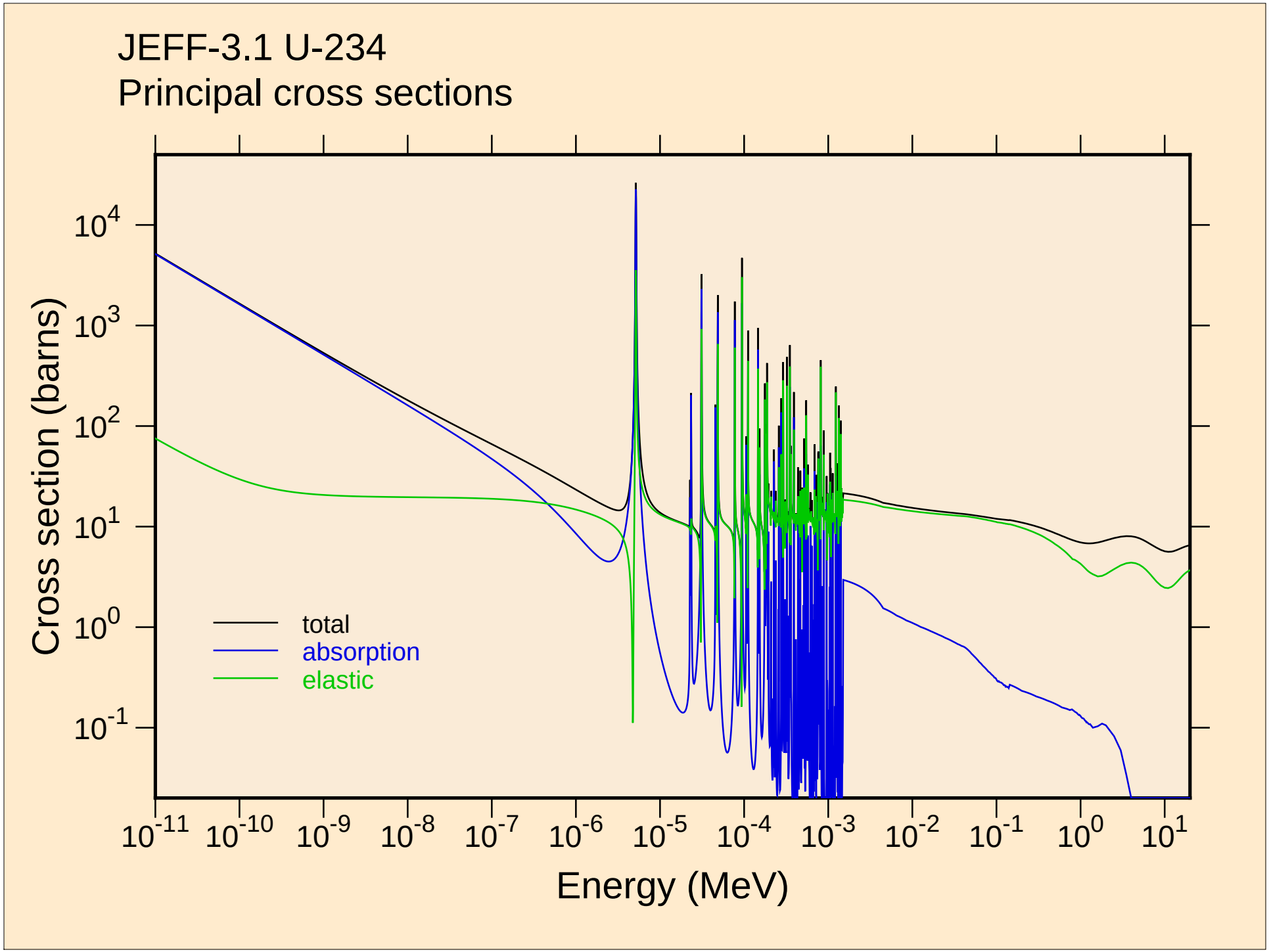
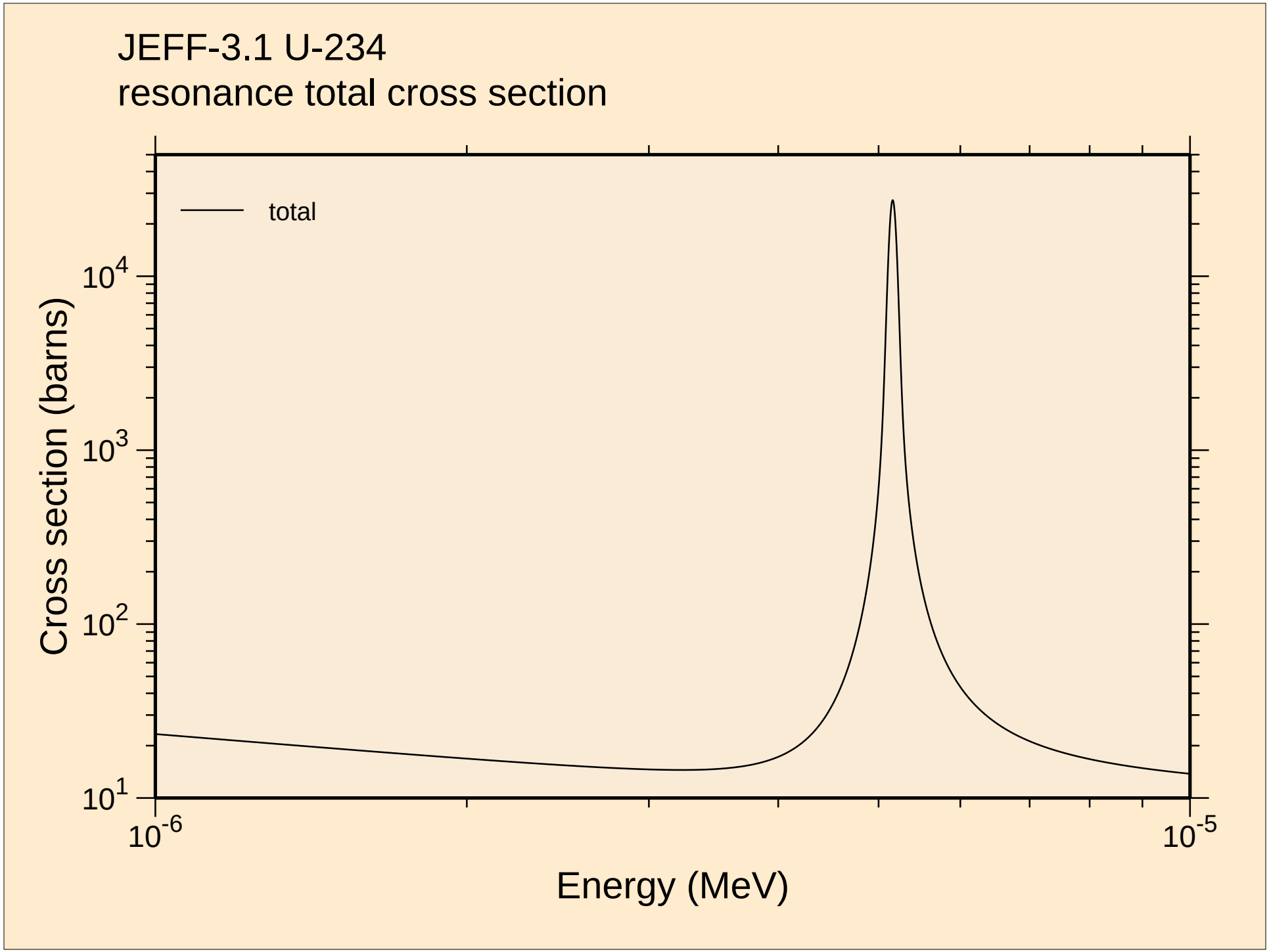
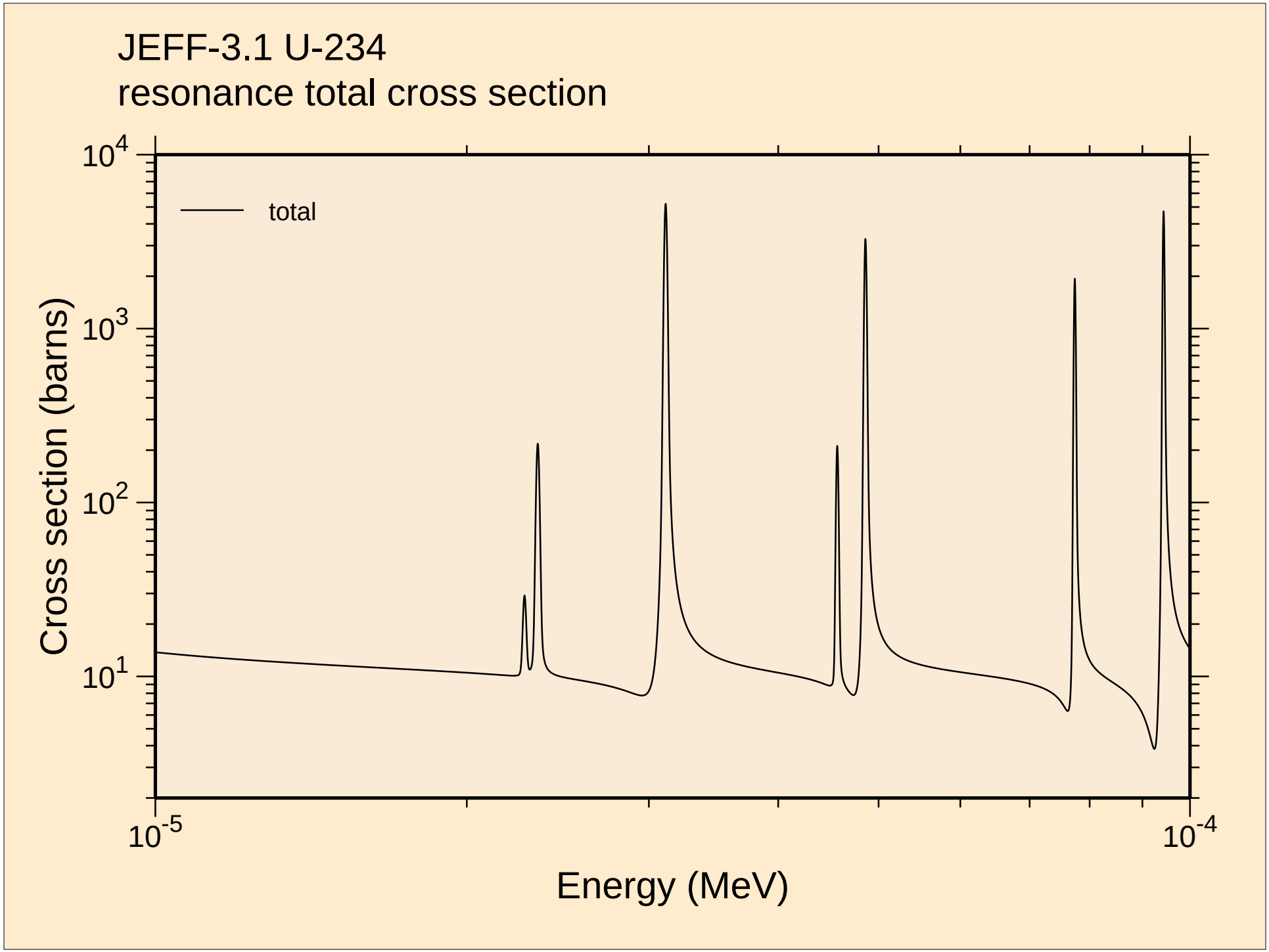
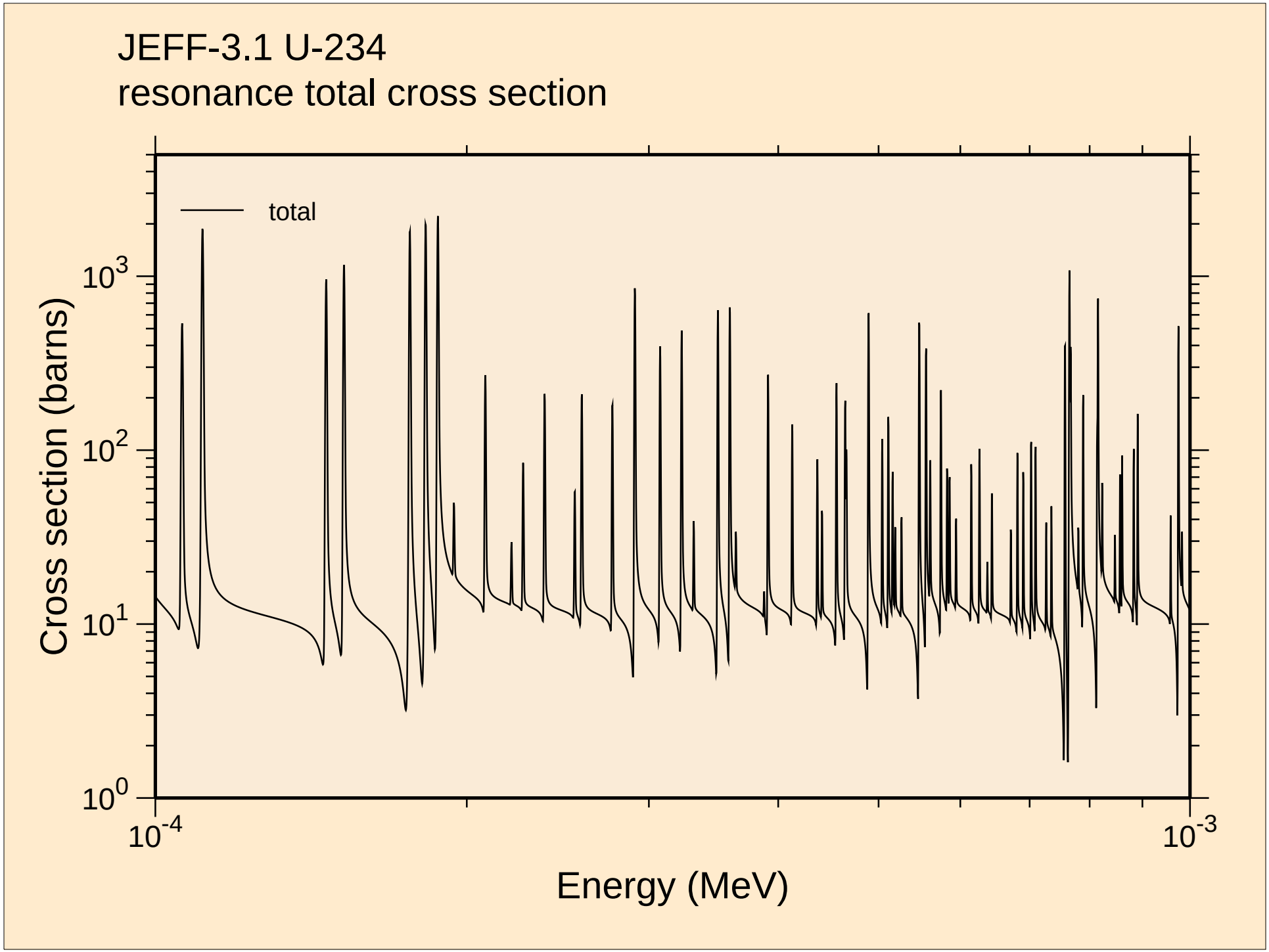
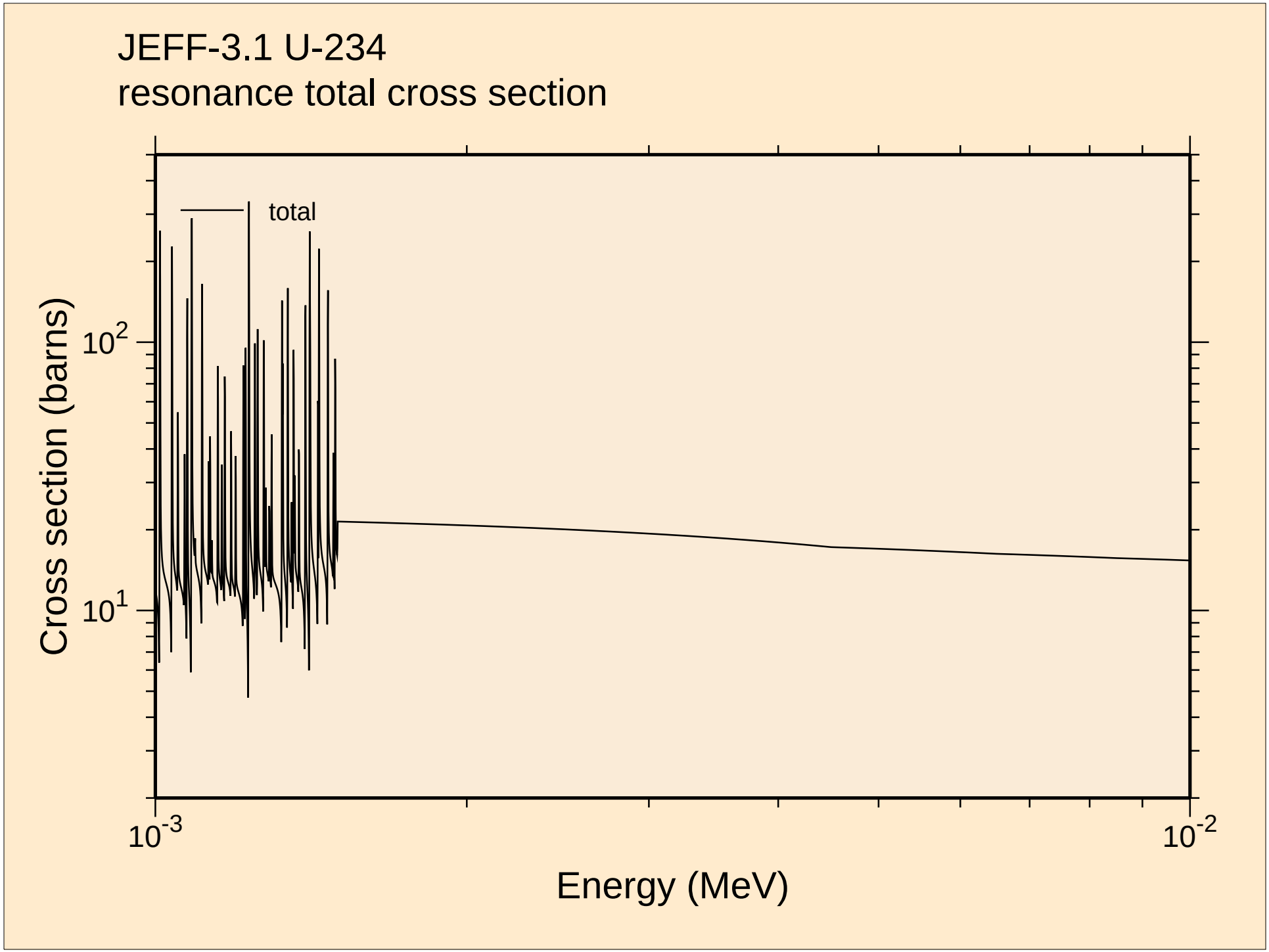
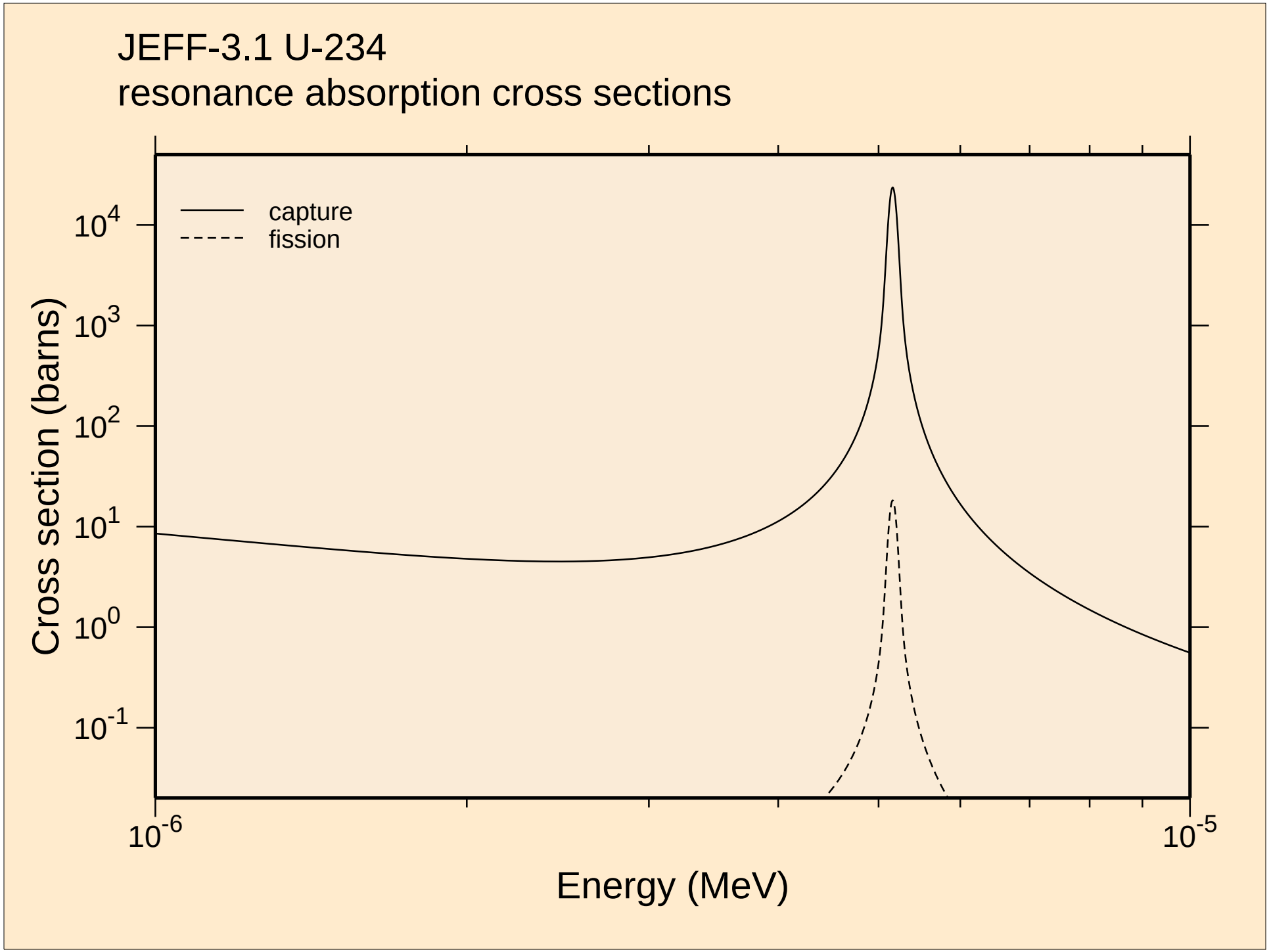

JEFF-3.1 U-234
Principal cross sections
Cross section (barns)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
total
absorption
elastic
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}
Energy (MeV)

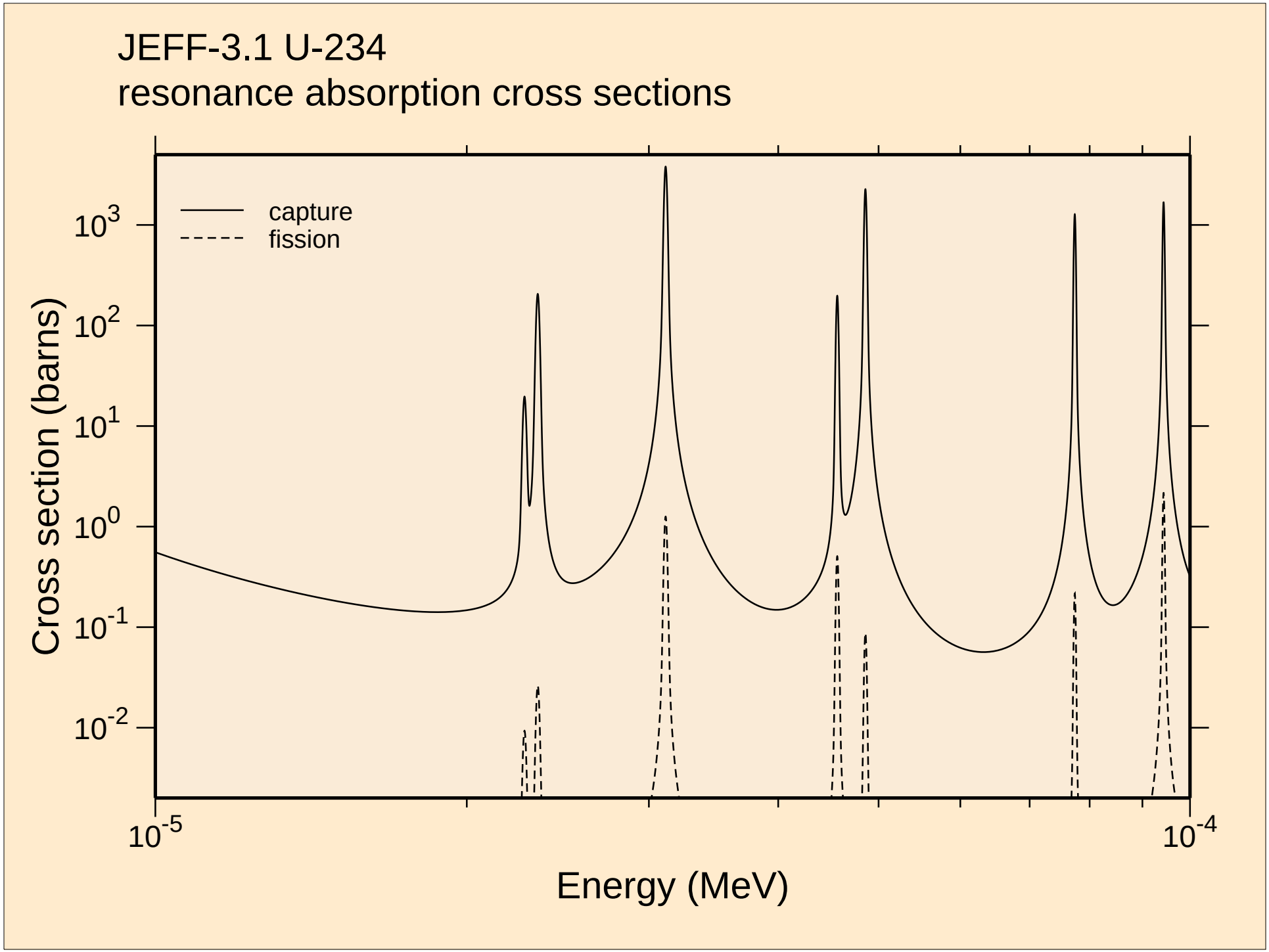

JEFF-3.1 U-234
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^-6
10^-5
Energy (MeV)

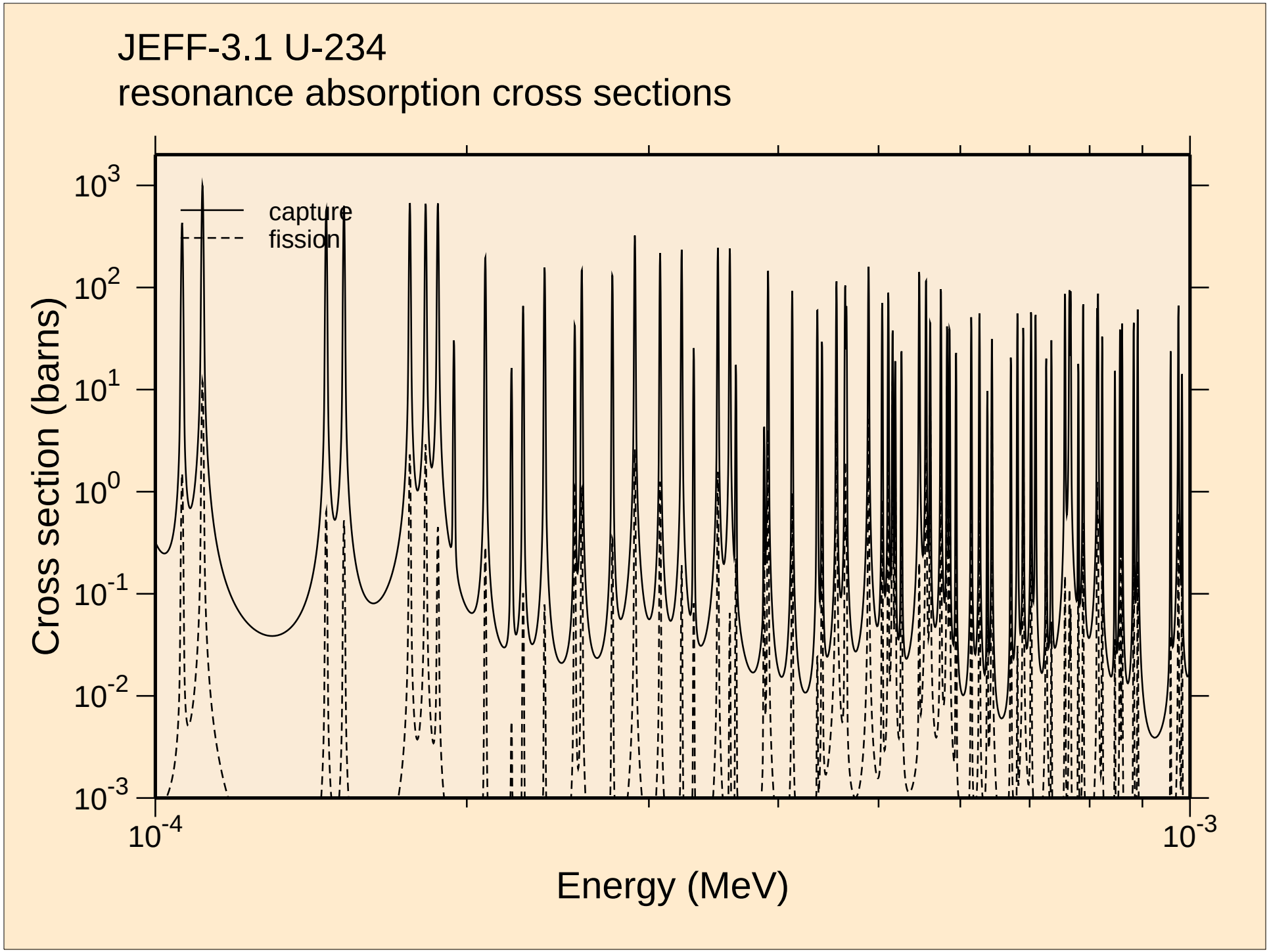

JEFF-3.1 U-234
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^{-5}
10^{-4}
Energy (MeV)

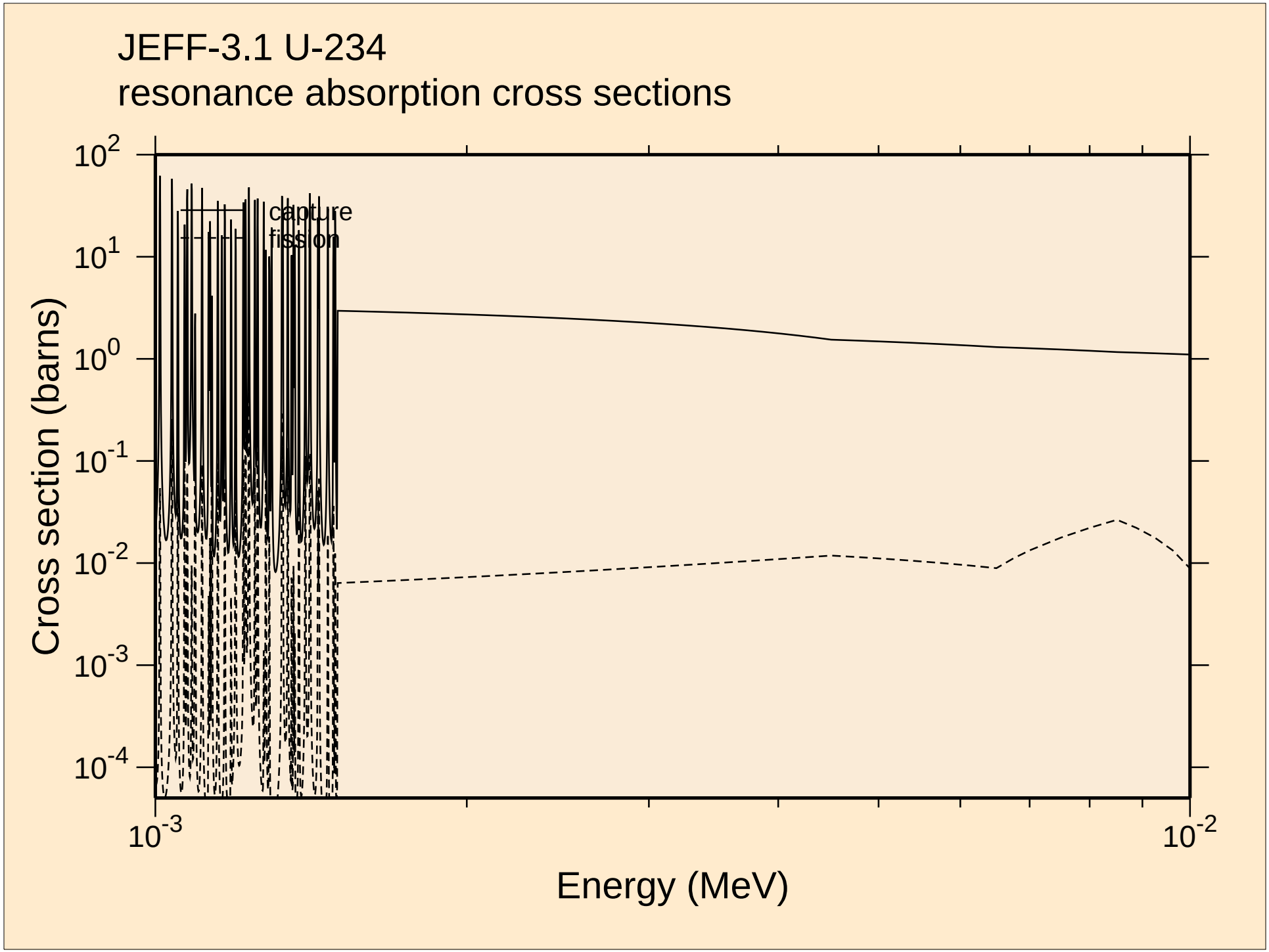

JEFF-3.1 U-234
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^-4
10^-3
Energy (MeV)

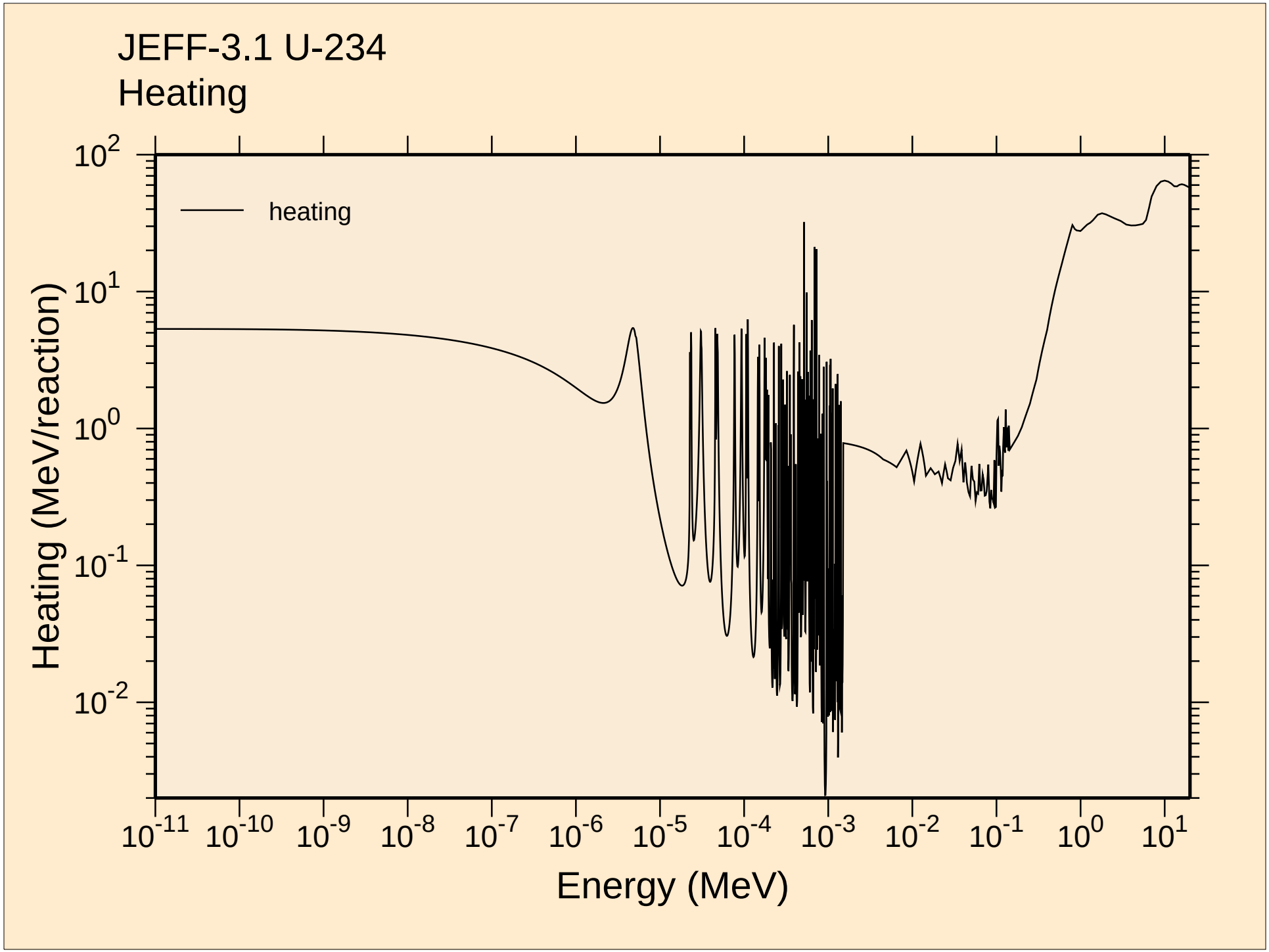

JEFF-3.1 U-234
resonance total cross section
total
Cross section (barns)
10^2
10^1
10^-3
10^-2
Energy (MeV)

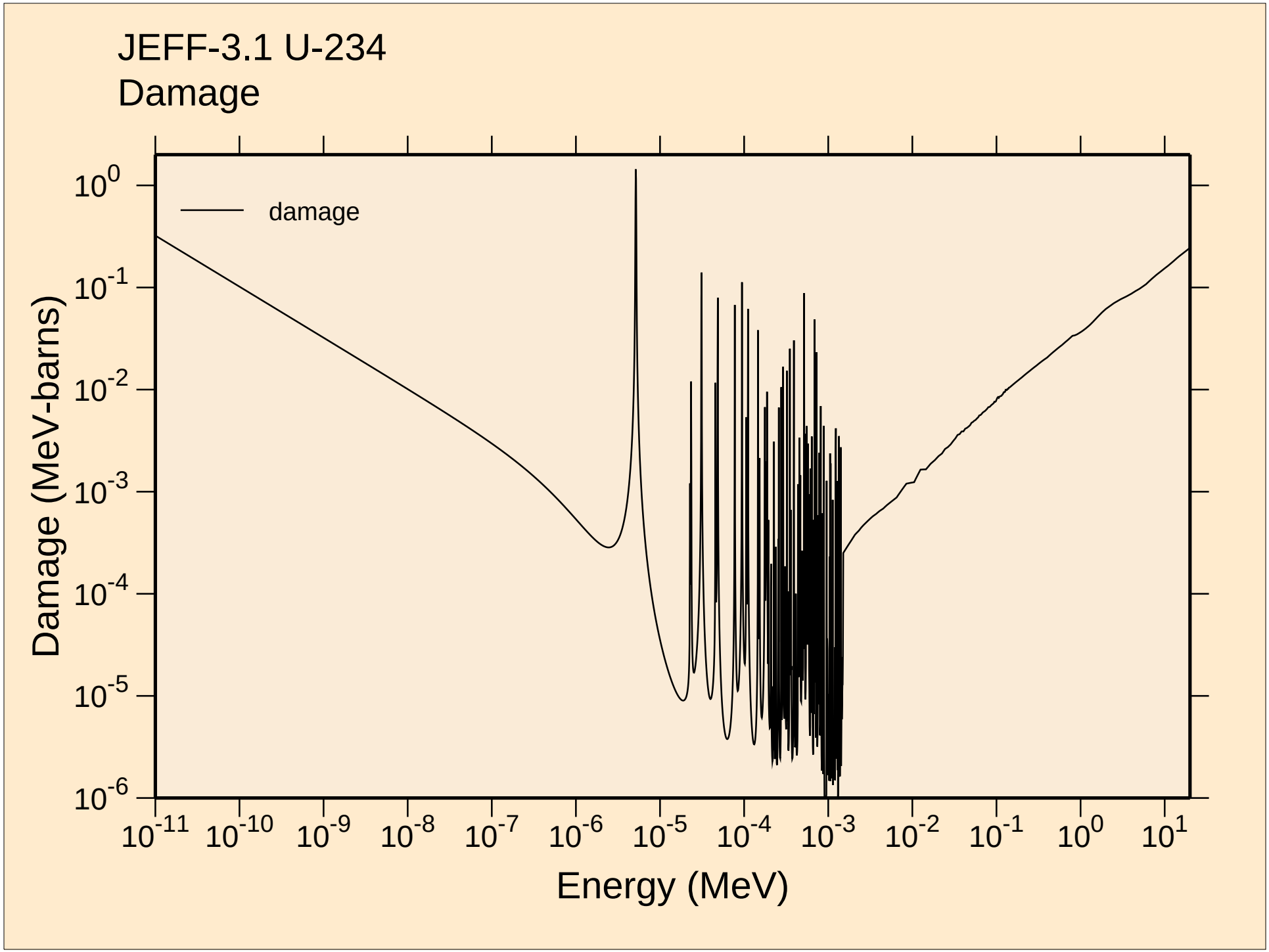

JEFF-3.1 U-234
resonance absorption cross sections
capture
fission
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-6
10^-5
Energy (MeV)

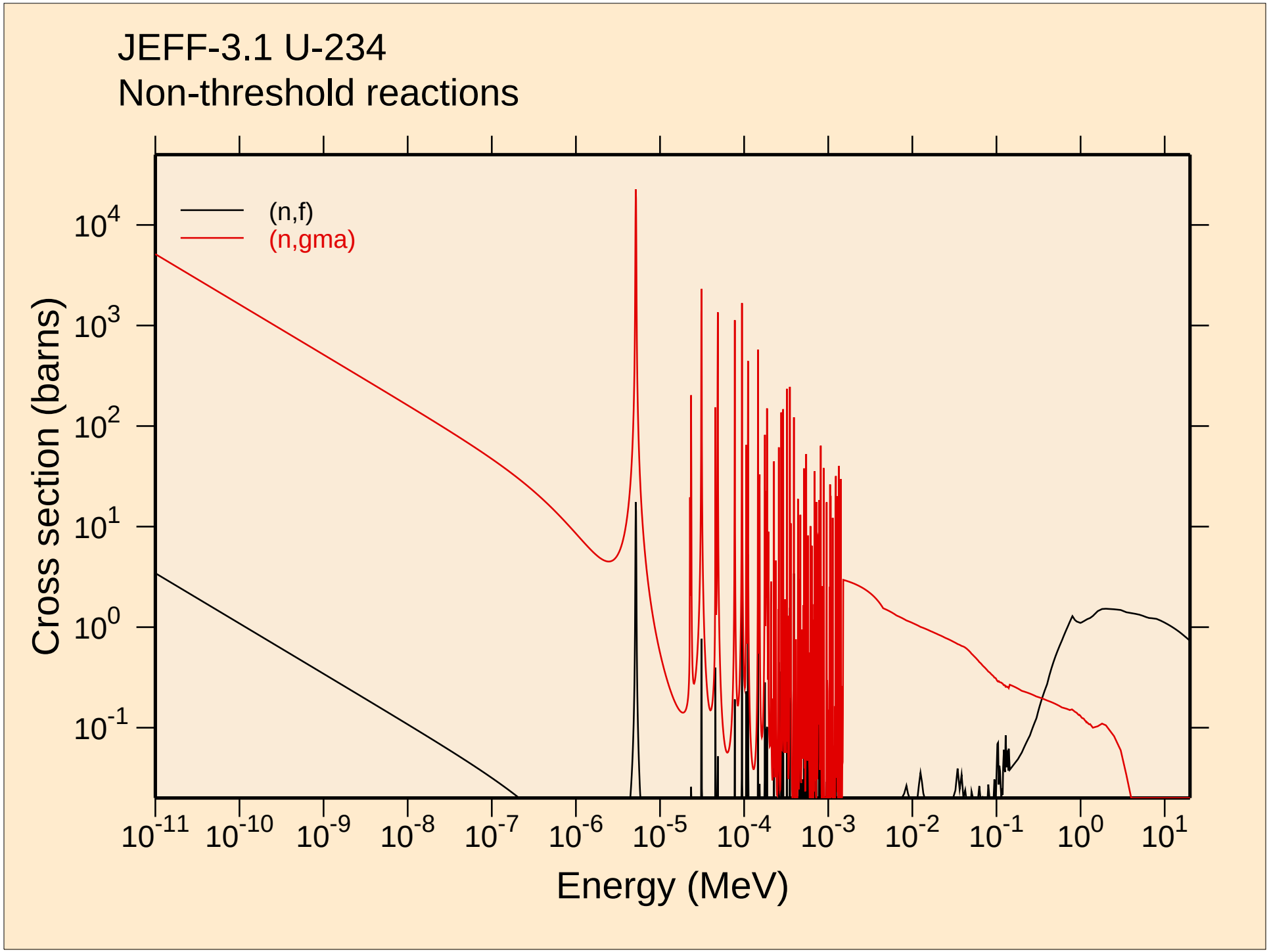

JEFF-3.1 U-234
resonance absorption cross sections
capture
fission
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-5
10^-4
Energy (MeV)

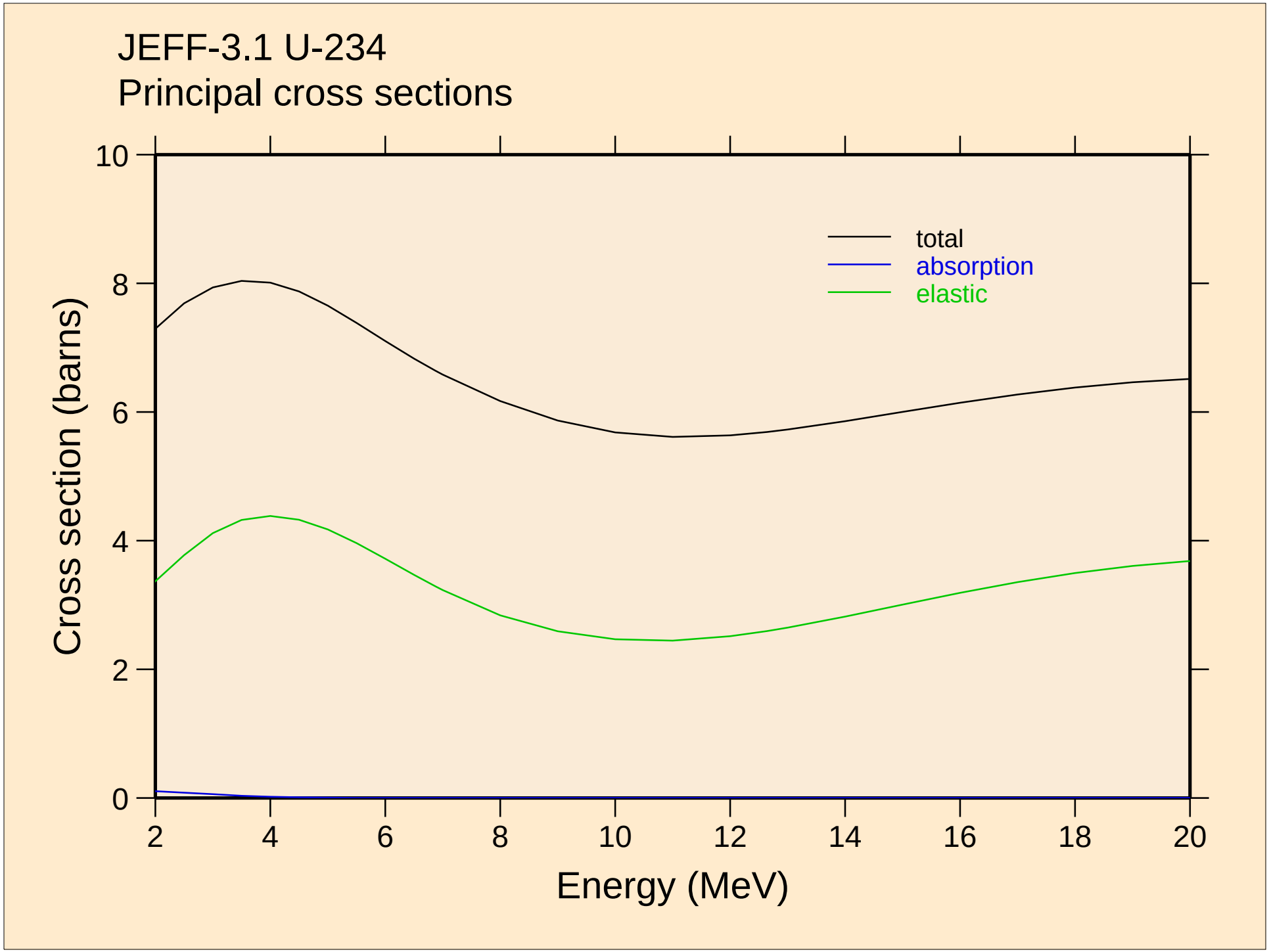

JEFF-3.1 U-234
resonance absorption cross sections
capture
fission
Cross section (barns)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-3}
Energy (MeV)

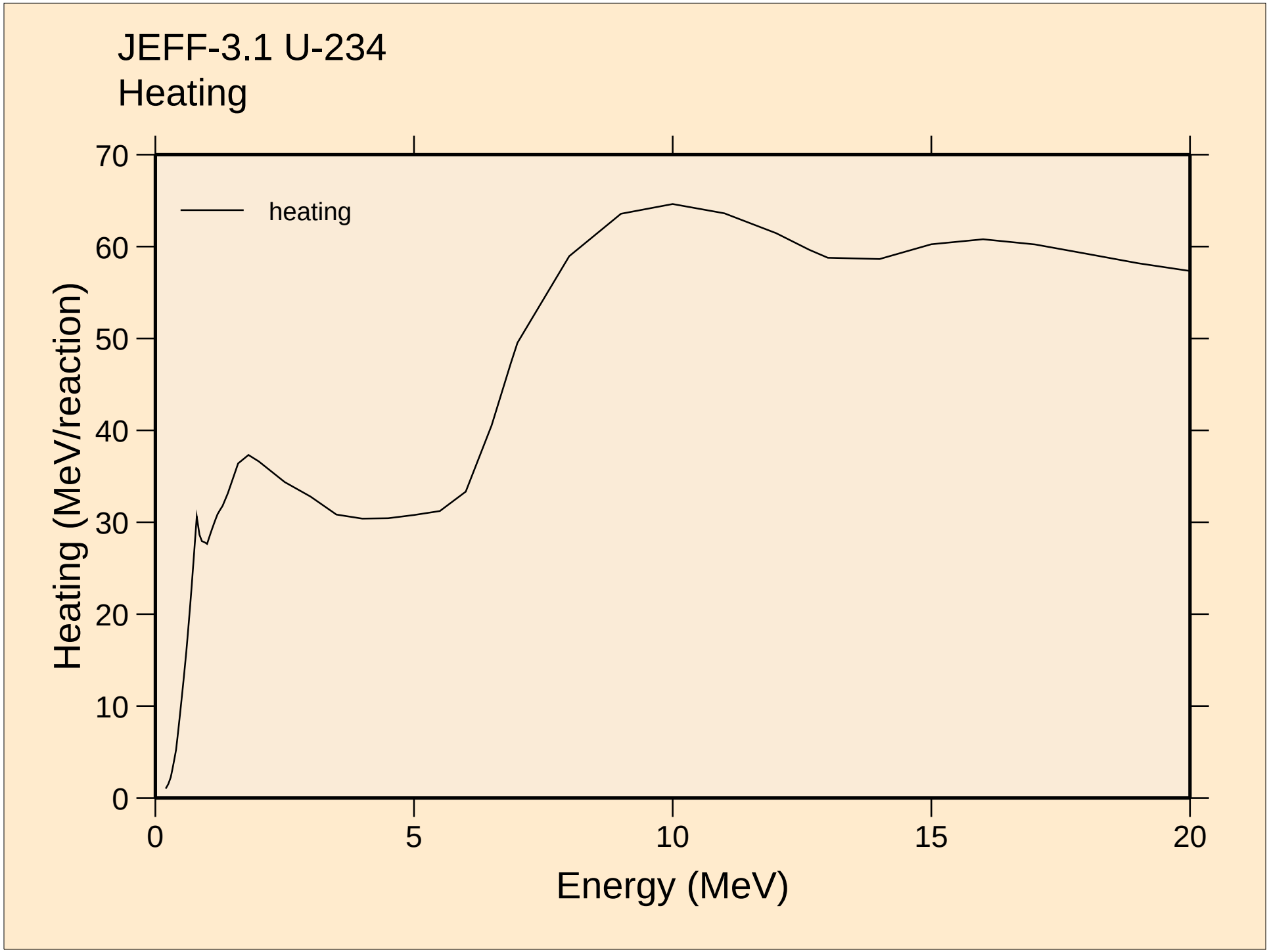

JEFF-3.1 U-234
resonance absorption cross sections
capture
fission
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-3}
10^{-2}
Energy (MeV)

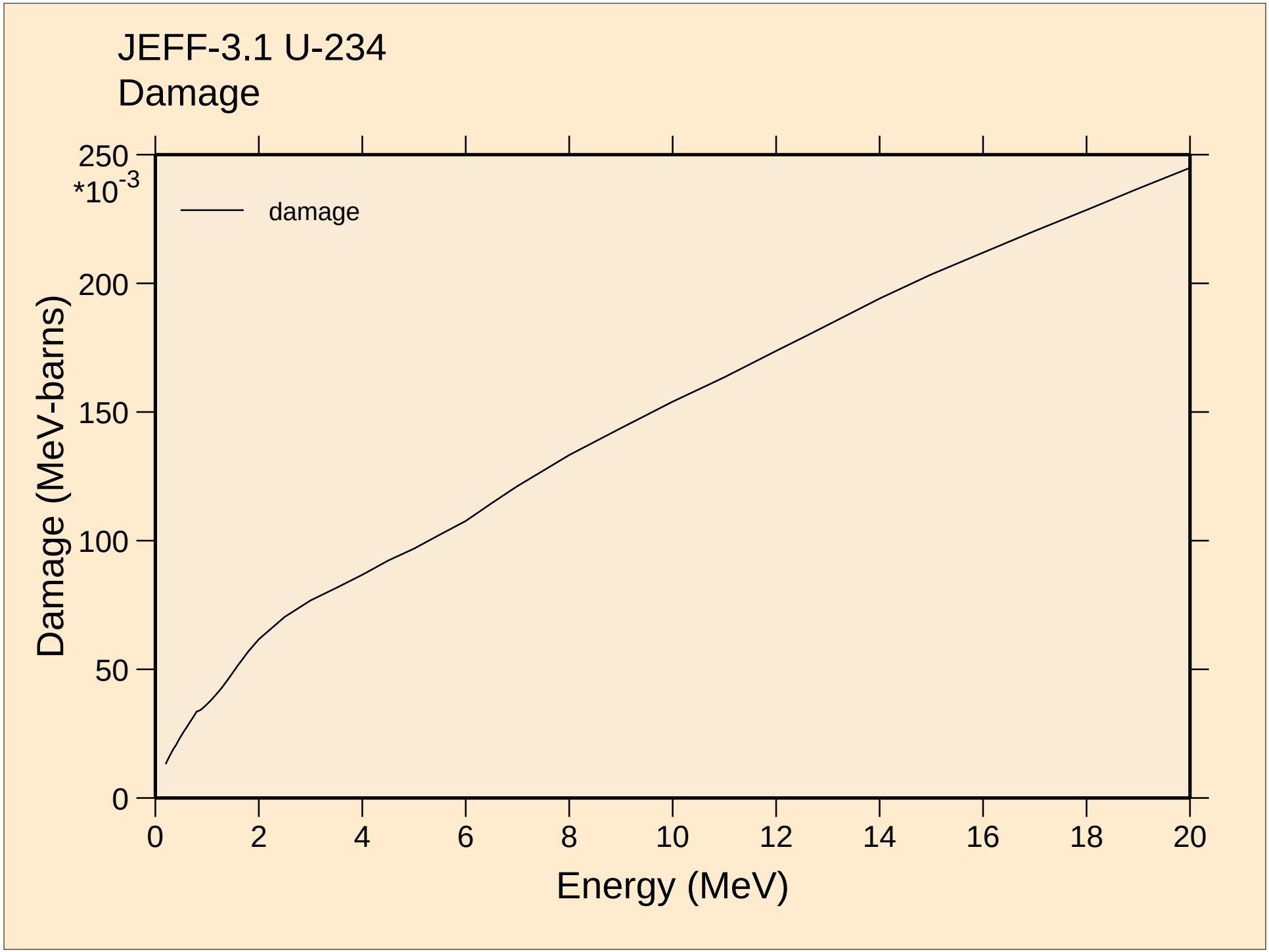

JEFF-3.1 U-234
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
10^-11
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

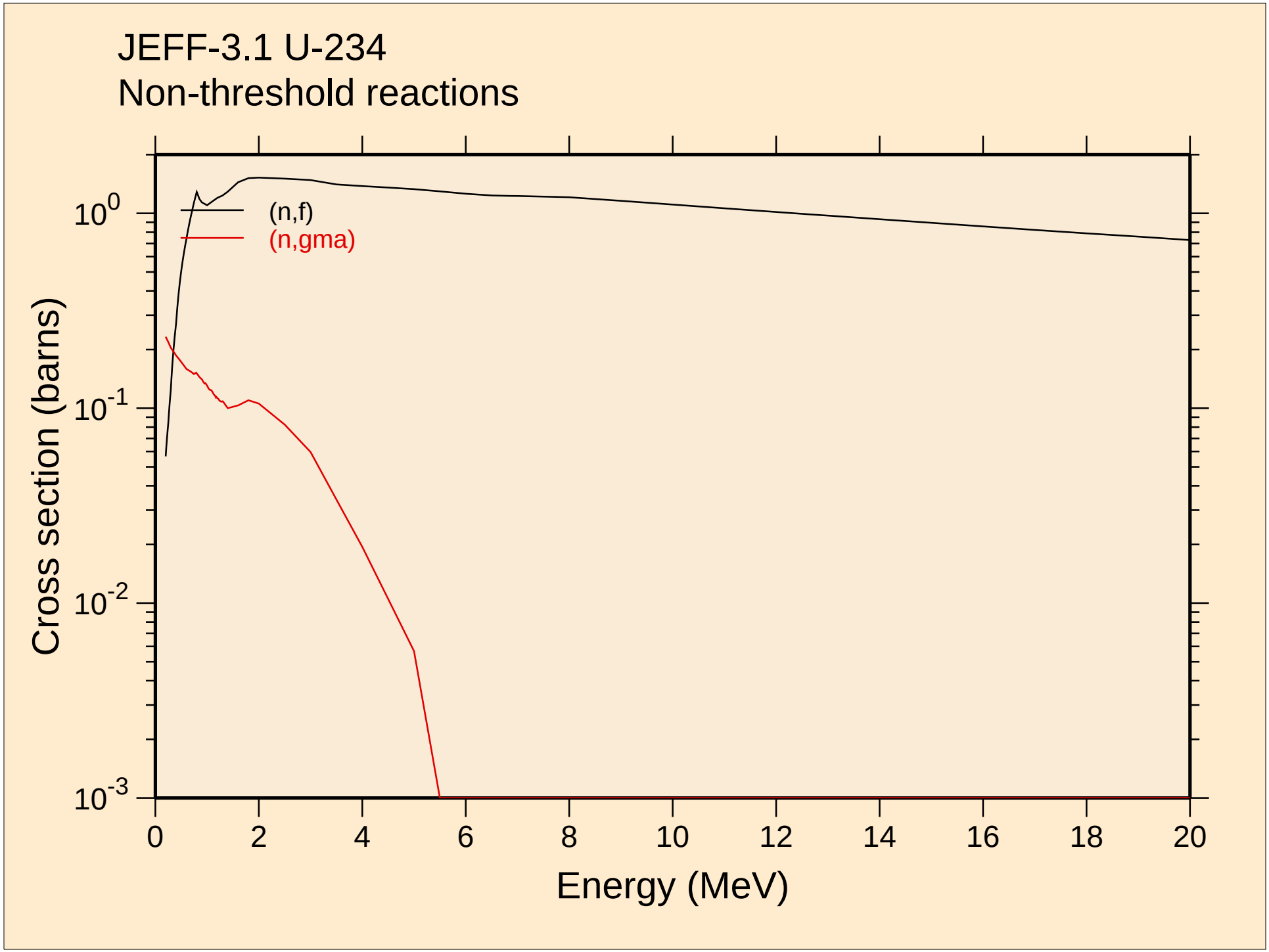

JEFF-3.1 U-234
Damage
damage
Damage (MeV-barns)
Energy (MeV)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-11
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-4
10^-3
10^-2
10^-1
10^0
10^1

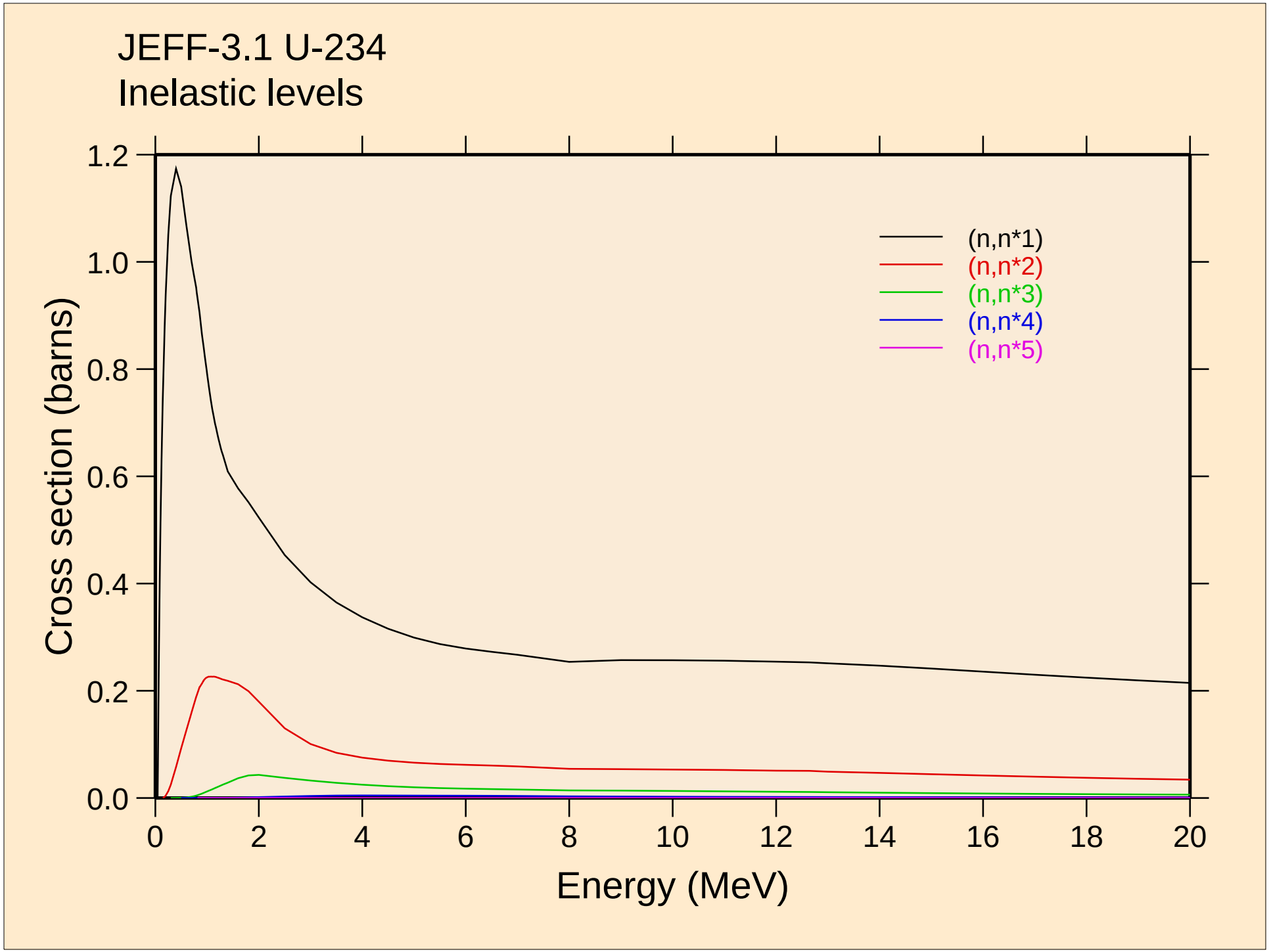

JEFF-3.1 U-234
Non-threshold reactions
(n,f)
(n,gma)
Cross section (barns)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-11} 10^{-10} 10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1}
Energy (MeV)

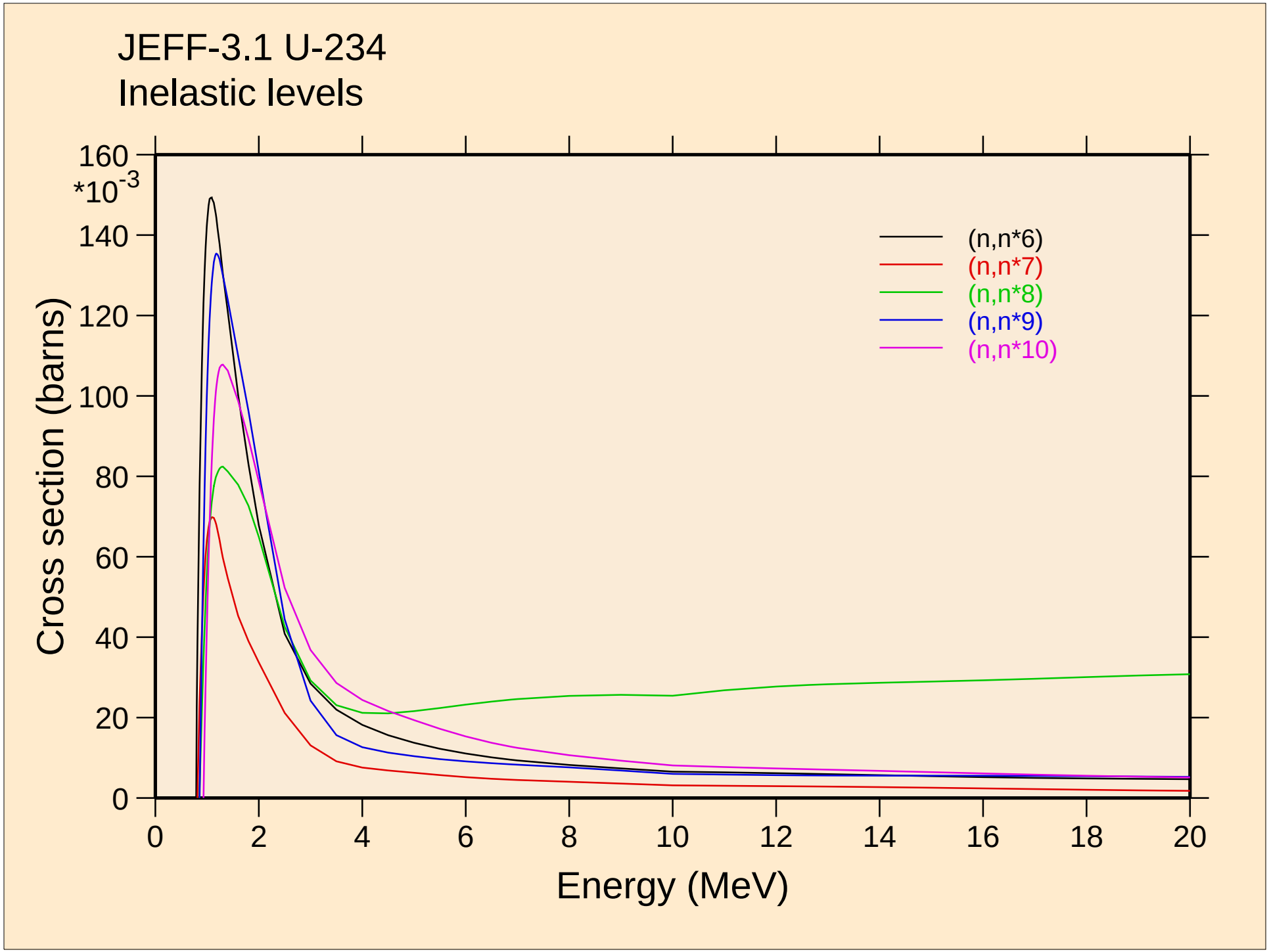

JEFF-3.1 U-234
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
0
2
4
6
8
10
2
4
6
8
10
12
14
16
18
20

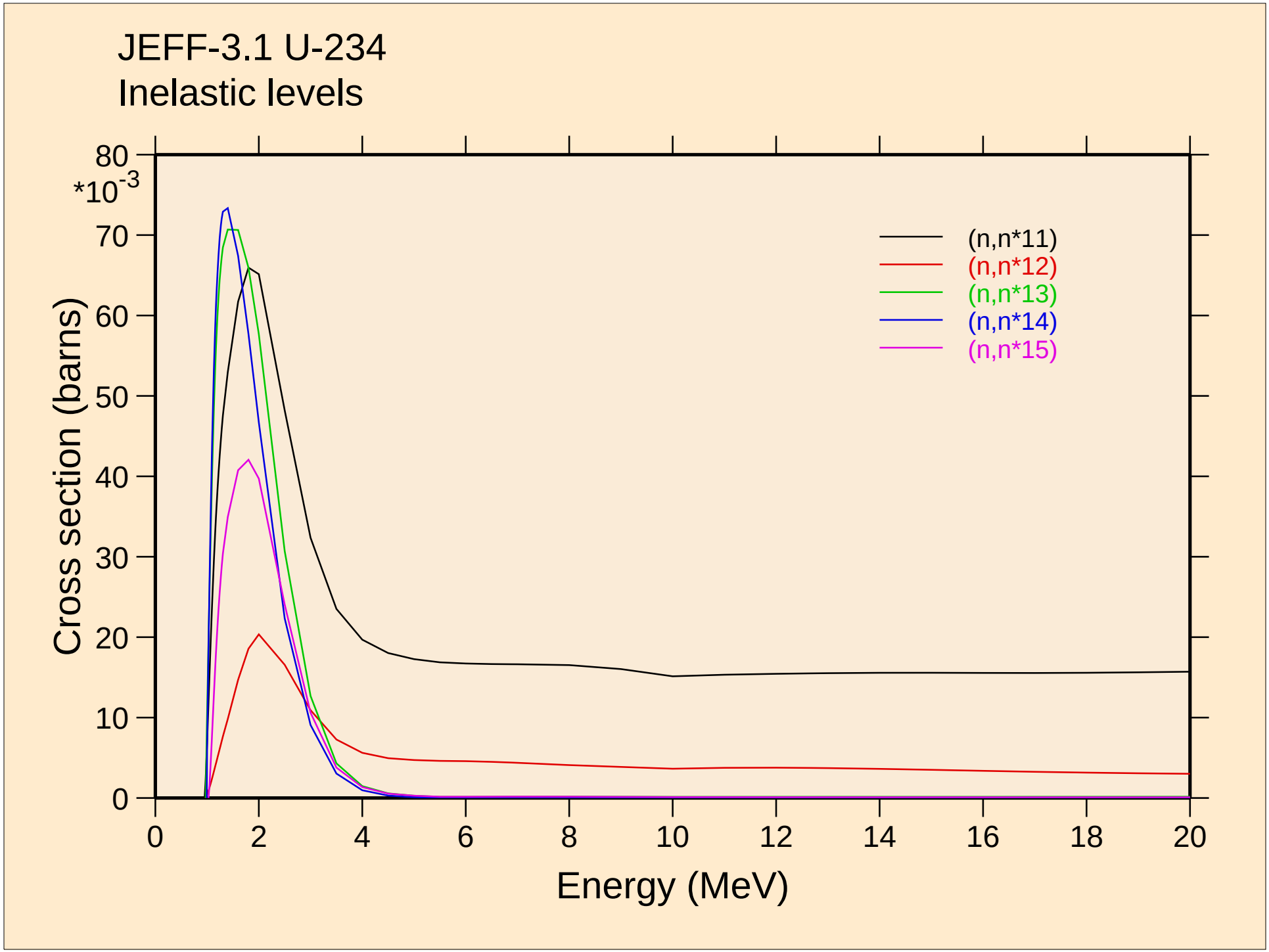

JEFF-3.1 U-234
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
10
20
30
40
50
60
70
0
5
10
15
20

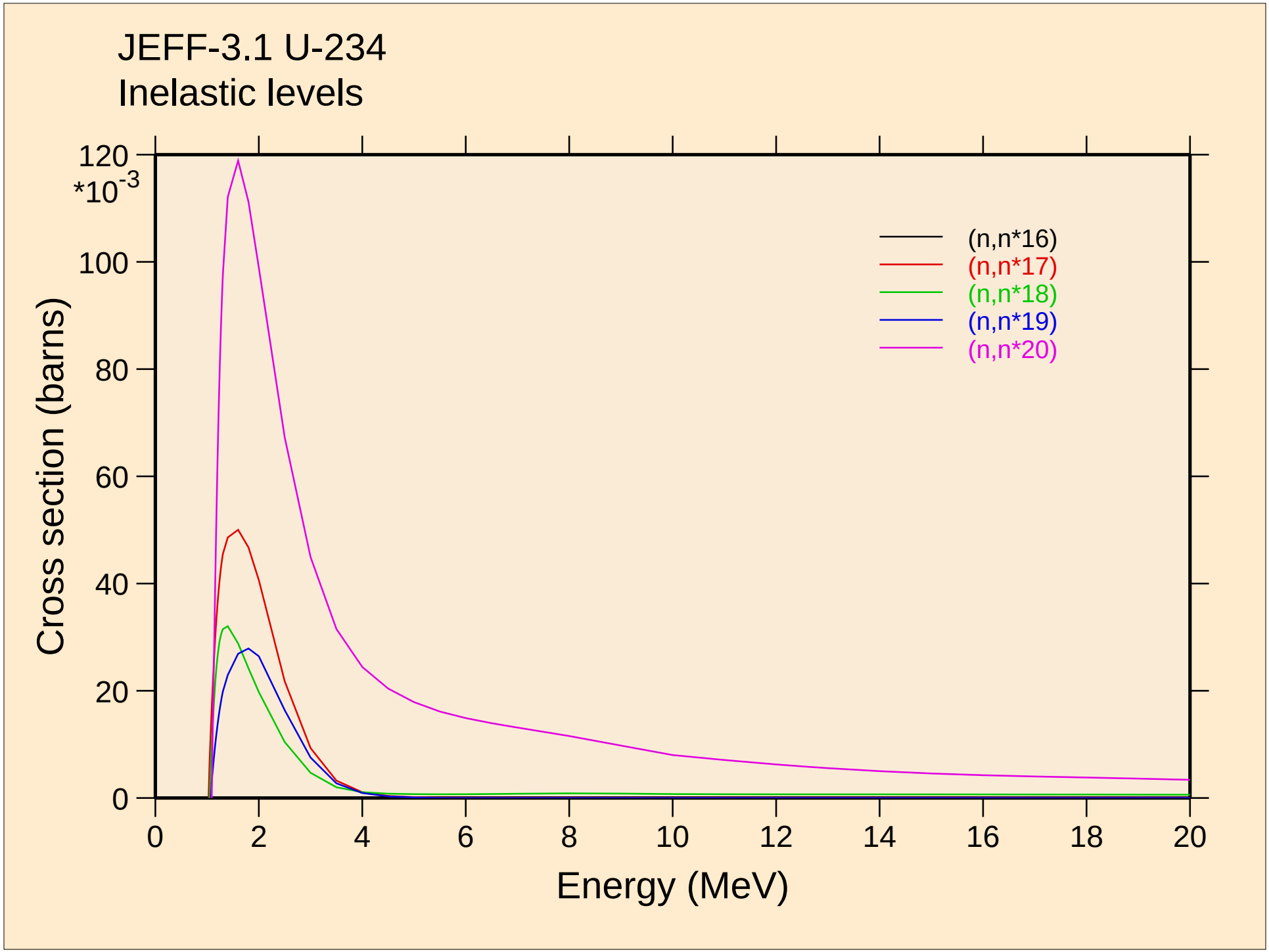

JEFF-3.1 U-234
Damage
250
*10-3
damage
200
150
100
50
0
Damage (MeV-barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

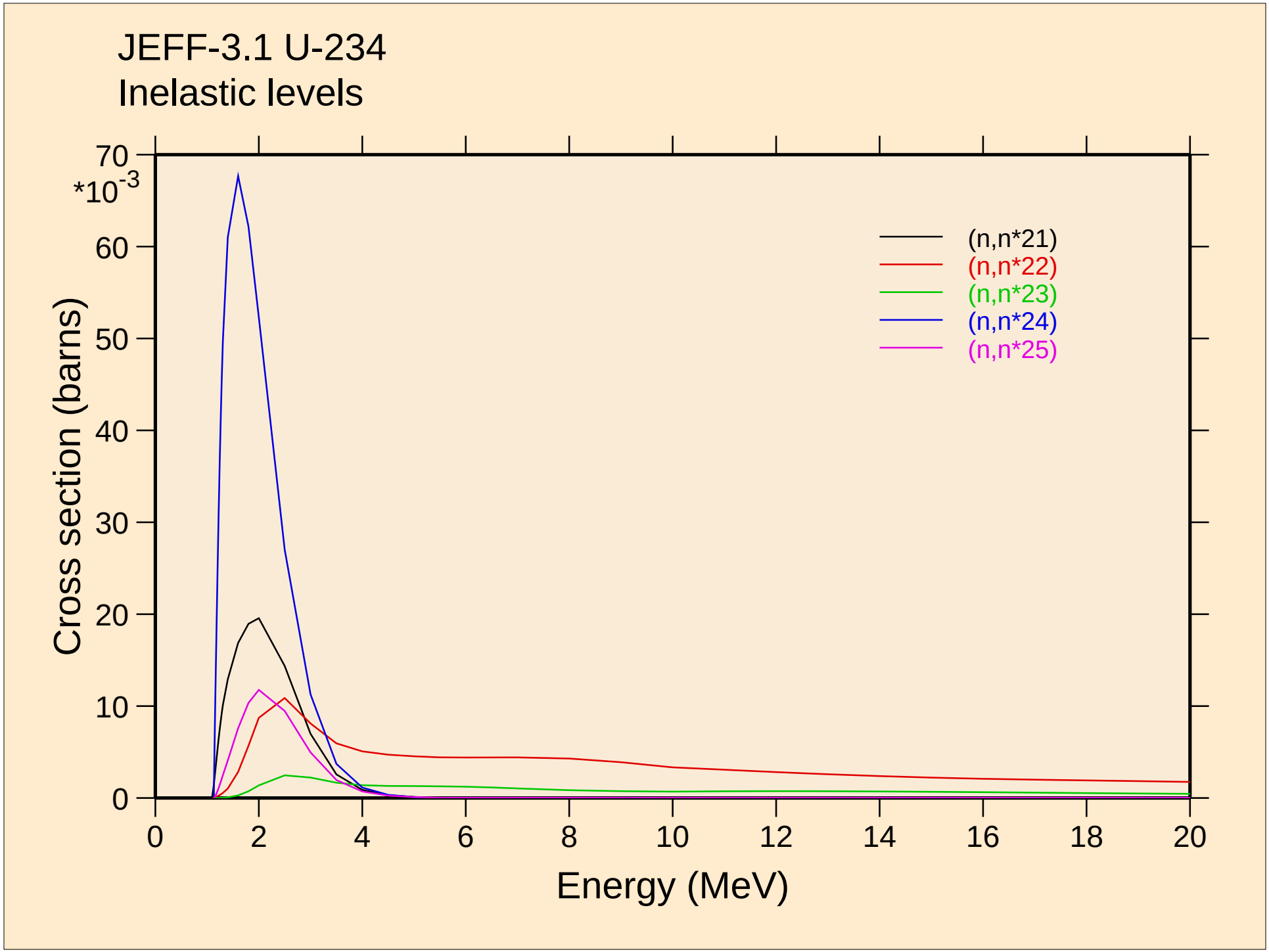

JEFF-3.1 U-234
Non-threshold reactions
(n,f)
(n,gma)
Cross section (barns)
10^0
10^-1
10^-2
10^-3
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

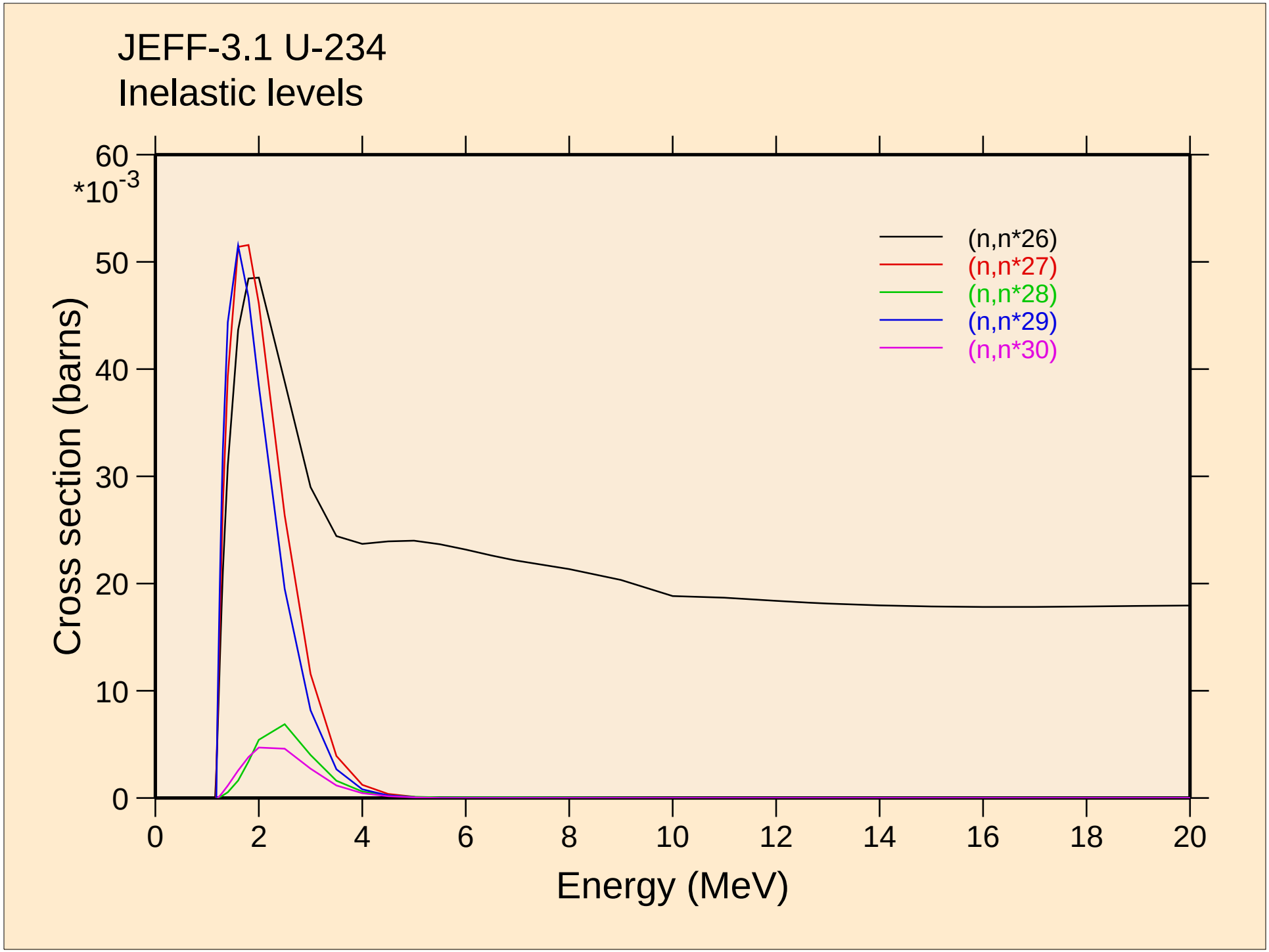

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
Energy (MeV)
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
2
4
6
8
10
12
14
16
18
20

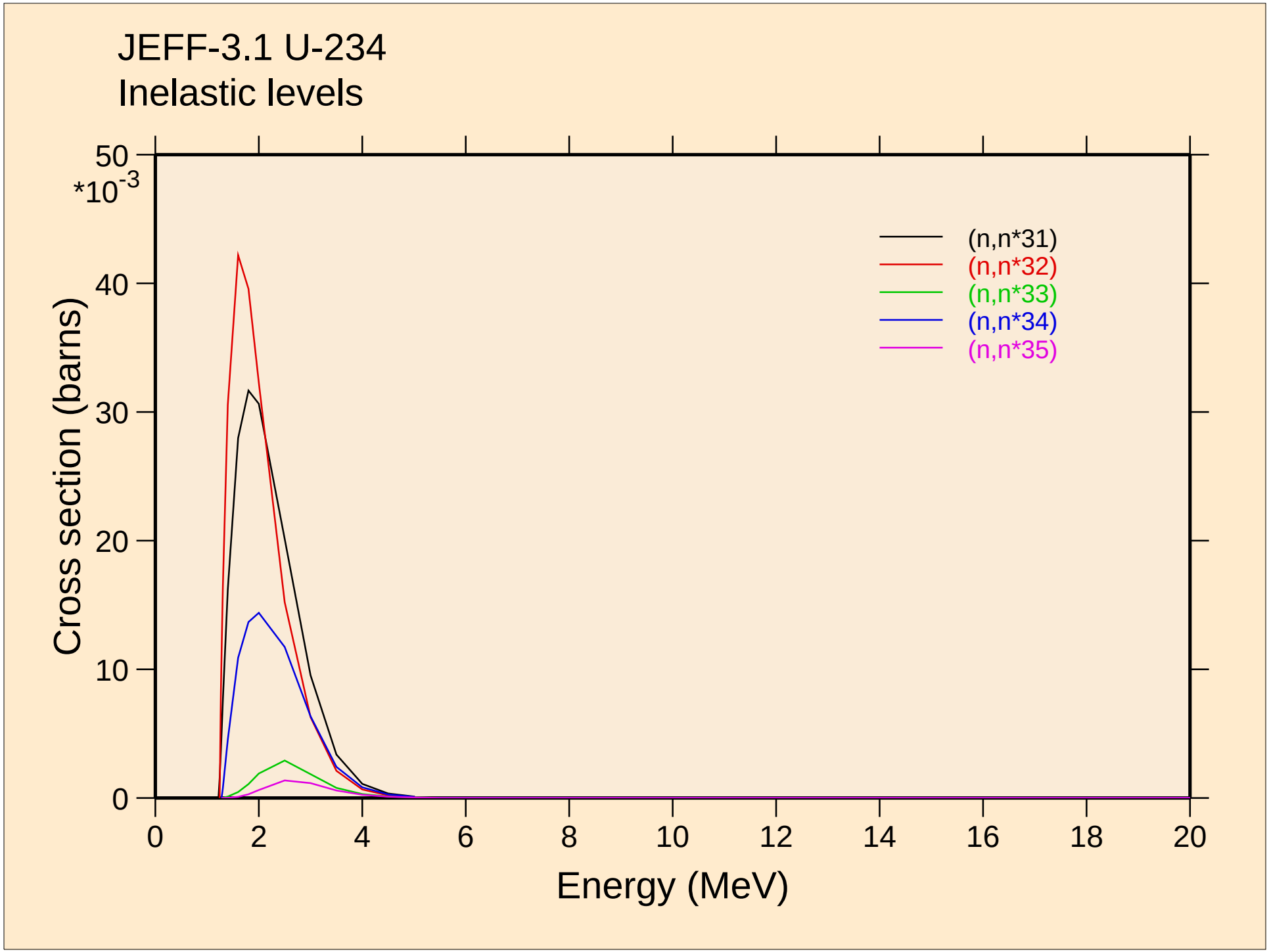

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
*10-3
160
140
120
100
80
60
40
20
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

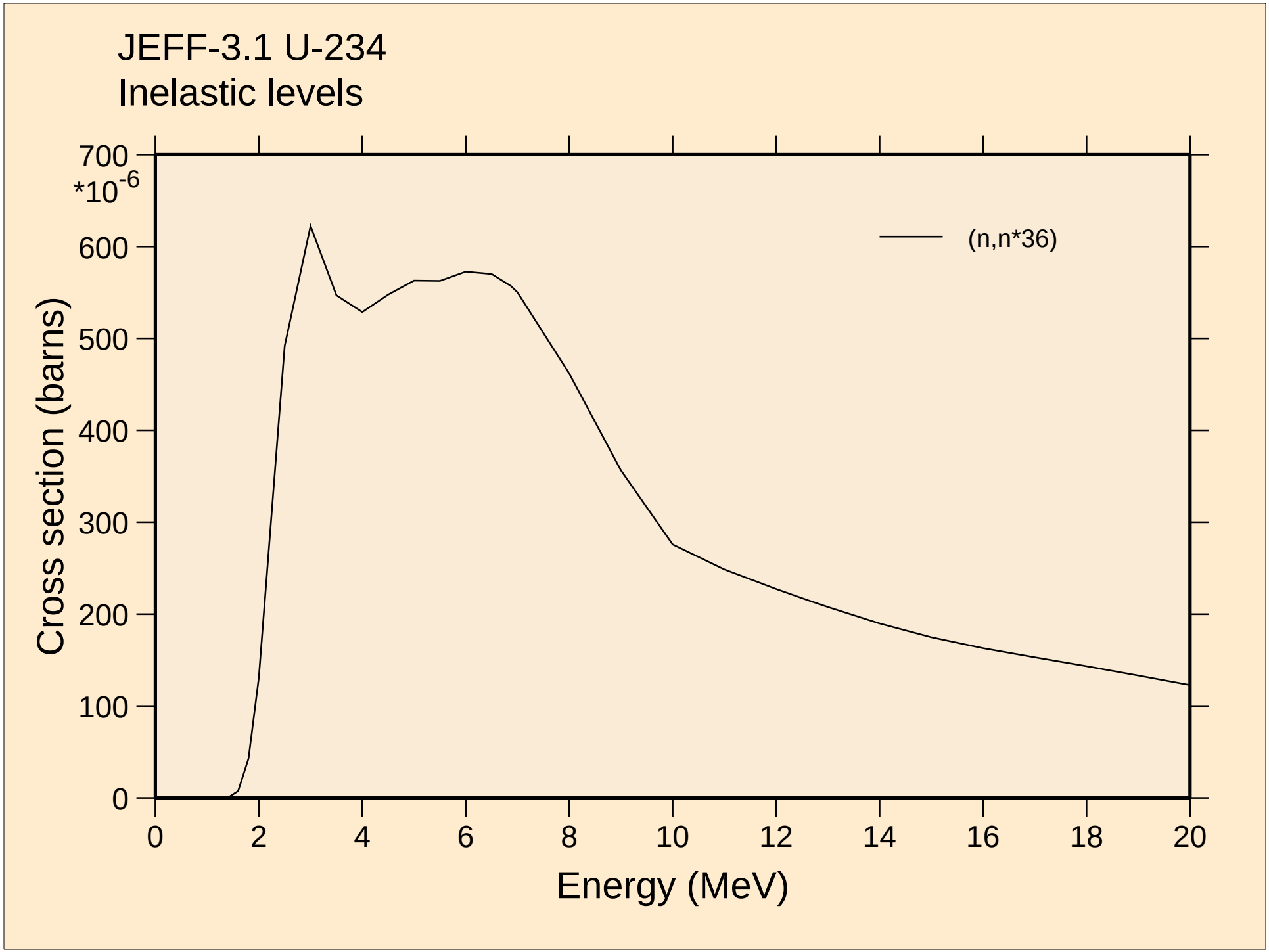

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
*10-3
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

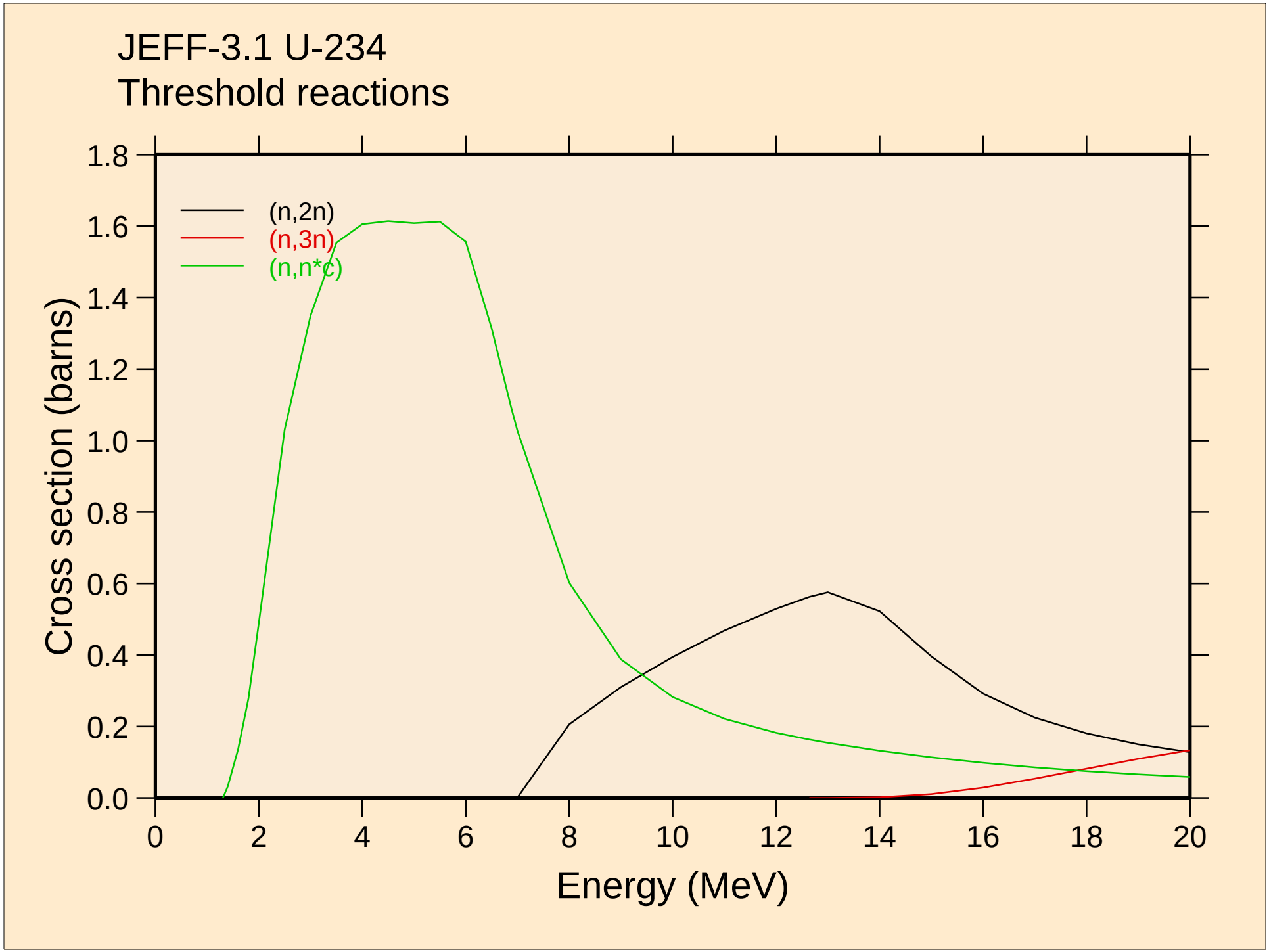

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
*10-3
120
100
80
60
40
20
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)

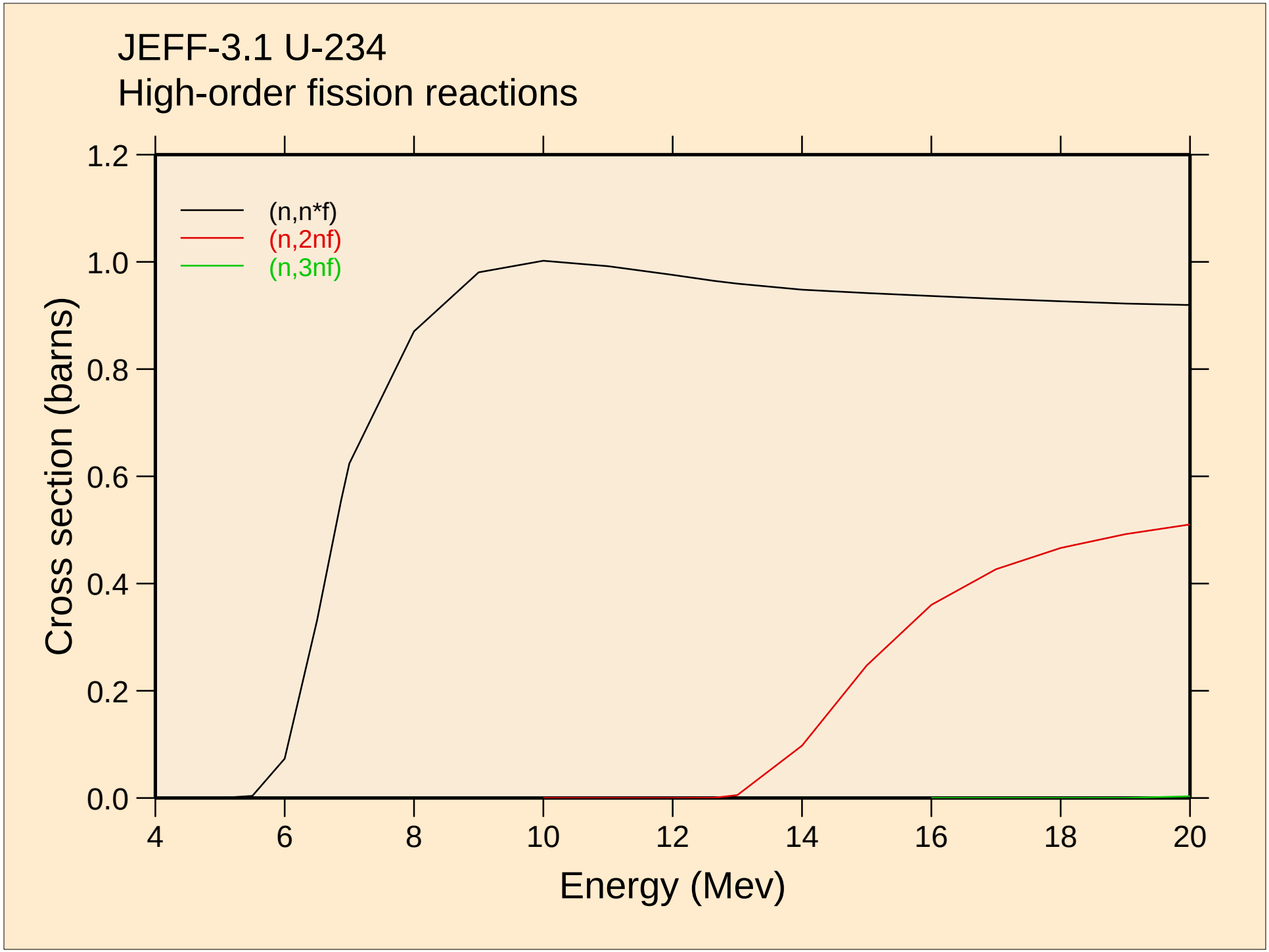

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
*10-3
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*21)
(n,n*22)
(n,n*23)
(n,n*24)
(n,n*25)

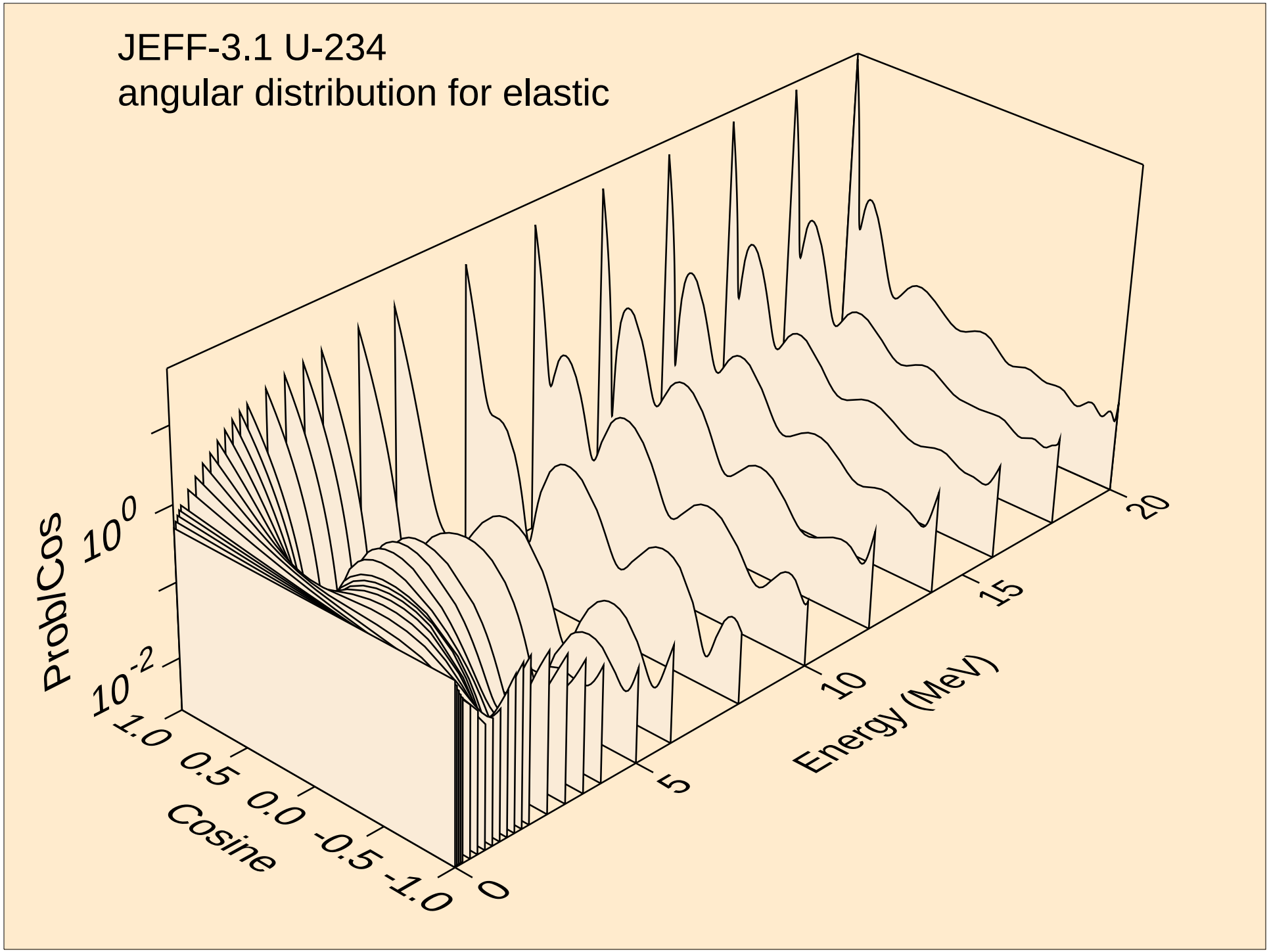

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
*10-3
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*26)
(n,n*27)
(n,n*28)
(n,n*29)
(n,n*30)

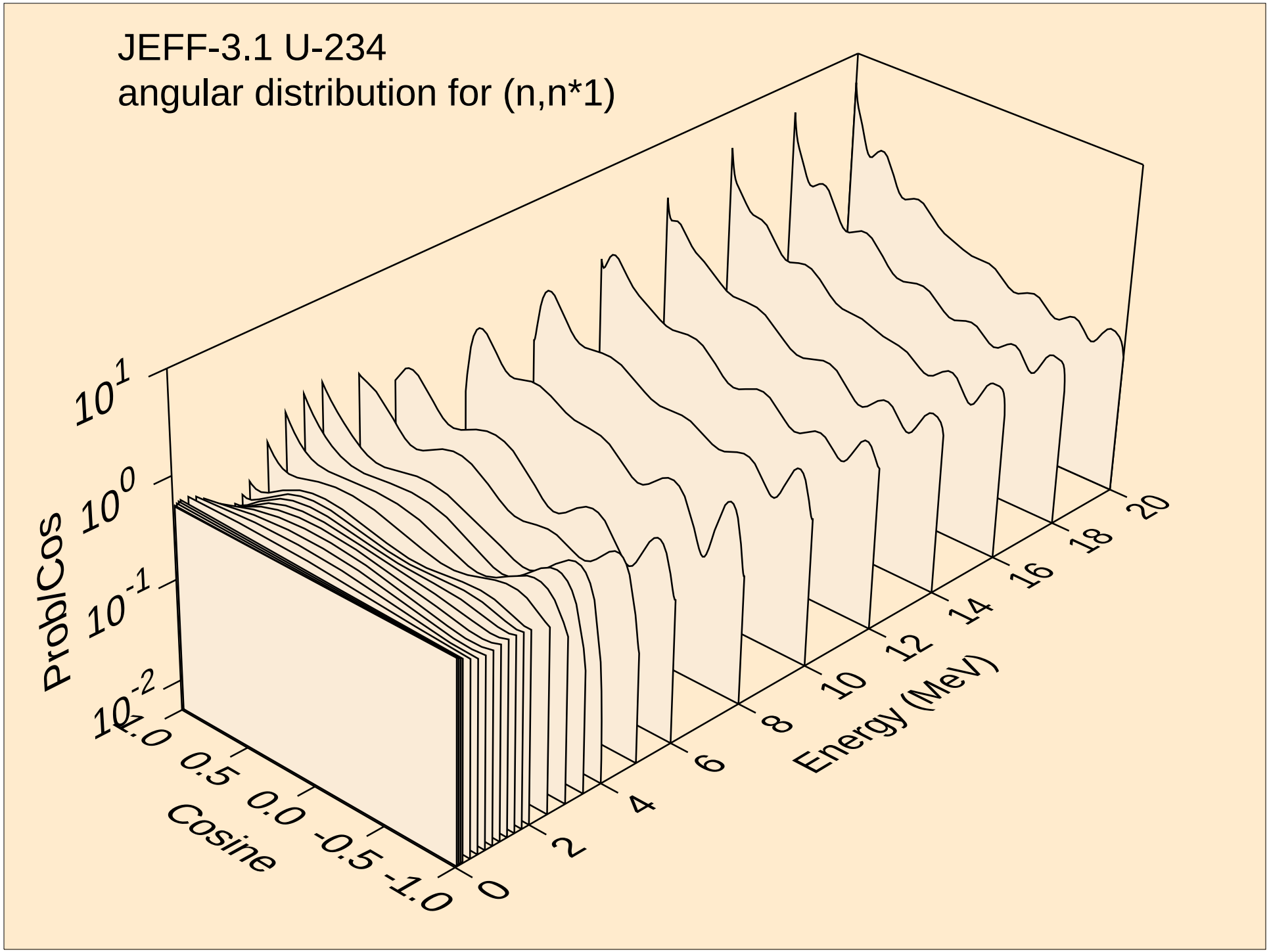

JEFF-3.1 U-234
Inelastic levels
Cross section (barns)
*10-3
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)
(n,n*31)
(n,n*32)
(n,n*33)
(n,n*34)
(n,n*35)

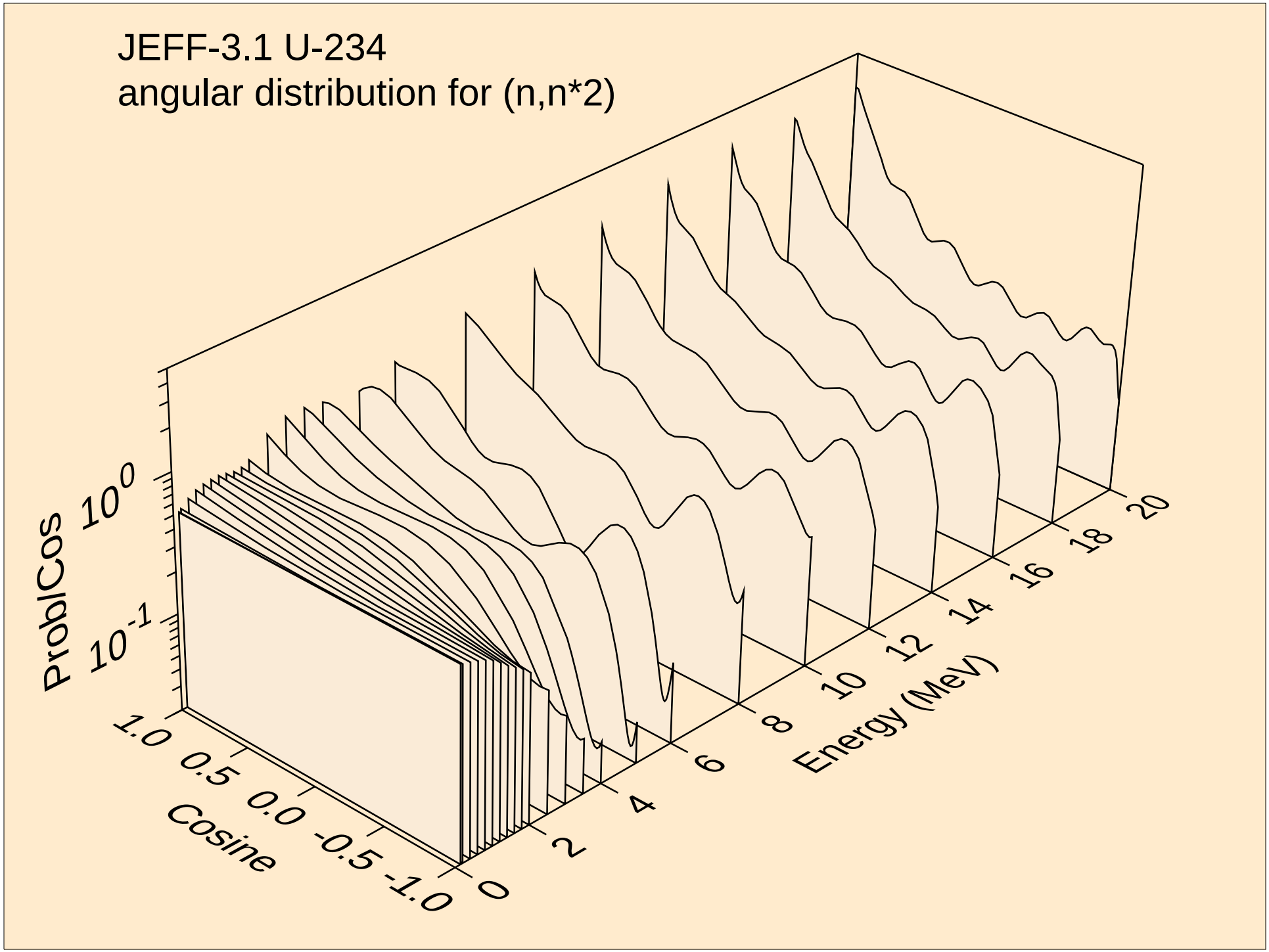

JEFF-3.1 U-234
Inelastic levels
700
*10-6
600
500
400
300
200
100
0
Cross section (barns)
(n,n*36)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

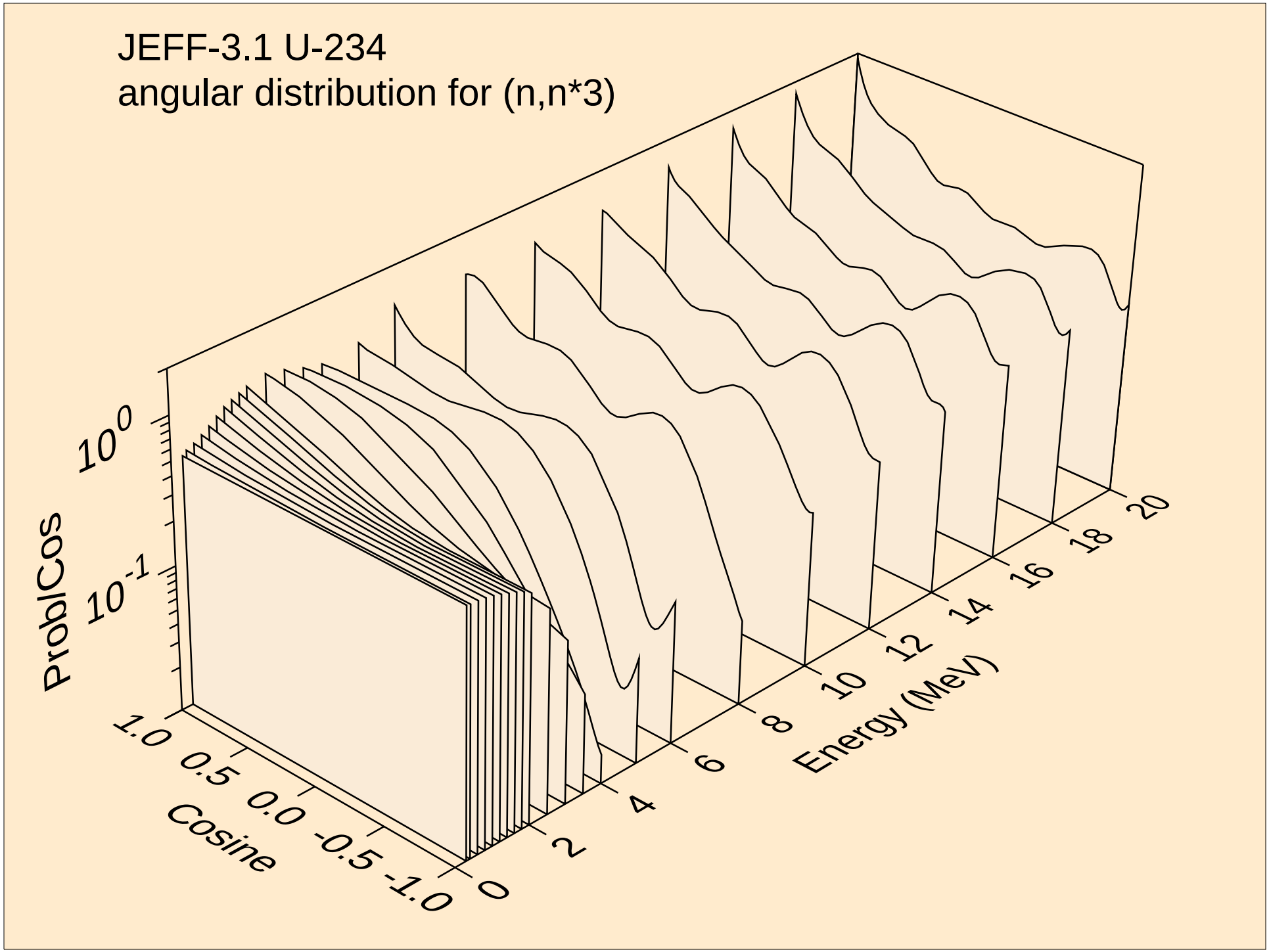

JEFF-3.1 U-234
Threshold reactions
(n,2n)
(n,3n)
(n,n*c)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
0
2
4
6
8
10
12
14
16
18
20

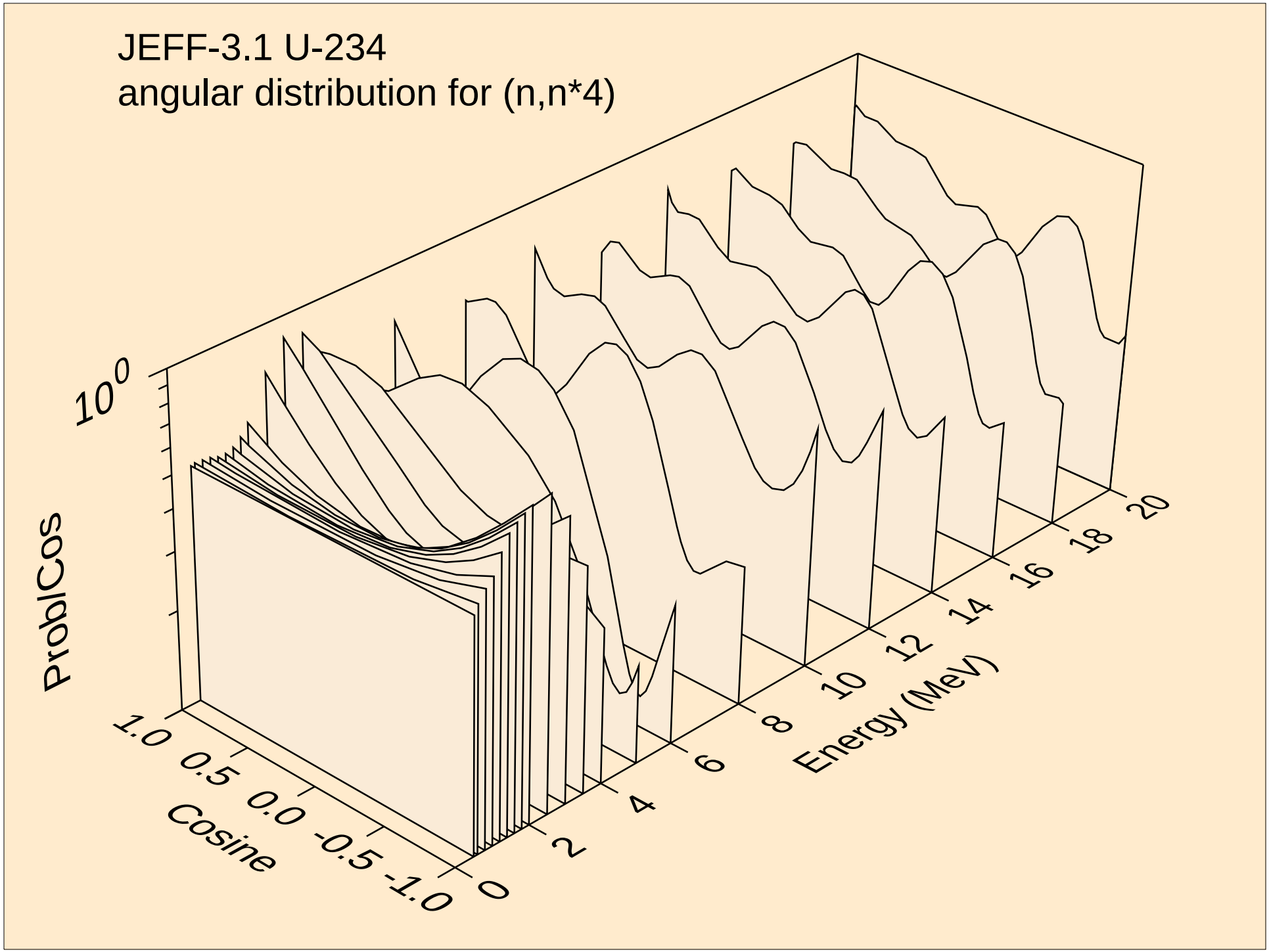

JEFF-3.1 U-234
High-order fission reactions
(n,n*f)
(n,2nf)
(n,3nf)
Cross section (barns)
Energy (Mev)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
4
6
8
10
12
14
16
18
20

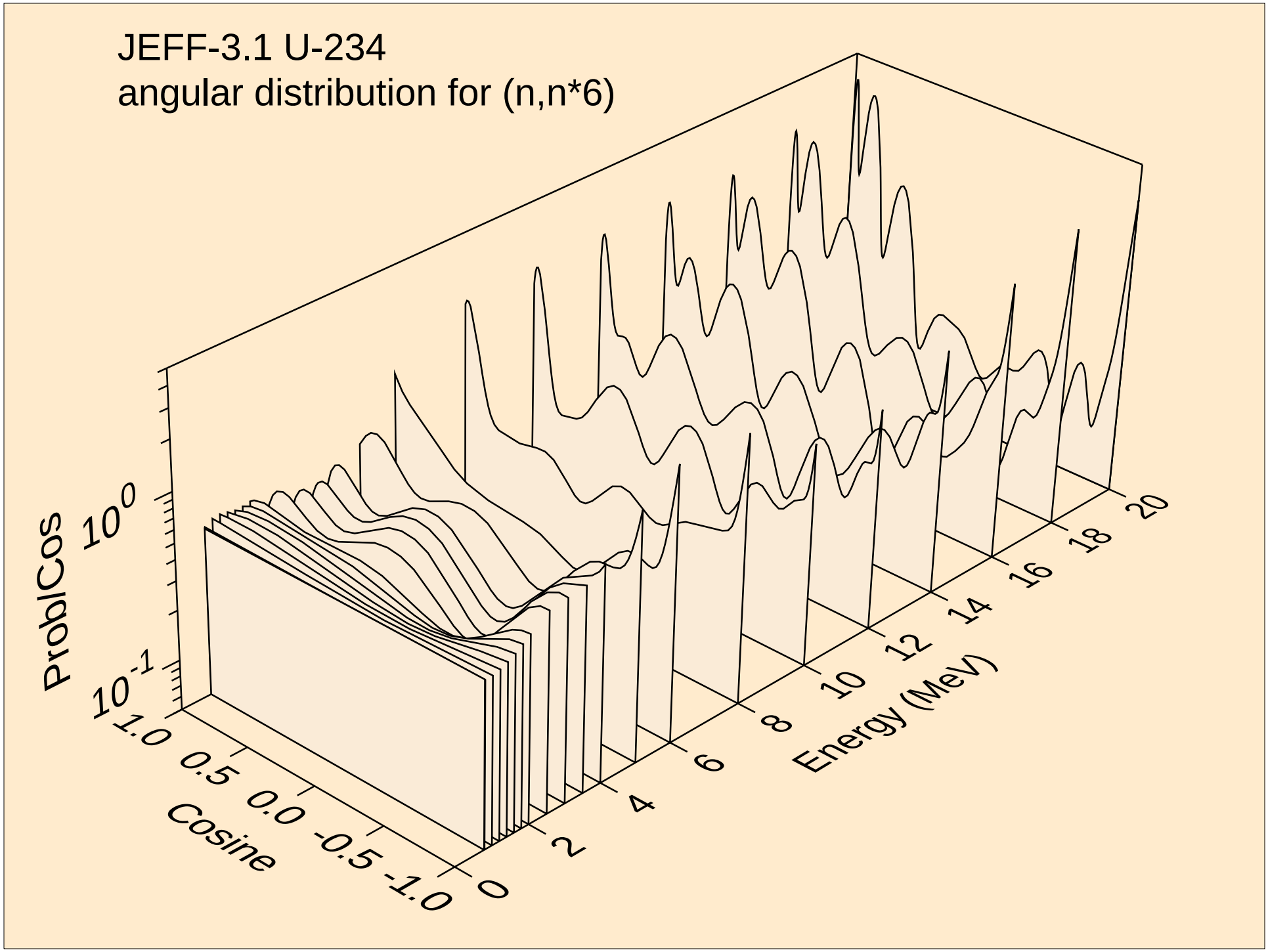

JEFF-3.1 U-234
angular distribution for elastic
ProbICos
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

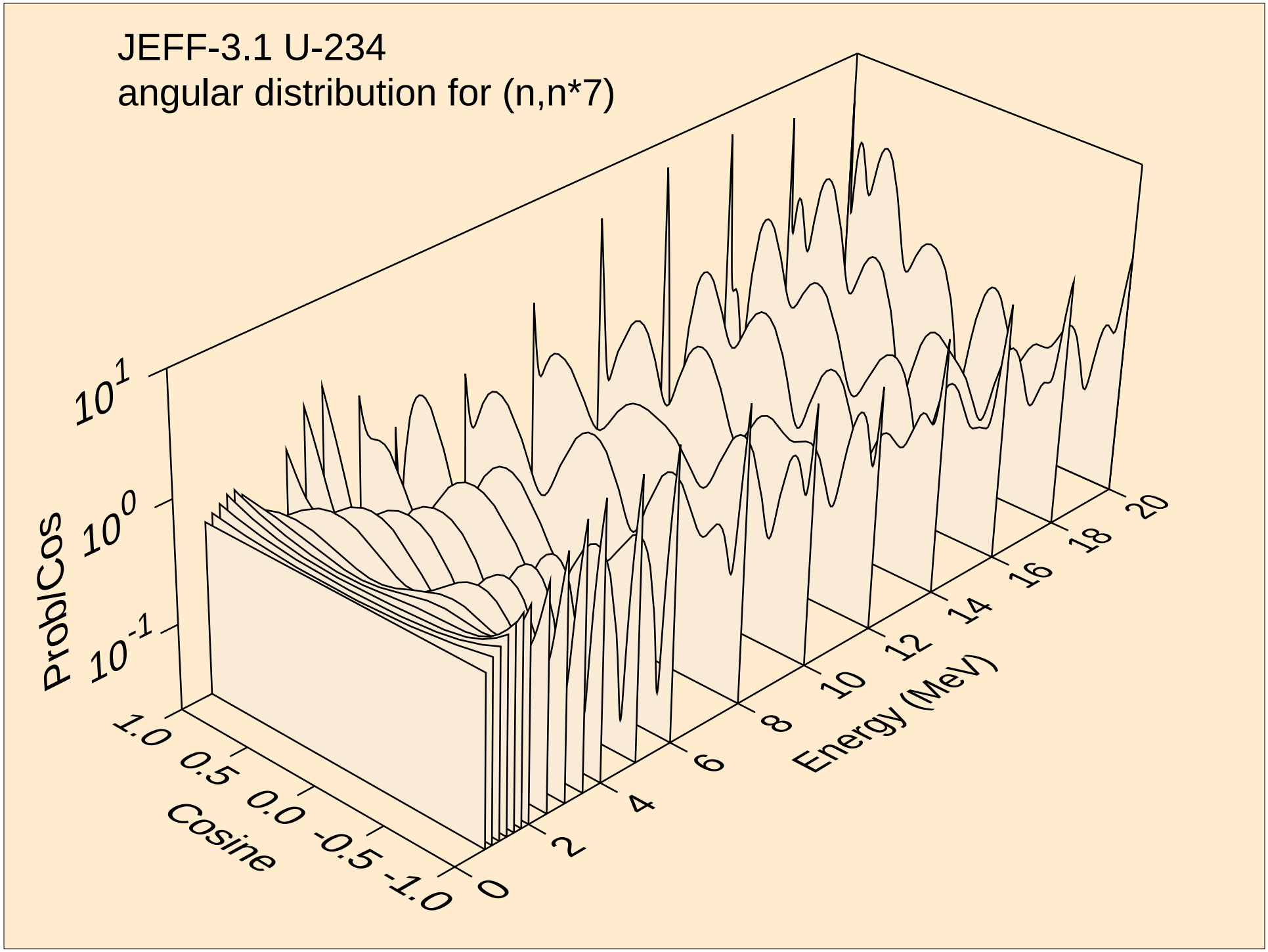

JEFF-3.1 U-234
angular distribution for (n,n*1)
ProbICos
10^1
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

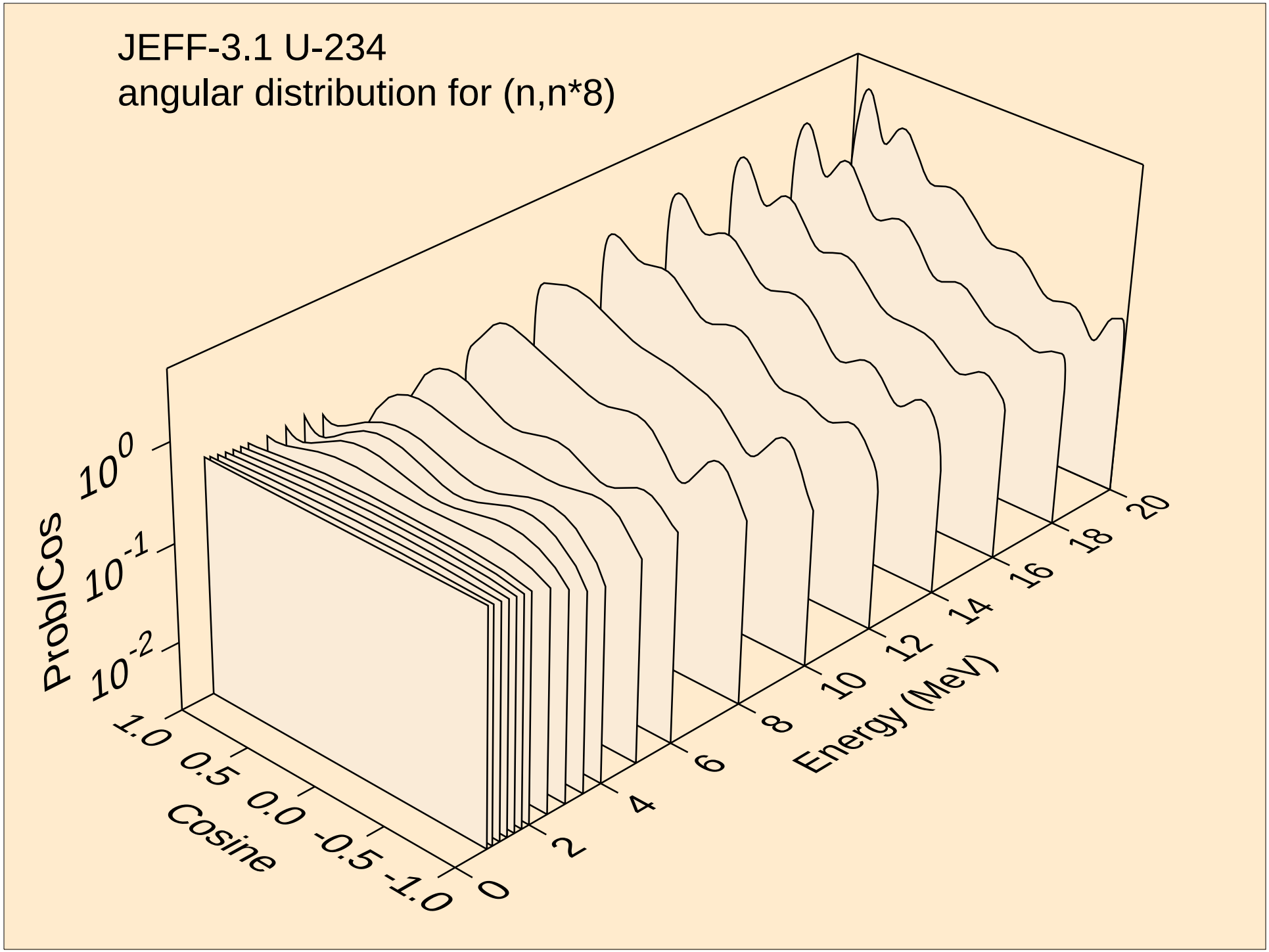

JEFF-3.1 U-234
angular distribution for (n,n*2)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

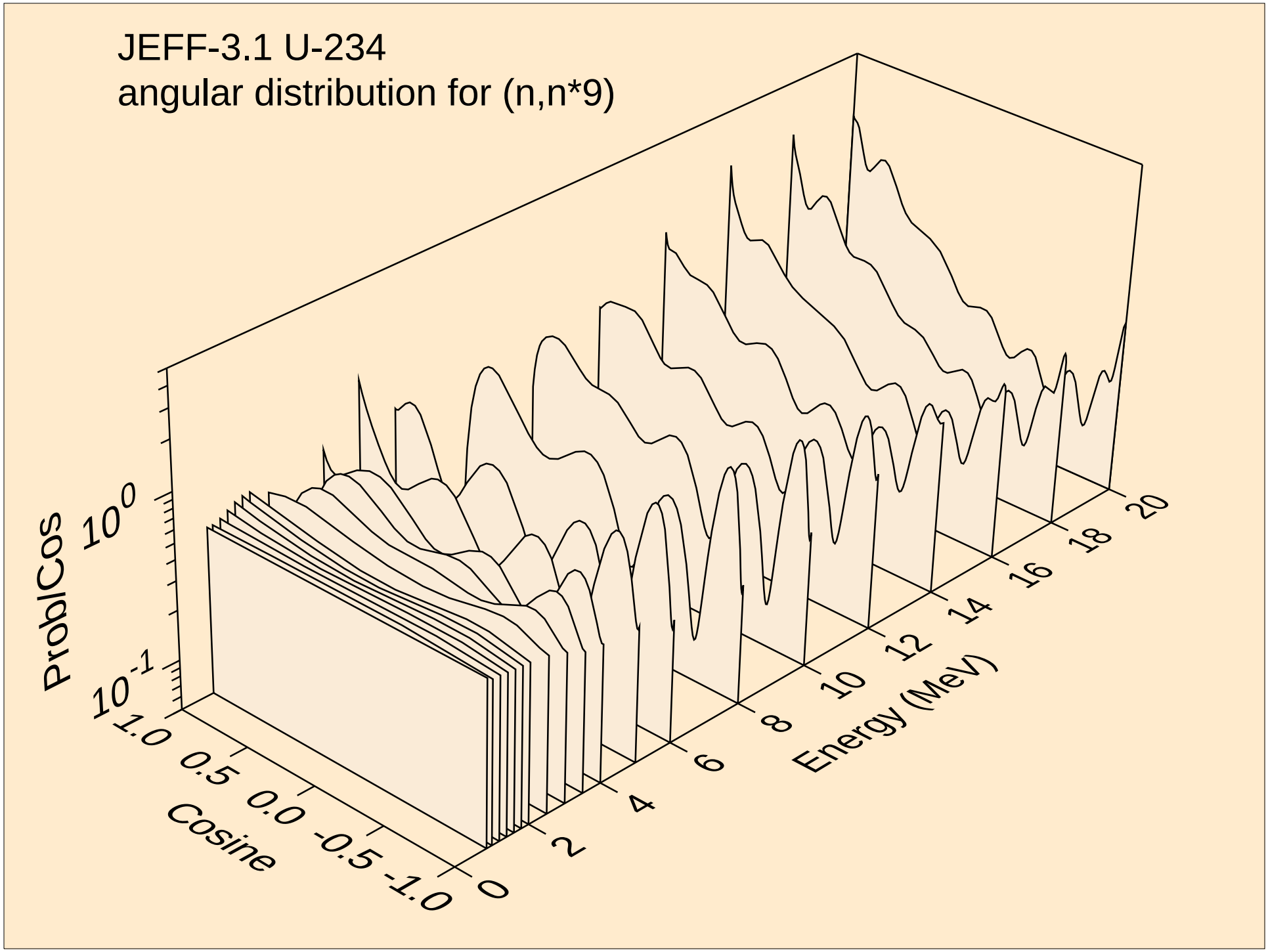

JEFF-3.1 U-234
angular distribution for (n,n*3)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

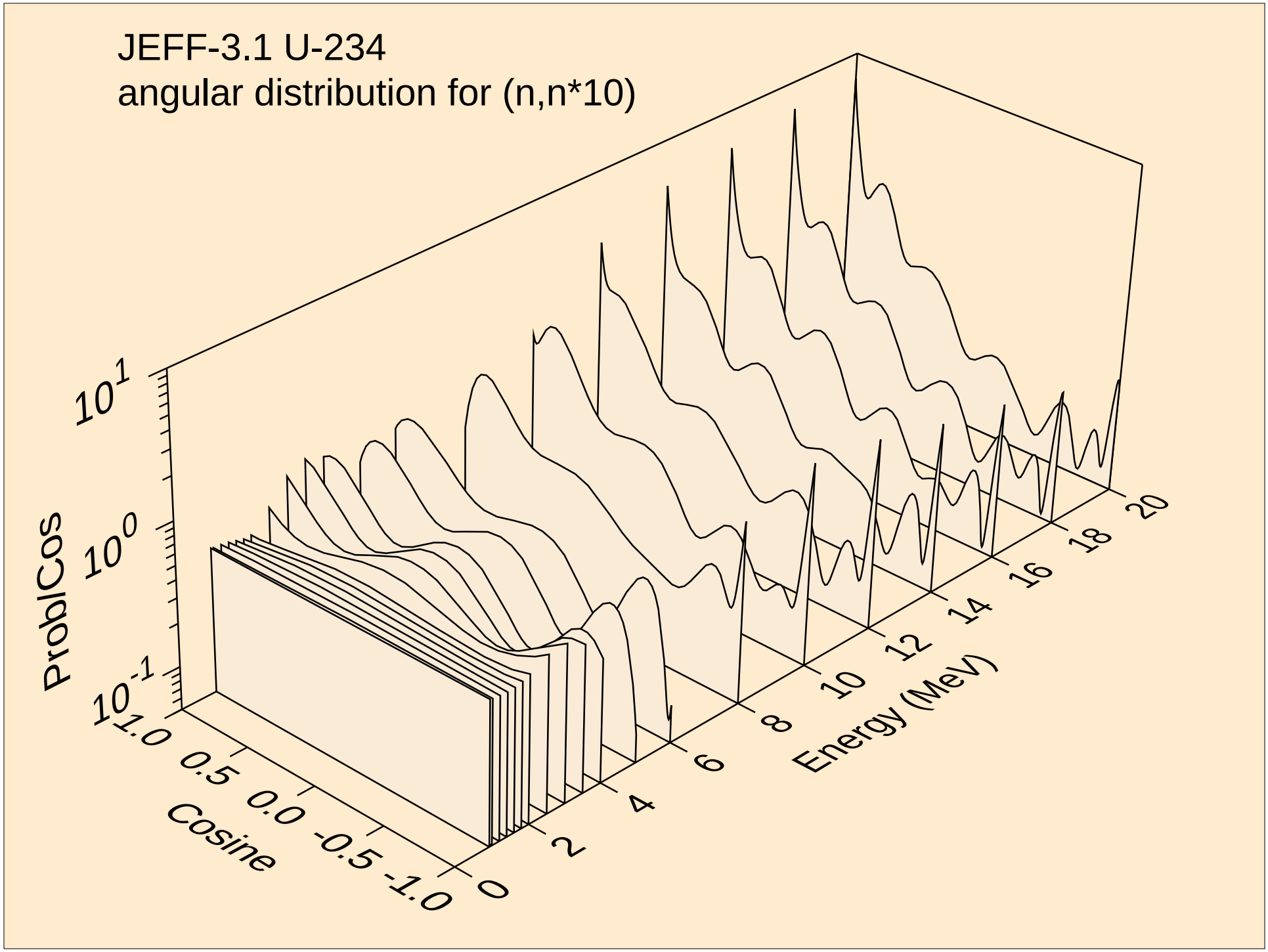

JEFF-3.1 U-234
angular distribution for (n,n*4)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

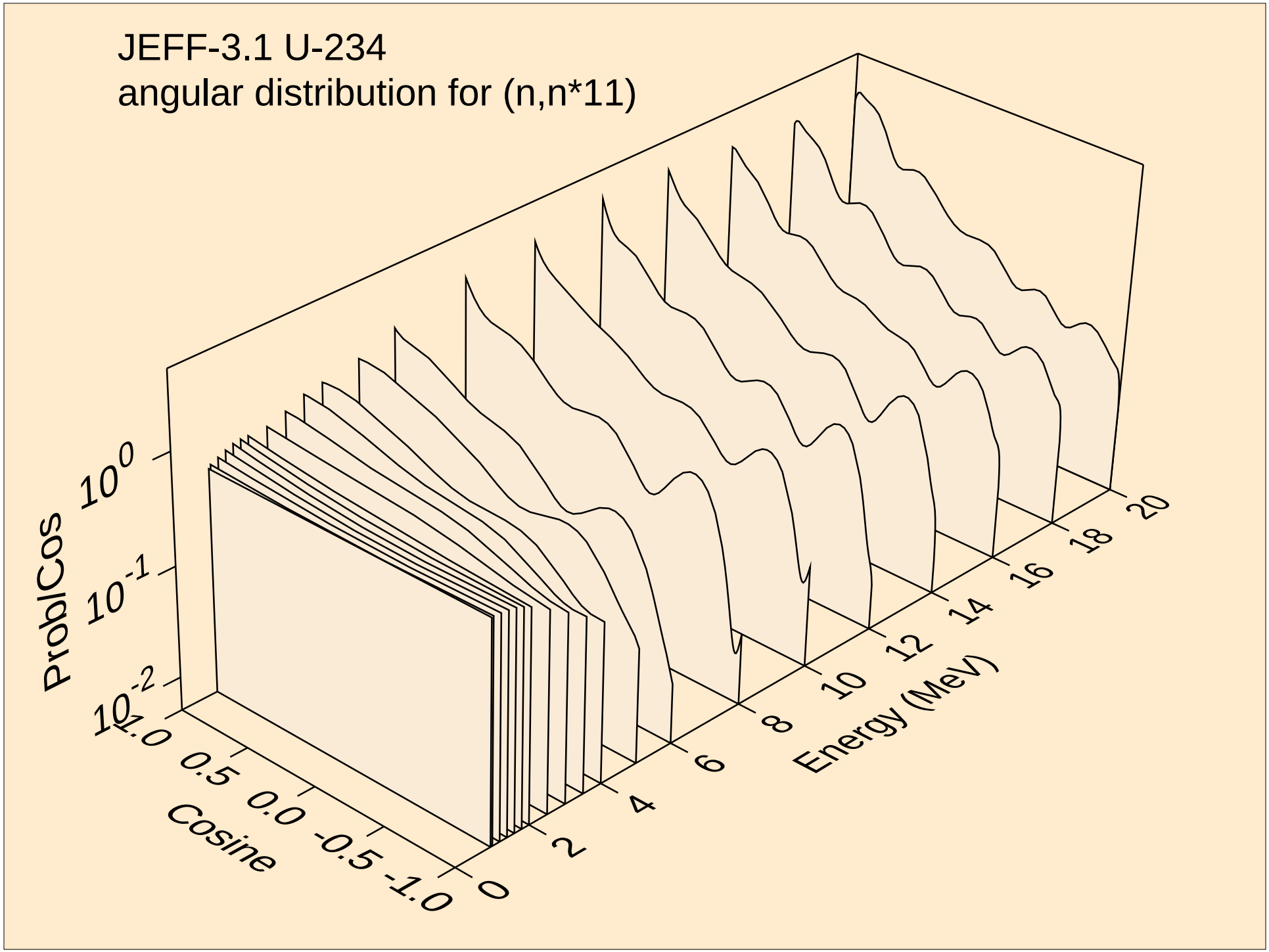

JEFF-3.1 U-234
angular distribution for (n,n*6)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

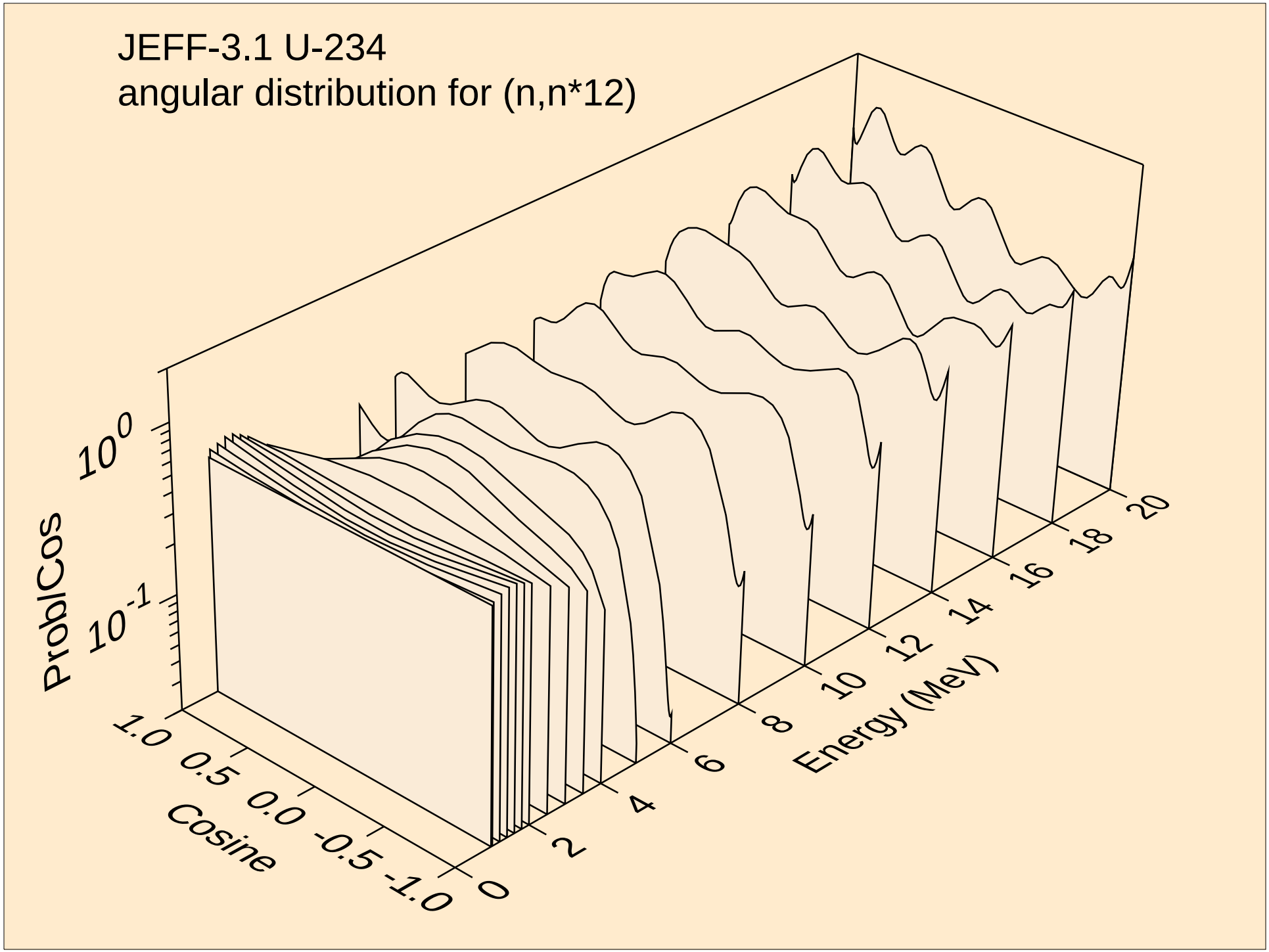

JEFF-3.1 U-234
angular distribution for (n,n*7)
ProbCos
10^{1}
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

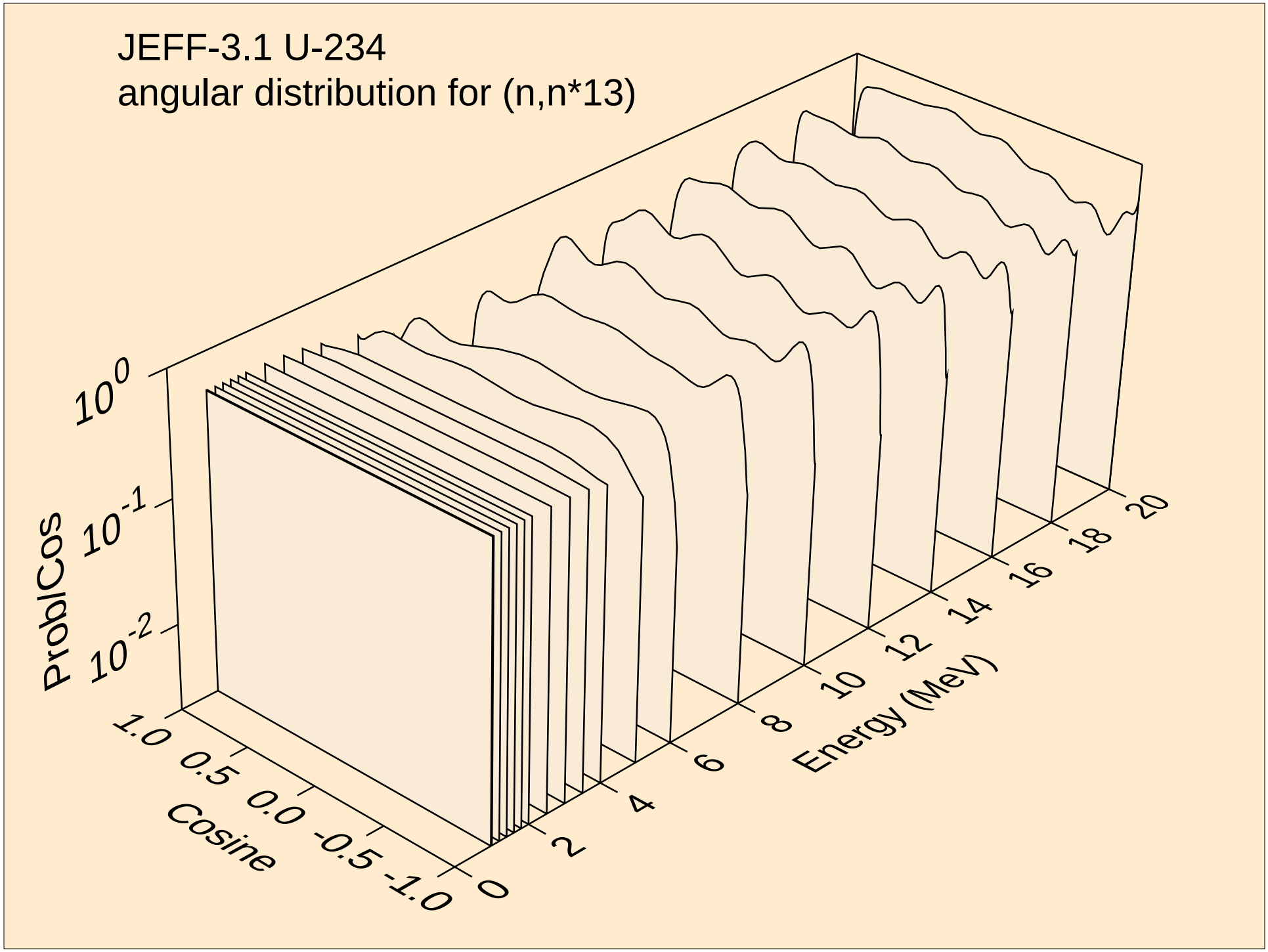

JEFF-3.1 U-234
angular distribution for (n,n*8)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

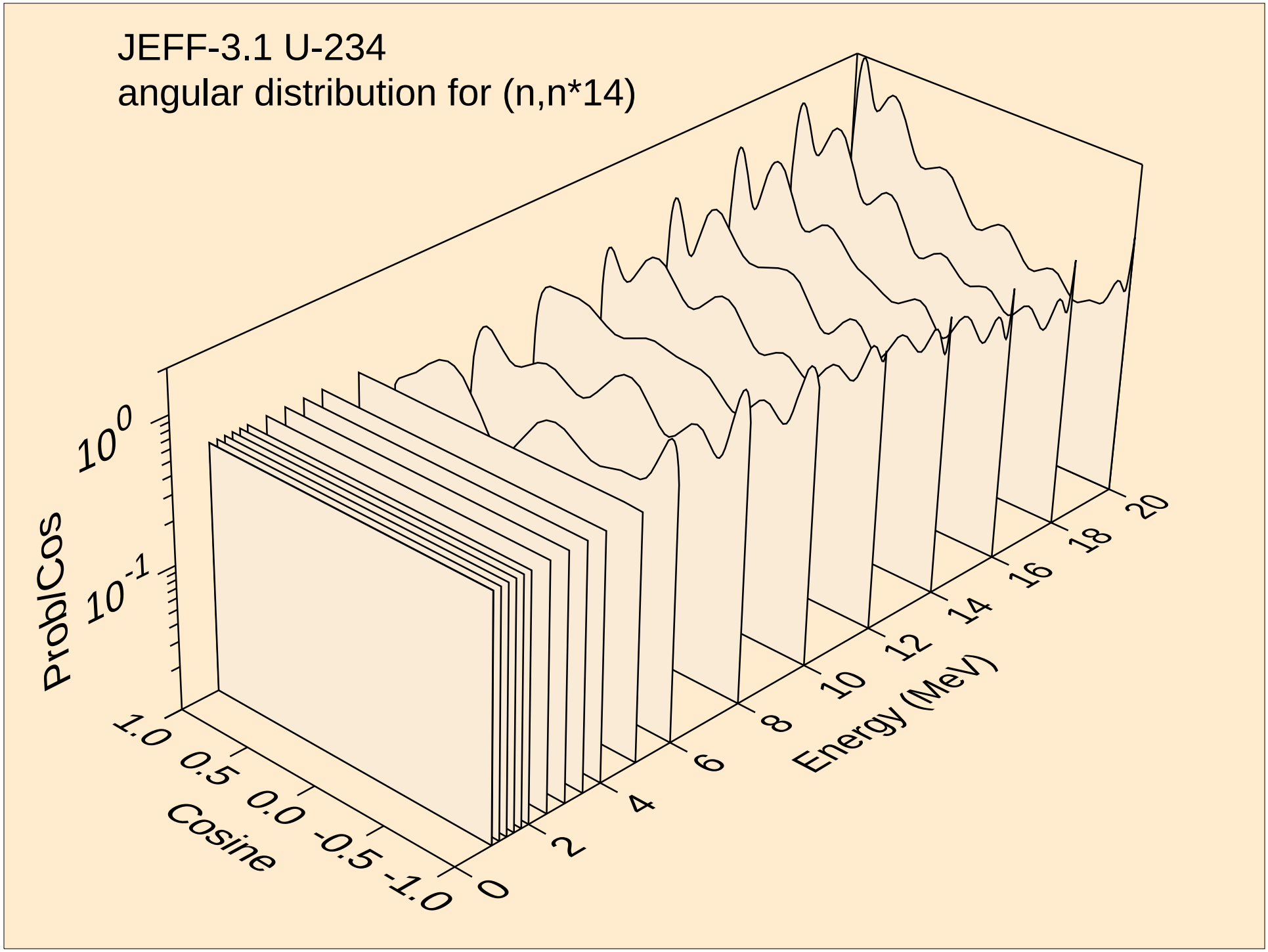

JEFF-3.1 U-234
angular distribution for (n,n*9)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

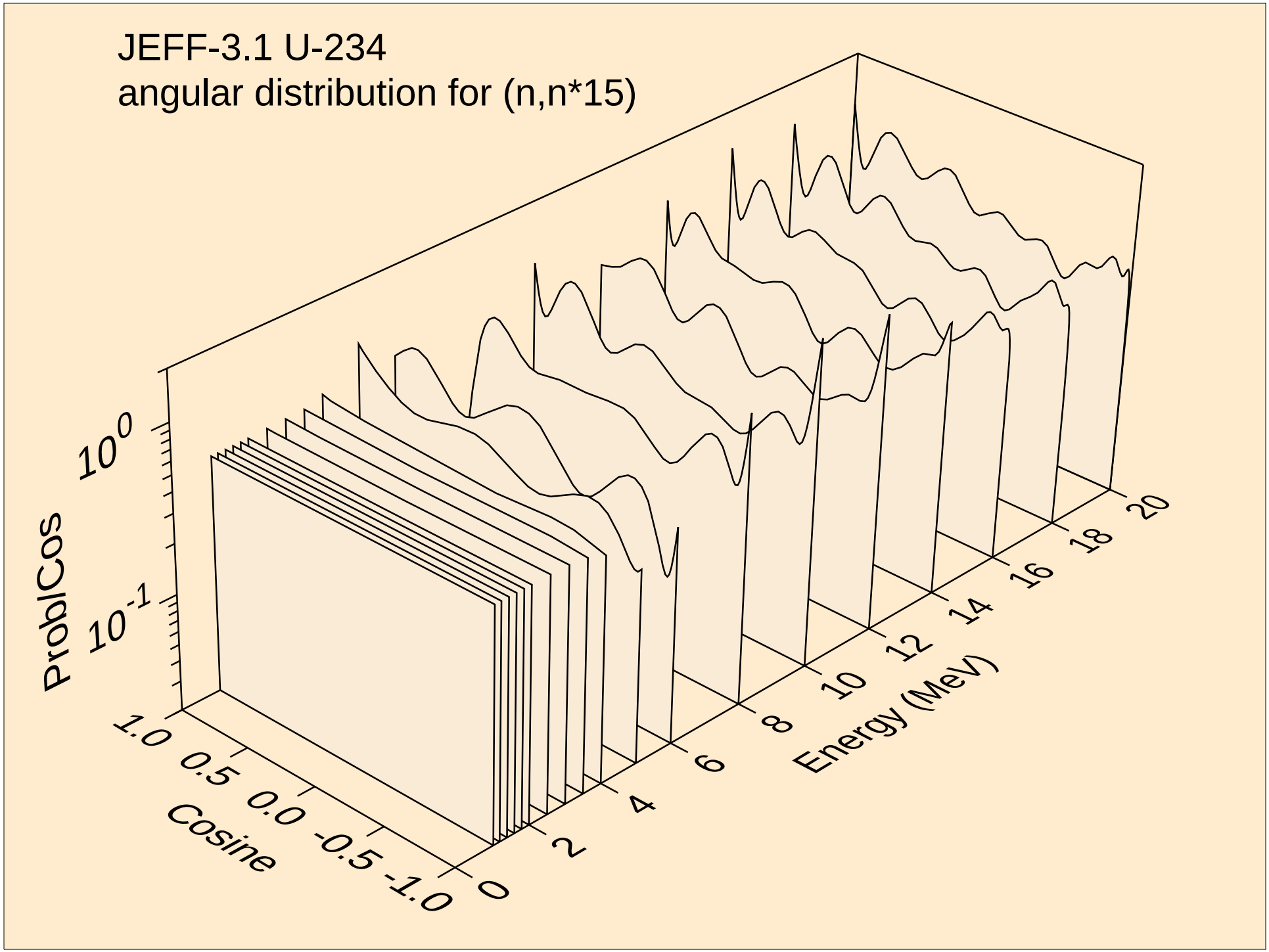

JEFF-3.1 U-234
angular distribution for (n,n*10)
ProbICos
10^{1}
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

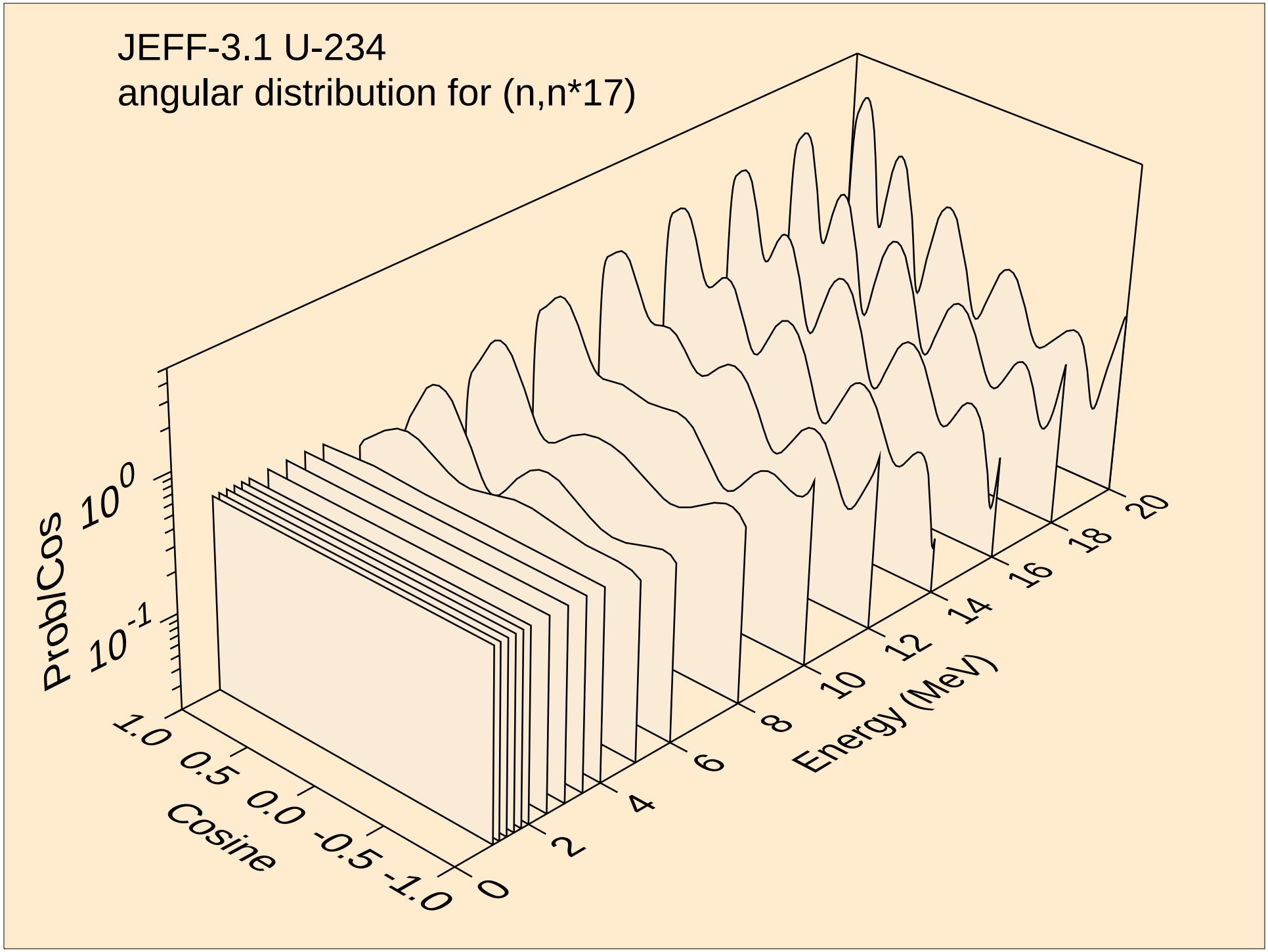

JEFF-3.1 U-234
angular distribution for (n,n*11)
Prob\Cos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

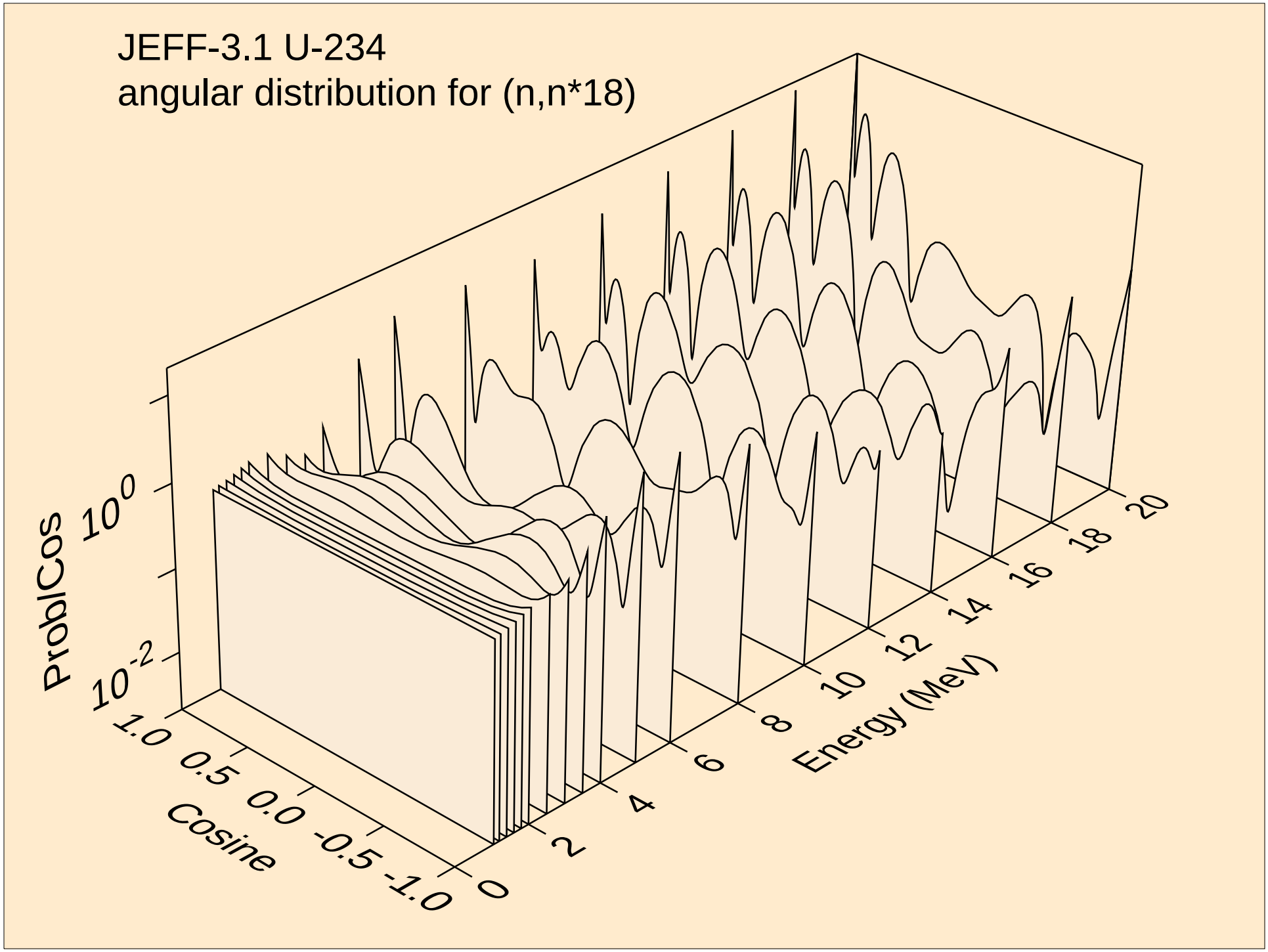

JEFF-3.1 U-234
angular distribution for (n,n*12)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

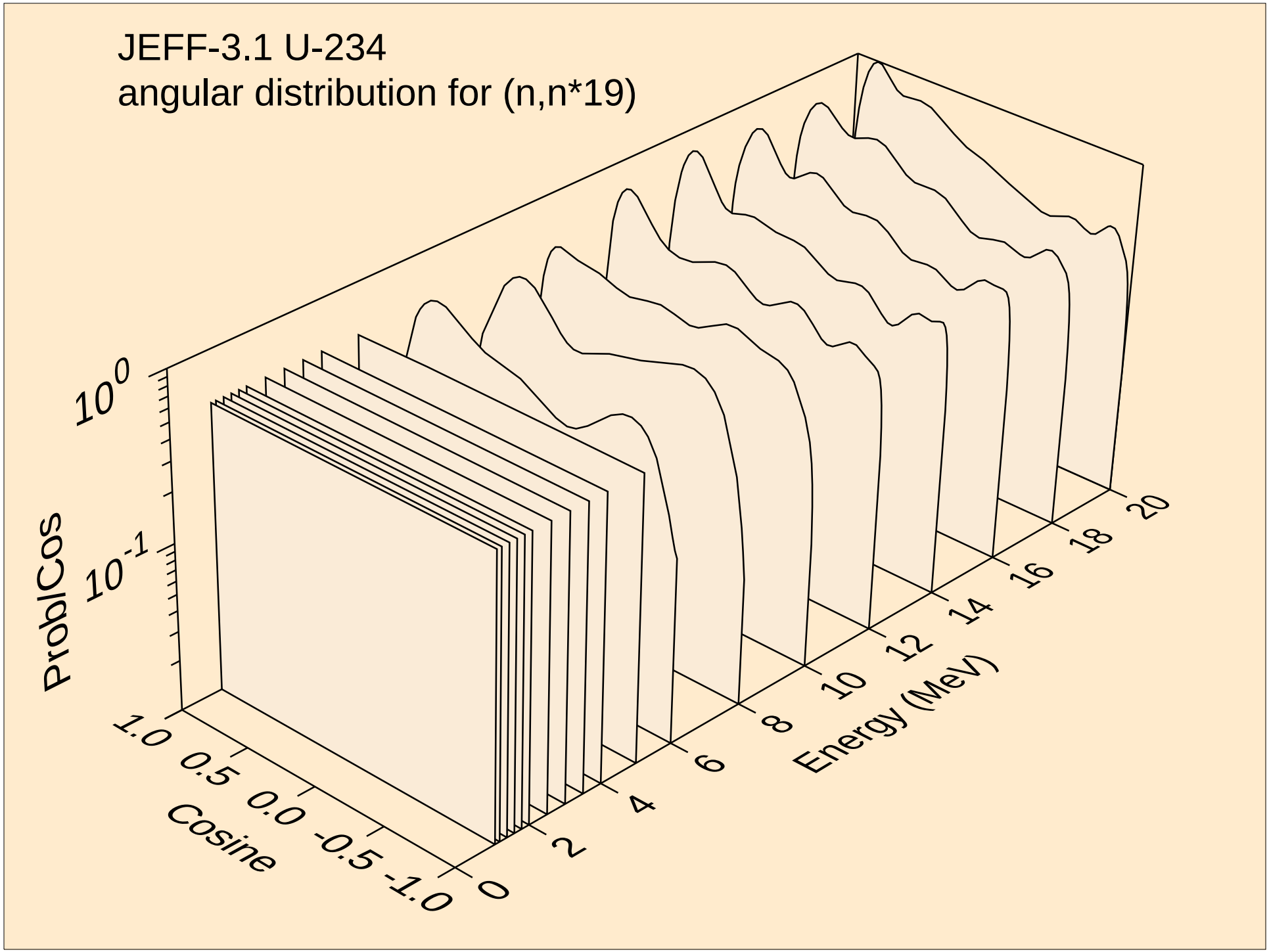

JEFF-3.1 U-234
angular distribution for (n,n*13)
ProbICos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

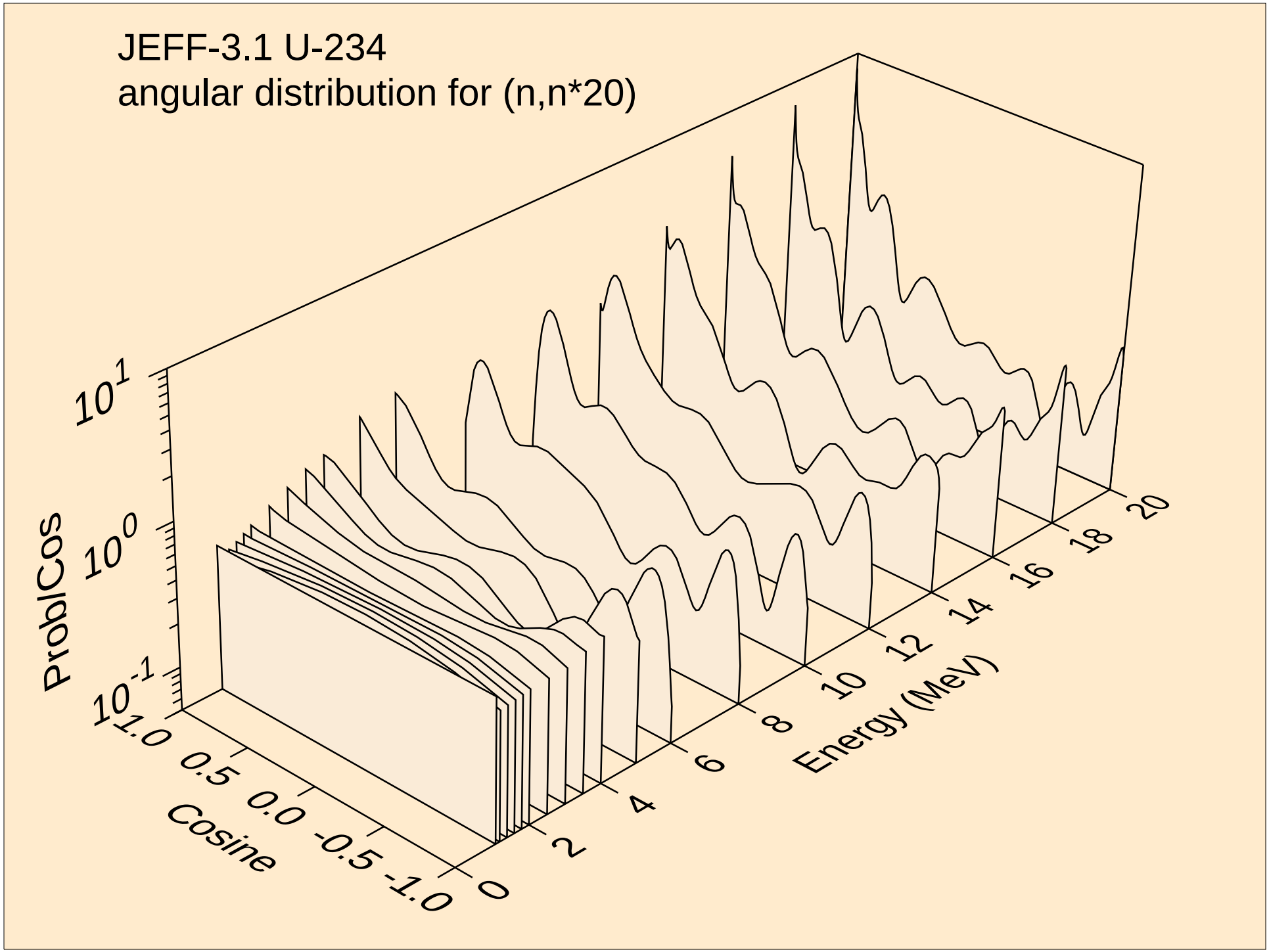

JEFF-3.1 U-234
angular distribution for (n,n*14)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

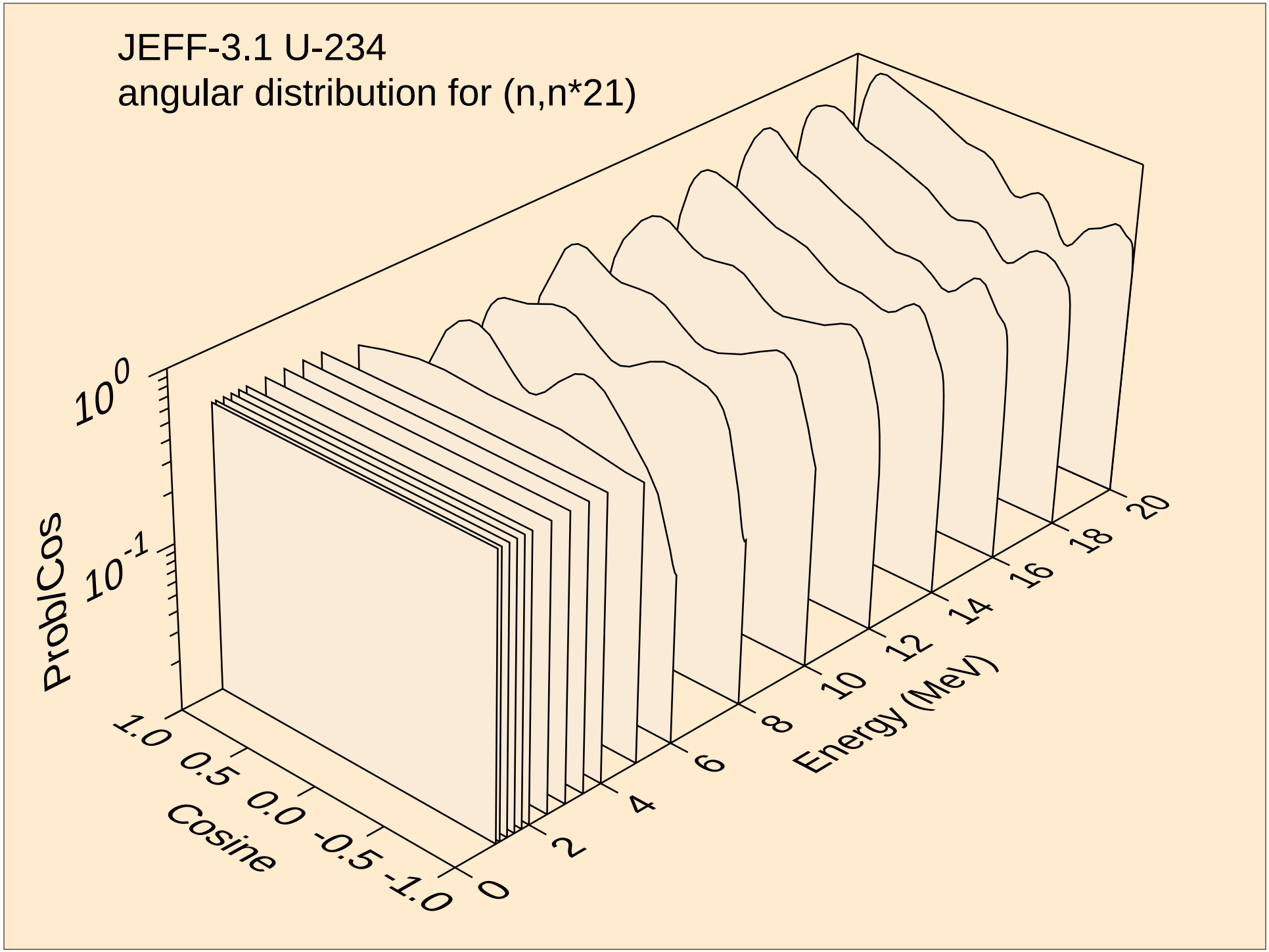

JEFF-3.1 U-234
angular distribution for (n,n*15)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

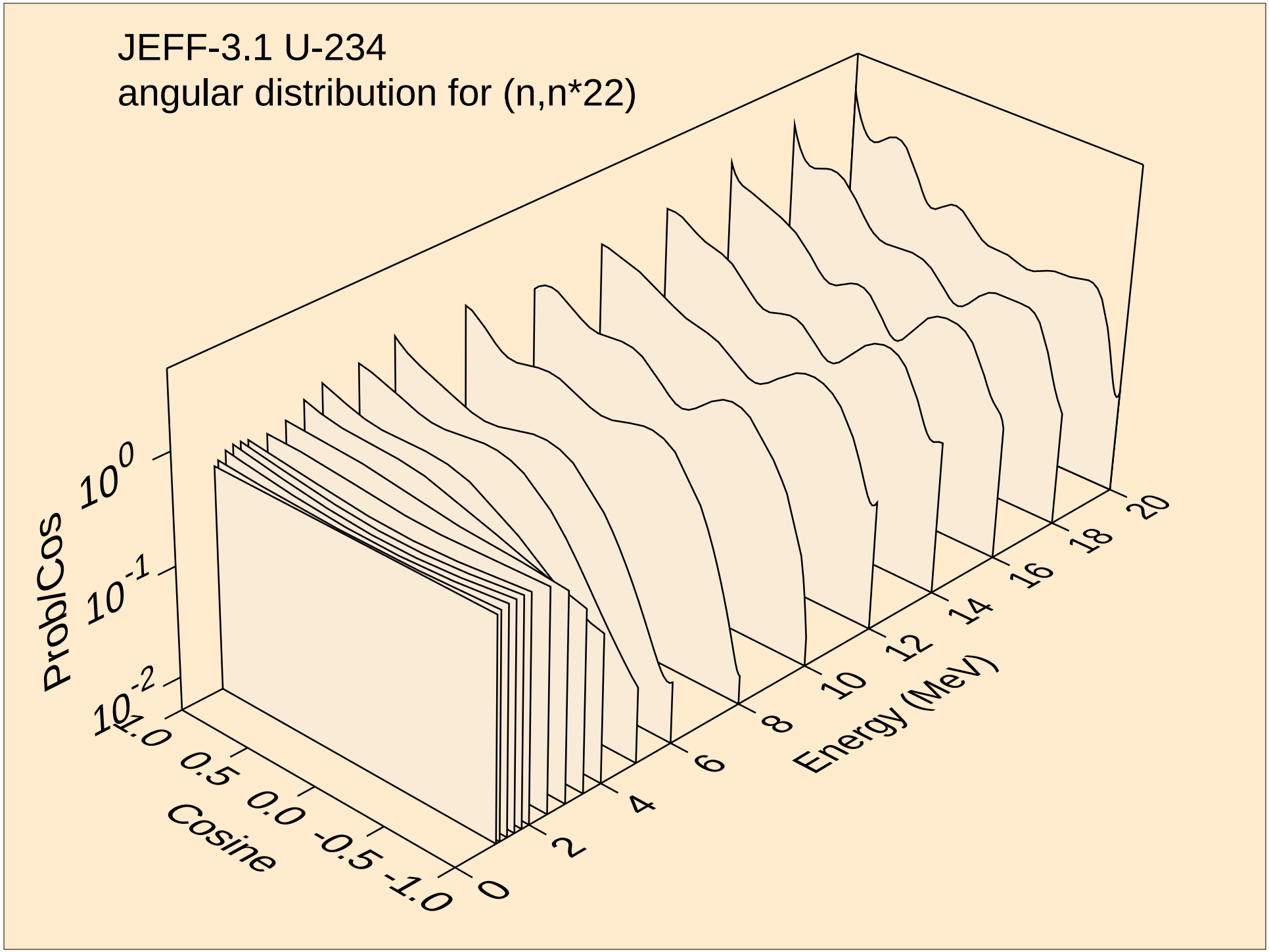

JEFF-3.1 U-234
angular distribution for (n,n*17)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

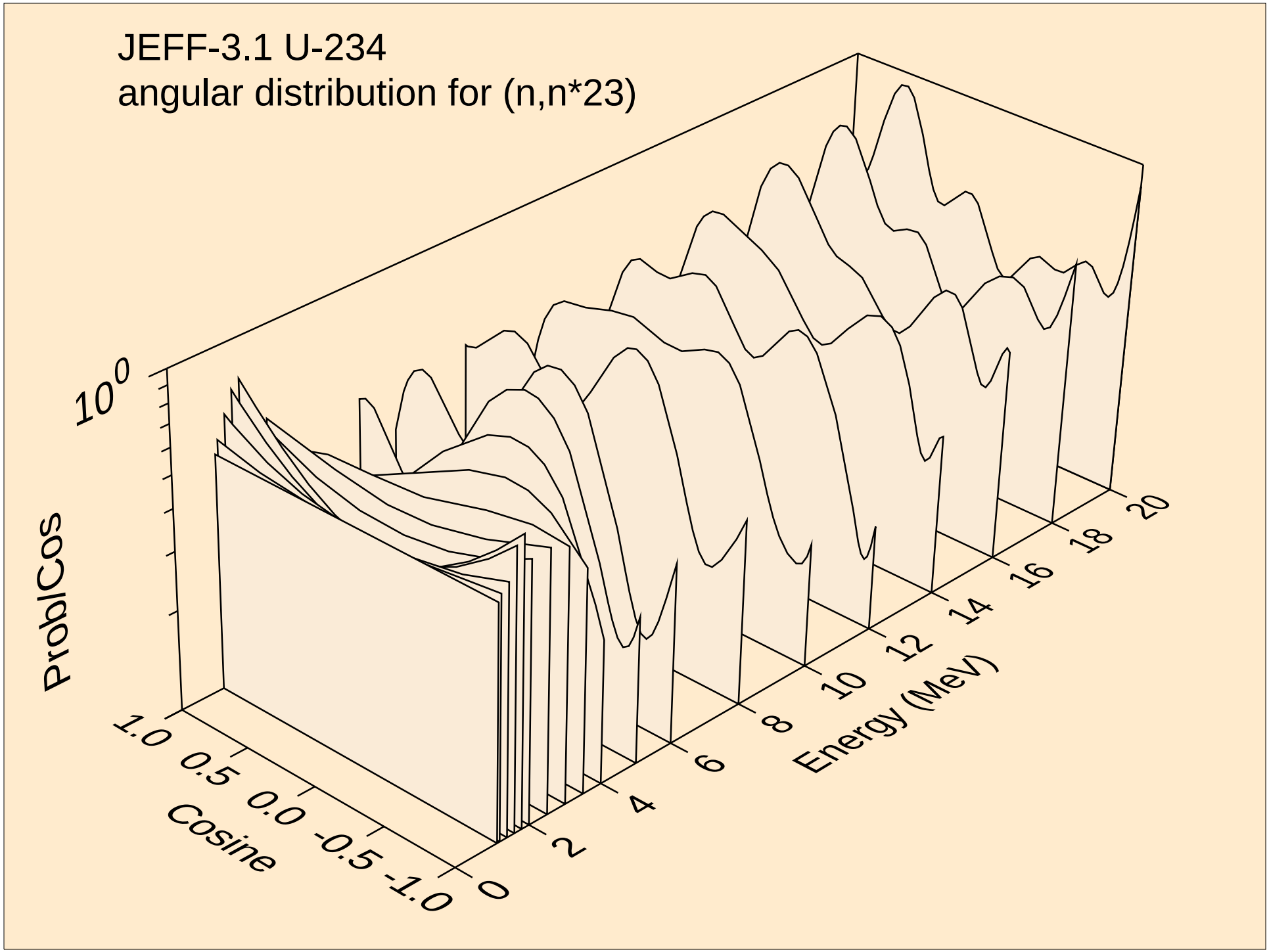

JEFF-3.1 U-234
angular distribution for (n,n*18)
ProbICos
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

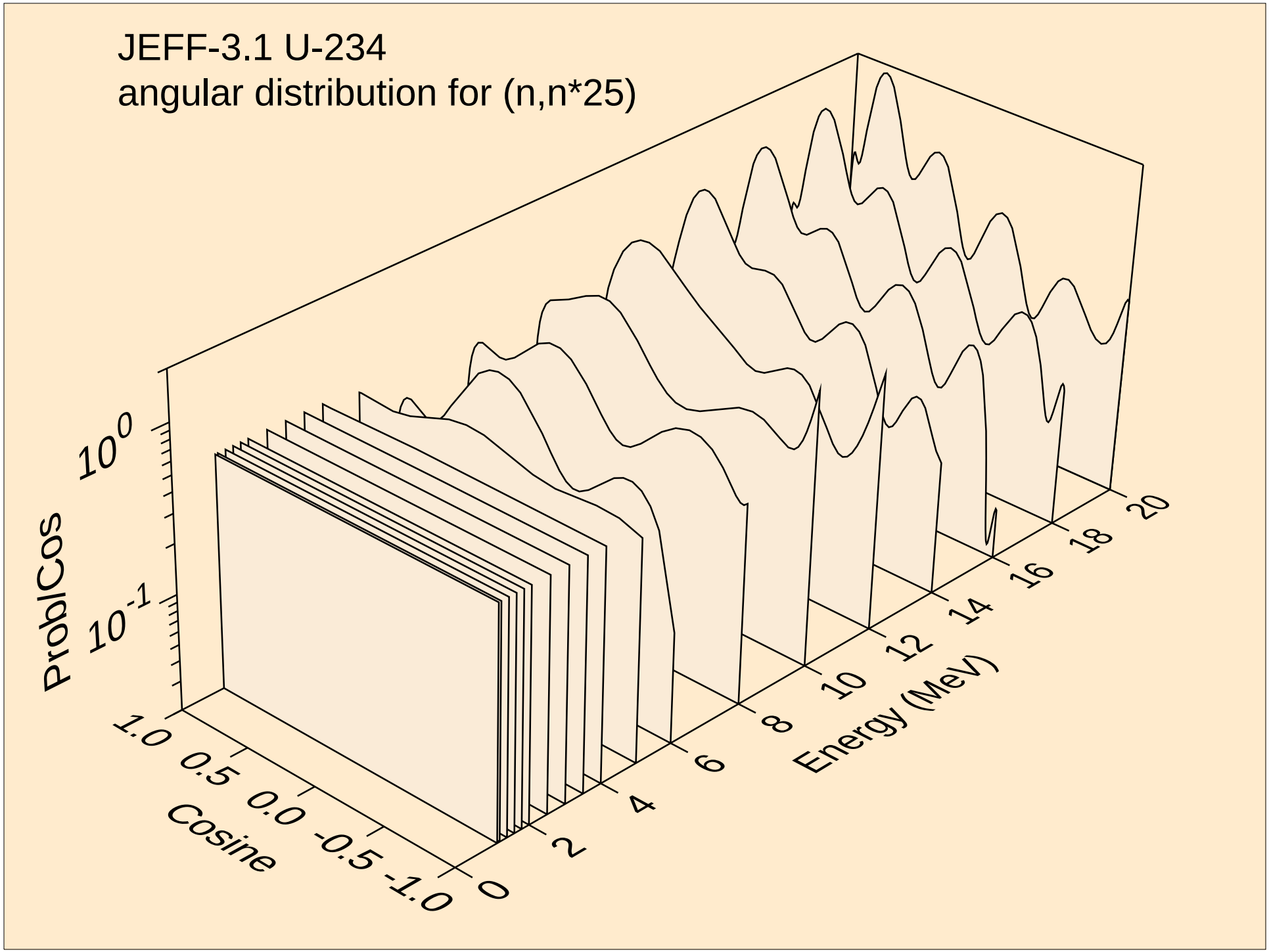

JEFF-3.1 U-234
angular distribution for (n,n*19)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

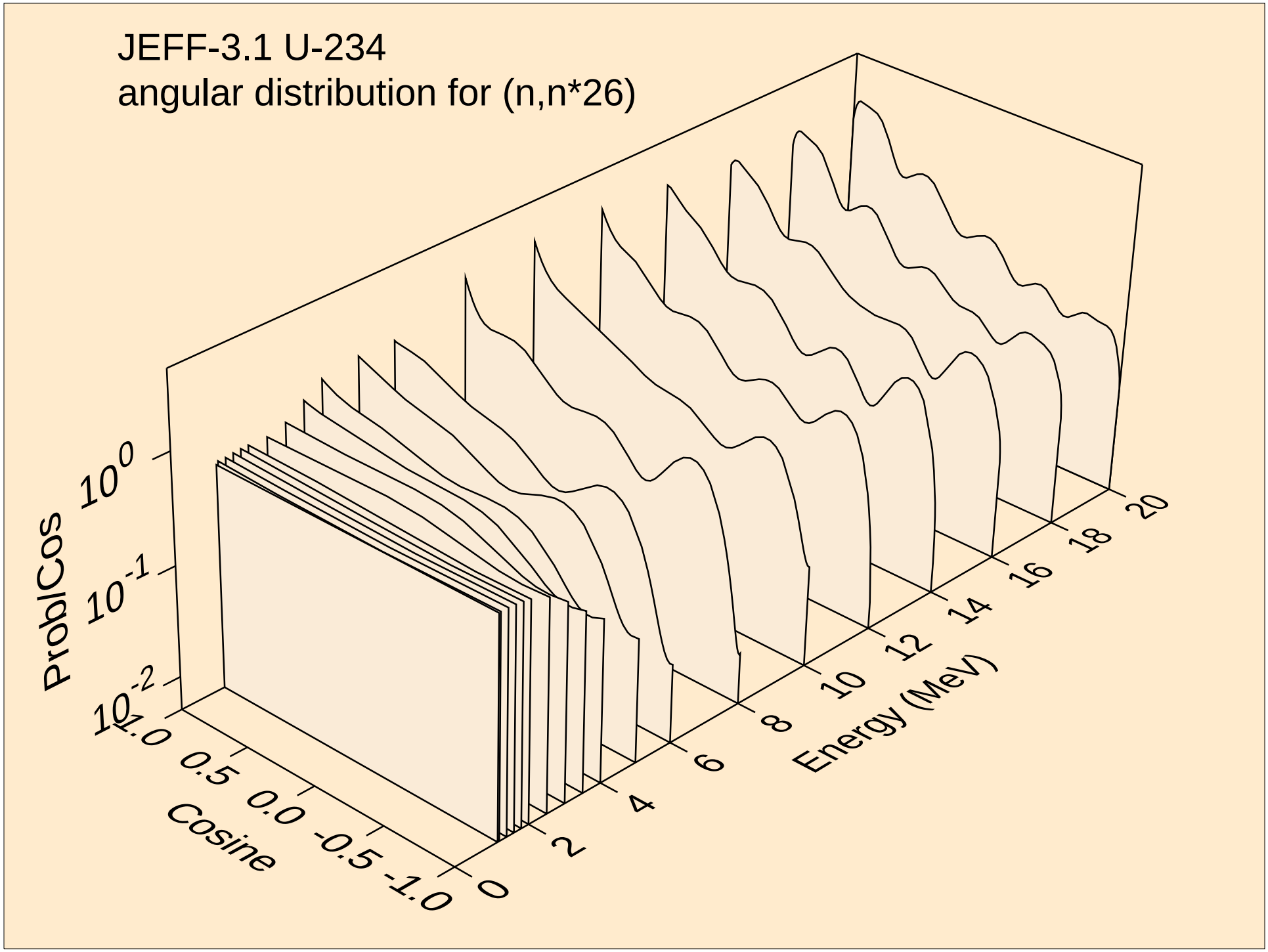

JEFF-3.1 U-234
angular distribution for (n,n*20)
ProbICos
10^{1}
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

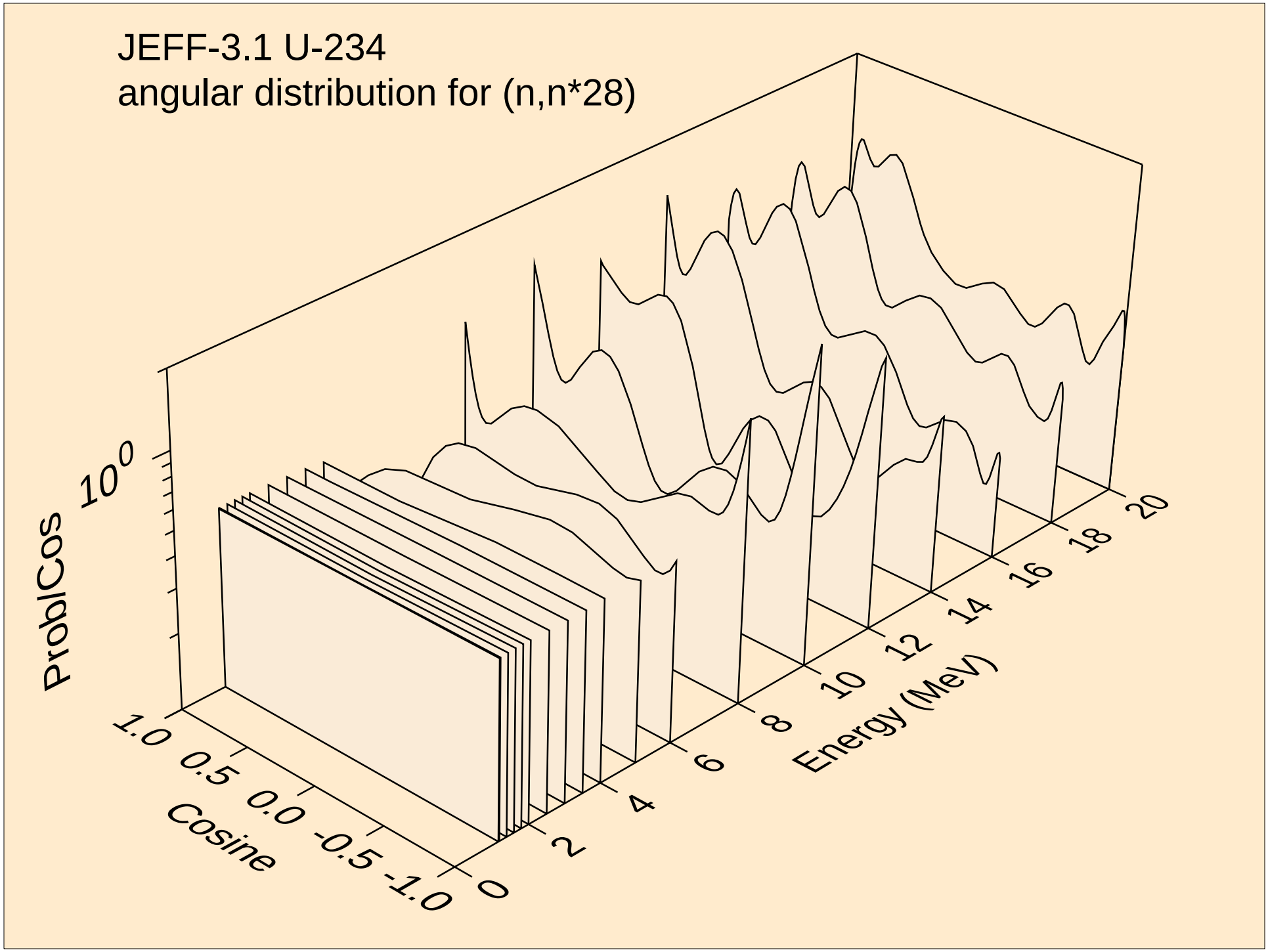

JEFF-3.1 U-234
angular distribution for (n,n*21)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

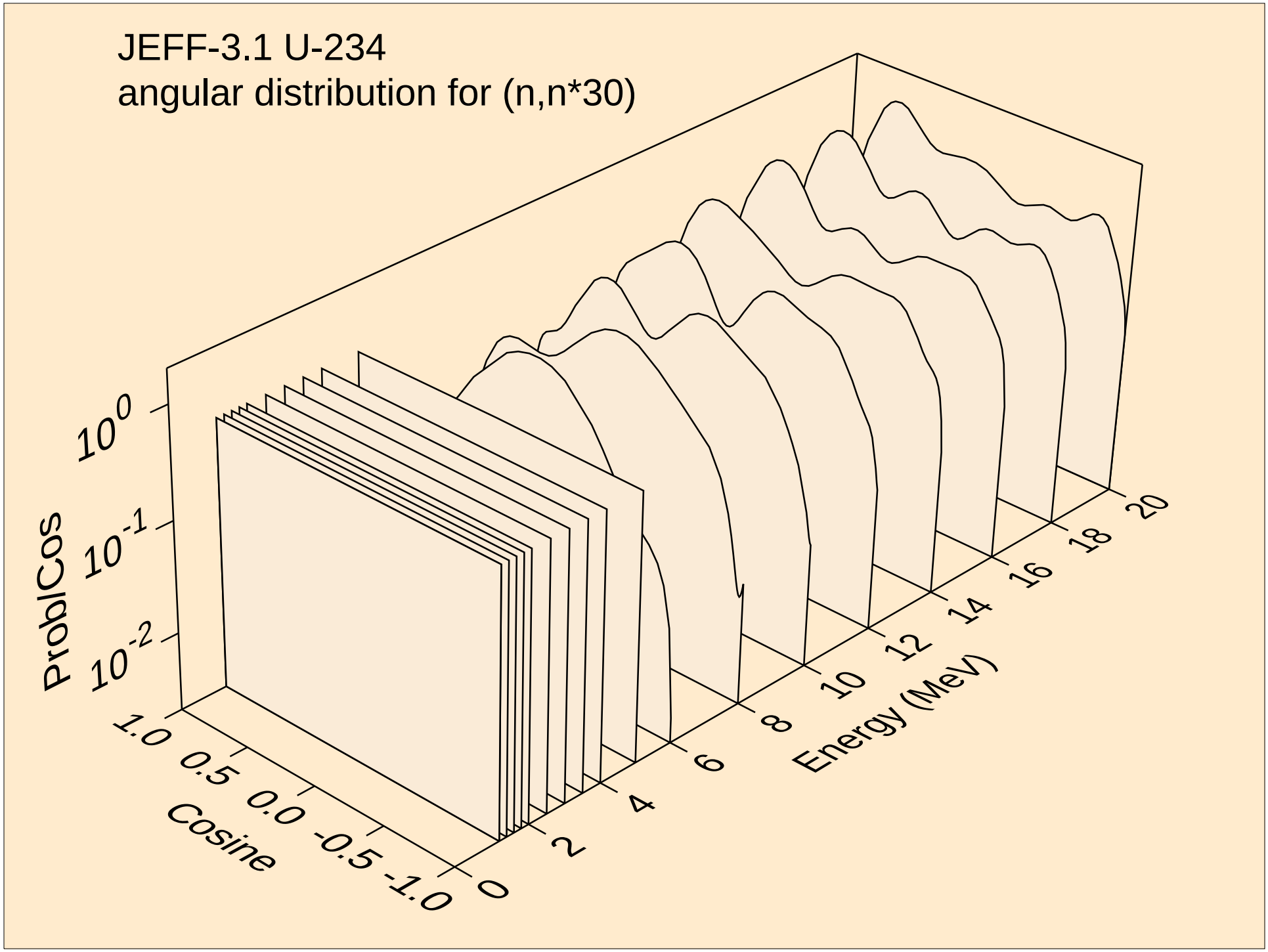

JEFF-3.1 U-234
angular distribution for (n,n*22)
Prob\Cos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

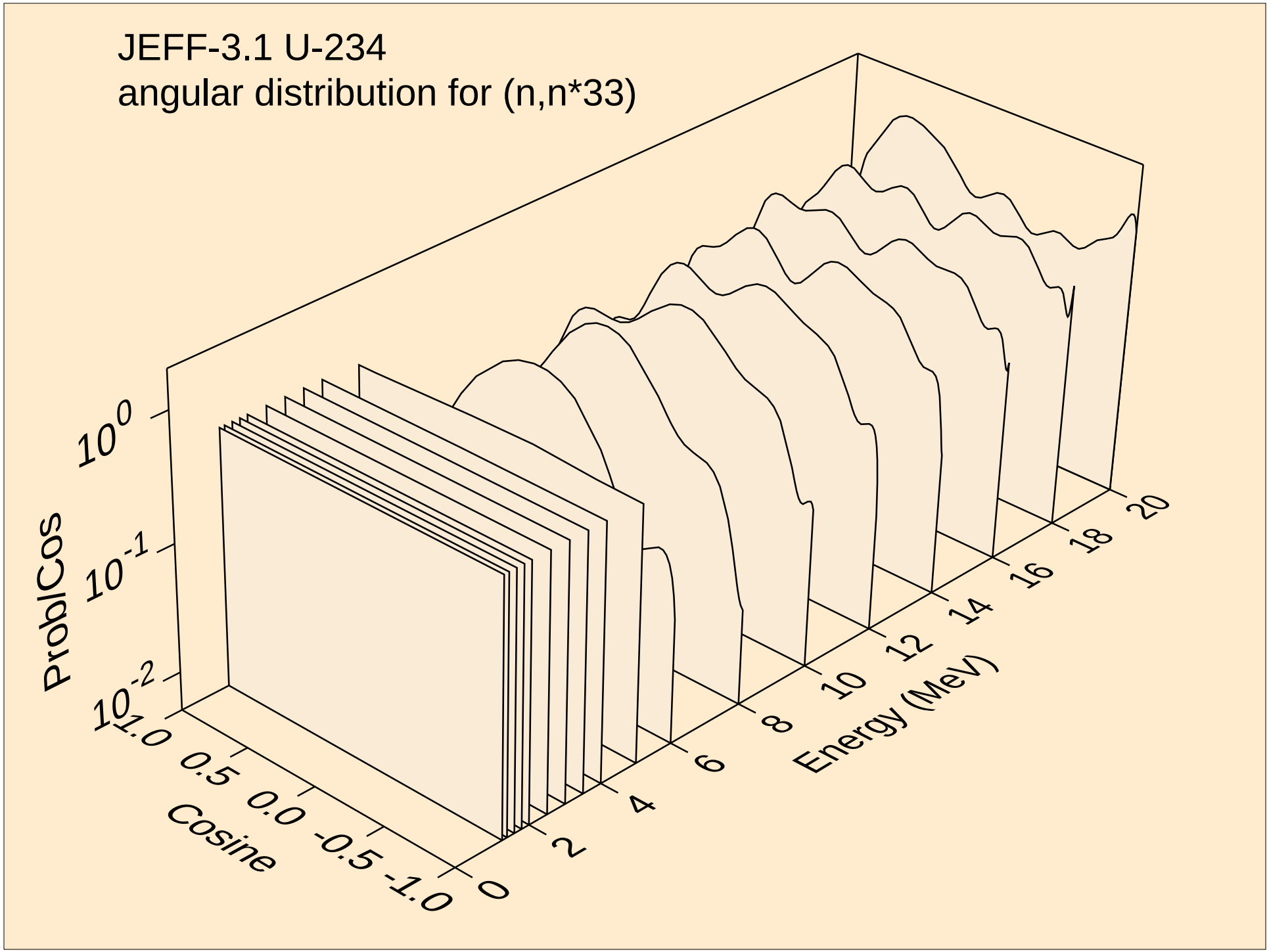

JEFF-3.1 U-234
angular distribution for (n,n*23)
10^0
ProblCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

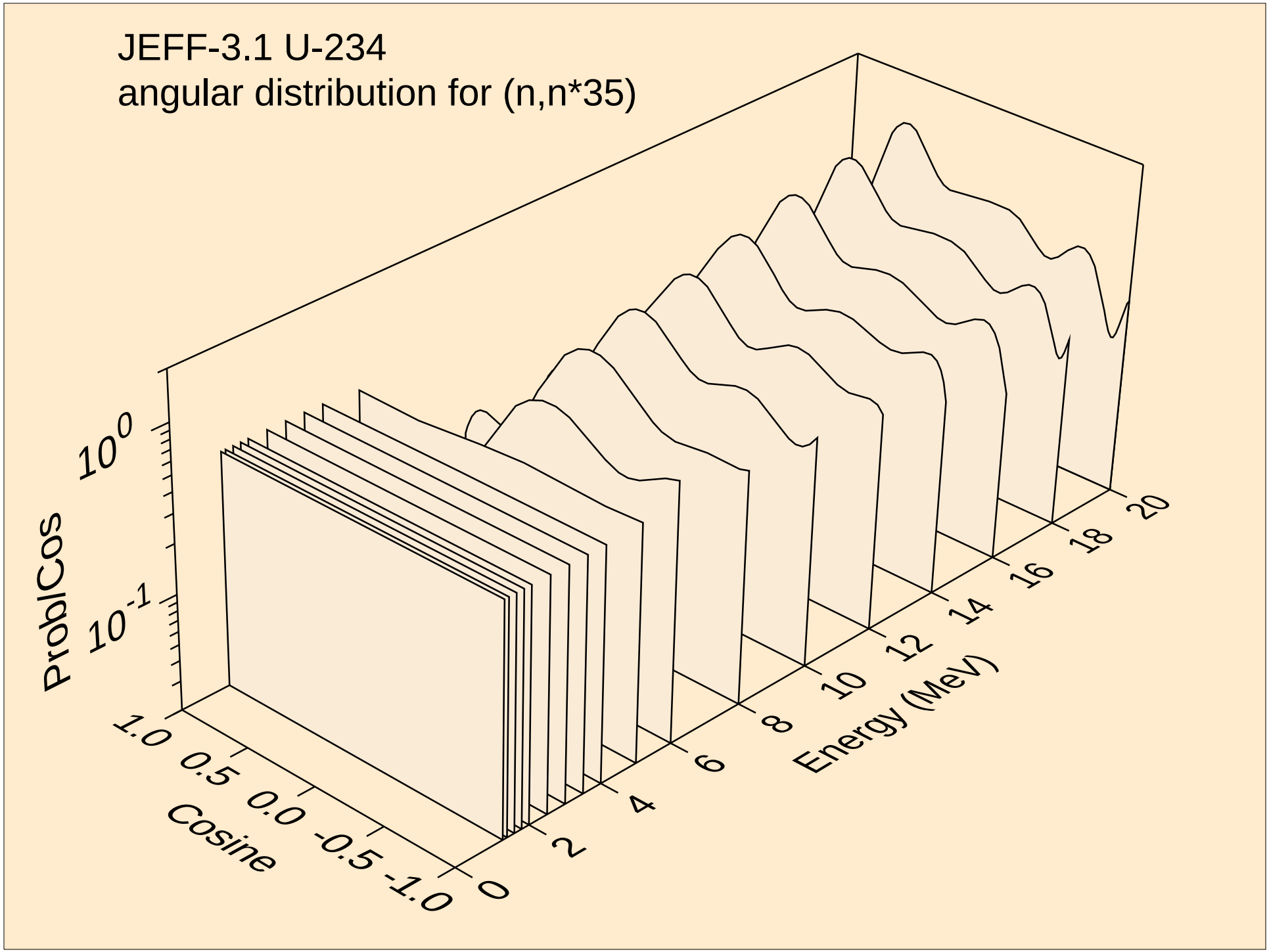

JEFF-3.1 U-234
angular distribution for (n,n*25)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

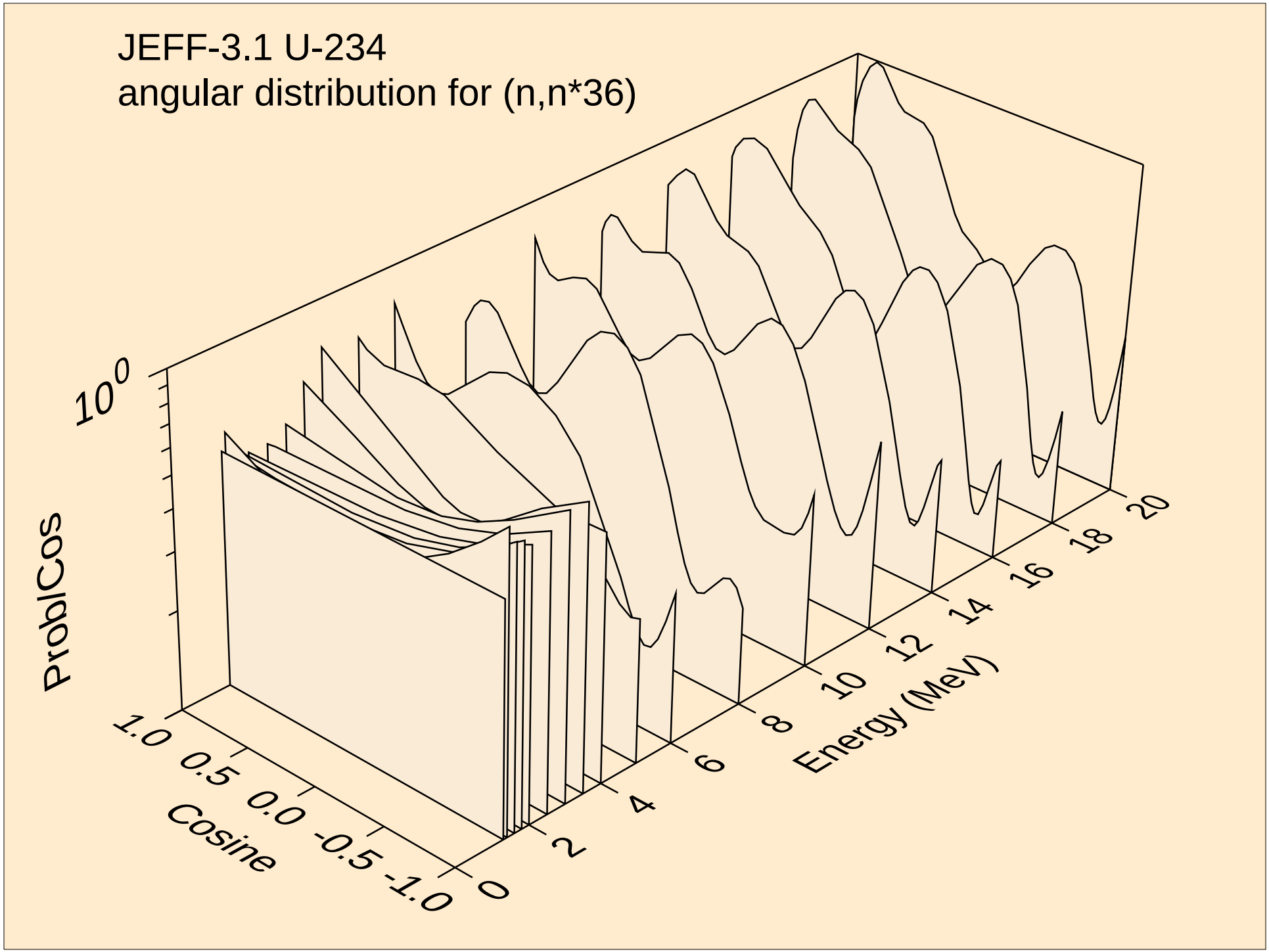

JEFF-3.1 U-234
angular distribution for (n,n*26)
Prob\Cos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

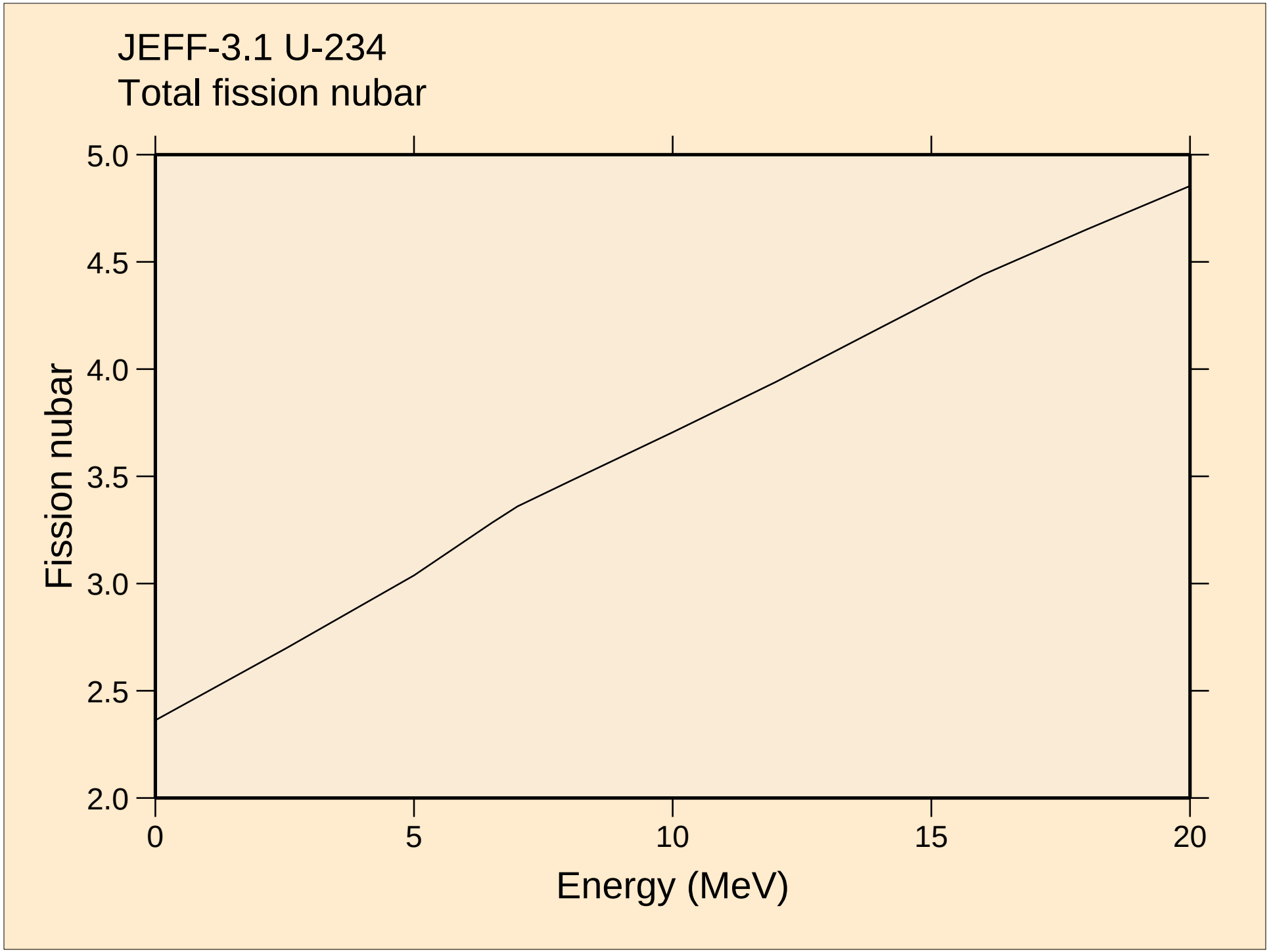

JEFF-3.1 U-234
angular distribution for (n,n*28)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

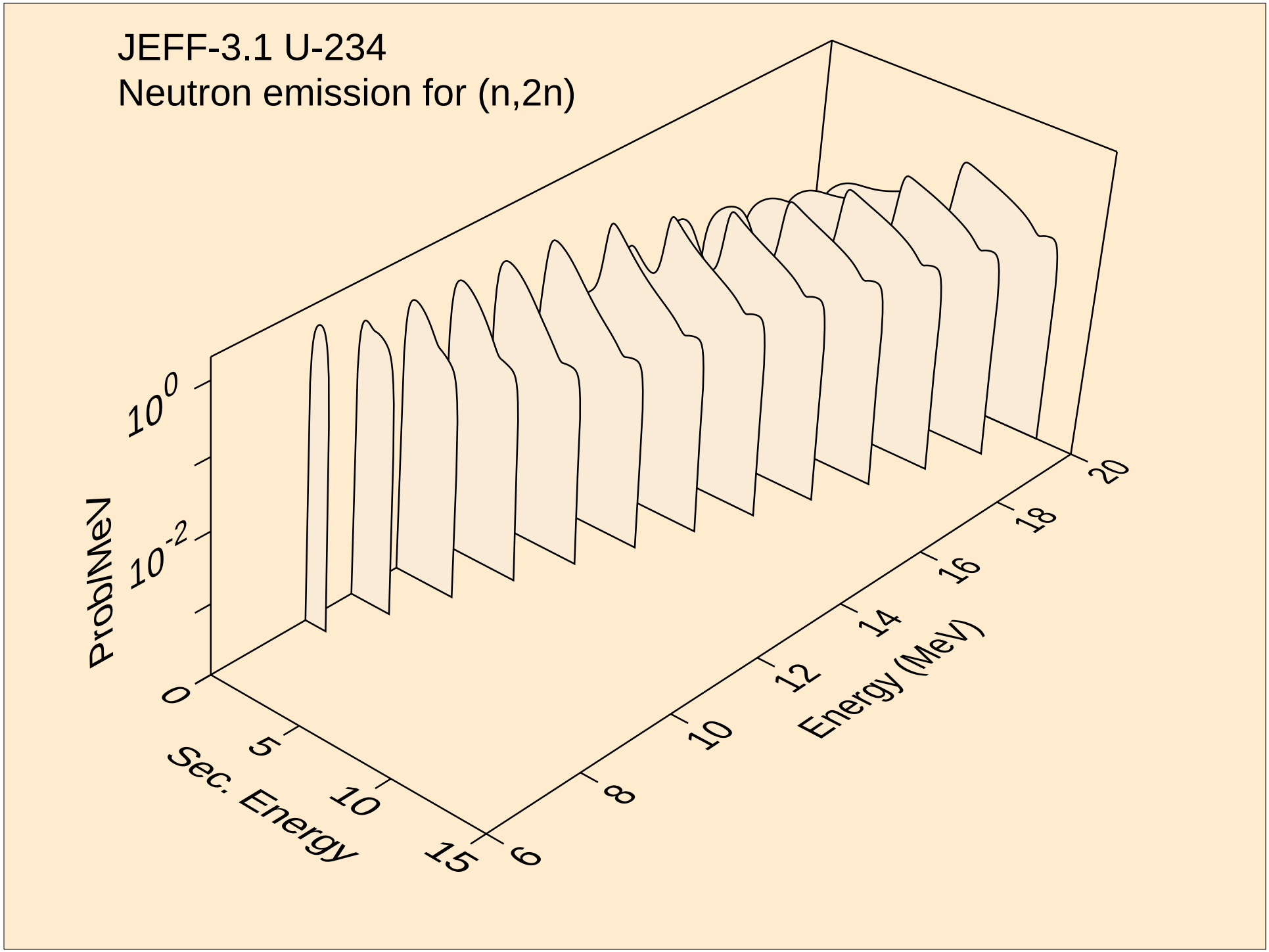

JEFF-3.1 U-234
angular distribution for (n,n*30)
ProbCos
10^{0}
10^{-1}
10^{-2}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

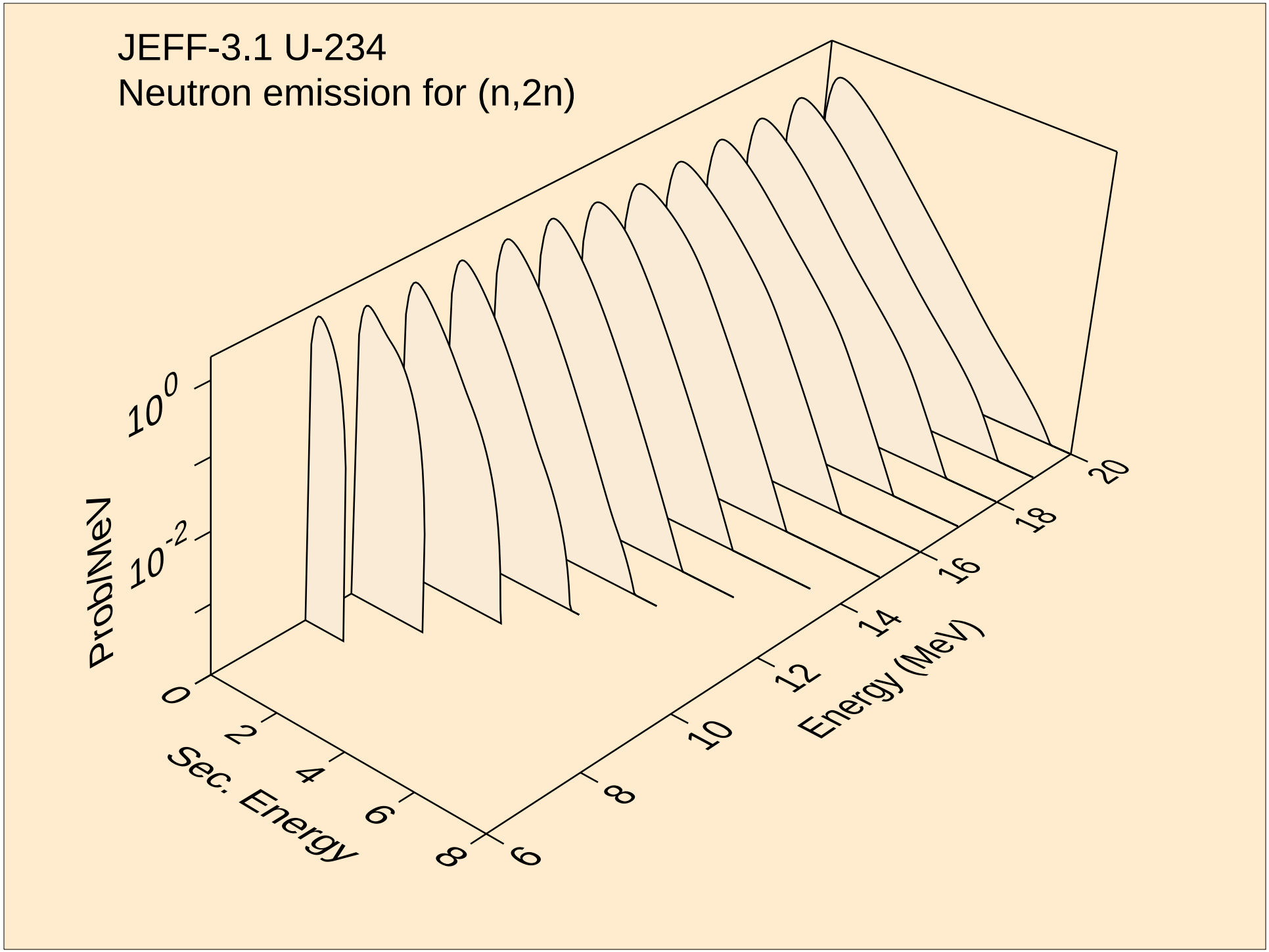

JEFF-3.1 U-234
angular distribution for (n,n*33)
ProbCos
10^{0}
10^{-1}
10^{-2}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

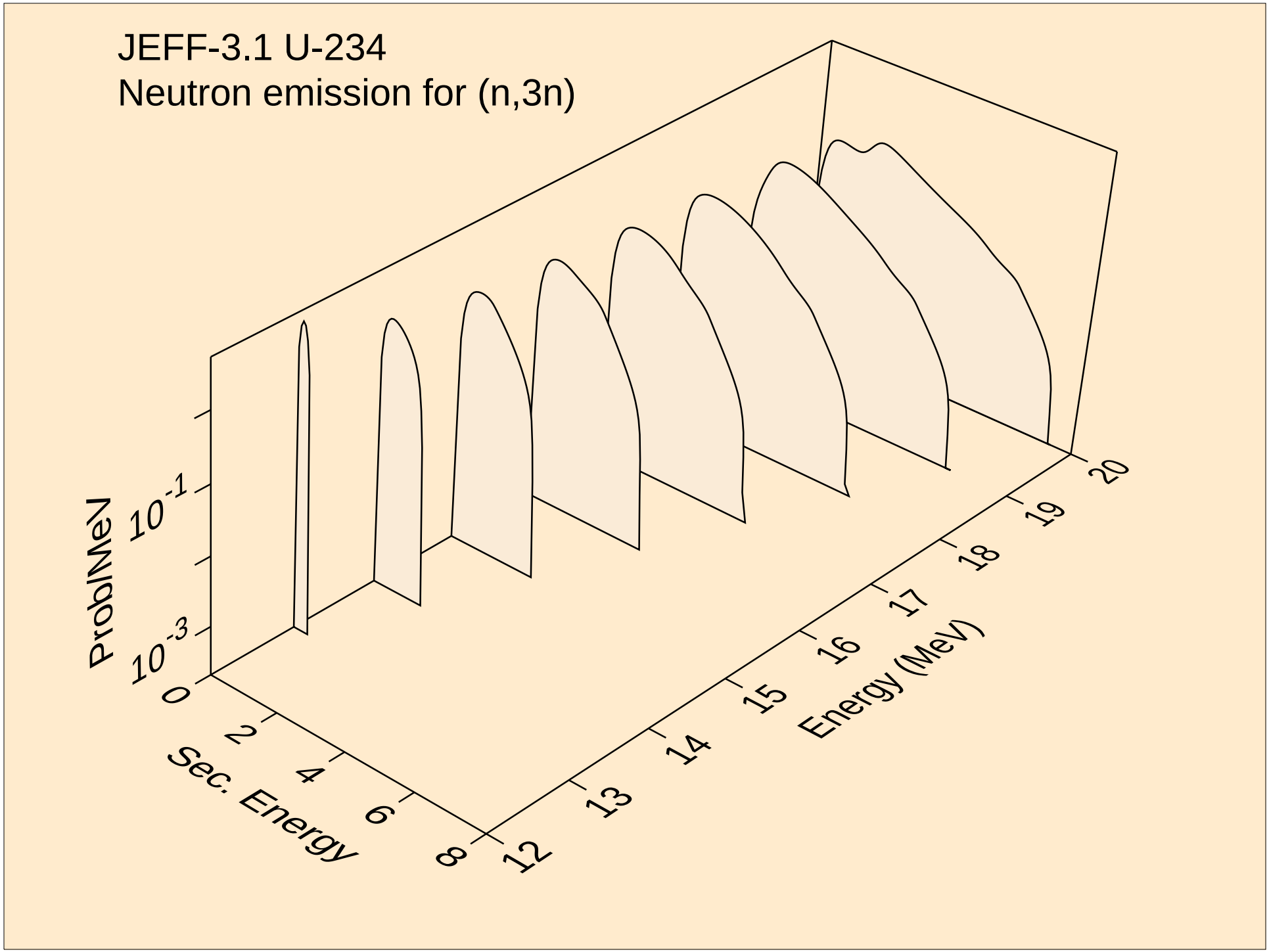

JEFF-3.1 U-234
angular distribution for (n,n*35)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

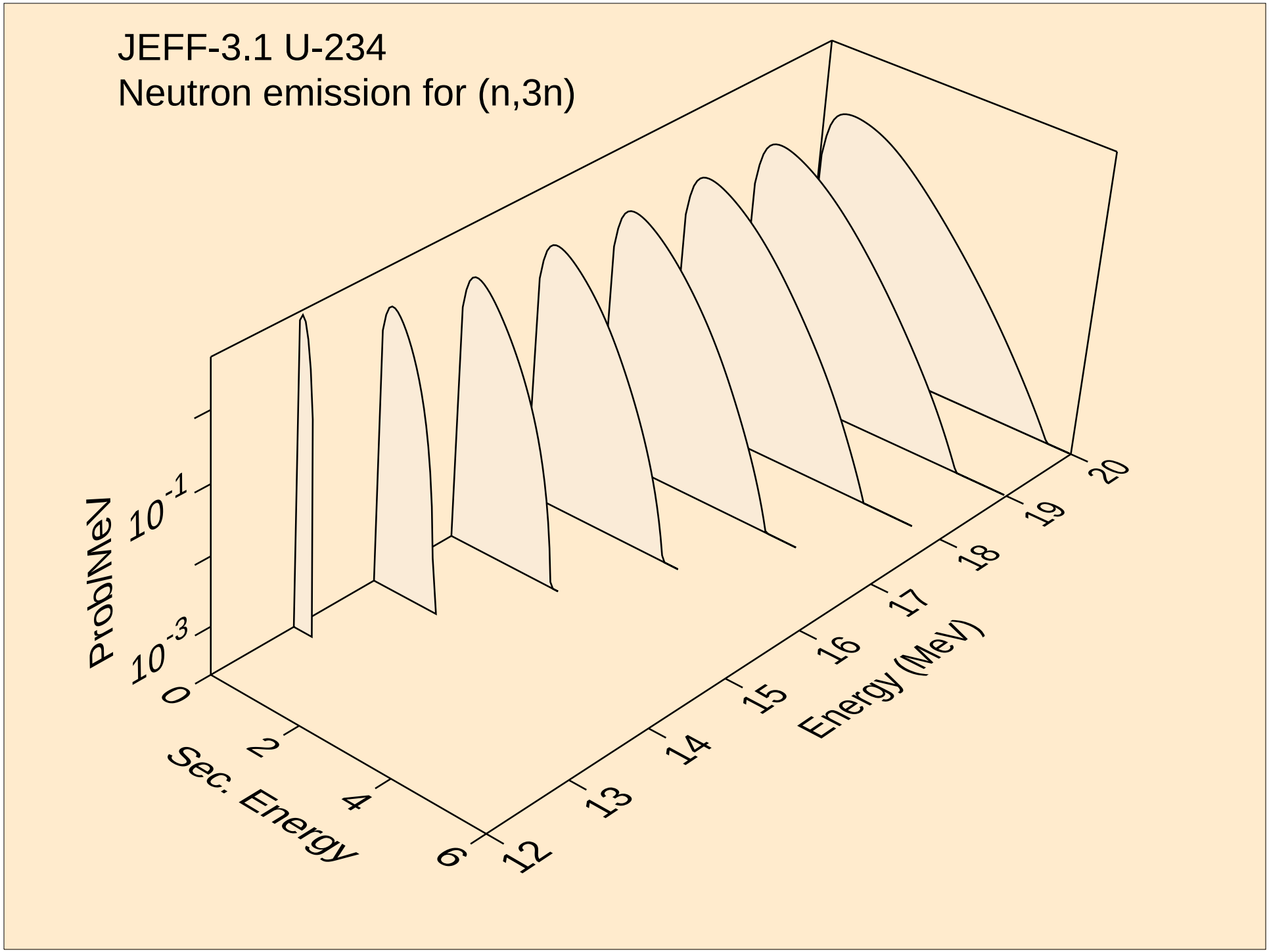

JEFF-3.1 U-234
angular distribution for (n,n*36)
10^0
ProblCos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

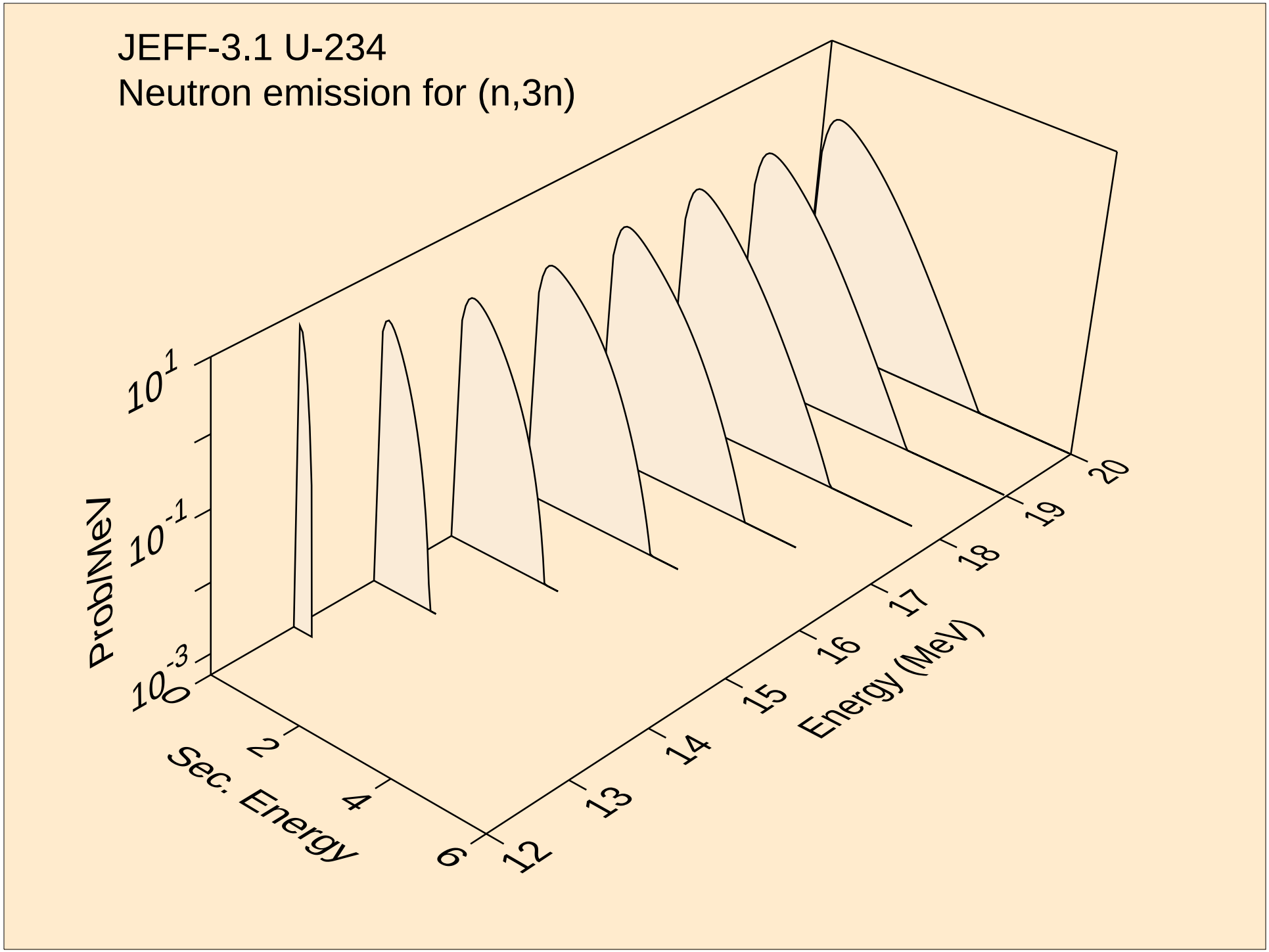

JEFF-3.1 U-234
Total fission nubar
Fission nubar
5.0
4.5
4.0
3.5
3.0
2.5
2.0
0
5
10
15
20
Energy (MeV)

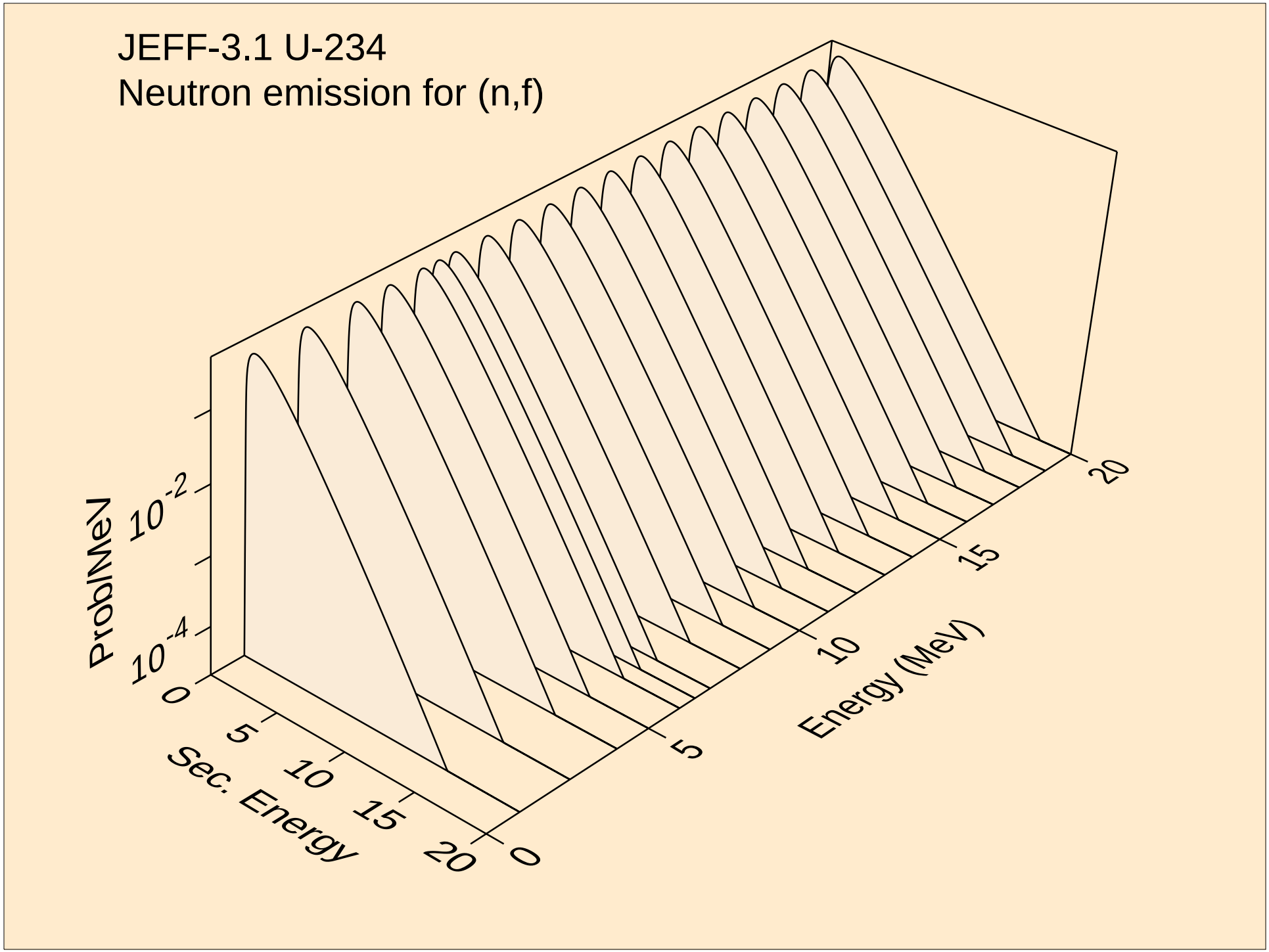

JEFF-3.1 U-234
Neutron emission for (n,2n)
Prob/MeV
10^{0}
10^{-2}
0
5
10
15
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)

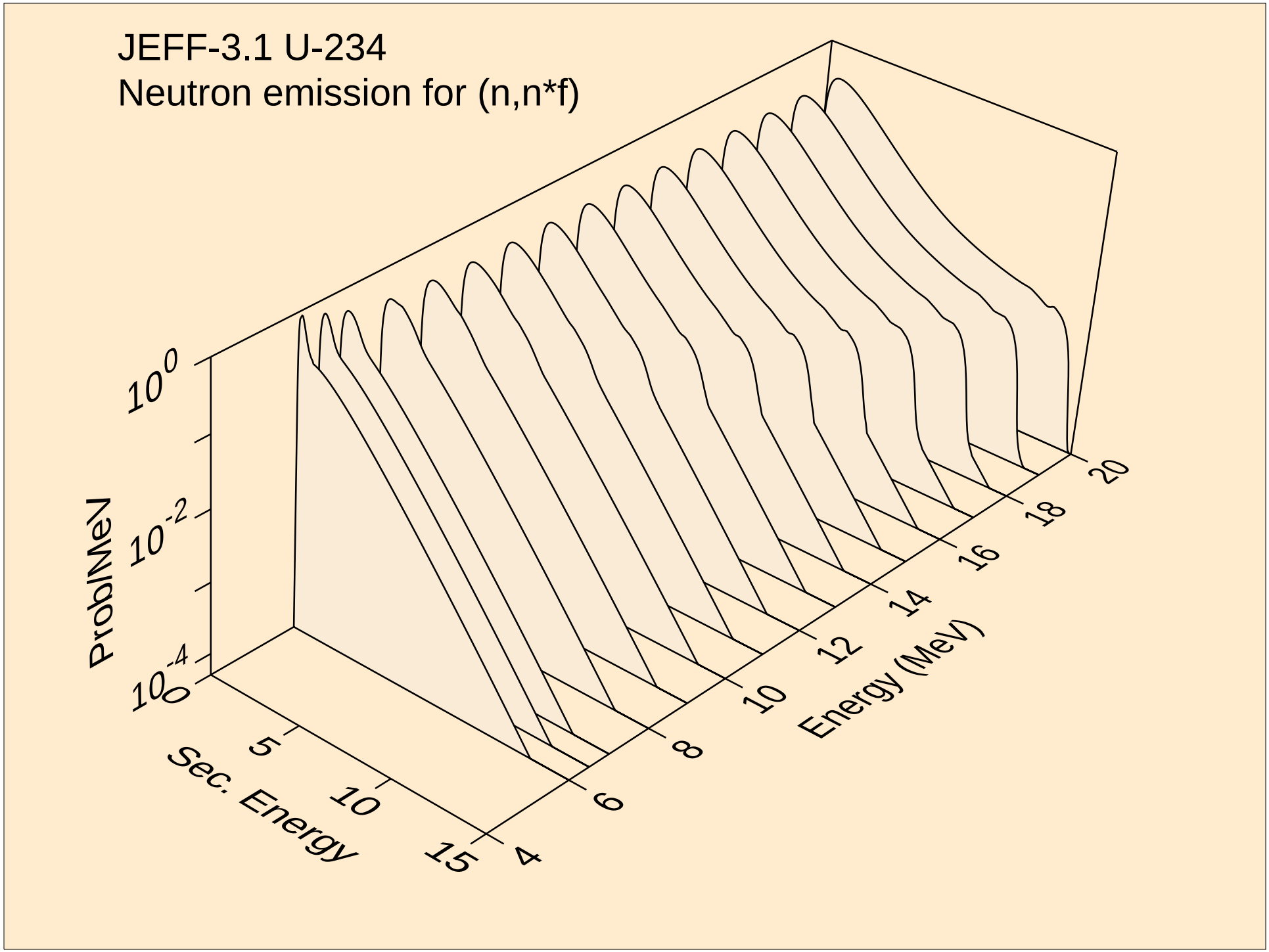

JEFF-3.1 U-234
Neutron emission for (n,2n)
Prob/MeV
10^{0}
10^{-2}
0
2
4
6
8
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)

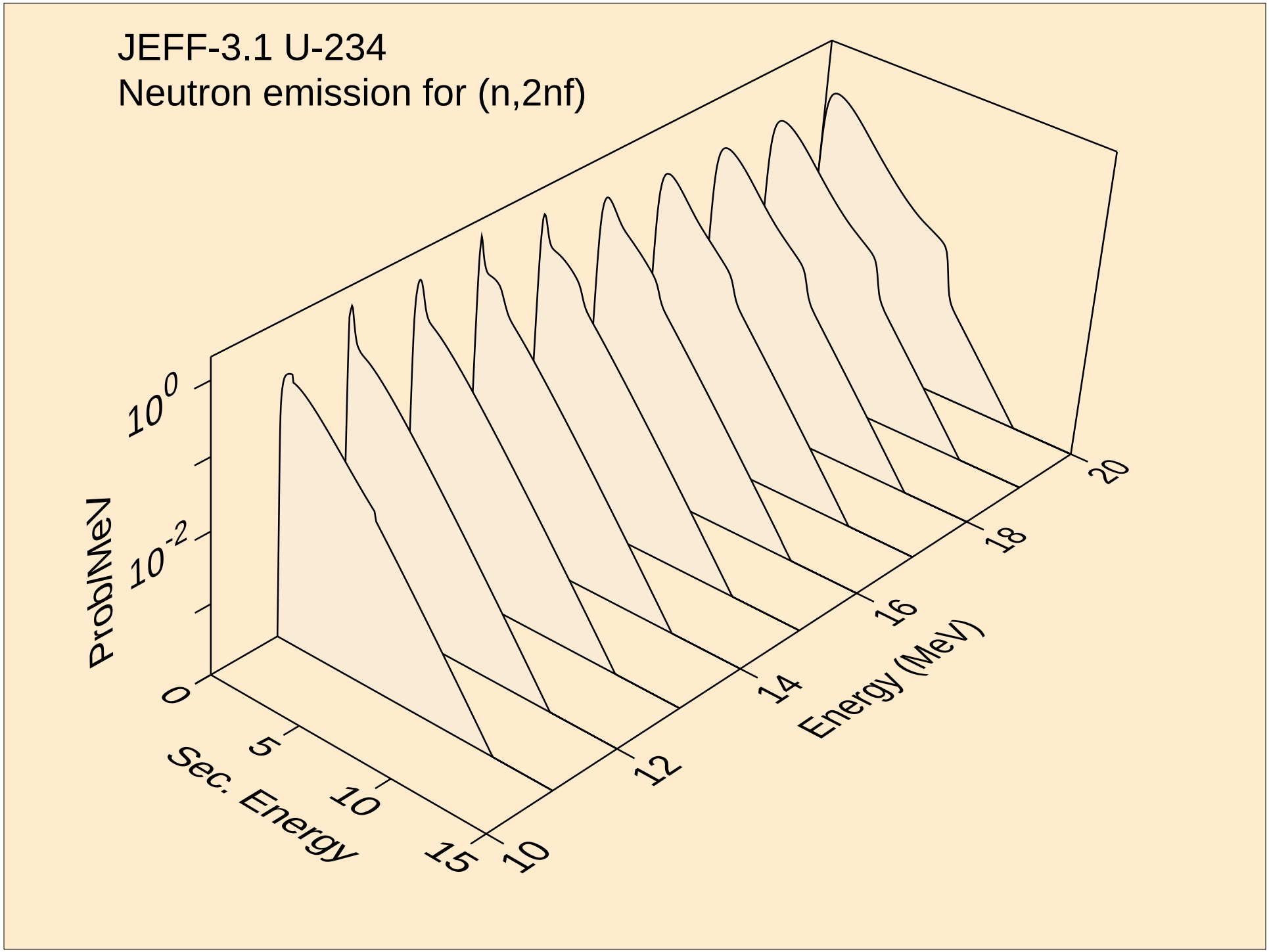

JEFF-3.1 U-234
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
2
4
6
8
Sec. Energy
12
13
14
15
16
17
18
19
20
Energy (MeV)

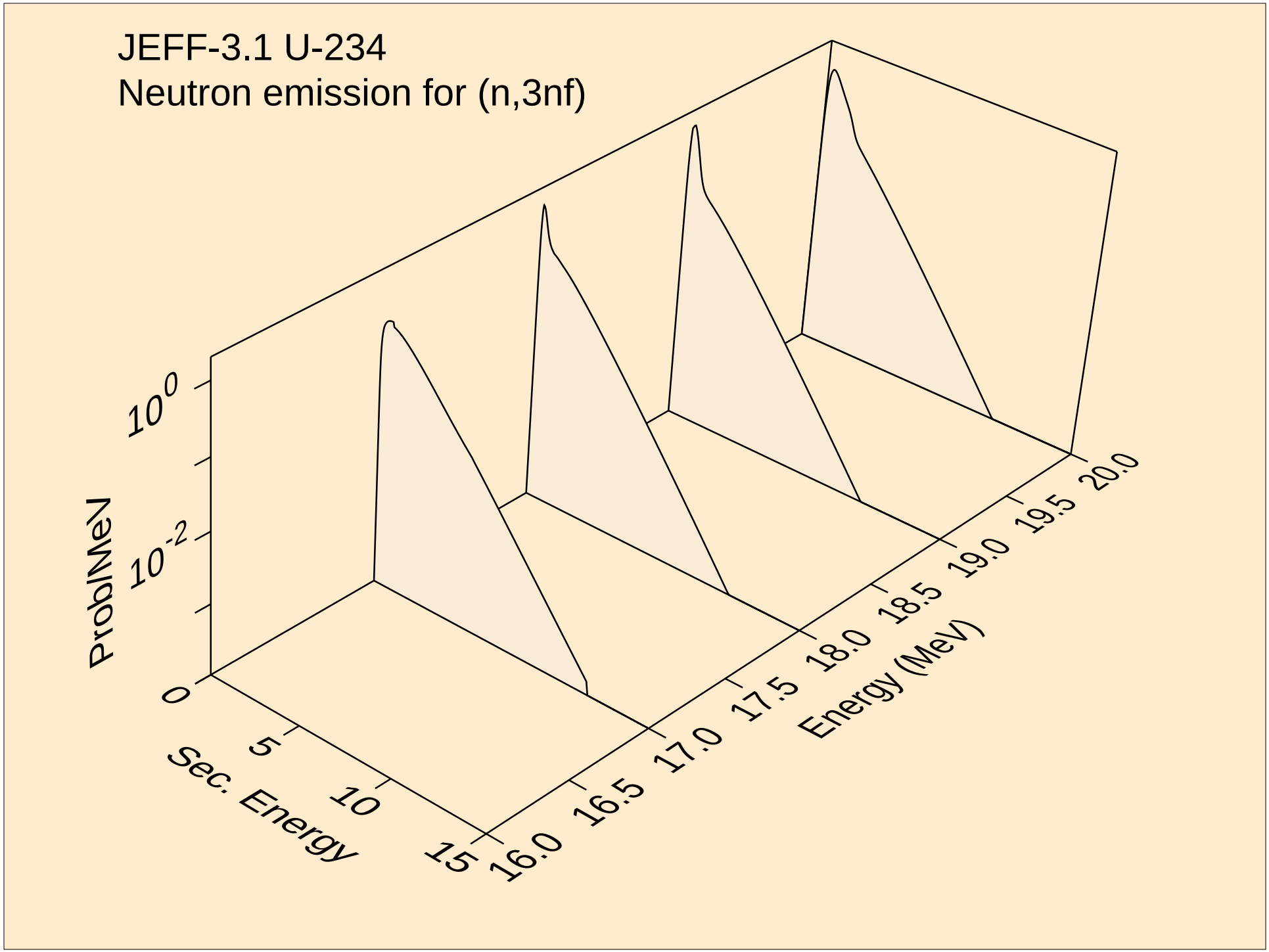

JEFF-3.1 U-234
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
12
13
14
15
16
17
18
19
20
Energy (MeV)

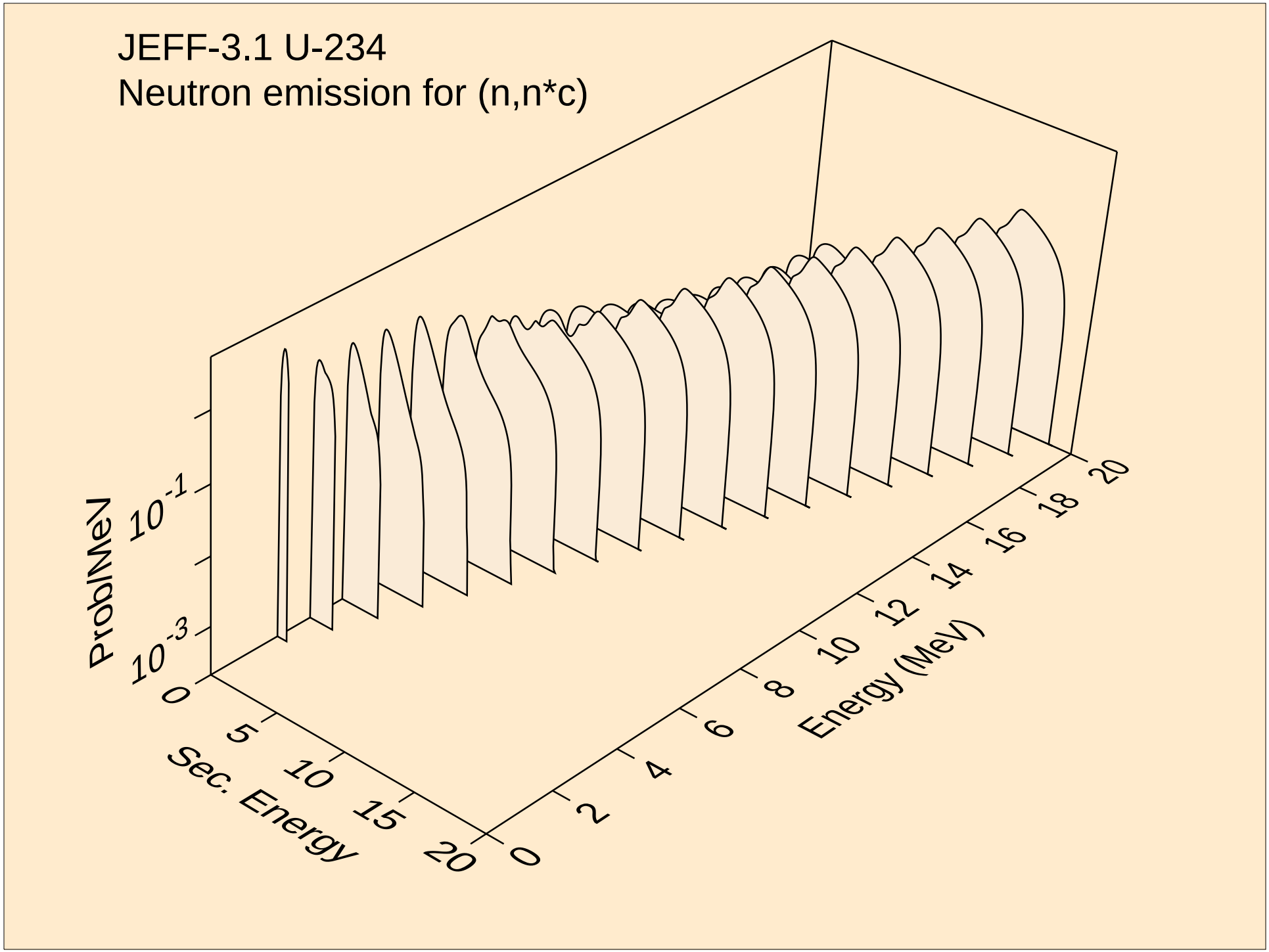

JEFF-3.1 U-234
Neutron emission for (n,3n)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
2
4
6
Sec. Energy
12
13
14
15
16
17
18
19
20
Energy (MeV)

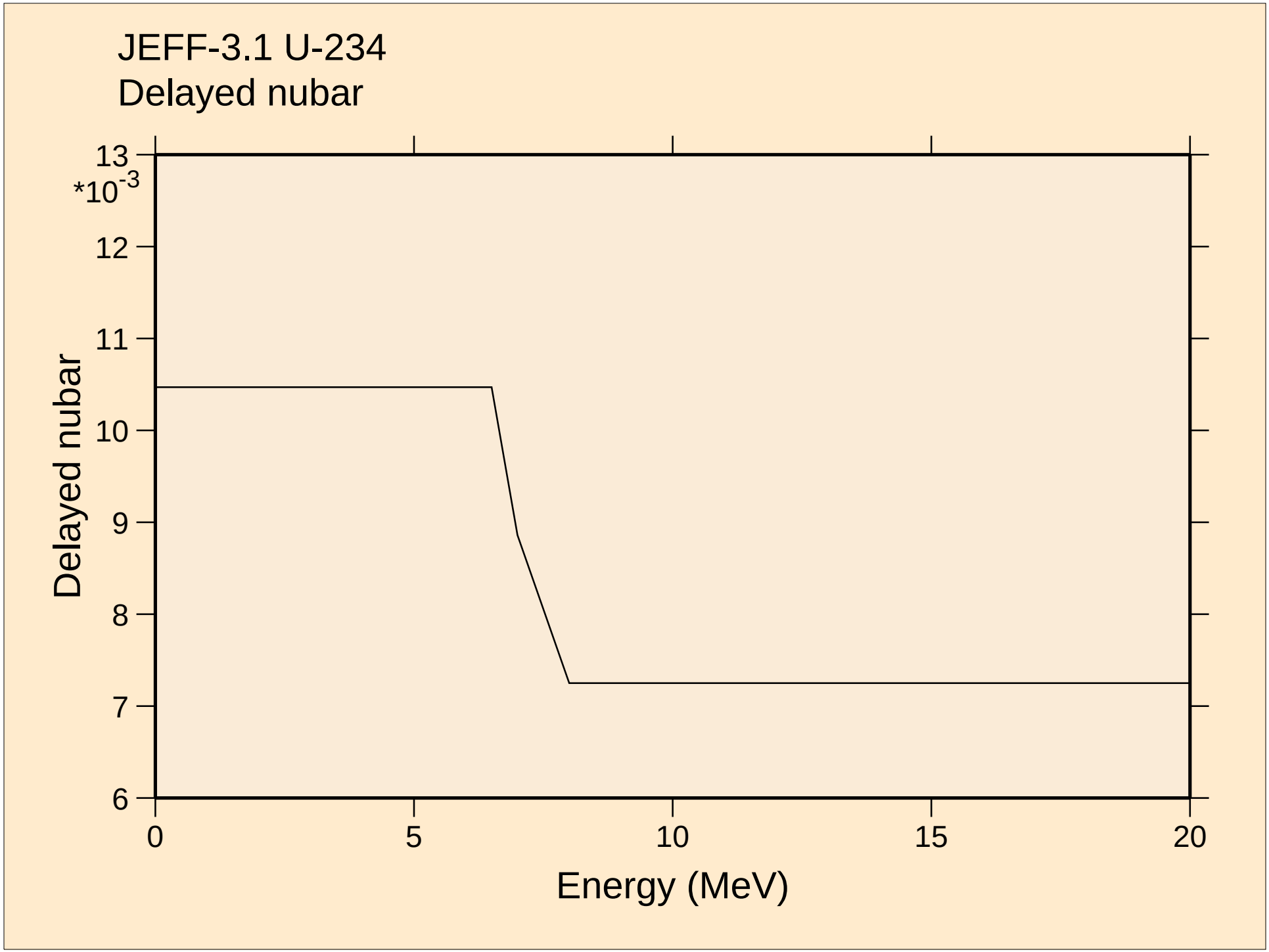

JEFF-3.1 U-234
Neutron emission for (n,f)
Prob/MeV
10-2
10-4
0
5
10
15
20
Sec. Energy
0
5
10
15
20
Energy (MeV)

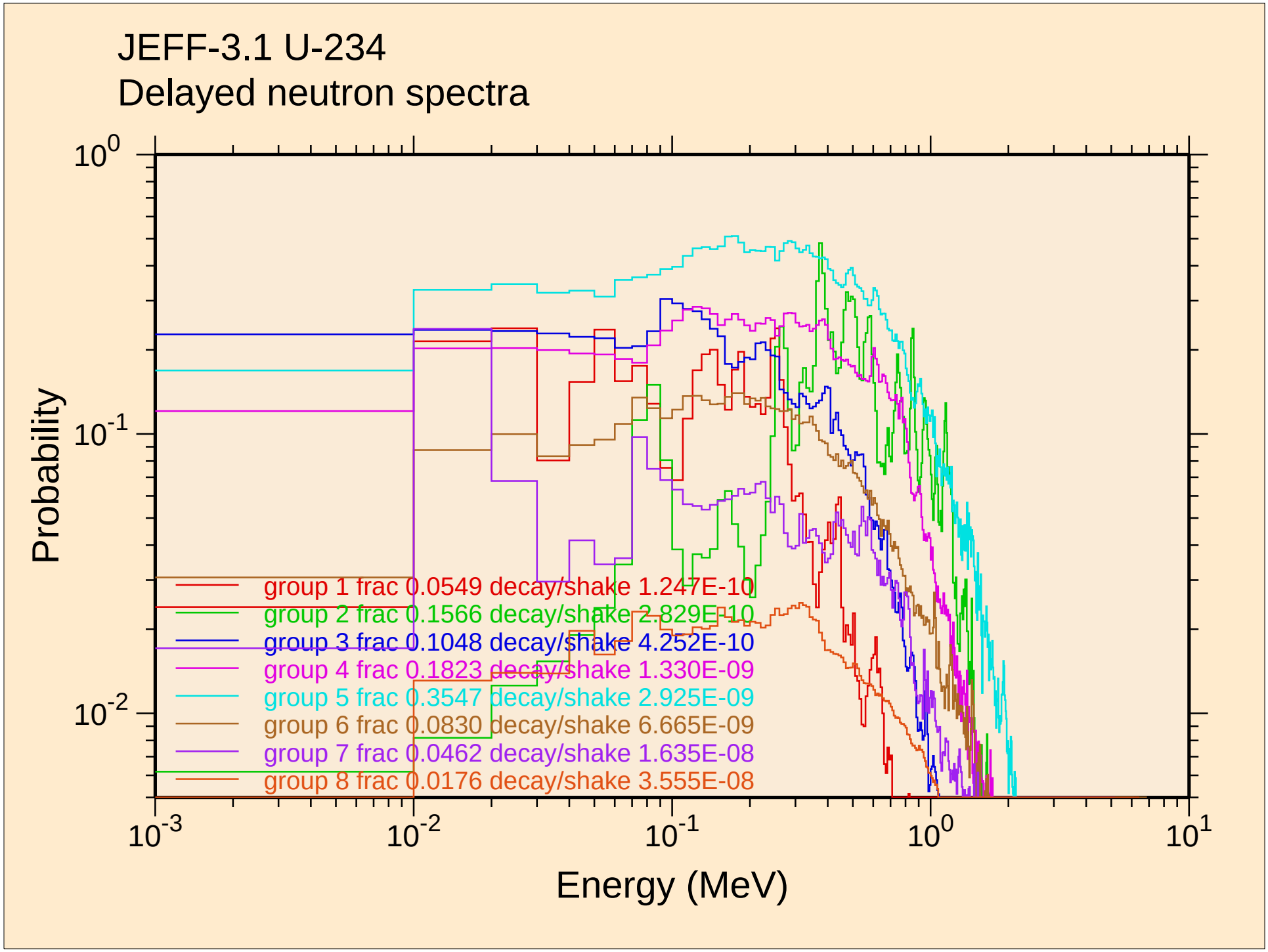

JEFF-3.1 U-234
Neutron emission for (n,n*f)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
5
10
15
Sec. Energy
4
6
8
10
12
14
16
18
20
Energy (MeV)


JEFF-3.1 U-234
Neutron emission for (n,2nf)
Prob/MeV
10^{0}
10^{-2}
0
5
10
15
Sec. Energy
10
12
14
16
18
20
Energy (MeV)


JEFF-3.1 U-234
Neutron emission for (n,3nf)
Prob/MeV
10^{0}
10^{-2}
0
5
10
15
Sec. Energy
16.0
16.5
17.0
17.5
18.0
18.5
19.0
19.5
20.0
Energy (MeV)


JEFF-3.1 U-234
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)


JEFF-3.1 U-234
Delayed nubar
13
*10-3
12
11
10
9
8
7
6
Delayed nubar
0
5
10
15
20
Energy (MeV)


JEFF-3.1 U-234
Delayed neutron spectra
Probability
Energy (MeV)
group 1 frac 0.0549 decay/shake 1.247E-10
group 2 frac 0.1566 decay/shake 2.829E-10
group 3 frac 0.1048 decay/shake 4.252E-10
group 4 frac 0.1823 decay/shake 1.330E-09
group 5 frac 0.3547 decay/shake 2.925E-09
group 6 frac 0.0830 decay/shake 6.665E-09
group 7 frac 0.0462 decay/shake 1.635E-08
group 8 frac 0.0176 decay/shake 3.555E-08