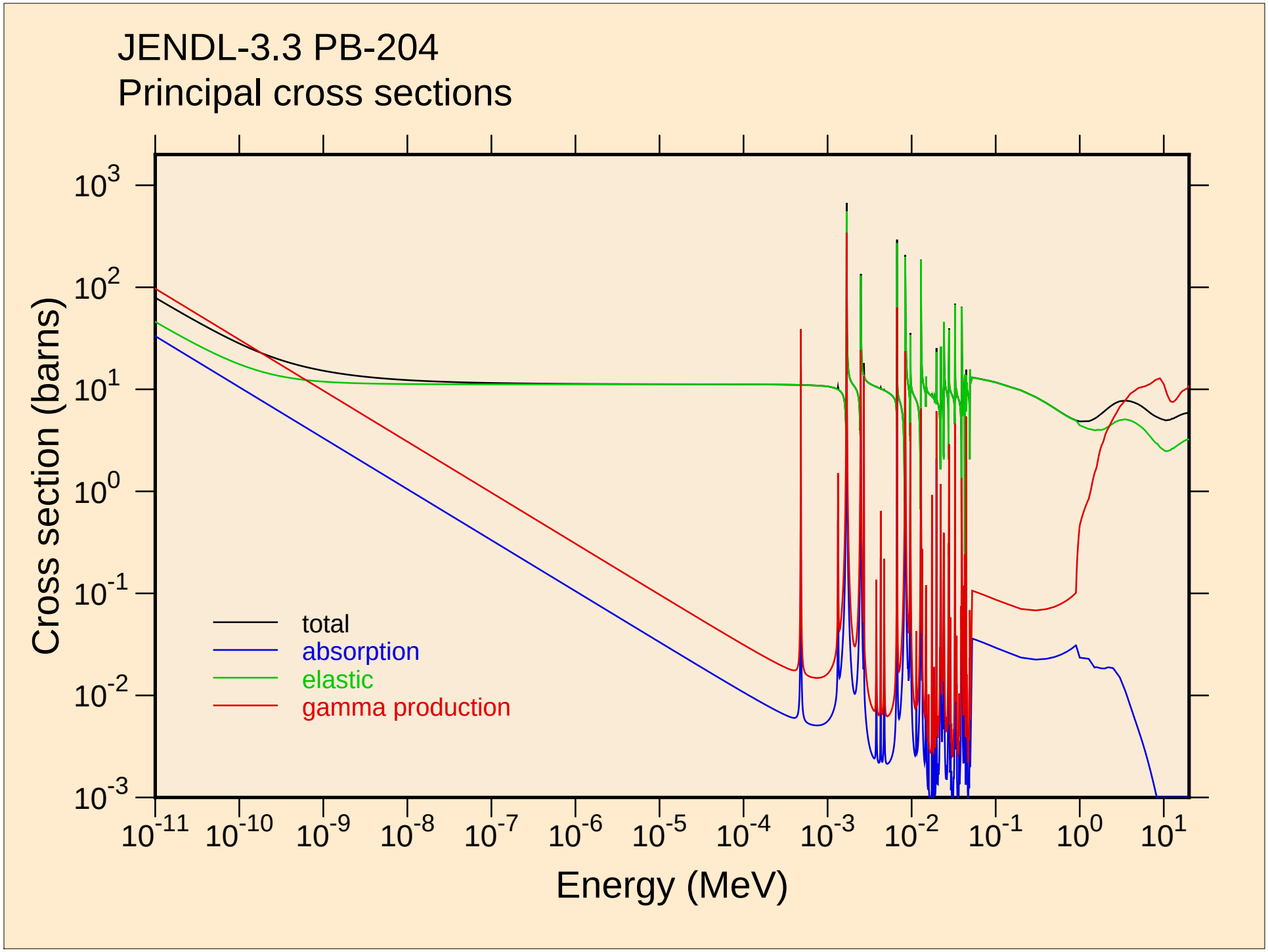
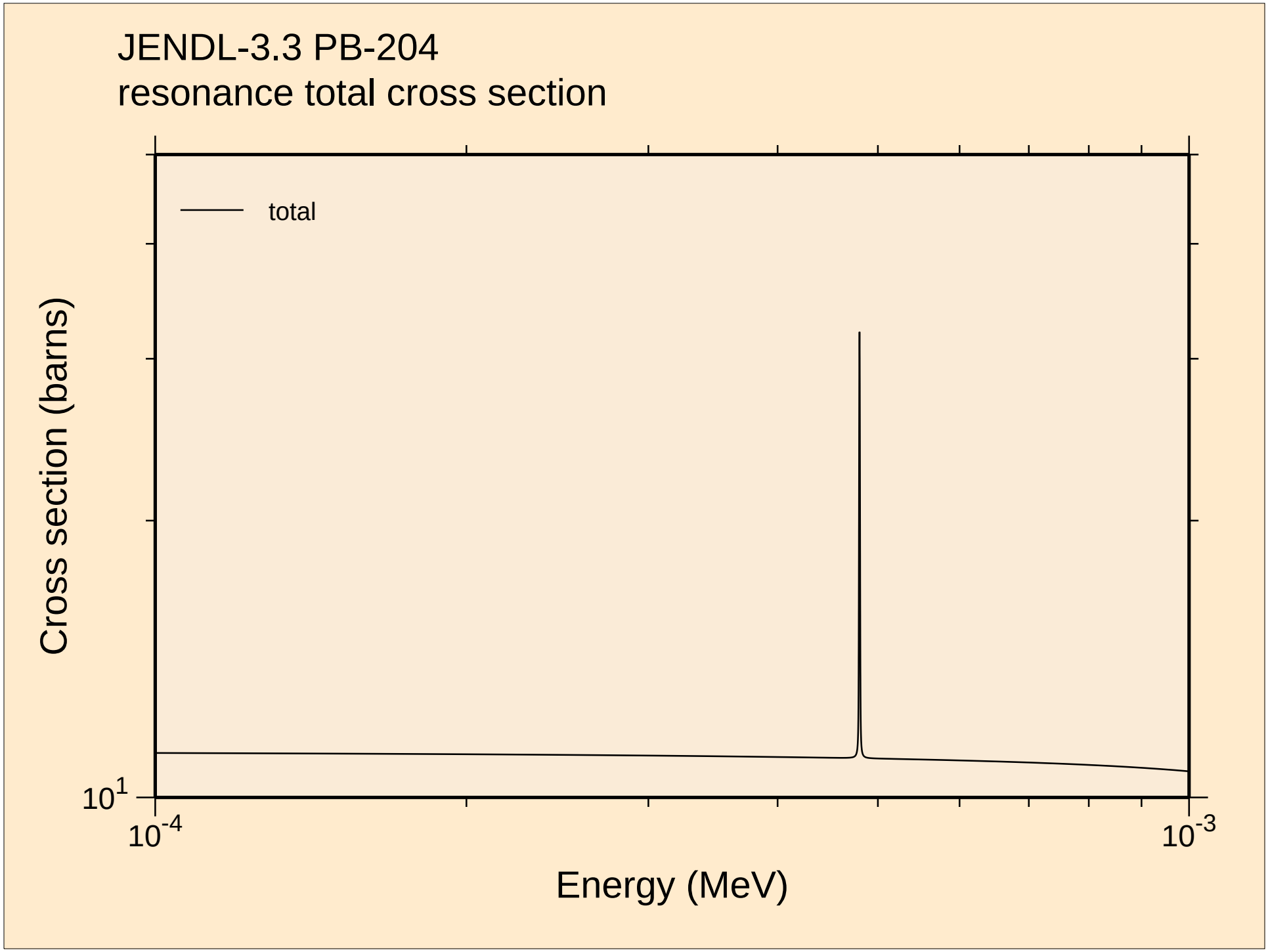
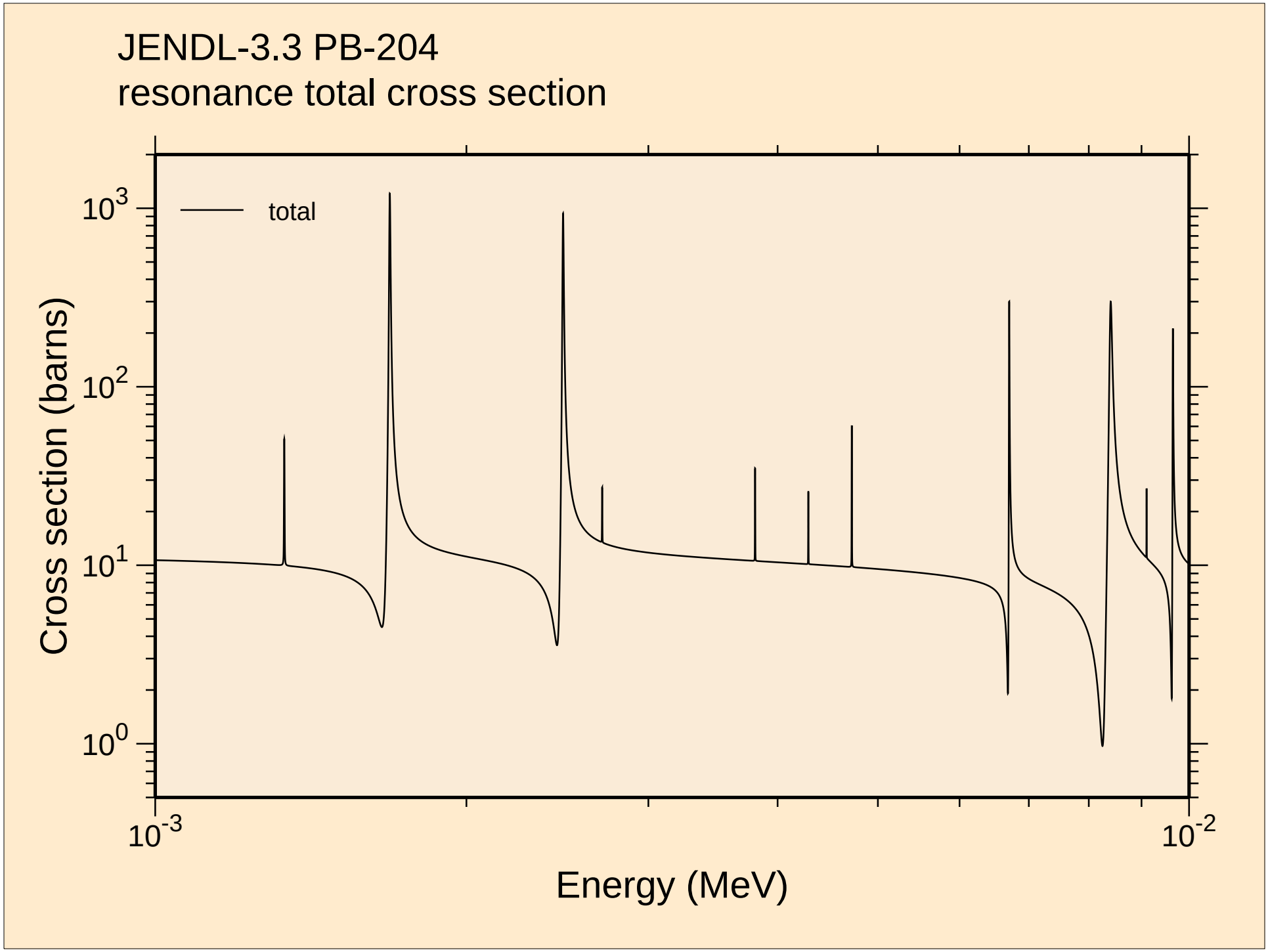
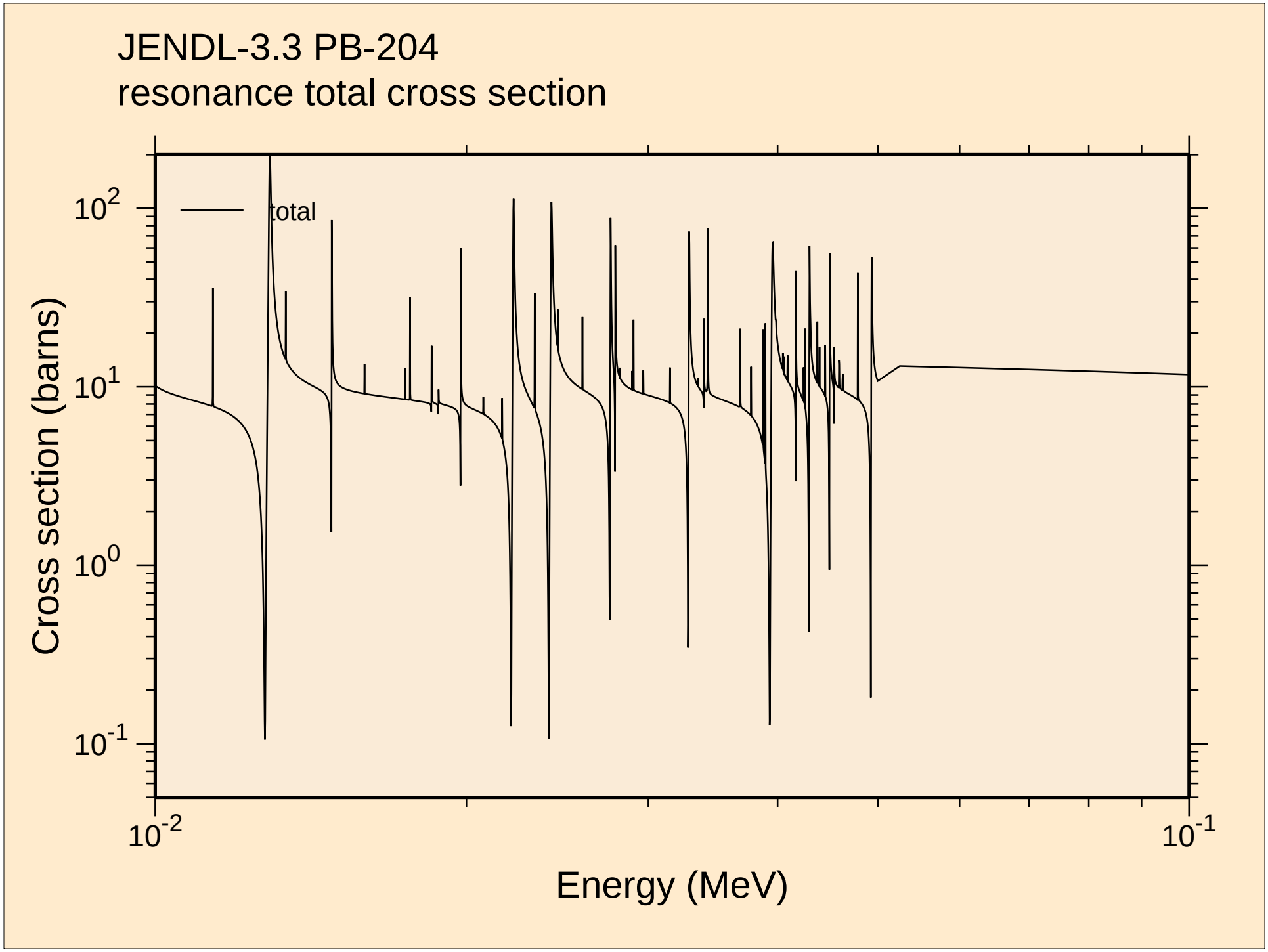
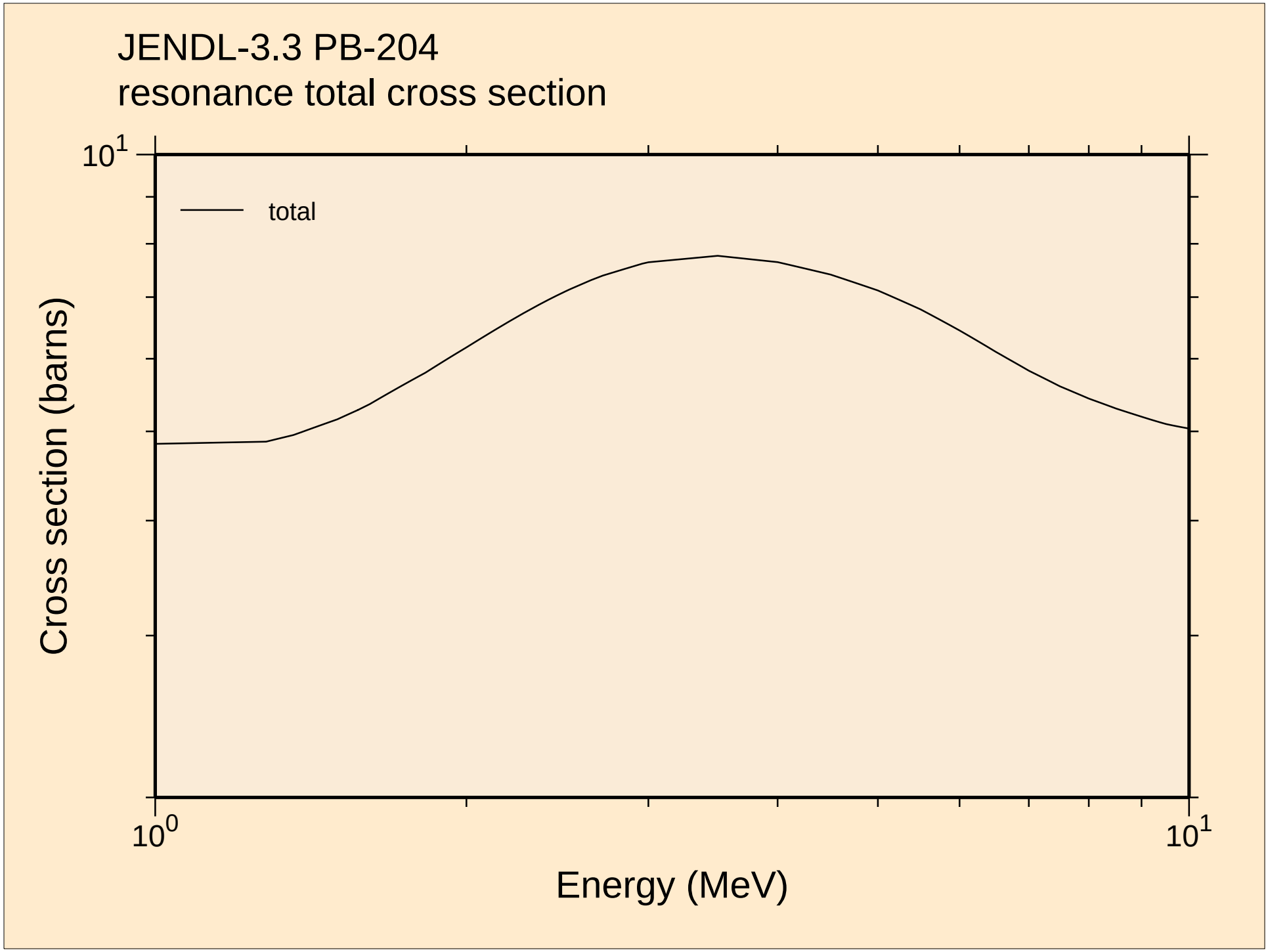
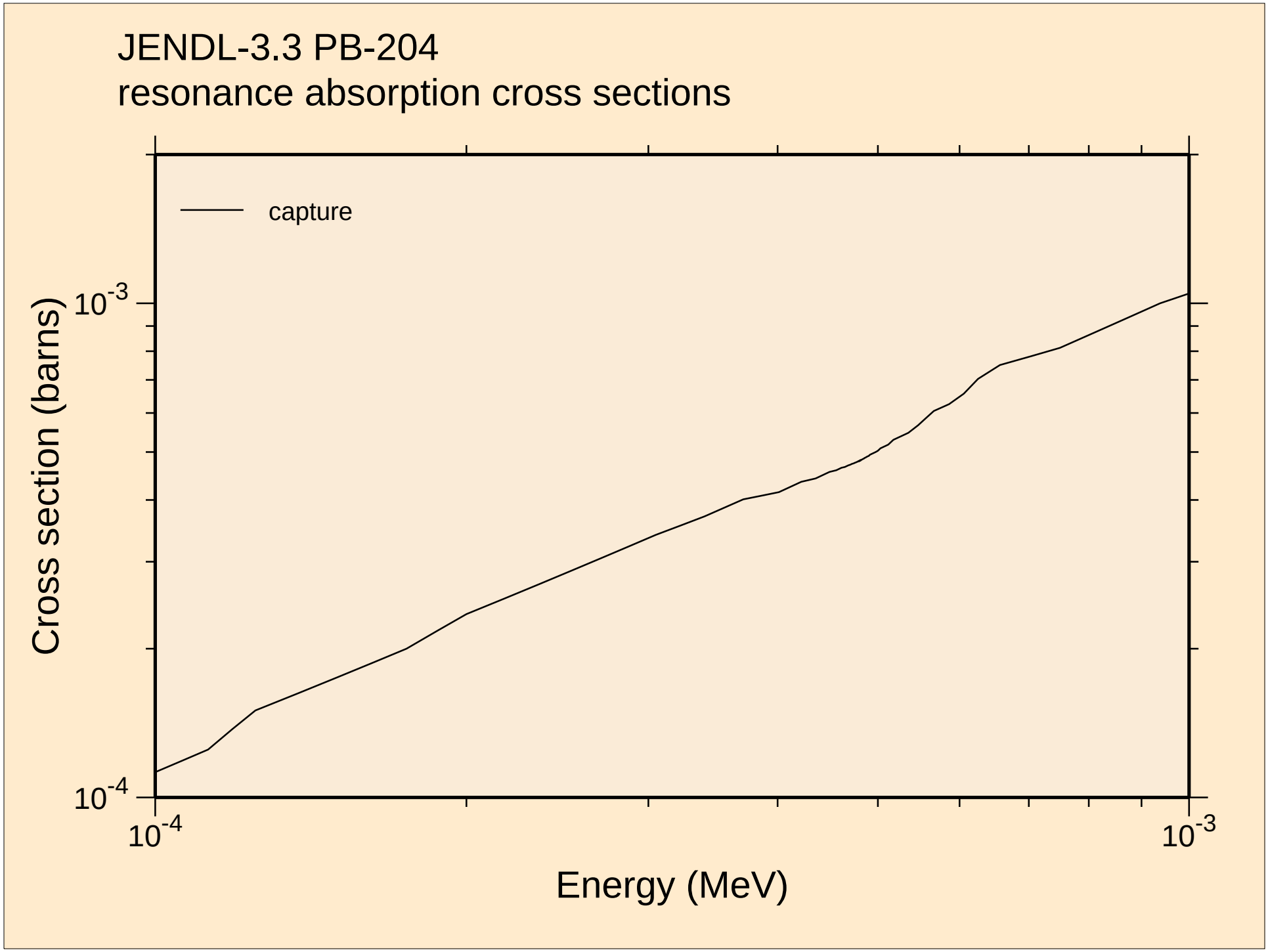

JENDL-3.3 PB-204
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-11}
10^{-10}
10^{-9}
10^{-8}
10^{-7}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
10^{0}
10^{1}

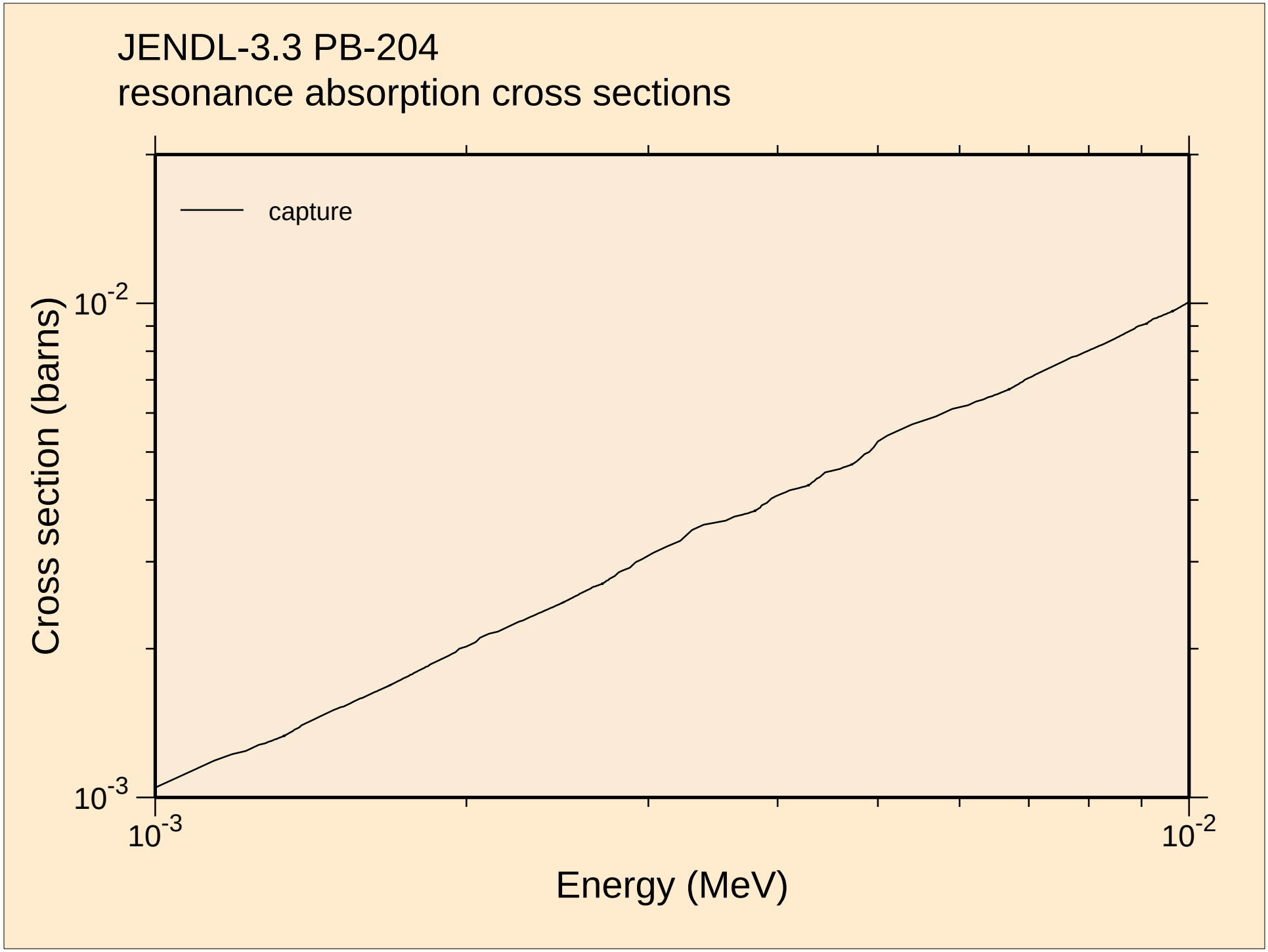

JENDL-3.3 PB-204
resonance total cross section
total
Cross section (barns)
10^1
10^{-4}
10^{-3}
Energy (MeV)

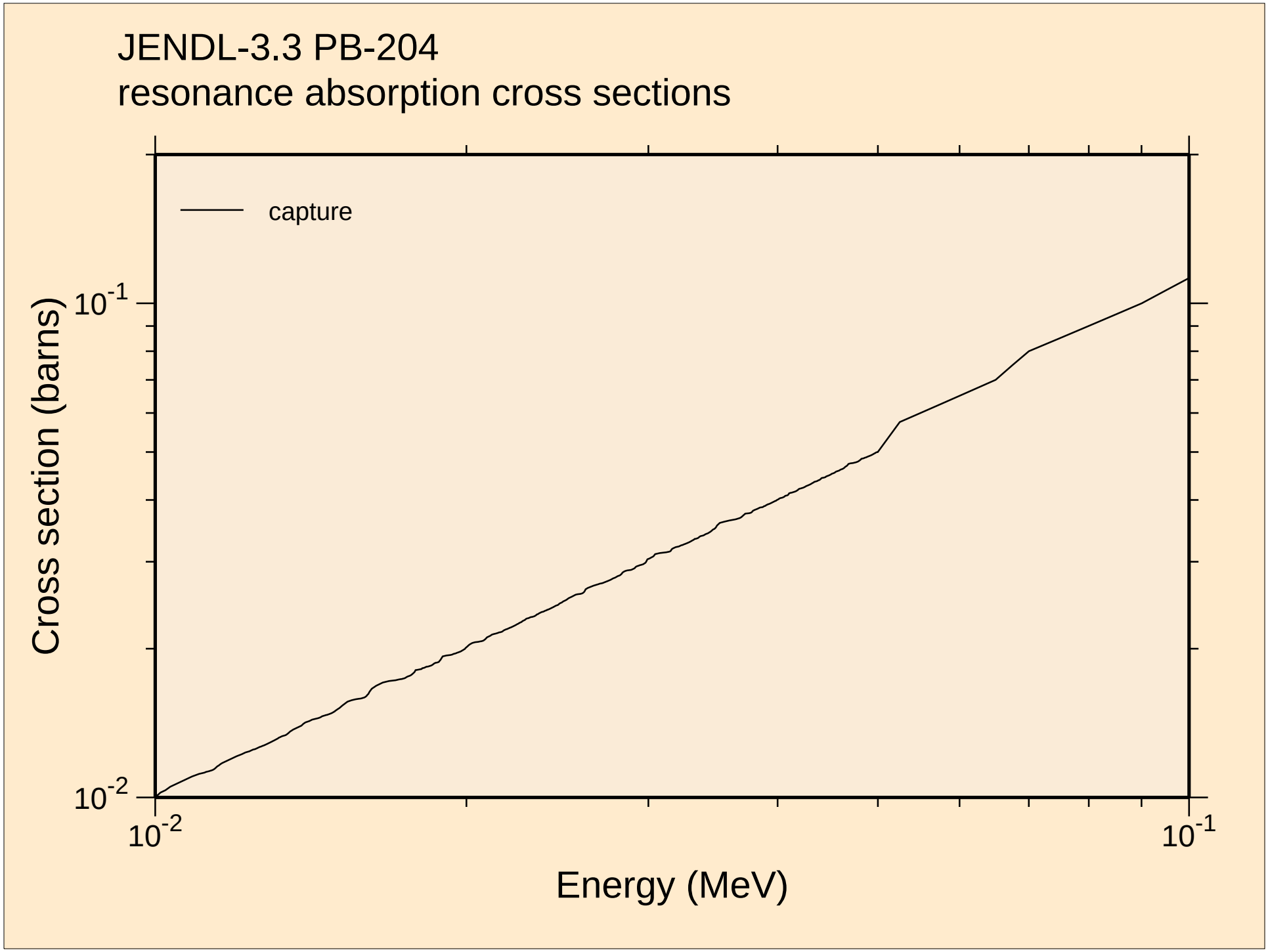

JENDL-3.3 PB-204
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^{-3}
10^{-2}
Energy (MeV)

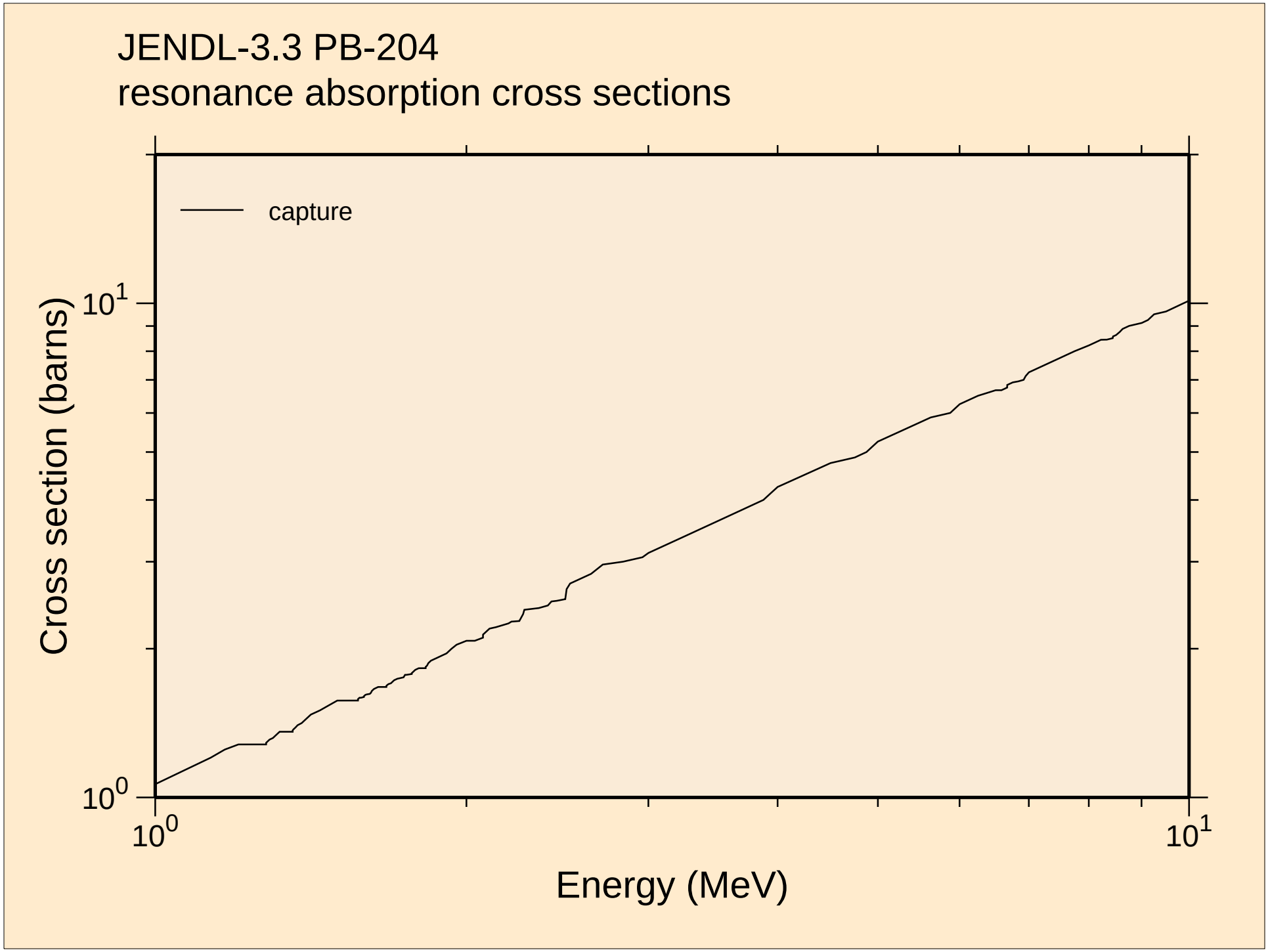

JENDL-3.3 PB-204
resonance total cross section
total
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-1}
Energy (MeV)

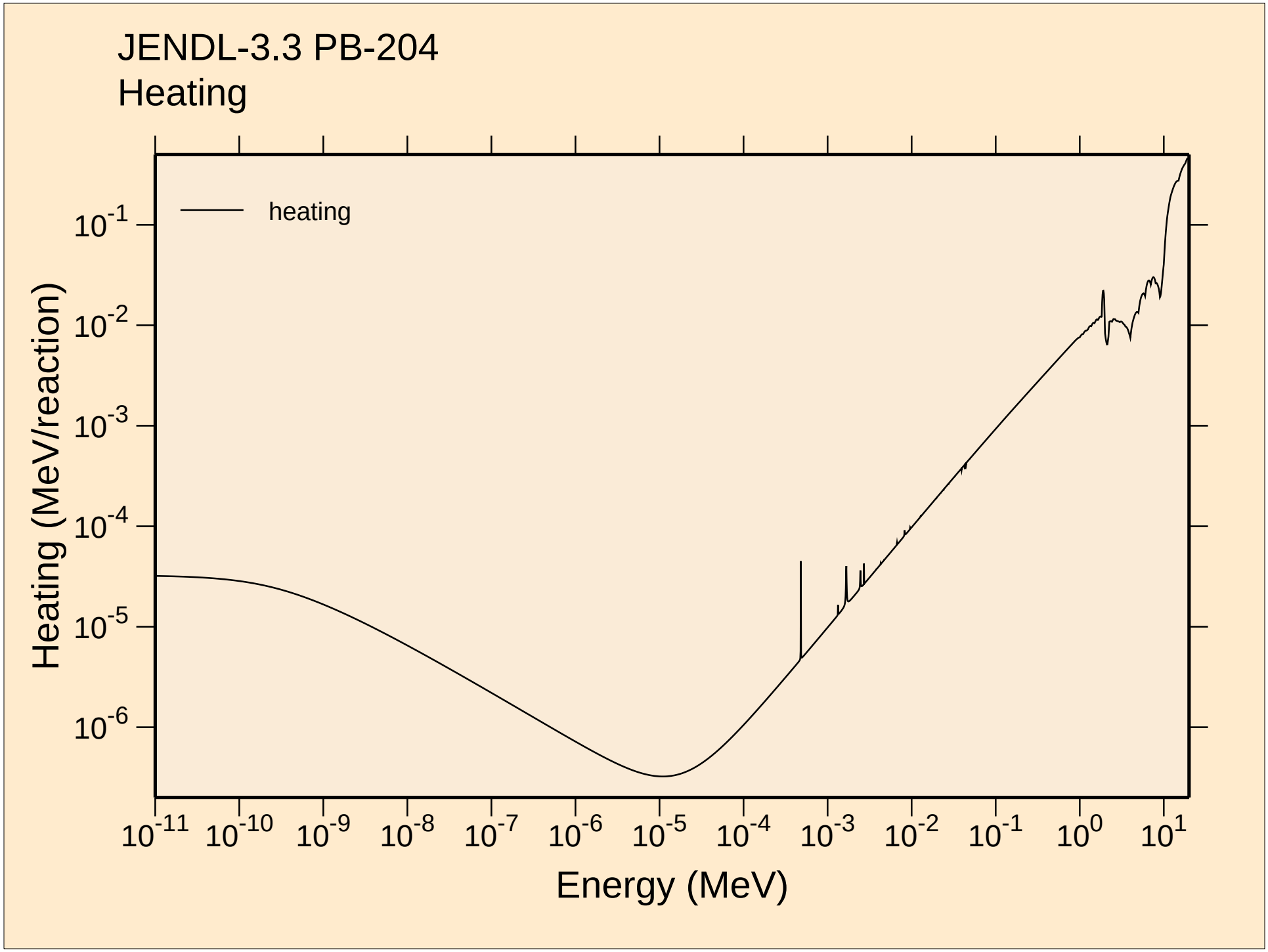

JENDL-3.3 PB-204
resonance total cross section
total
Cross section (barns)
Energy (MeV)
10^1
10^0
10^1

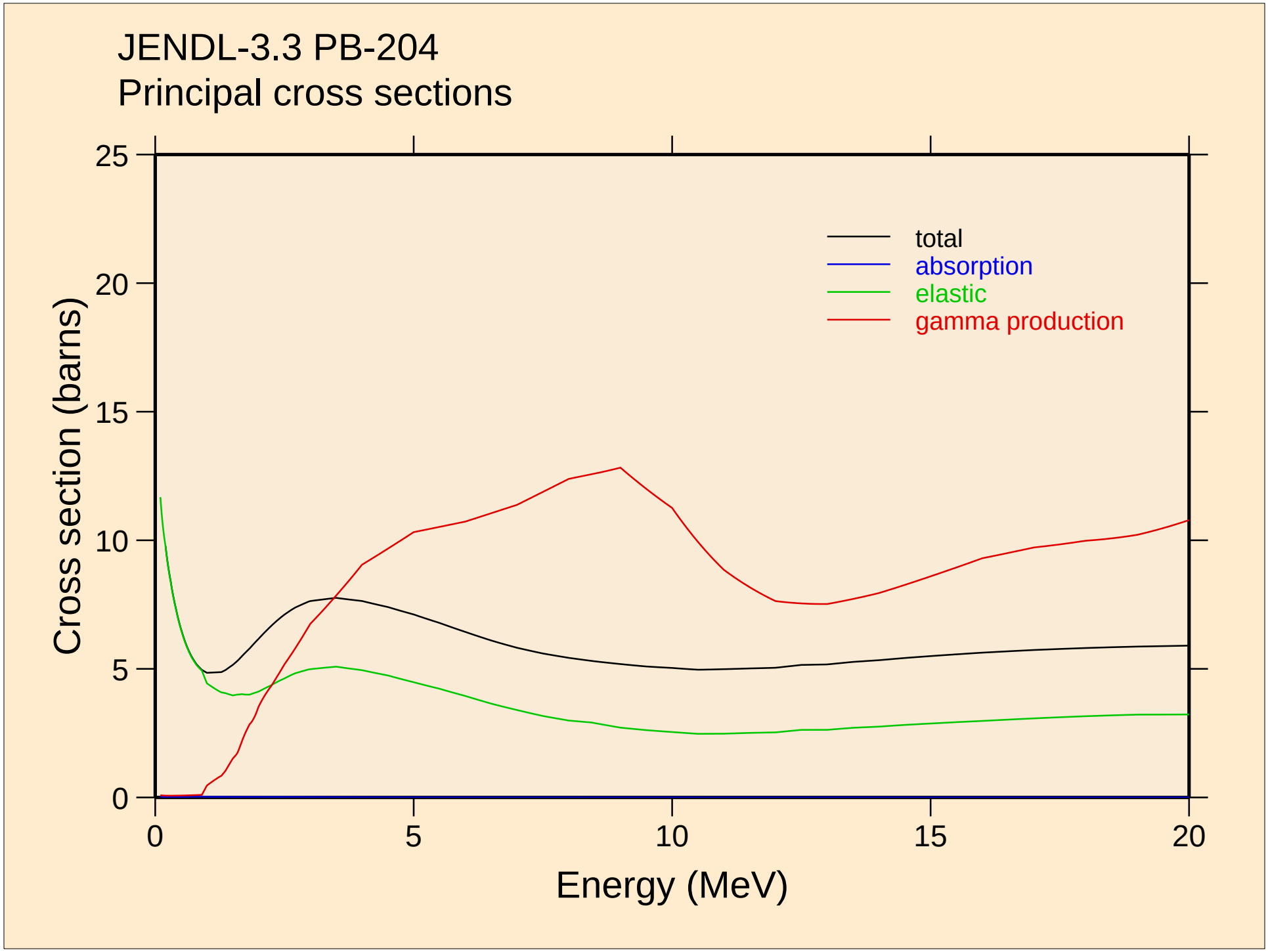

JENDL-3.3 PB-204
resonance absorption cross sections
capture
Cross section (barns)
10-3
10-4
10-4
10-3
Energy (MeV)

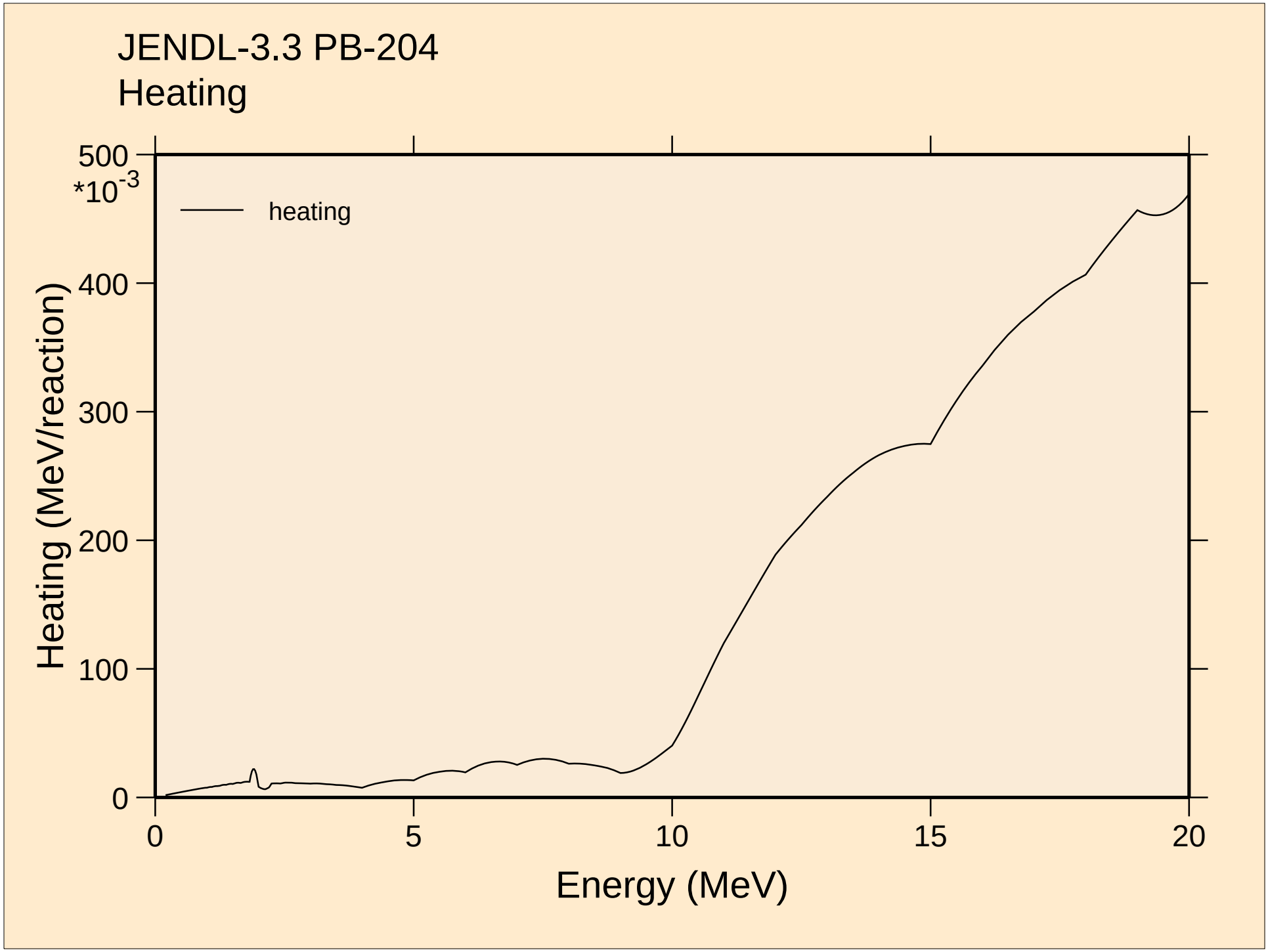

JENDL-3.3 PB-204
resonance absorption cross sections
capture
Cross section (barns)
10-2
10-3
10-3
10-2
Energy (MeV)

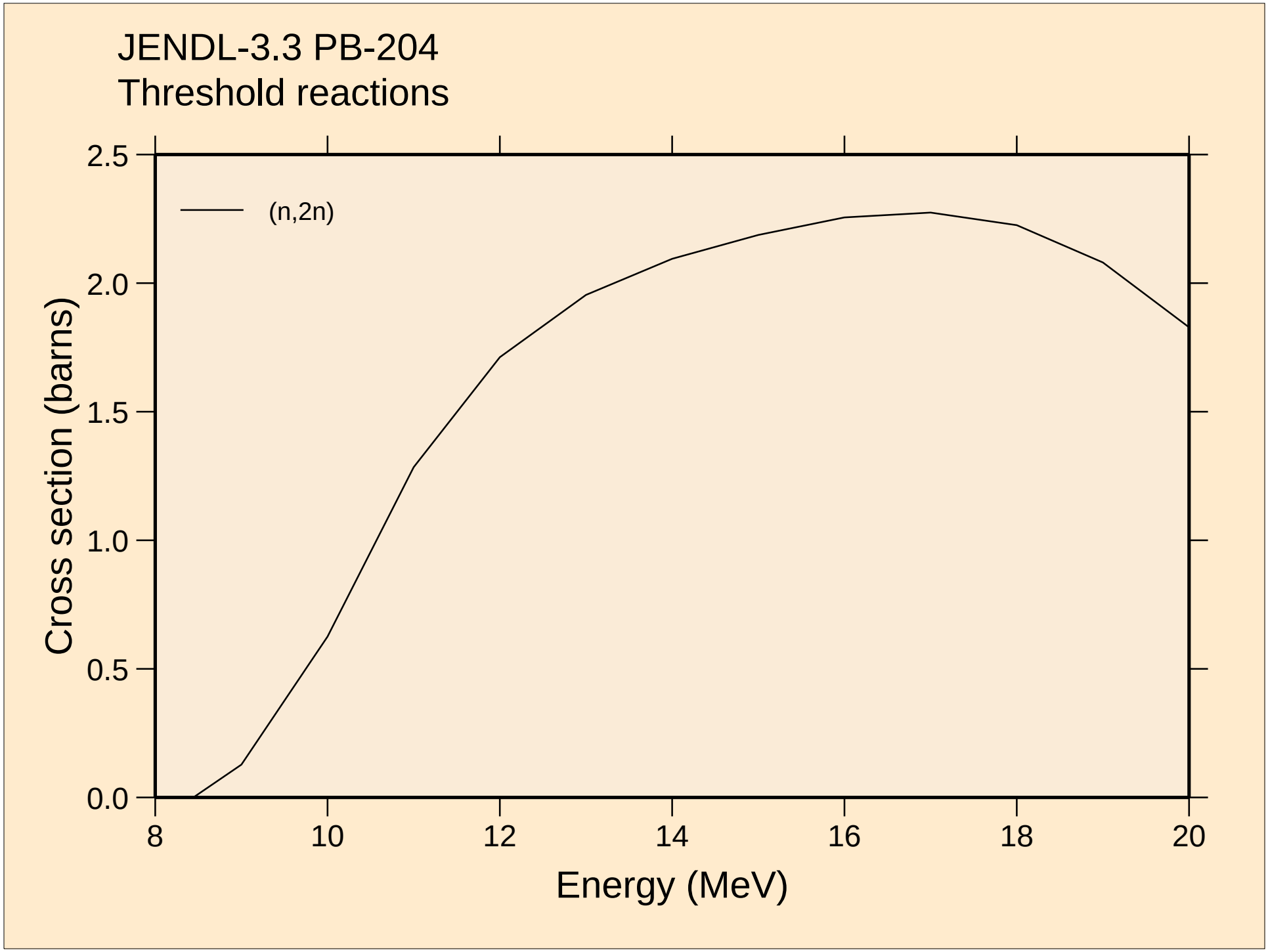

JENDL-3.3 PB-204
resonance absorption cross sections
capture
Cross section (barns)
10-1
10-2
10-2
10-1
Energy (MeV)

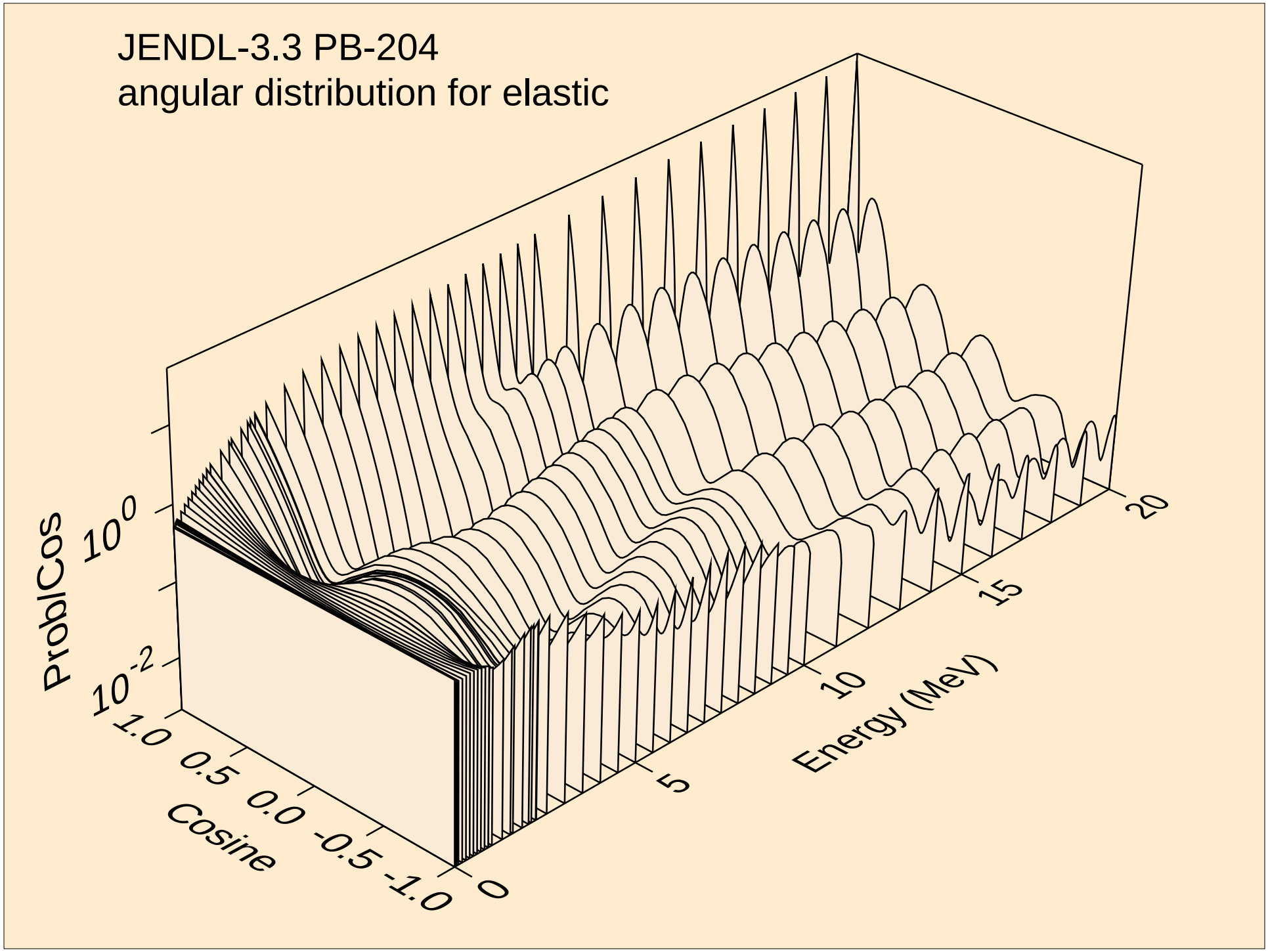

JENDL-3.3 PB-204
resonance absorption cross sections
capture
Cross section (barns)
10^1
10^0
10^0
10^1
Energy (MeV)

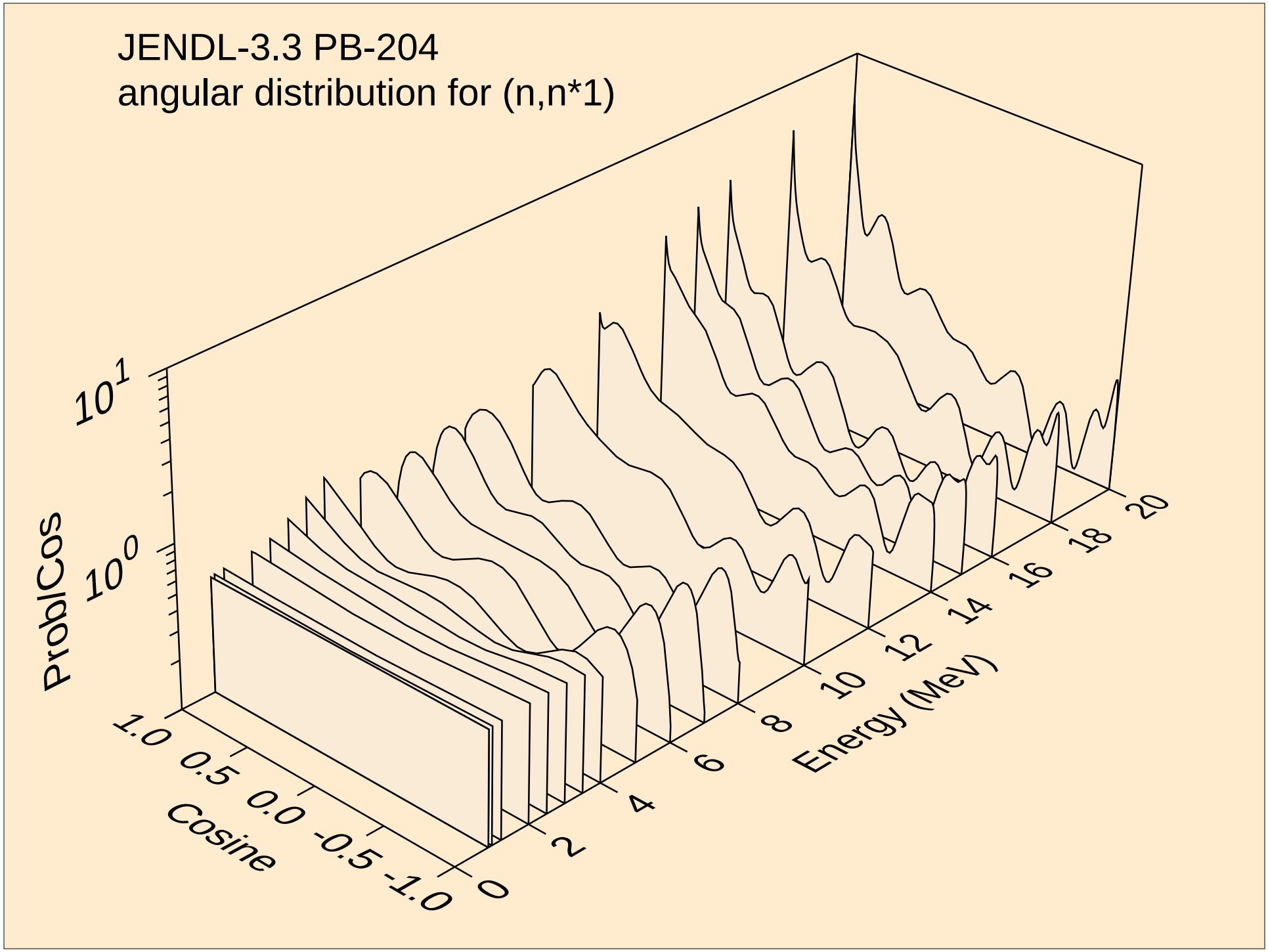

JENDL-3.3 PB-204
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10-1
10-2
10-3
10-4
10-5
10-6
10-11
10-10
10-9
10-8
10-7
10-6
10-5
10-4
10-3
10-2
10-1
100
101

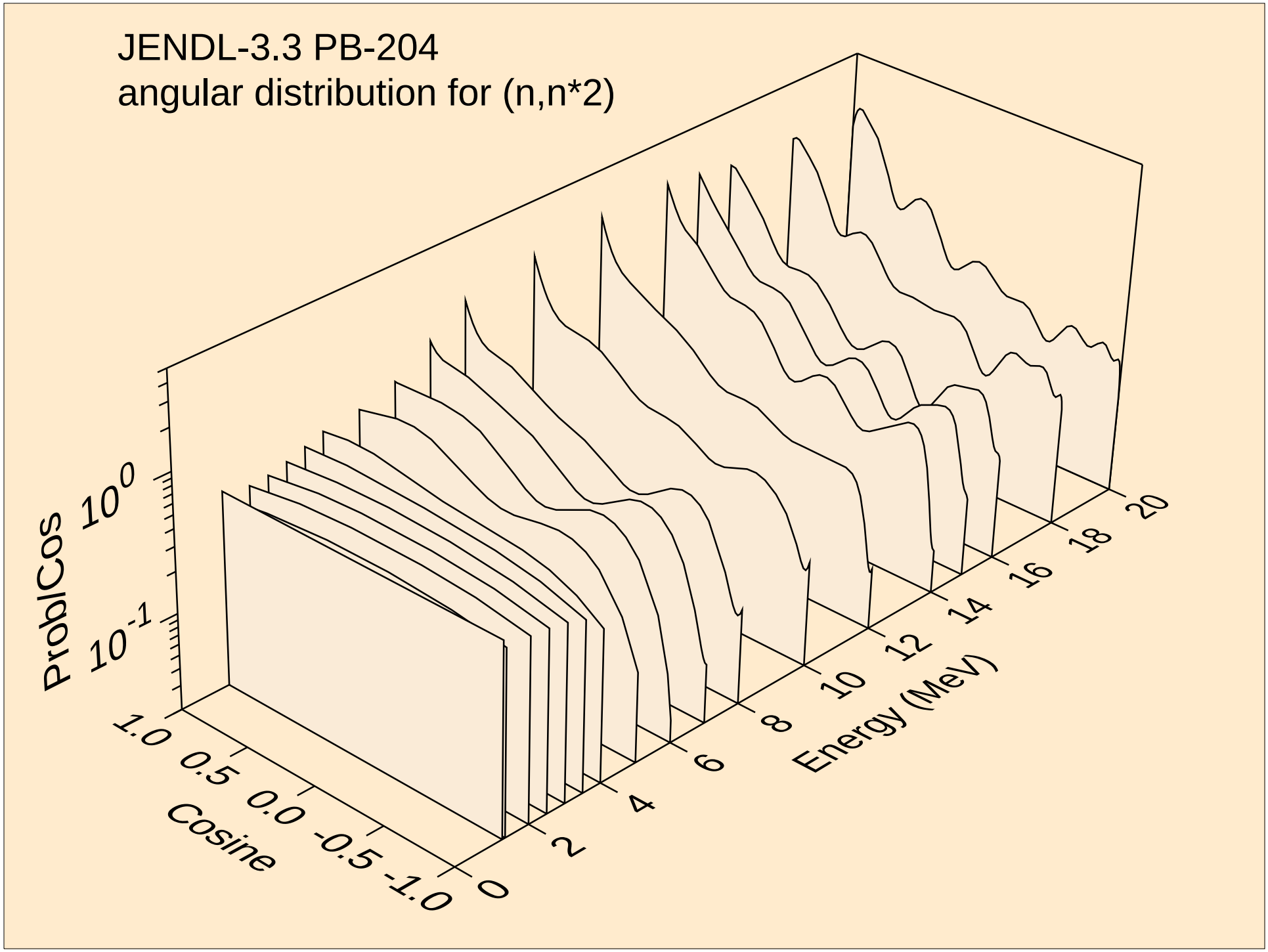

JENDL-3.3 PB-204
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production
0
5
10
15
20
25
0
5
10
15
20

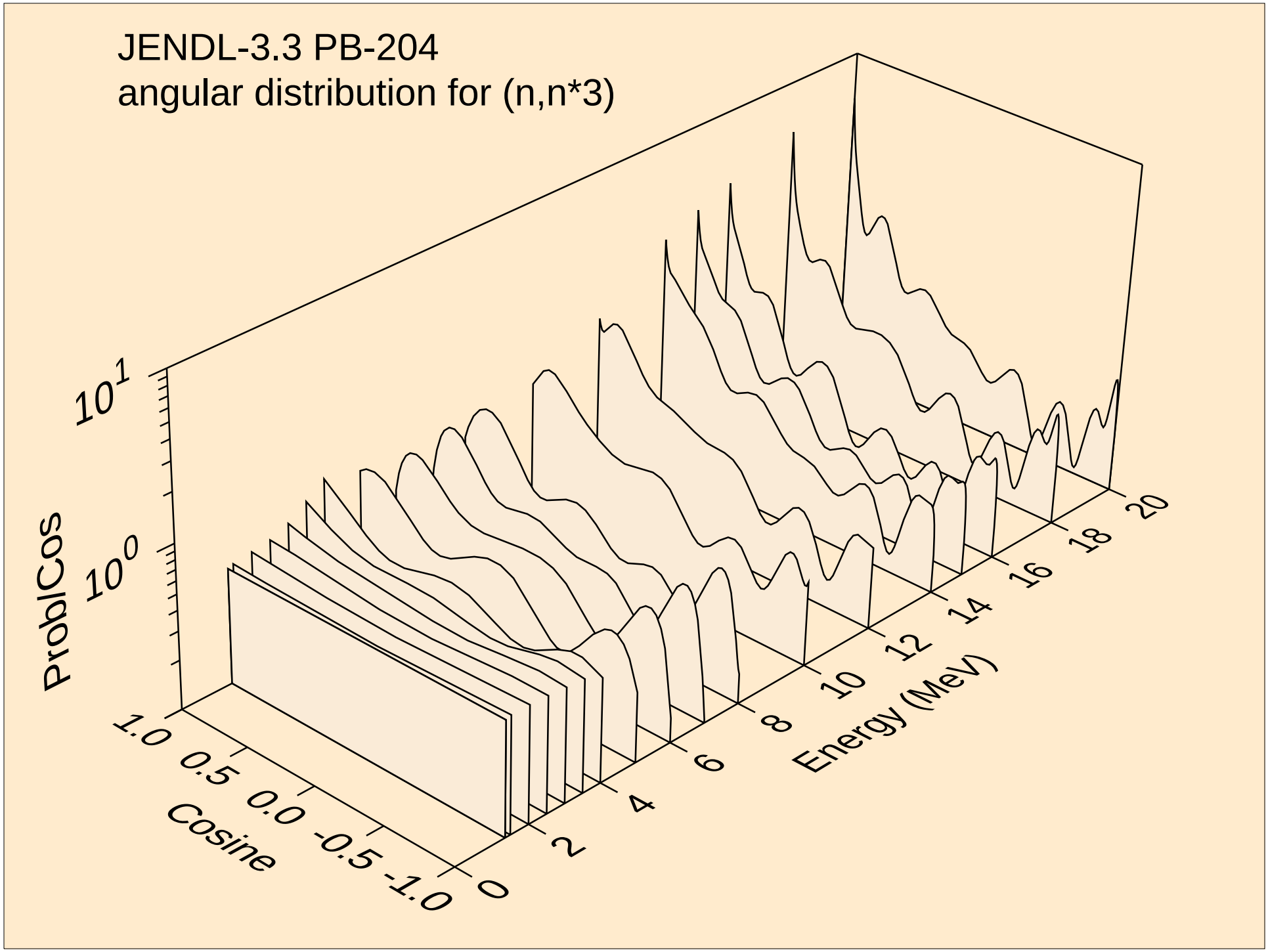

JENDL-3.3 PB-204
Heating
heating
Heating (MeV/reaction)
*10-3
500
400
300
200
100
0
0
5
10
15
20
Energy (MeV)

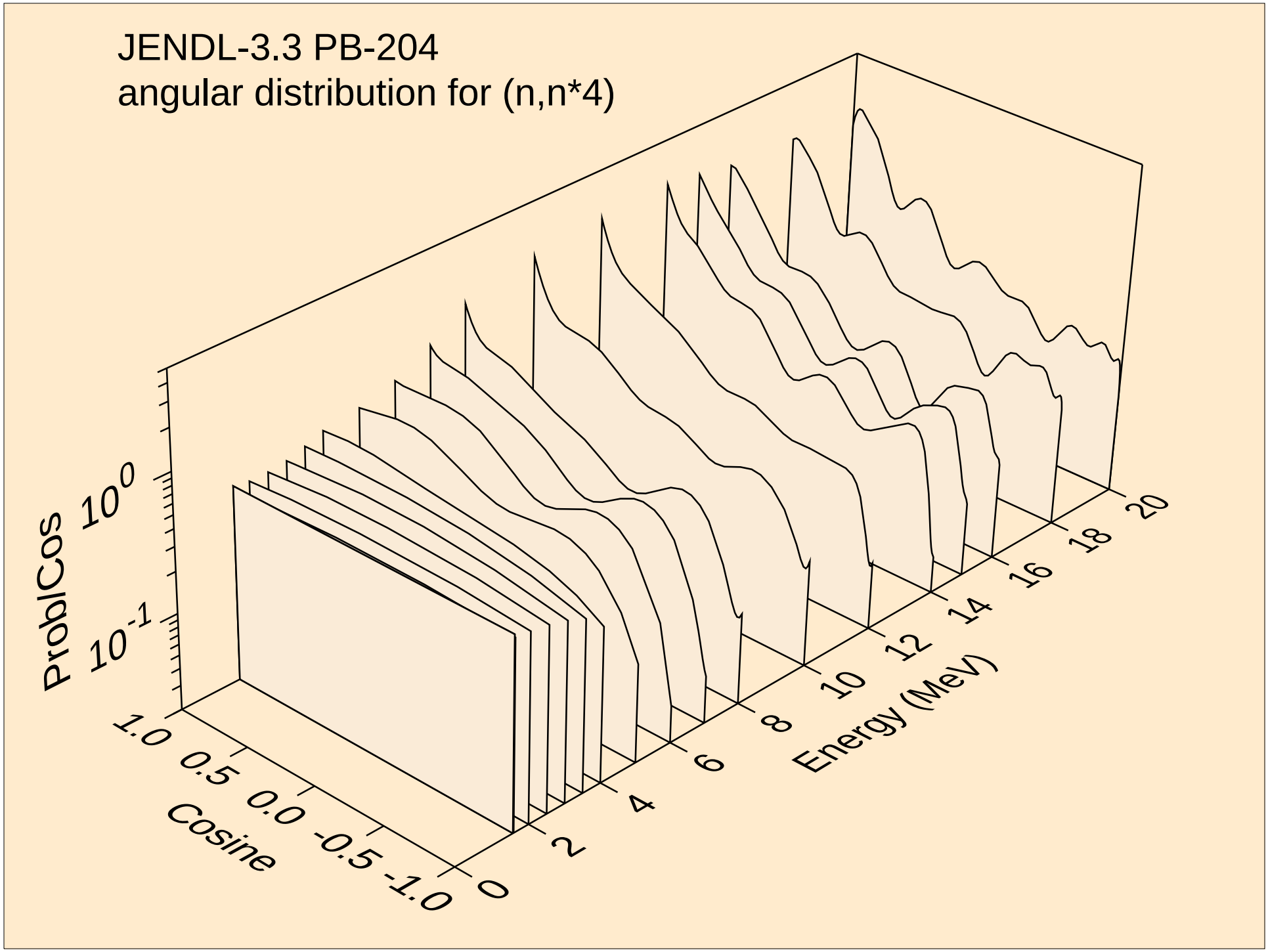

JENDL-3.3 PB-204
Threshold reactions
(n,2n)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
8
10
12
14
16
18
20

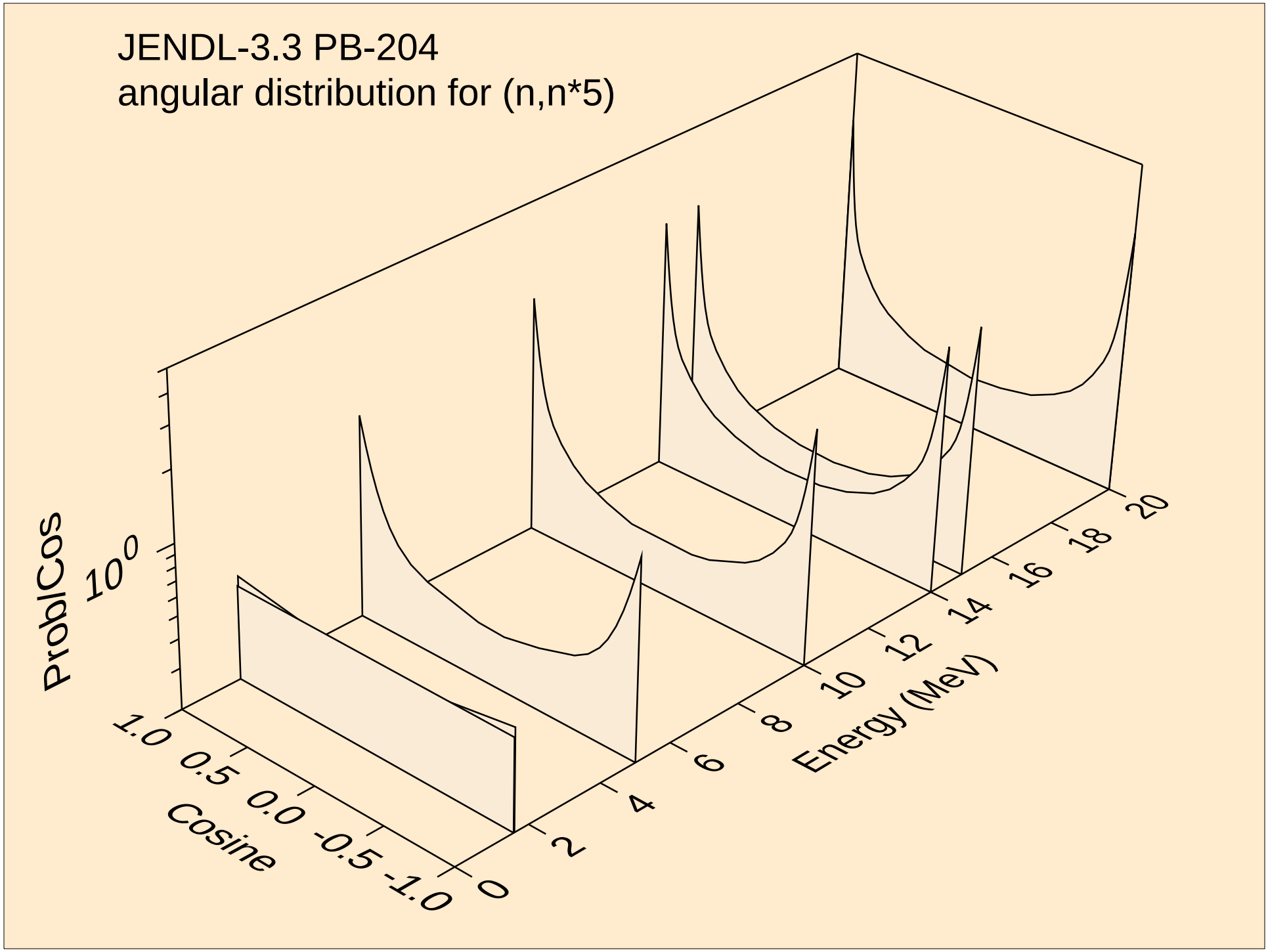

JENDL-3.3 PB-204
angular distribution for elastic
ProblCos
10^0
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

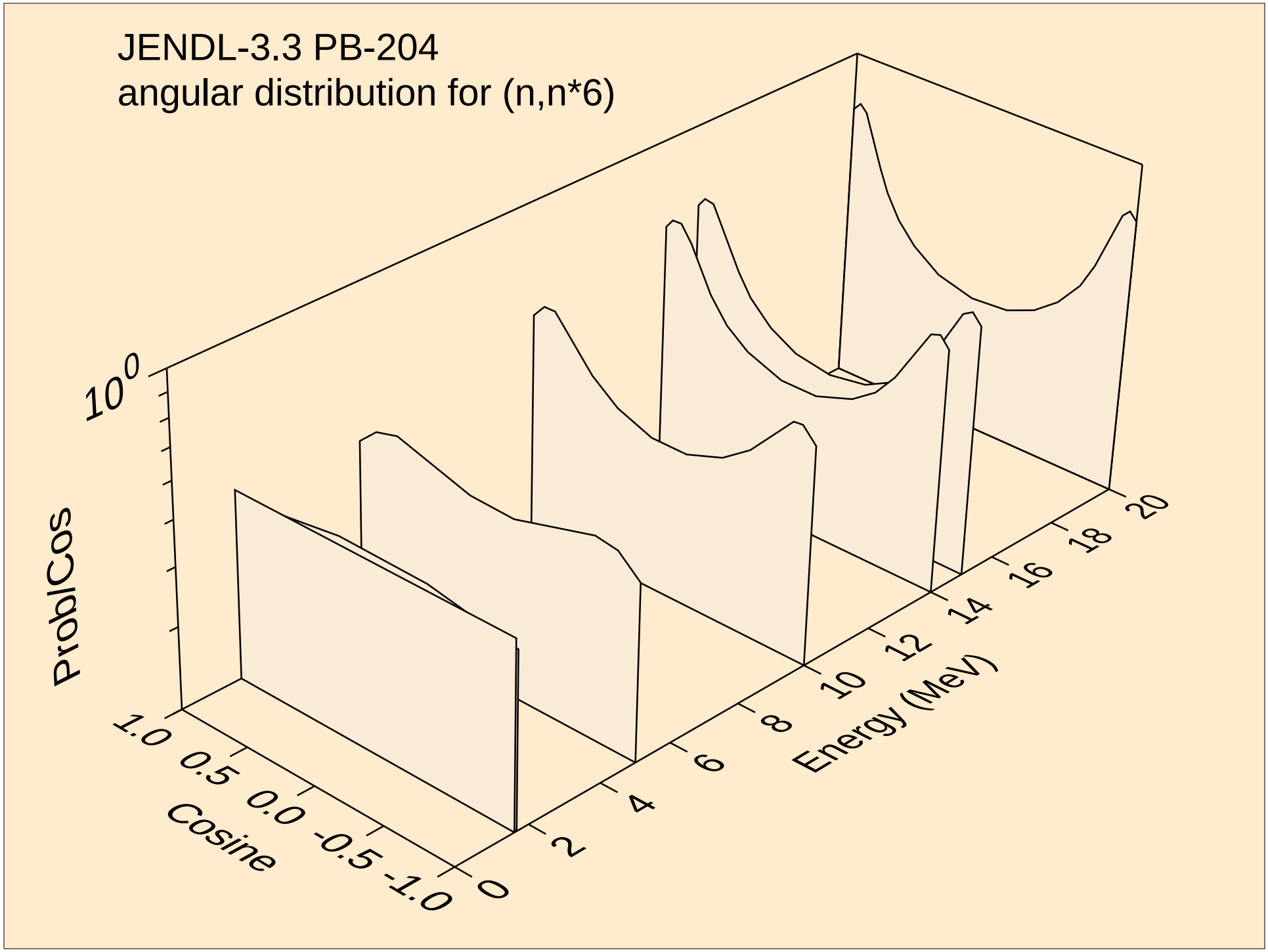

JENDL-3.3 PB-204
angular distribution for (n,n*1)
ProblCos
10^1
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

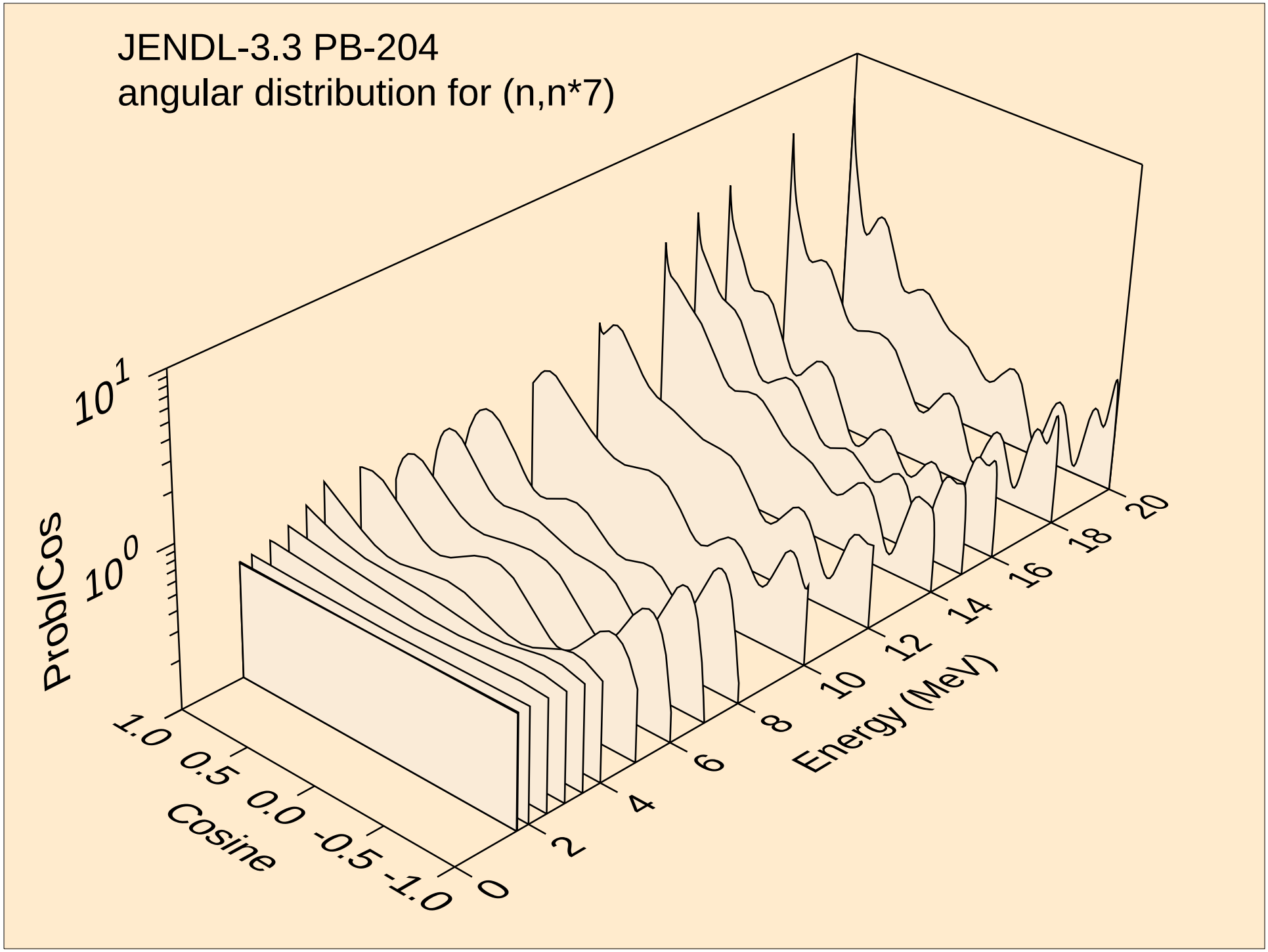

JENDL-3.3 PB-204
angular distribution for (n,n*2)
ProbCos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

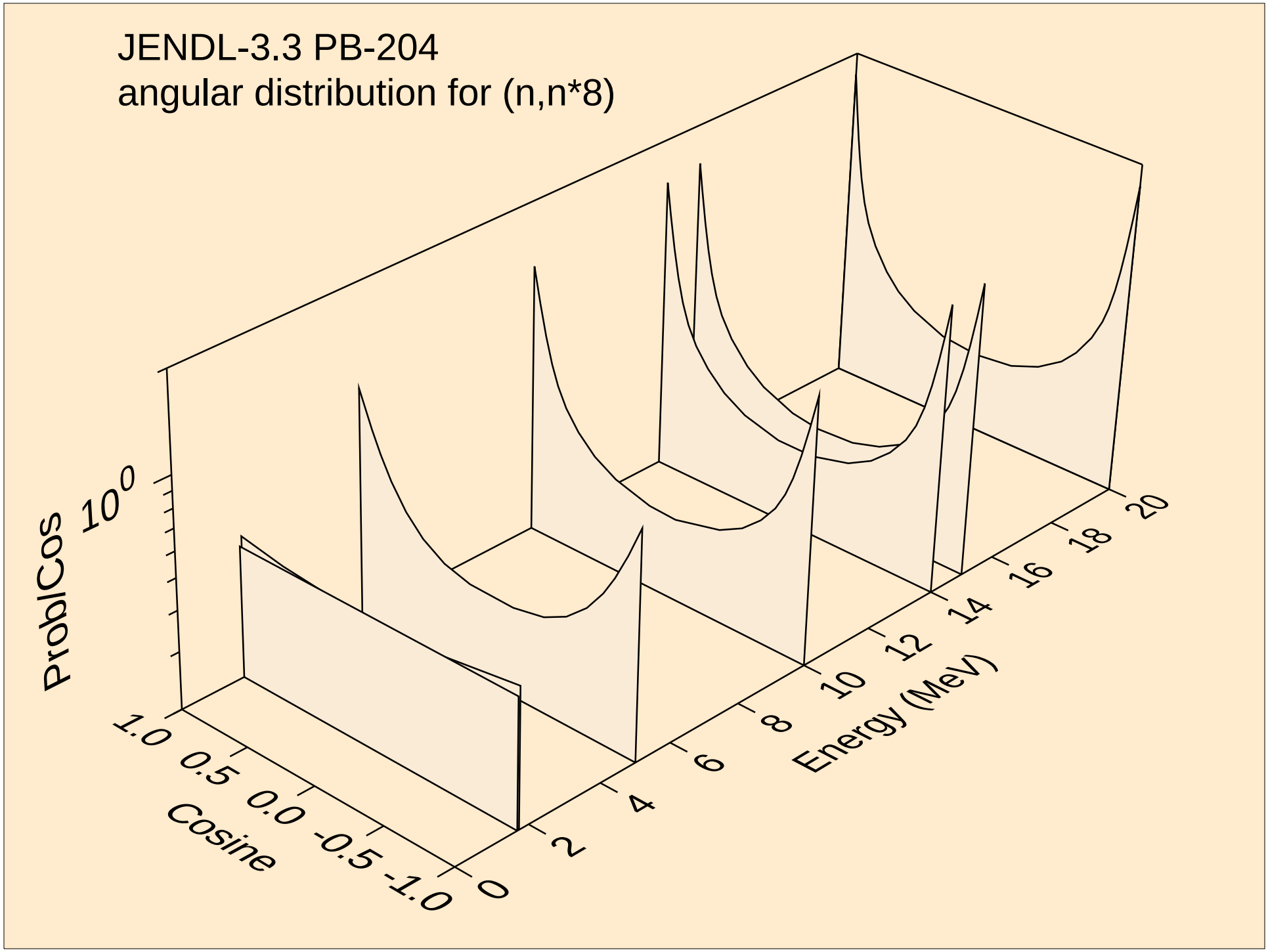

JENDL-3.3 PB-204
angular distribution for (n,n*3)
ProbCos
10^1
10^0
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

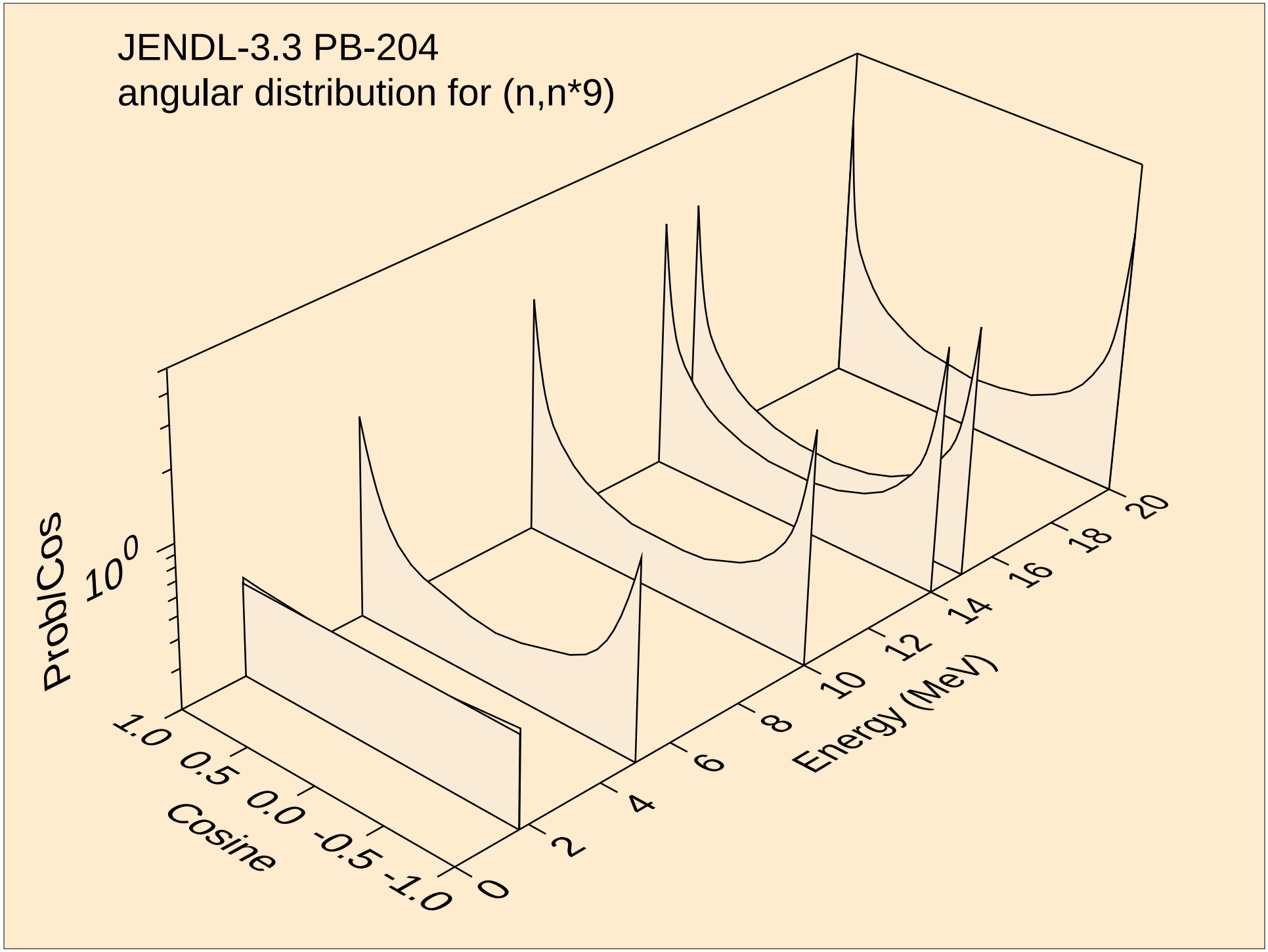

JENDL-3.3 PB-204
angular distribution for (n,n*4)
Prob/Cos
10^0
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

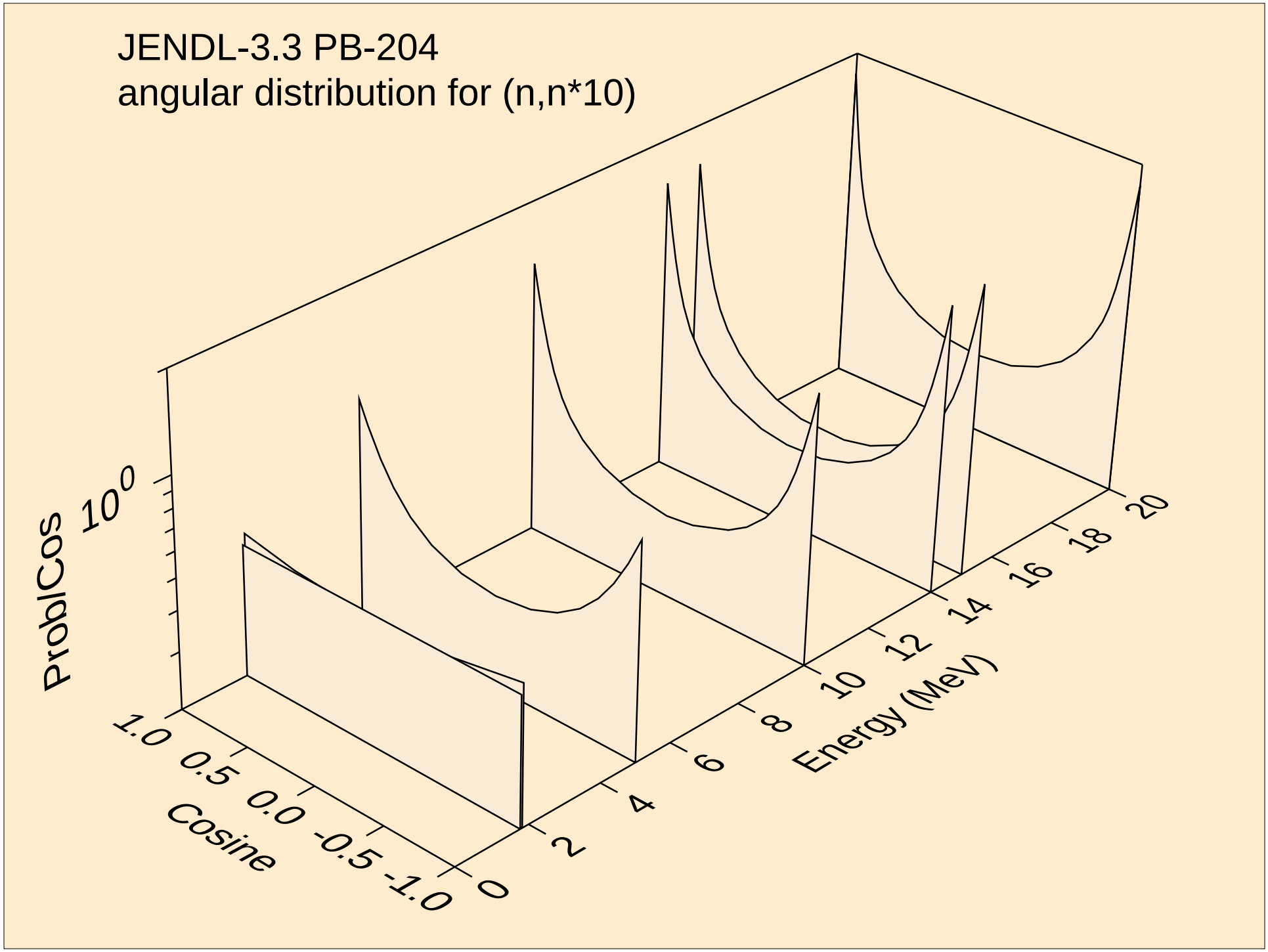

JENDL-3.3 PB-204
angular distribution for (n,n*5)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

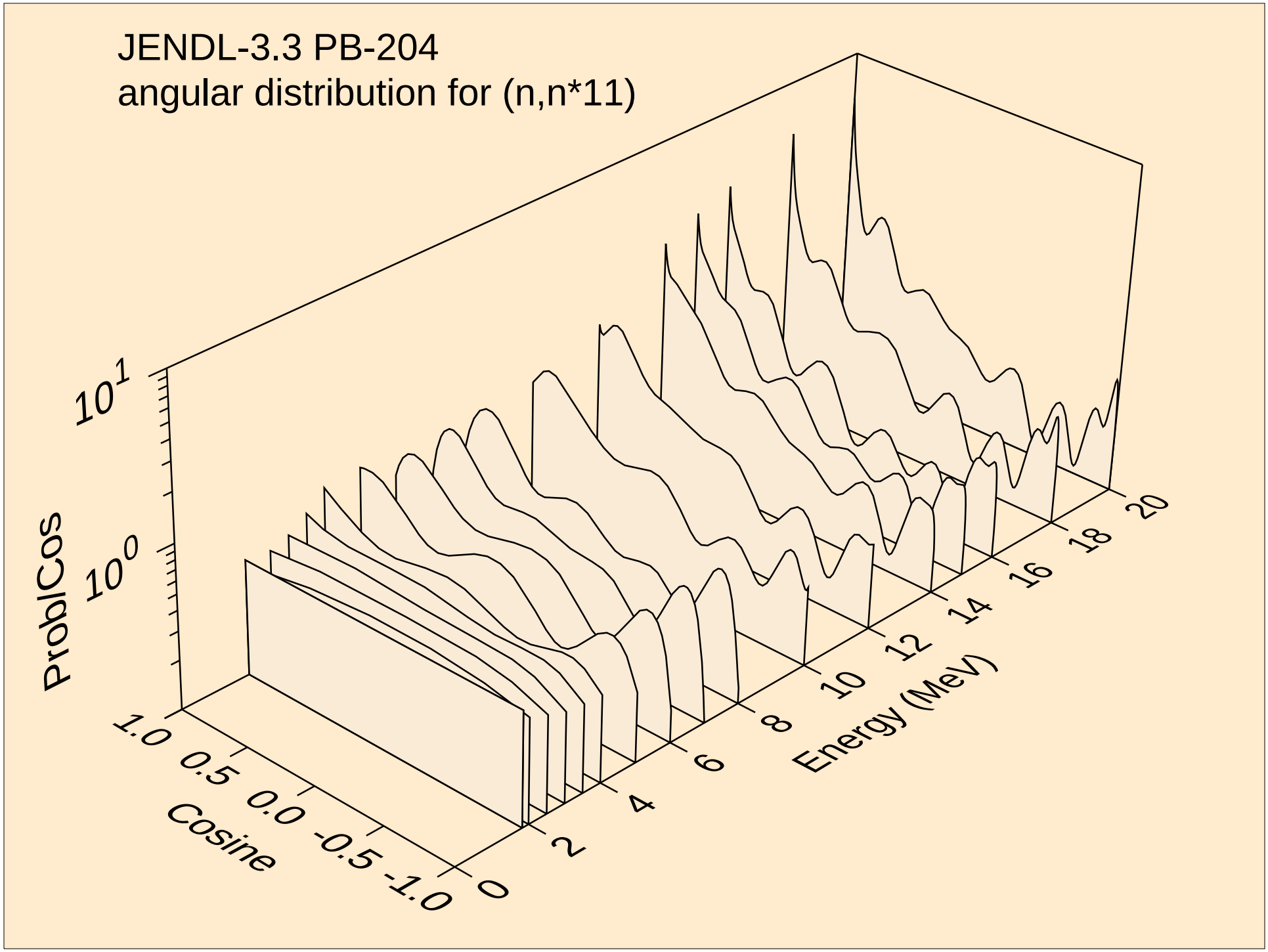

JENDL-3.3 PB-204
angular distribution for (n,n*6)
10^0
ProbCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

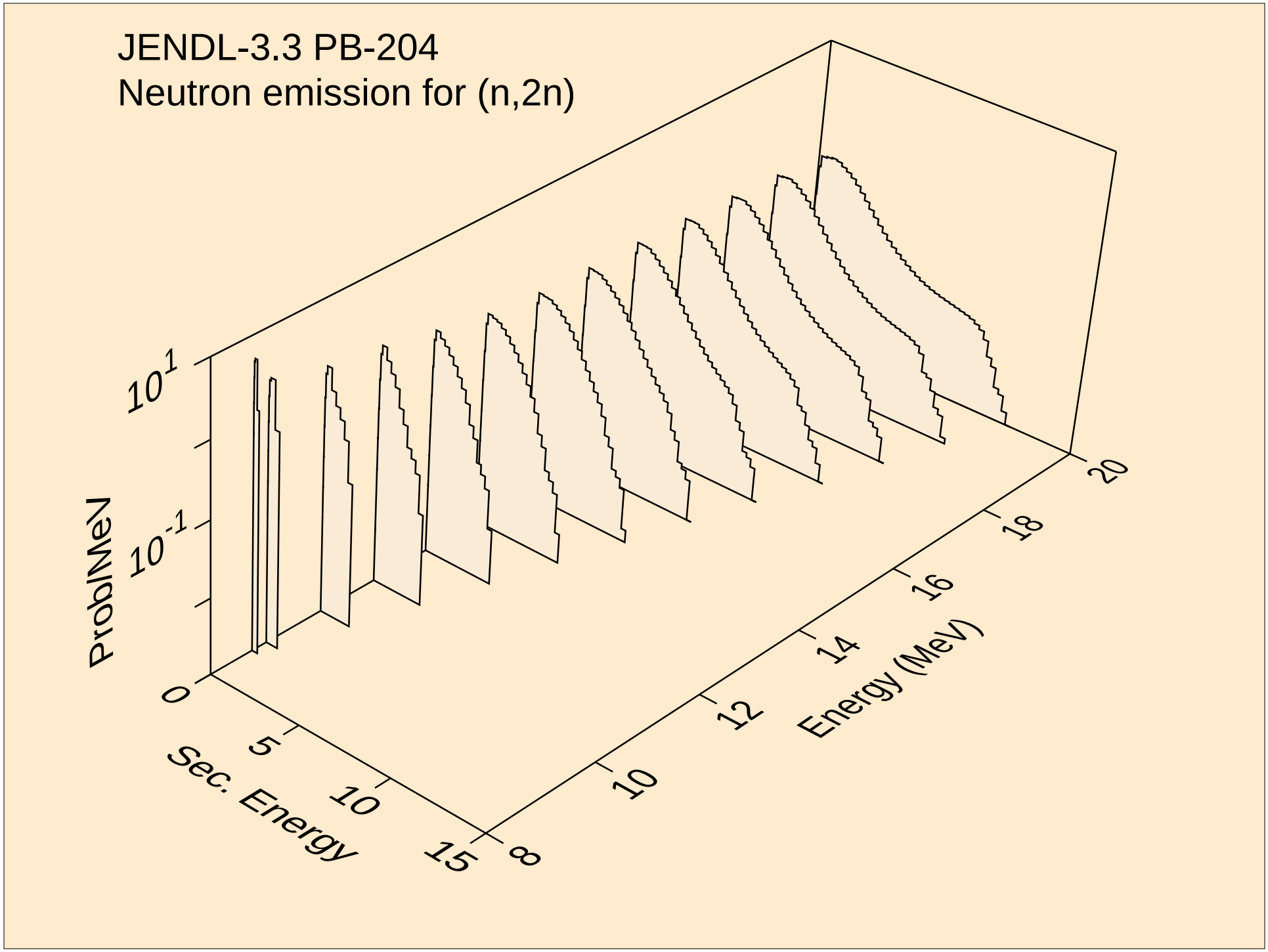

JENDL-3.3 PB-204
angular distribution for (n,n*7)
ProbCos
10^1
10^0
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

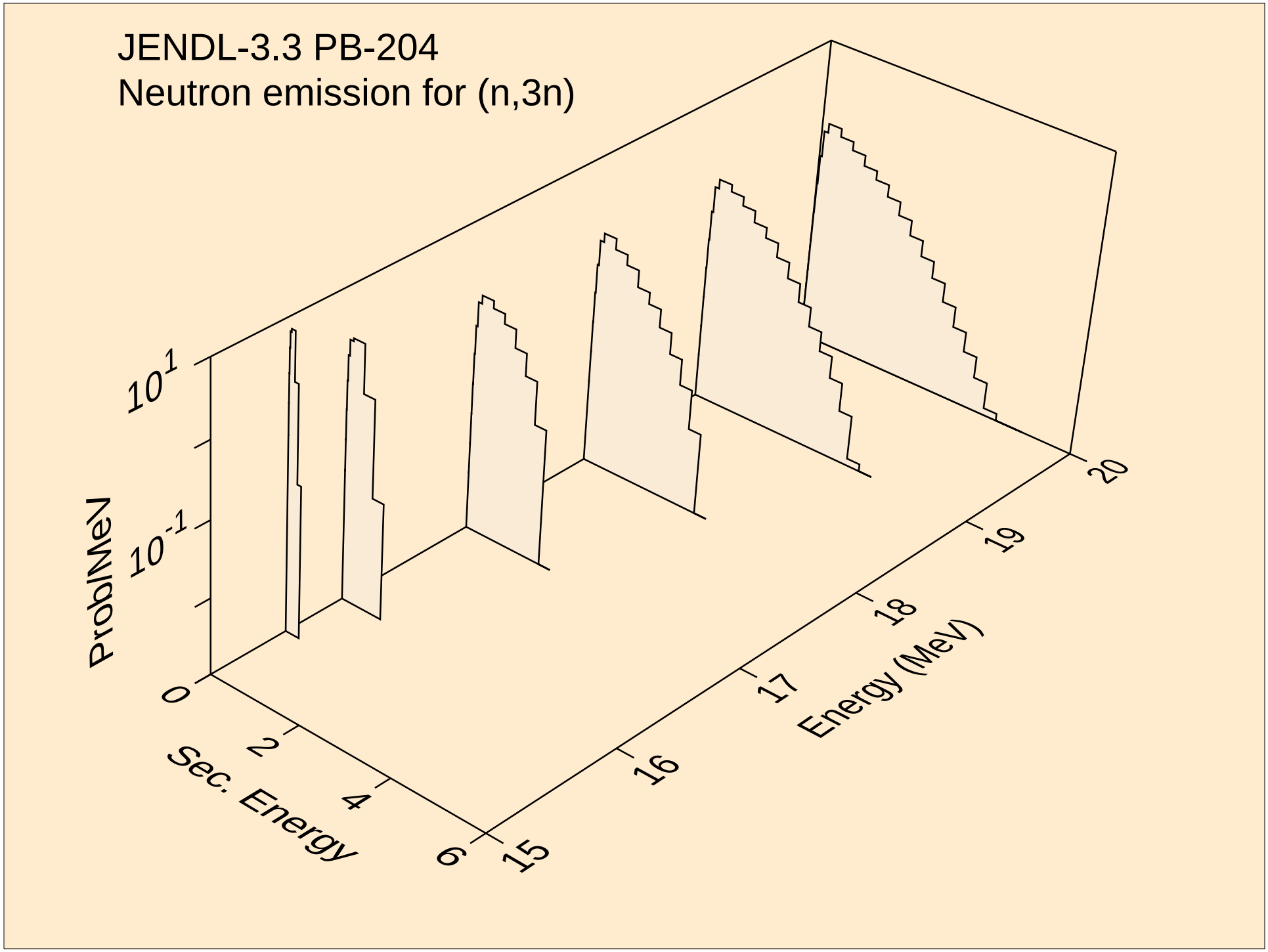

JENDL-3.3 PB-204
angular distribution for (n,n*8)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)


JENDL-3.3 PB-204
angular distribution for (n,n*9)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

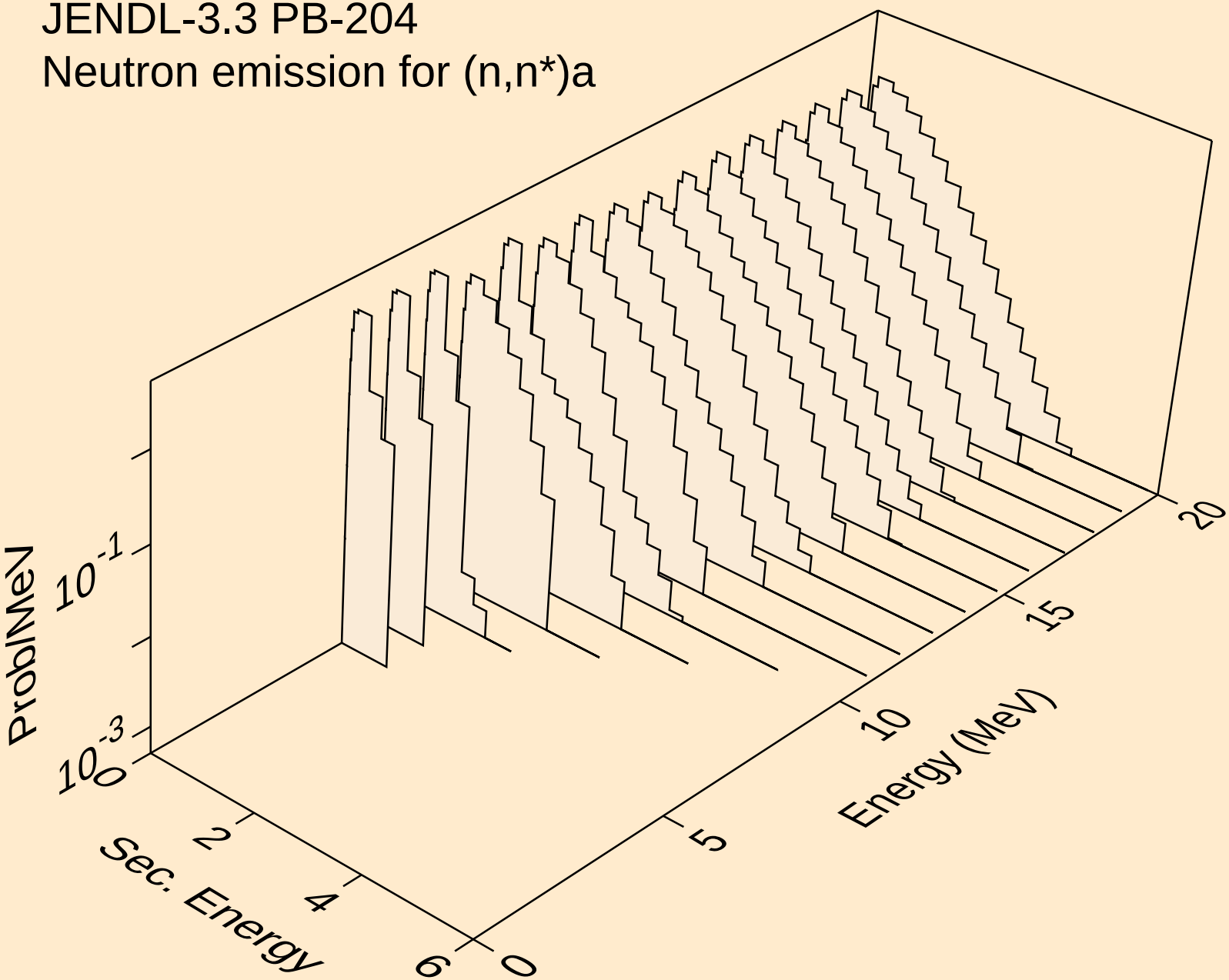

JENDL-3.3 PB-204
angular distribution for (n,n*10)
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

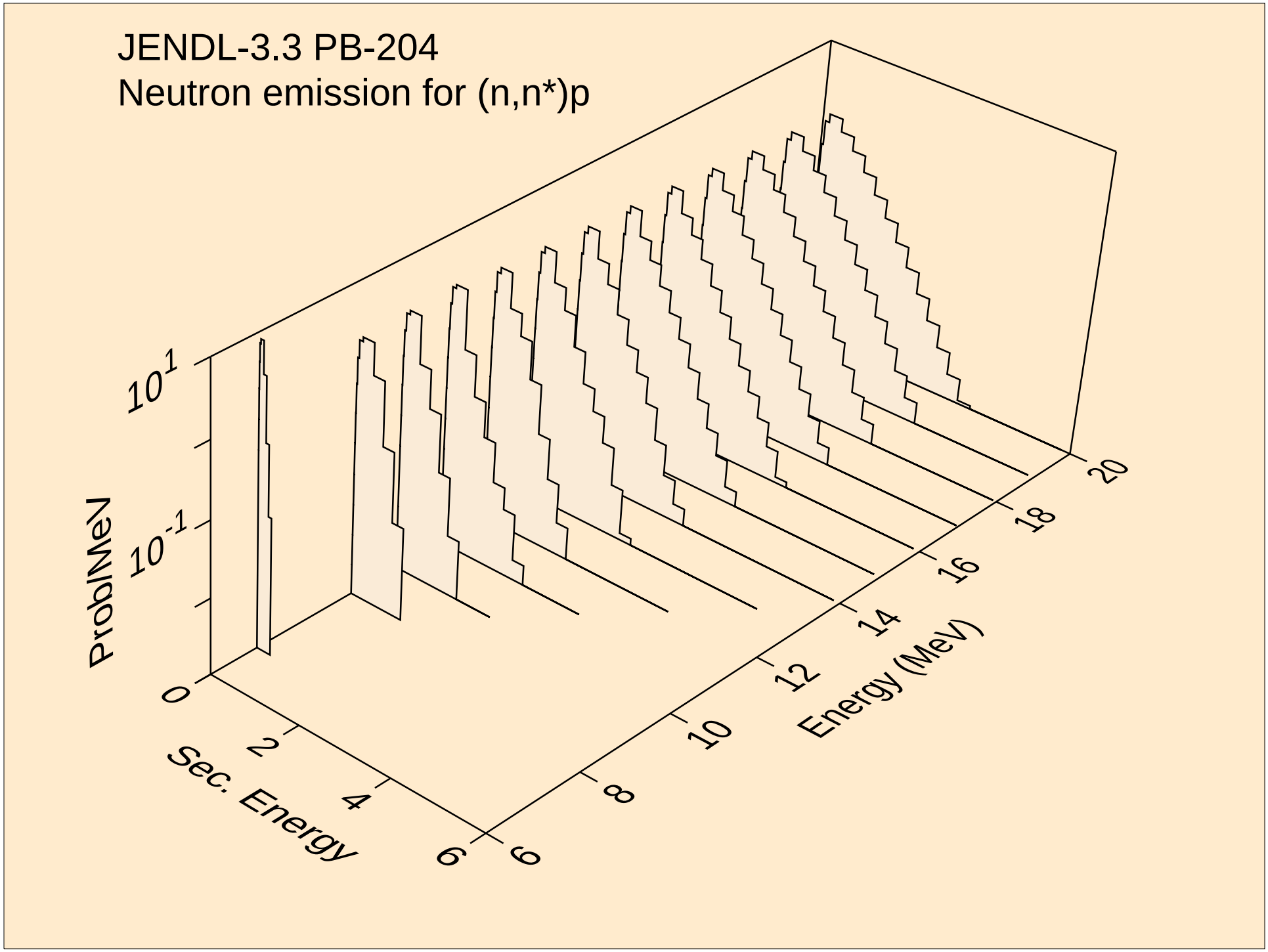

JENDL-3.3 PB-204
angular distribution for (n,n*11)
ProblCos
10^1
10^0
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

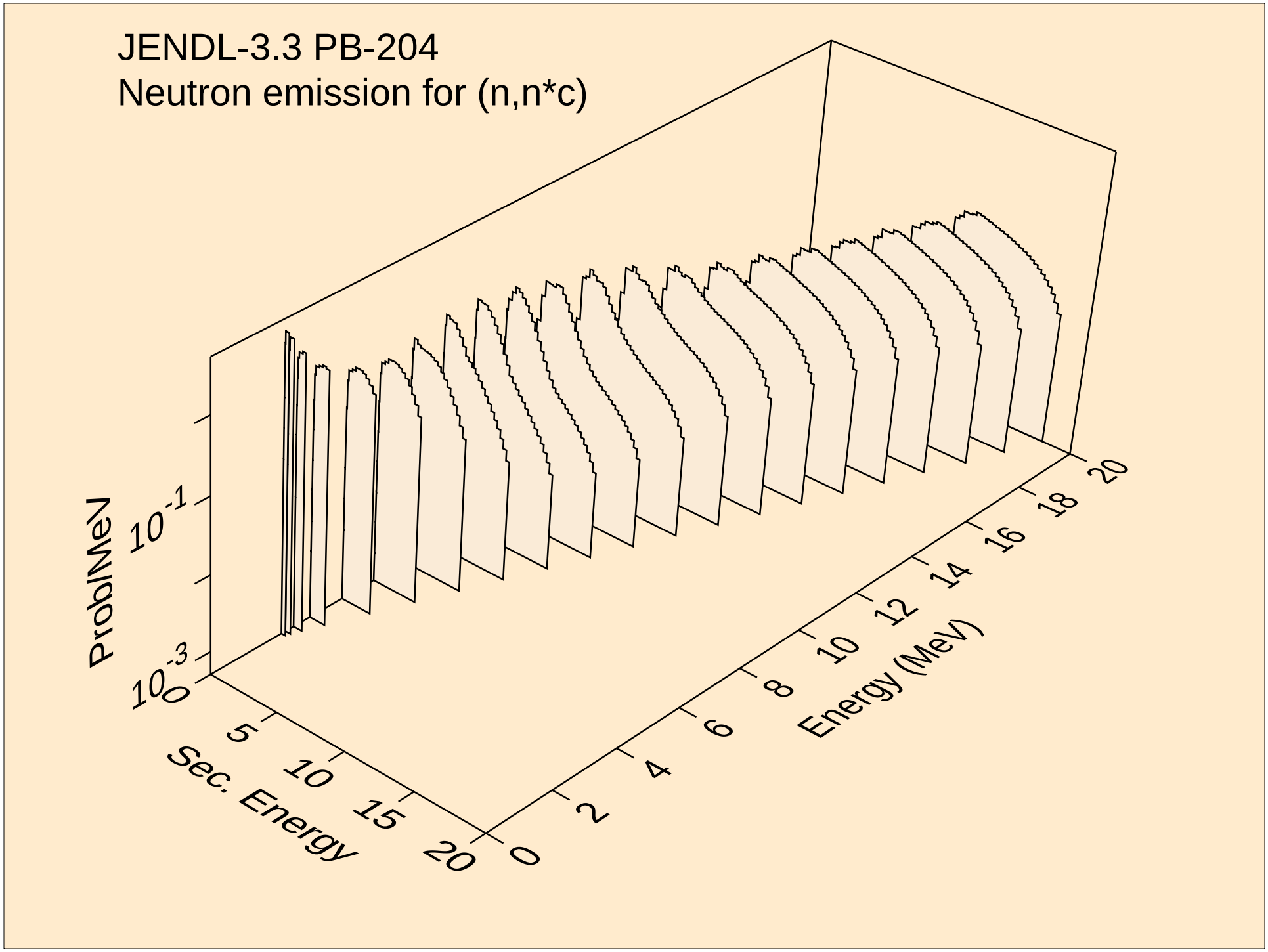

JENDL-3.3 PB-204
Neutron emission for (n,2n)
Prob/MeV
10^{1}
10^{-1}
0
5
10
15
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)


JENDL-3.3 PB-204
Neutron emission for (n,3n)
Prob/MeV
10^1
10^-1
0
Sec. Energy
2
4
6
Energy (MeV)
15
16
17
18
19
20

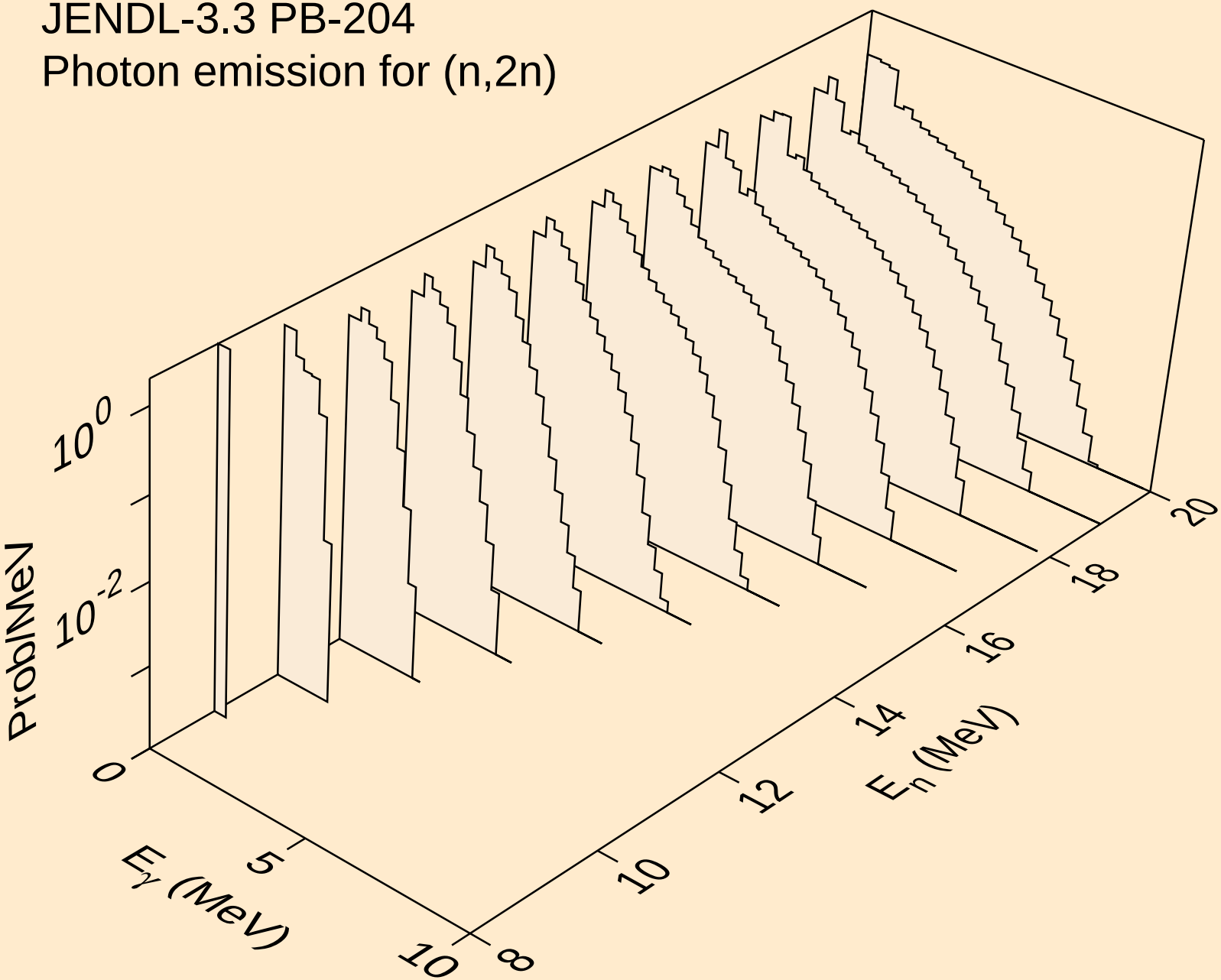
JENDL-3.3 PB-204
Neutron emission for (n,n*)a



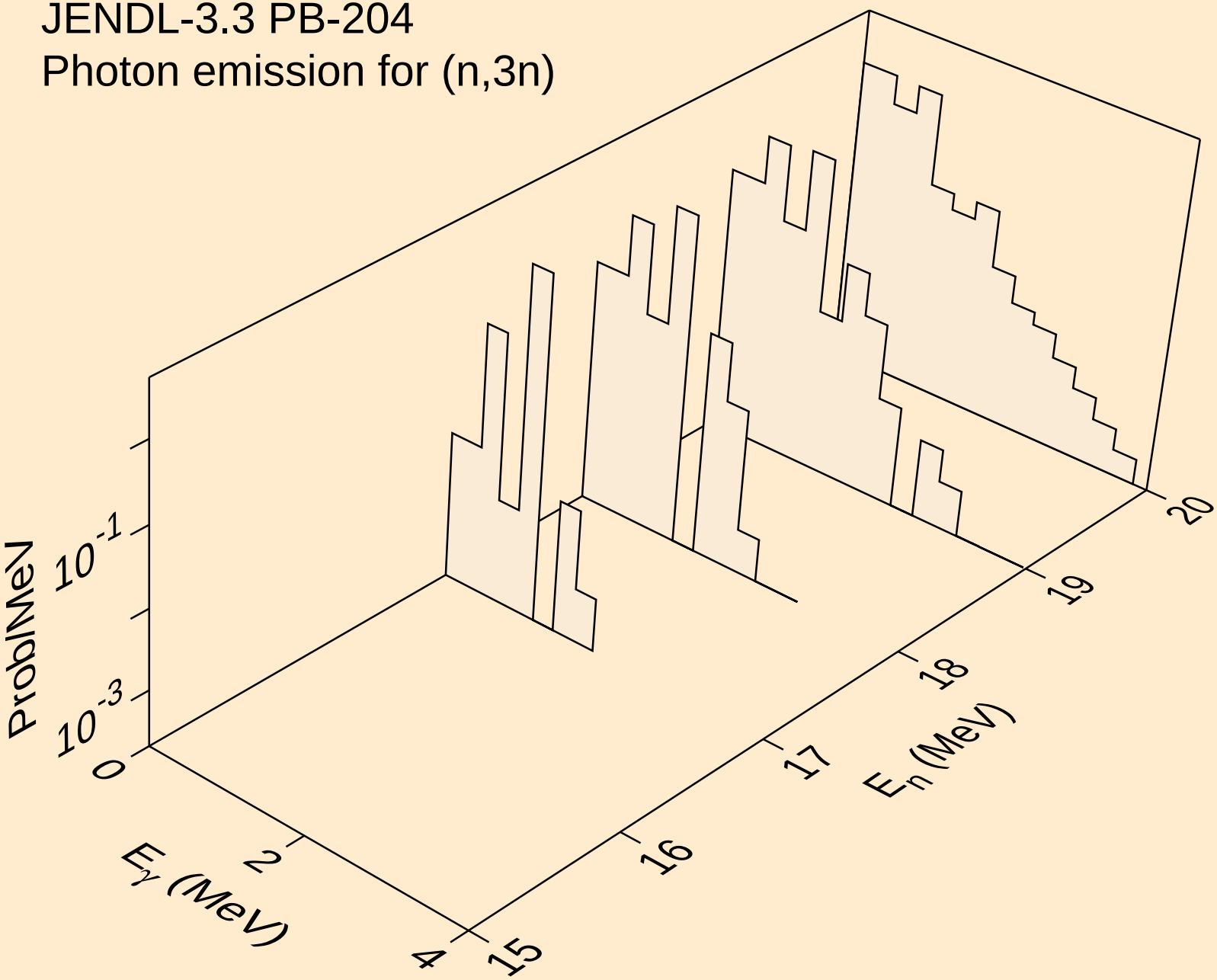

JENDL-3.3 PB-204
Neutron emission for (n,n*)p
Prob/MeV
10^1
10^-1
0
Sec. Energy
2
4
6
Energy (MeV)
6
8
10
12
14
16
18
20


JENDL-3.3 PB-204
Neutron emission for (n,n*c)
Prob/MeV
10^{-1}
10^{-3}
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

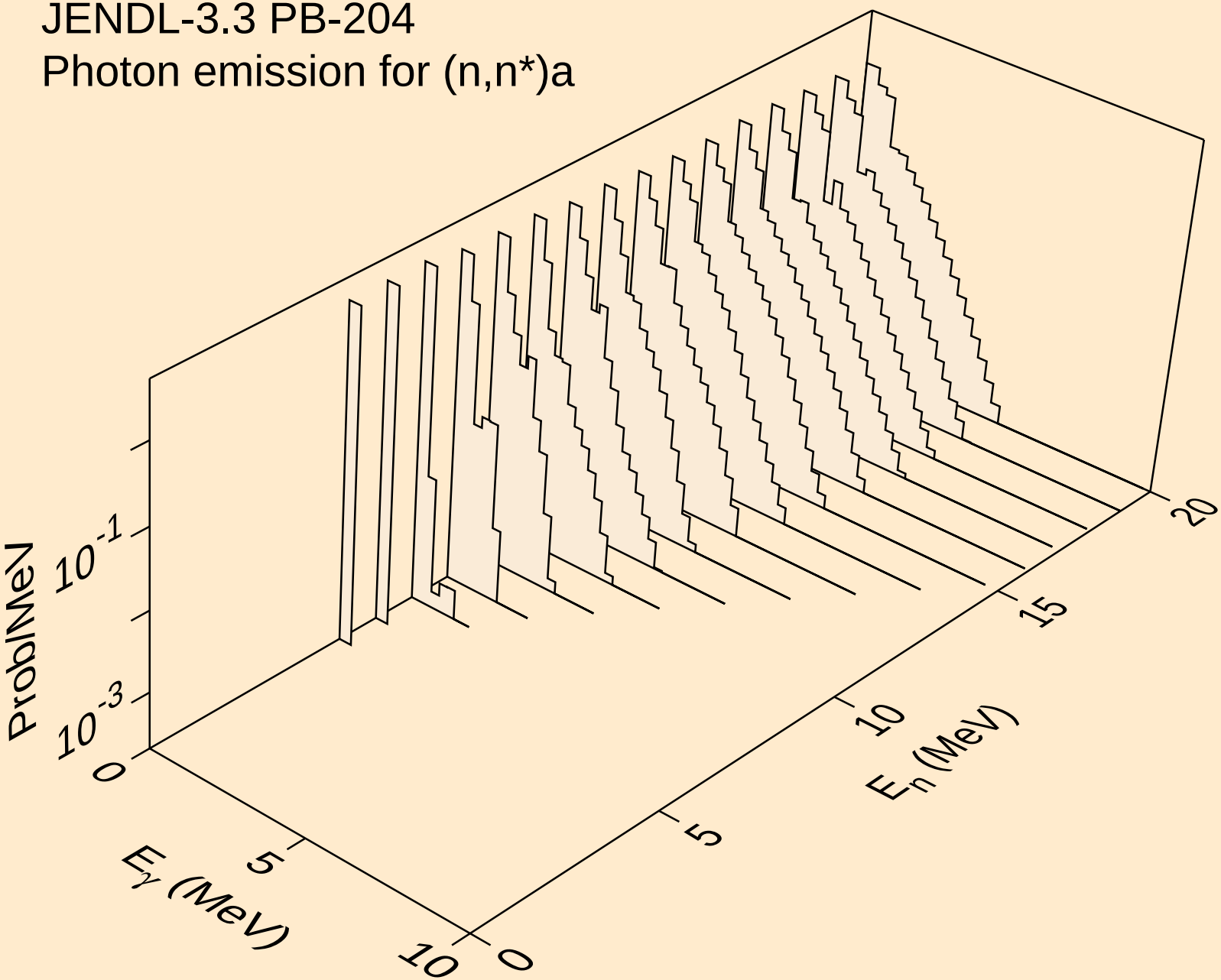
JENDL-3.3 PB-204
Photon emission for (n,2n)



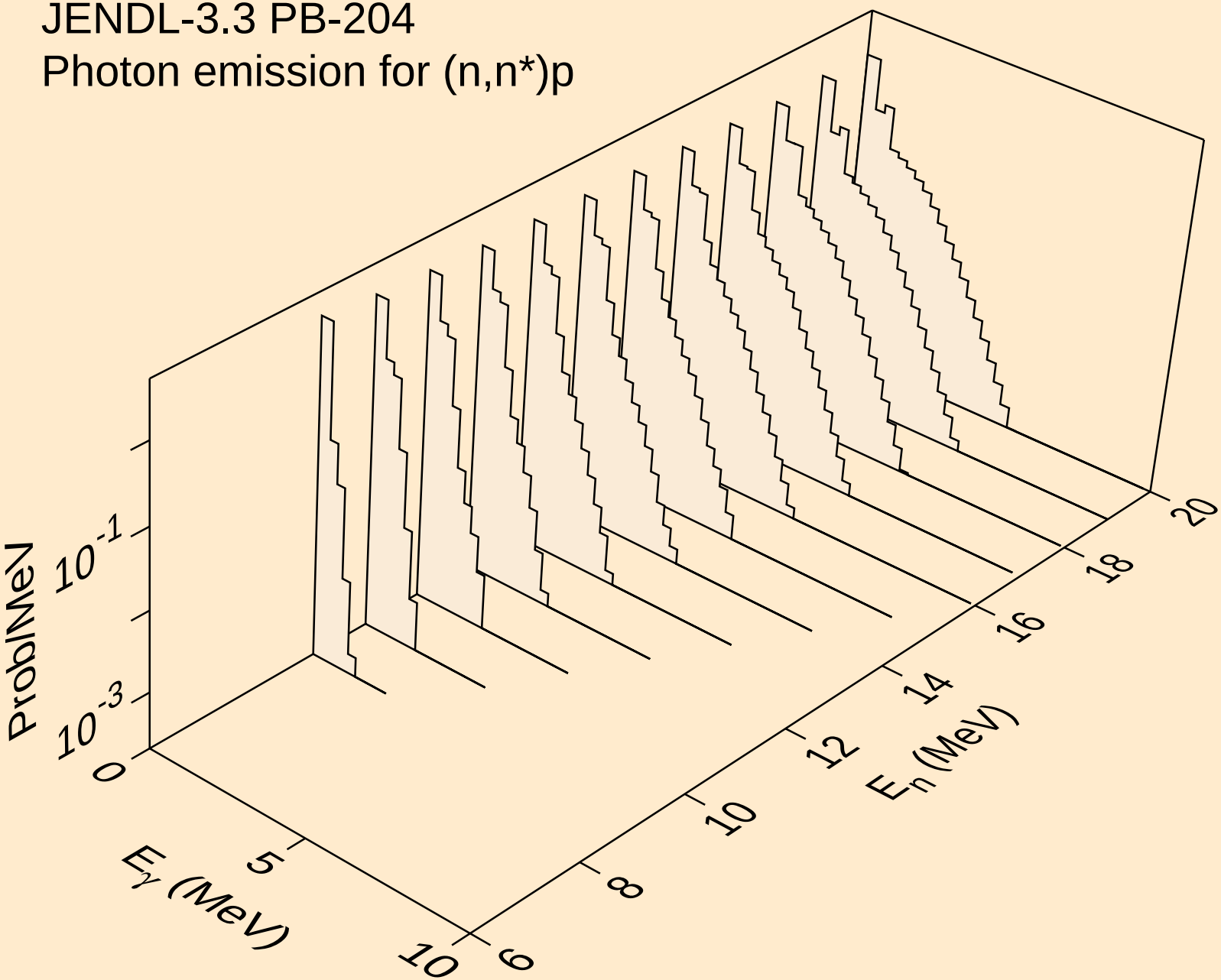
JENDL-3.3 PB-204
Photon emission for (n,3n)



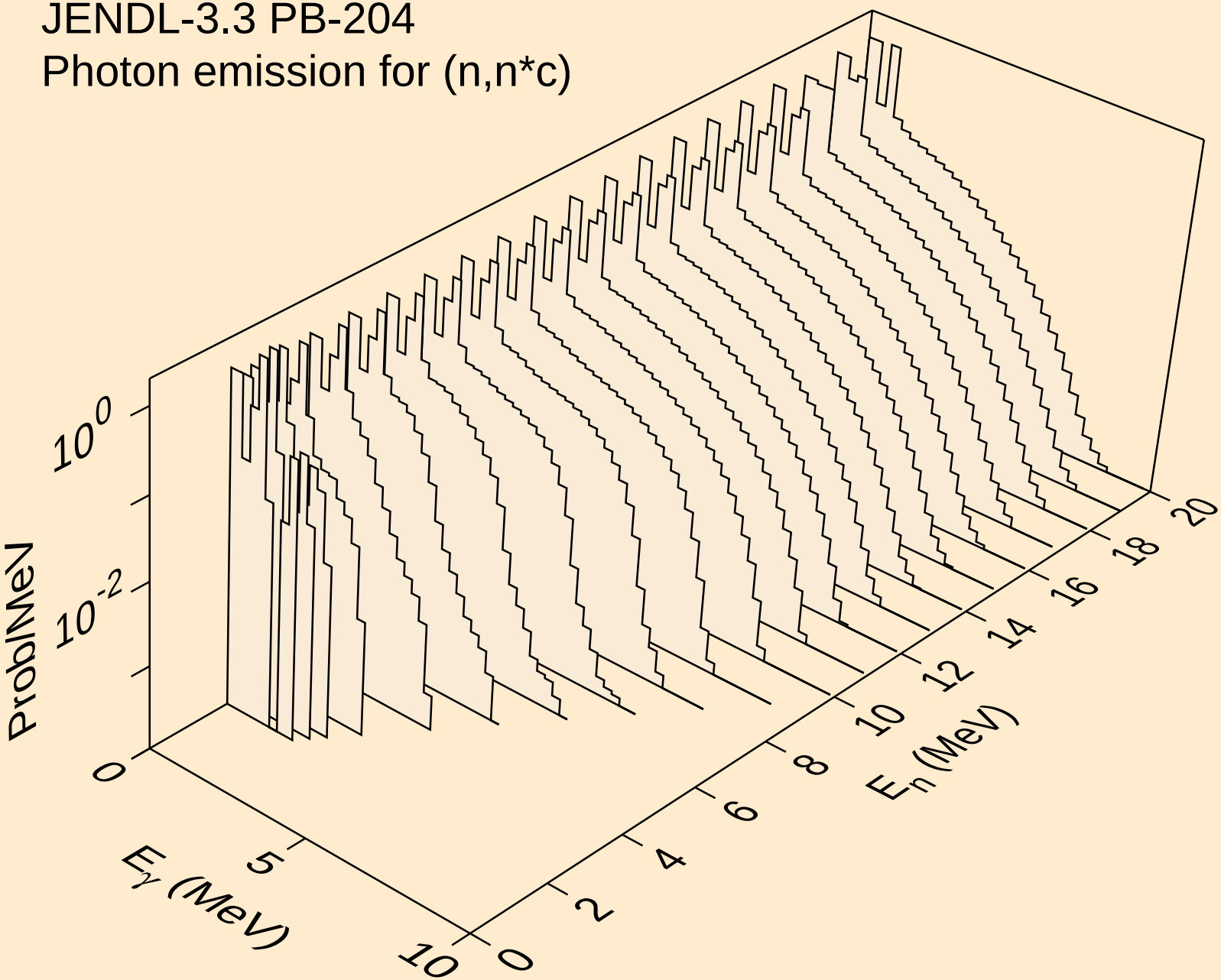
JENDL-3.3 PB-204
Photon emission for (n,n*)a



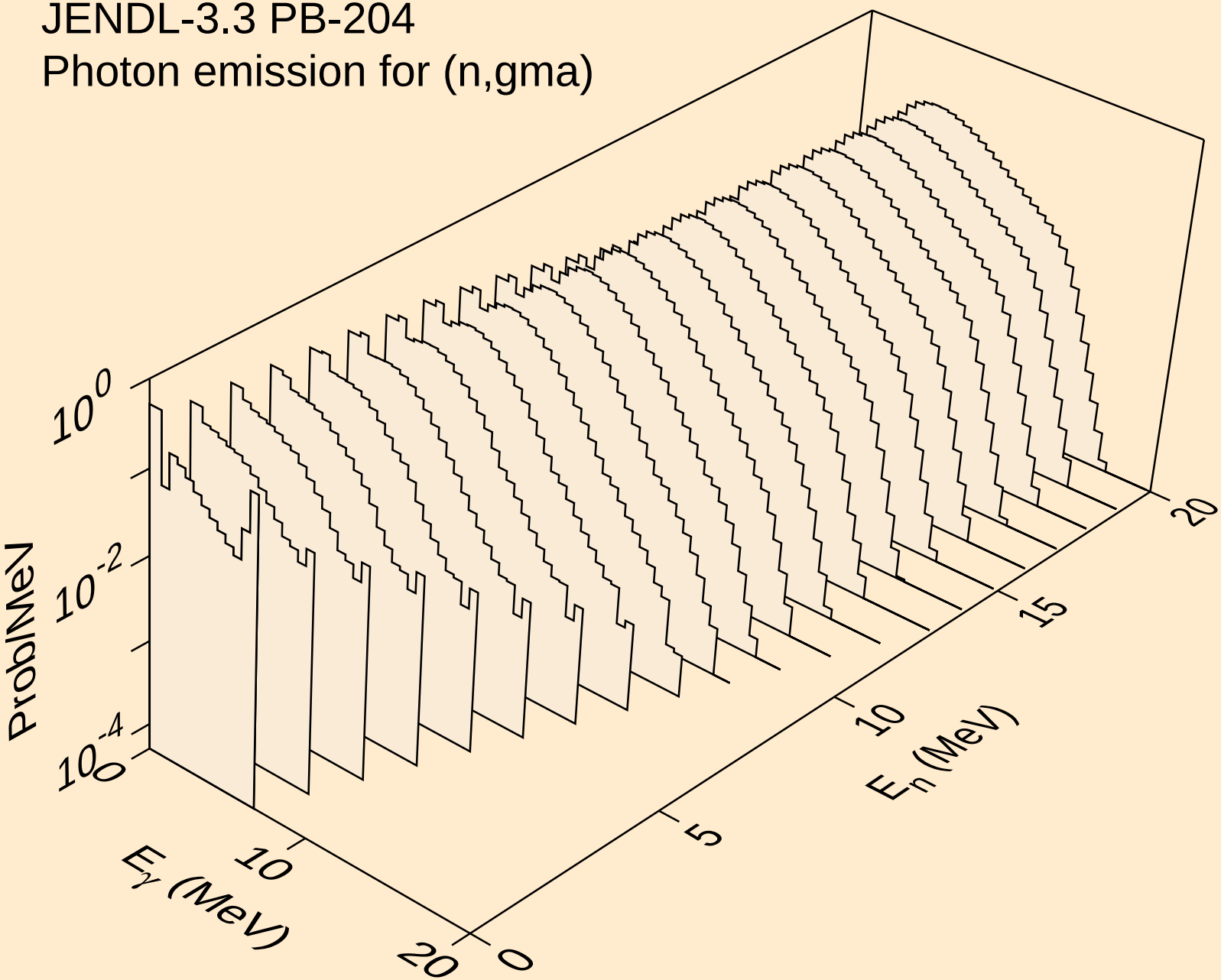
JENDL-3.3 PB-204
Photon emission for (n,n*)p



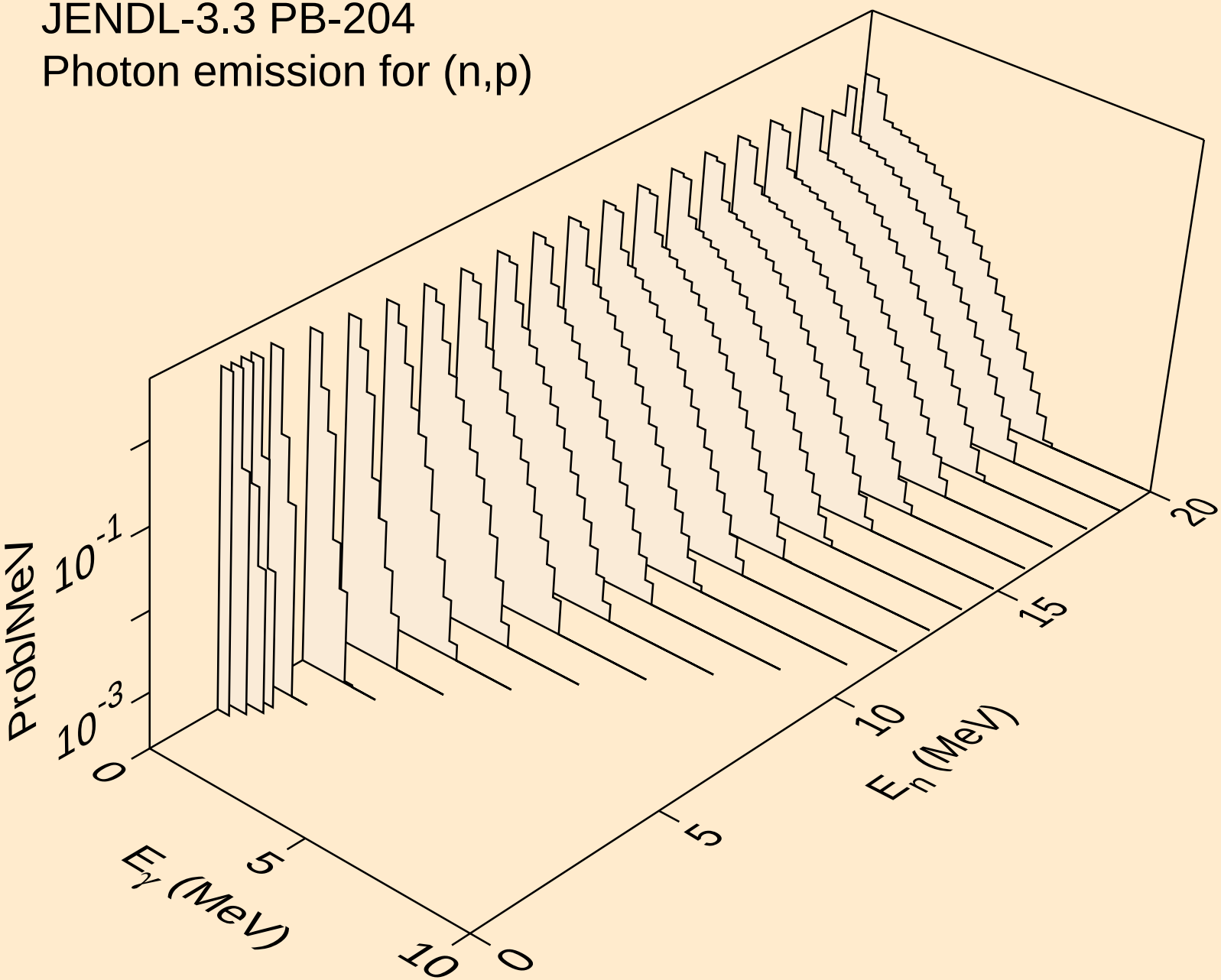
JENDL-3.3 PB-204
Photon emission for (n,n*c)



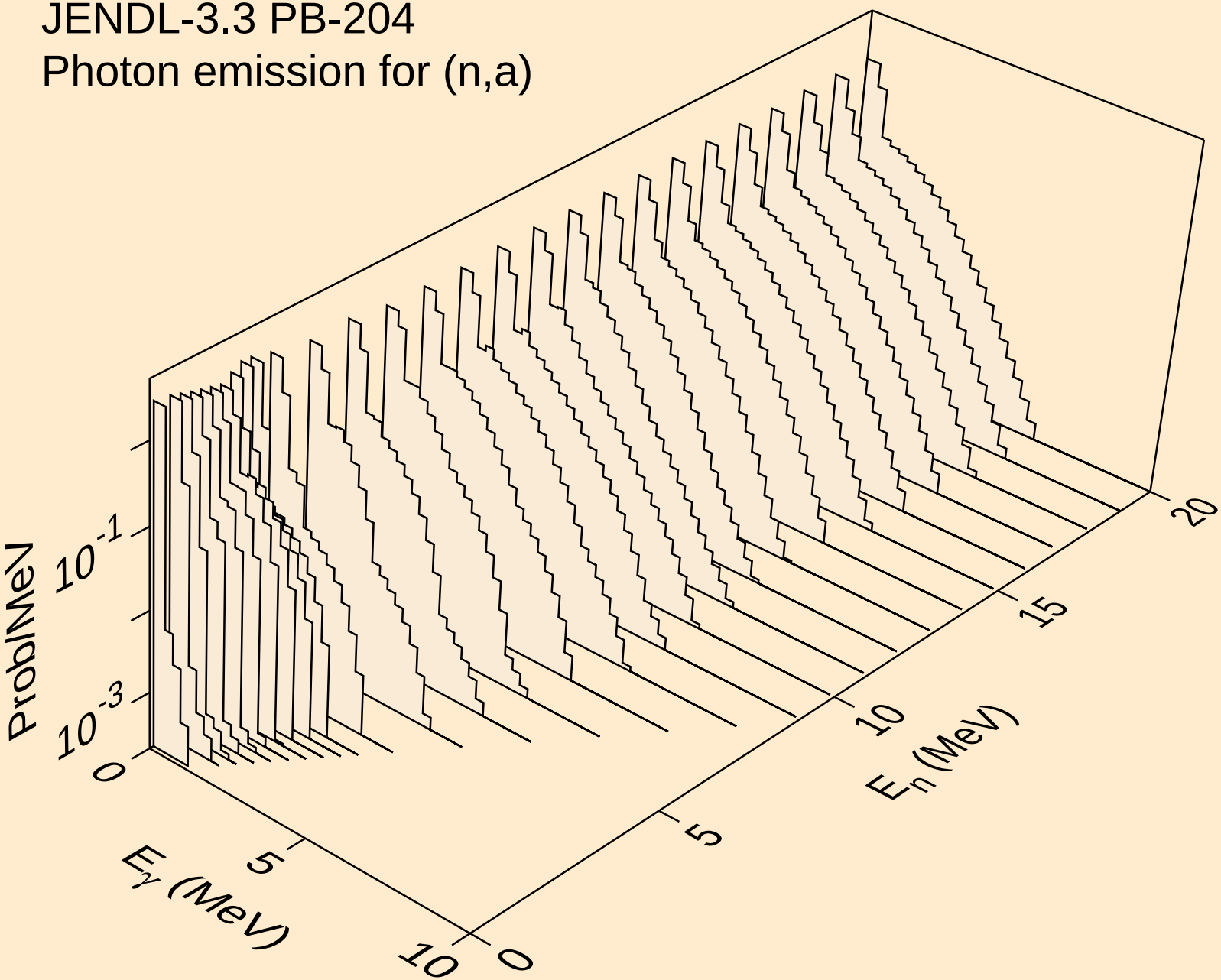
JENDL-3.3 PB-204
Photon emission for (n,gma)

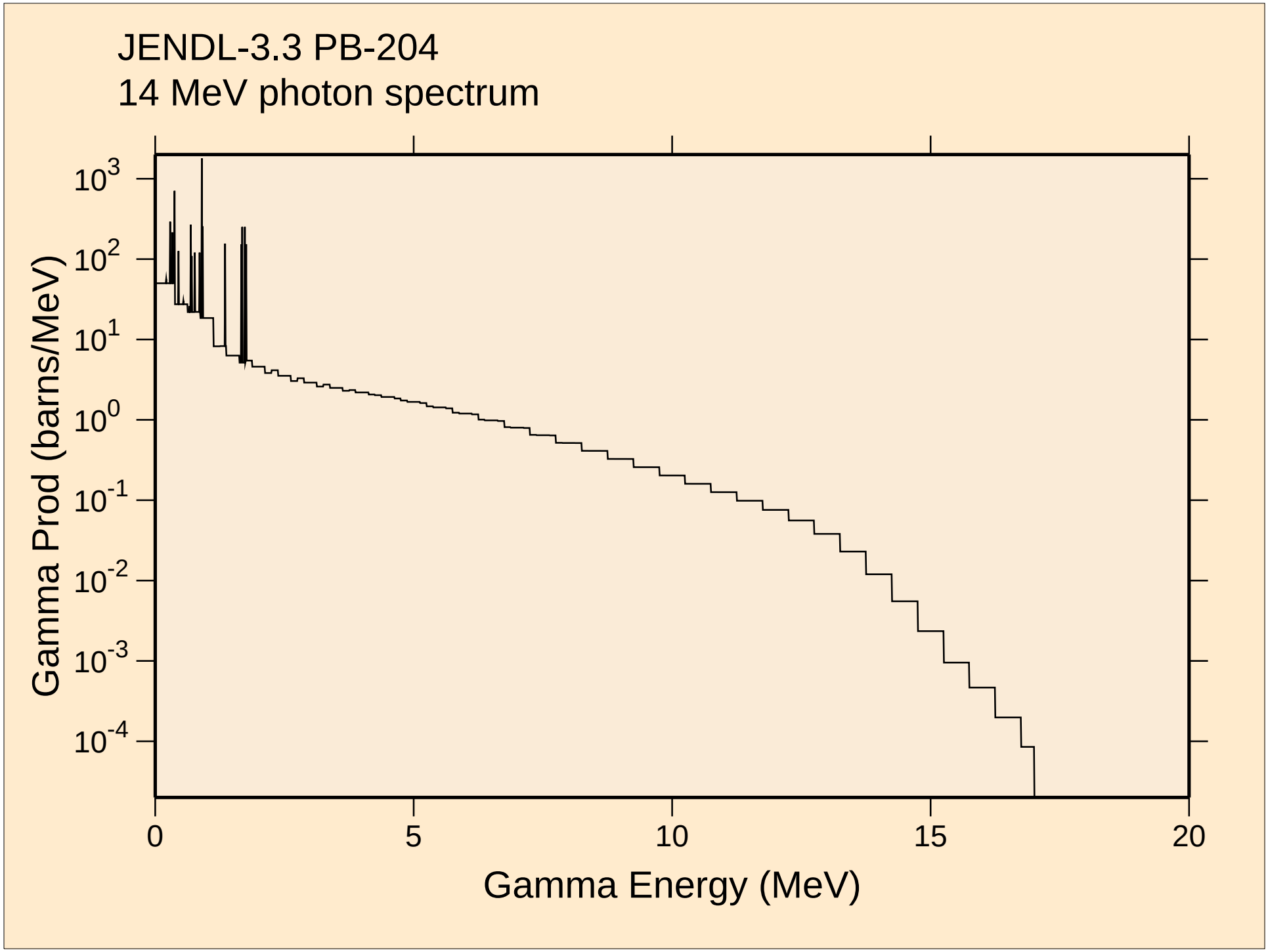


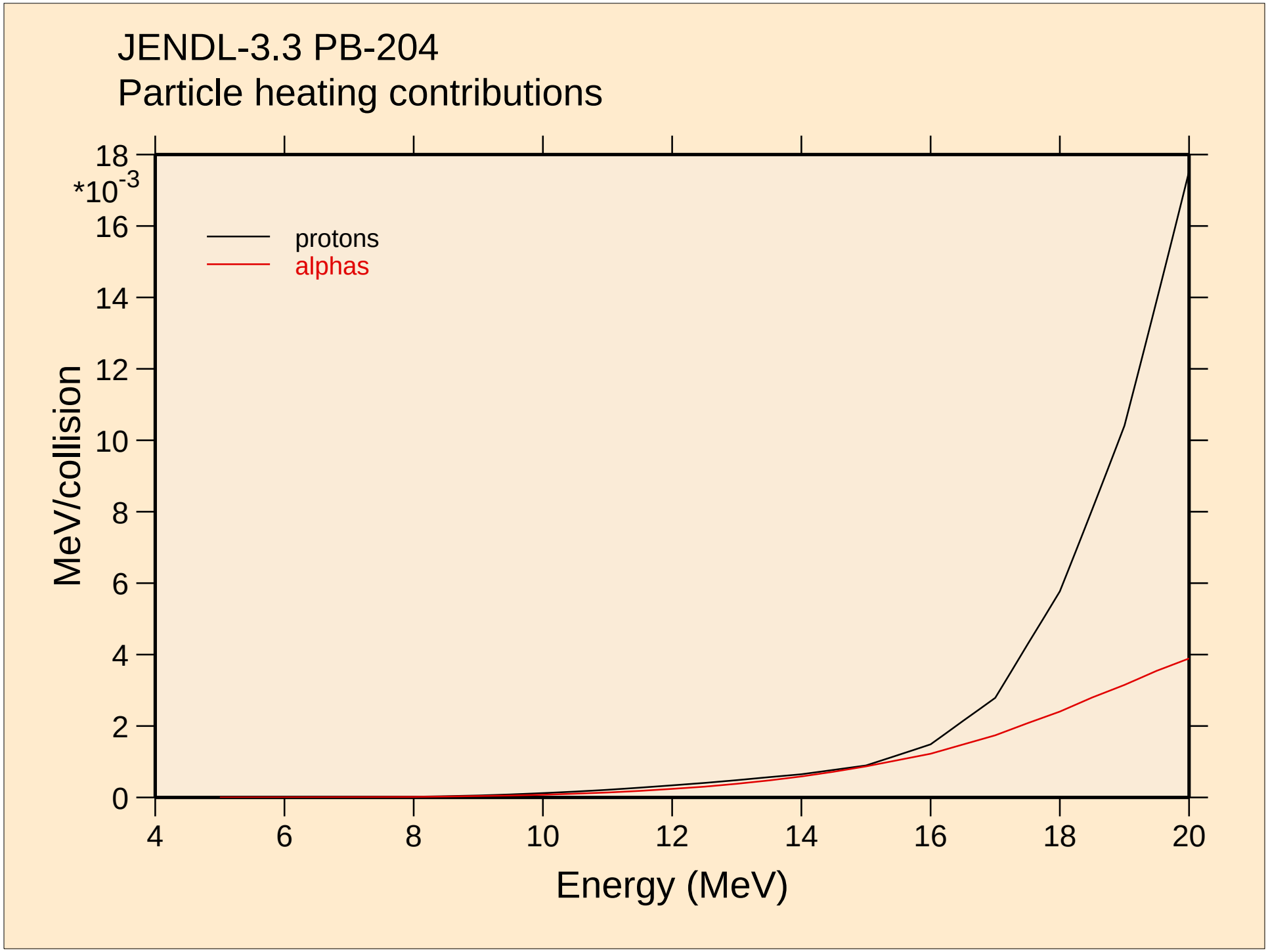
JENDL-3.3 PB-204
Photon emission for (n,p)

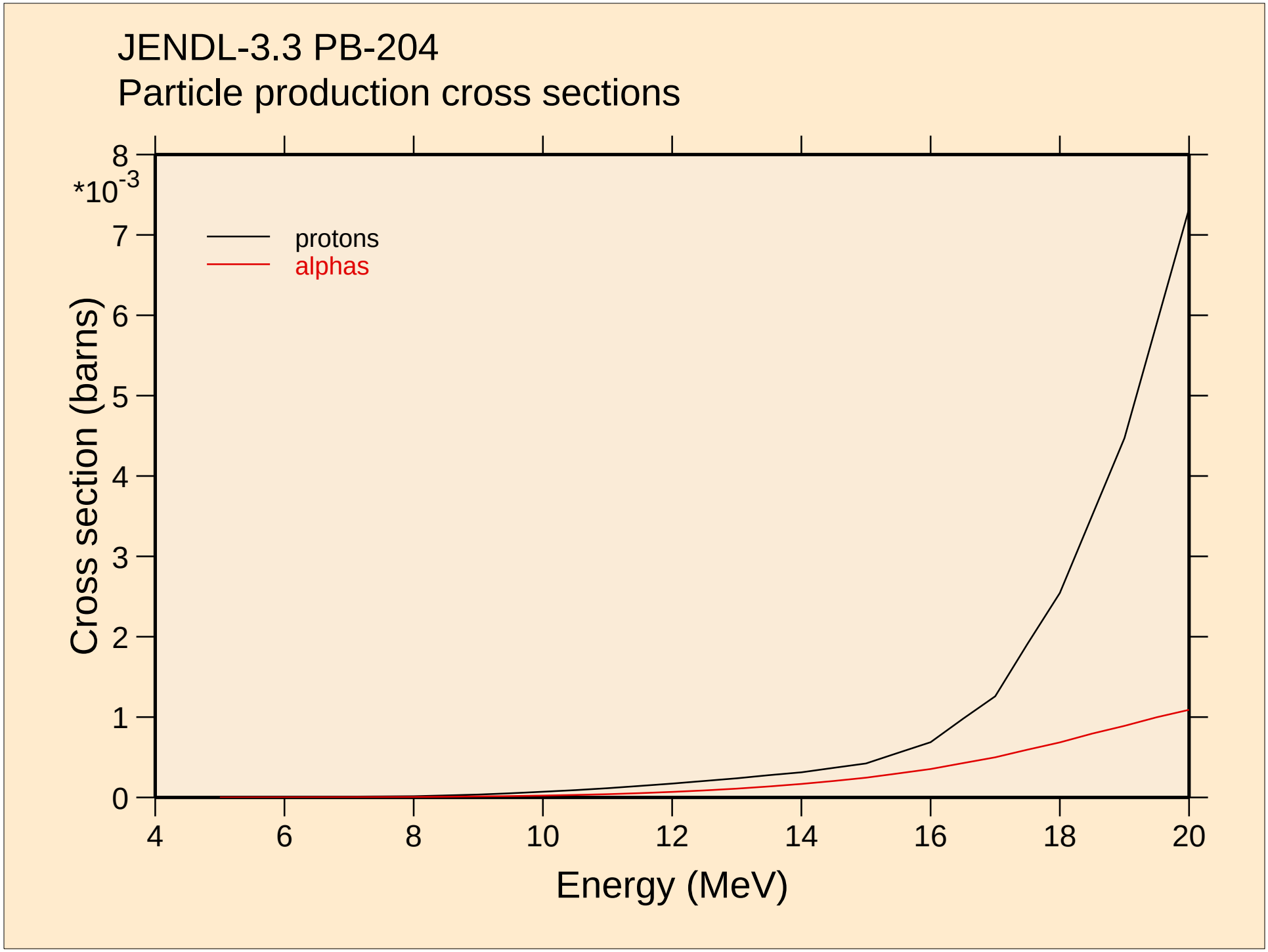


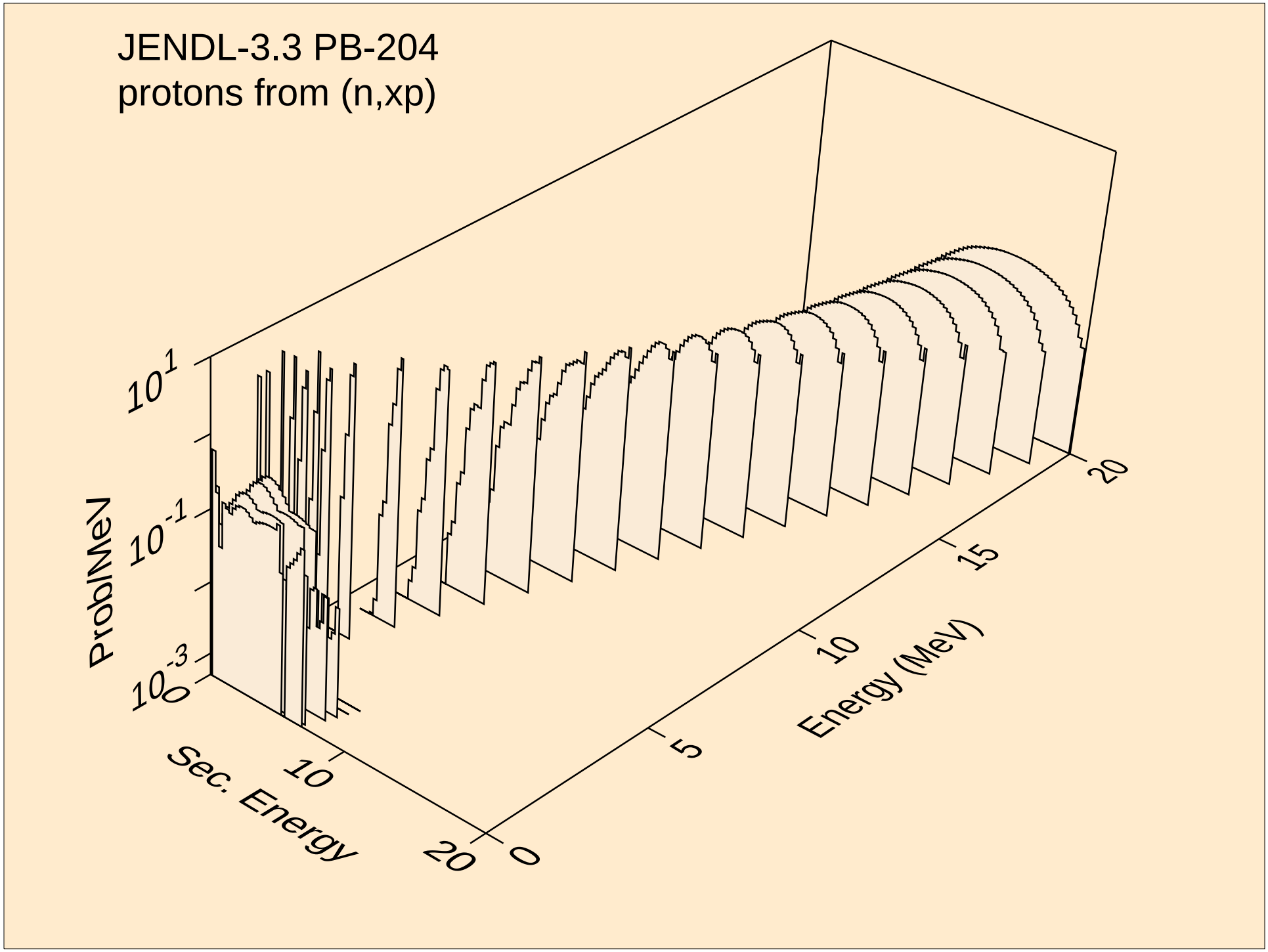
JENDL-3.3 PB-204
Photon emission for (n,a)

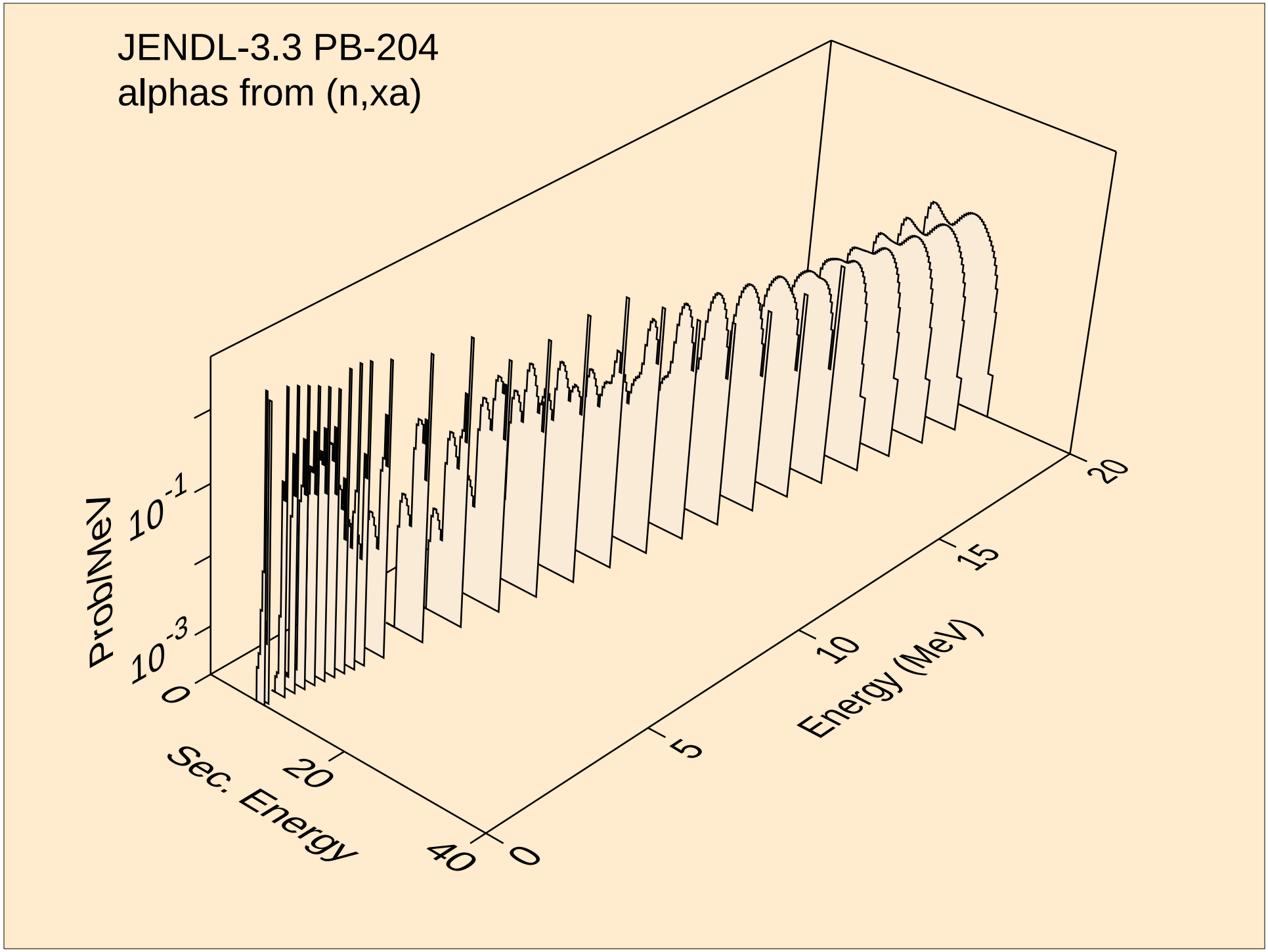



JENDL-3.3 PB-204
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
0
5
10
15
20
Gamma Energy (MeV)


JENDL-3.3 PB-204
Particle heating contributions
*10-3
18
16
14
12
10
8
6
4
2
0
MeV/collision
protons
alphas
4
6
8
10
12
14
16
18
20
Energy (MeV)


JENDL-3.3 PB-204
Particle production cross sections
*10-3
8
7
6
5
4
3
2
1
0
Cross section (barns)
protons
alphas
4
6
8
10
12
14
16
18
20
Energy (MeV)


JENDL-3.3 PB-204
protons from (n,xp)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
Sec. Energy
0
10
20
Energy (MeV)
0
5
10
15
20


JENDL-3.3 PB-204
alphas from (n,xa)
Prob/MeV
10^-1
10^-3
0
Sec. Energy
20
40
0
5
10
15
20
Energy (MeV)