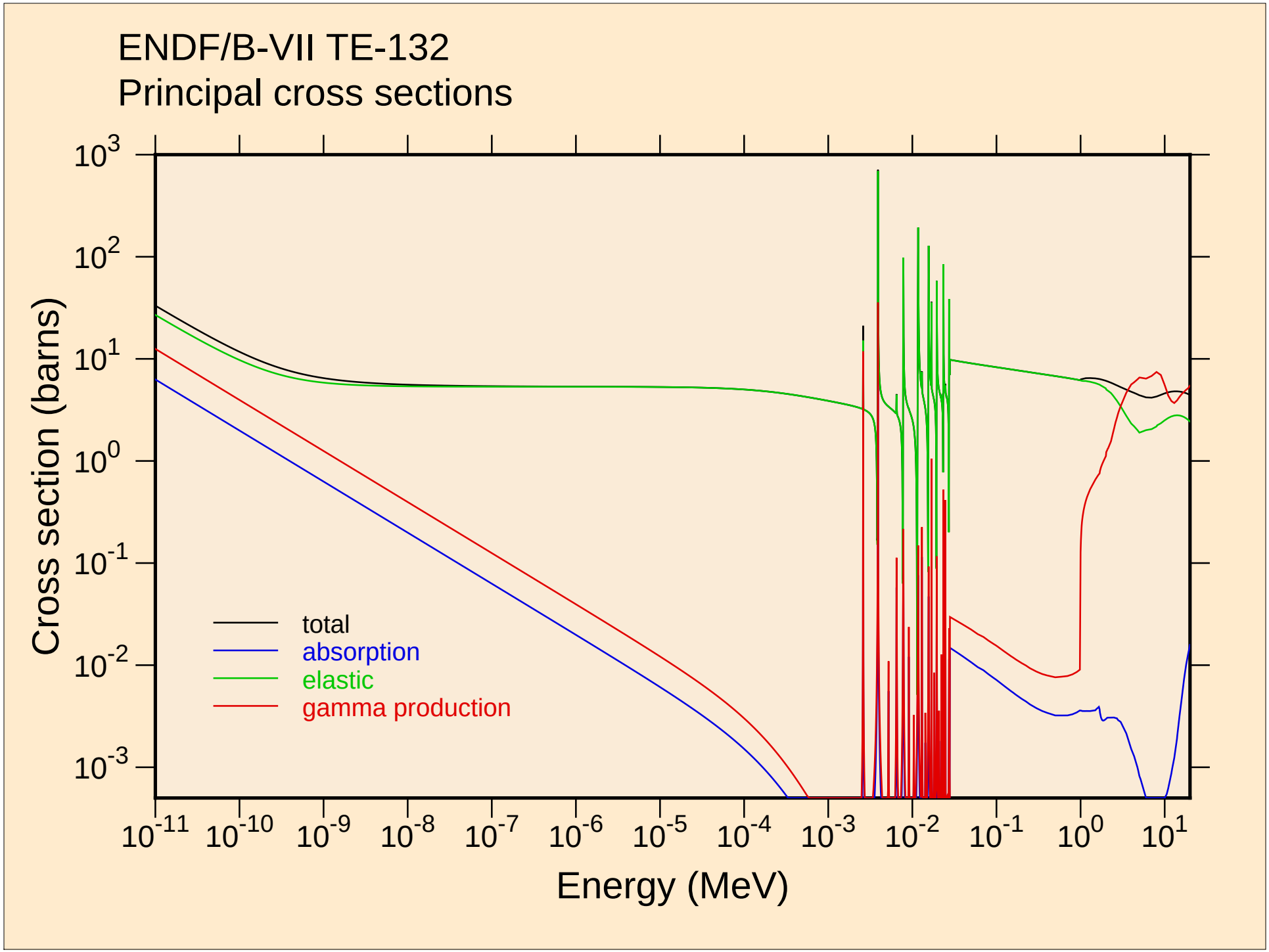
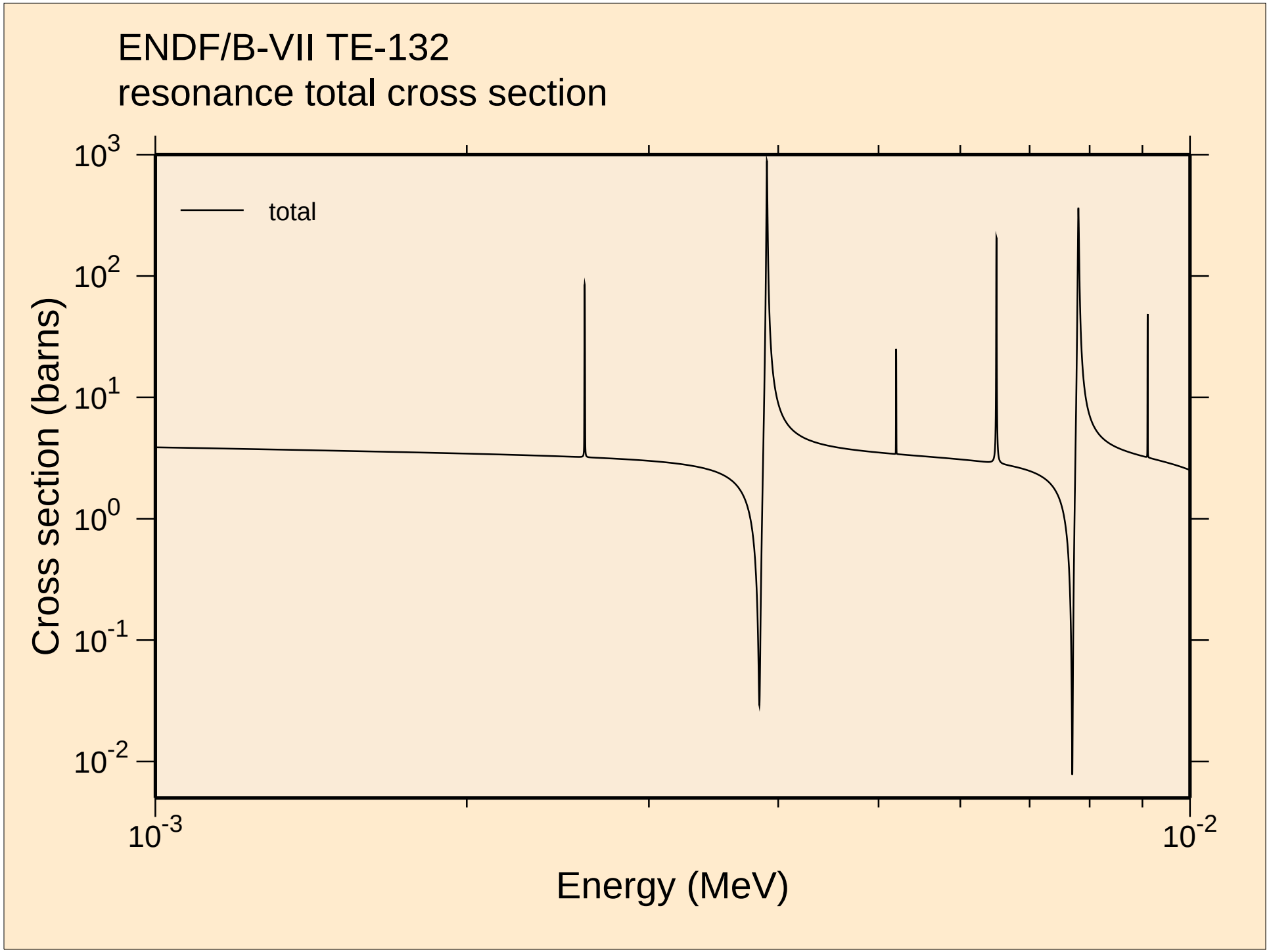
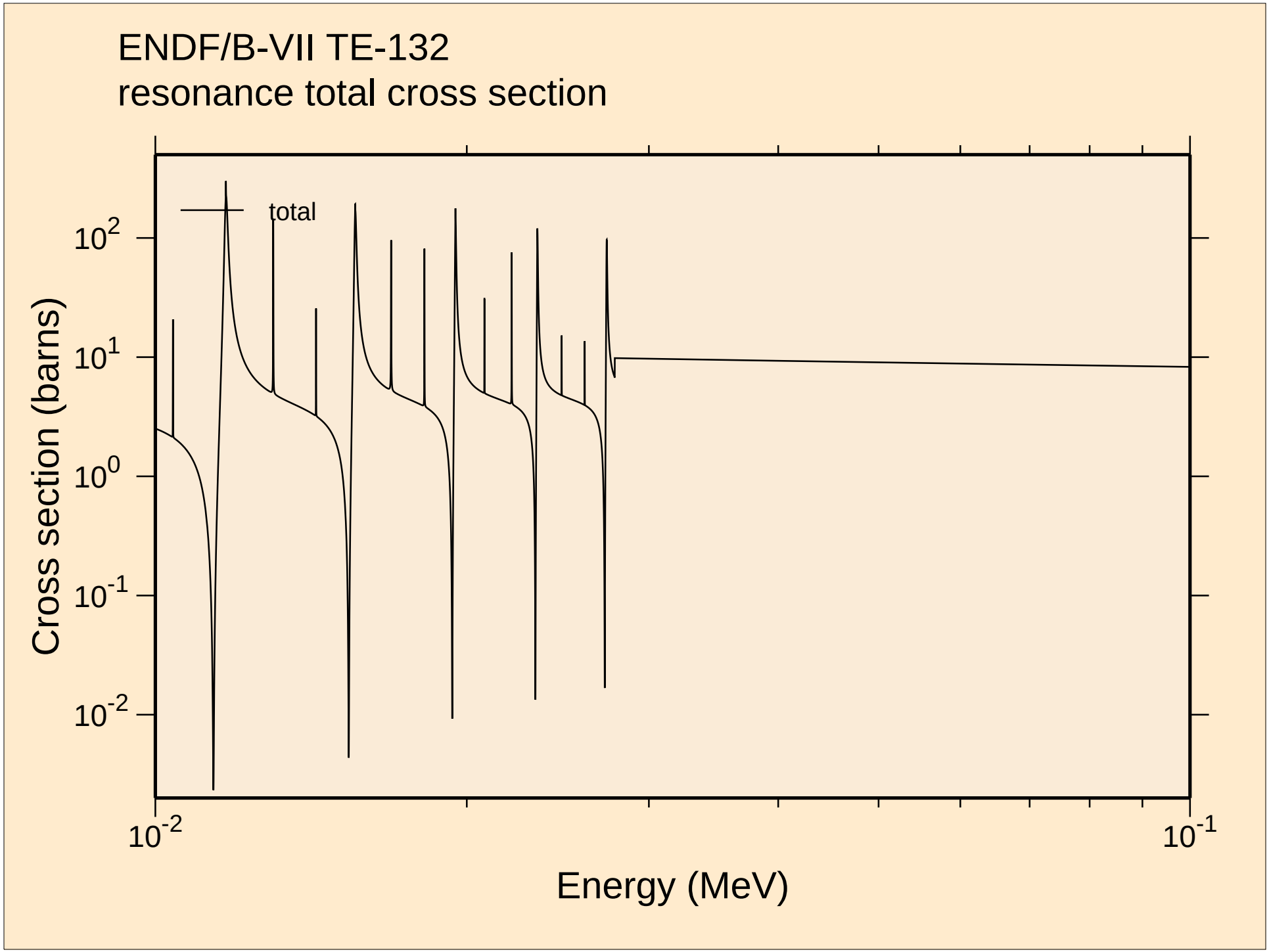
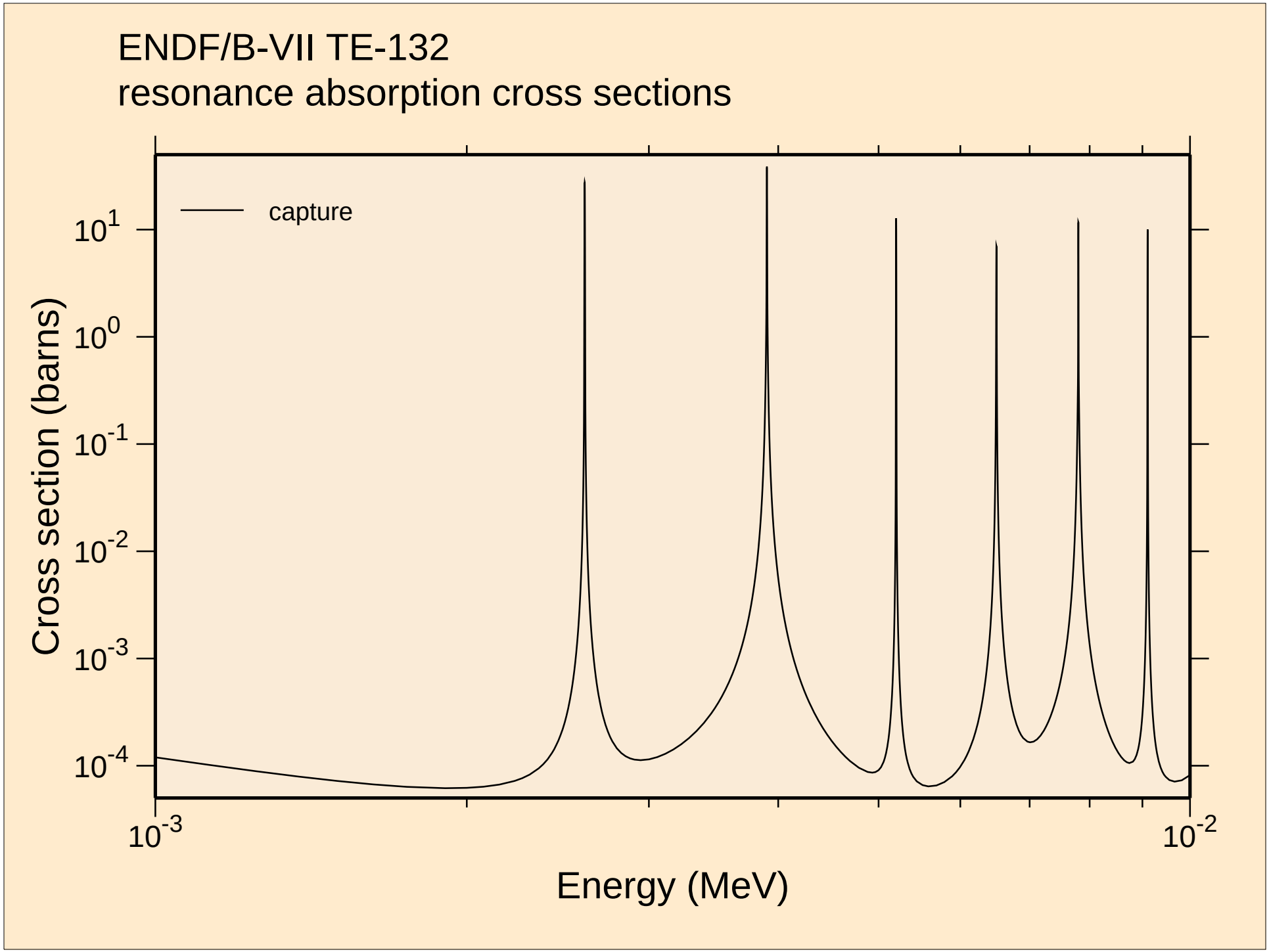
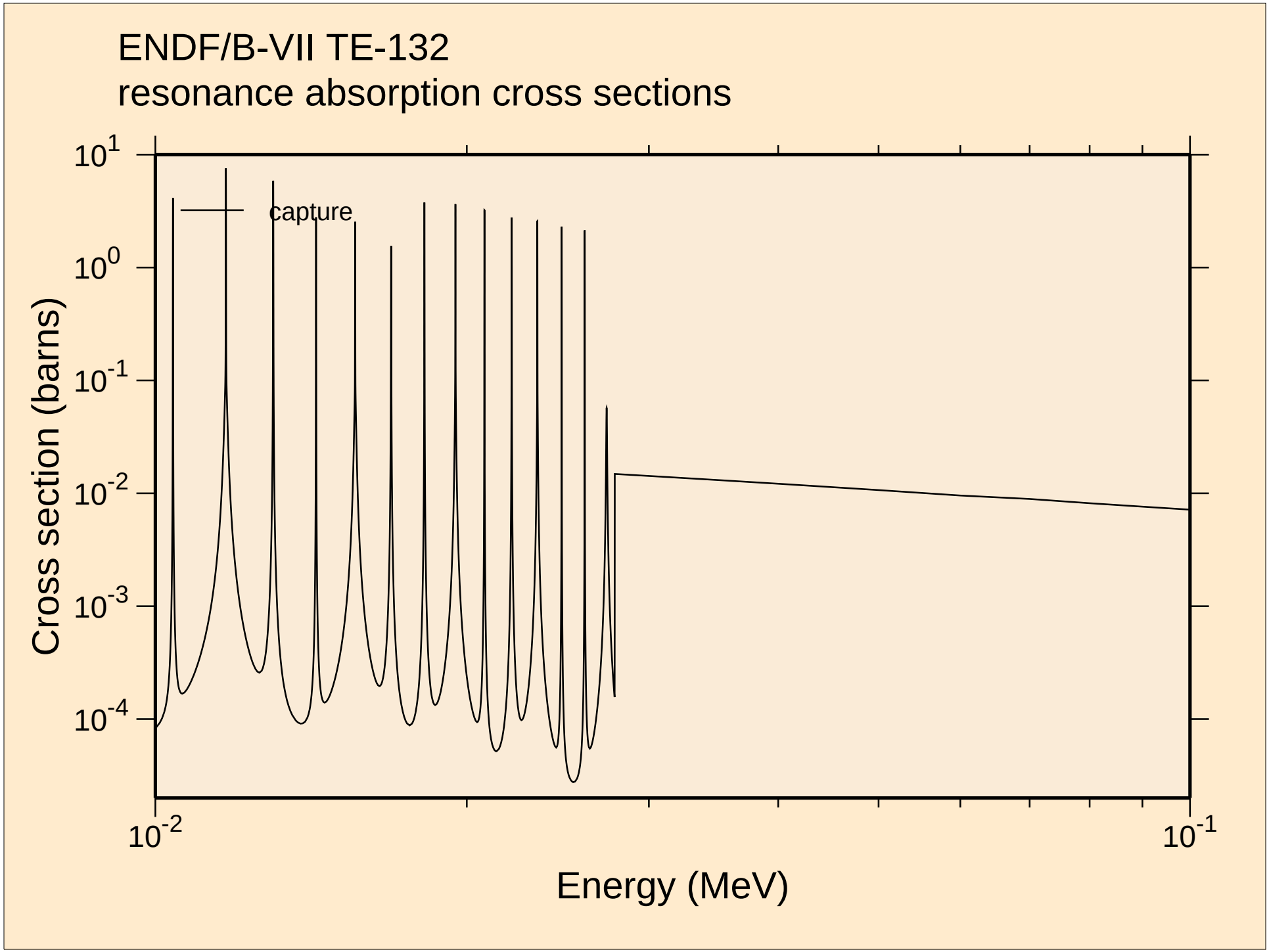

ENDF/B-VII TE-132
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production

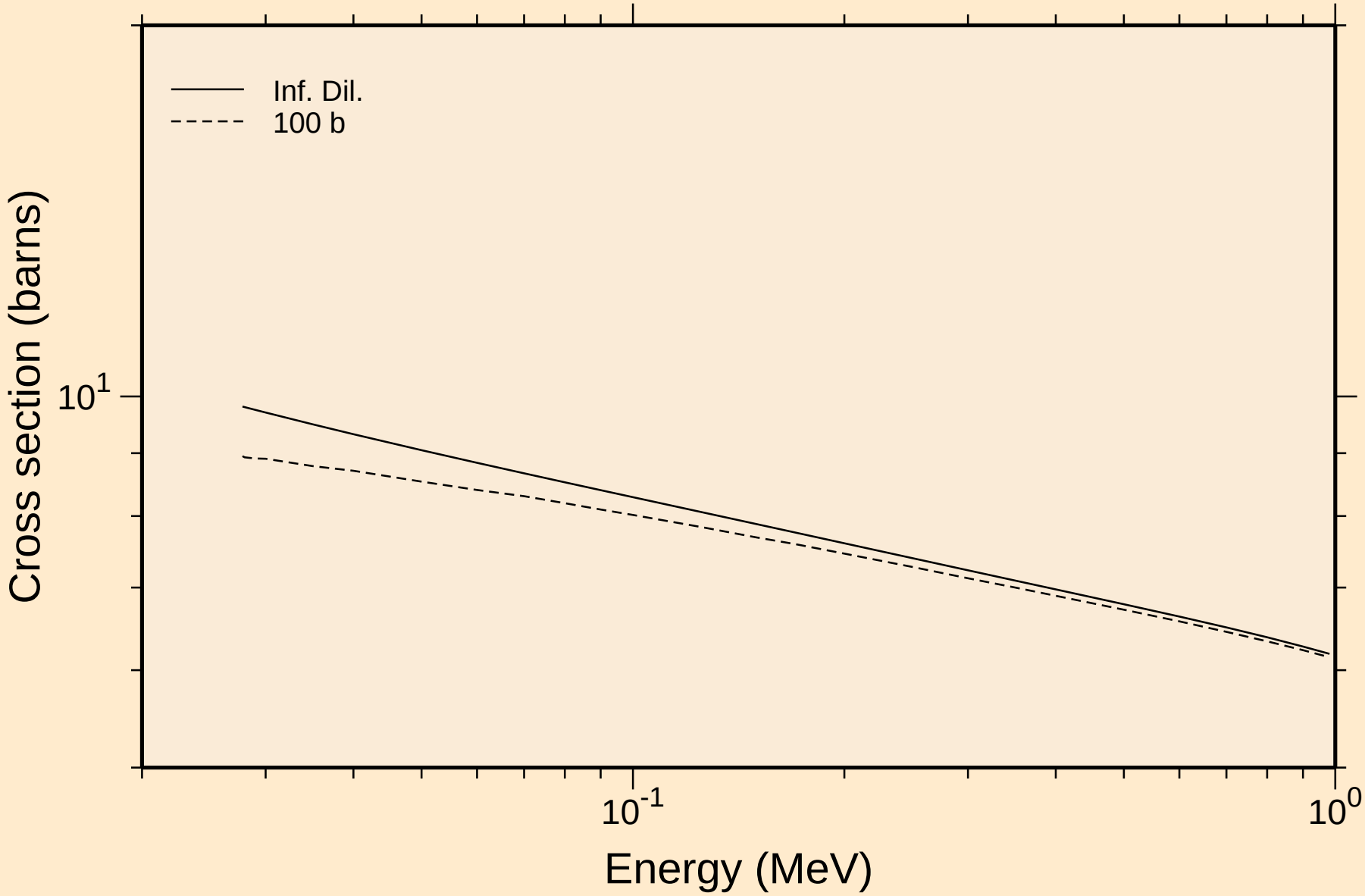

ENDF/B-VII TE-132
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-3
10^-2
Energy (MeV)


ENDF/B-VII TE-132
resonance total cross section
total
Cross section (barns)
10^2
10^1
10^0
10^-1
10^-2
10^-2
10^-1
Energy (MeV)

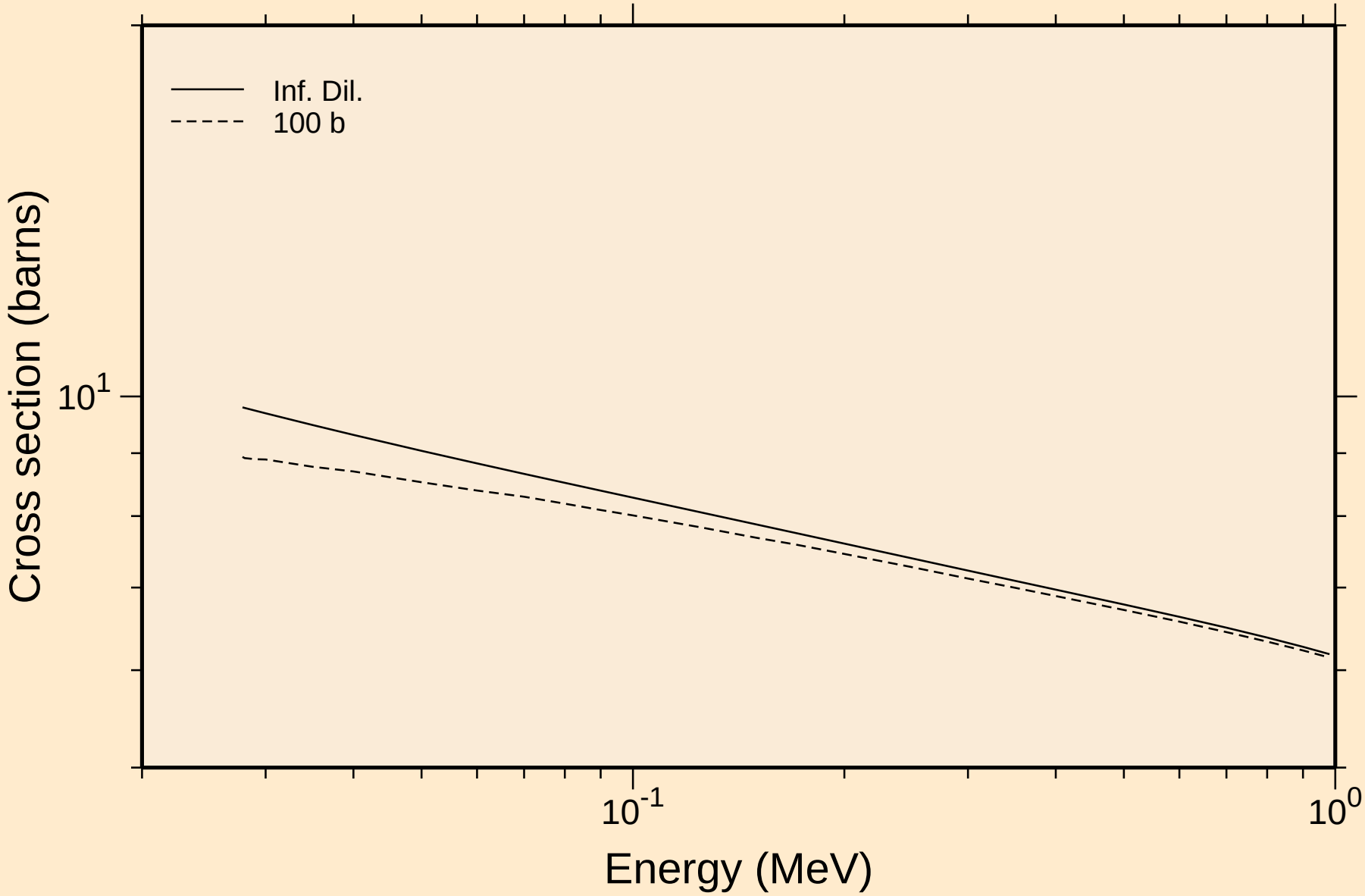

ENDF/B-VII TE-132
resonance absorption cross sections
capture
Cross section (barns)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-3
10^-2
Energy (MeV)


ENDF/B-VII TE-132
resonance absorption cross sections
capture
Cross section (barns)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-2
10^-1
Energy (MeV)

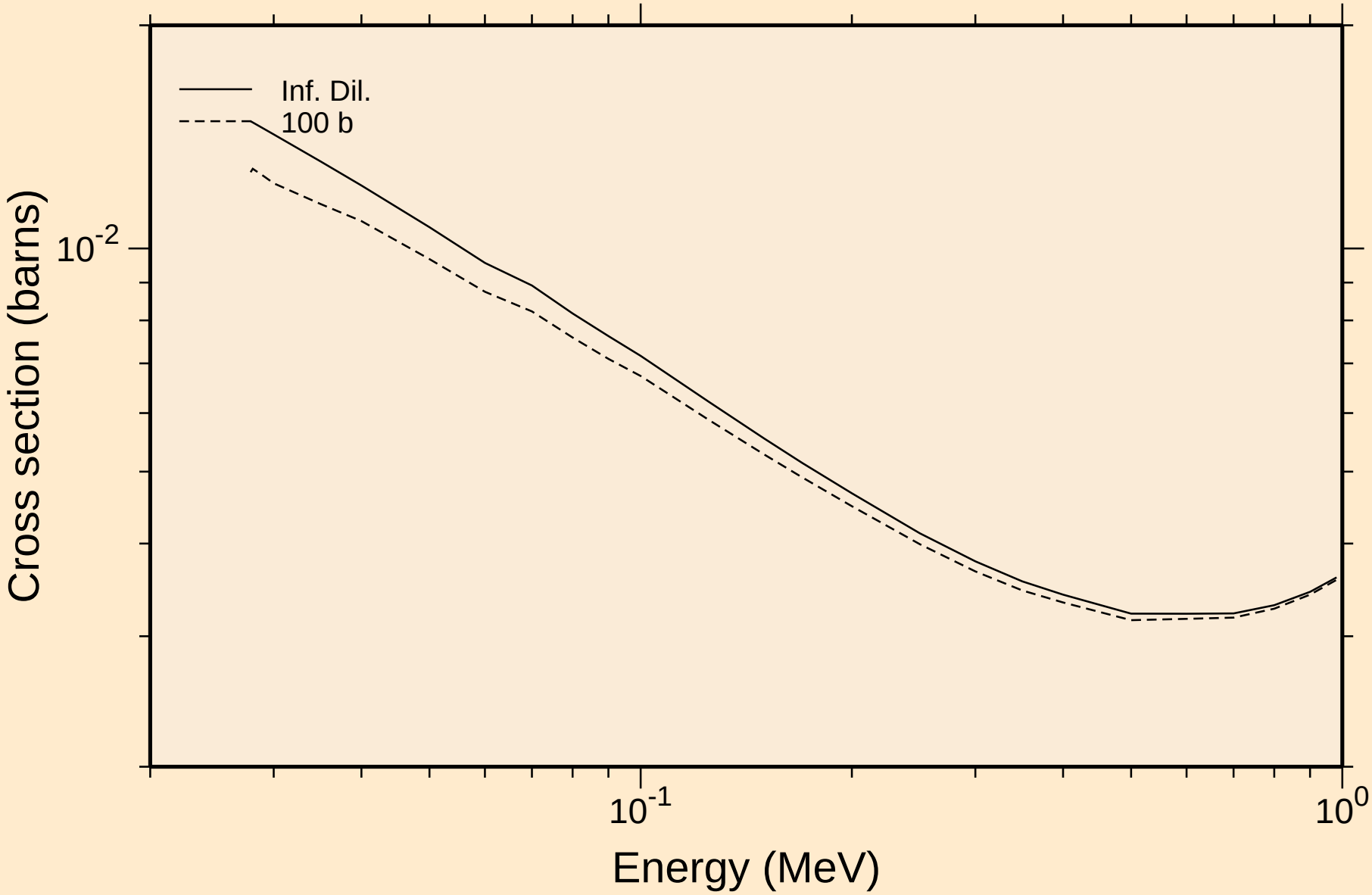
ENDF/B-VII TE-132
UR total cross section

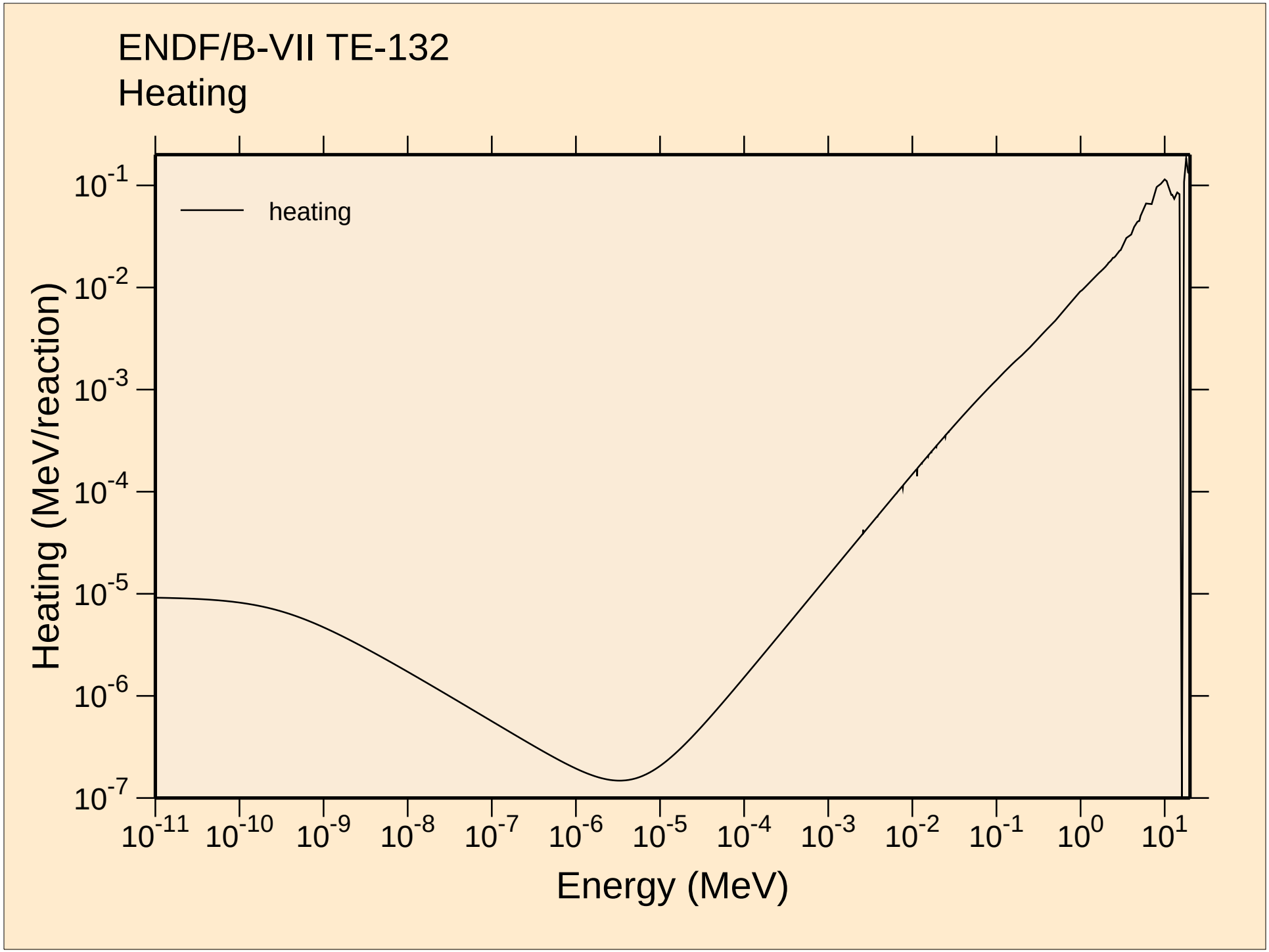


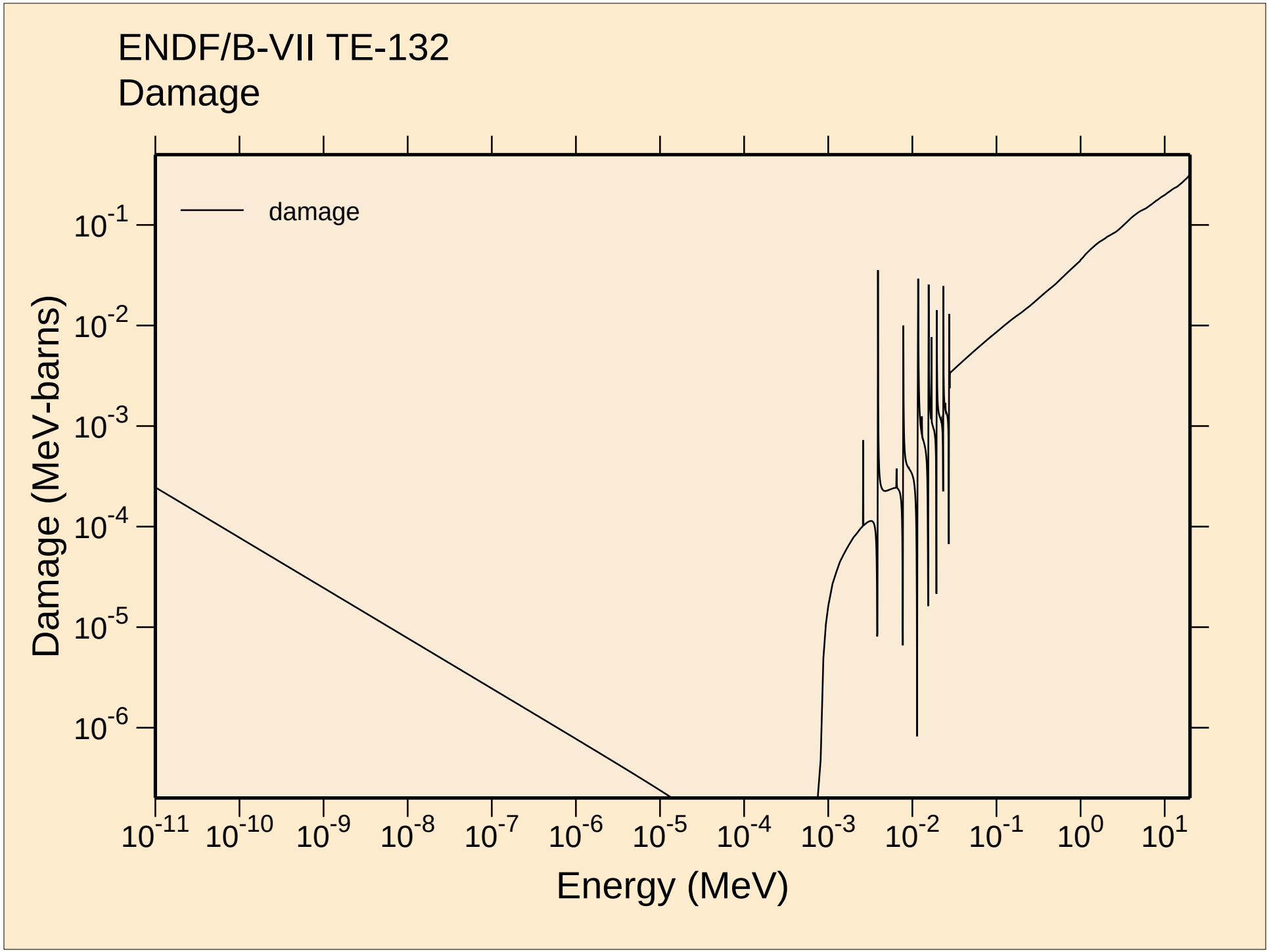
ENDF/B-VII TE-132
UR elastic cross section

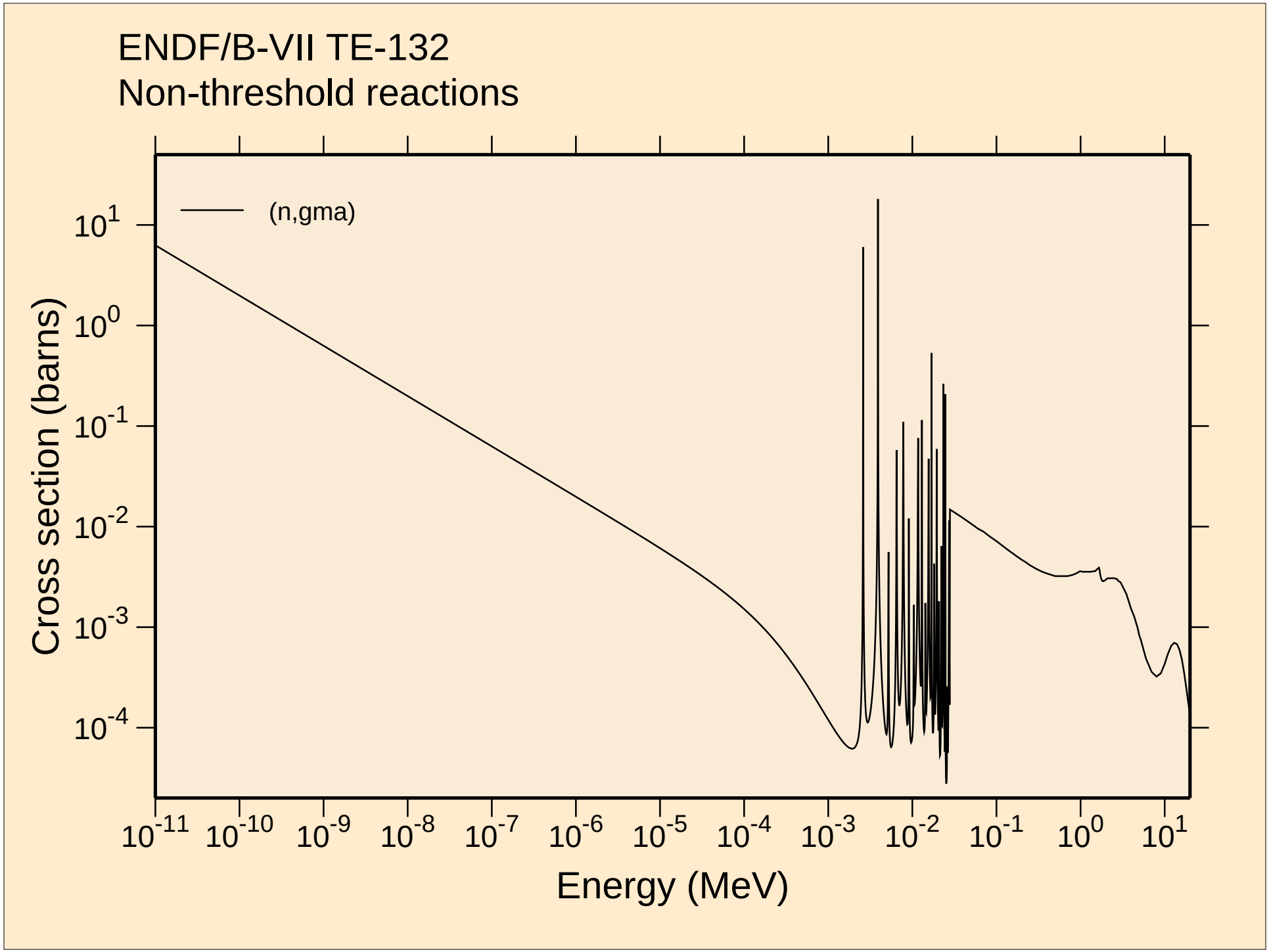


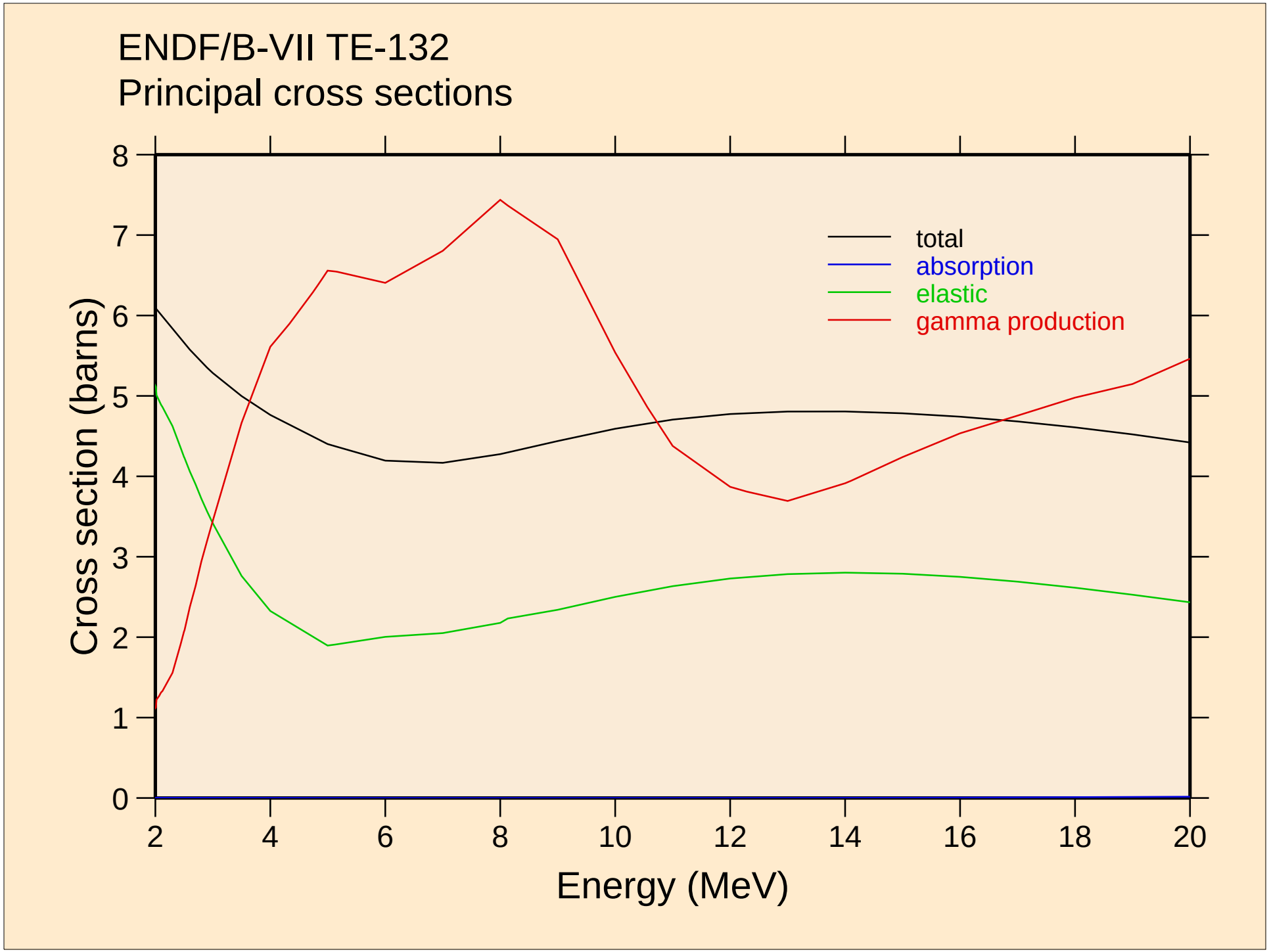
ENDF/B-VII TE-132
UR capture cross section

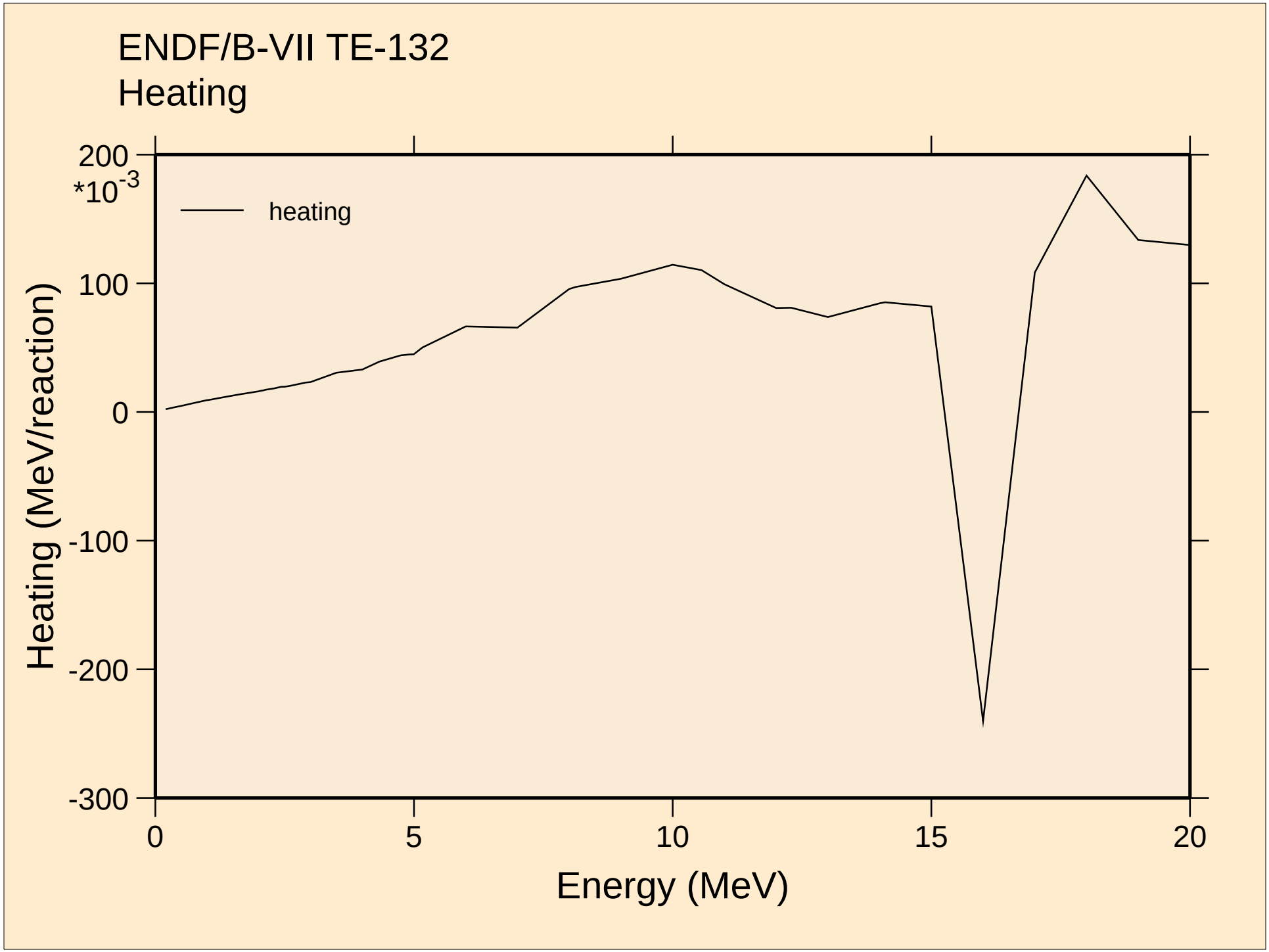


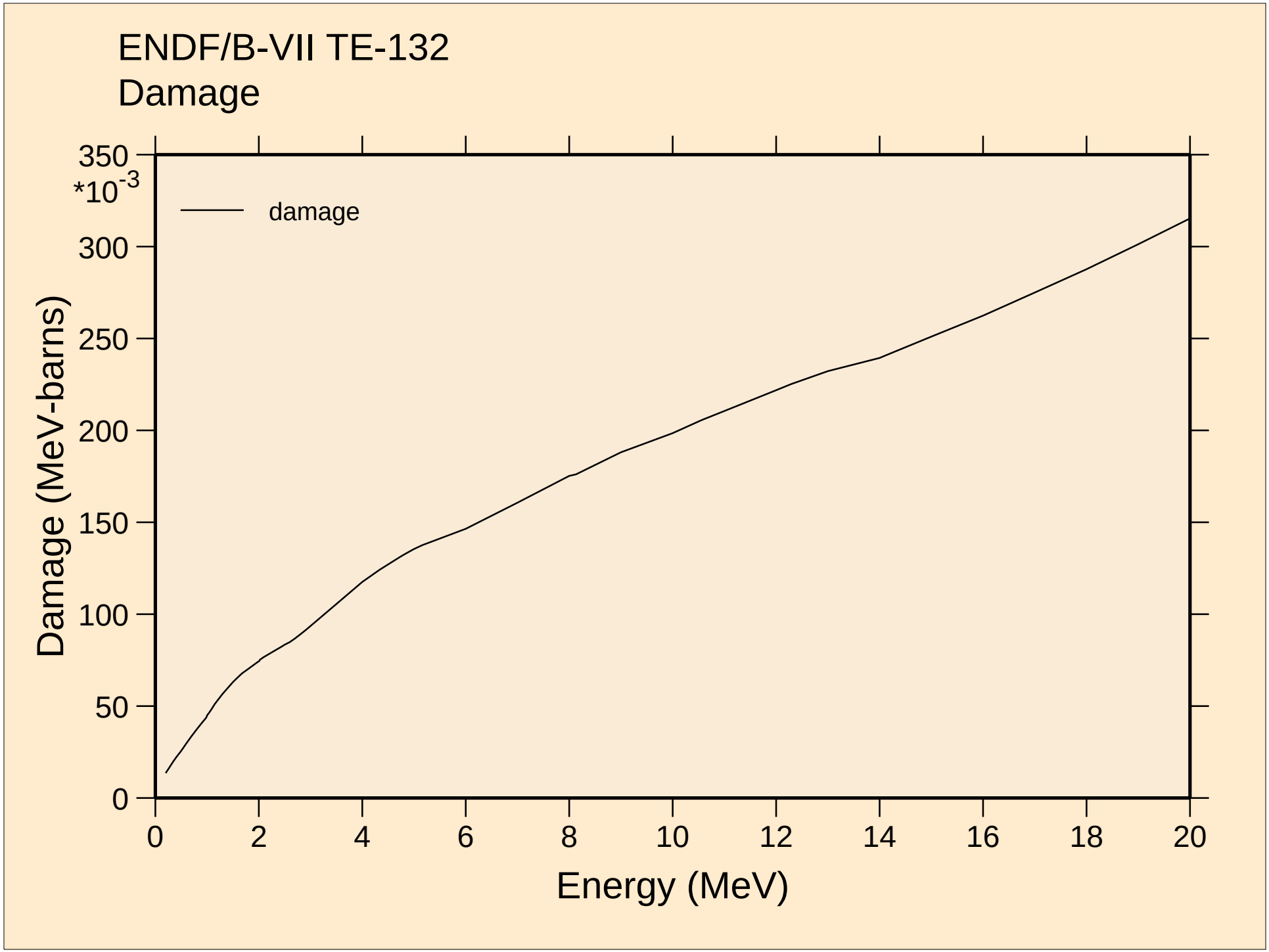

ENDF/B-VII TE-132
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10-1
10-2
10-3
10-4
10-5
10-6
10-7
10-11
10-10
10-9
10-8
10-7
10-6
10-5
10-4
10-3
10-2
10-1
100
101

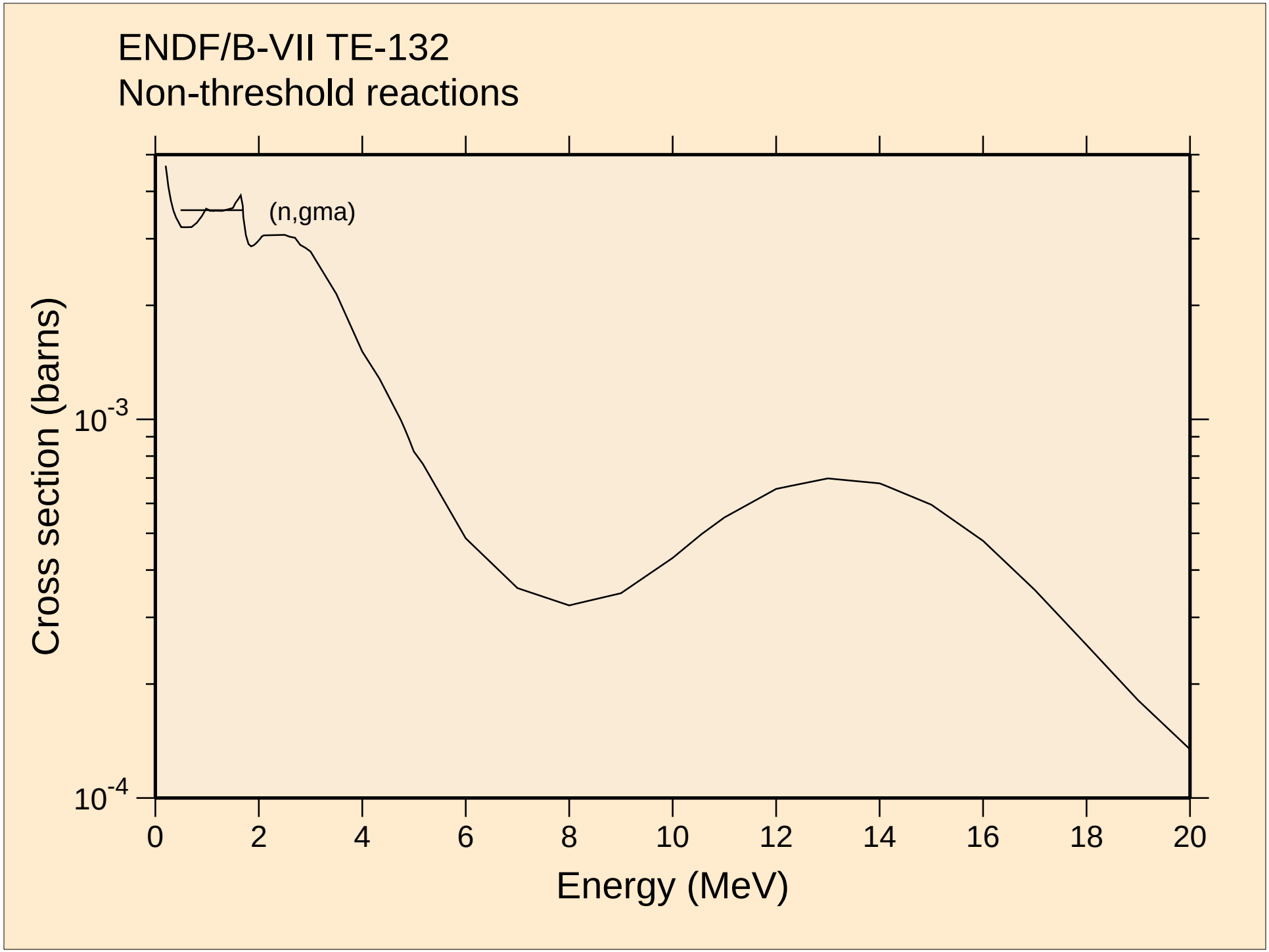

ENDF/B-VII TE-132
Damage
damage
Damage (MeV-barns)
10-1
10-2
10-3
10-4
10-5
10-6
10-11 10-10 10-9 10-8 10-7 10-6 10-5 10-4 10-3 10-2 10-1 100 101
Energy (MeV)

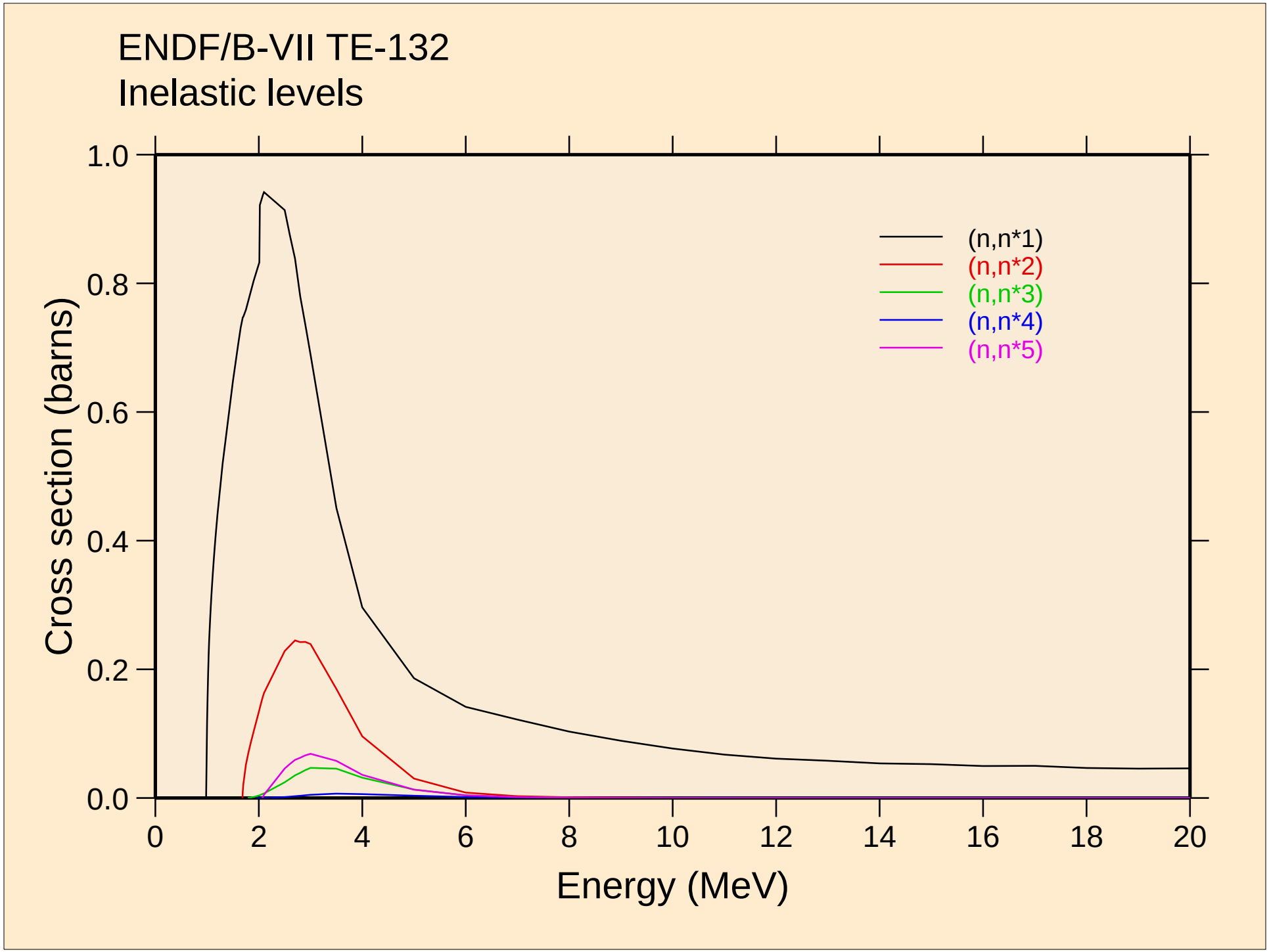

ENDF/B-VII TE-132
Non-threshold reactions
(n,gma)
Cross section (barns)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11 10^-10 10^-9 10^-8 10^-7 10^-6 10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1
Energy (MeV)

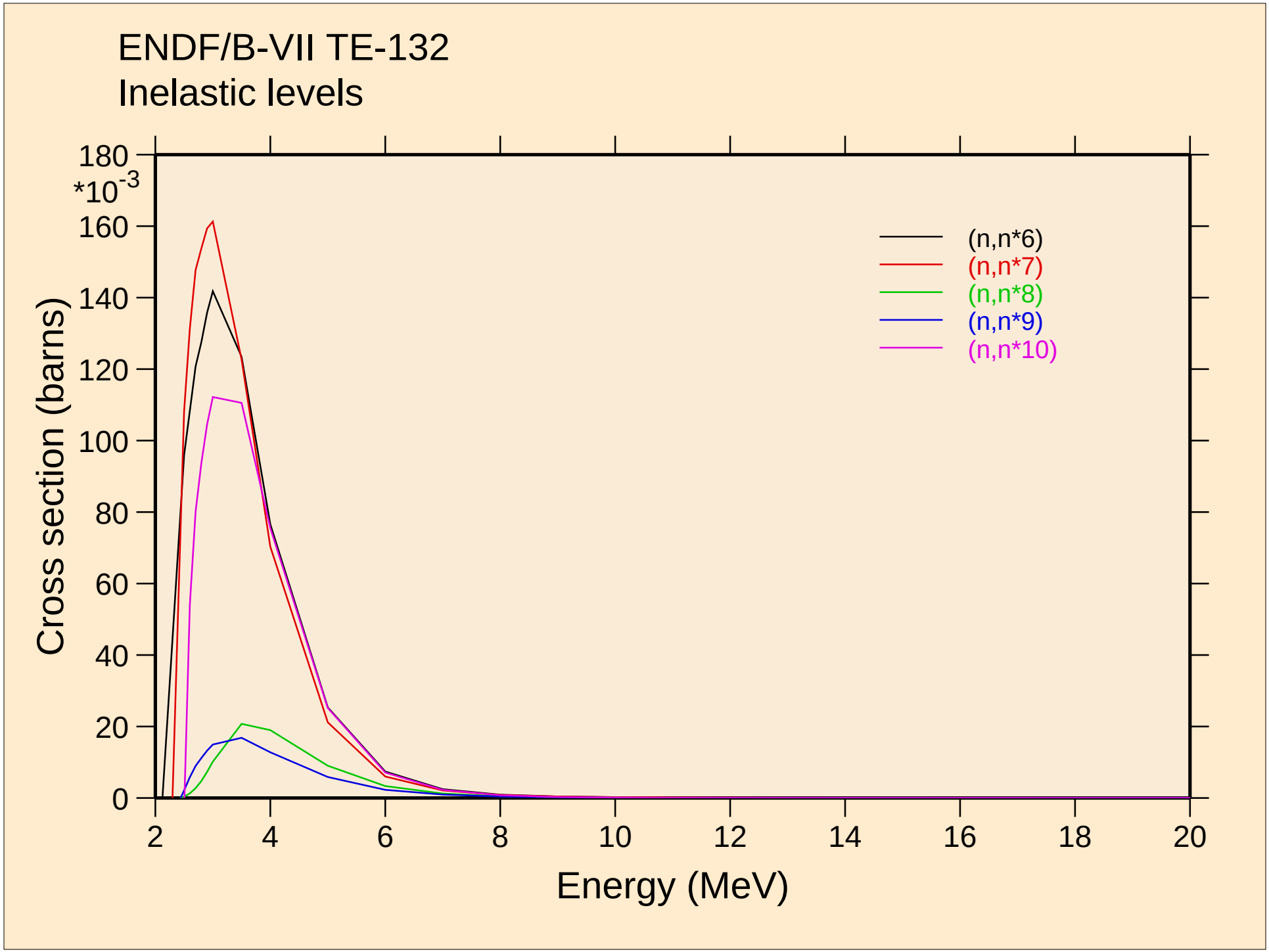

ENDF/B-VII TE-132
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production
0
1
2
3
4
5
6
7
8
2
4
6
8
10
12
14
16
18
20

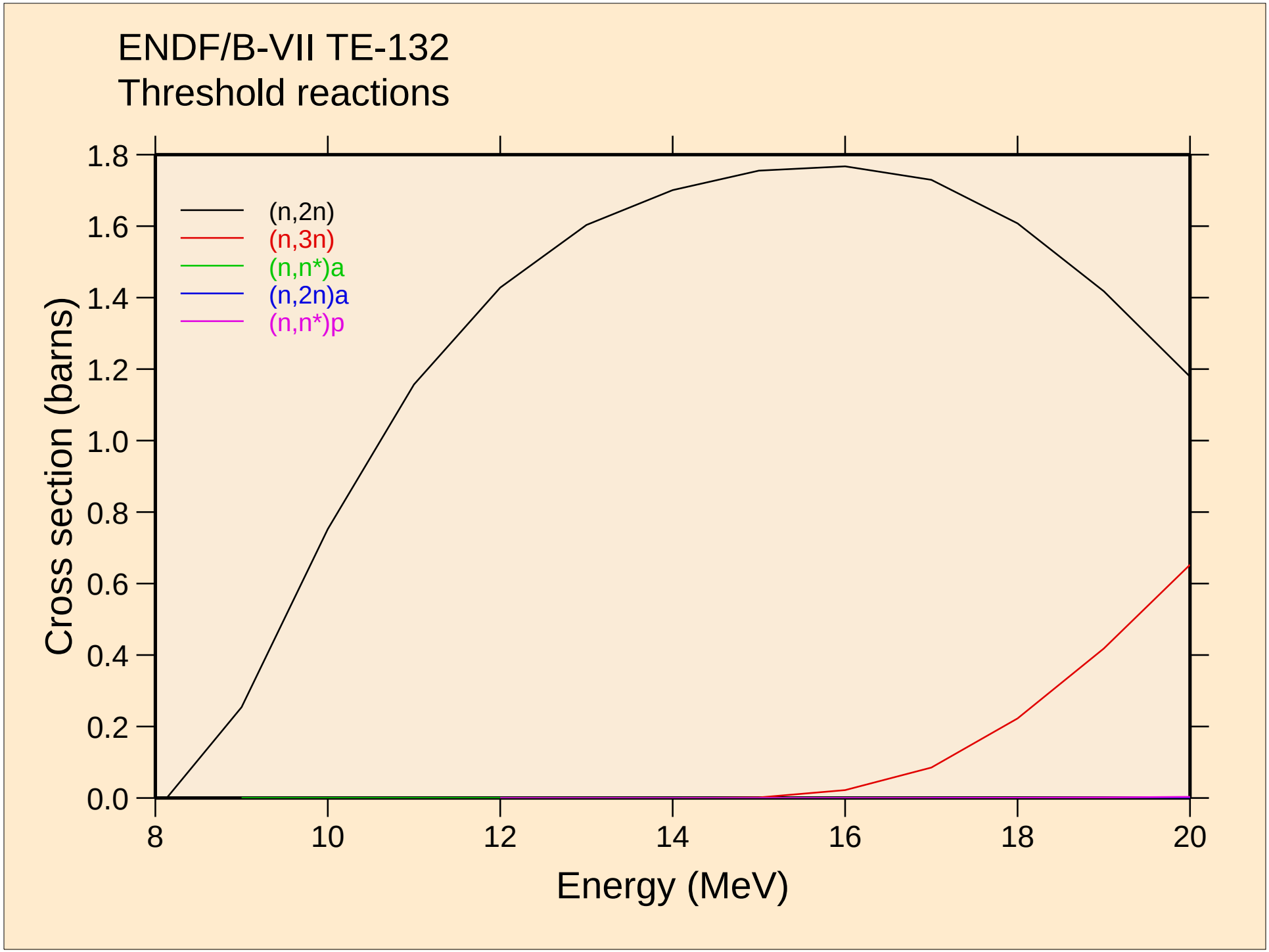

ENDF/B-VII TE-132
Heating
200
*10-3
100
0
-100
-200
-300
heating
Heating (MeV/reaction)
0
5
10
15
20
Energy (MeV)

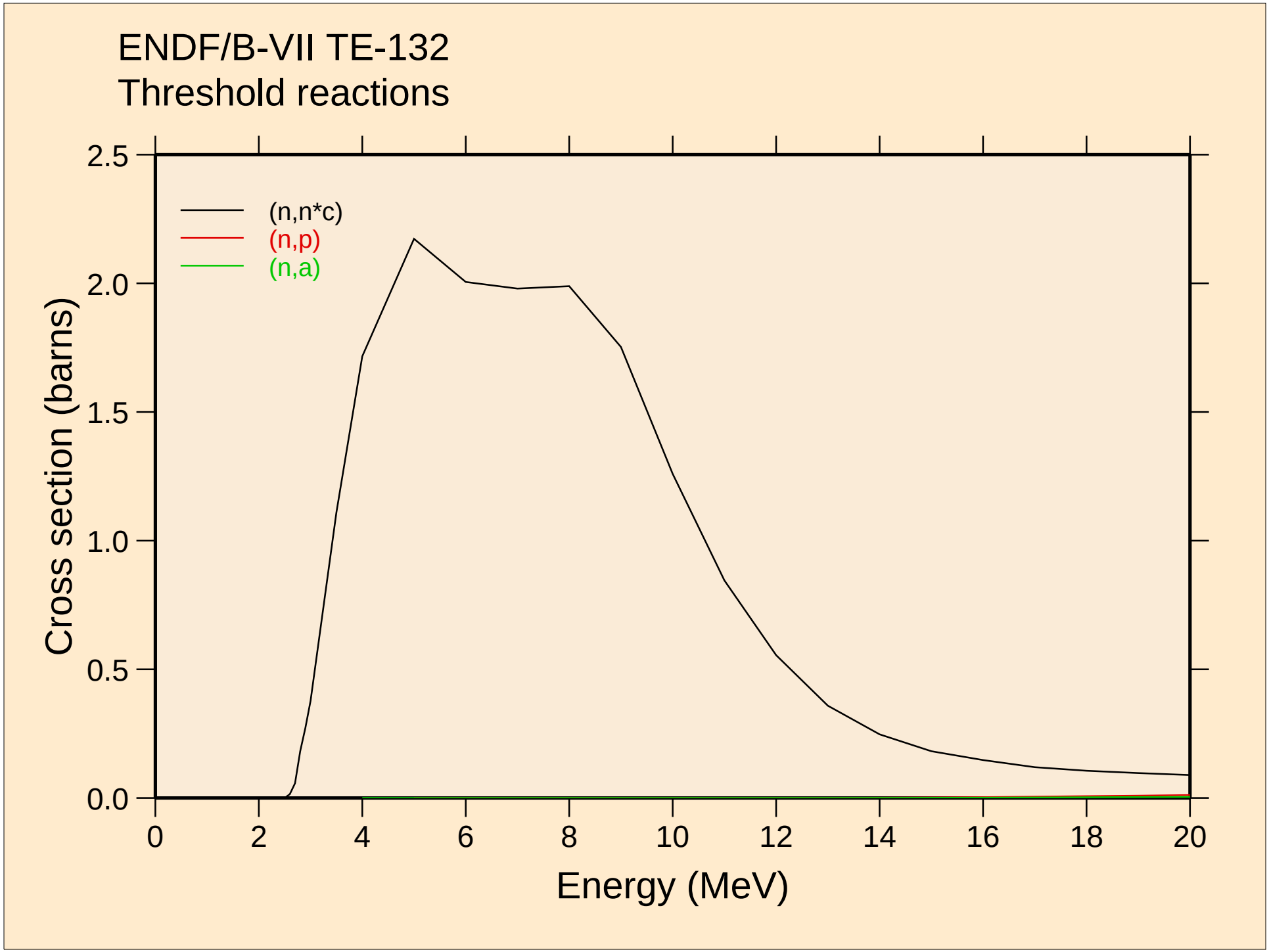

ENDF/B-VII TE-132
Damage
damage
*10-3
350
300
250
200
150
100
50
0
Damage (MeV-barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

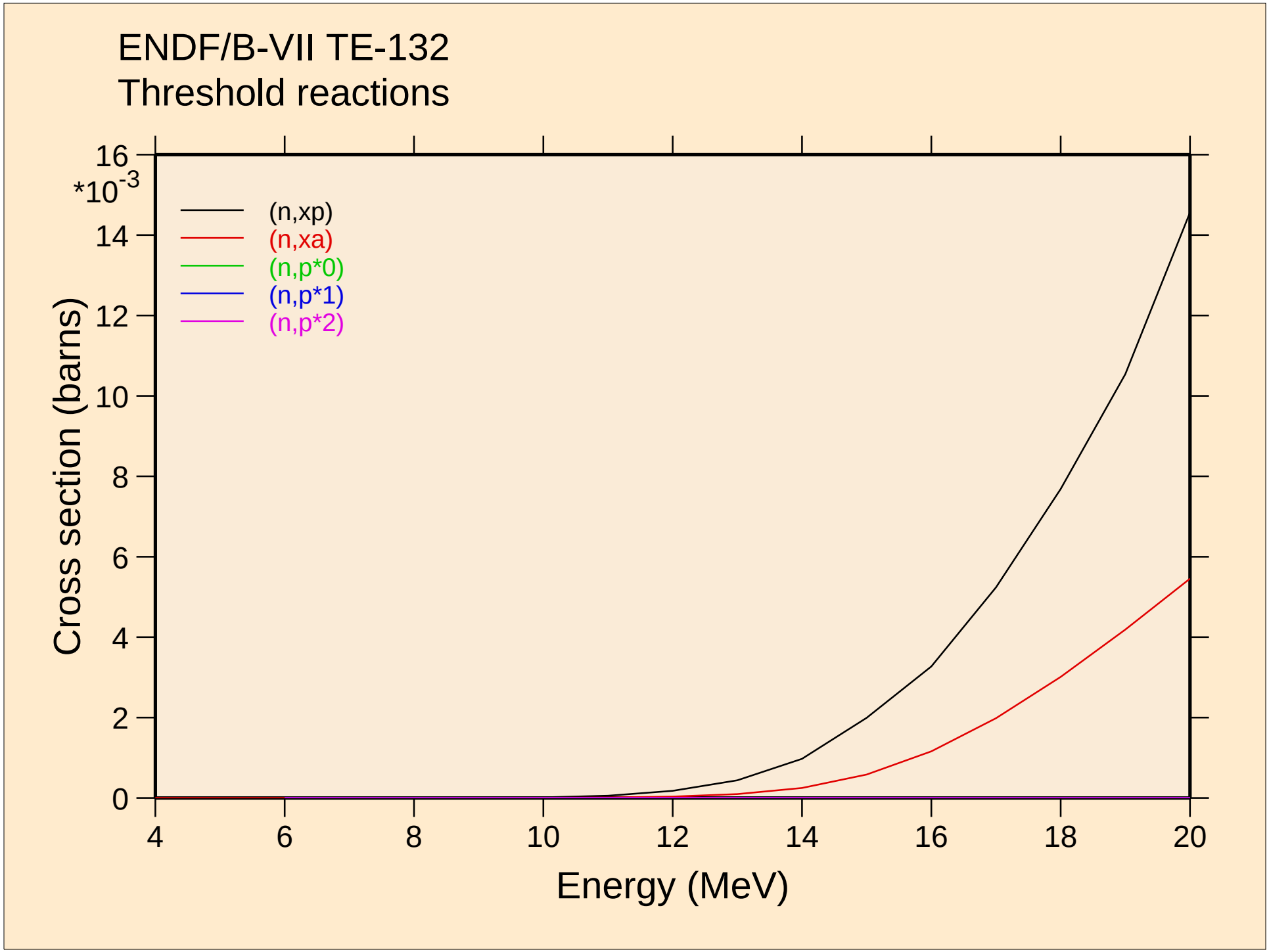

ENDF/B-VII TE-132
Non-threshold reactions
(n,gma)
Cross section (barns)
10-3
10-4
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

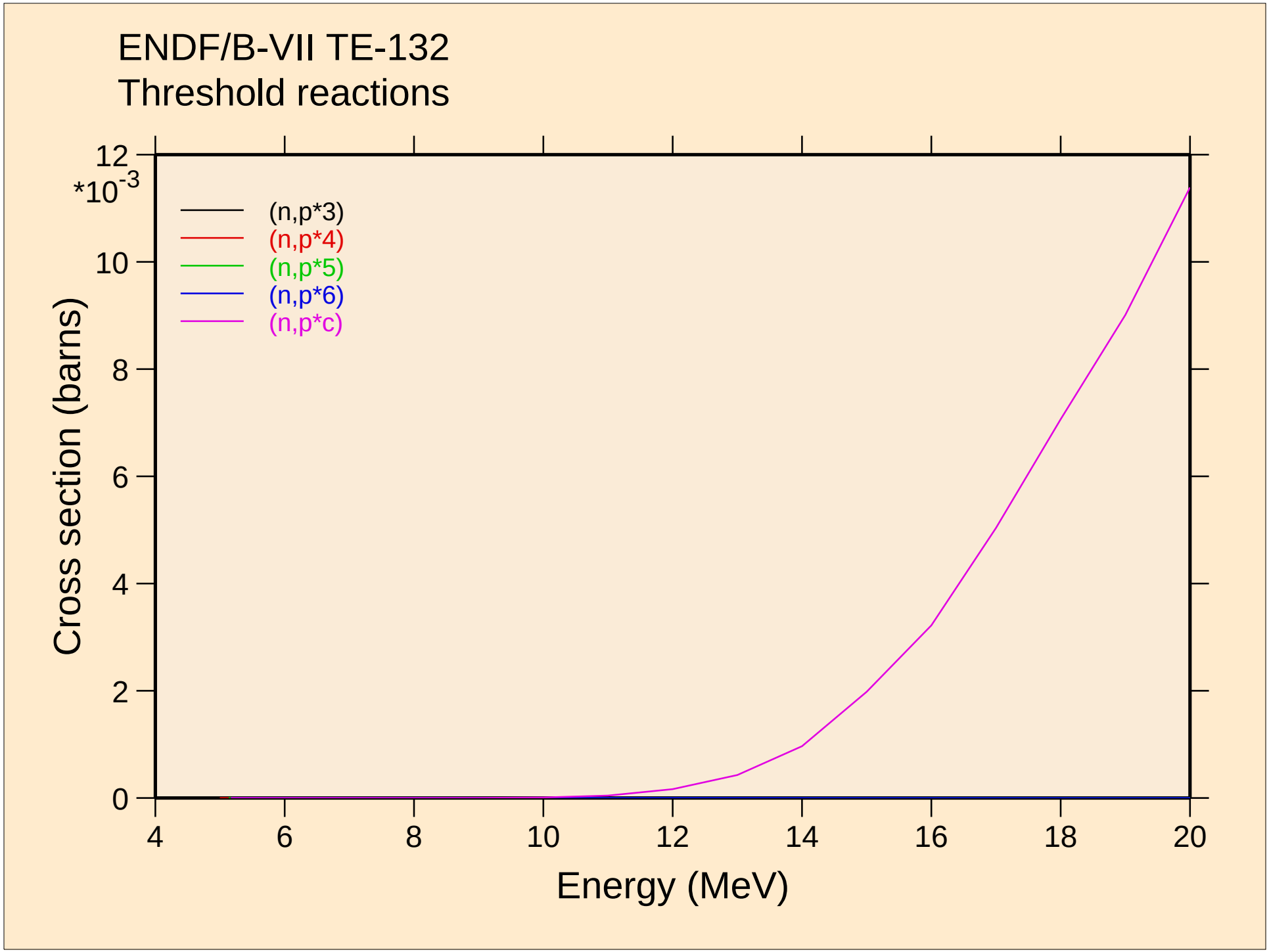

ENDF/B-VII TE-132
Inelastic levels
Cross section (barns)
Energy (MeV)
1.0
0.8
0.6
0.4
0.2
0.0
0
2
4
6
8
10
12
14
16
18
20
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

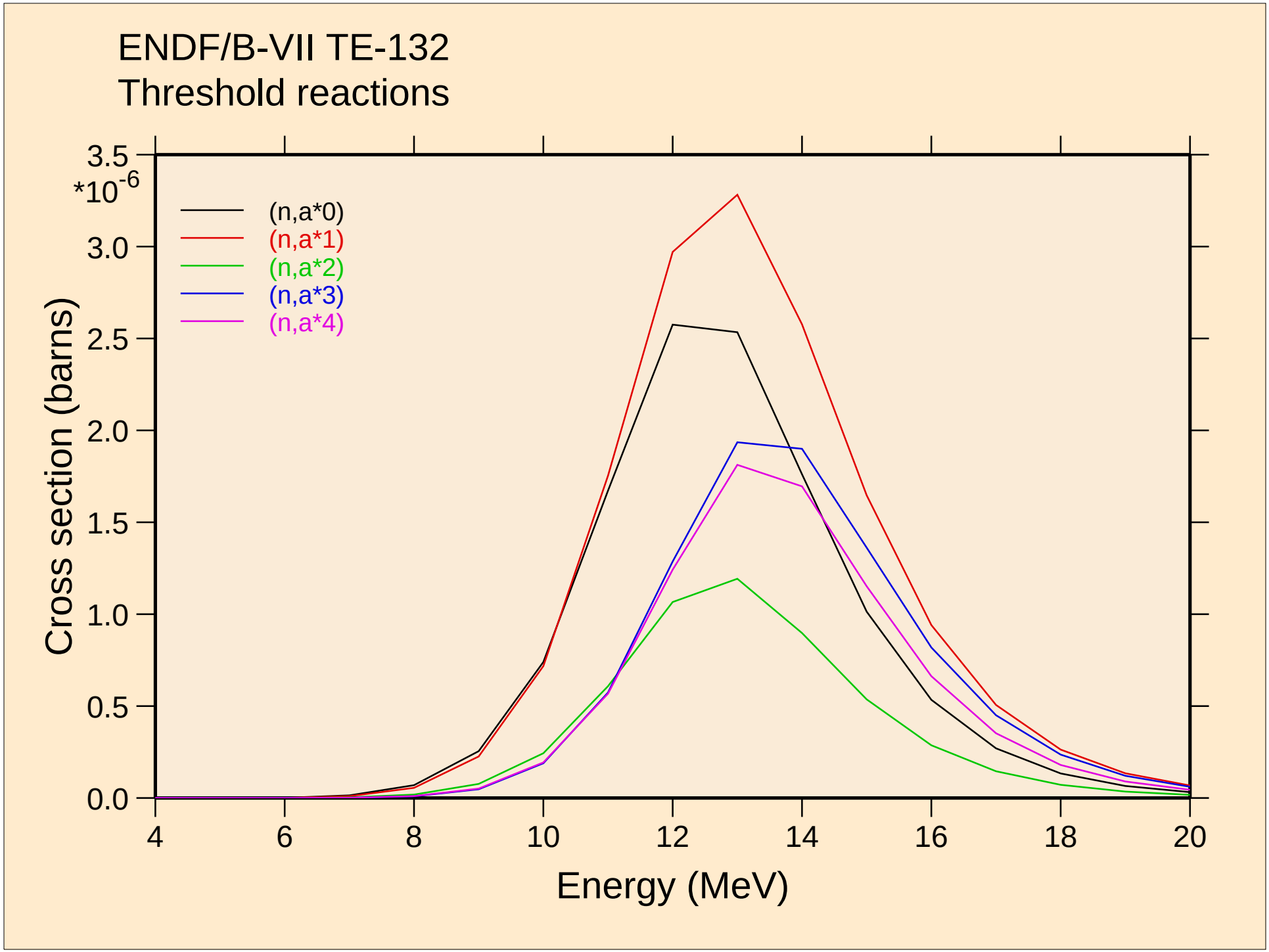

ENDF/B-VII TE-132
Inelastic levels
Cross section (barns)
*10-3
180
160
140
120
100
80
60
40
20
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

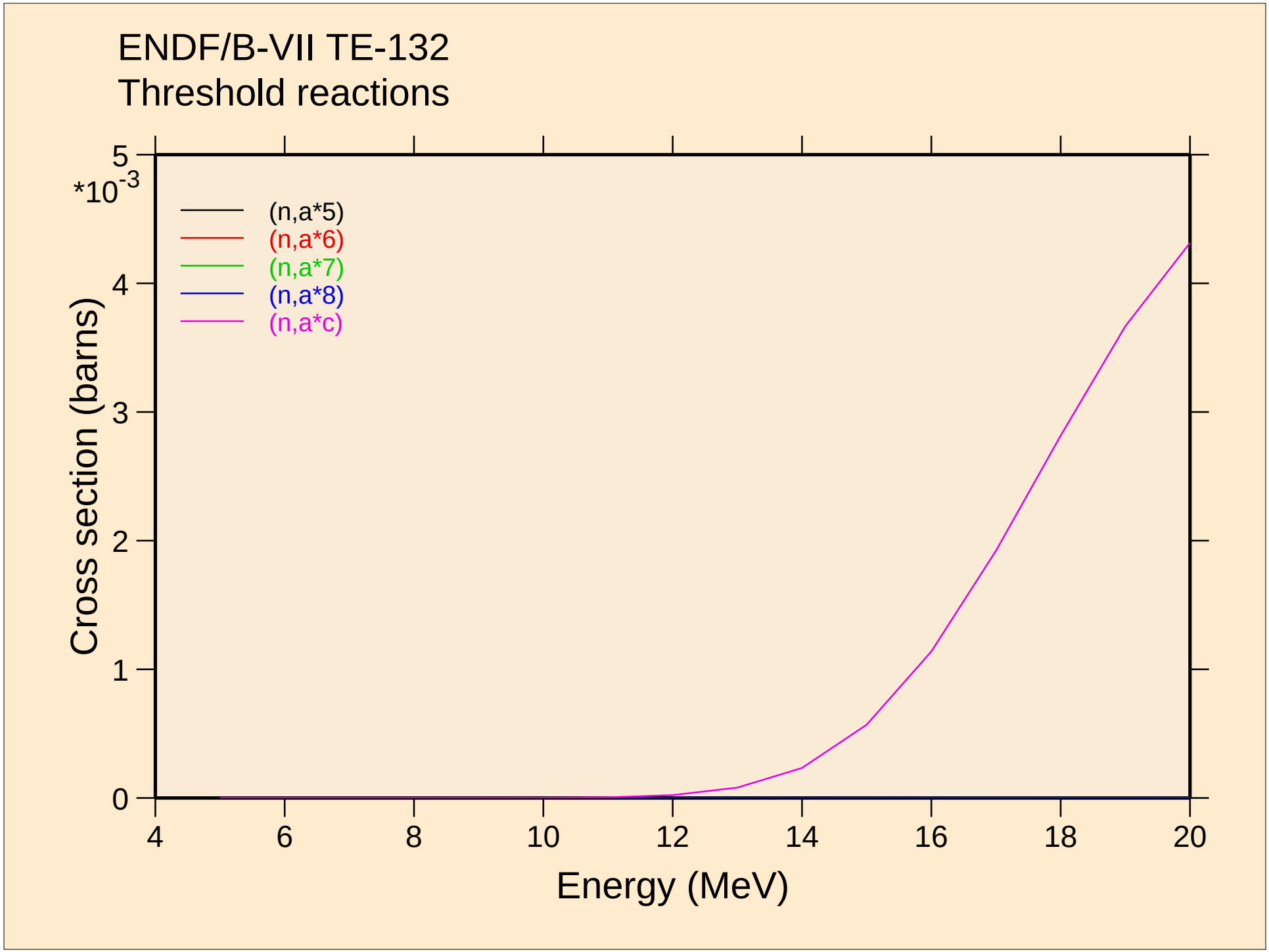

ENDF/B-VII TE-132
Threshold reactions
(n,2n)
(n,3n)
(n,n*)a
(n,2n)a
(n,n*)p
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
8
10
12
14
16
18
20

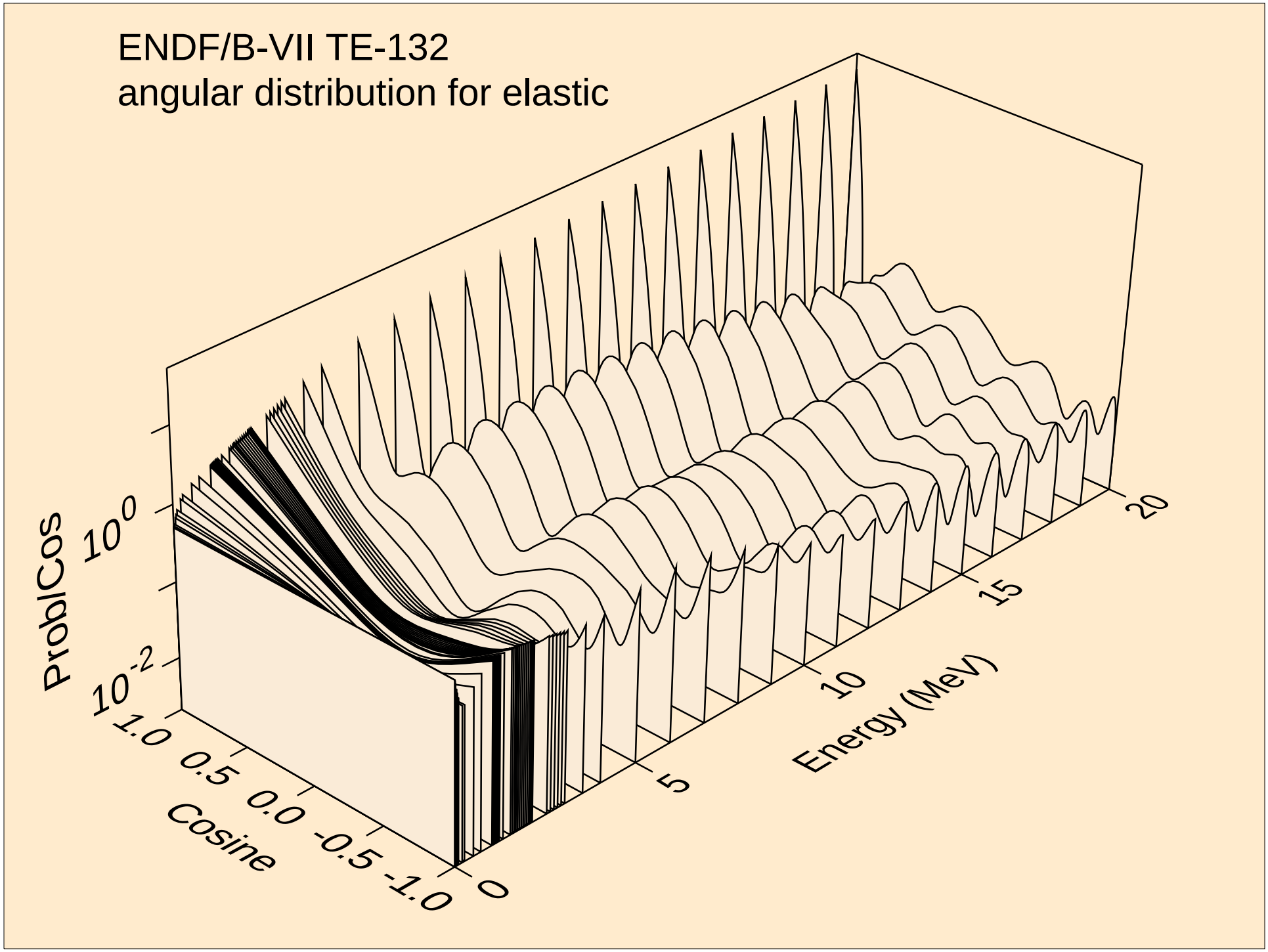

ENDF/B-VII TE-132
Threshold reactions
(n,n*c)
(n,p)
(n,a)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
0
2
4
6
8
10
12
14
16
18
20

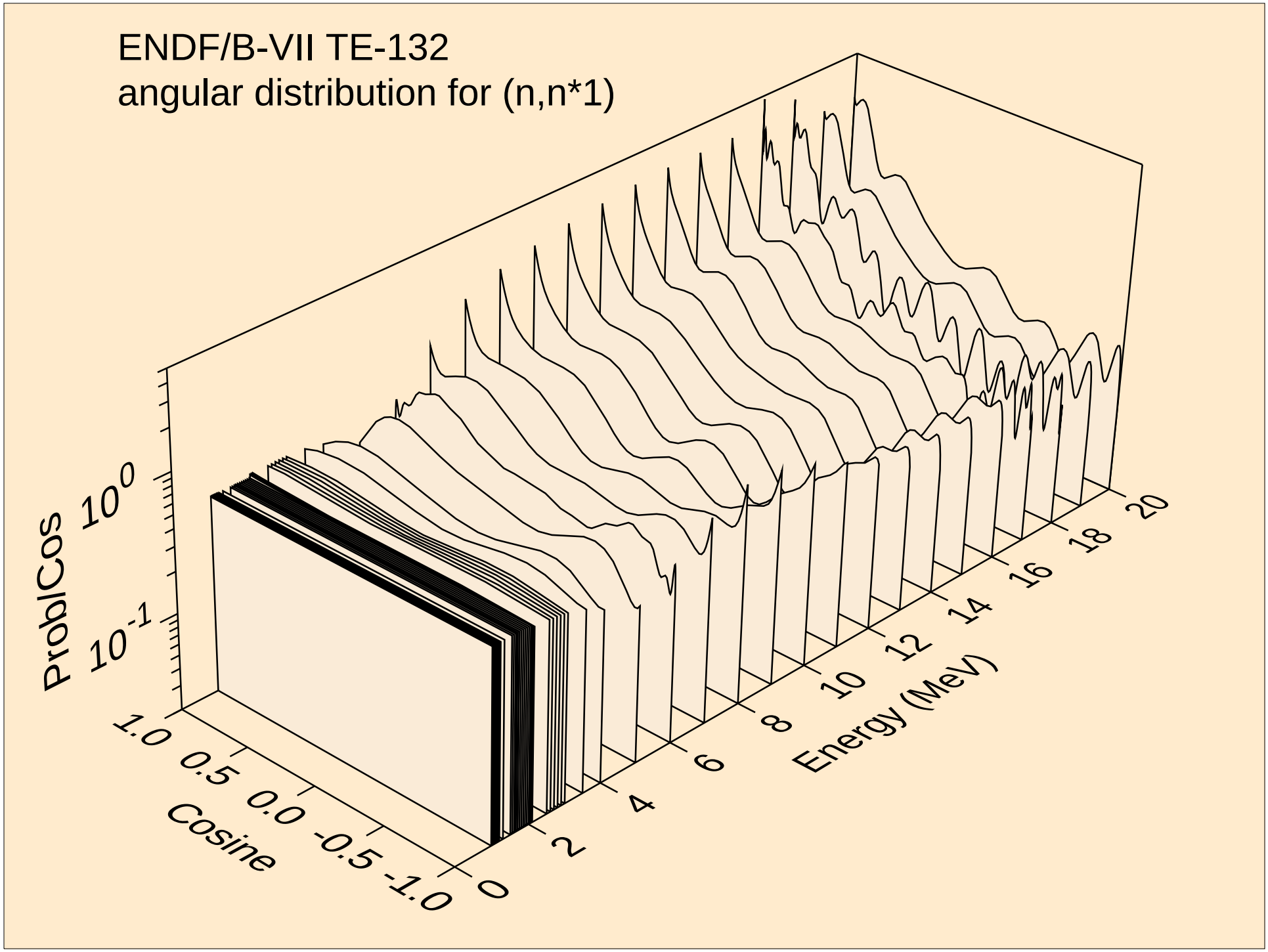

ENDF/B-VII TE-132
Threshold reactions
*10-3
16
14
12
10
8
6
4
2
0
Cross section (barns)
(n,xp)
(n,xa)
(n,p*0)
(n,p*1)
(n,p*2)
4
6
8
10
12
14
16
18
20
Energy (MeV)

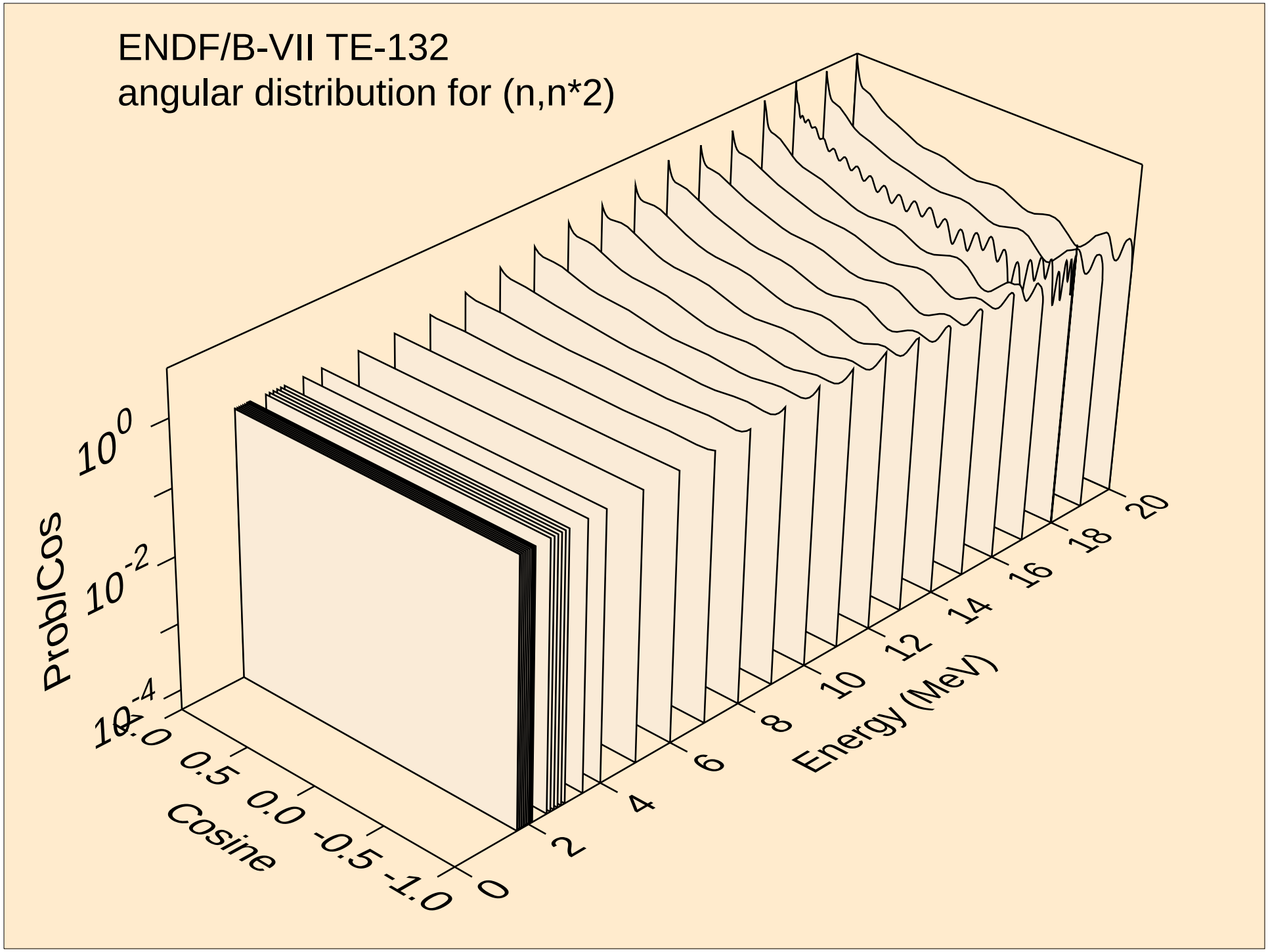

ENDF/B-VII TE-132
Threshold reactions
12
*10-3
10
8
6
4
2
0
Cross section (barns)
(n,p*3)
(n,p*4)
(n,p*5)
(n,p*6)
(n,p*c)
4
6
8
10
12
14
16
18
20
Energy (MeV)

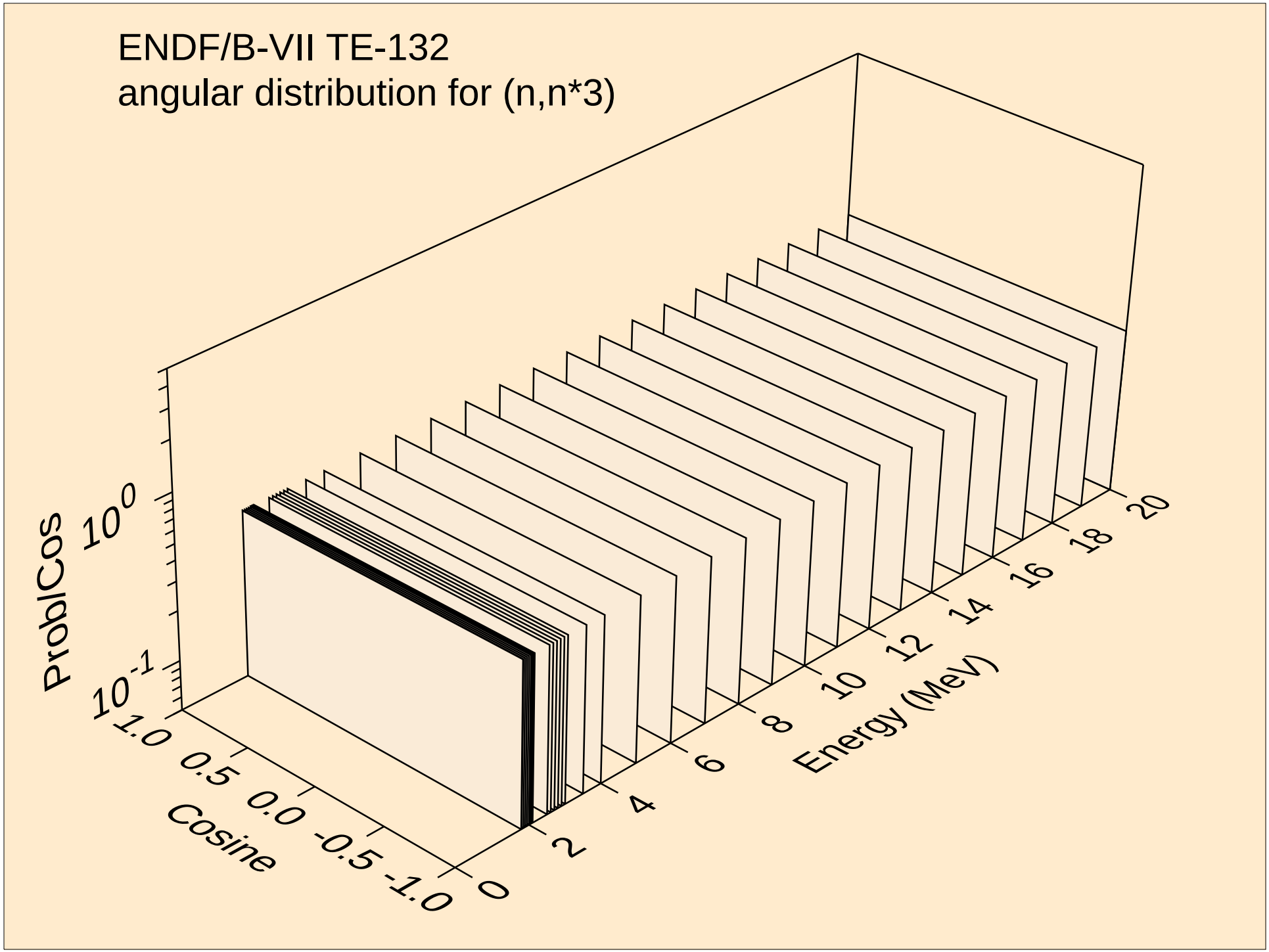

ENDF/B-VII TE-132
Threshold reactions
Cross section (barns)
*10-6
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
(n,a*0)
(n,a*1)
(n,a*2)
(n,a*3)
(n,a*4)
4
6
8
10
12
14
16
18
20
Energy (MeV)

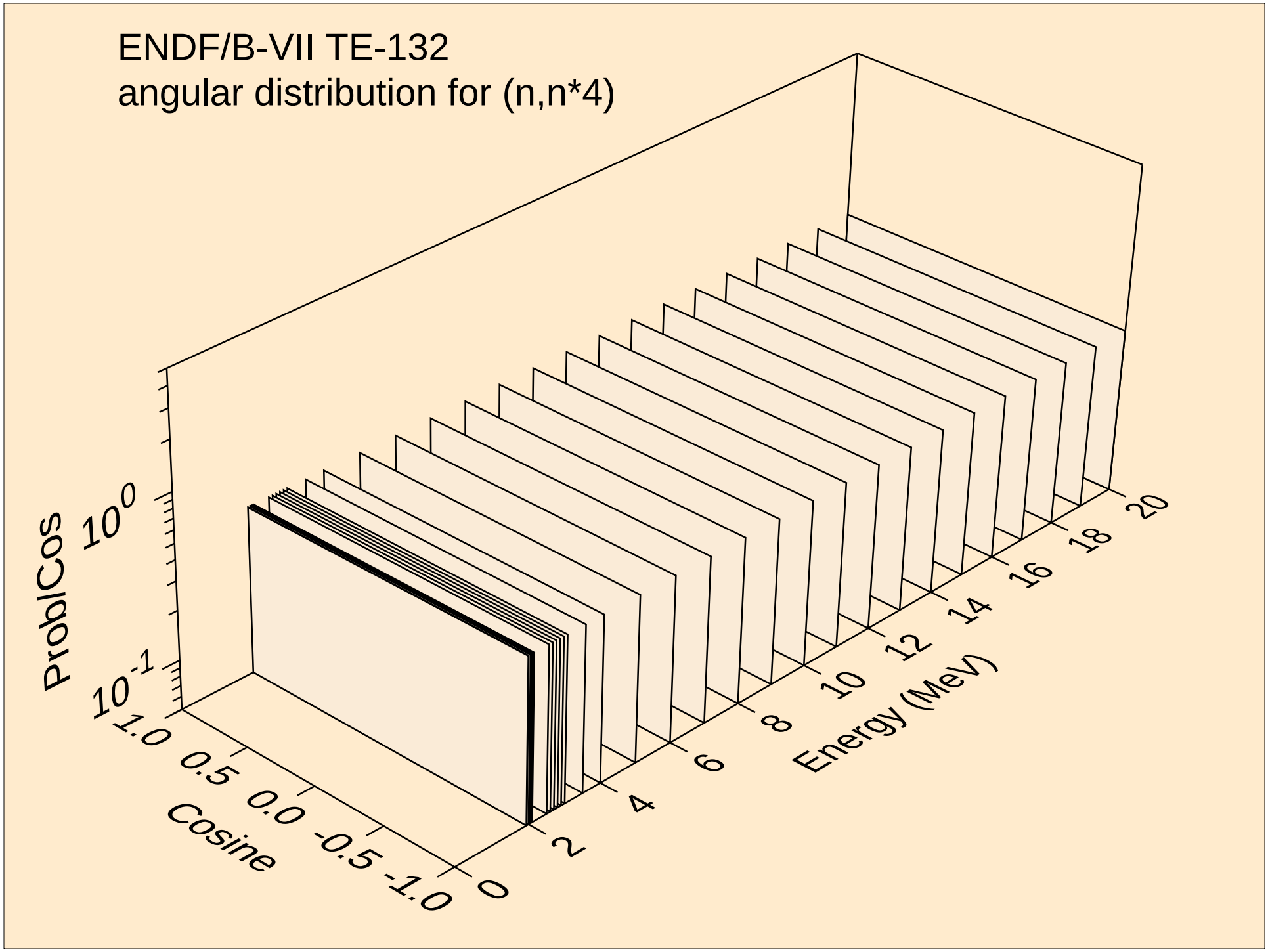

ENDF/B-VII TE-132
Threshold reactions
*10-3
Cross section (barns)
(n,a*5)
(n,a*6)
(n,a*7)
(n,a*8)
(n,a*c)
0
1
2
3
4
5
4
6
8
10
12
14
16
18
20
Energy (MeV)

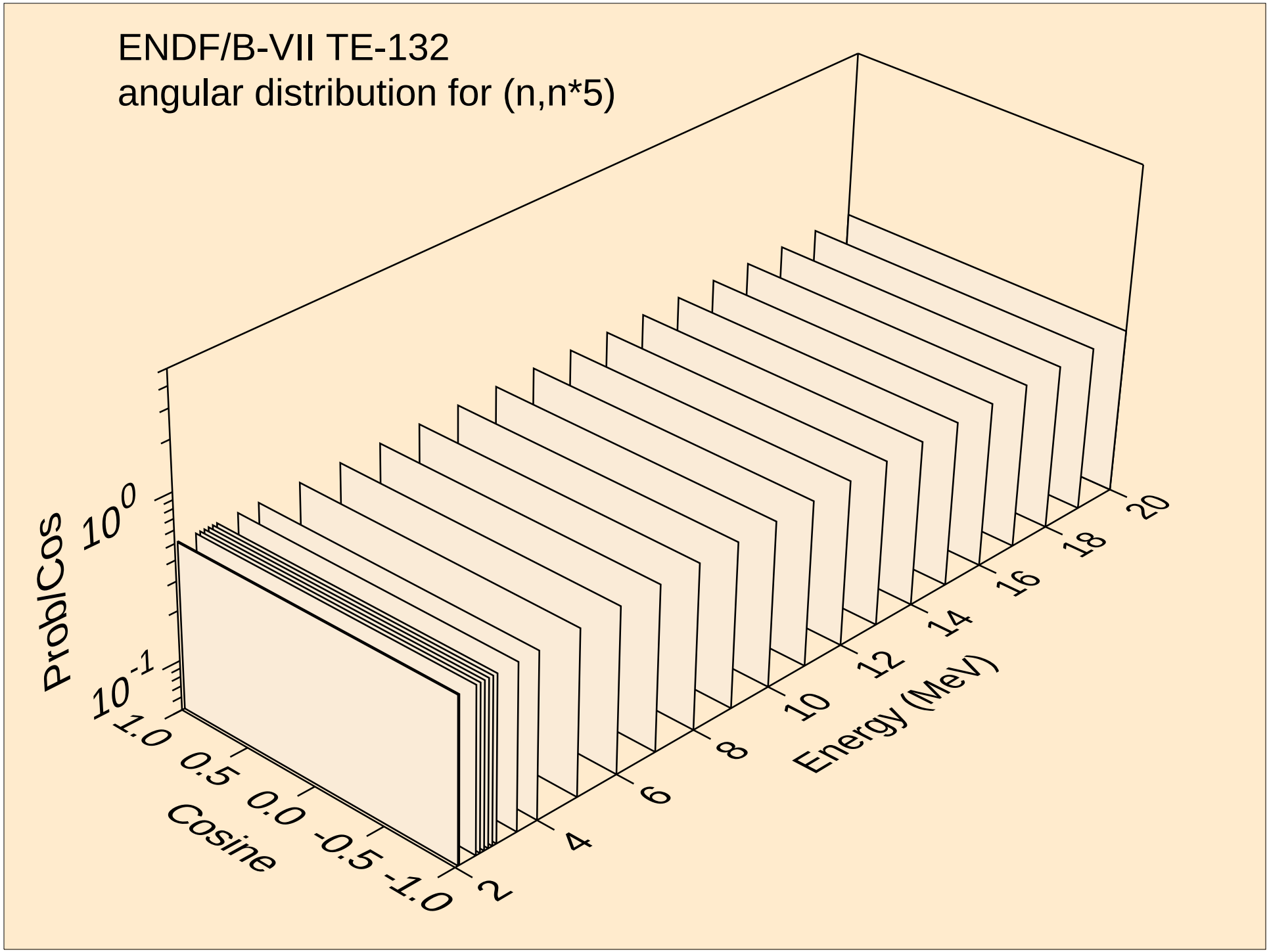

ENDF/B-VII TE-132
angular distribution for elastic
ProbICos
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

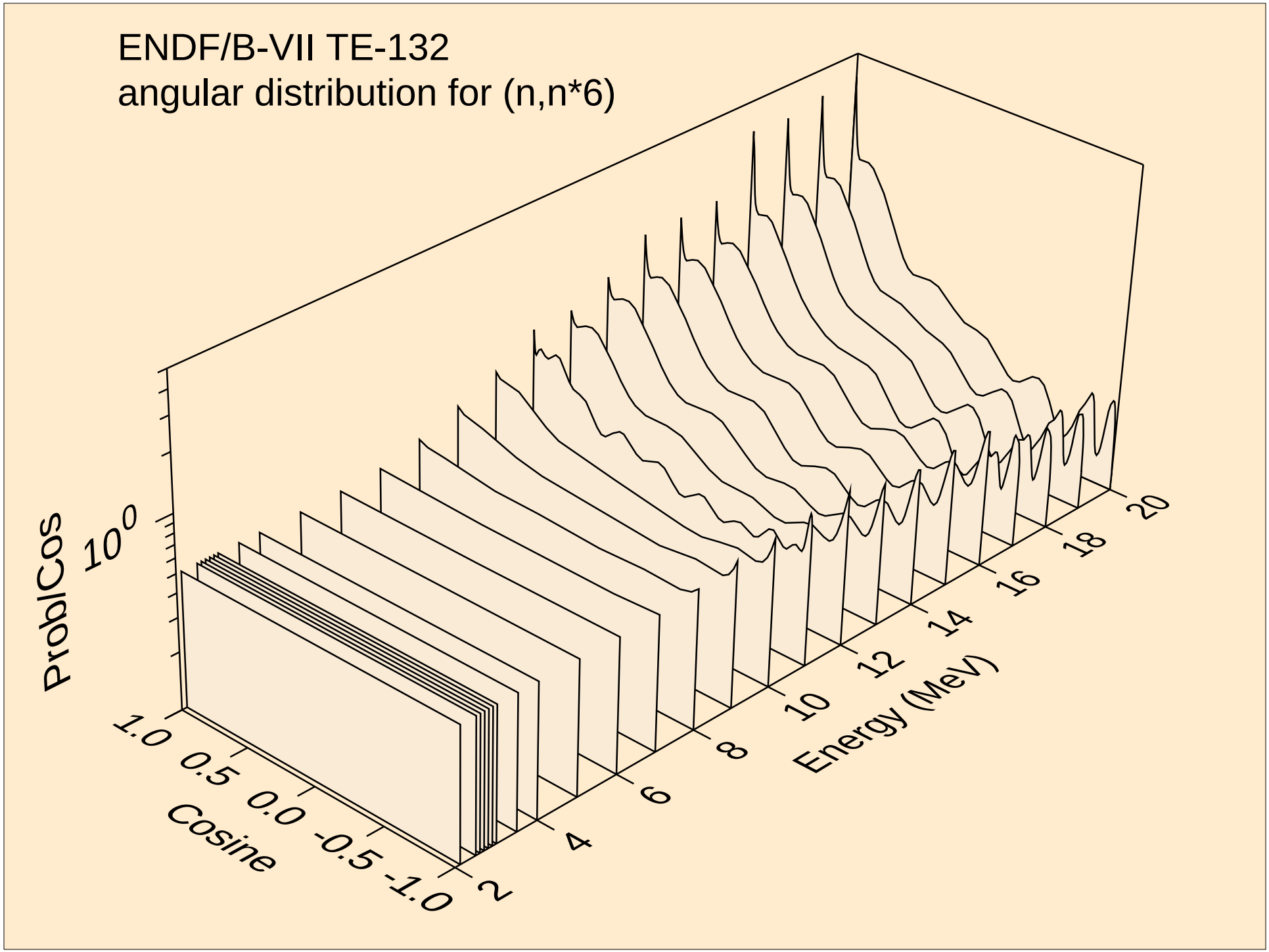

ENDF/B-VII TE-132
angular distribution for (n,n*1)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

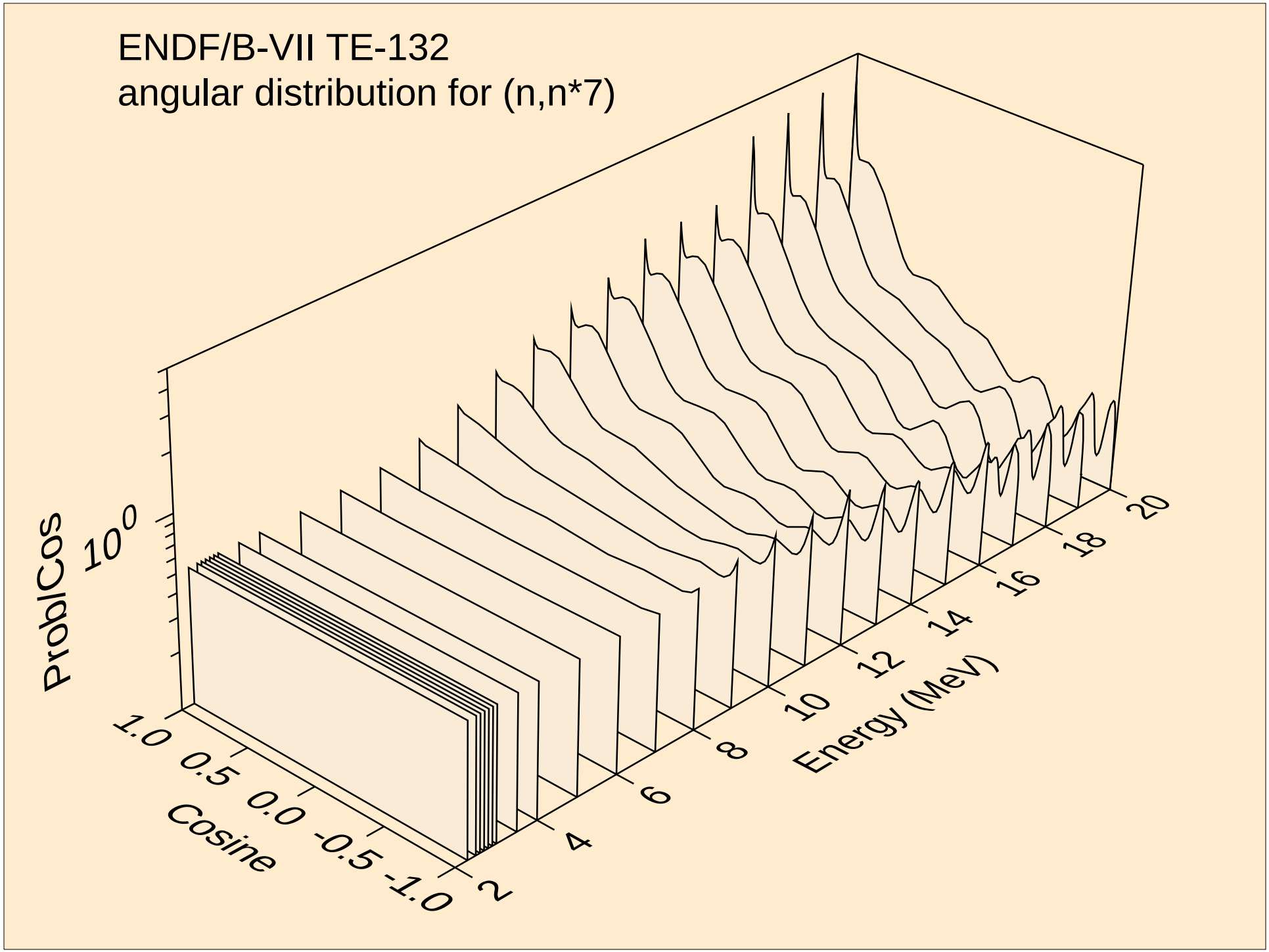

ENDF/B-VII TE-132
angular distribution for (n,n*2)
Prob\Cos
10^{0}
10^{-2}
10^{-4}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

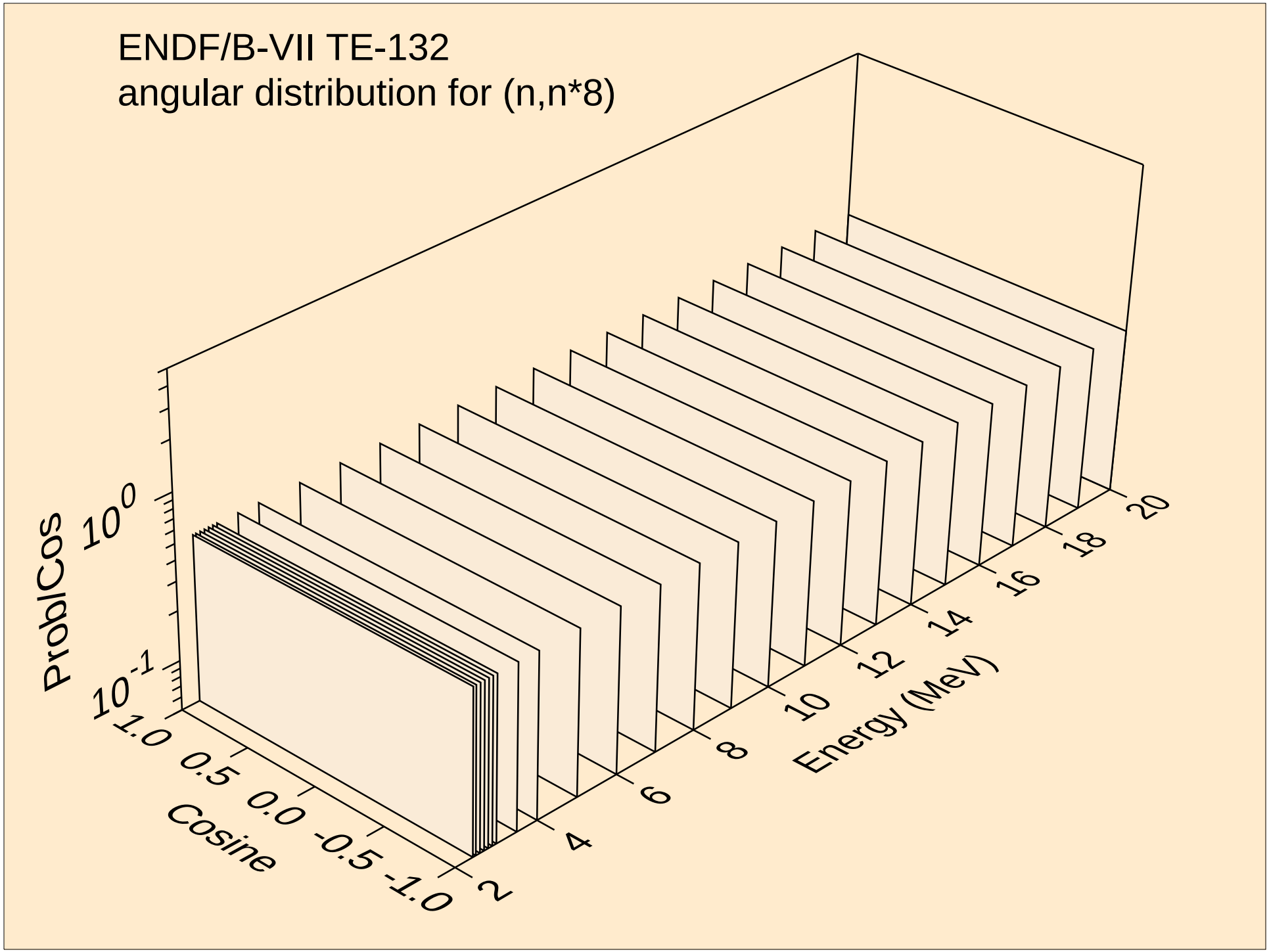

ENDF/B-VII TE-132
angular distribution for (n,n*3)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

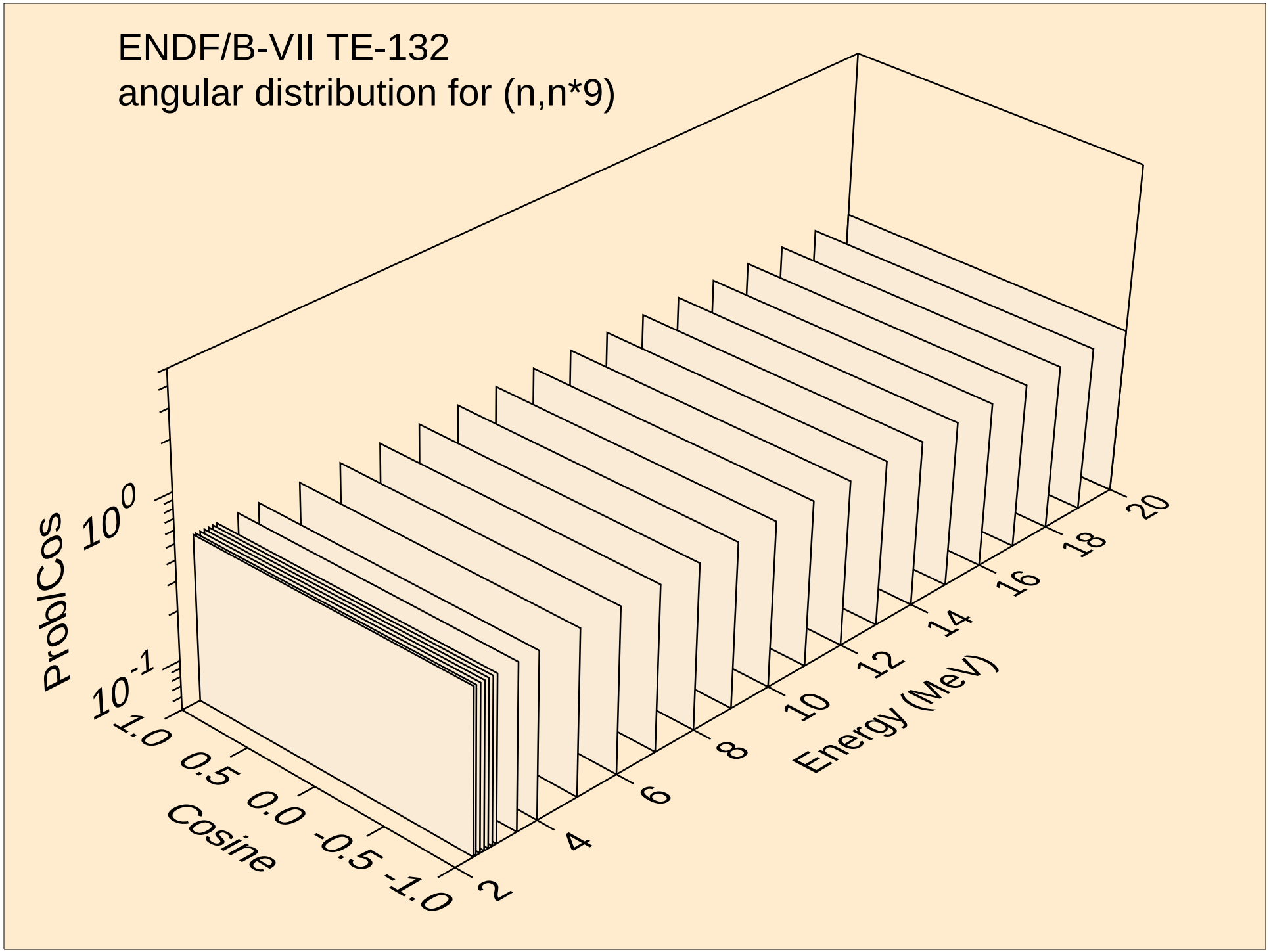

ENDF/B-VII TE-132
angular distribution for (n,n*4)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

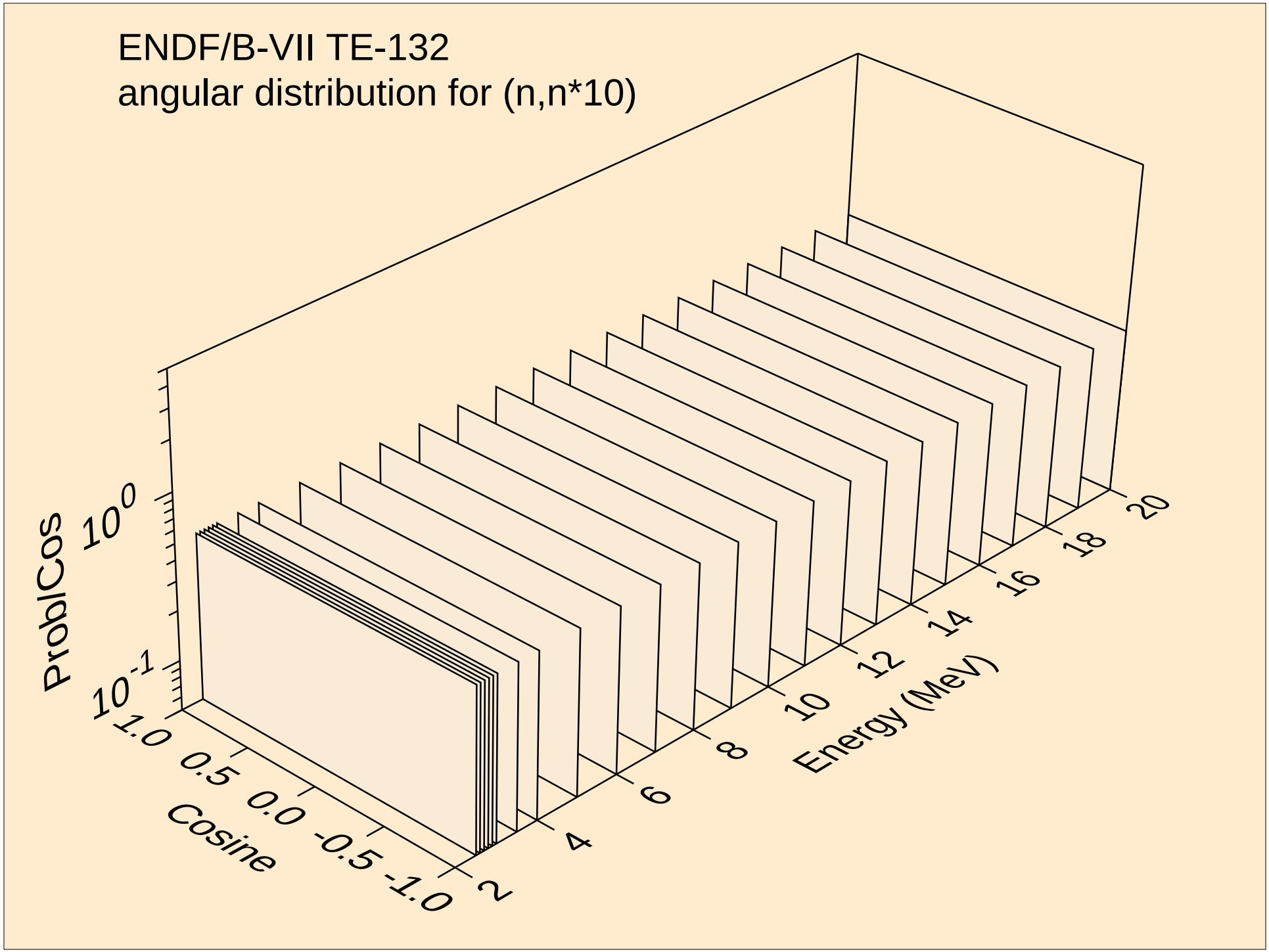

ENDF/B-VII TE-132
angular distribution for (n,n*5)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

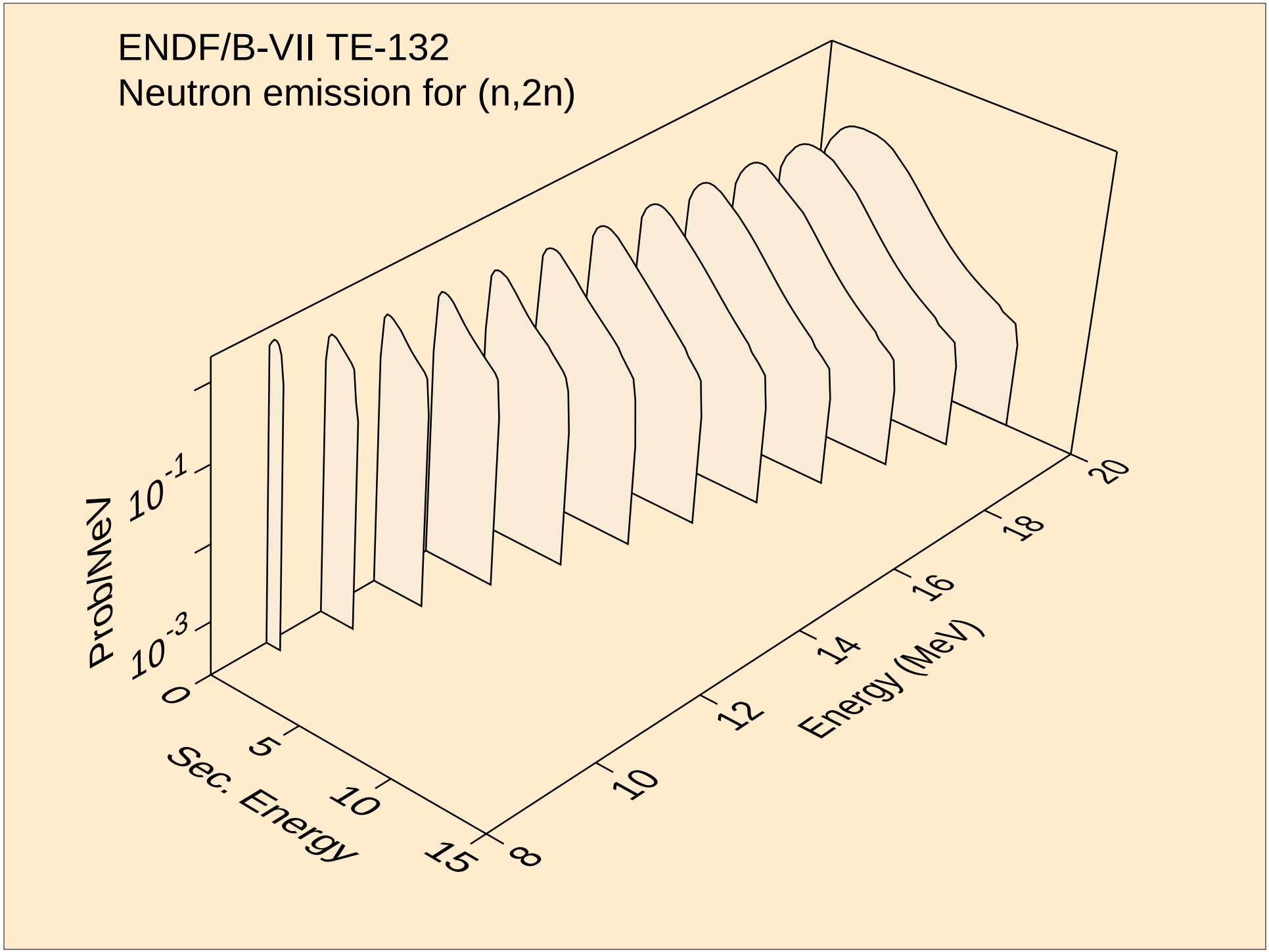

ENDF/B-VII TE-132
angular distribution for (n,n*6)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

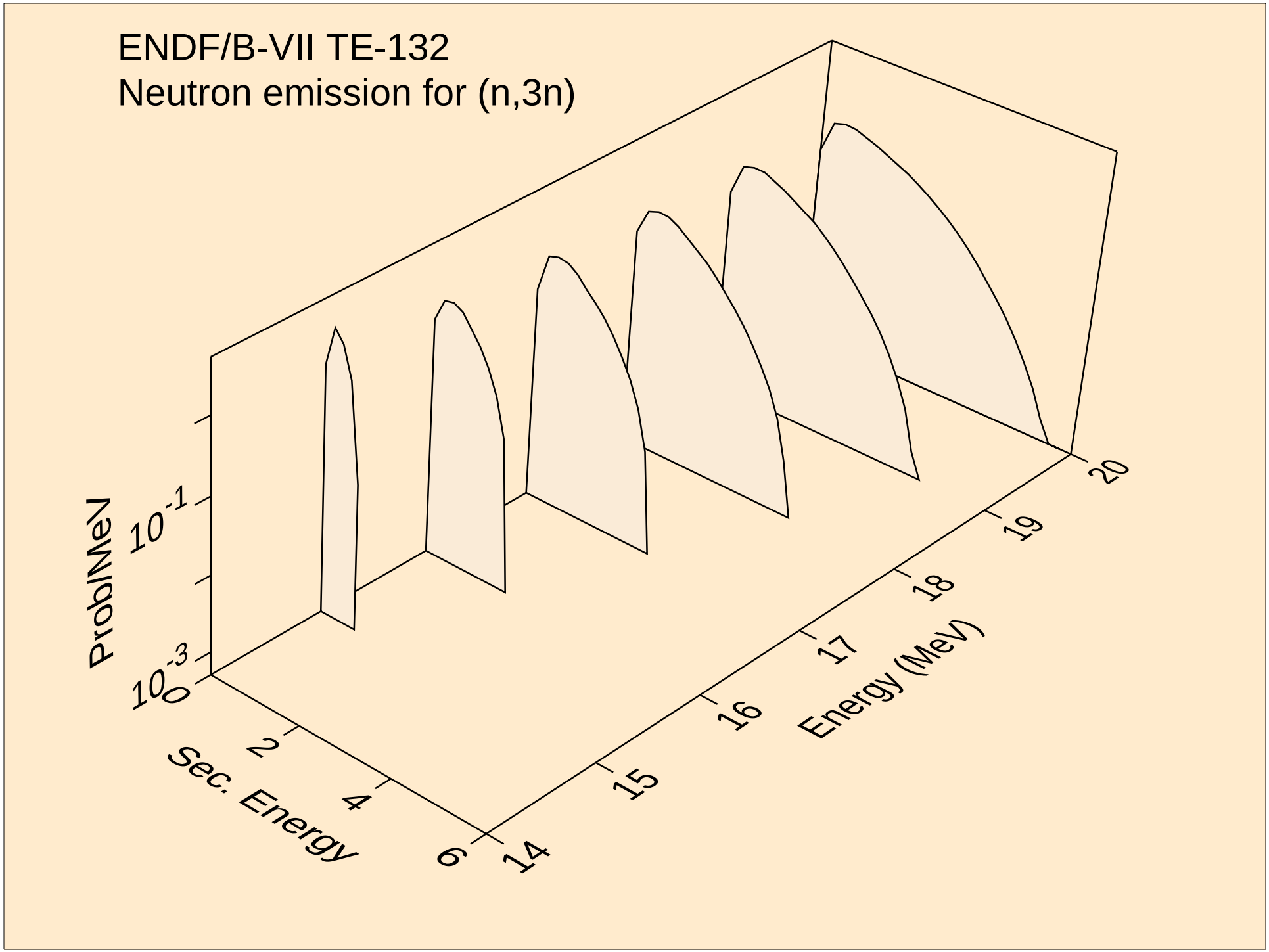

ENDF/B-VII TE-132
angular distribution for (n,n*7)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

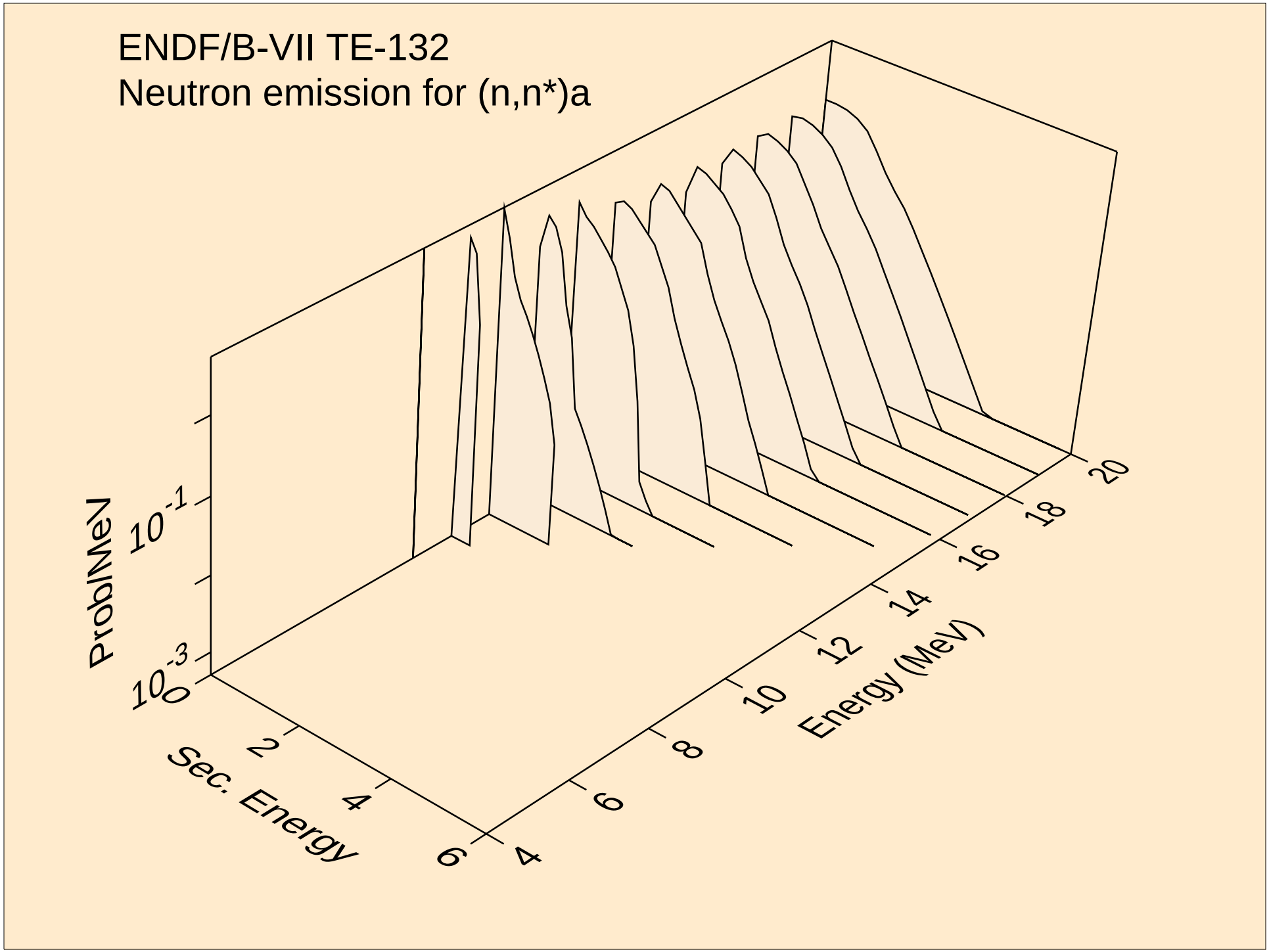

ENDF/B-VII TE-132
angular distribution for (n,n*8)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

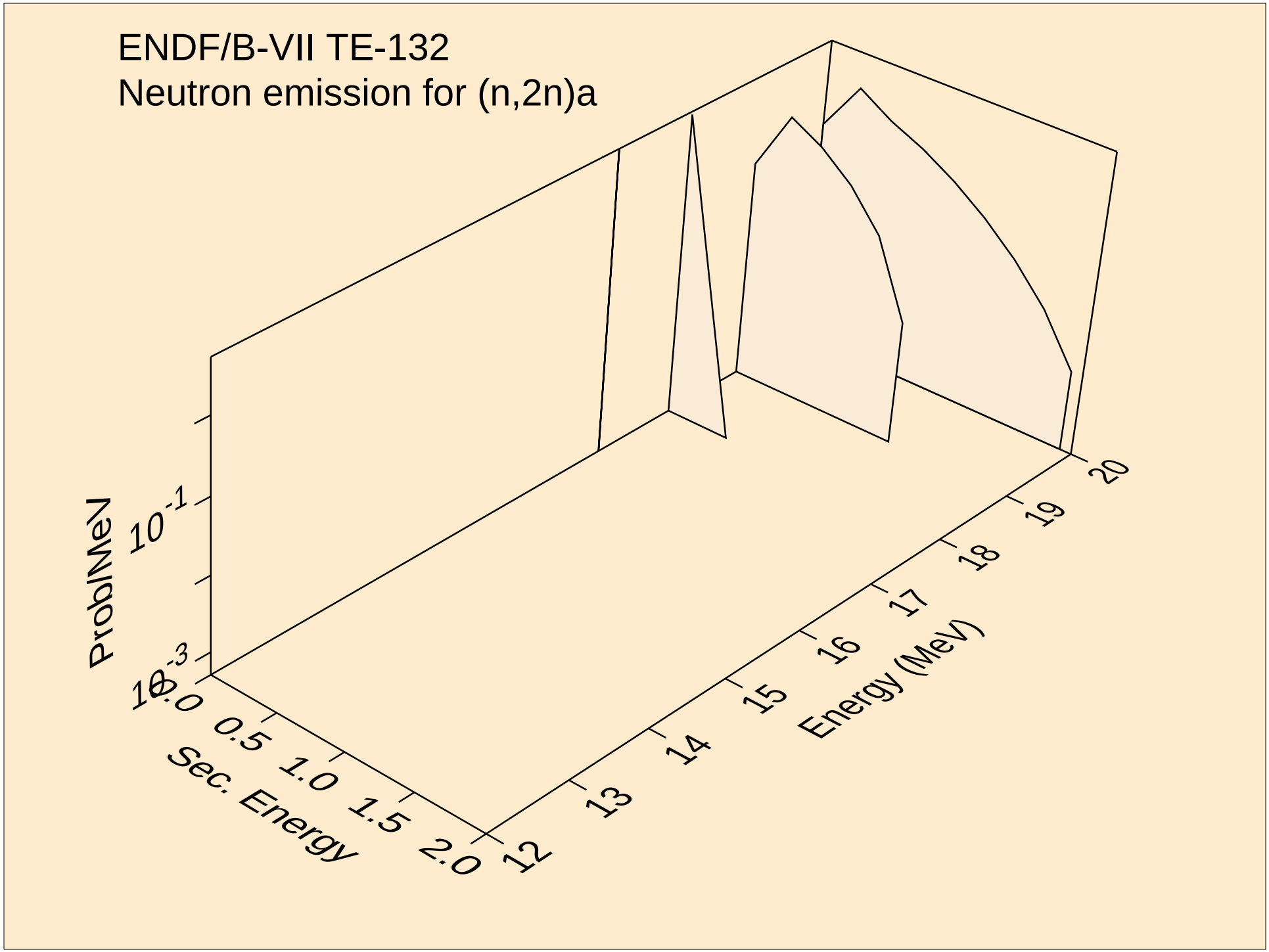

ENDF/B-VII TE-132
angular distribution for (n,n*9)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

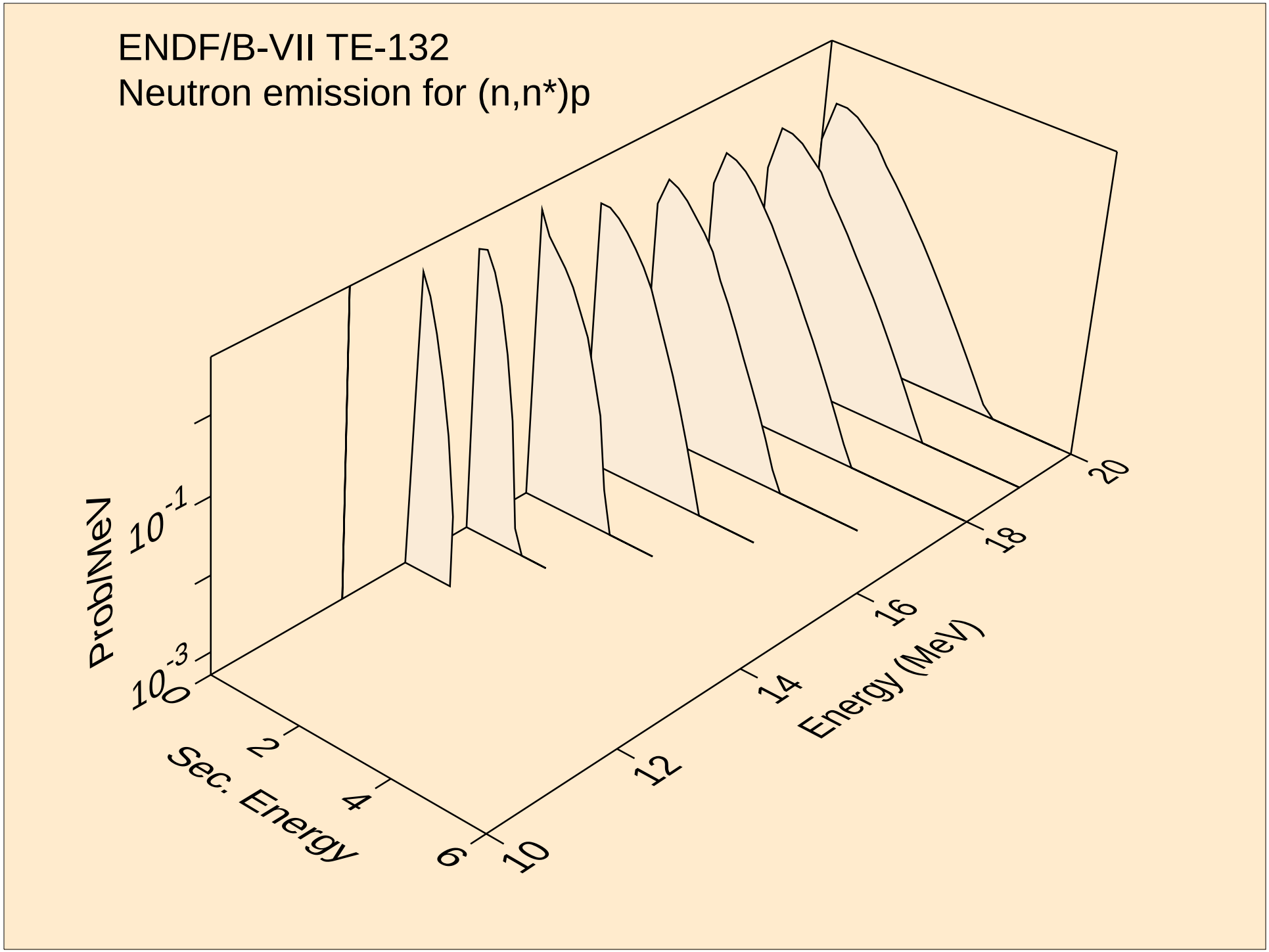

ENDF/B-VII TE-132
angular distribution for (n,n*10)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

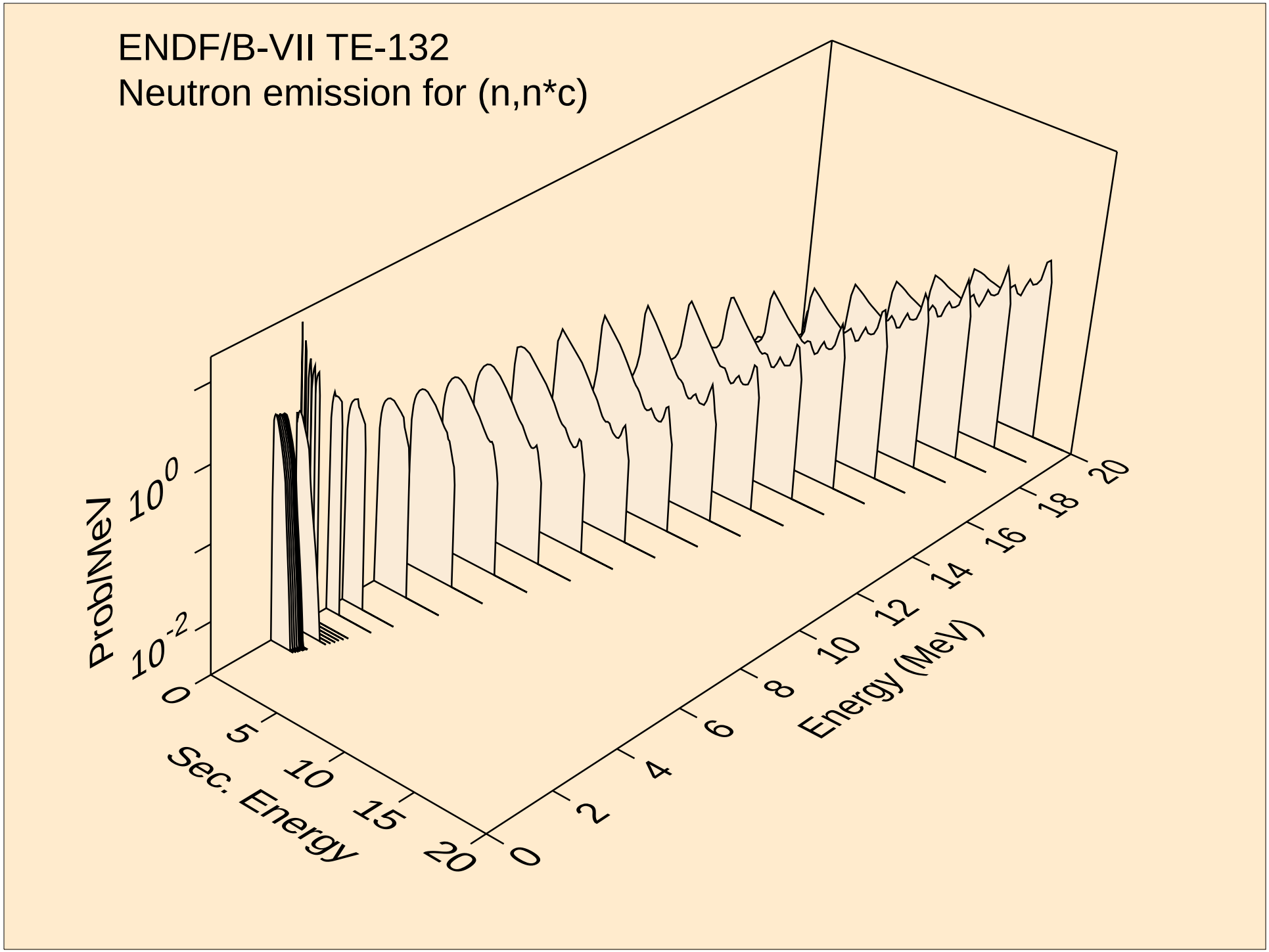

ENDF/B-VII TE-132
Neutron emission for (n,2n)
Prob/MeV
10-1
10-3
0
5
10
15
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)

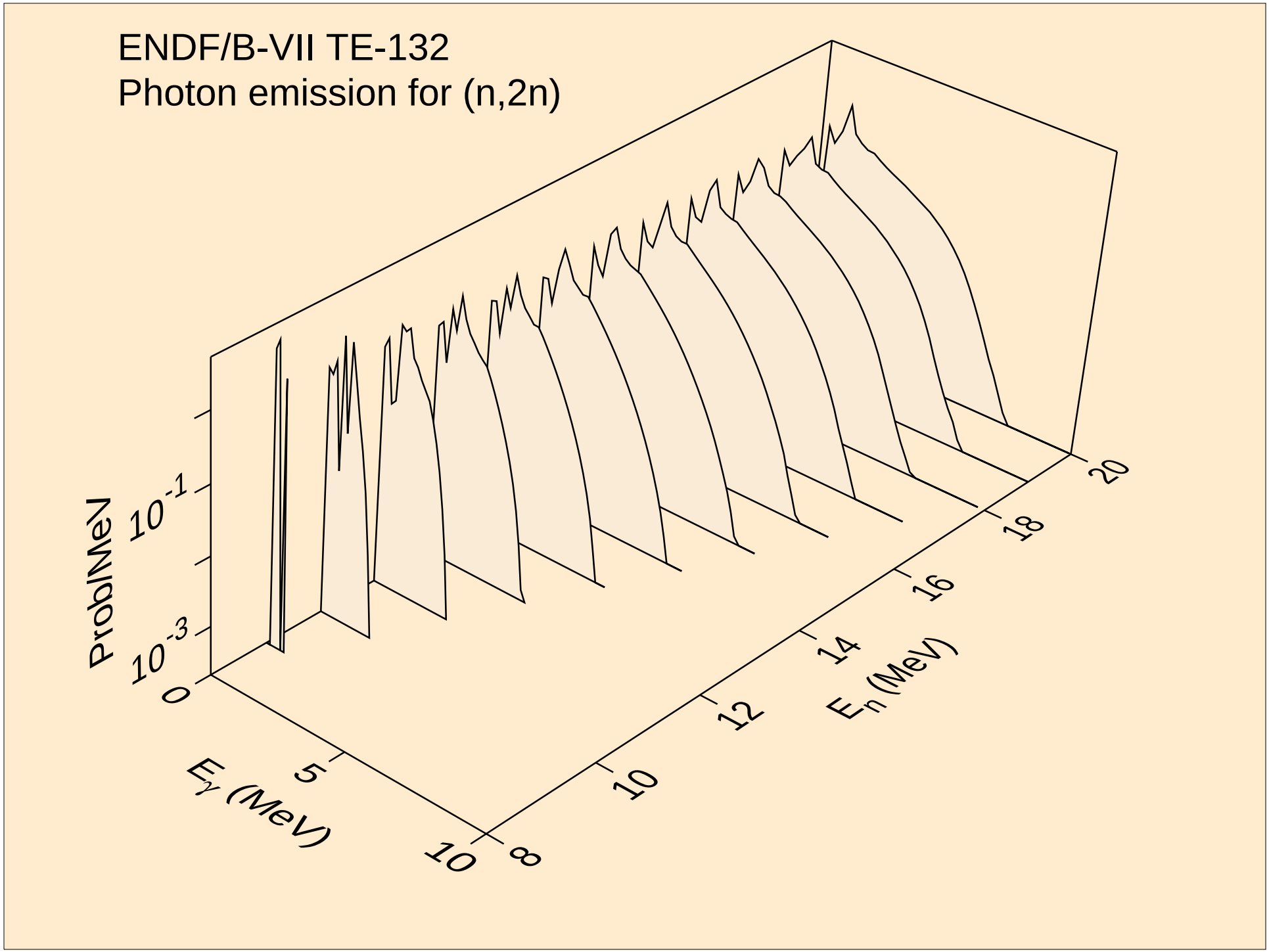

ENDF/B-VII TE-132
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
14
15
16
17
18
19
20
Energy (MeV)

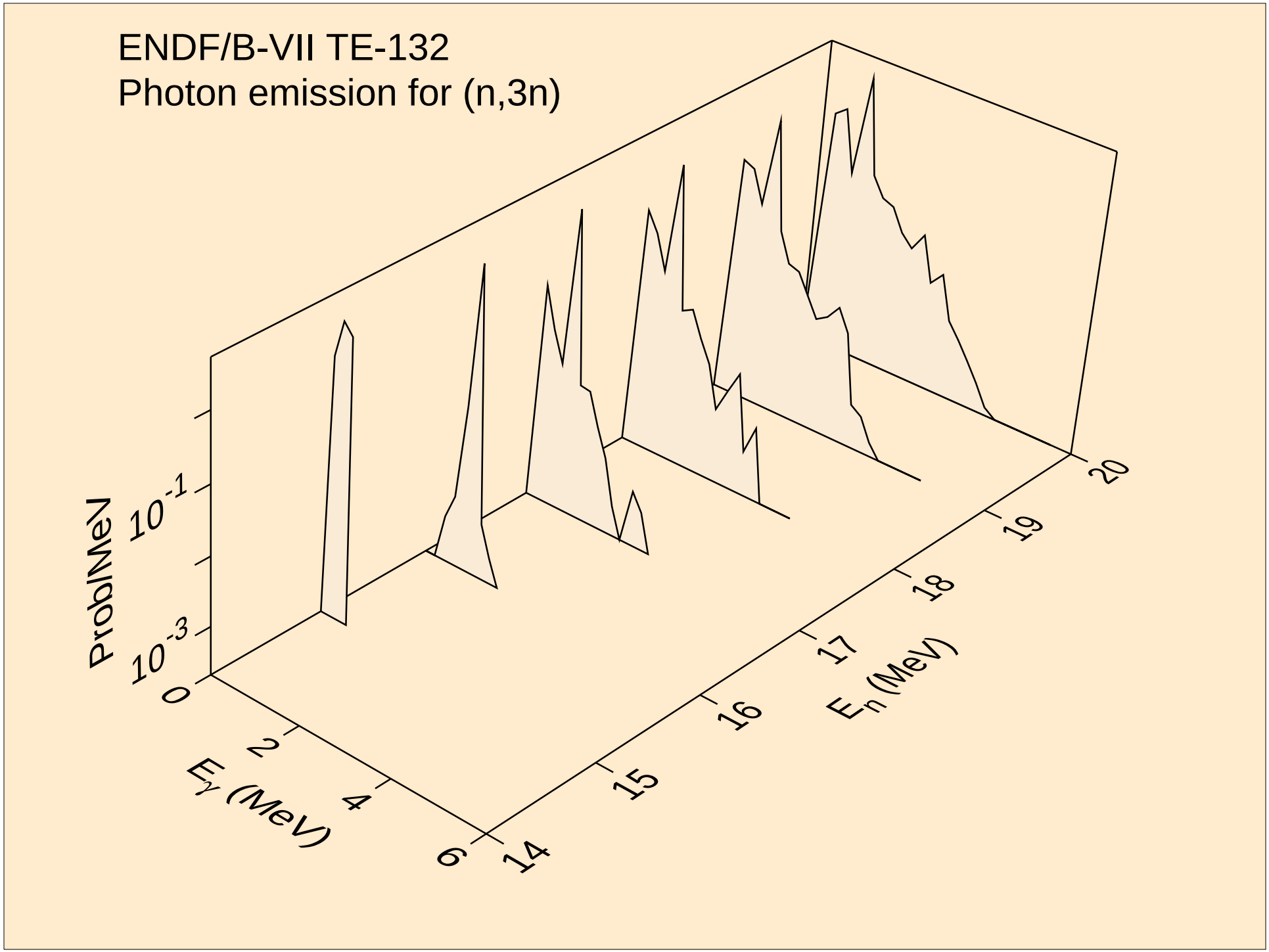

ENDF/B-VII TE-132
Neutron emission for (n,n*)a
Prob/MeV
10^-1
10^-3
0
2
4
6
Sec. Energy
4
6
8
10
12
14
16
18
20
Energy (MeV)

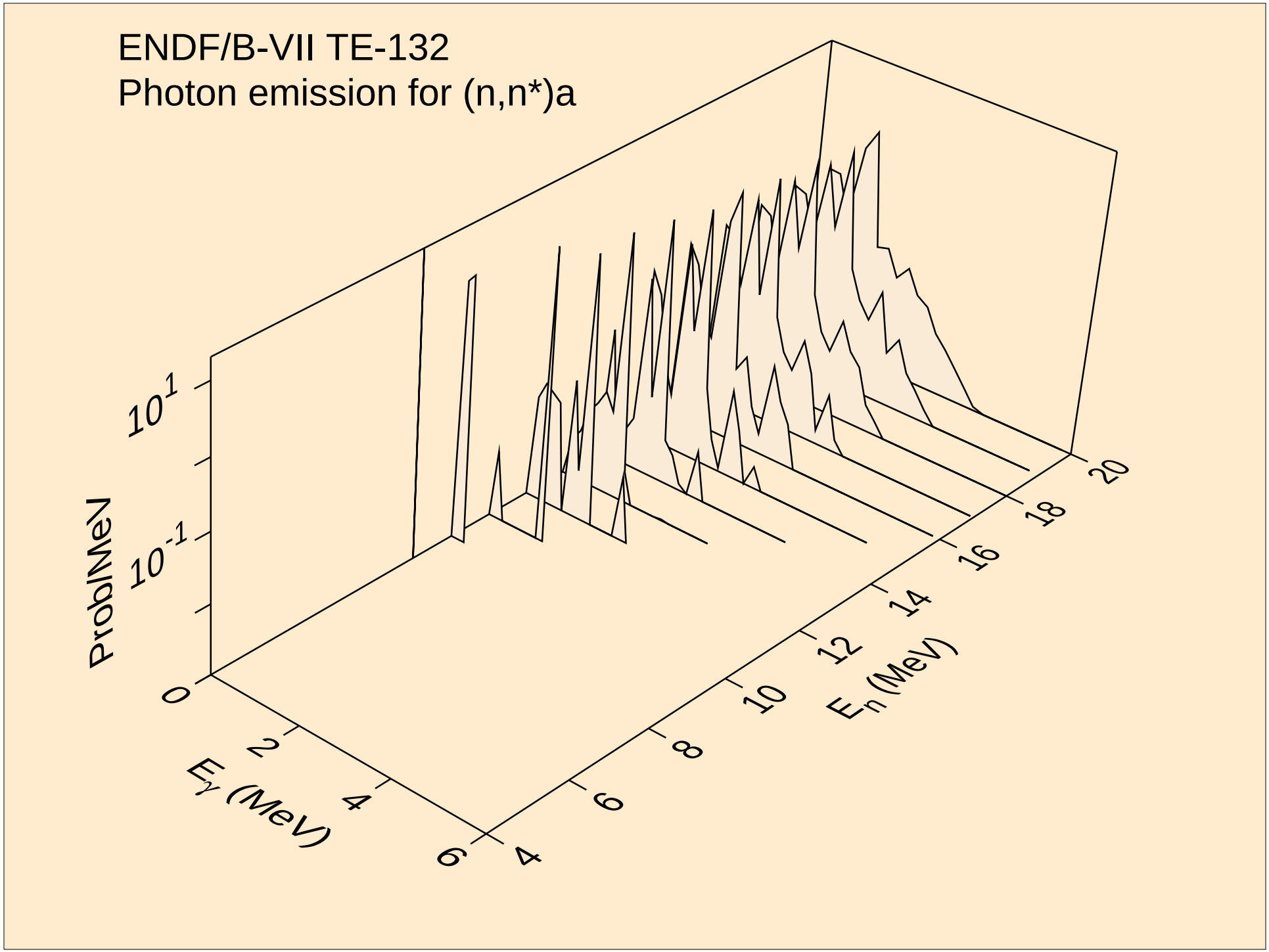

ENDF/B-VII TE-132
Neutron emission for (n,2n)a
Prob/MeV
10-1
10-3
0.0
0.5
1.0
1.5
2.0
Sec. Energy
12
13
14
15
16
17
18
19
20
Energy (MeV)

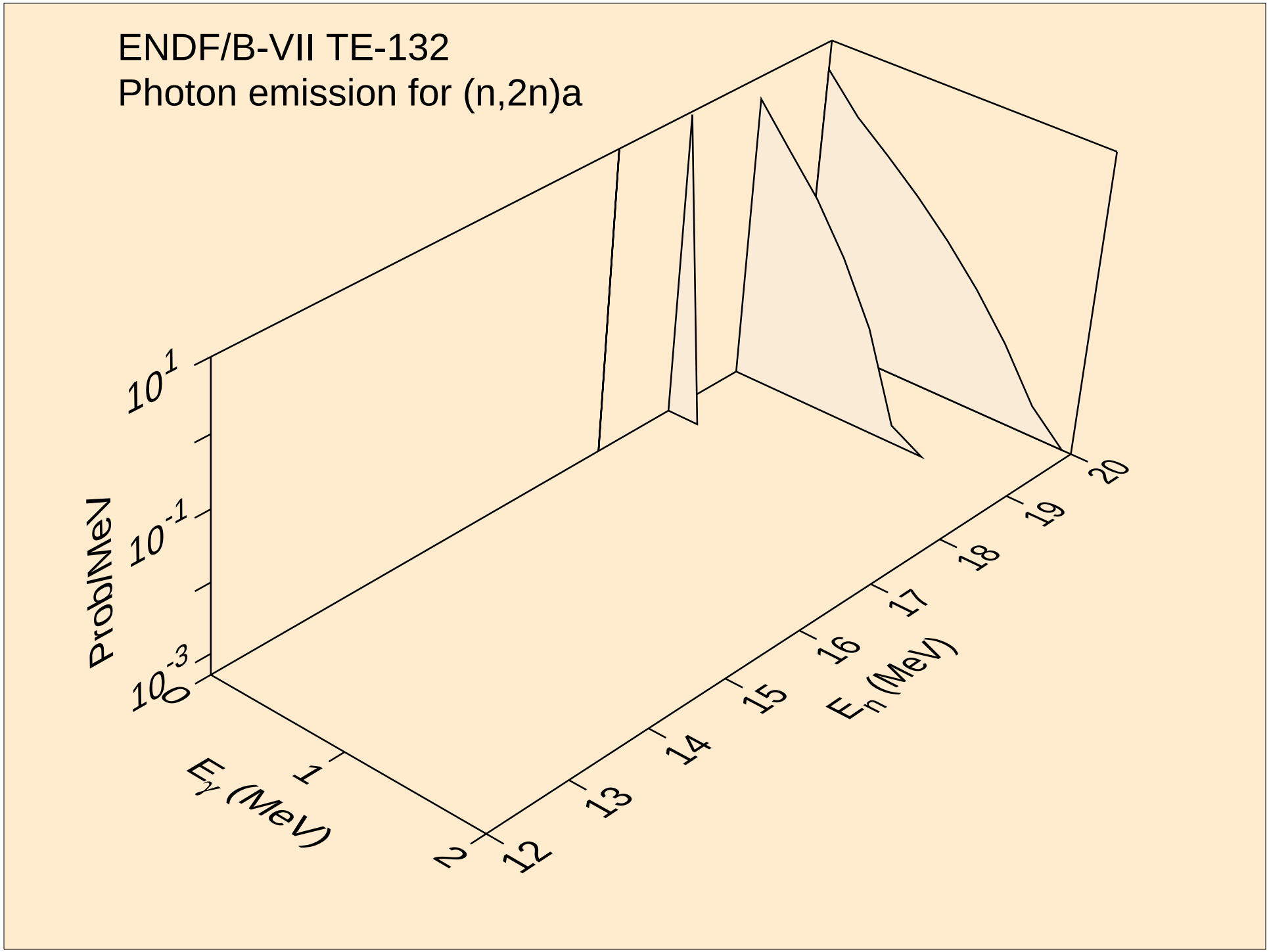

ENDF/B-VII TE-132
Neutron emission for (n,n*)p
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
10
12
14
16
18
20
Energy (MeV)

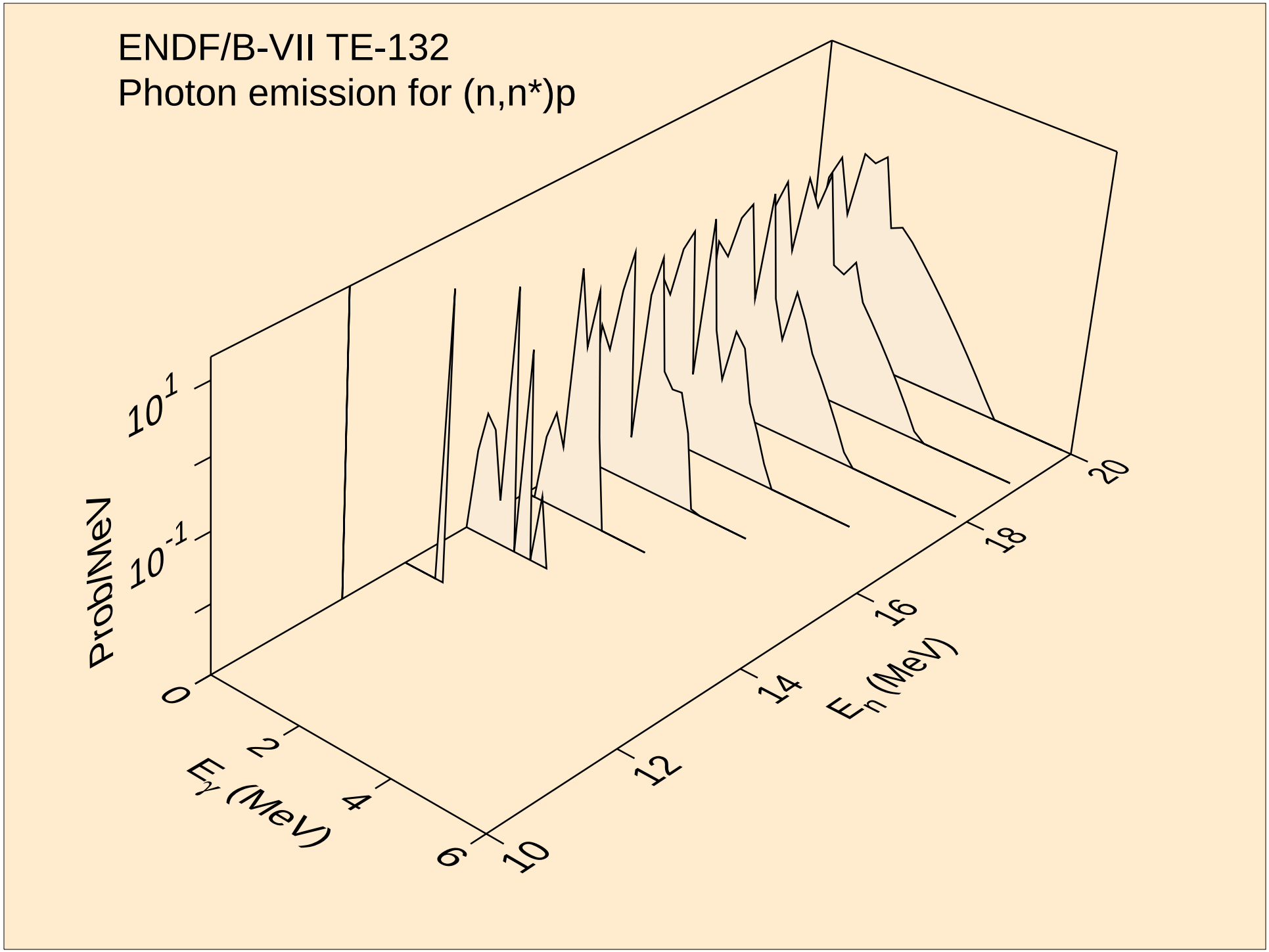

ENDF/B-VII TE-132
Neutron emission for (n,n*c)
Prob/MeV
10^{0}
10^{-2}
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

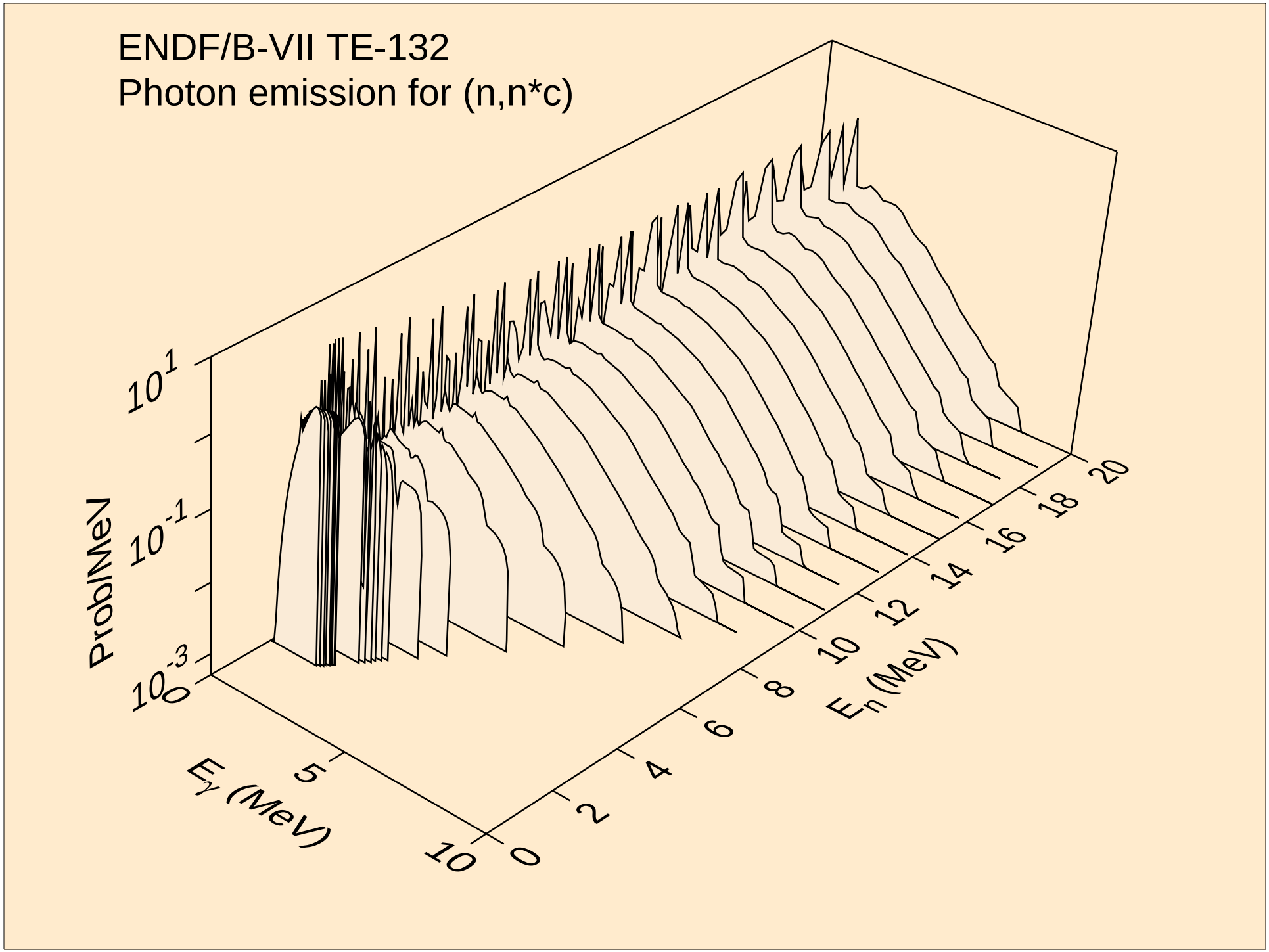

ENDF/B-VII TE-132
Photon emission for (n,2n)
Prob/MeV
10^-1
10^-3
0
5
10
Eγ (MeV)
8
10
12
14
16
18
20
En (MeV)

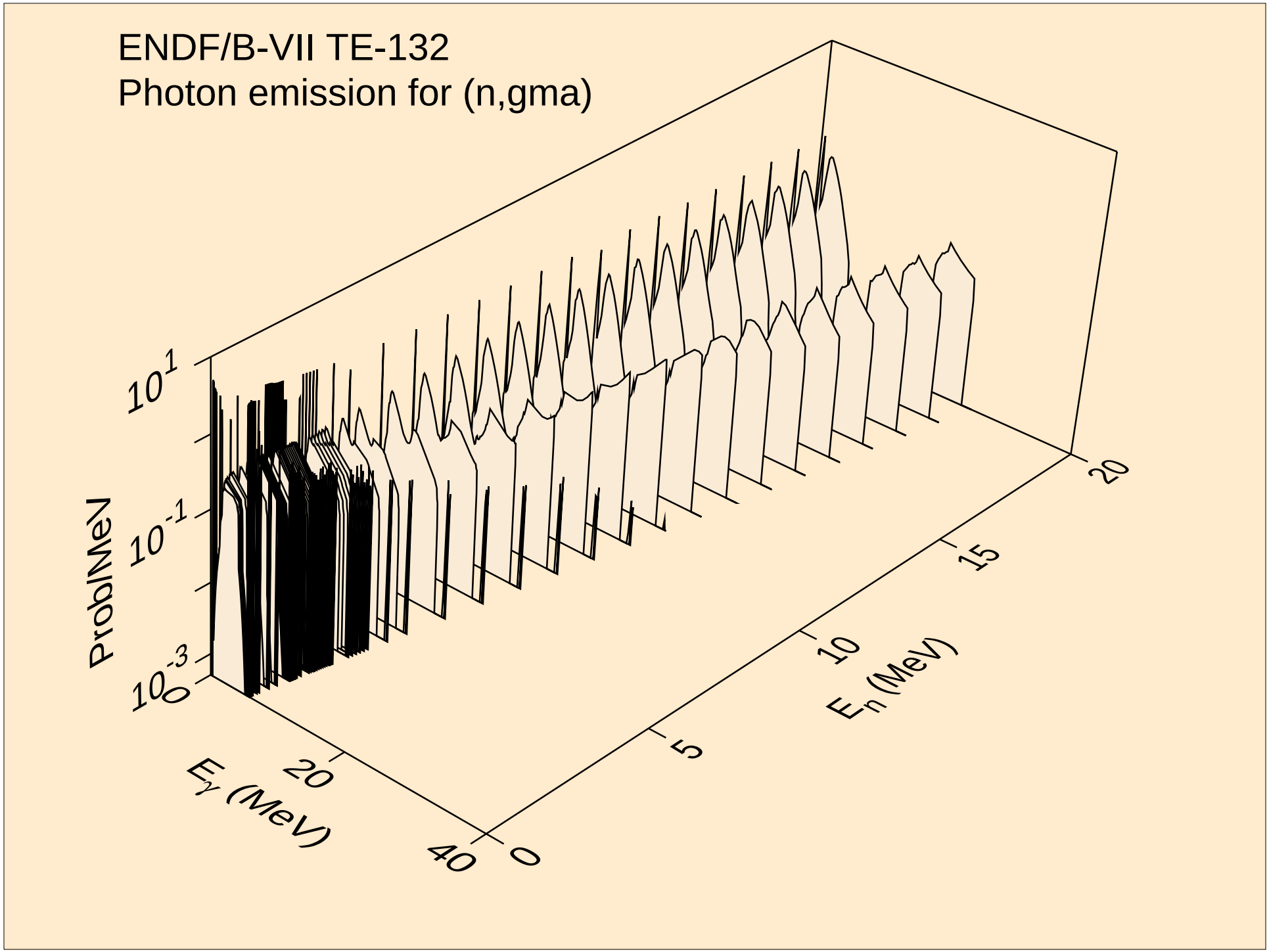

ENDF/B-VII TE-132
Photon emission for (n,3n)
Prob/MeV
10^-1
10^-3
0
2
4
6
Eγ (MeV)
14
15
16
17
18
19
20
En (MeV)

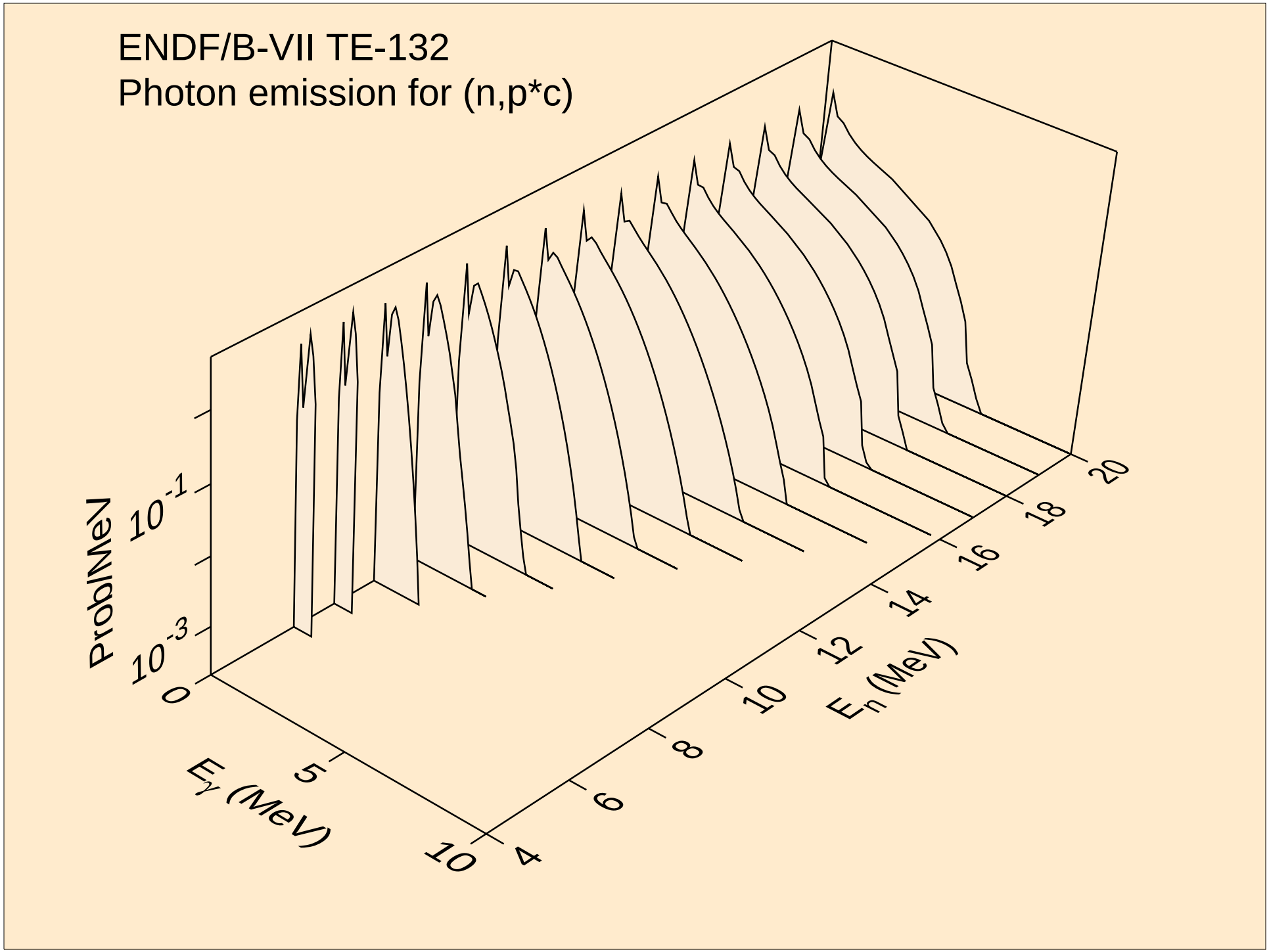

ENDF/B-VII TE-132
Photon emission for (n,n*)a
Prob/MeV
10^{1}
10^{-1}
0
2
4
6
E_γ (MeV)
4
6
8
10
12
14
16
18
20
E_n (MeV)

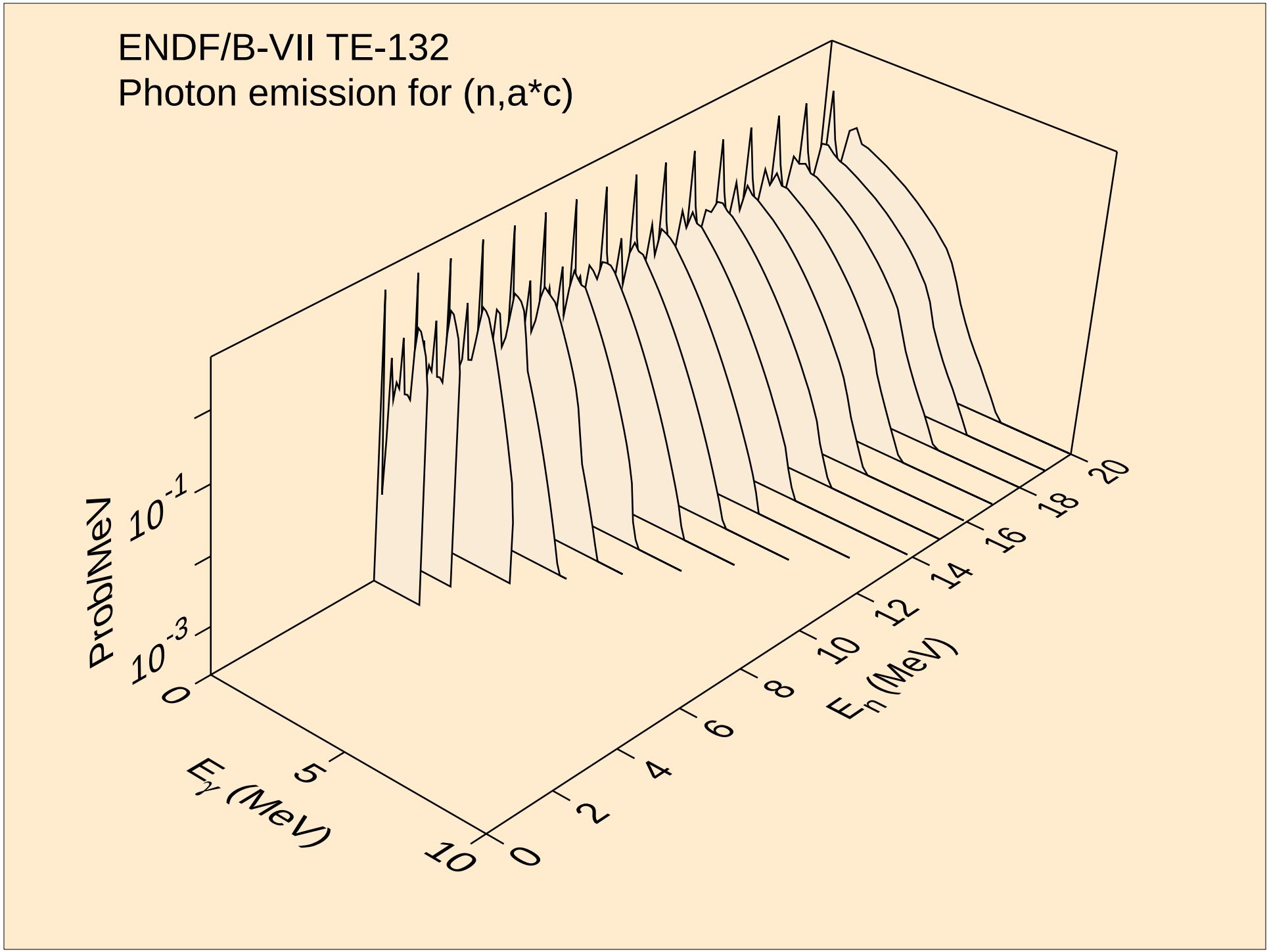

ENDF/B-VII TE-132
Photon emission for (n,2n)a
Prob/MeV
10^{1}
10^{-1}
10^{-3}
E_γ (MeV)
1
2
12
13
14
15
16
17
18
19
20
E_n (MeV)

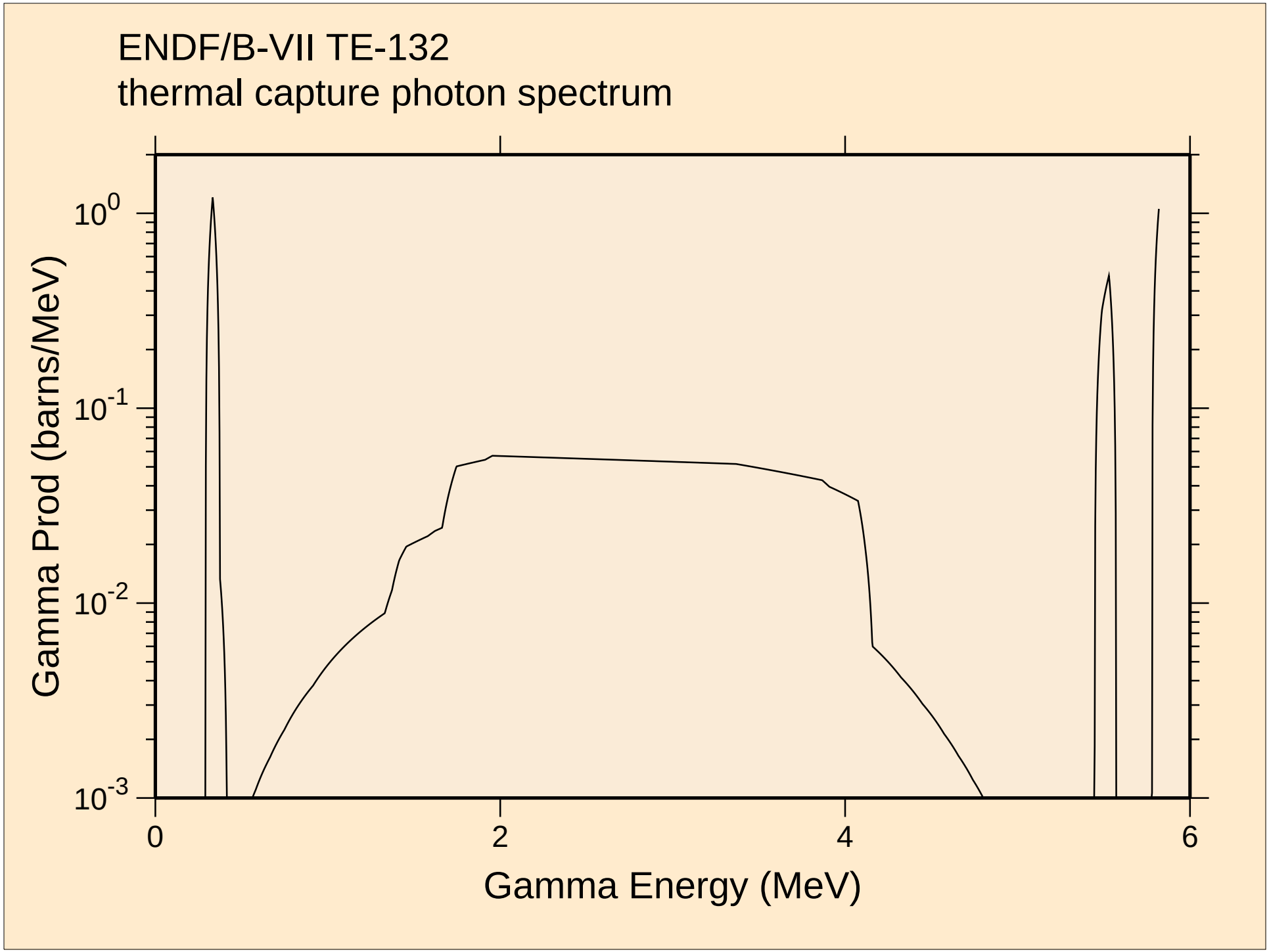

ENDF/B-VII TE-132
Photon emission for (n,n*)p
Prob/MeV
10^{1}
10^{-1}
0
2
4
6
E_γ (MeV)
10
12
14
16
18
20
E_n (MeV)

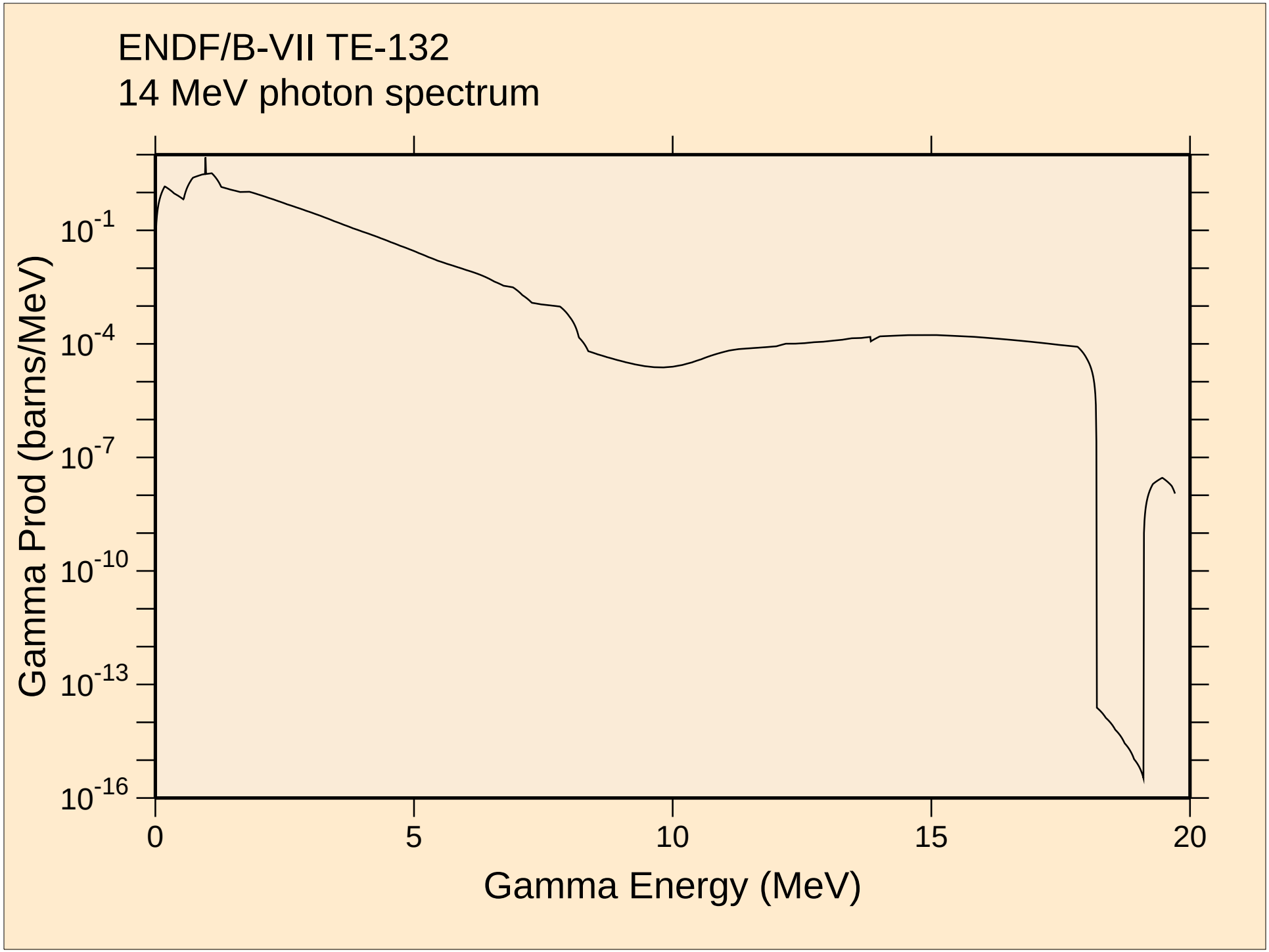

ENDF/B-VII TE-132
Photon emission for (n,n*c)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
5
10
E_γ (MeV)
0
2
4
6
8
10
12
14
16
18
20
E_n (MeV)

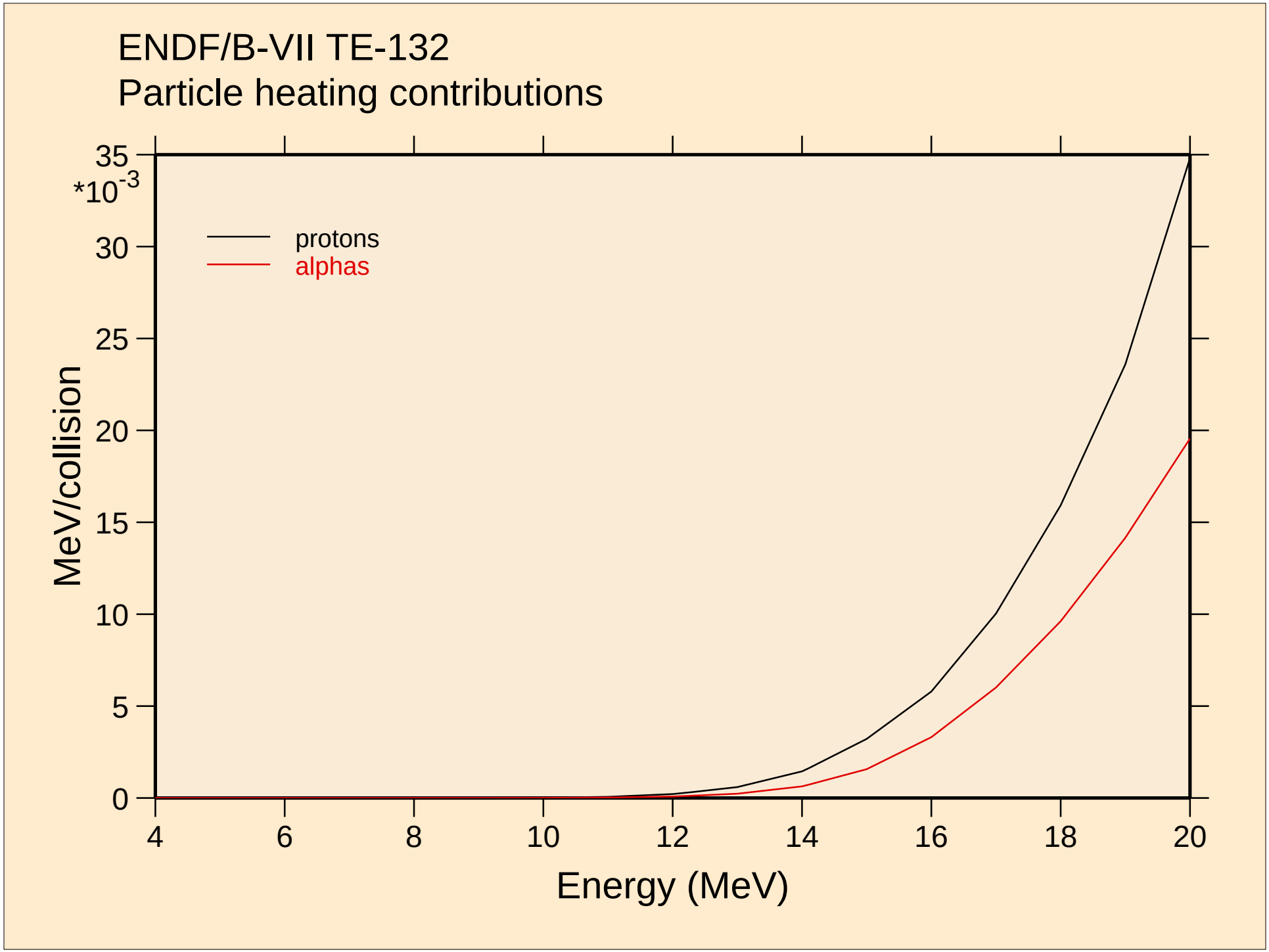

ENDF/B-VII TE-132
Photon emission for (n,gma)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
20
40
E_γ (MeV)
0
5
10
15
20
E_n (MeV)

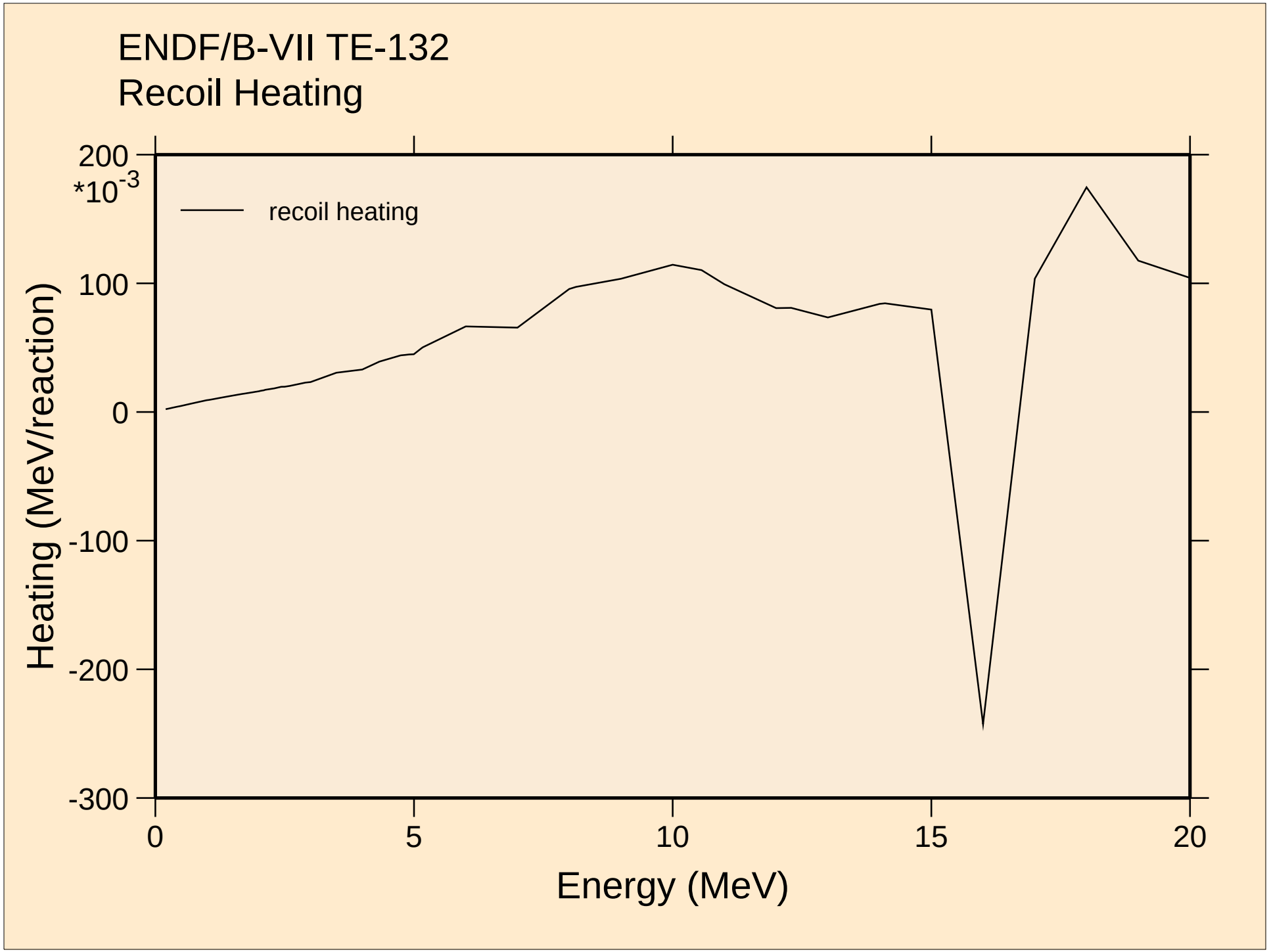

ENDF/B-VII TE-132
Photon emission for (n,p*c)
Prob/MeV
10-1
10-3
0
Eγ (MeV)
5
10
En (MeV)
4
6
8
10
12
14
16
18
20

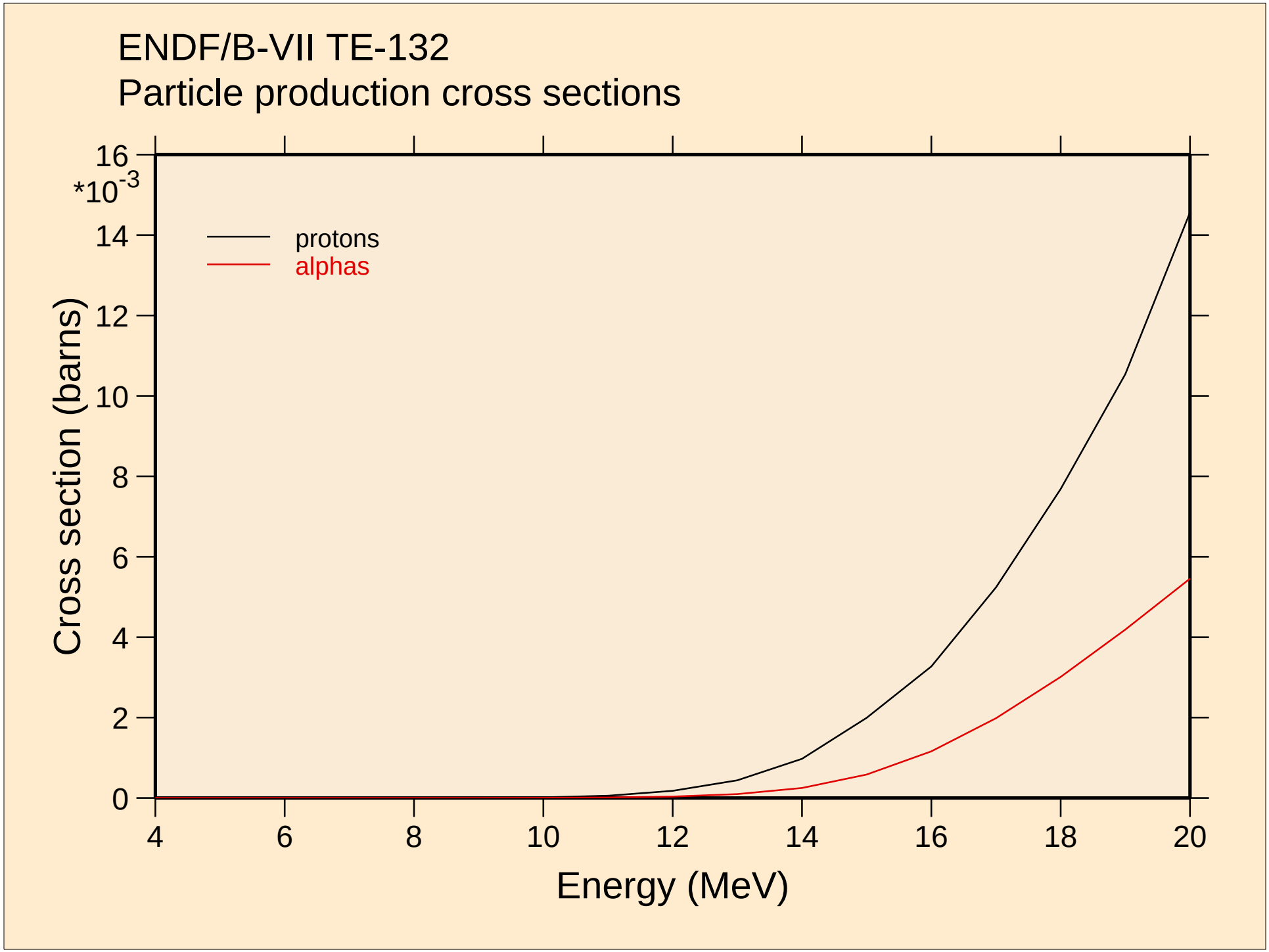

ENDF/B-VII TE-132
Photon emission for (n,a*c)
Prob/MeV
10-1
10-3
0
Eγ (MeV)
5
10
0
2
4
6
8
10
12
14
16
18
20
En (MeV)

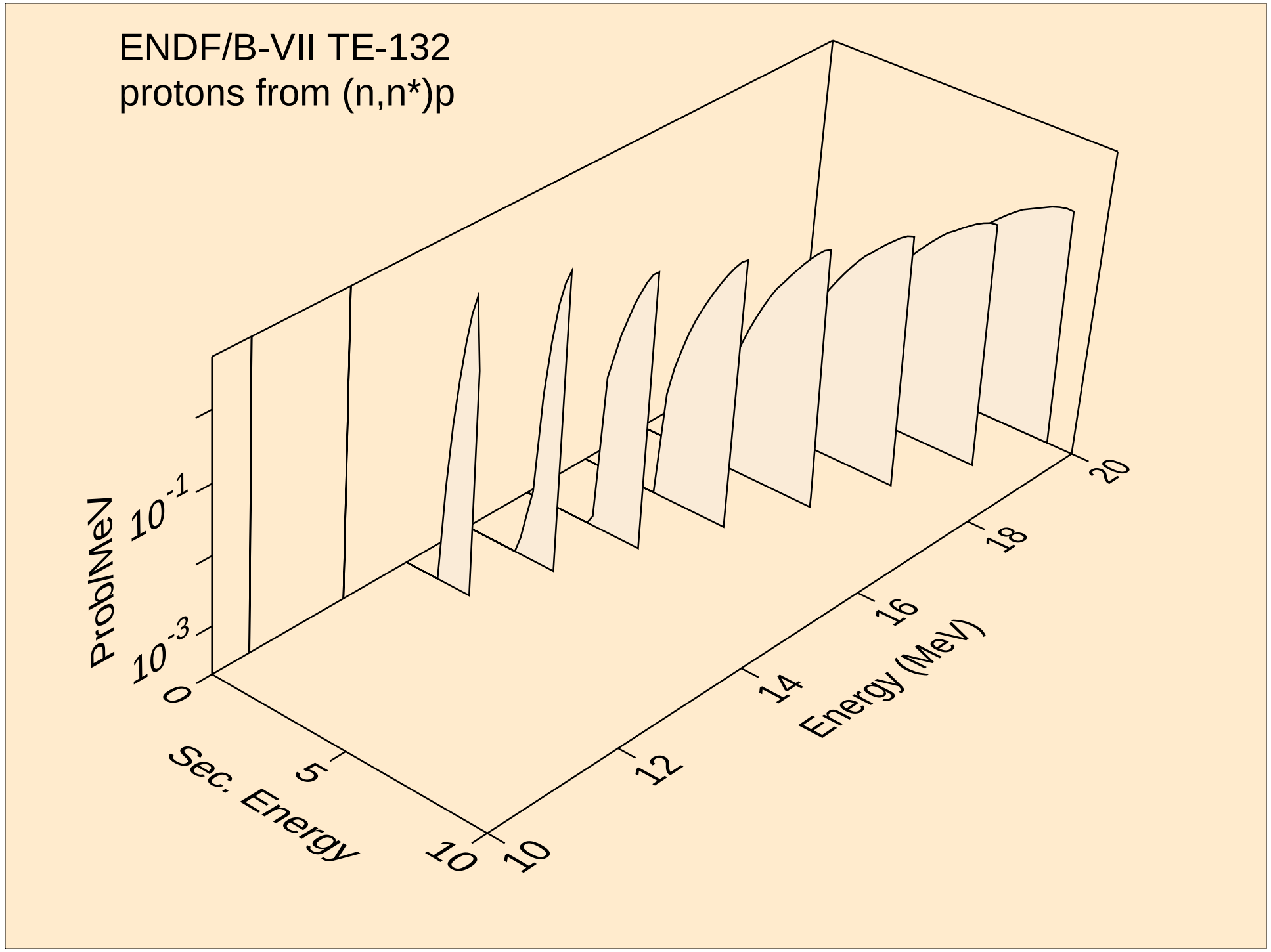

ENDF/B-VII TE-132
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^0
10^-1
10^-2
10^-3
0
2
4
6
Gamma Energy (MeV)

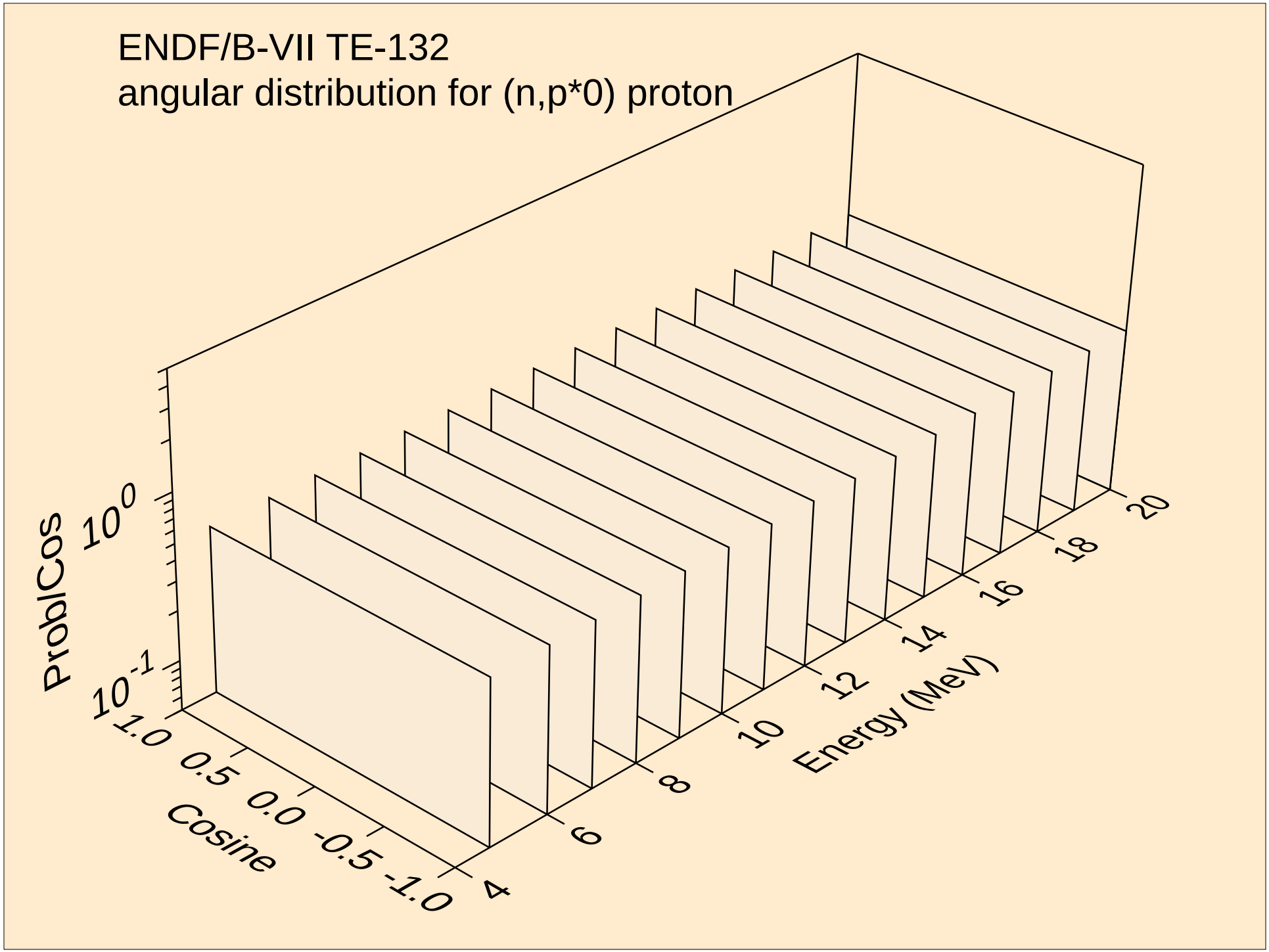

ENDF/B-VII TE-132
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10-1
10-4
10-7
10-10
10-13
10-16
0
5
10
15
20
Gamma Energy (MeV)

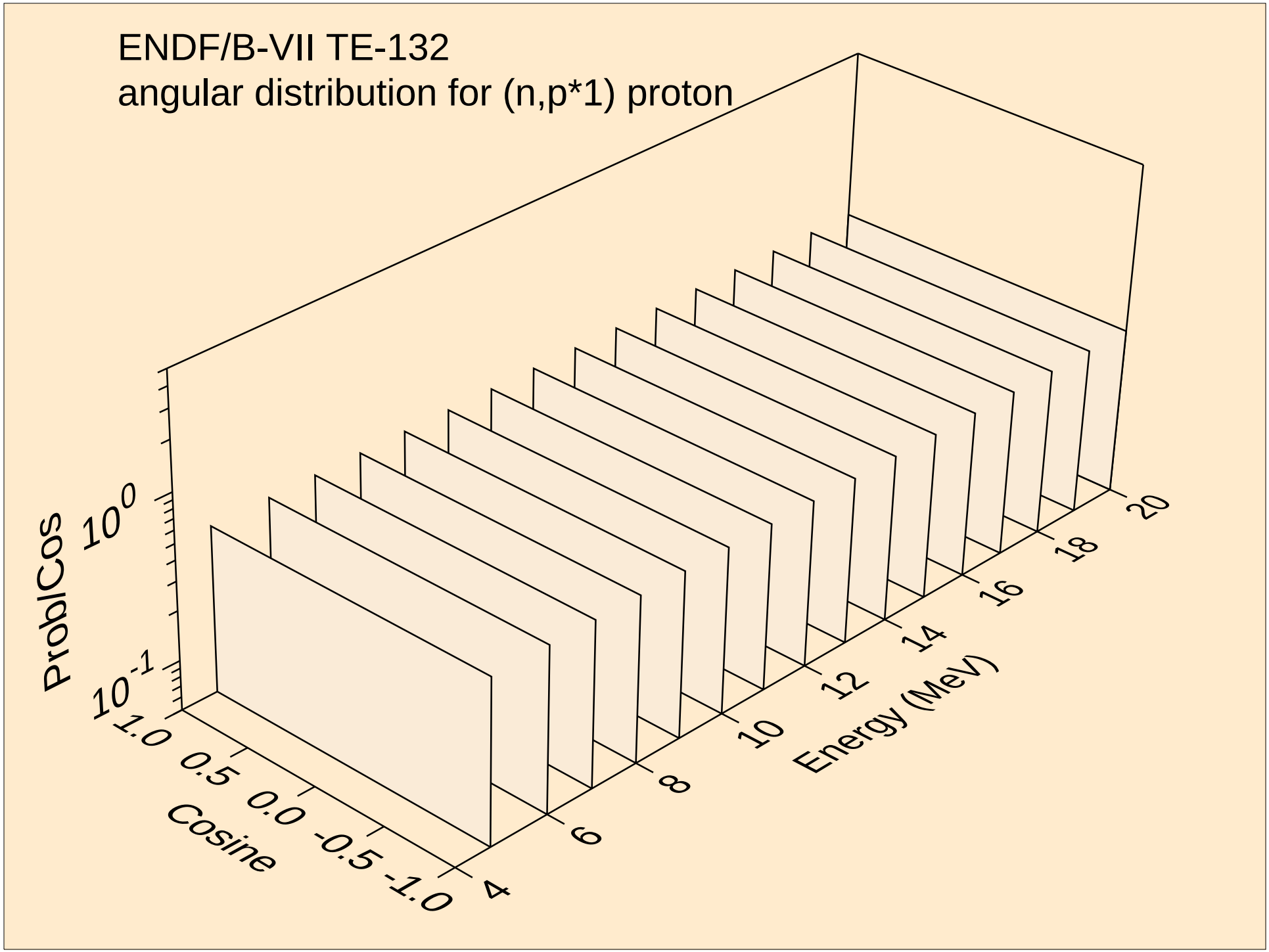

ENDF/B-VII TE-132
Particle heating contributions
*10-3
35
30
25
20
15
10
5
0
MeV/collision
protons
alphas
4
6
8
10
12
14
16
18
20
Energy (MeV)

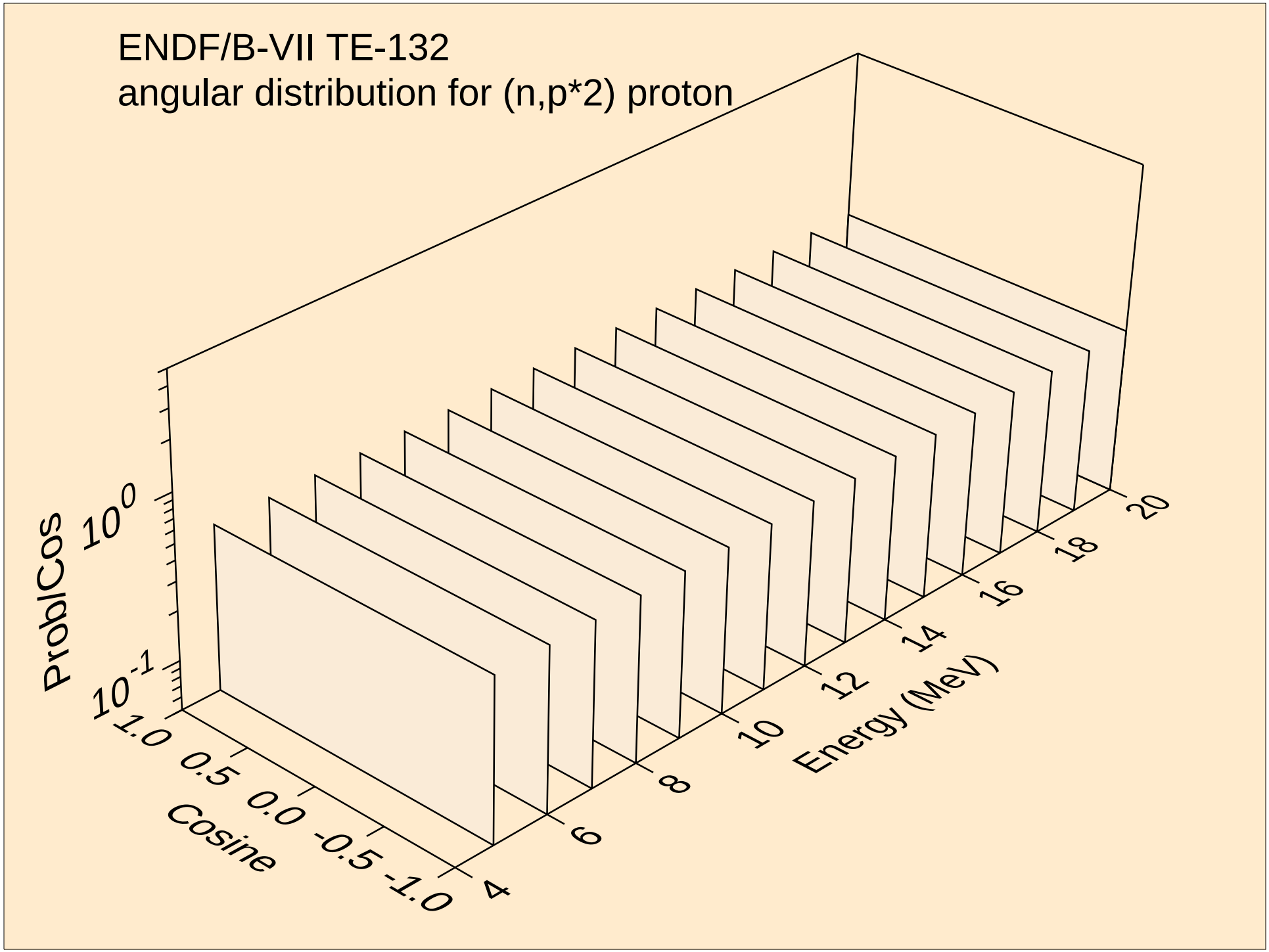

ENDF/B-VII TE-132
Recoil Heating
200
*10-3
100
0
-100
-200
-300
recoil heating
Heating (MeV/reaction)
0
5
10
15
20
Energy (MeV)

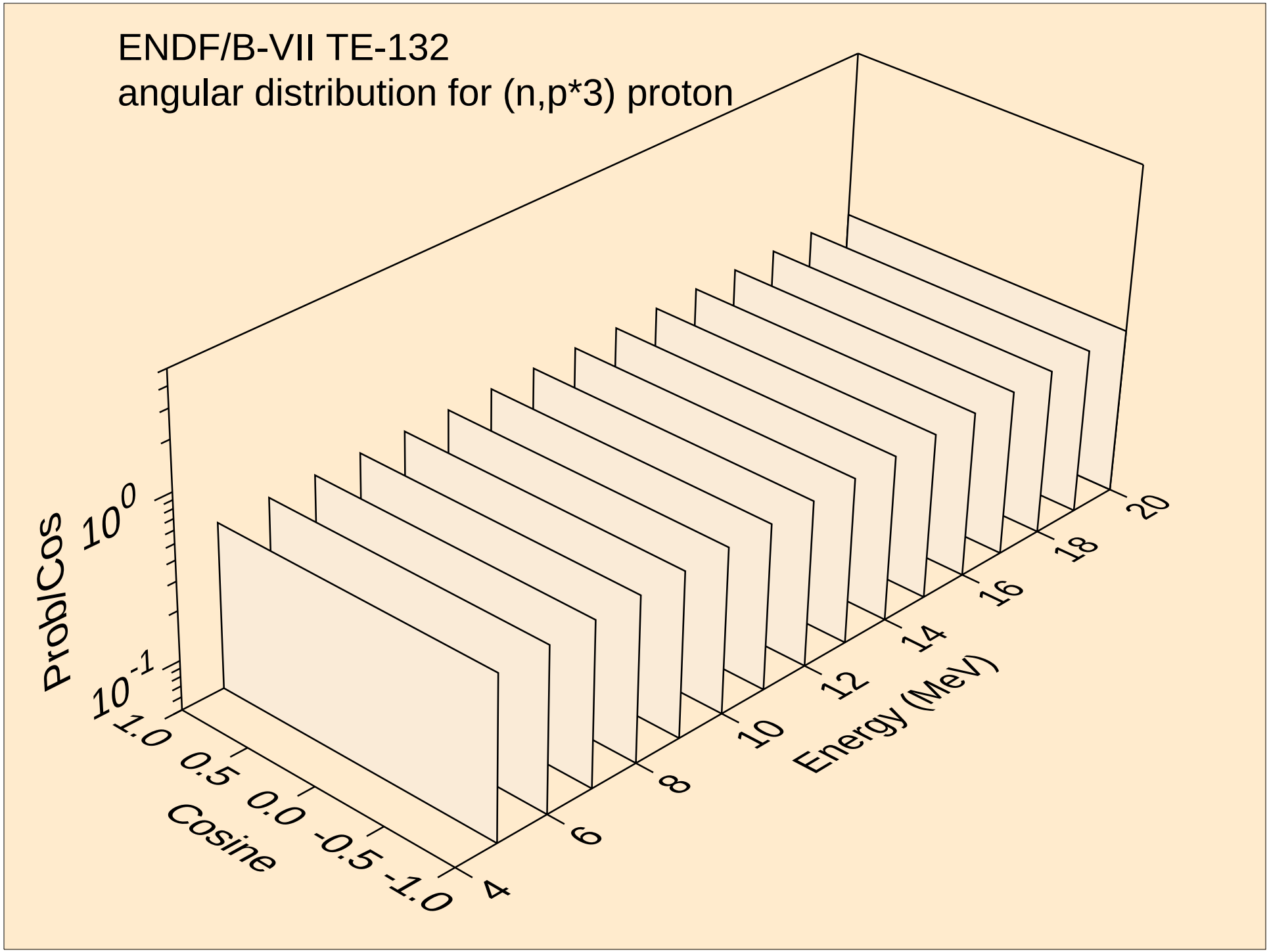

ENDF/B-VII TE-132
Particle production cross sections
Cross section (barns)
*10-3
16
14
12
10
8
6
4
2
0
protons
alphas
4
6
8
10
12
14
16
18
20
Energy (MeV)

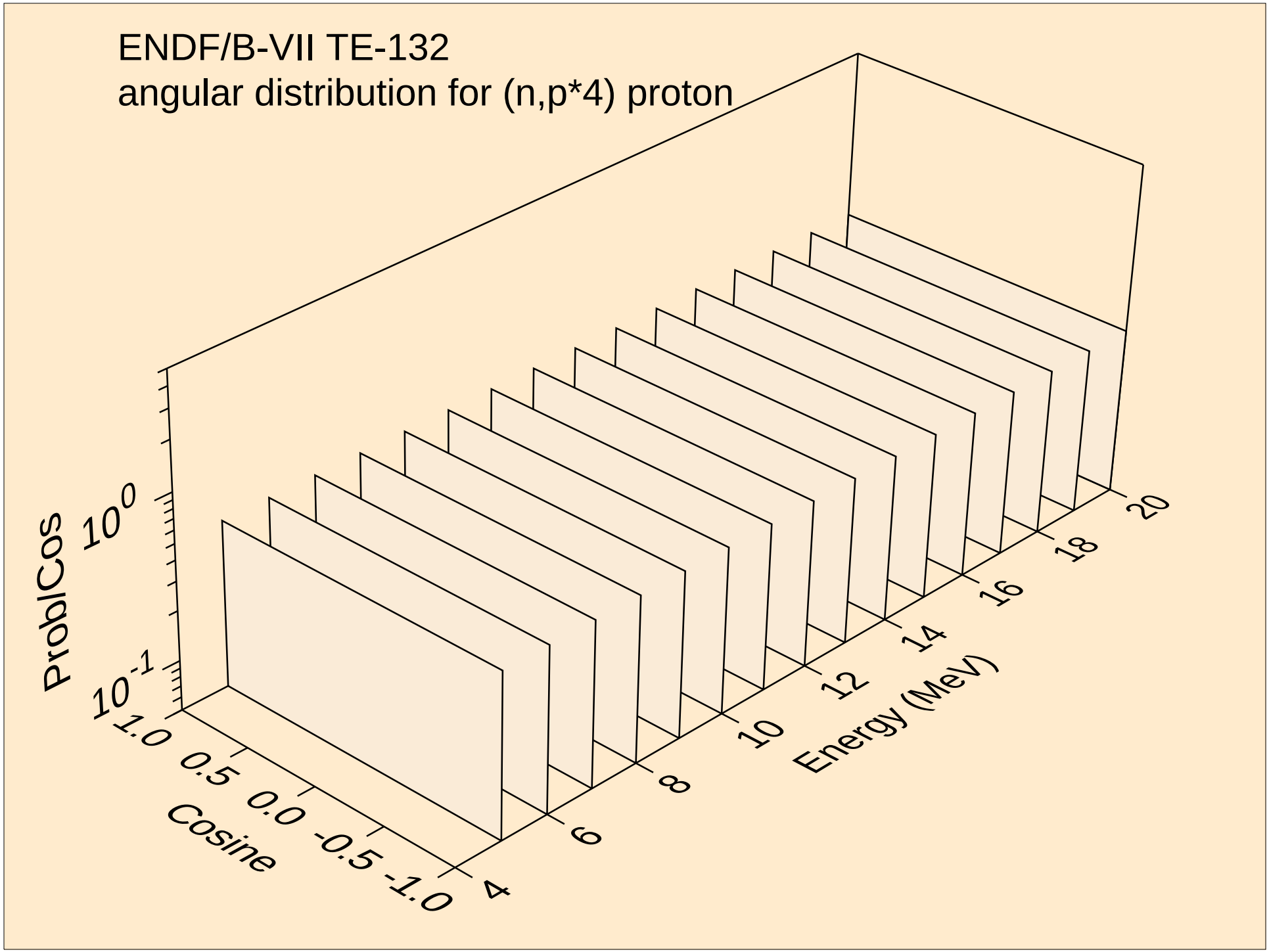

ENDF/B-VII TE-132
protons from (n,n*)p
Prob/MeV
10^-1
10^-3
0
Sec. Energy
5
10
10
12
14
16
18
20
Energy (MeV)

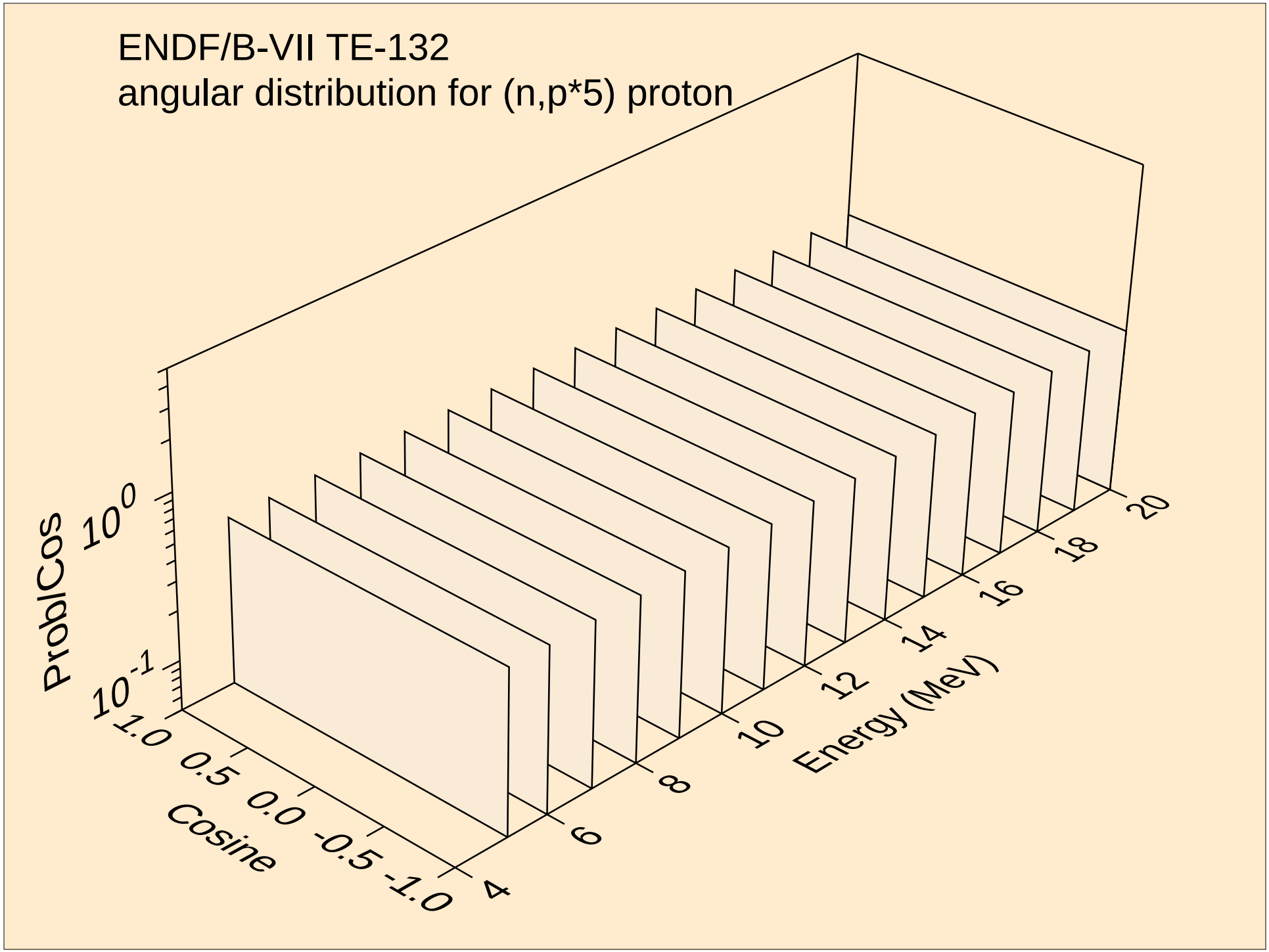

ENDF/B-VII TE-132
angular distribution for (n,p*0) proton
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

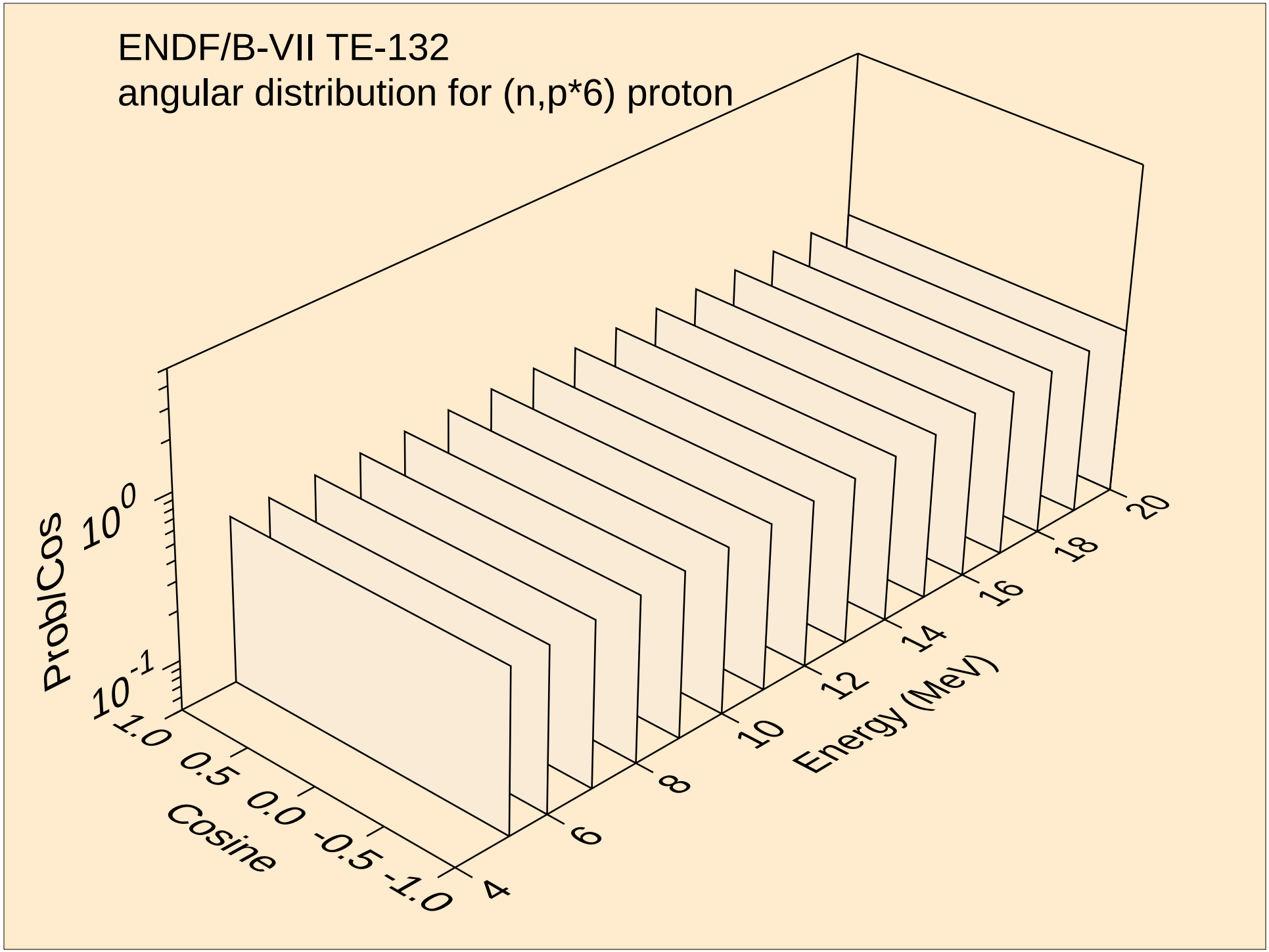

ENDF/B-VII TE-132
angular distribution for (n,p*1) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

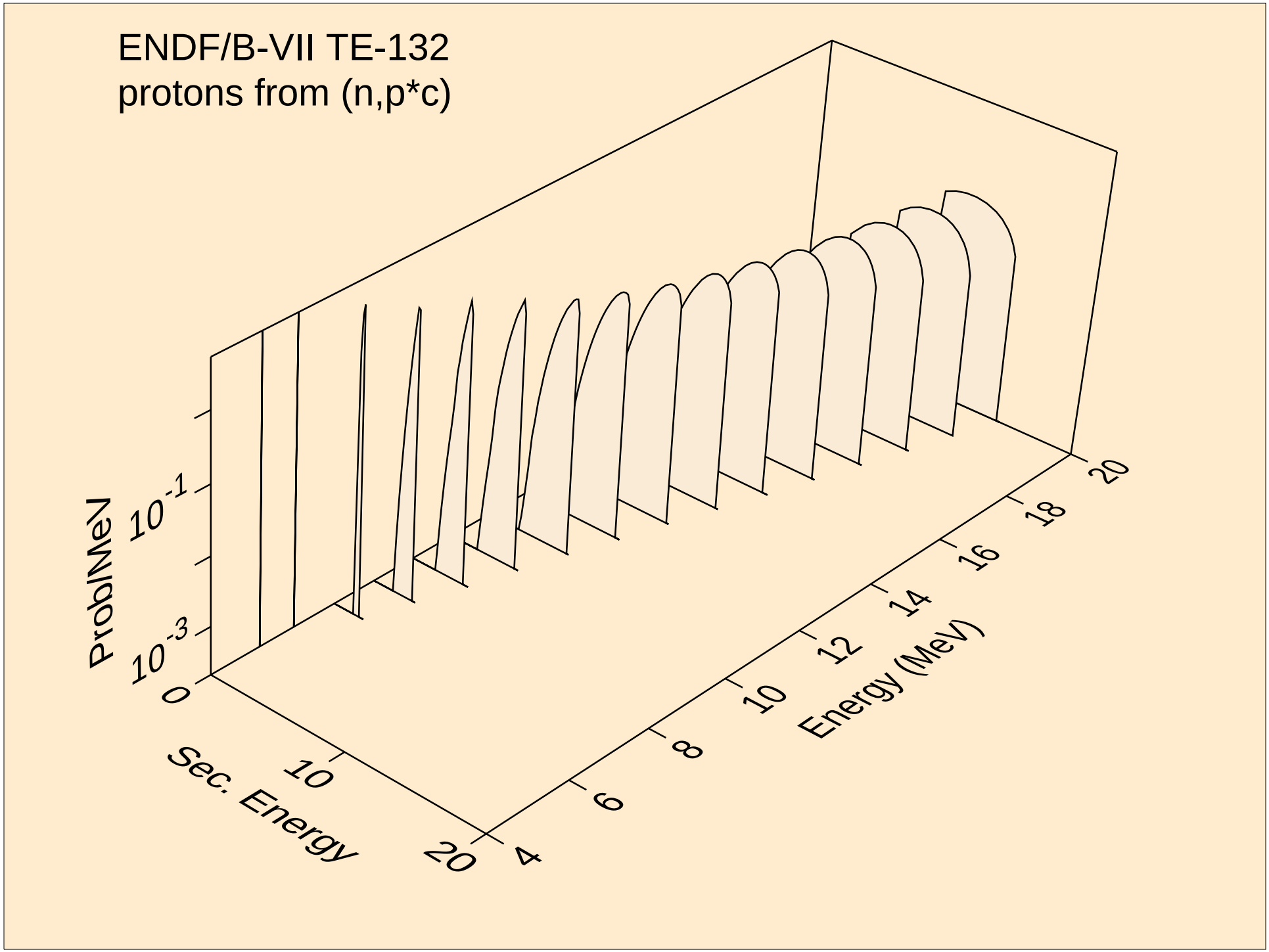

ENDF/B-VII TE-132
angular distribution for (n,p*2) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

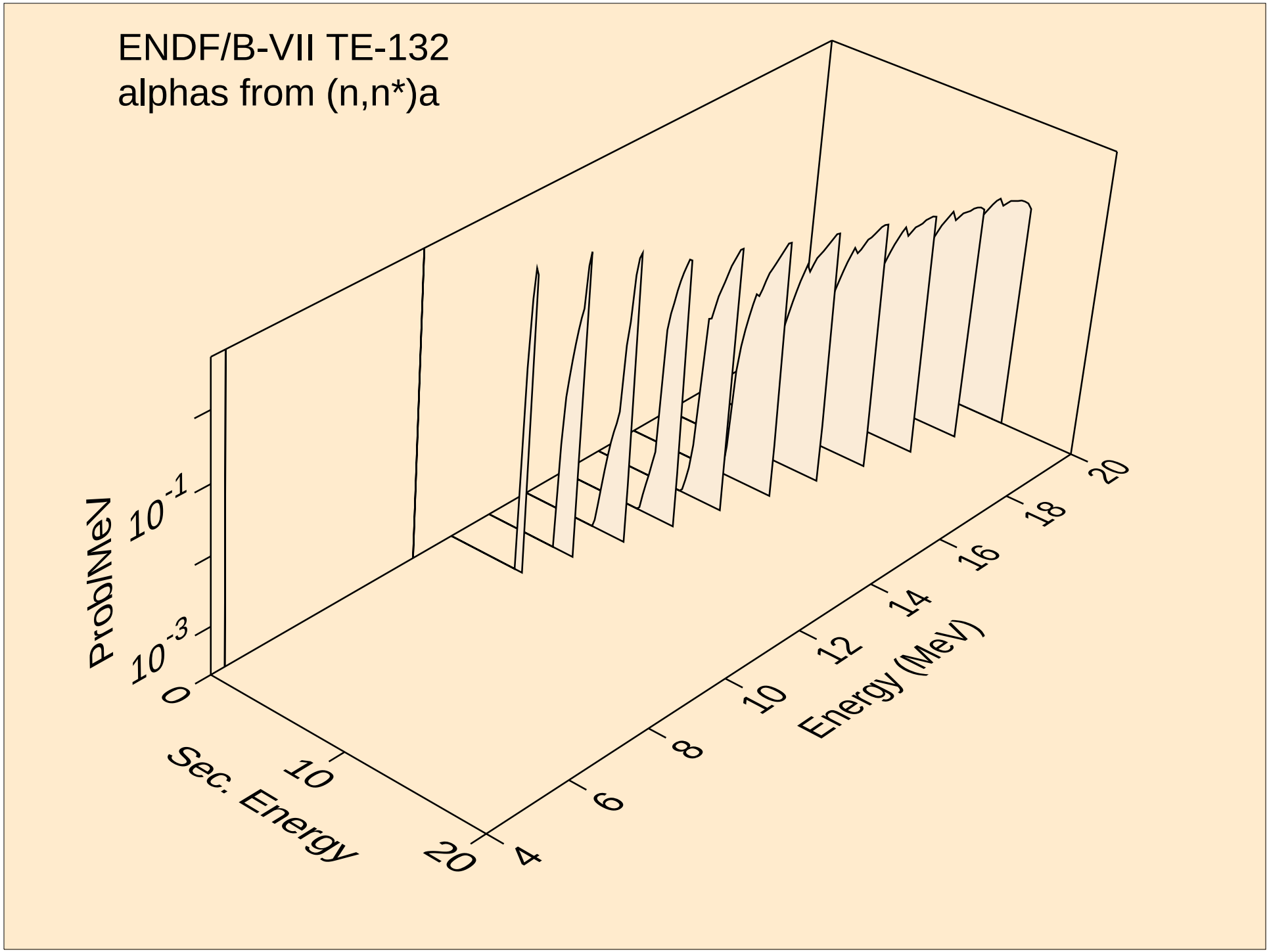

ENDF/B-VII TE-132
angular distribution for (n,p*3) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

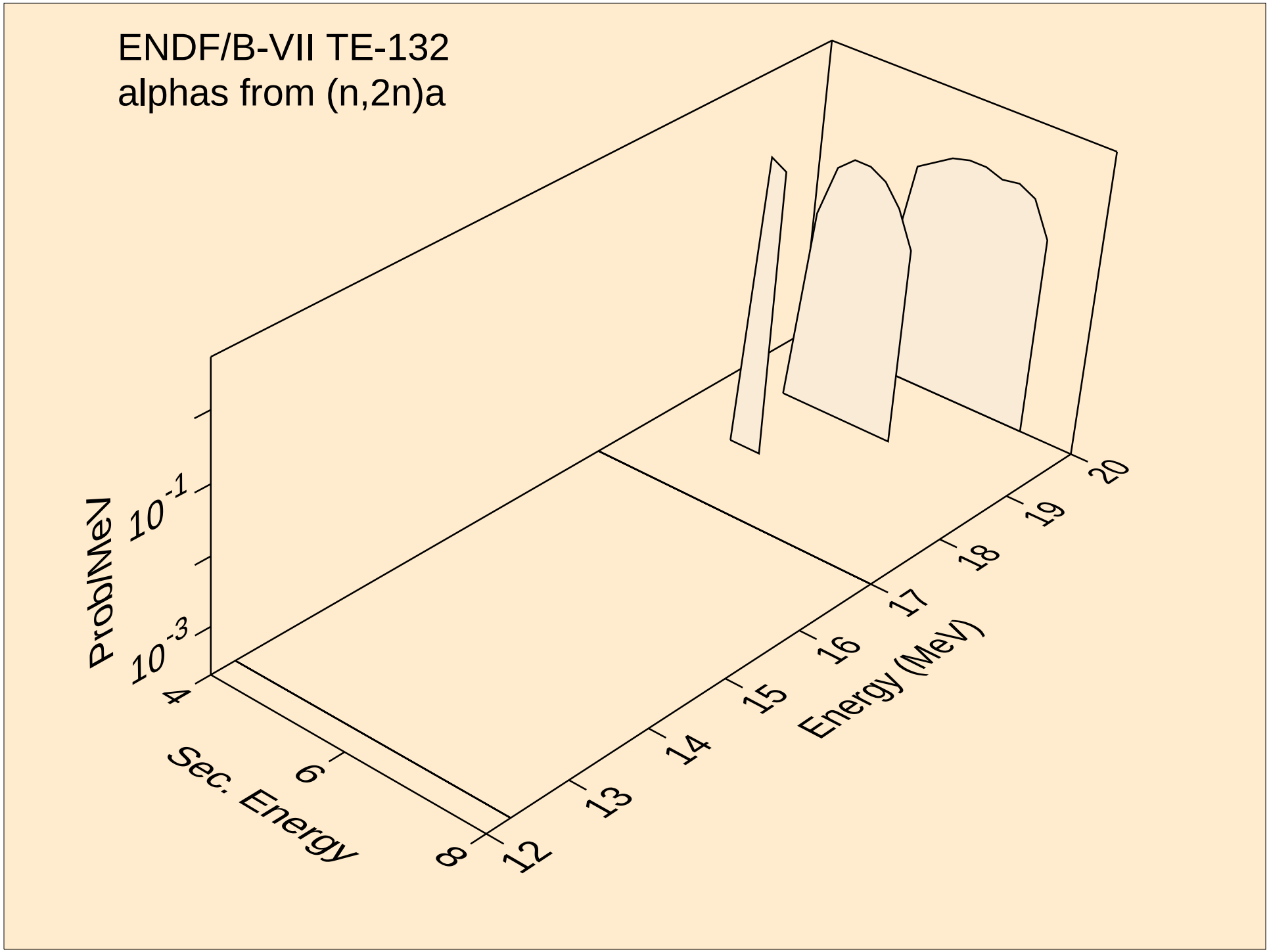

ENDF/B-VII TE-132
angular distribution for (n,p*4) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

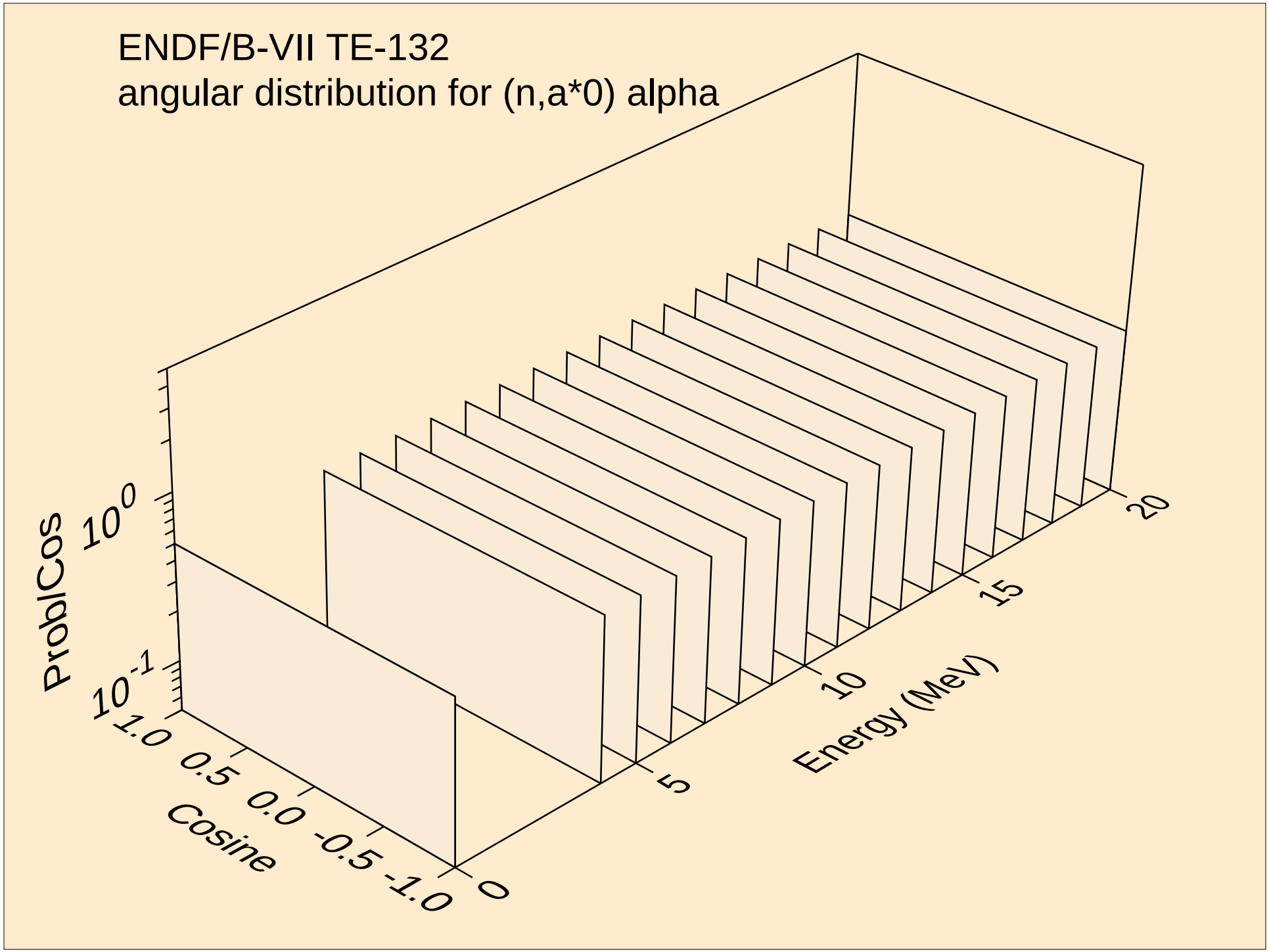

ENDF/B-VII TE-132
angular distribution for (n,p*5) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

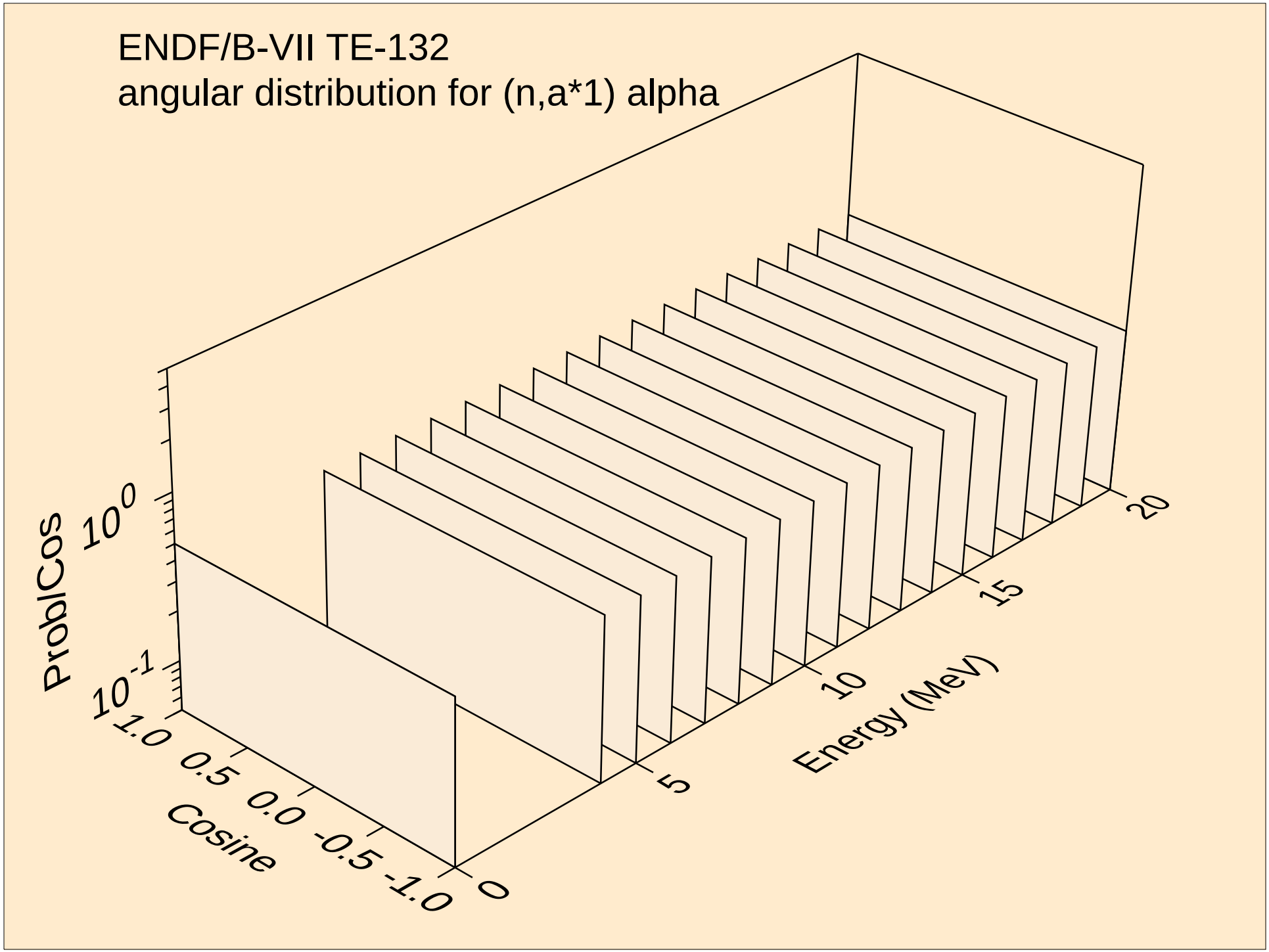

ENDF/B-VII TE-132
angular distribution for (n,p*6) proton
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

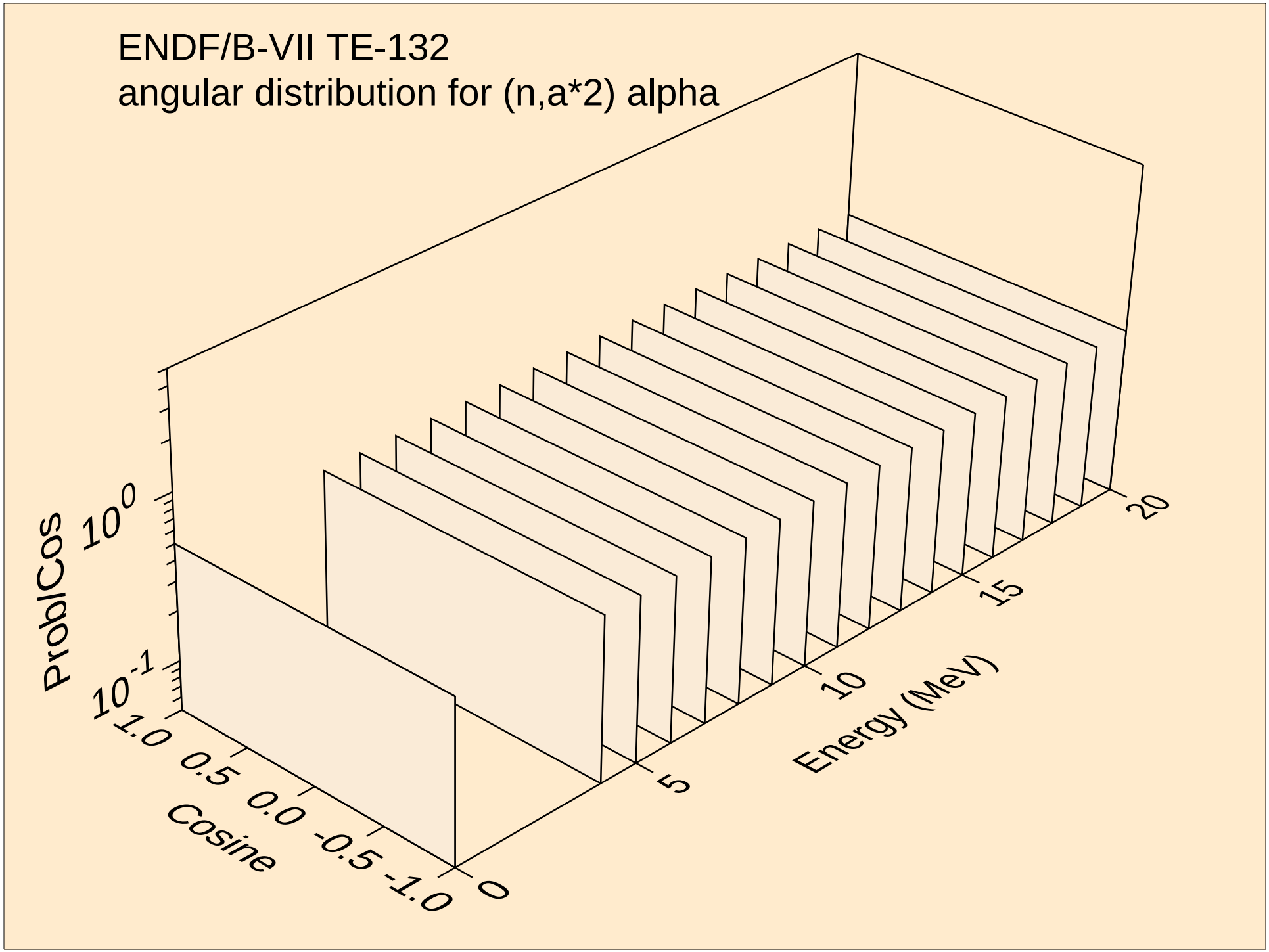

ENDF/B-VII TE-132
protons from (n,p*c)
Prob/MeV
10^{-1}
10^{-3}
0
Sec. Energy
10
20
4
6
8
10
12
14
16
18
20
Energy (MeV)

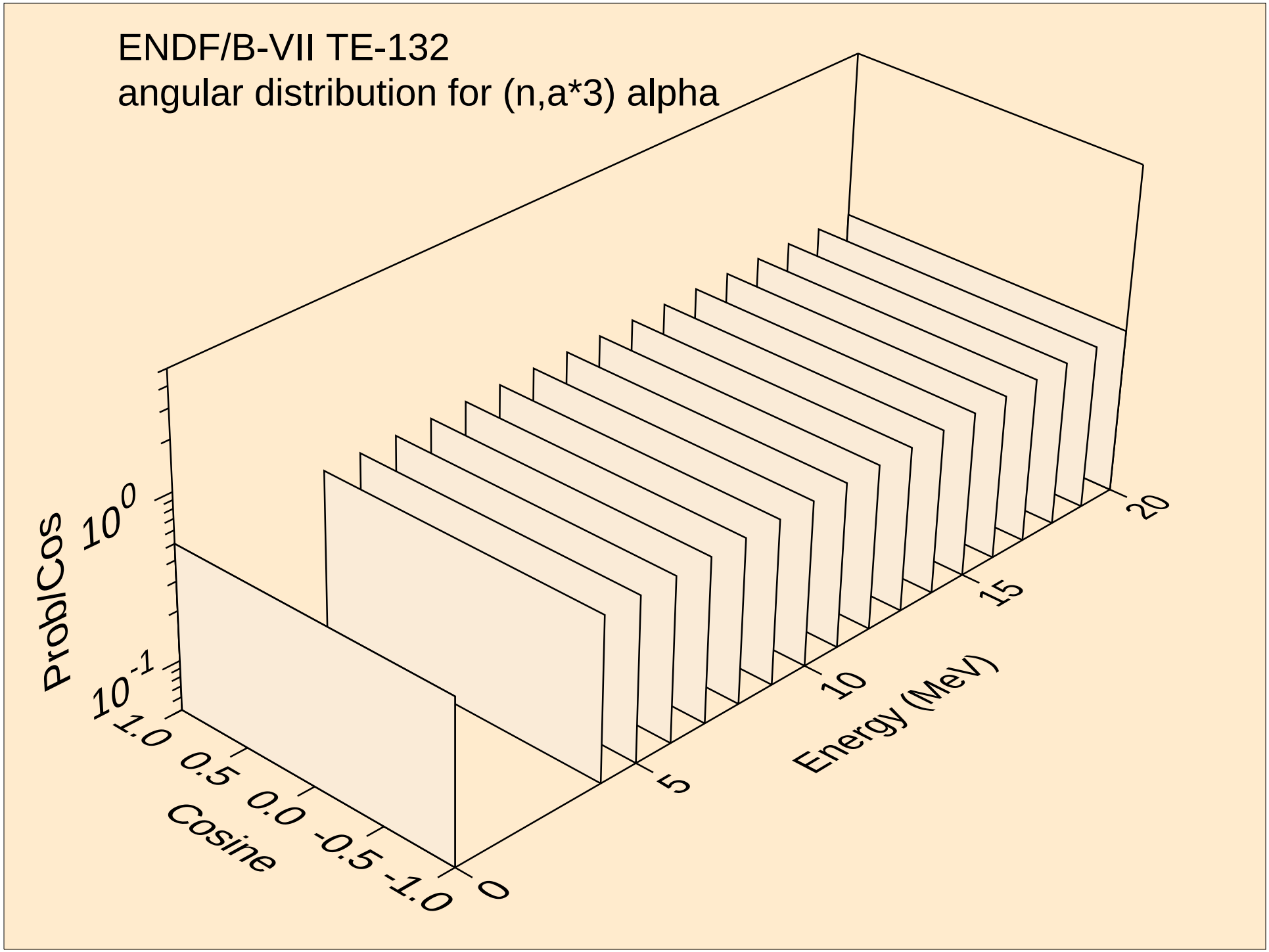

ENDF/B-VII TE-132
alphas from (n,n*)a
Prob/MeV
10^{-1}
10^{-3}
0
Sec. Energy
10
20
4
6
8
10
12
14
16
18
20
Energy (MeV)

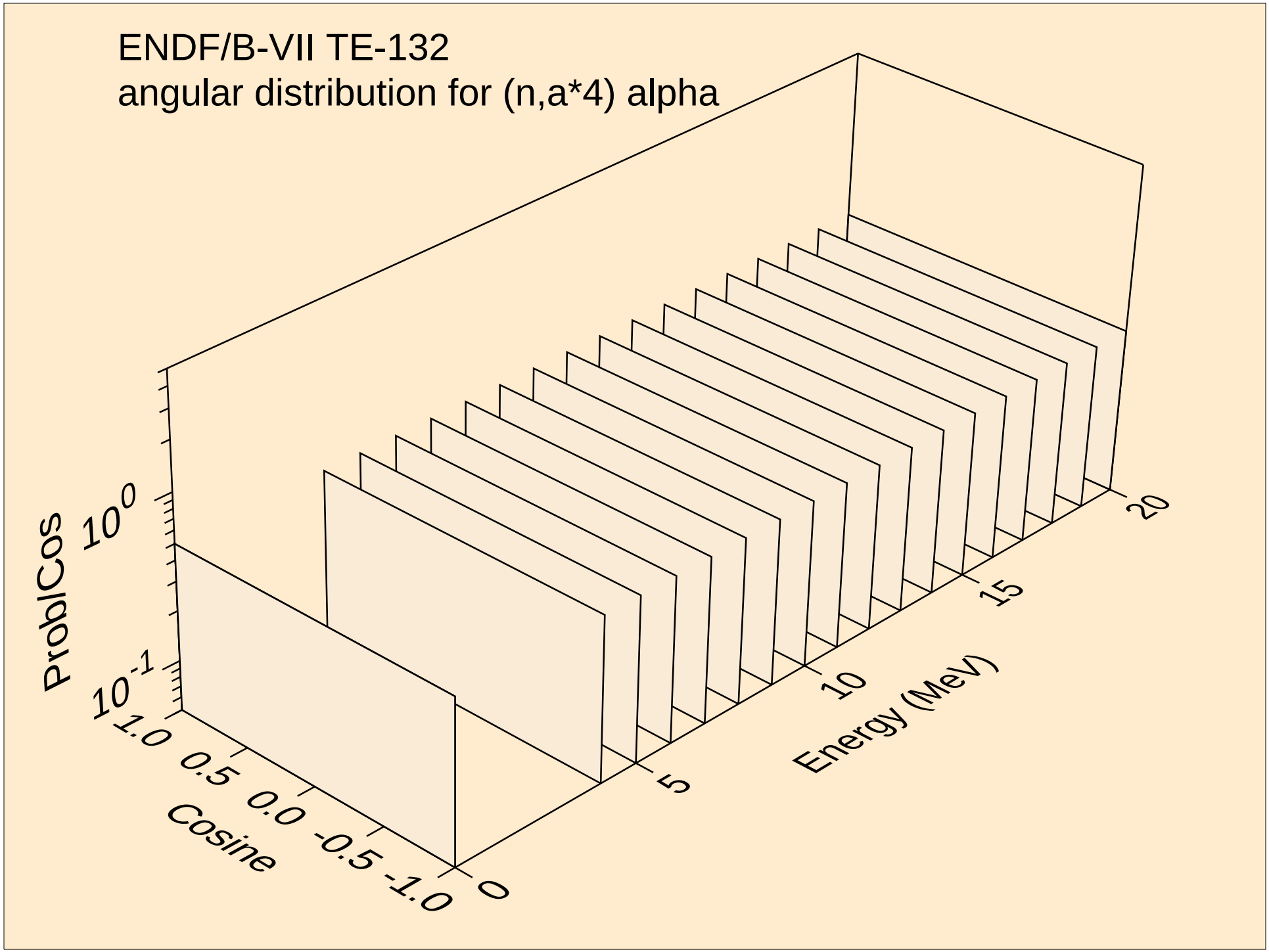

ENDF/B-VII TE-132
alphas from (n,2n)a
Prob/MeV
10^{-1}
10^{-3}
4
6
8
Sec. Energy
12
13
14
15
16
17
18
19
20
Energy (MeV)

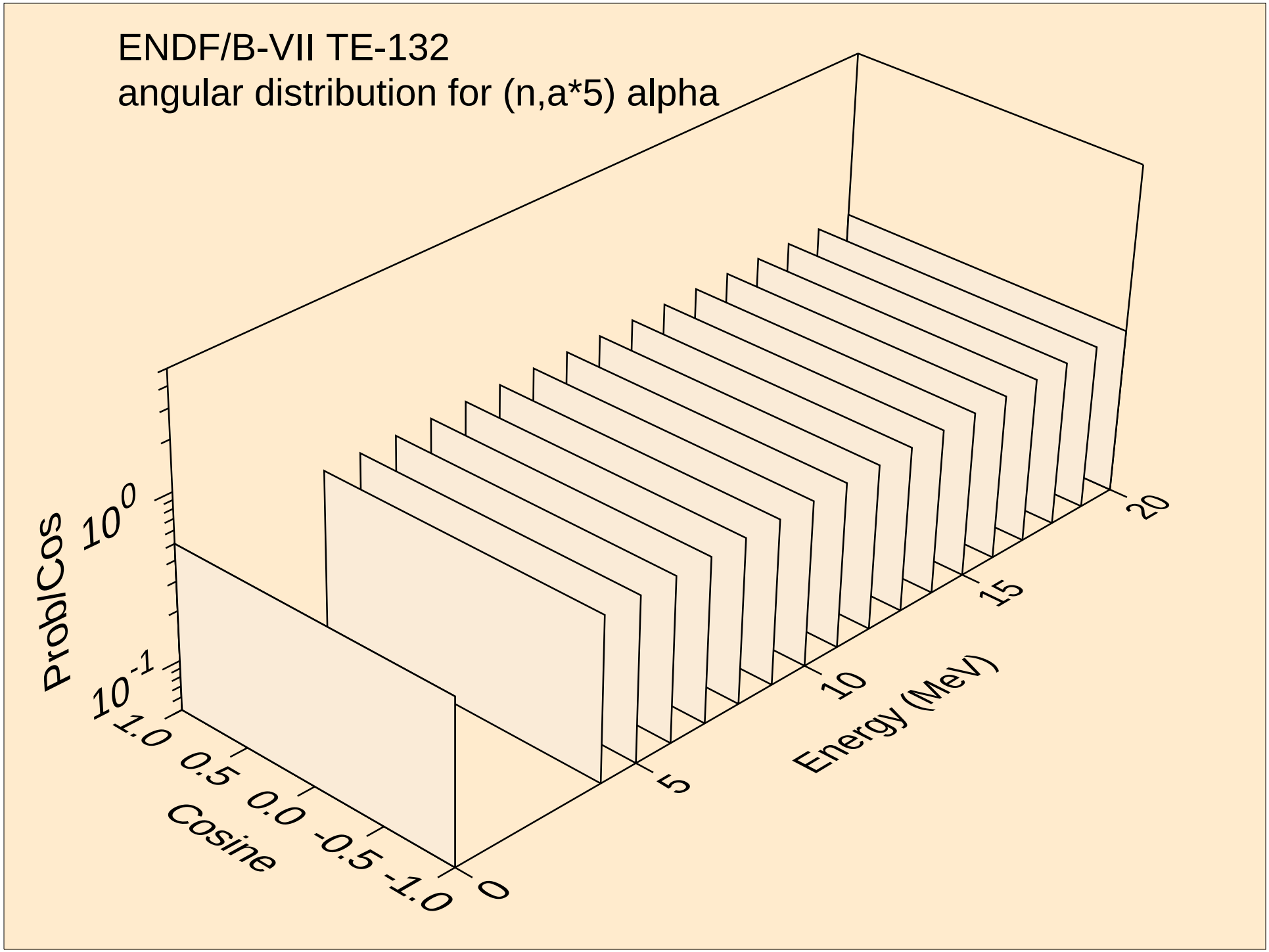

ENDF/B-VII TE-132
angular distribution for (n,a*0) alpha
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

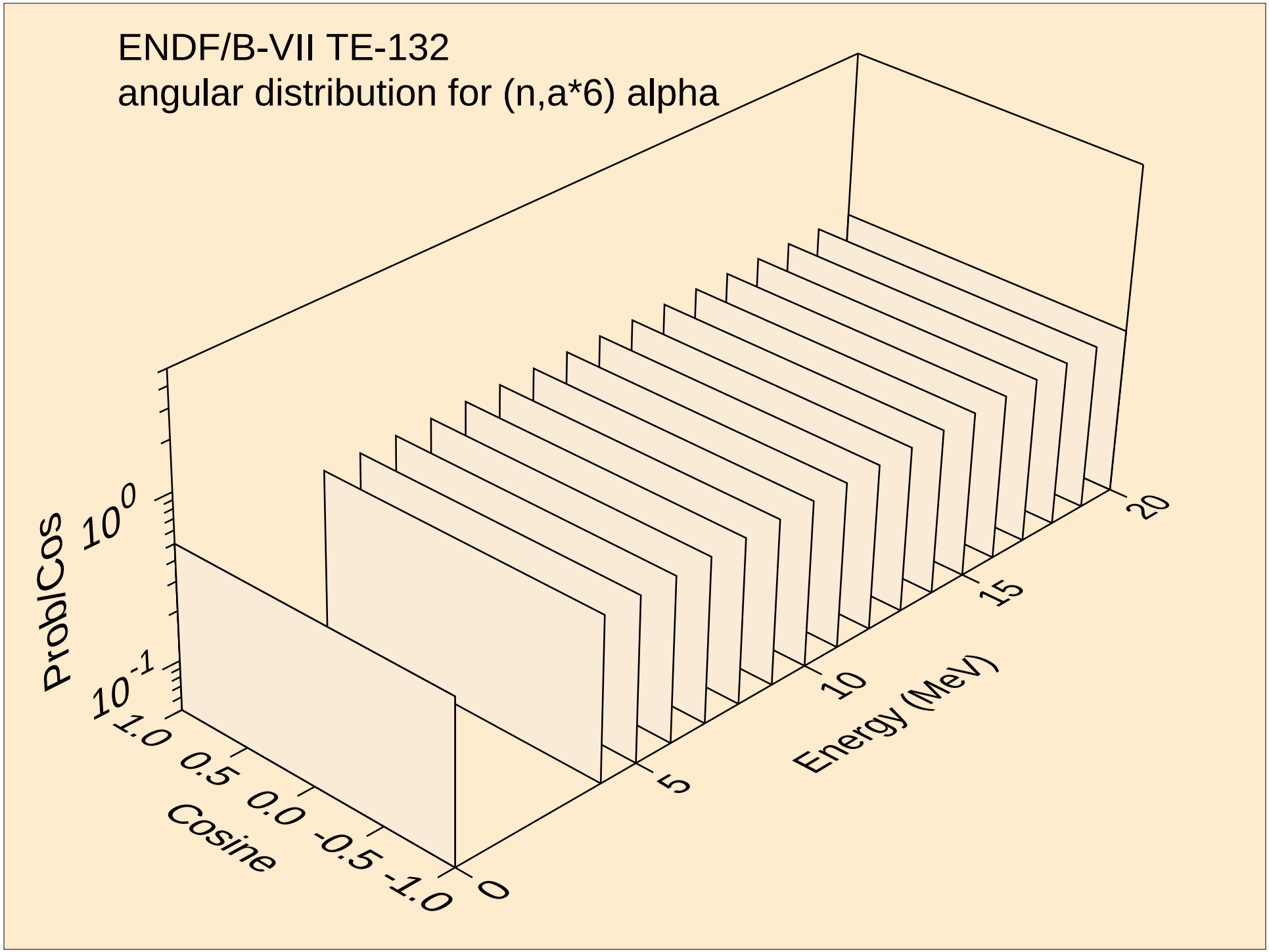

ENDF/B-VII TE-132
angular distribution for (n,a*1) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

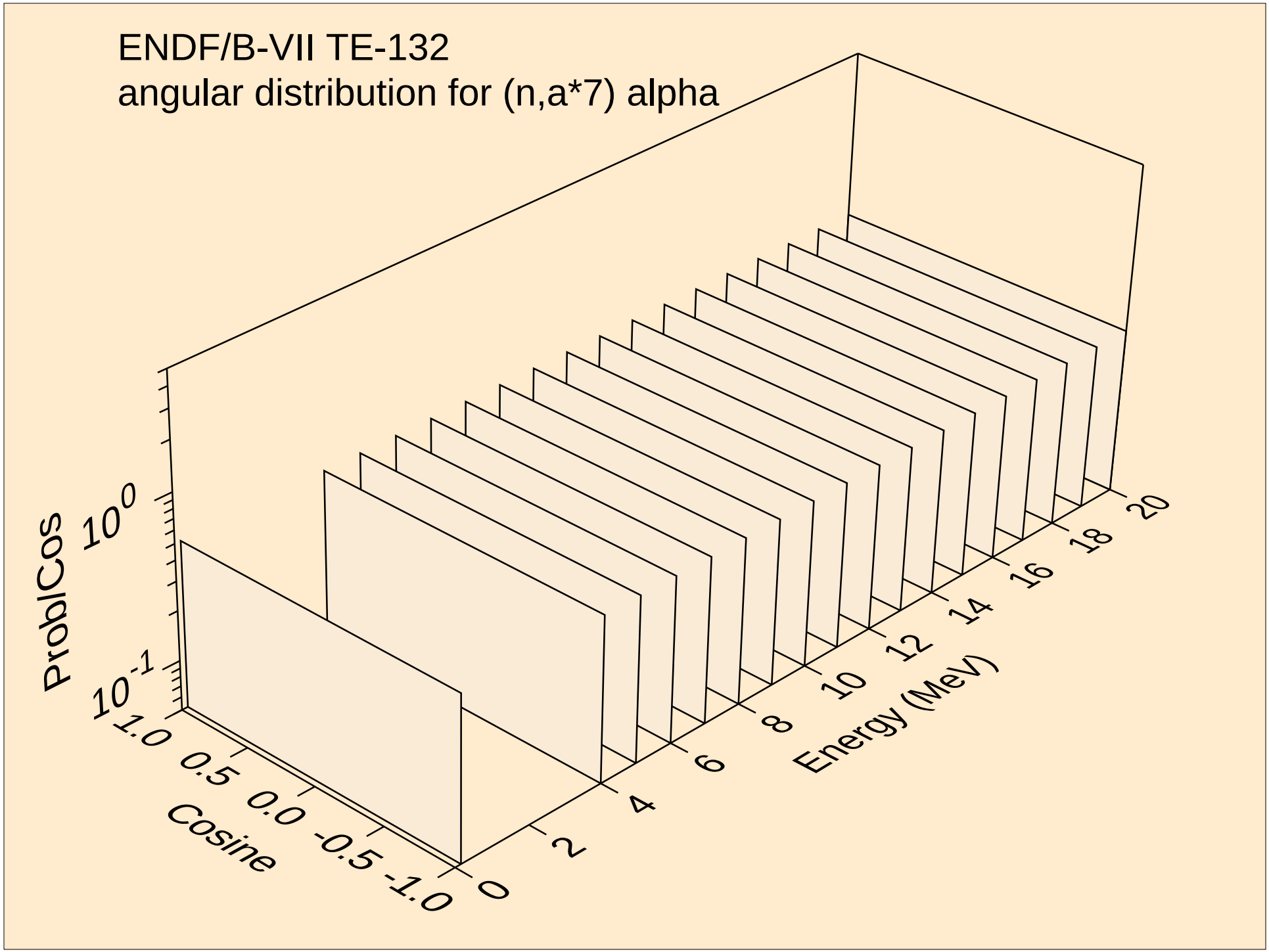

ENDF/B-VII TE-132
angular distribution for (n,a*2) alpha
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

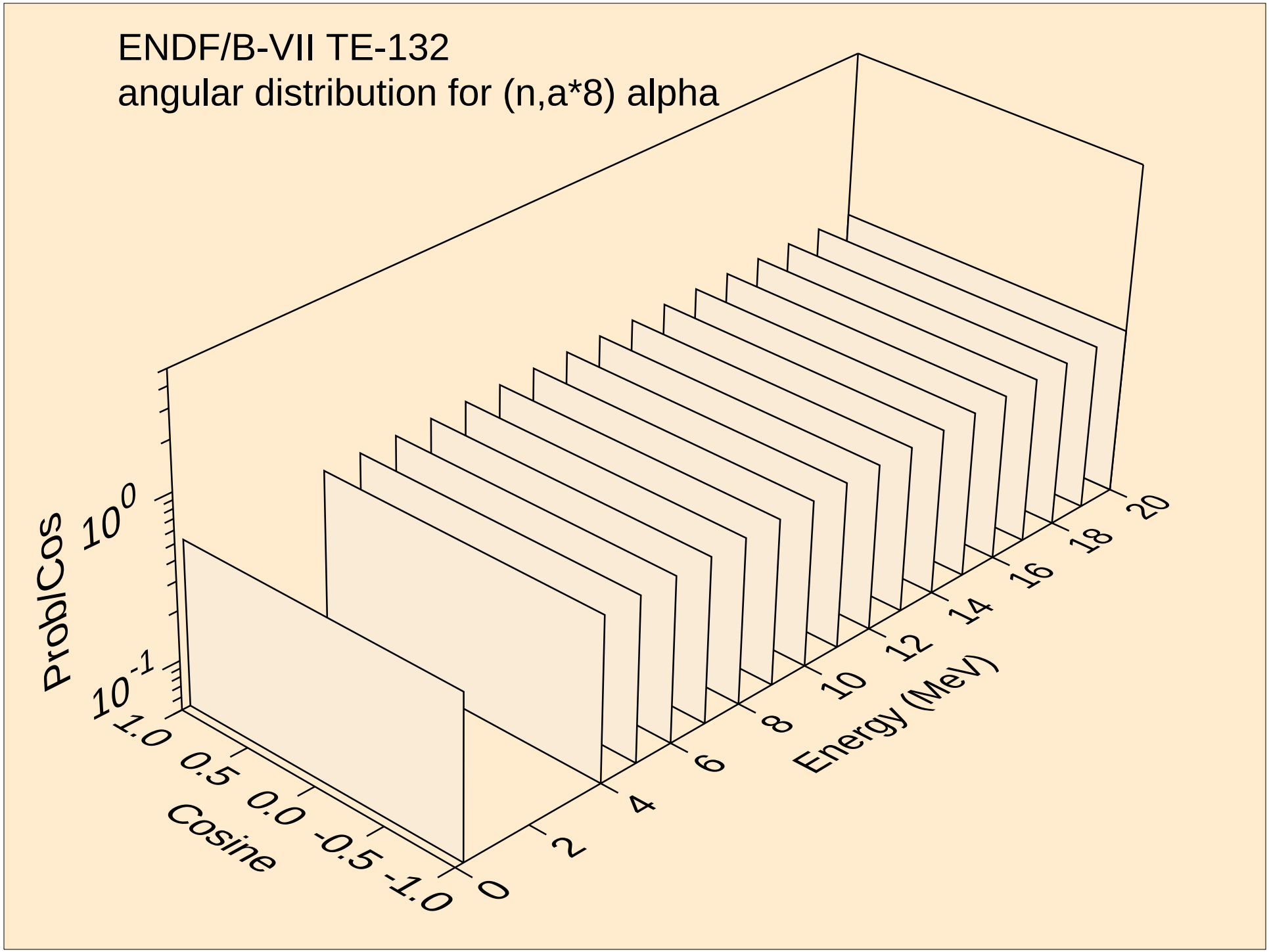

ENDF/B-VII TE-132
angular distribution for (n,a*3) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

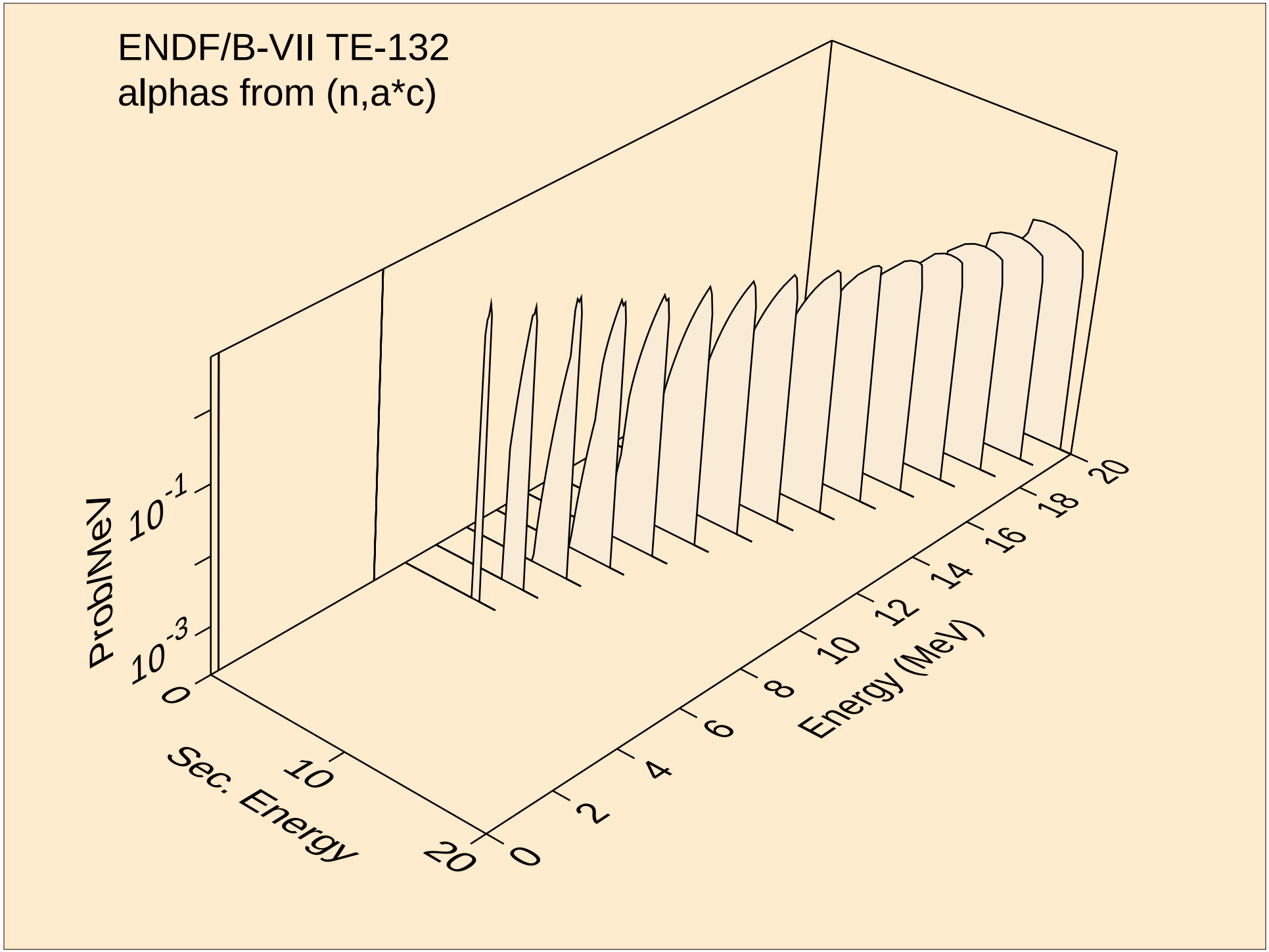

ENDF/B-VII TE-132
angular distribution for (n,a*4) alpha
ProbICos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)


ENDF/B-VII TE-132
angular distribution for (n,a*5) alpha
ProbCos
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 TE-132
angular distribution for (n,a*6) 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 TE-132
angular distribution for (n,a*7) alpha
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 TE-132
angular distribution for (n,a*8) alpha
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 TE-132
alphas from (n,a*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)