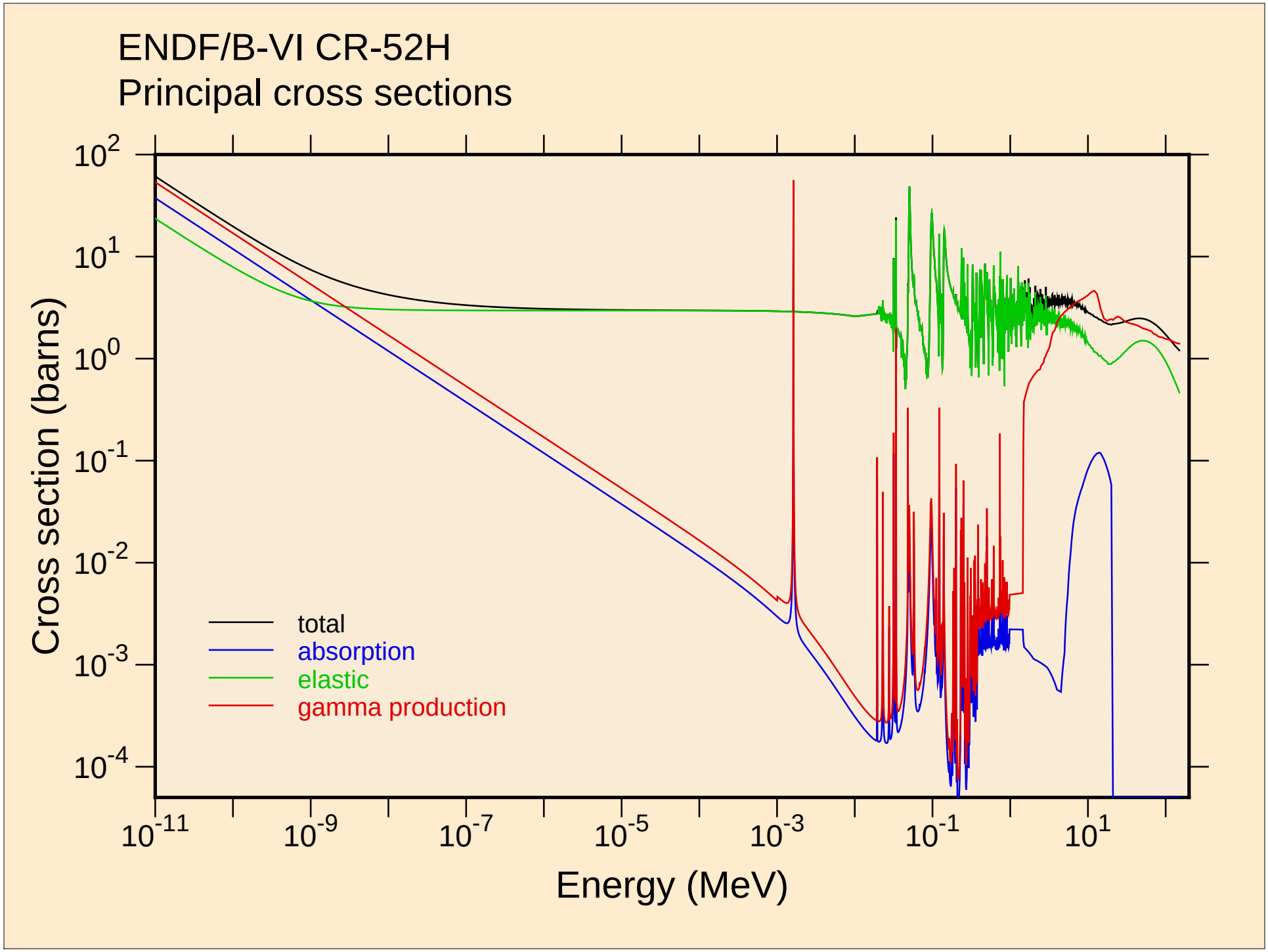
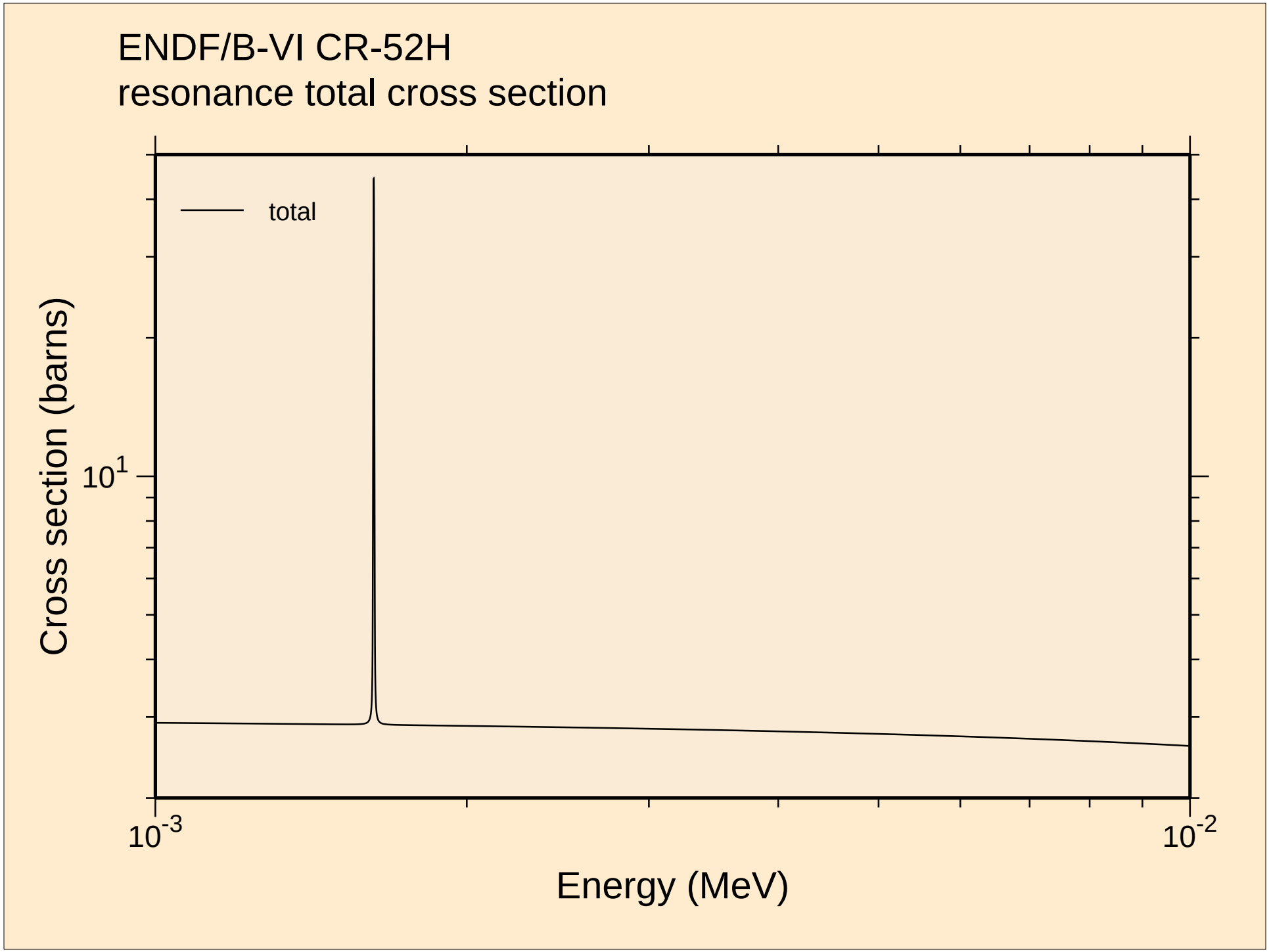
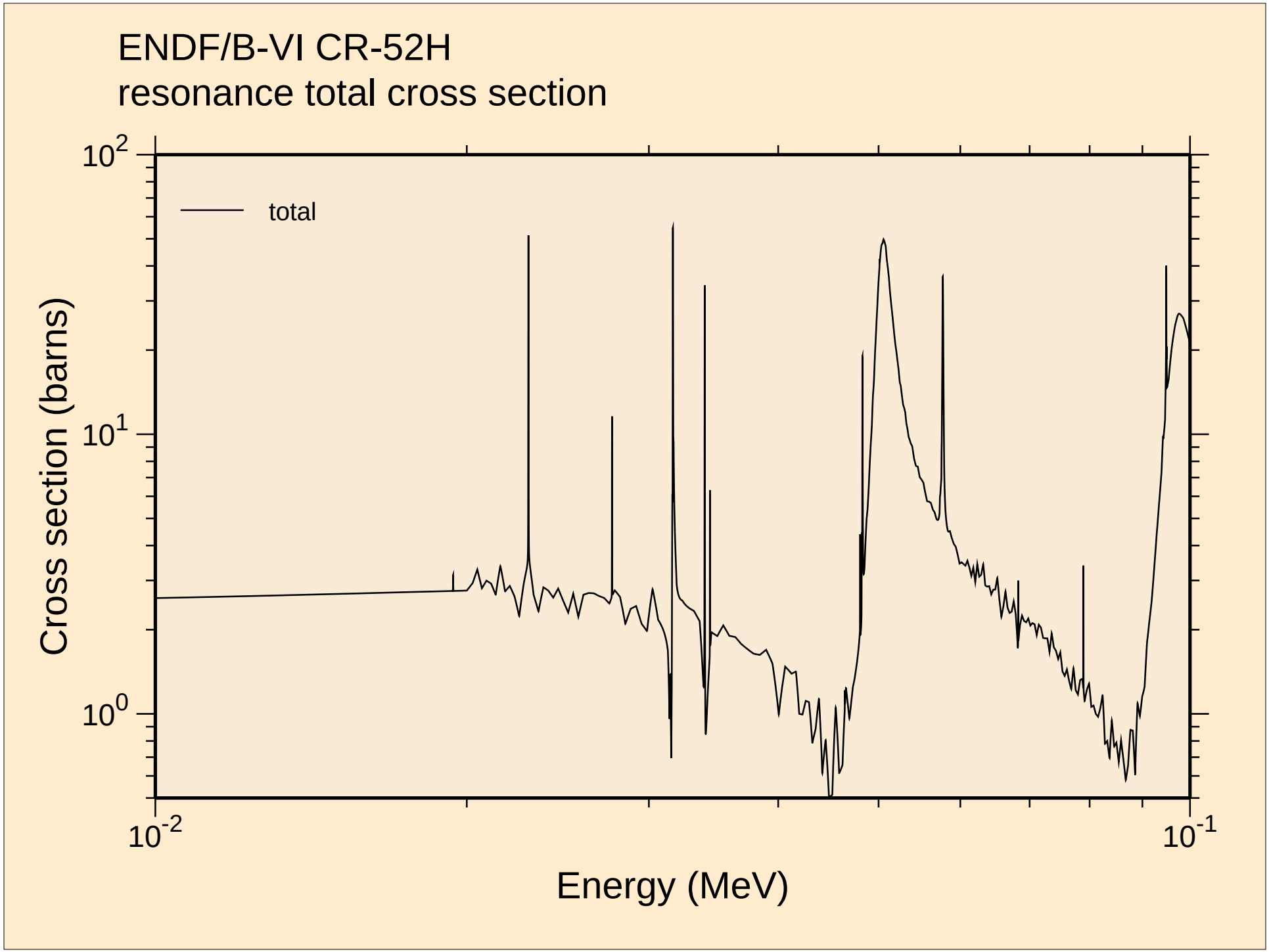
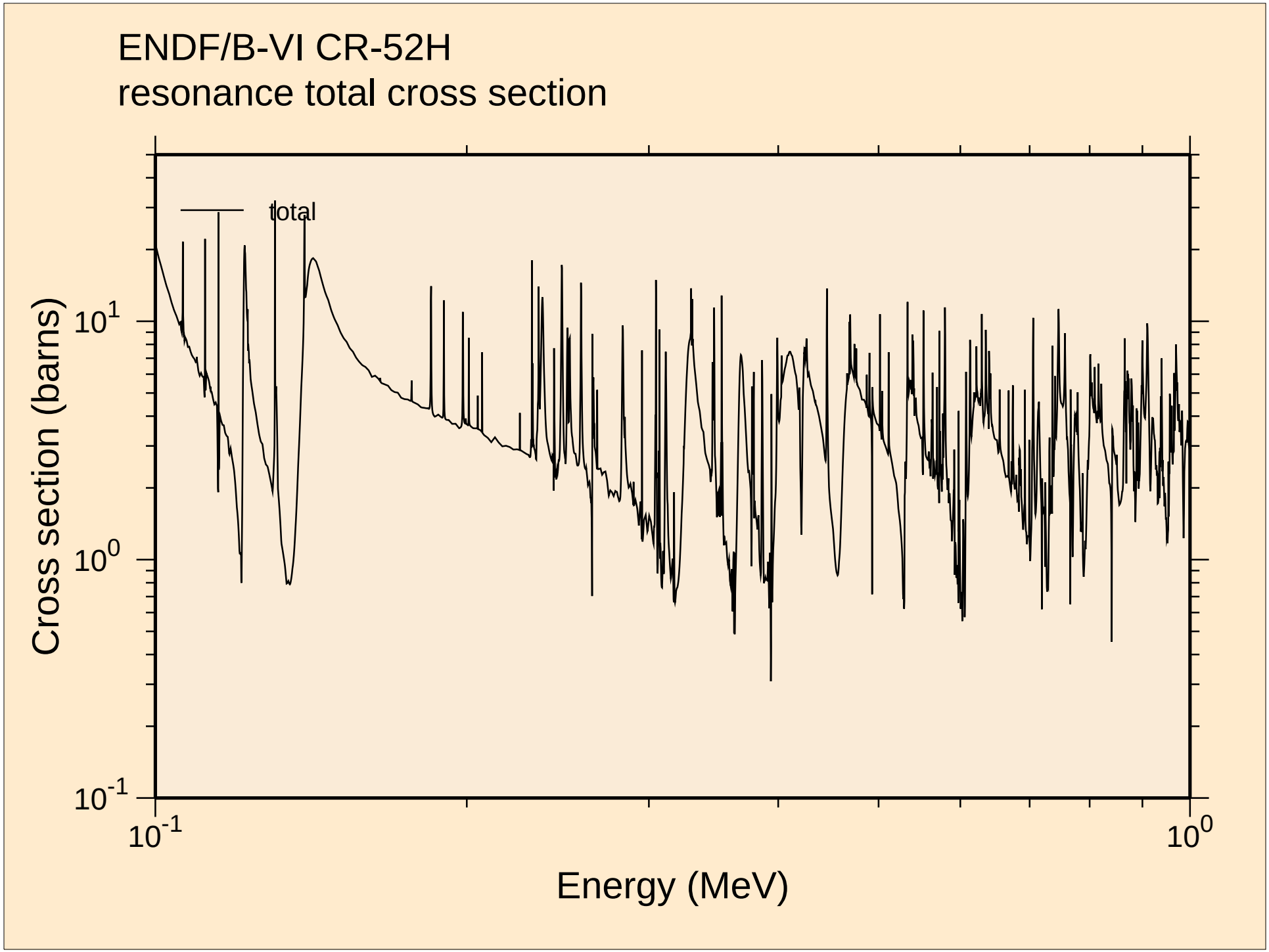
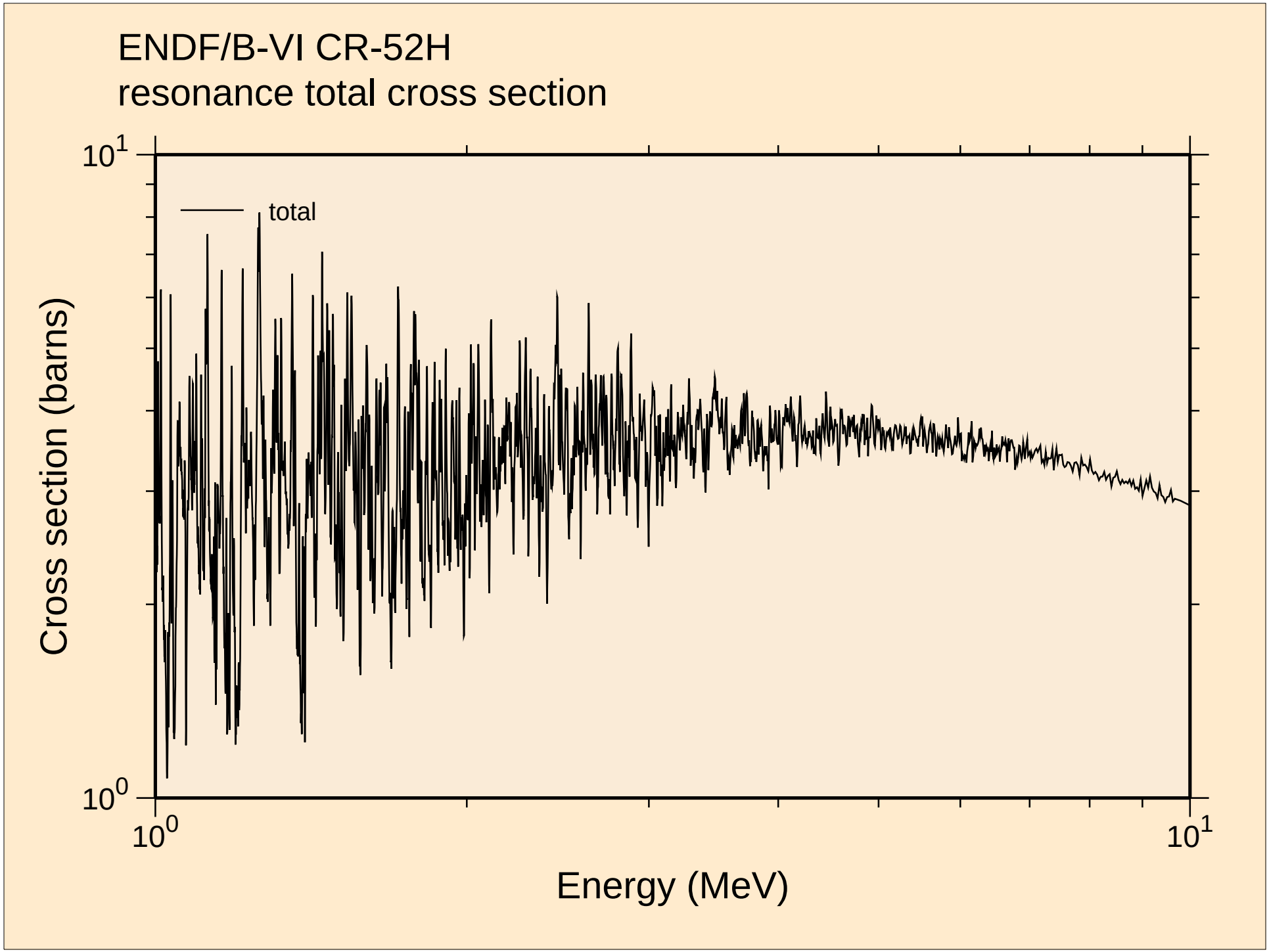

ENDF/B-VI CR-52H
Principal cross sections
Cross section (barns)
$10^{2}$
$10^{1}$
$10^{0}$
$10^{-1}$
$10^{-2}$
$10^{-3}$
$10^{-4}$
total
absorption
elastic
gamma production
$10^{-11}$
$10^{-9}$
$10^{-7}$
$10^{-5}$
$10^{-3}$
$10^{-1}$
$10^{1}$
Energy (MeV)

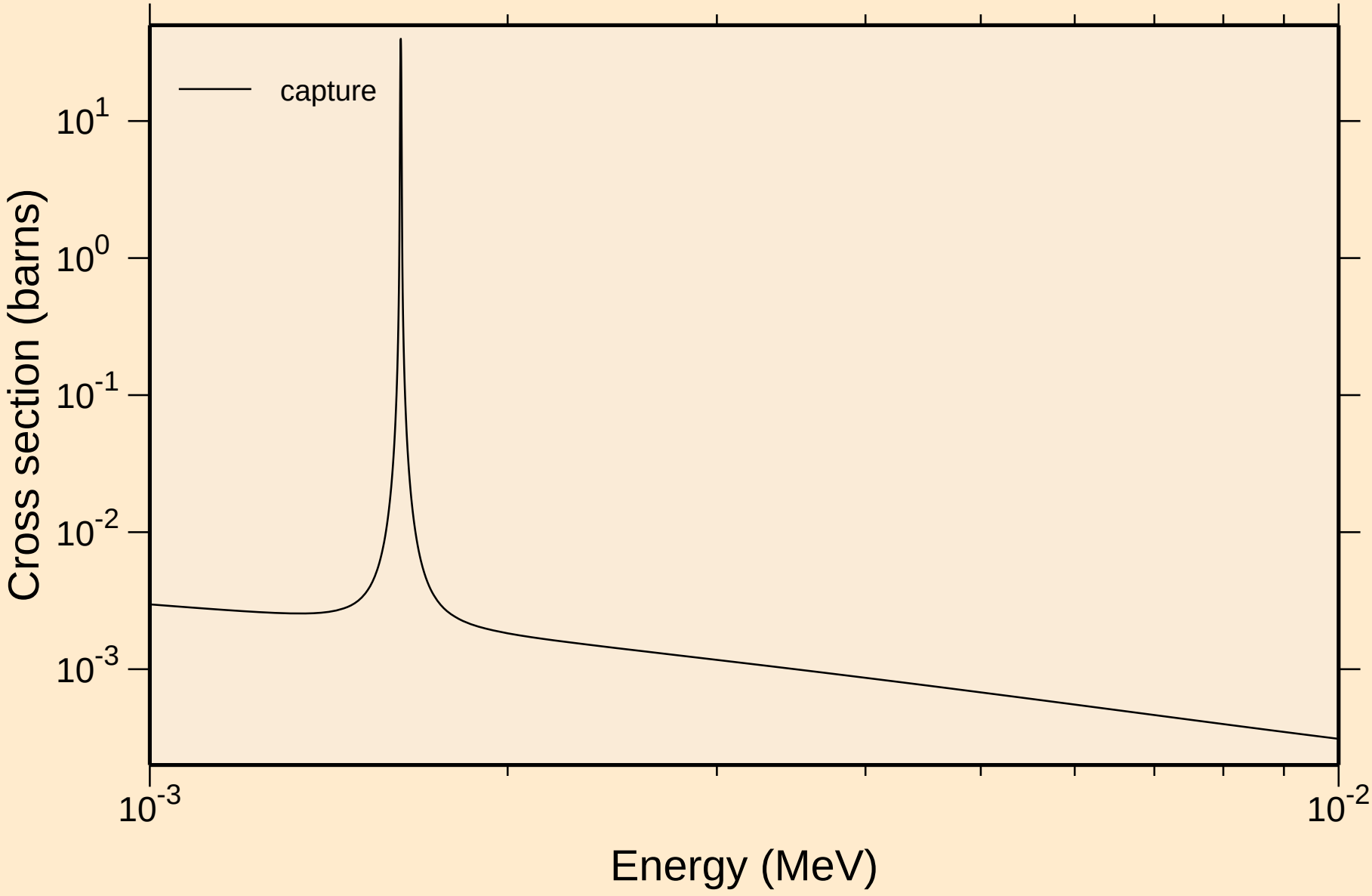

ENDF/B-VI CR-52H
resonance total cross section
total
Cross section (barns)
10^1
10^-3
10^-2
Energy (MeV)

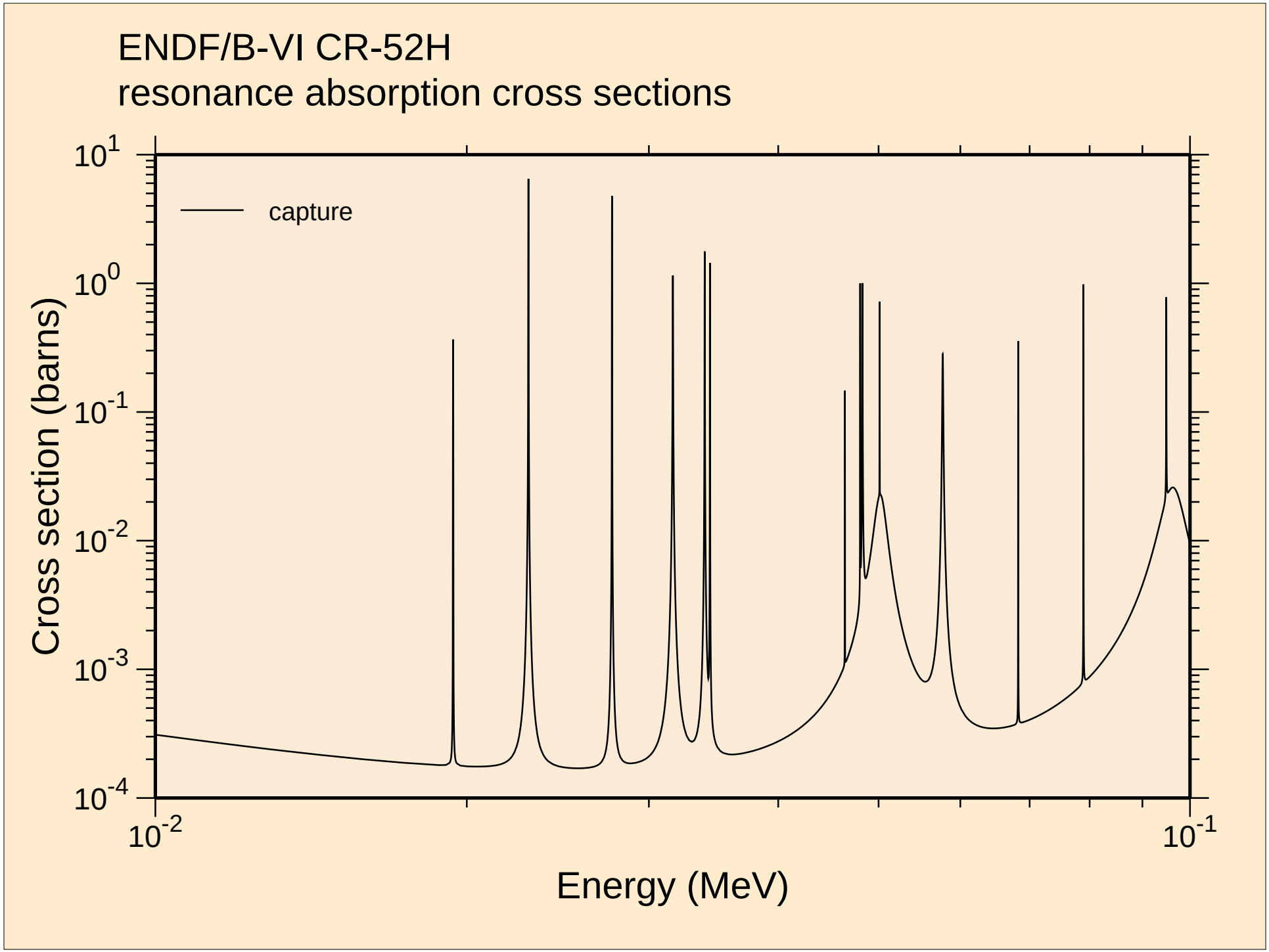

ENDF/B-VI CR-52H
resonance total cross section
total
Cross section (barns)
$10^2$
$10^1$
$10^0$
$10^{-2}$
$10^{-1}$
Energy (MeV)

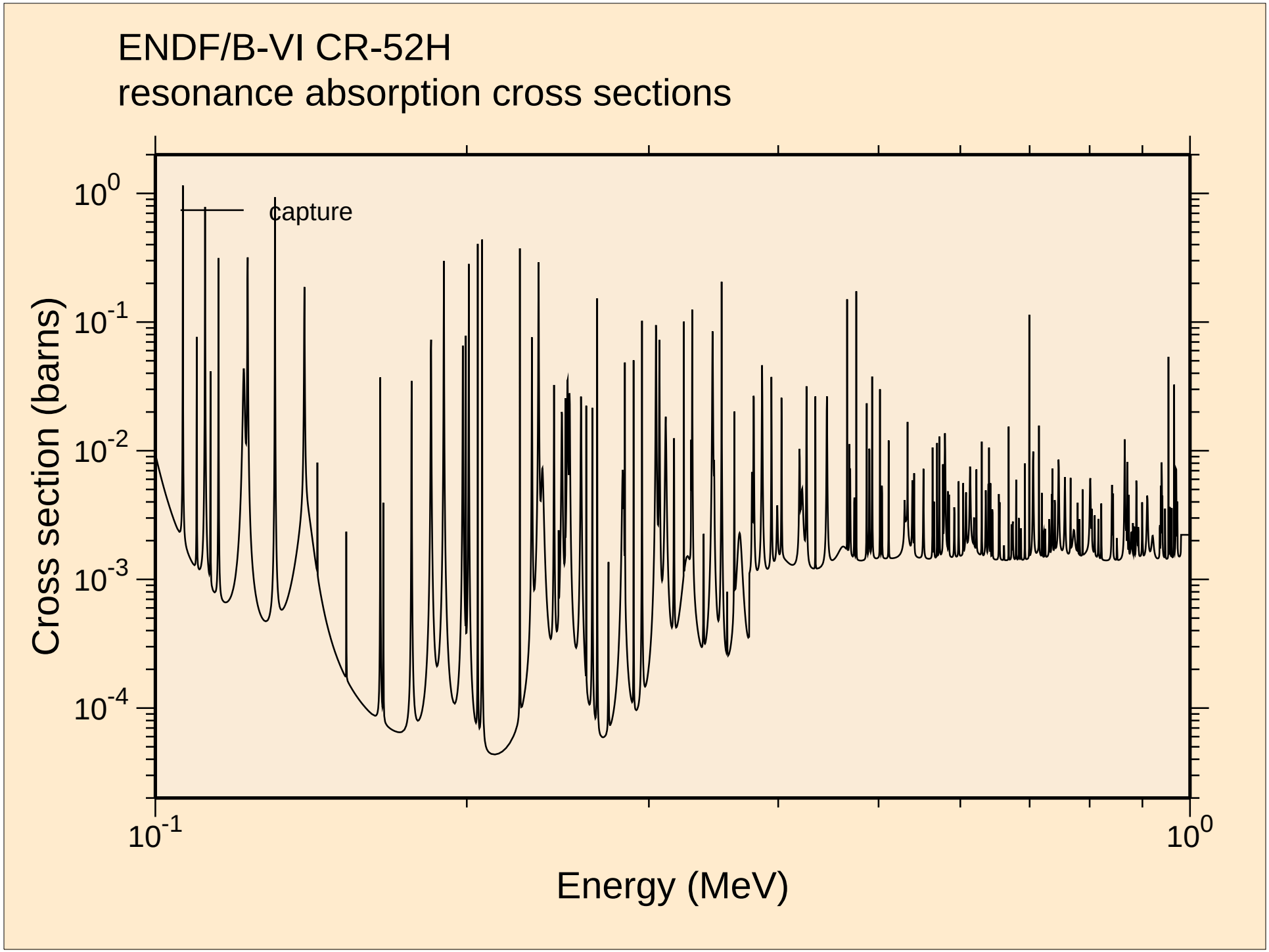

ENDF/B-VI CR-52H
resonance total cross section
total
Cross section (barns)
$10^{1}$
$10^{0}$
$10^{-1}$
$10^{-1}$
$10^{0}$
Energy (MeV)


ENDF/B-VI CR-52H
resonance total cross section
total
Cross section (barns)
Energy (MeV)
10^1
10^0
10^0
10^1

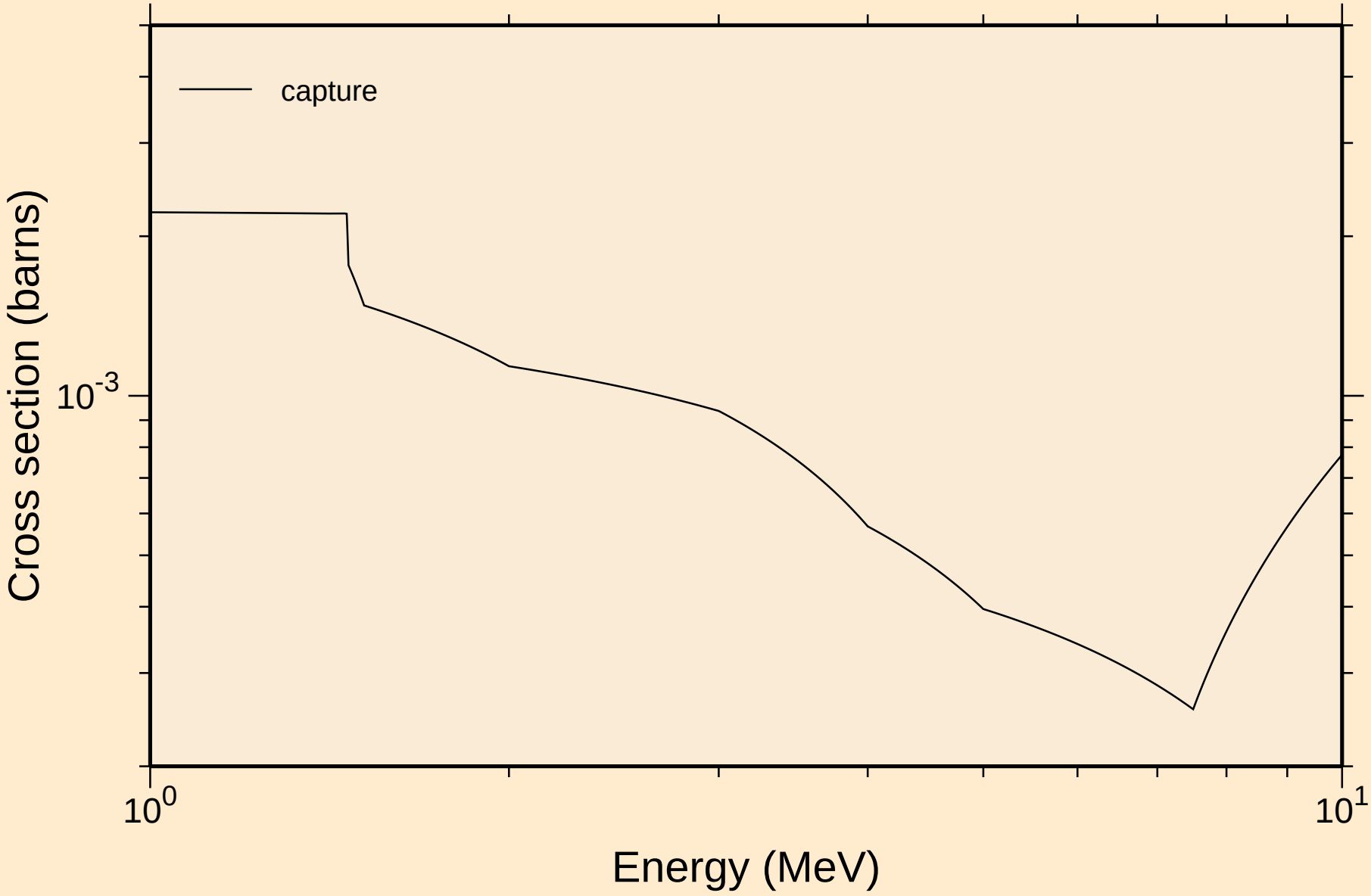
ENDF/B-VI CR-52H
resonance absorption cross sections

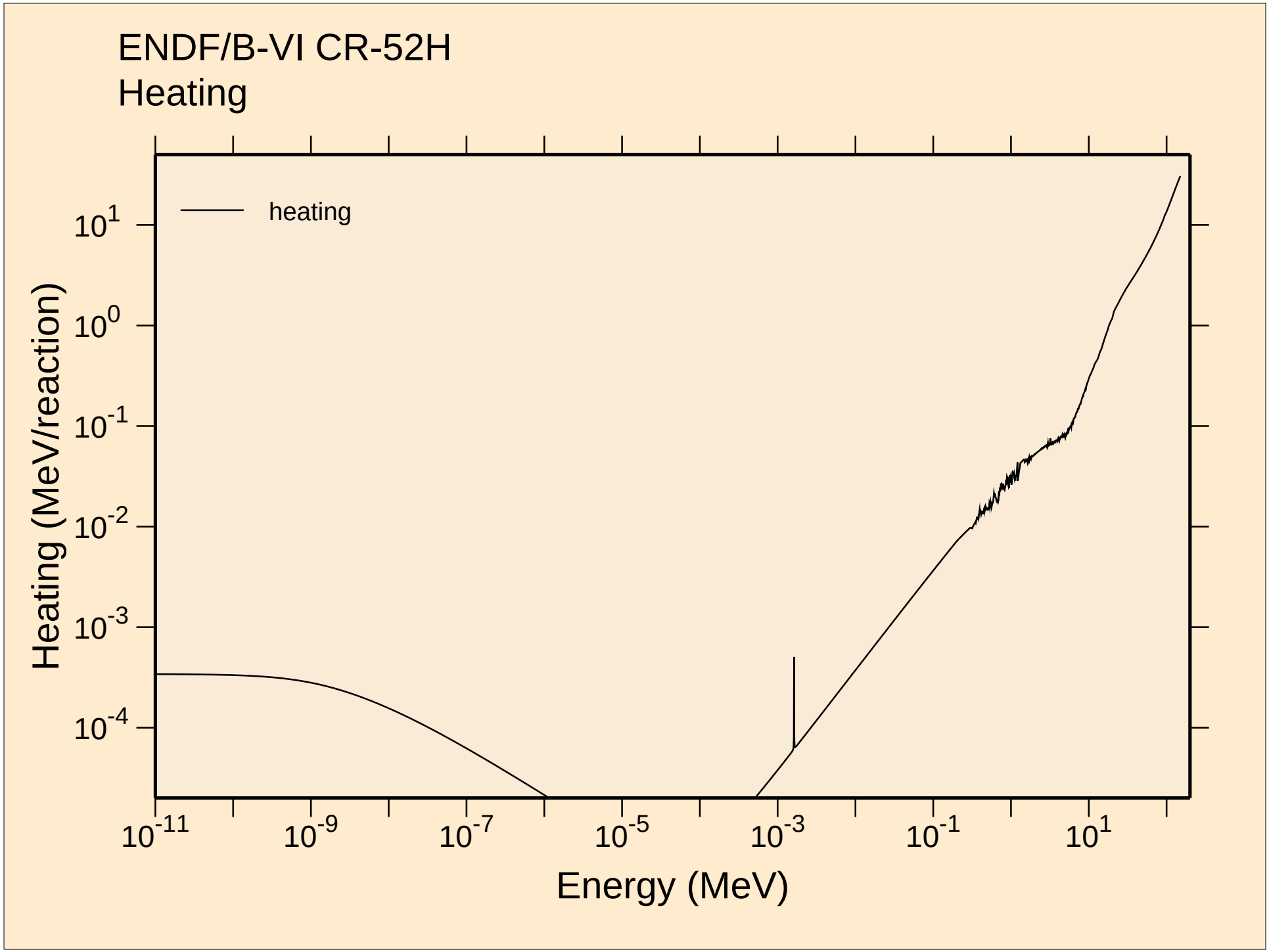


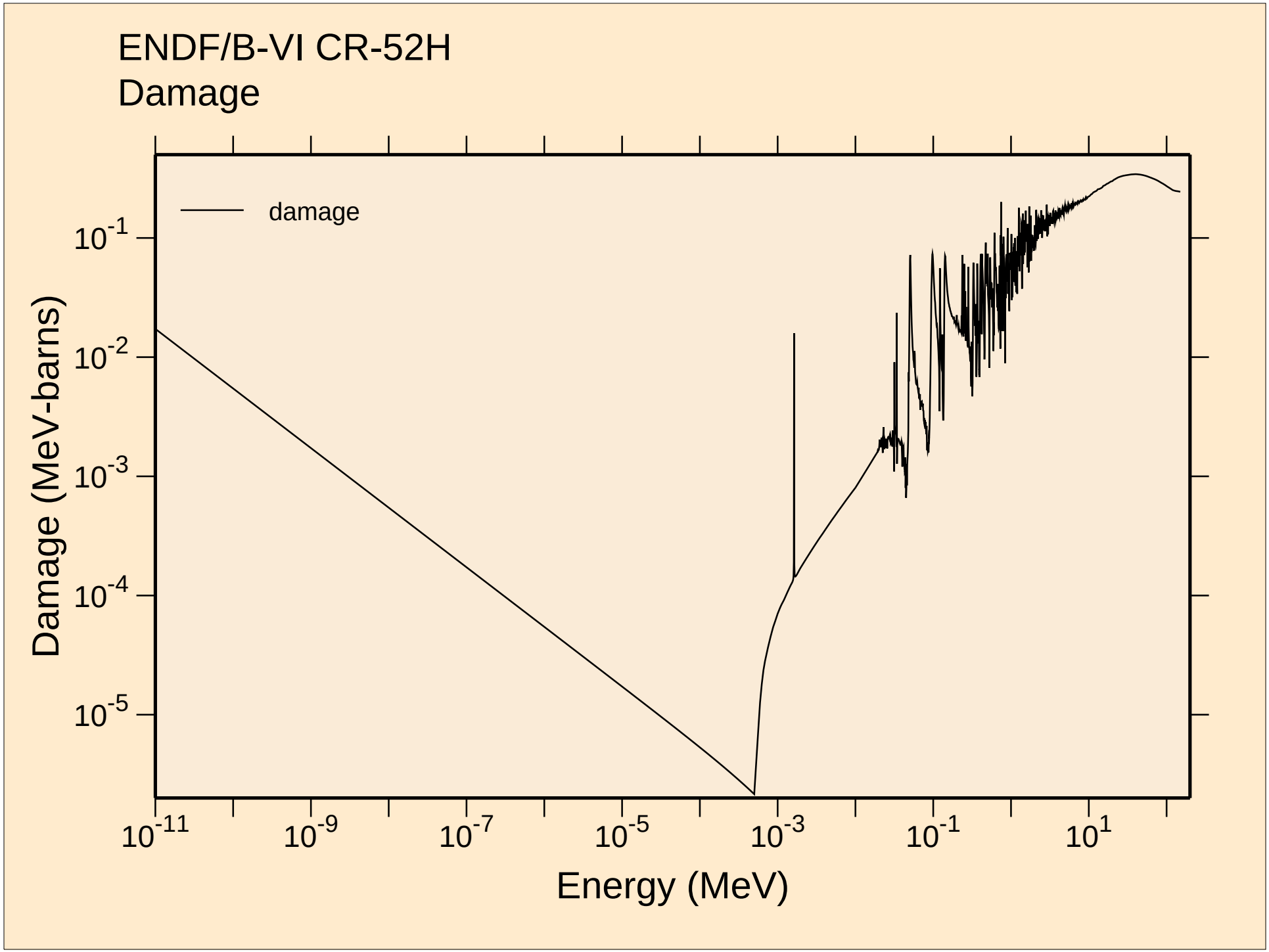

ENDF/B-VI CR-52H
resonance absorption cross sections
capture
Cross section (barns)
$10^{1}$
$10^{0}$
$10^{-1}$
$10^{-2}$
$10^{-3}$
$10^{-4}$
$10^{-2}$
$10^{-1}$
Energy (MeV)

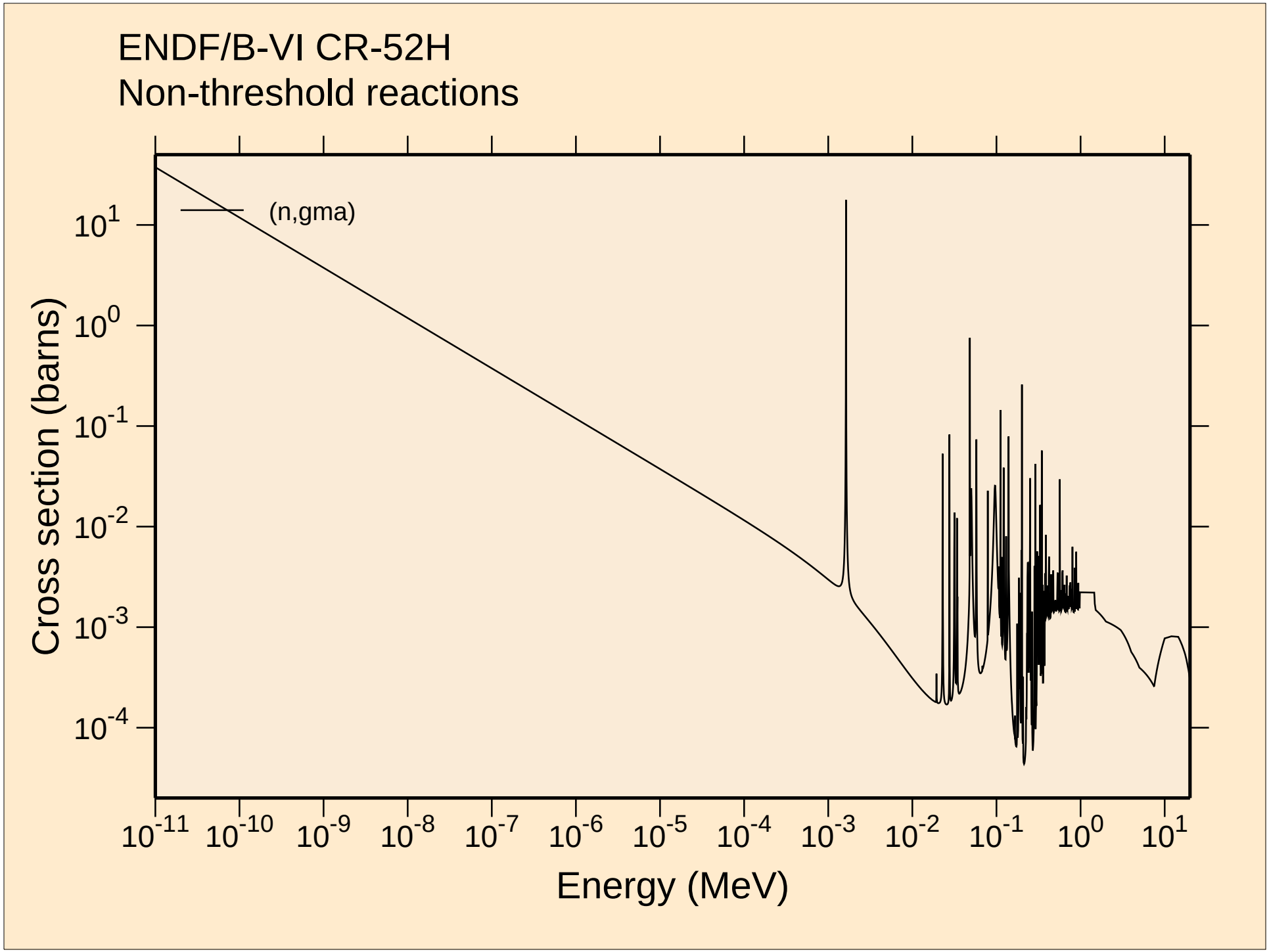

ENDF/B-VI CR-52H
resonance absorption cross sections
capture
Cross section (barns)
10^0
10^-1
10^-2
10^-3
10^-4
10^-1
10^0
Energy (MeV)

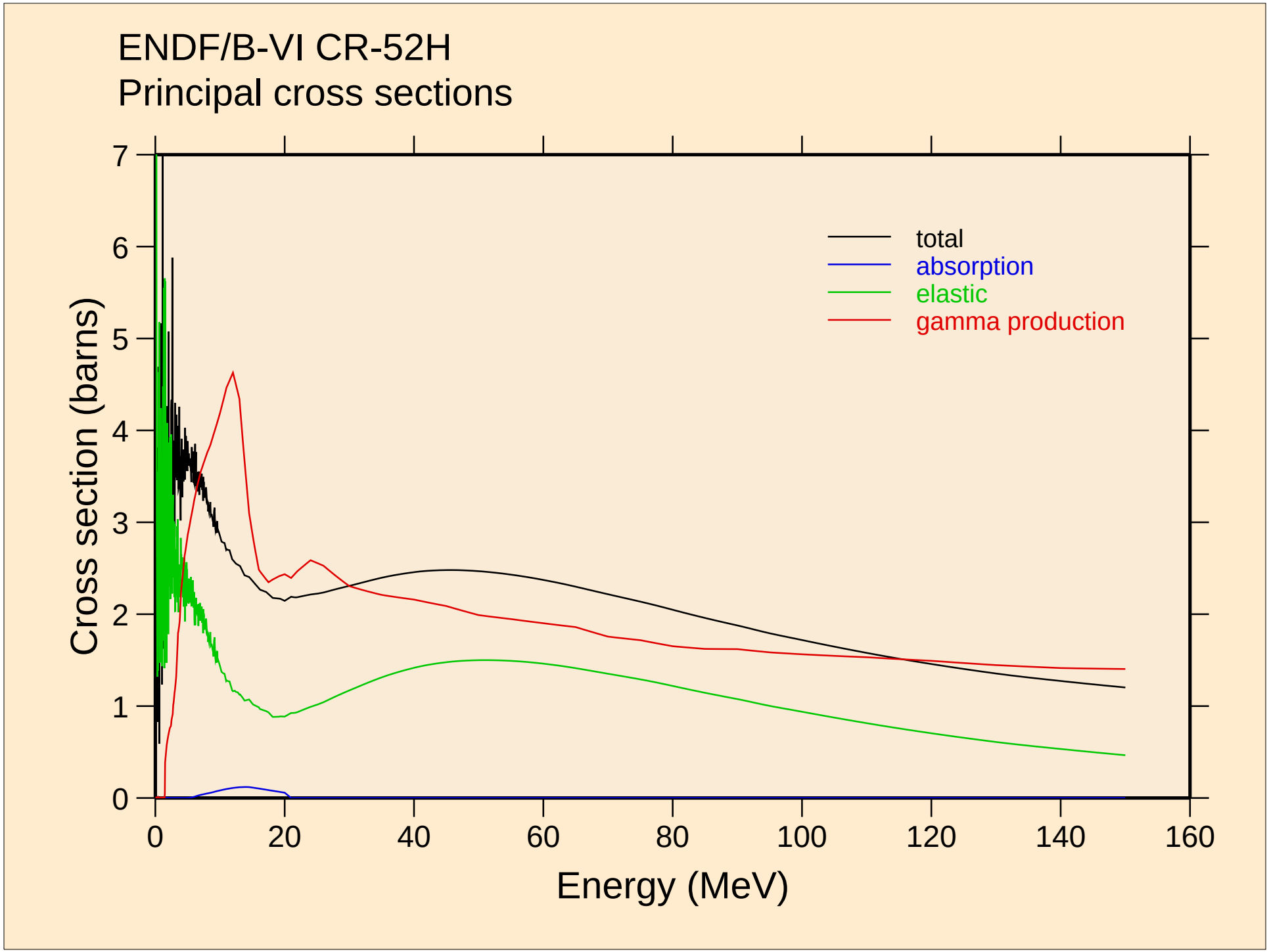
ENDF/B-VI CR-52H
resonance absorption cross sections

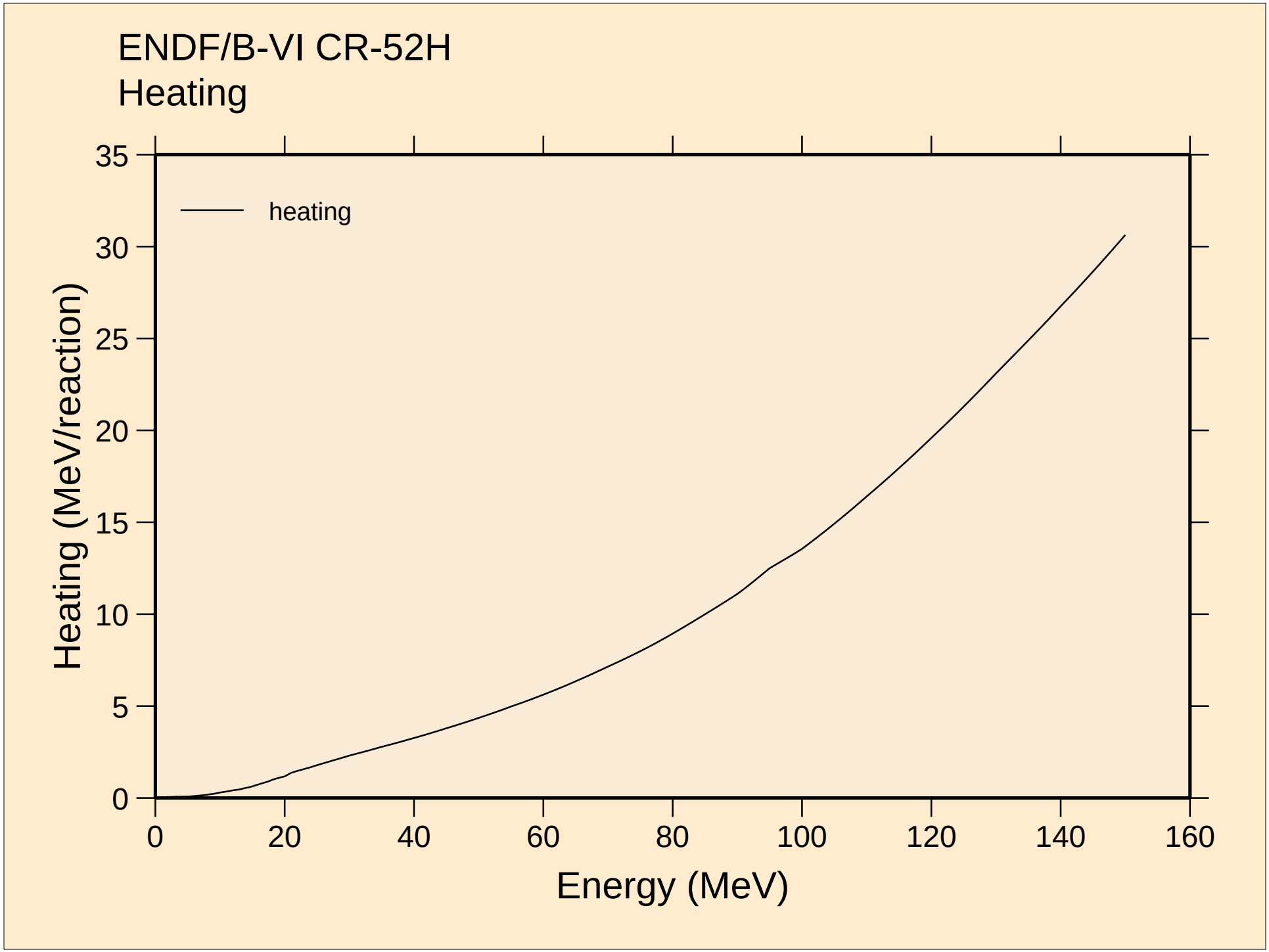


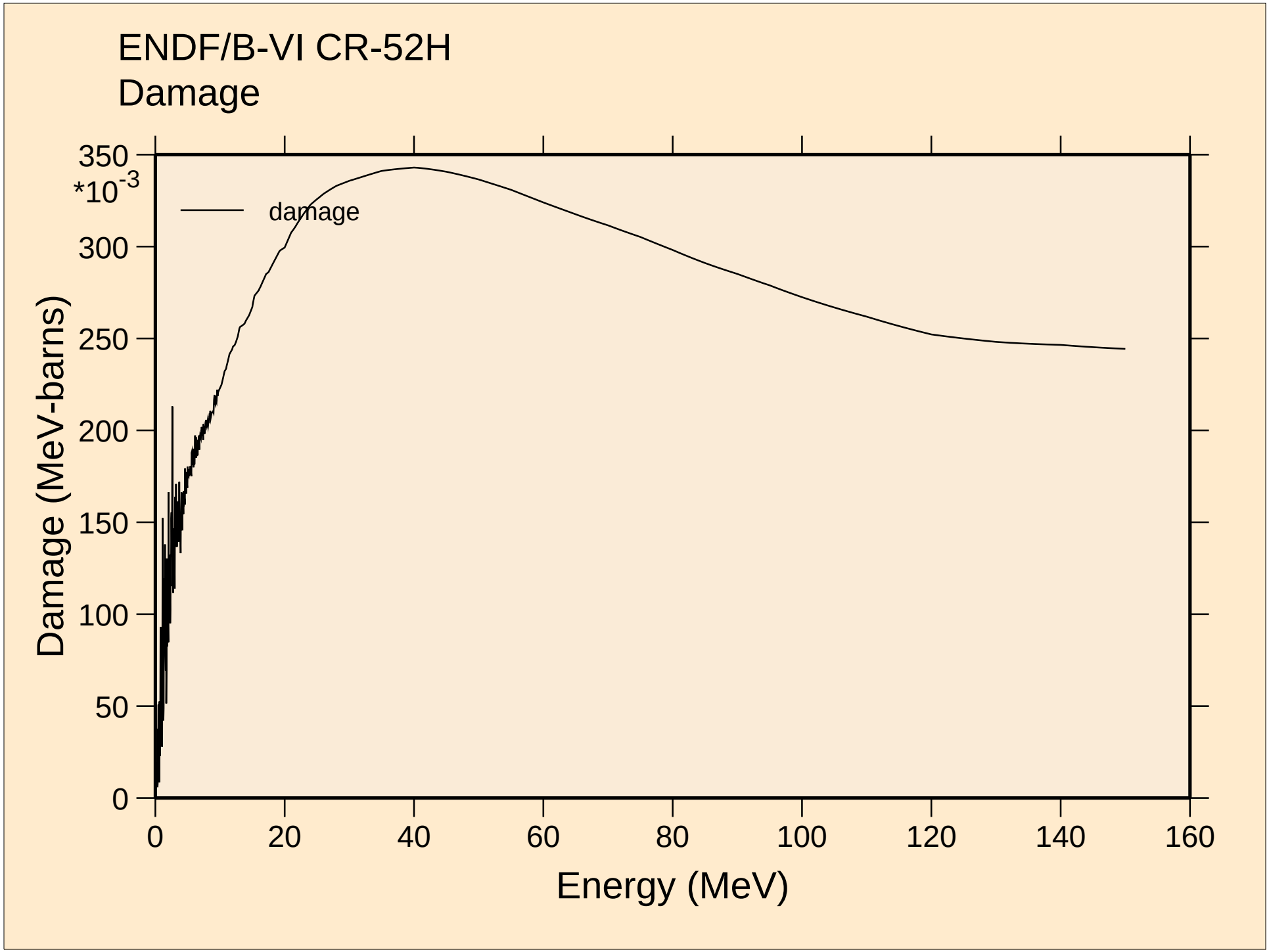

ENDF/B-VI CR-52H
Heating
heating
Heating (MeV/reaction)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1
Energy (MeV)

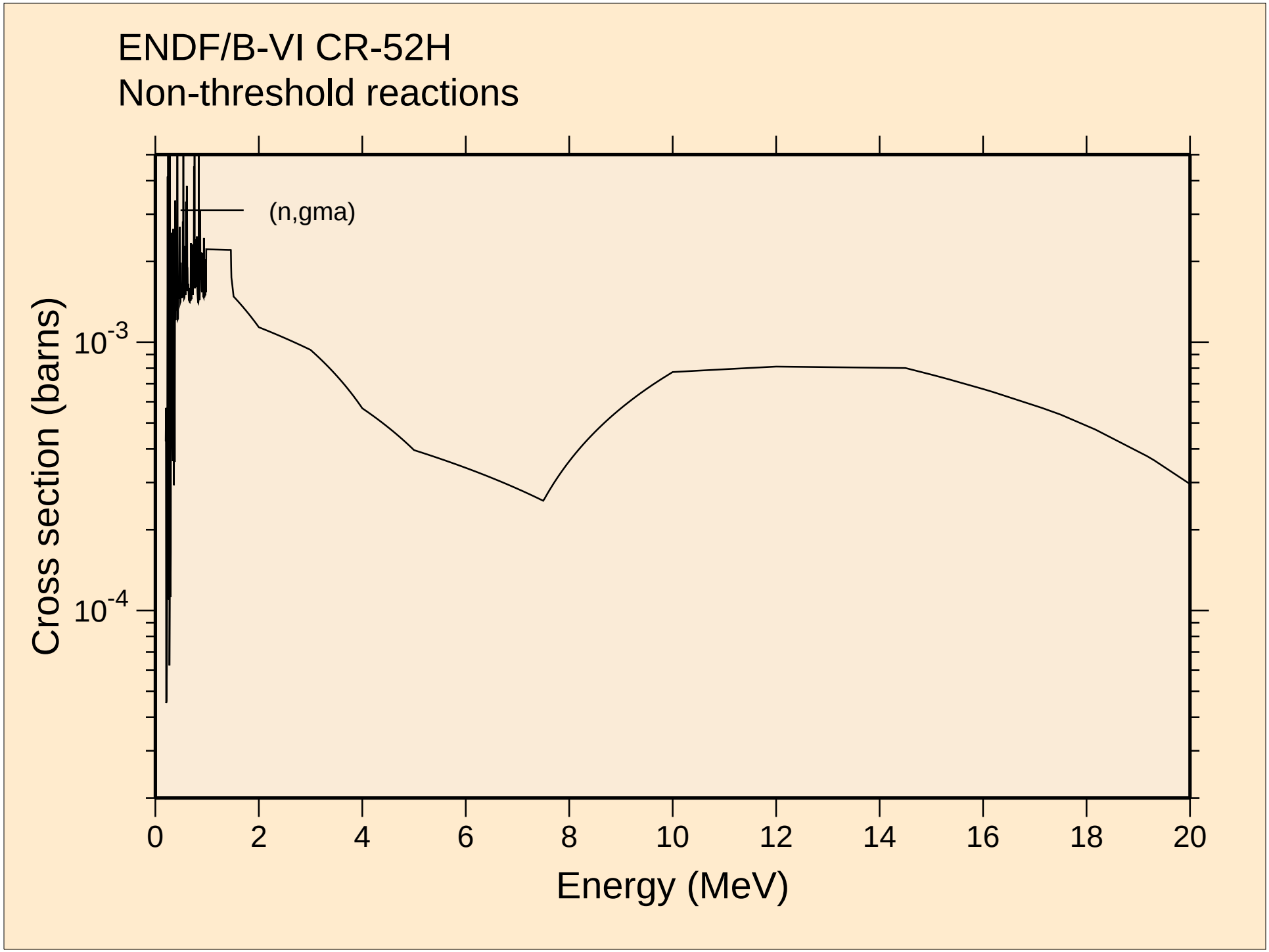

ENDF/B-VI CR-52H
Damage
damage
Damage (MeV-barns)
10-1
10-2
10-3
10-4
10-5
10-11
10-9
10-7
10-5
10-3
10-1
101
Energy (MeV)

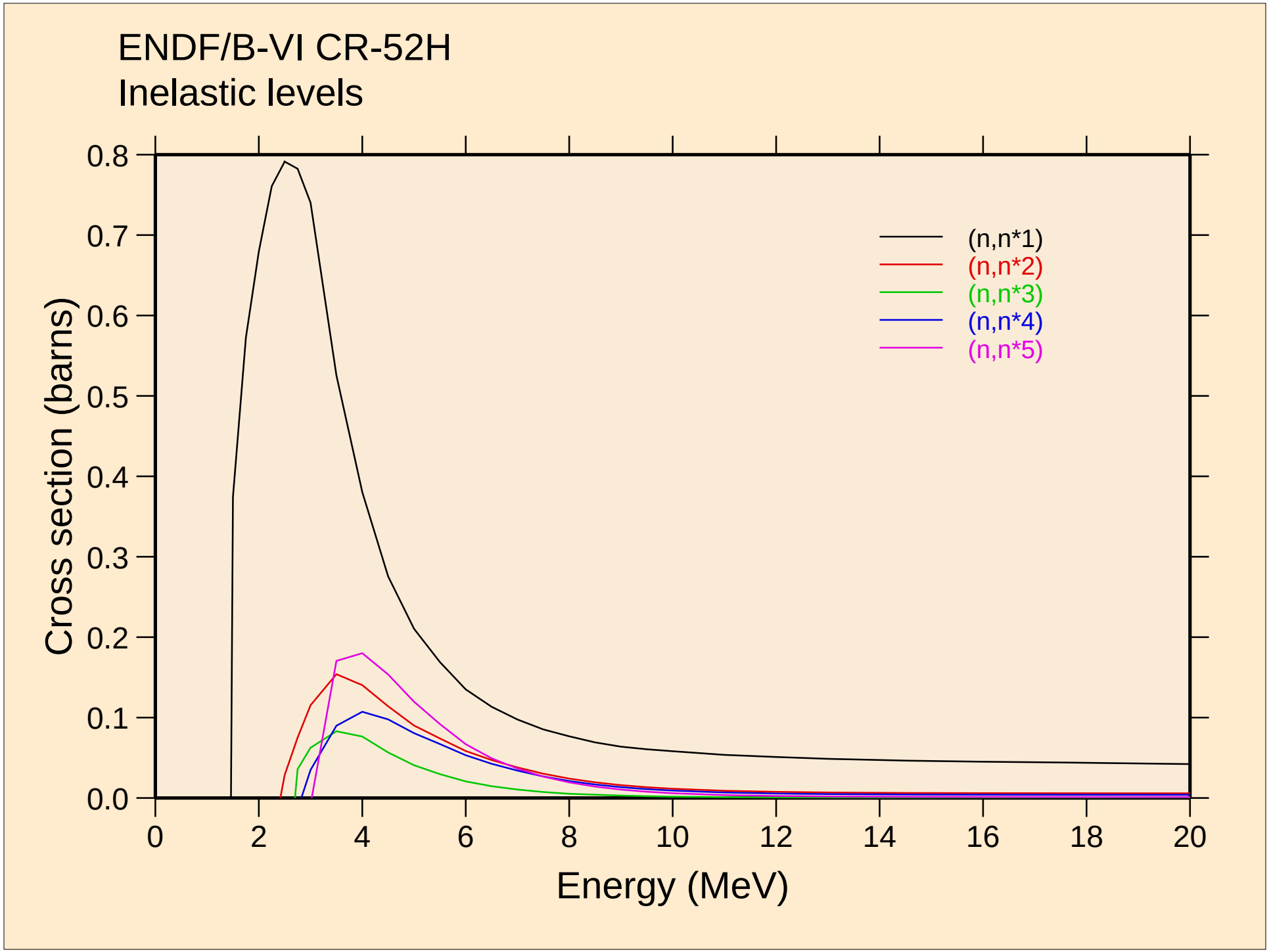

ENDF/B-VI CR-52H
Non-threshold reactions
(n,gma)
Cross section (barns)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11 10^-10 10^-9 10^-8 10^-7 10^-6 10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1
Energy (MeV)

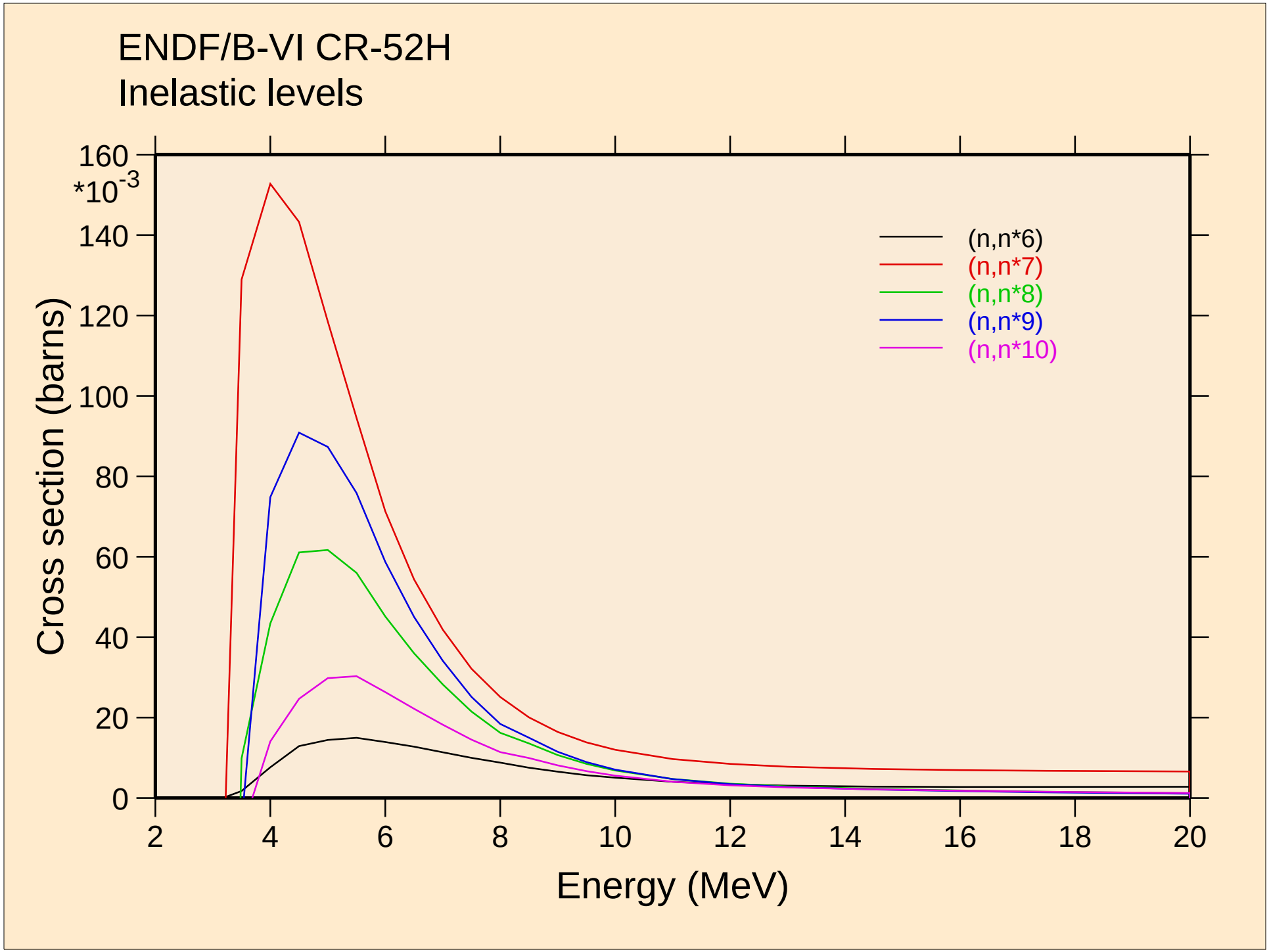

ENDF/B-VI CR-52H
Principal cross sections
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
6
7
0
20
40
60
80
100
120
140
160
total
absorption
elastic
gamma production

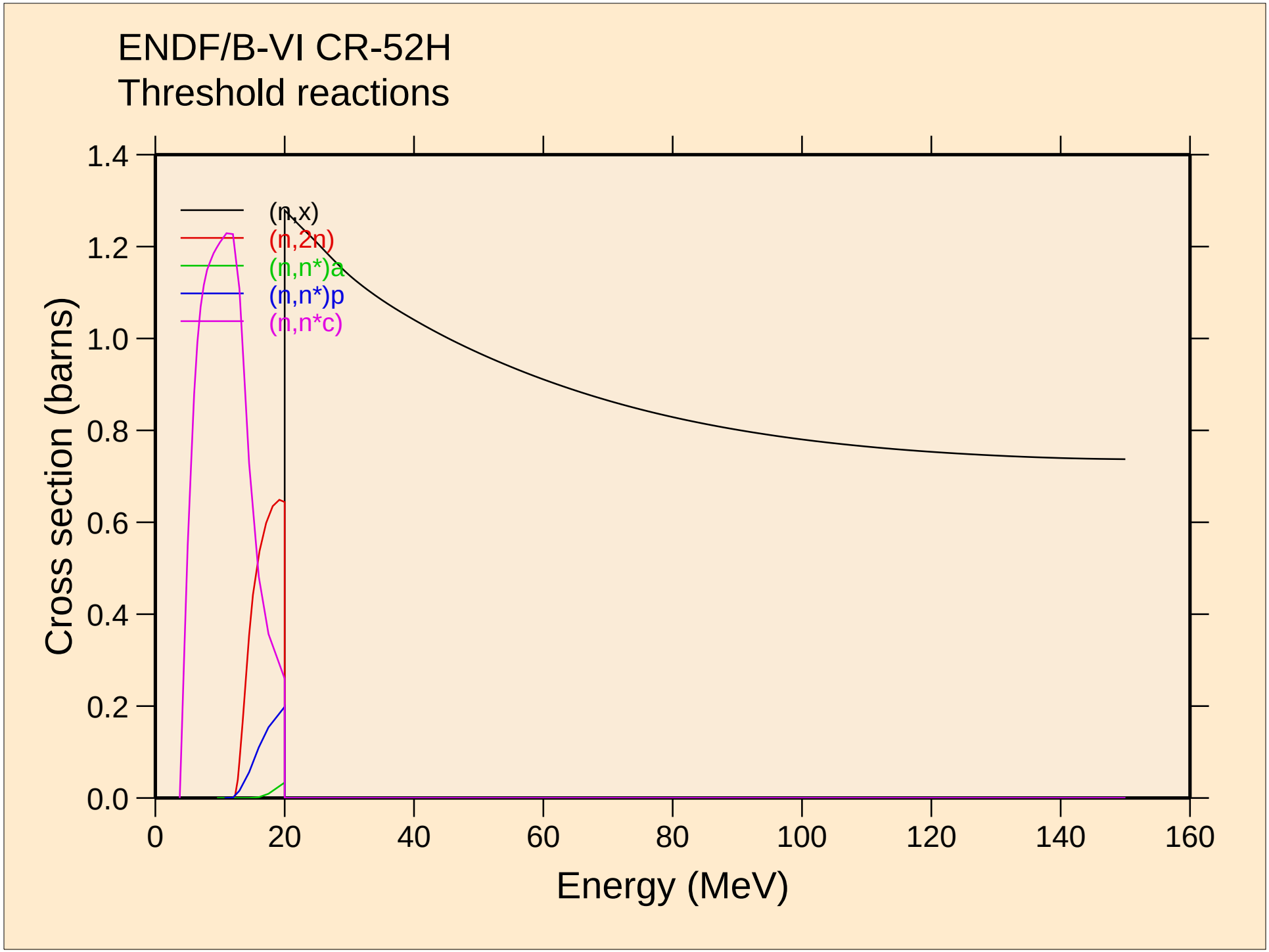

ENDF/B-VI CR-52H
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
5
10
15
20
25
30
35
0
20
40
60
80
100
120
140
160

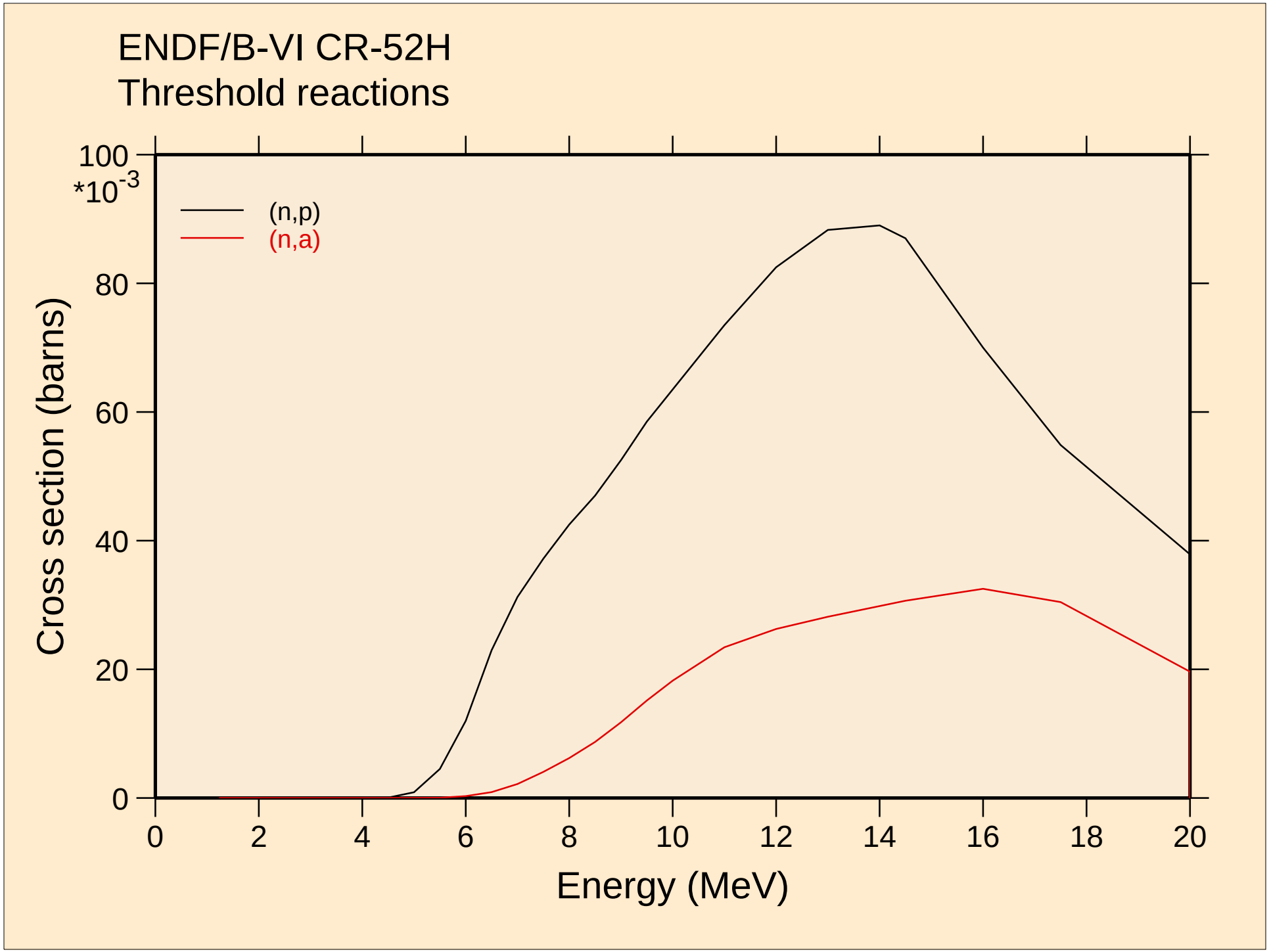

ENDF/B-VI CR-52H
Damage
350
*10-3
300
250
200
150
100
50
0
damage
Damage (MeV-barns)
0
20
40
60
80
100
120
140
160
Energy (MeV)

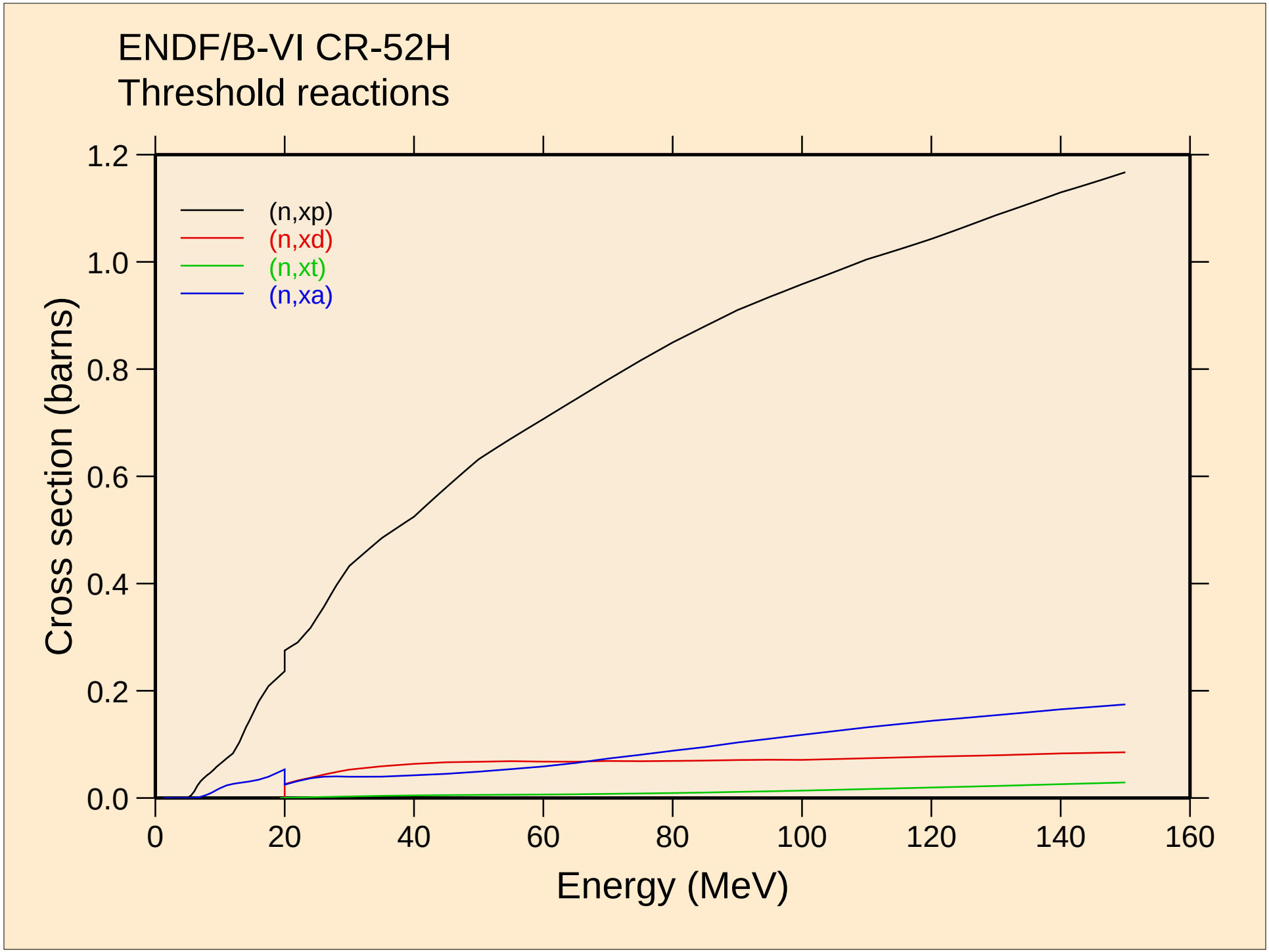

ENDF/B-VI CR-52H
Non-threshold reactions
(n,gma)
Cross section (barns)
10-3
10-4
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

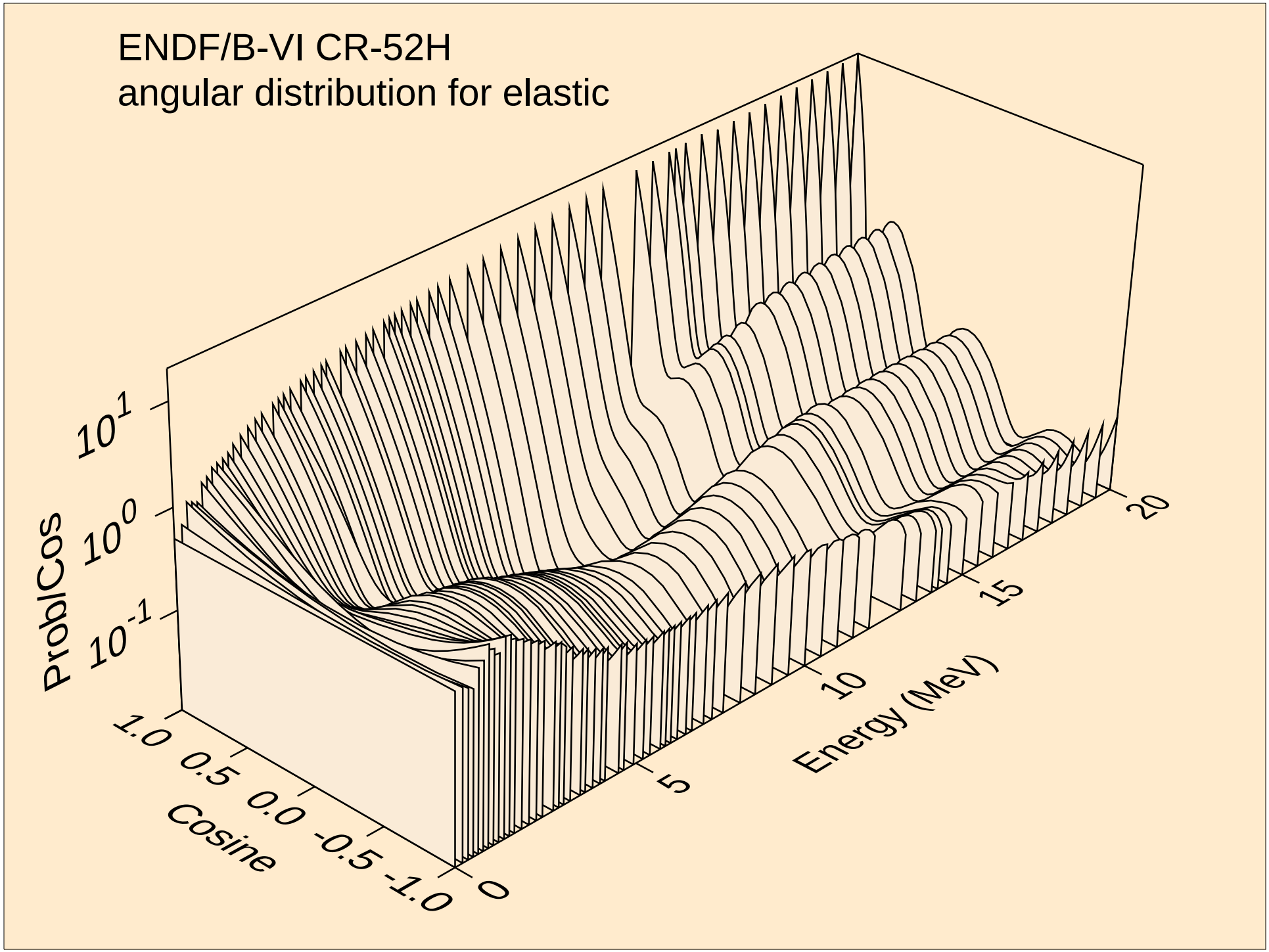

ENDF/B-VI CR-52H
Inelastic levels
Cross section (barns)
Energy (MeV)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
2
4
6
8
10
12
14
16
18
20
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

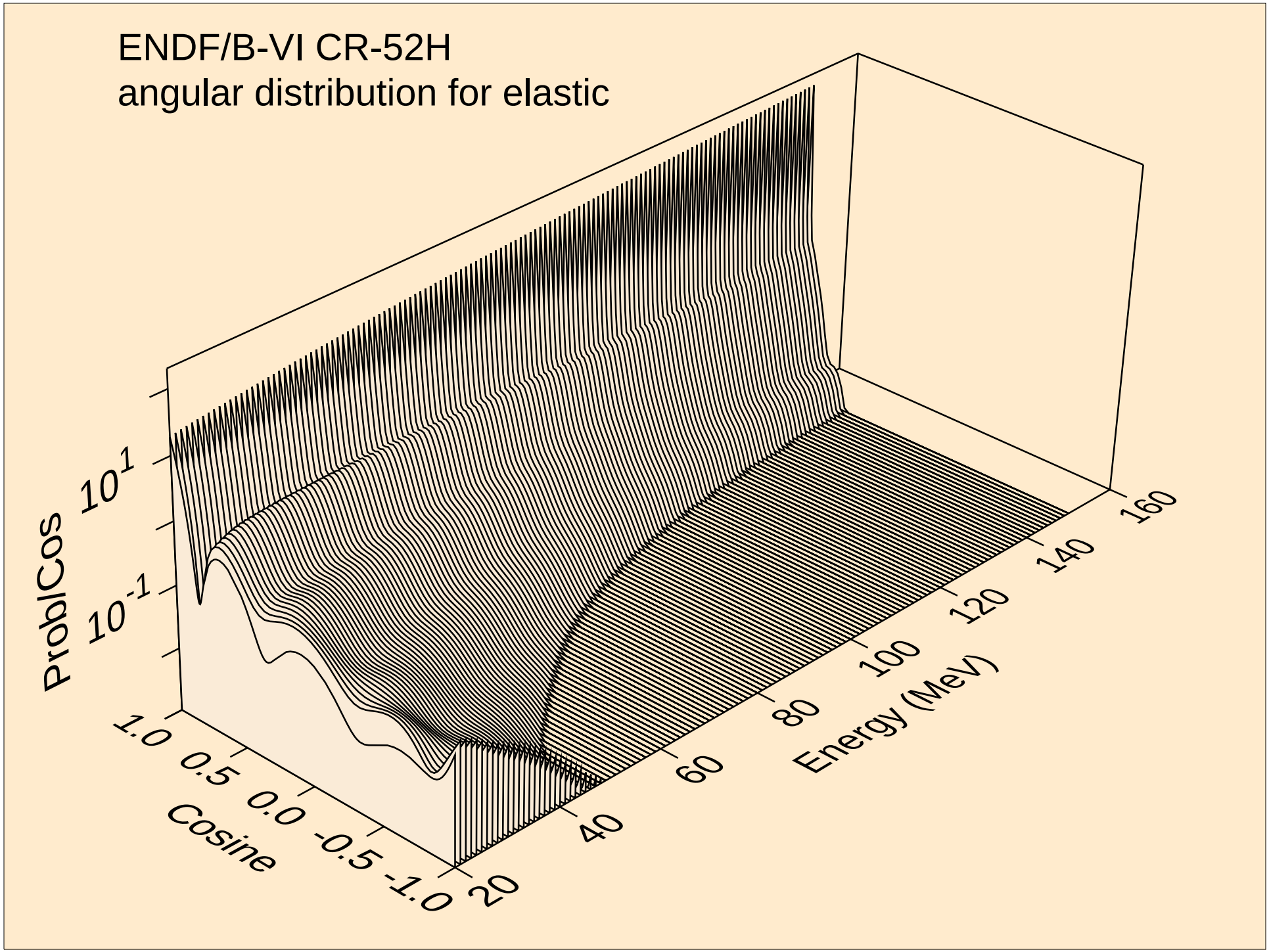

ENDF/B-VI CR-52H
Inelastic levels
Cross section (barns)
*10-3
160
140
120
100
80
60
40
20
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

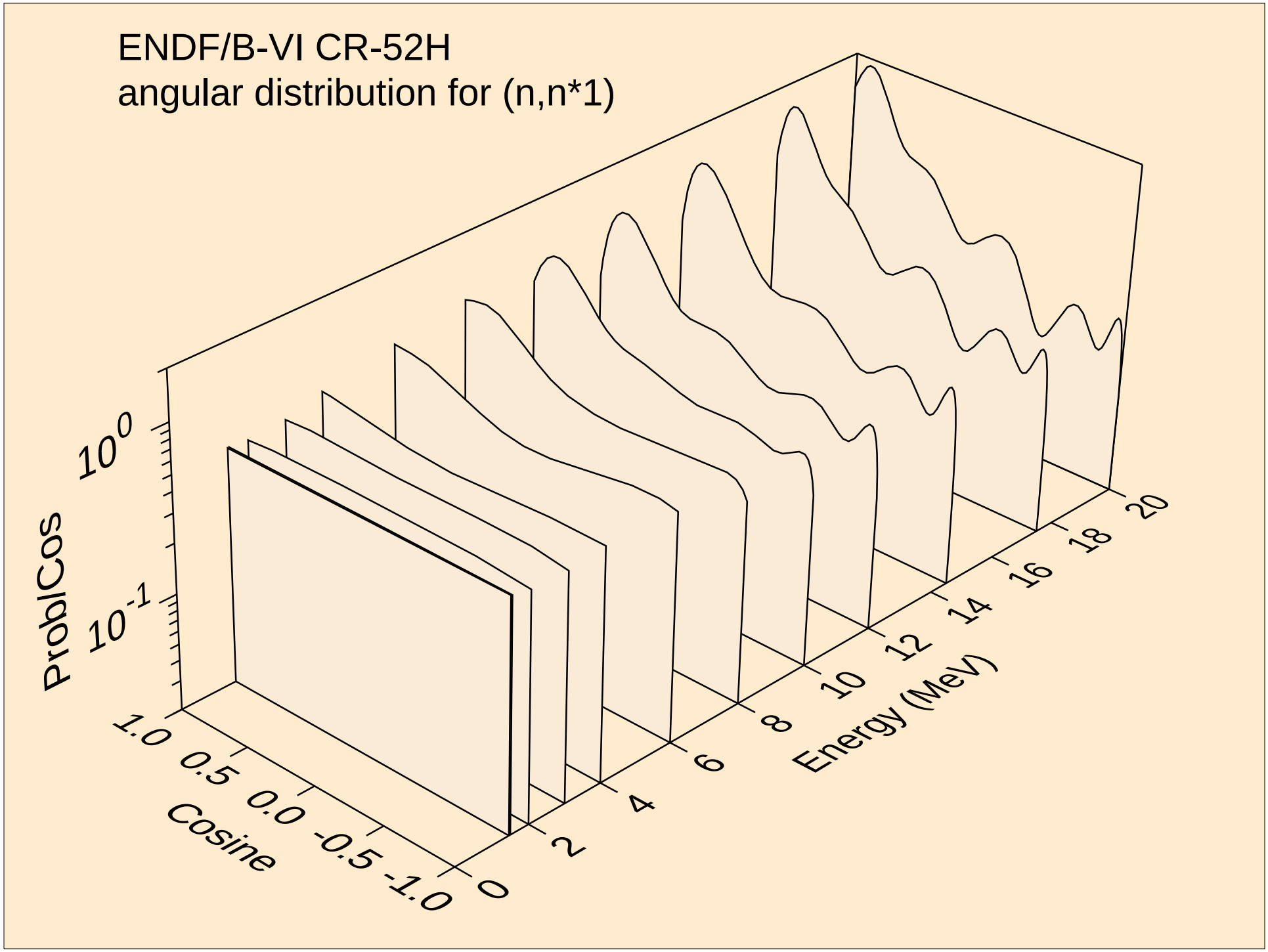

ENDF/B-VI CR-52H
Threshold reactions
(n,x)
(n,2n)
(n,n*)a
(n,n*)p
(n,n*c)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0
20
40
60
80
100
120
140
160

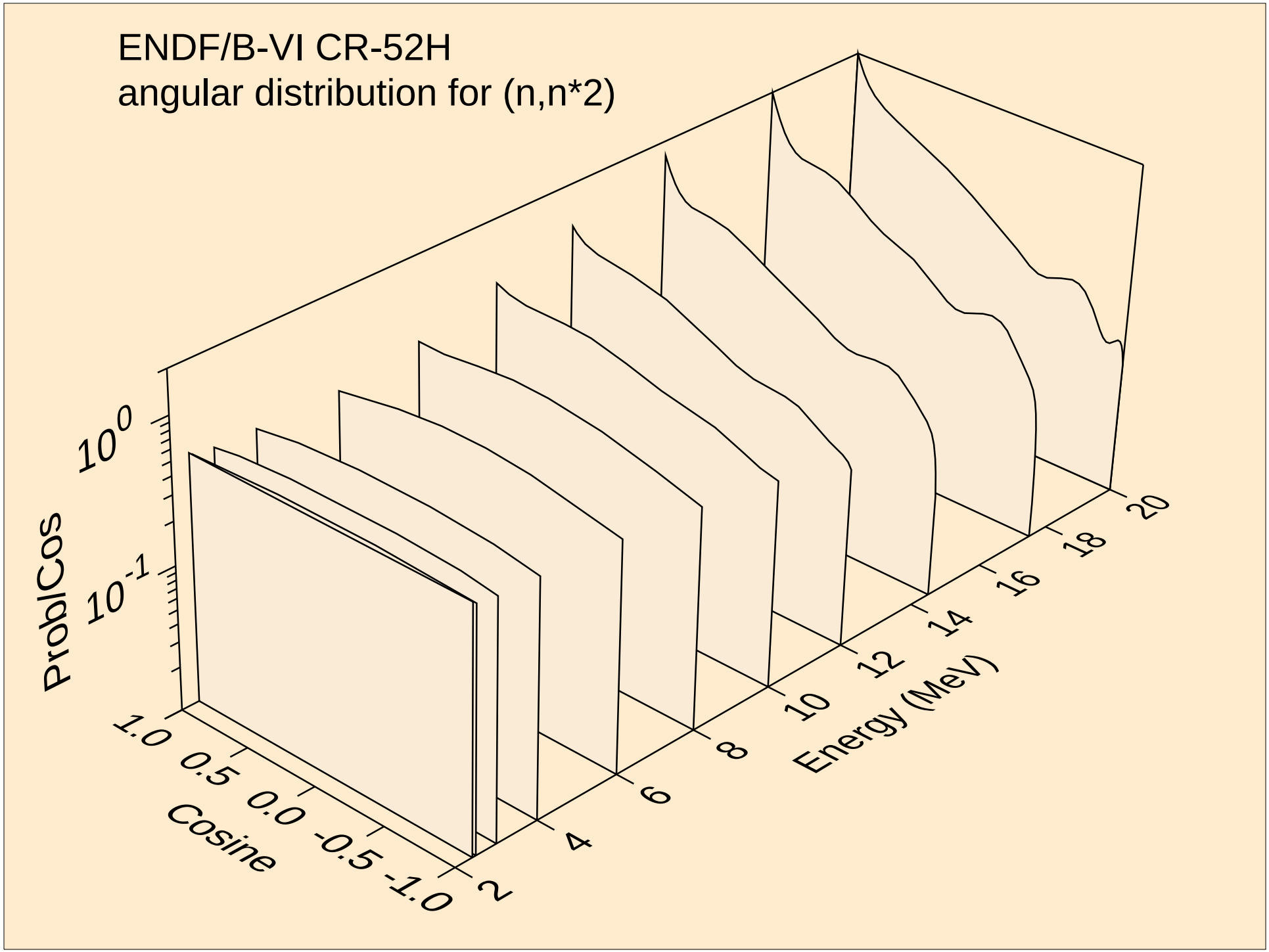

ENDF/B-VI CR-52H
Threshold reactions
100
*10-3
80
60
40
20
0
(n,p)
(n,a)
Cross section (barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

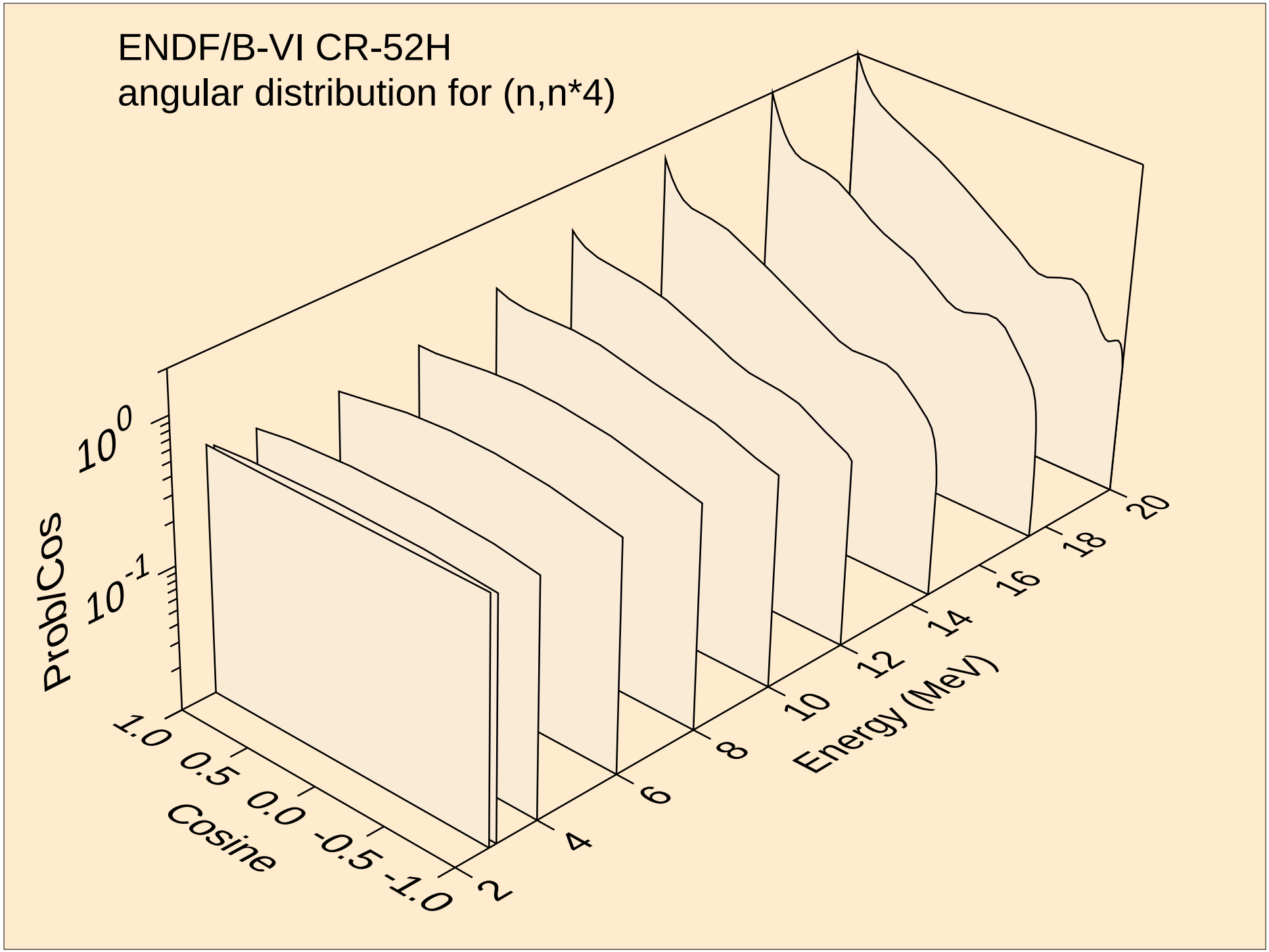

ENDF/B-VI CR-52H
Threshold reactions
(n,xp)
(n,xd)
(n,xt)
(n,xa)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
20
40
60
80
100
120
140
160

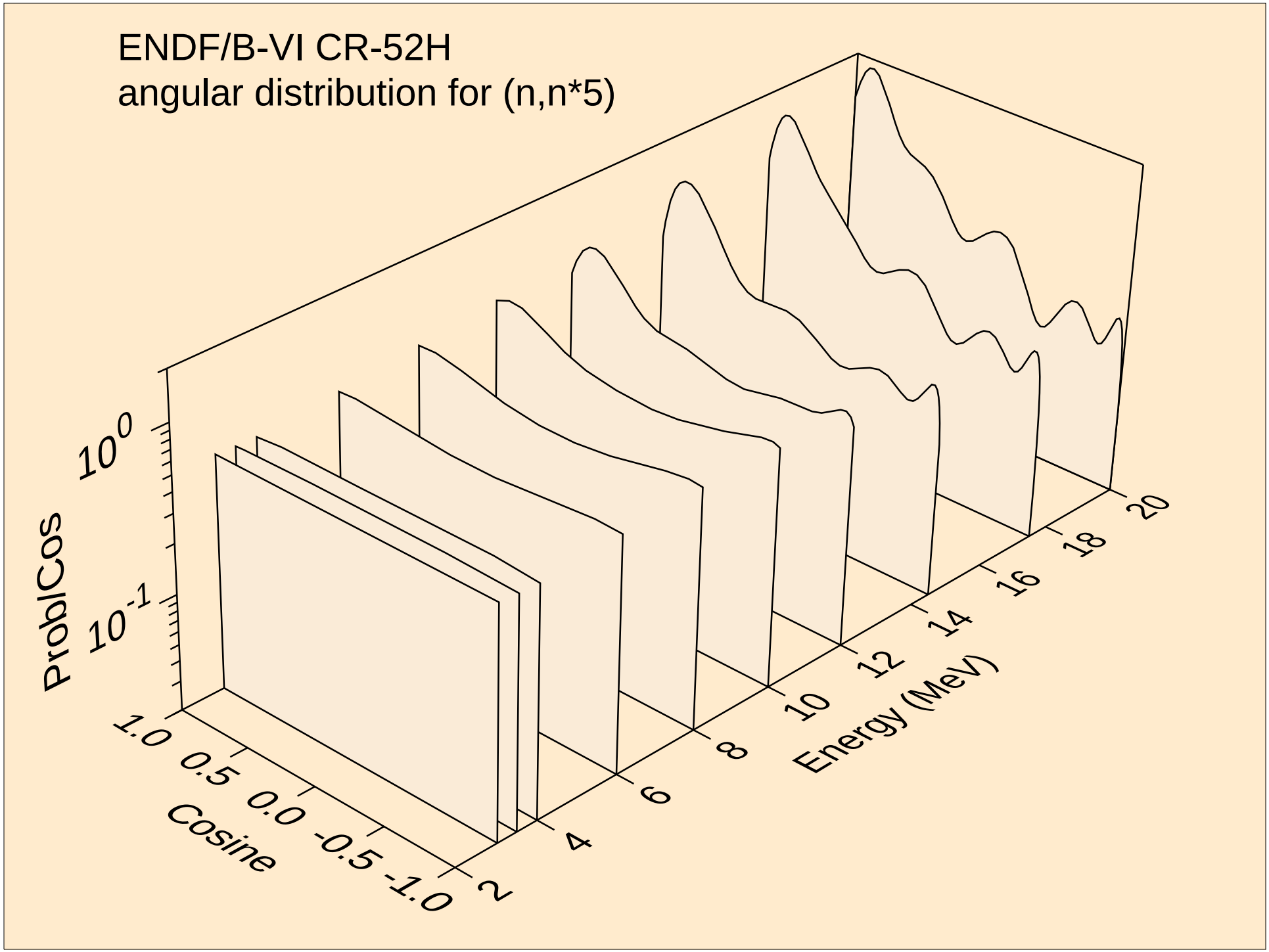

ENDF/B-VI CR-52H
angular distribution for elastic
ProbICos
$10^{1}$
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

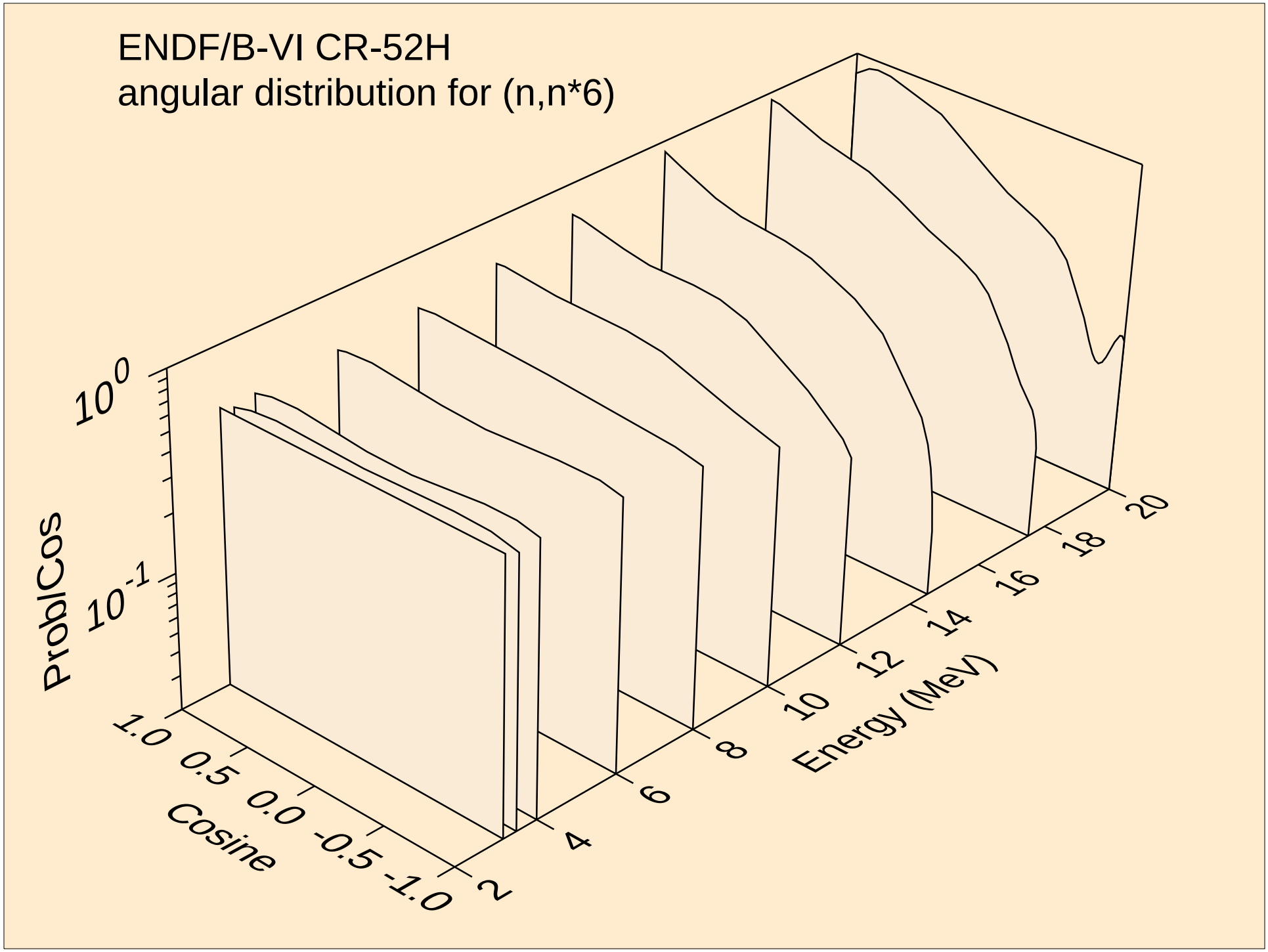

ENDF/B-VI CR-52H
angular distribution for elastic
ProbICos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
Energy (MeV)

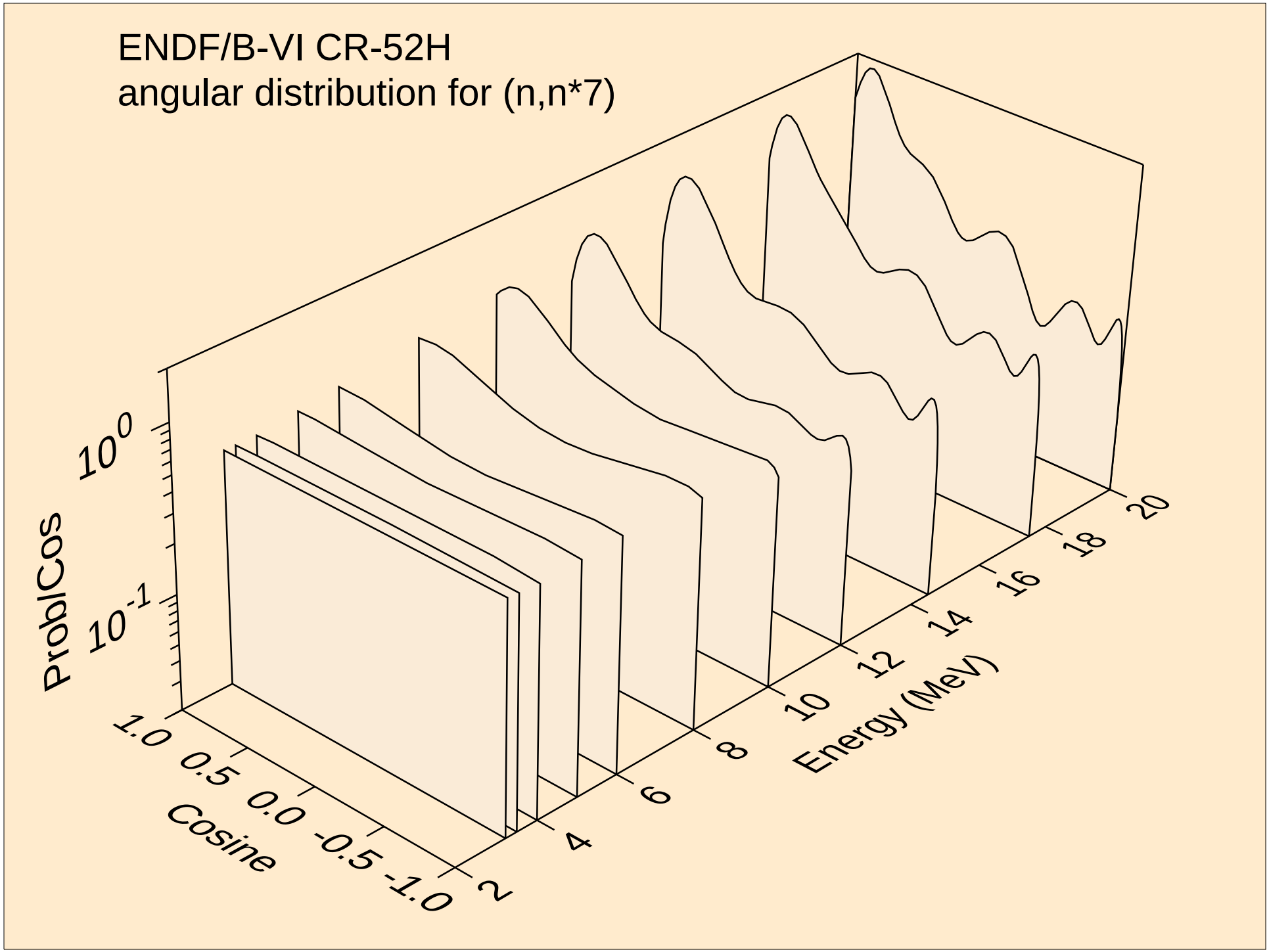

ENDF/B-VI CR-52H
angular distribution for (n,n*1)
Prob\Cos
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

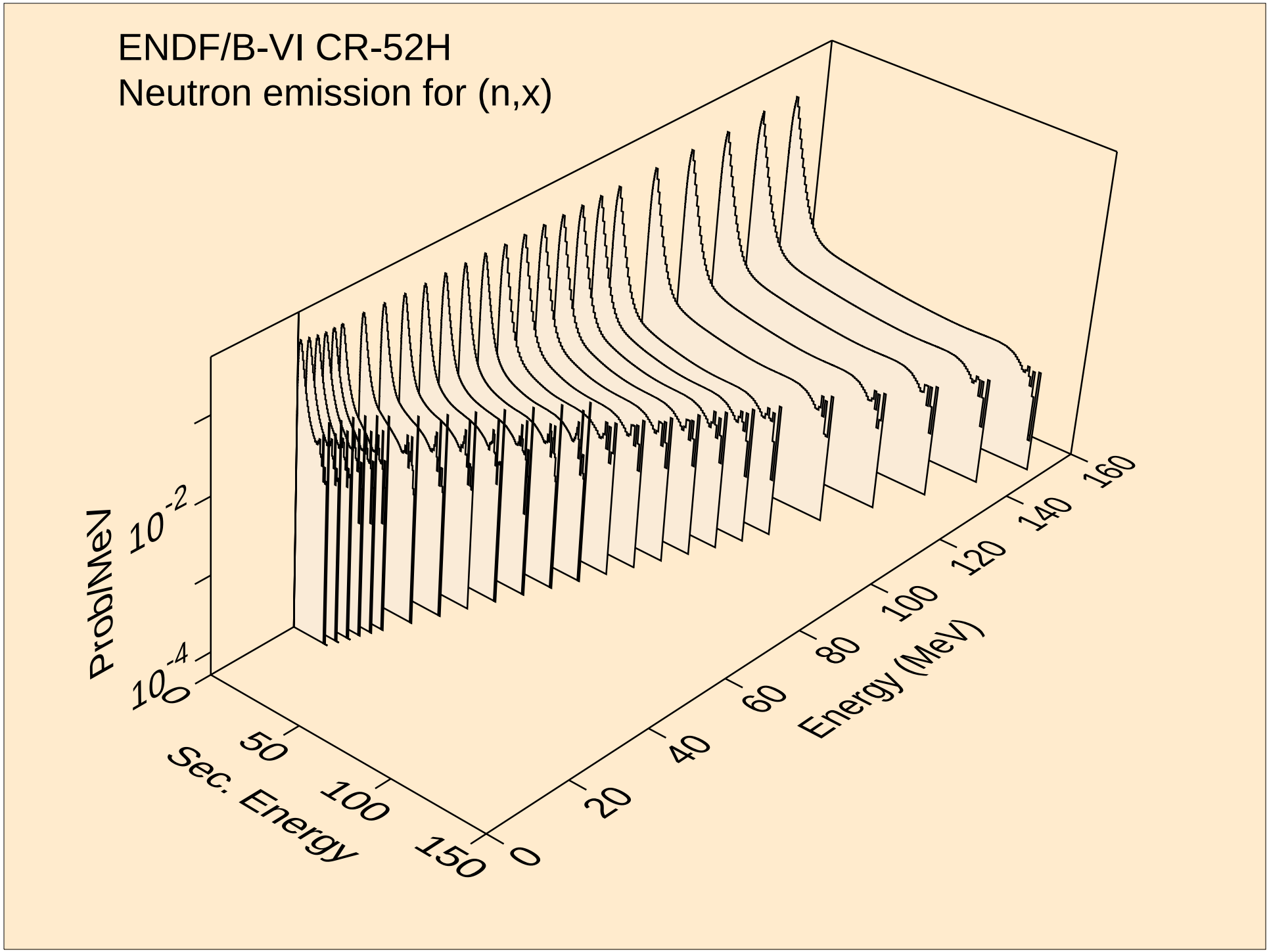

ENDF/B-VI CR-52H
angular distribution for (n,n*2)
Prob\Cos
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

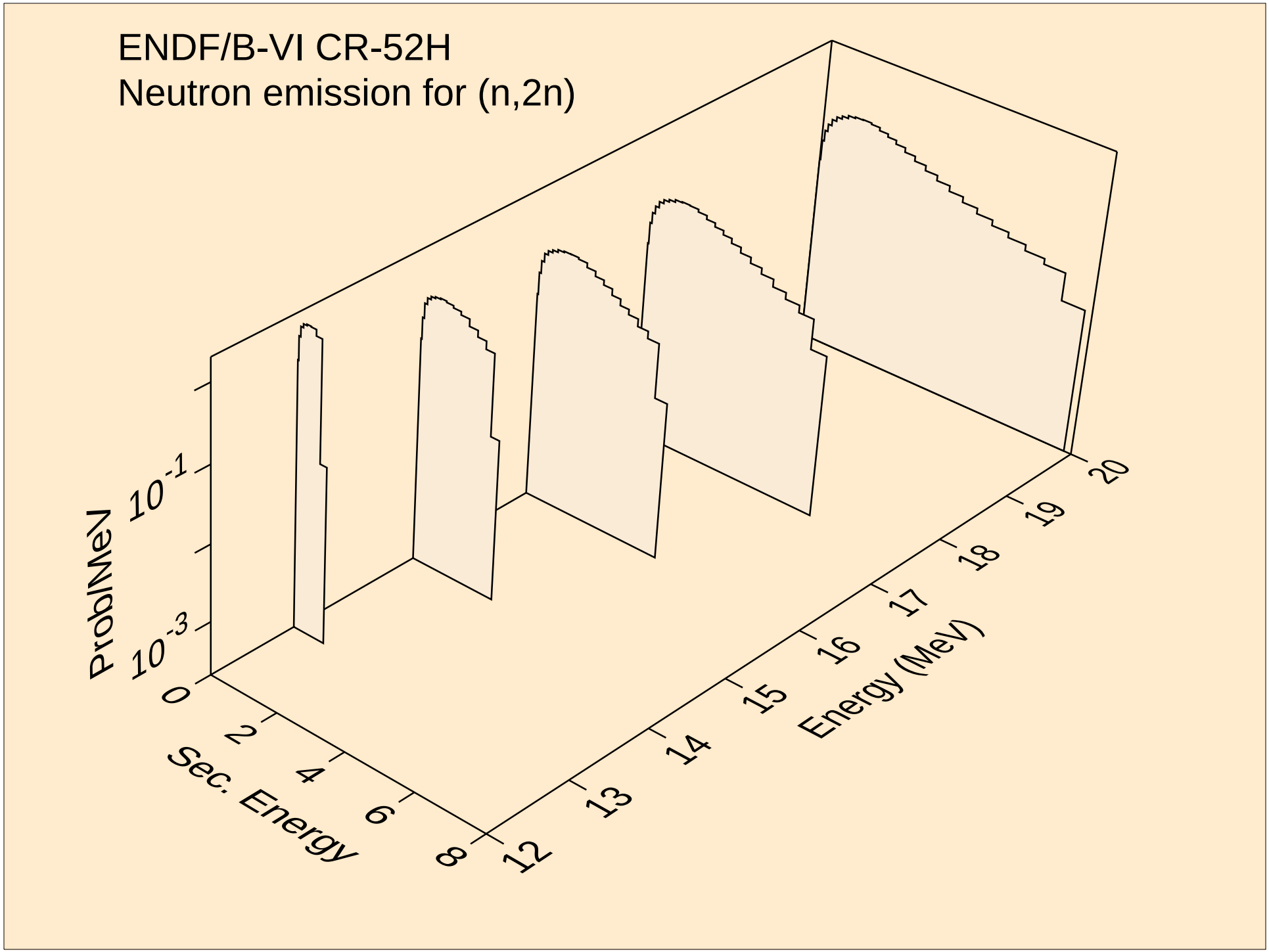

ENDF/B-VI CR-52H
angular distribution for (n,n*4)
Prob\Cos
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

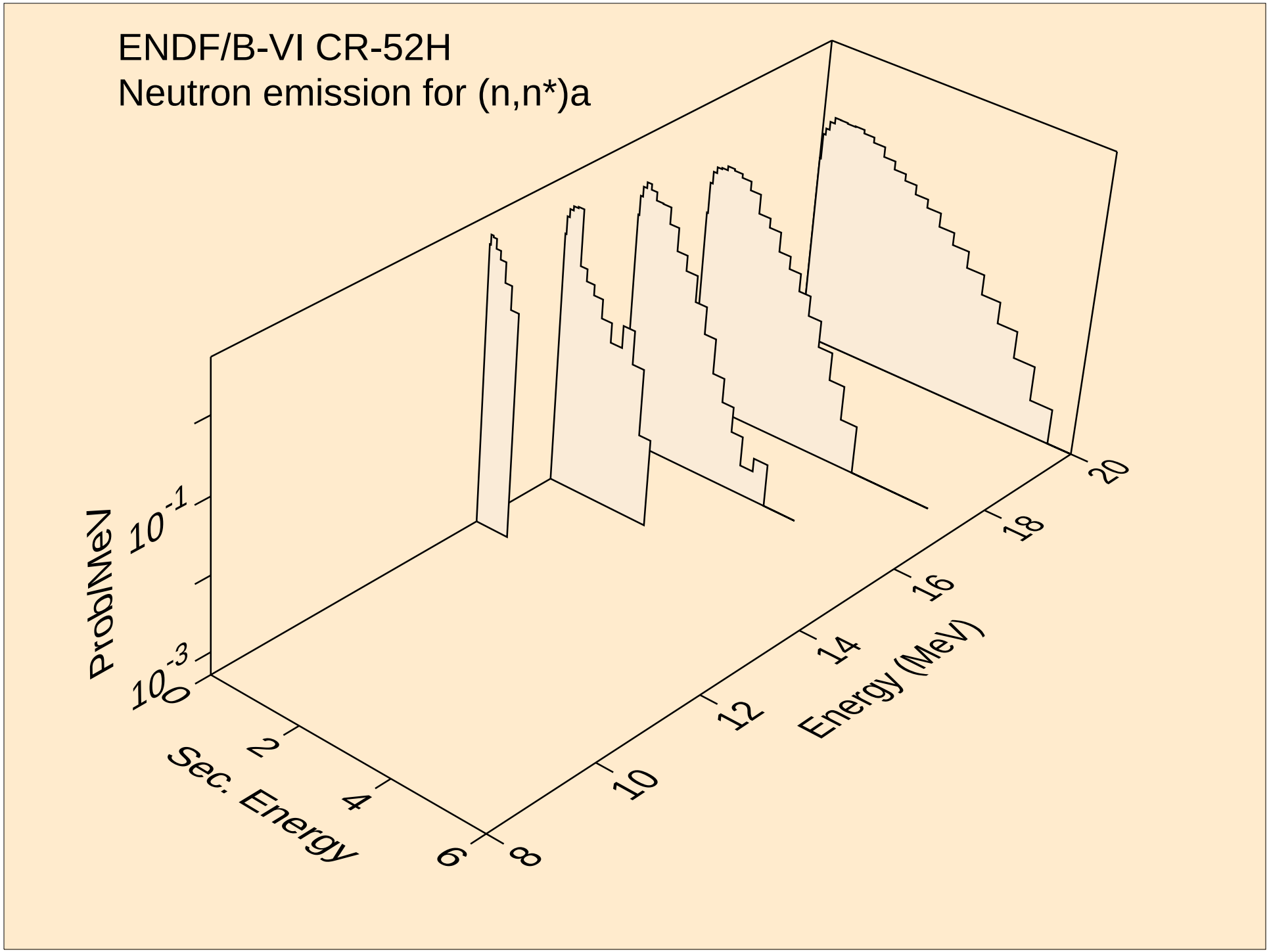

ENDF/B-VI CR-52H
angular distribution for (n,n*5)
Prob\Cos
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

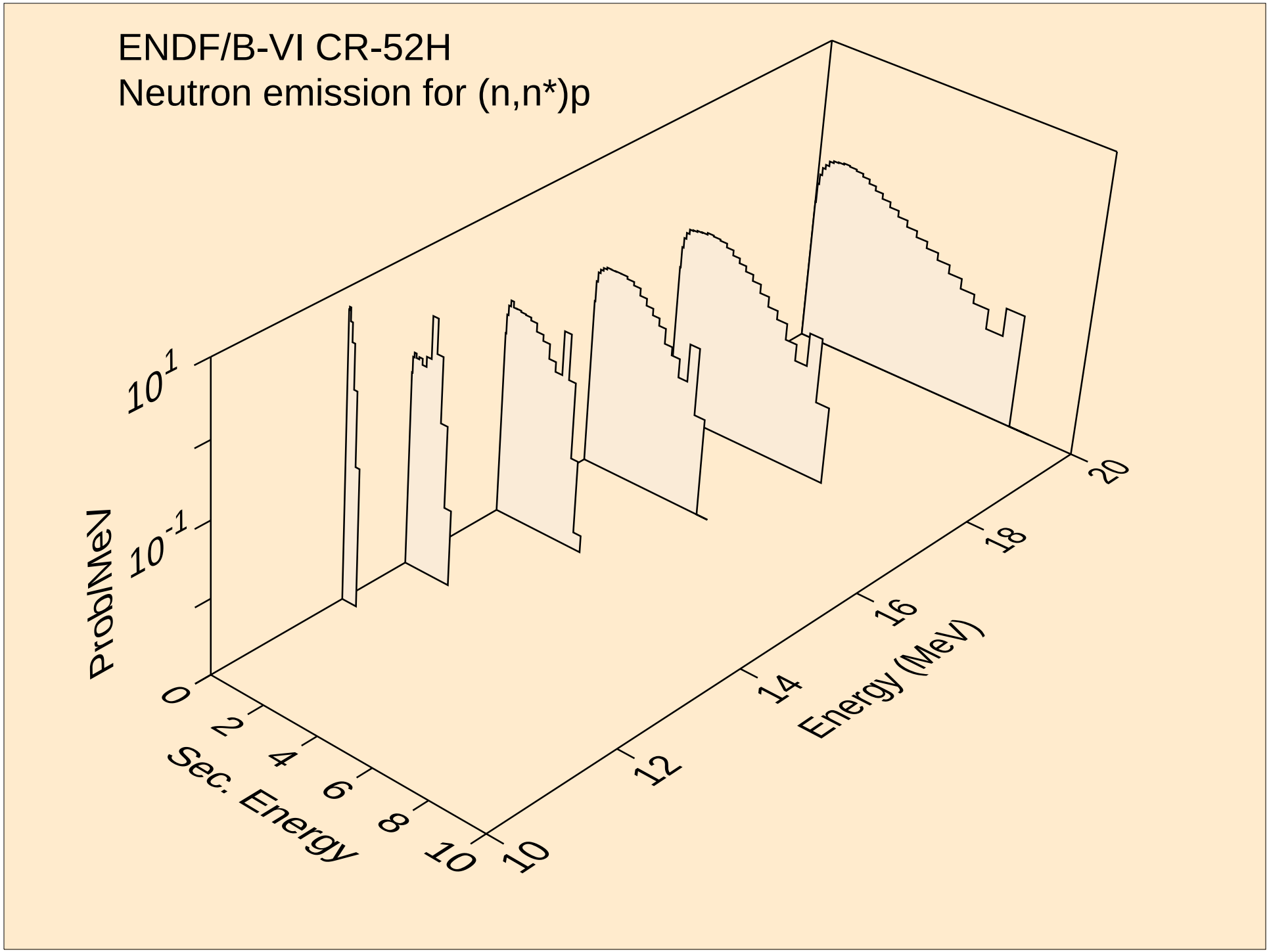

ENDF/B-VI CR-52H
angular distribution for (n,n*6)
Prob\Cos
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

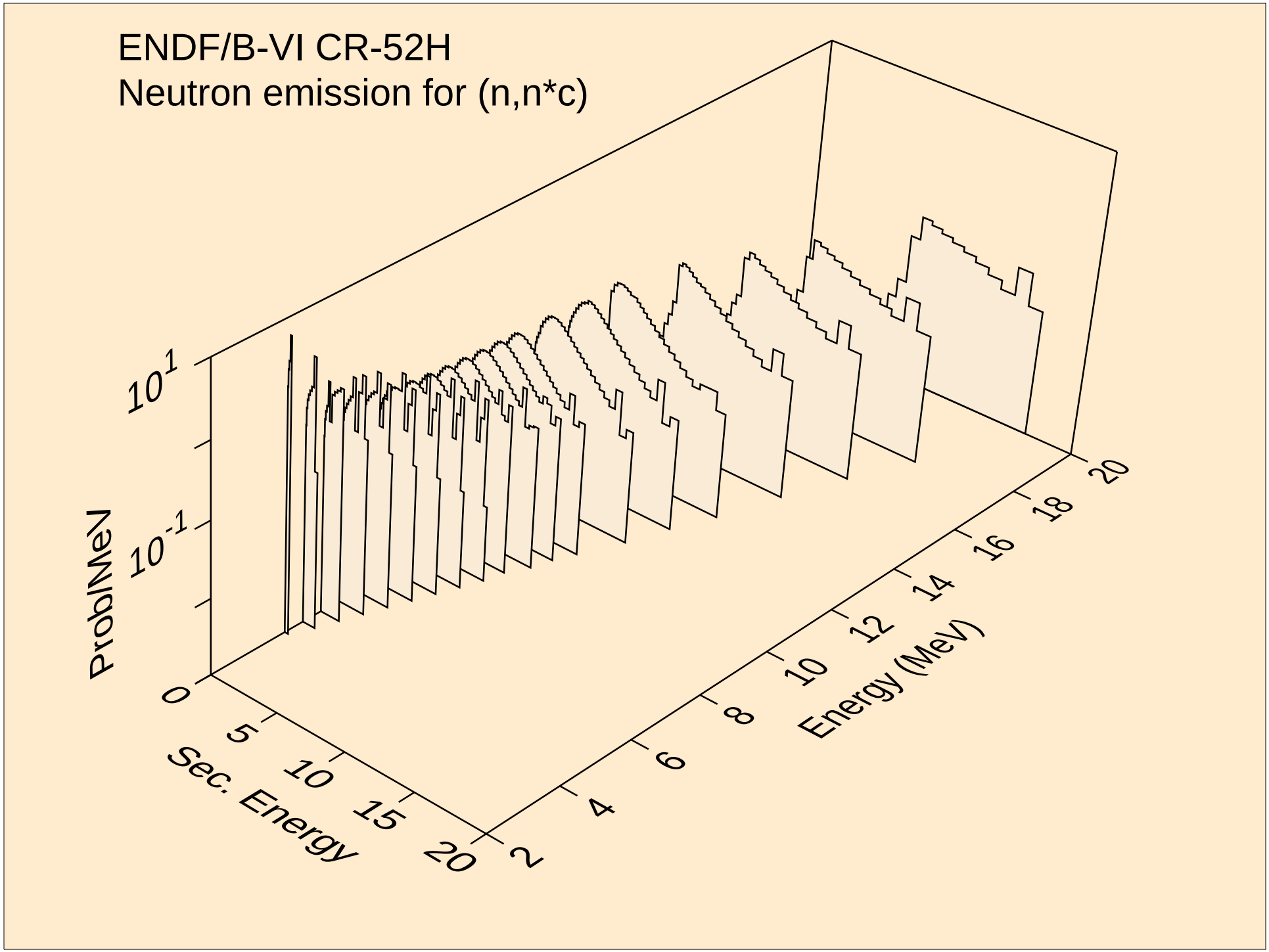

ENDF/B-VI CR-52H
angular distribution for (n,n*7)
Prob\Cos
$10^{0}$
$10^{-1}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

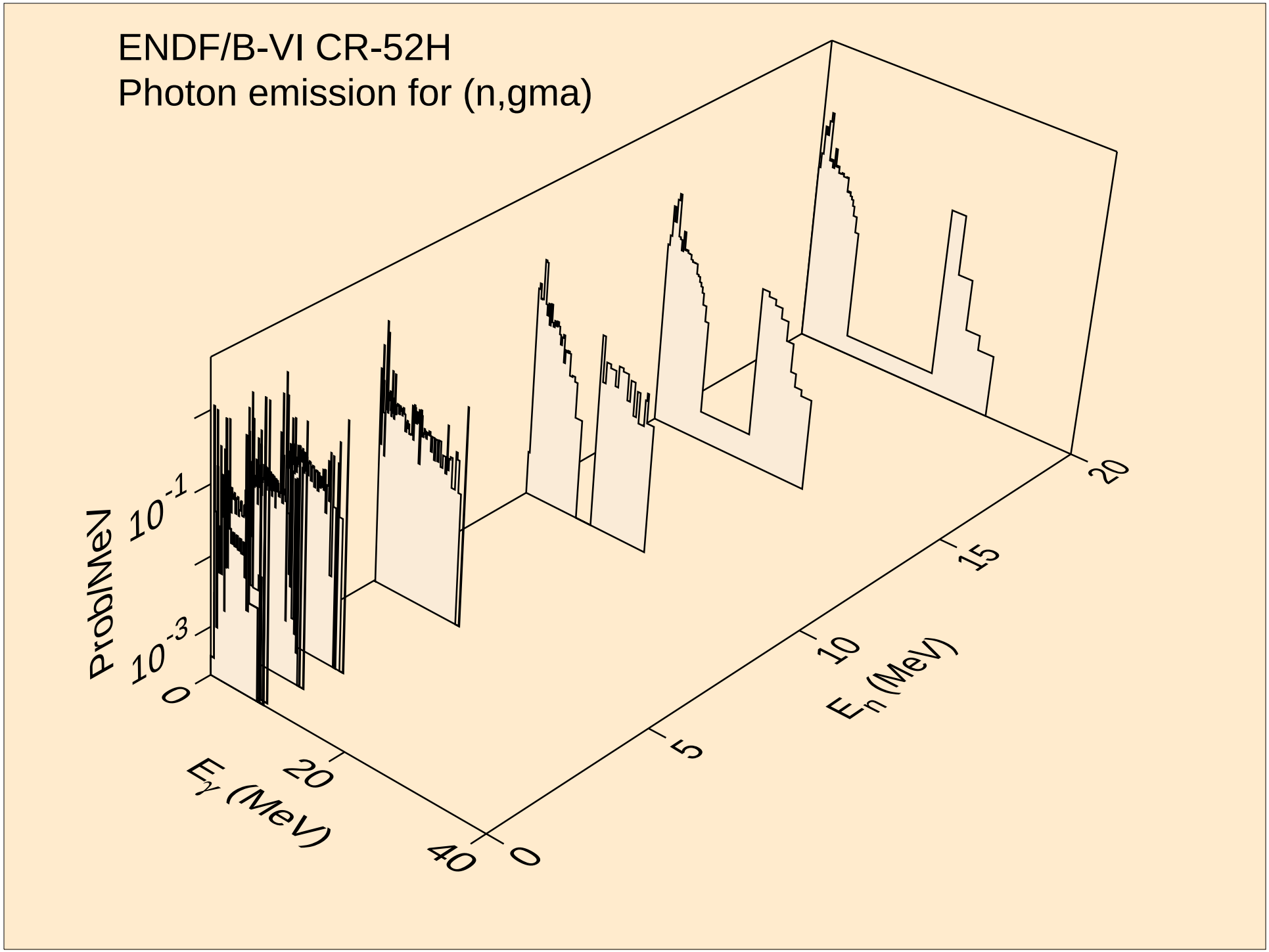

ENDF/B-VI CR-52H
Neutron emission for (n,x)
Prob/MeV
10-2
10-4
0
50
100
150
Sec. Energy
0
20
40
60
80
100
120
140
160
Energy (MeV)

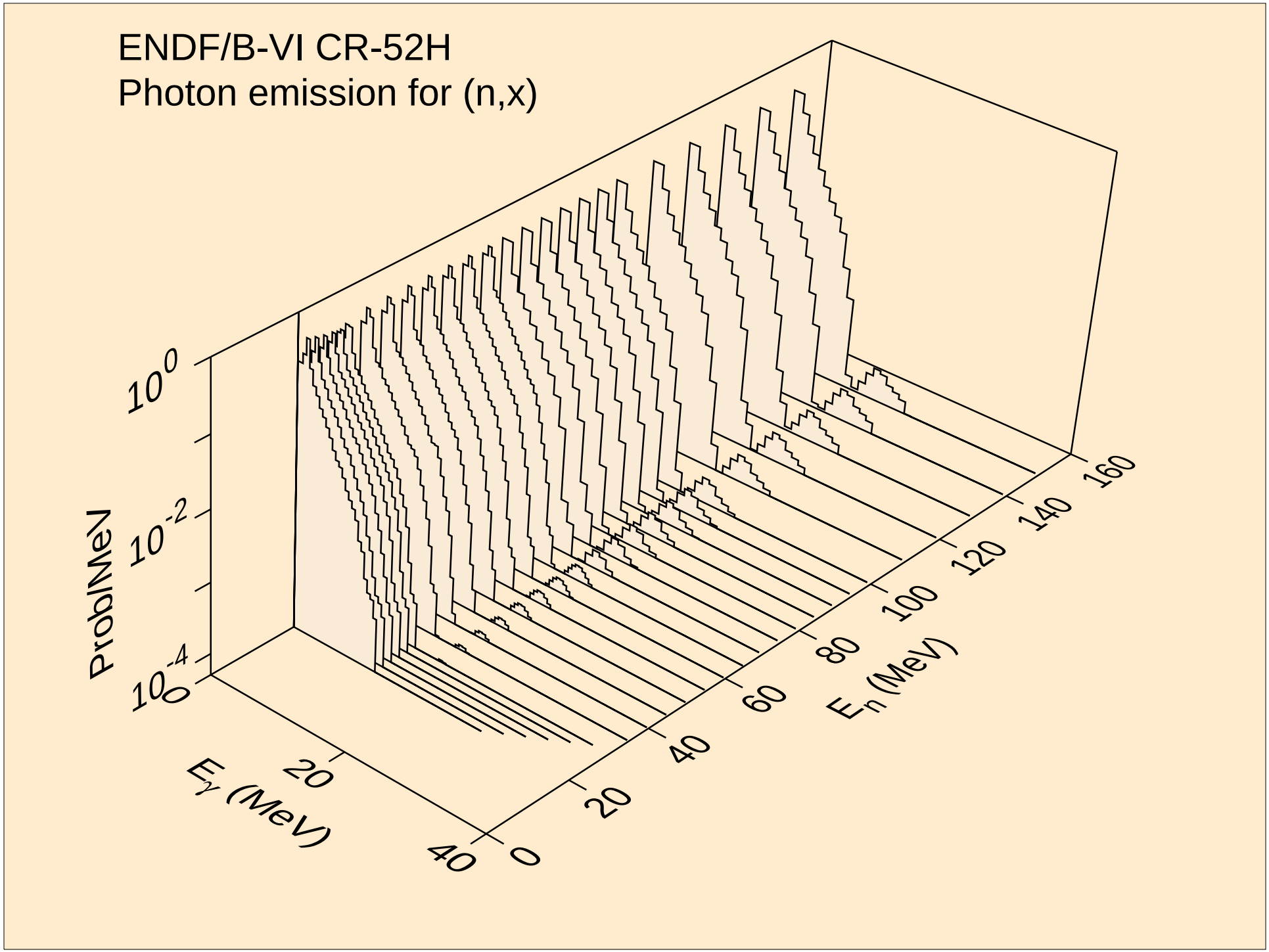

ENDF/B-VI CR-52H
Neutron emission for (n,2n)
Prob/MeV
10-1
10-3
0
2
4
6
8
Sec. Energy
12
13
14
15
16
17
18
19
20
Energy (MeV)

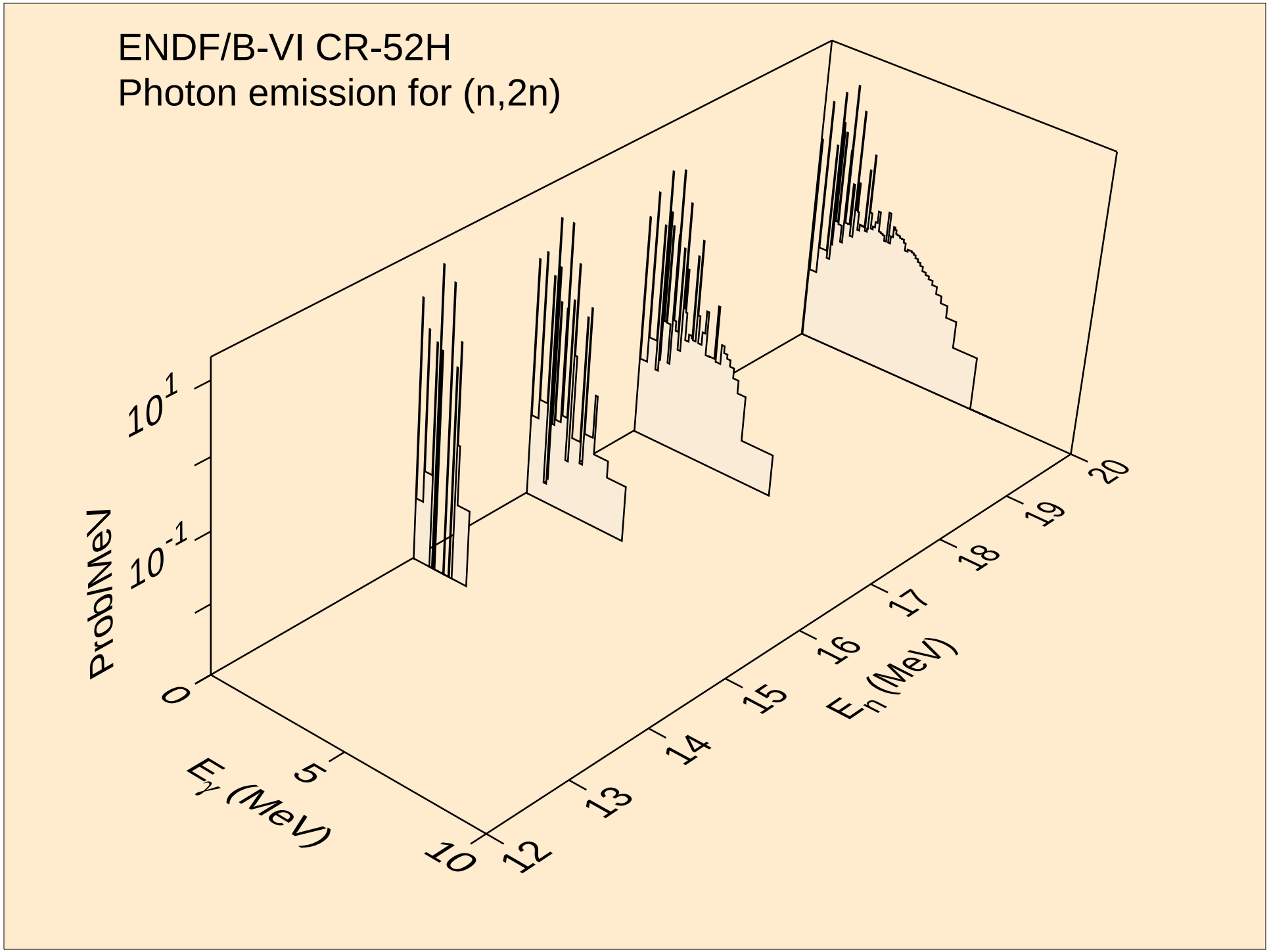

ENDF/B-VI CR-52H
Neutron emission for (n,n*)a
Prob/MeV
10-1
10-3
0
2
4
6
8
Sec. Energy
10
12
14
16
18
20
Energy (MeV)

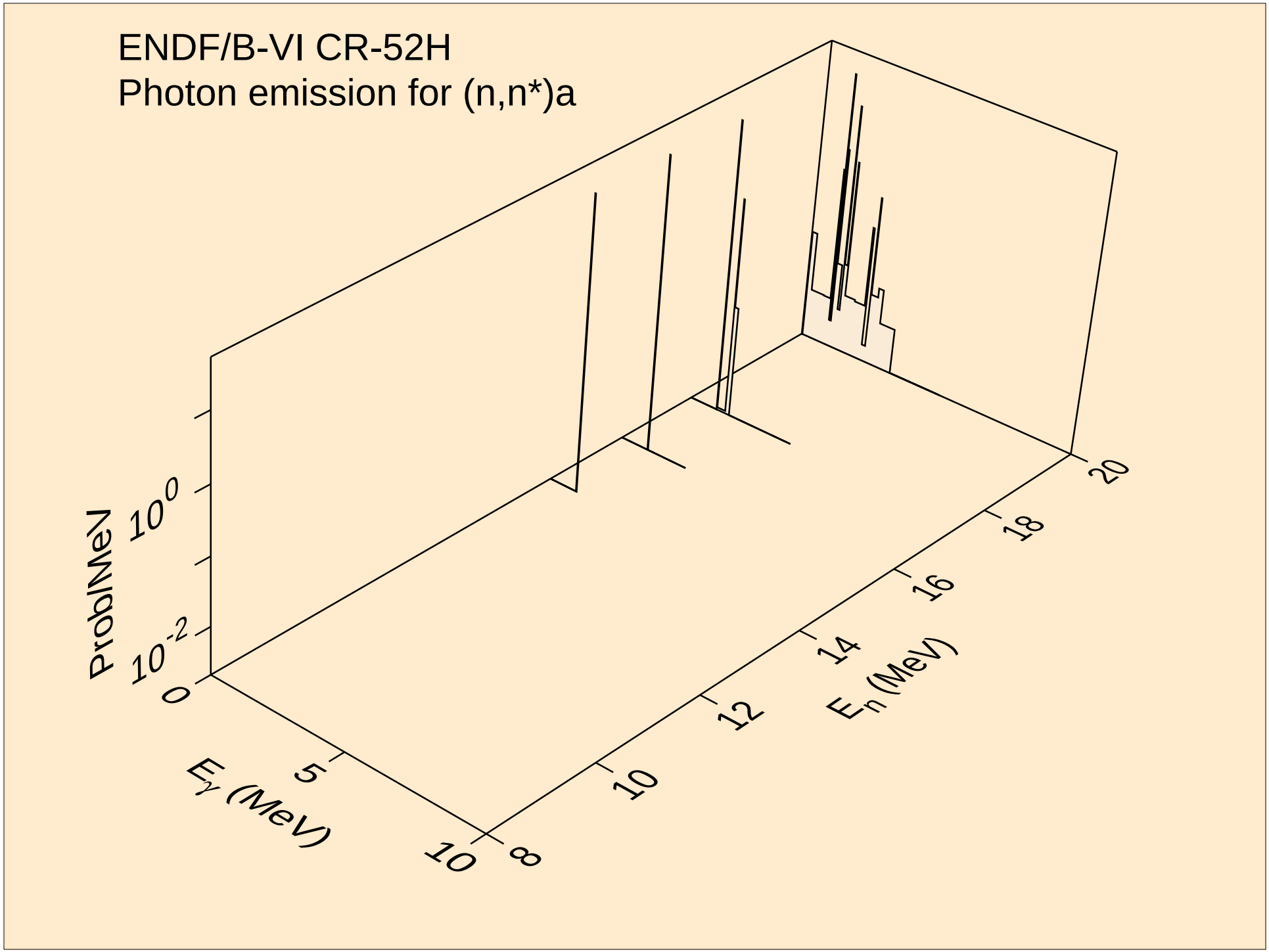

ENDF/B-VI CR-52H
Neutron emission for (n,n*)p
Prob/MeV
$10^{1}$
$10^{-1}$
0
2
4
6
8
10
Sec. Energy
10
12
14
16
18
20
Energy (MeV)

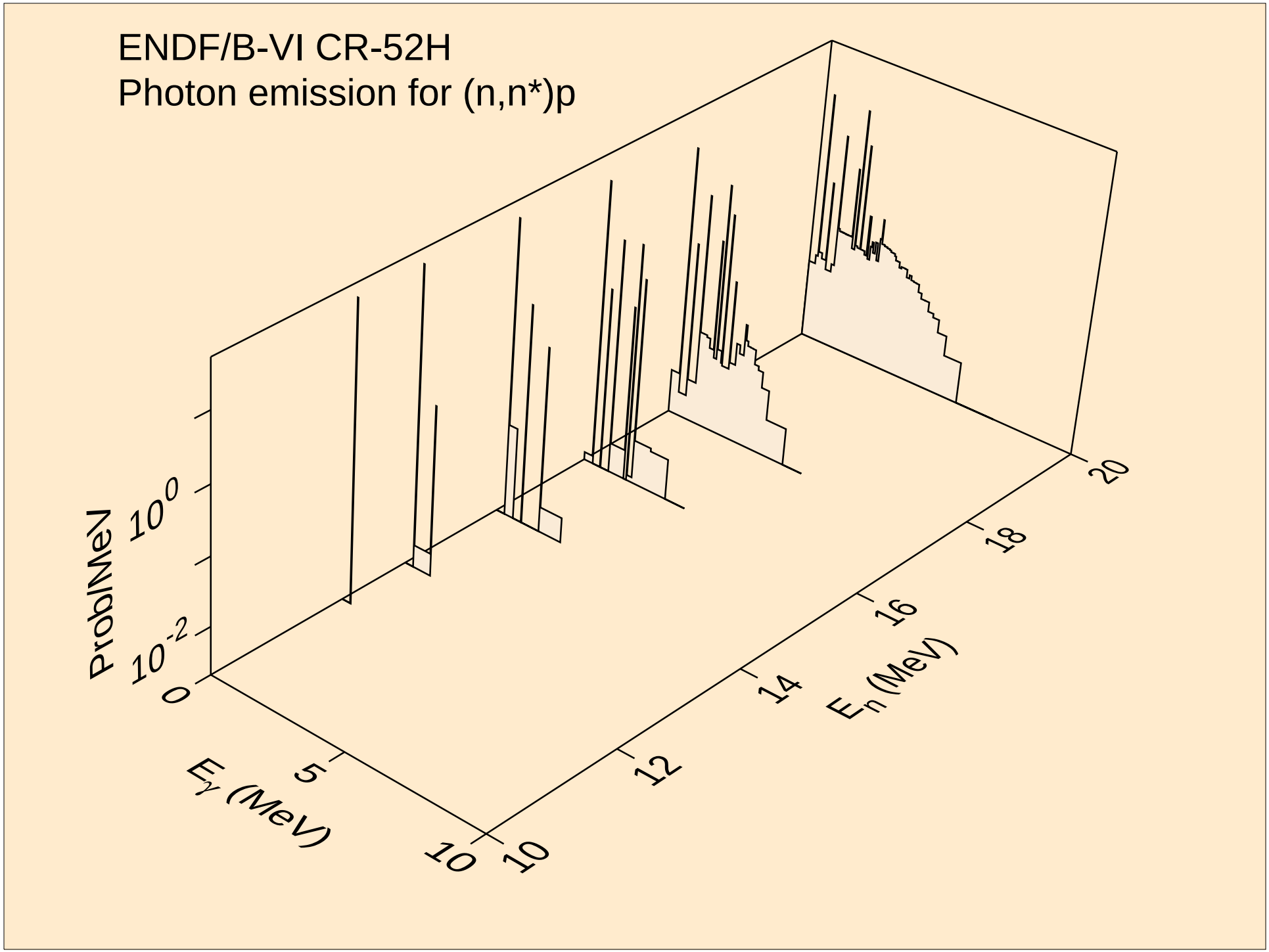

ENDF/B-VI CR-52H
Neutron emission for (n,n*c)
Prob/MeV
$10^{1}$
$10^{-1}$
0
5
10
15
20
Sec. Energy
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

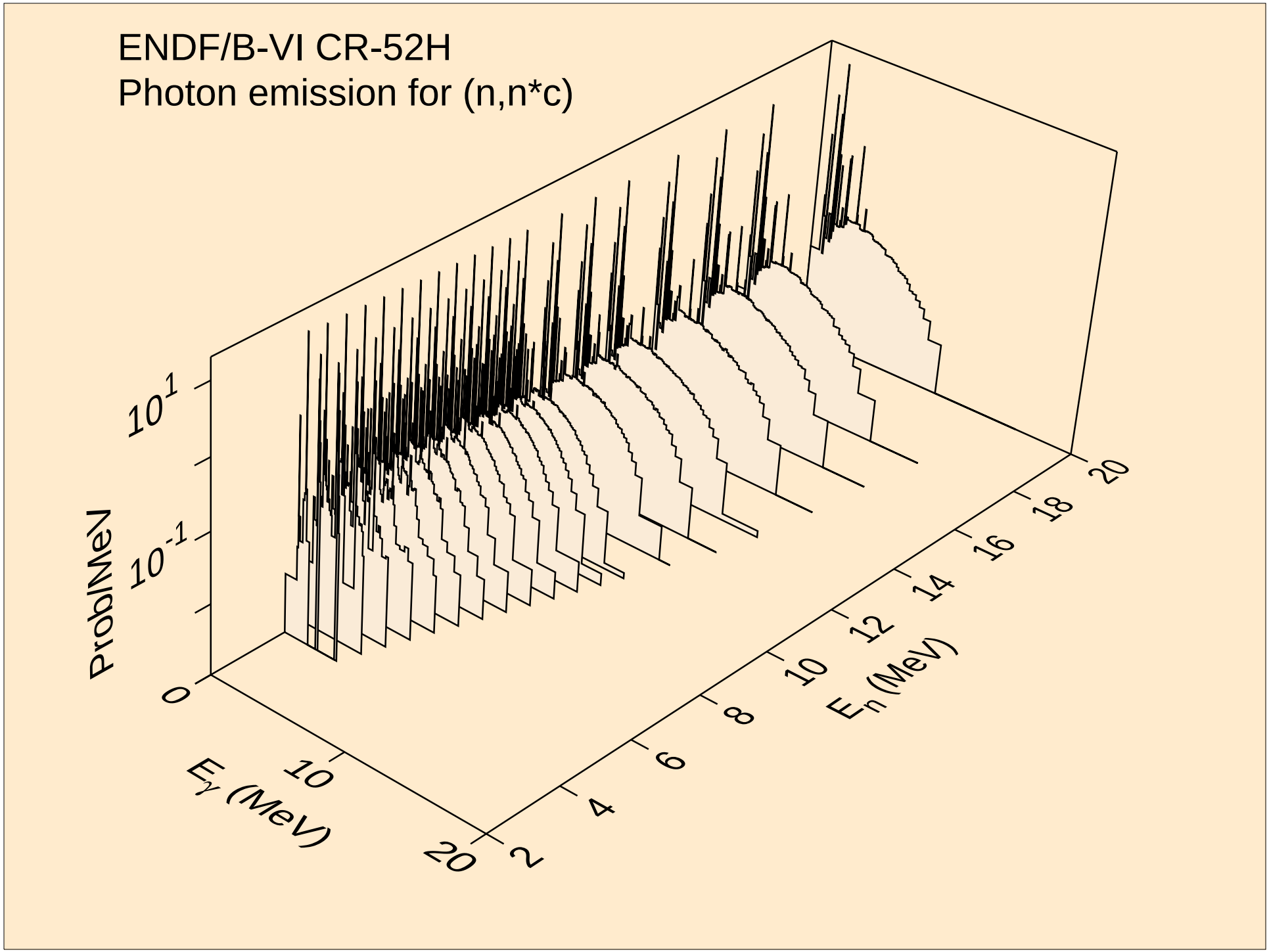

ENDF/B-VI CR-52H
Photon emission for (n,gma)
Prob/MeV
10^-1
10^-3
0
20
40
Eγ (MeV)
0
5
10
15
20
En (MeV)

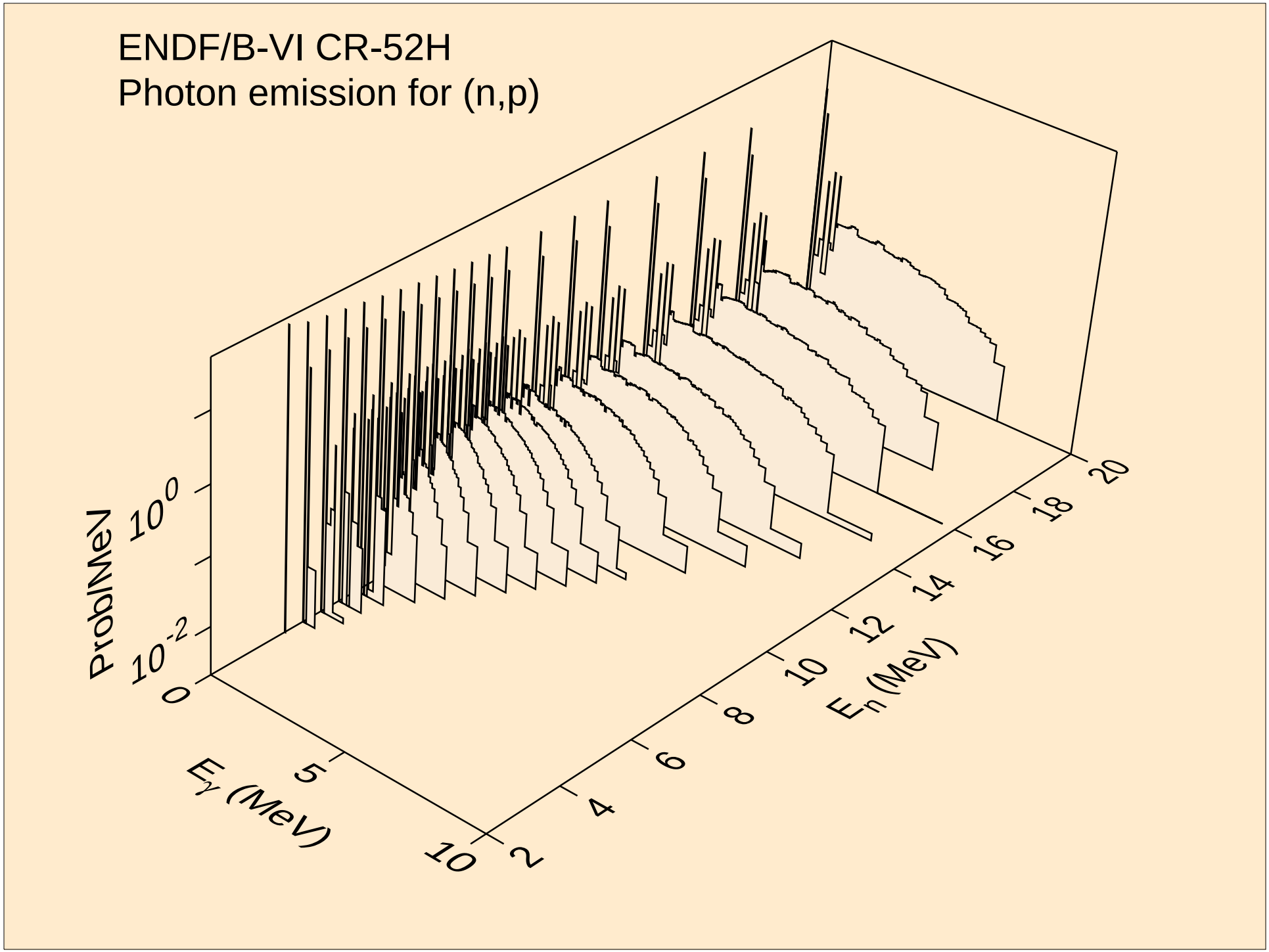

ENDF/B-VI CR-52H
Photon emission for (n,x)
Prob/MeV
$10^{0}$
$10^{-2}$
$10^{-4}$
$E_\gamma$ (MeV)
0
20
40
$E_n$ (MeV)
0
20
40
60
80
100
120
140
160

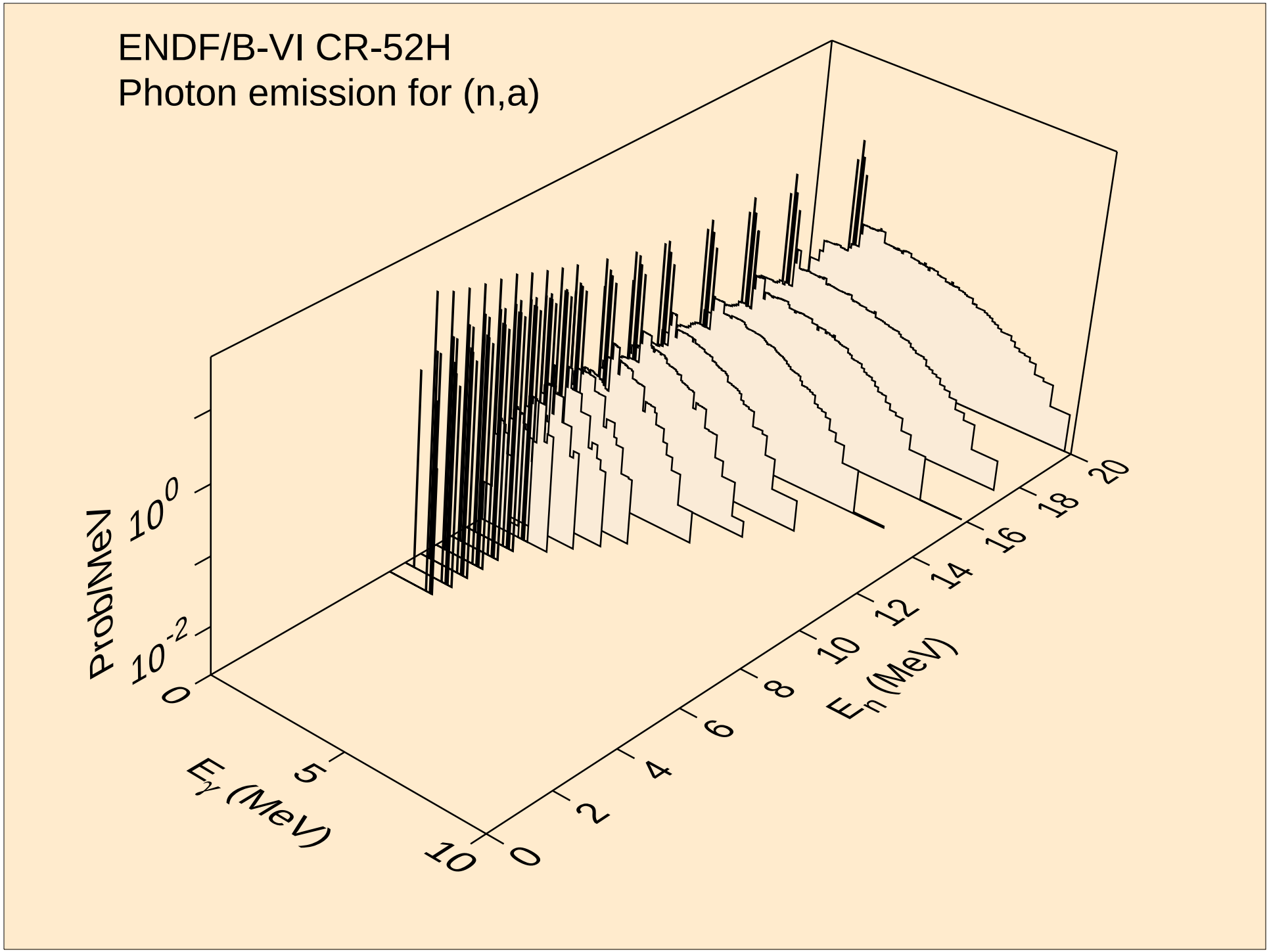

ENDF/B-VI CR-52H
Photon emission for (n,2n)
Prob/MeV
$10^{1}$
$10^{-1}$
0
5
10
$E_\gamma$ (MeV)
12
13
14
15
16
17
18
19
20
$E_n$ (MeV)

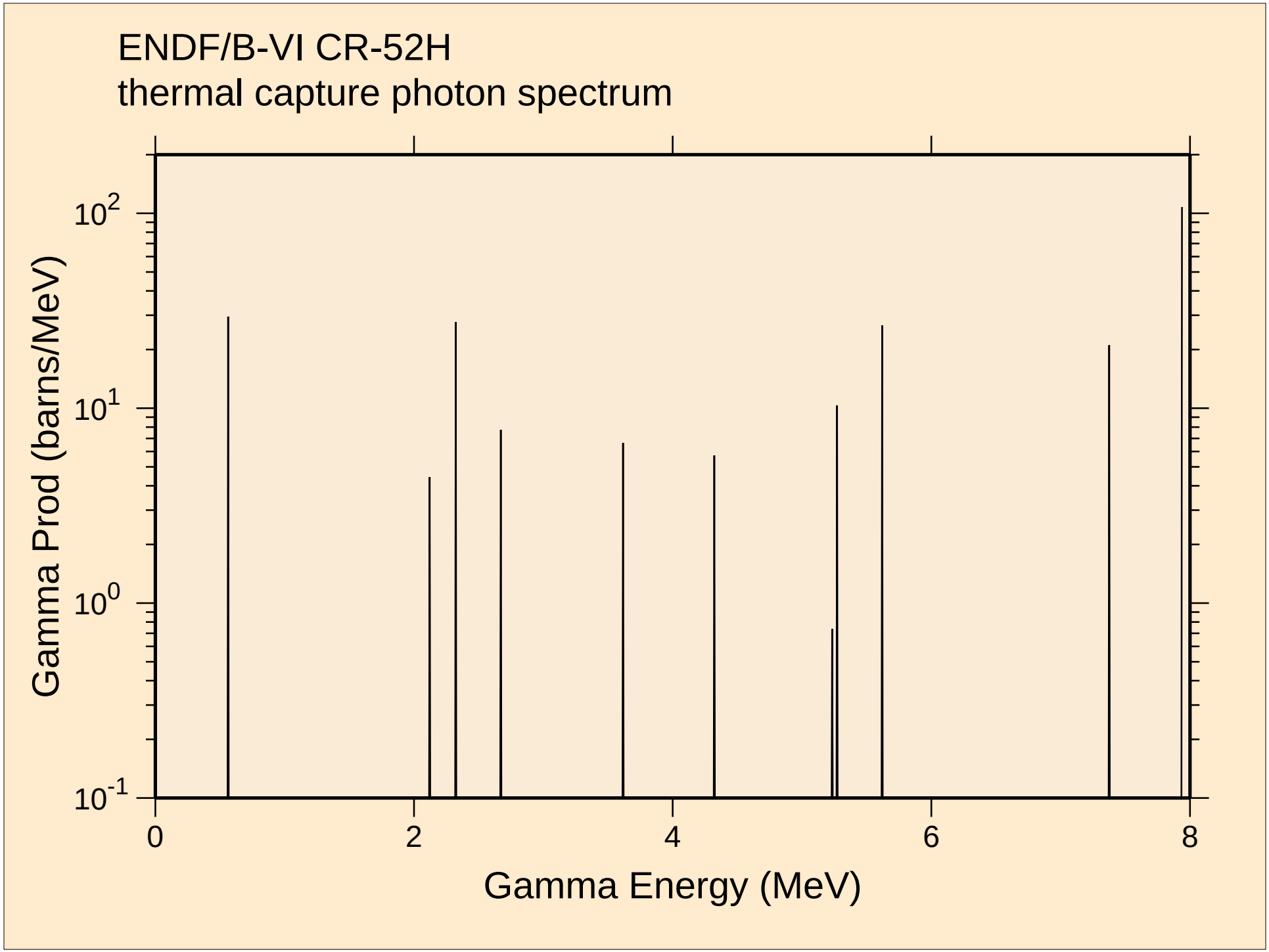

ENDF/B-VI CR-52H
Photon emission for (n,n*)a
Prob/MeV
$10^{0}$
$10^{-2}$
0
$E_\gamma$ (MeV)
5
10
8
10
12
14
16
18
20
$E_n$ (MeV)

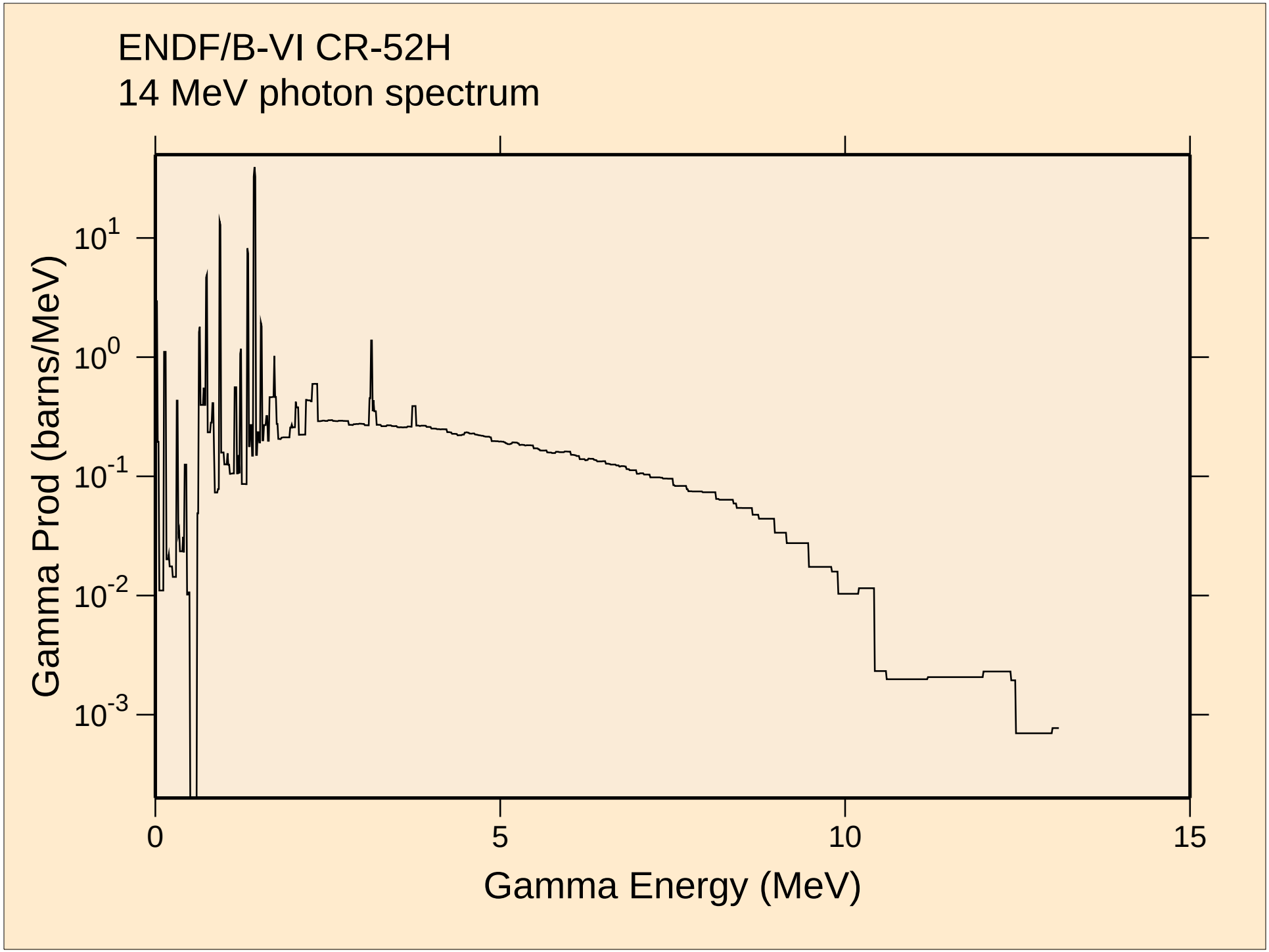

ENDF/B-VI CR-52H
Photon emission for (n,n*)p
Prob/MeV
$10^{0}$
$10^{-2}$
0
$E_\gamma$ (MeV)
5
10
10
12
14
16
18
20
$E_n$ (MeV)

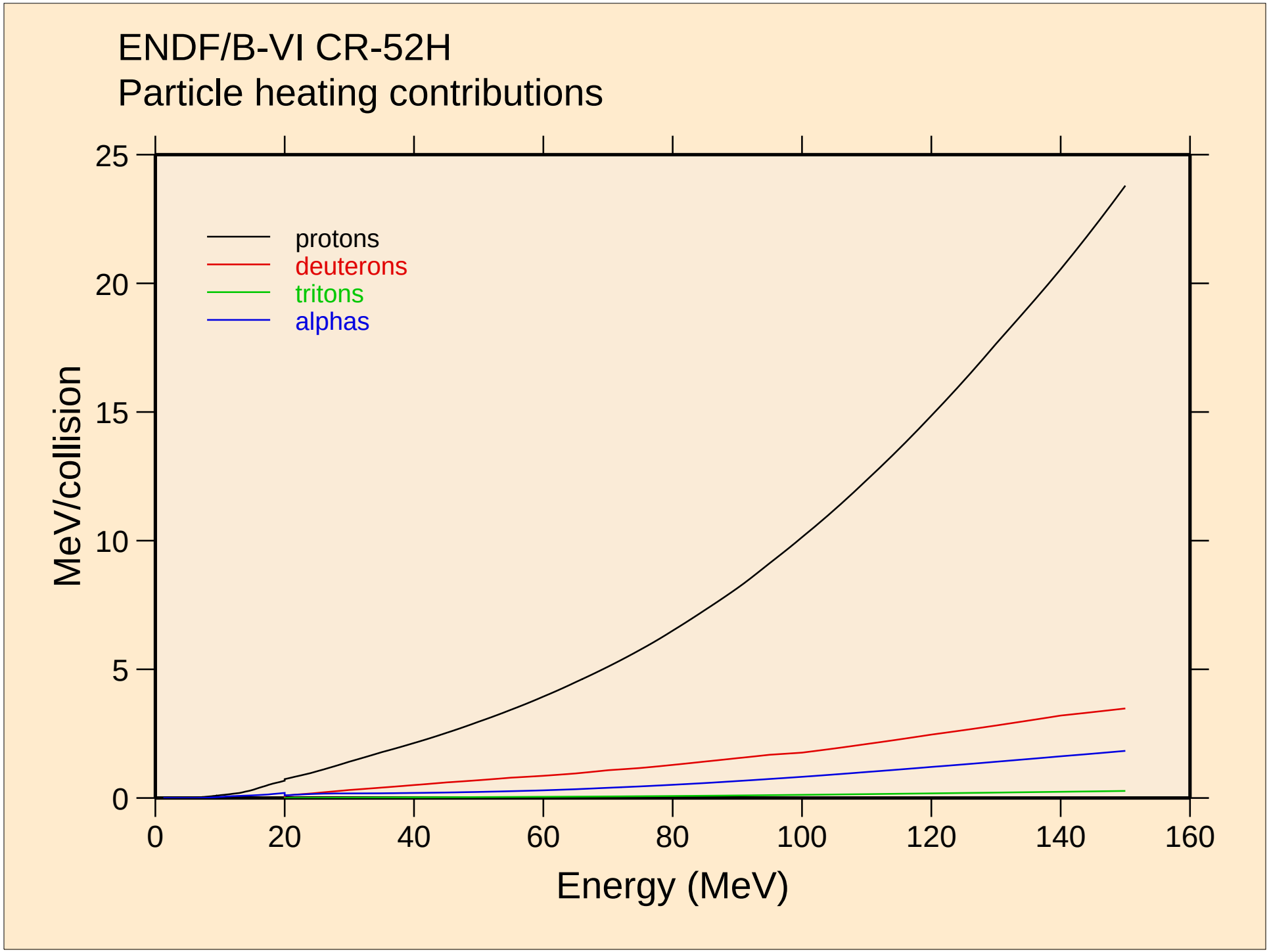

ENDF/B-VI CR-52H
Photon emission for (n,n*c)
Prob/MeV
$10^{1}$
$10^{-1}$
0
10
20
$E_\gamma$ (MeV)
2
4
6
8
10
12
14
16
18
20
$E_n$ (MeV)

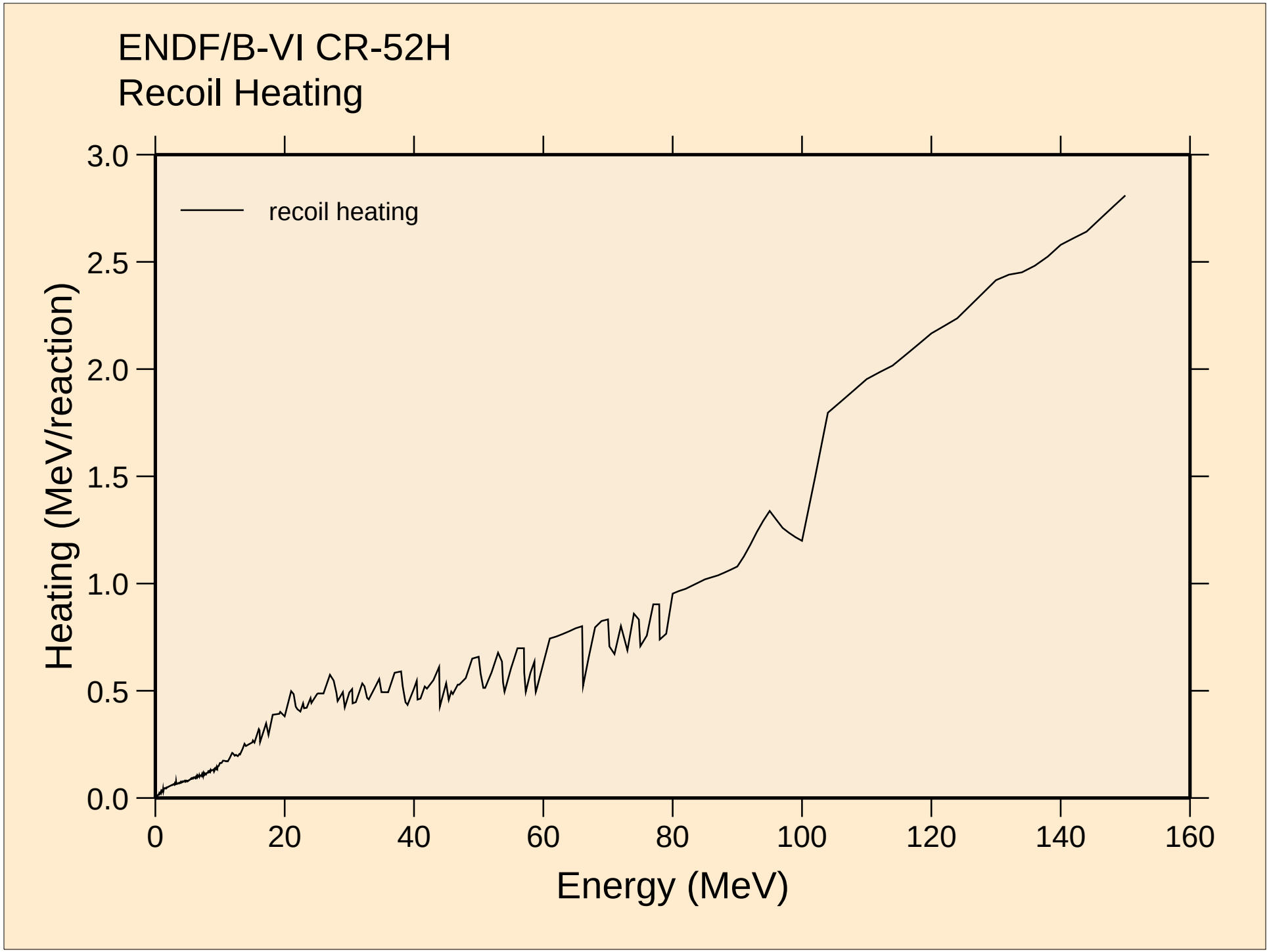

ENDF/B-VI CR-52H
Photon emission for (n,p)
Prob/MeV
$10^0$
$10^{-2}$
0
$E_\gamma$ (MeV)
5
10
2
4
6
8
10
12
14
16
18
20
$E_n$ (MeV)

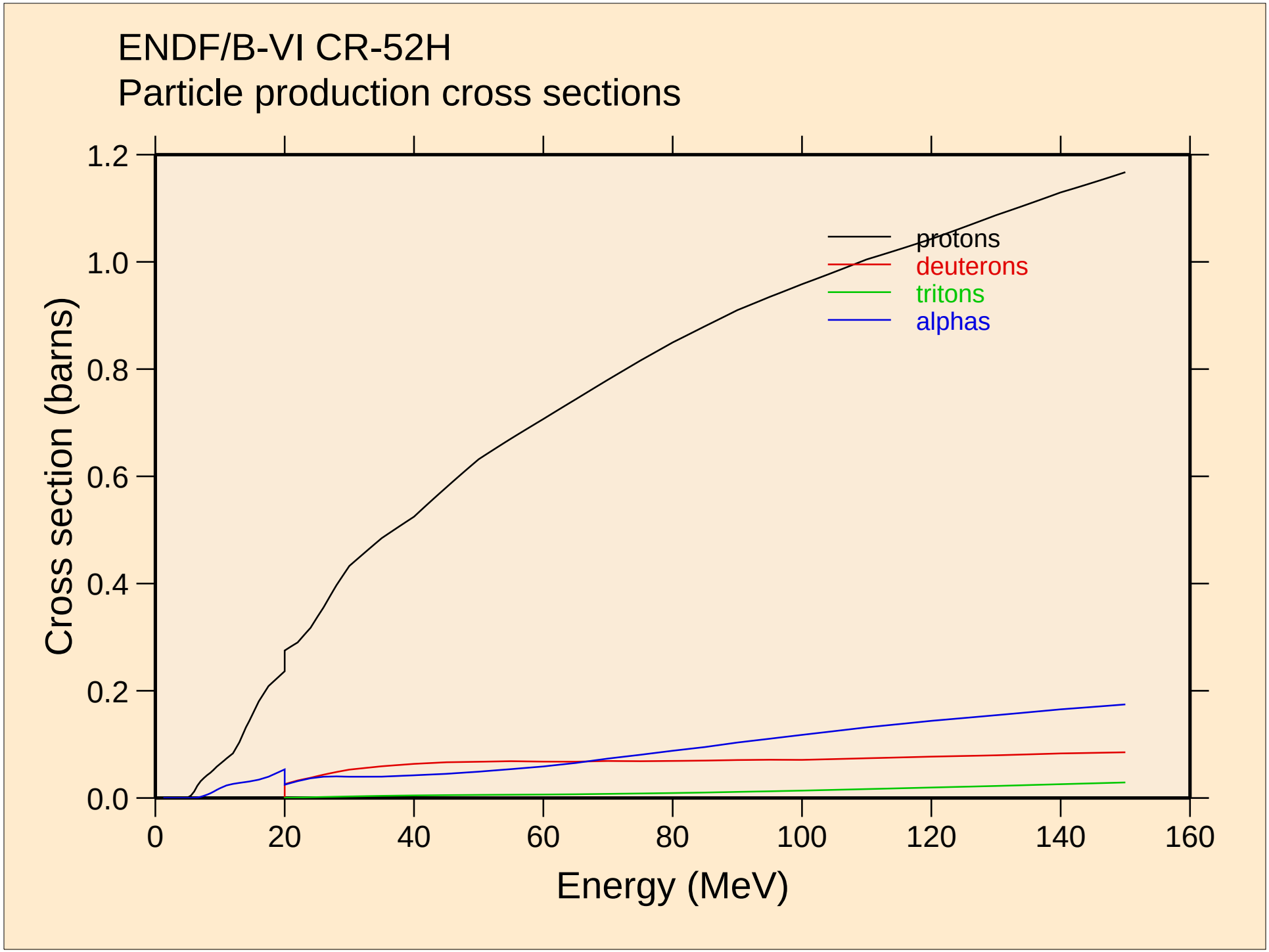

ENDF/B-VI CR-52H
Photon emission for (n,a)
Prob/MeV
$10^{0}$
$10^{-2}$
0
$E_\gamma$ (MeV)
5
10
0
2
4
6
8
10
12
14
16
18
20
$E_n$ (MeV)

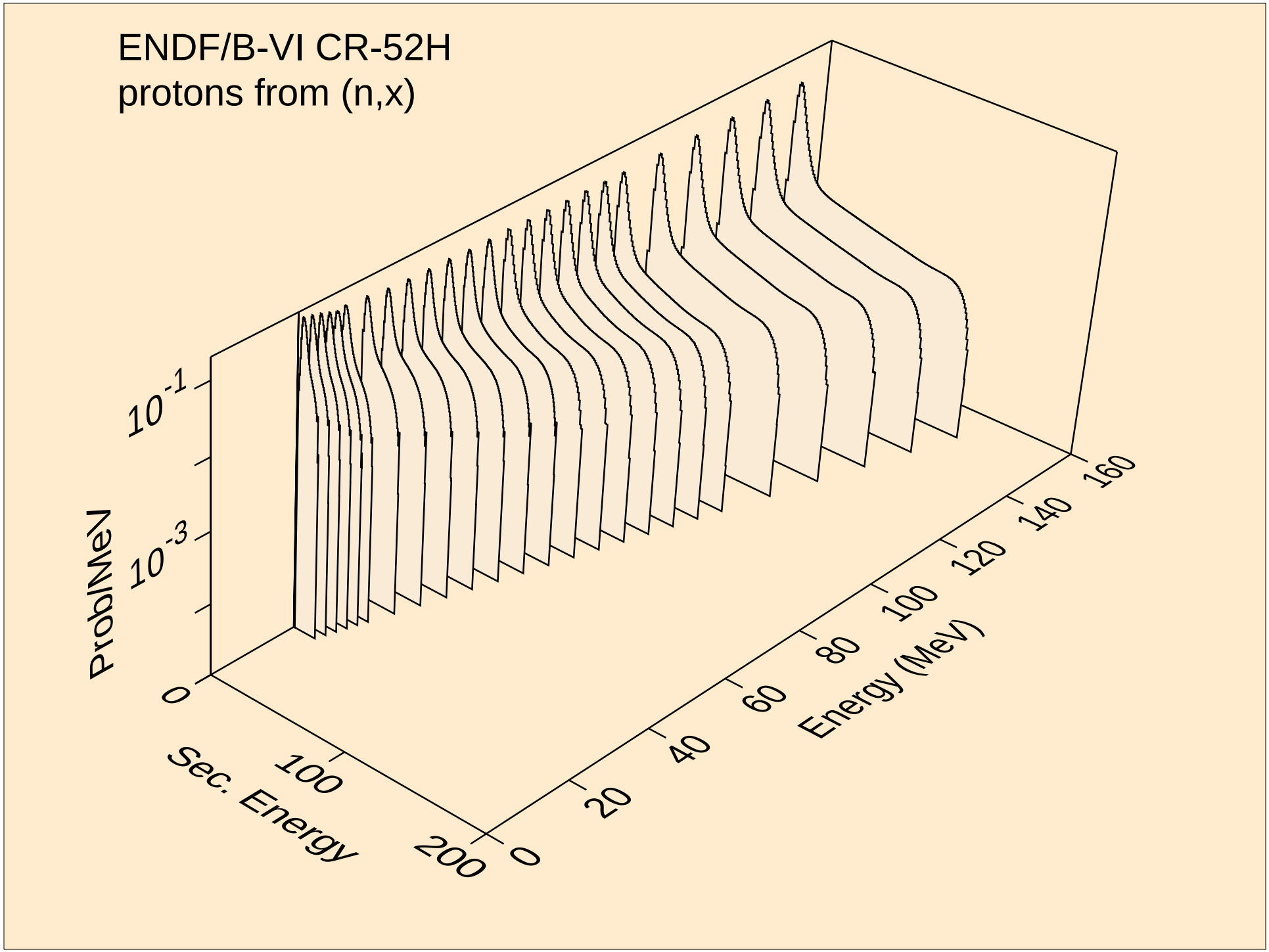

ENDF/B-VI CR-52H
thermal capture photon spectrum
Gamma Prod (barns/MeV)
$10^{2}$
$10^{1}$
$10^{0}$
$10^{-1}$
0
2
4
6
8
Gamma Energy (MeV)

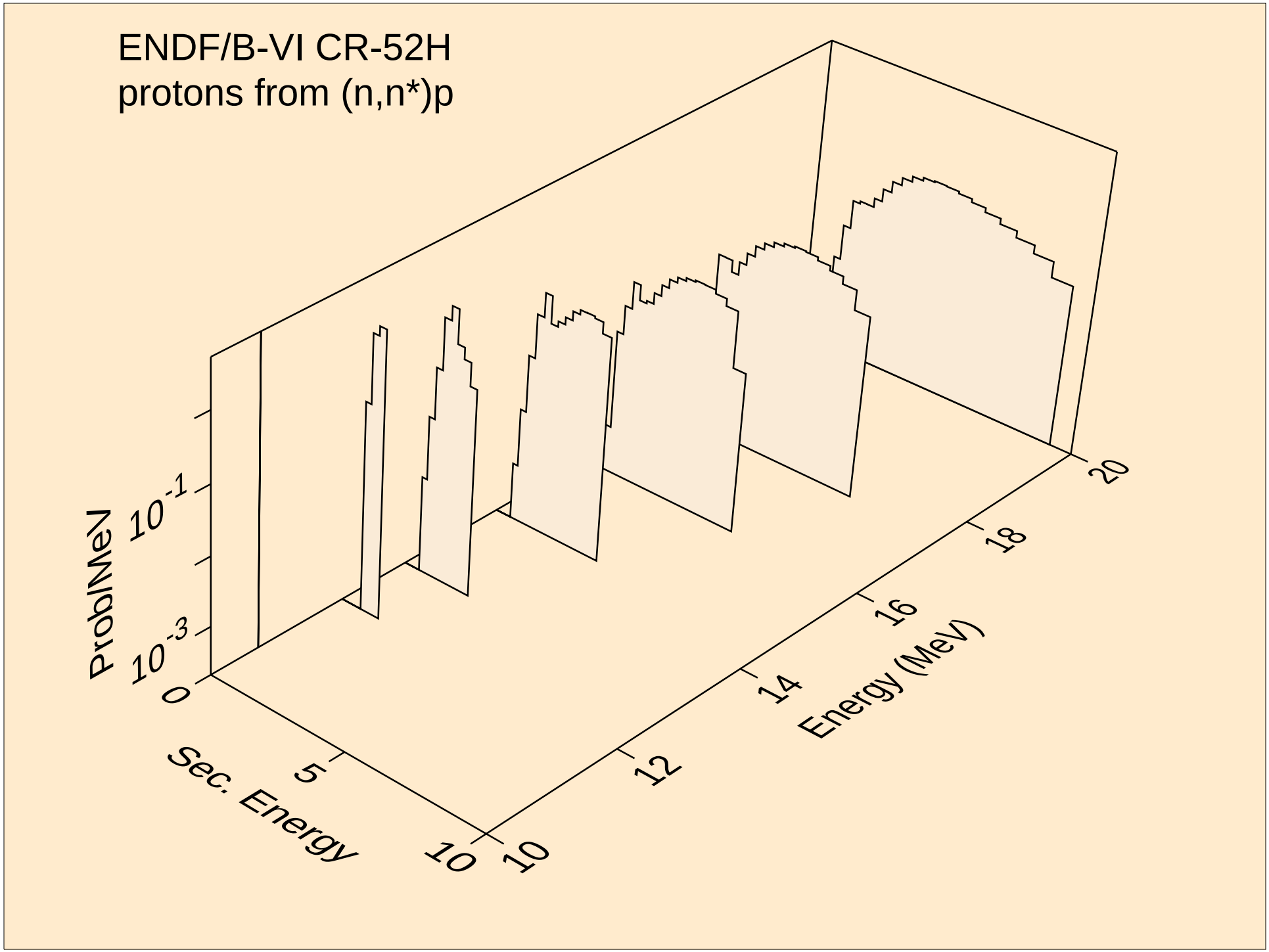

ENDF/B-VI CR-52H
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^1
10^0
10^-1
10^-2
10^-3
0
5
10
15
Gamma Energy (MeV)

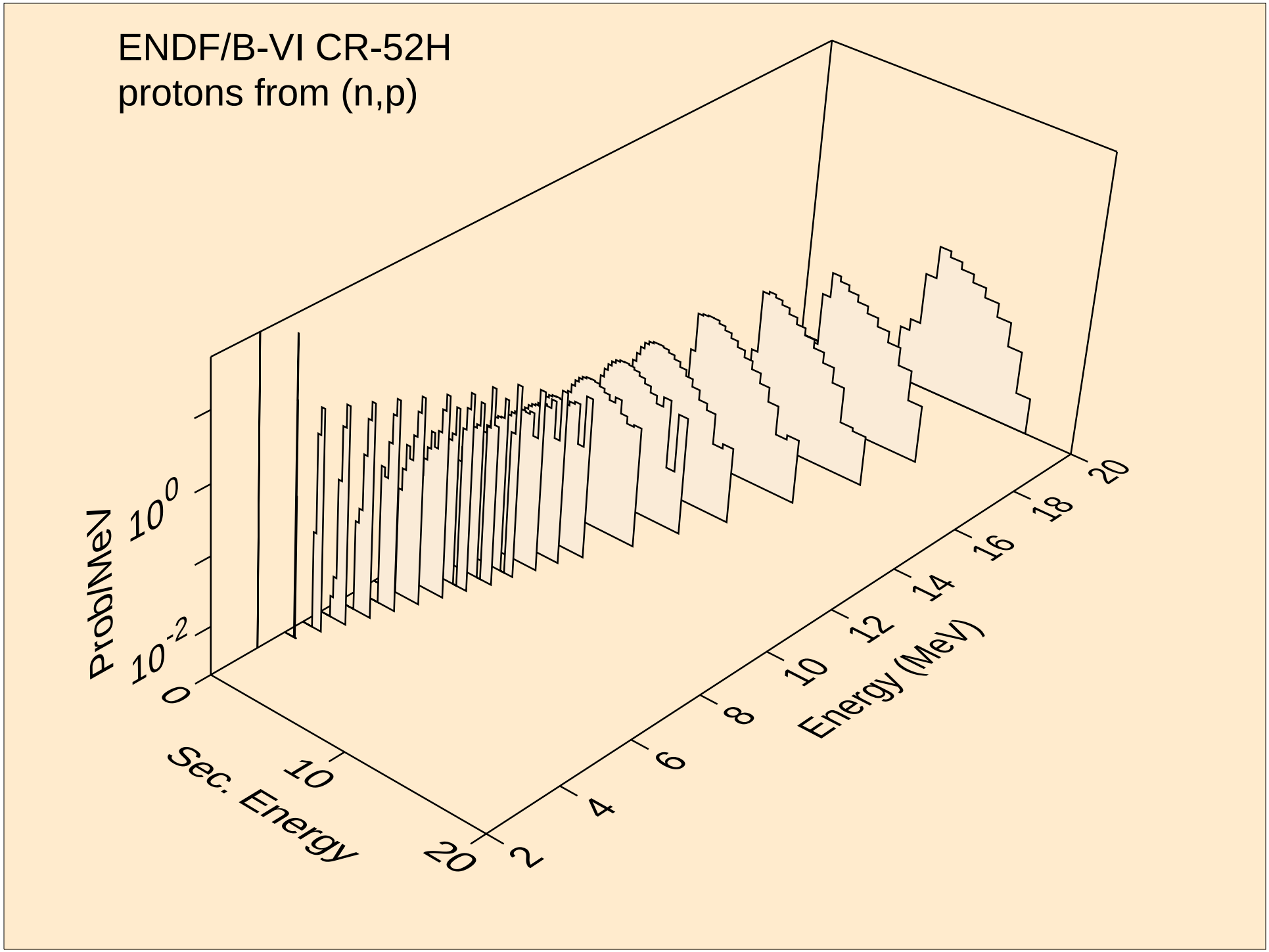

ENDF/B-VI CR-52H
Particle heating contributions
protons
deuterons
tritons
alphas
MeV/collision
Energy (MeV)
0
5
10
15
20
25
0
20
40
60
80
100
120
140
160

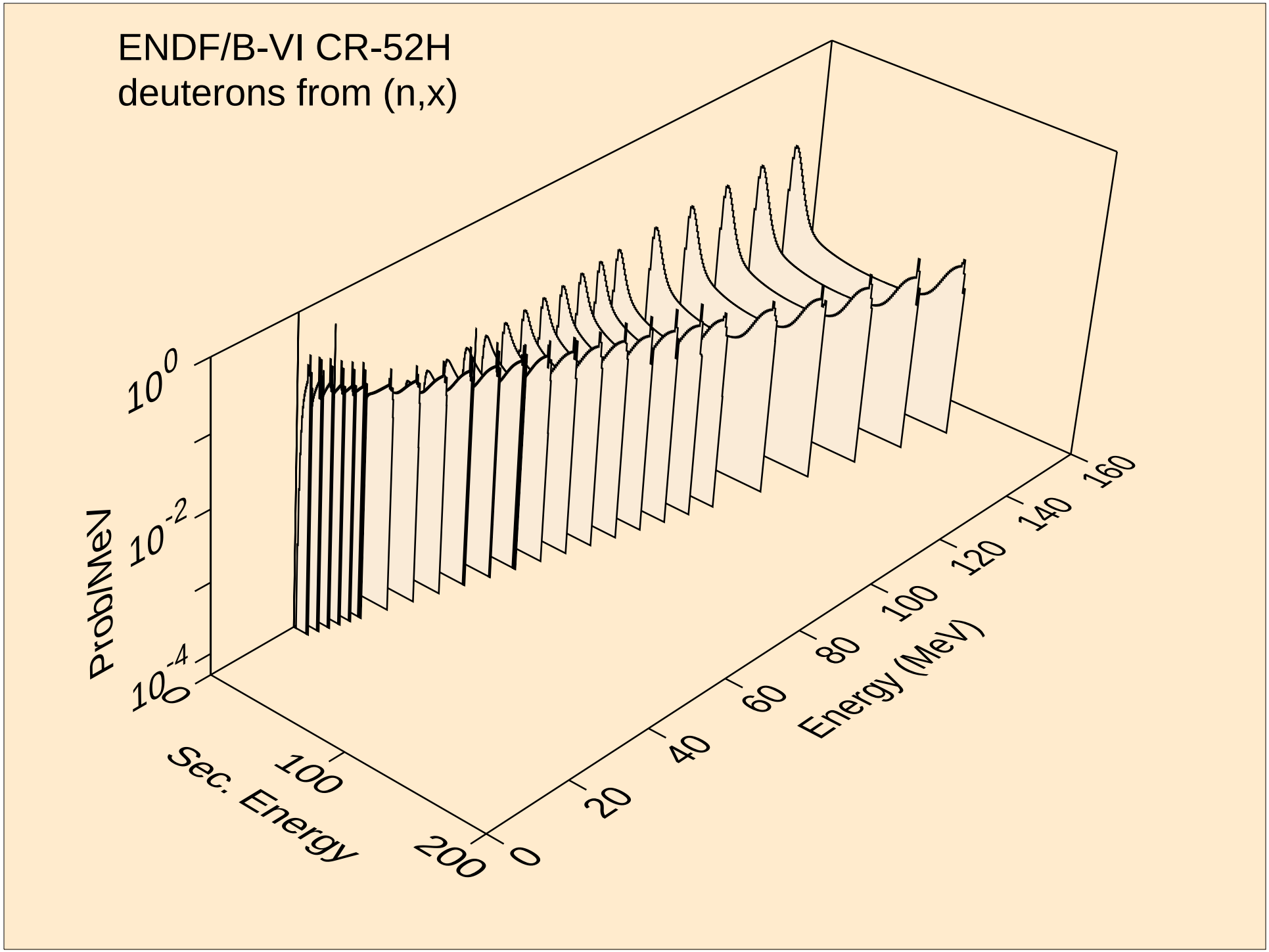

ENDF/B-VI CR-52H
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
20
40
60
80
100
120
140
160

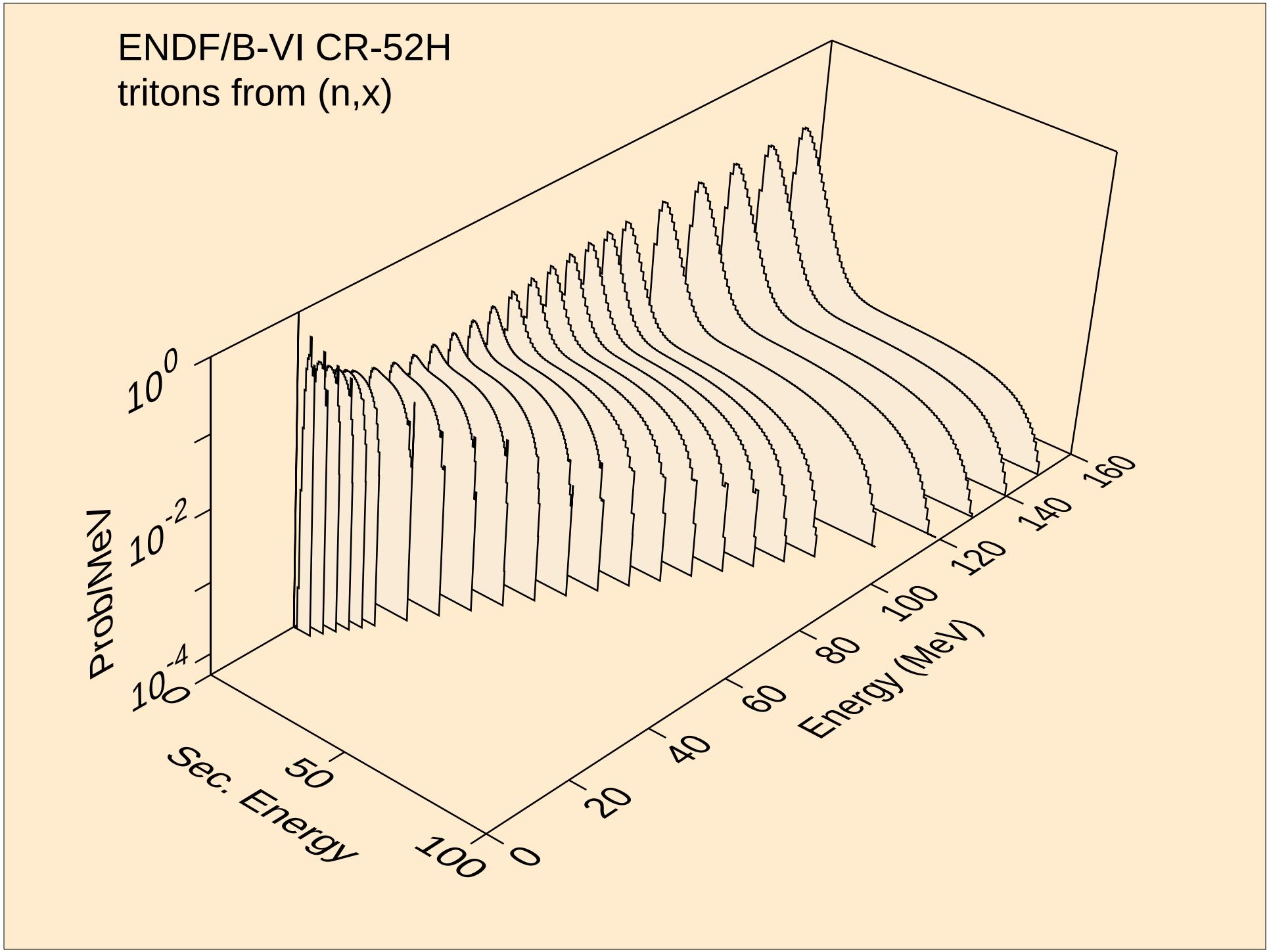

ENDF/B-VI CR-52H
Particle production cross sections
Cross section (barns)
Energy (MeV)
protons
deuterons
tritons
alphas
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
20
40
60
80
100
120
140
160

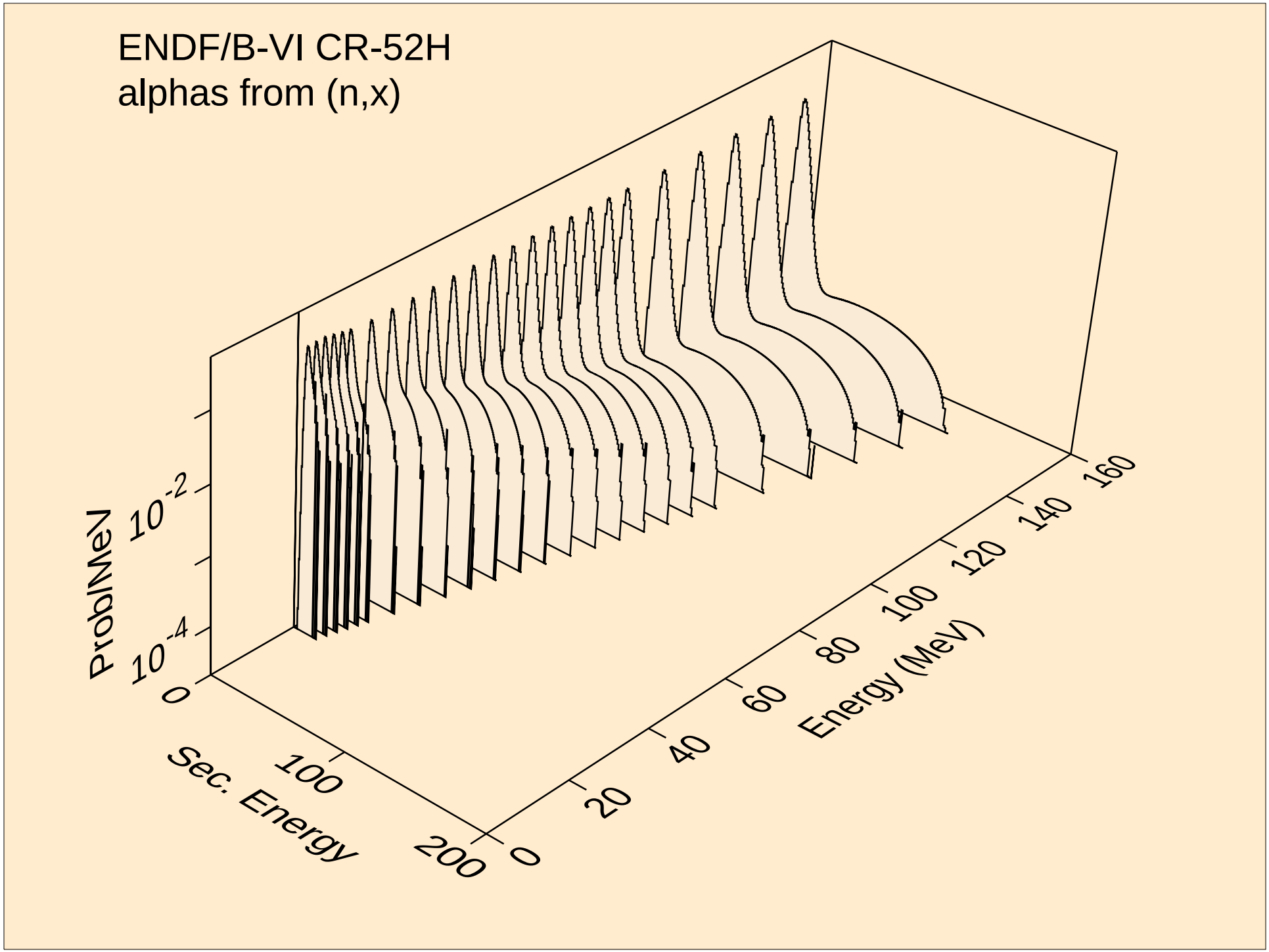

ENDF/B-VI CR-52H
protons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
Energy (MeV)

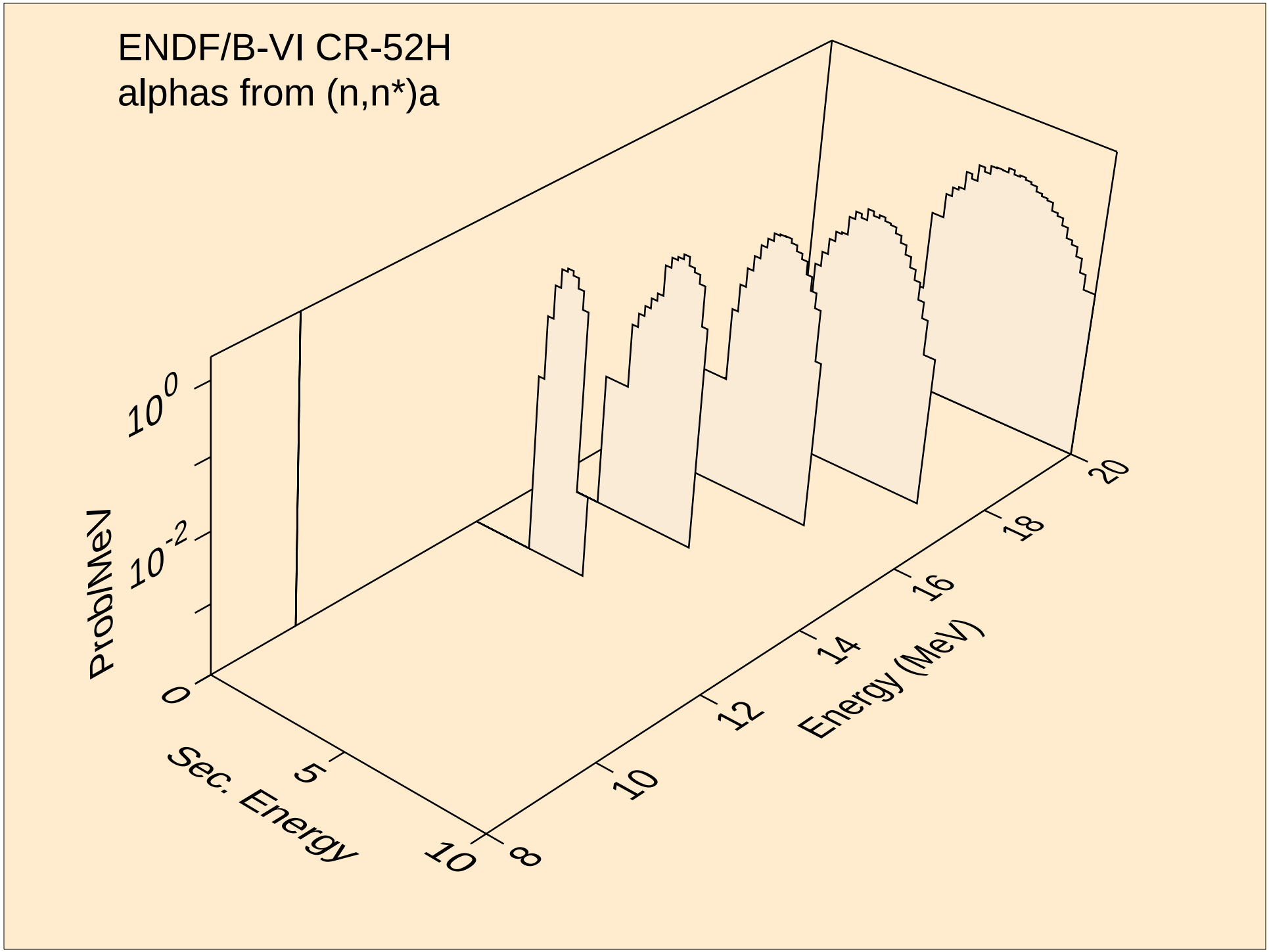

ENDF/B-VI CR-52H
protons from (n,n*)p
Prob/MeV
10^-1
10^-3
0
Sec. Energy
5
10
10
12
14
16
18
20
Energy (MeV)

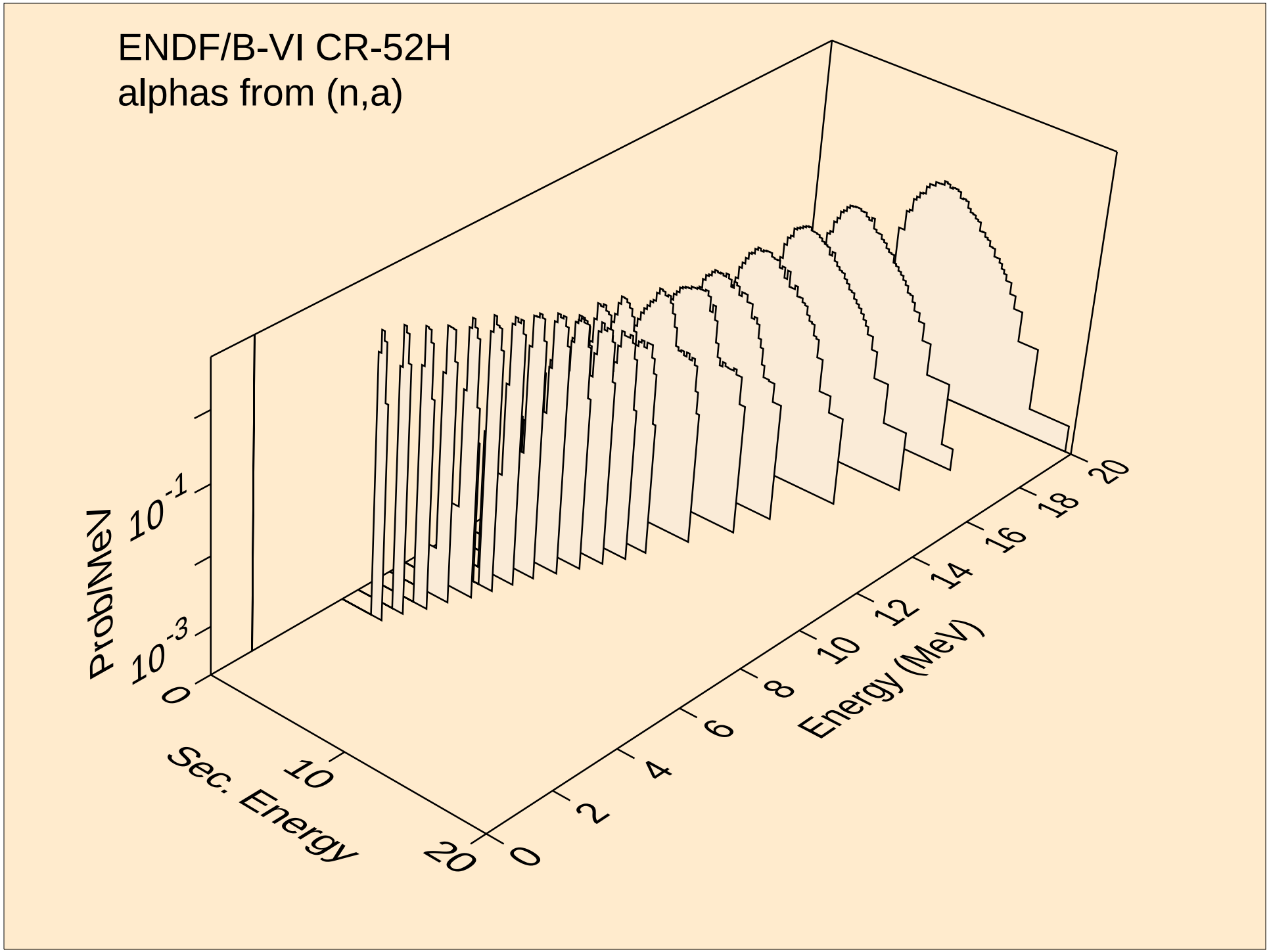

ENDF/B-VI CR-52H
protons from (n,p)
Prob/MeV
$10^{0}$
$10^{-2}$
0
10
Sec. Energy
20
2
4
6
8
10
12
14
16
18
20
Energy (MeV)


ENDF/B-VI CR-52H
deuterons from (n,x)
Prob/MeV
$10^{0}$
$10^{-2}$
$10^{-4}$
0
100
200
Sec. Energy
0
20
40
60
80
100
120
140
160
Energy (MeV)


ENDF/B-VI CR-52H
tritons from (n,x)
Prob/MeV
$10^{0}$
$10^{-2}$
$10^{-4}$
Sec. Energy
0
50
100
Energy (MeV)
0
20
40
60
80
100
120
140
160


ENDF/B-VI CR-52H
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-VI CR-52H
alphas from (n,n*)a
Prob/MeV
$10^{0}$
$10^{-2}$
0
Sec. Energy
5
10
8
10
12
14
16
18
20
Energy (MeV)


ENDF/B-VI CR-52H
alphas from (n,a)
Prob/MeV
10^-1
10^-3
0
Sec. Energy
10
20
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)