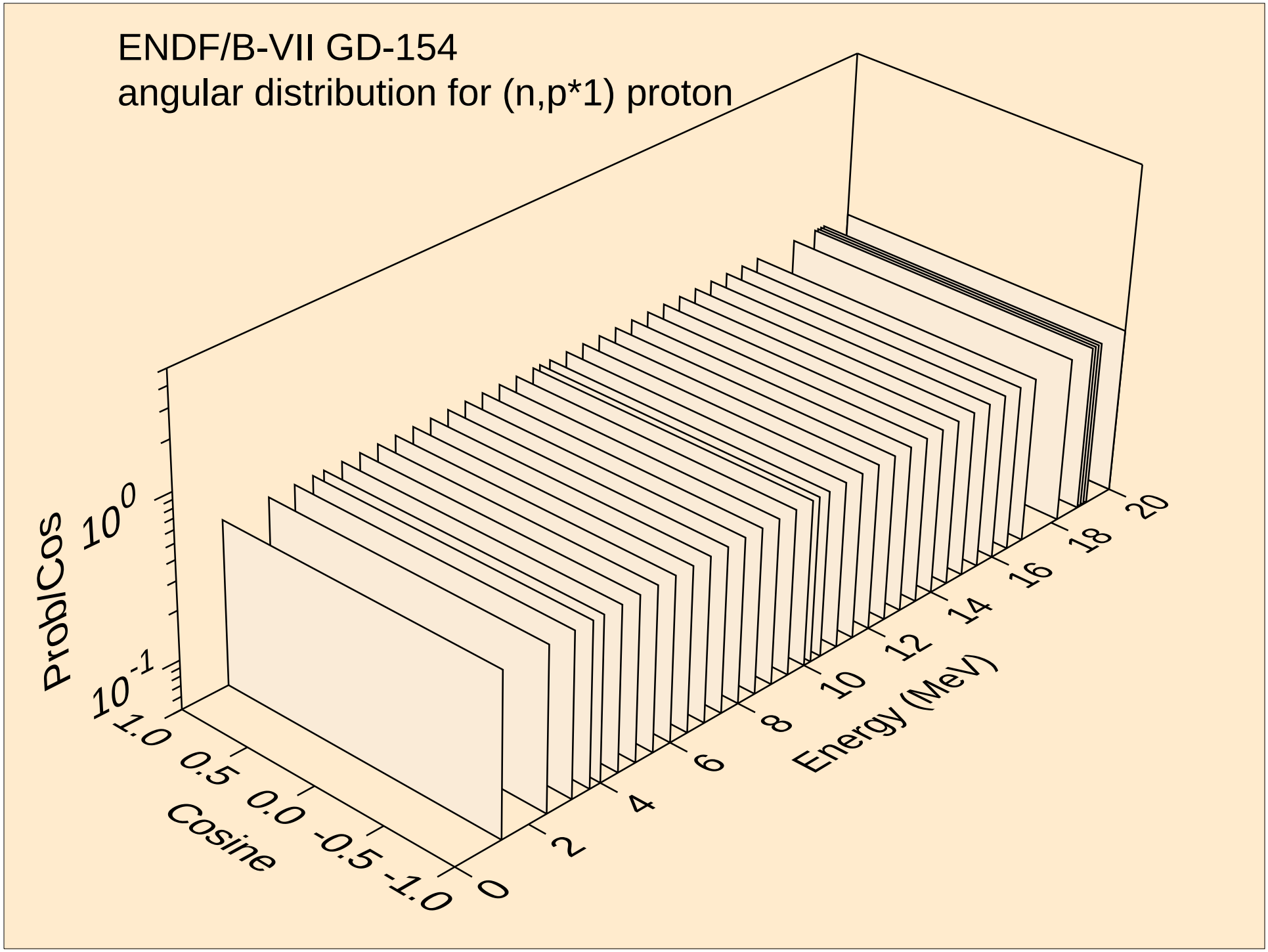

ENDF/B-VII GD-154
Recoil Heating
recoil heating
*10-3
100
80
60
40
20
0
-20
-40
-60
Heating (MeV/reaction)
0
5
10
15
20
Energy (MeV)

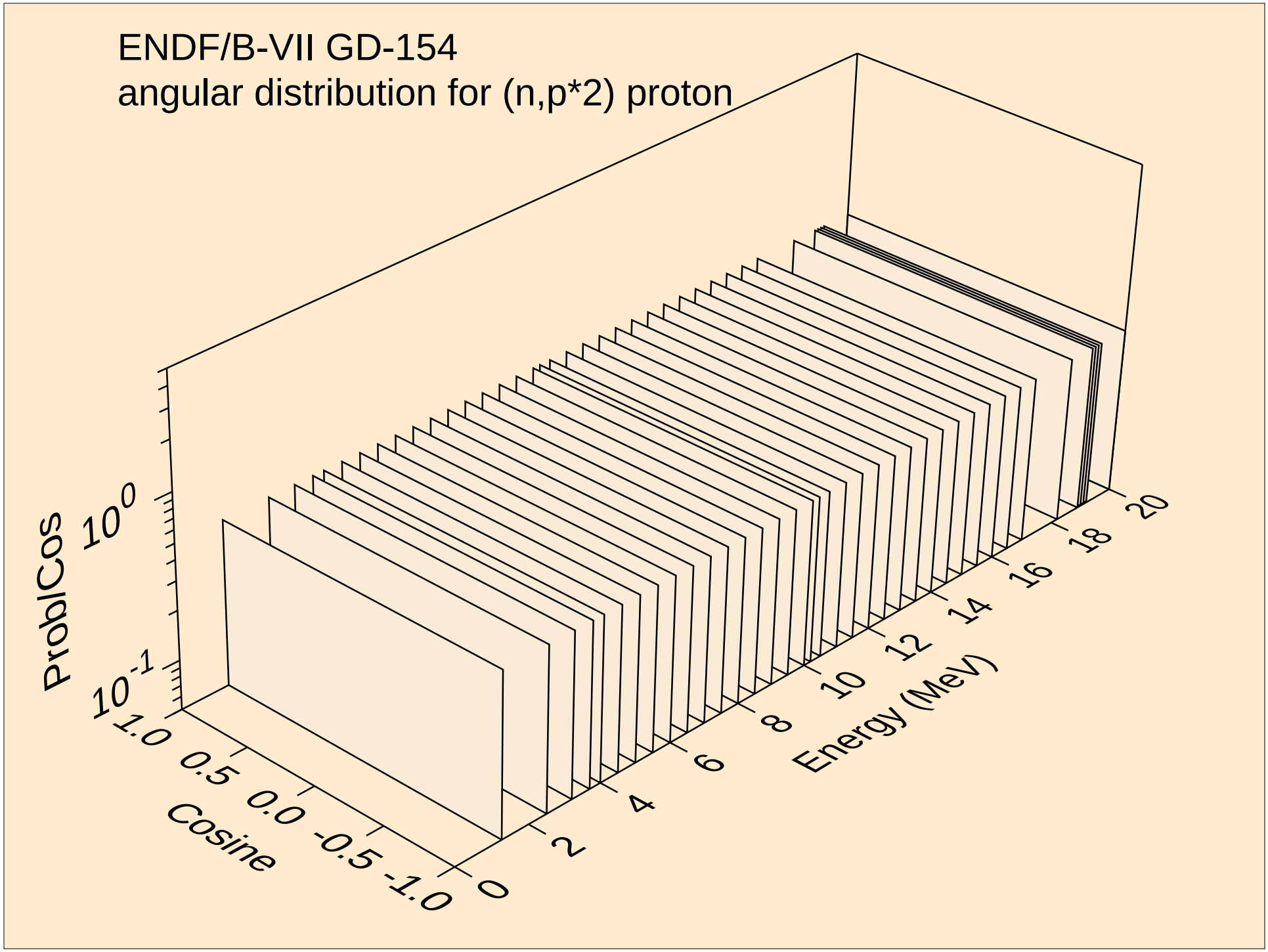

ENDF/B-VII GD-154
Particle production cross sections
*10-3
25
20
15
10
5
0
protons
alphas
Cross section (barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

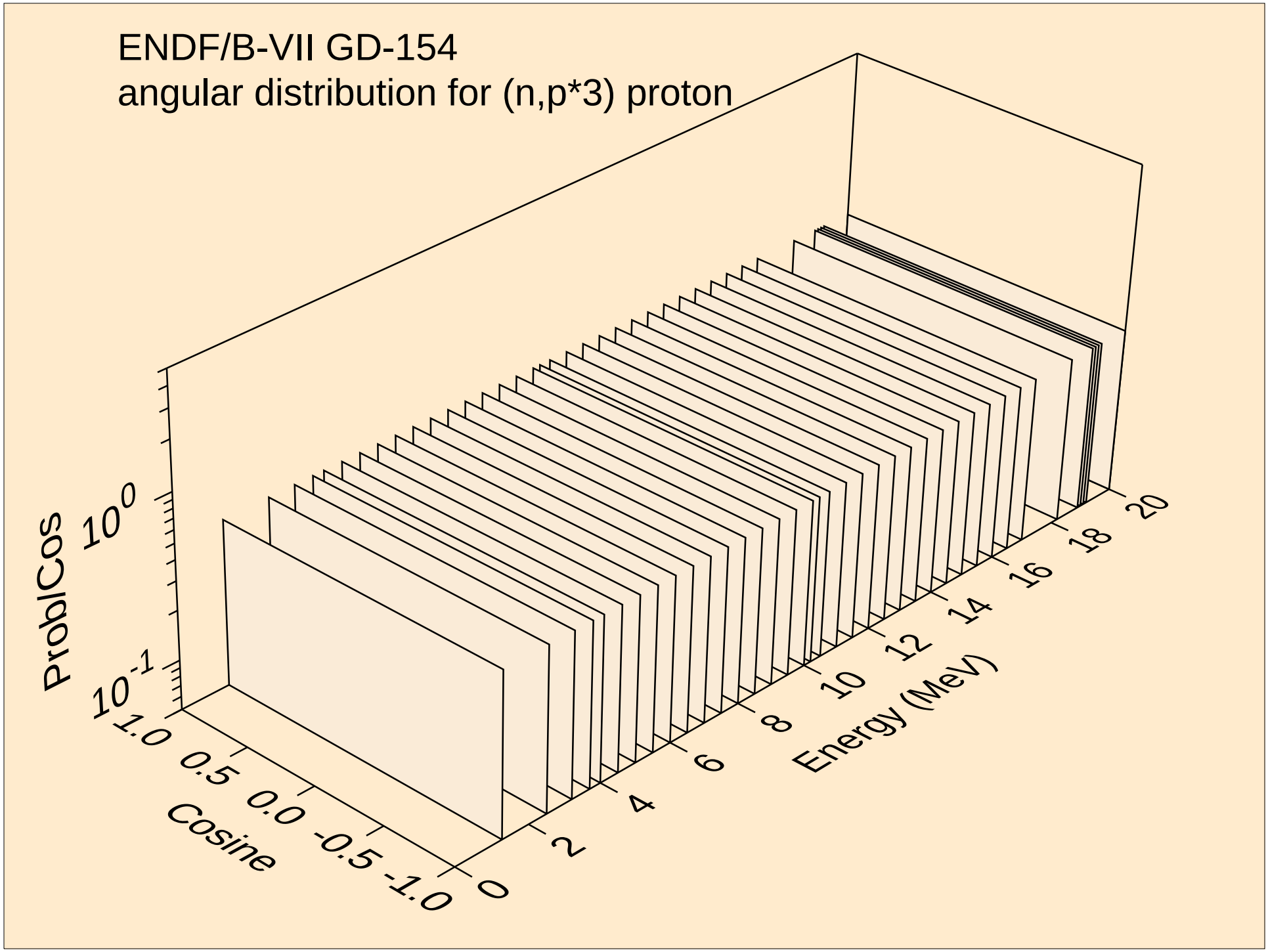

ENDF/B-VII GD-154
protons from (n,n*)p
Prob/MeV
10^-1
10^-3
0
Sec. Energy
10
20
Energy (MeV)
8
10
12
14
16
18
20

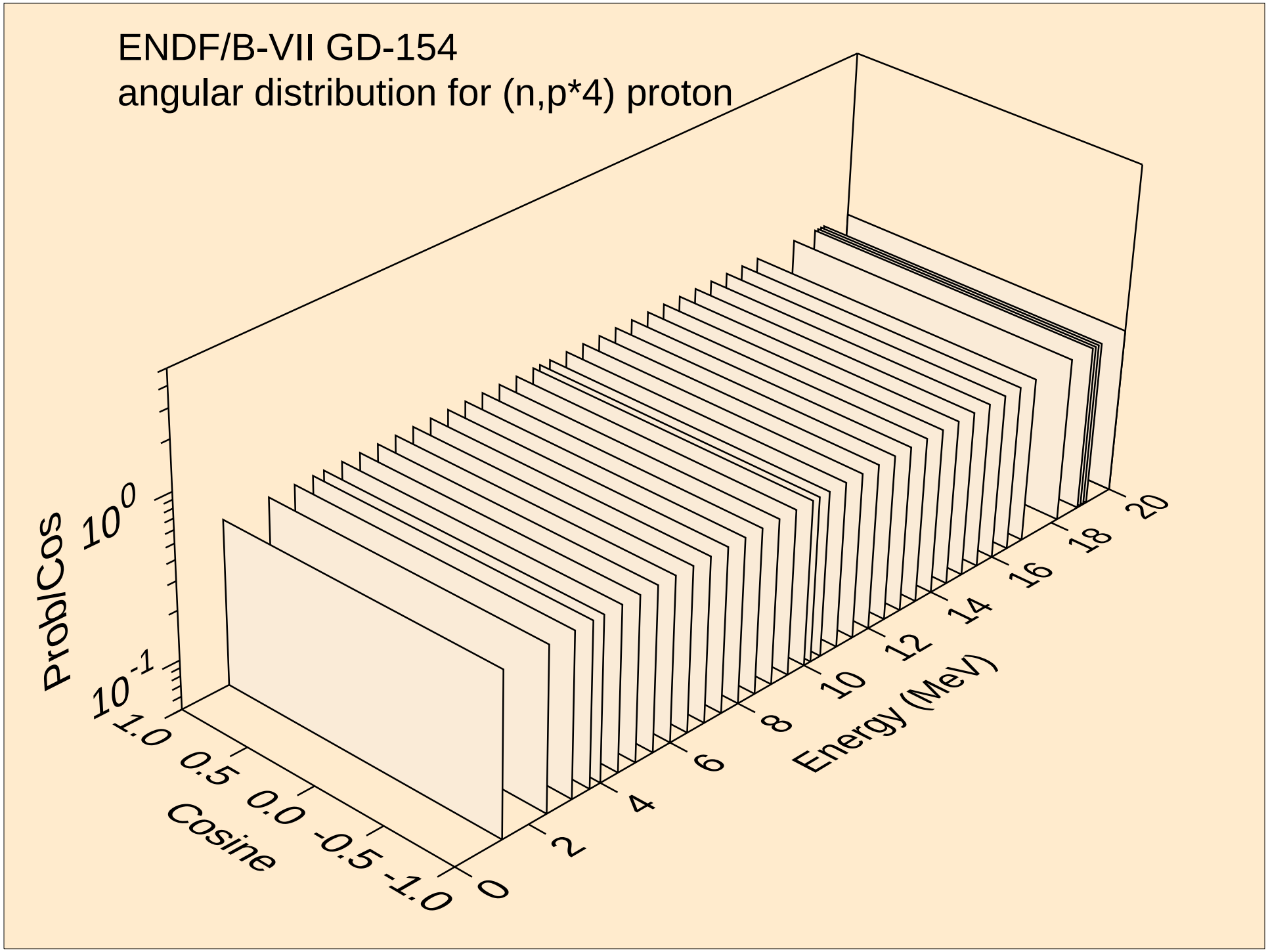

ENDF/B-VII GD-154
protons from (n,2np)
Prob/MeV
10^{0}
10^{-2}
0
2
4
Sec. Energy
16.0
16.5
17.0
17.5
18.0
18.5
19.0
19.5
20.0
Energy (MeV)

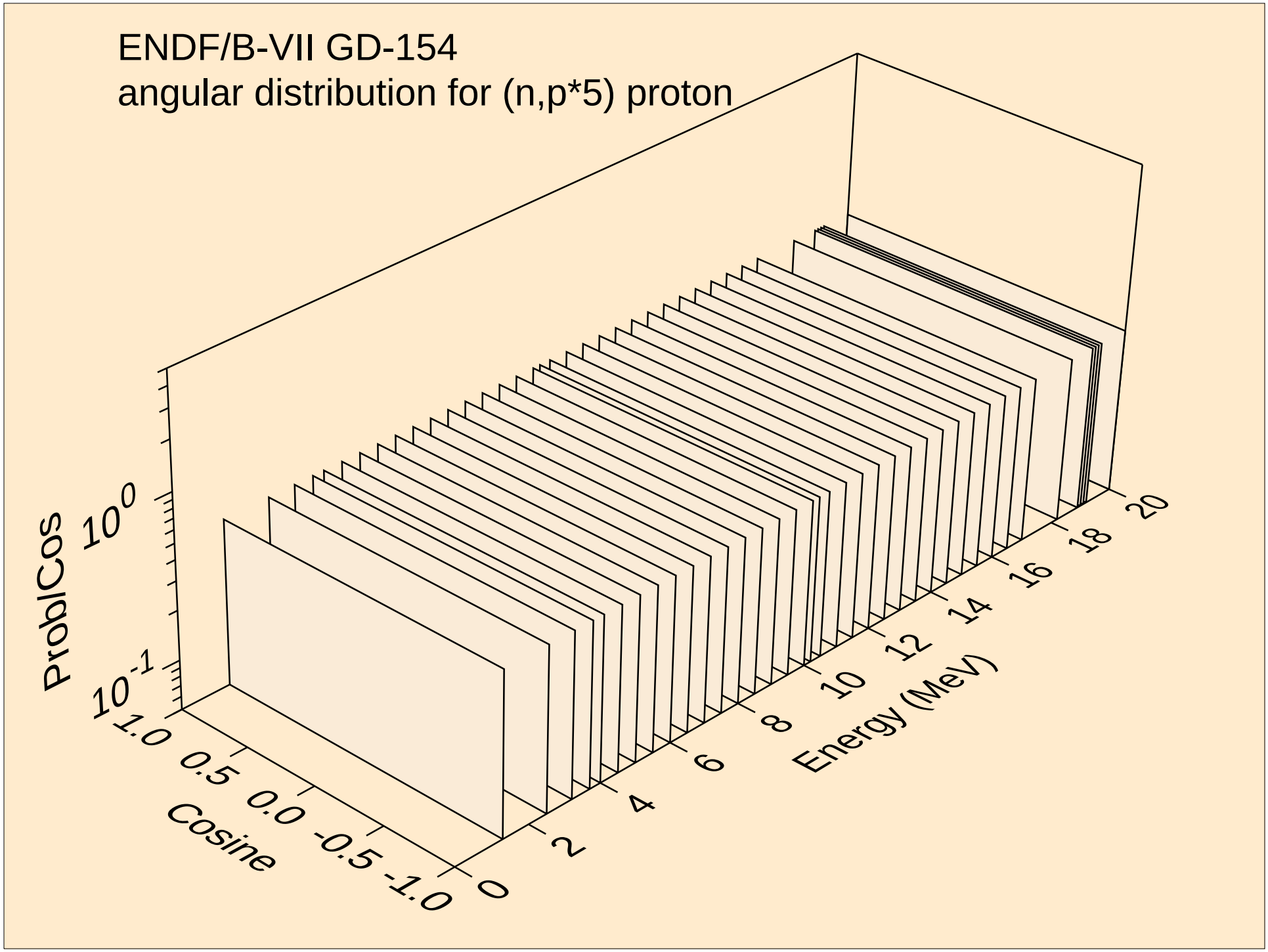

ENDF/B-VII GD-154
angular distribution for (n,p*0) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

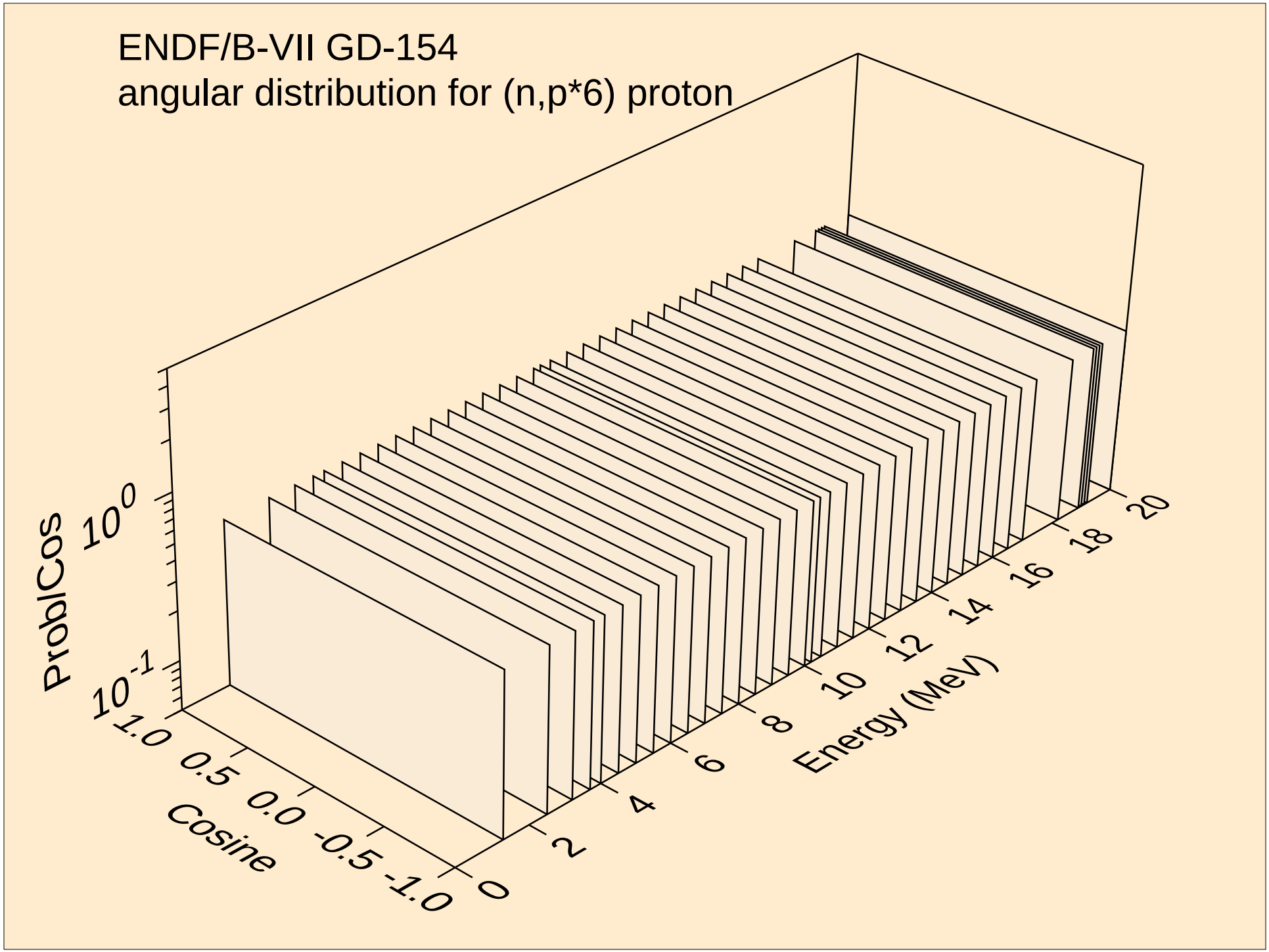

ENDF/B-VII GD-154
angular distribution for (n,p*1) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

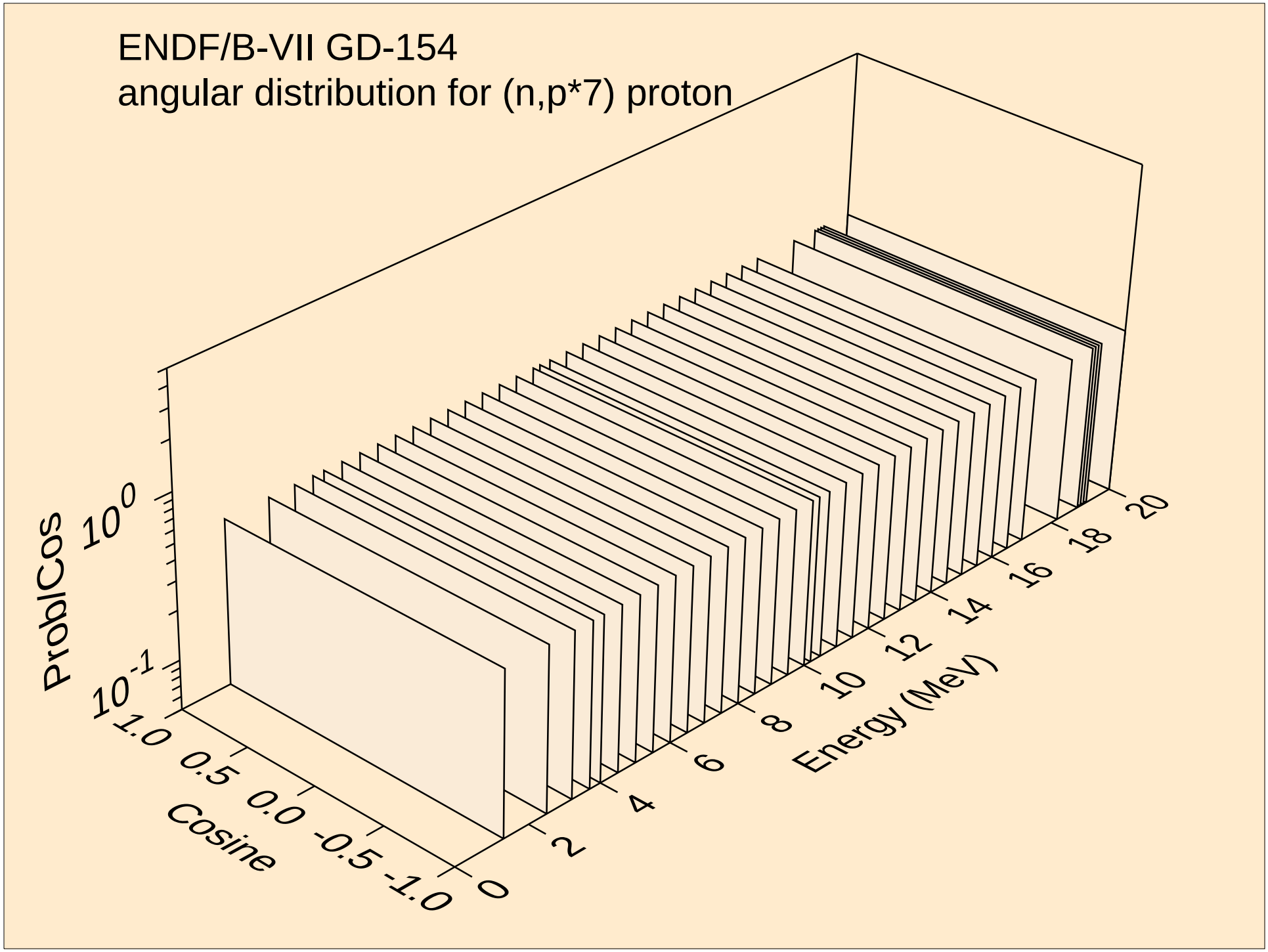

ENDF/B-VII GD-154
angular distribution for (n,p*2) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

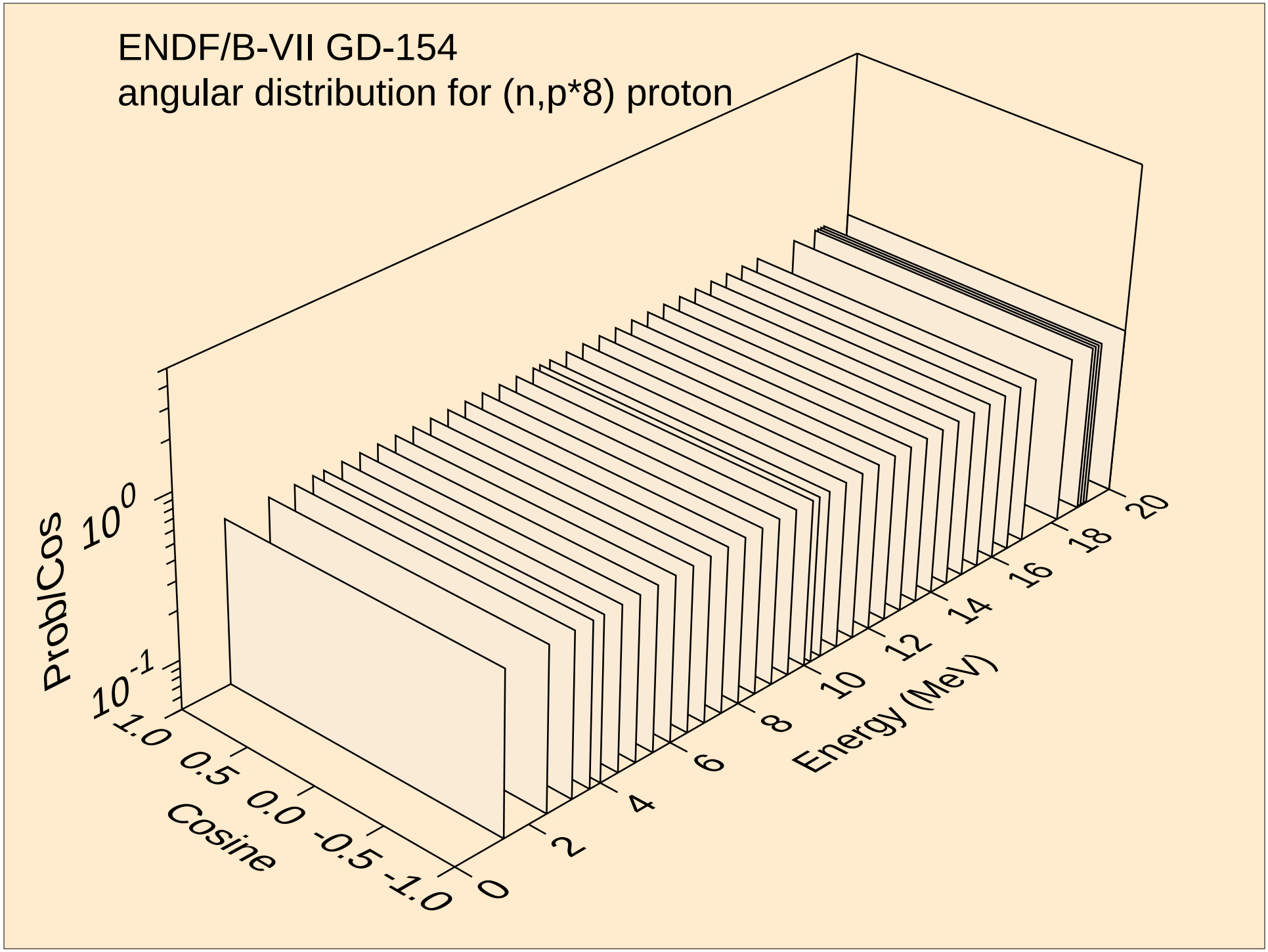

ENDF/B-VII GD-154
angular distribution for (n,p*3) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

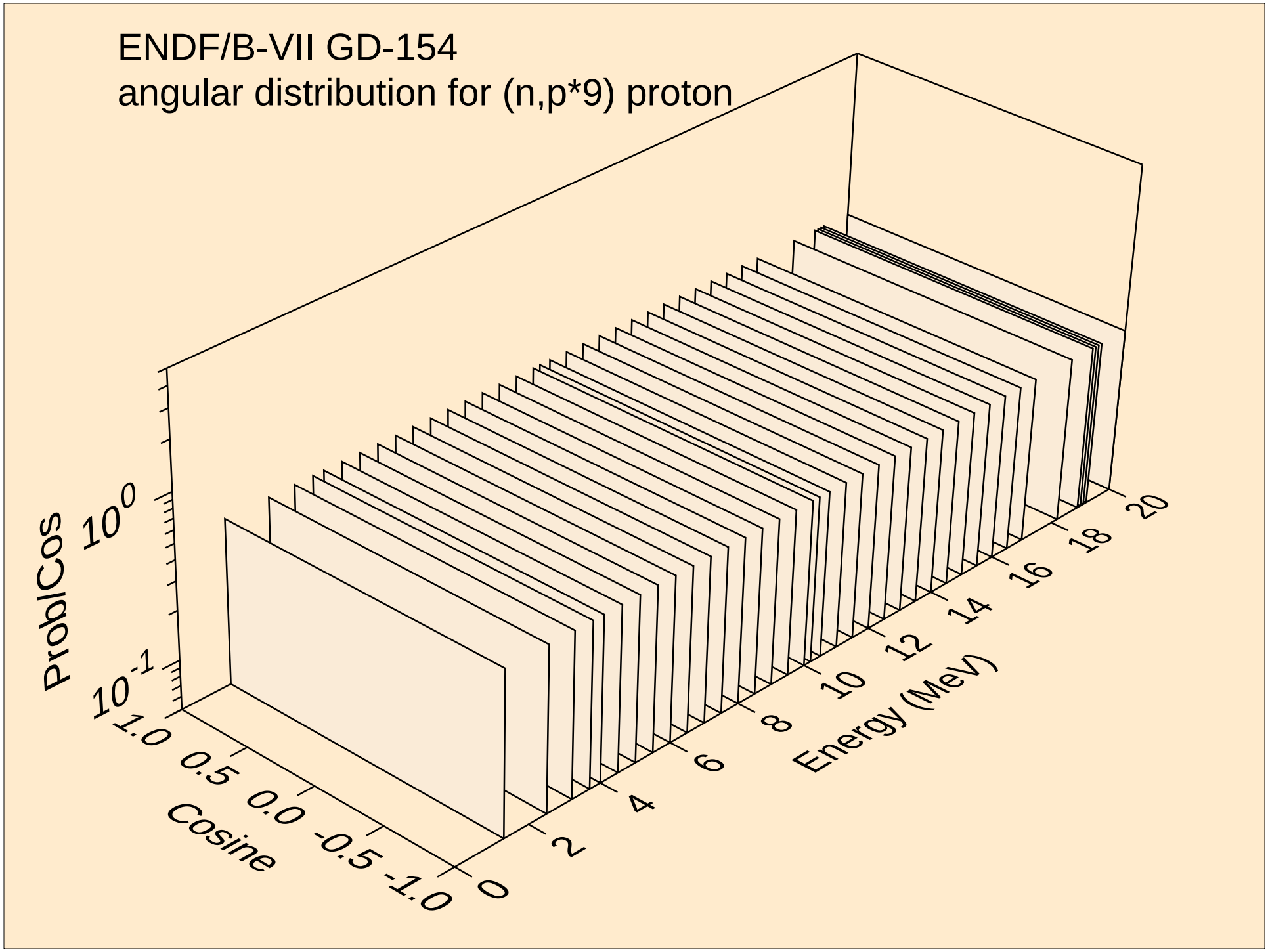

ENDF/B-VII GD-154
angular distribution for (n,p*4) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

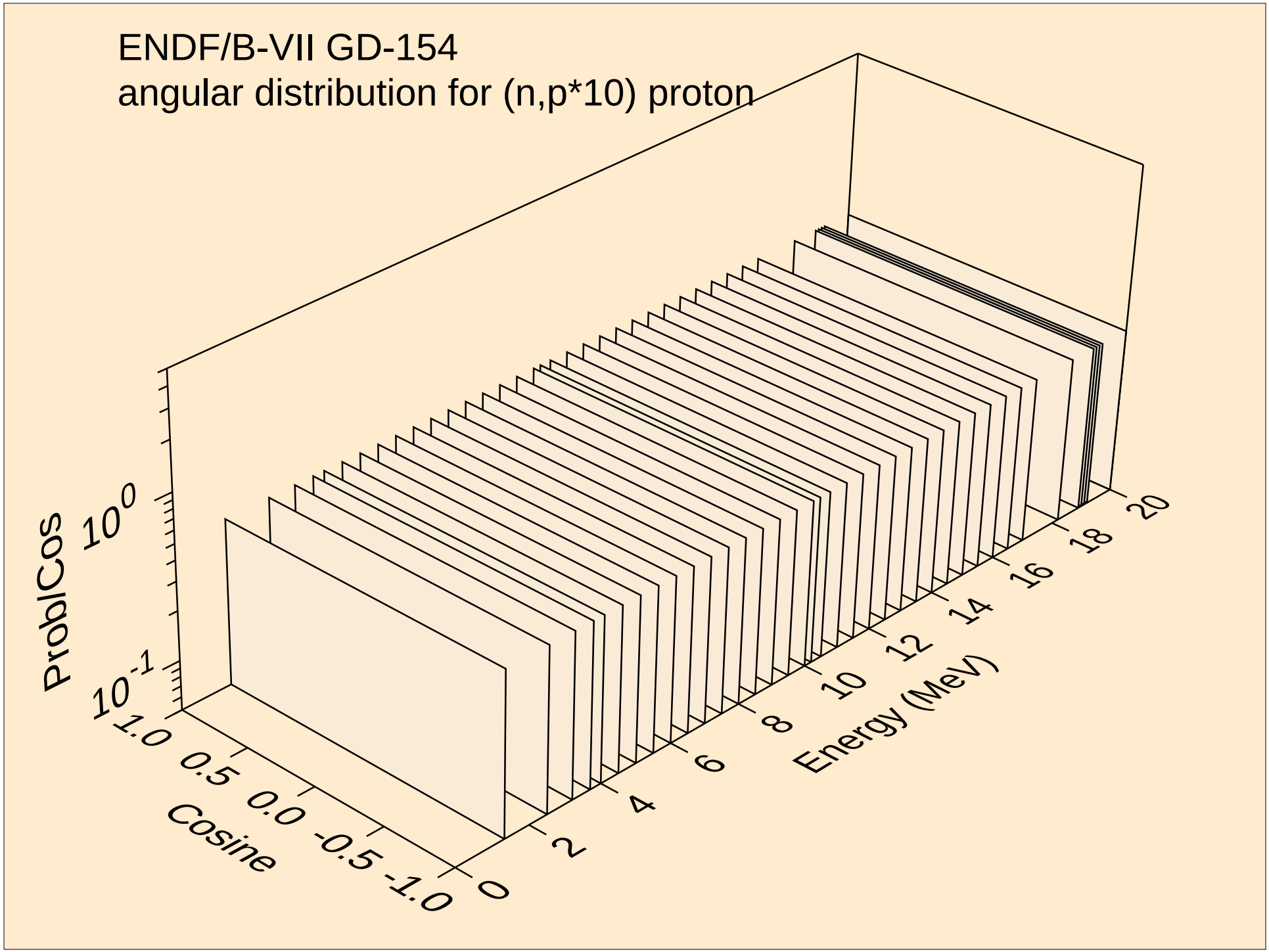

ENDF/B-VII GD-154
angular distribution for (n,p*5) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

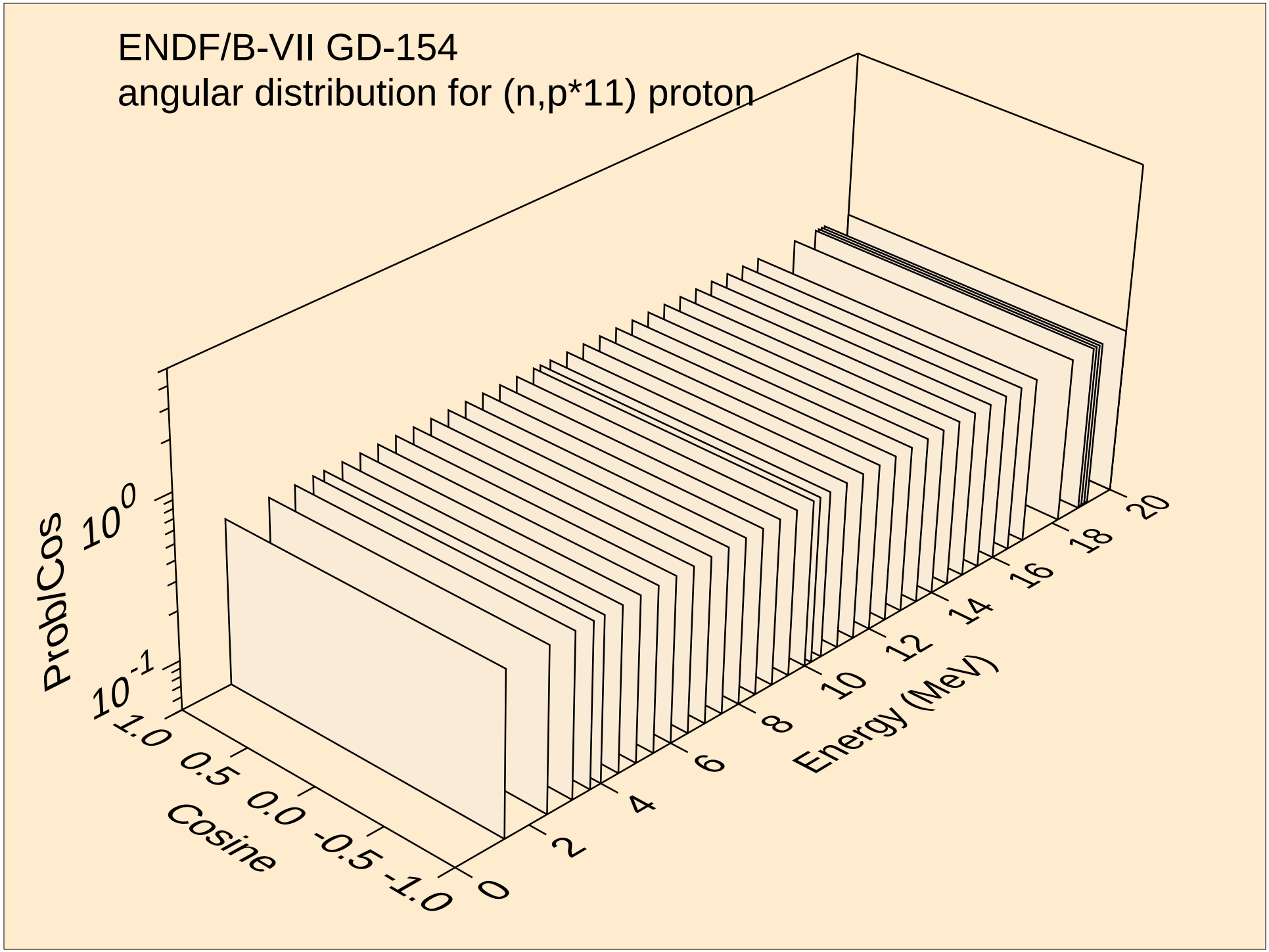

ENDF/B-VII GD-154
angular distribution for (n,p*6) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

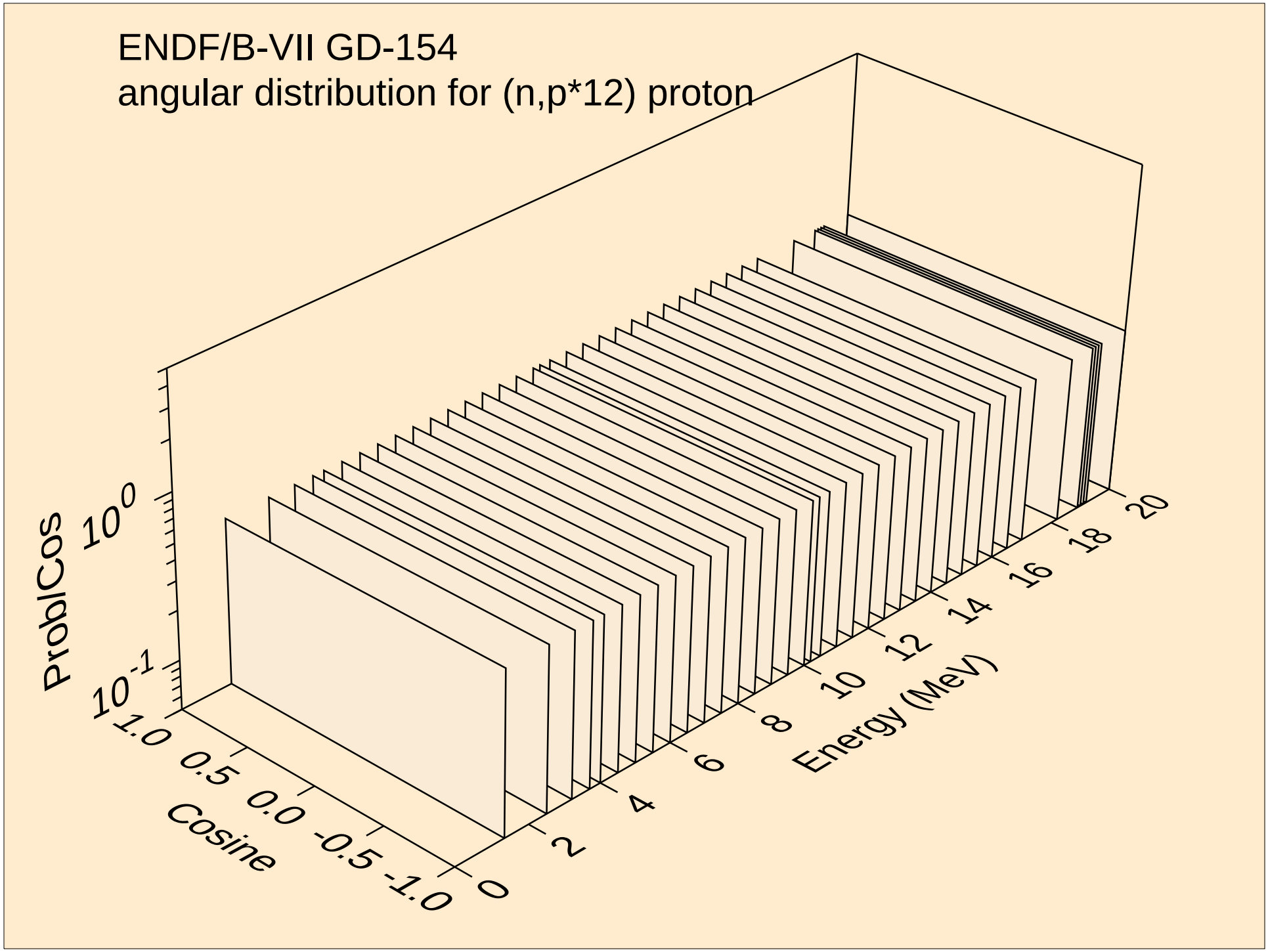

ENDF/B-VII GD-154
angular distribution for (n,p*7) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

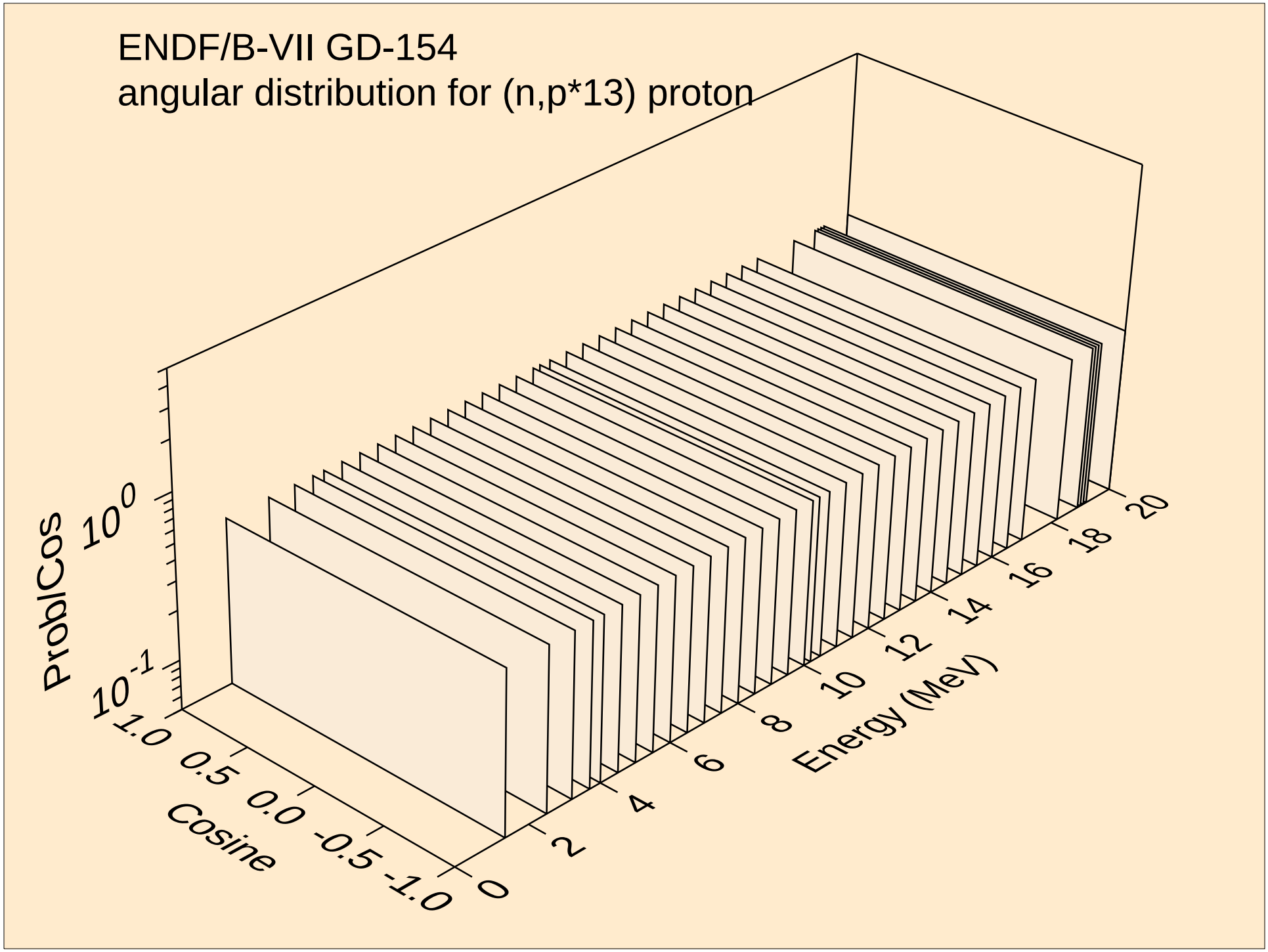

ENDF/B-VII GD-154
angular distribution for (n,p*8) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

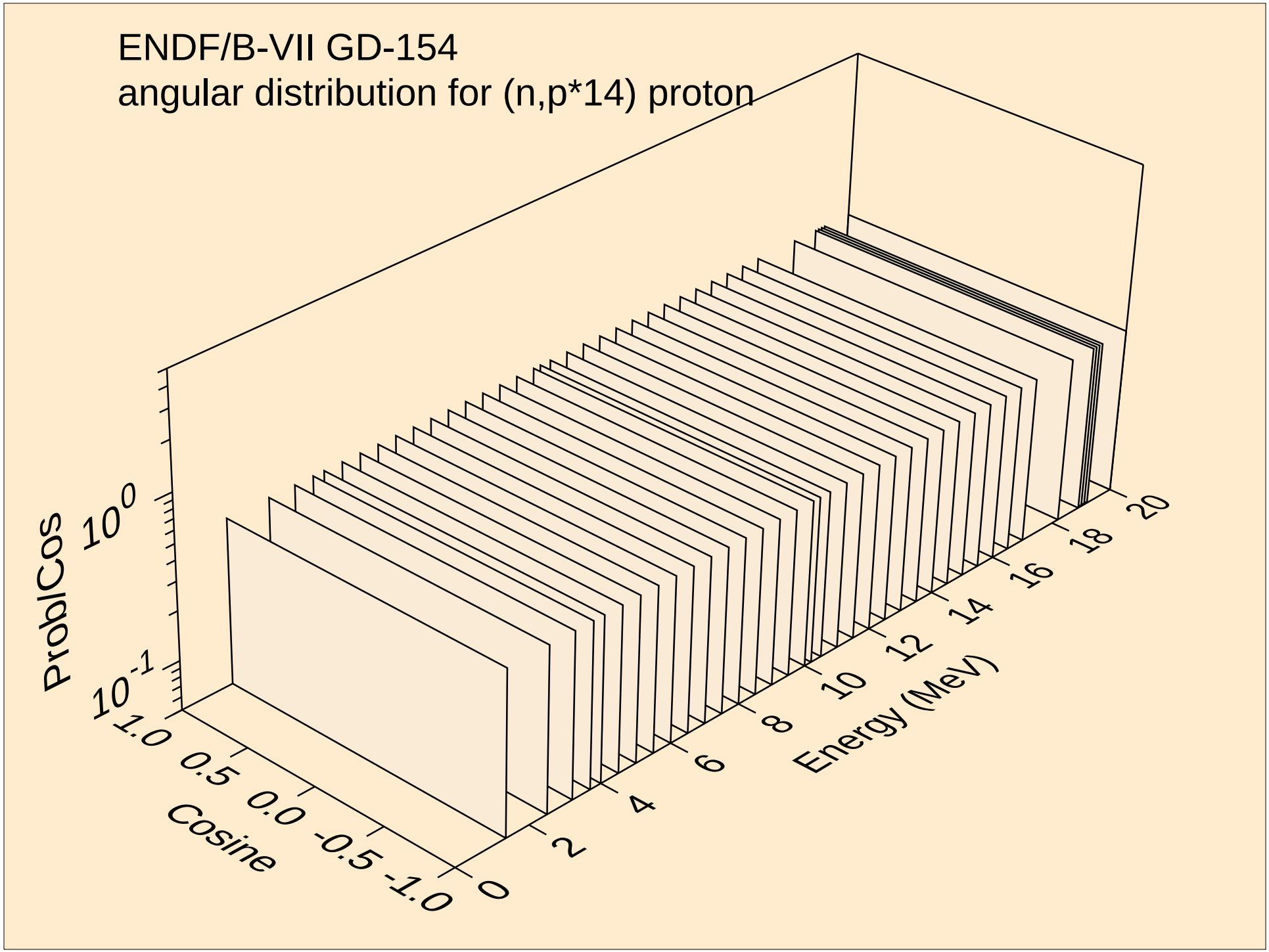

ENDF/B-VII GD-154
angular distribution for (n,p*9) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

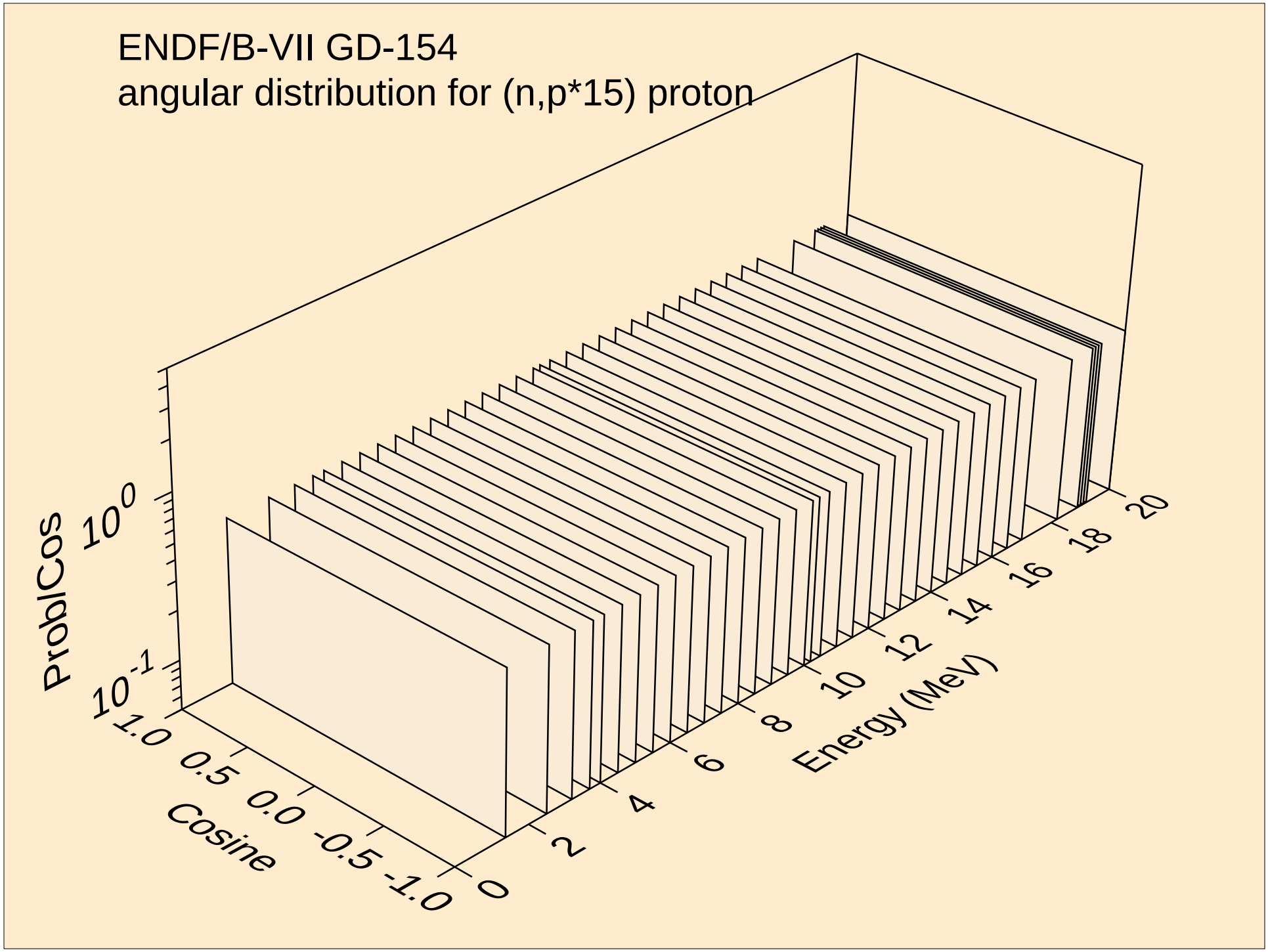

ENDF/B-VII GD-154
angular distribution for (n,p*10) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

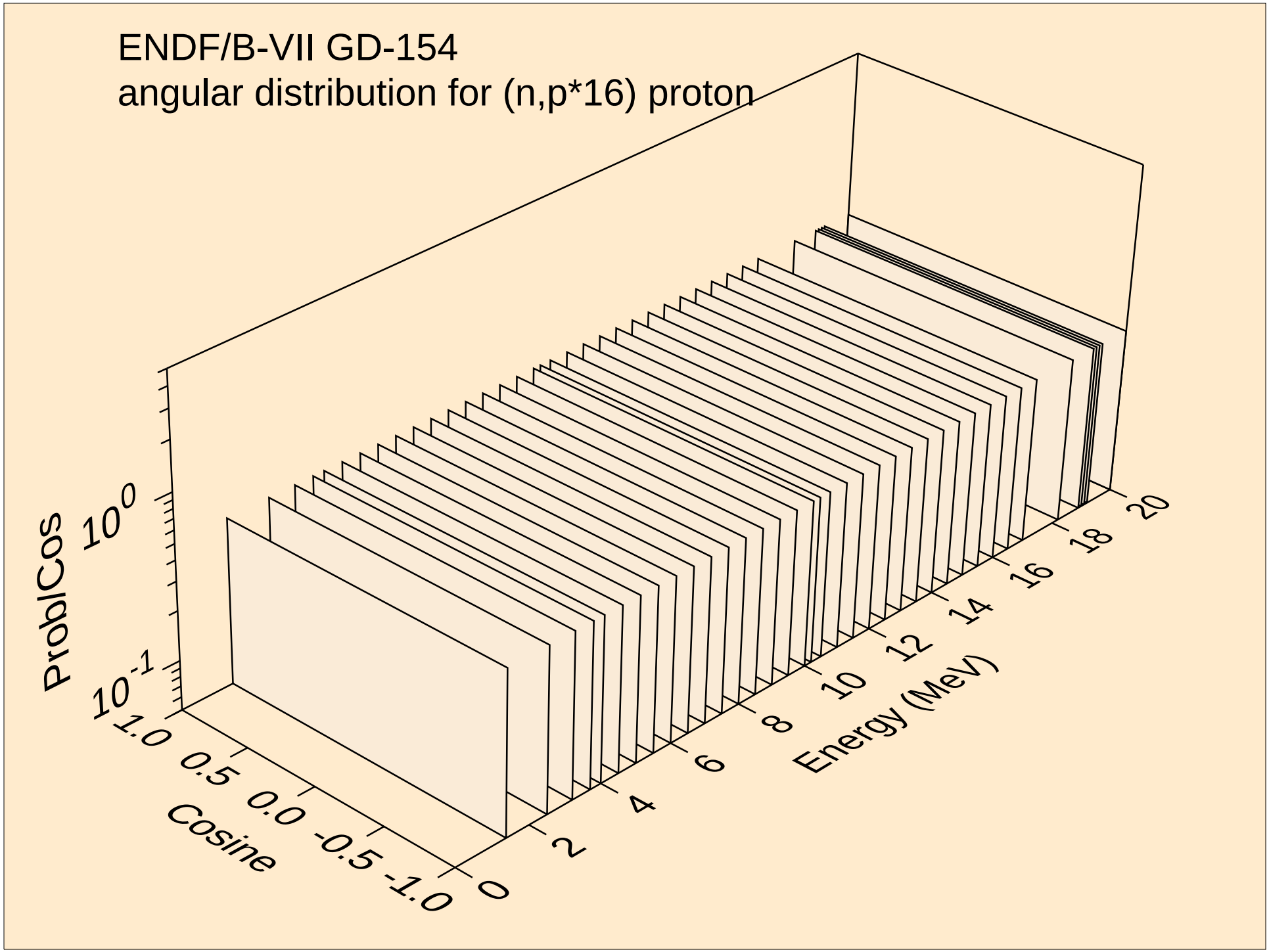

ENDF/B-VII GD-154
angular distribution for (n,p*11) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

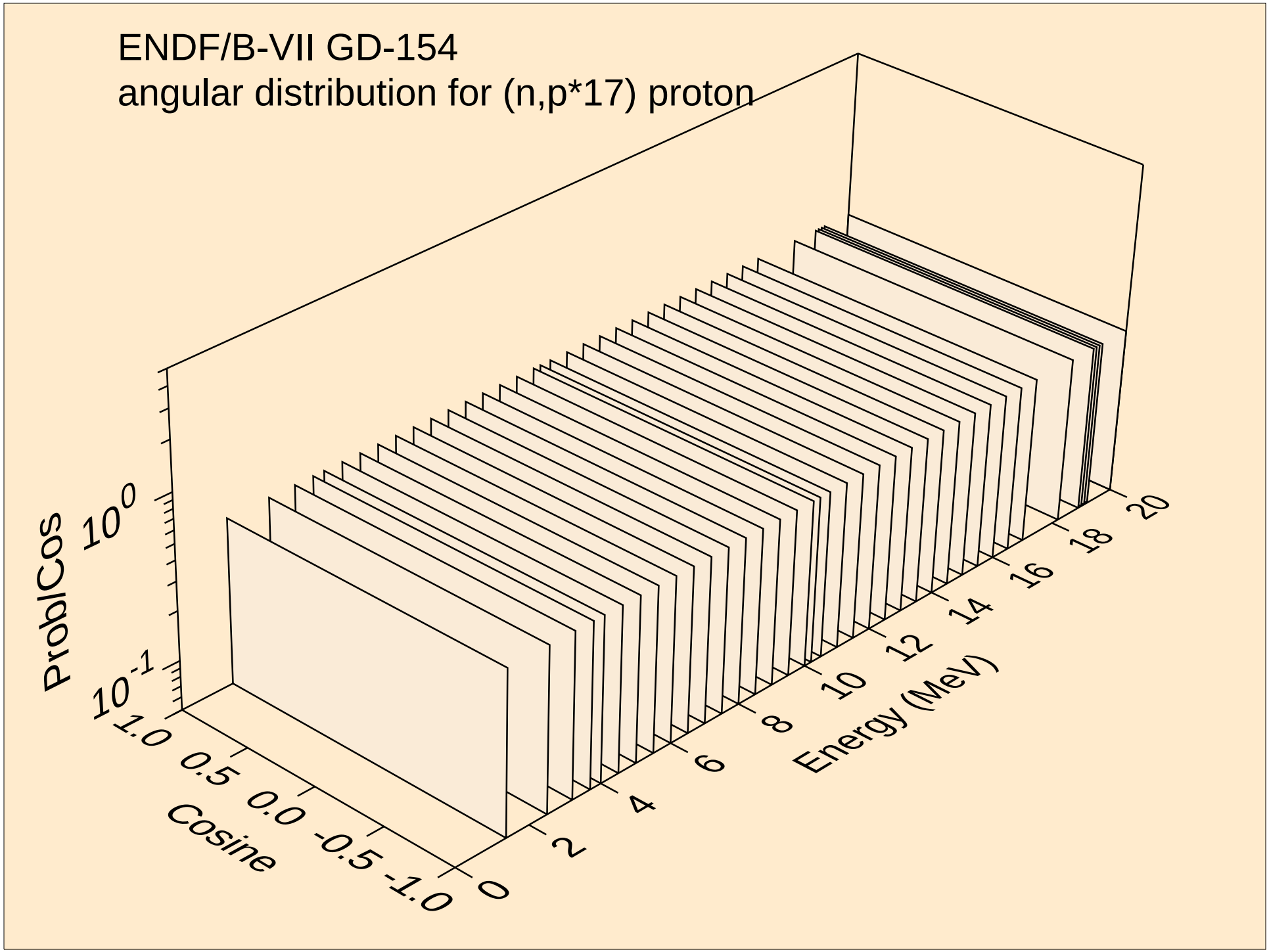

ENDF/B-VII GD-154
angular distribution for (n,p*12) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

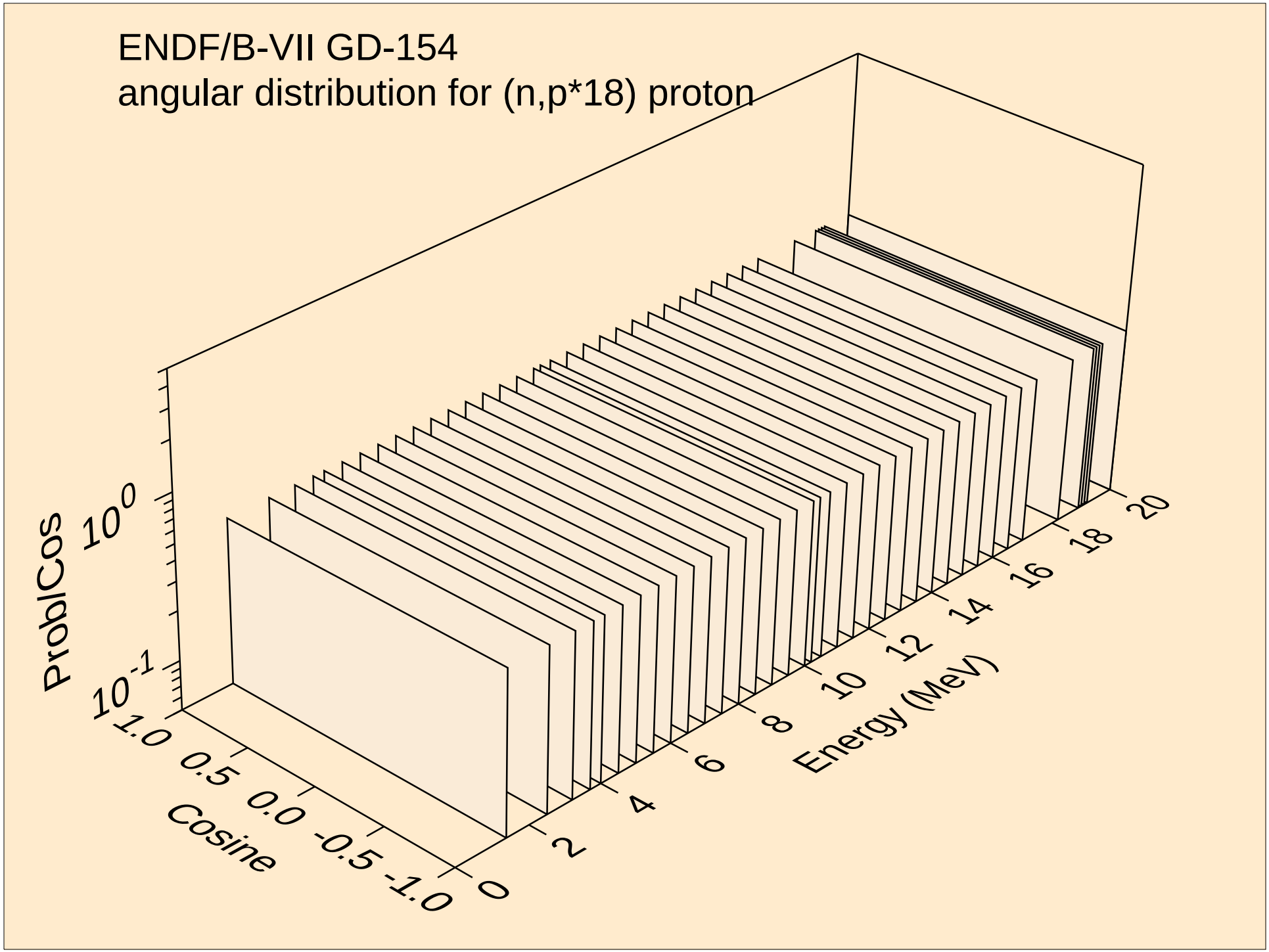

ENDF/B-VII GD-154
angular distribution for (n,p*13) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

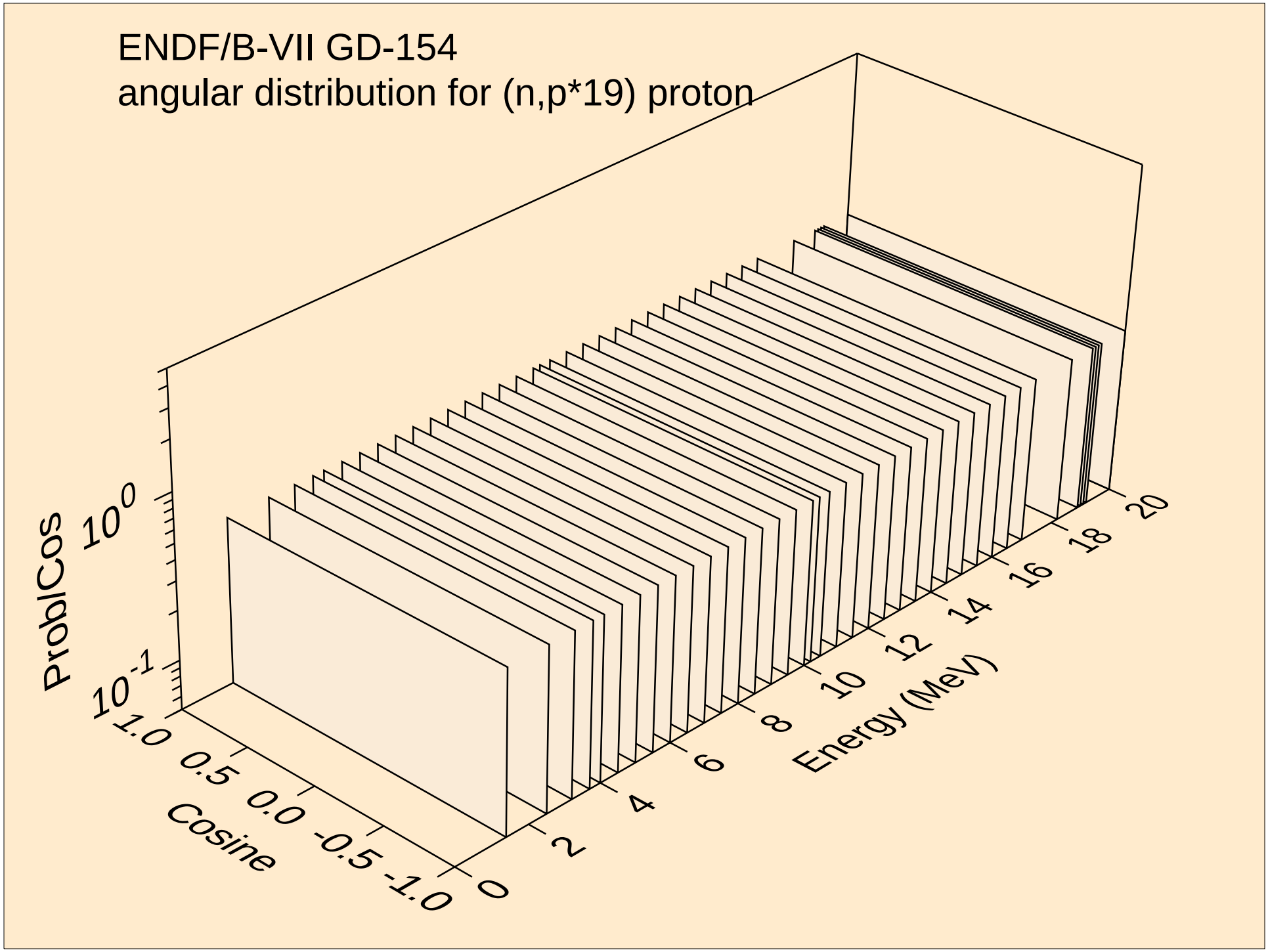

ENDF/B-VII GD-154
angular distribution for (n,p*14) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

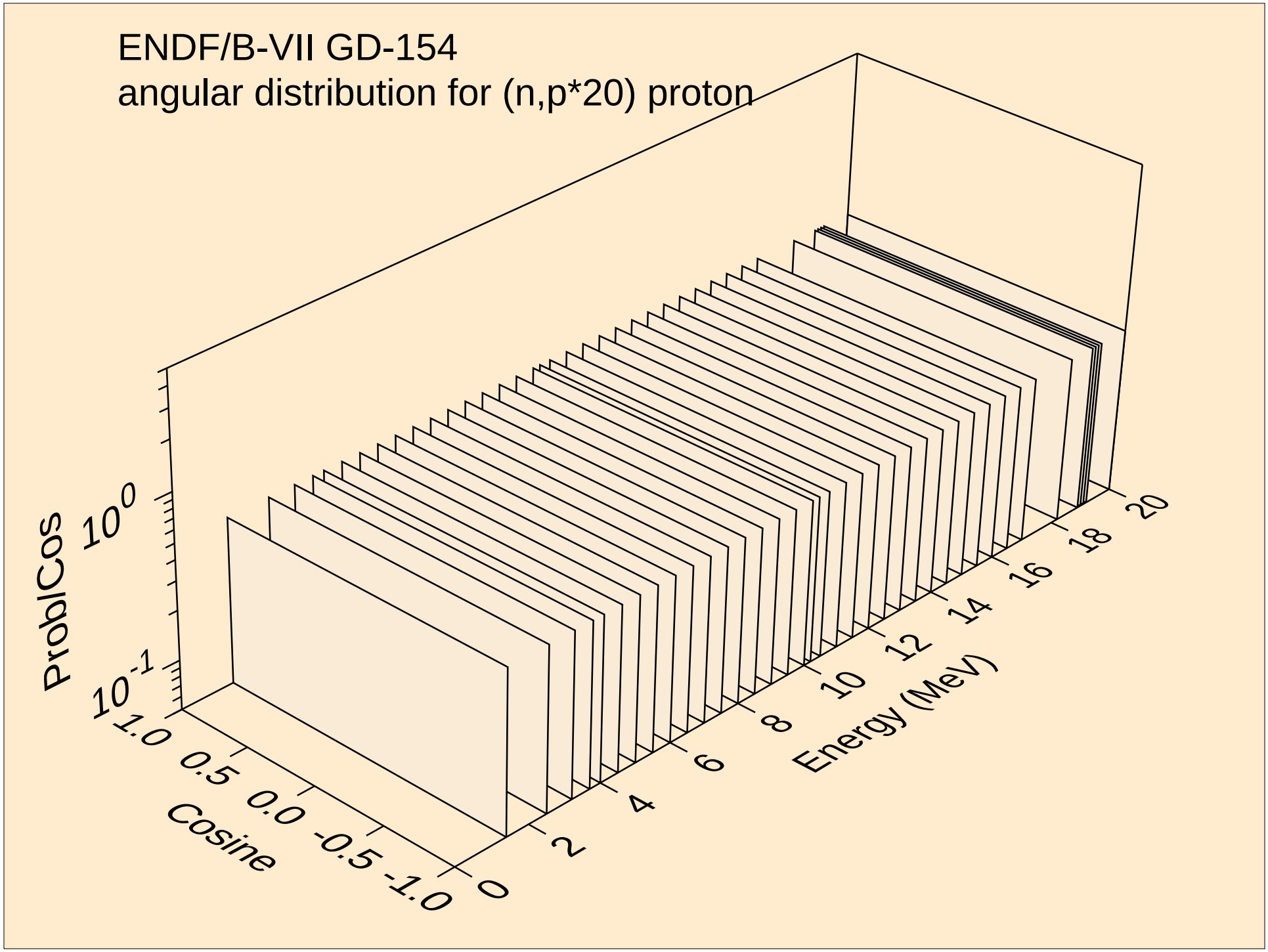

ENDF/B-VII GD-154
angular distribution for (n,p*15) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

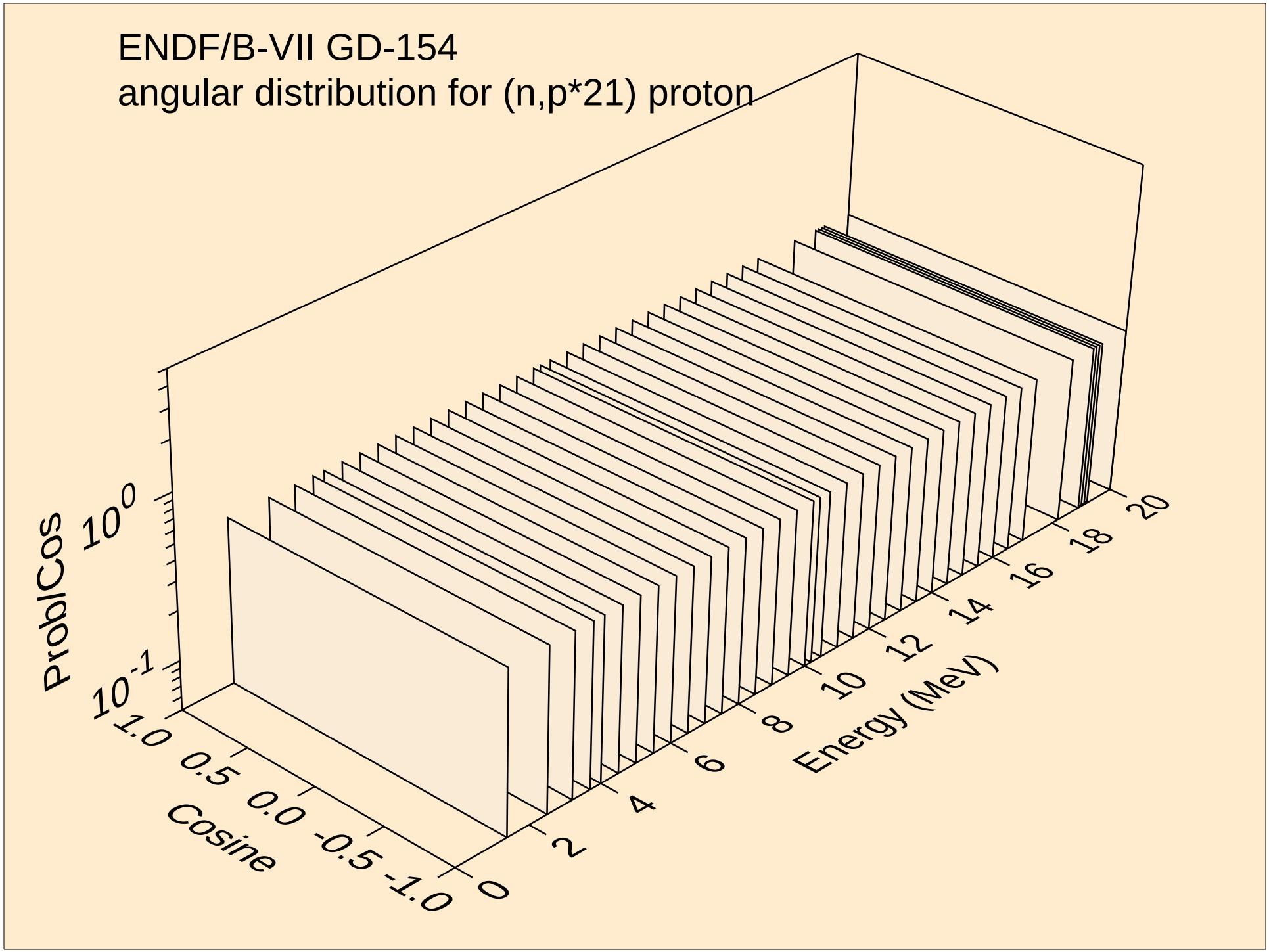

ENDF/B-VII GD-154
angular distribution for (n,p*16) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

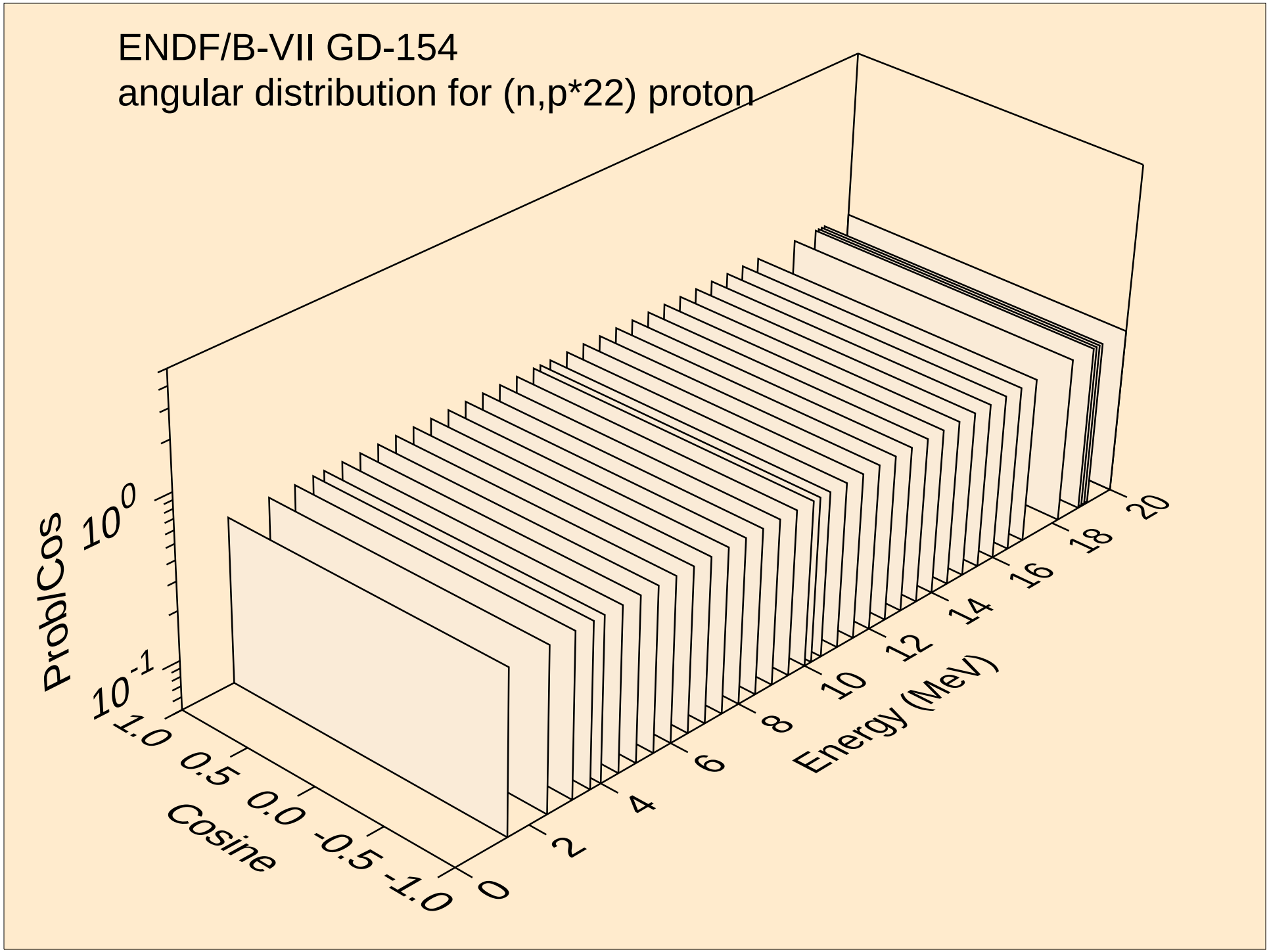

ENDF/B-VII GD-154
angular distribution for (n,p*17) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

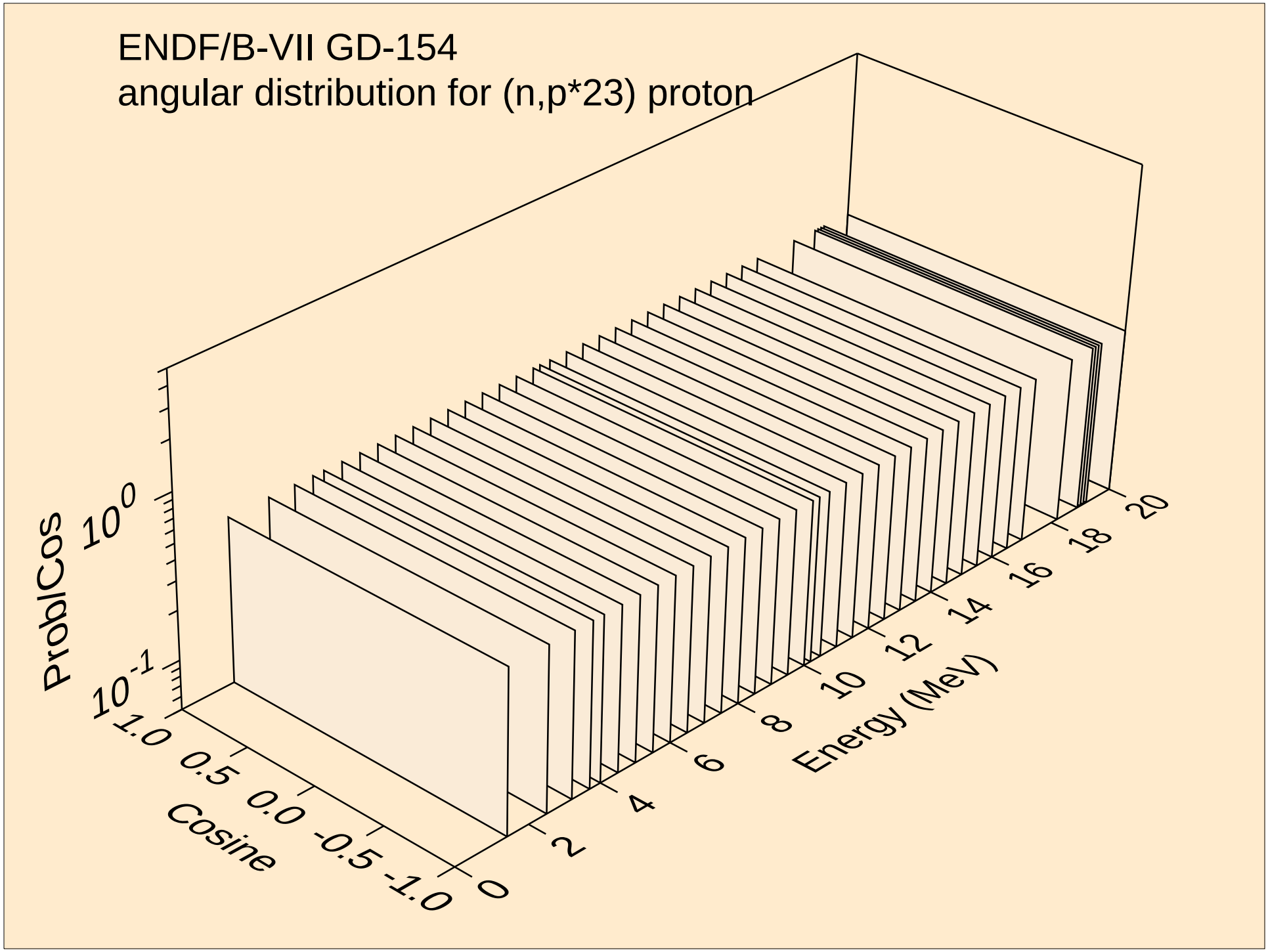

ENDF/B-VII GD-154
angular distribution for (n,p*18) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

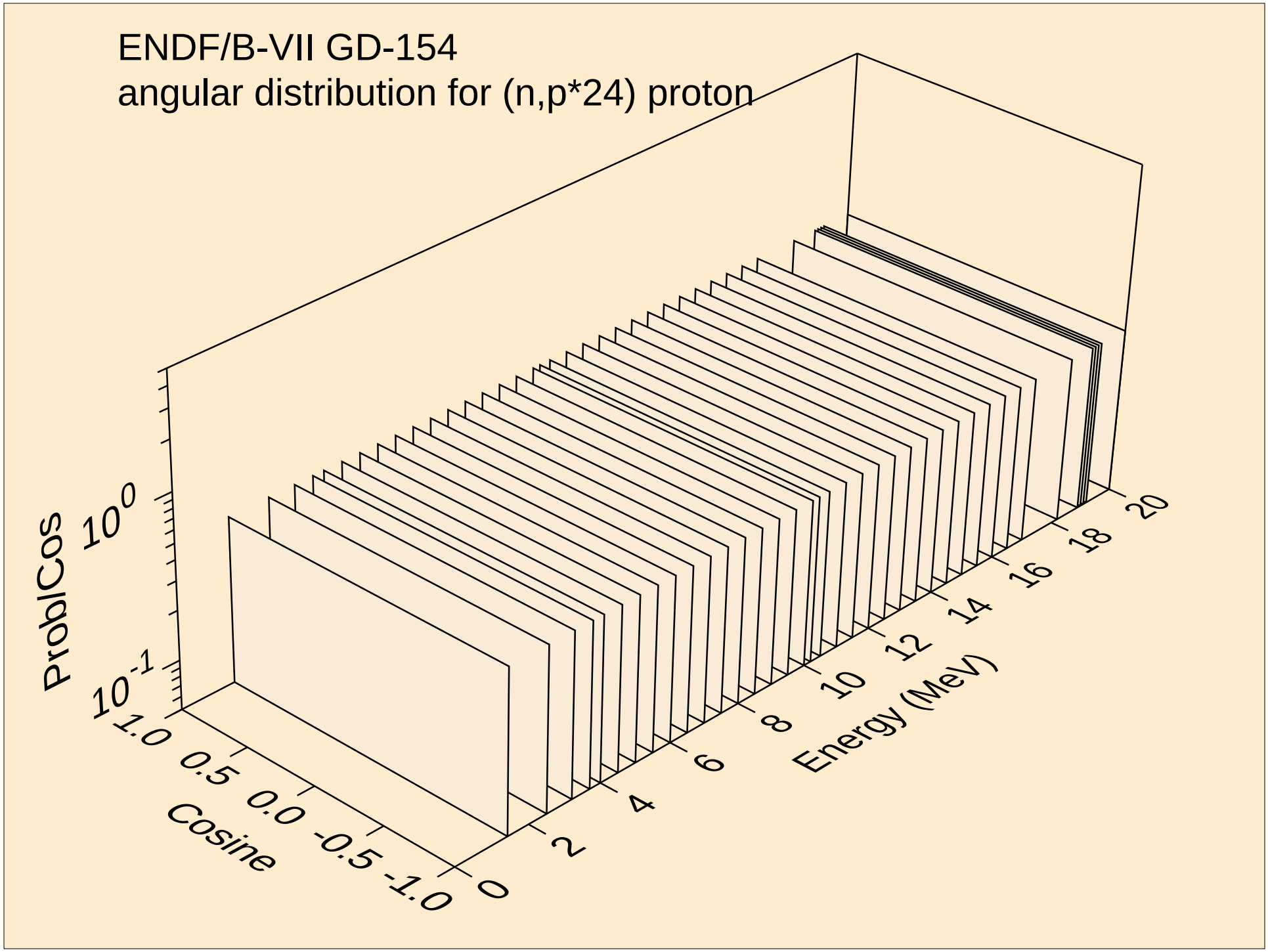

ENDF/B-VII GD-154
angular distribution for (n,p*19) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

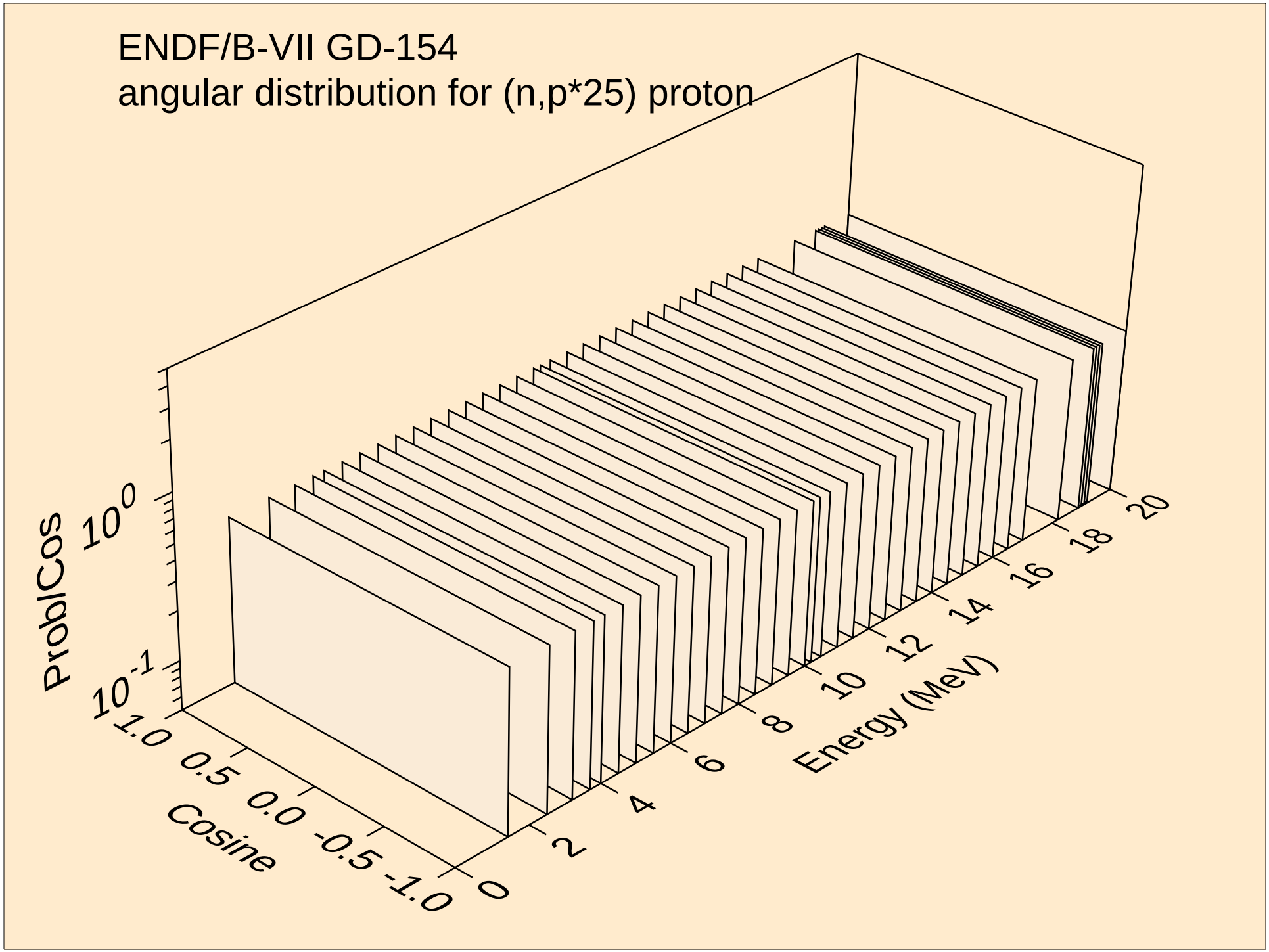

ENDF/B-VII GD-154
angular distribution for (n,p*20) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

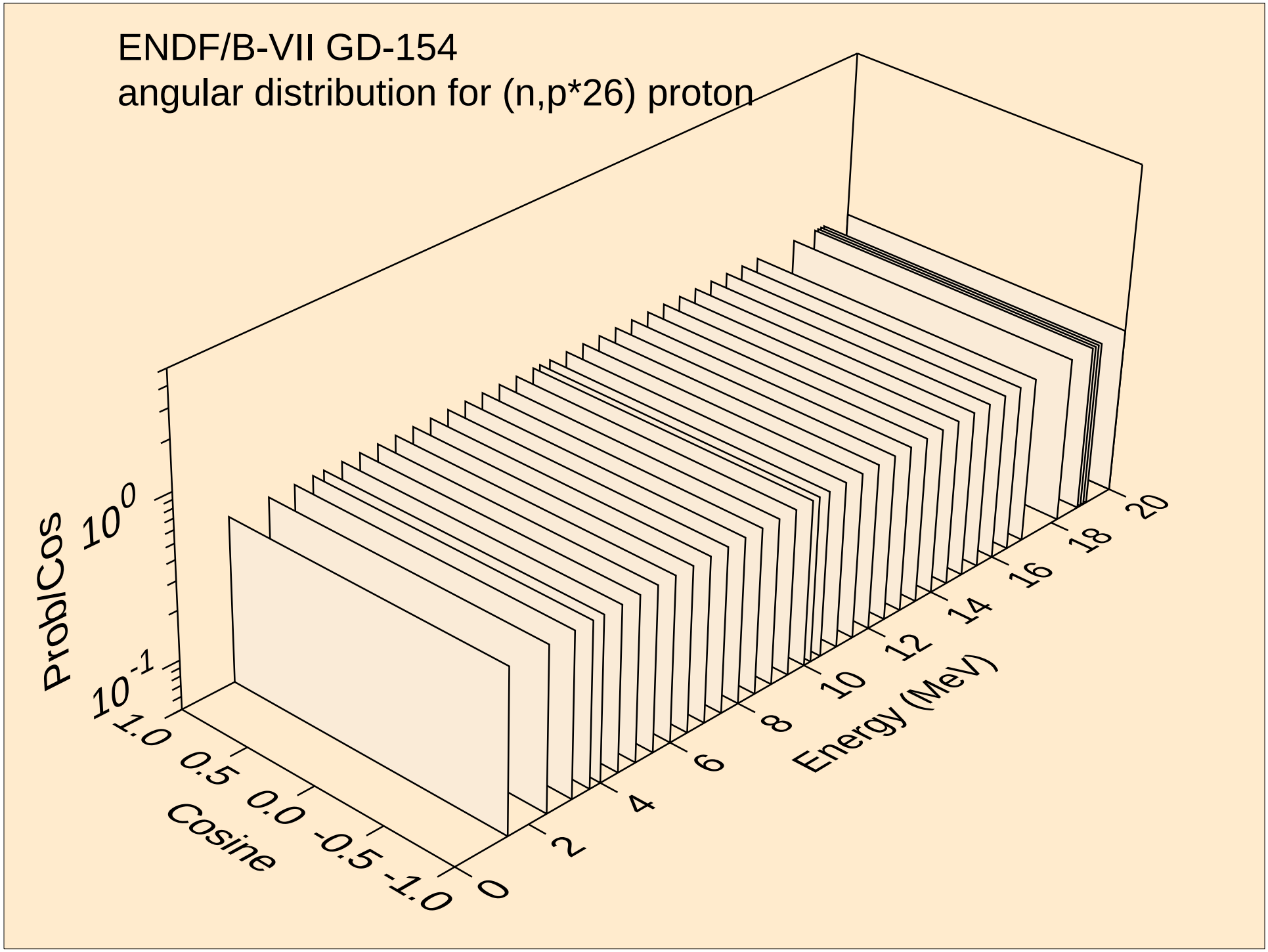

ENDF/B-VII GD-154
angular distribution for (n,p*21) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

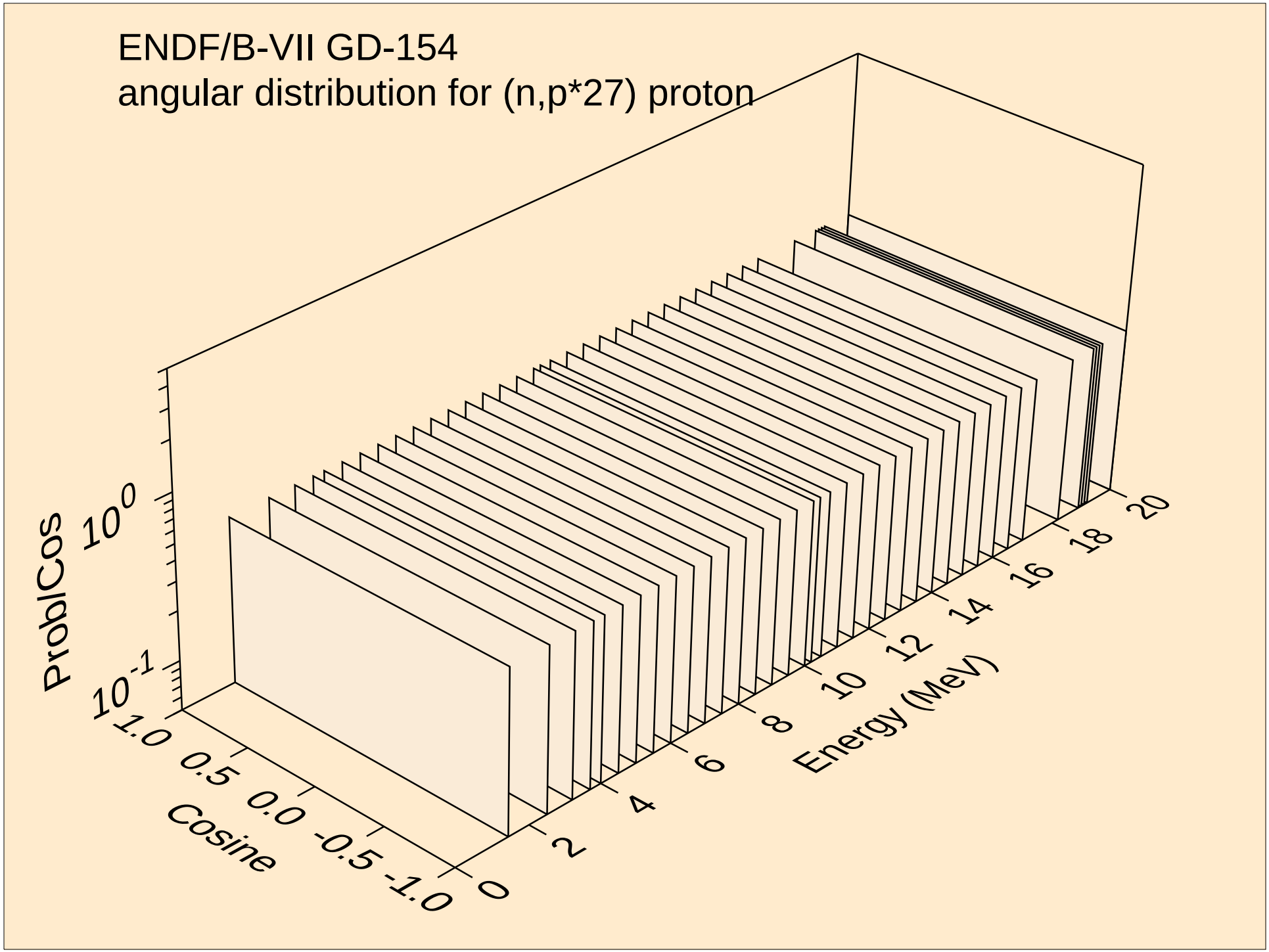

ENDF/B-VII GD-154
angular distribution for (n,p*22) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

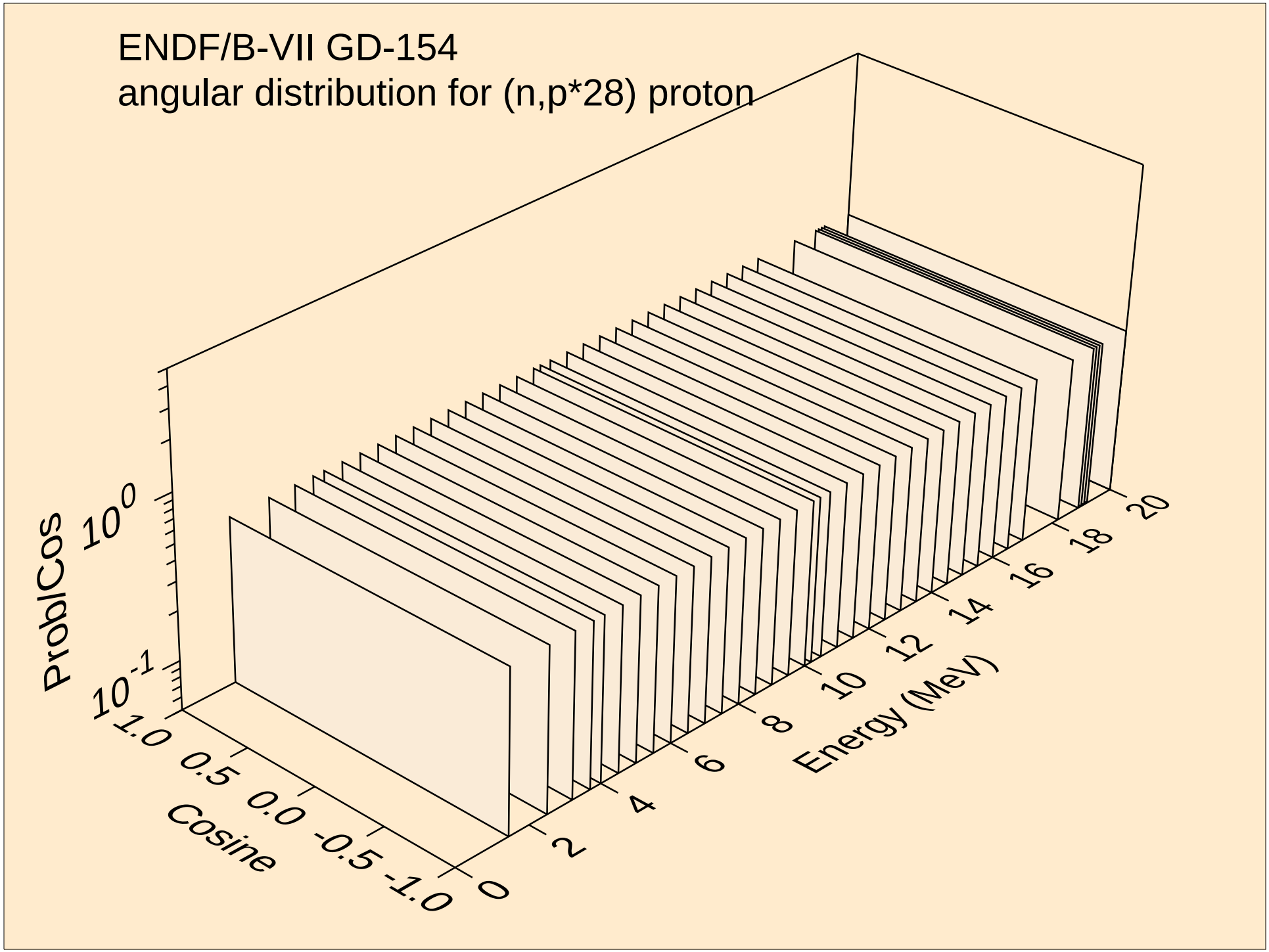

ENDF/B-VII GD-154
angular distribution for (n,p*23) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

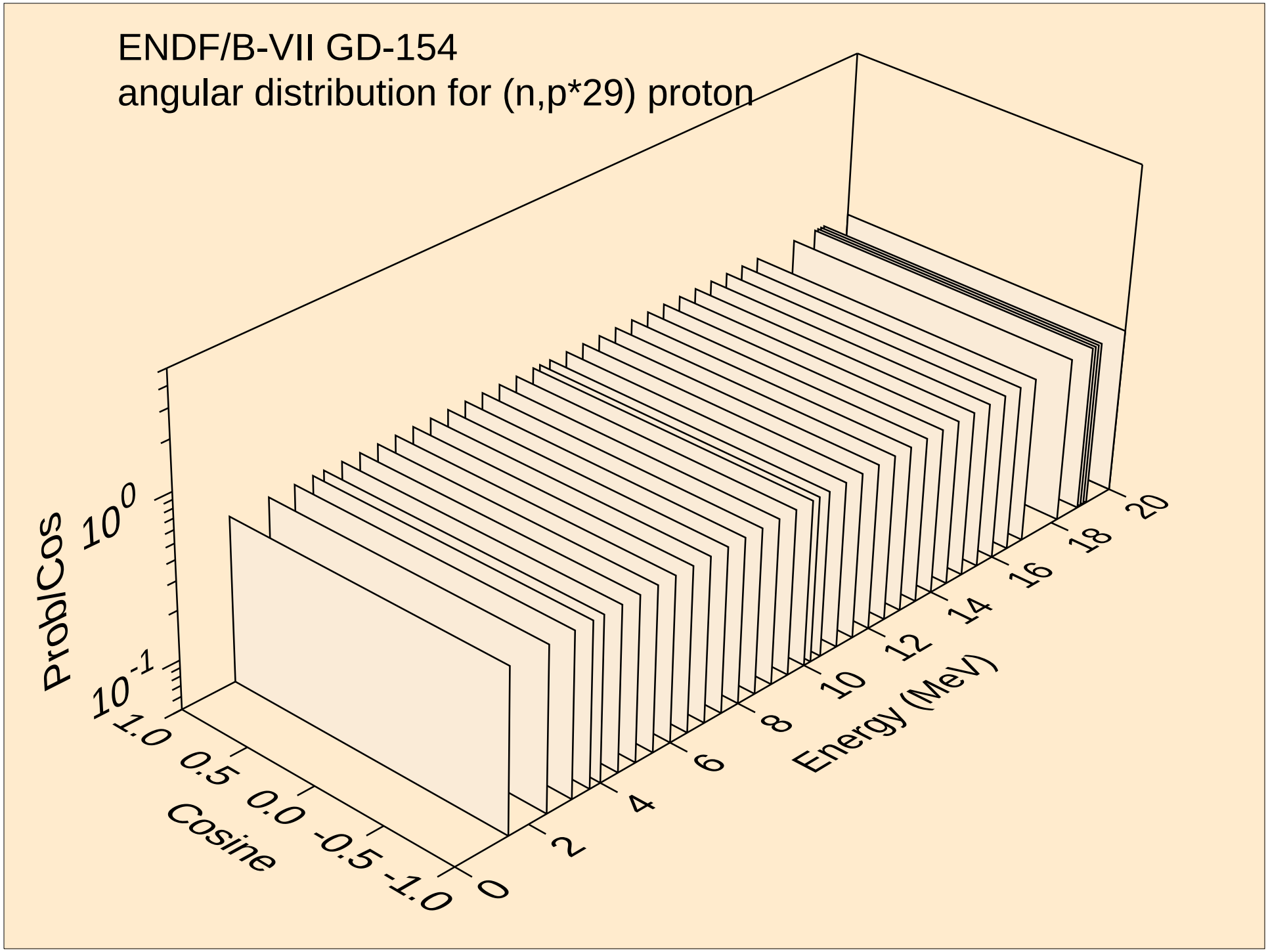

ENDF/B-VII GD-154
angular distribution for (n,p*24) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

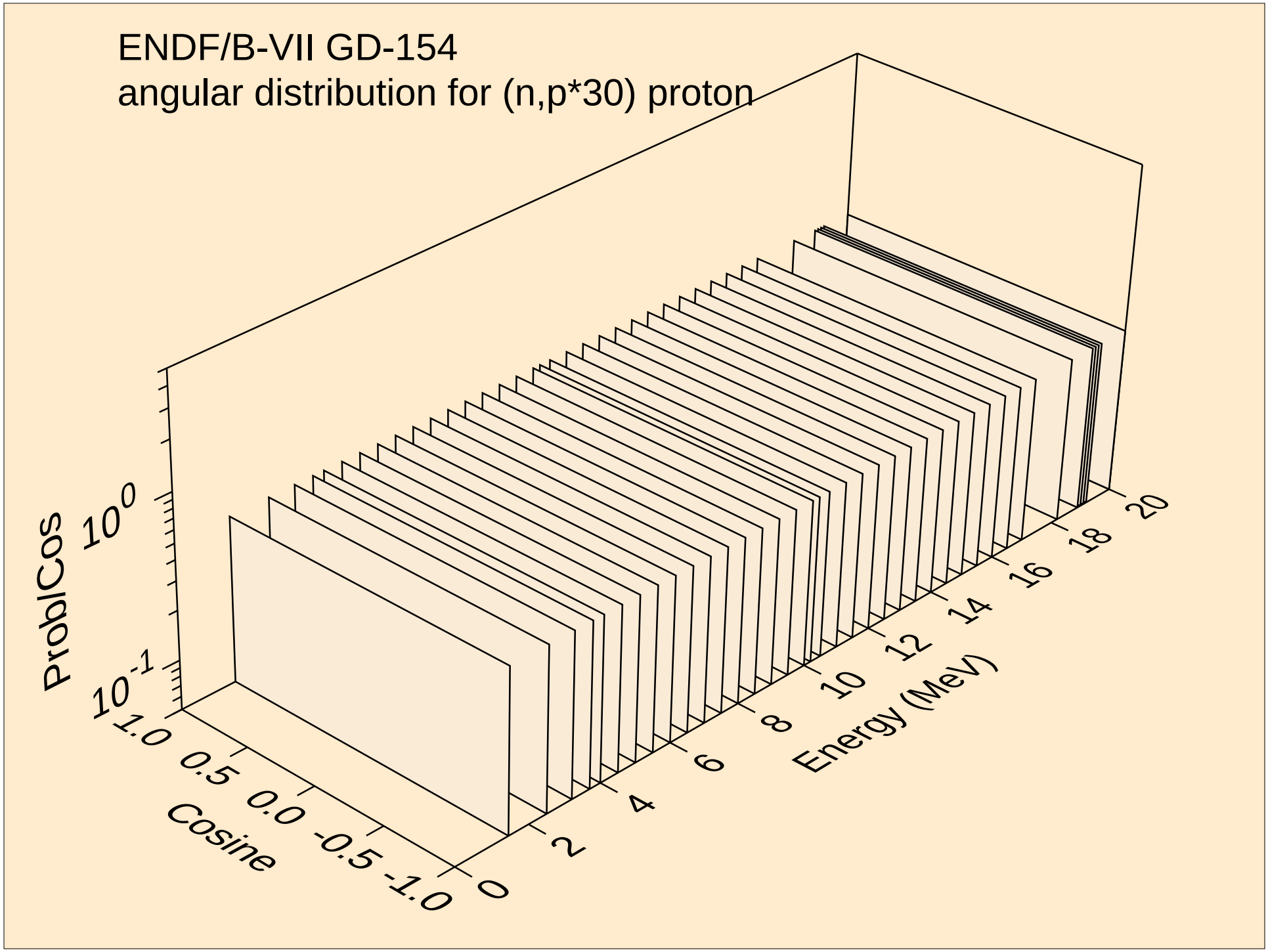

ENDF/B-VII GD-154
angular distribution for (n,p*25) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

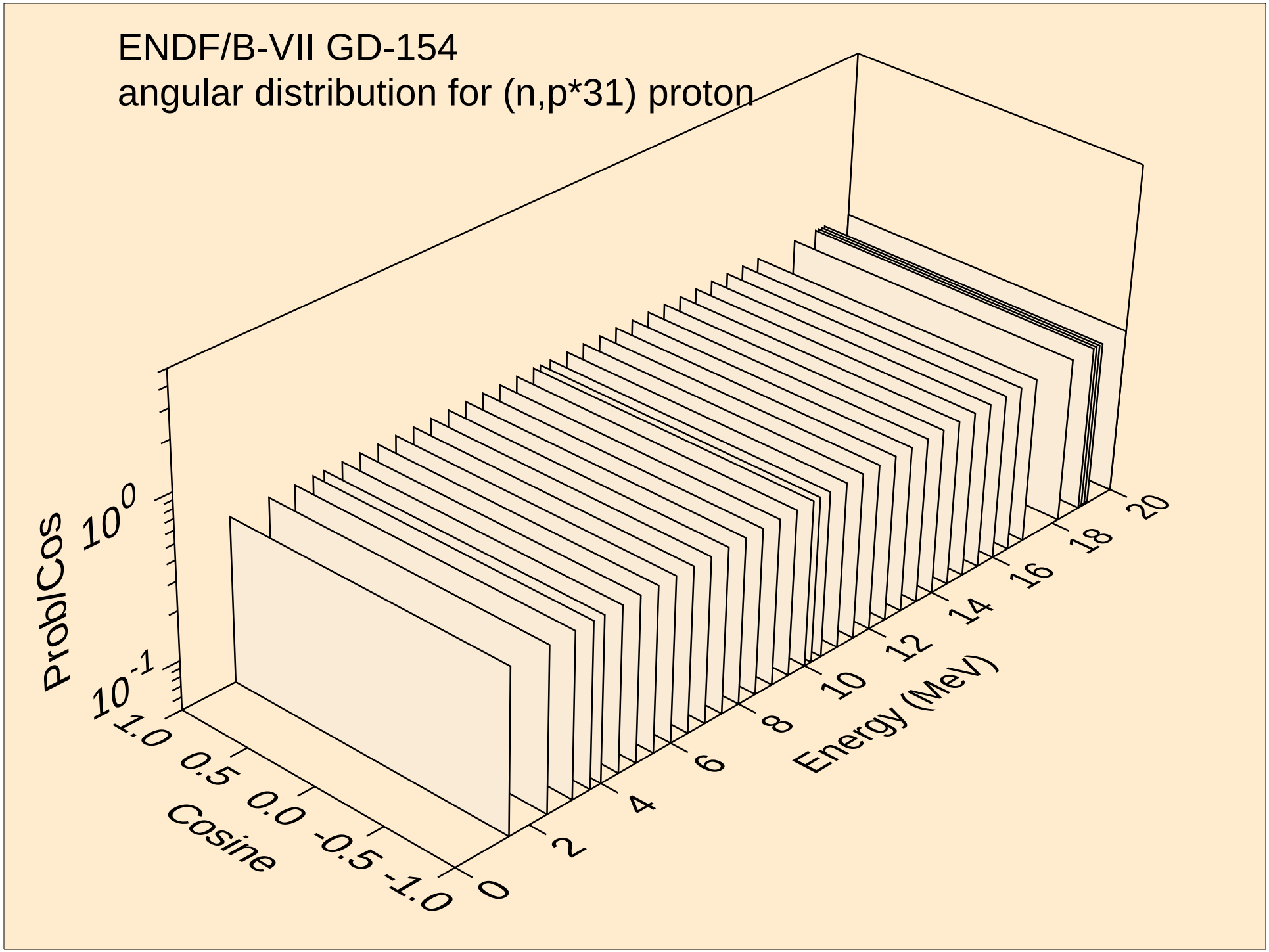

ENDF/B-VII GD-154
angular distribution for (n,p*26) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

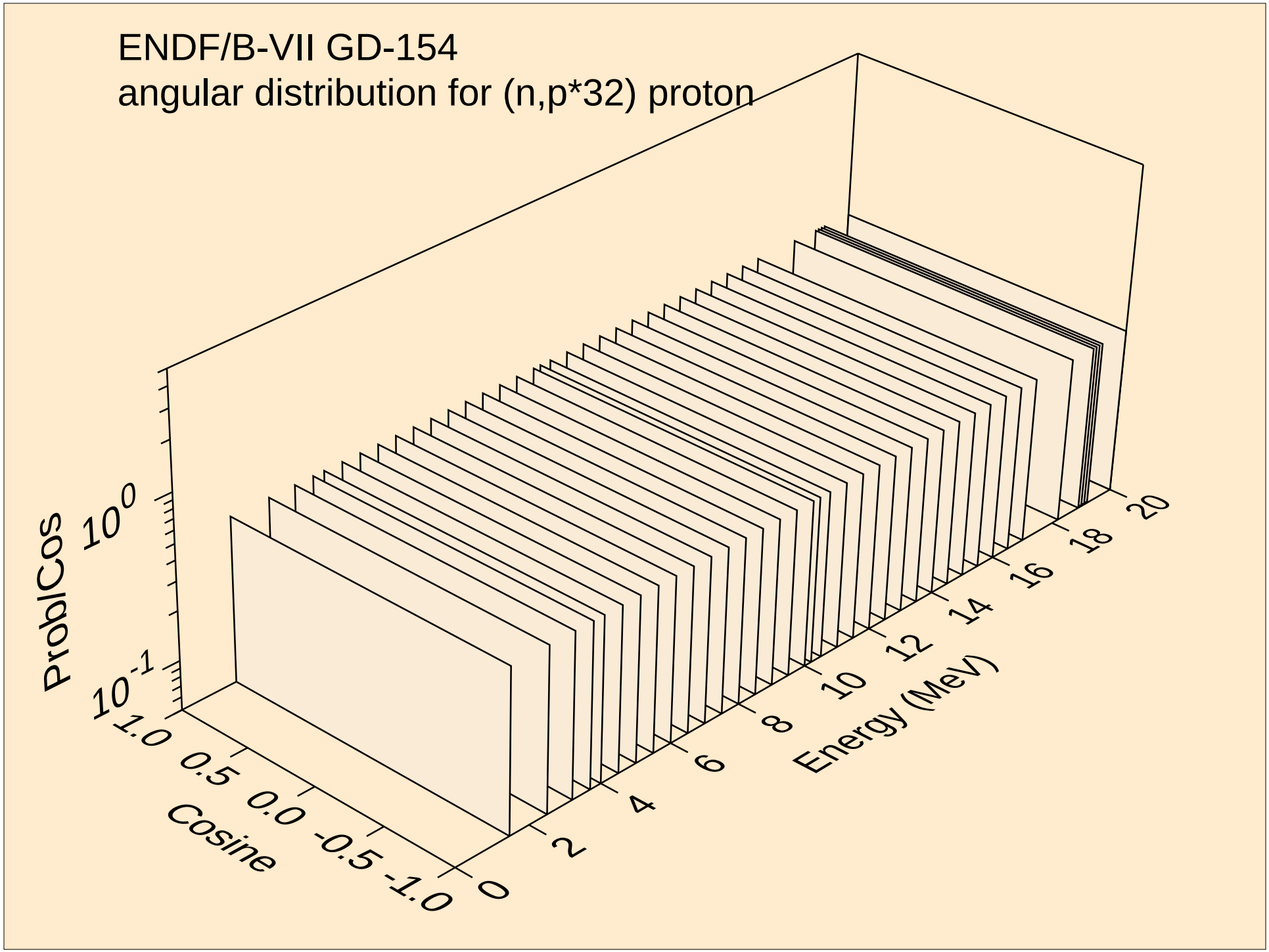

ENDF/B-VII GD-154
angular distribution for (n,p*27) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

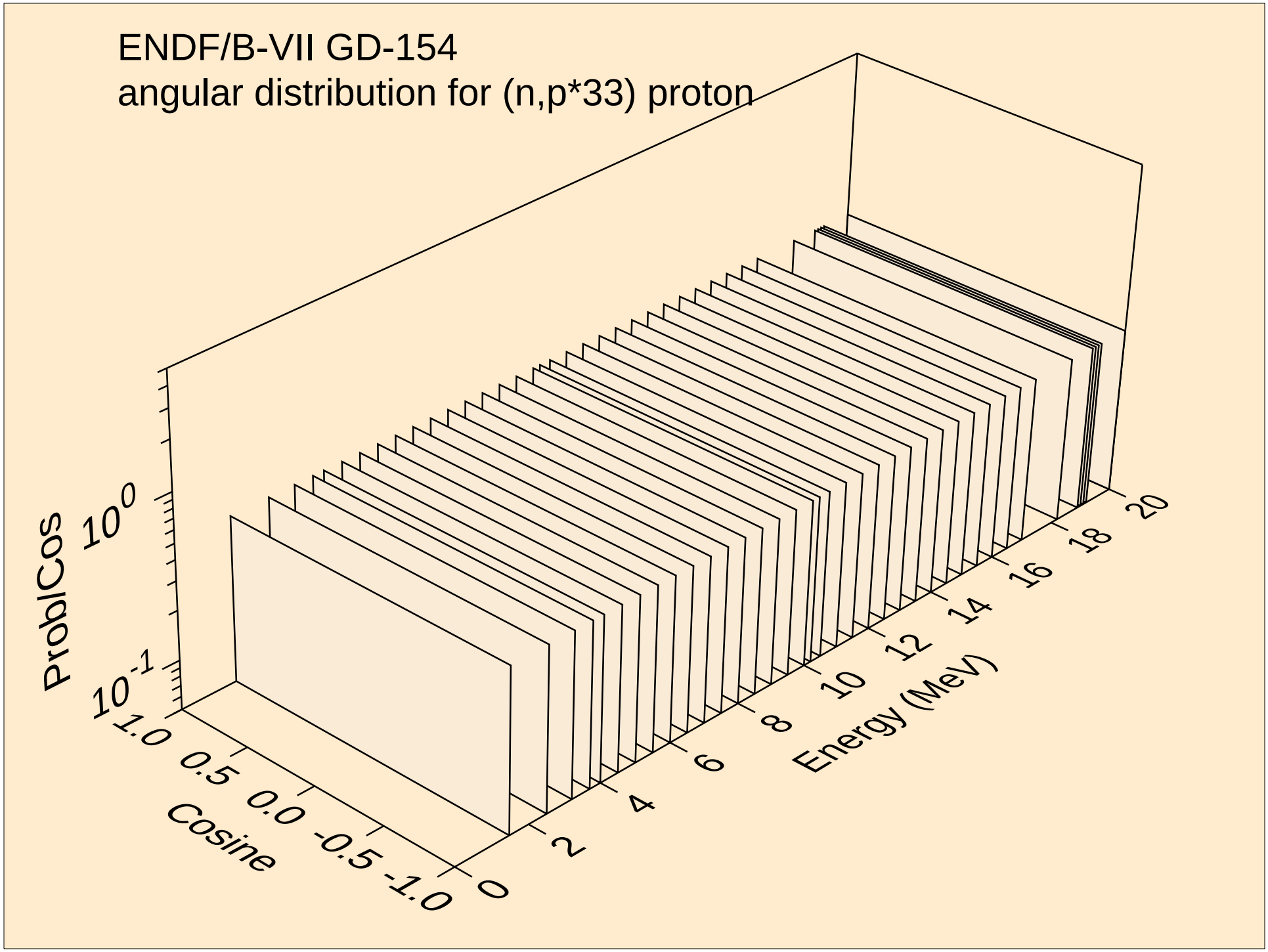

ENDF/B-VII GD-154
angular distribution for (n,p*28) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

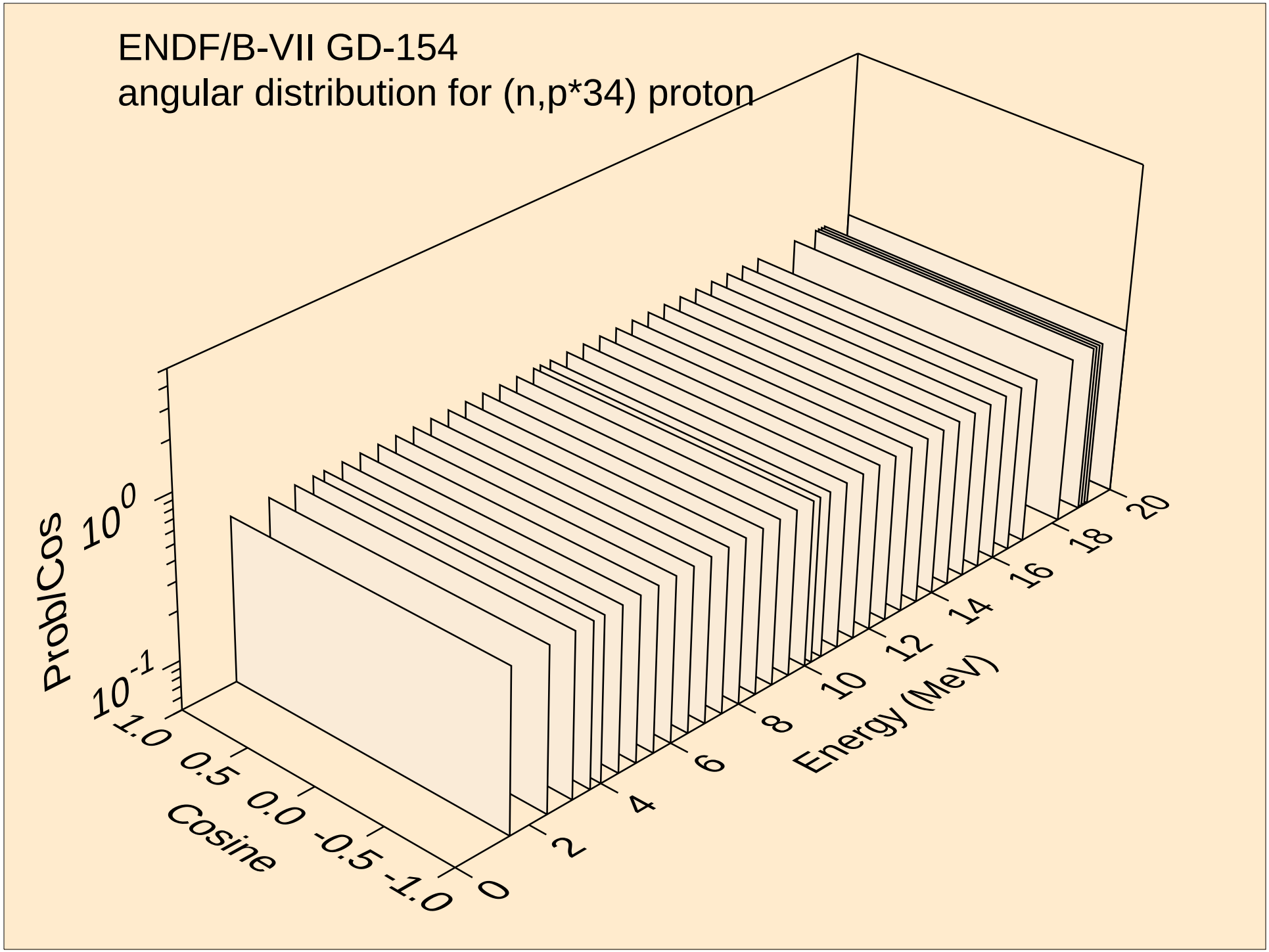

ENDF/B-VII GD-154
angular distribution for (n,p*29) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

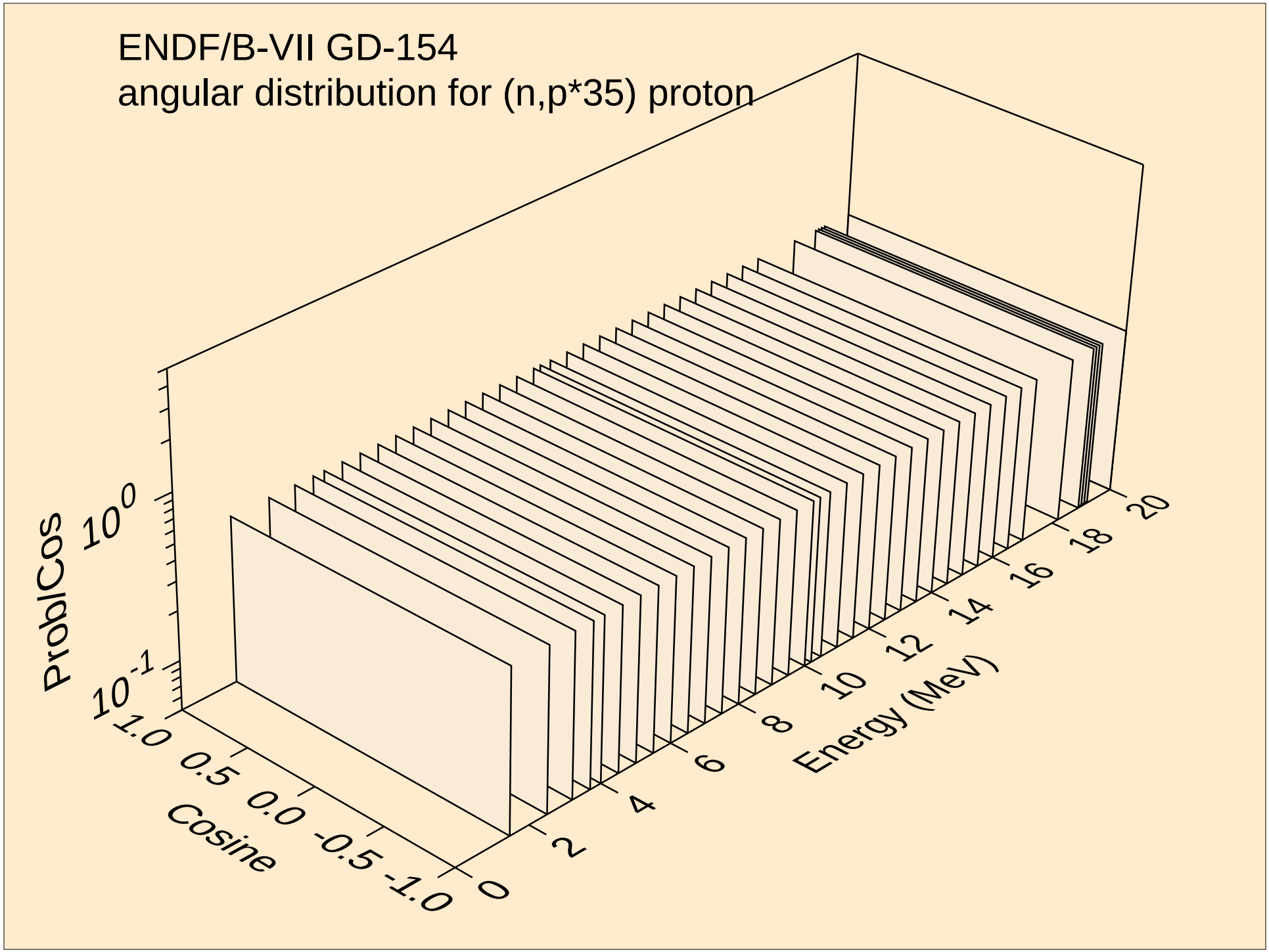

ENDF/B-VII GD-154
angular distribution for (n,p*30) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

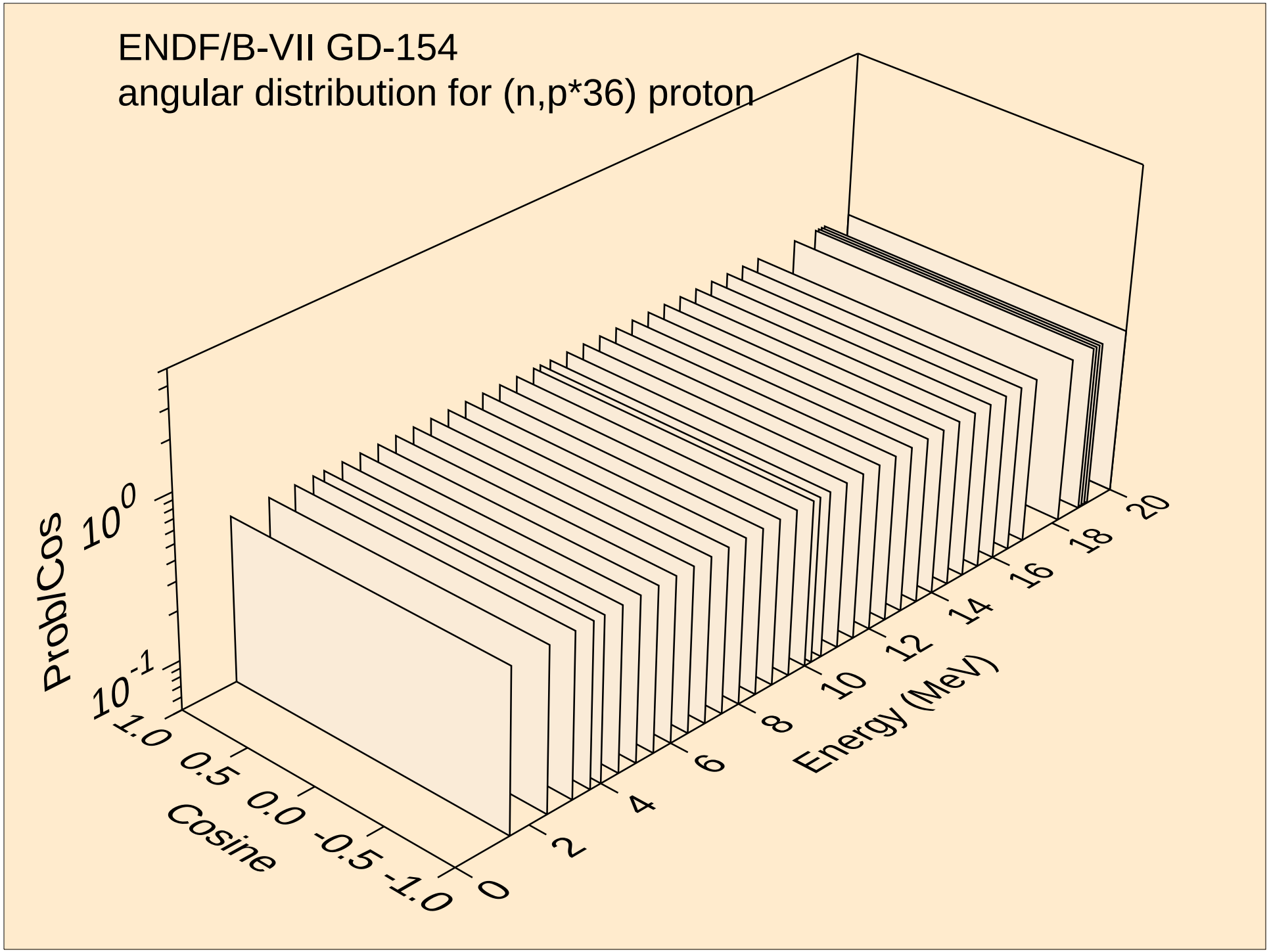

ENDF/B-VII GD-154
angular distribution for (n,p*31) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

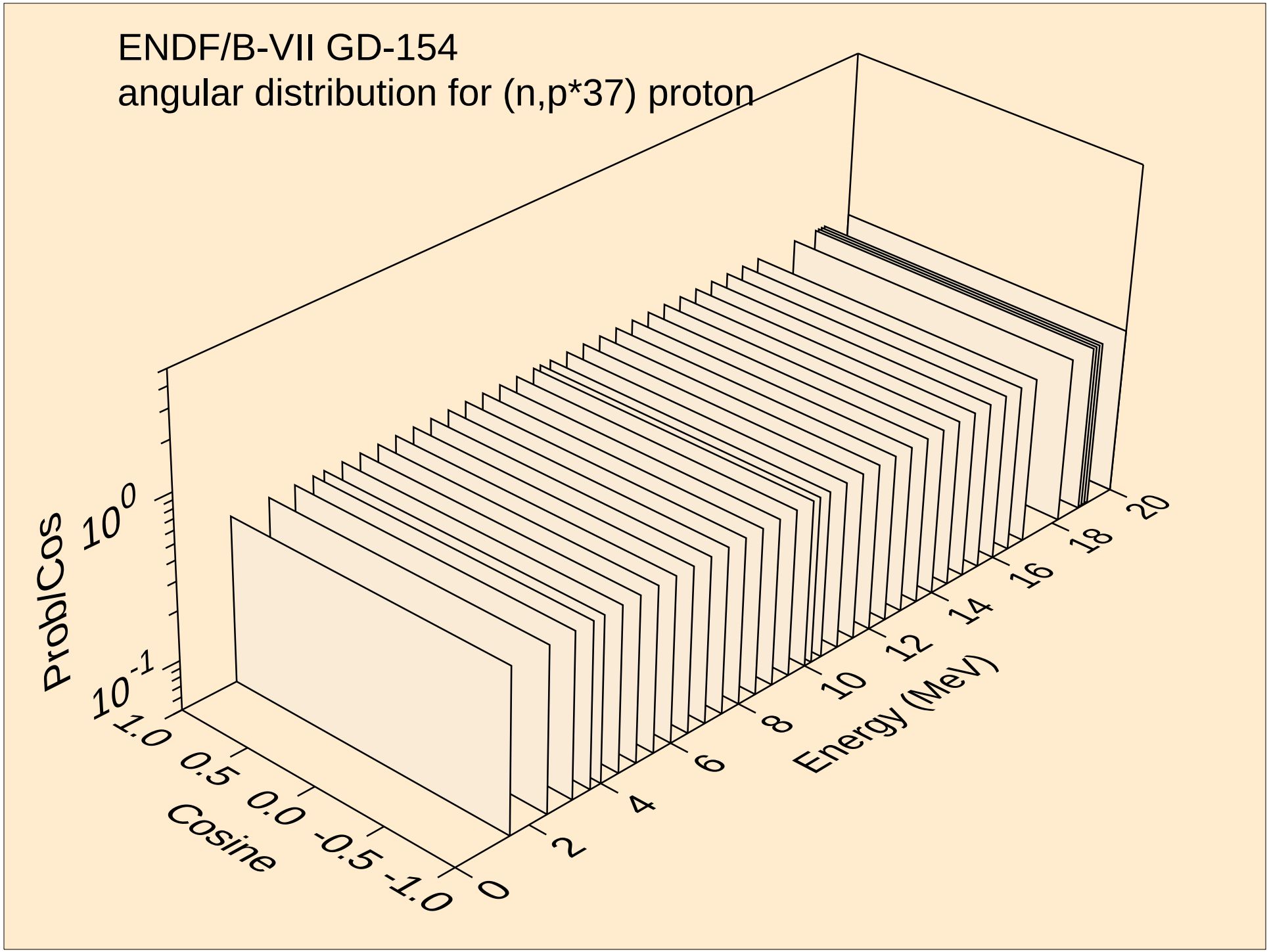

ENDF/B-VII GD-154
angular distribution for (n,p*32) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

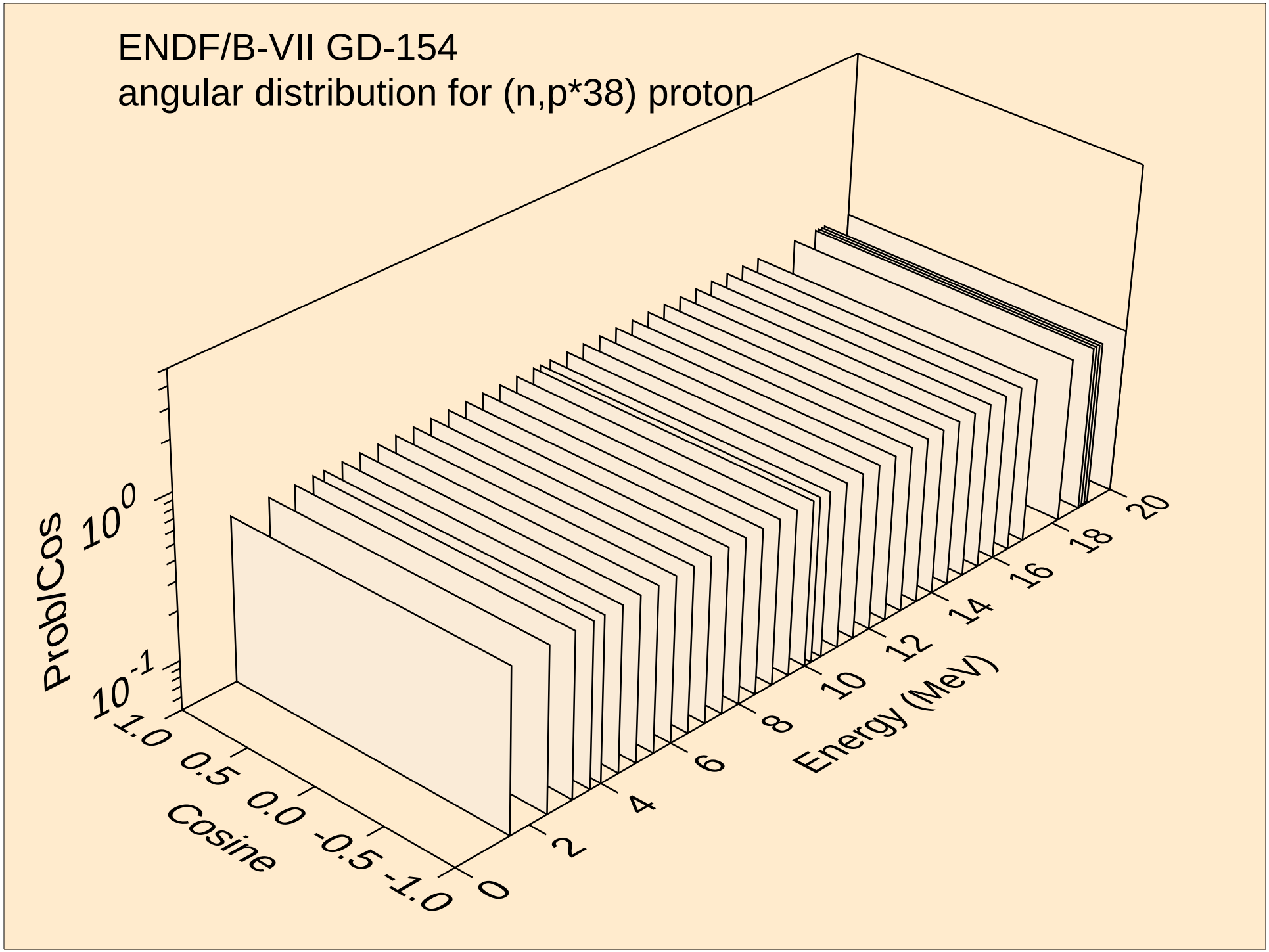

ENDF/B-VII GD-154
angular distribution for (n,p*33) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

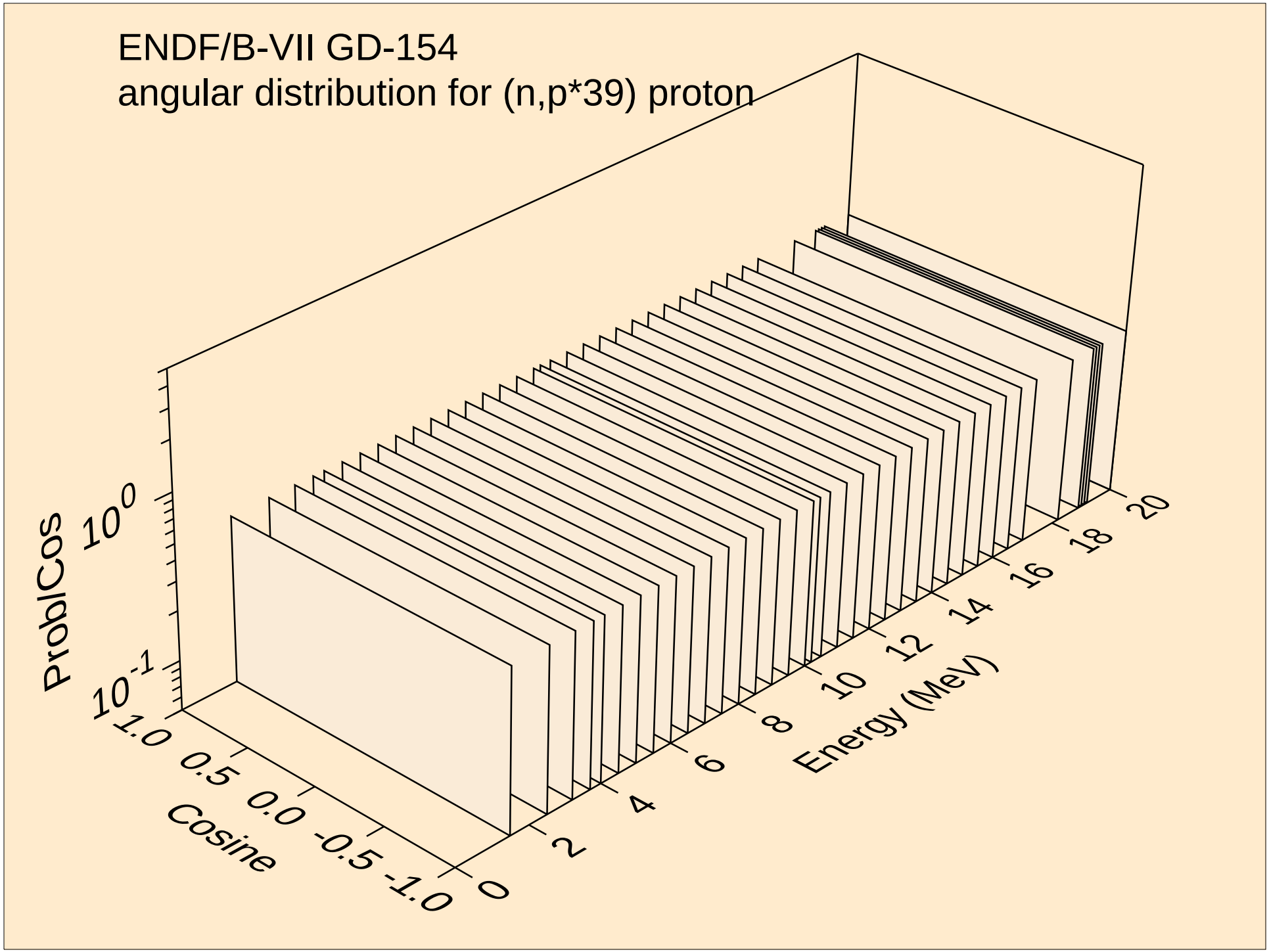

ENDF/B-VII GD-154
angular distribution for (n,p*34) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

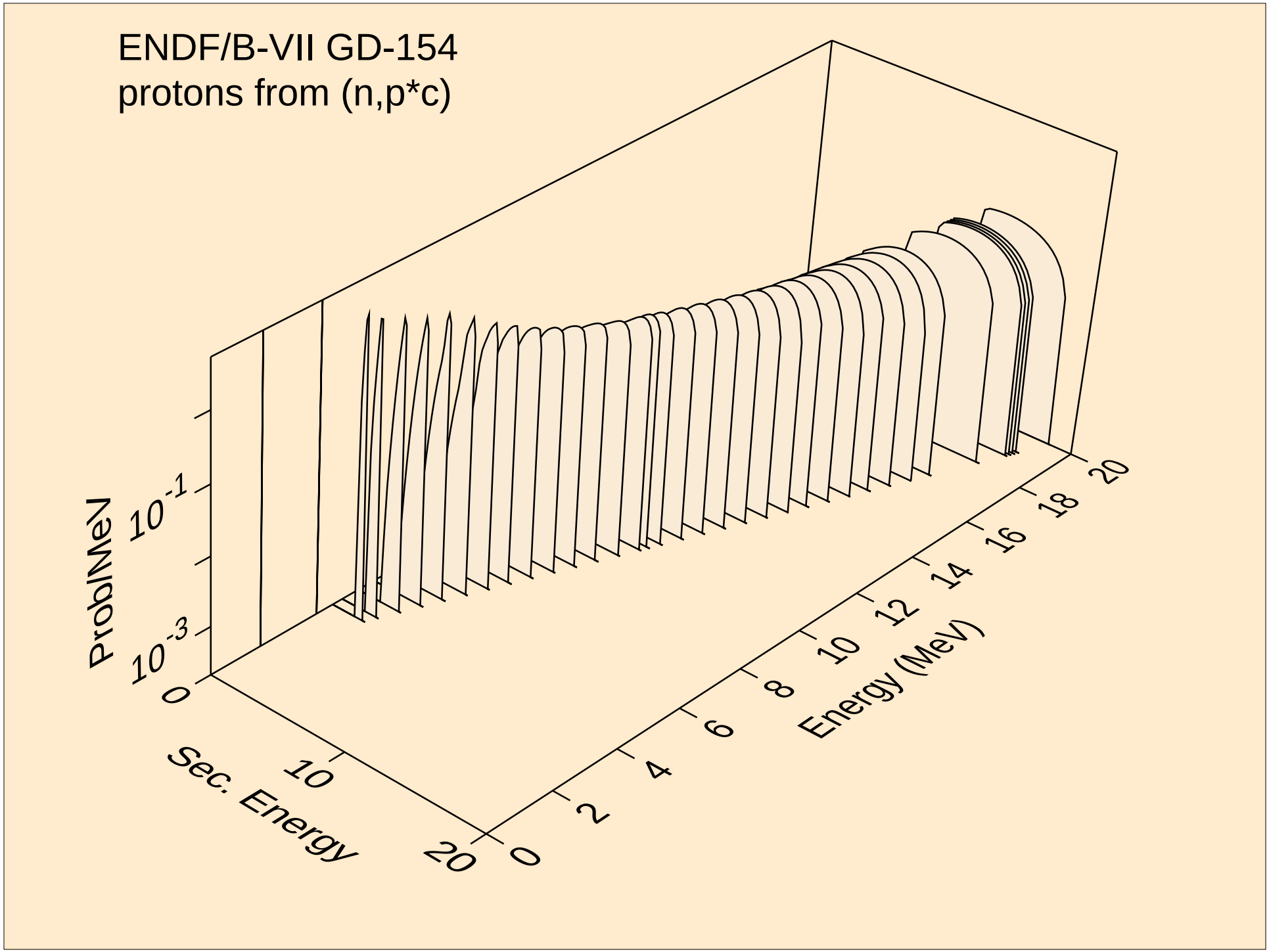

ENDF/B-VII GD-154
angular distribution for (n,p*35) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

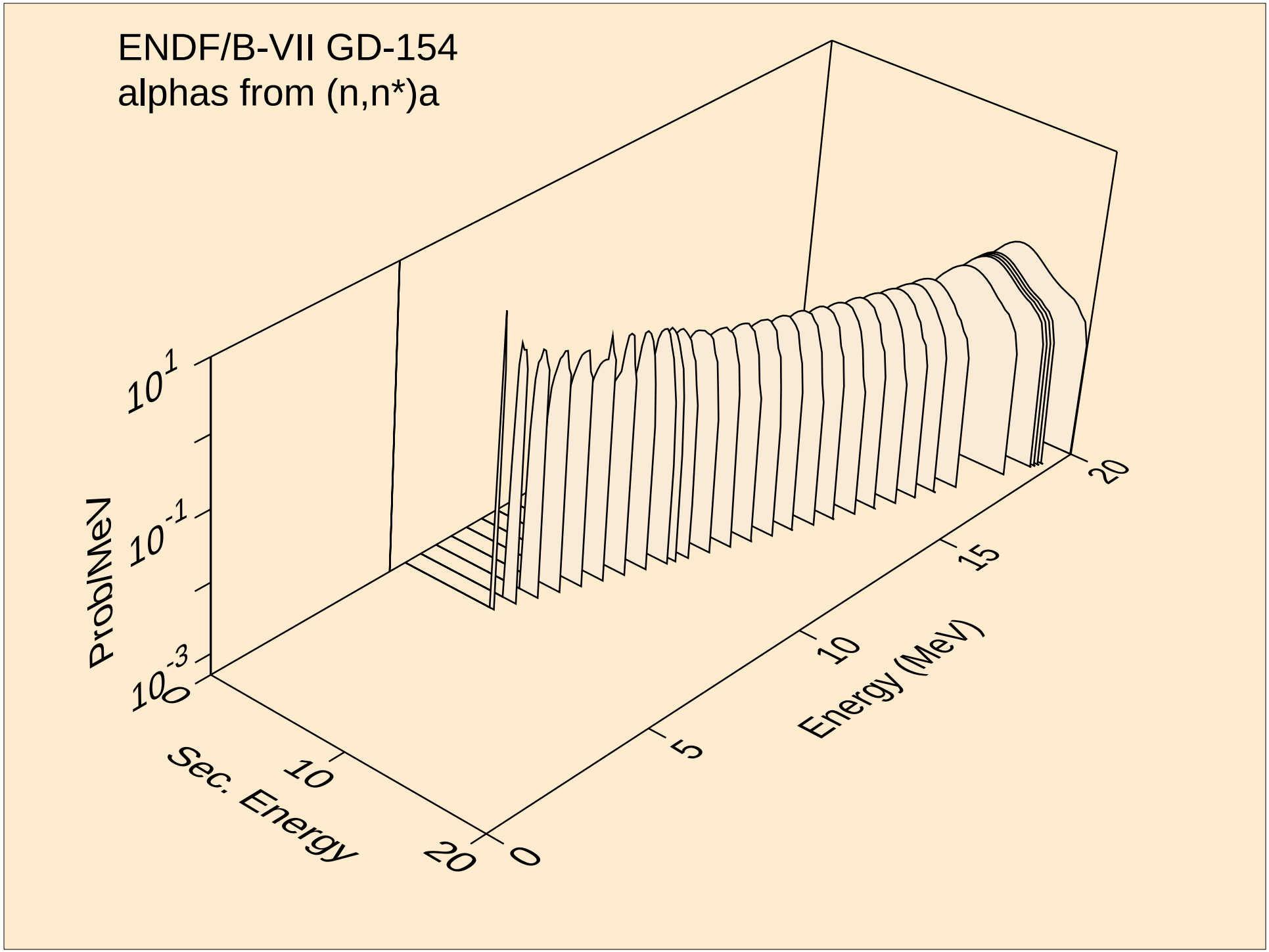

ENDF/B-VII GD-154
angular distribution for (n,p*36) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

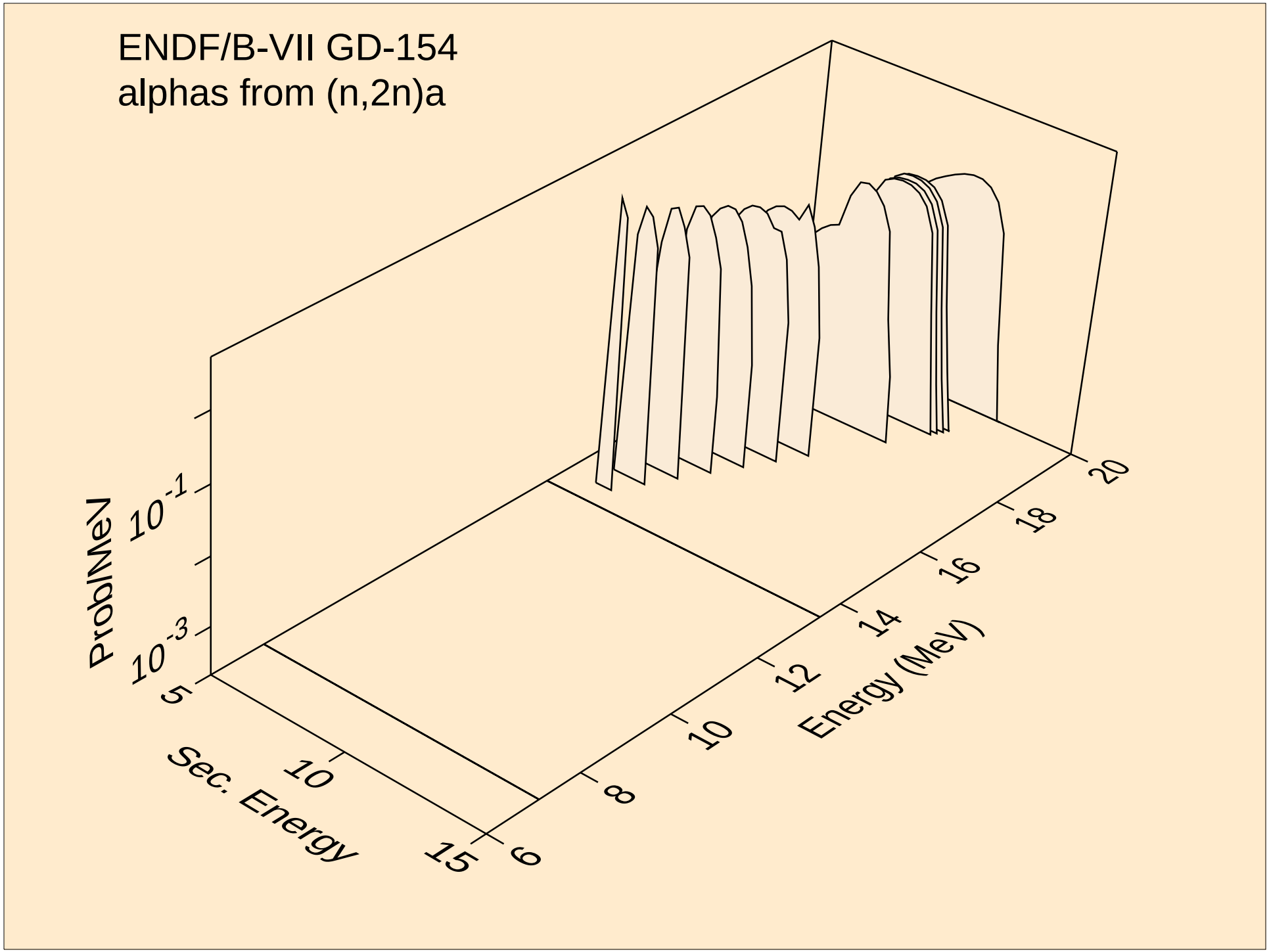

ENDF/B-VII GD-154
angular distribution for (n,p*37) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

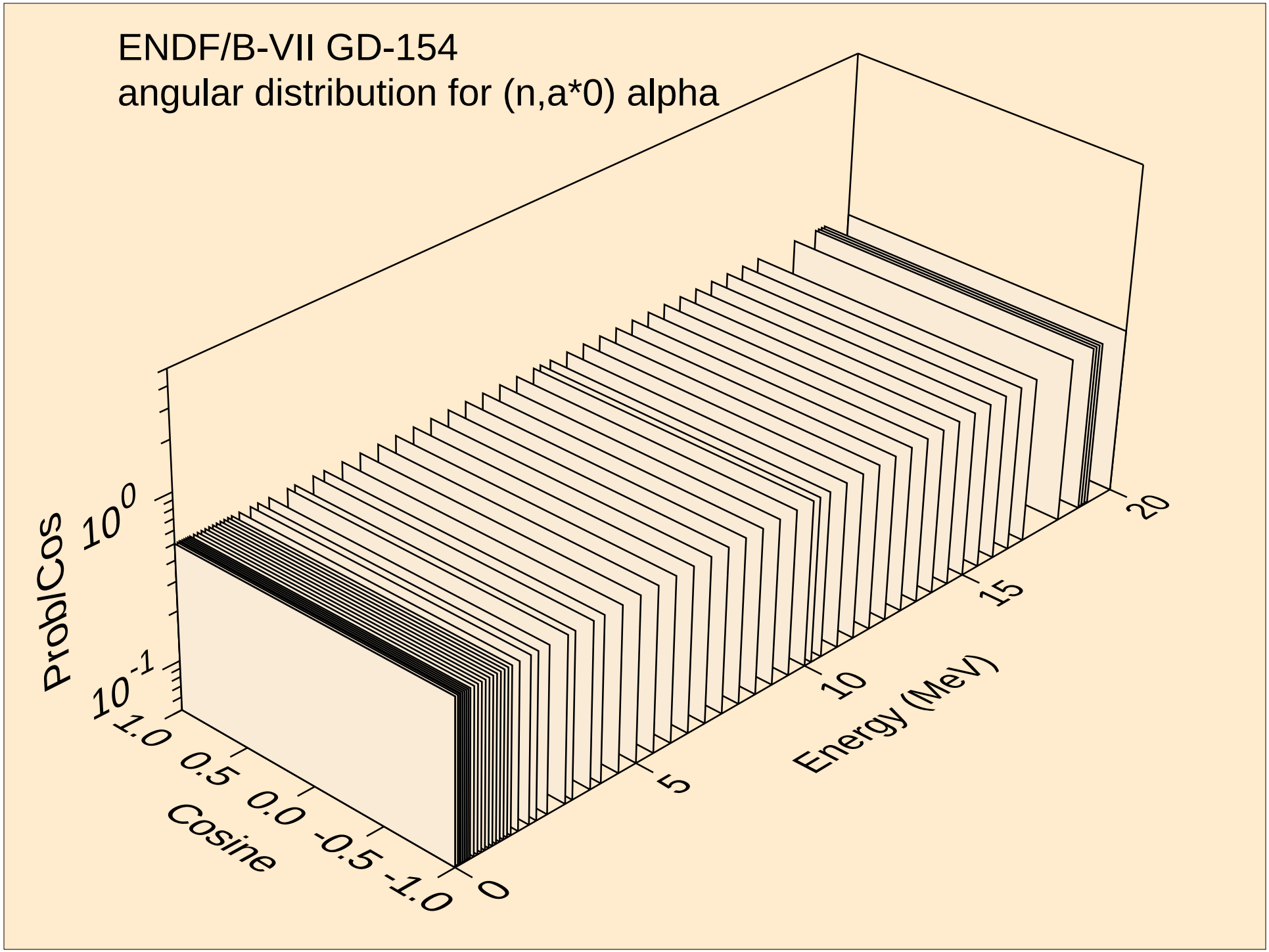

ENDF/B-VII GD-154
angular distribution for (n,p*38) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

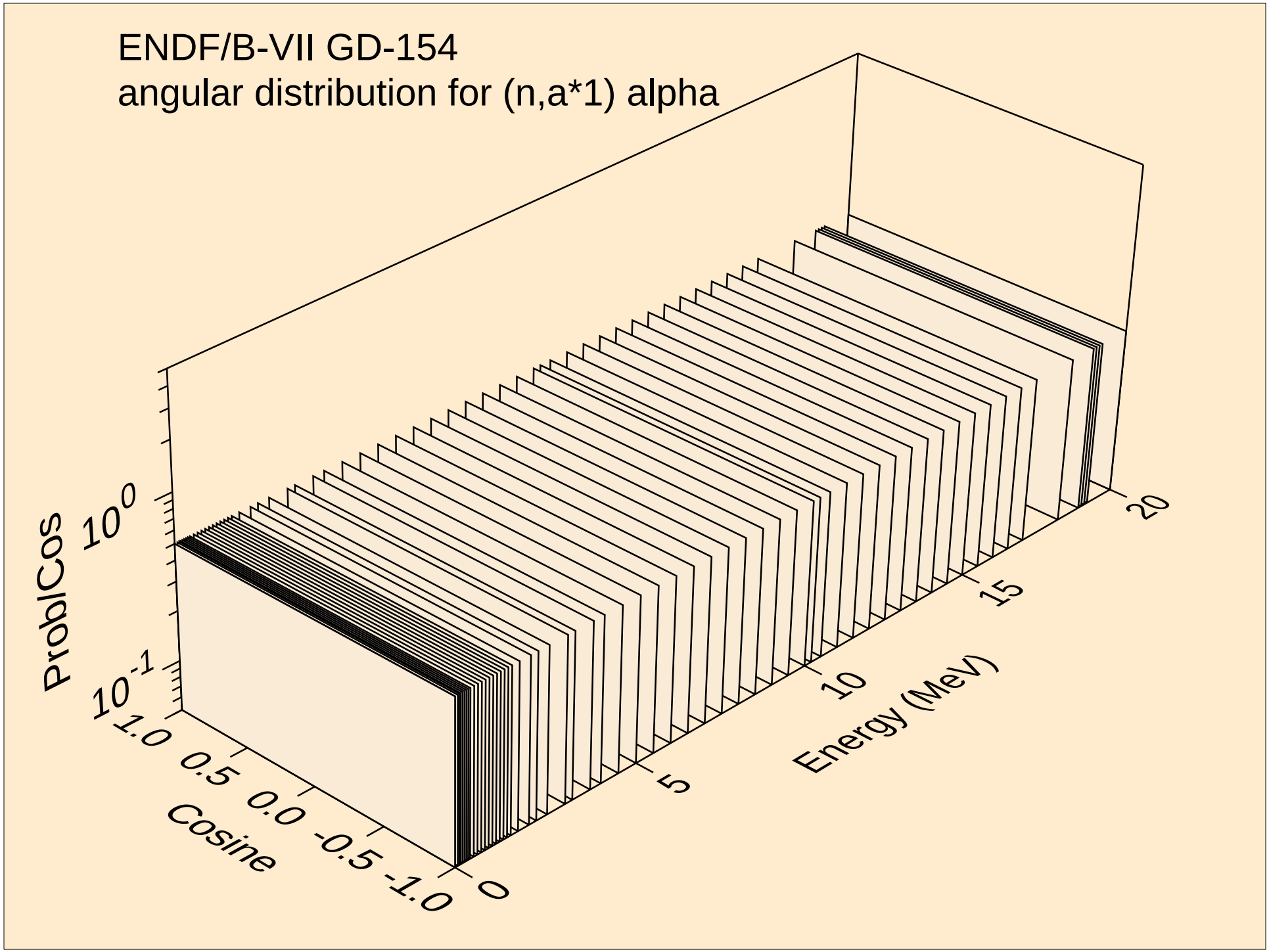

ENDF/B-VII GD-154
angular distribution for (n,p*39) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

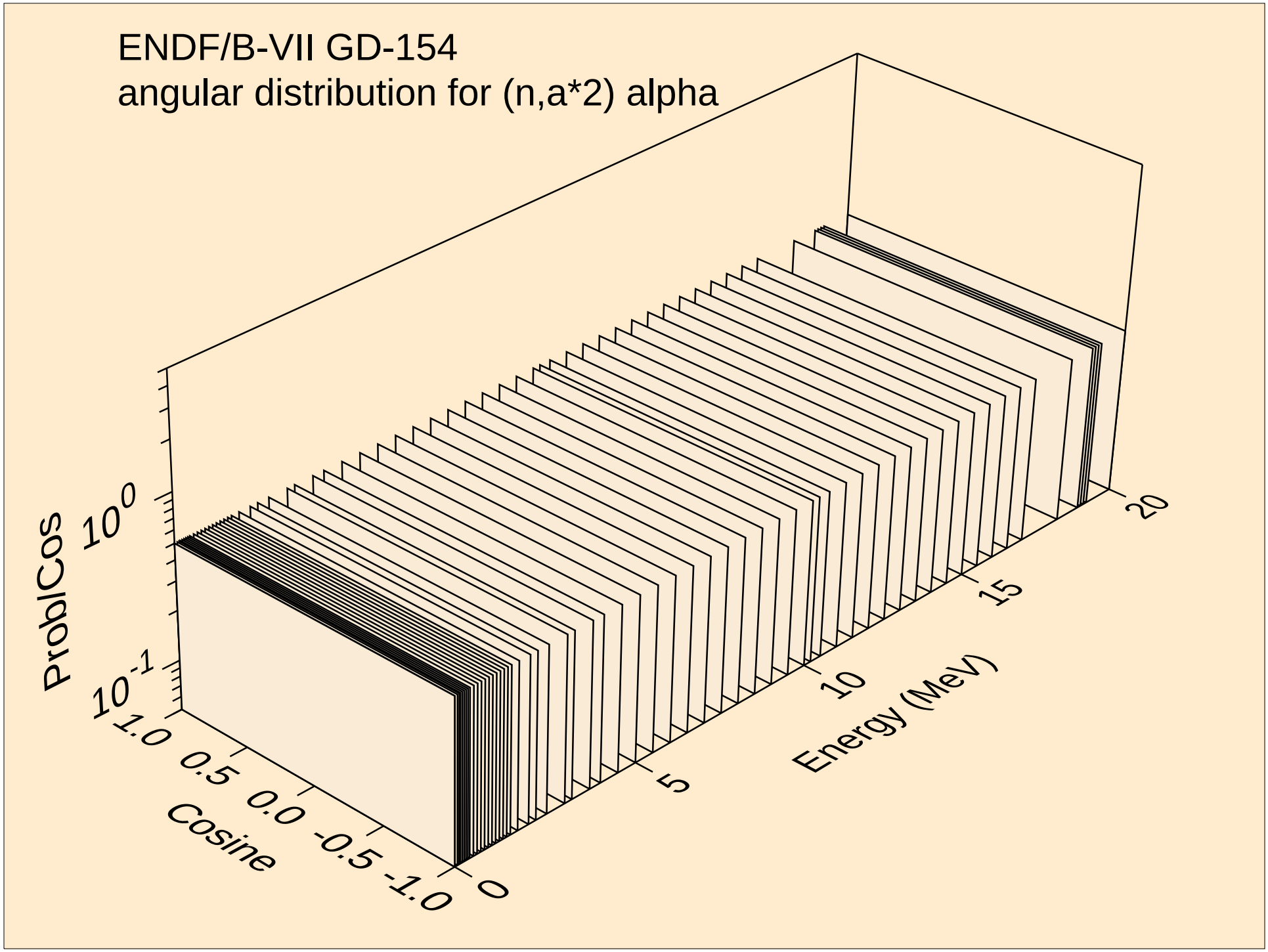

ENDF/B-VII GD-154
protons from (n,p*c)
Prob/MeV
10^-1
10^-3
0
Sec. Energy
10
20
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

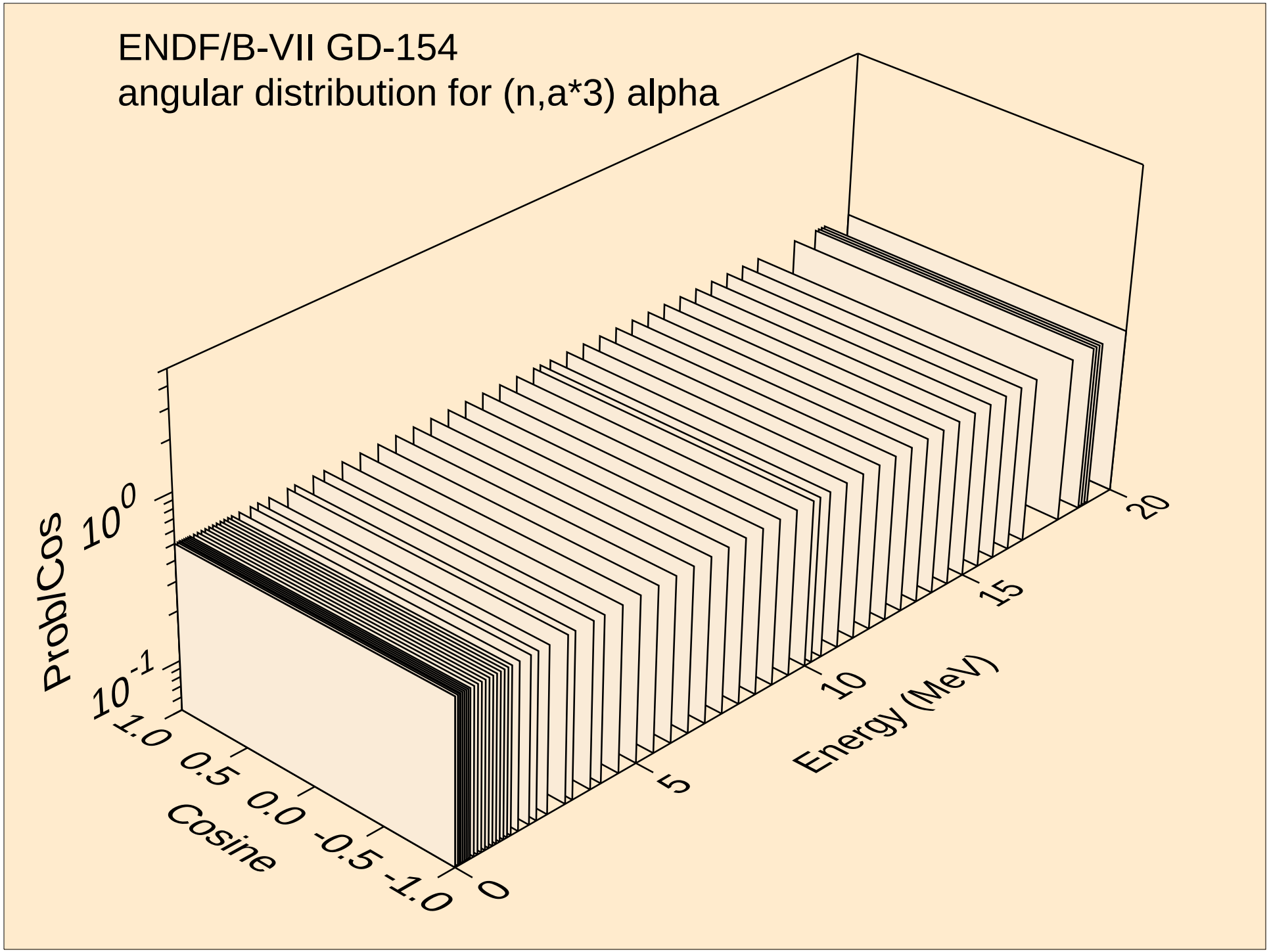

ENDF/B-VII GD-154
alphas from (n,n*)a
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
10
20
Sec. Energy
0
5
10
15
20
Energy (MeV)

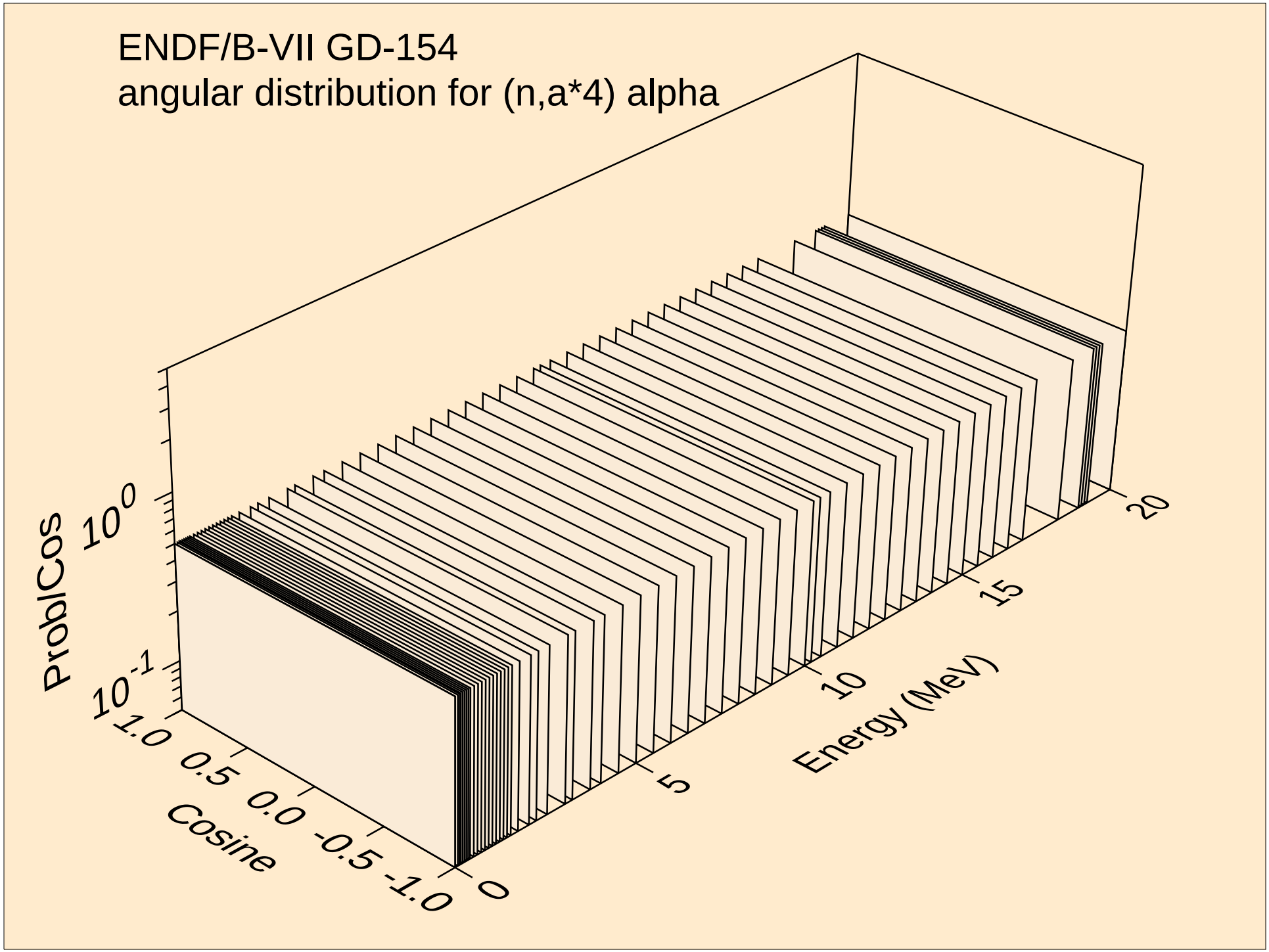

ENDF/B-VII GD-154
alphas from (n,2n)a
Prob/MeV
10^{-1}
10^{-3}
5
10
15
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)

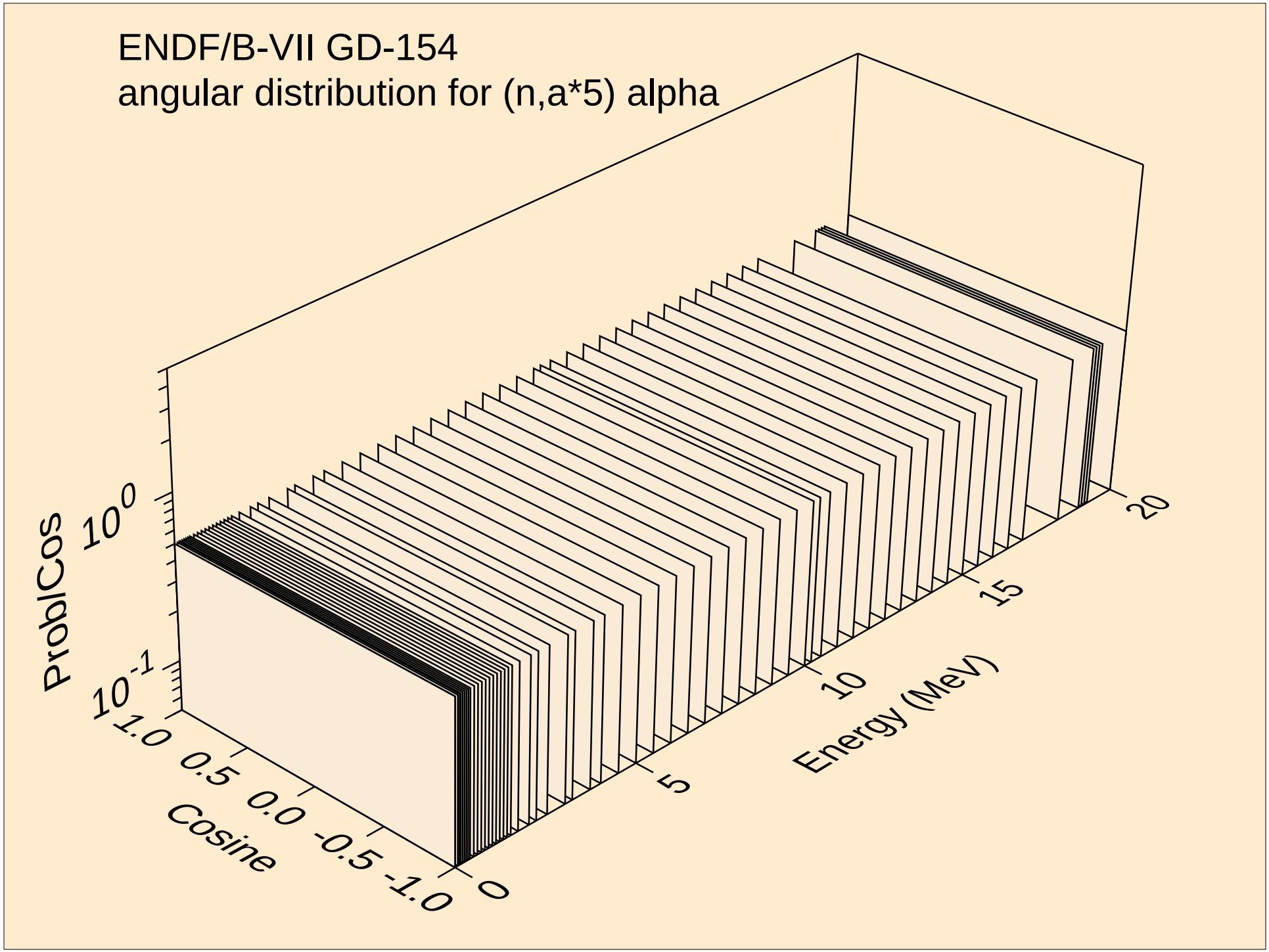

ENDF/B-VII GD-154
angular distribution for (n,a*0) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

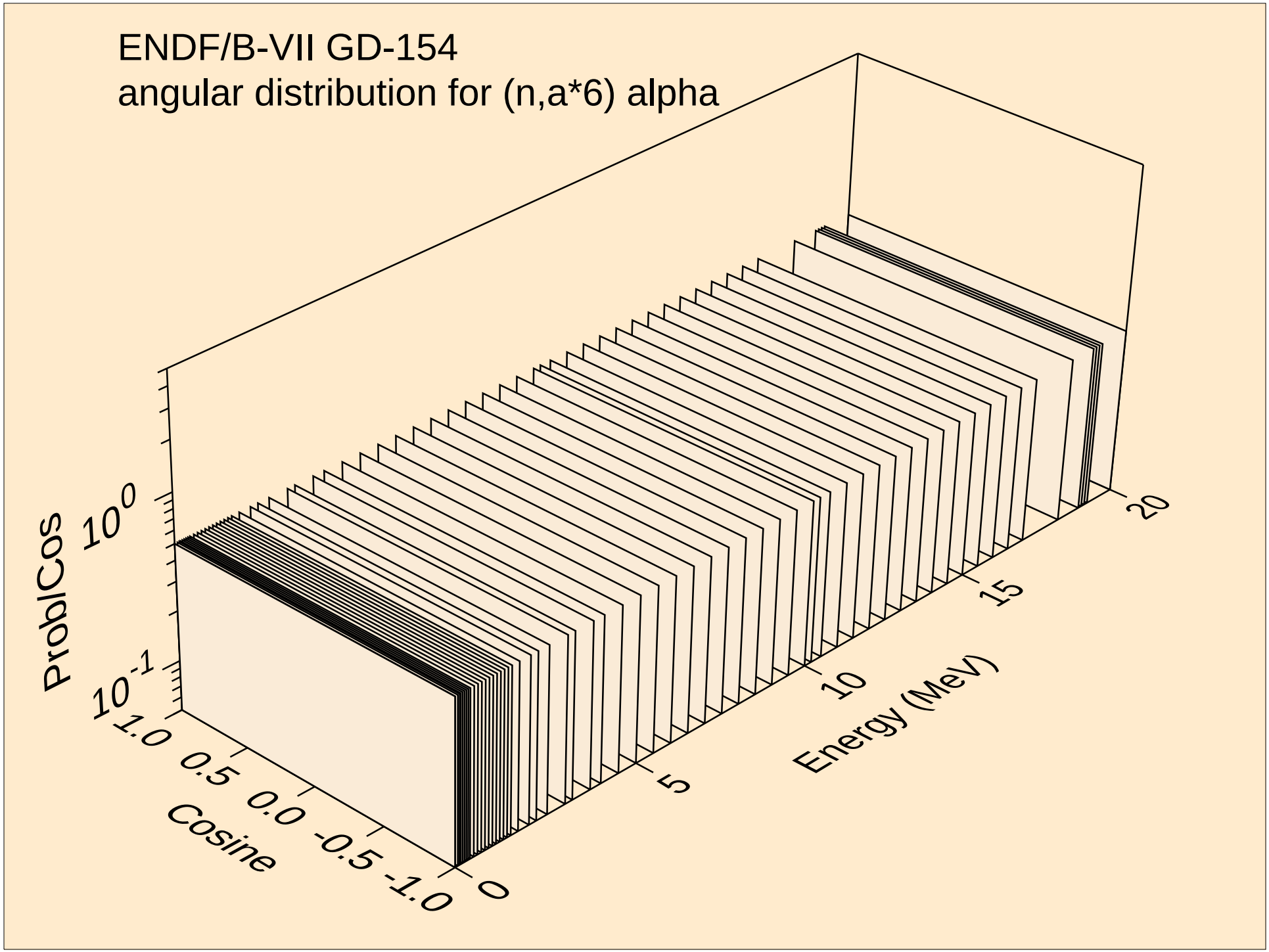

ENDF/B-VII GD-154
angular distribution for (n,a*1) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

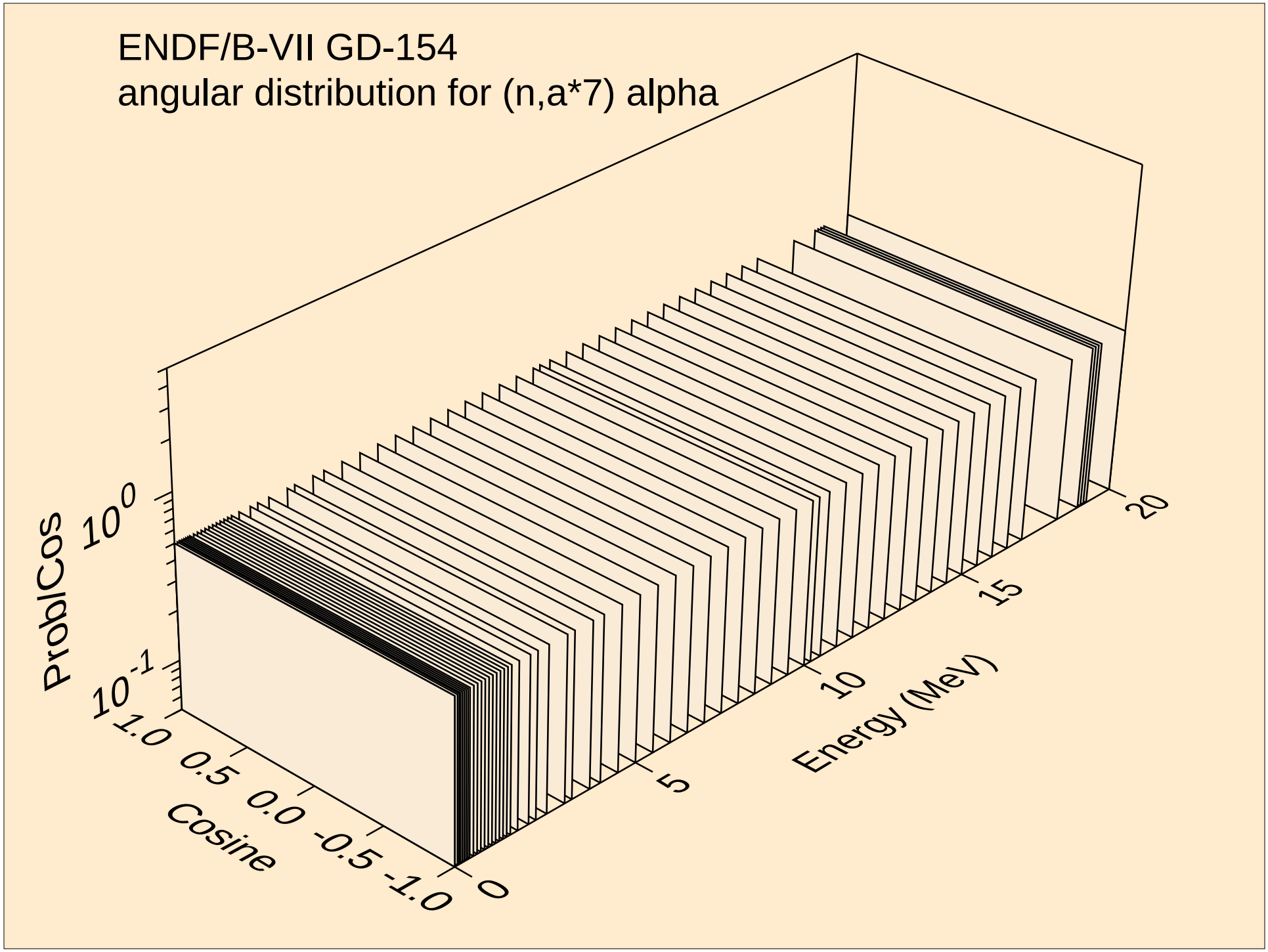

ENDF/B-VII GD-154
angular distribution for (n,a*2) alpha
ProblCos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

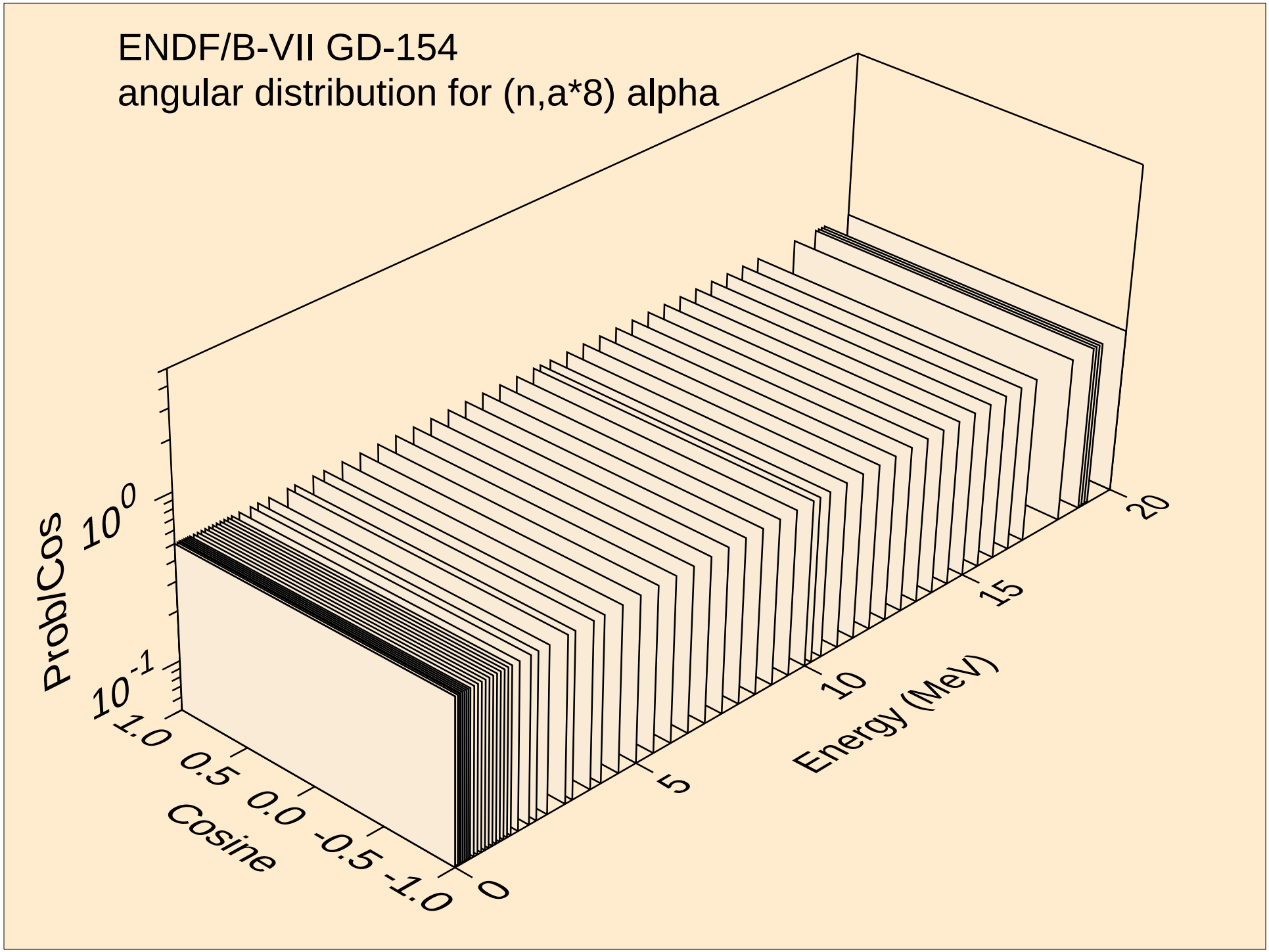

ENDF/B-VII GD-154
angular distribution for (n,a*3) alpha
ProblCos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

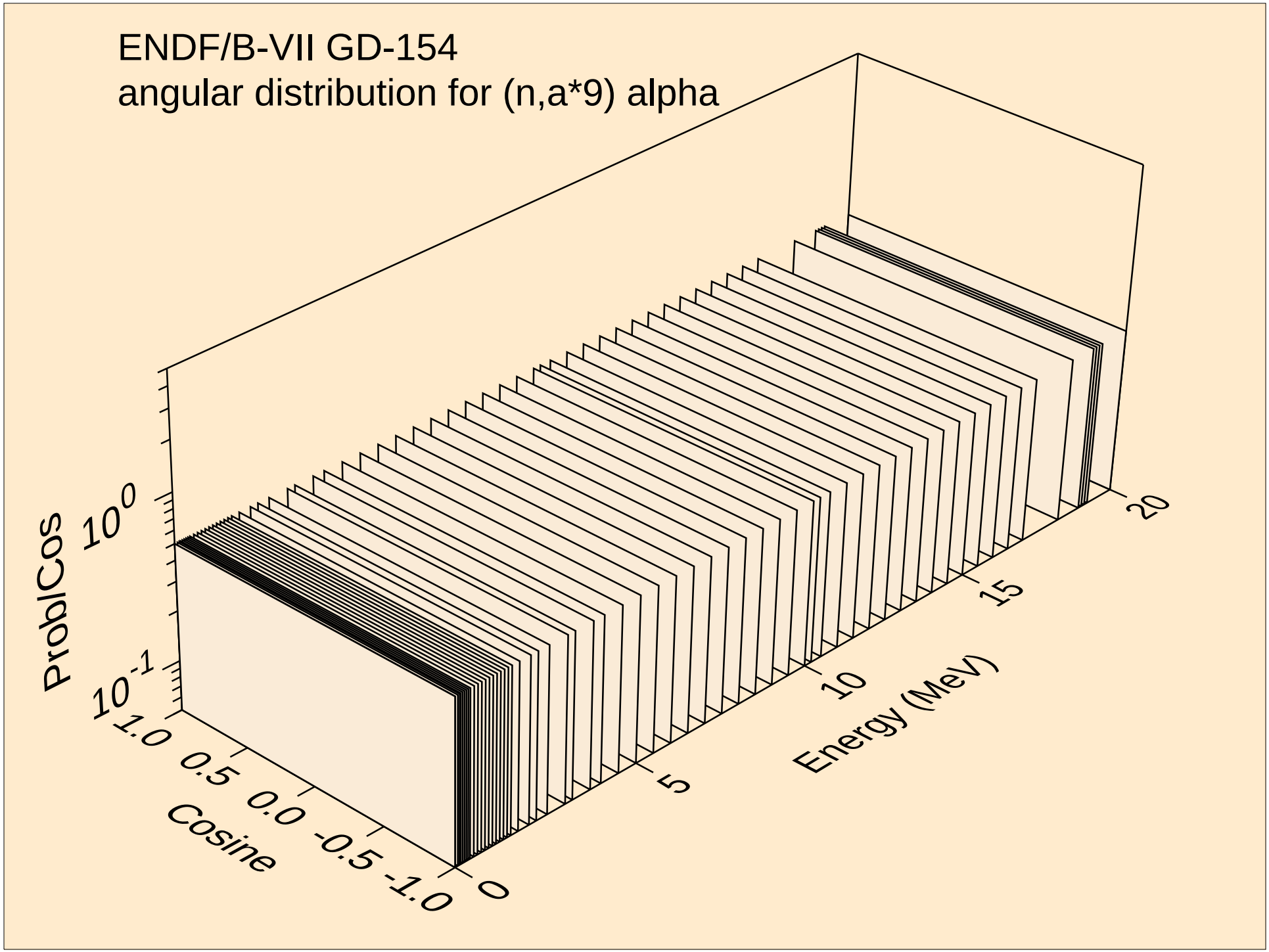

ENDF/B-VII GD-154
angular distribution for (n,a*4) alpha
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

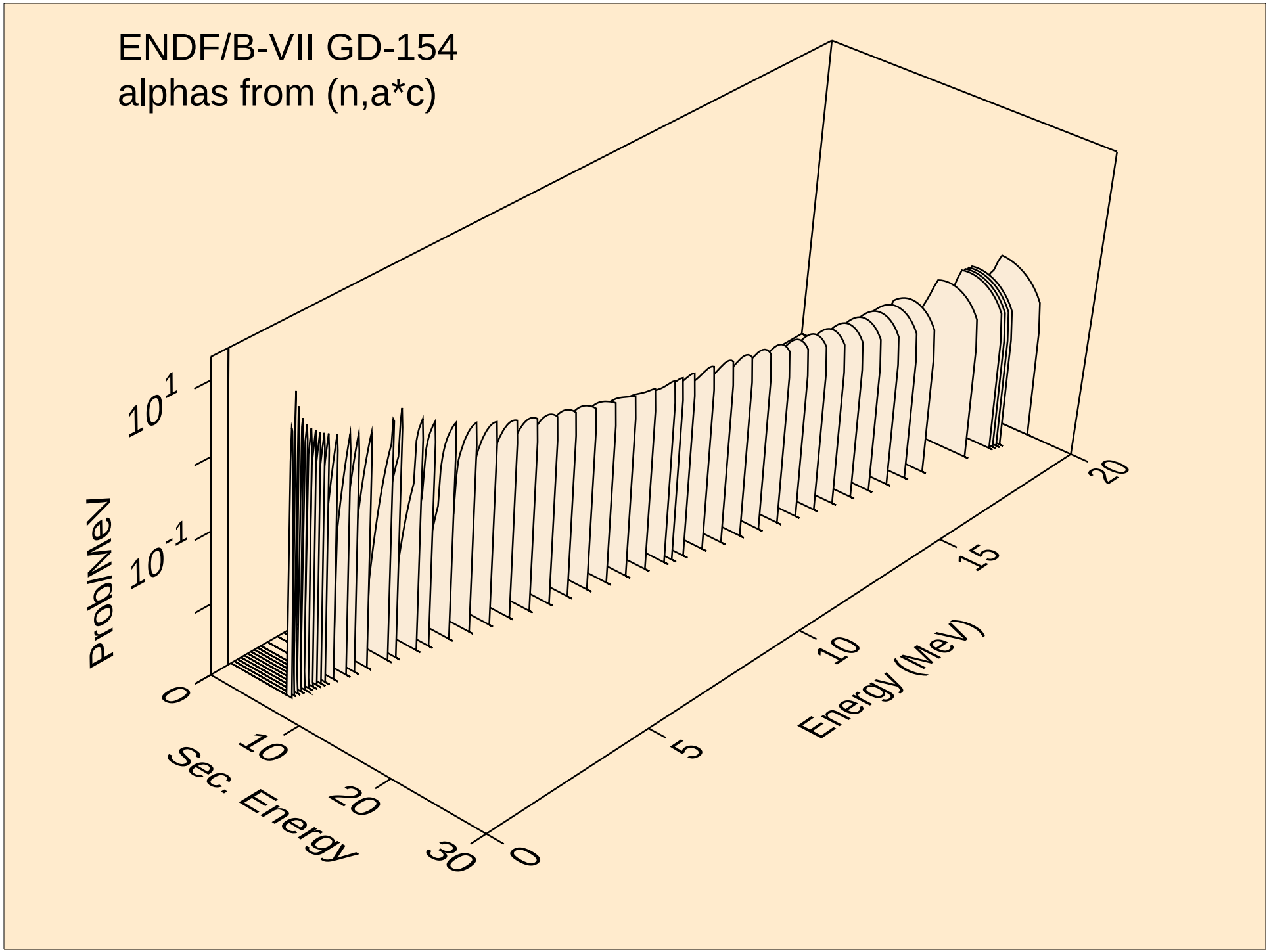

ENDF/B-VII GD-154
angular distribution for (n,a*5) alpha
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)


ENDF/B-VII GD-154
angular distribution for (n,a*6) alpha
ProblCos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)


ENDF/B-VII GD-154
angular distribution for (n,a*7) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)


ENDF/B-VII GD-154
angular distribution for (n,a*8) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)


ENDF/B-VII GD-154
angular distribution for (n,a*9) alpha
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)


ENDF/B-VII GD-154
alphas from (n,a*c)
Prob/MeV
10^{1}
10^{-1}
0
10
20
30
Sec. Energy
0
5
10
15
20
Energy (MeV)