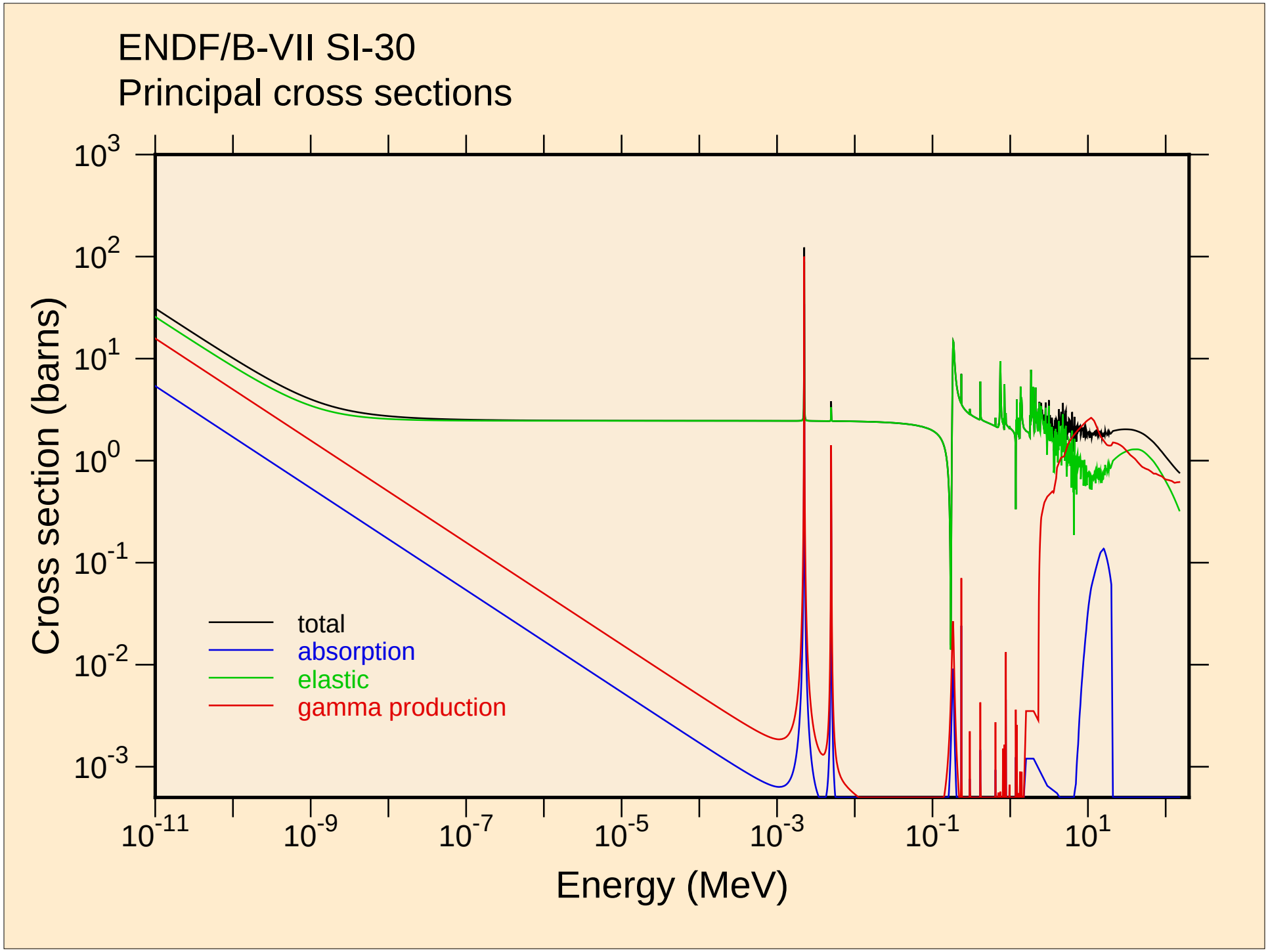
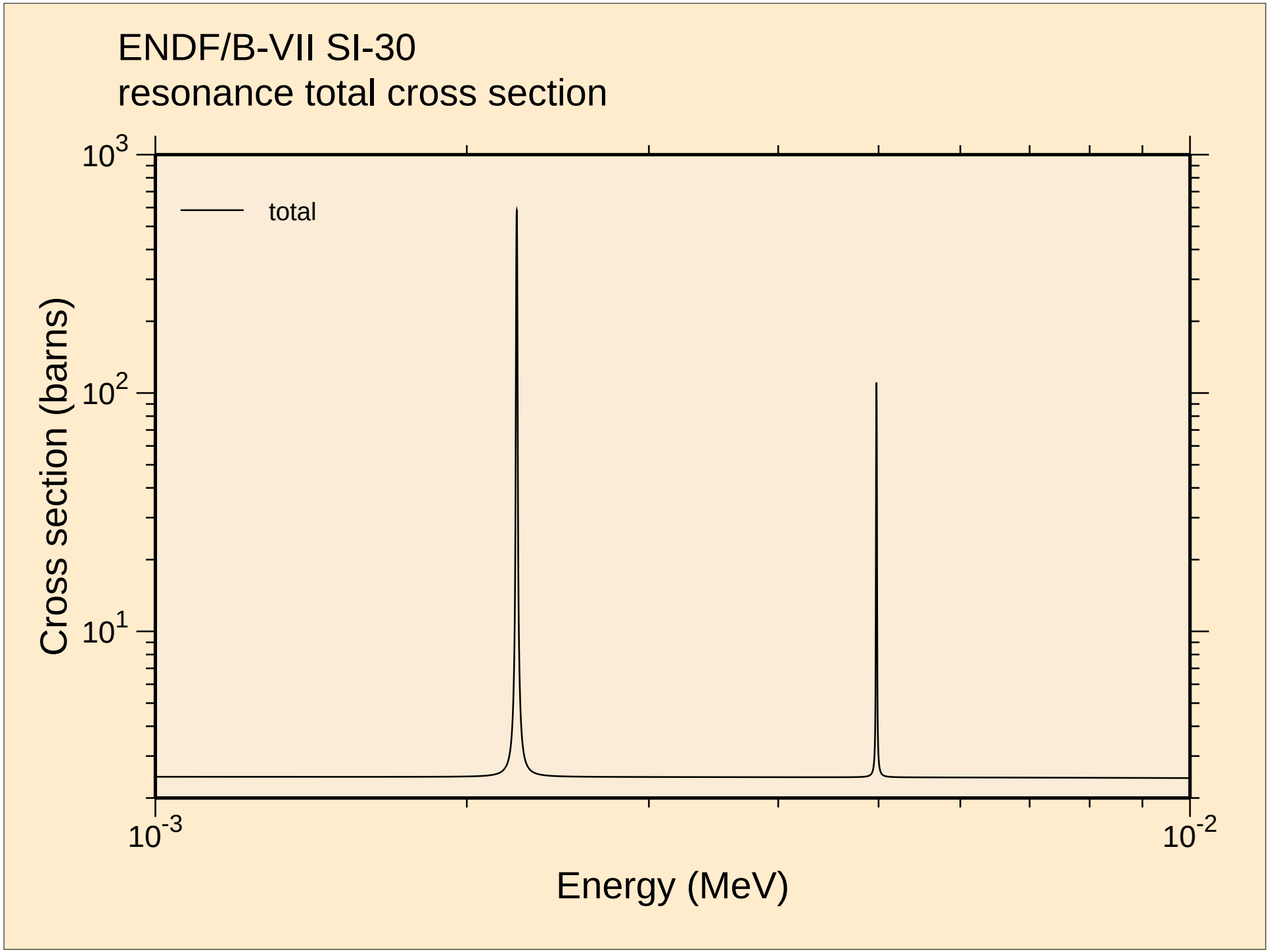
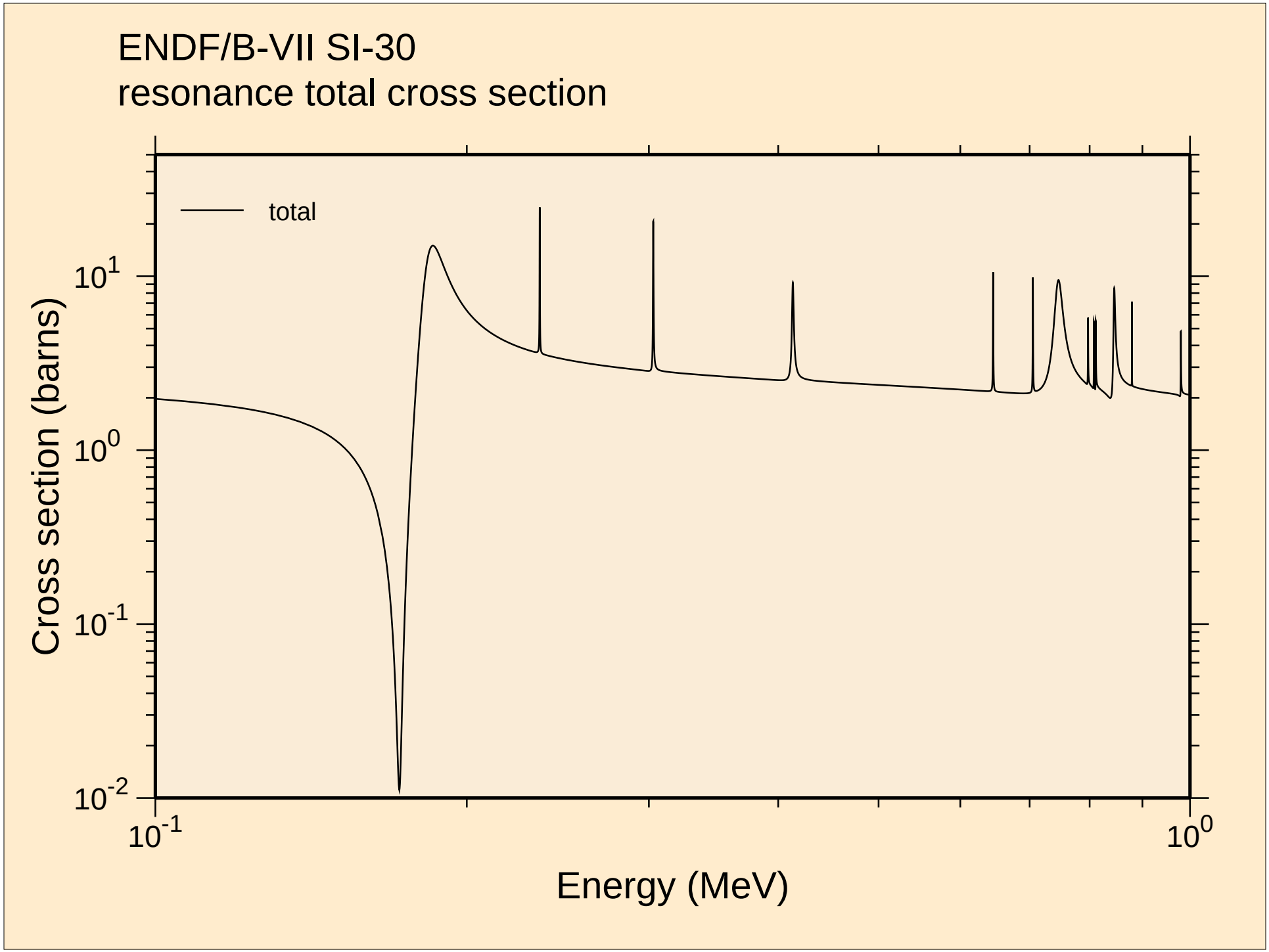
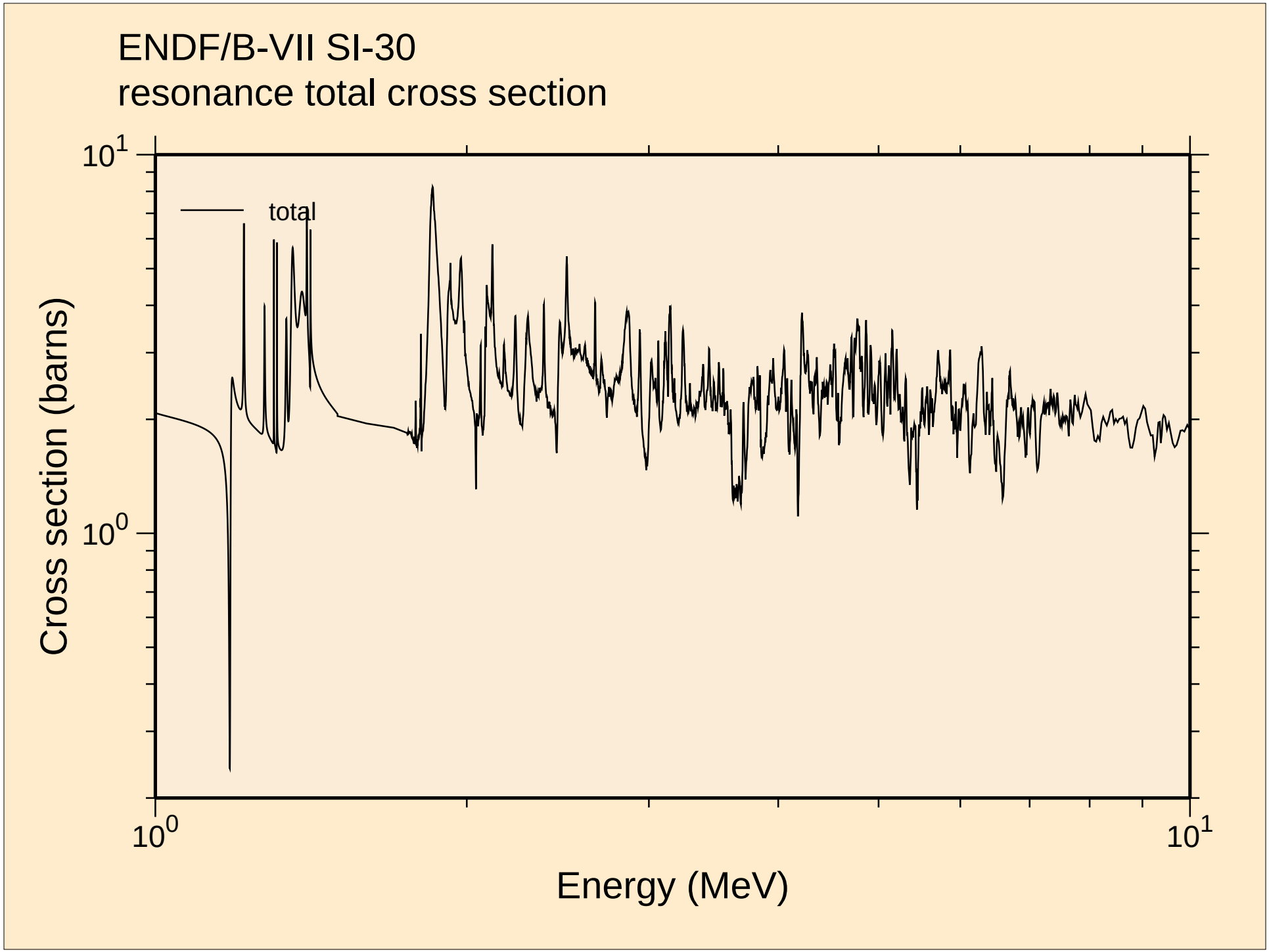
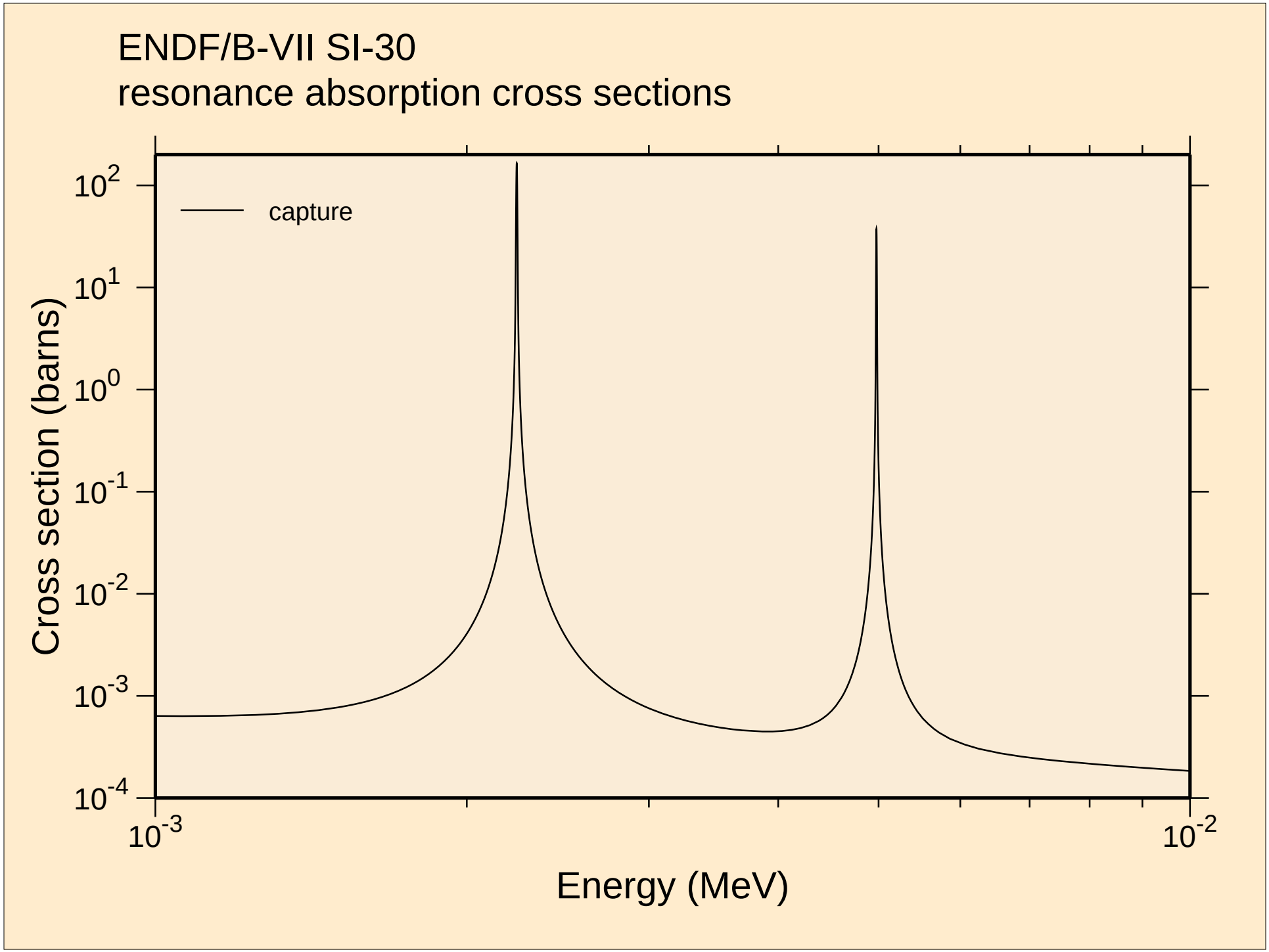

ENDF/B-VII SI-30
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production

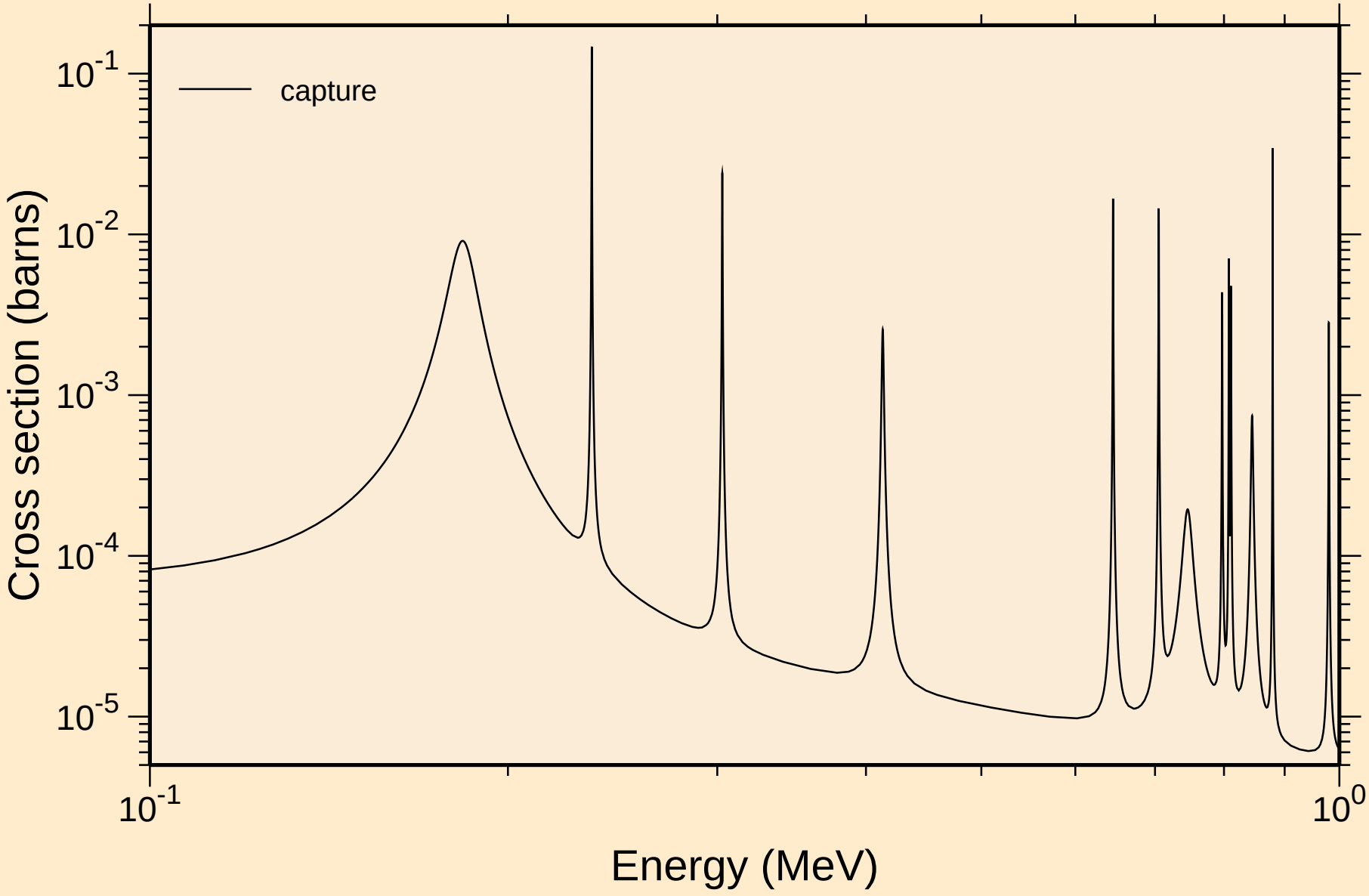

ENDF/B-VII SI-30
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^{-3}
10^{-2}
Energy (MeV)

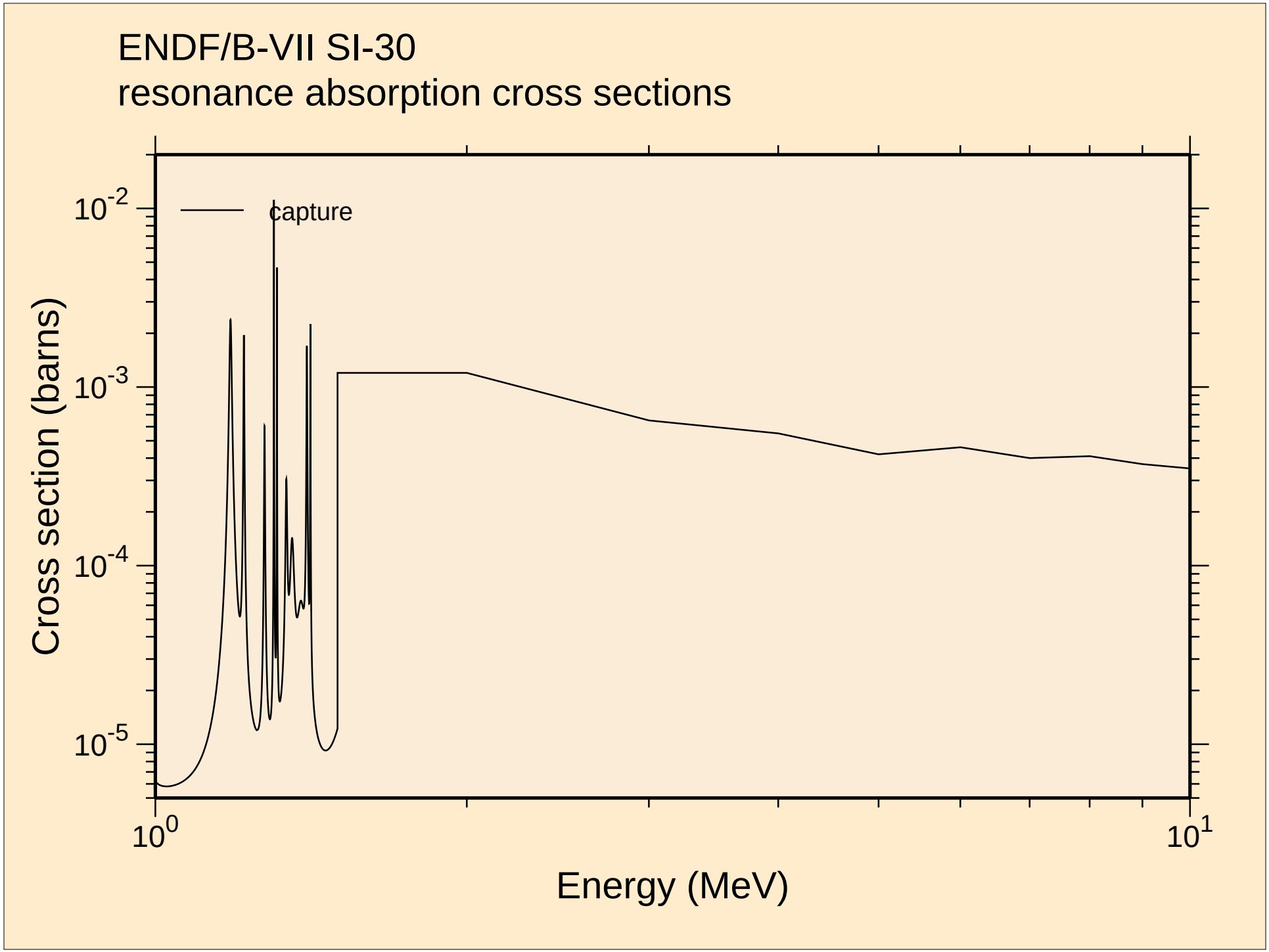

ENDF/B-VII SI-30
resonance total cross section
total
Cross section (barns)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-1}
10^{0}
Energy (MeV)

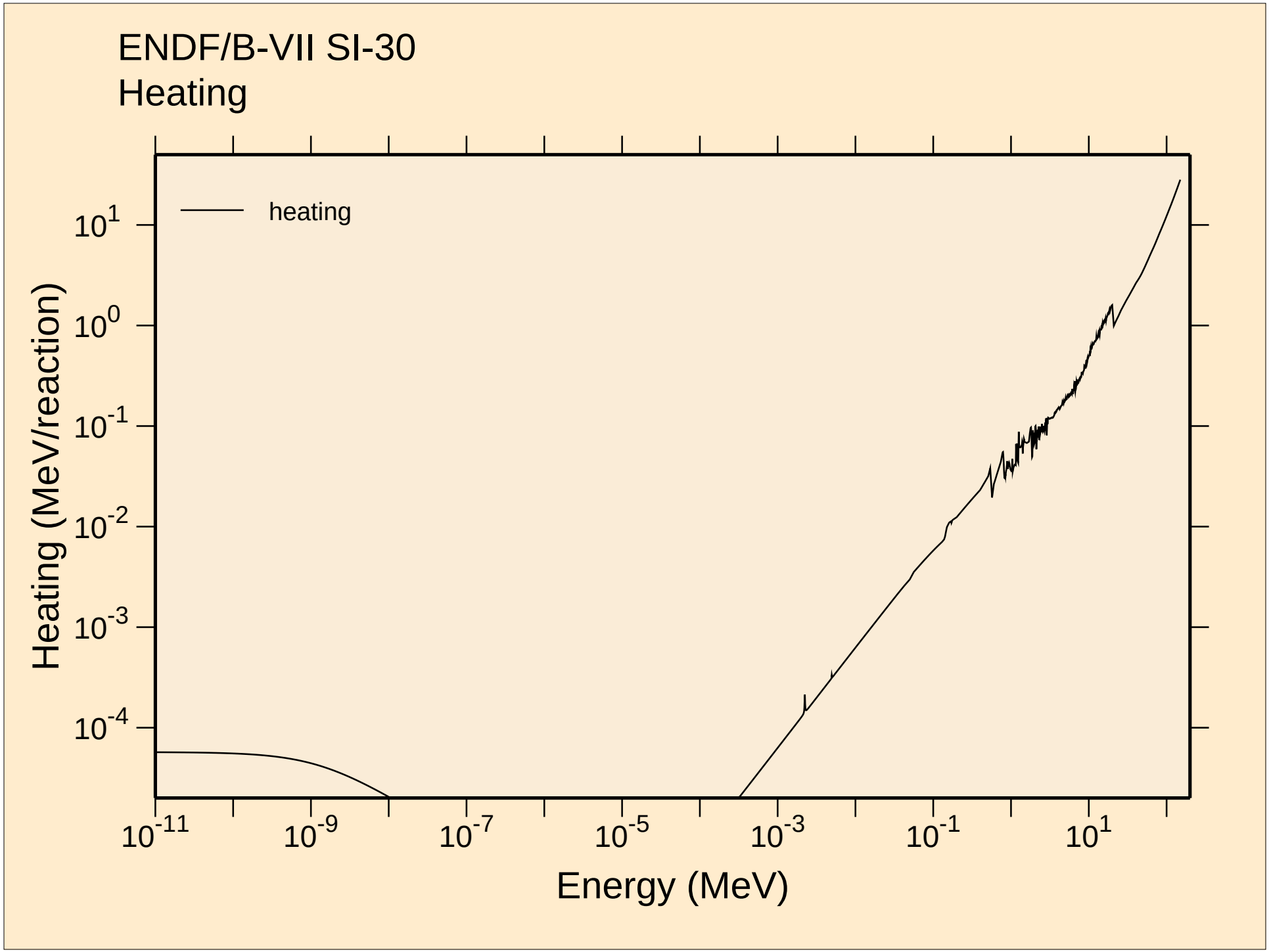

ENDF/B-VII SI-30
resonance total cross section
total
Cross section (barns)
10^1
10^0
10^0
10^1
Energy (MeV)

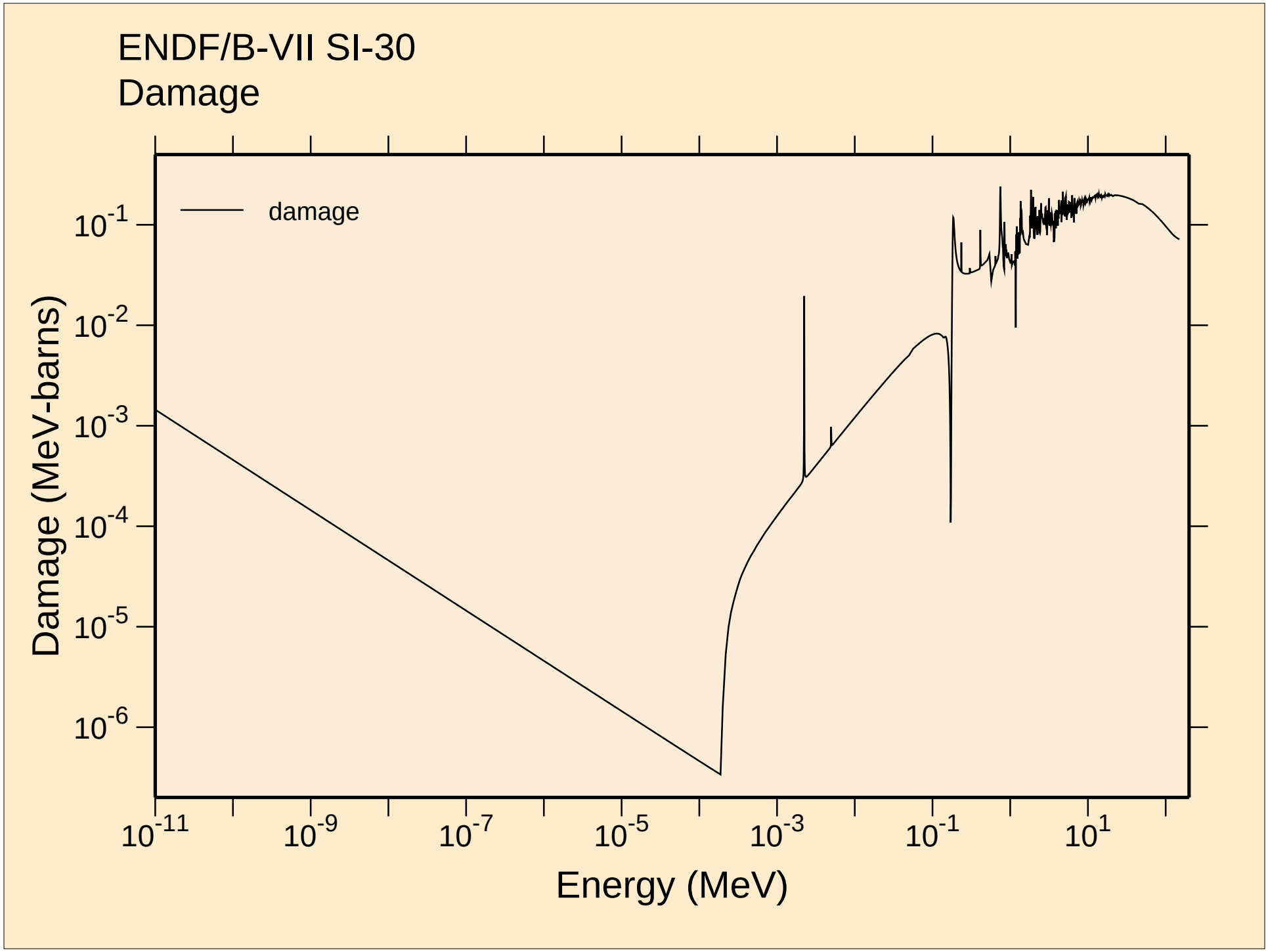

ENDF/B-VII SI-30
resonance absorption cross sections
capture
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-3}
10^{-2}
Energy (MeV)

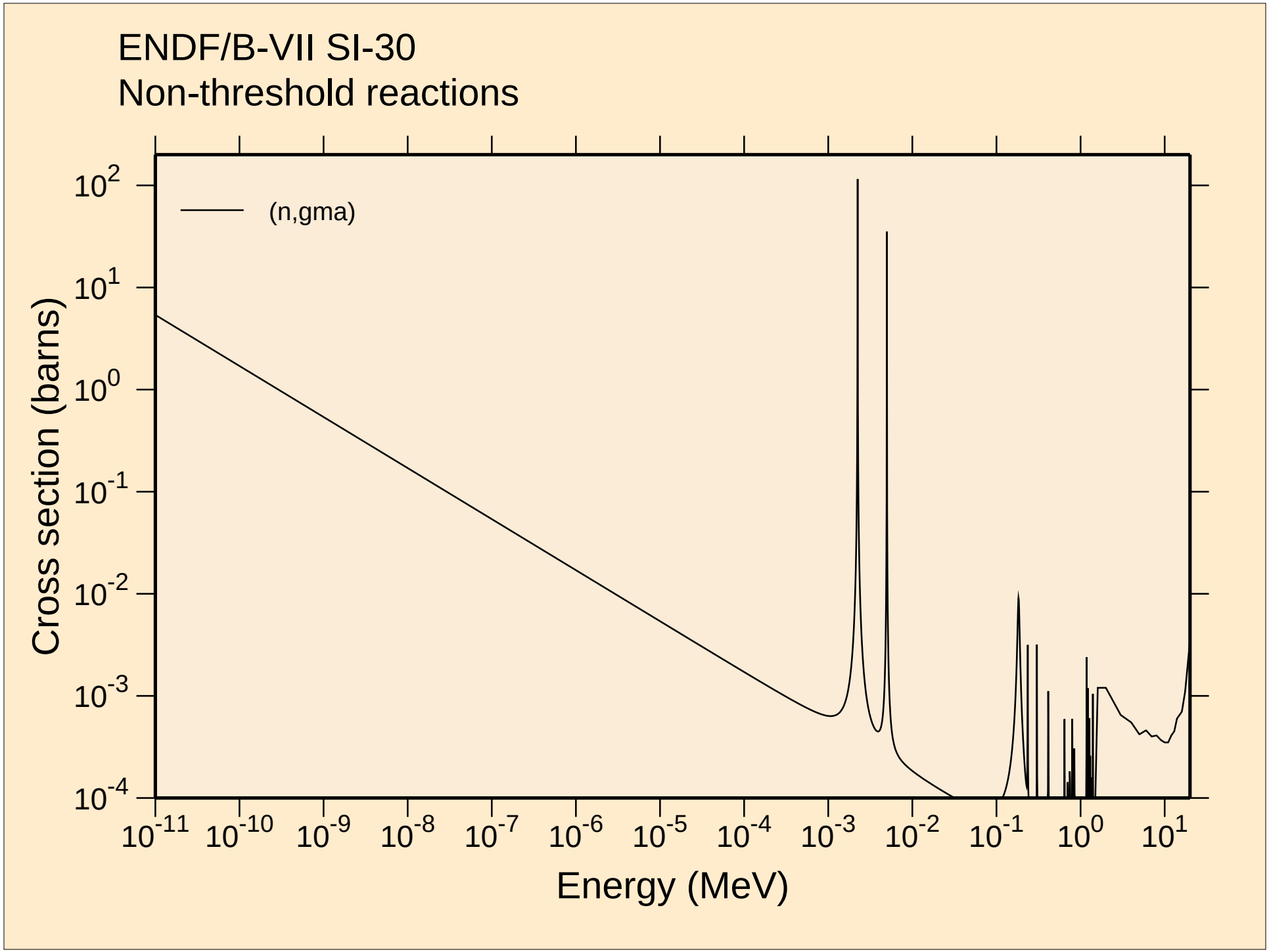
ENDF/B-VII SI-30
resonance absorption cross sections

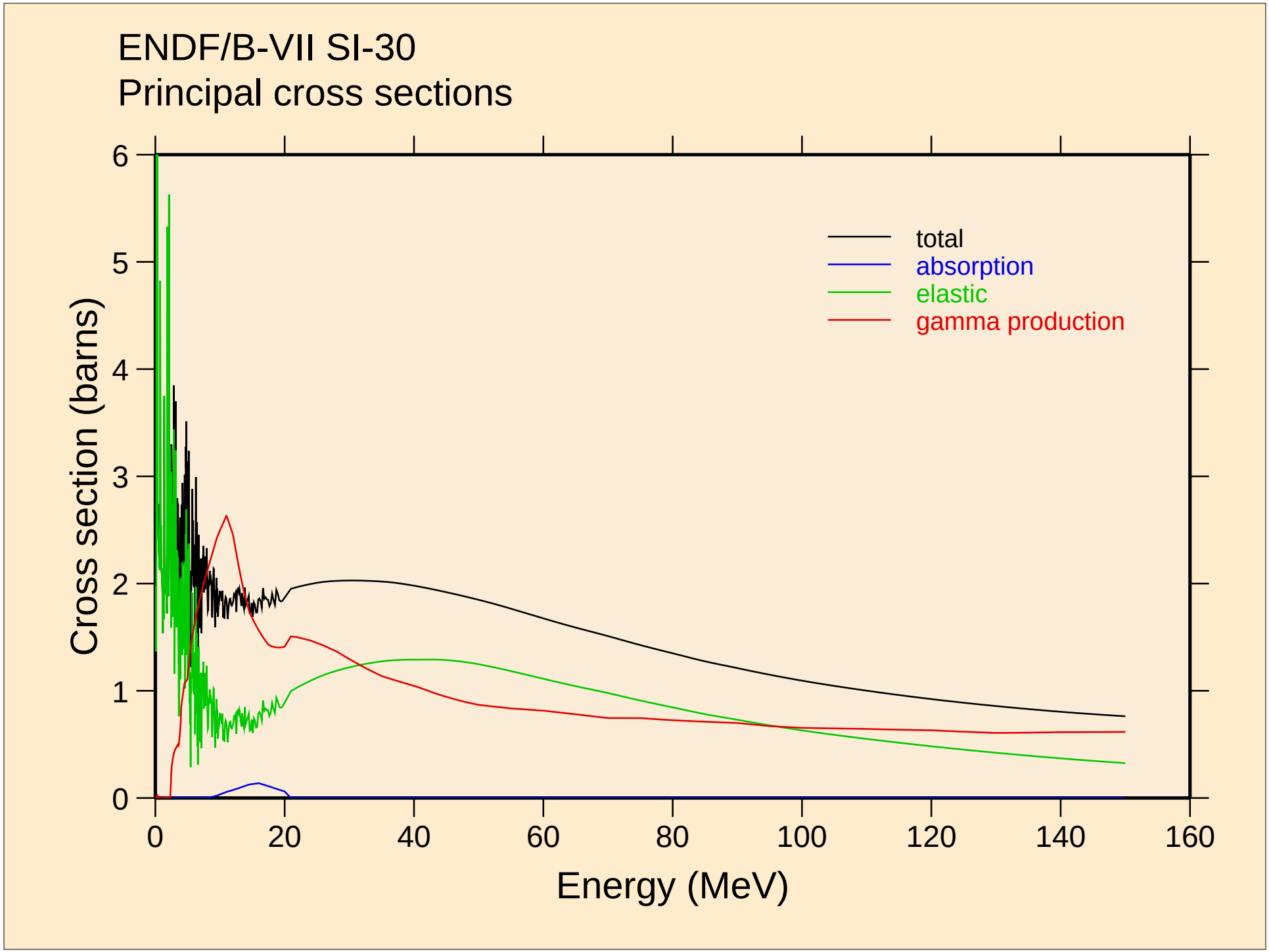


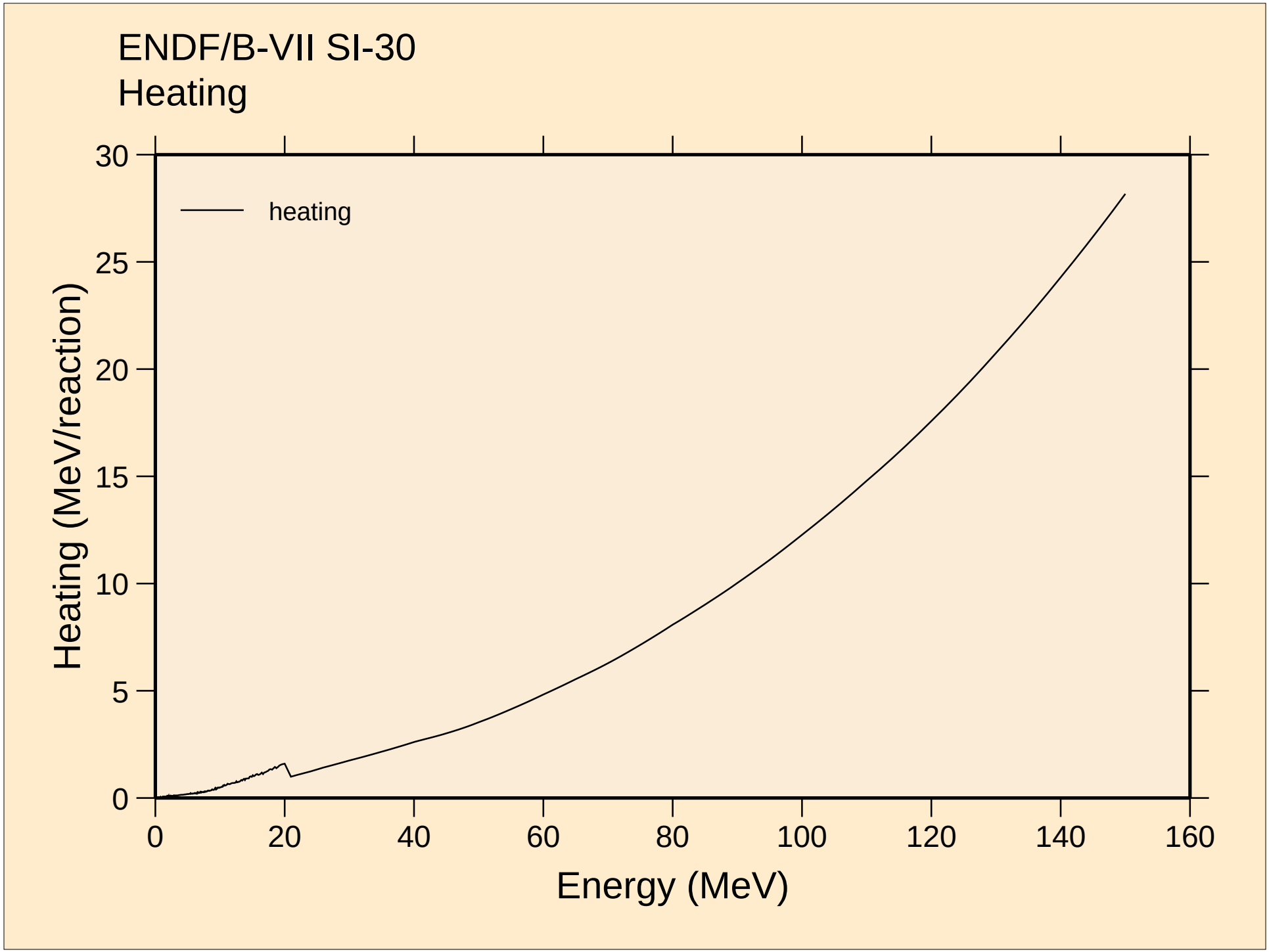

ENDF/B-VII SI-30
resonance absorption cross sections
capture
Cross section (barns)
10-2
10-3
10-4
10-5
100
101
Energy (MeV)

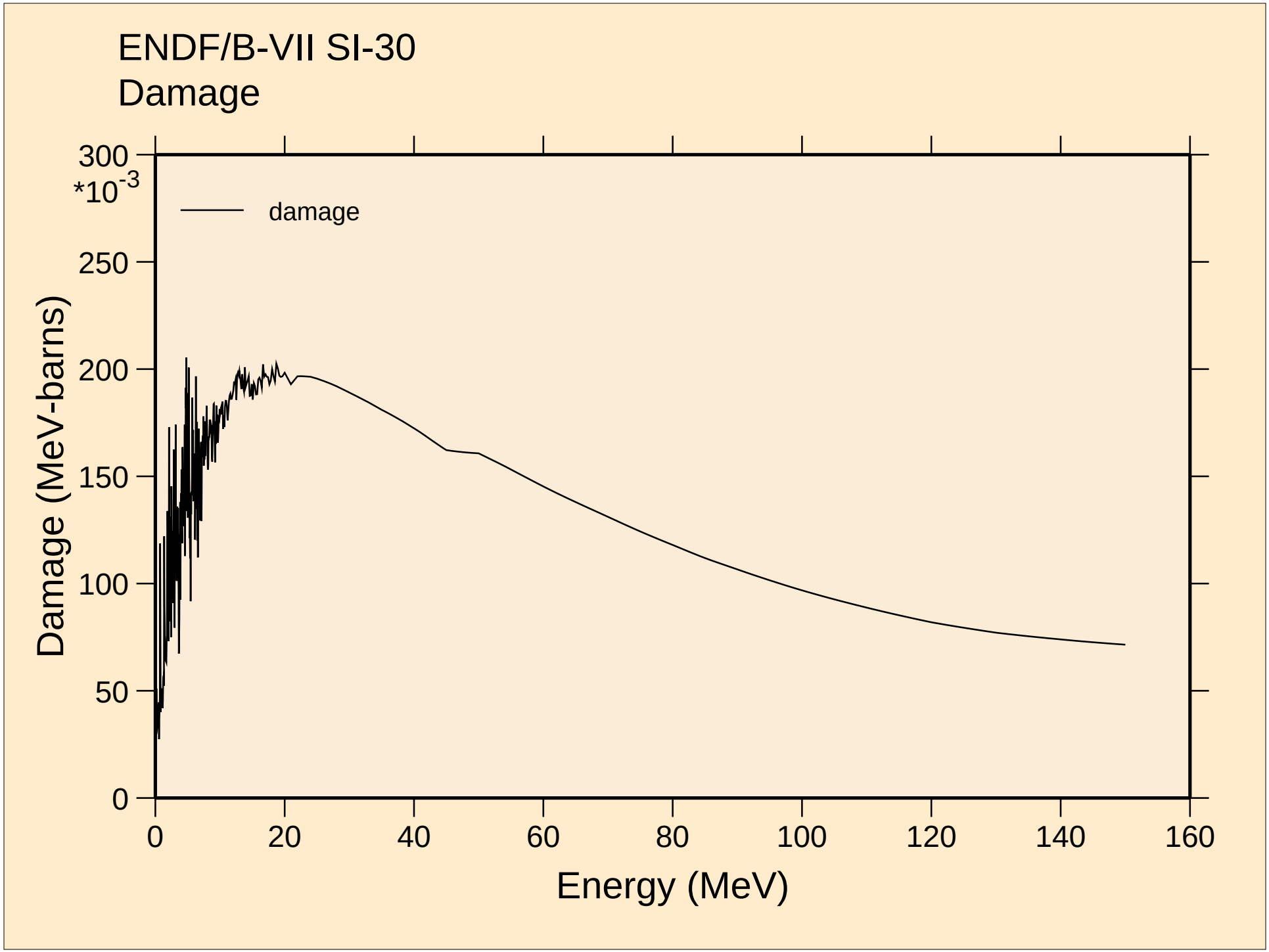

ENDF/B-VII SI-30
Heating
heating
Heating (MeV/reaction)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1
Energy (MeV)

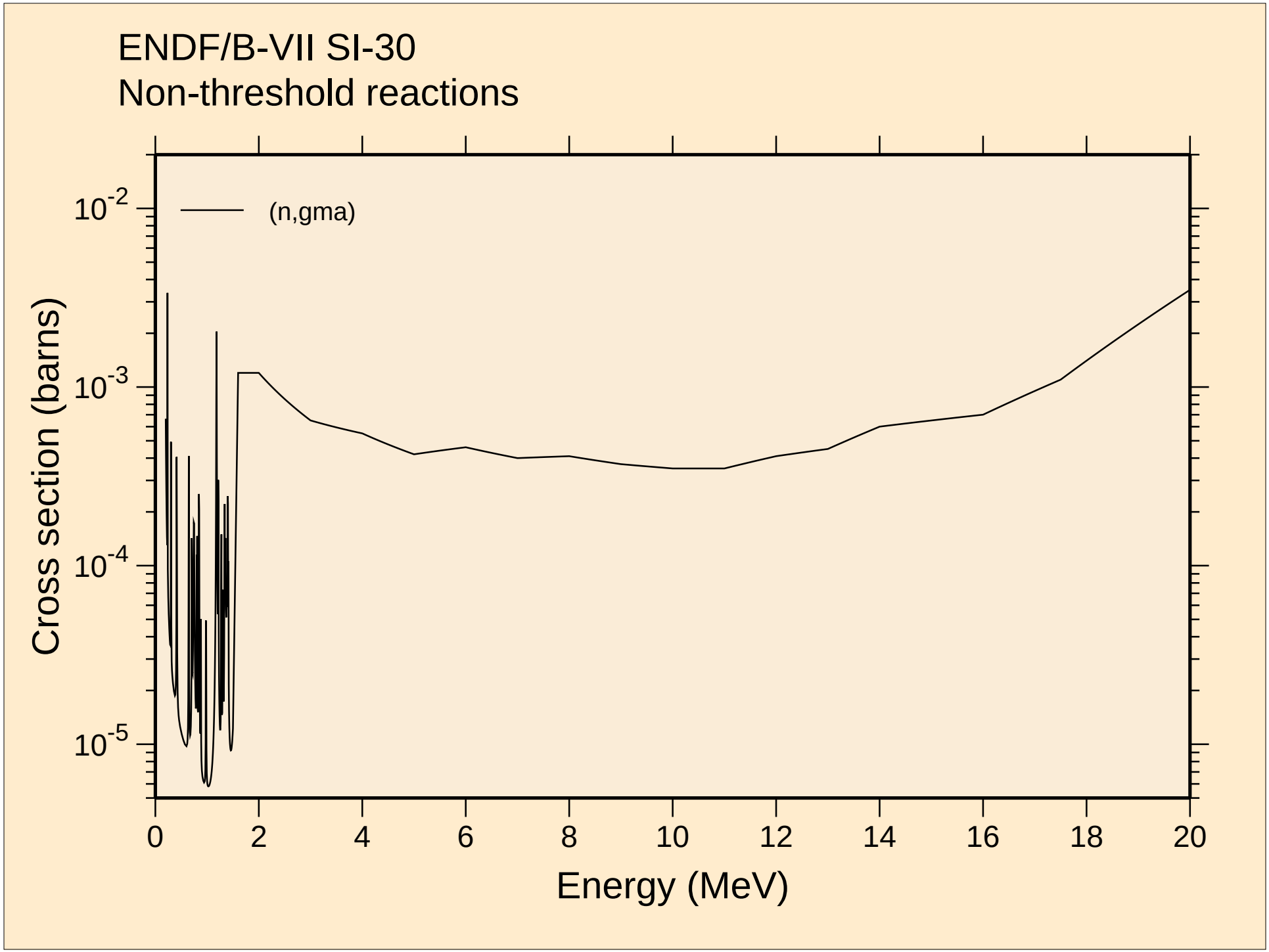

ENDF/B-VII SI-30
Damage
damage
Damage (MeV-barns)
10-1
10-2
10-3
10-4
10-5
10-6
10-11
10-9
10-7
10-5
10-3
10-1
101
Energy (MeV)

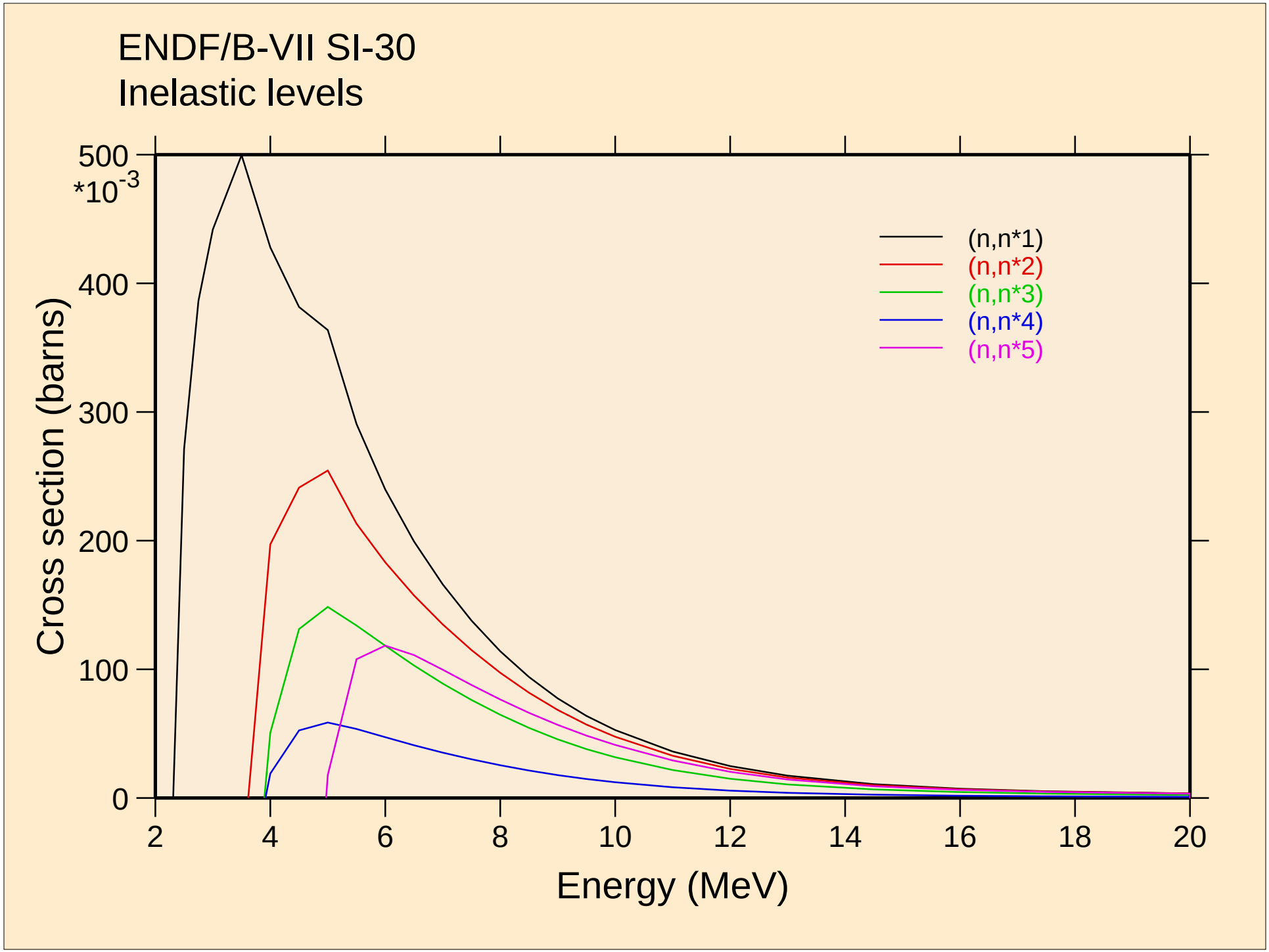

ENDF/B-VII SI-30
Non-threshold reactions
(n,gma)
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}
Energy (MeV)

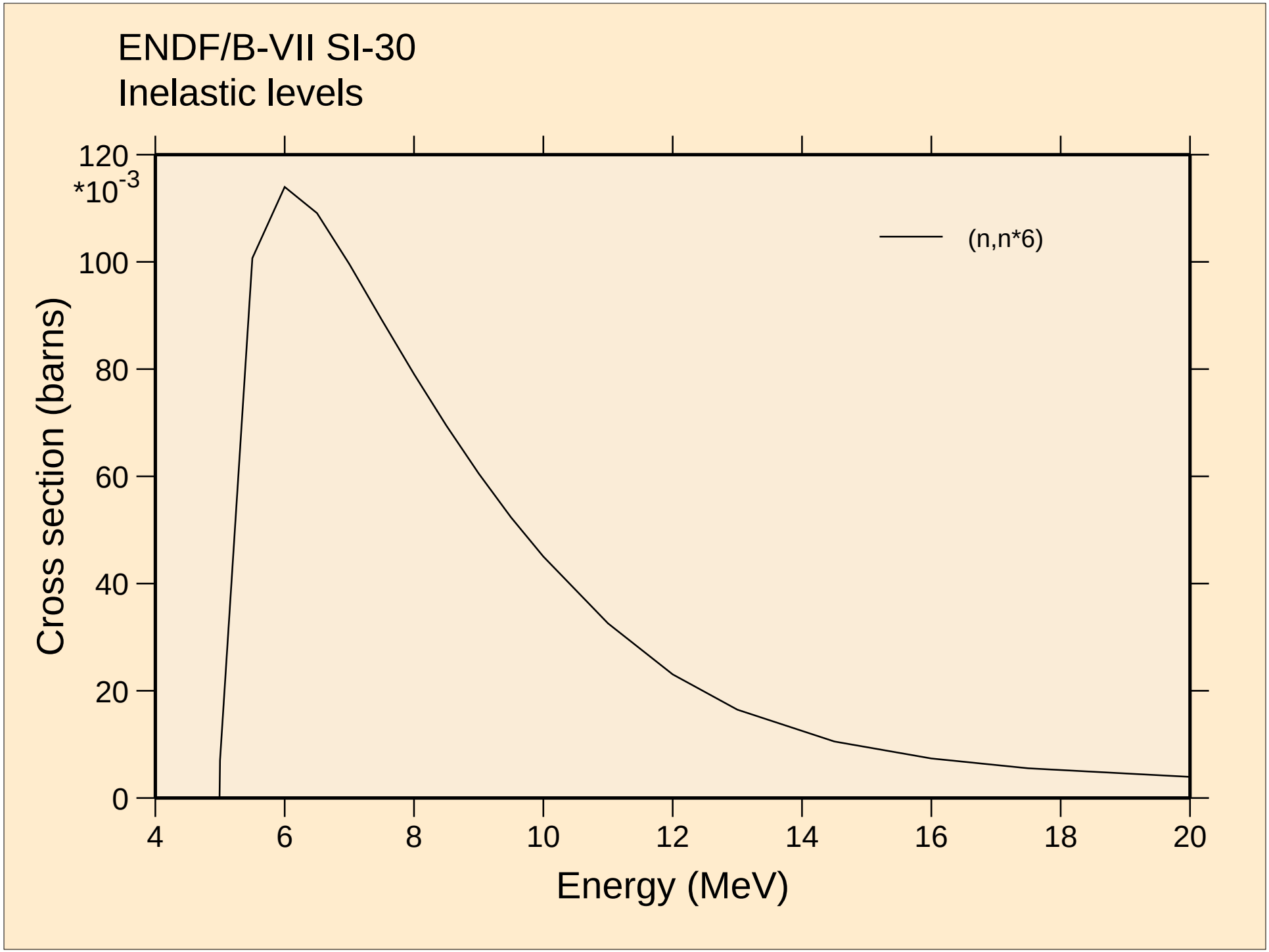

ENDF/B-VII SI-30
Principal cross sections
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
total
absorption
elastic
gamma production

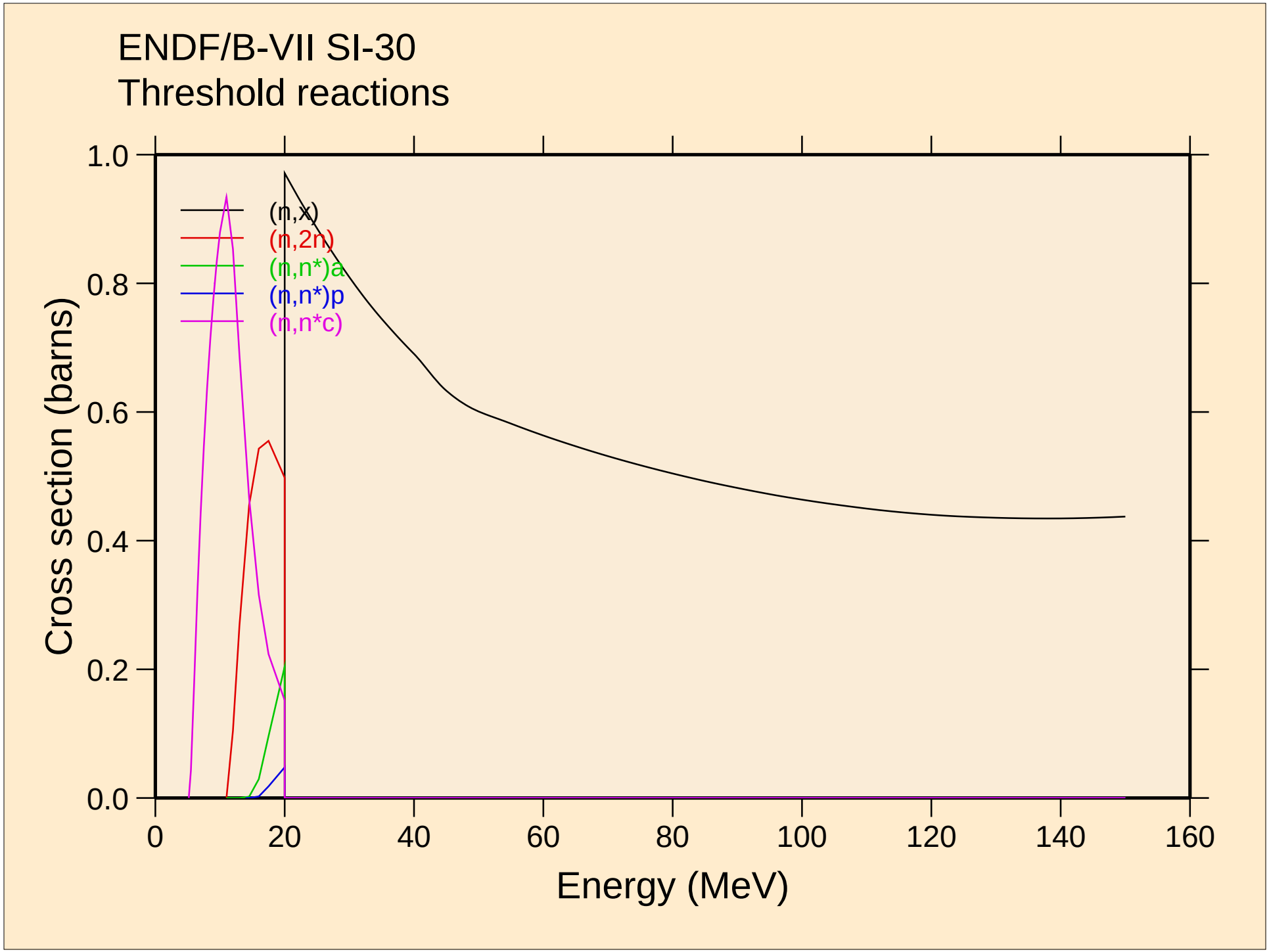

ENDF/B-VII SI-30
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
5
10
15
20
25
30
0
20
40
60
80
100
120
140
160

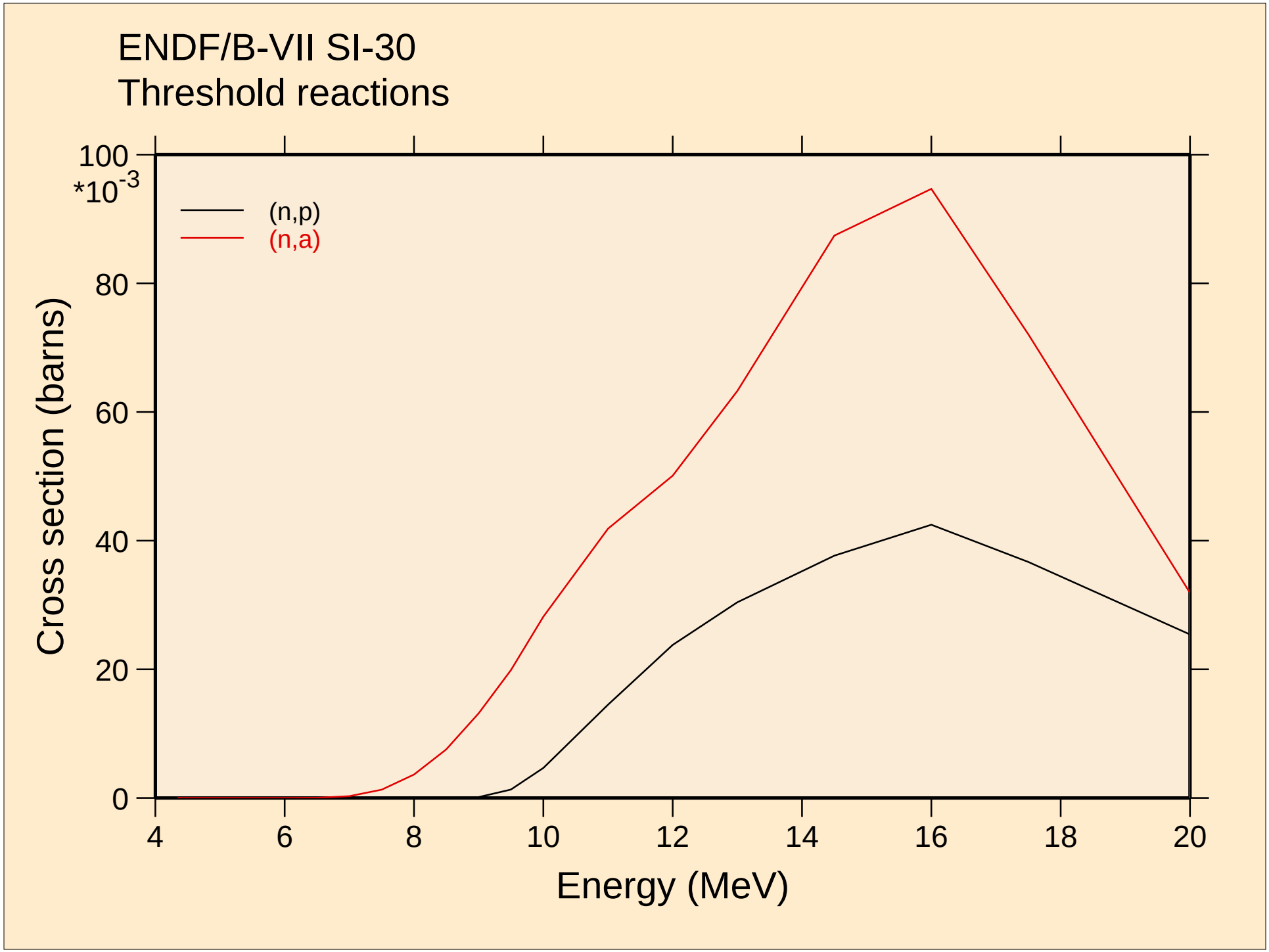

ENDF/B-VII SI-30
Damage
300
*10-3
250
200
150
100
50
0
damage
Damage (MeV-barns)
0
20
40
60
80
100
120
140
160
Energy (MeV)

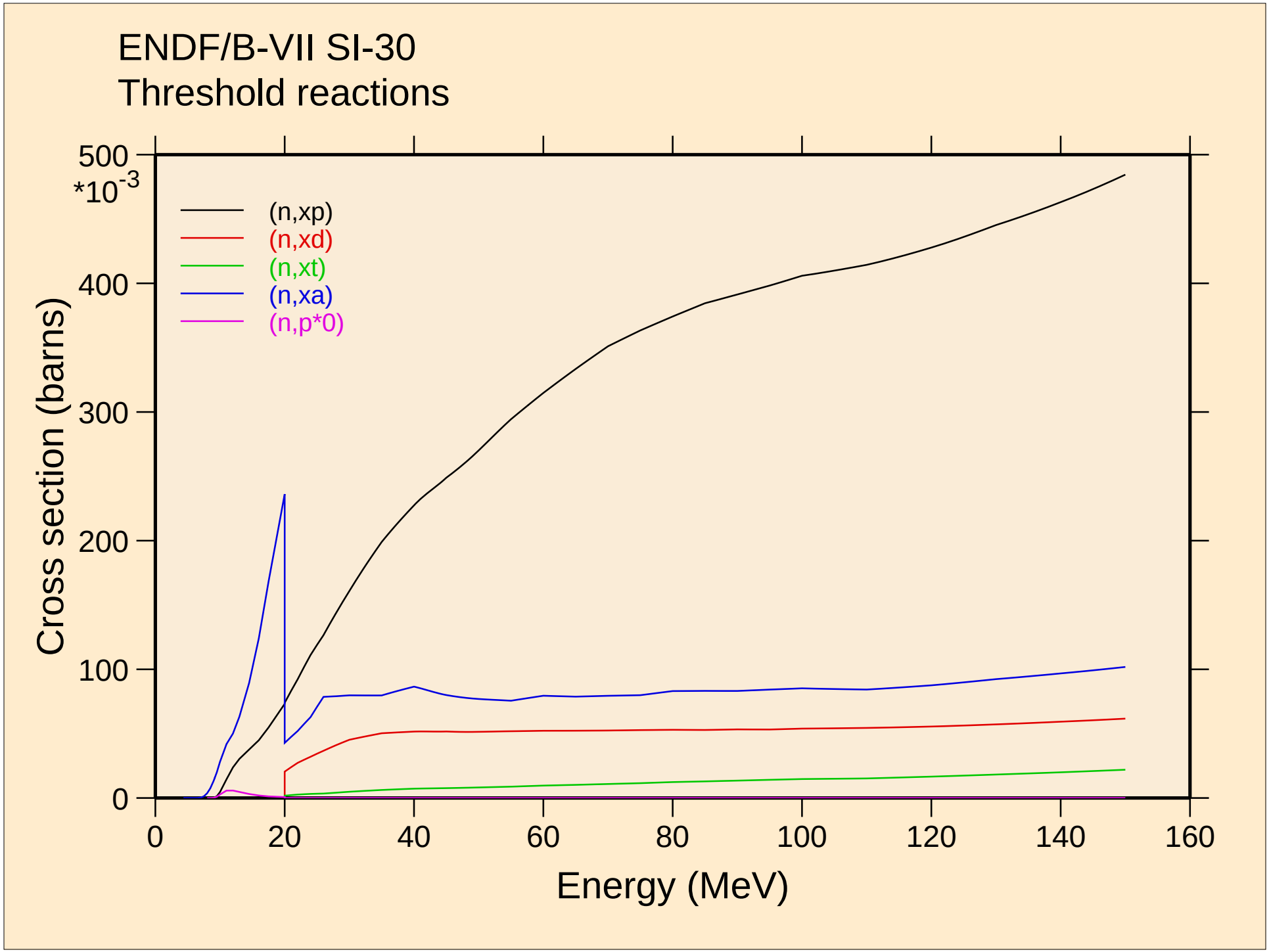

ENDF/B-VII SI-30
Non-threshold reactions
(n,gma)
Cross section (barns)
10-2
10-3
10-4
10-5
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

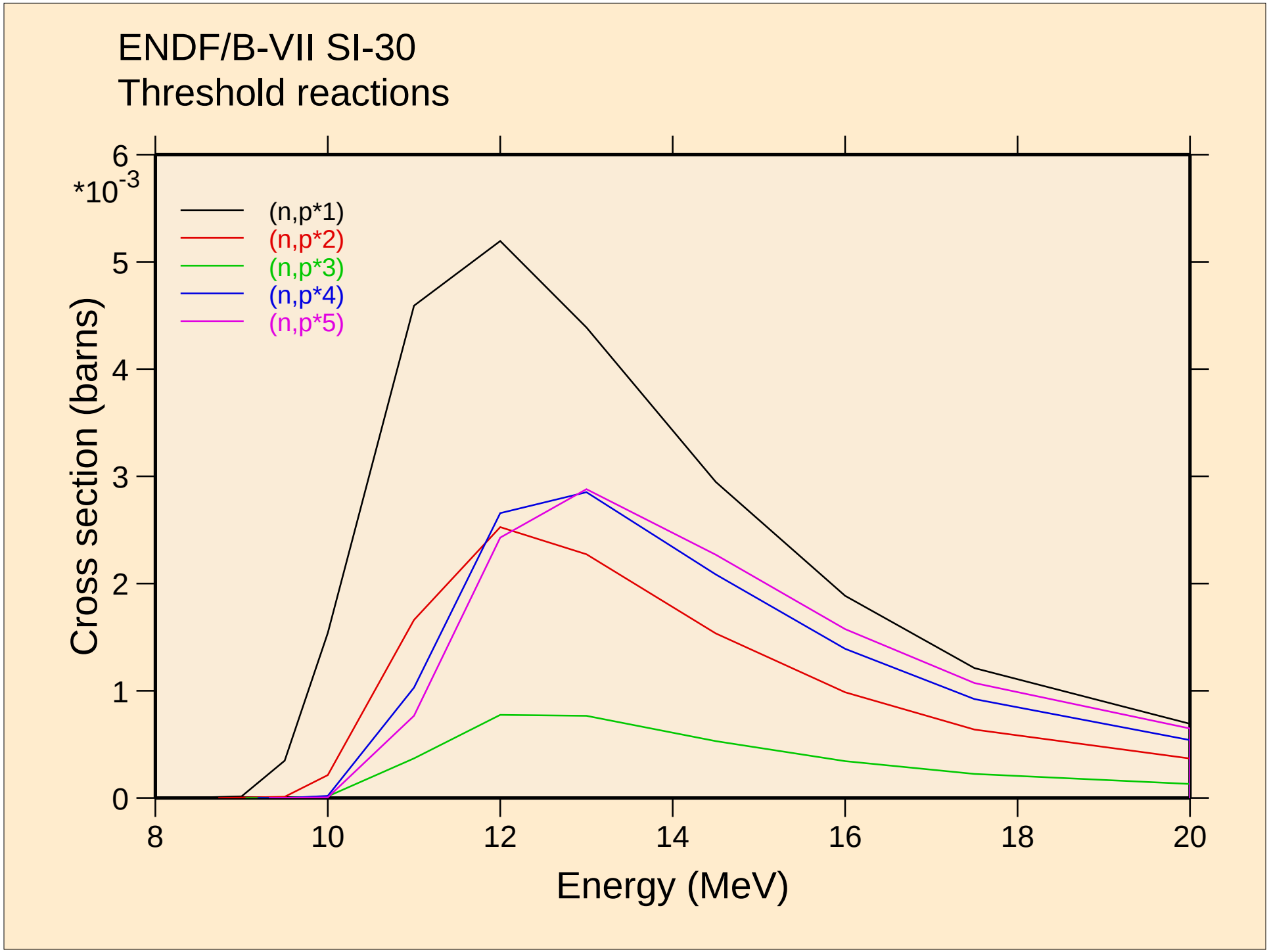

ENDF/B-VII SI-30
Inelastic levels
Cross section (barns)
*10-3
500
400
300
200
100
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

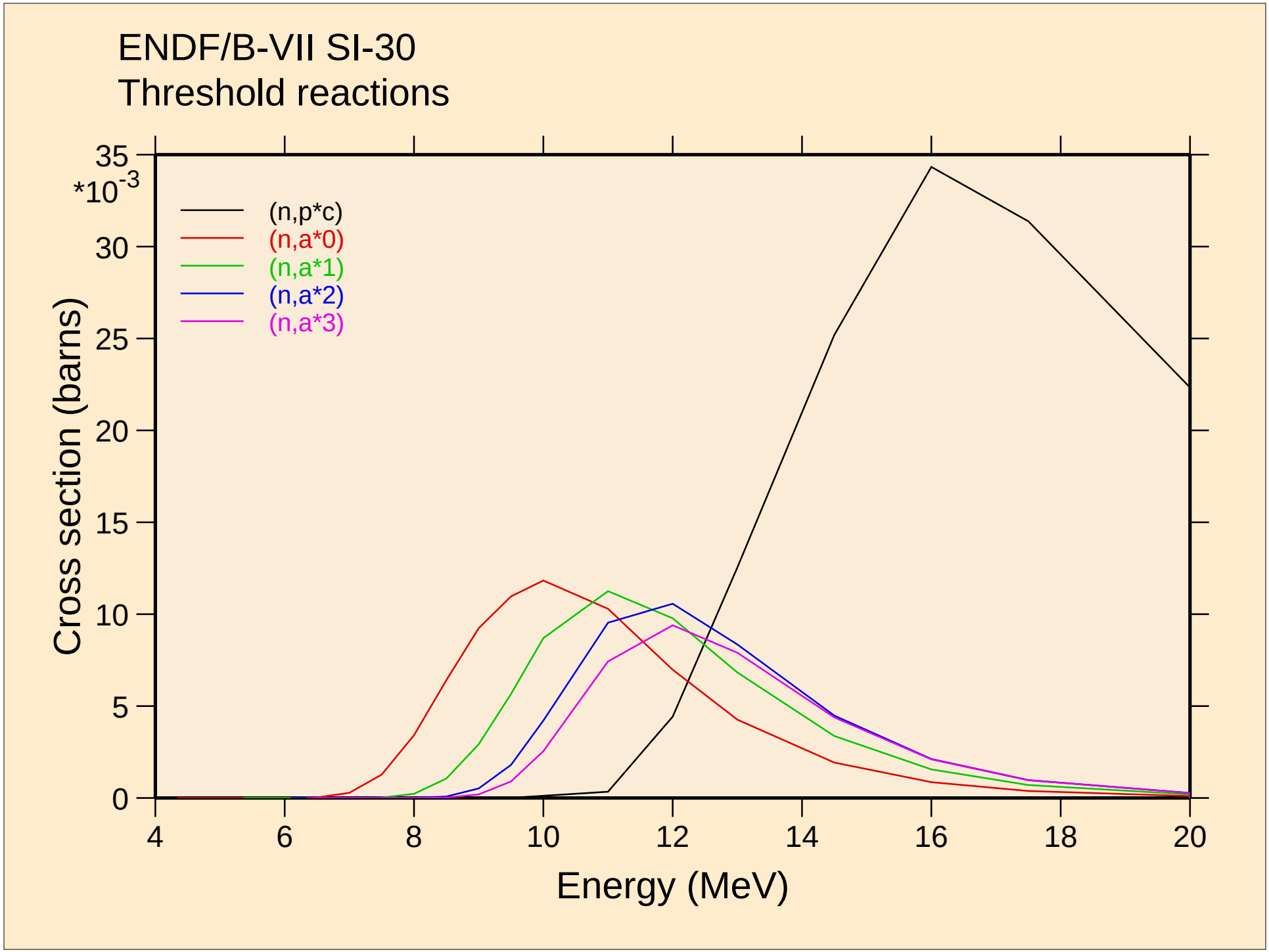

ENDF/B-VII SI-30
Inelastic levels
120
*10-3
100
80
60
40
20
0
Cross section (barns)
(n,n*6)
4
6
8
10
12
14
16
18
20
Energy (MeV)

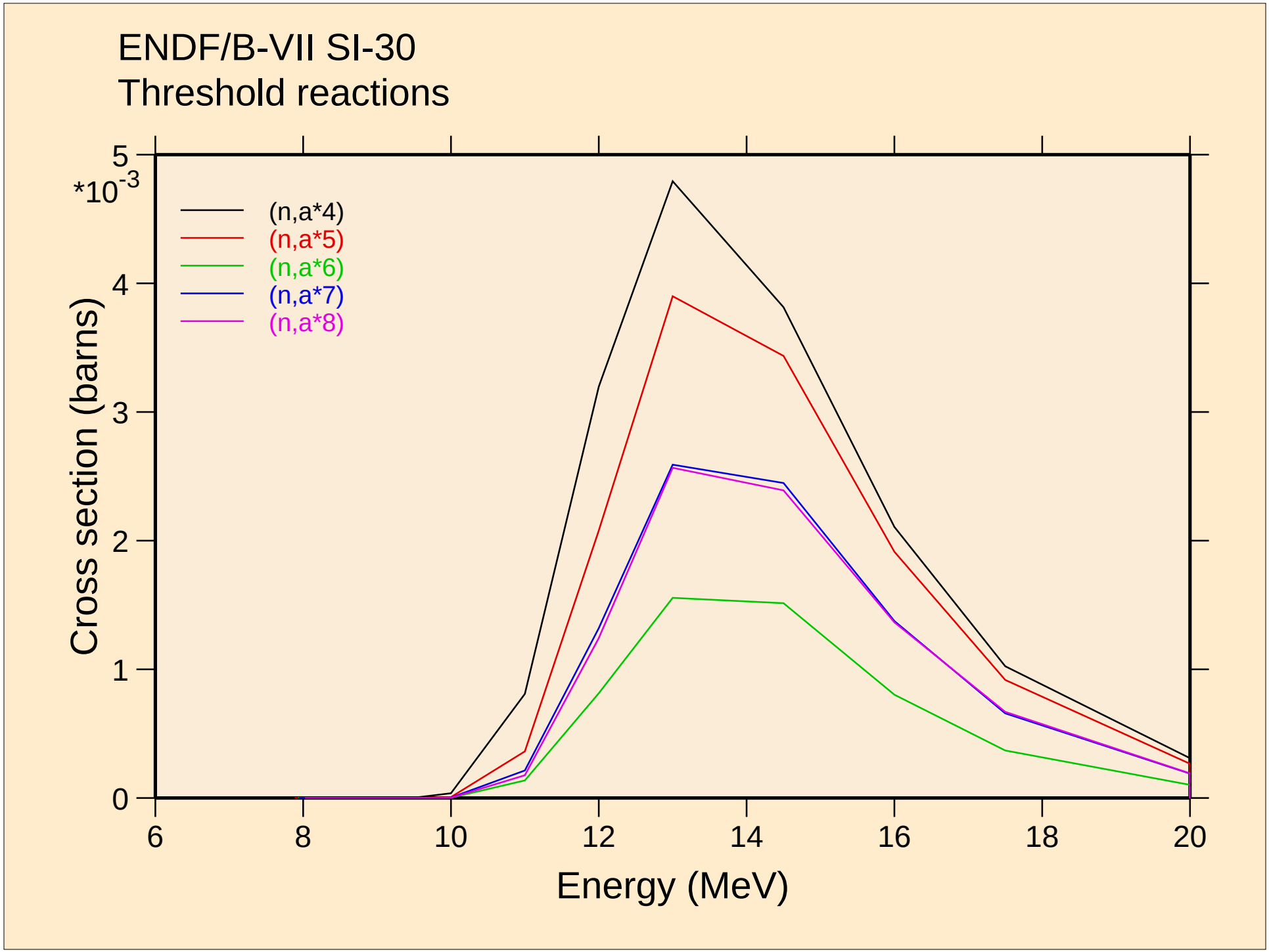

ENDF/B-VII SI-30
Threshold reactions
Cross section (barns)
Energy (MeV)
(n,x)
(n,2n)
(n,n*)a
(n,n*)p
(n,n*c)
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
120
140
160

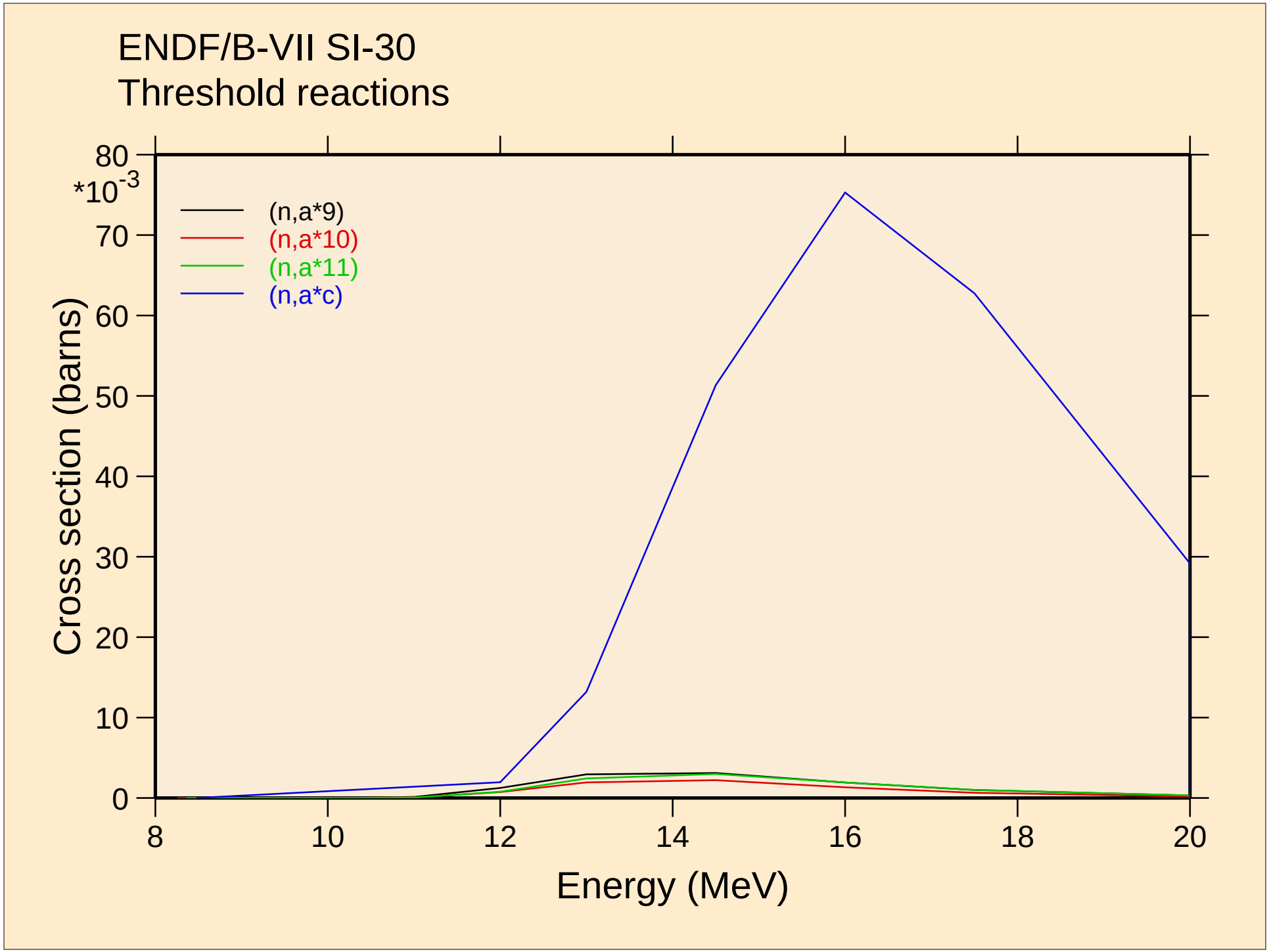

ENDF/B-VII SI-30
Threshold reactions
100
*10-3
80
60
40
20
0
(n,p)
(n,a)
Cross section (barns)
4
6
8
10
12
14
16
18
20
Energy (MeV)

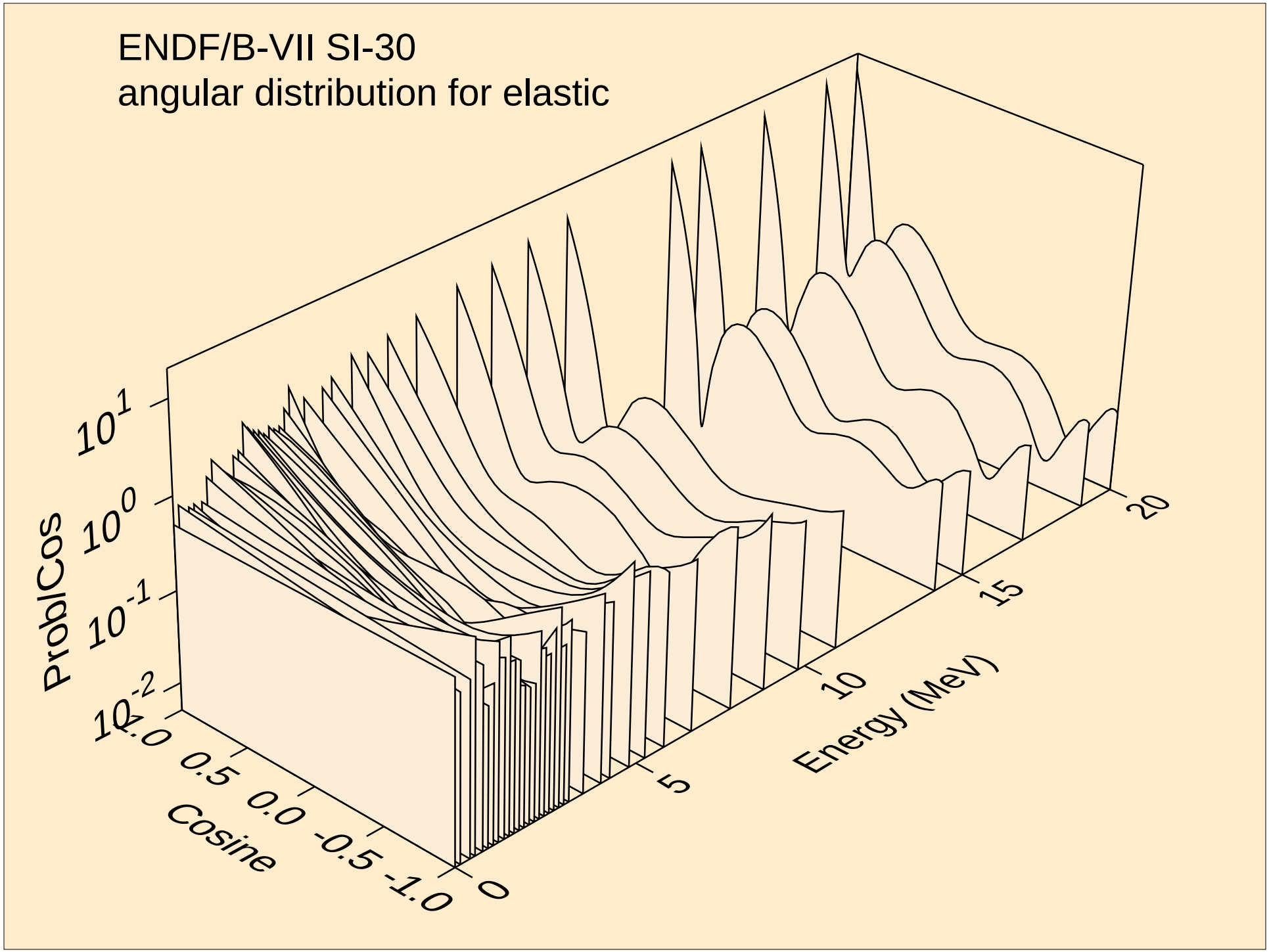

ENDF/B-VII SI-30
Threshold reactions
500
*10-3
400
300
200
100
0
Cross section (barns)
(n,xp)
(n,xd)
(n,xt)
(n,xa)
(n,p*0)
0
20
40
60
80
100
120
140
160
Energy (MeV)

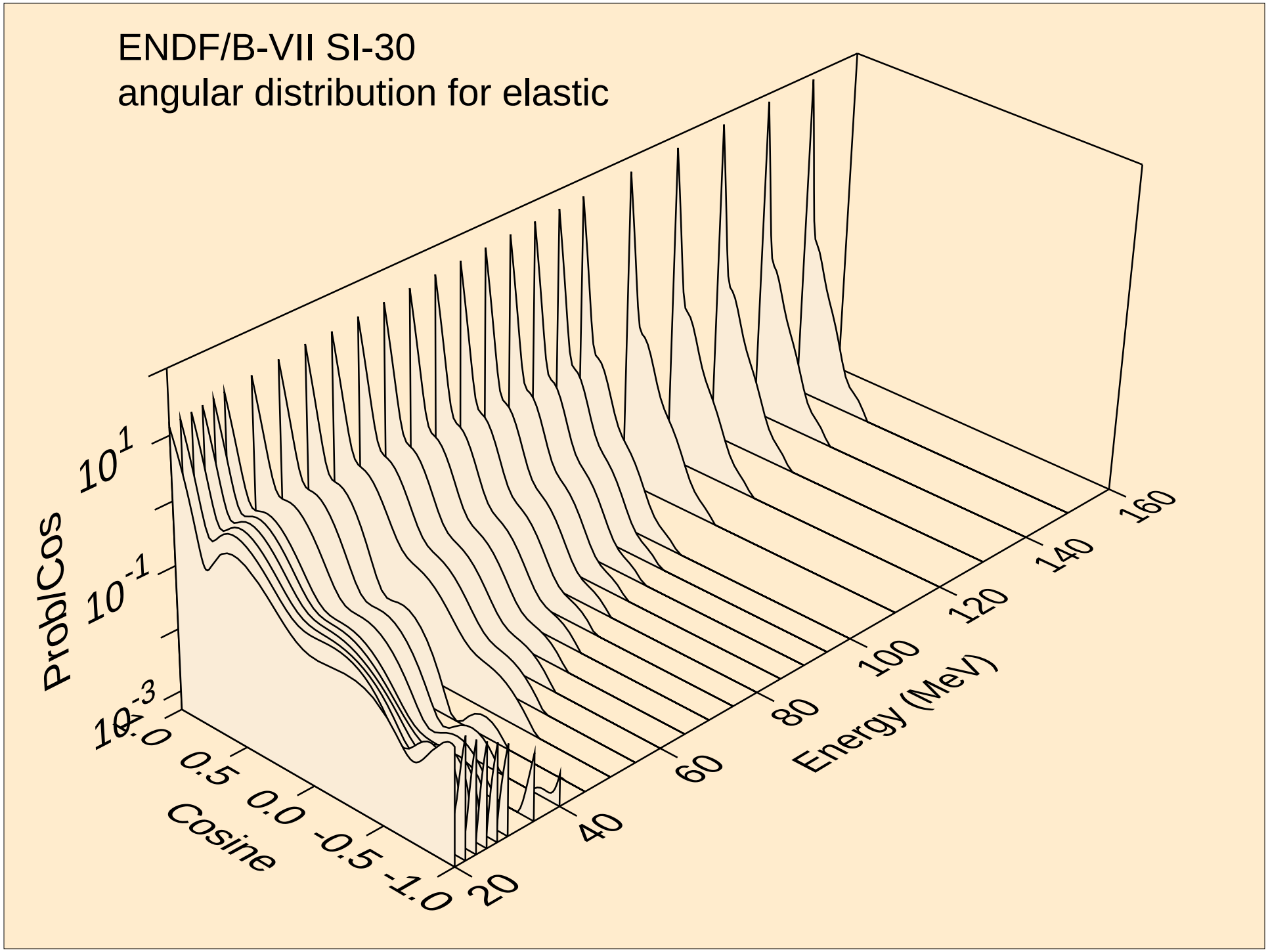

ENDF/B-VII SI-30
Threshold reactions
*10-3
Cross section (barns)
(n,p*1)
(n,p*2)
(n,p*3)
(n,p*4)
(n,p*5)
0
1
2
3
4
5
6
8
10
12
14
16
18
20
Energy (MeV)

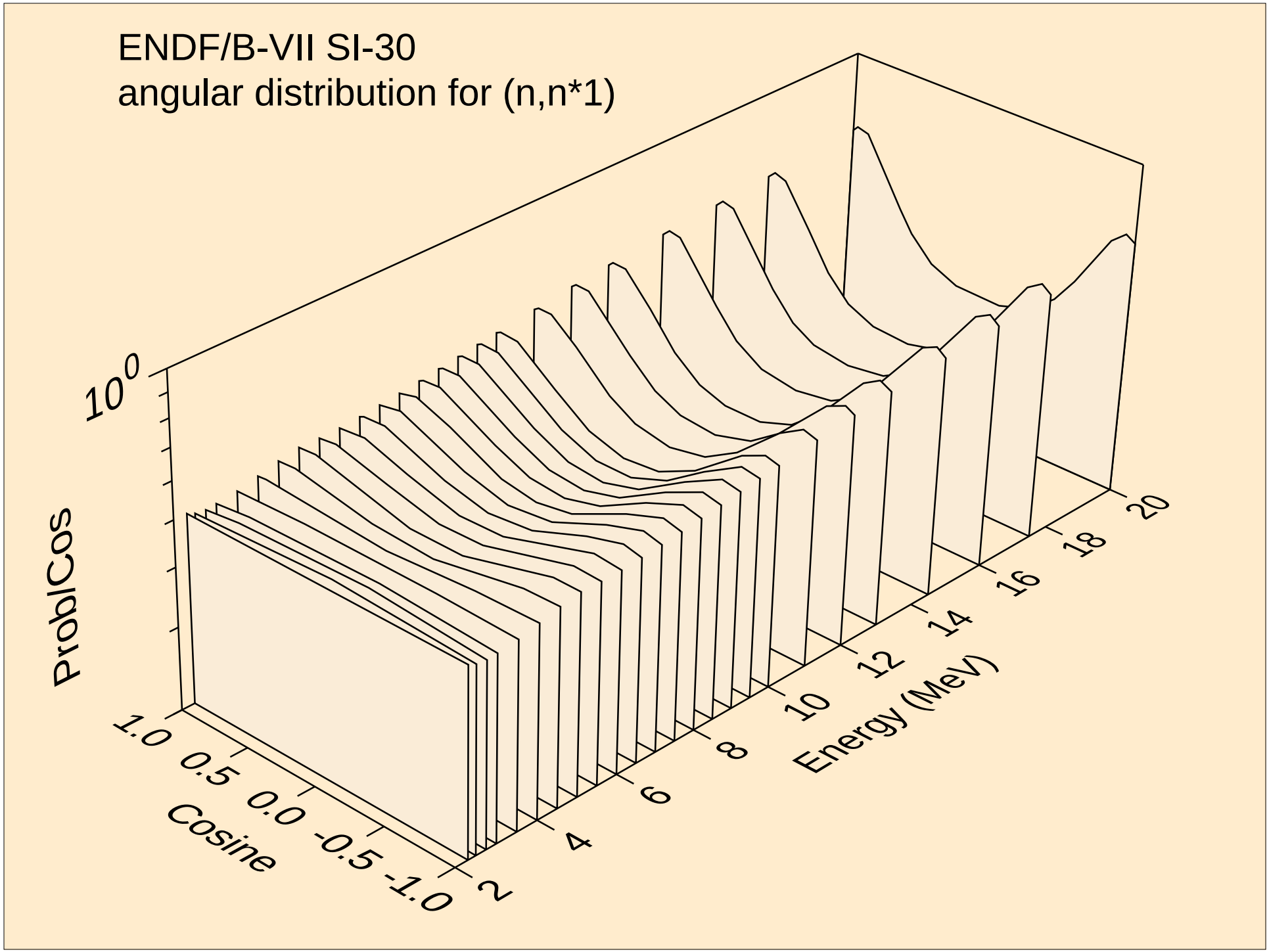

ENDF/B-VII SI-30
Threshold reactions
*10-3
35
30
25
20
15
10
5
0
Cross section (barns)
(n,p*c)
(n,a*0)
(n,a*1)
(n,a*2)
(n,a*3)
4
6
8
10
12
14
16
18
20
Energy (MeV)

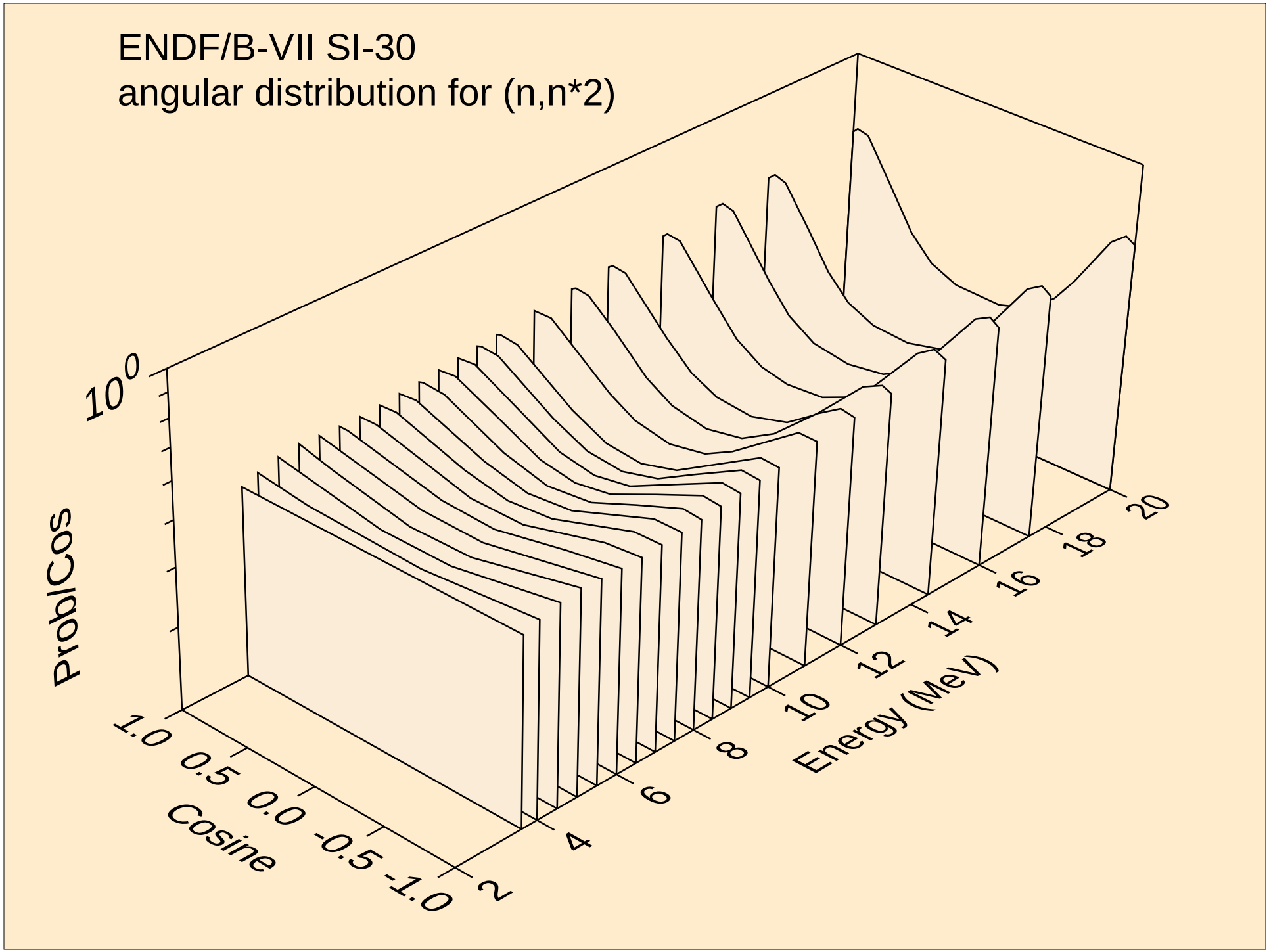

ENDF/B-VII SI-30
Threshold reactions
*10-3
Cross section (barns)
(n,a*4)
(n,a*5)
(n,a*6)
(n,a*7)
(n,a*8)
0
1
2
3
4
5
6
8
10
12
14
16
18
20
Energy (MeV)

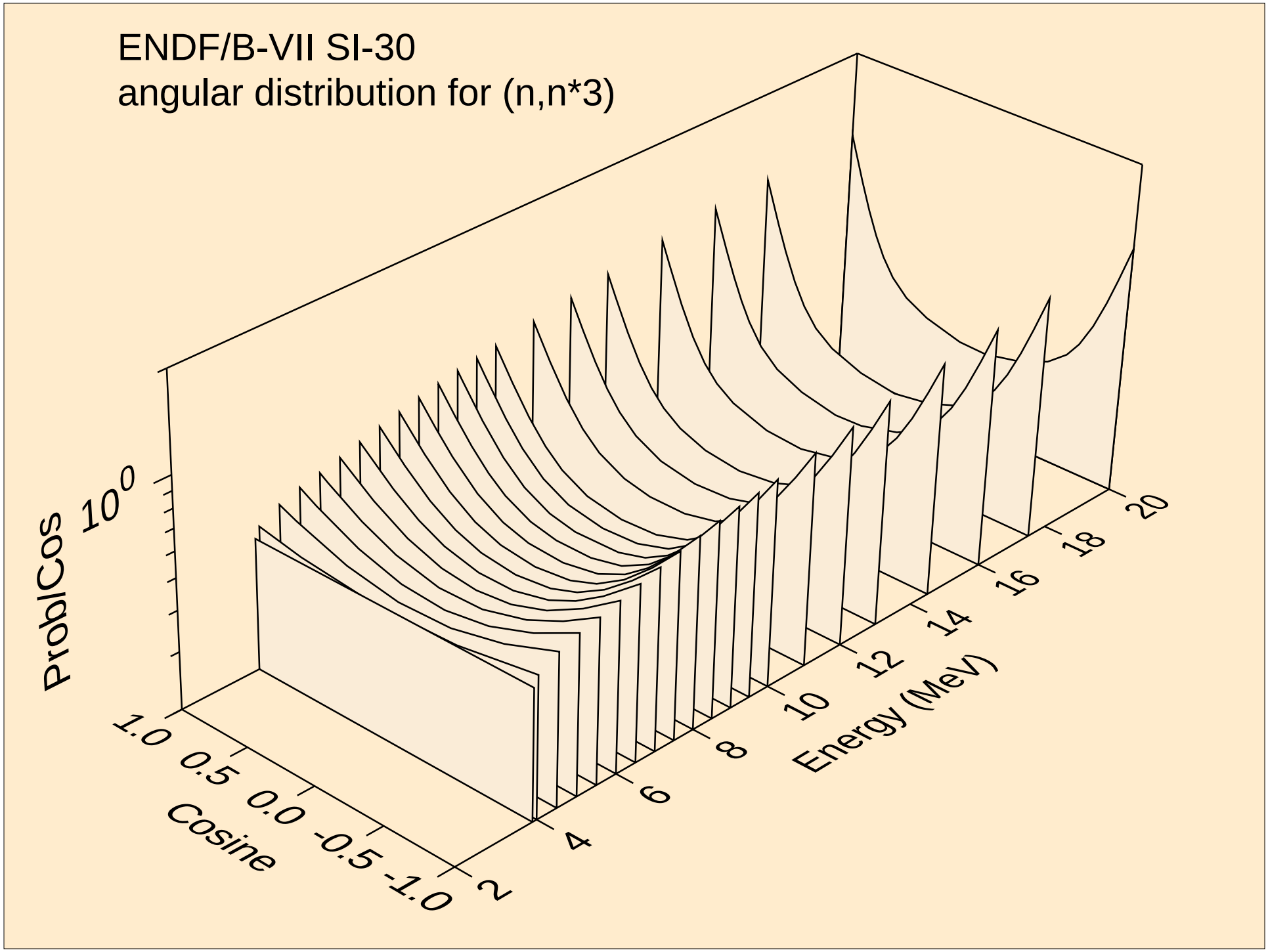

ENDF/B-VII SI-30
Threshold reactions
*10-3
80
70
60
50
40
30
20
10
0
Cross section (barns)
(n,a*9)
(n,a*10)
(n,a*11)
(n,a*c)
8
10
12
14
16
18
20
Energy (MeV)

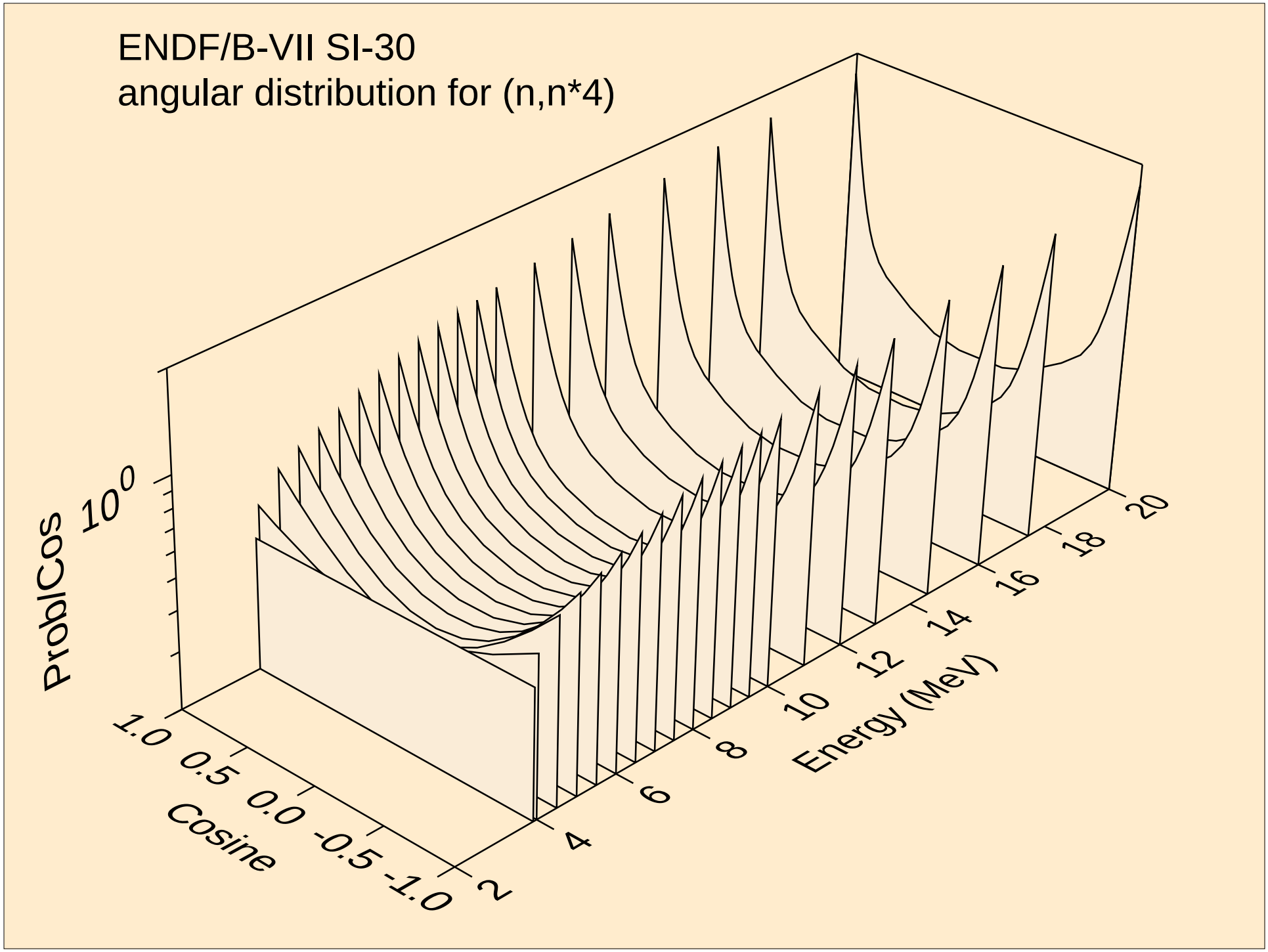

ENDF/B-VII SI-30
angular distribution for elastic
ProbICos
10^{1}
10^{0}
10^{-1}
10^{-2}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
5
10
15
20

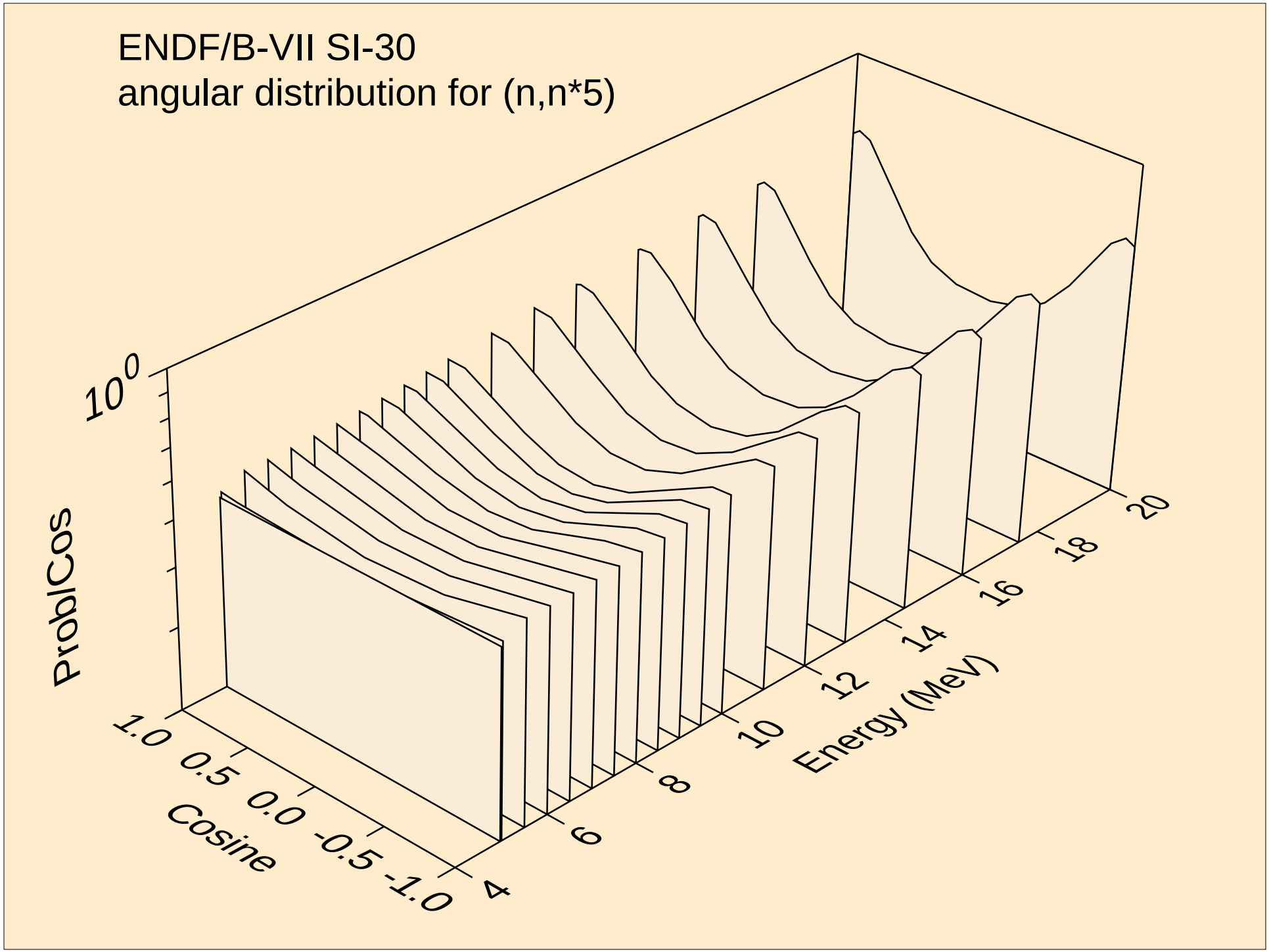

ENDF/B-VII SI-30
angular distribution for elastic
Prob\Cos
10^{1}
10^{-1}
10^{-3}
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
Energy (MeV)

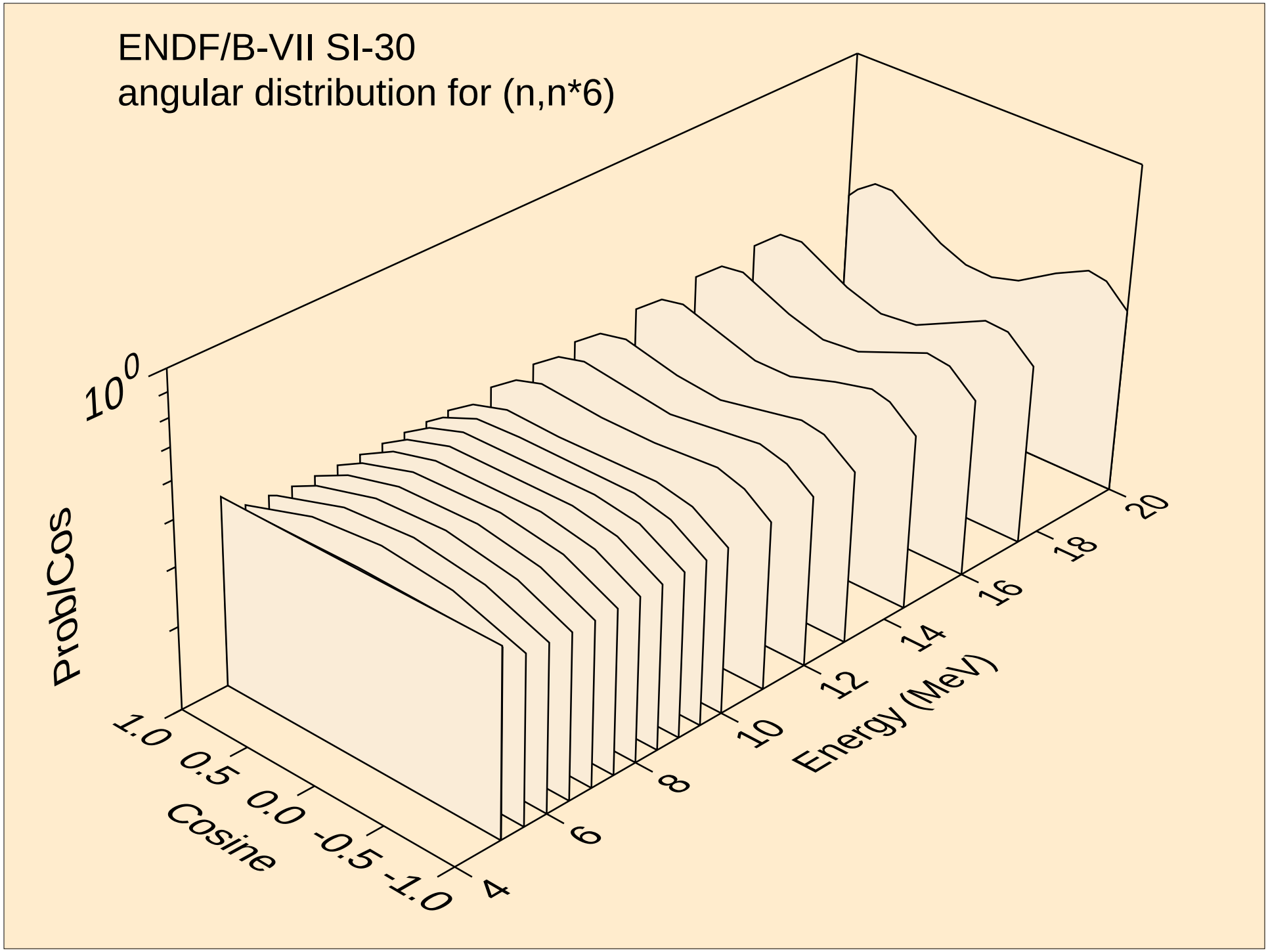

ENDF/B-VII SI-30
angular distribution for (n,n*1)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

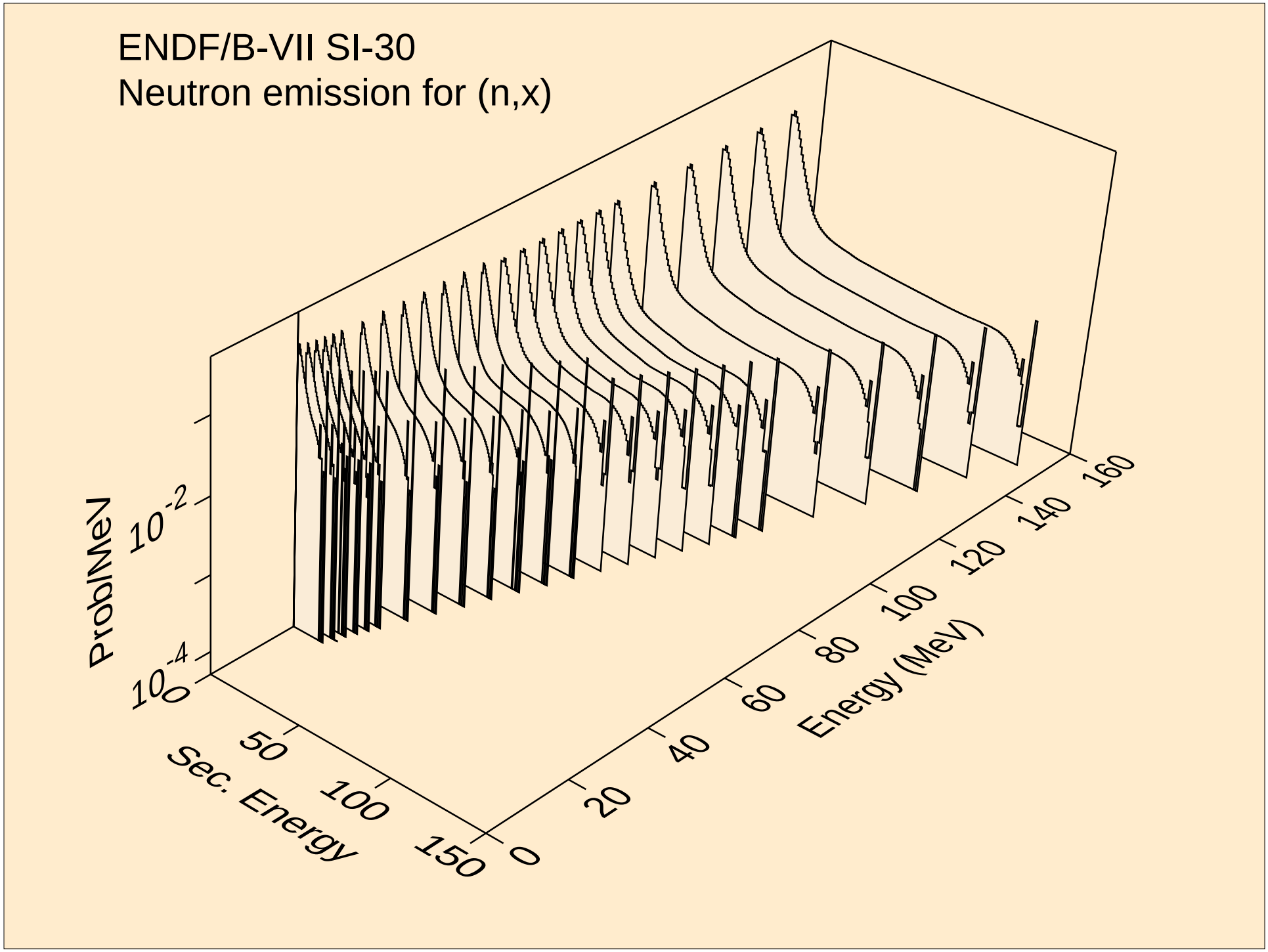

ENDF/B-VII SI-30
angular distribution for (n,n*2)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

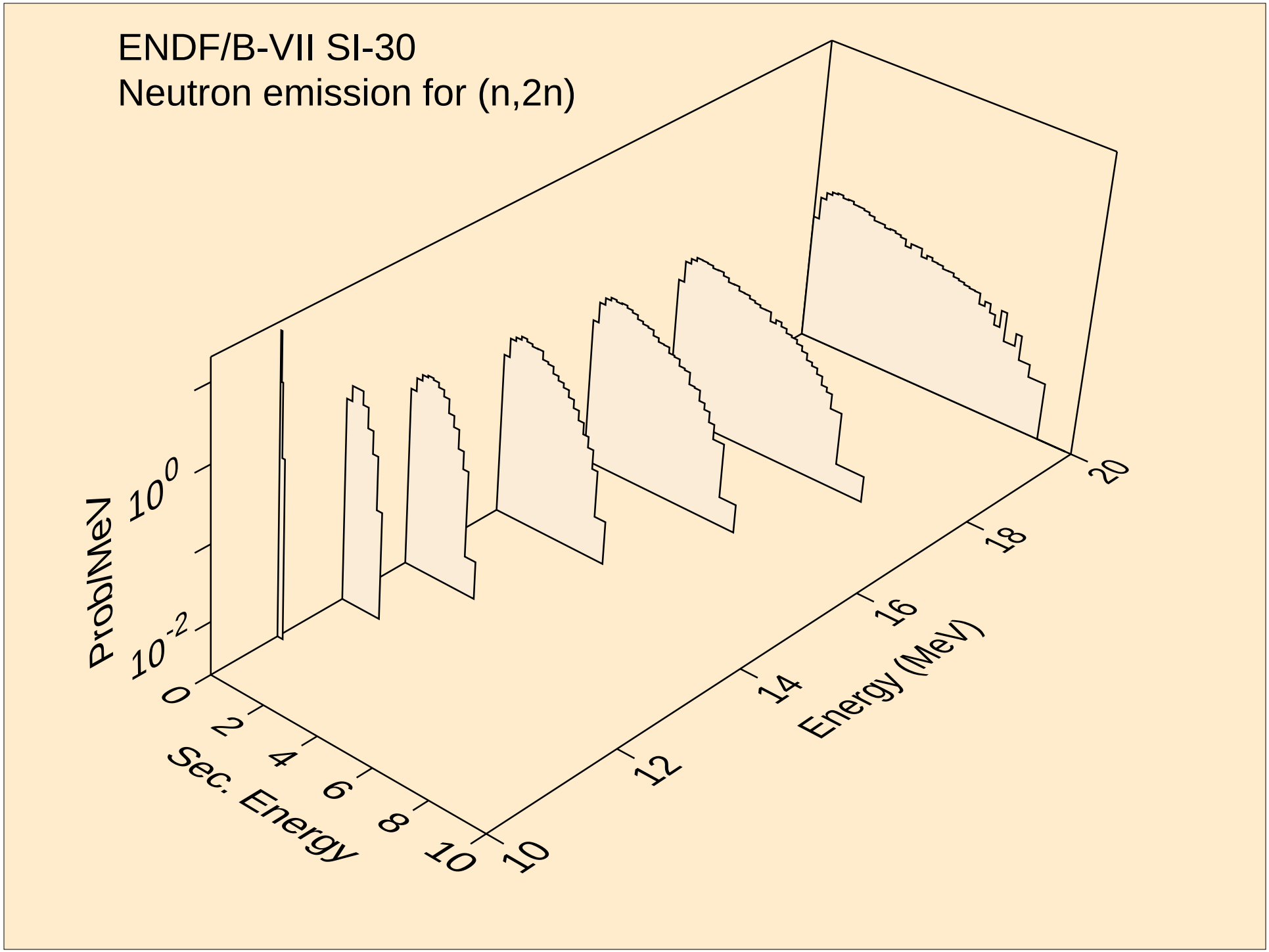

ENDF/B-VII SI-30
angular distribution for (n,n*3)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

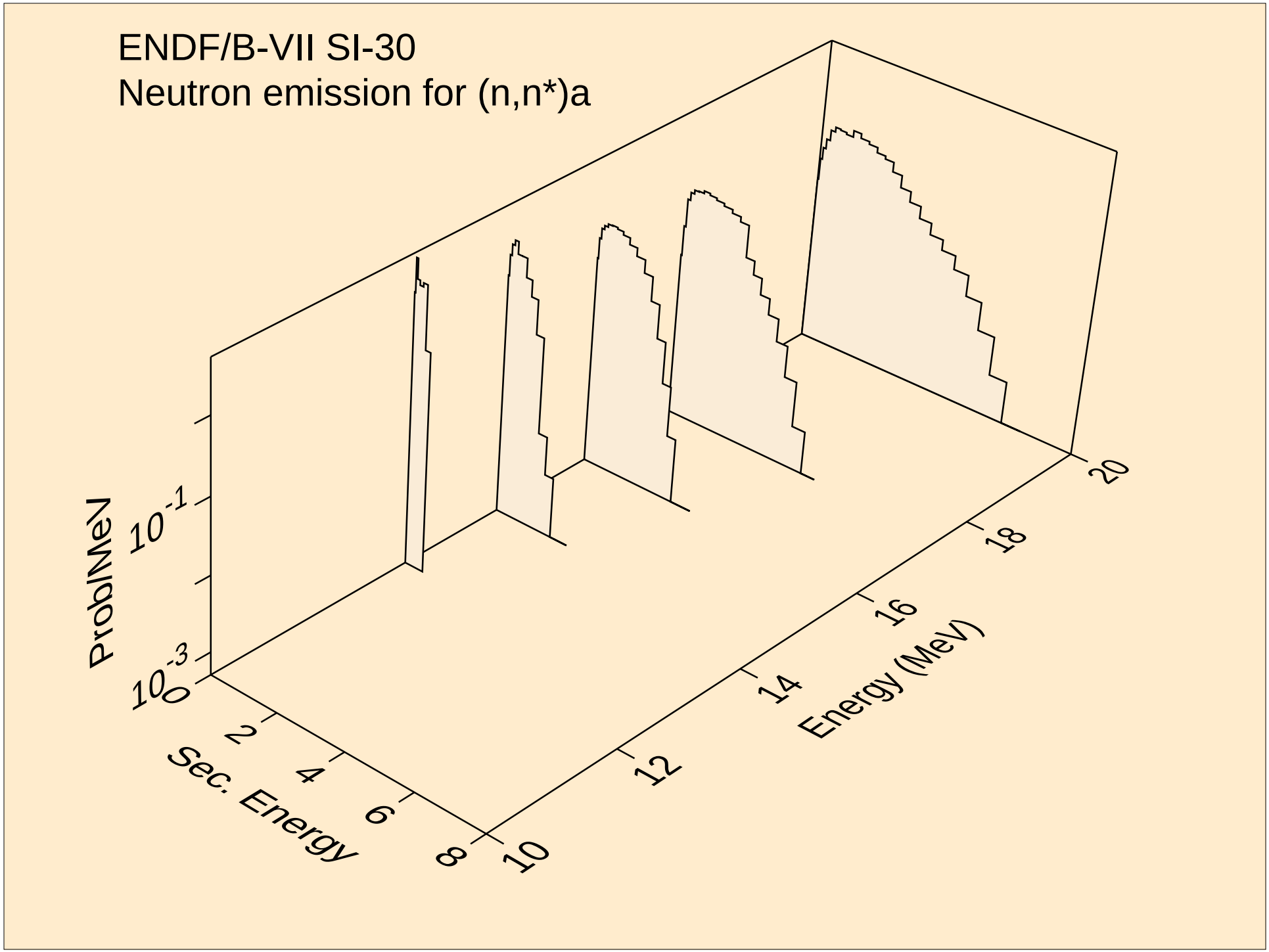

ENDF/B-VII SI-30
angular distribution for (n,n*4)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

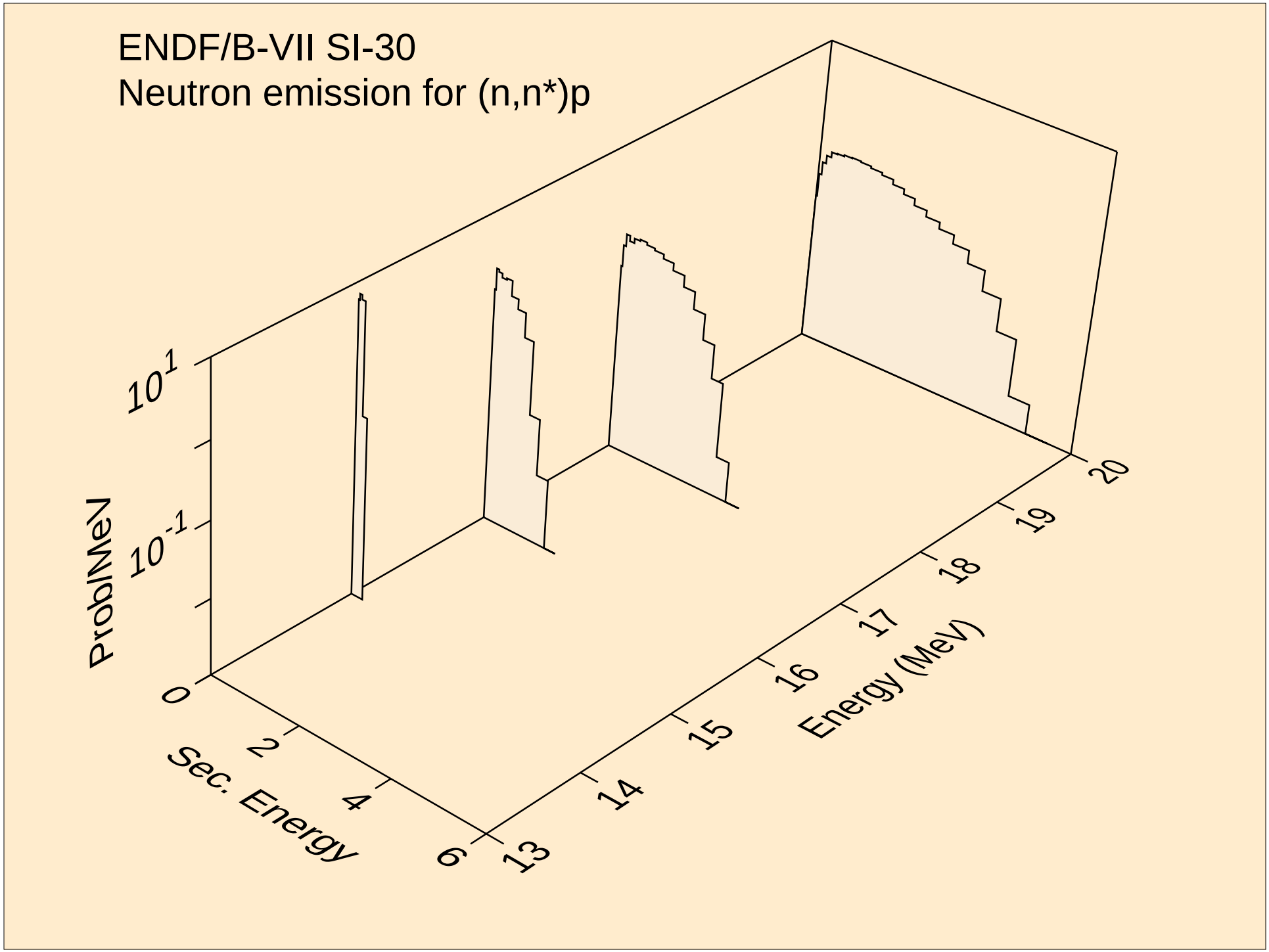

ENDF/B-VII SI-30
angular distribution for (n,n*5)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

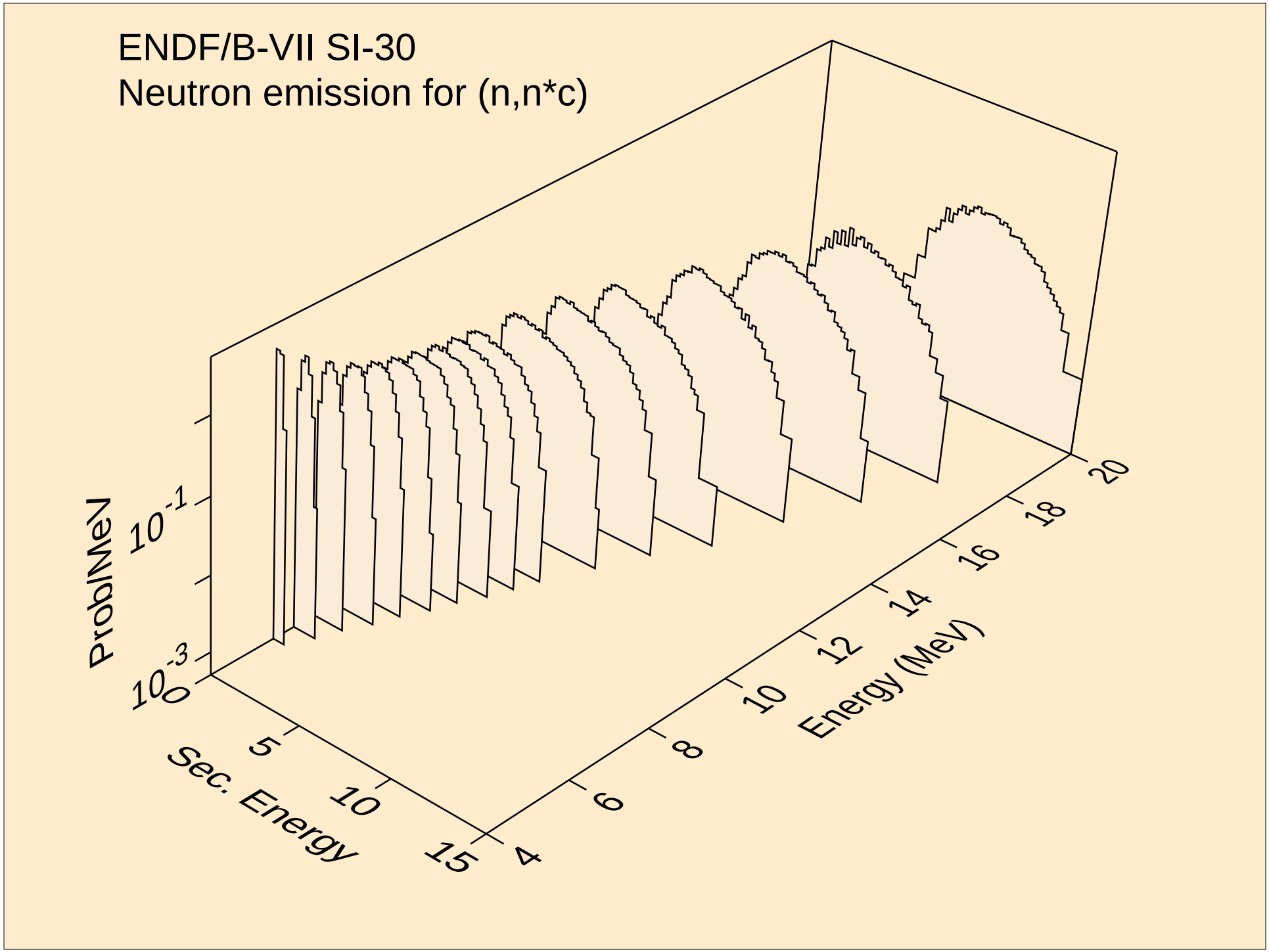

ENDF/B-VII SI-30
angular distribution for (n,n*6)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

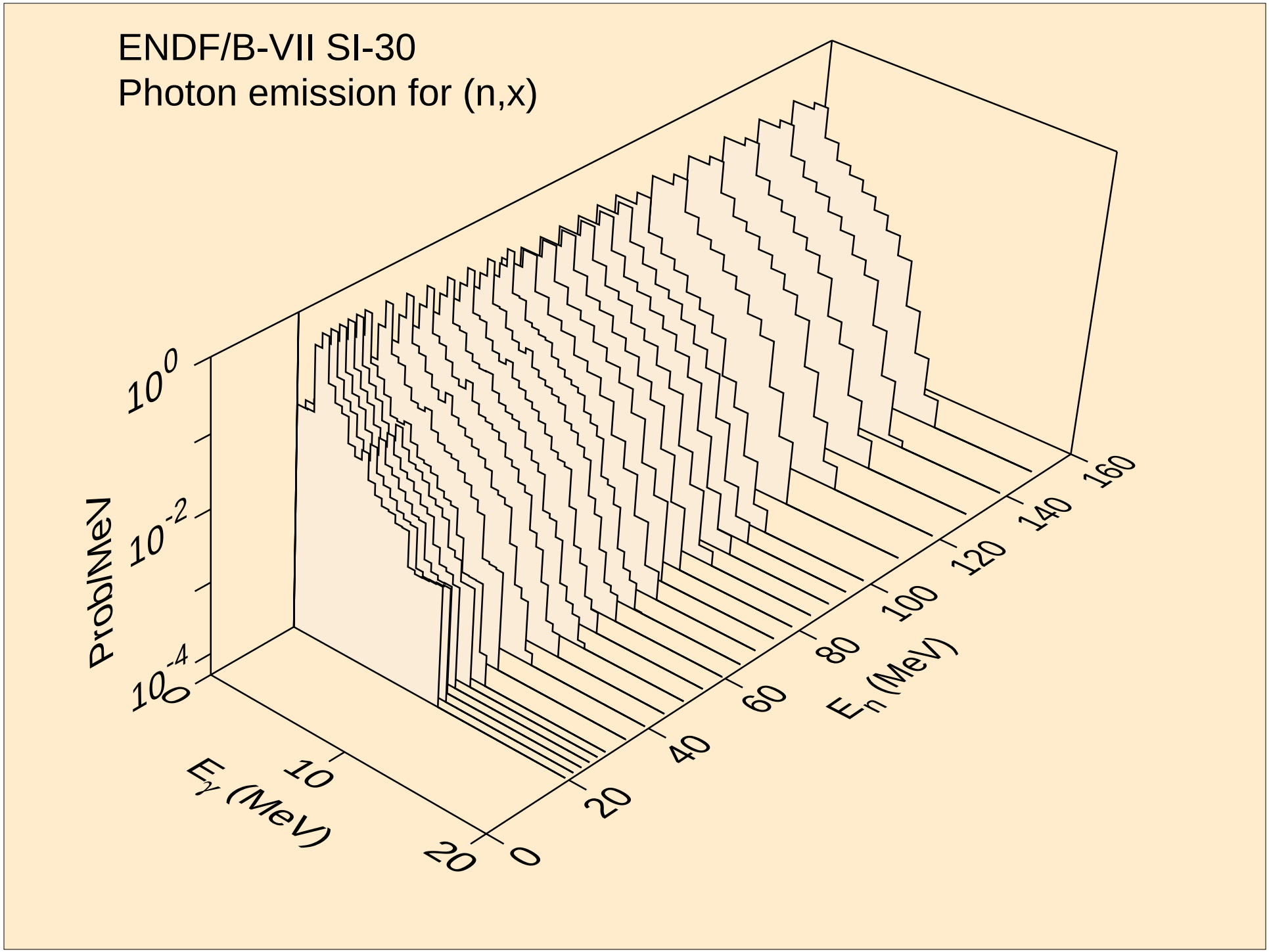

ENDF/B-VII SI-30
Neutron emission for (n,x)
Prob/MeV
10-2
10-4
0
50
100
150
Sec. Energy
0
20
40
60
80
100
120
140
160
Energy (MeV)

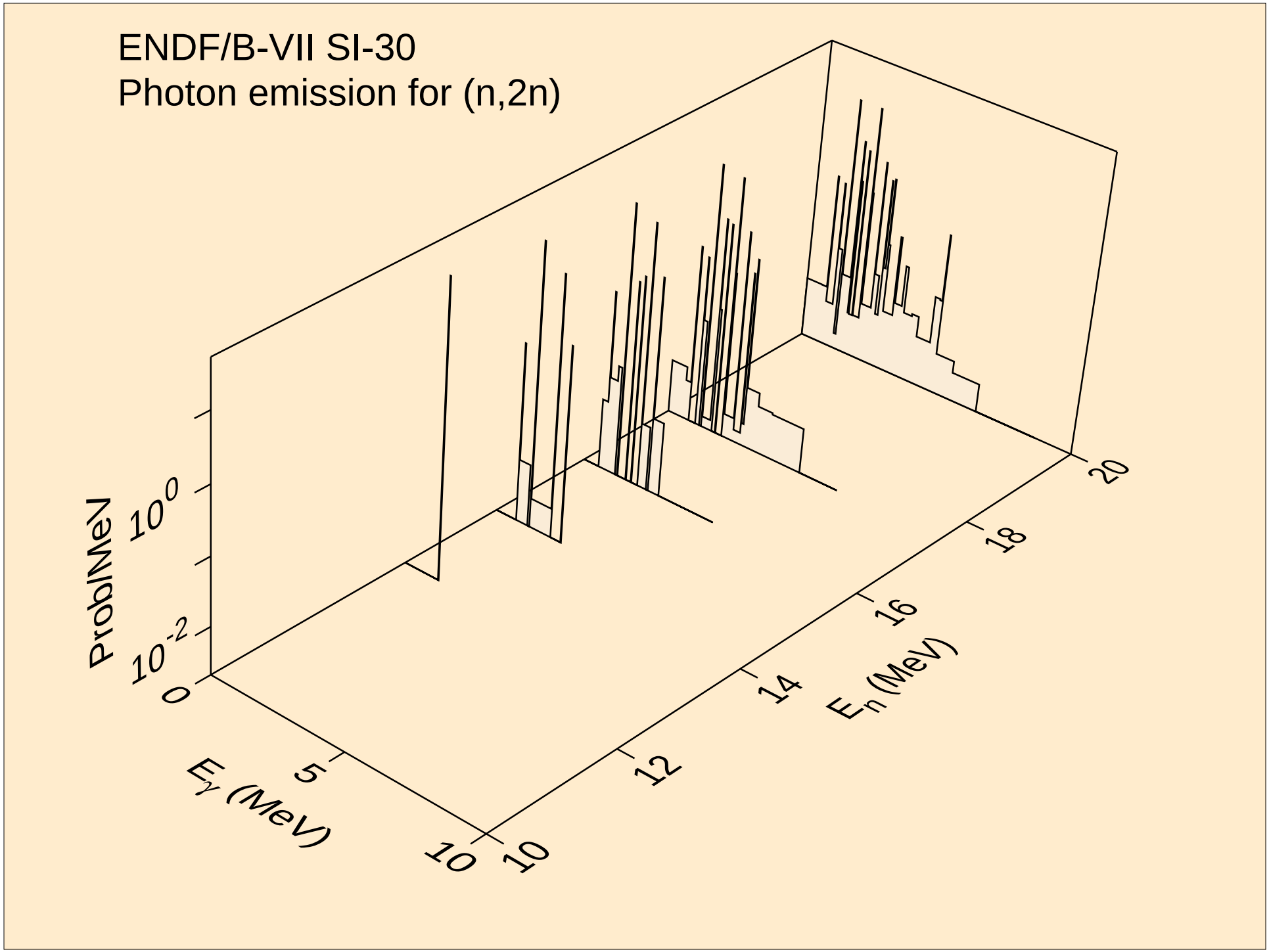

ENDF/B-VII SI-30
Neutron emission for (n,2n)
Prob/MeV
10^{0}
10^{-2}
0
2
4
6
8
10
Sec. Energy
10
12
14
16
18
20
Energy (MeV)

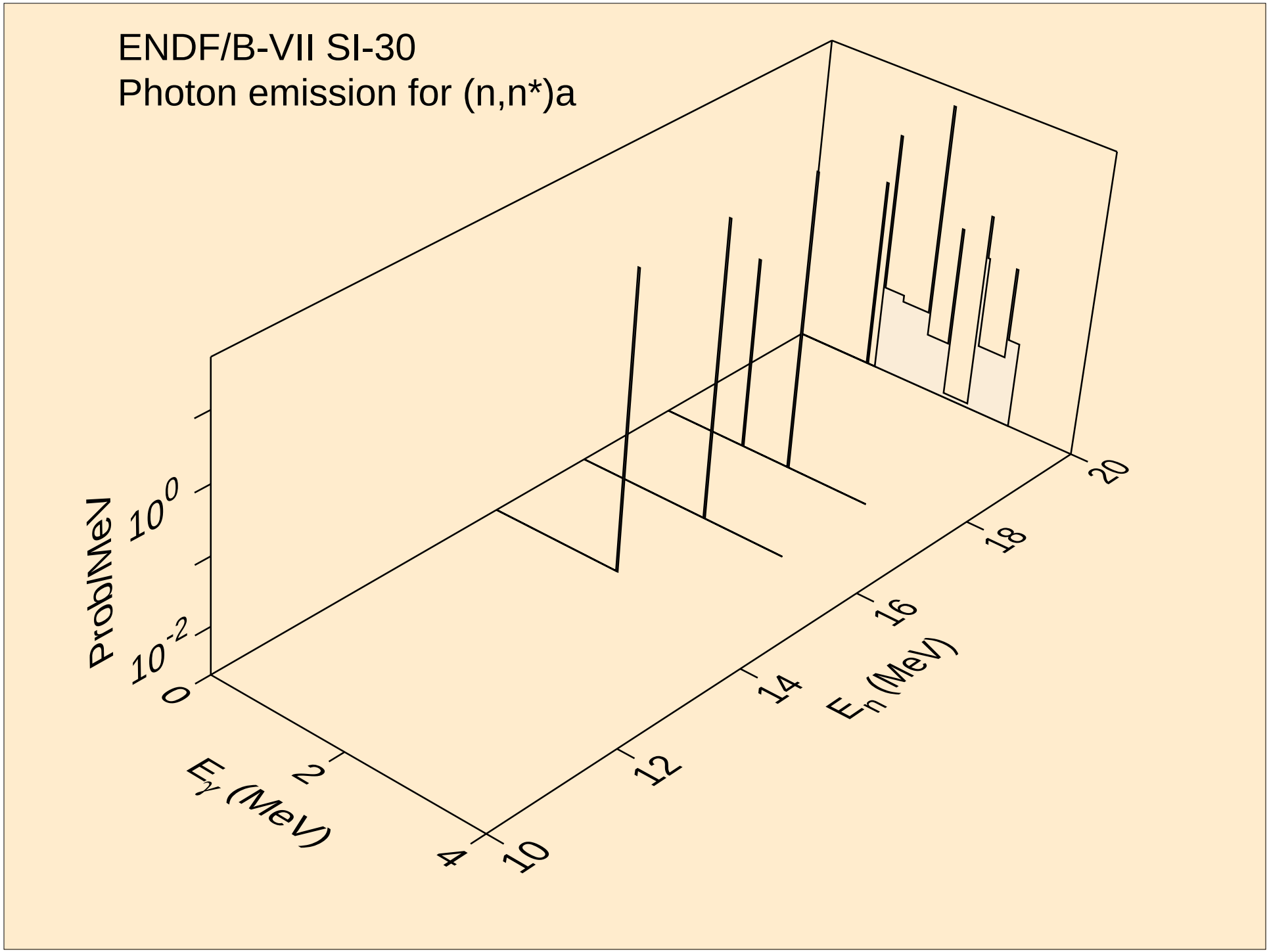

ENDF/B-VII SI-30
Neutron emission for (n,n*)a
Prob/MeV
10-1
10-3
0
2
4
6
8
10
Sec. Energy
12
14
16
18
20
Energy (MeV)

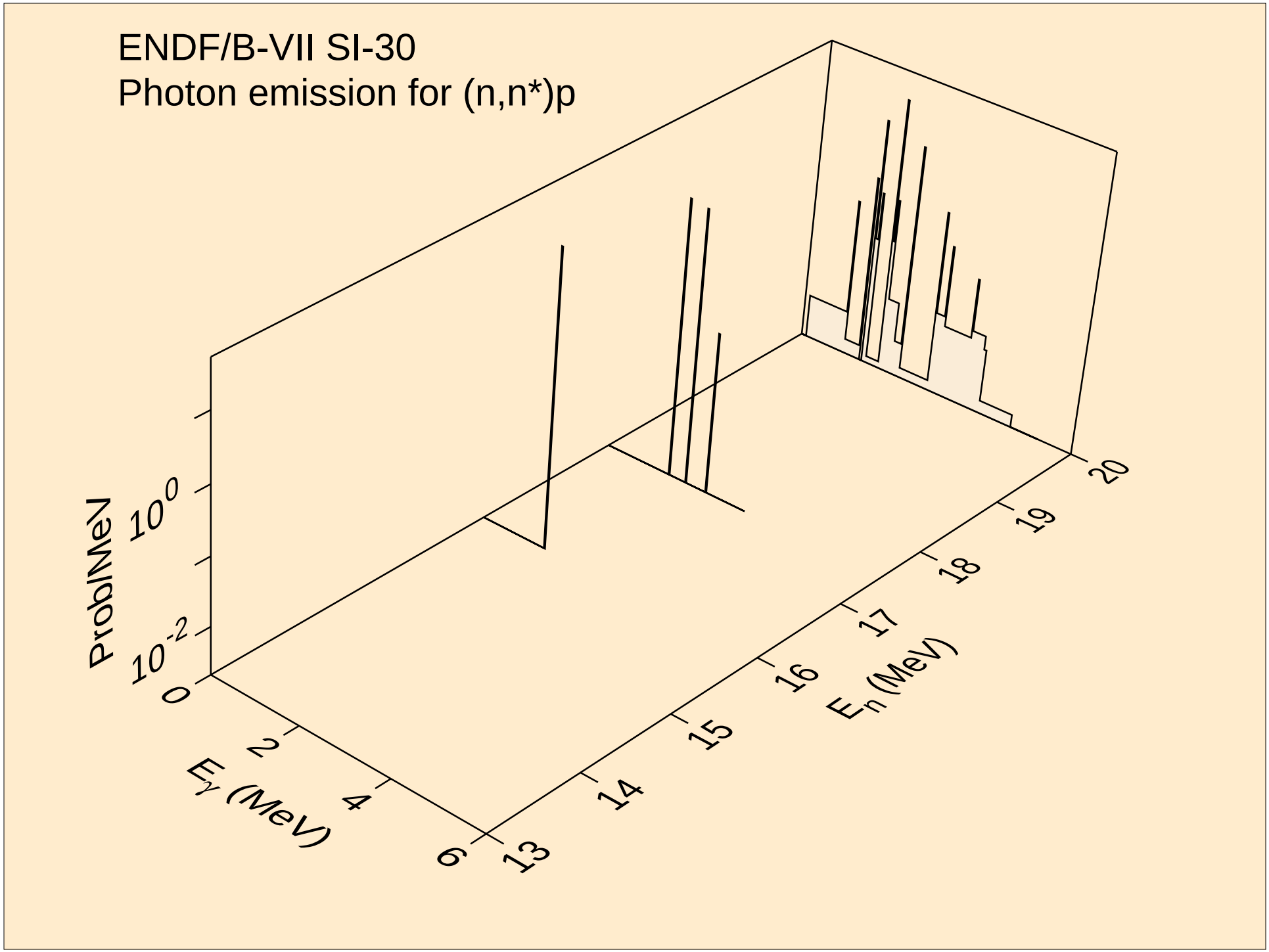

ENDF/B-VII SI-30
Neutron emission for (n,n*)p
Prob/MeV
10^{1}
10^{-1}
0
2
4
6
Sec. Energy
13
14
15
16
17
18
19
20
Energy (MeV)

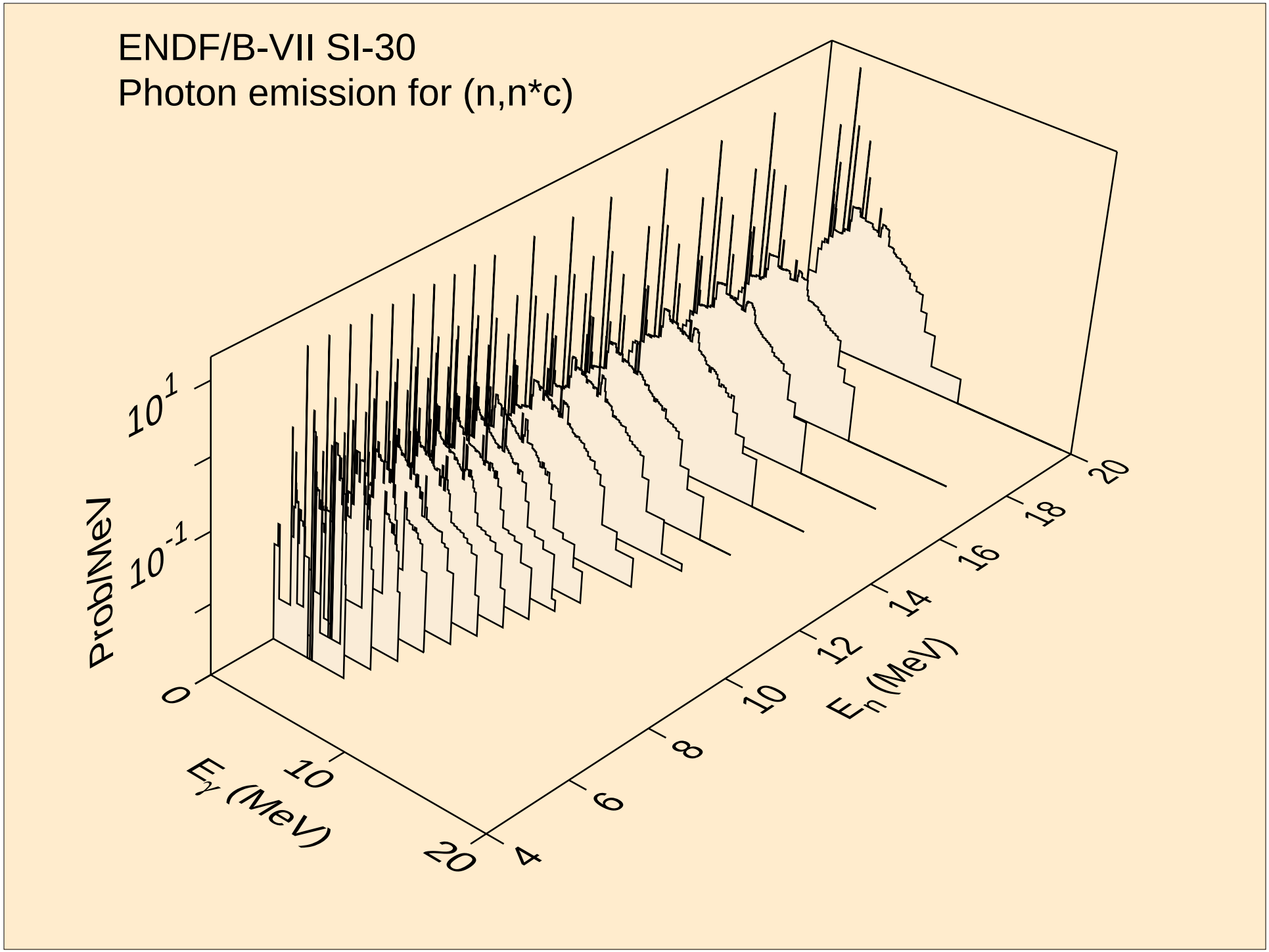

ENDF/B-VII SI-30
Neutron emission for (n,n*c)
Prob/MeV
10^-1
10^-3
0
5
10
15
Sec. Energy
4
6
8
10
12
14
16
18
20
Energy (MeV)

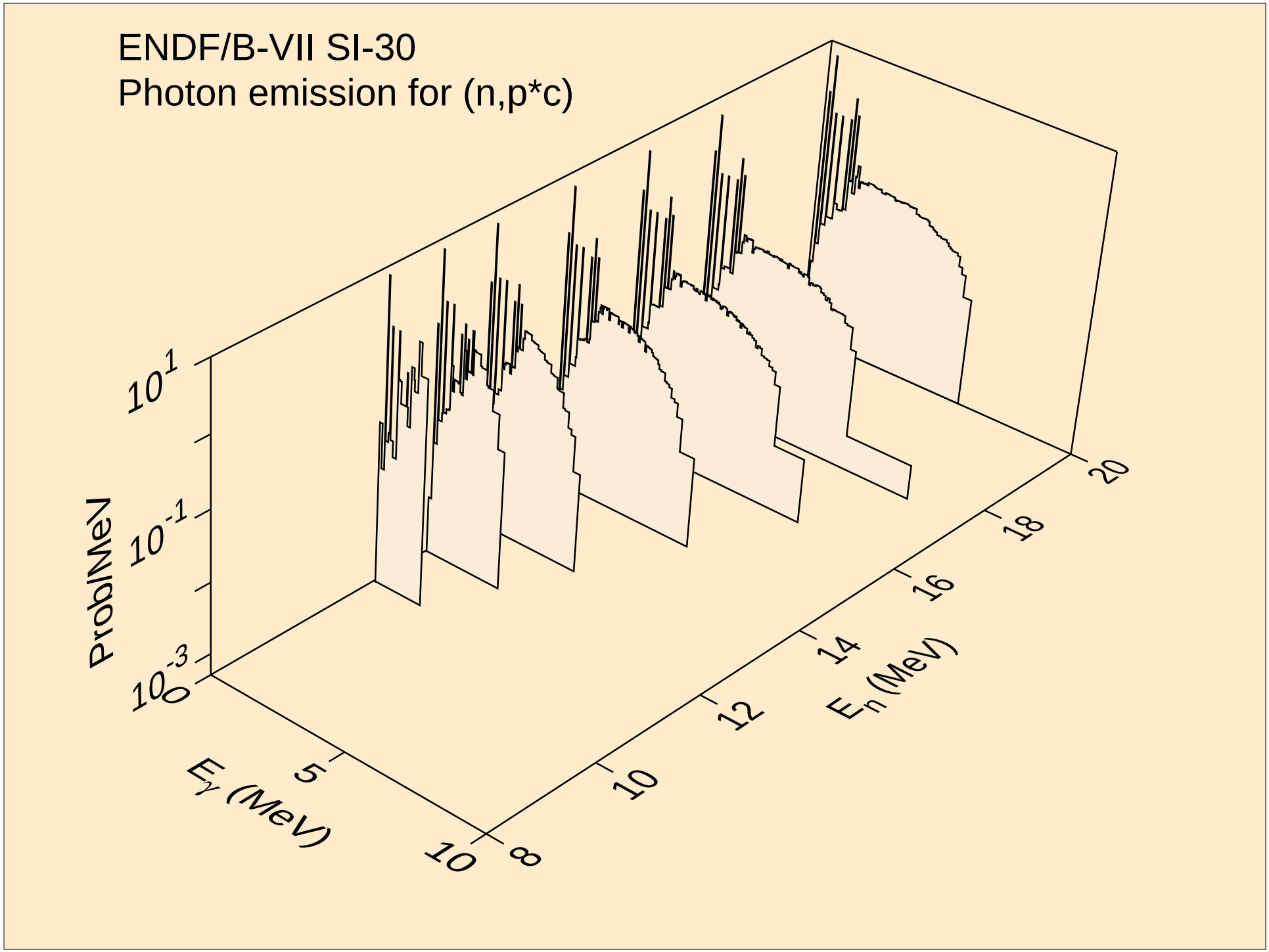

ENDF/B-VII SI-30
Photon emission for (n,x)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
E_γ (MeV)
0
10
20
E_n (MeV)
0
20
40
60
80
100
120
140
160

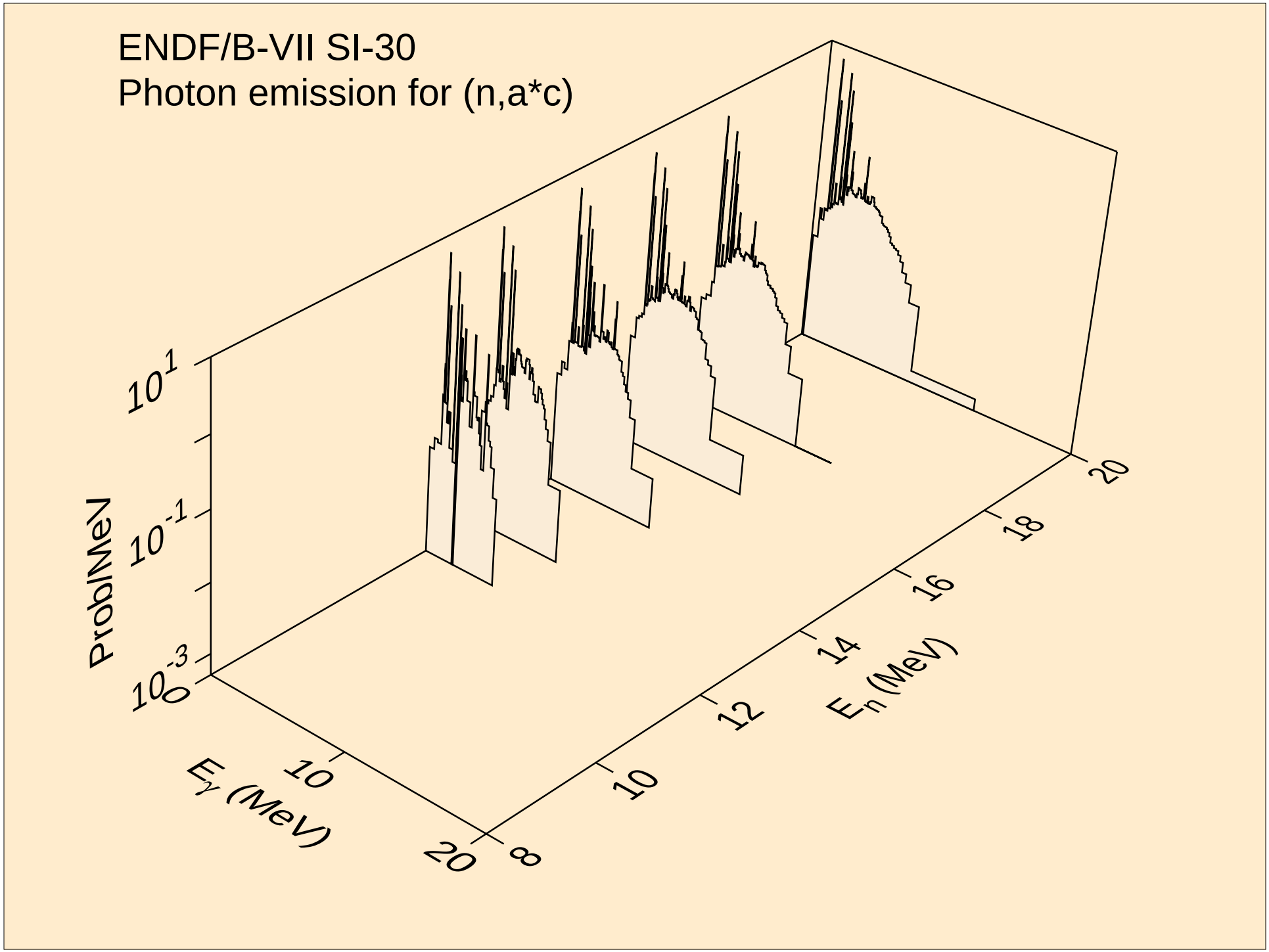

ENDF/B-VII SI-30
Photon emission for (n,2n)
Prob/MeV
10^{0}
10^{-2}
0
E_γ (MeV)
5
10
10
12
14
16
18
20
E_n (MeV)

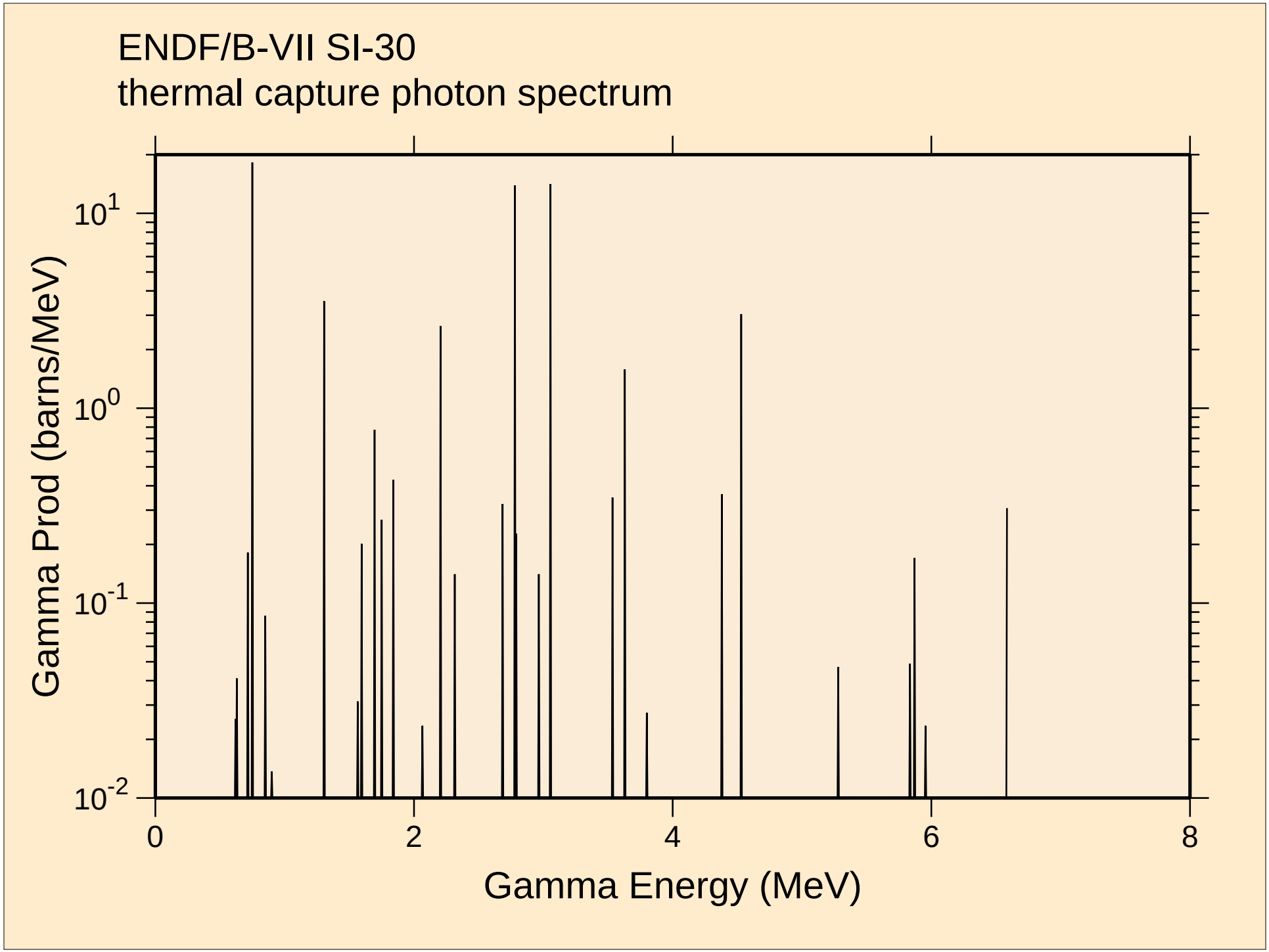

ENDF/B-VII SI-30
Photon emission for (n,n*)a
Prob/MeV
10^{0}
10^{-2}
0
E_γ (MeV)
2
4
10
12
14
16
18
20
E_n (MeV)

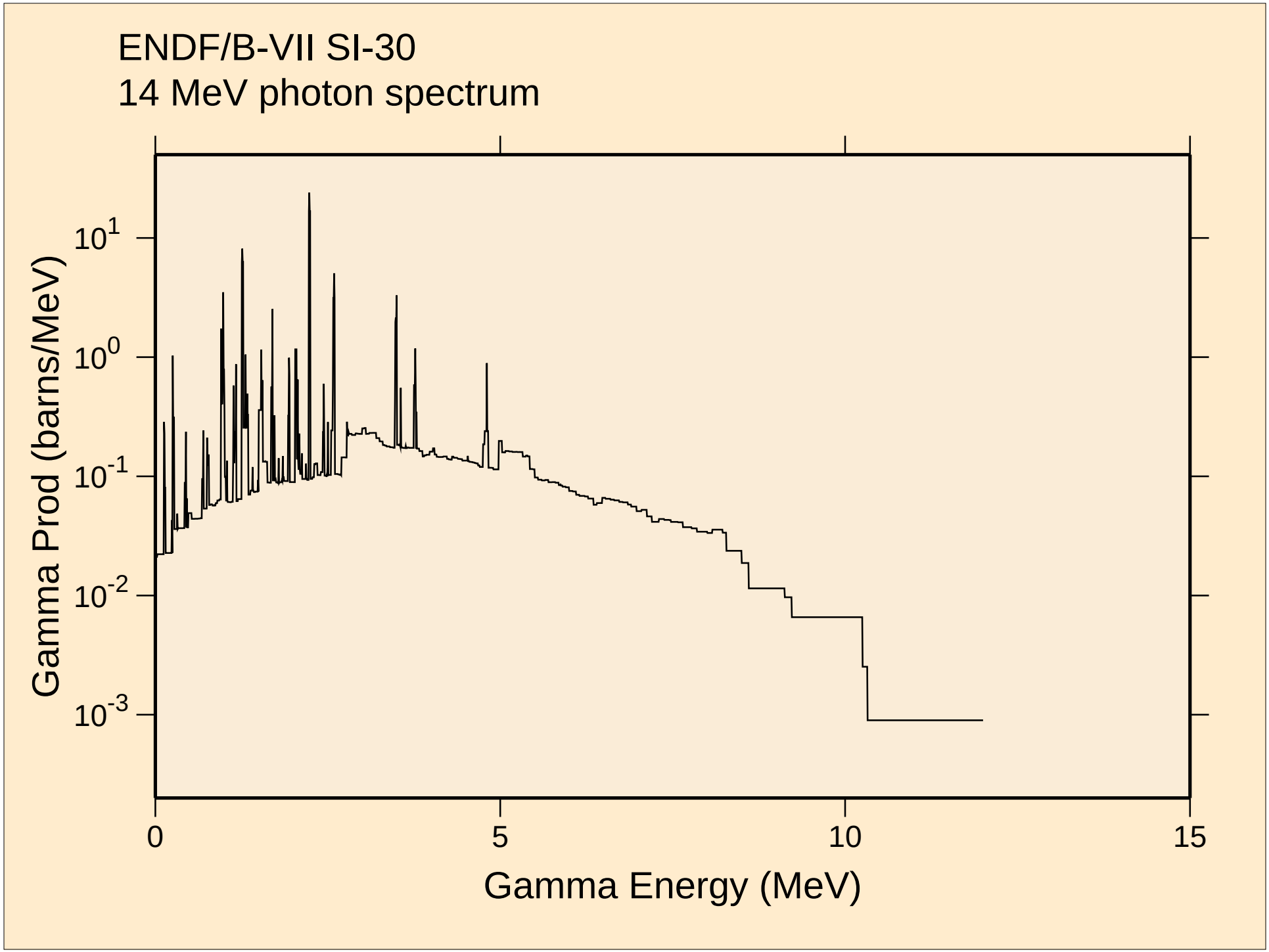

ENDF/B-VII SI-30
Photon emission for (n,n*)p
Prob/MeV
10^{0}
10^{-2}
0
2
4
6
E_γ (MeV)
13
14
15
16
17
18
19
20
E_n (MeV)

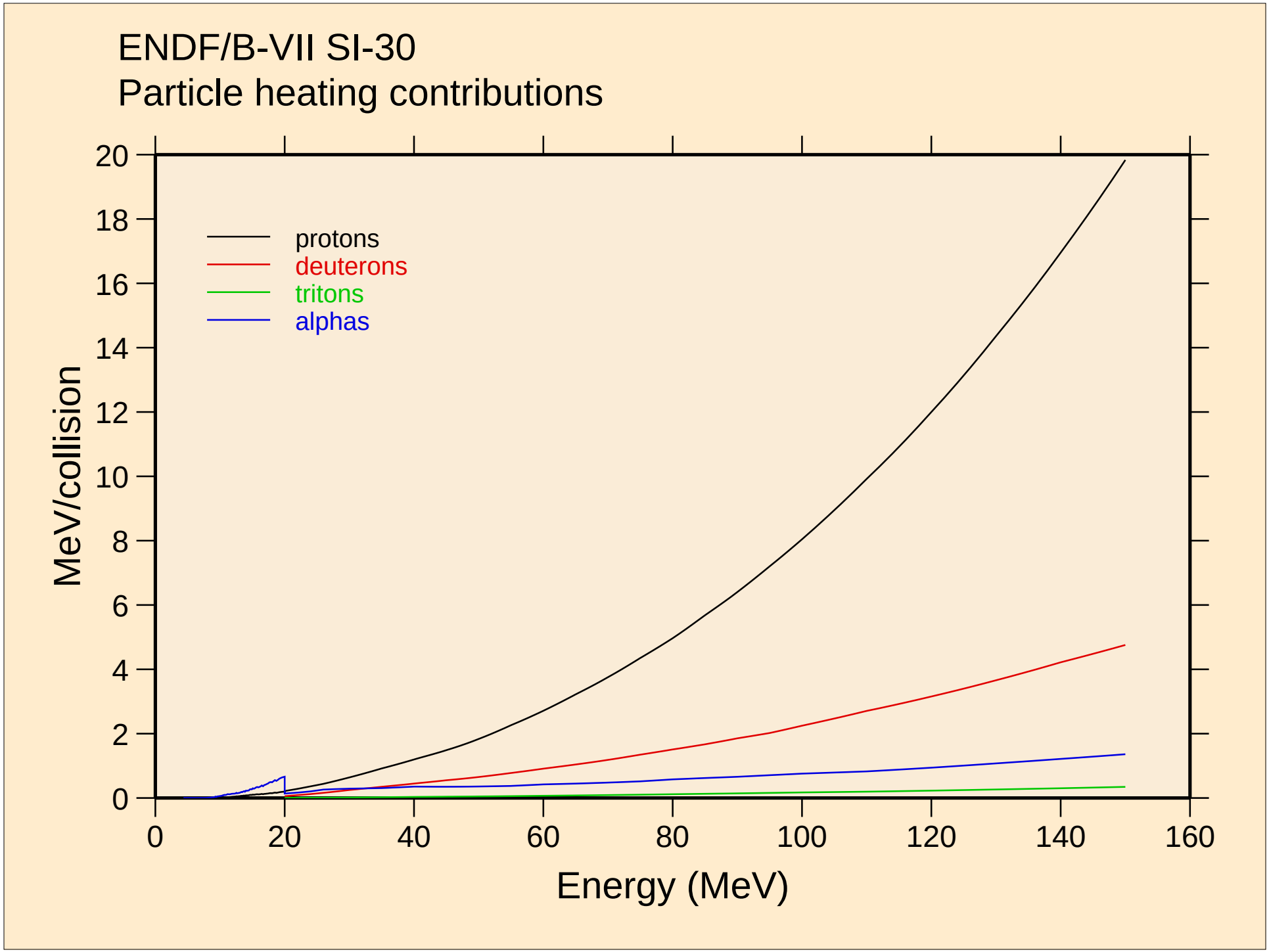

ENDF/B-VII SI-30
Photon emission for (n,n*c)
Prob/MeV
10^{1}
10^{-1}
0
10
20
E_γ (MeV)
4
6
8
10
12
14
16
18
20
E_n (MeV)

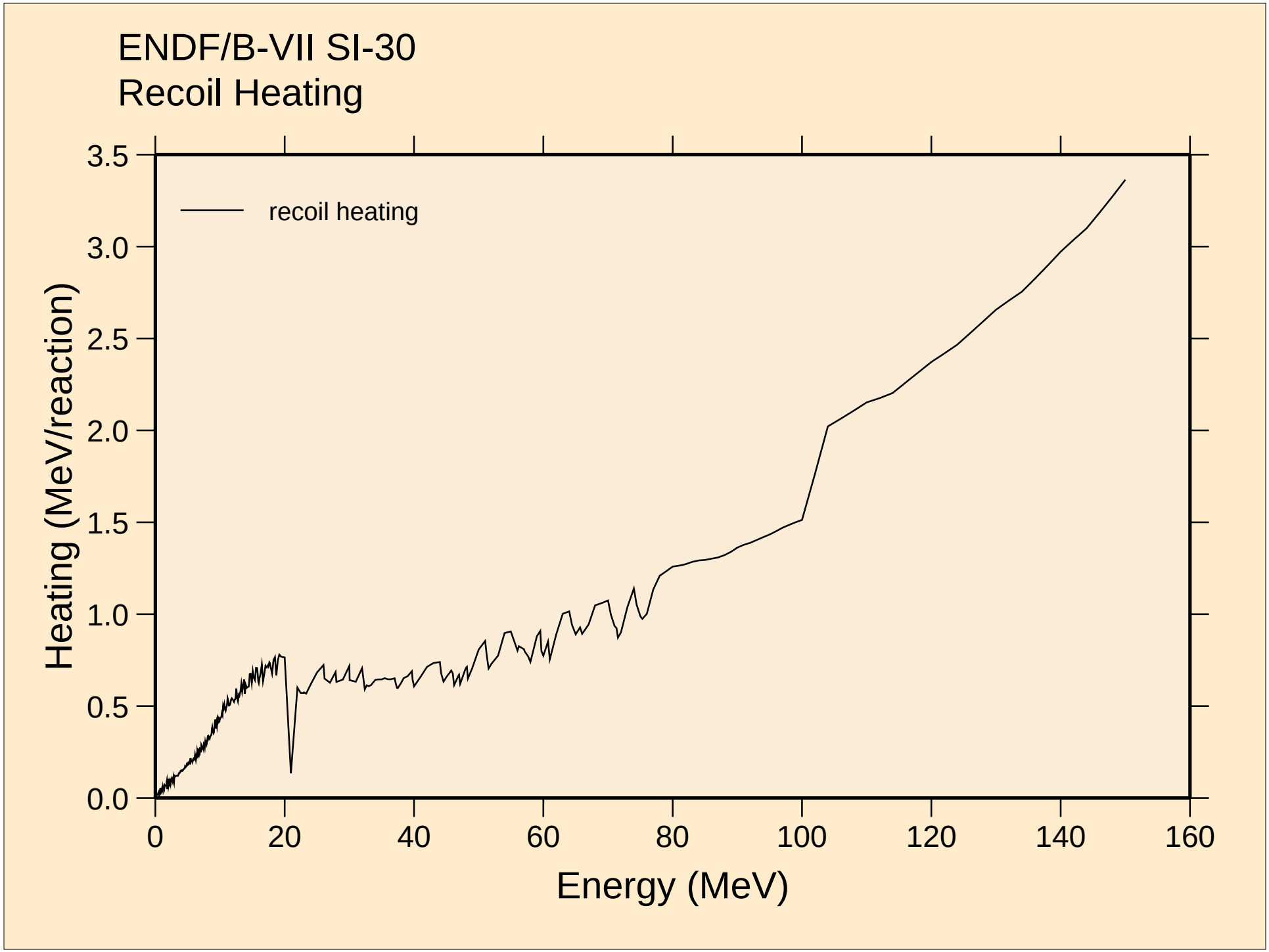

ENDF/B-VII SI-30
Photon emission for (n,p*c)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
5
10
E_γ (MeV)
8
10
12
14
16
18
20
E_n (MeV)

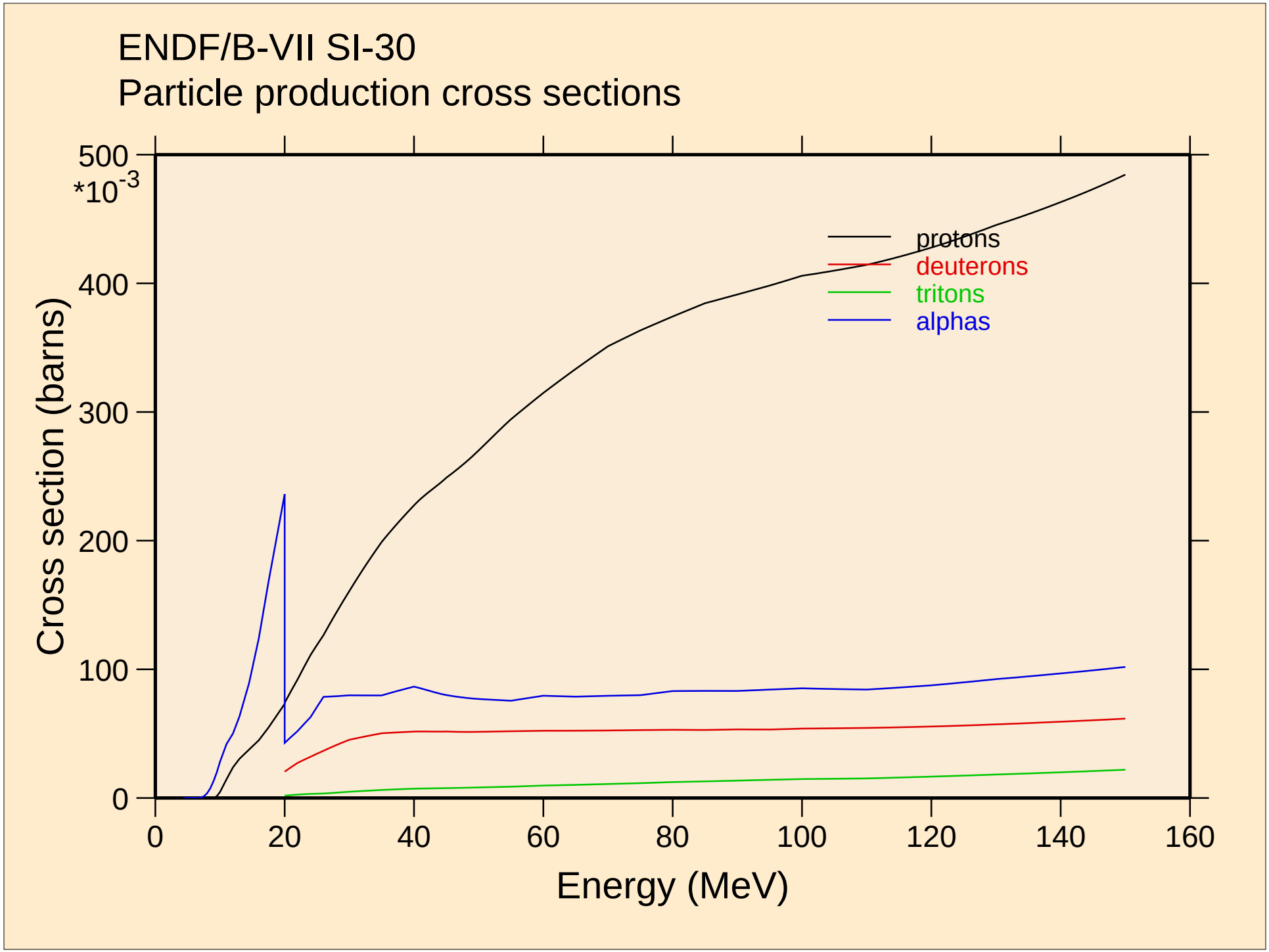

ENDF/B-VII SI-30
Photon emission for (n,a*c)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
10
20
E_γ (MeV)
8
10
12
14
16
18
20
E_n (MeV)

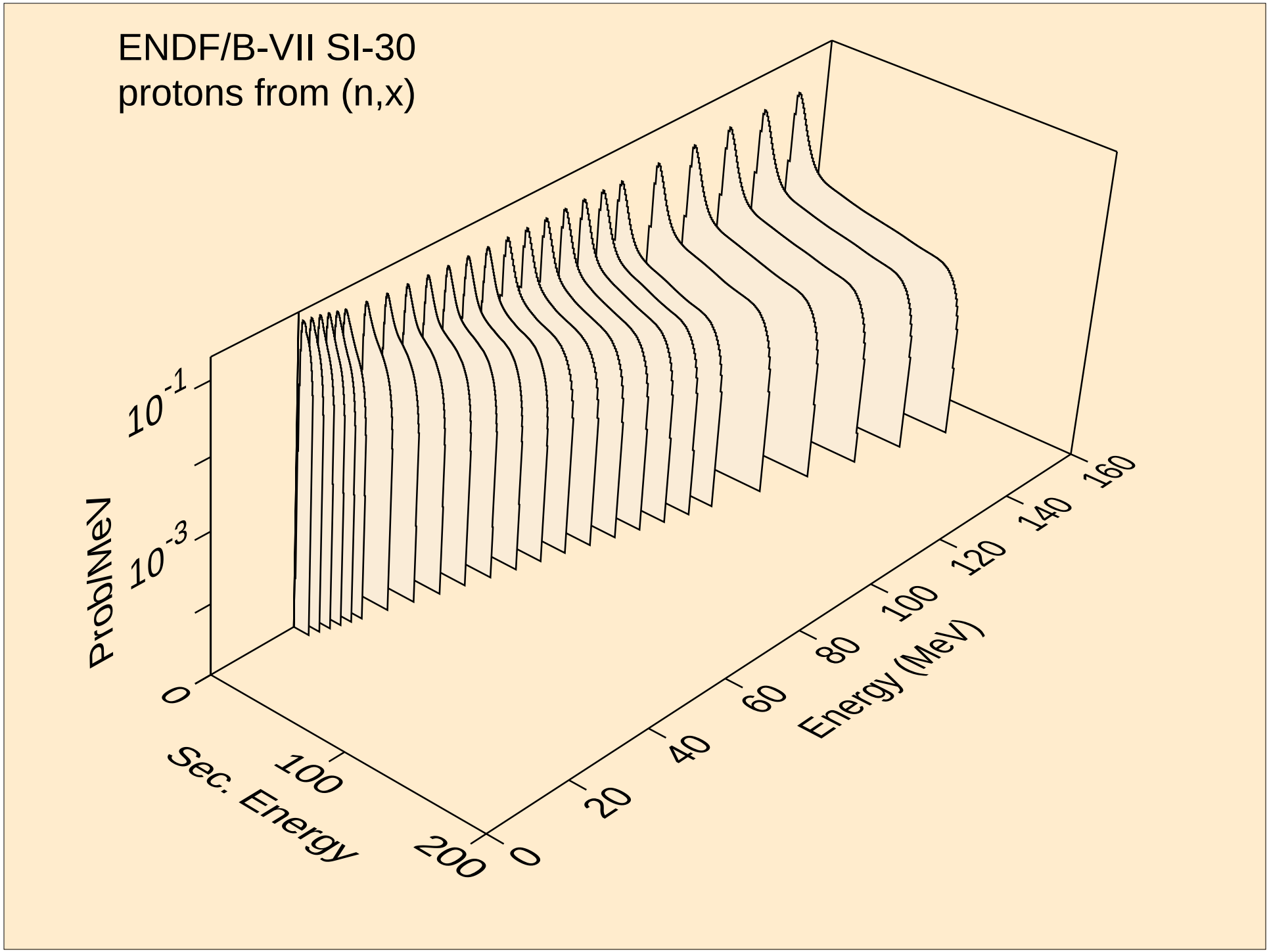

ENDF/B-VII SI-30
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^1
10^0
10^-1
10^-2
0
2
4
6
8
Gamma Energy (MeV)

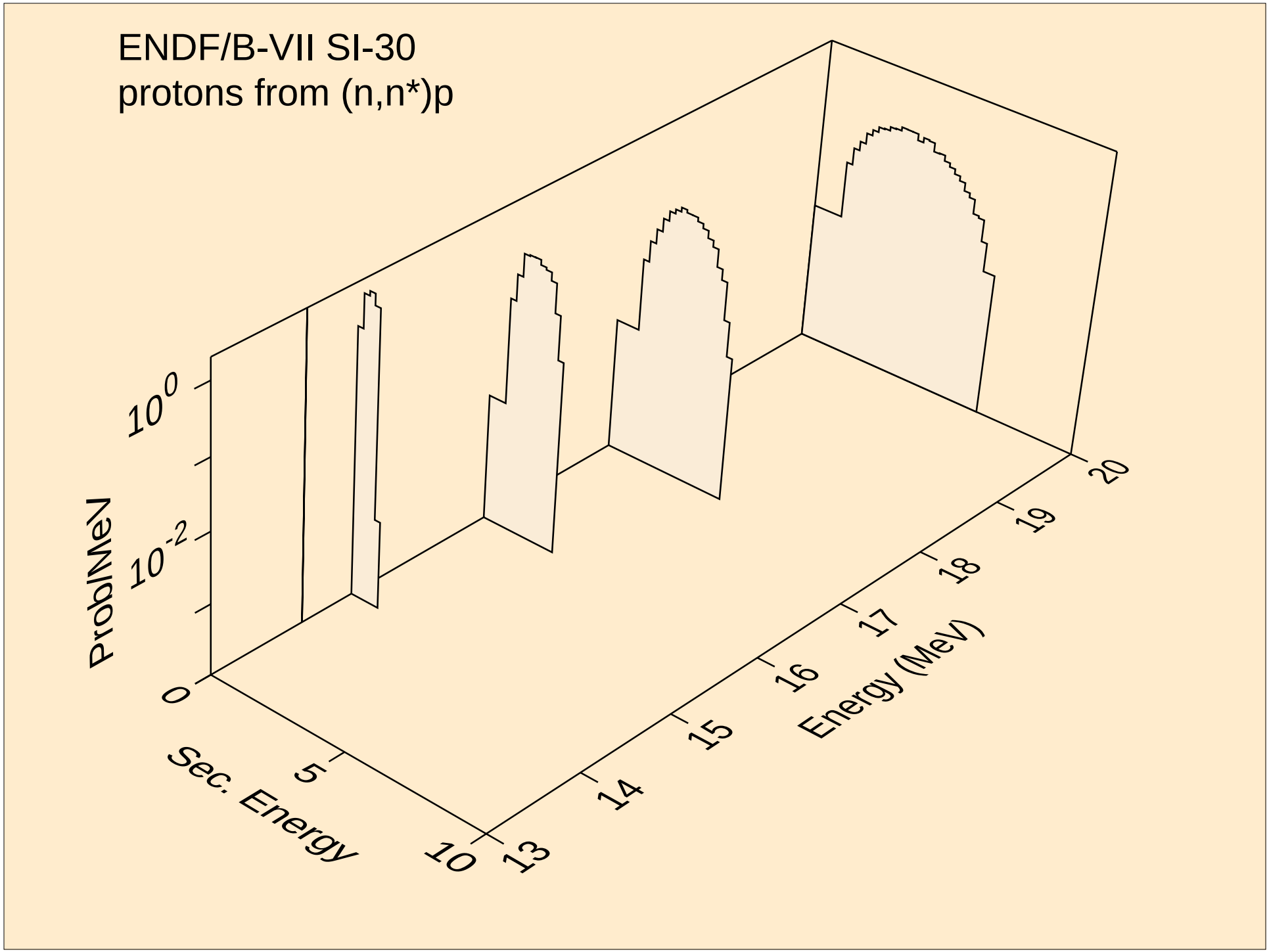

ENDF/B-VII SI-30
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^1
10^0
10^-1
10^-2
10^-3
0
5
10
15
Gamma Energy (MeV)

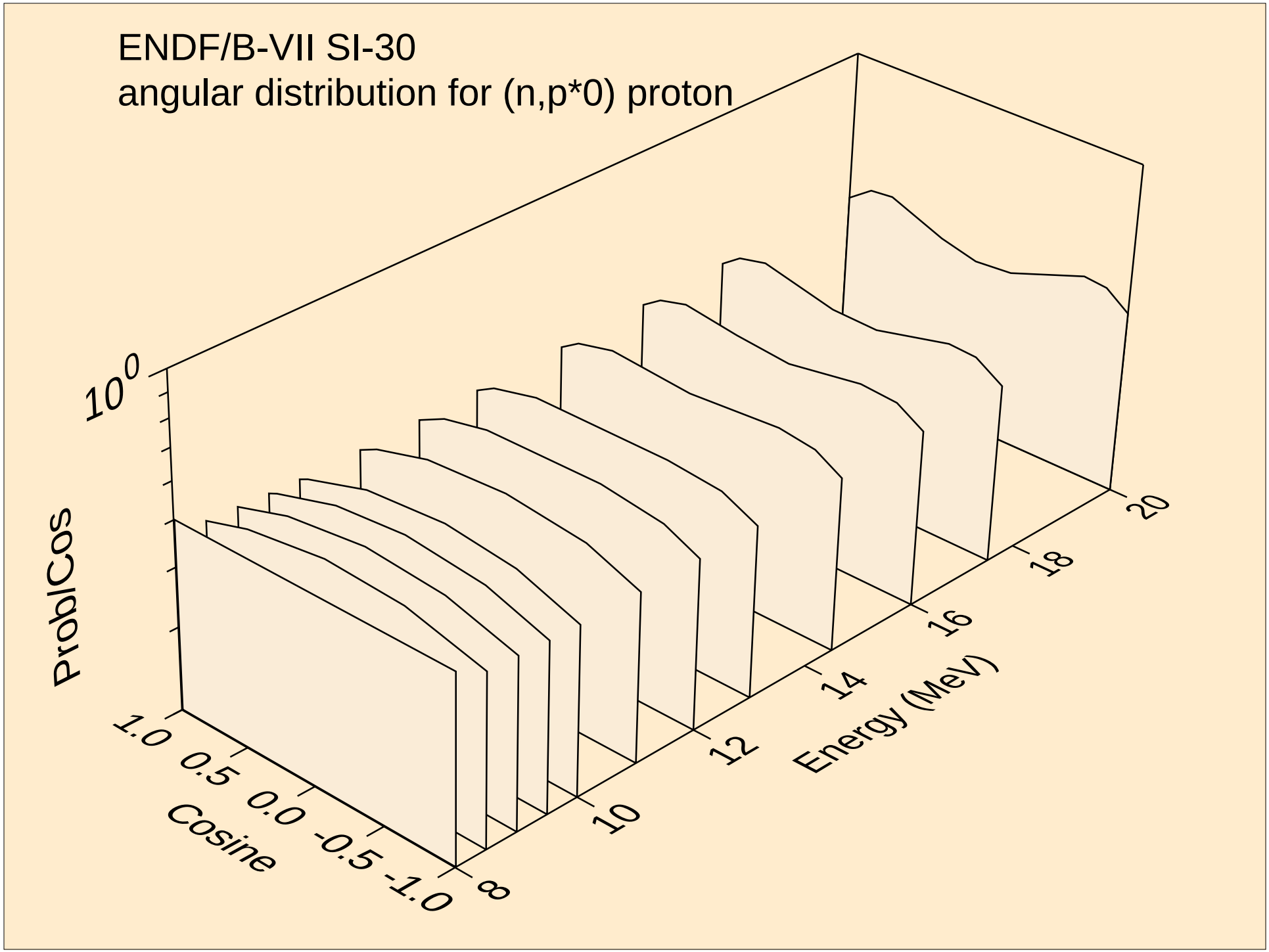

ENDF/B-VII SI-30
Particle heating contributions
protons
deuterons
tritons
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20
0
20
40
60
80
100
120
140
160

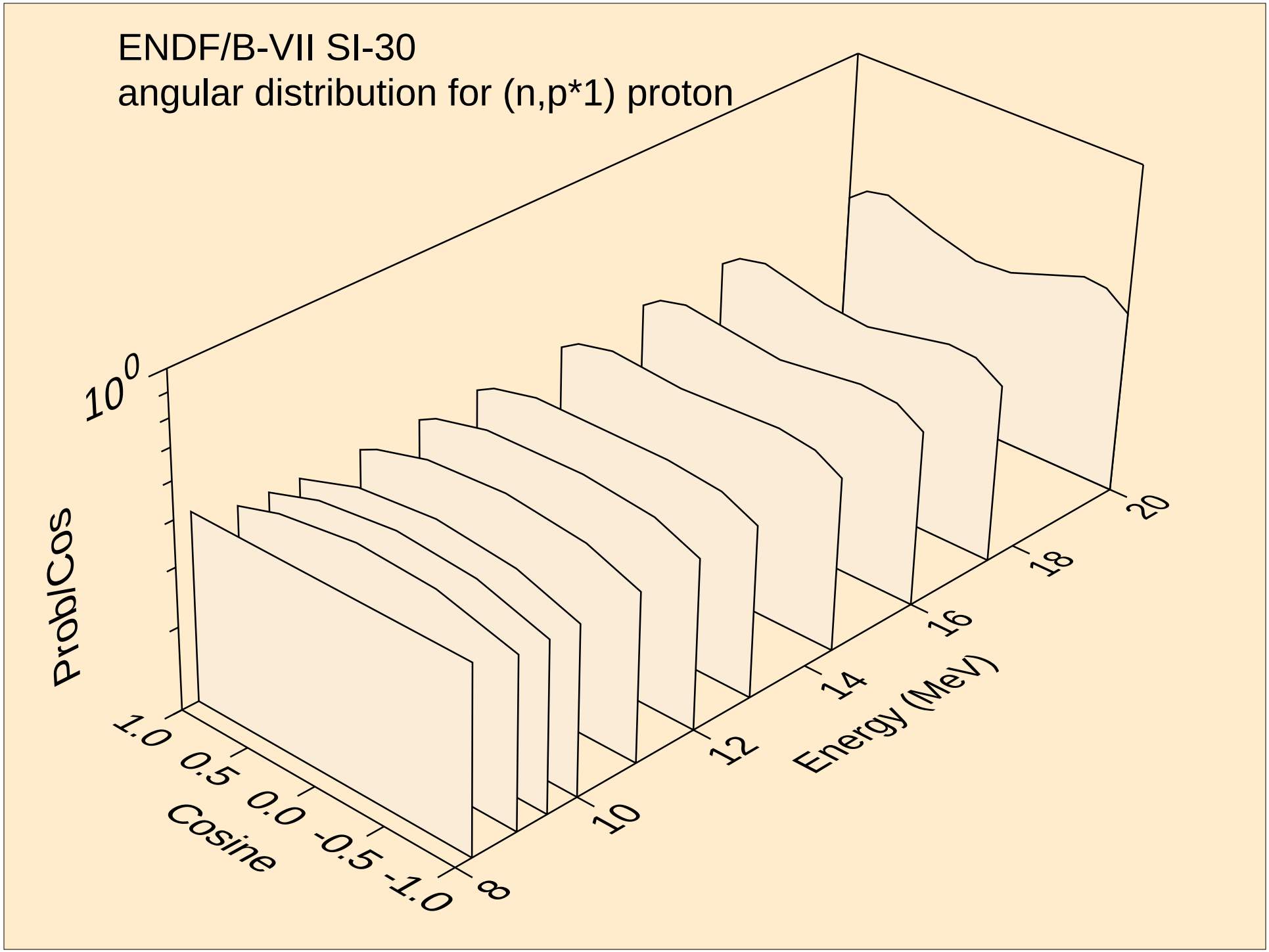

ENDF/B-VII SI-30
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0
20
40
60
80
100
120
140
160

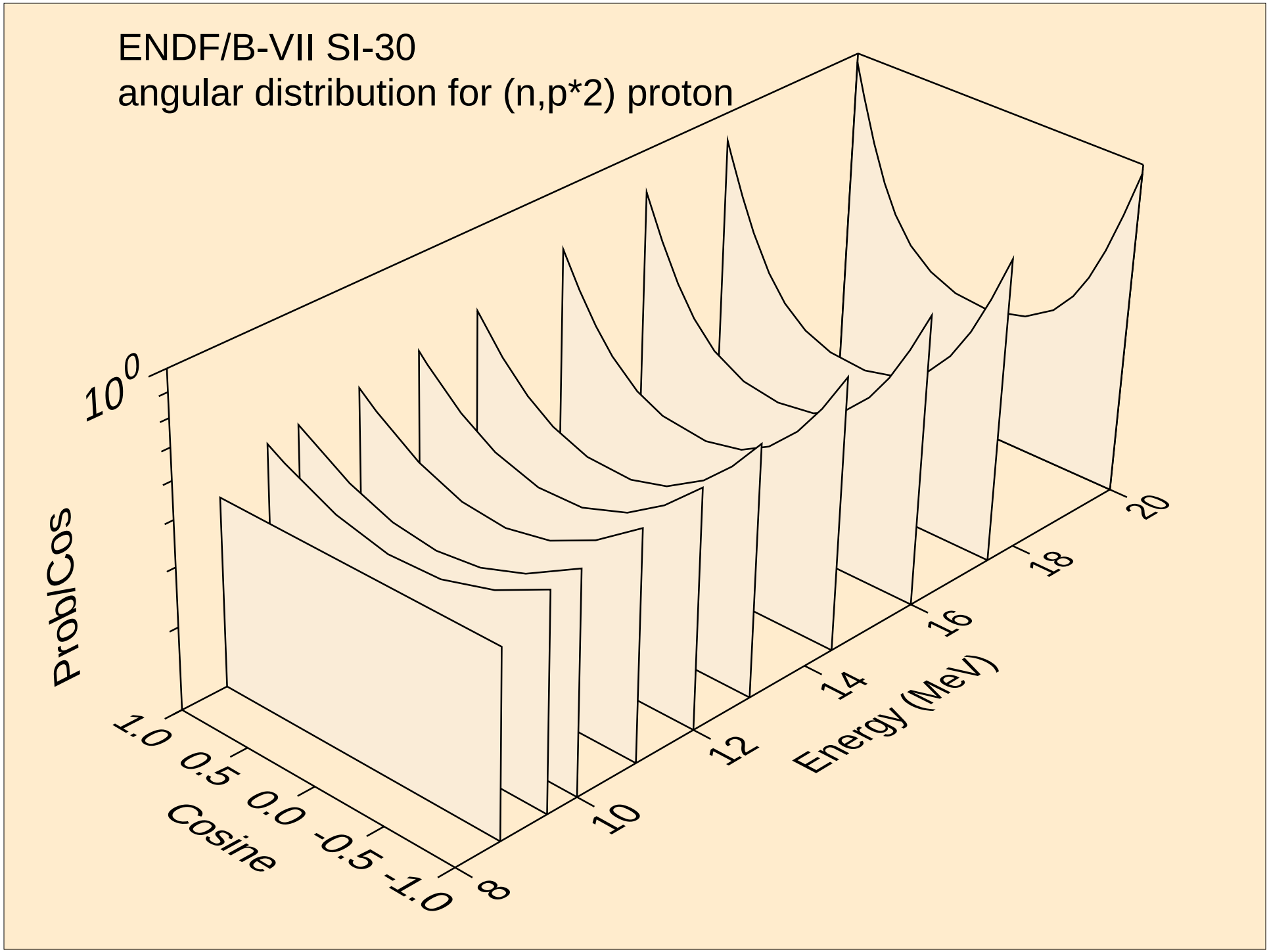

ENDF/B-VII SI-30
Particle production cross sections
Cross section (barns)
*10-3
500
400
300
200
100
0
0
20
40
60
80
100
120
140
160
Energy (MeV)
protons
deuterons
tritons
alphas

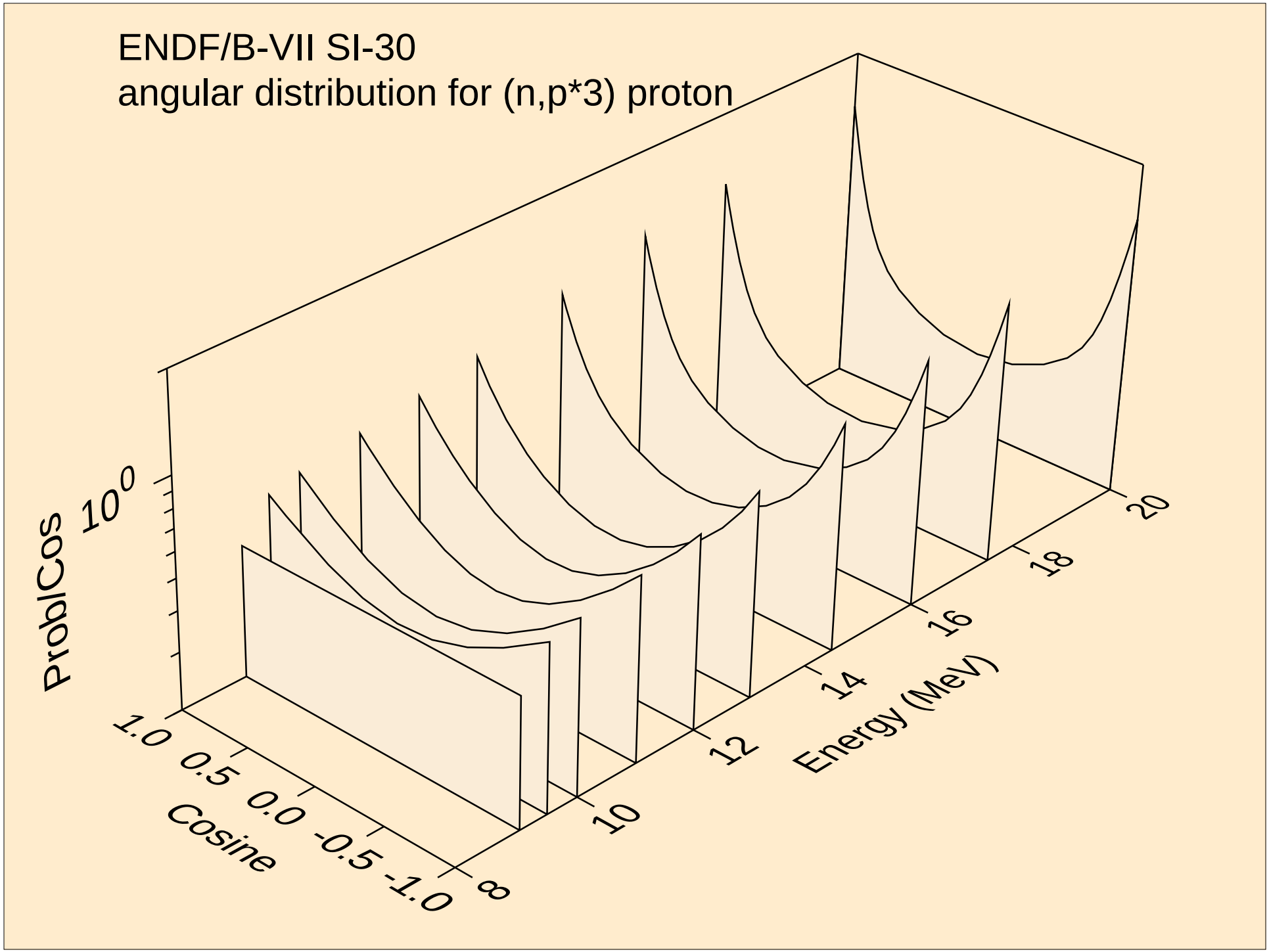

ENDF/B-VII SI-30
protons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
Energy (MeV)

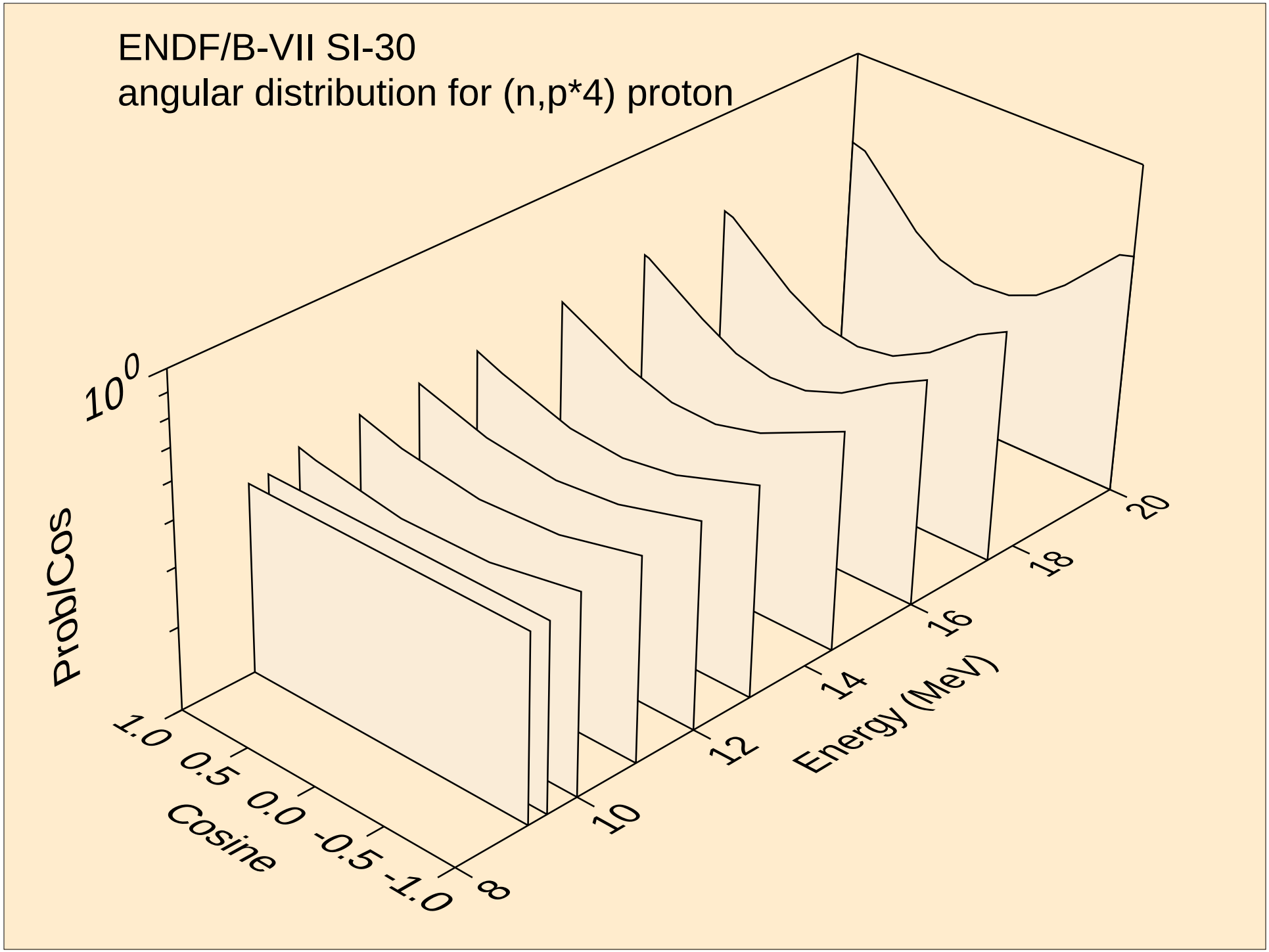

ENDF/B-VII SI-30
protons from (n,n*)p
Prob/MeV
10^{0}
10^{-2}
0
Sec. Energy
5
10
13
14
15
16
17
18
19
20
Energy (MeV)

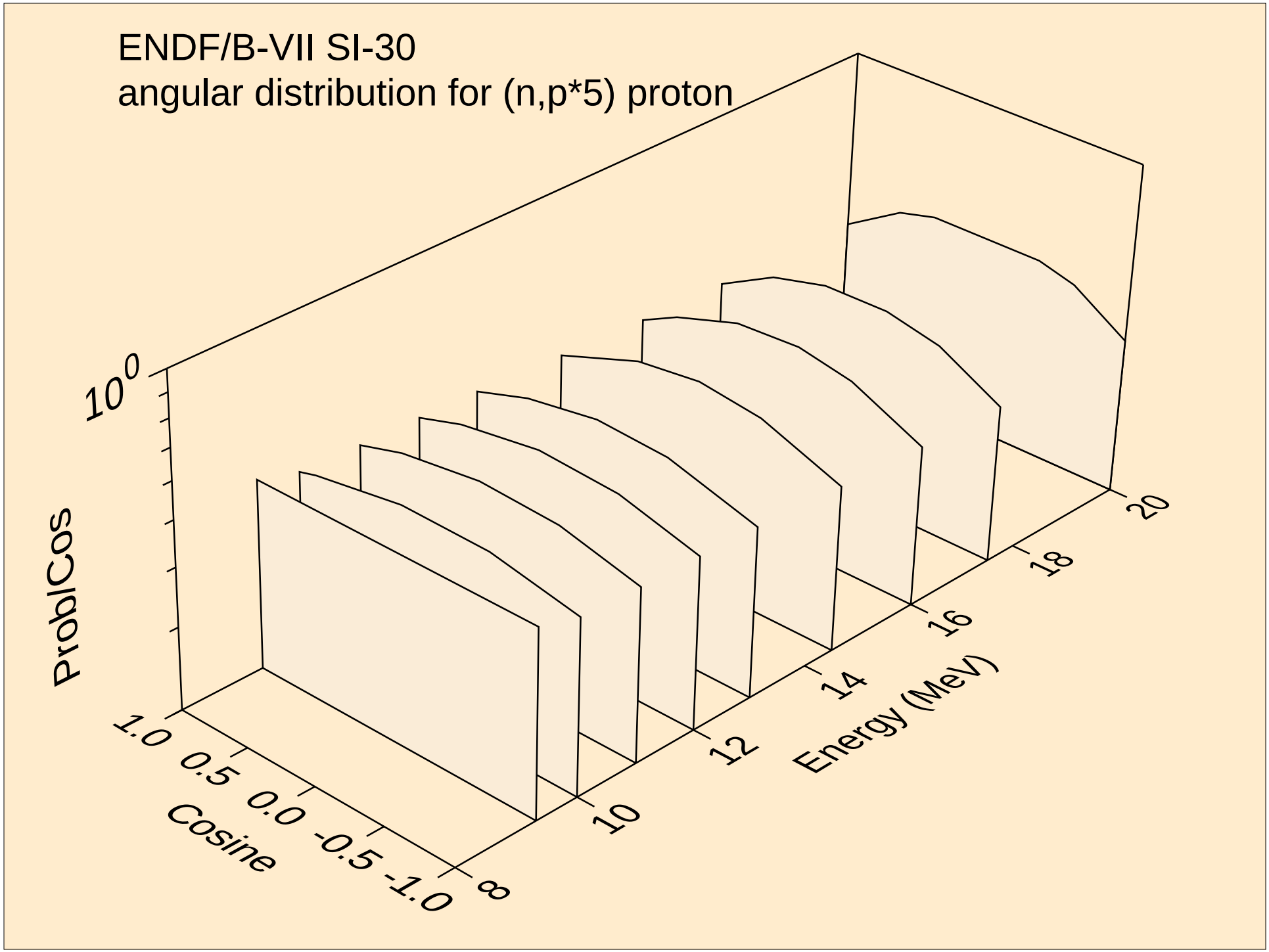

ENDF/B-VII SI-30
angular distribution for (n,p*0) proton
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)

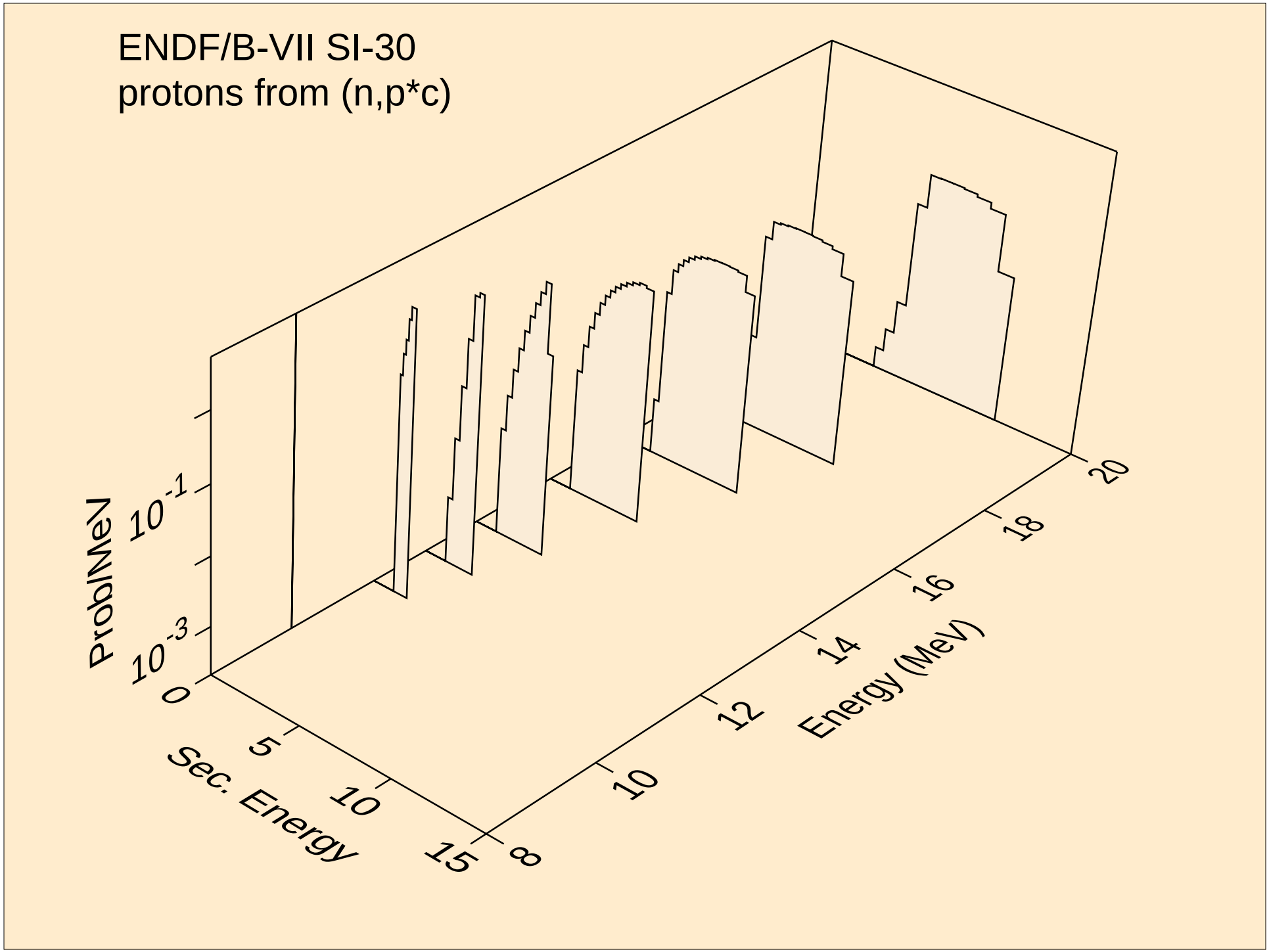

ENDF/B-VII SI-30
angular distribution for (n,p*1) proton
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)

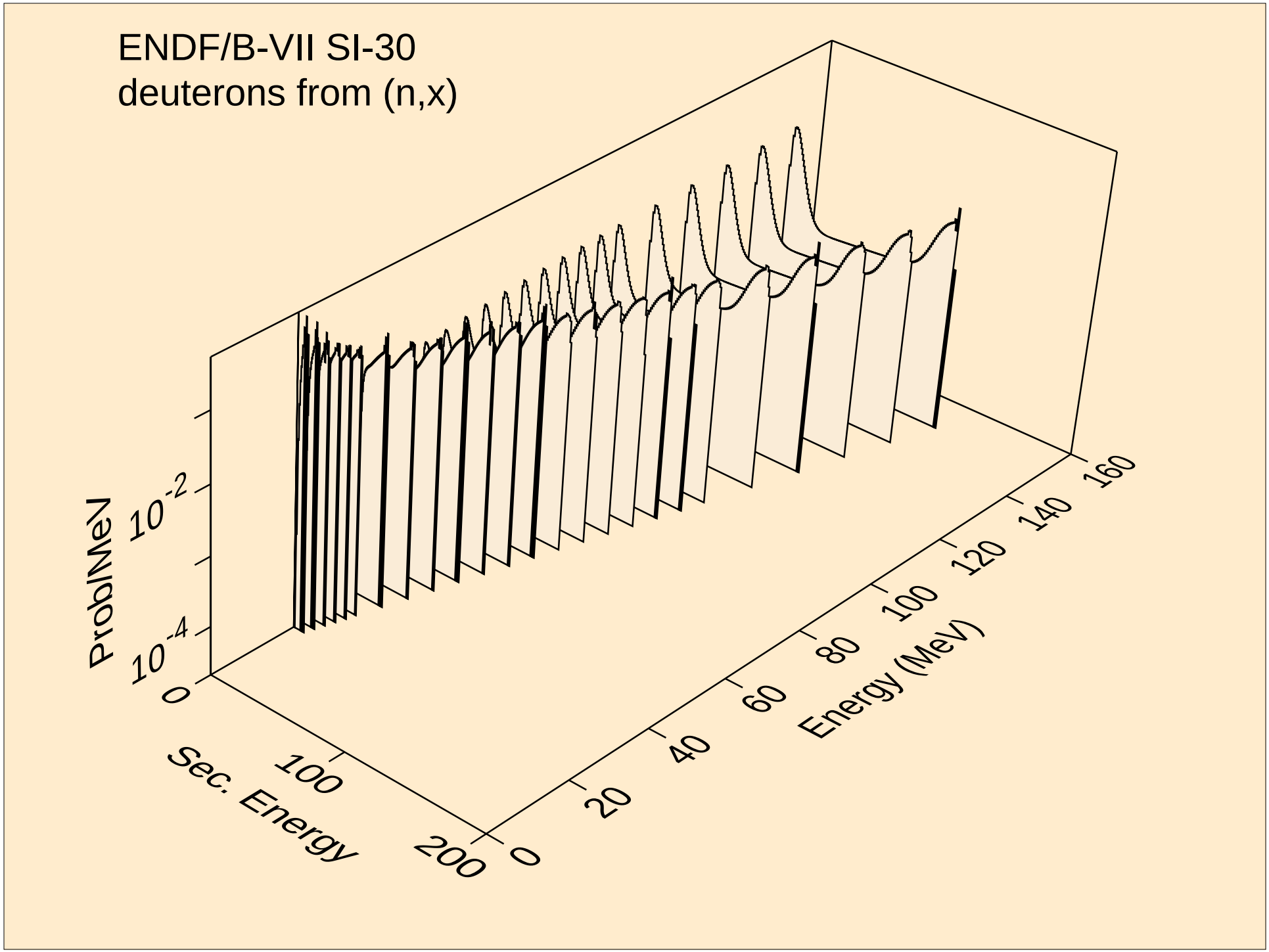

ENDF/B-VII SI-30
angular distribution for (n,p*2) proton
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)

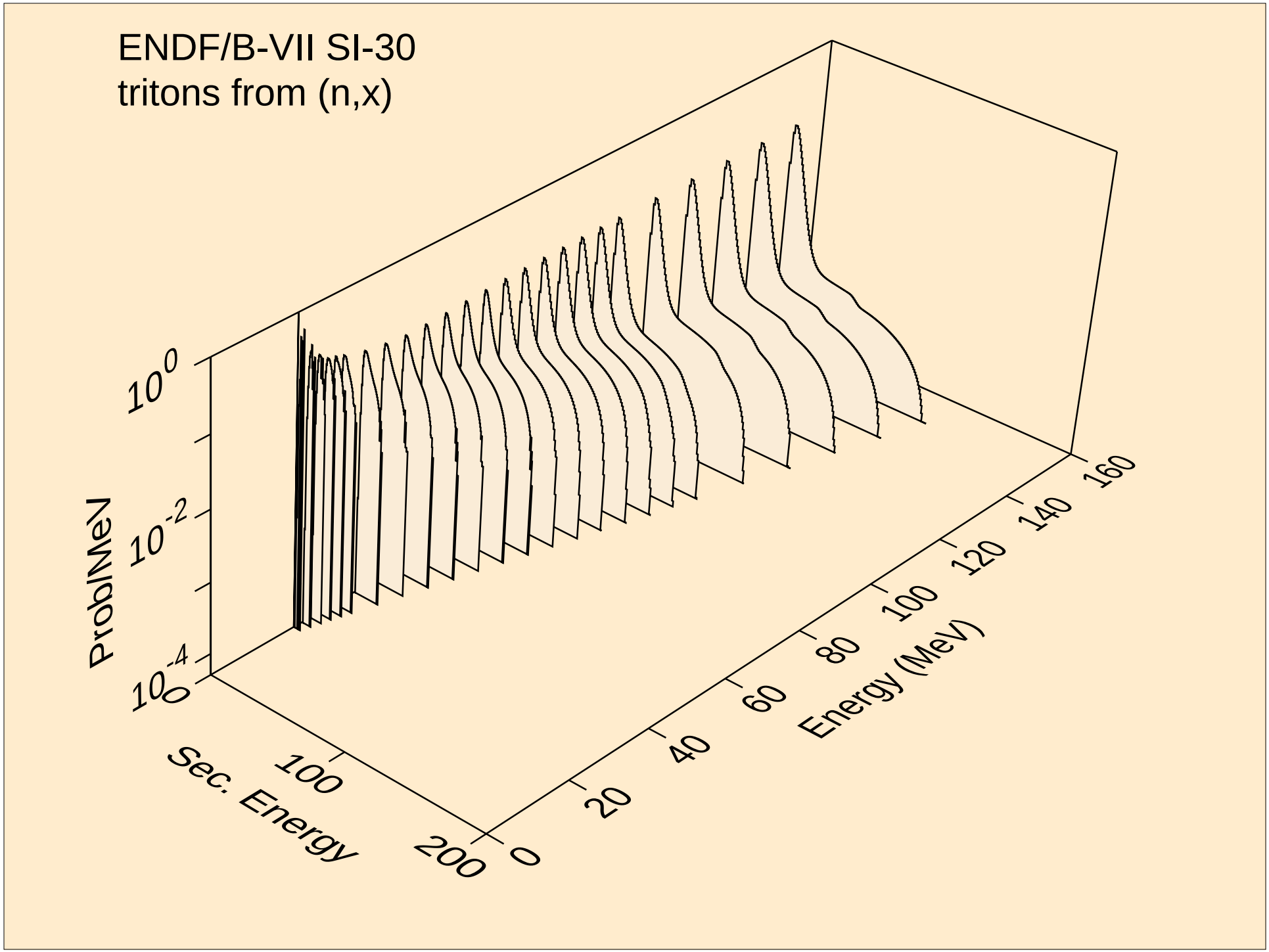

ENDF/B-VII SI-30
angular distribution for (n,p*3) proton
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)

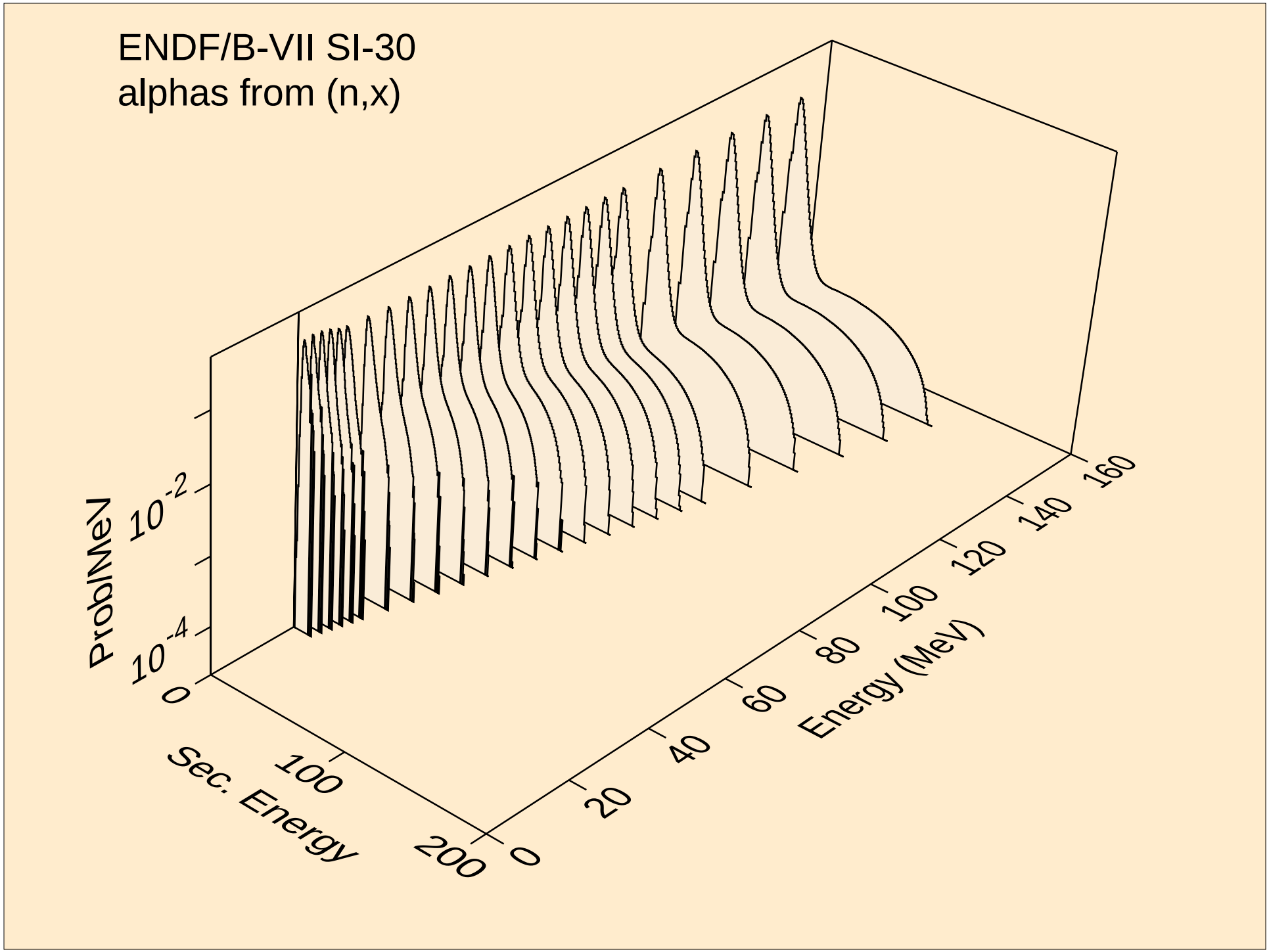

ENDF/B-VII SI-30
angular distribution for (n,p*4) proton
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)

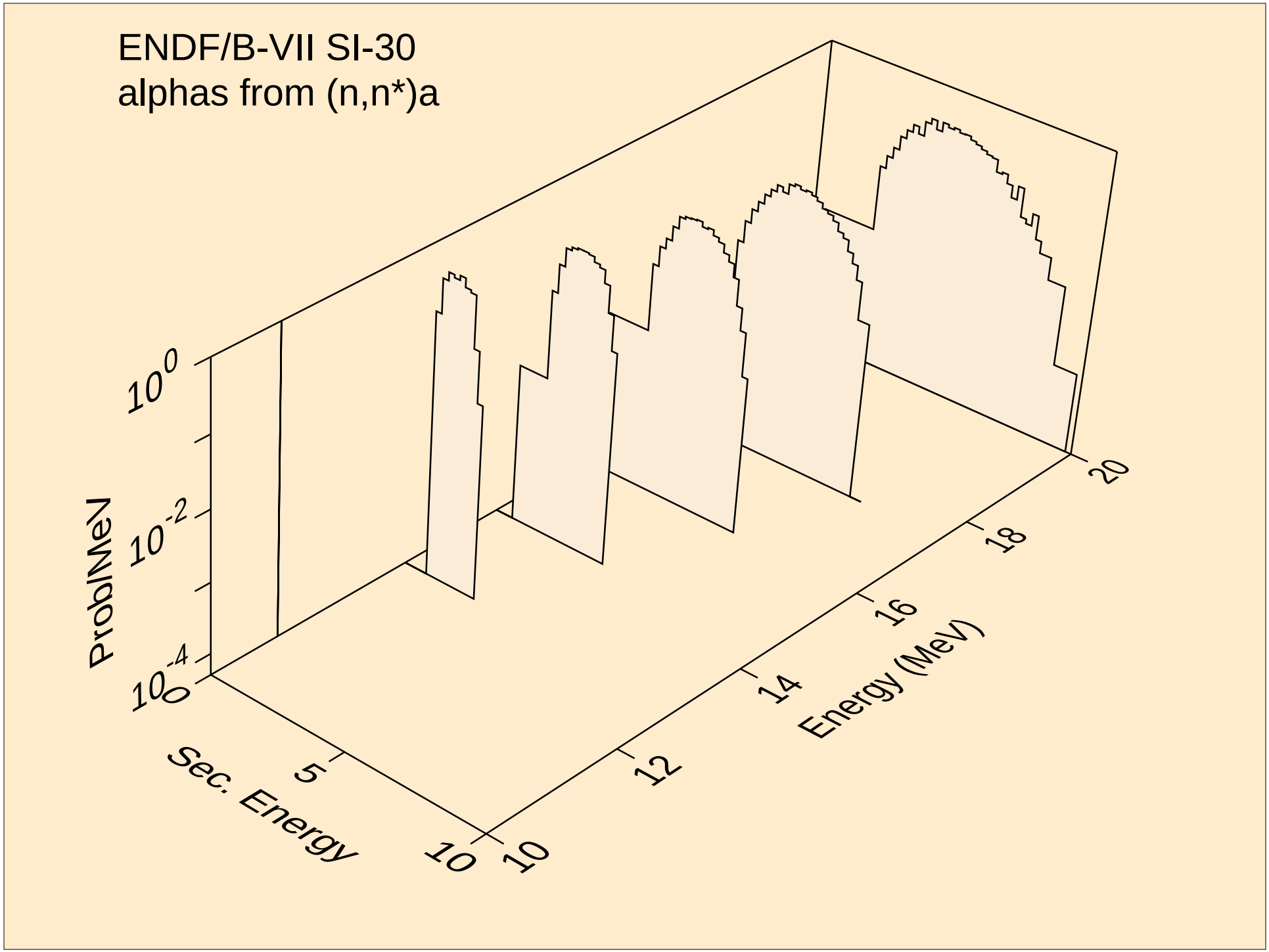

ENDF/B-VII SI-30
angular distribution for (n,p*5) proton
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)

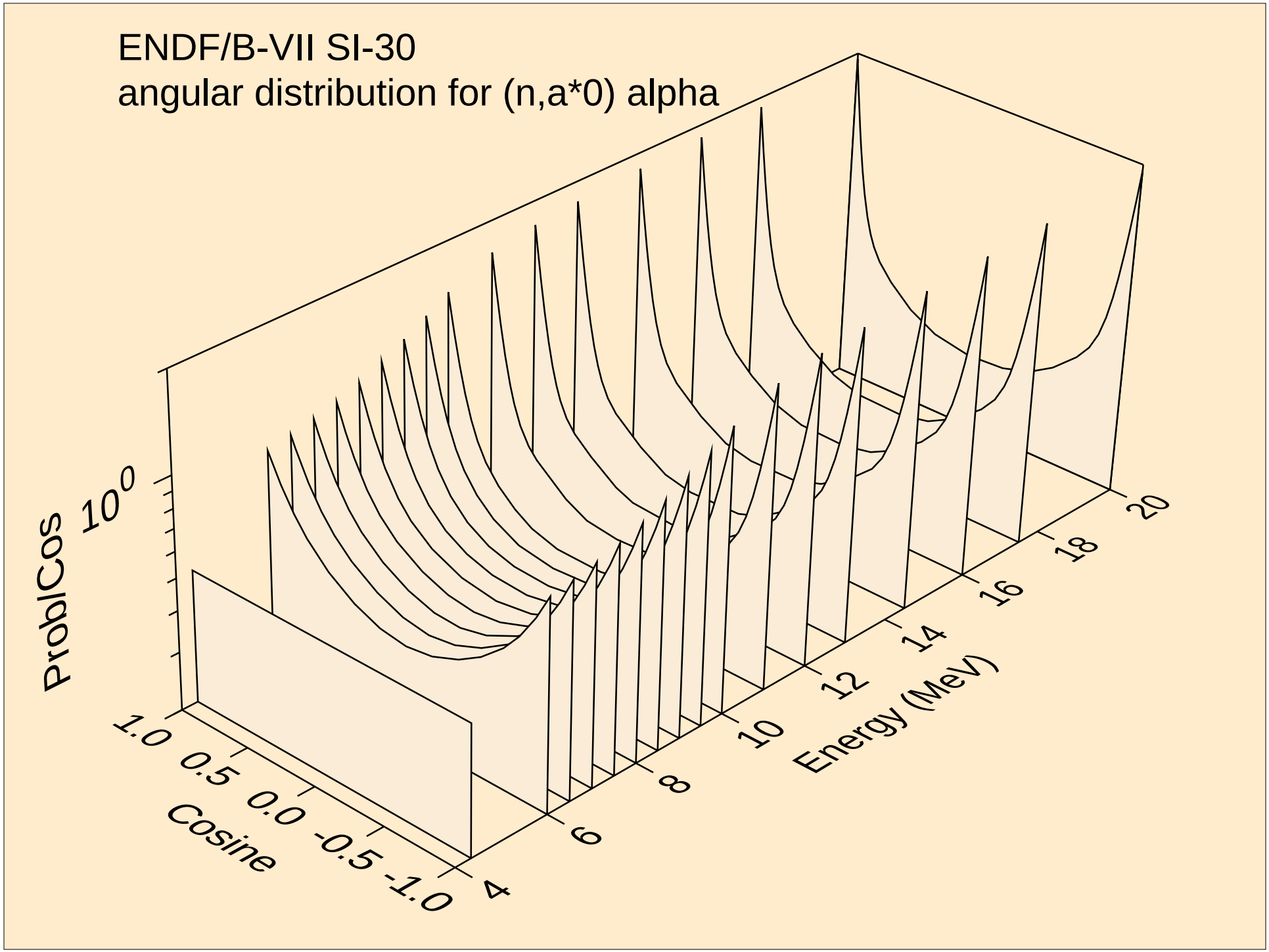

ENDF/B-VII SI-30
protons from (n,p*c)
Prob/MeV
10^{-1}
10^{-3}
0
Sec. Energy
5
10
15
∞
Energy (MeV)
10
12
14
16
18
20

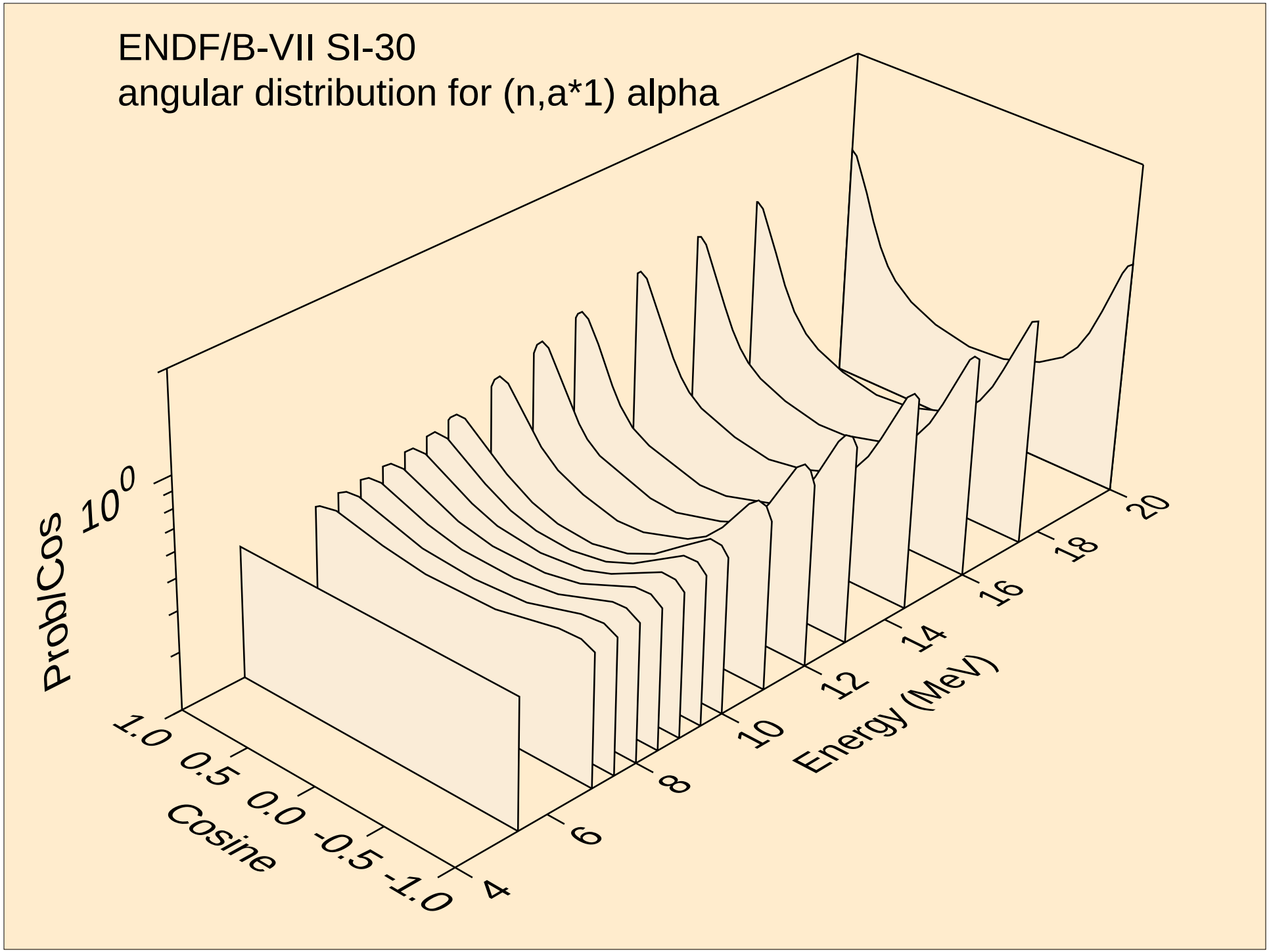

ENDF/B-VII SI-30
deuterons from (n,x)
Prob/MeV
10-2
10-4
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
Energy (MeV)

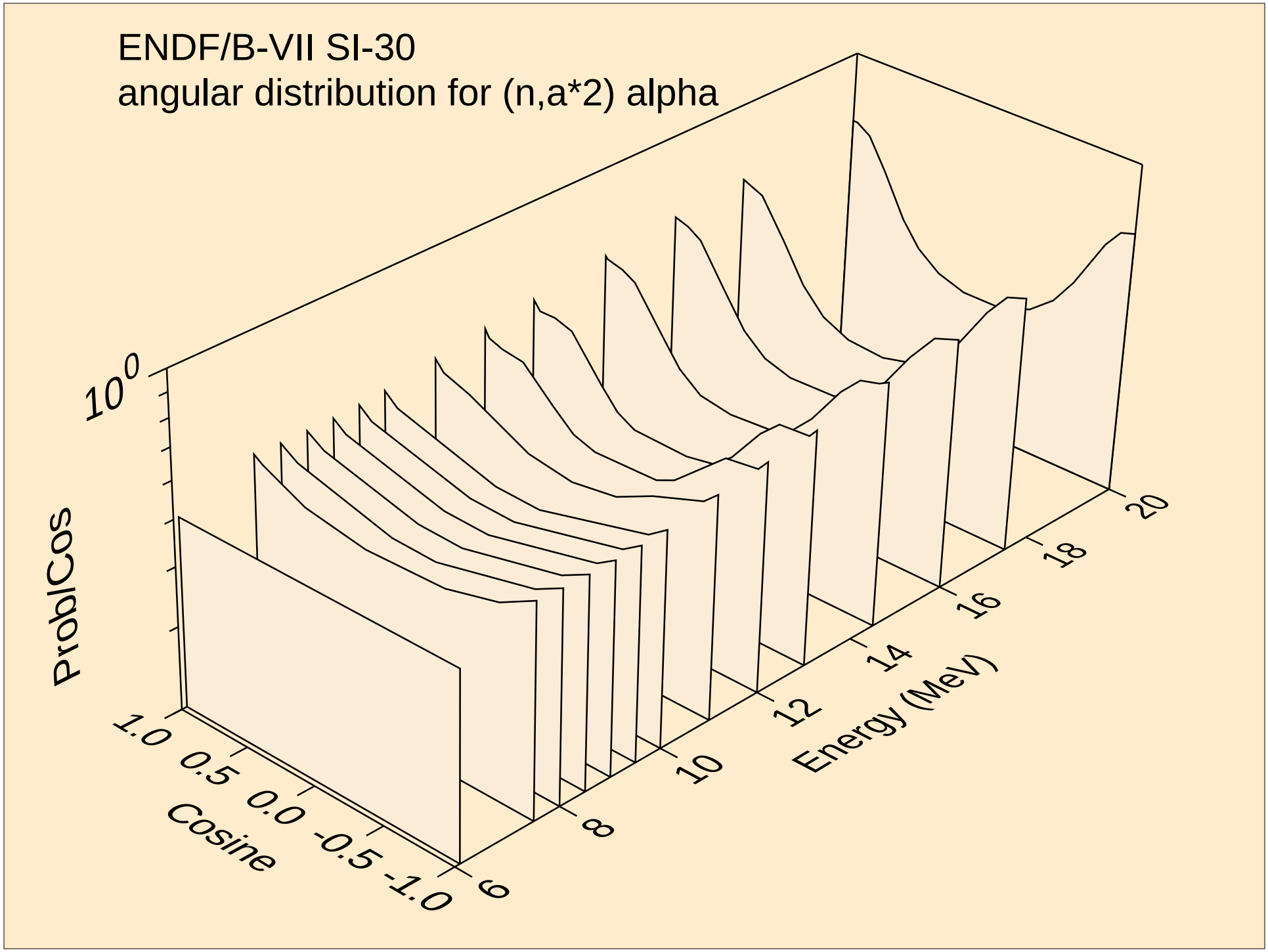

ENDF/B-VII SI-30
tritons from (n,x)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
Sec. Energy
0
100
200
Energy (MeV)
0
20
40
60
80
100
120
140
160

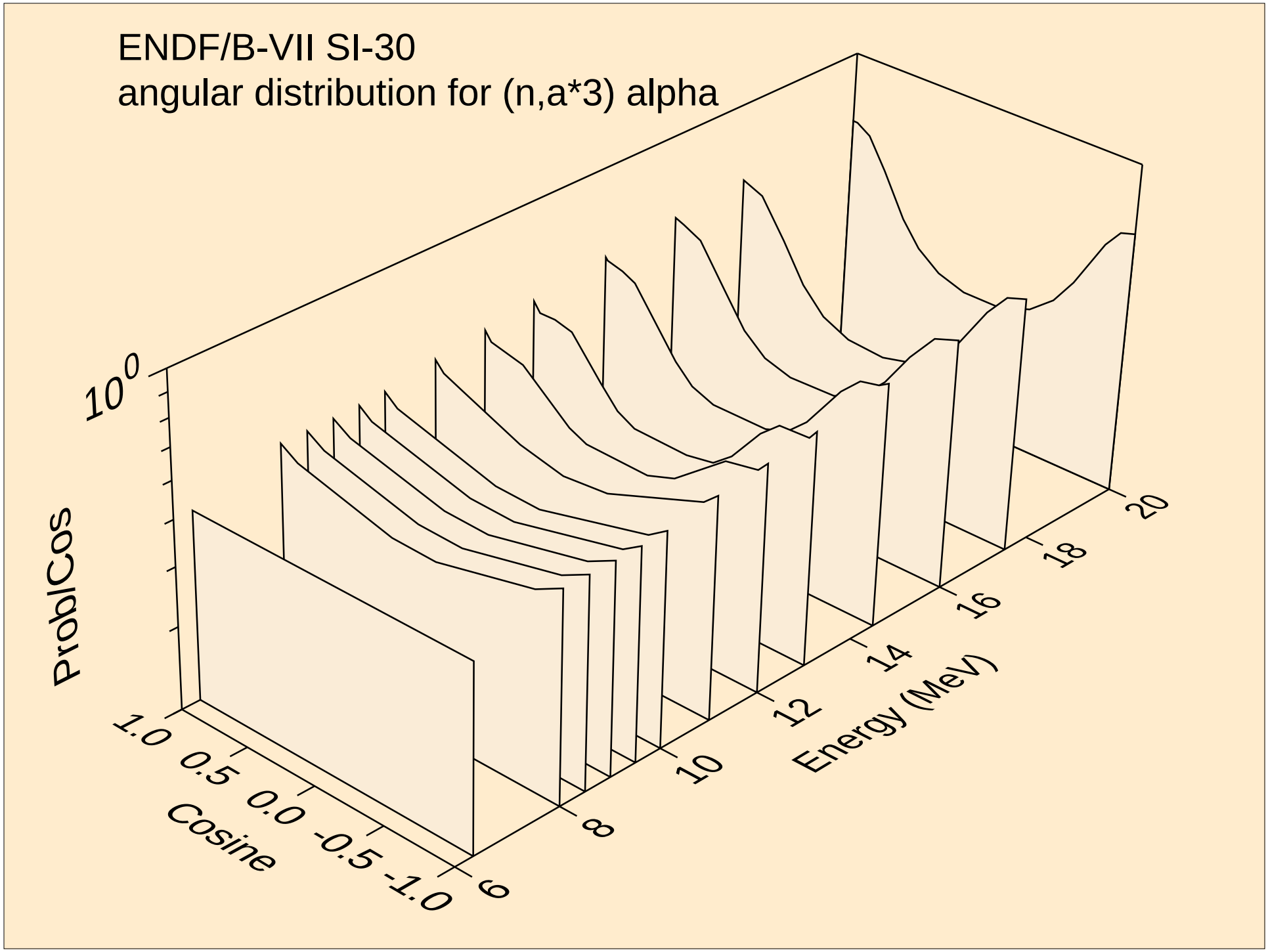

ENDF/B-VII SI-30
alphas from (n,x)
Prob/MeV
10-2
10-4
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
Energy (MeV)

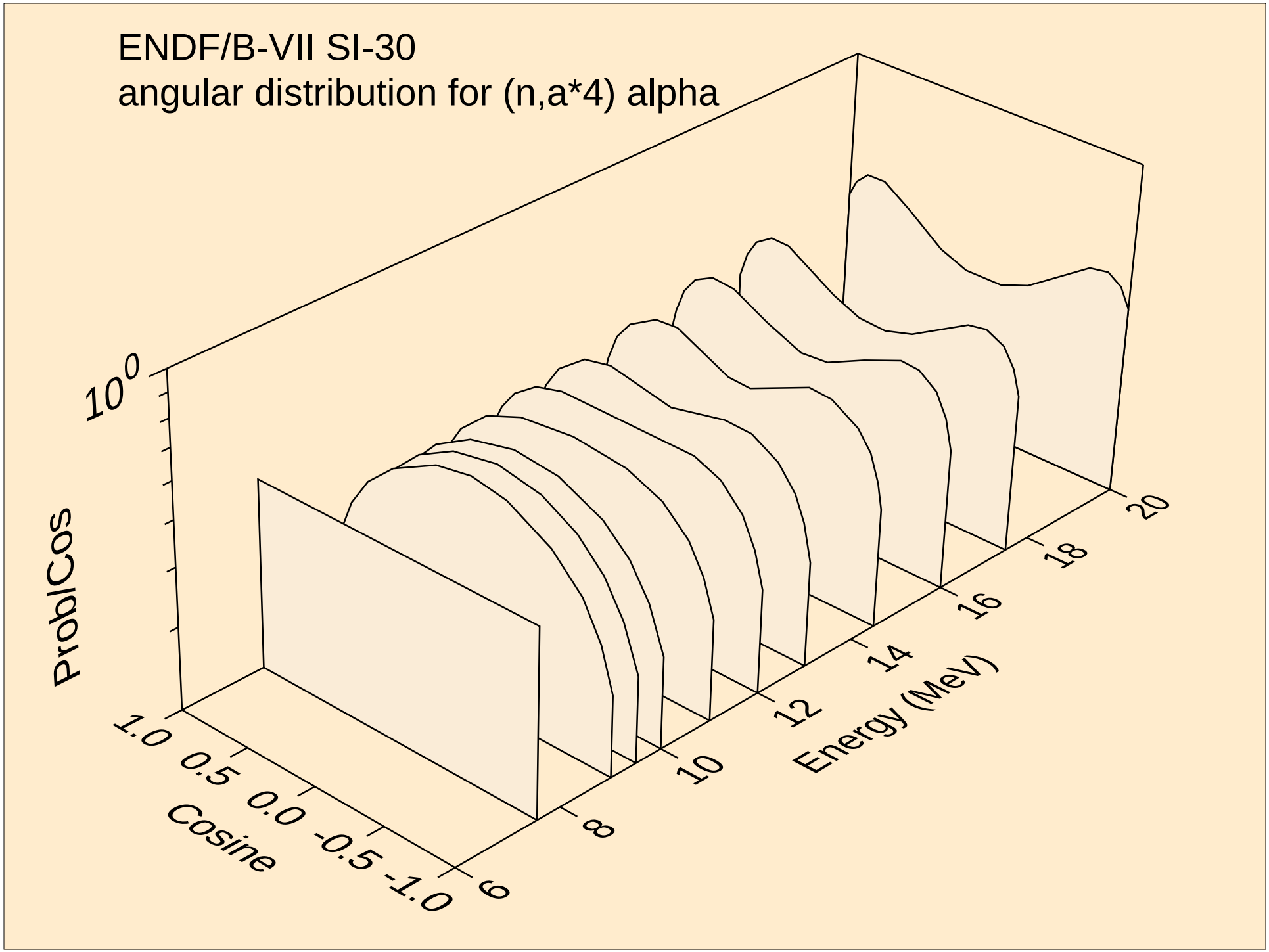

ENDF/B-VII SI-30
alphas from (n,n*)a
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
5
10
Sec. Energy
10
12
14
16
18
20
Energy (MeV)

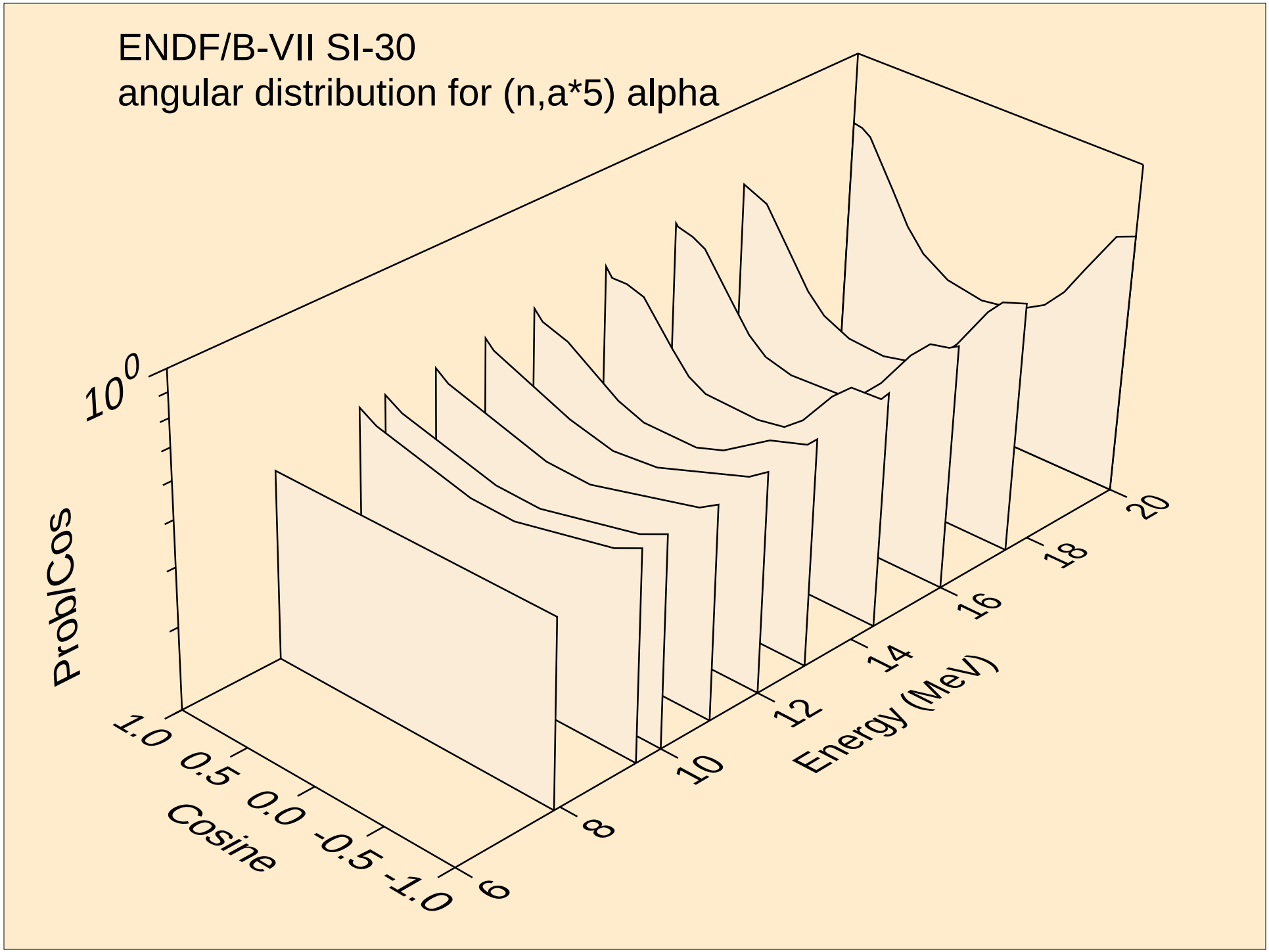

ENDF/B-VII SI-30
angular distribution for (n,a*0) alpha
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

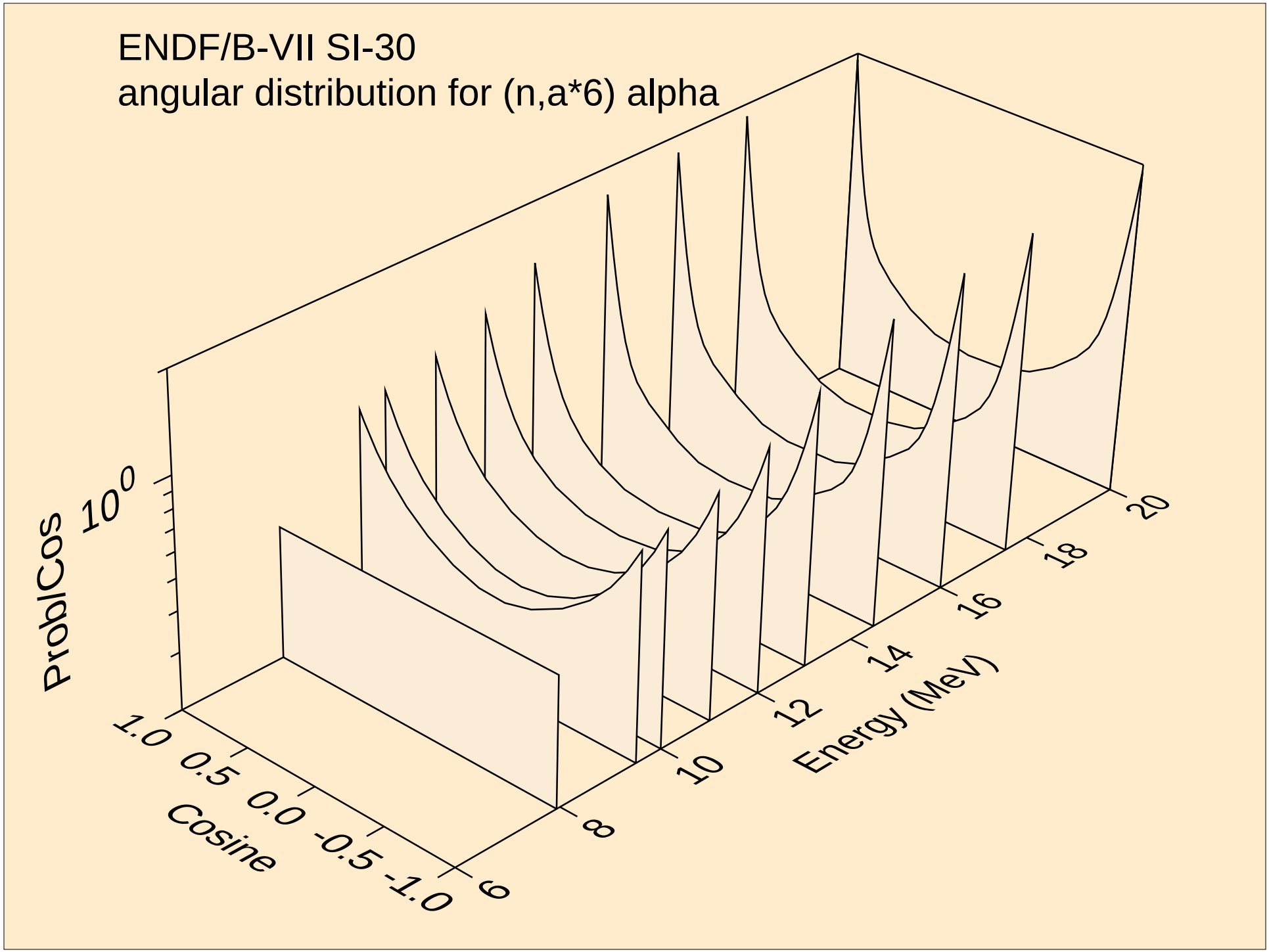

ENDF/B-VII SI-30
angular distribution for (n,a*1) alpha
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

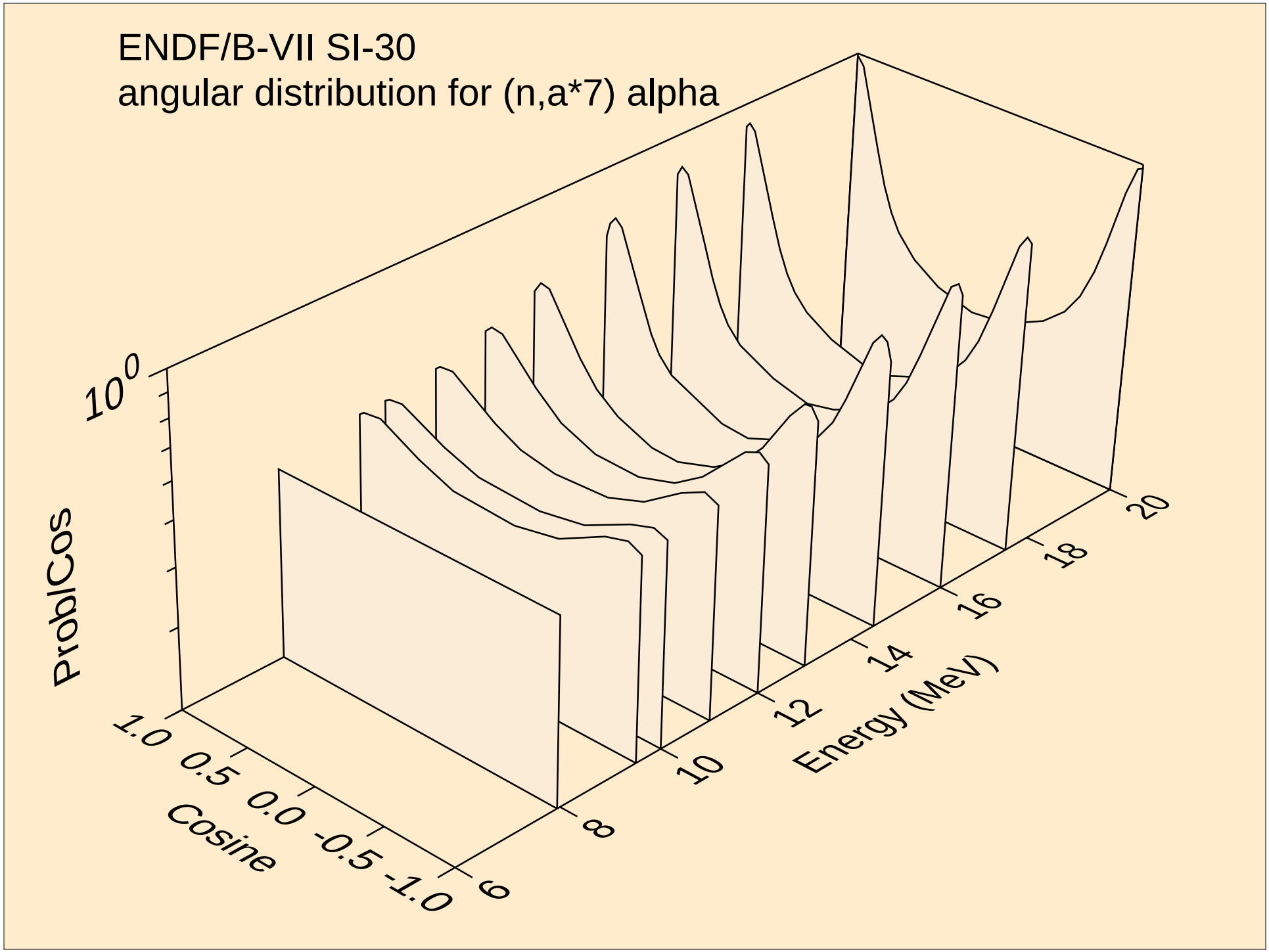

ENDF/B-VII SI-30
angular distribution for (n,a*2) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)

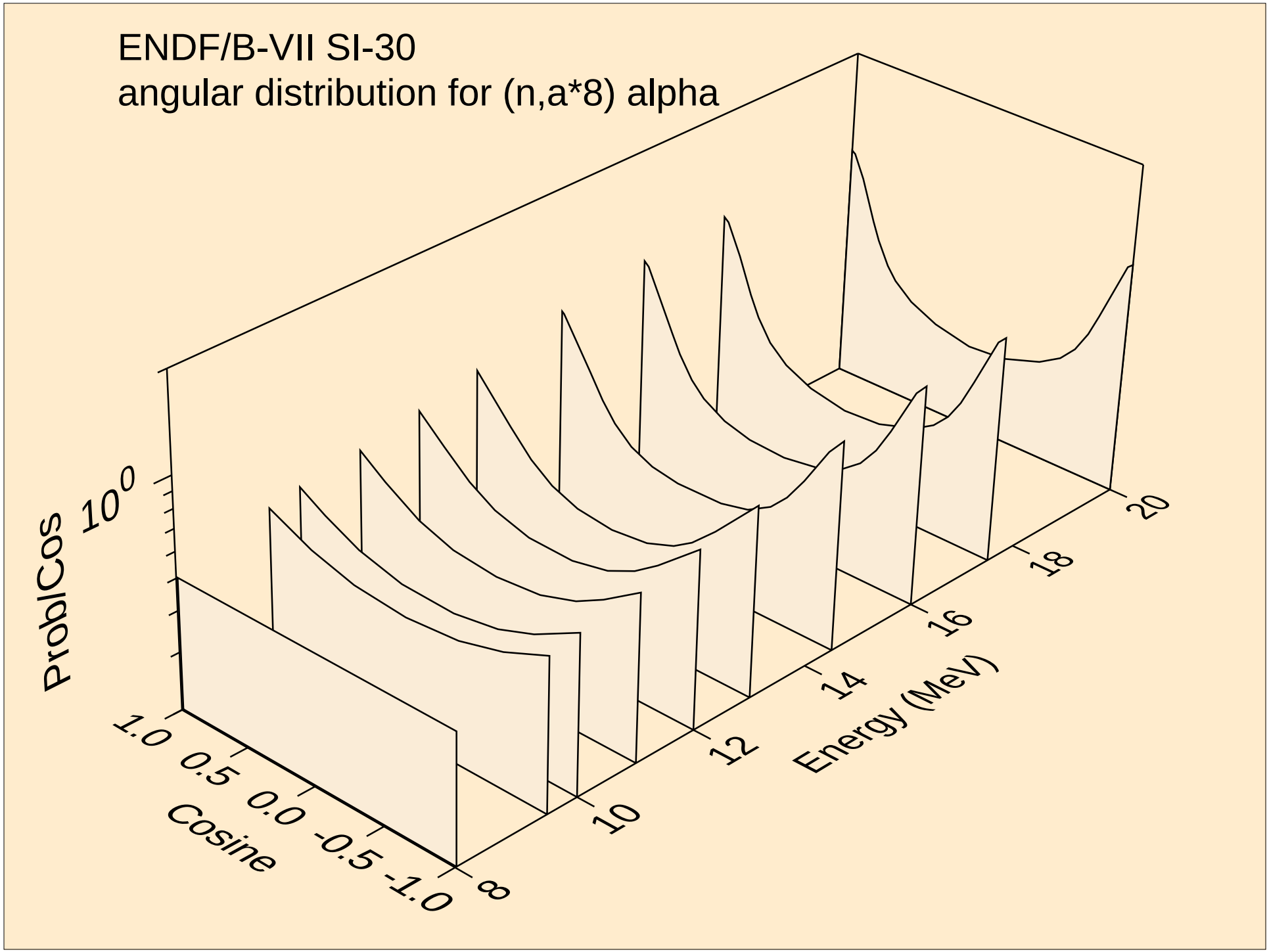

ENDF/B-VII SI-30
angular distribution for (n,a*3) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)

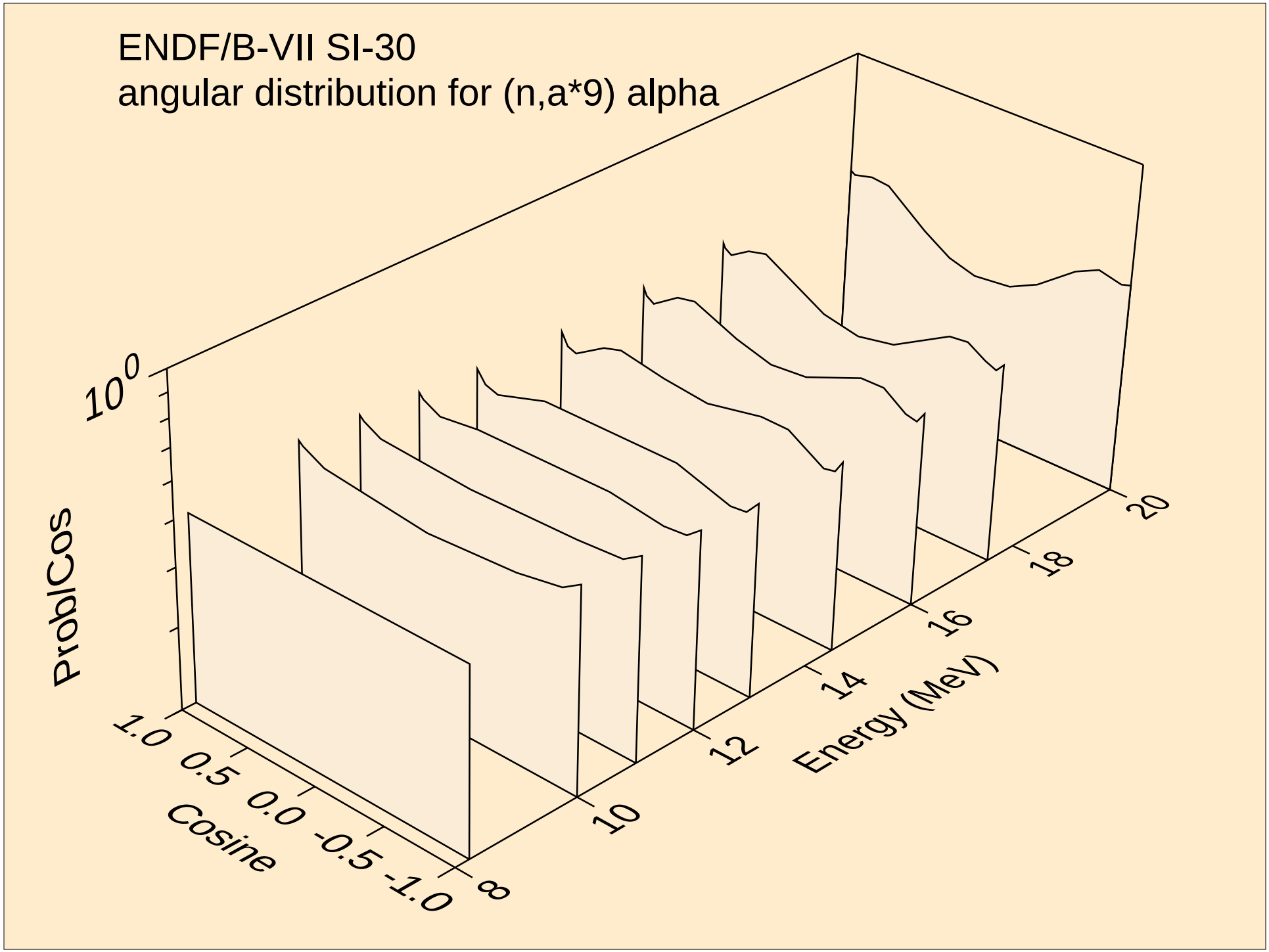

ENDF/B-VII SI-30
angular distribution for (n,a*4) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)

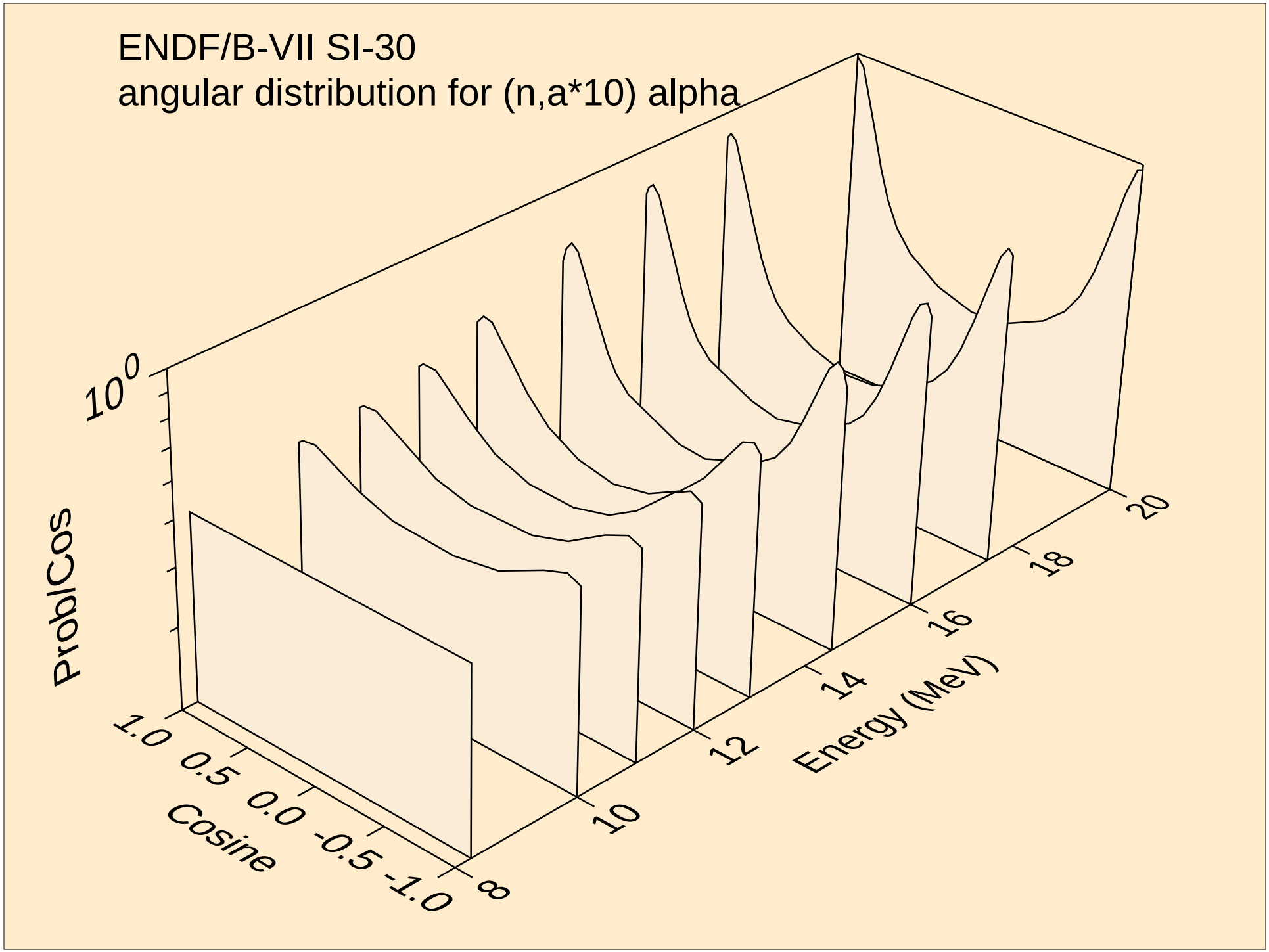

ENDF/B-VII SI-30
angular distribution for (n,a*5) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)

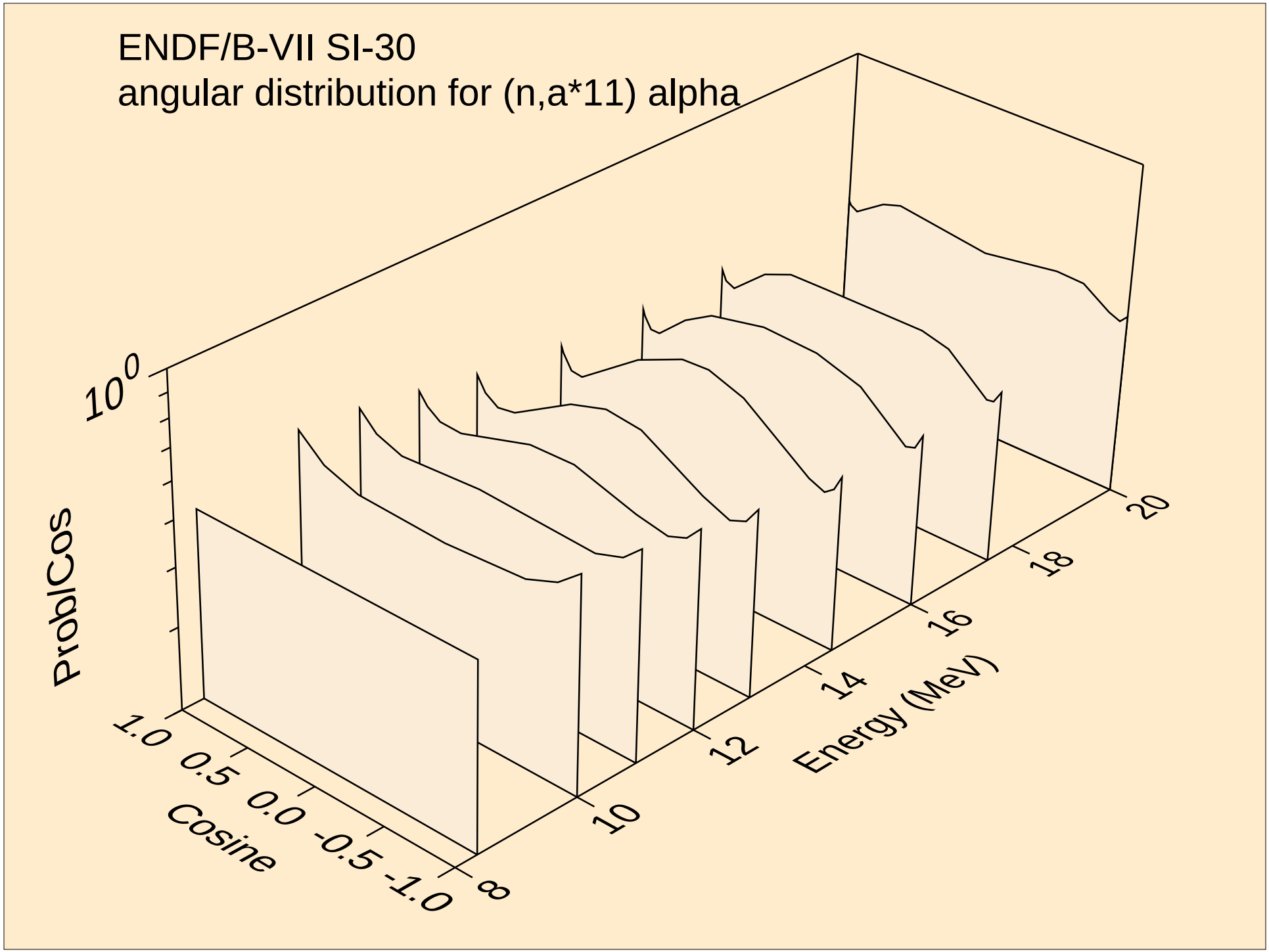

ENDF/B-VII SI-30
angular distribution for (n,a*6) alpha
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)

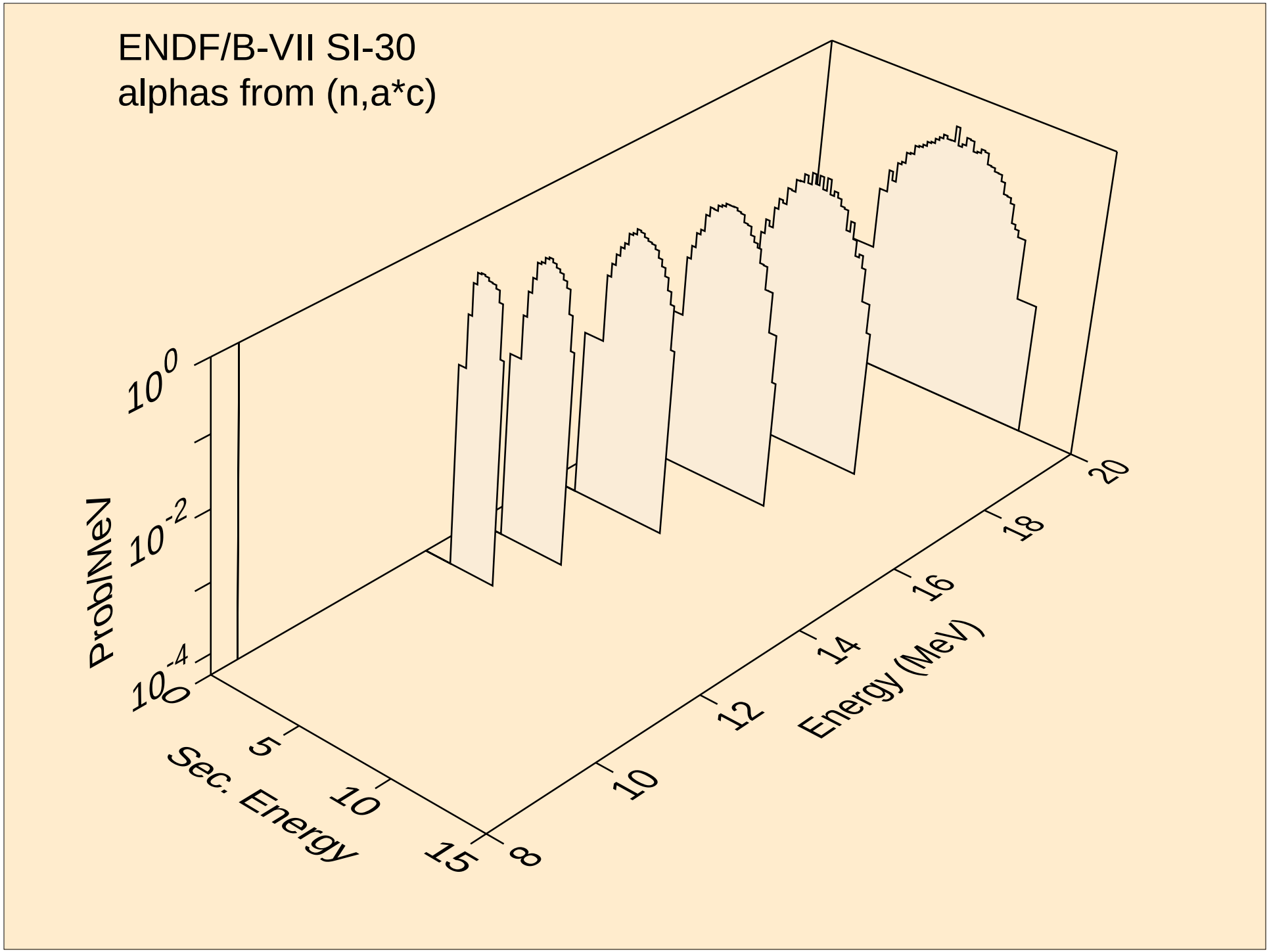

ENDF/B-VII SI-30
angular distribution for (n,a*7) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
6
8
10
12
14
16
18
20
Energy (MeV)


ENDF/B-VII SI-30
angular distribution for (n,a*8) alpha
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)


ENDF/B-VII SI-30
angular distribution for (n,a*9) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)


ENDF/B-VII SI-30
angular distribution for (n,a*10) alpha
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
8
10
12
14
16
18
20
Energy (MeV)


ENDF/B-VII SI-30
angular distribution for (n,a*11) alpha
ProbICos
10^0
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
8
10
12
14
16
18
20


ENDF/B-VII SI-30
alphas from (n,a*c)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
5
10
15
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)