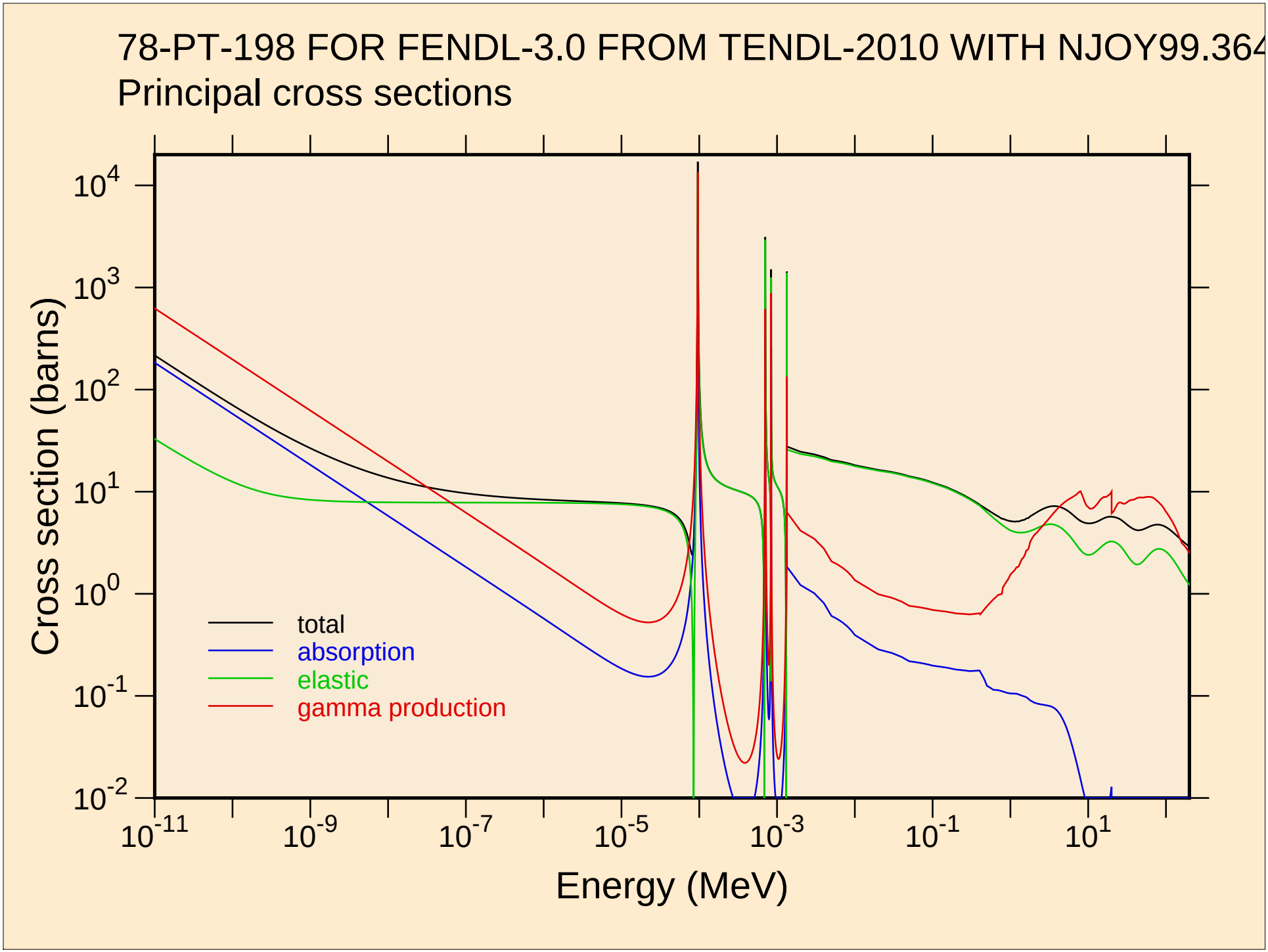
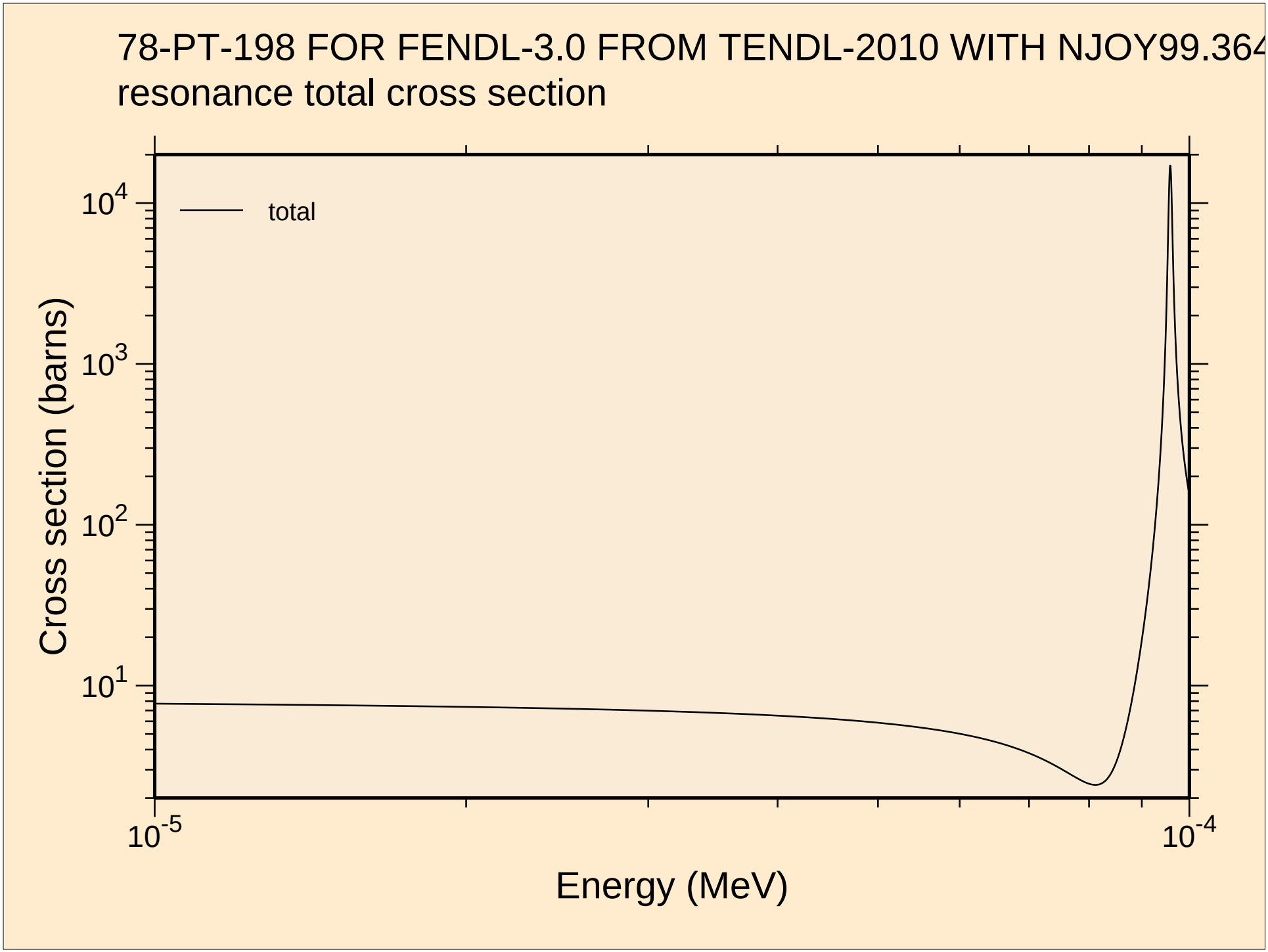
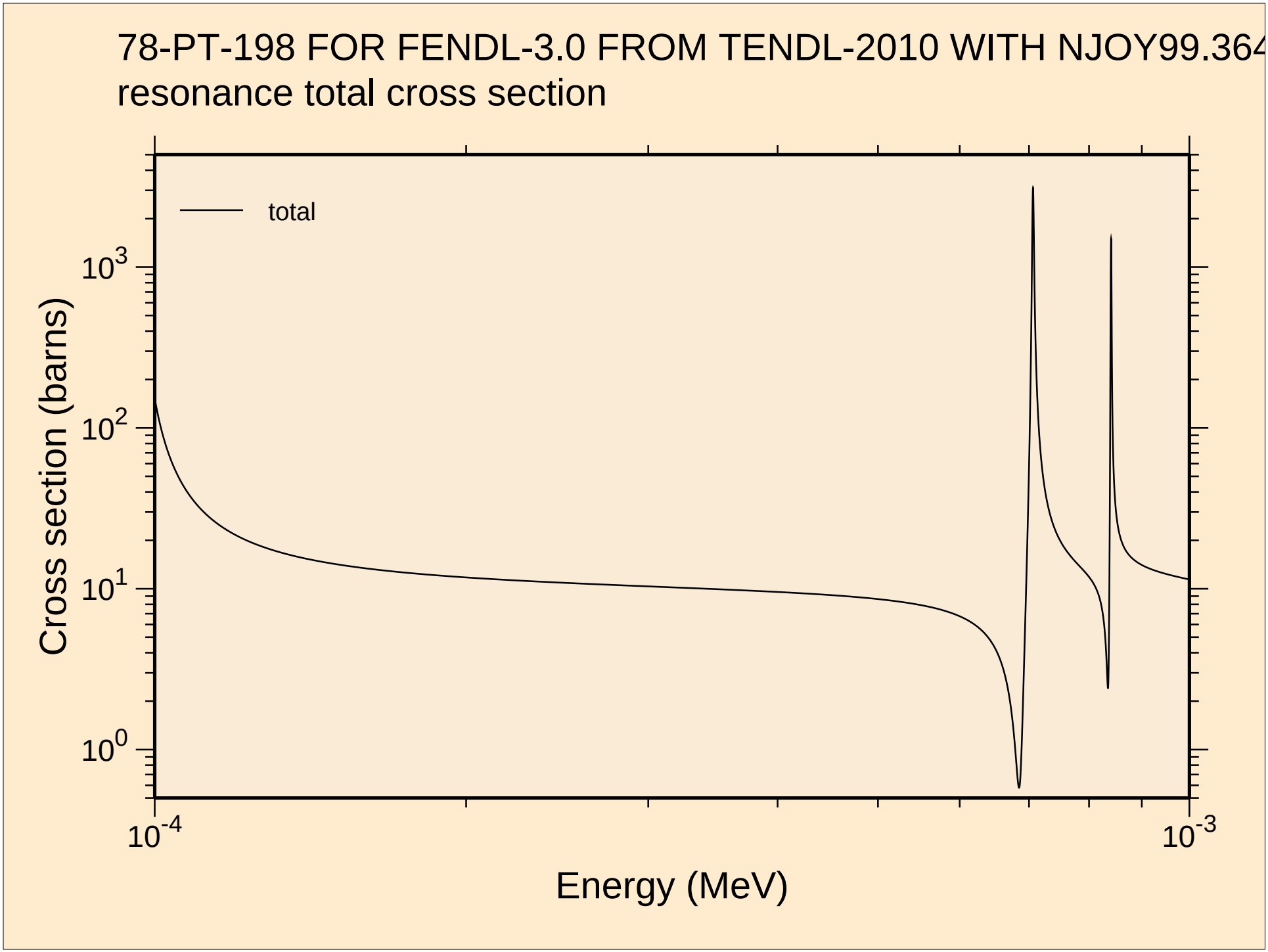
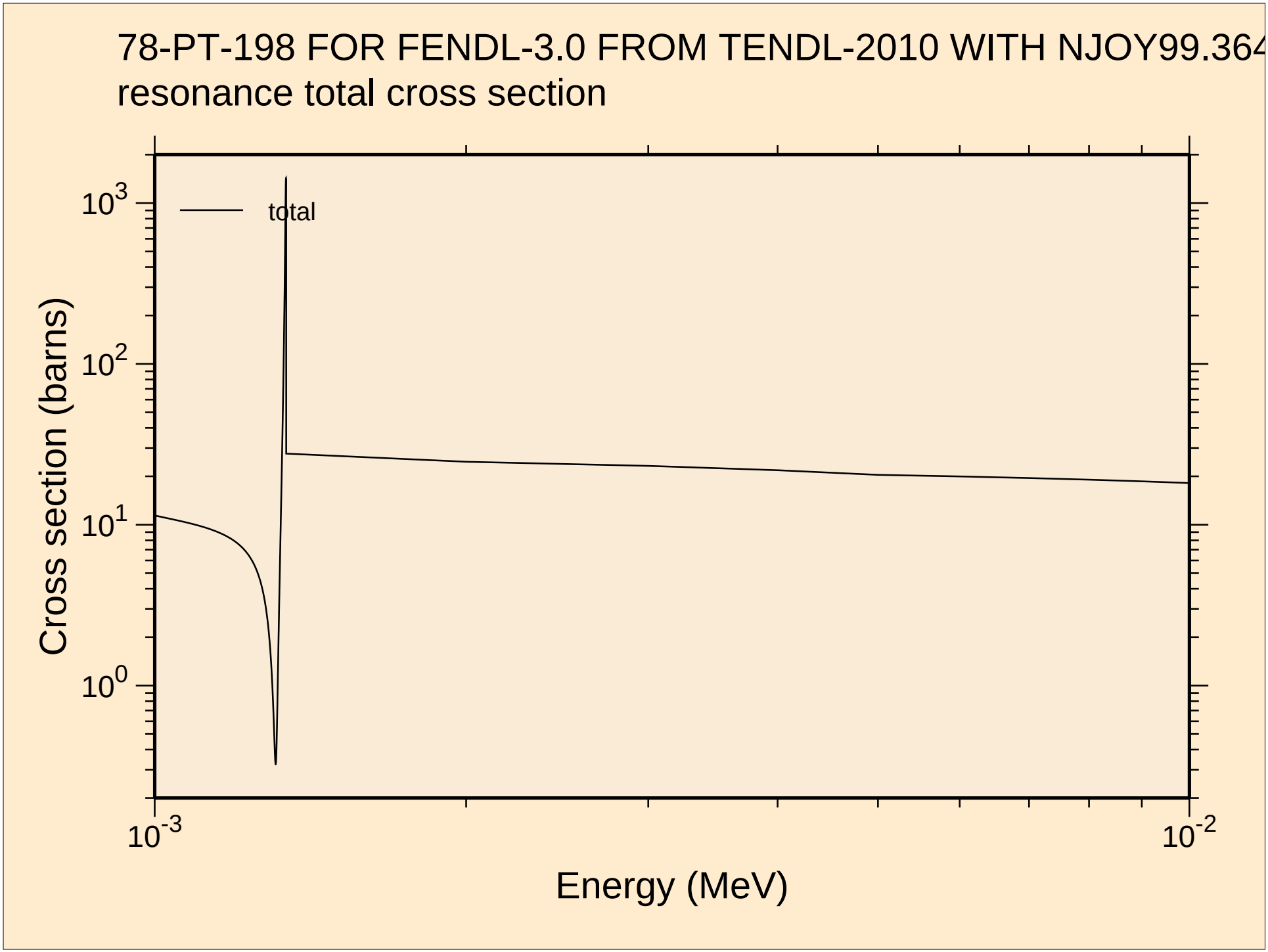
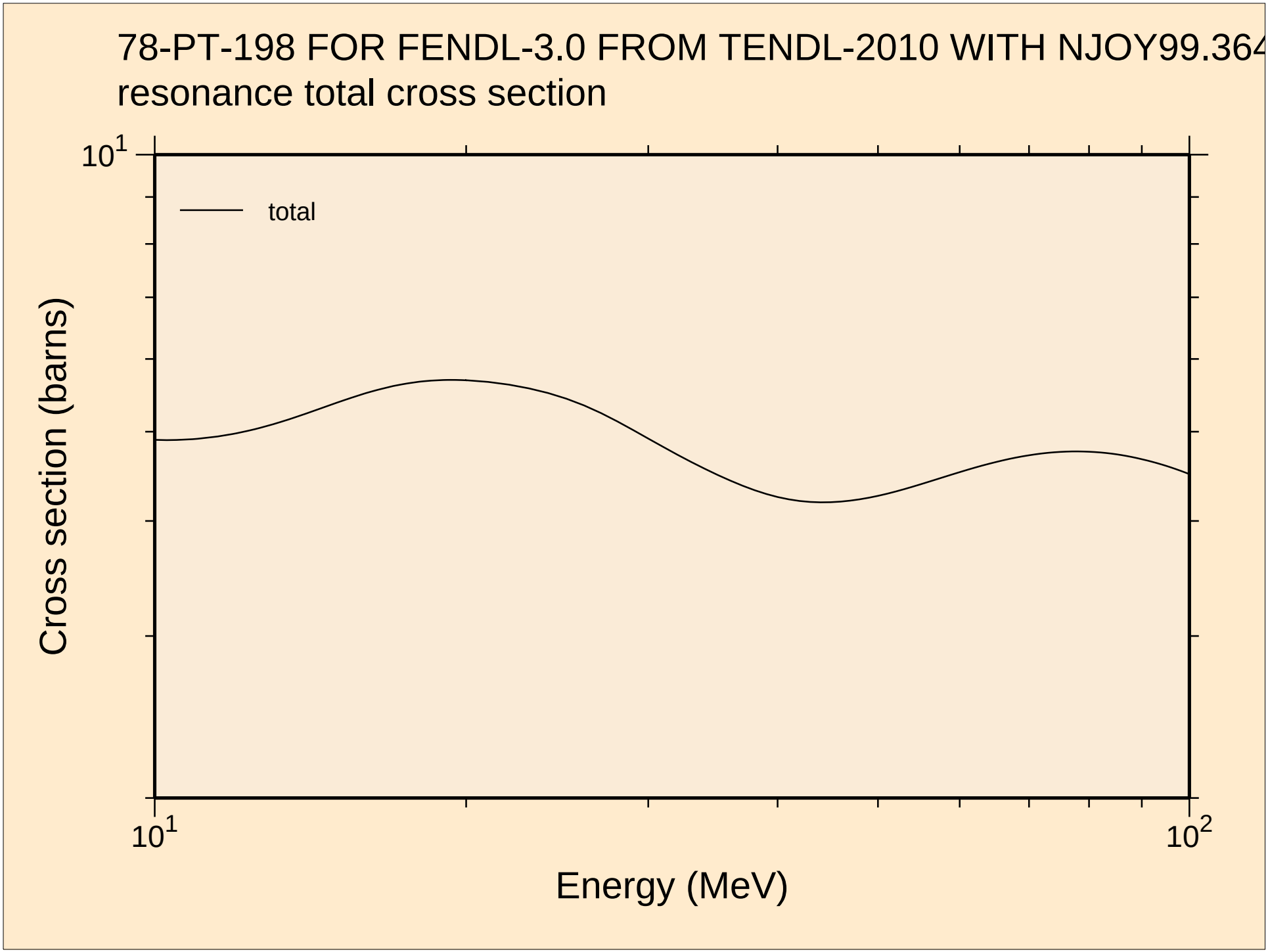
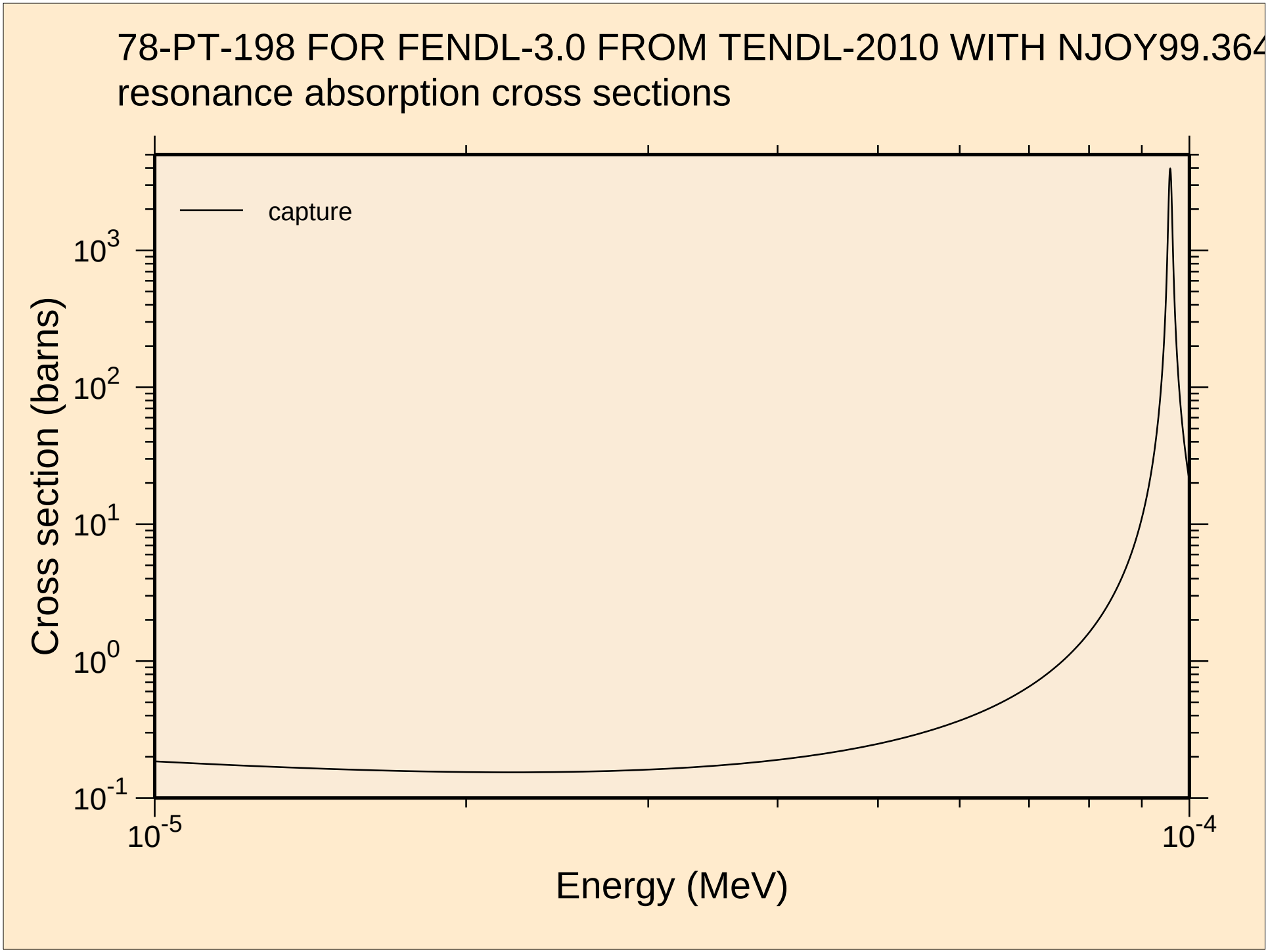

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production


78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^-5
10^-4
Energy (MeV)

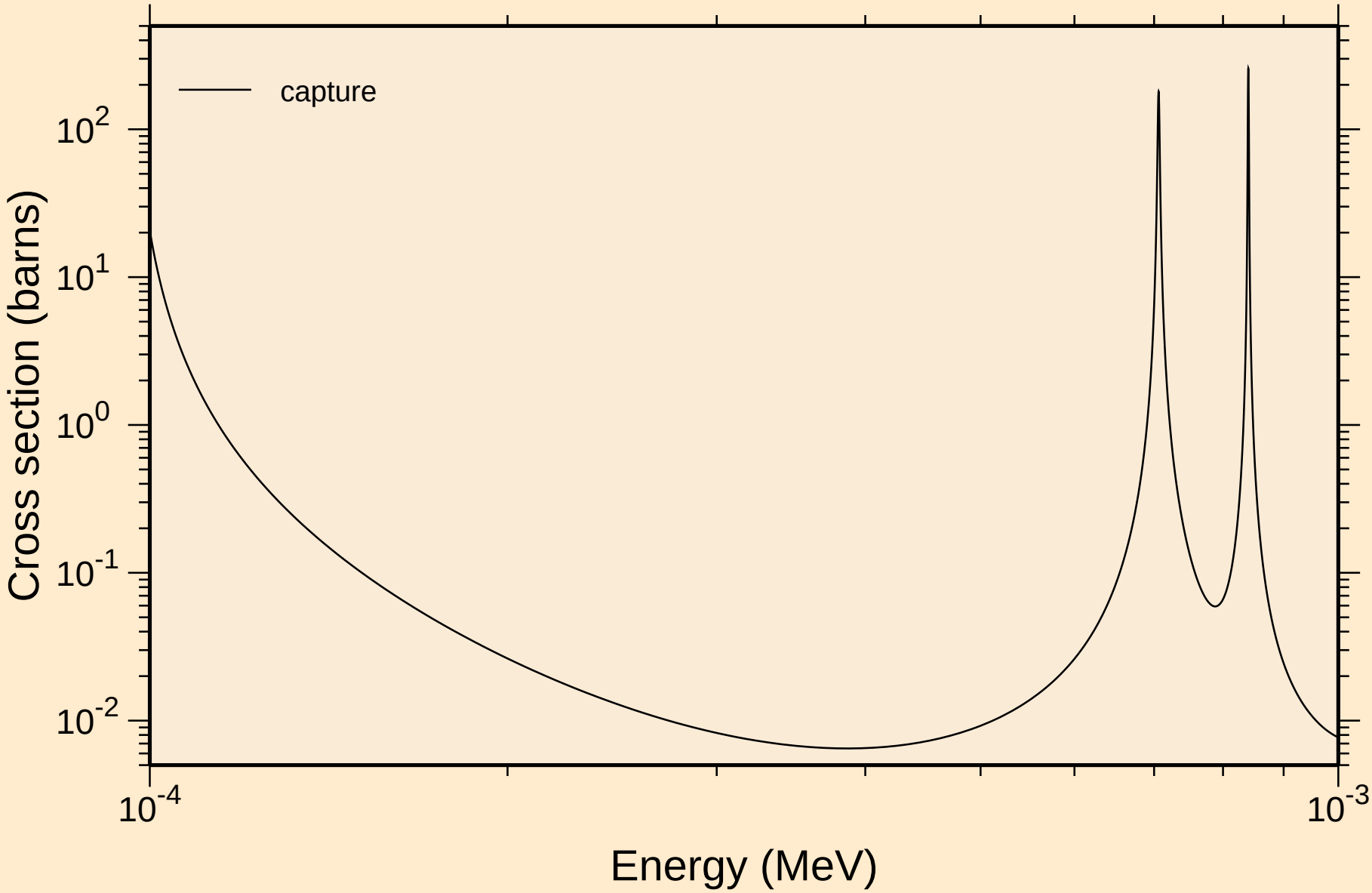

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^-4
10^-3
Energy (MeV)

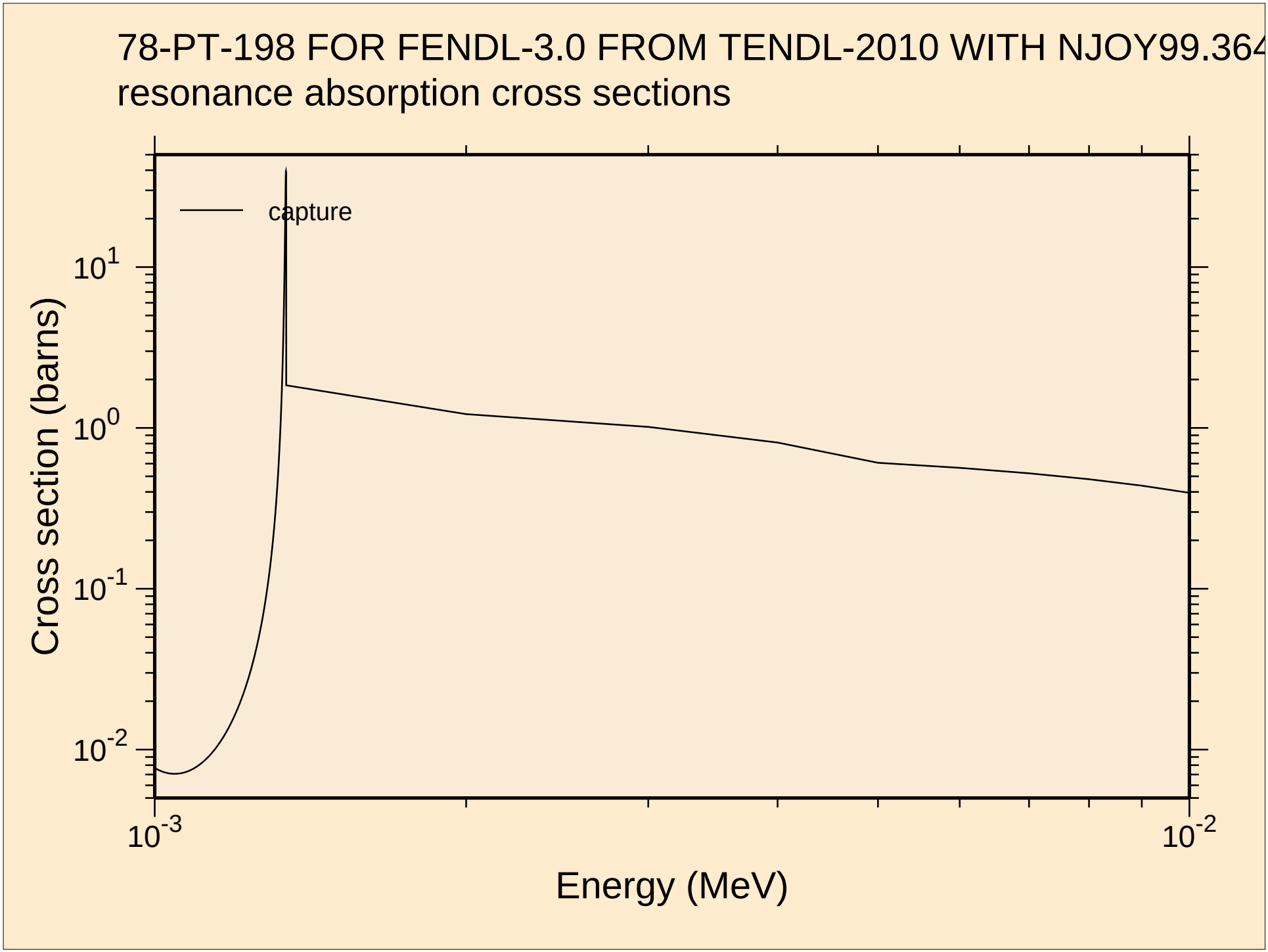

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^-3
10^-2
Energy (MeV)

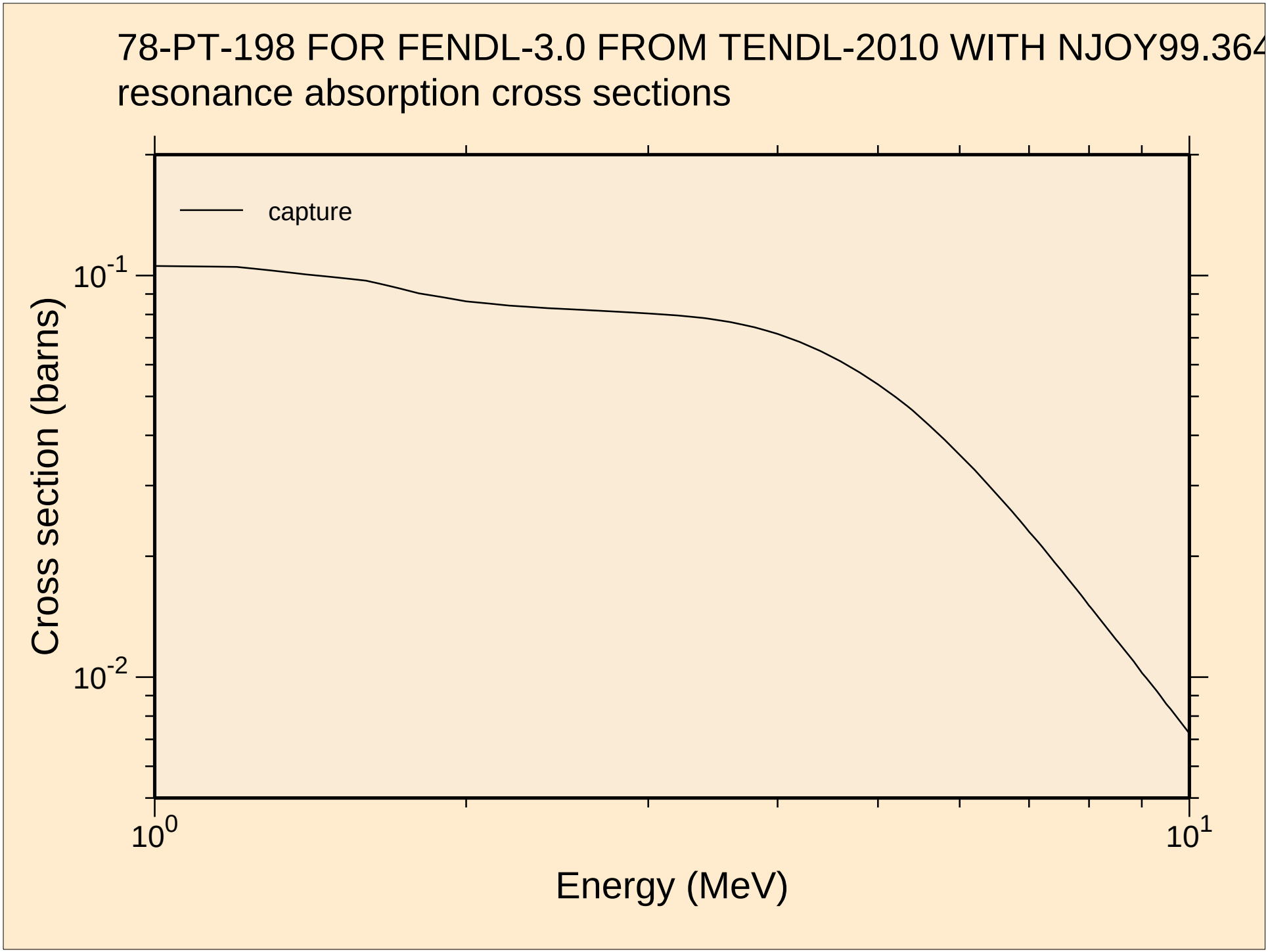

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance total cross section
total
Cross section (barns)
Energy (MeV)
10^1
10^1
10^2

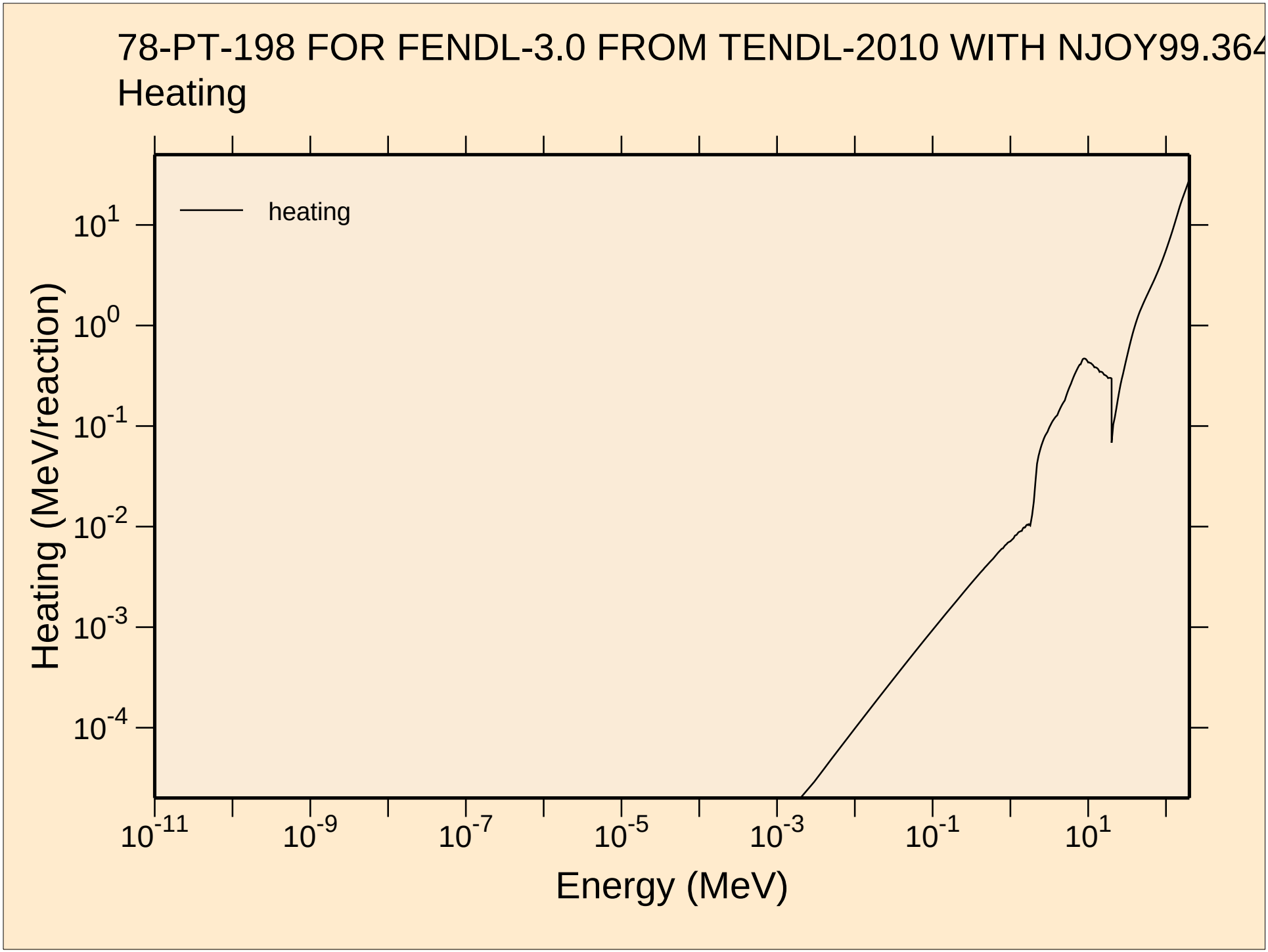

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance absorption cross sections
capture
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-5
10^-4
Energy (MeV)

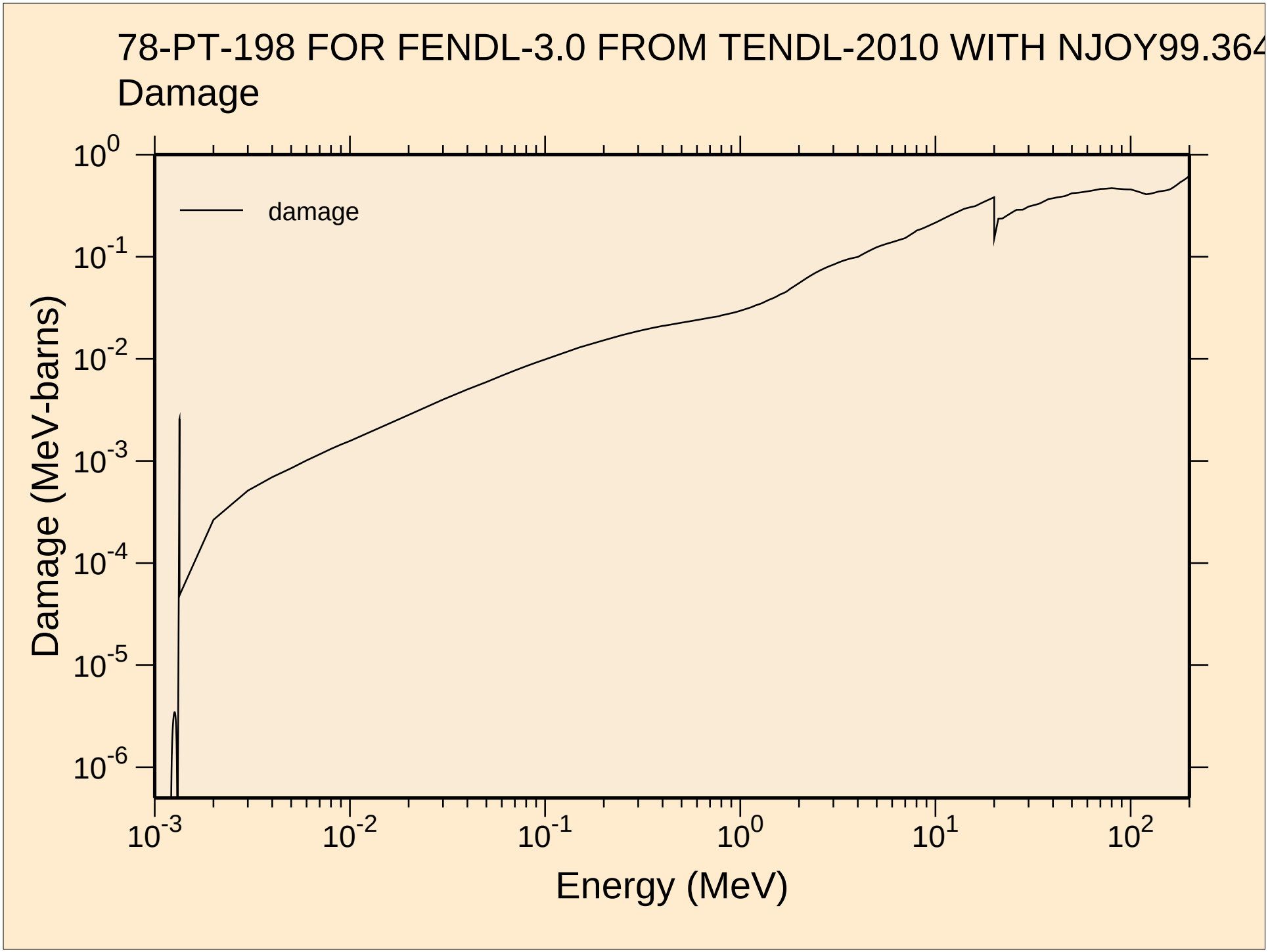
78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance absorption cross sections

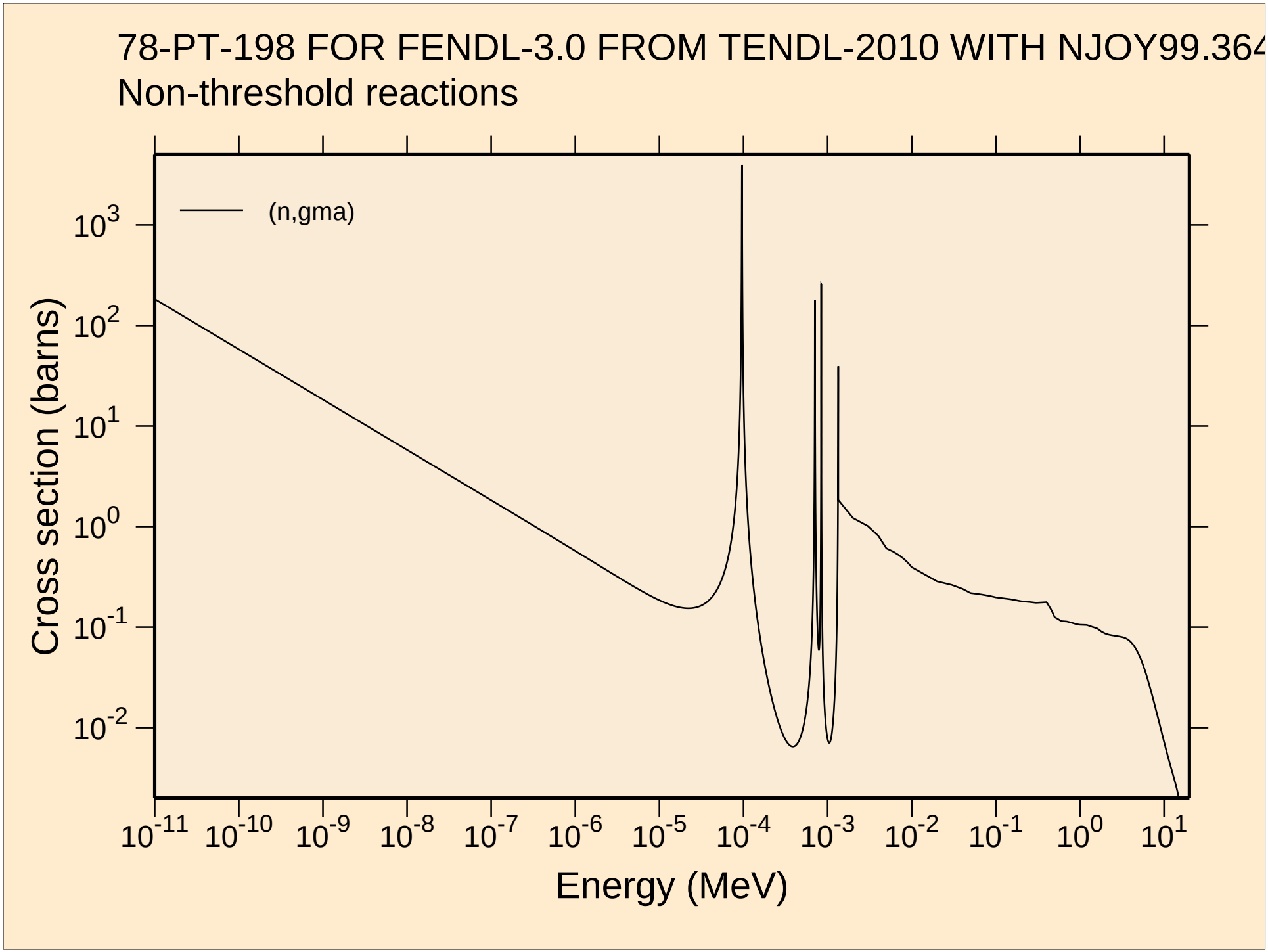


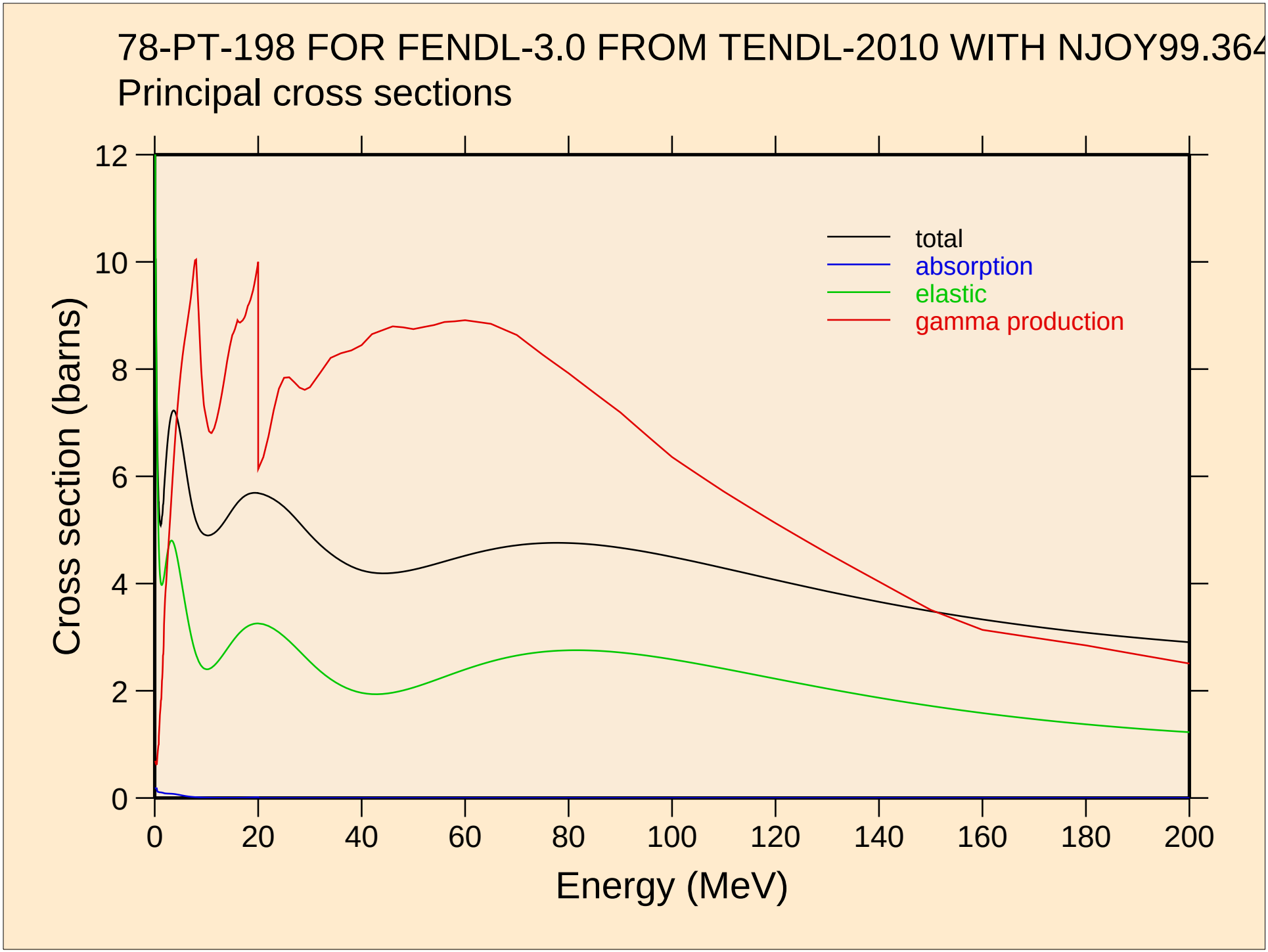

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance absorption cross sections
capture
Cross section (barns)
10^1
10^0
10^-1
10^-2
10^-3
10^-2
Energy (MeV)

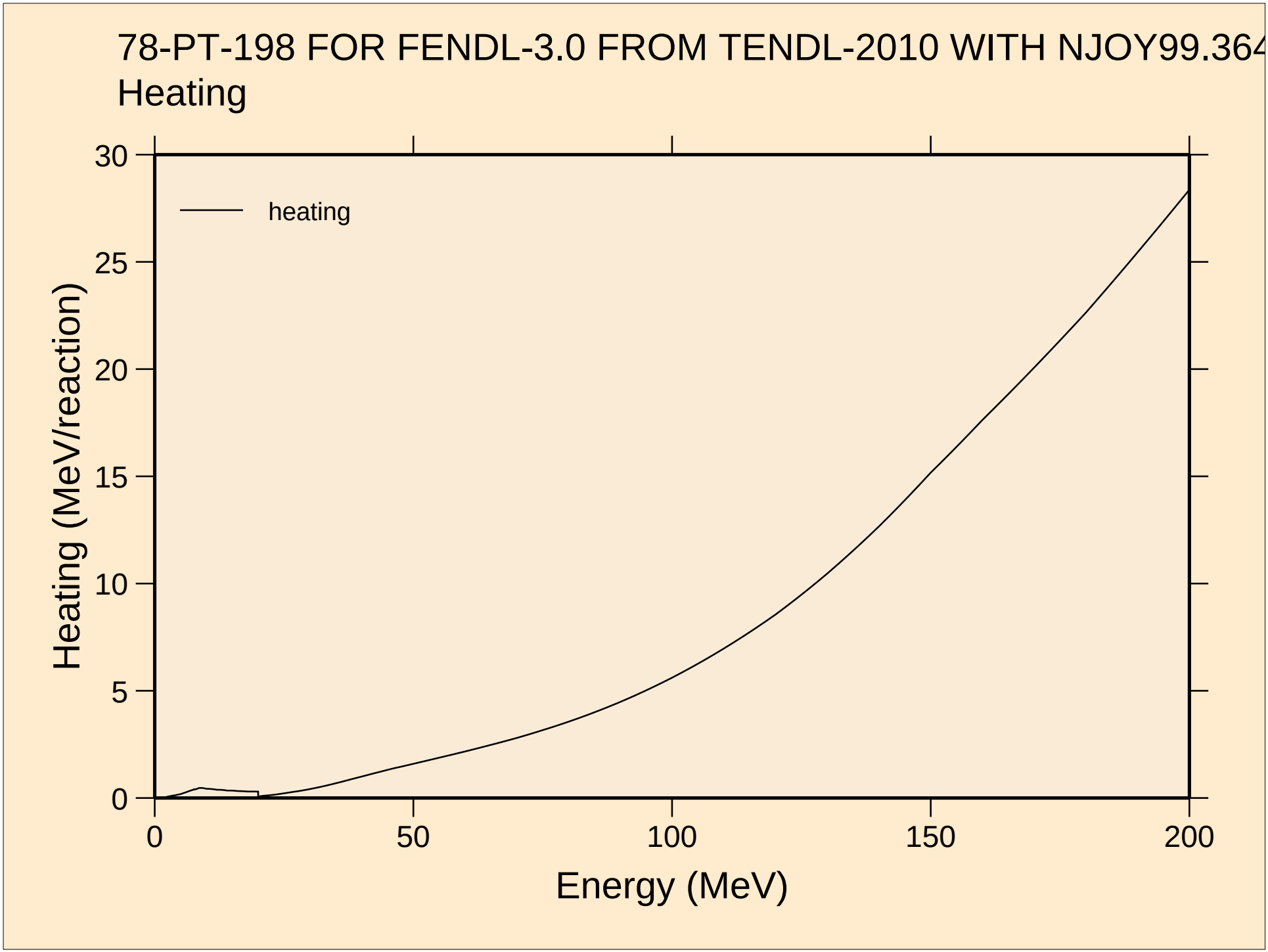

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
resonance absorption cross sections
capture
Cross section (barns)
10-1
10-2
100
101
Energy (MeV)

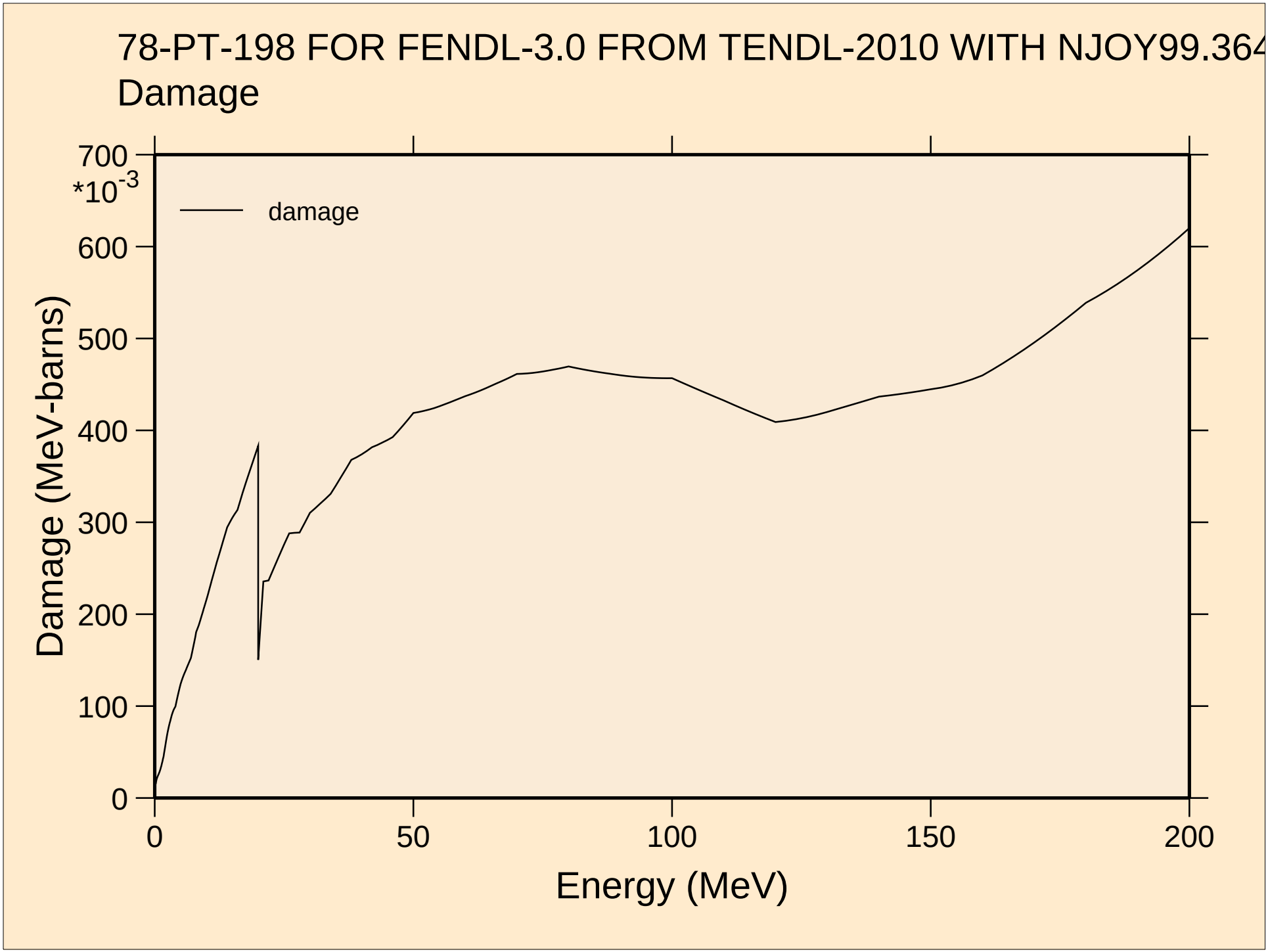

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Heating
heating
Heating (MeV/reaction)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-11}
10^{-9}
10^{-7}
10^{-5}
10^{-3}
10^{-1}
10^{1}
Energy (MeV)

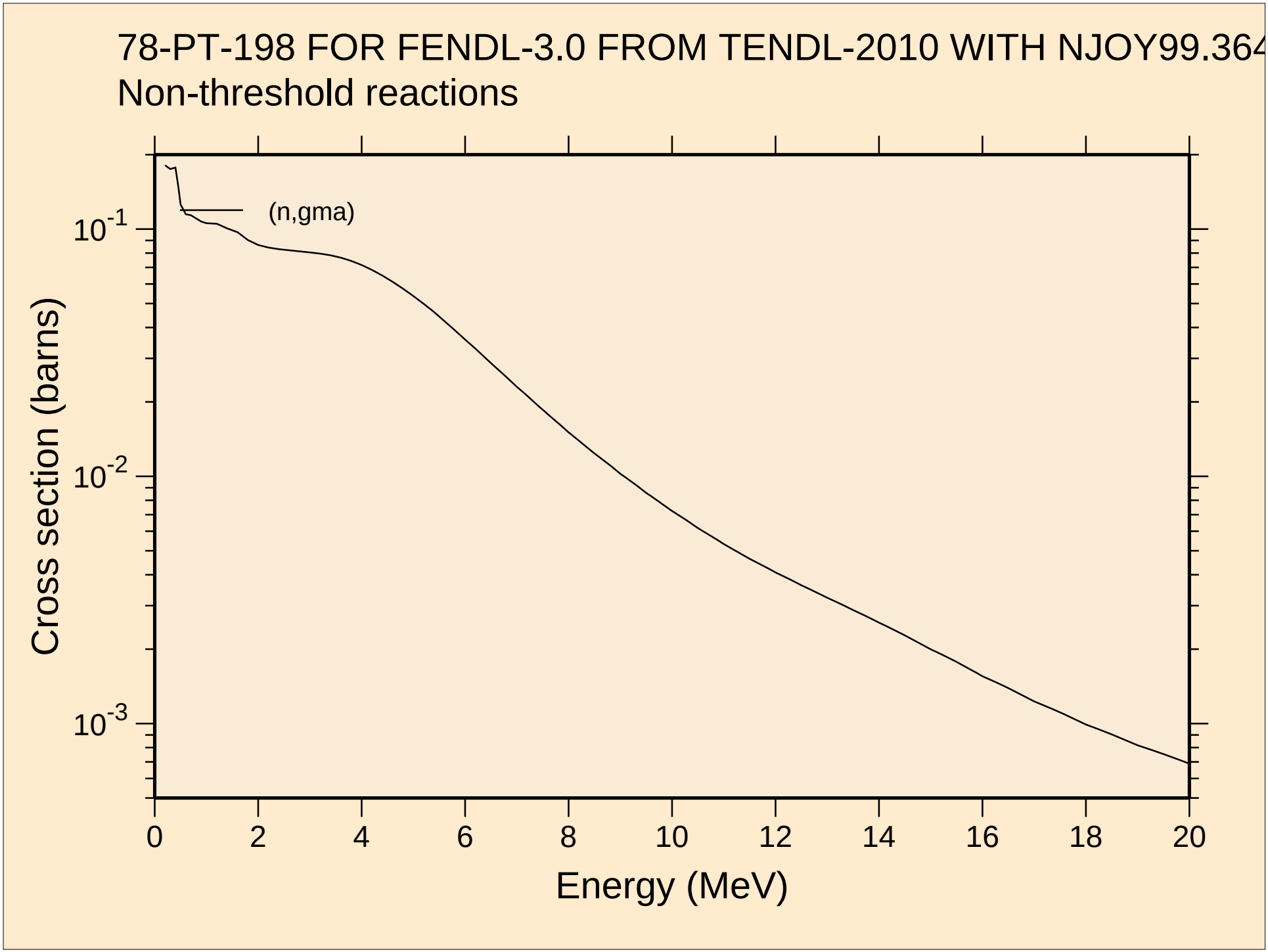

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Damage
damage
Damage (MeV-barns)
Energy (MeV)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-3
10^-2
10^-1
10^0
10^1
10^2

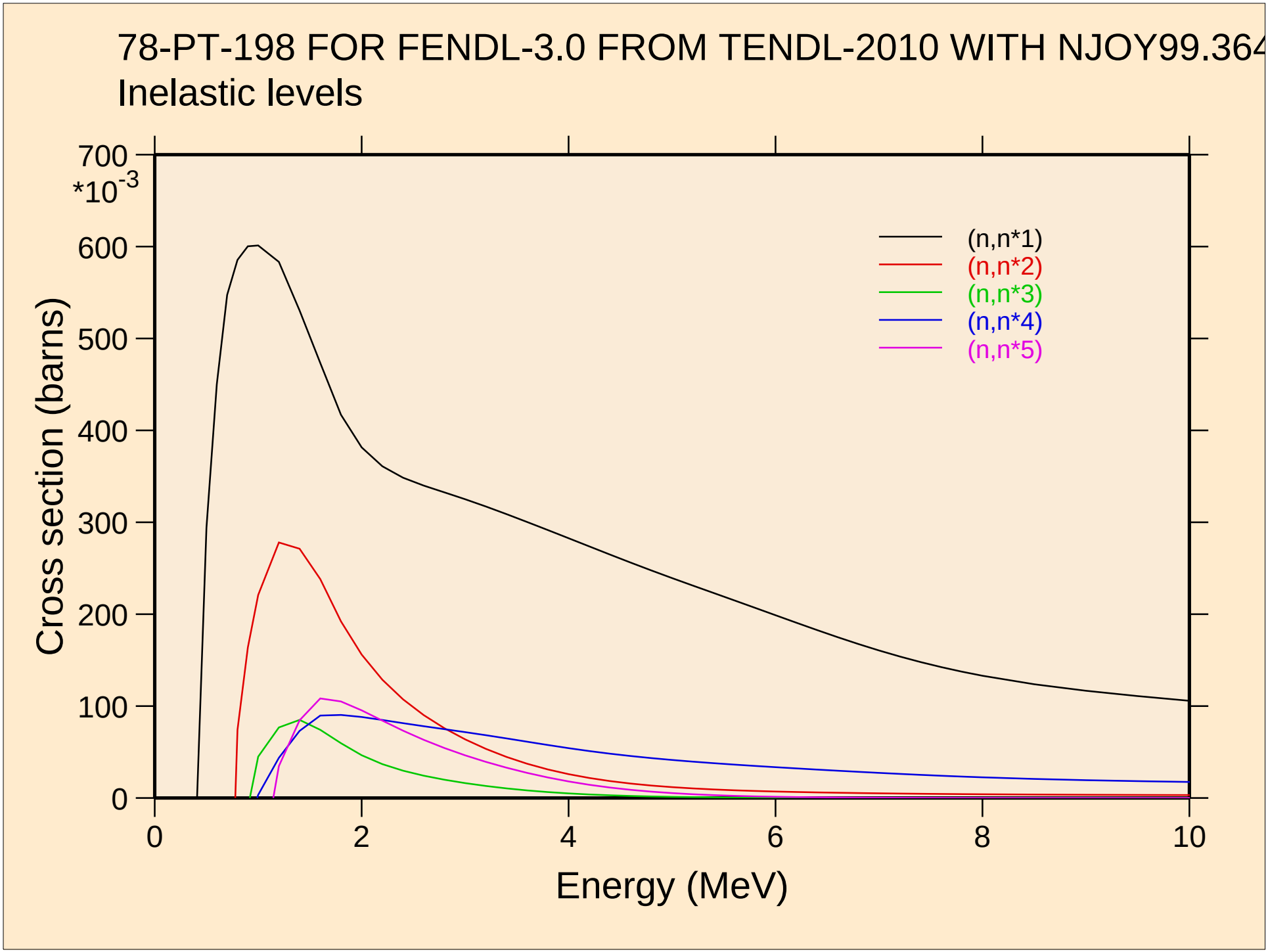

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Non-threshold reactions
(n,gma)
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-11 10^-10 10^-9 10^-8 10^-7 10^-6 10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1
Energy (MeV)

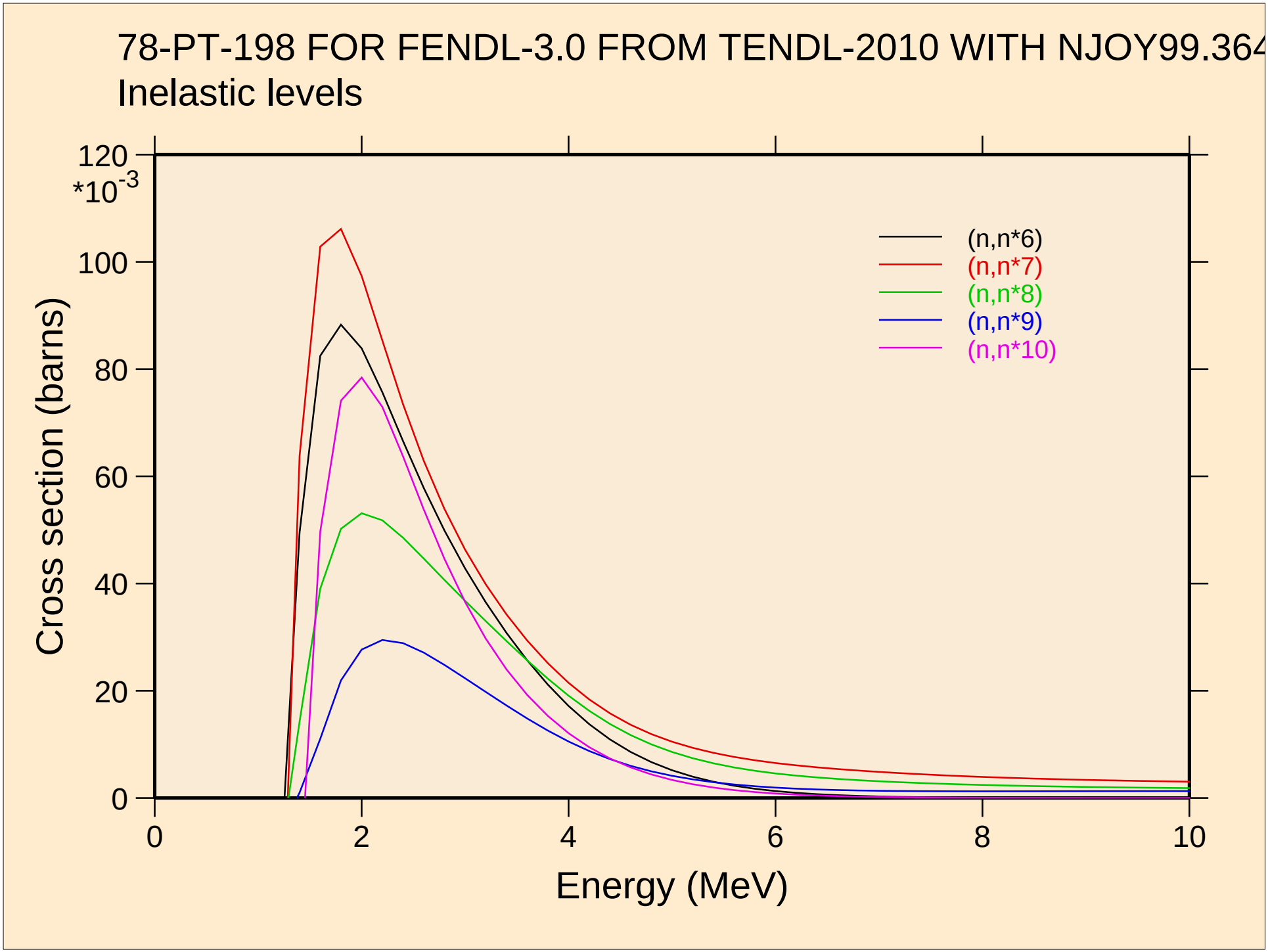

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Principal cross sections
Cross section (barns)
Energy (MeV)
0
2
4
6
8
10
12
0
20
40
60
80
100
120
140
160
180
200
total
absorption
elastic
gamma production

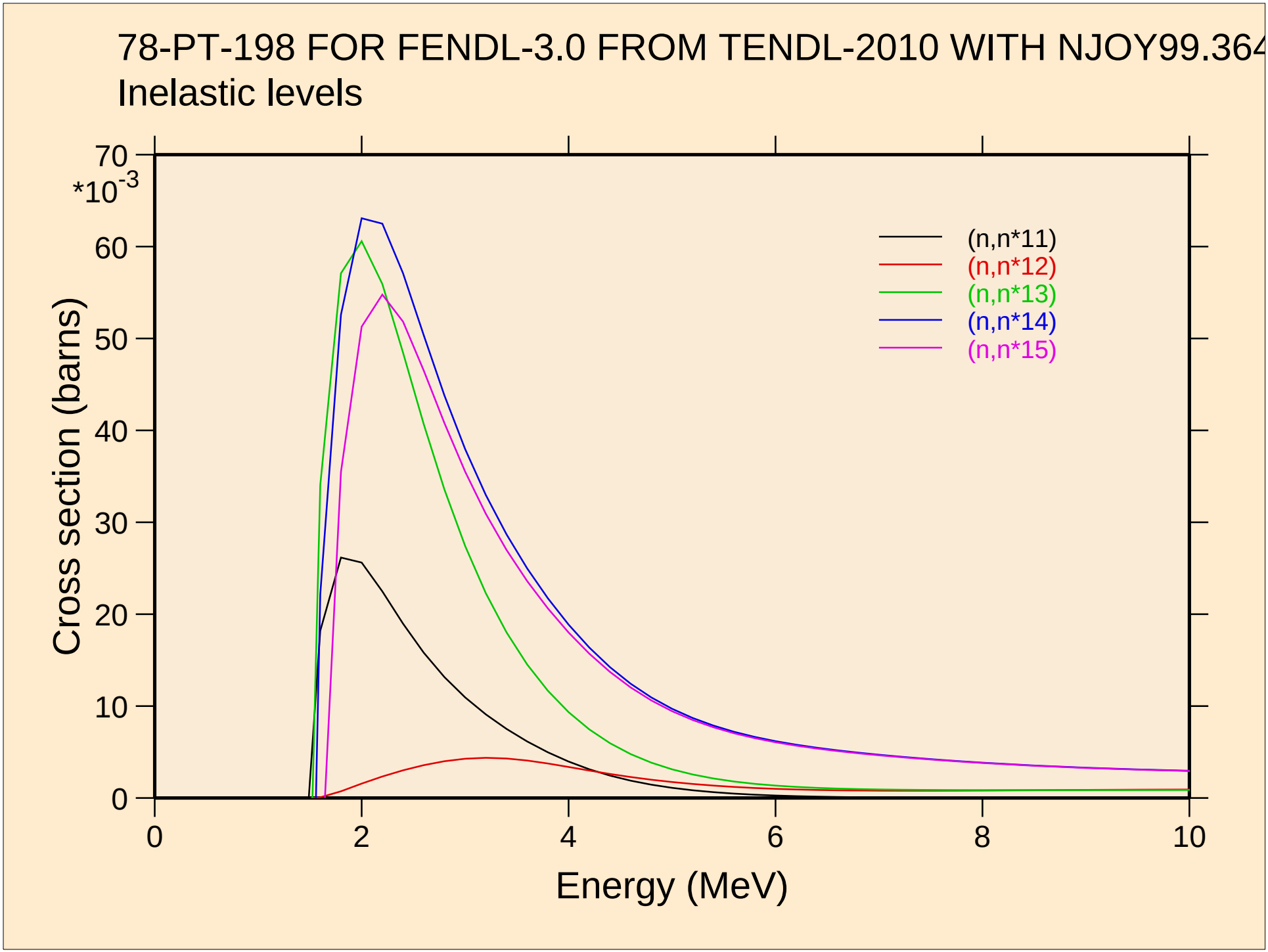

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
5
10
15
20
25
30
0
50
100
150
200

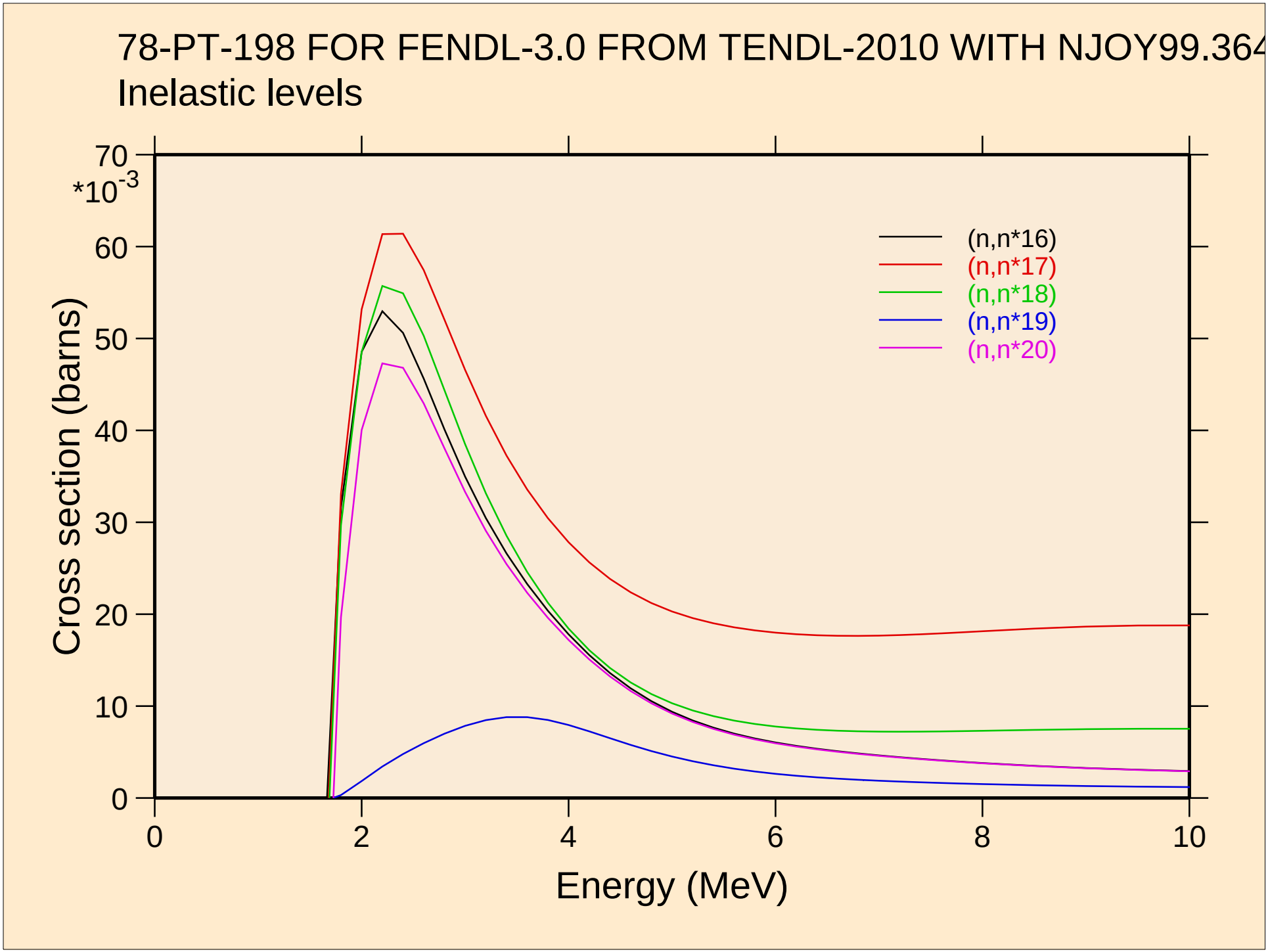

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Damage
*10-3
damage
700
600
500
400
300
200
100
0
Damage (MeV-barns)
0
50
100
150
200
Energy (MeV)

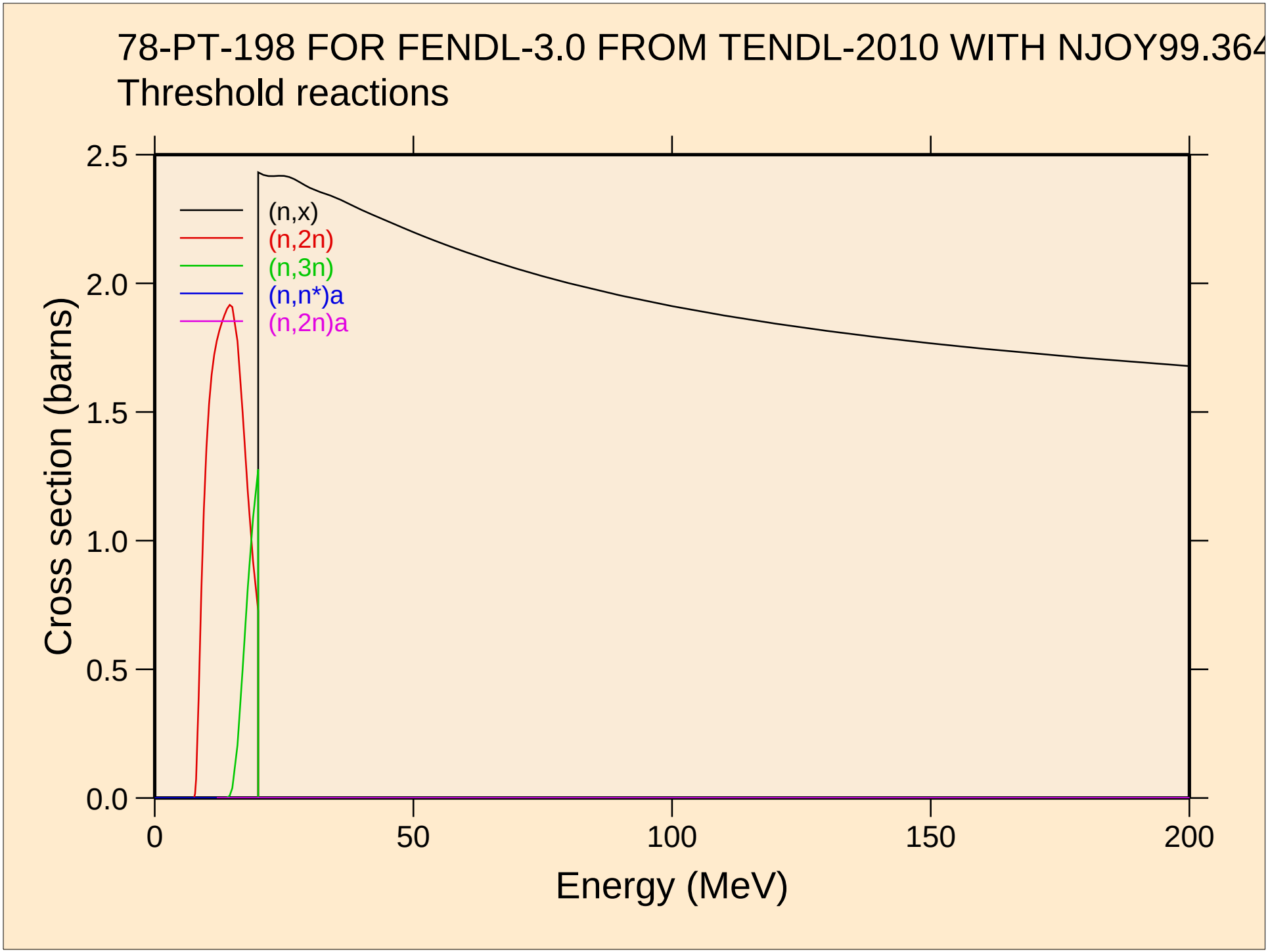

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Non-threshold reactions
(n,gma)
Cross section (barns)
10-1
10-2
10-3
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

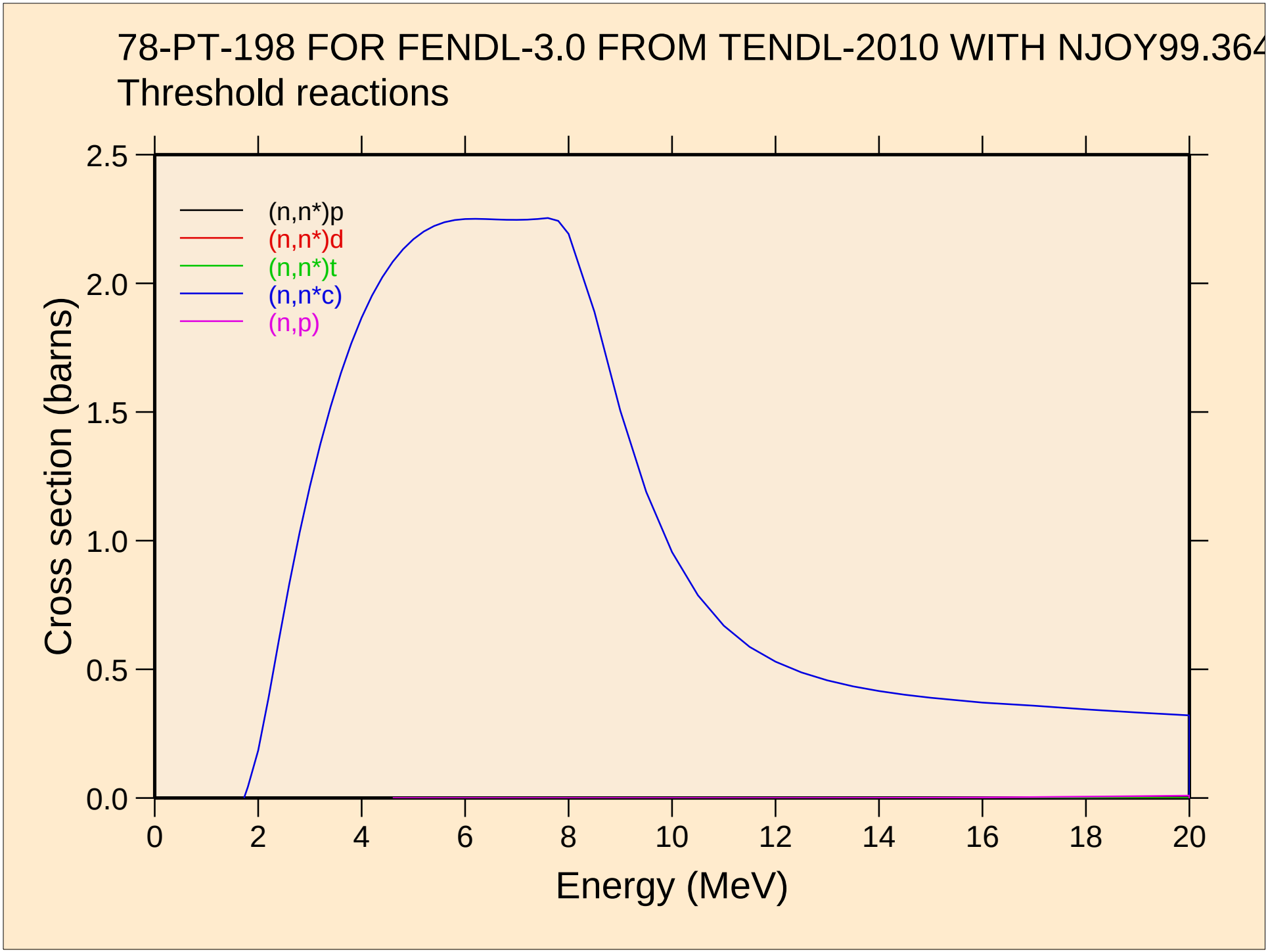

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Inelastic levels
Cross section (barns)
*10-3
700
600
500
400
300
200
100
0
0
2
4
6
8
10
Energy (MeV)
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

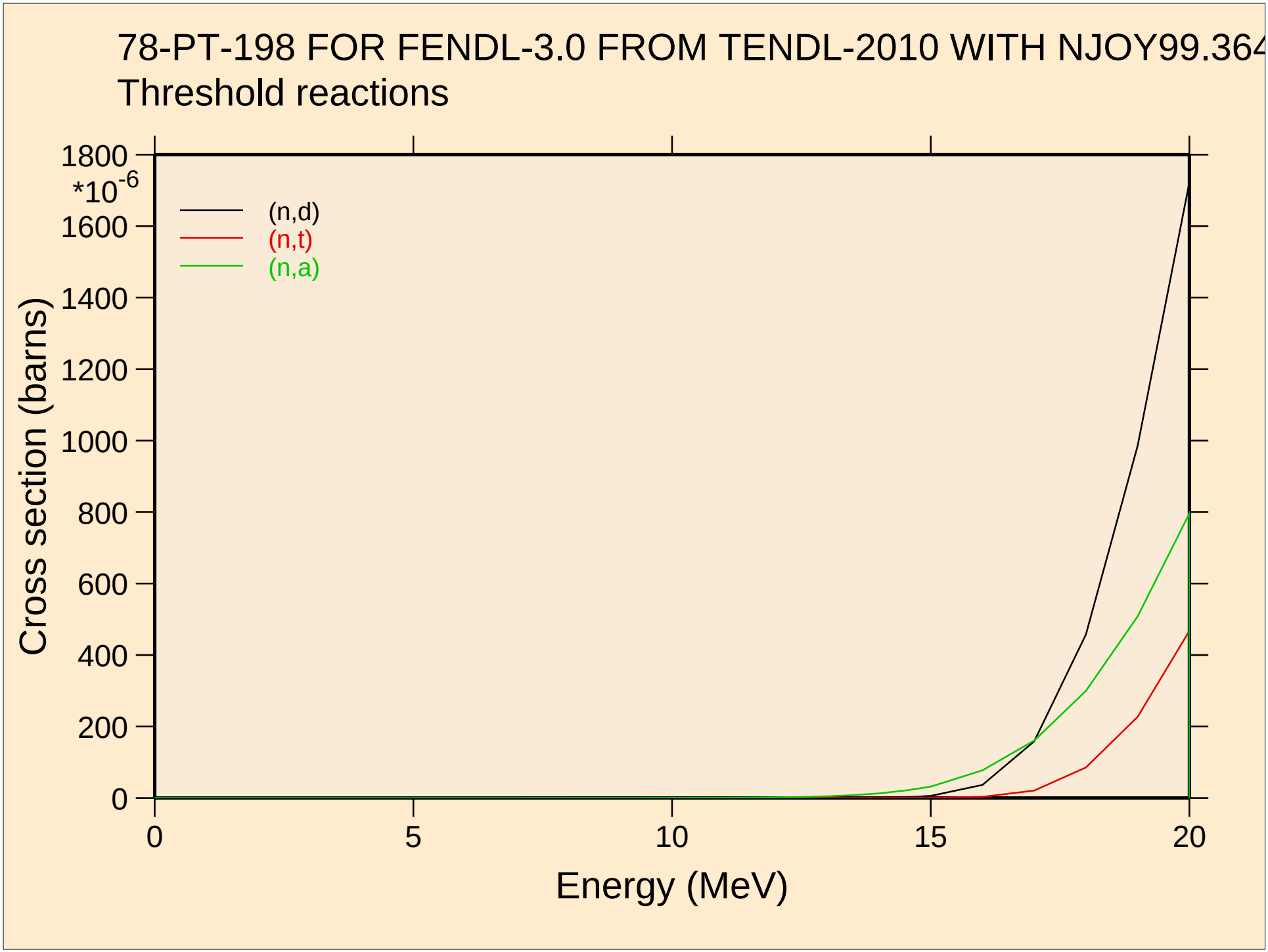

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Inelastic levels
120
*10-3
100
80
60
40
20
0
Cross section (barns)
0
2
4
6
8
10
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

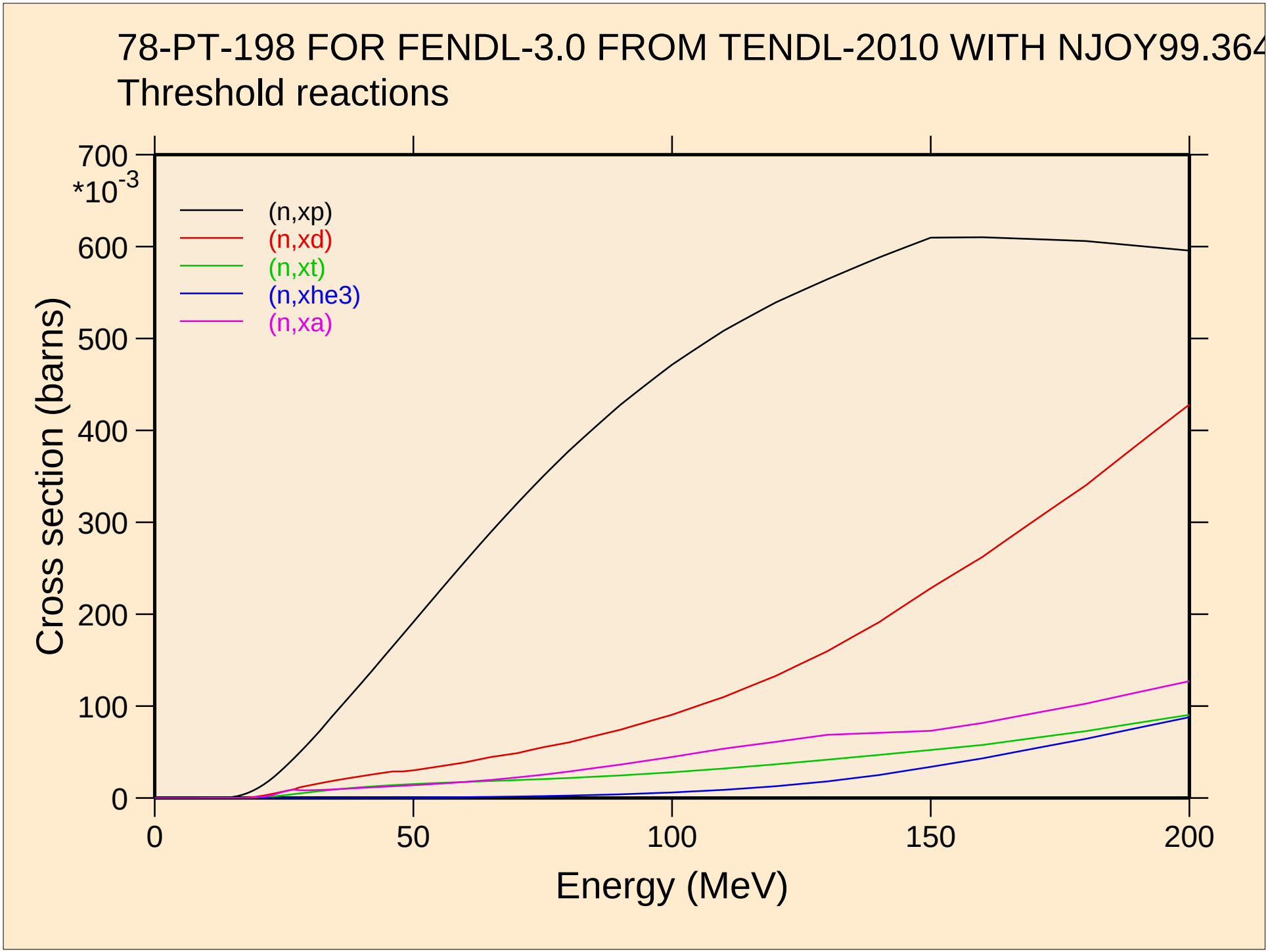

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Inelastic levels
Cross section (barns)
*10-3
70
60
50
40
30
20
10
0
0
2
4
6
8
10
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

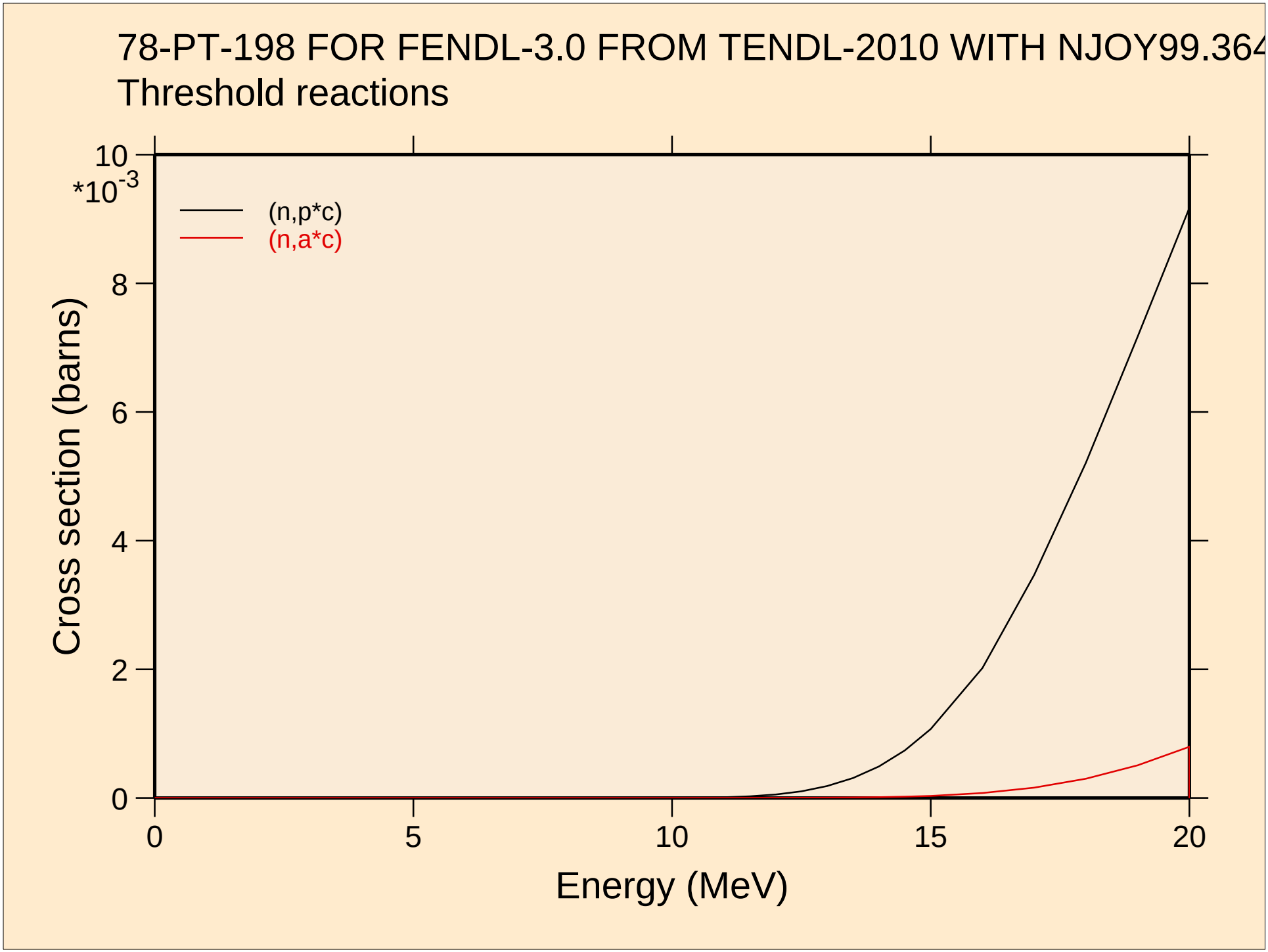

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Inelastic levels
Cross section (barns)
*10-3
70
60
50
40
30
20
10
0
0
2
4
6
8
10
Energy (MeV)
(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)

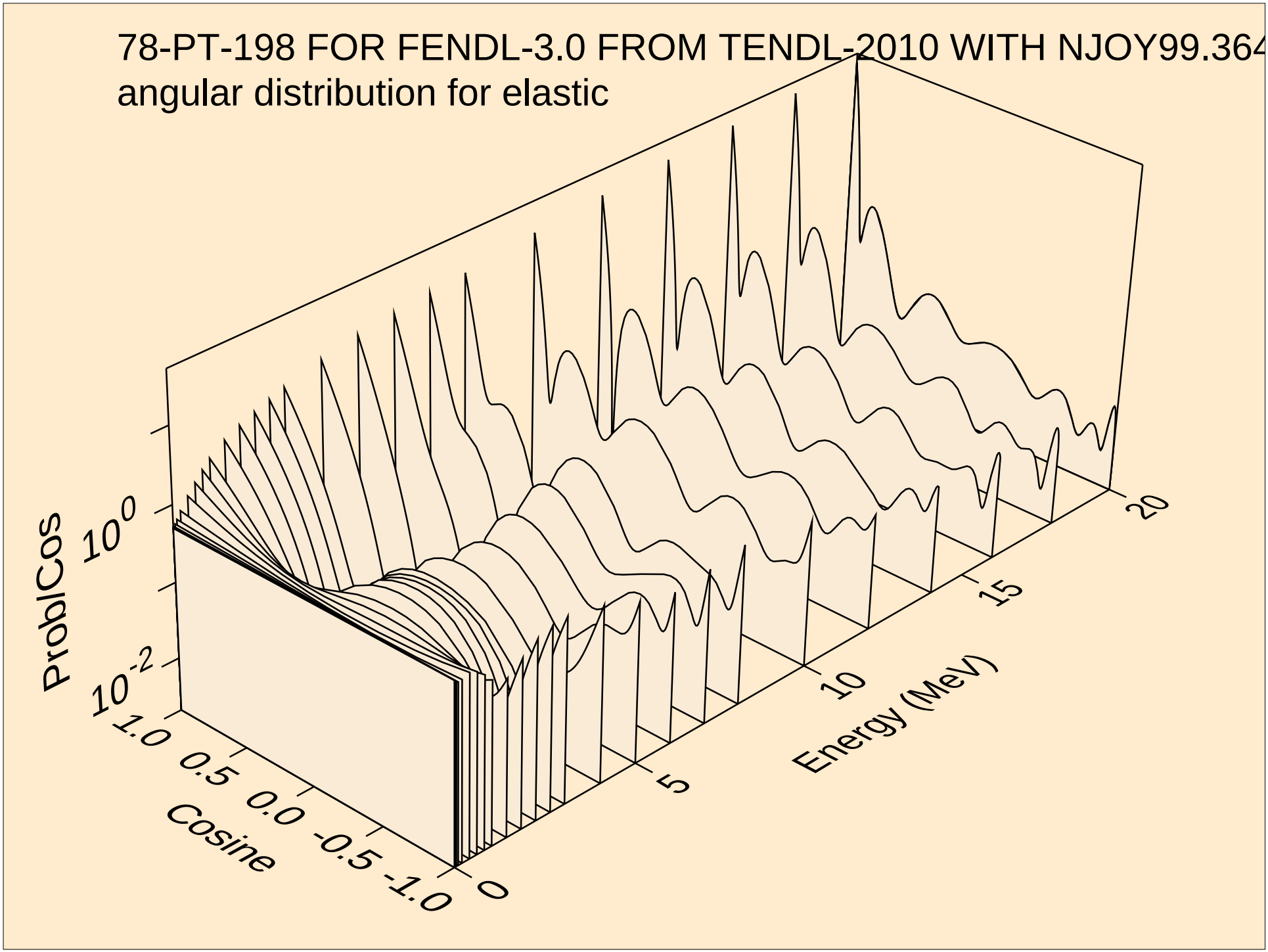

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Threshold reactions
(n,x)
(n,2n)
(n,3n)
(n,n*)a
(n,2n)a
Cross section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
0
50
100
150
200
Energy (MeV)

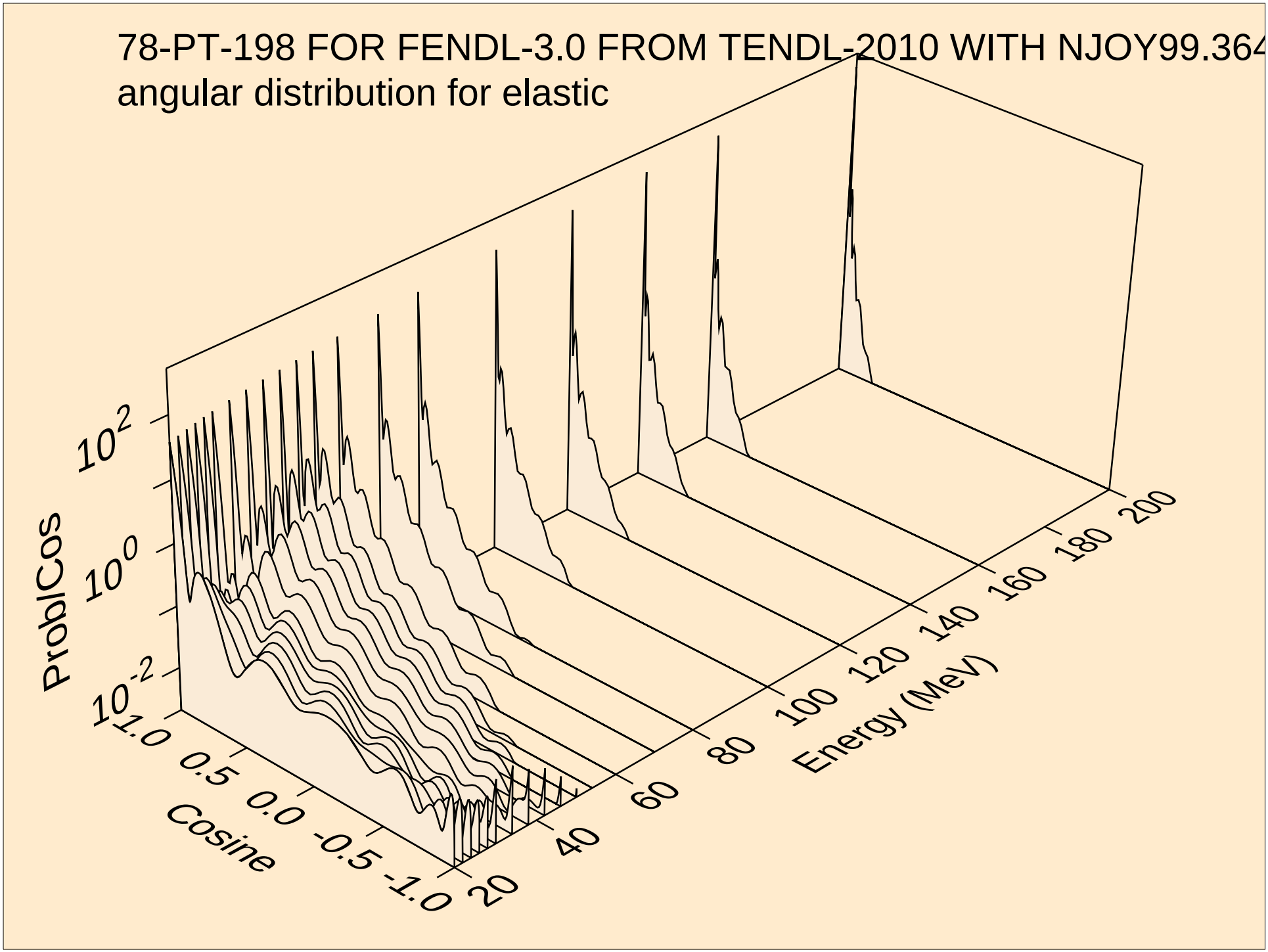

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Threshold reactions
(n,n*)p
(n,n*)d
(n,n*)t
(n,n*c)
(n,p)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
0
2
4
6
8
10
12
14
16
18
20

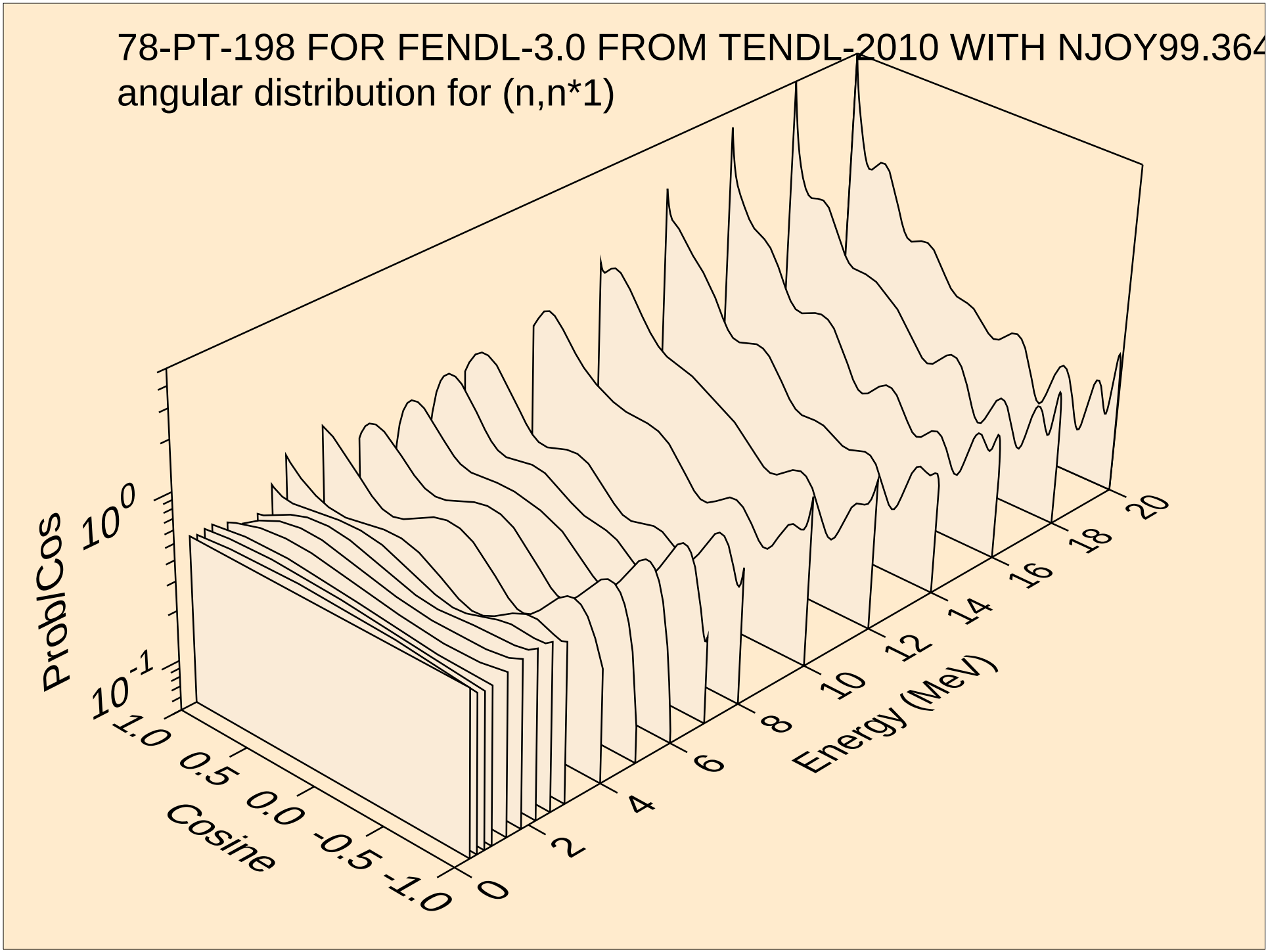

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Threshold reactions
(n,d)
(n,t)
(n,a)
*10-6
1800
1600
1400
1200
1000
800
600
400
200
0
Cross section (barns)
0
5
10
15
20
Energy (MeV)

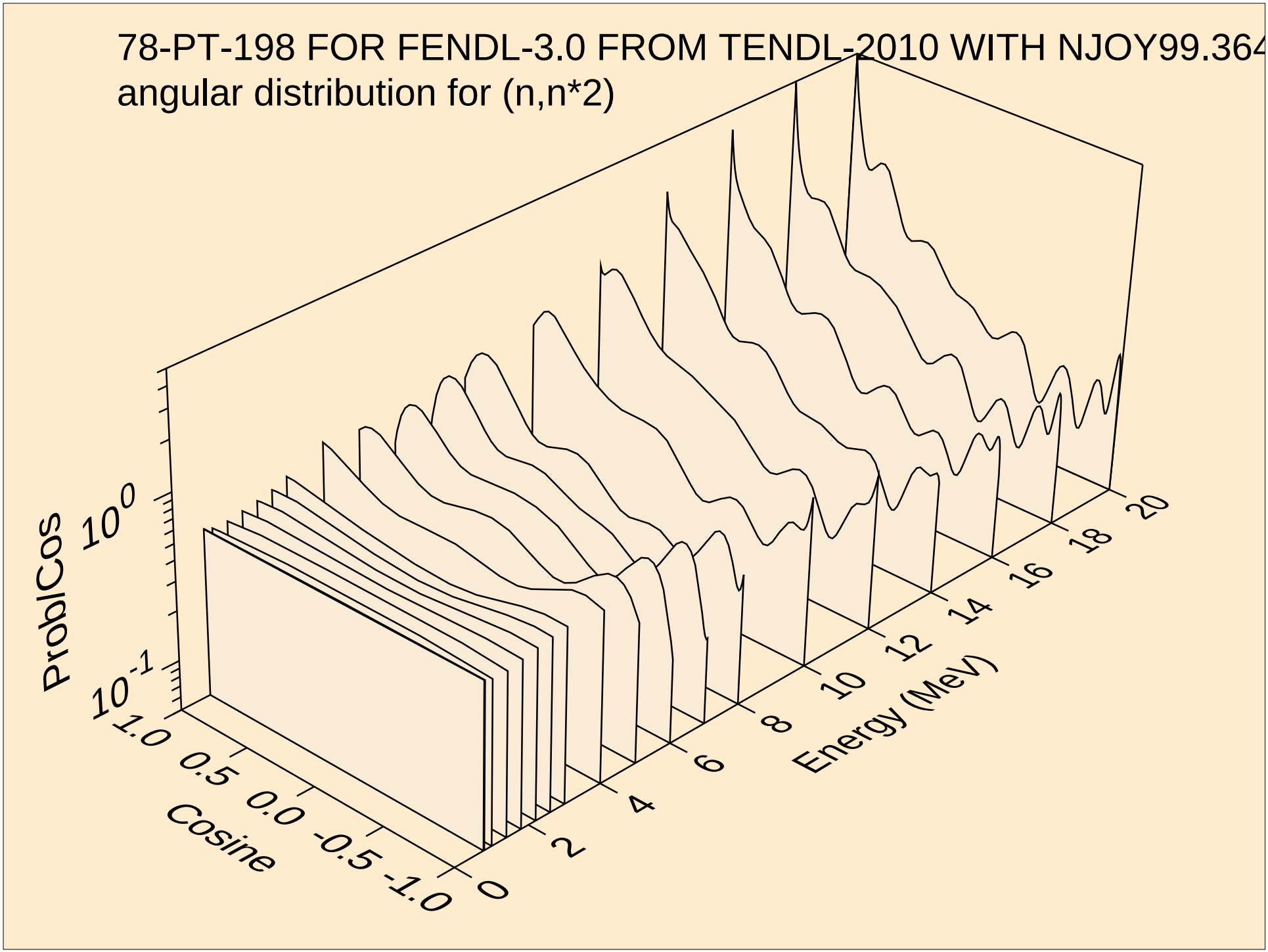

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Threshold reactions
700
*10-3
600
500
400
300
200
100
0
Cross section (barns)
(n,xp)
(n,xd)
(n,xt)
(n,xhe3)
(n,xa)
0
50
100
150
200
Energy (MeV)

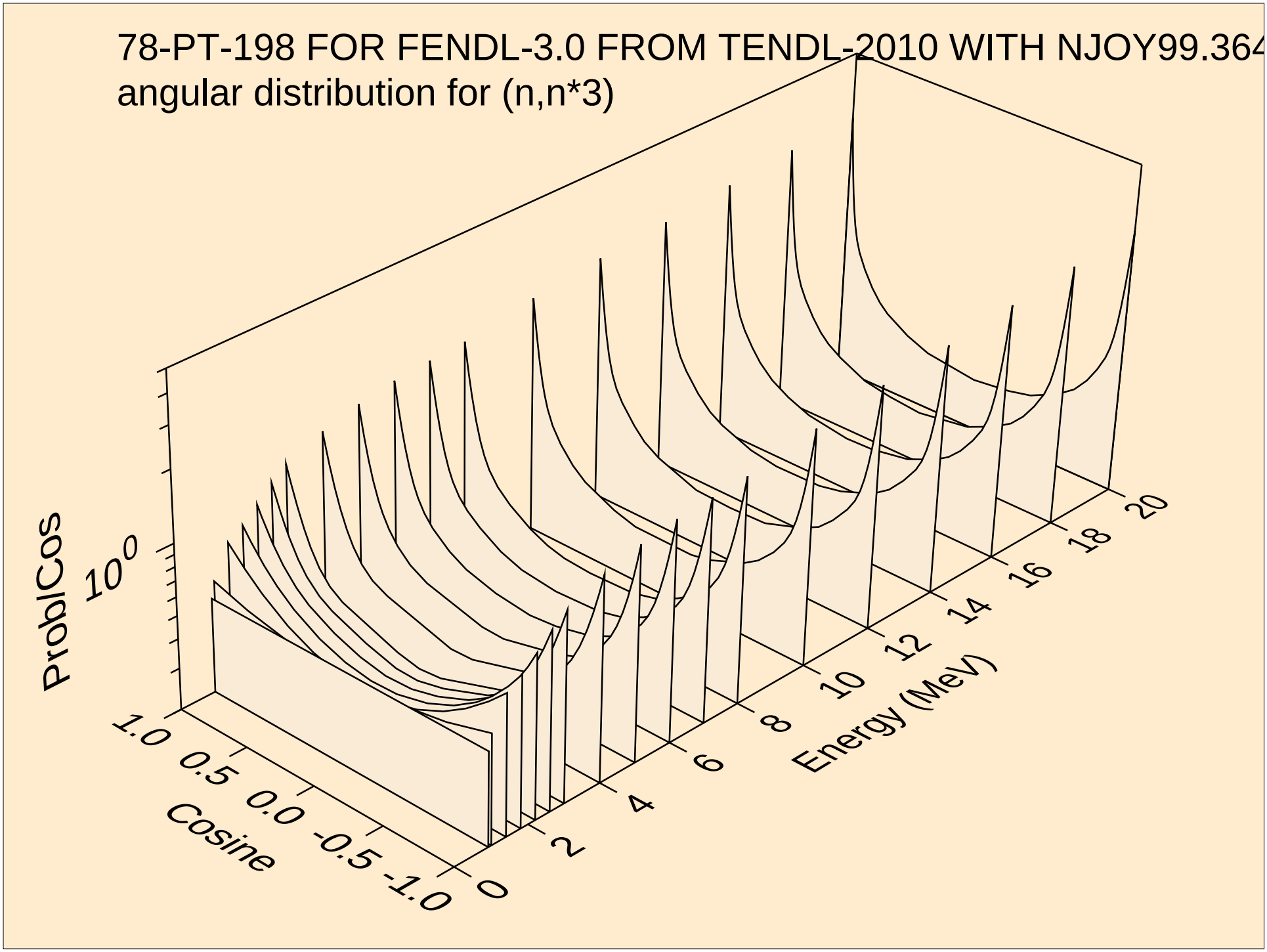

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Threshold reactions
10
*10-3
8
6
4
2
0
(n,p*c)
(n,a*c)
Cross section (barns)
0
5
10
15
20
Energy (MeV)

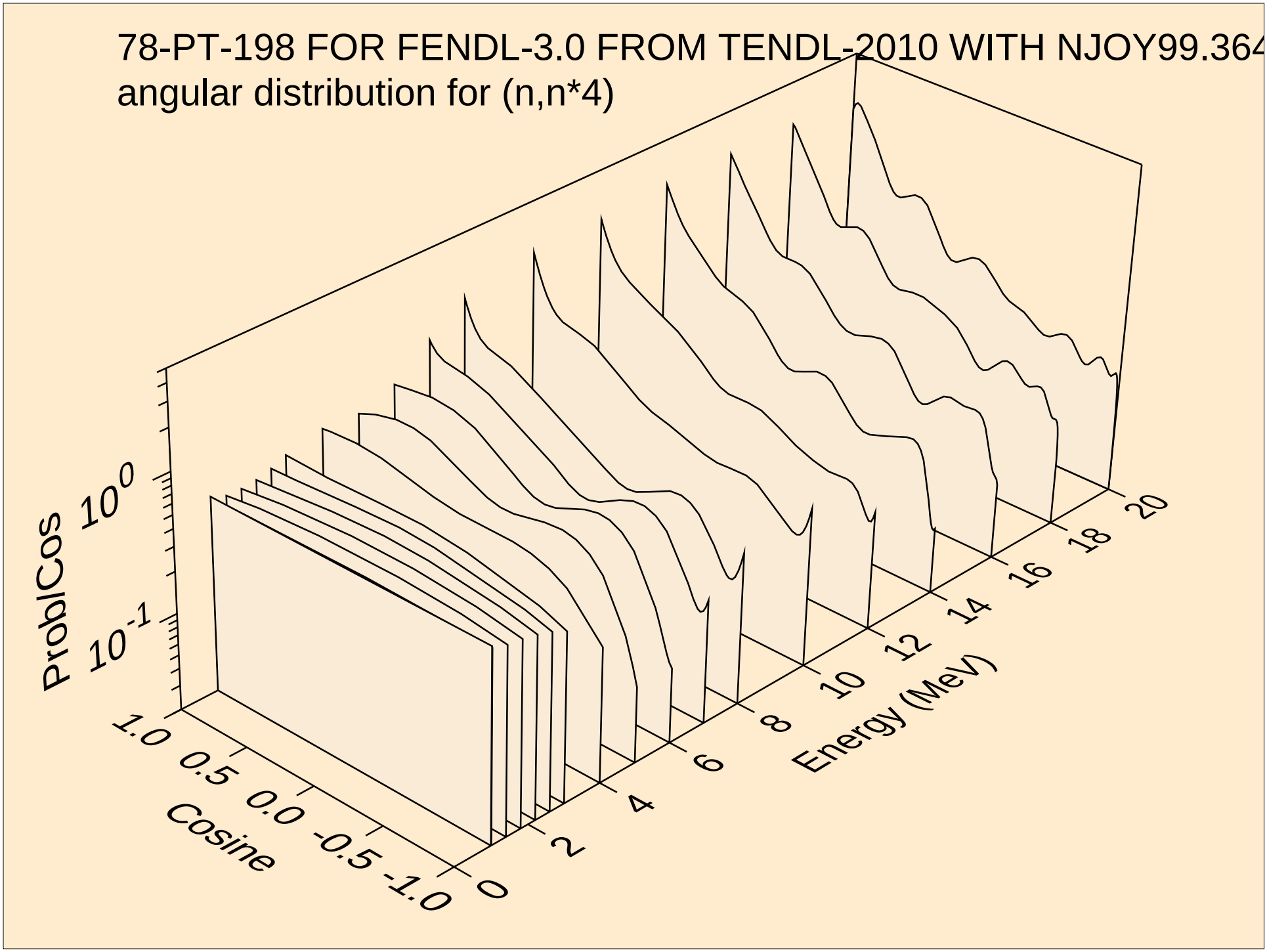

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for elastic
ProbICos
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

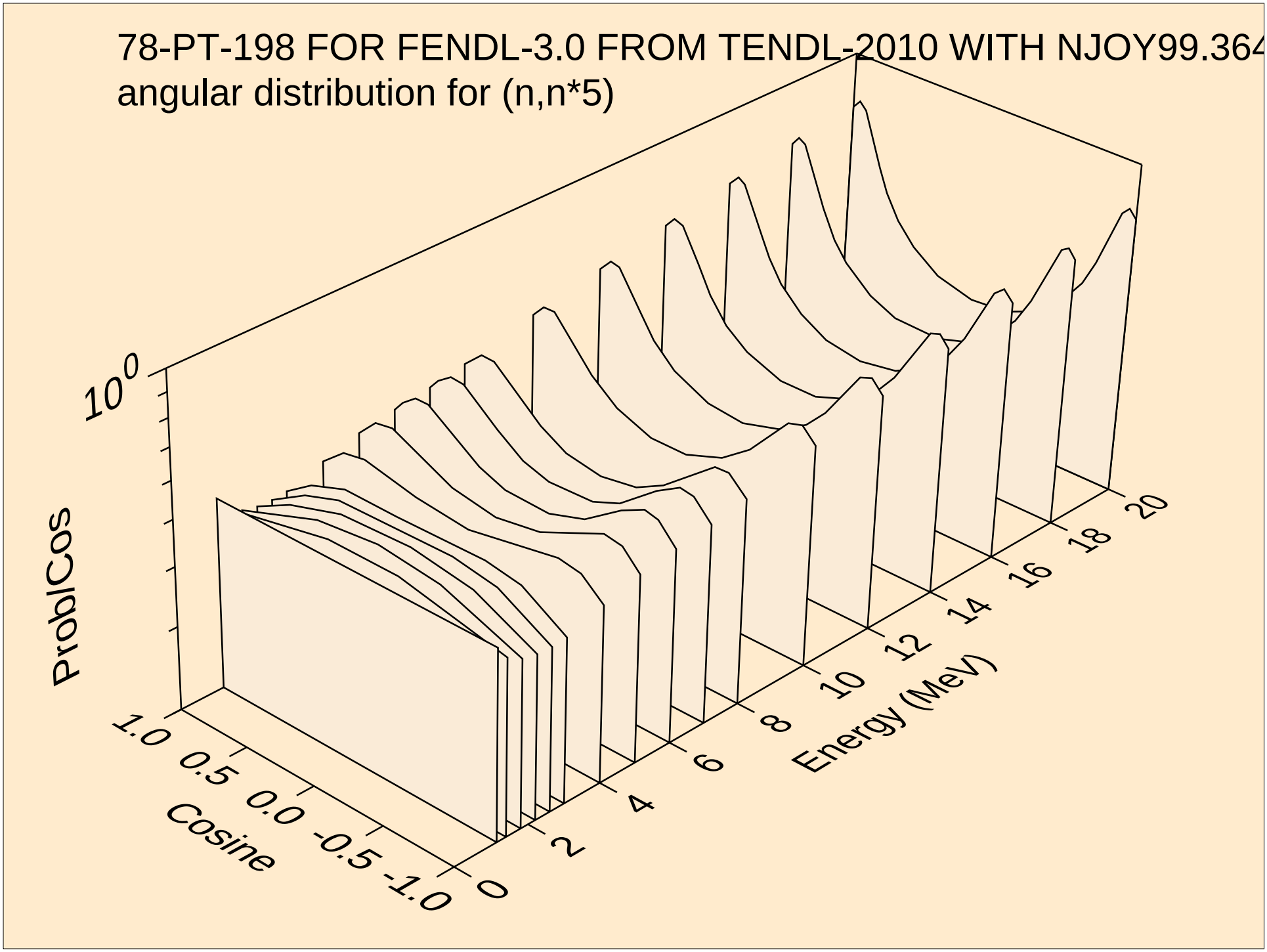

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for elastic
ProbICos
10^{2}
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

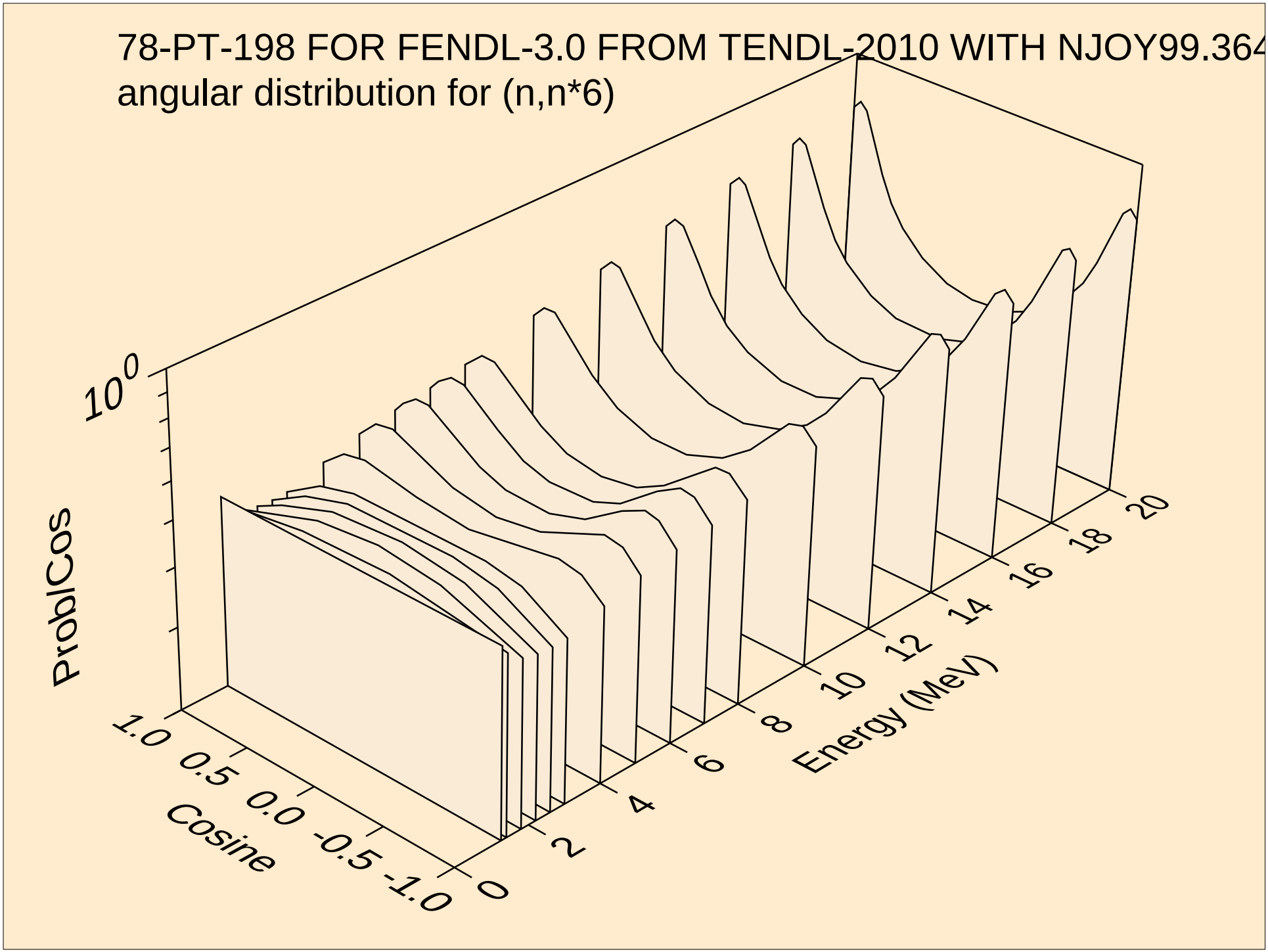

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*1)
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

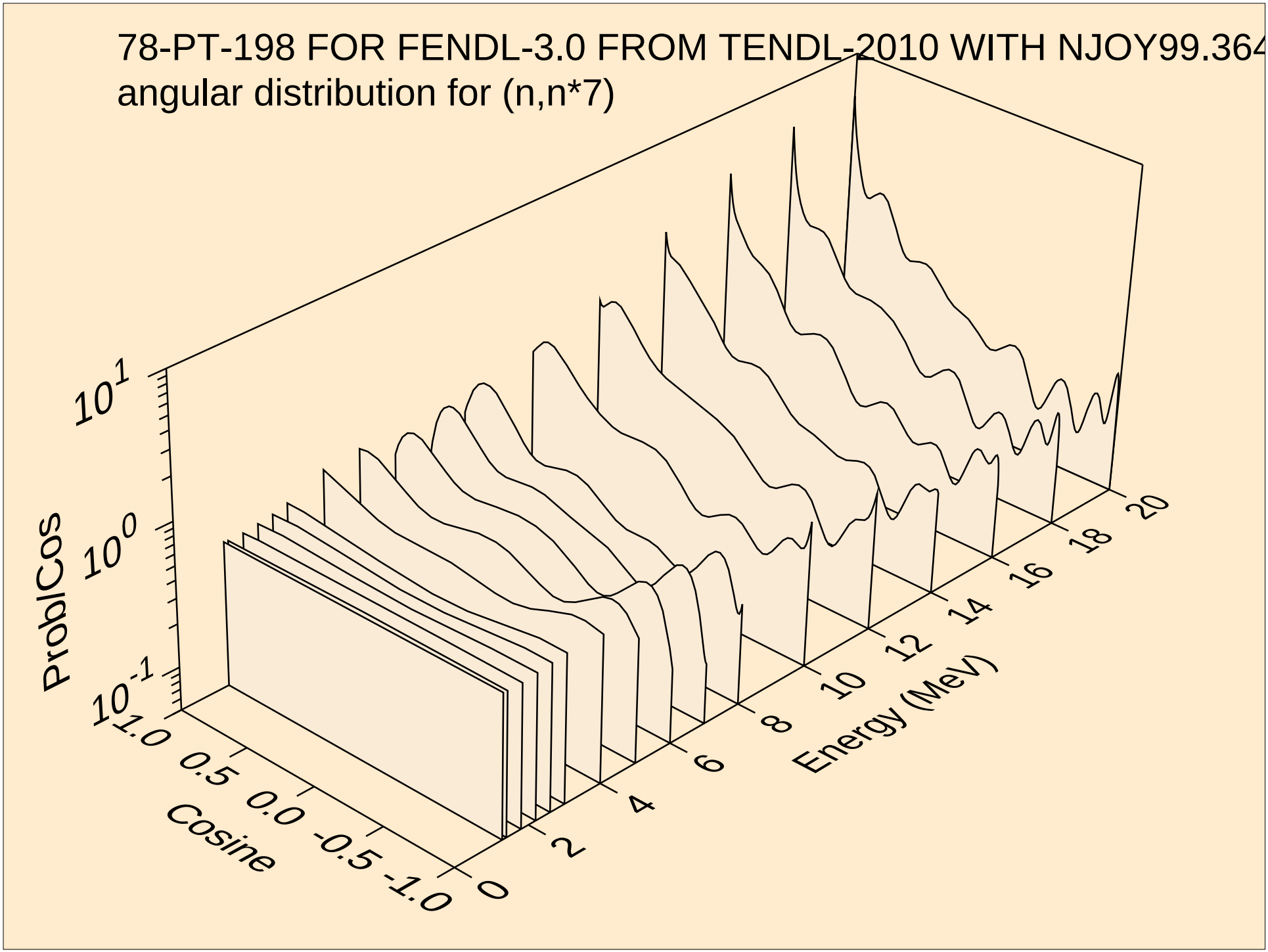

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*2)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

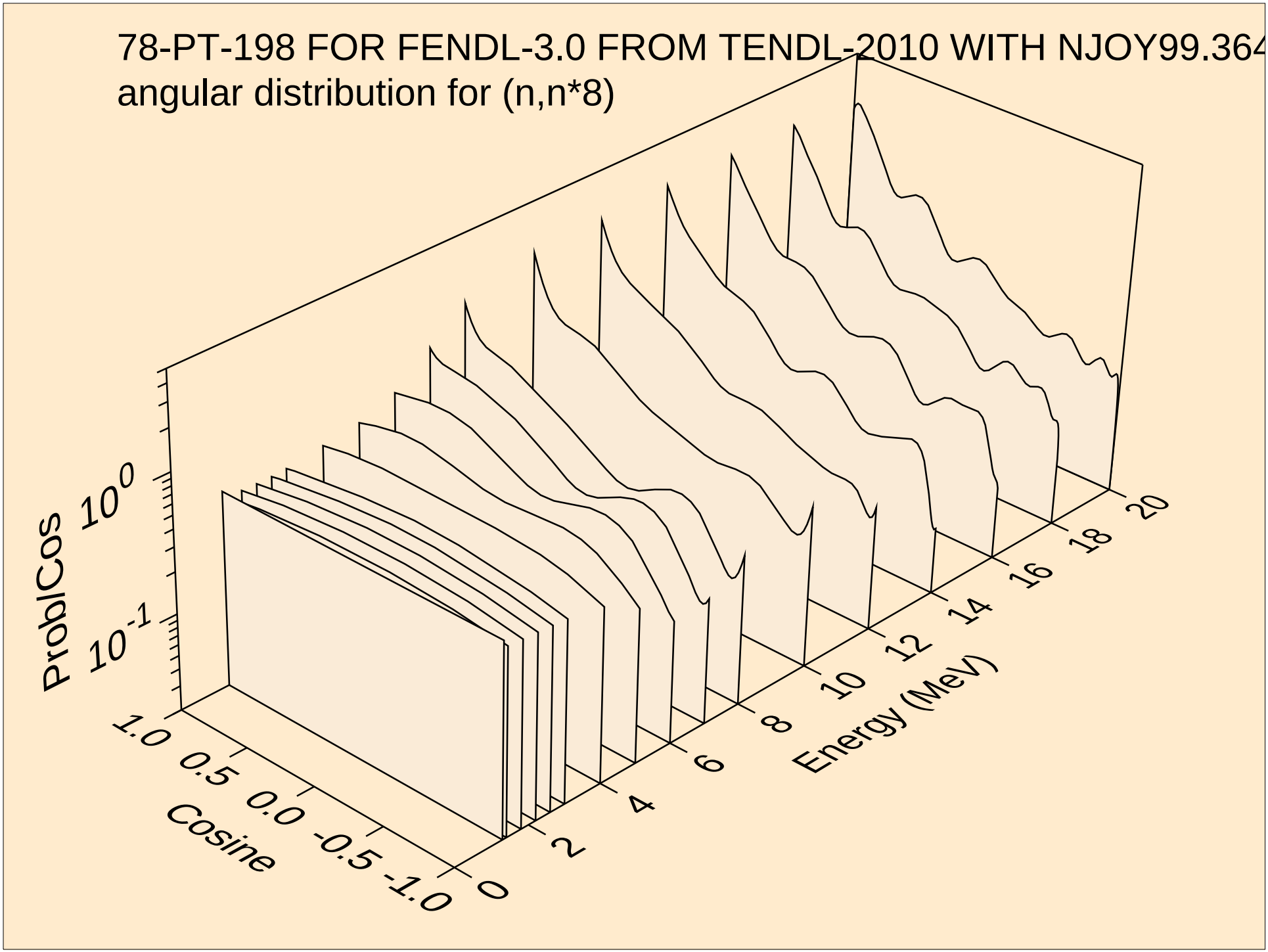

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*3)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

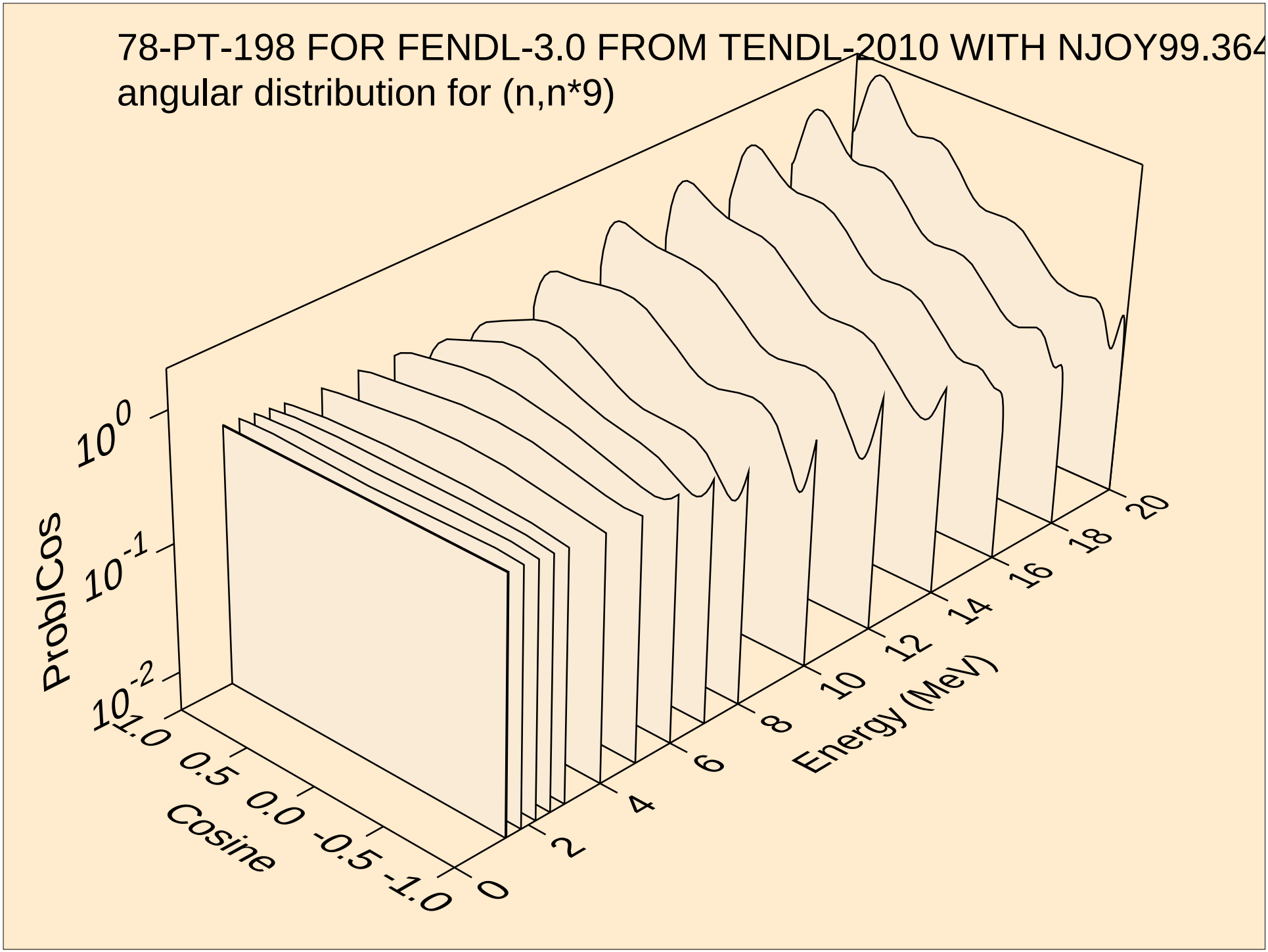

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*4)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

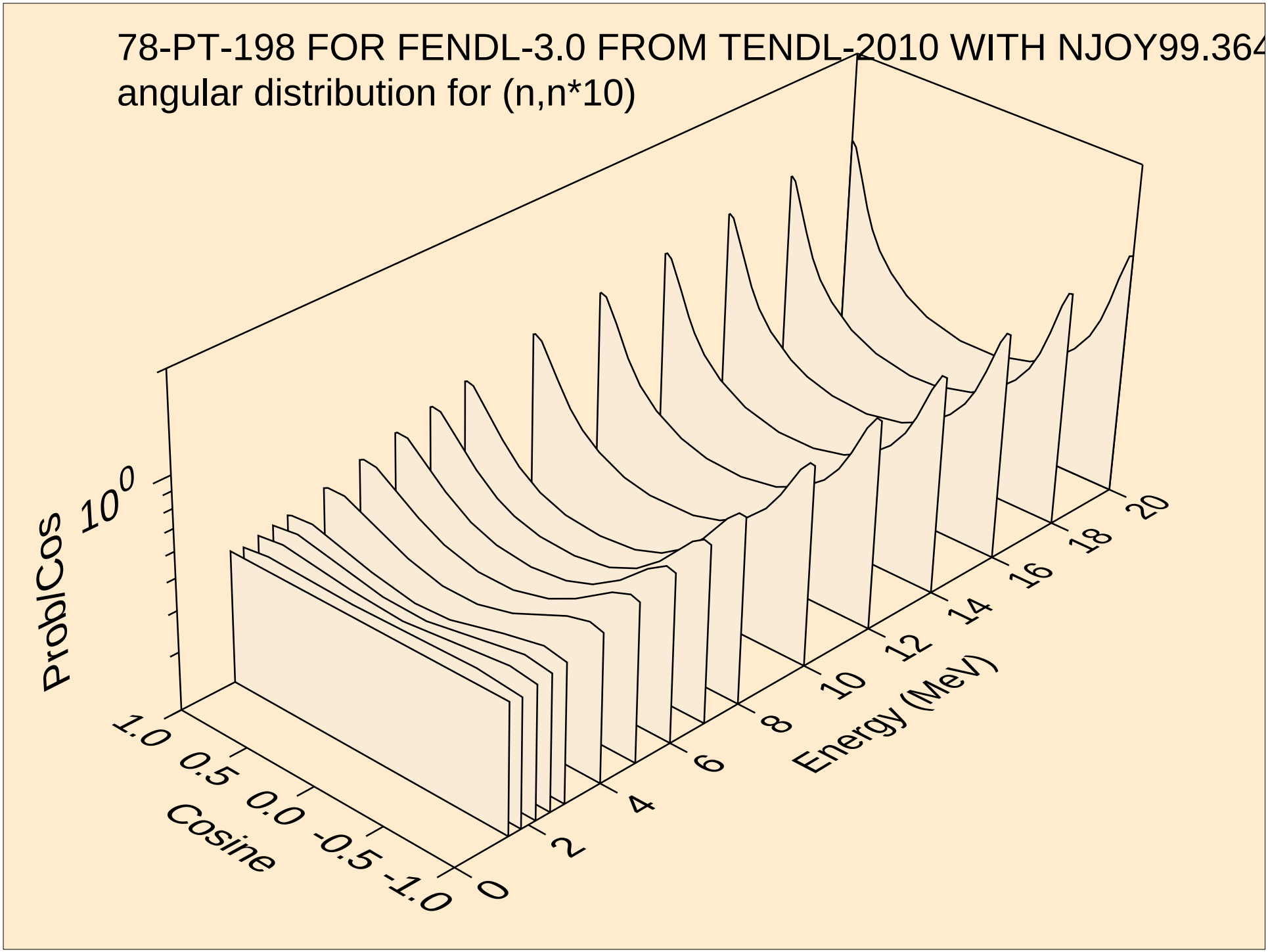

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*5)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

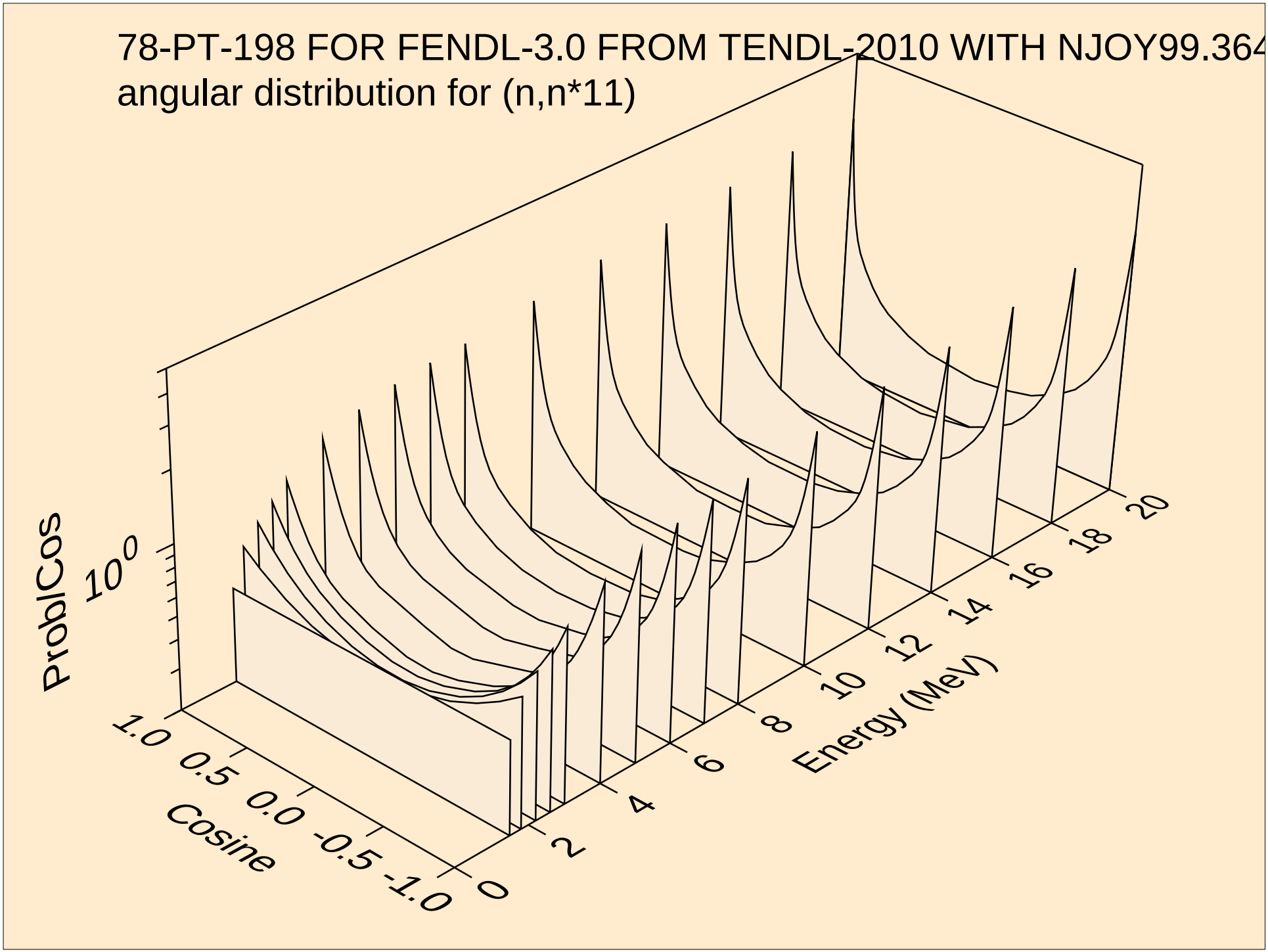

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*6)
ProbICos
10^0
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

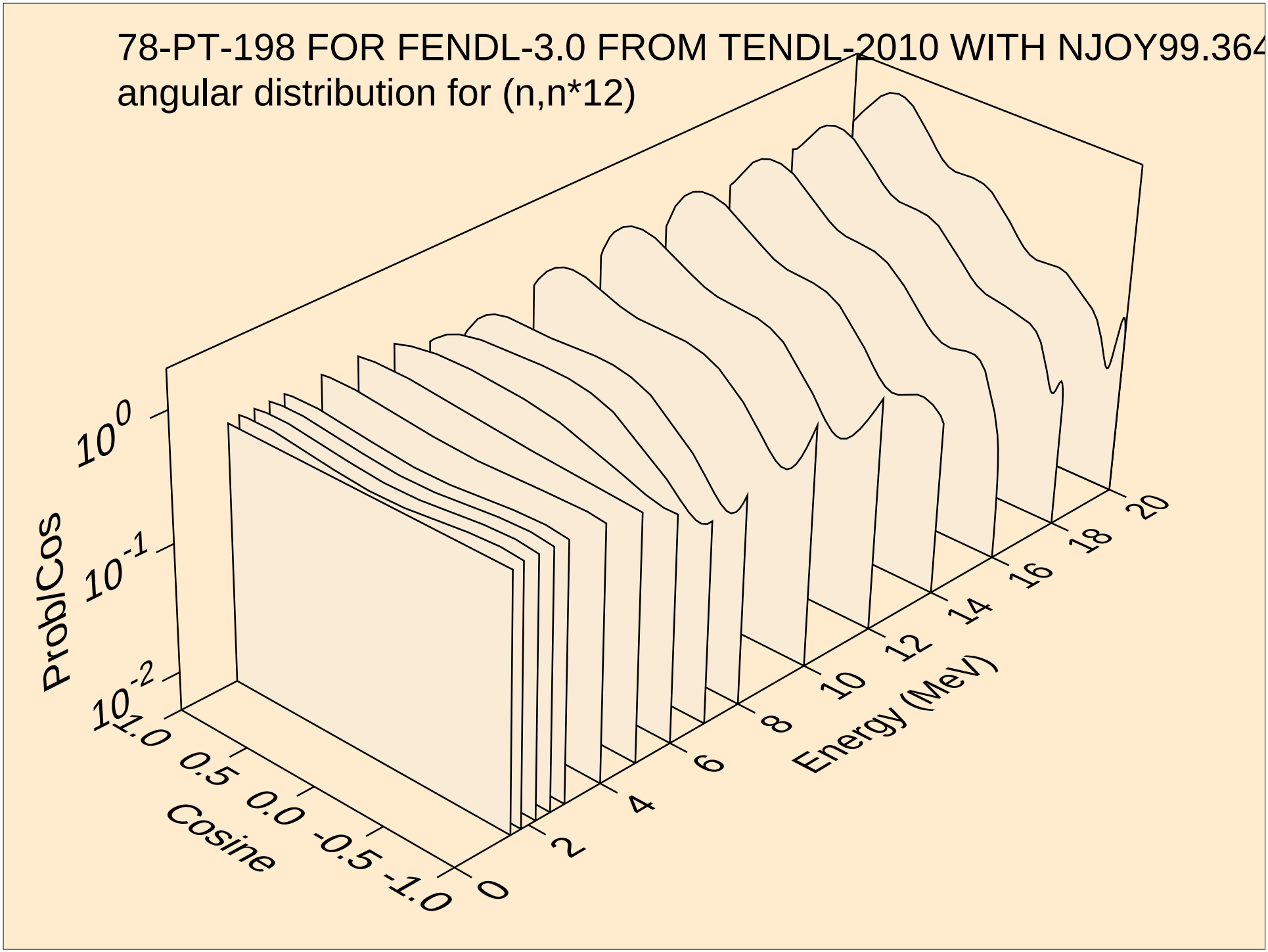

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*7)
ProbICos
10^{1}
10^{0}
10^{-1}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

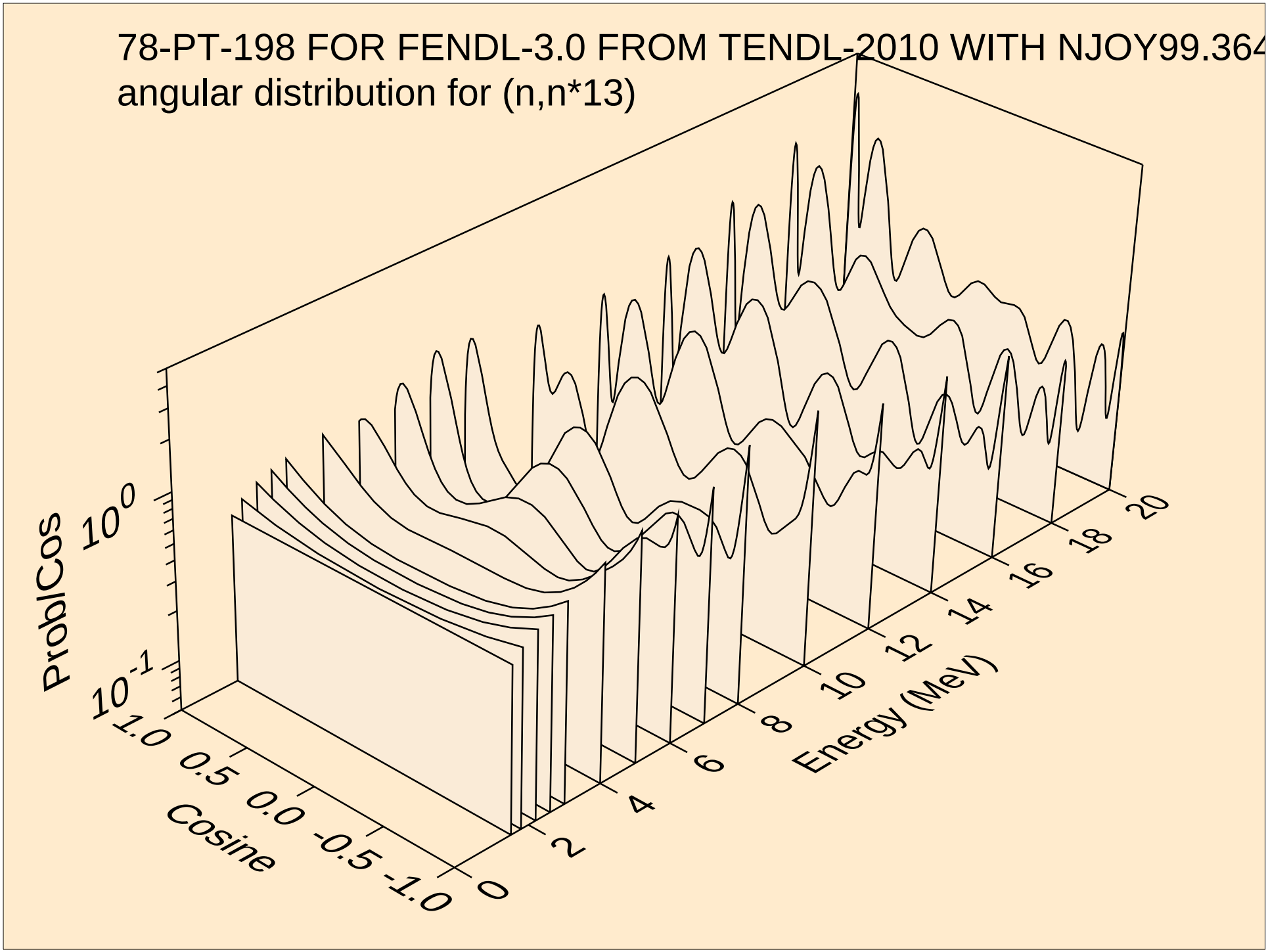

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*8)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

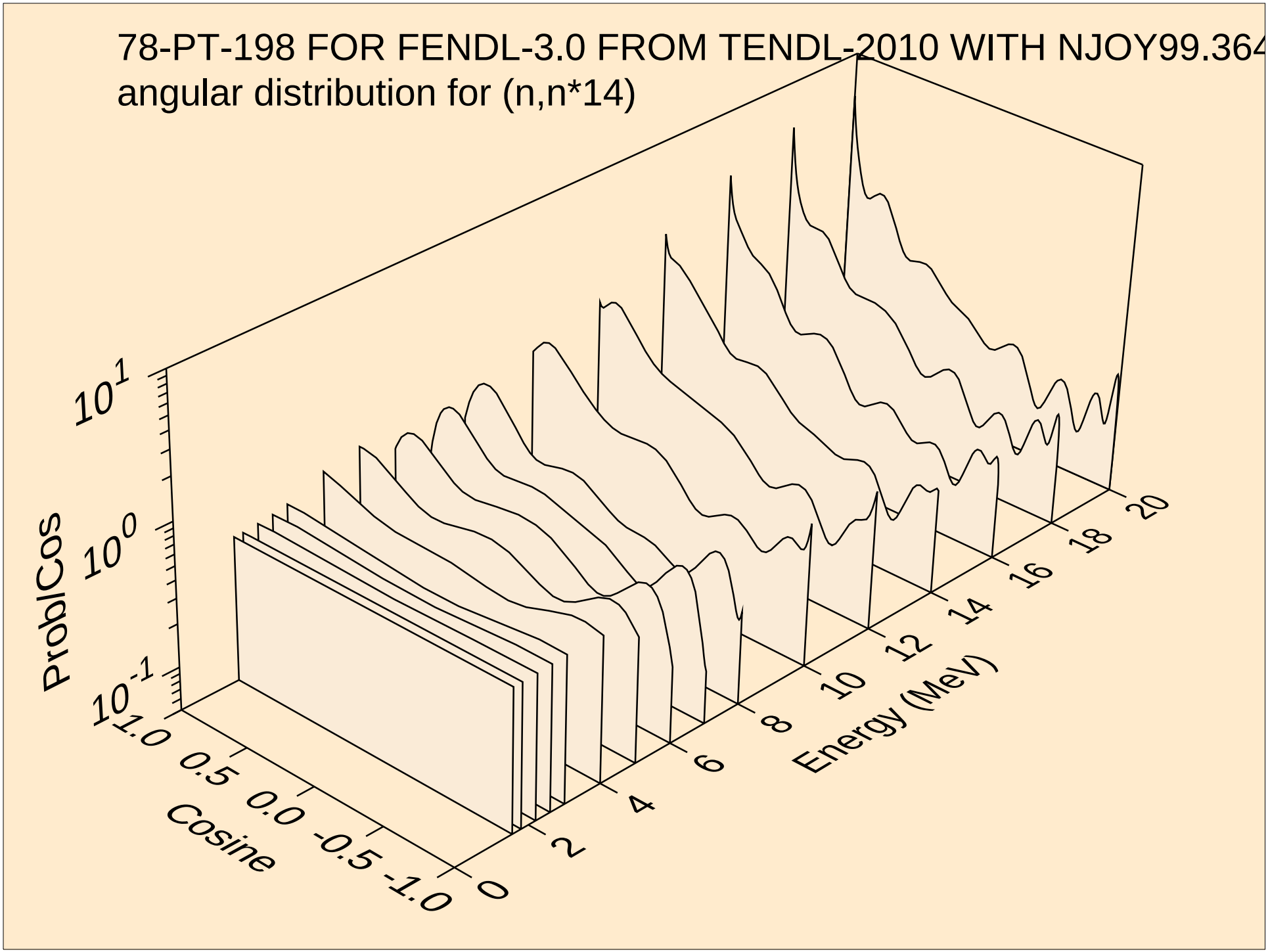

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*9)
ProbCos
10^{0}
10^{-1}
10^{-2}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

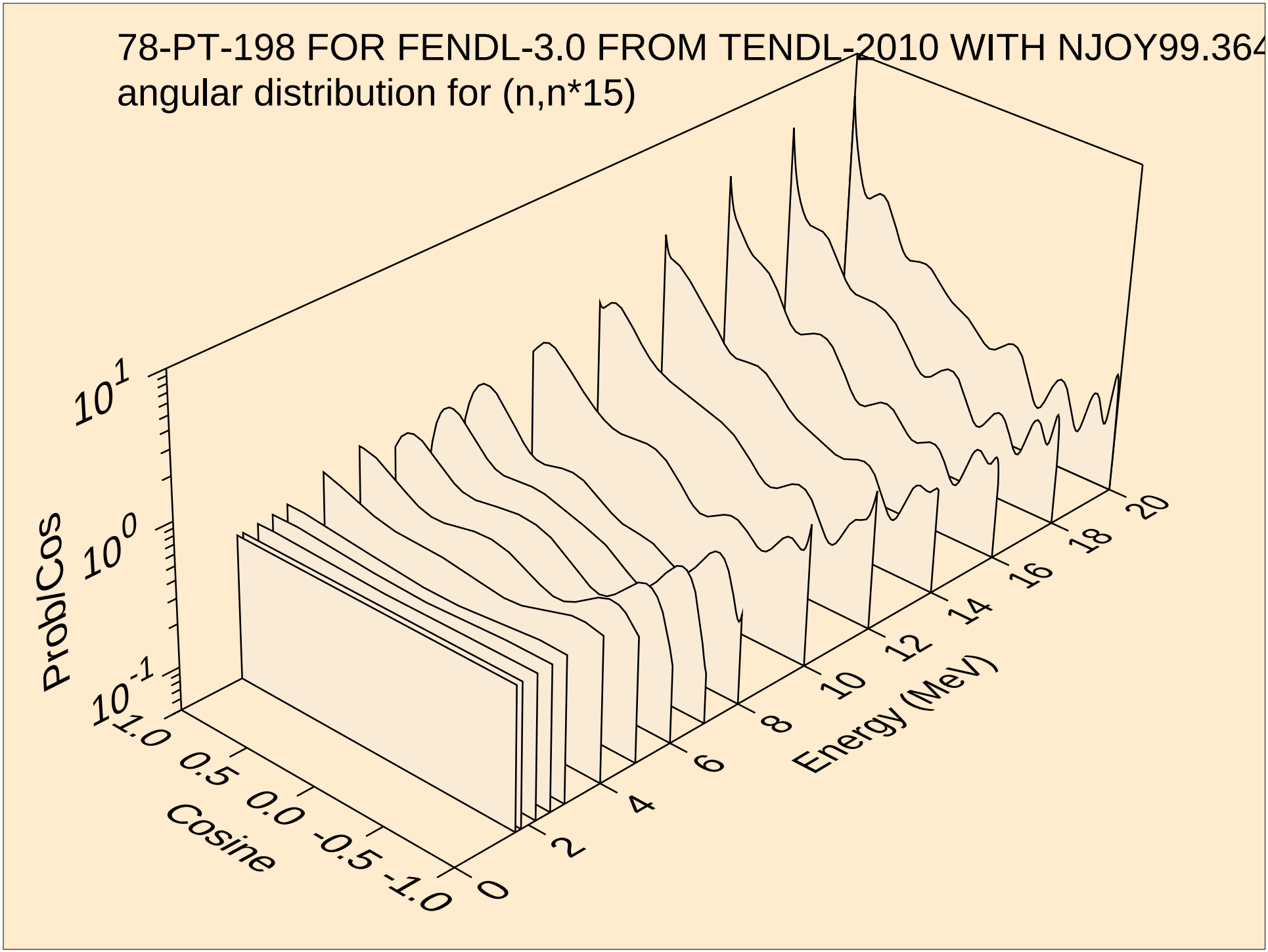

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*10)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

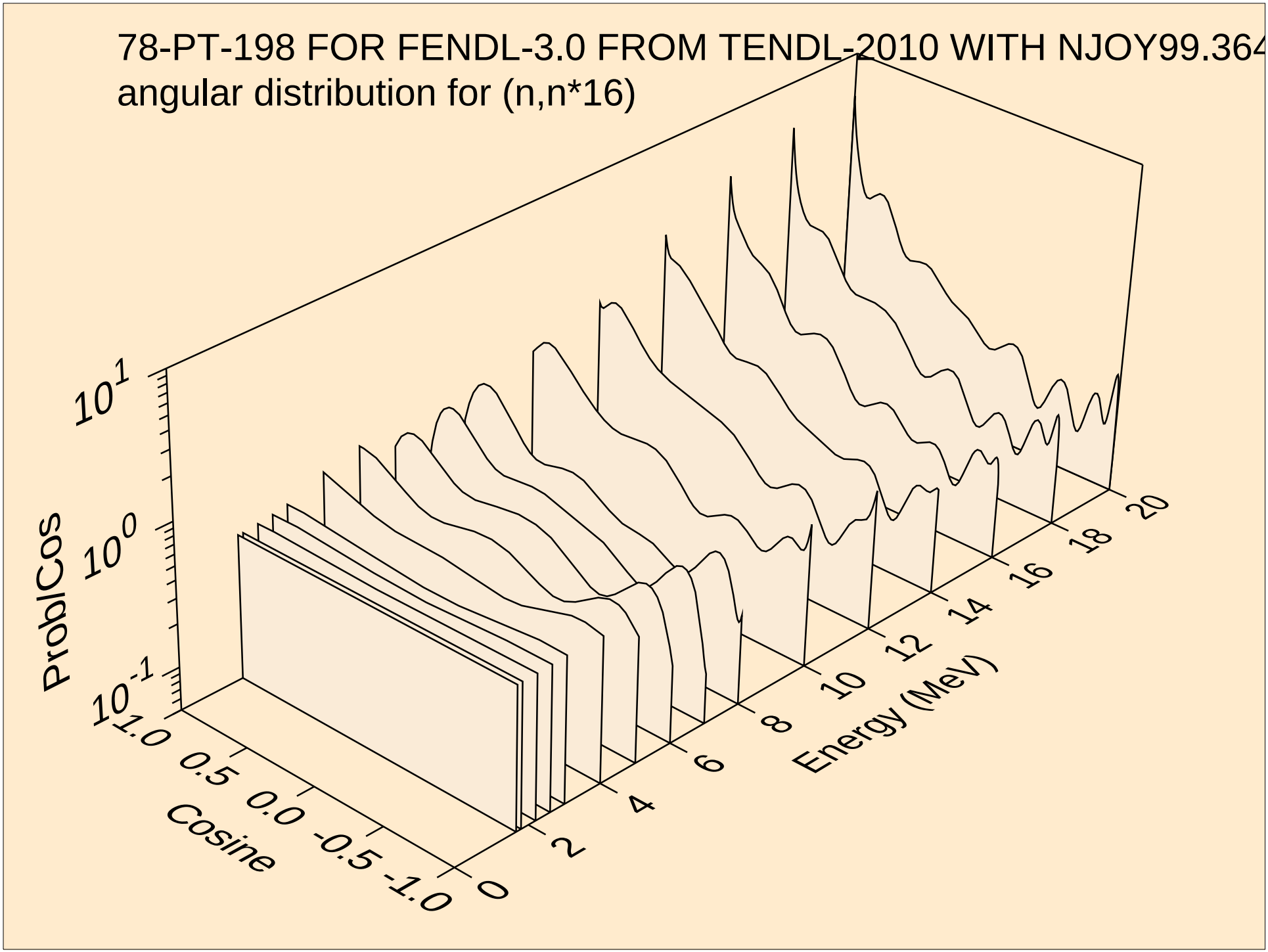

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*11)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

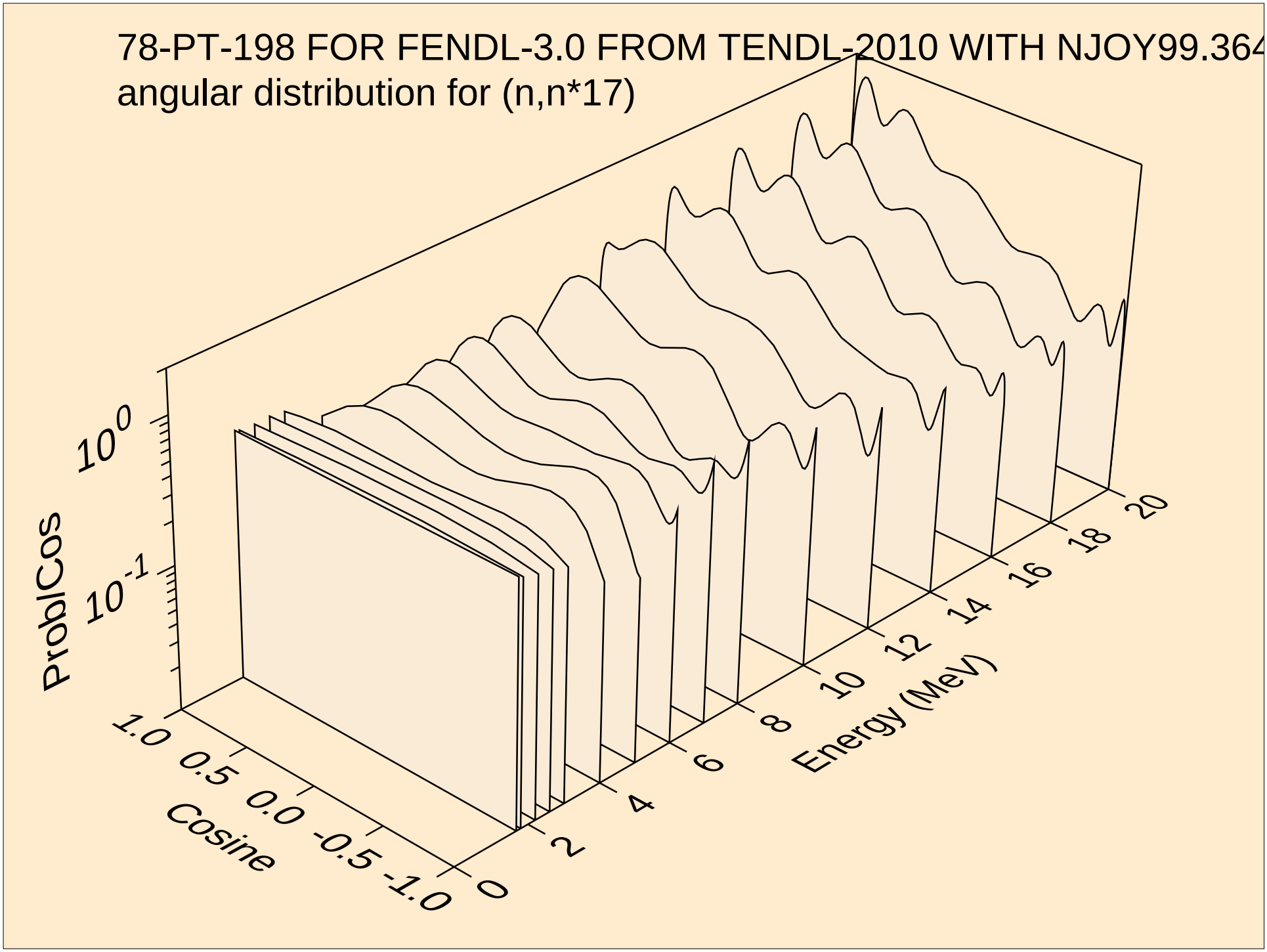

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*12)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

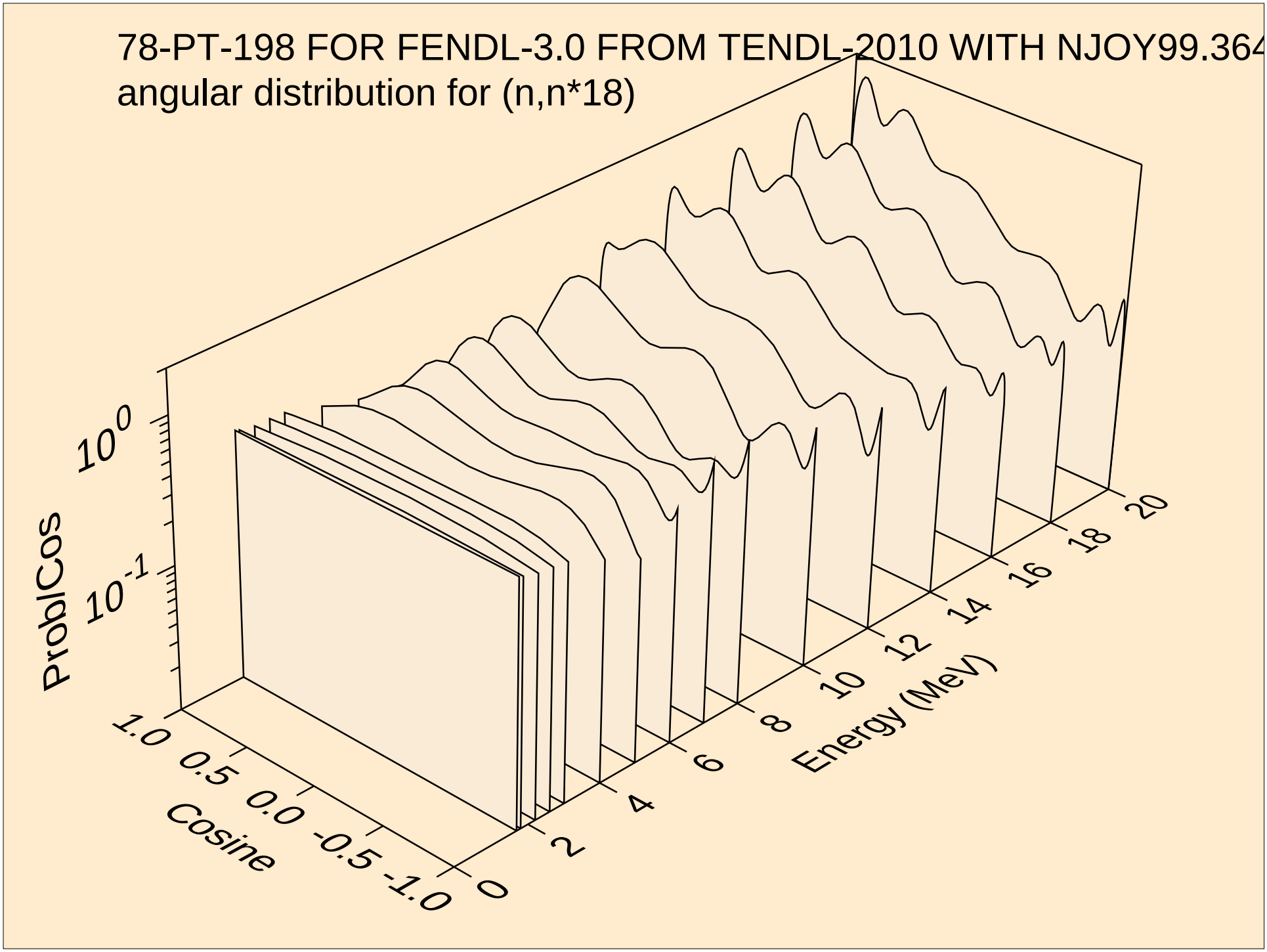

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*13)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

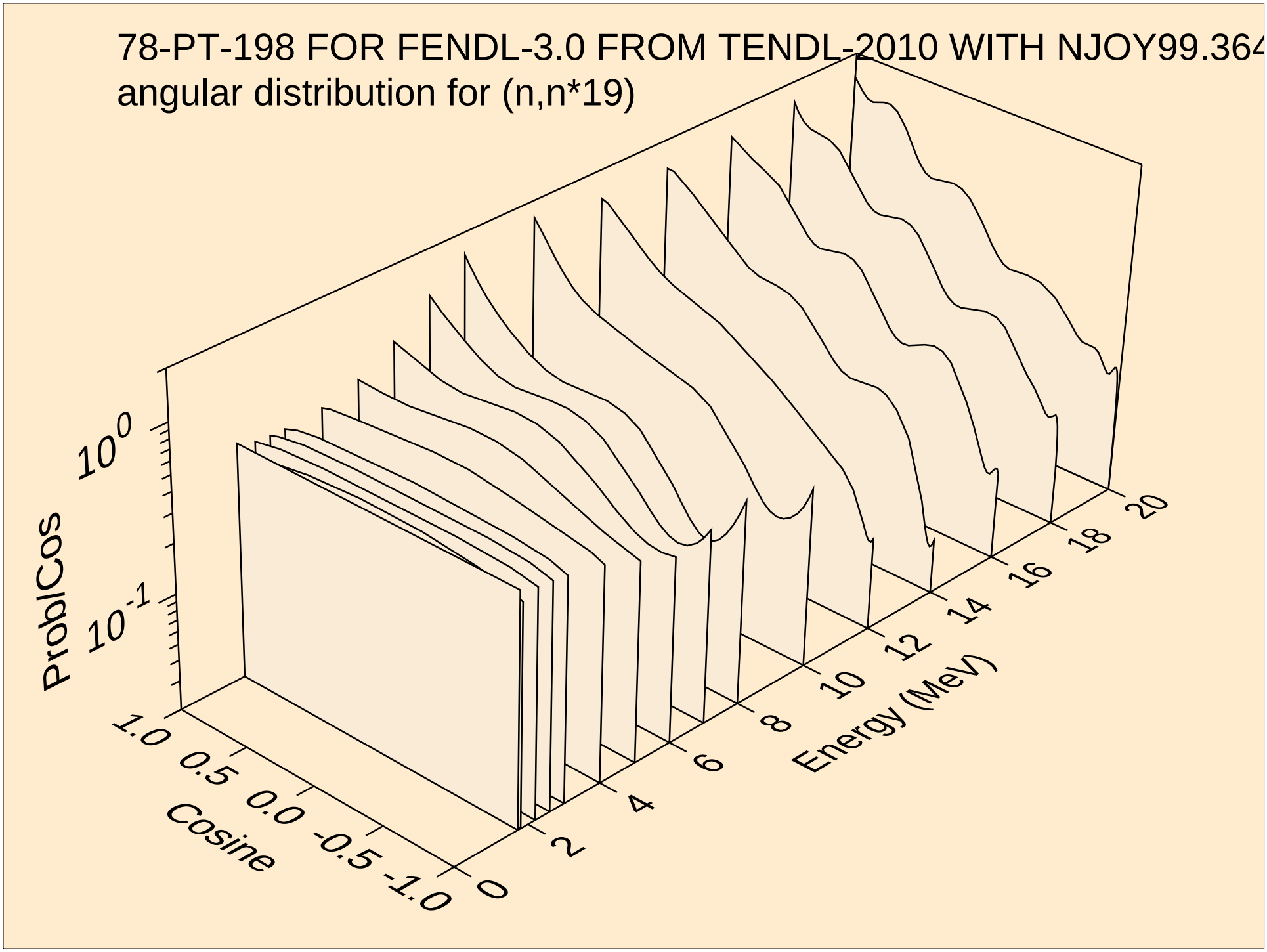

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*14)
ProbCos
10^{1}
10^{0}
10^{-1}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

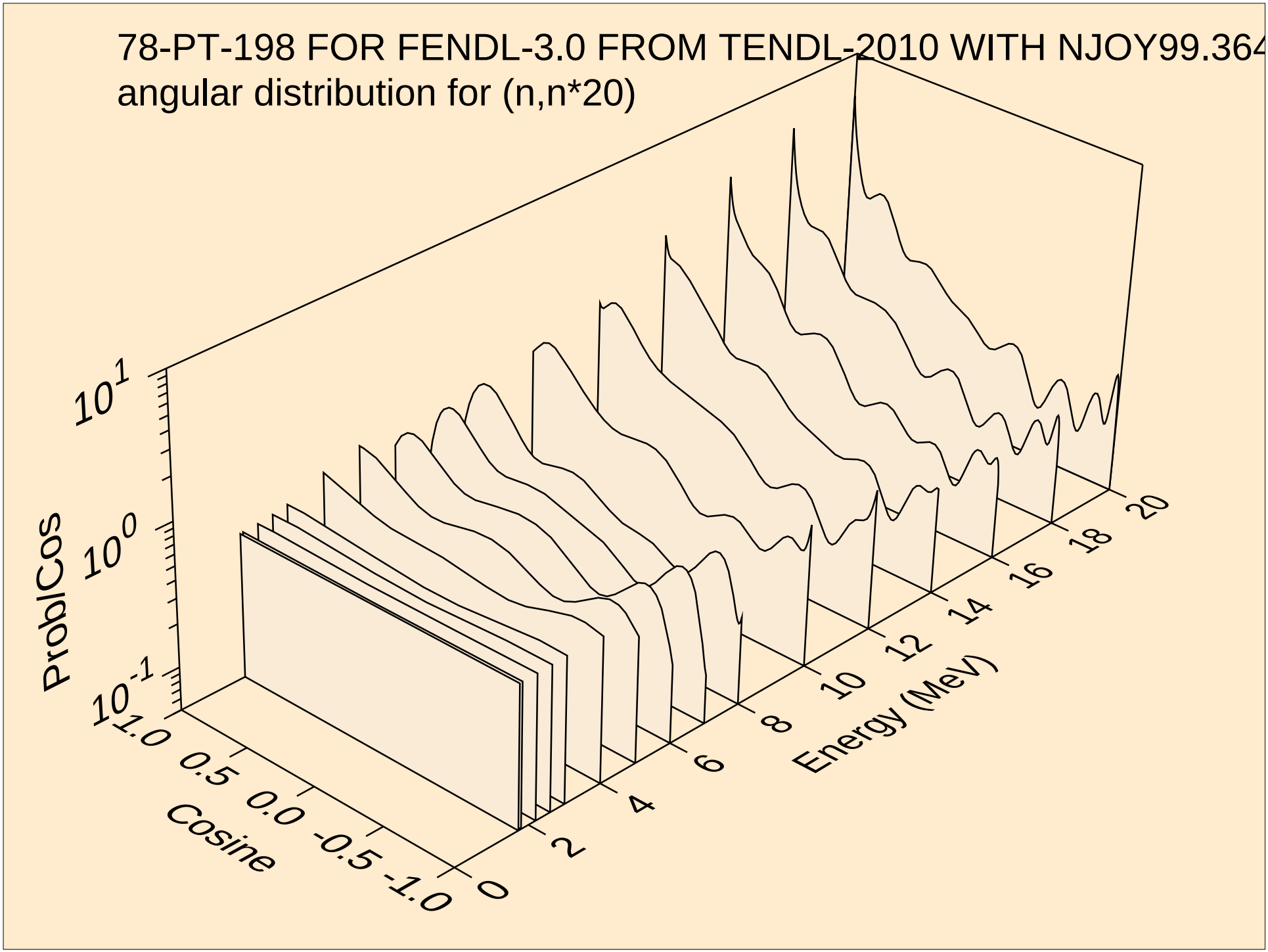

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*15)
ProbICos
10^{1}
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

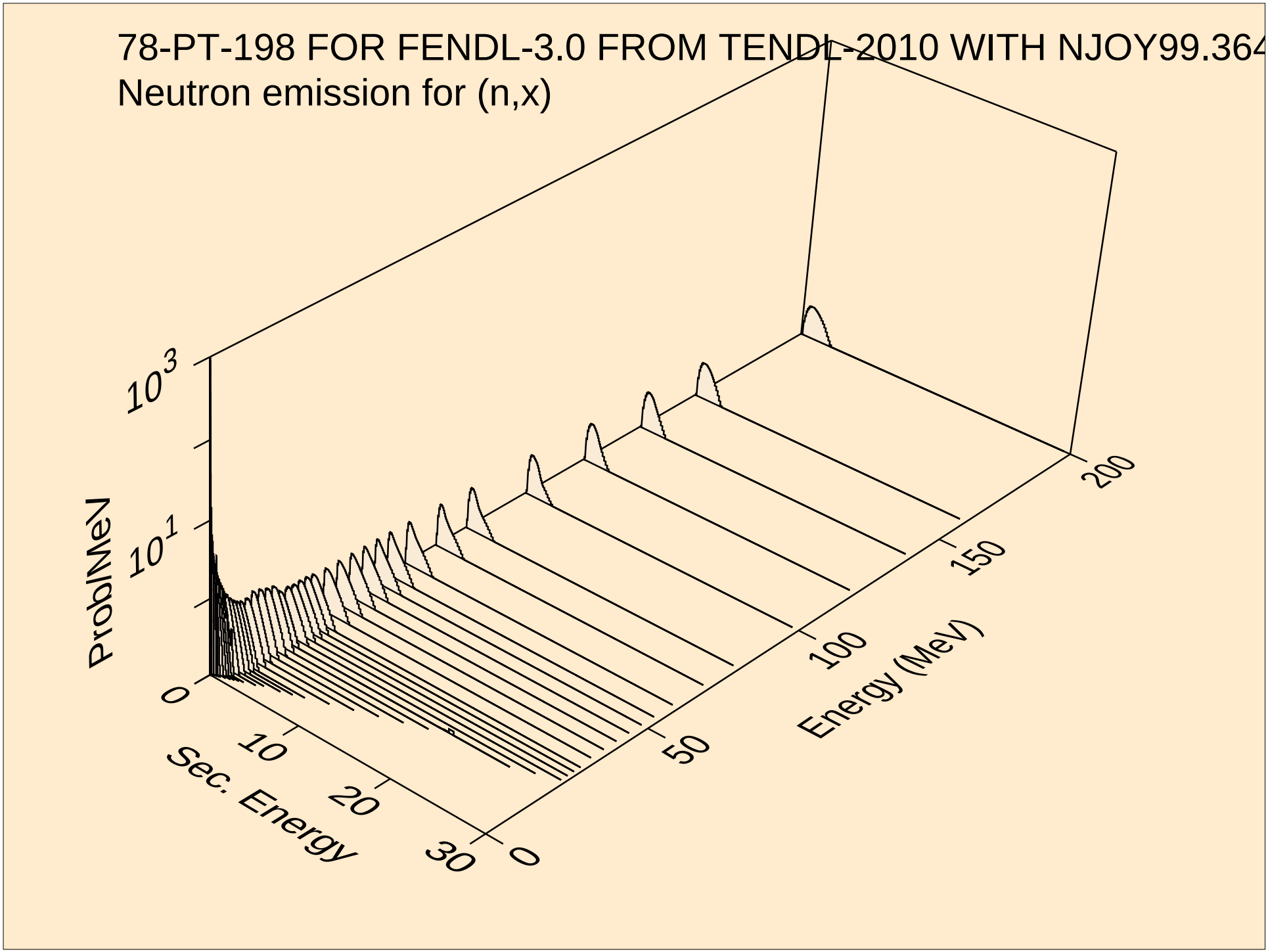

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*16)
ProbICos
10^{1}
10^{0}
10^{-1}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

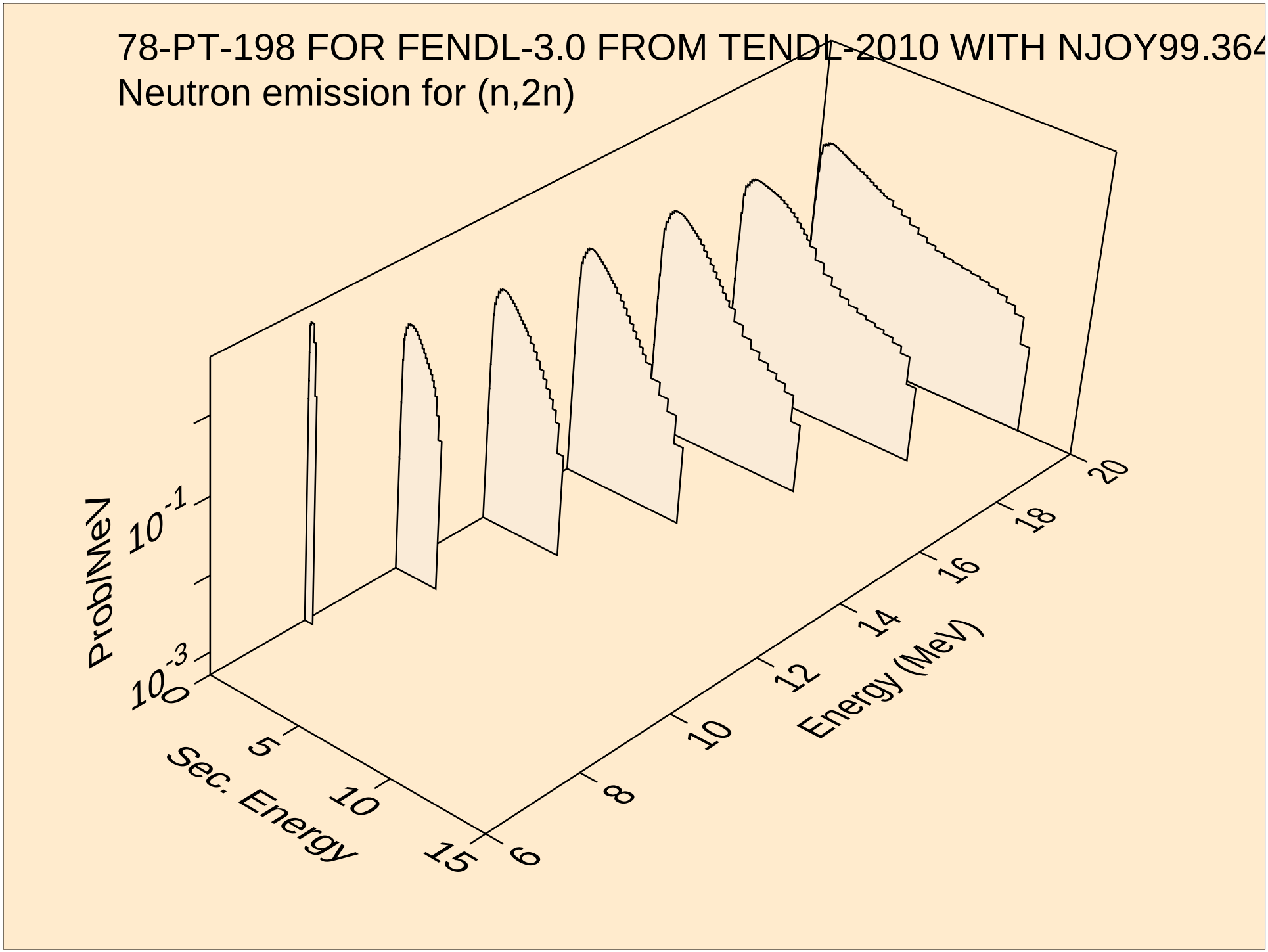

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*17)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

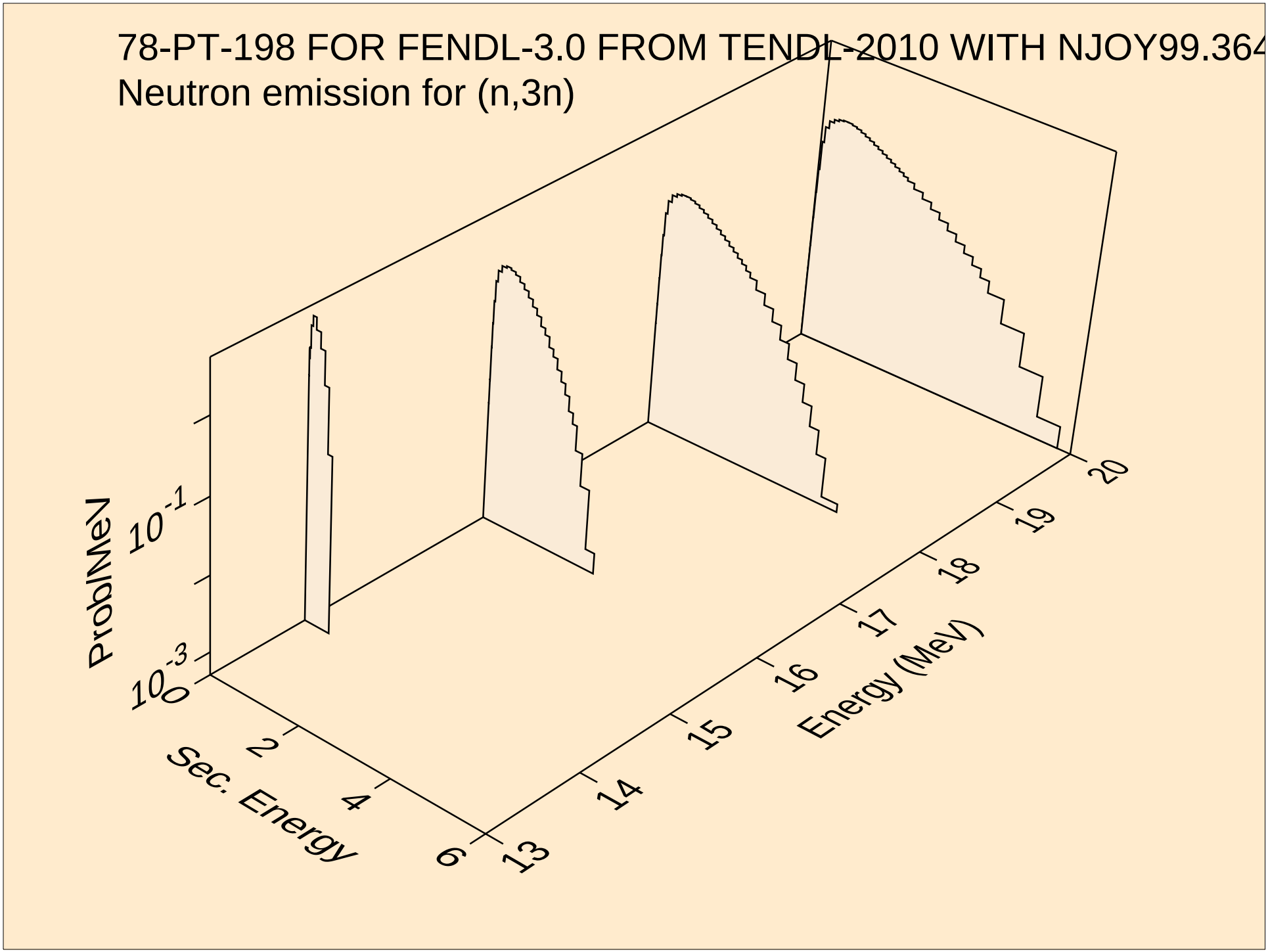

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*18)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

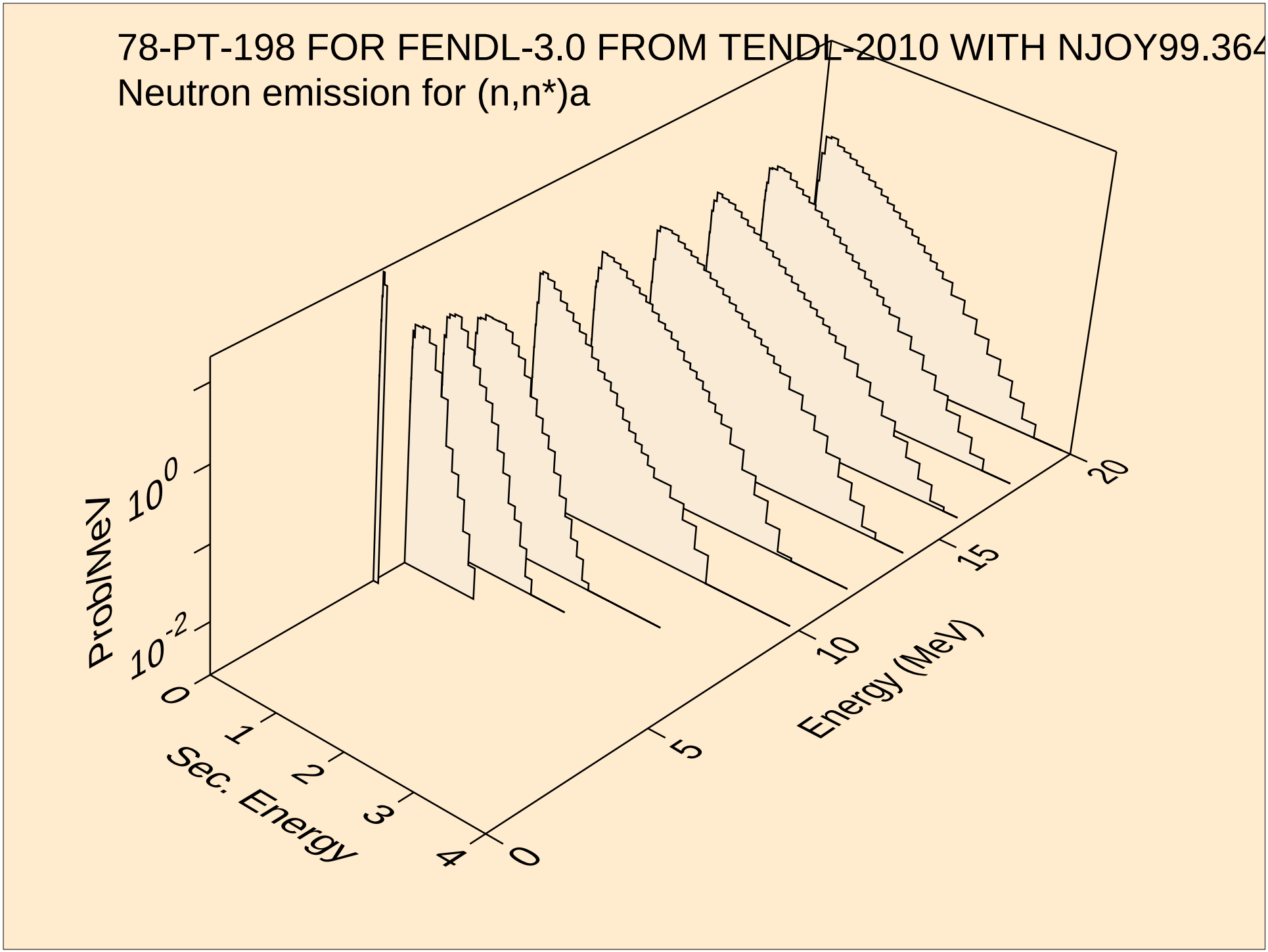

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*19)
ProbCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

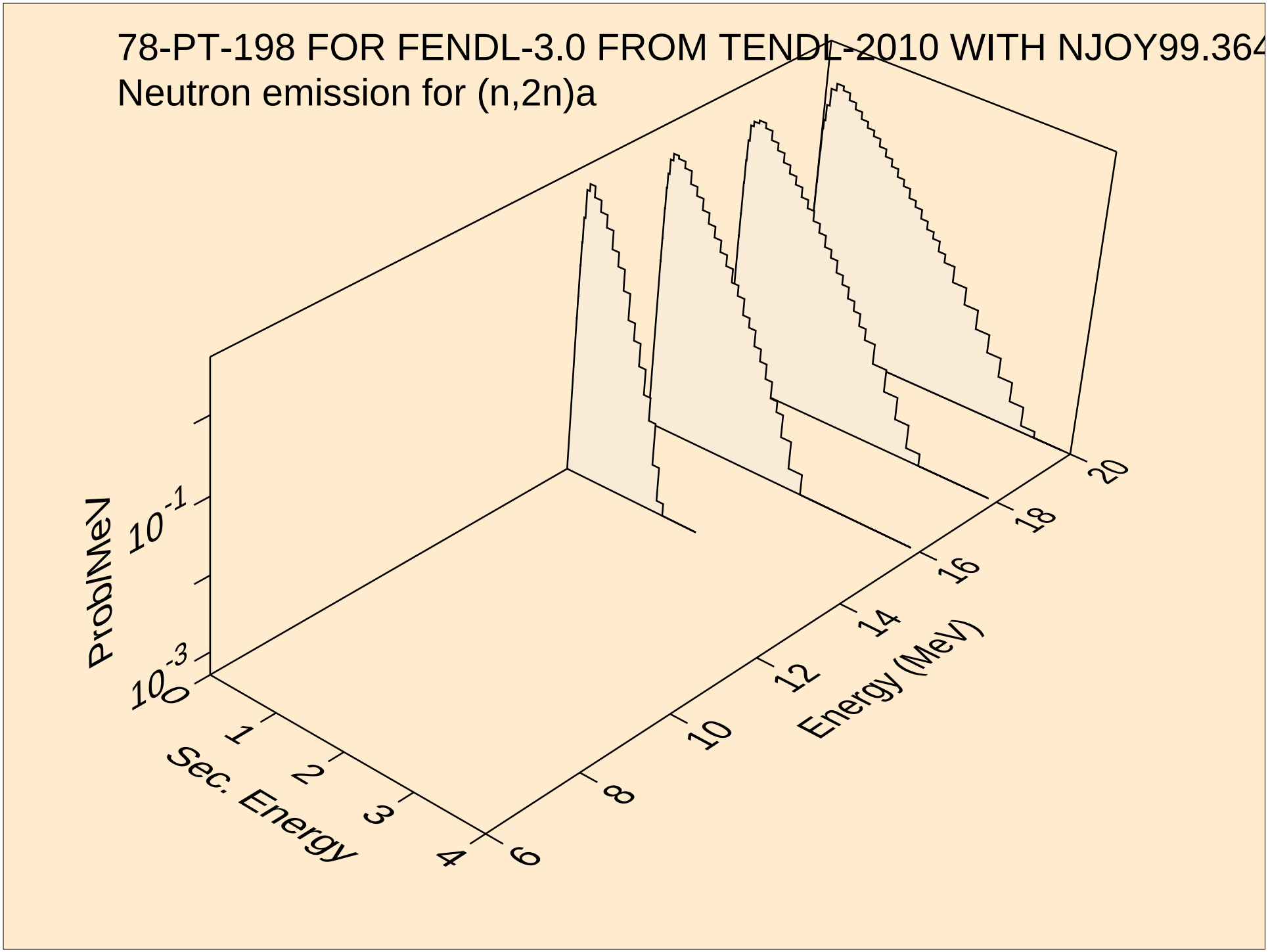

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
angular distribution for (n,n*20)
ProbICos
10^{1}
10^{0}
10^{-1}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20

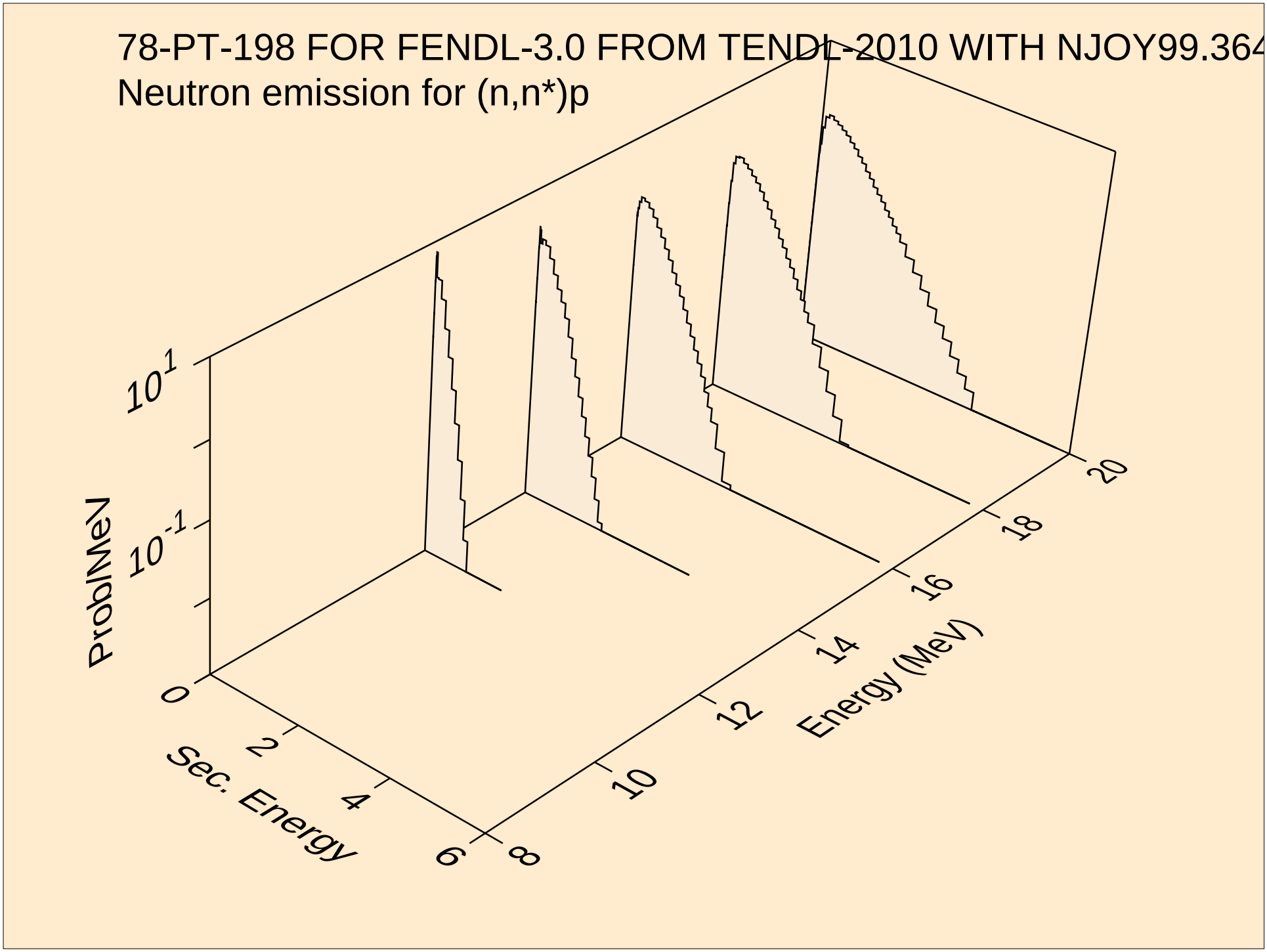

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,x)
Prob/MeV
10^3
10^1
0
10
20
30
Sec. Energy
0
50
100
150
200
Energy (MeV)

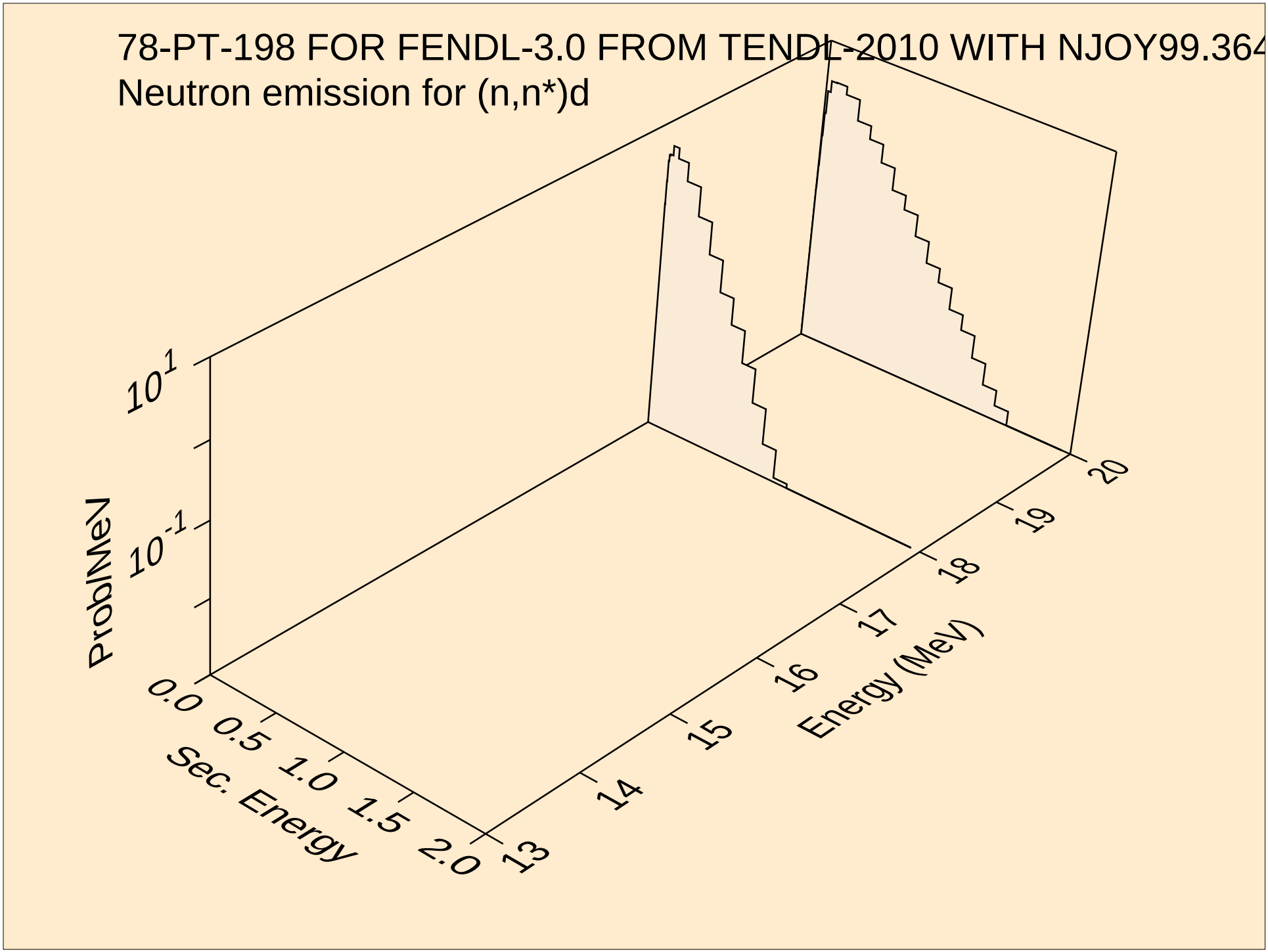

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,2n)
Prob/MeV
10-1
10-3
0
5
10
15
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)

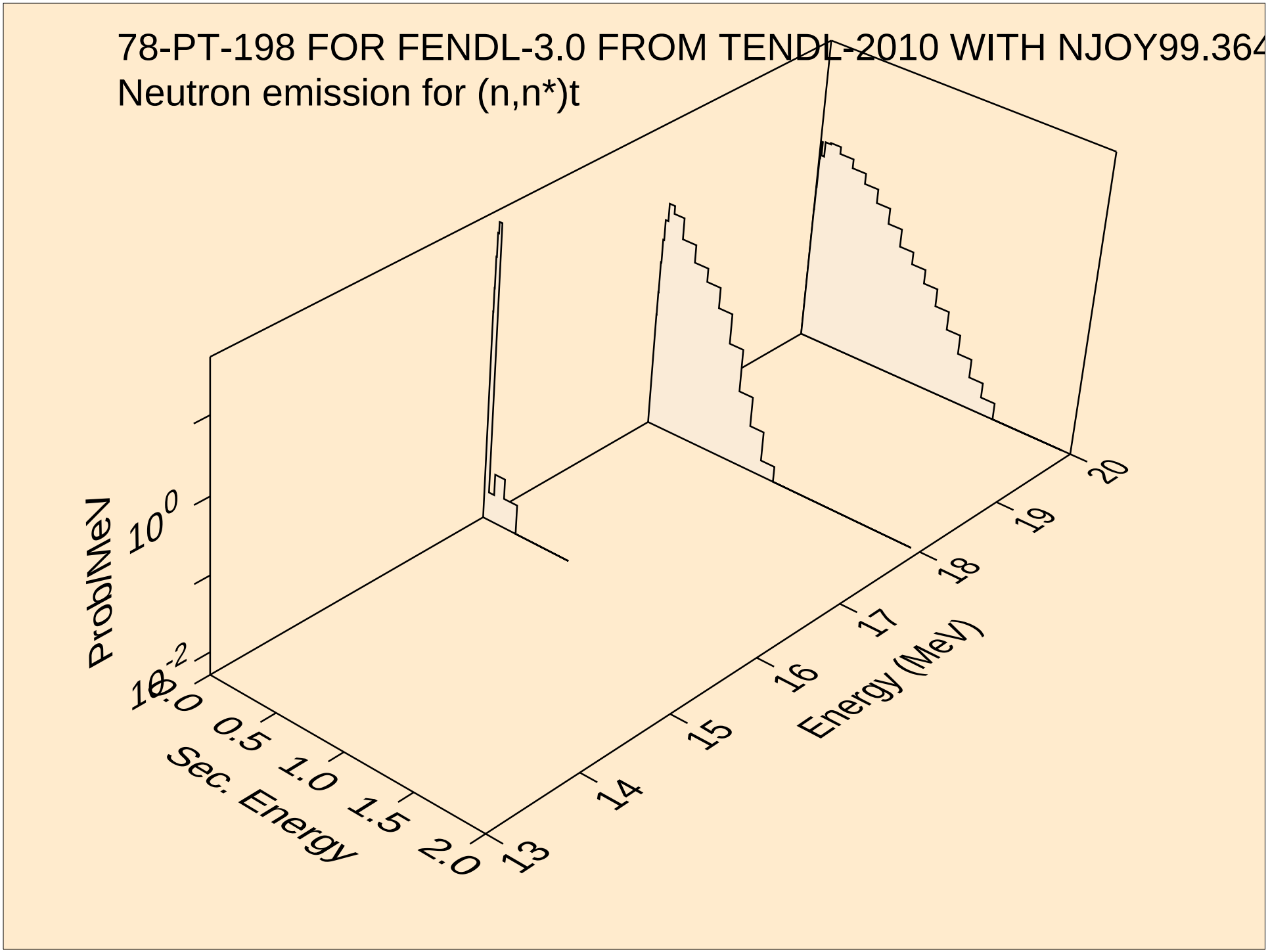

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
13
14
15
16
17
18
19
20
Energy (MeV)

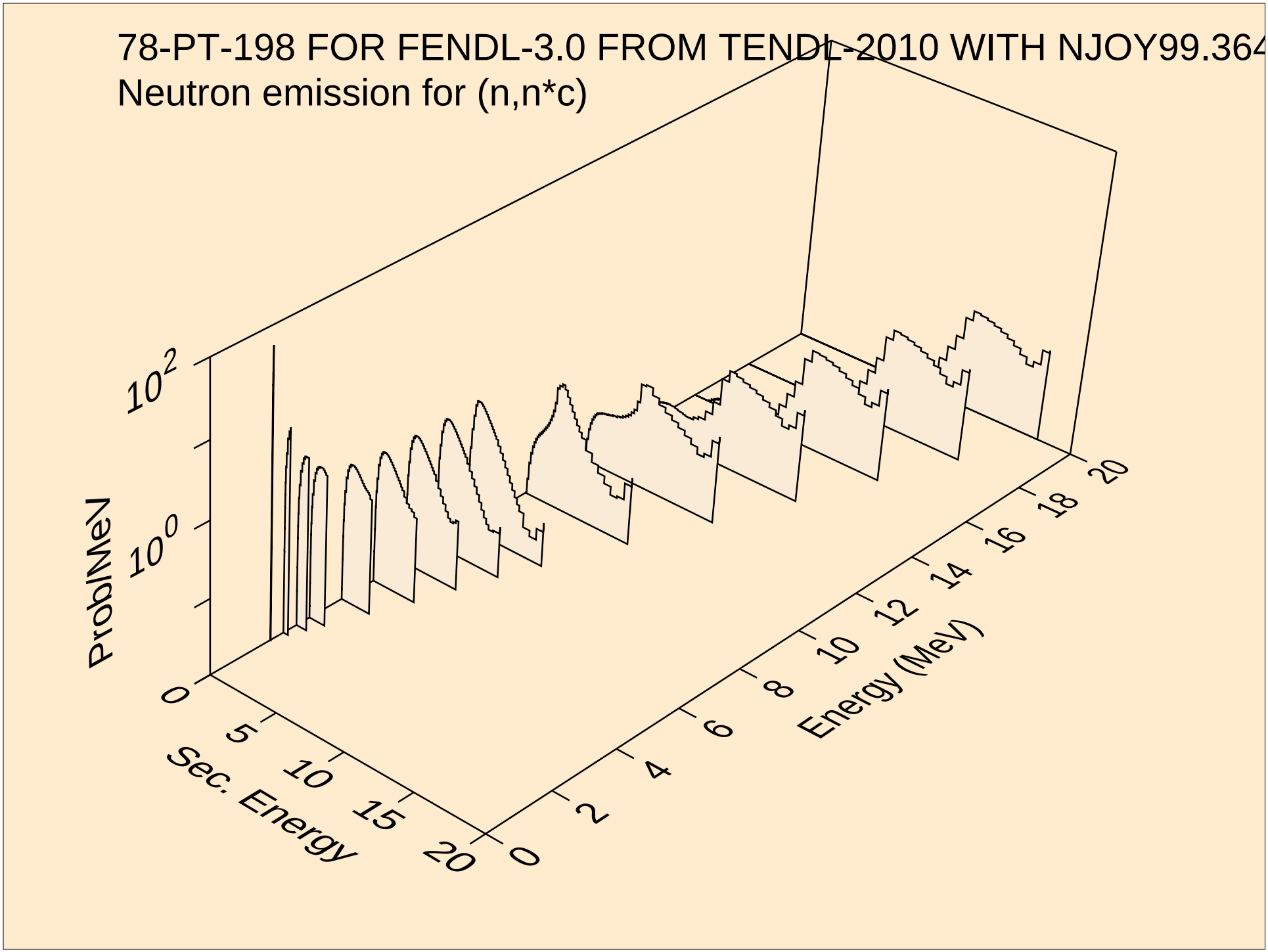

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,n*)a
Prob/MeV
10^0
10^-2
0
1
2
3
4
Sec. Energy
0
5
10
15
20
Energy (MeV)

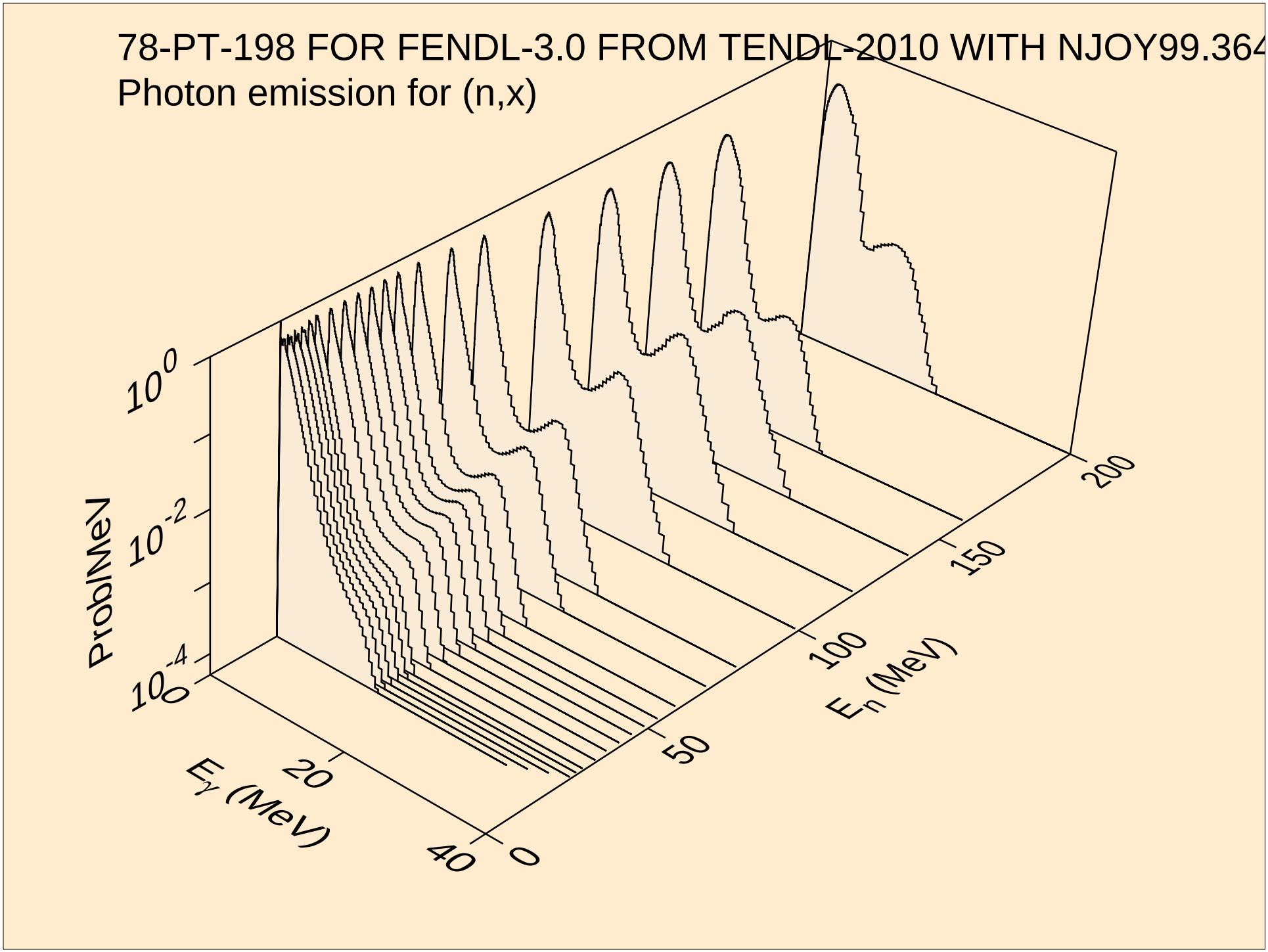

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,2n)a
Prob/MeV
10-1
10-3
0
1
2
3
4
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)

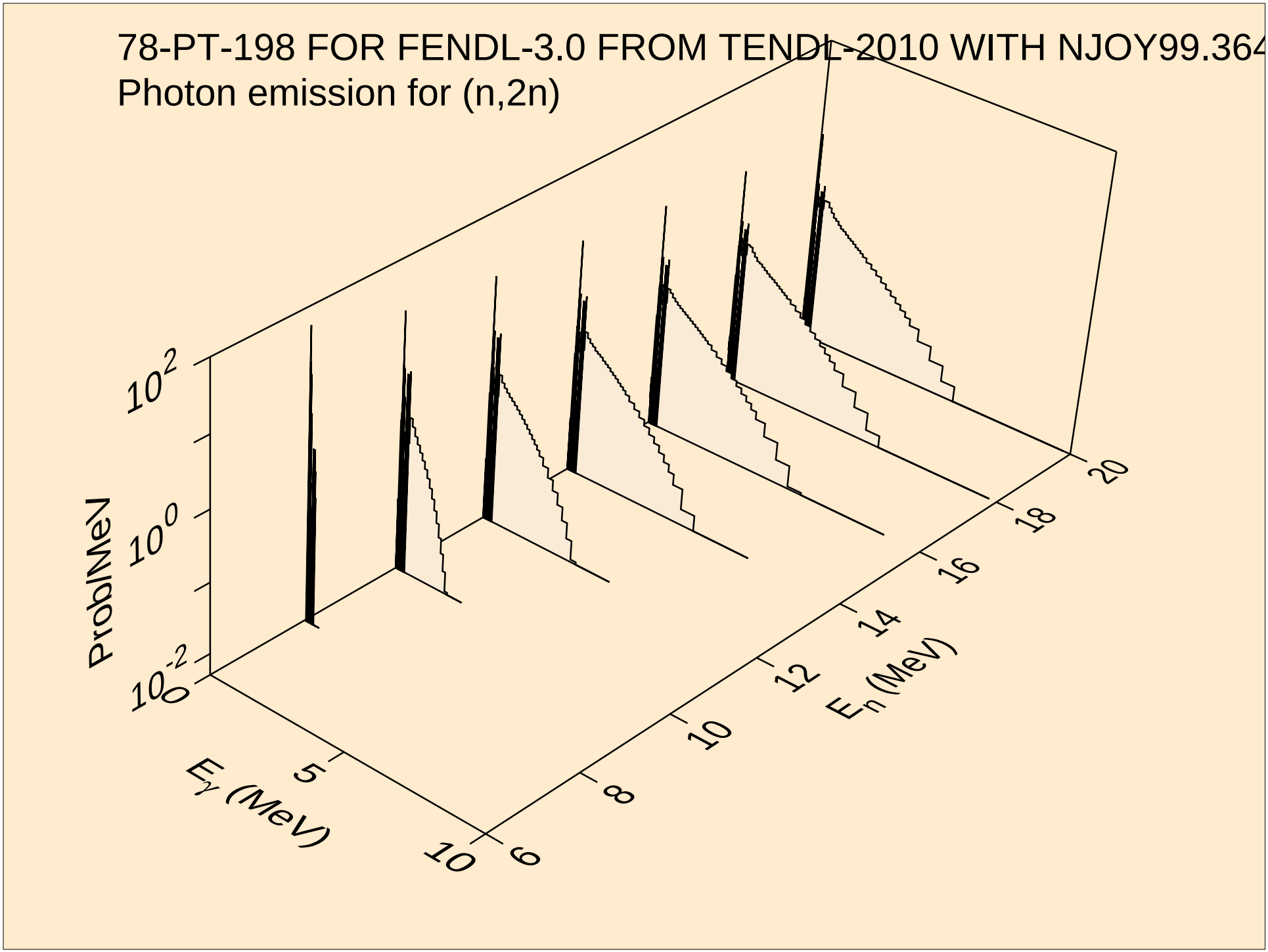

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,n*)p
Prob/MeV
10^1
10^-1
0
2
4
6
8
10
12
14
16
18
20
Sec. Energy
Energy (MeV)

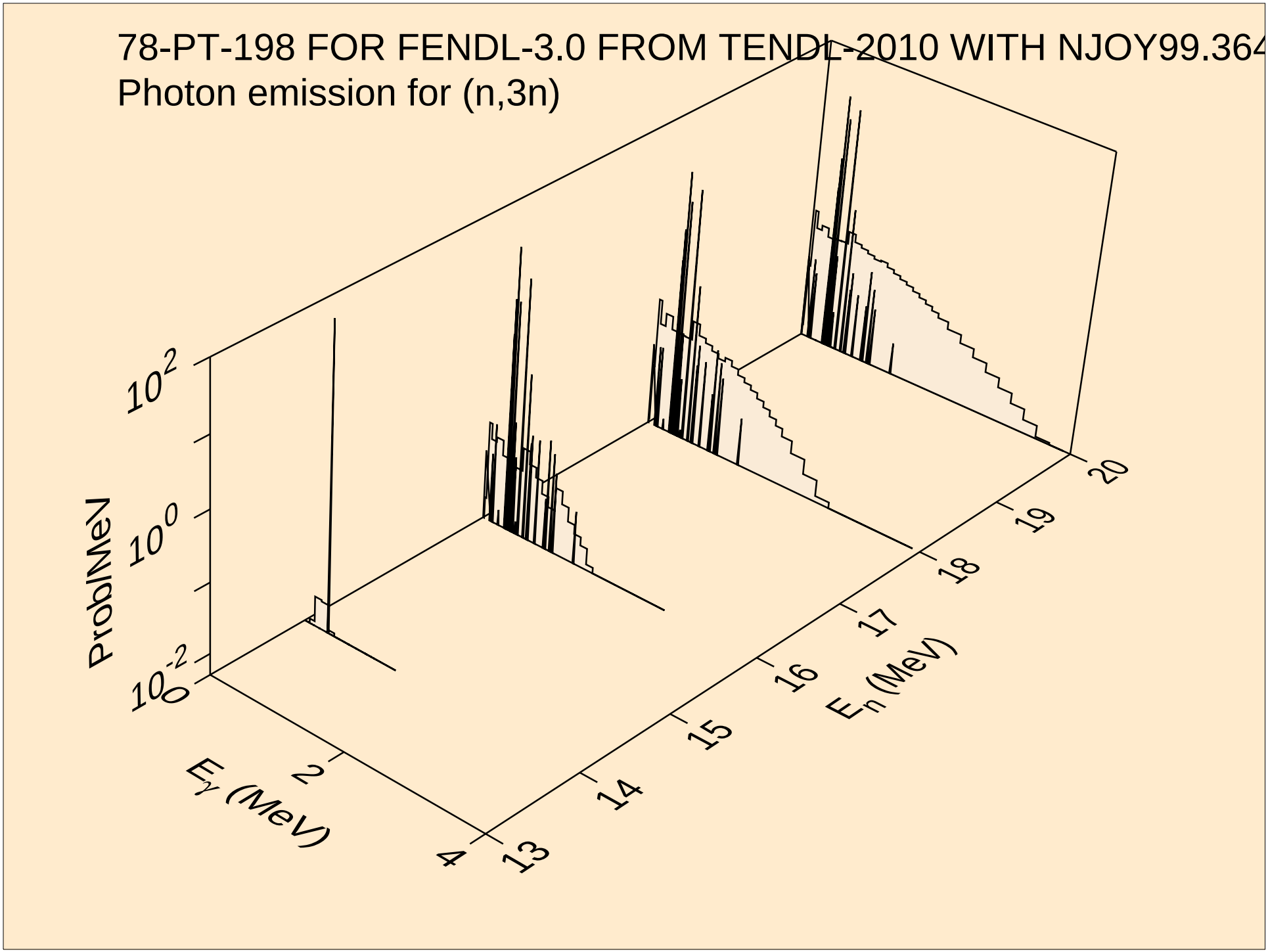

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,n*)d
Prob/MeV
10^1
10^-1
0.0
0.5
1.0
1.5
2.0
Sec. Energy
13
14
15
16
17
18
19
20
Energy (MeV)

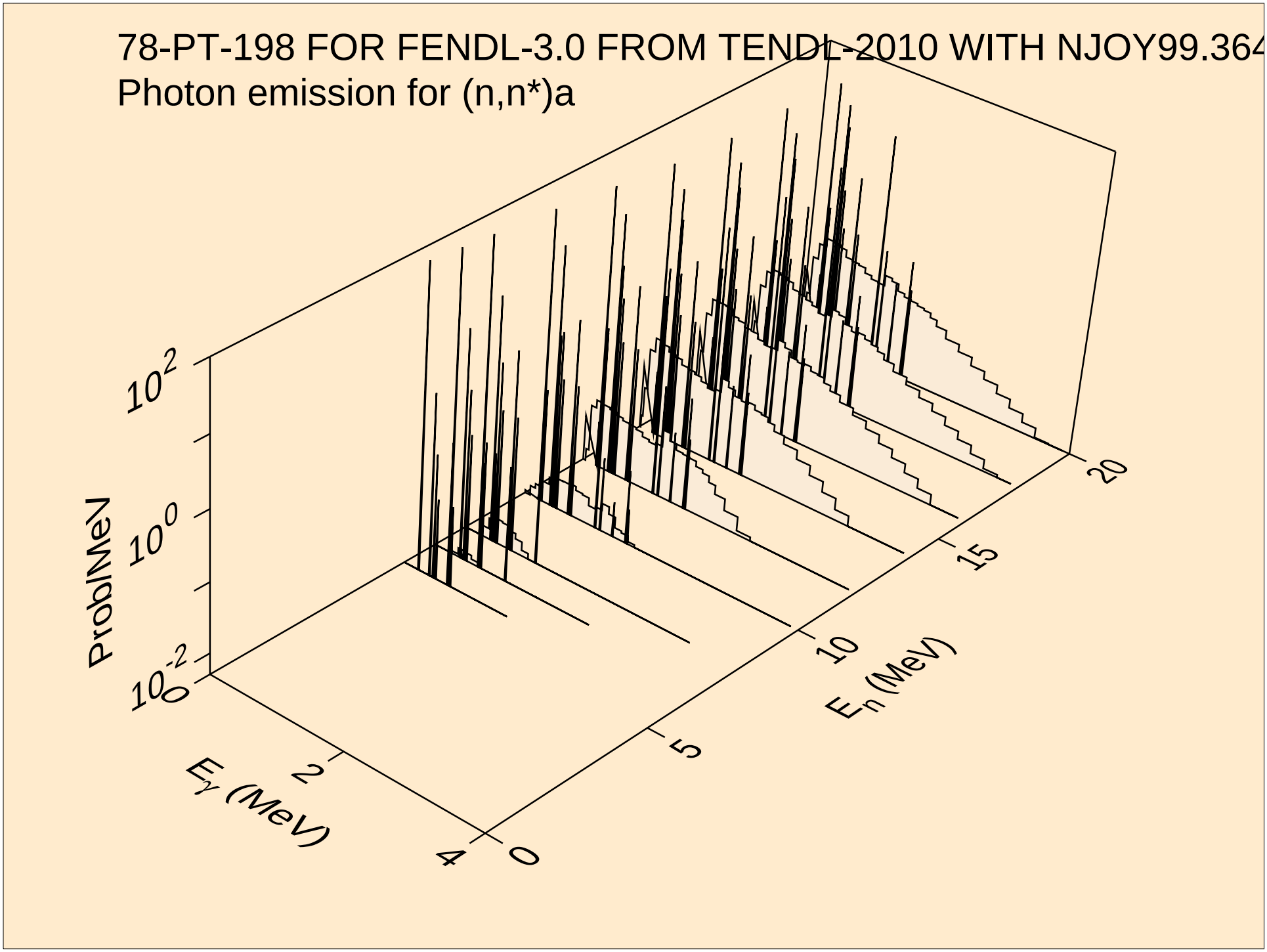

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,n*)t
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
1.5
2.0
Sec. Energy
13
14
15
16
17
18
19
20
Energy (MeV)

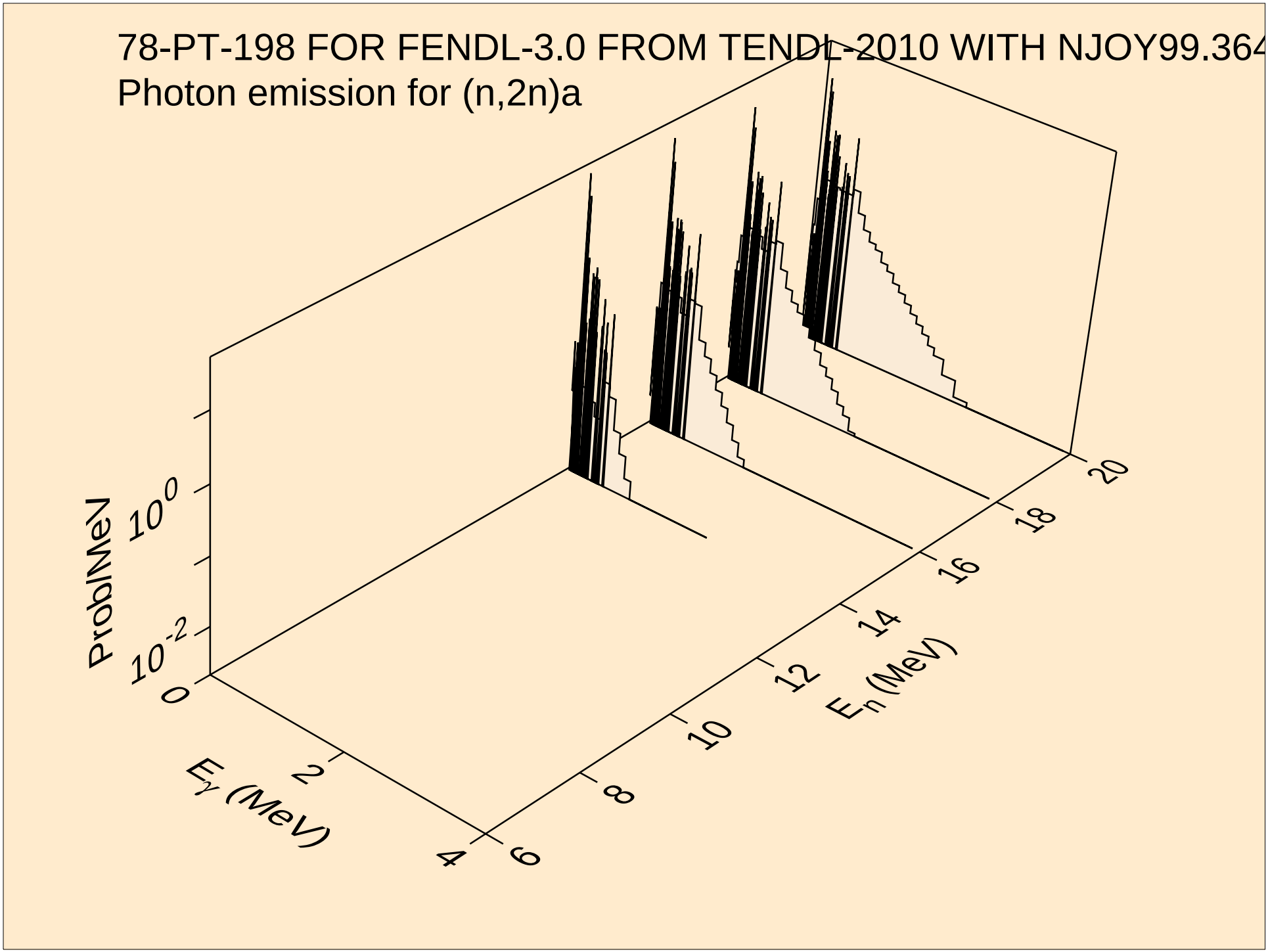

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Neutron emission for (n,n*c)
Prob/MeV
10^2
10^0
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

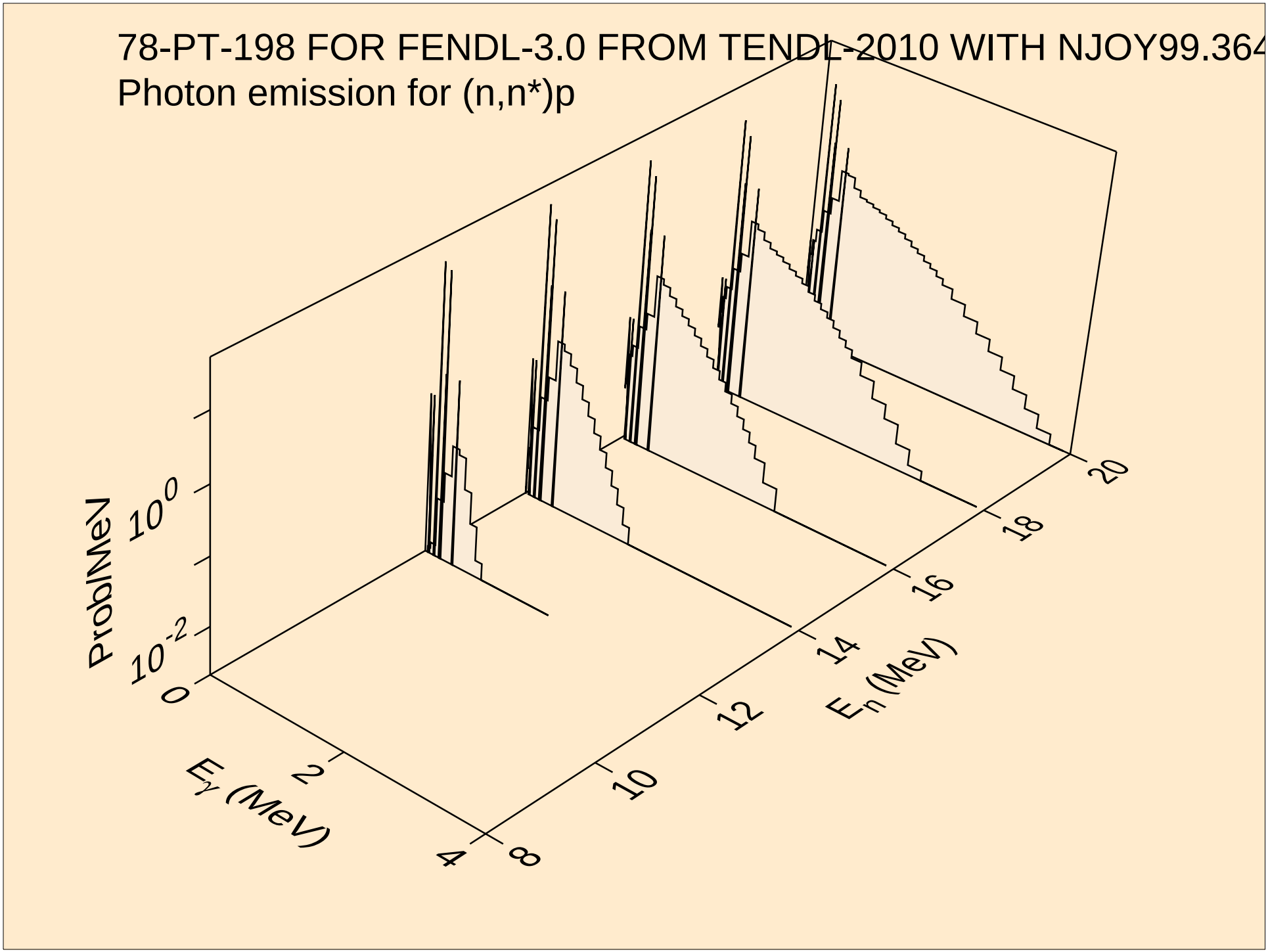

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,x)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
20
40
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

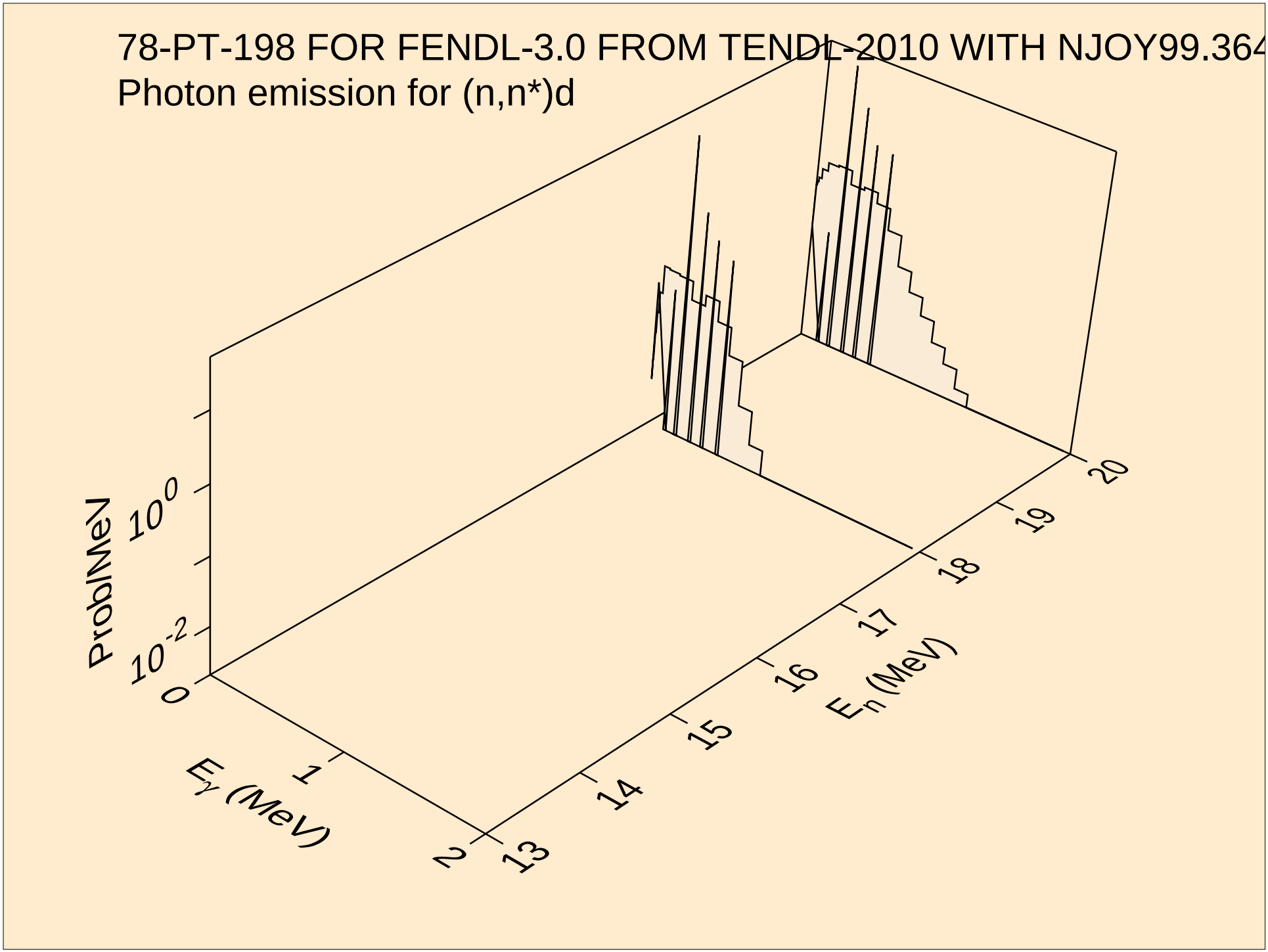

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,2n)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
6
8
10
12
14
16
18
20
E_n (MeV)

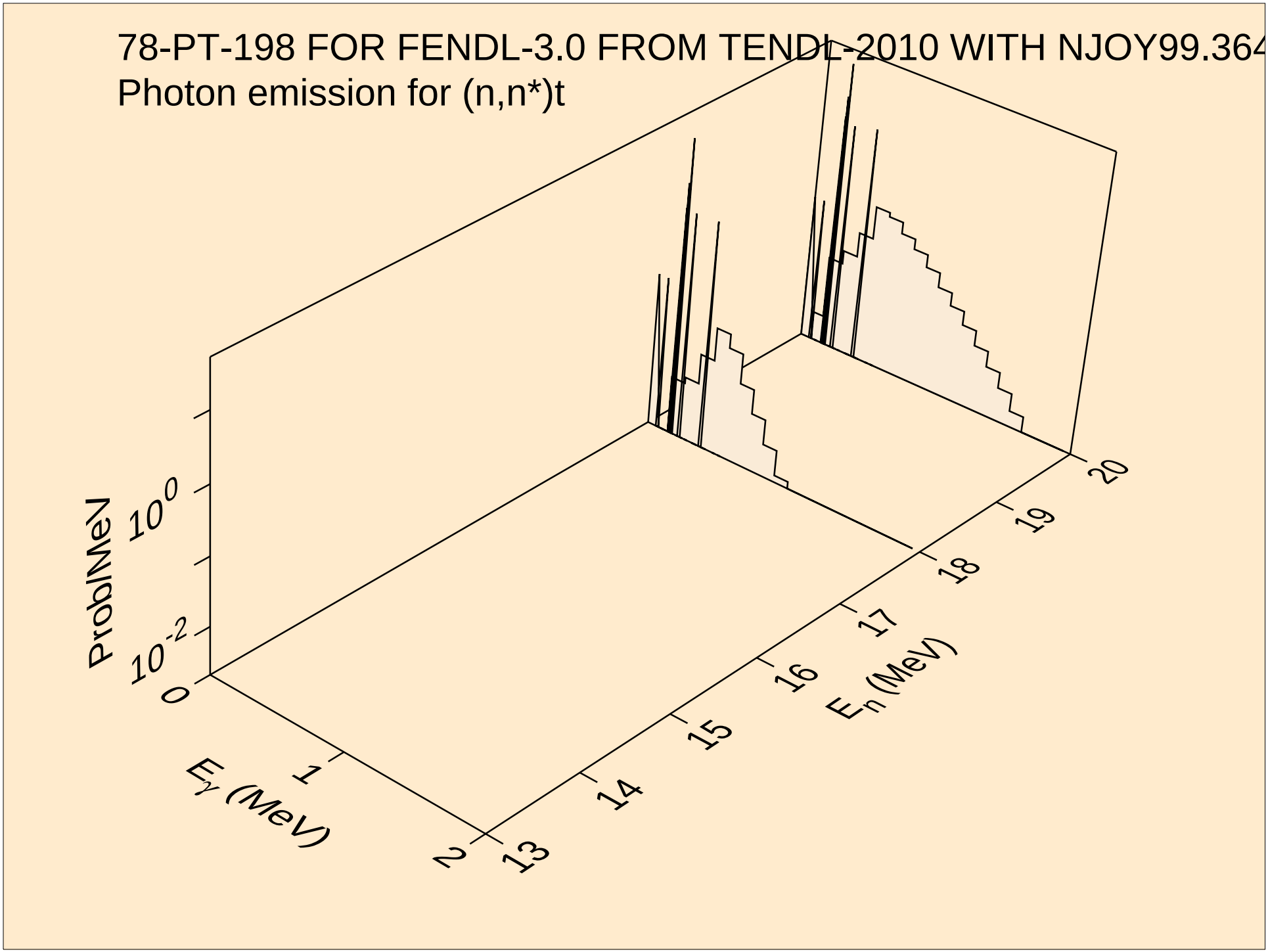

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,3n)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
2
4
E_γ (MeV)
13
14
15
16
17
18
19
20
E_n (MeV)

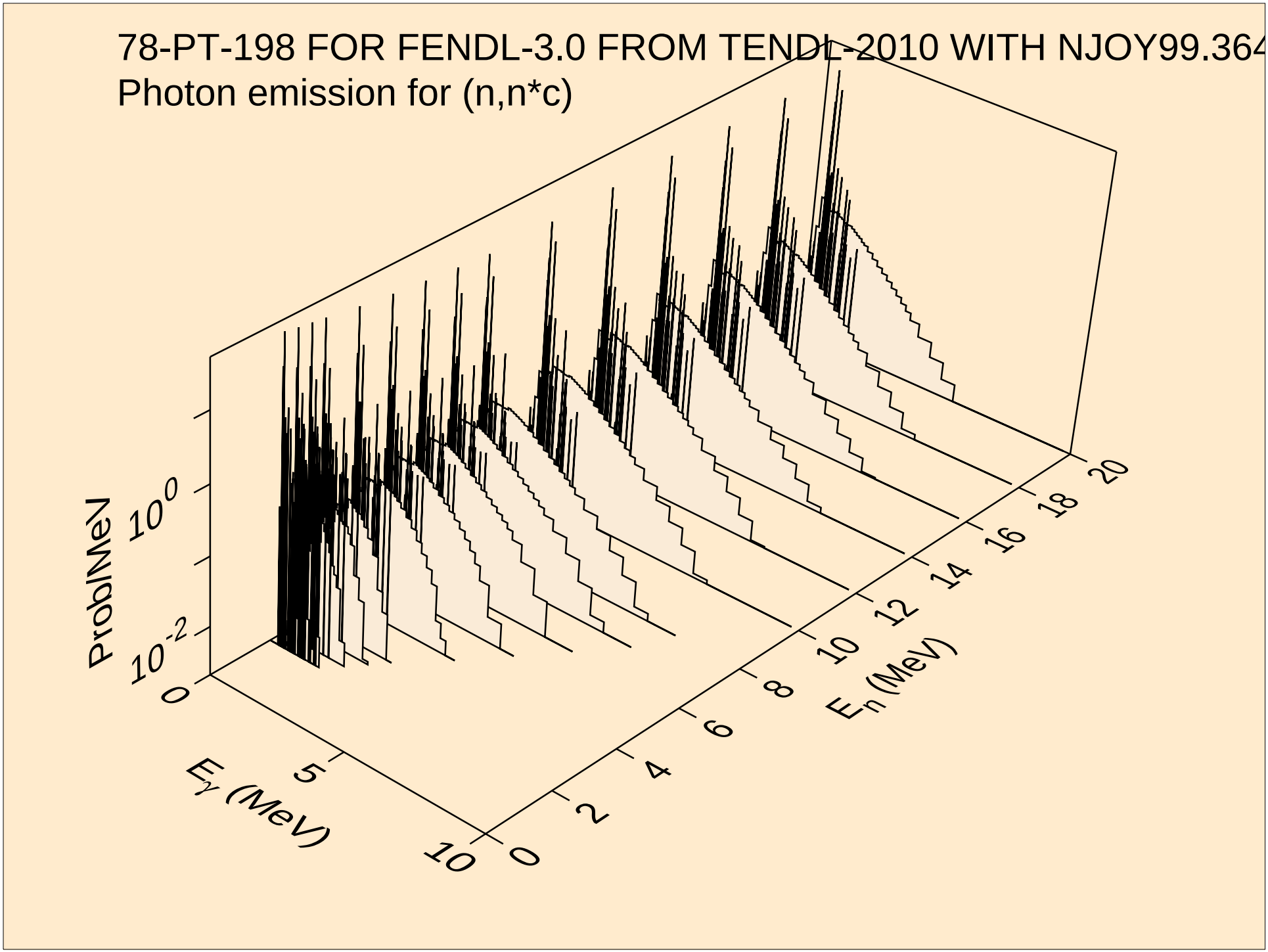

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,n*)a
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
2
4
E_γ (MeV)
5
10
15
20
E_n (MeV)

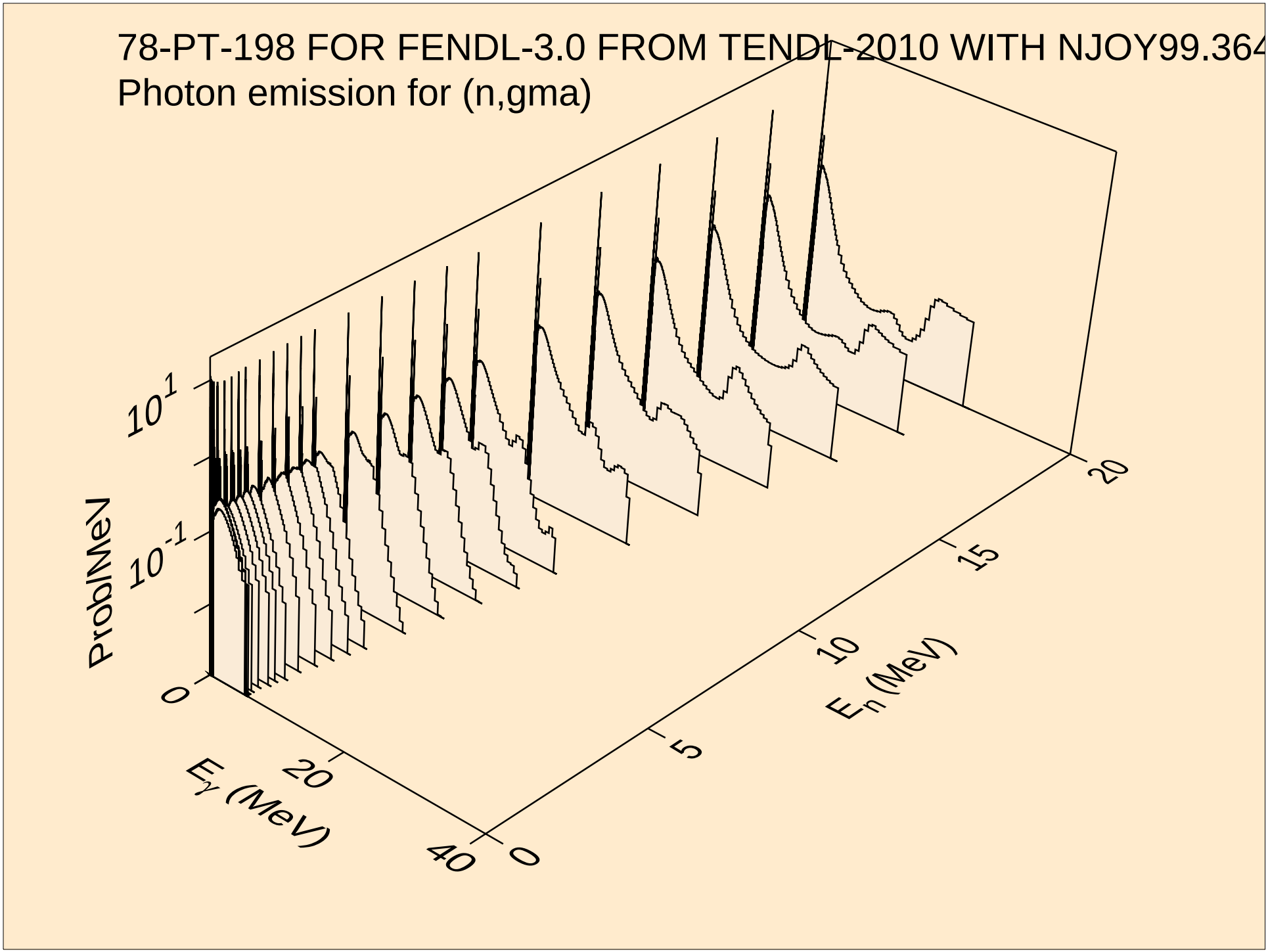

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,2n)a
Prob/MeV
10^0
10^-2
0
2
4
E_γ (MeV)
6
8
10
12
14
16
18
20
E_n (MeV)

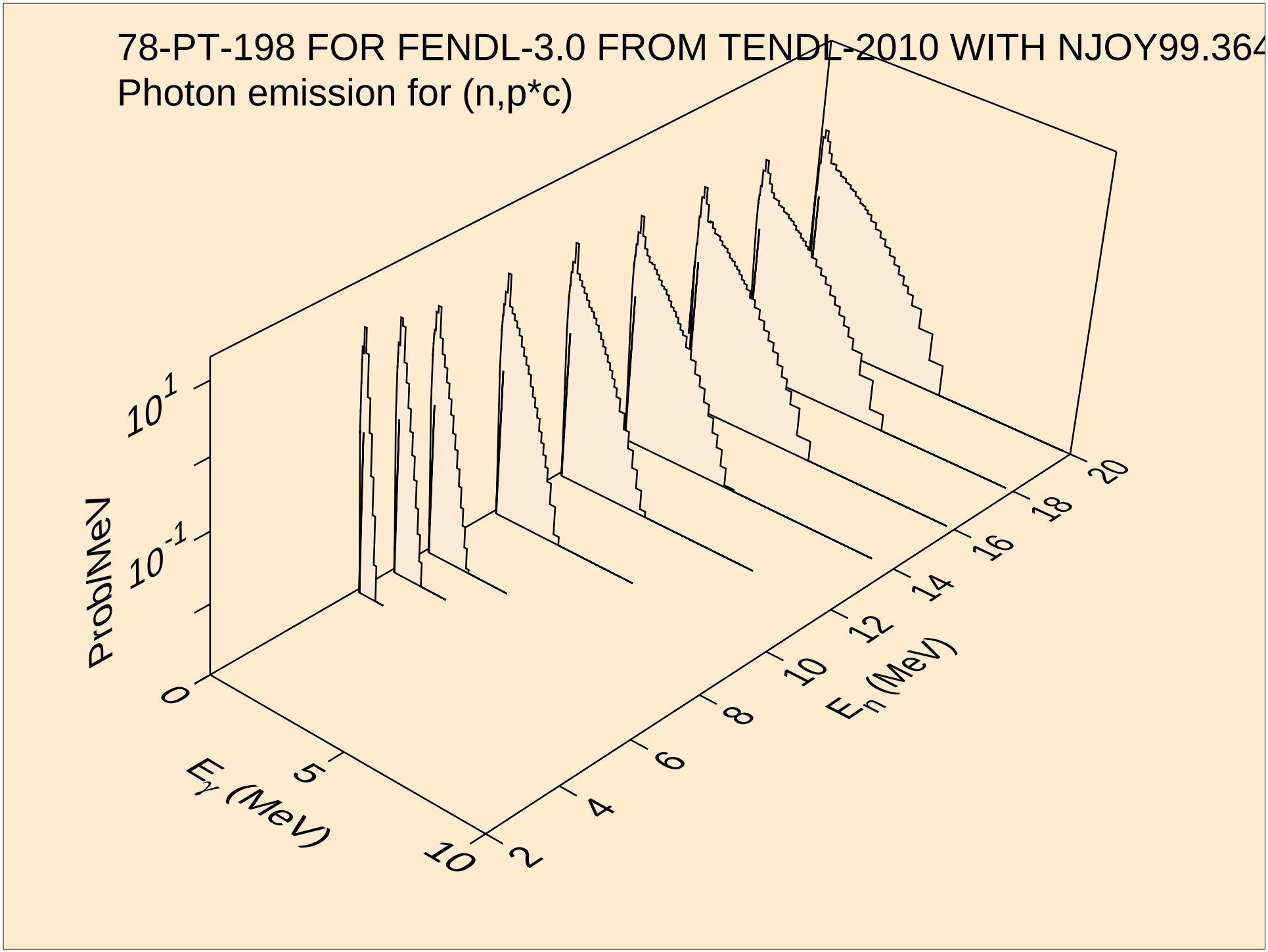

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,n*)p
Prob/MeV
10^0
10^-2
0
2
4
E_γ (MeV)
8
10
12
14
16
18
20
E_n (MeV)

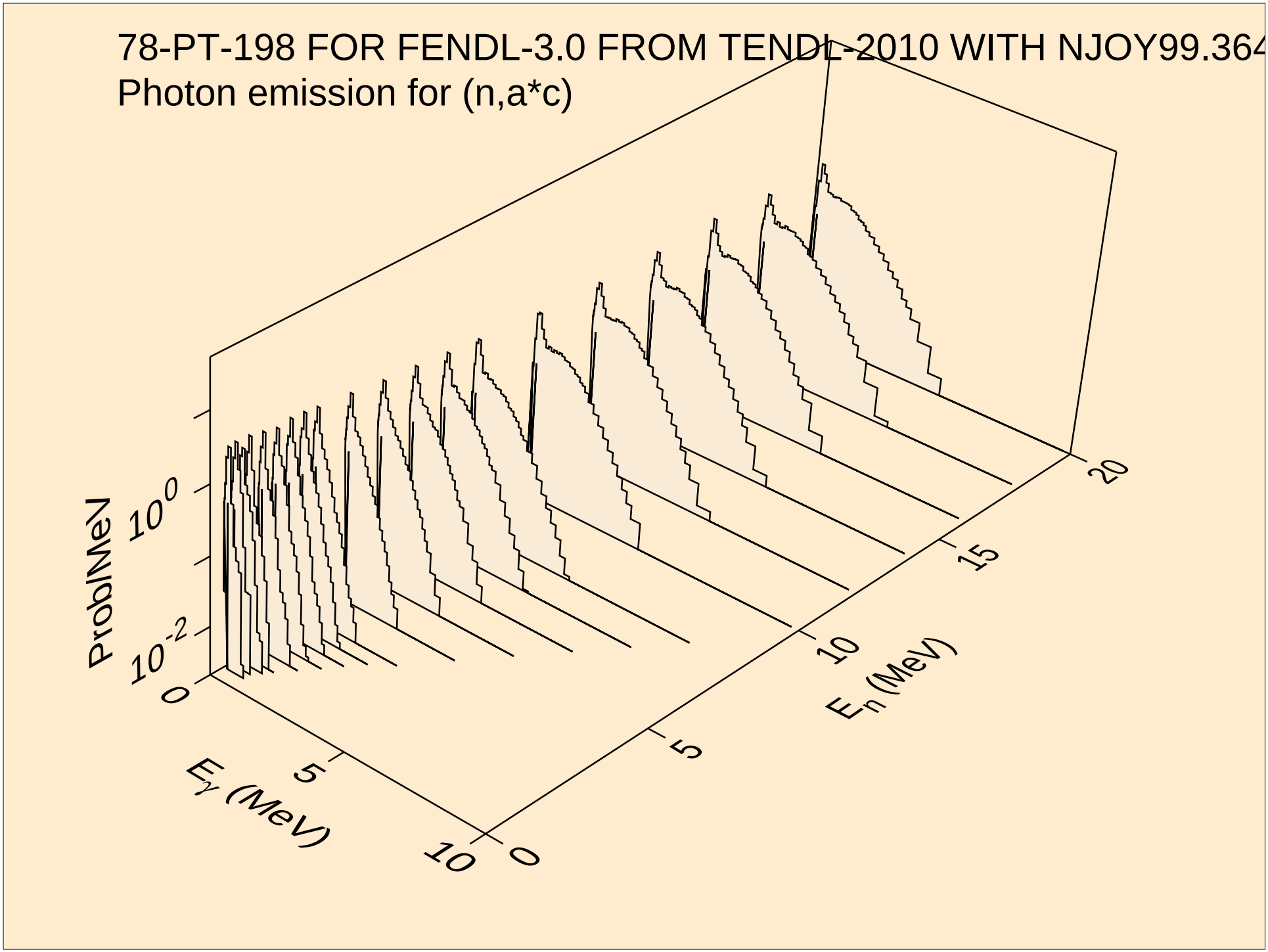

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,n*)d
Prob/MeV
10^0
10^-2
0
1
2
Eγ (MeV)
13
14
15
16
17
18
19
20
En (MeV)

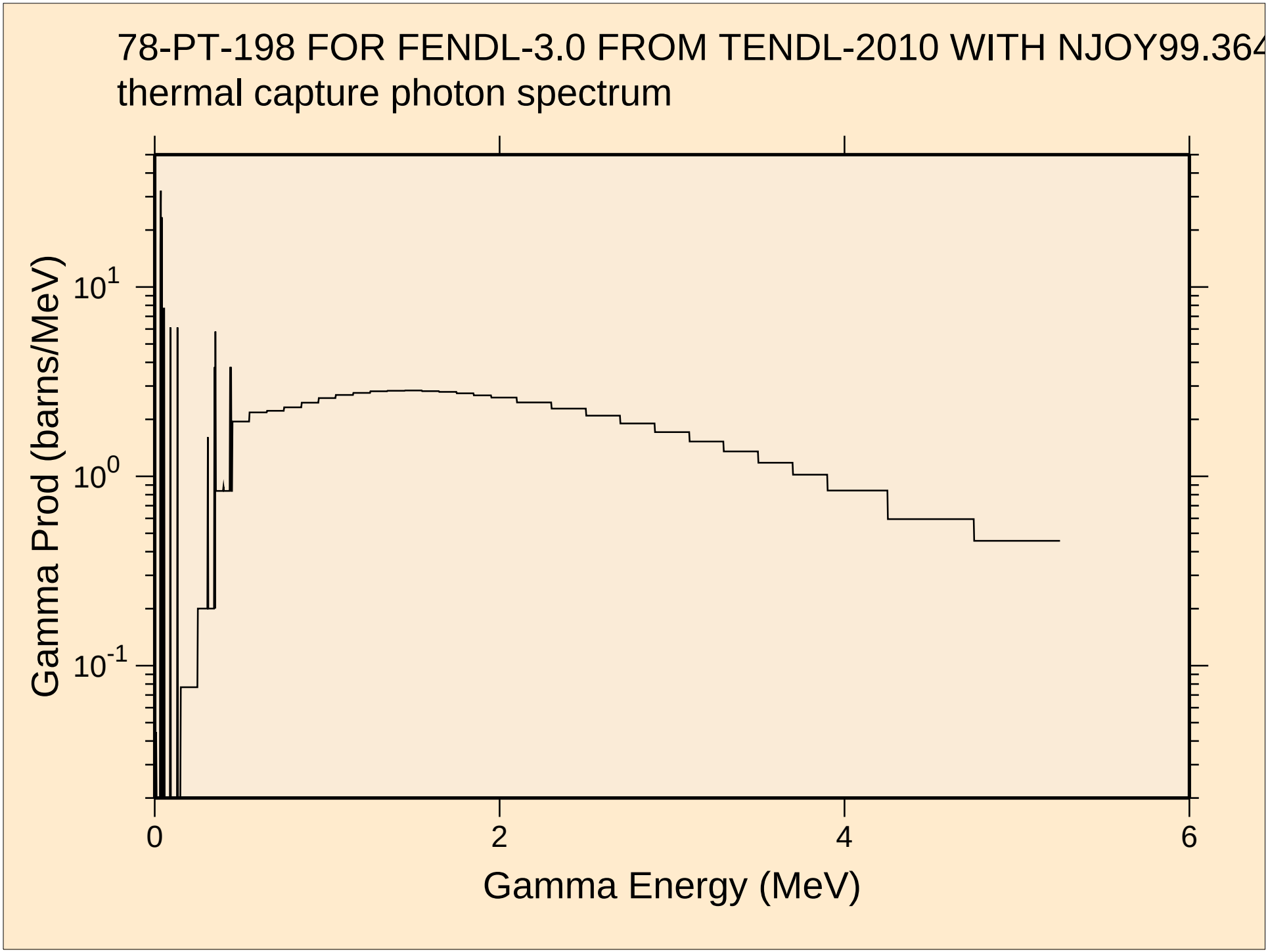

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,n*)t
Prob/MeV
10^0
10^-2
0
1
2
E_γ (MeV)
13
14
15
16
17
18
19
20
E_n (MeV)

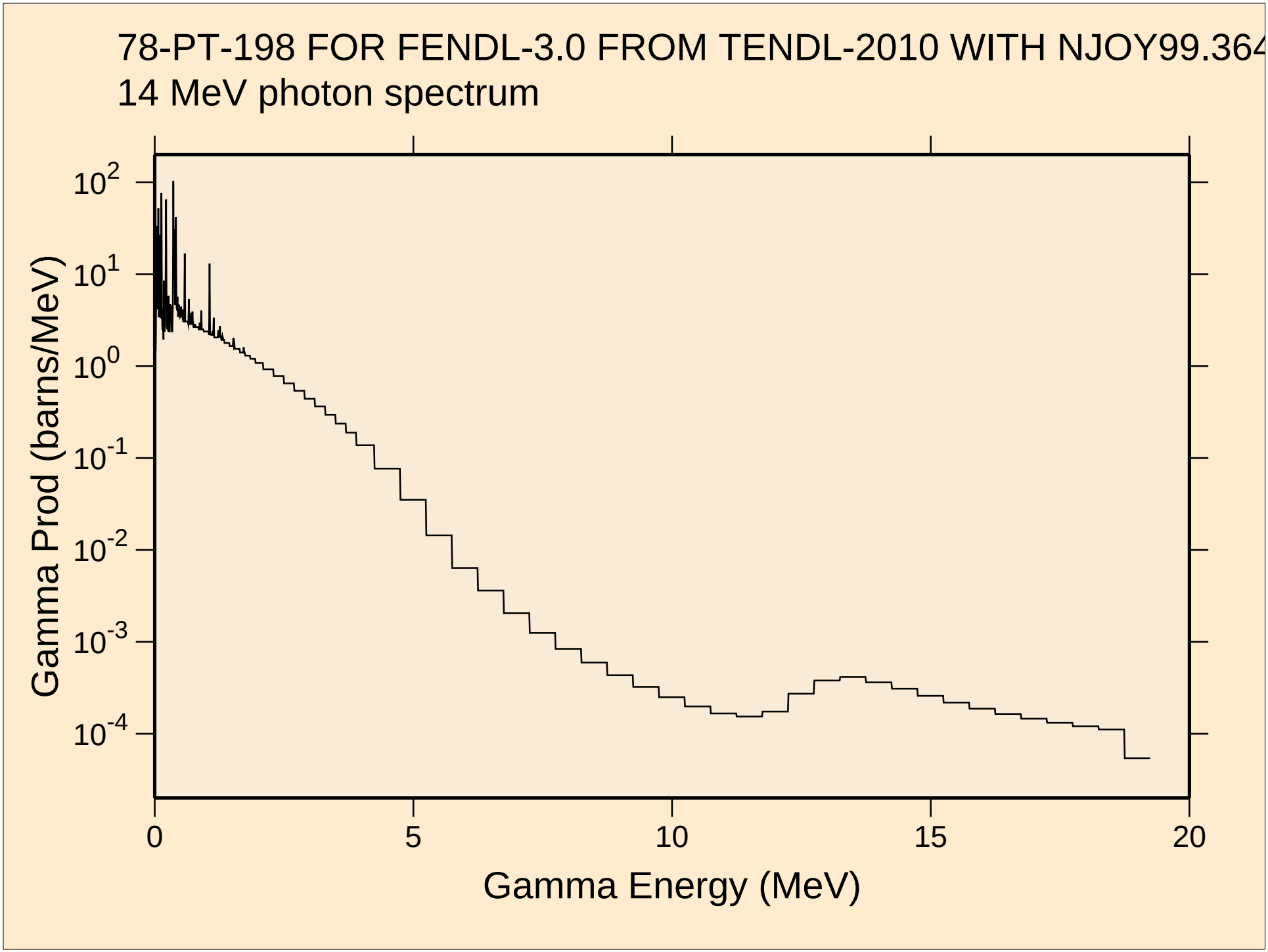

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,n*c)
Prob/MeV
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
0
2
4
6
8
10
12
14
16
18
20
E_n (MeV)

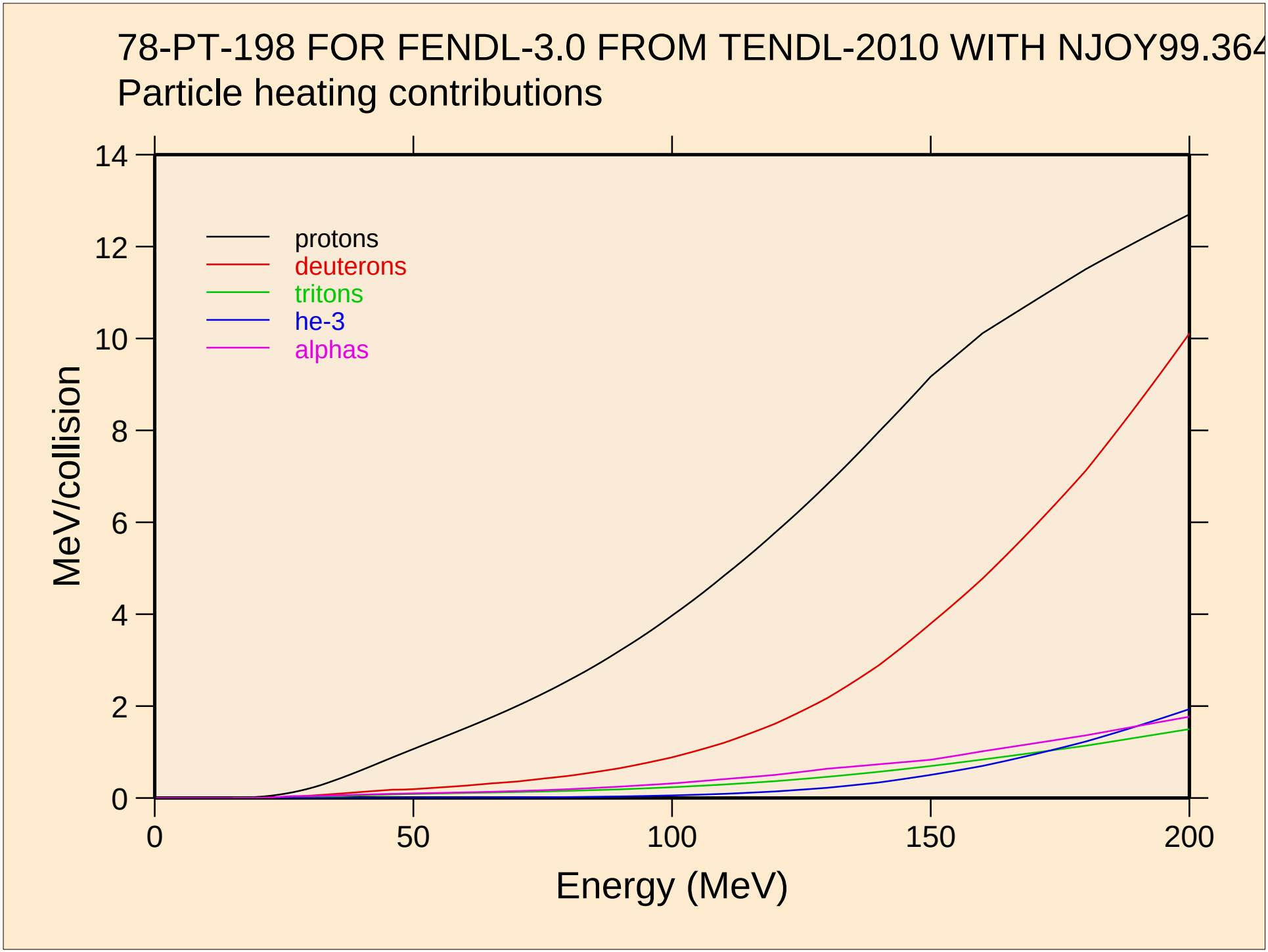

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,gma)
Prob/MeV
10^{1}
10^{-1}
0
20
40
E_γ (MeV)
0
5
10
15
20
E_n (MeV)

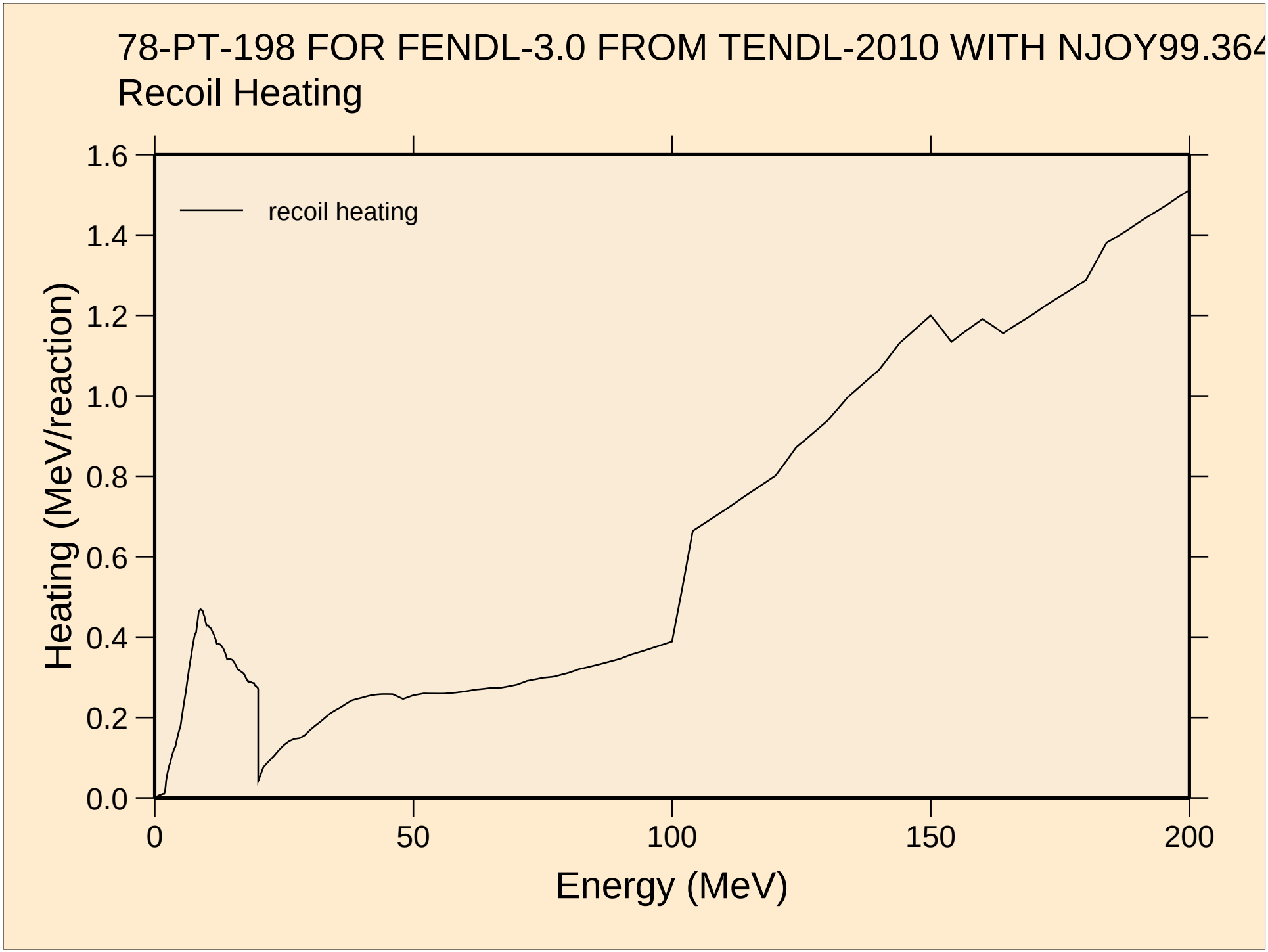

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,p*c)
Prob/MeV
10^{1}
10^{-1}
0
5
10
E_γ (MeV)
2
4
6
8
10
12
14
16
18
20
E_n (MeV)

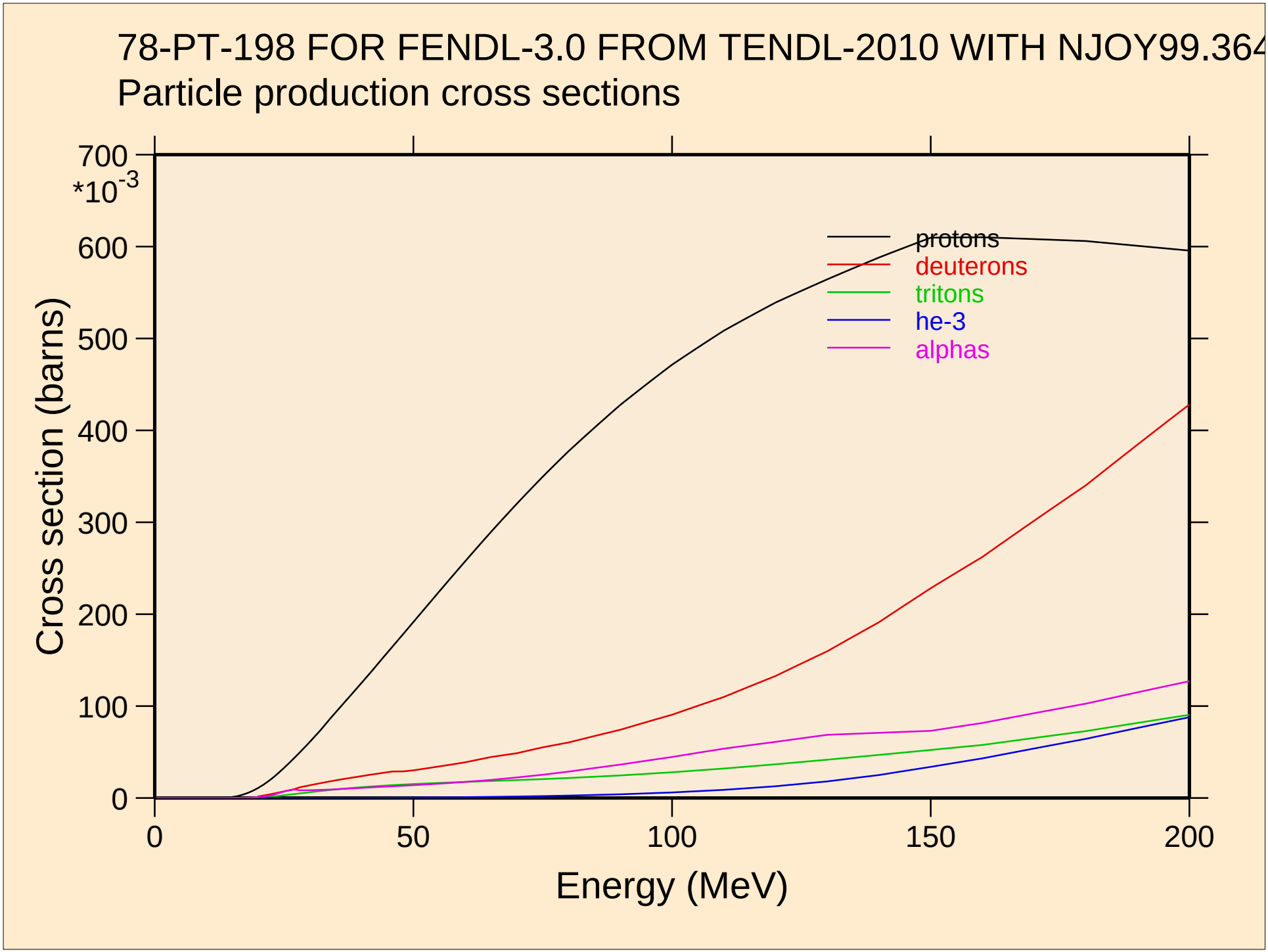

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Photon emission for (n,a*c)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
E_n (MeV)

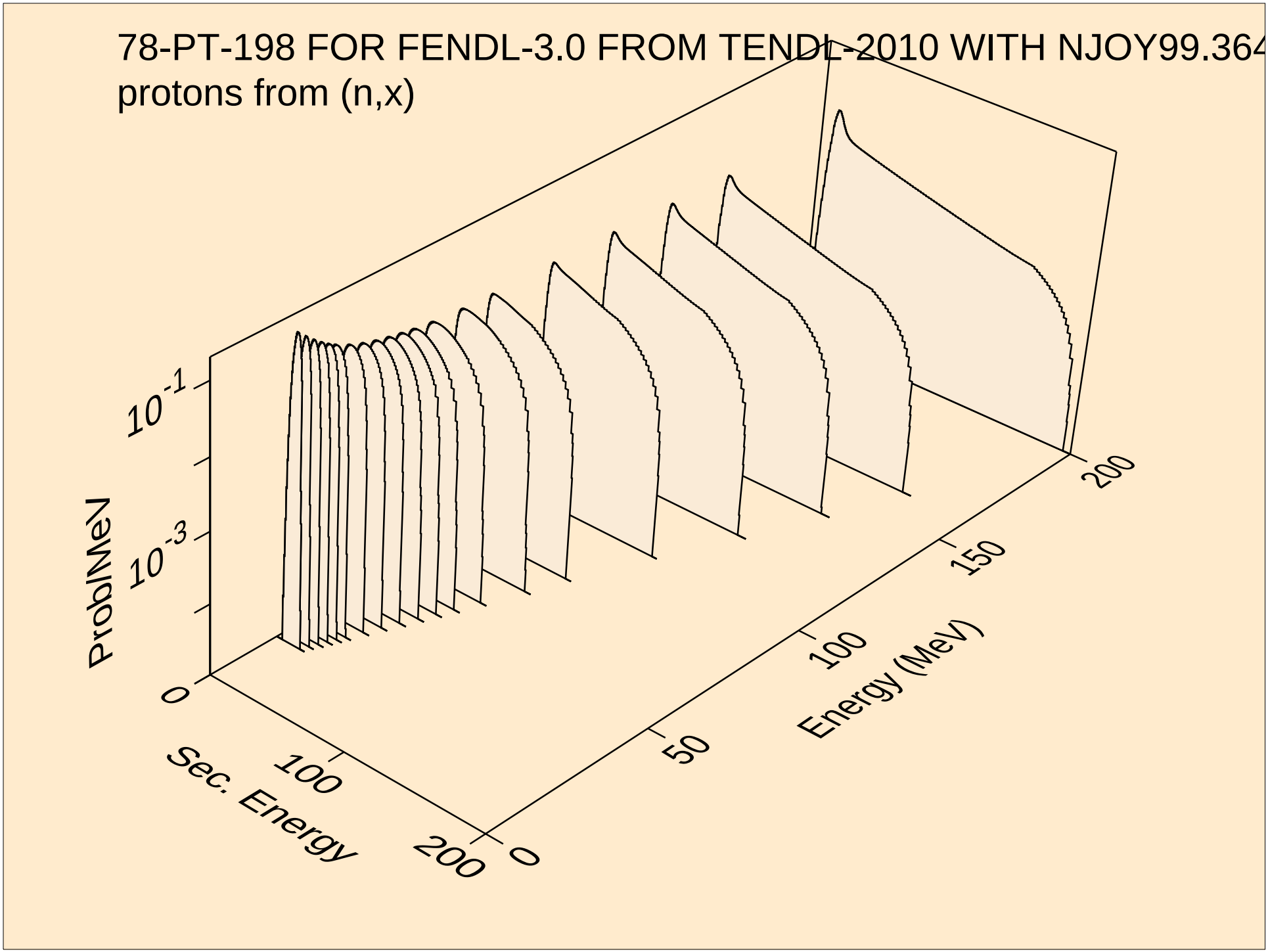

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^1
10^0
10^-1
0
2
4
6
Gamma Energy (MeV)

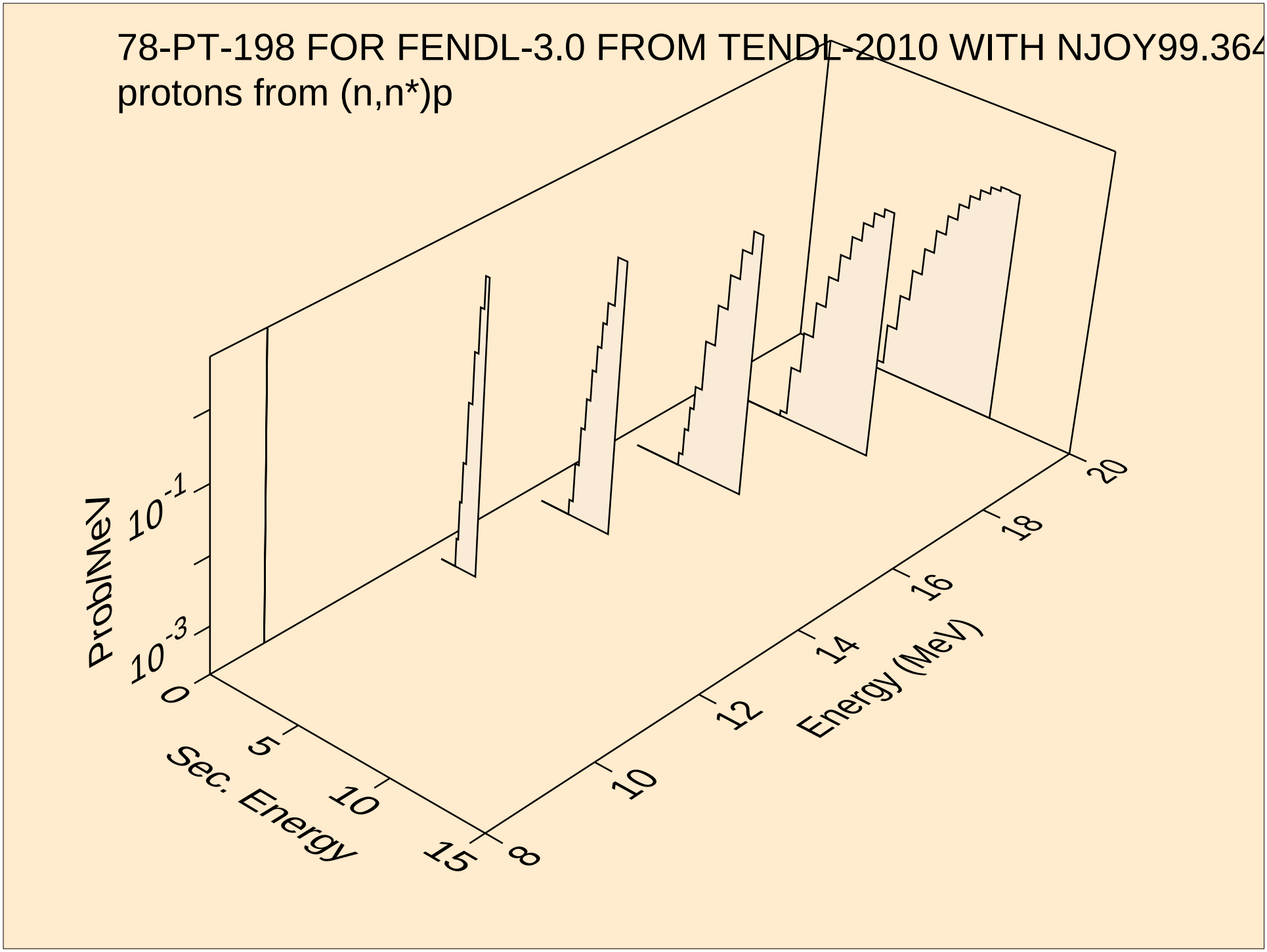

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^2
10^1
10^0
10^-1
10^-2
10^-3
10^-4
0
5
10
15
20
Gamma Energy (MeV)

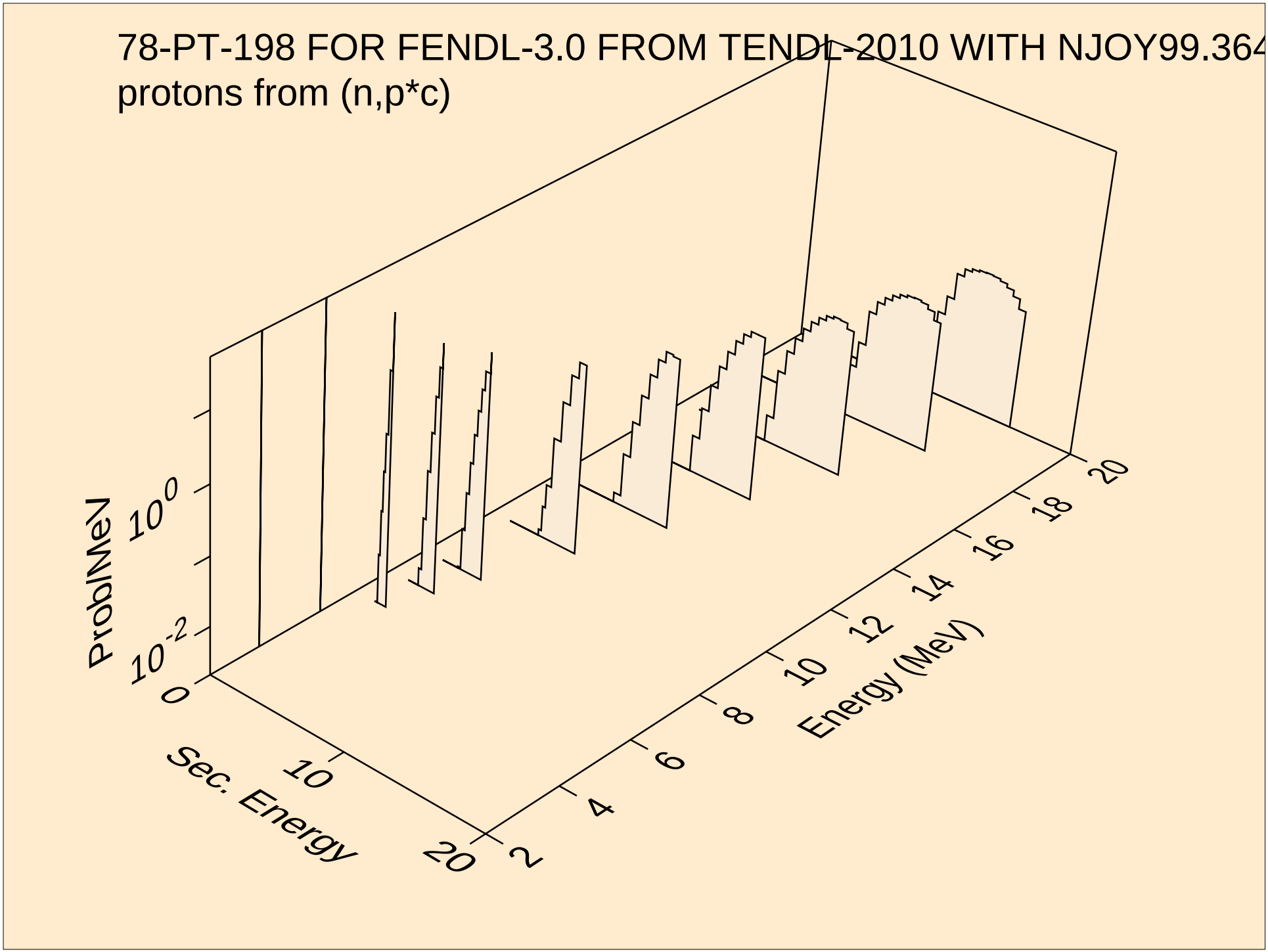

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Particle heating contributions
protons
deuterons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
12
14
0
50
100
150
200

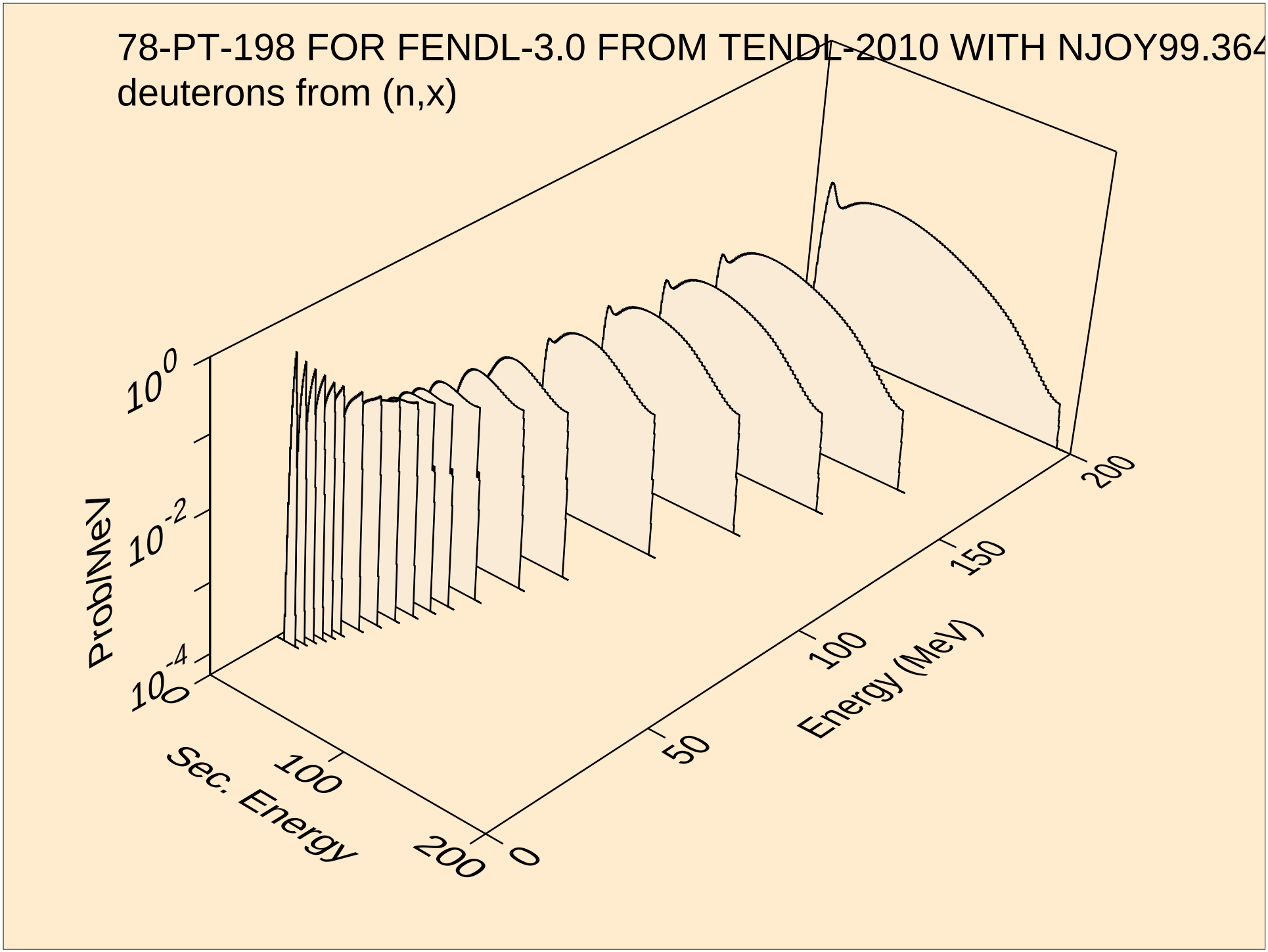

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
0
50
100
150
200

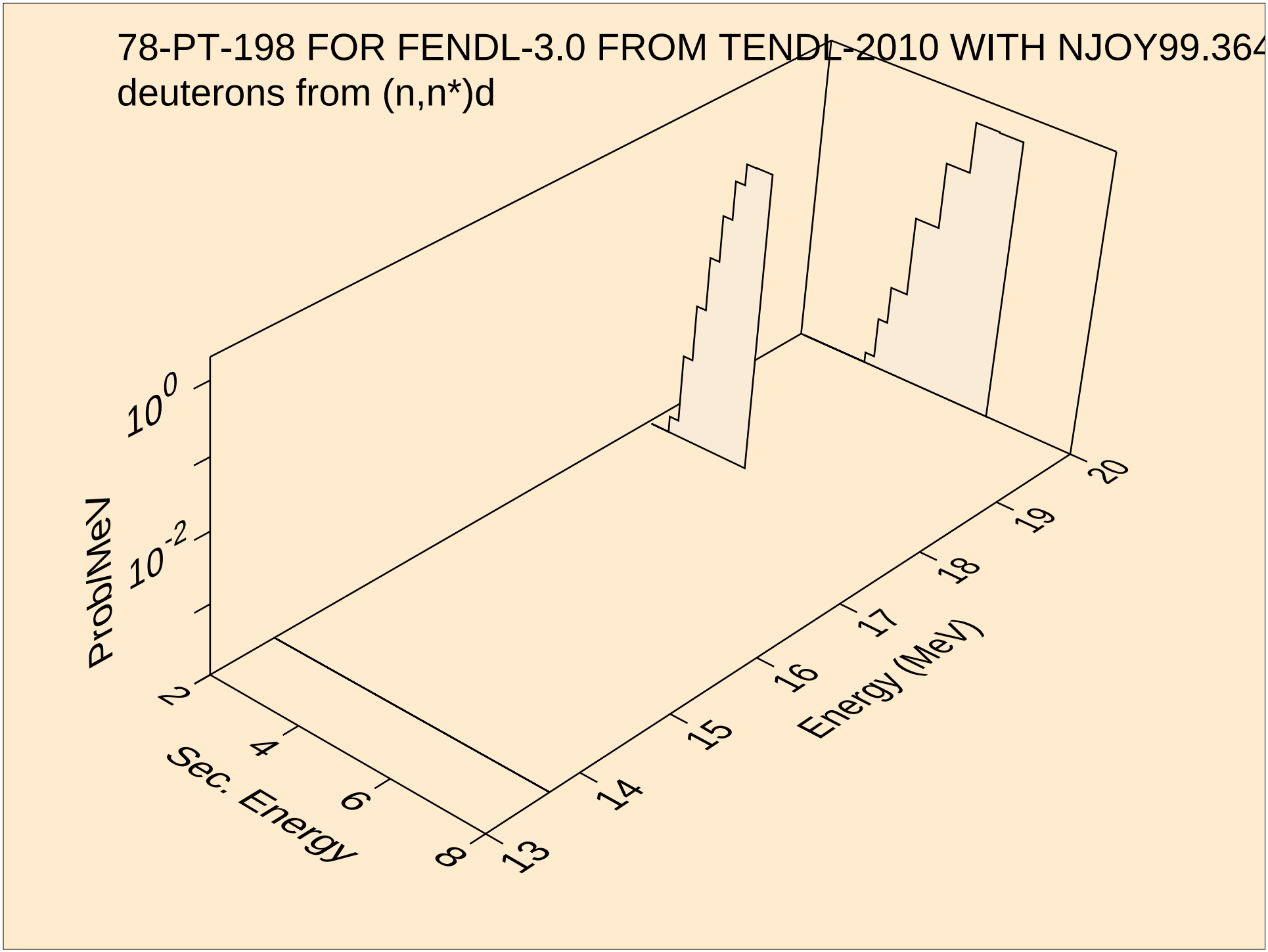

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
Particle production cross sections
Cross section (barns)
*10-3
700
600
500
400
300
200
100
0
0
50
100
150
200
Energy (MeV)
protons
deuterons
tritons
he-3
alphas

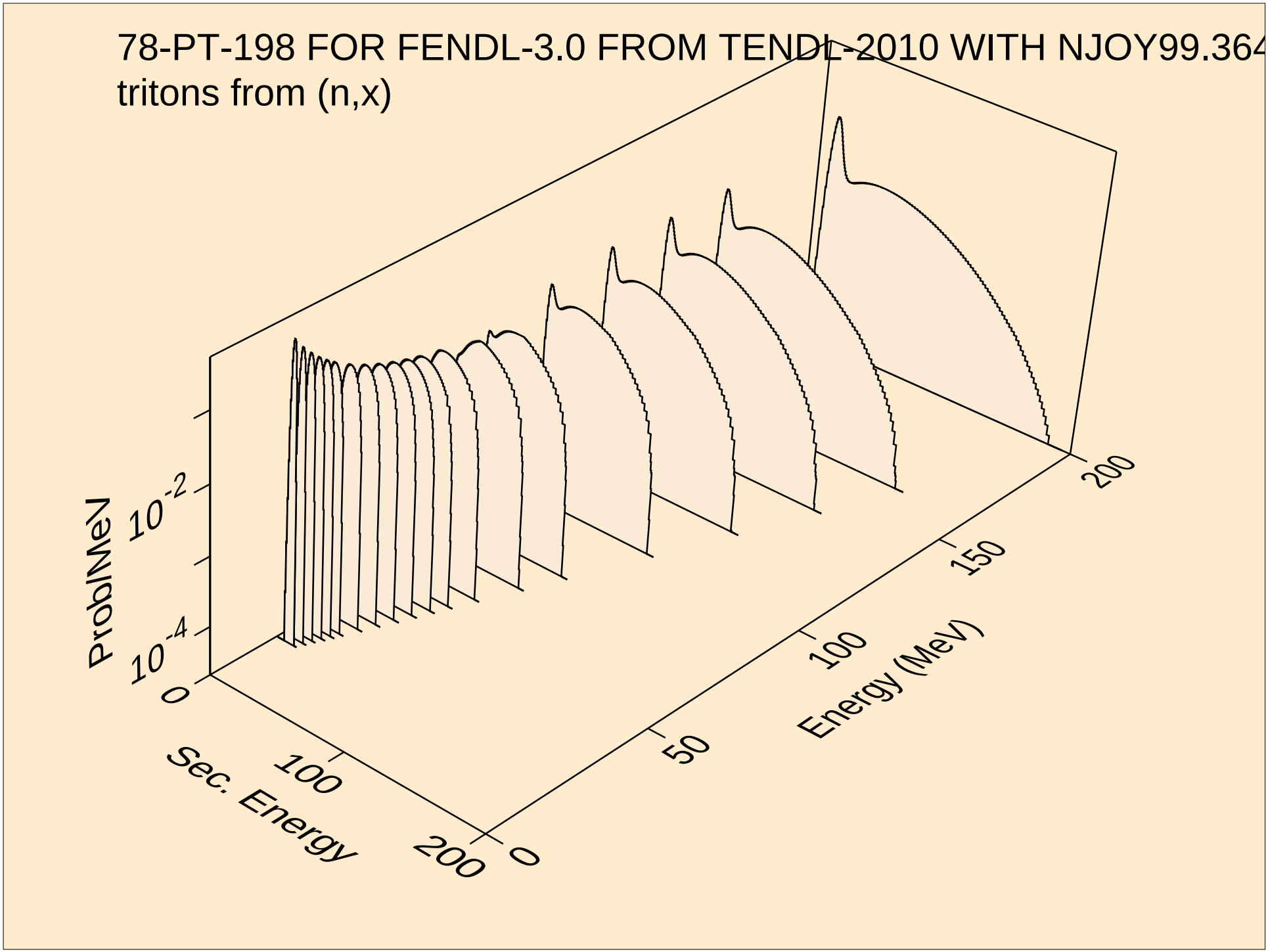

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
protons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

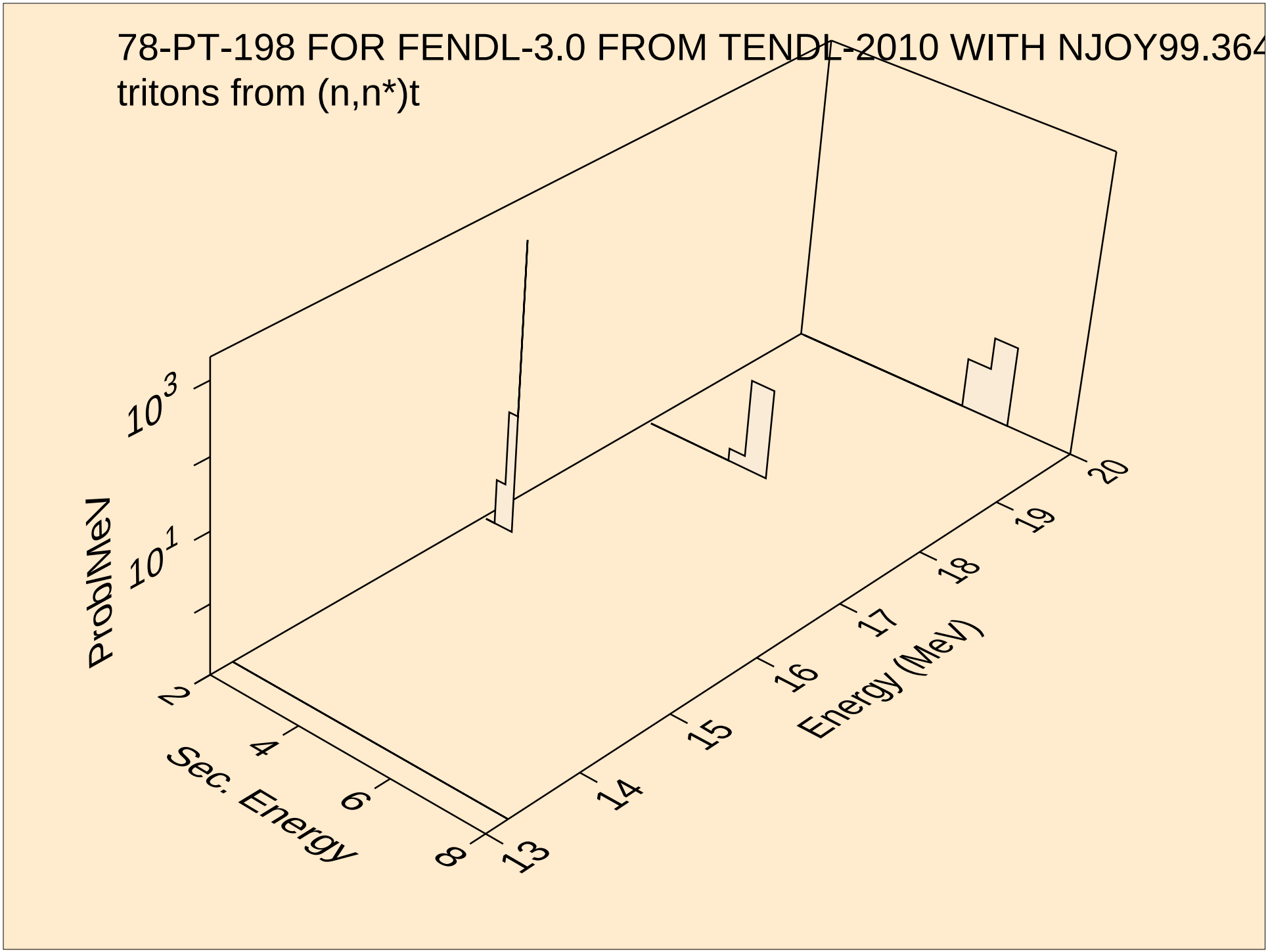

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
protons from (n,n*)p
Prob/MeV
10-1
10-3
0
5
10
15
Sec. Energy
8
10
12
14
16
18
20
Energy (MeV)

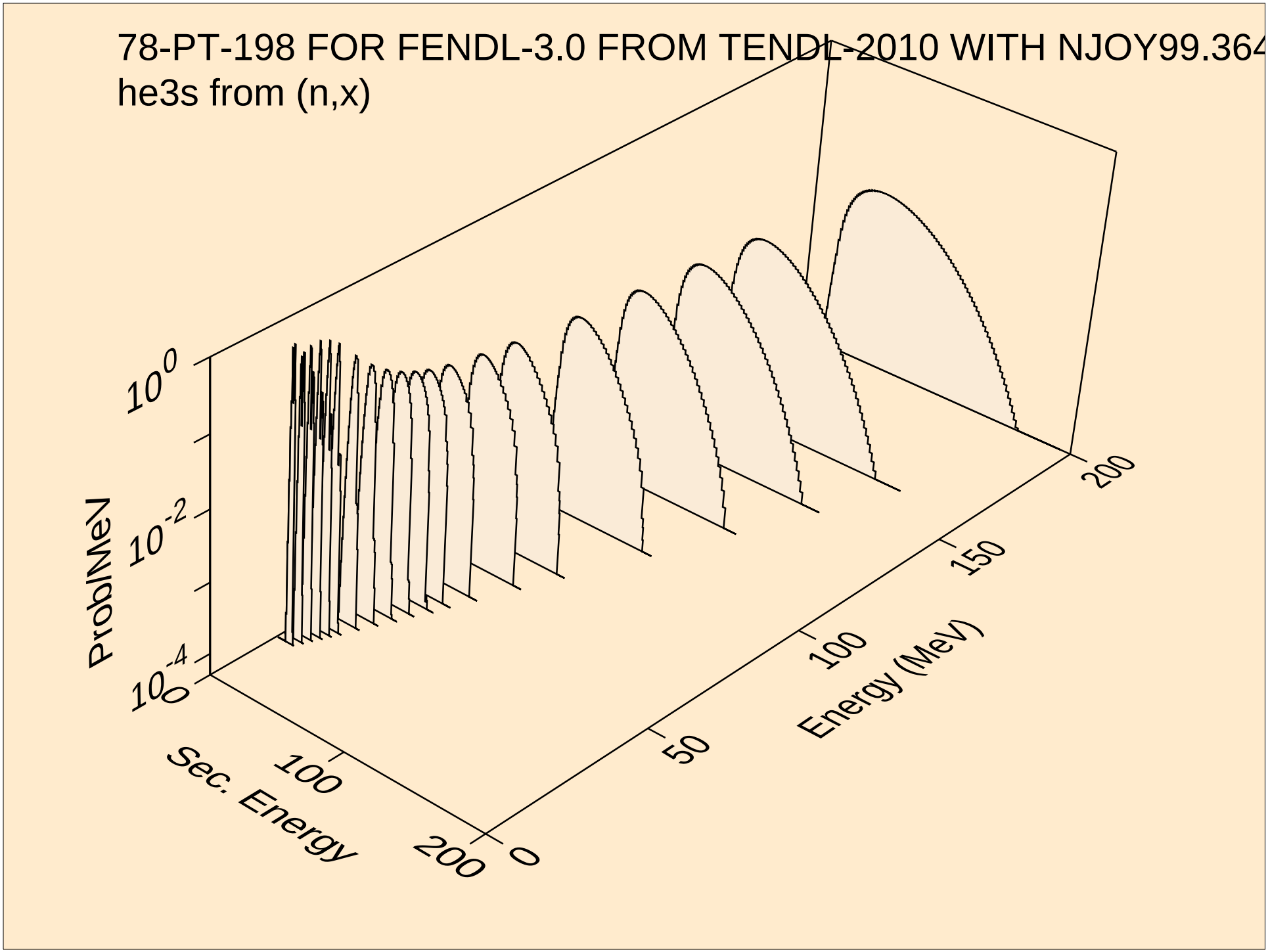

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
protons from (n,p*c)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

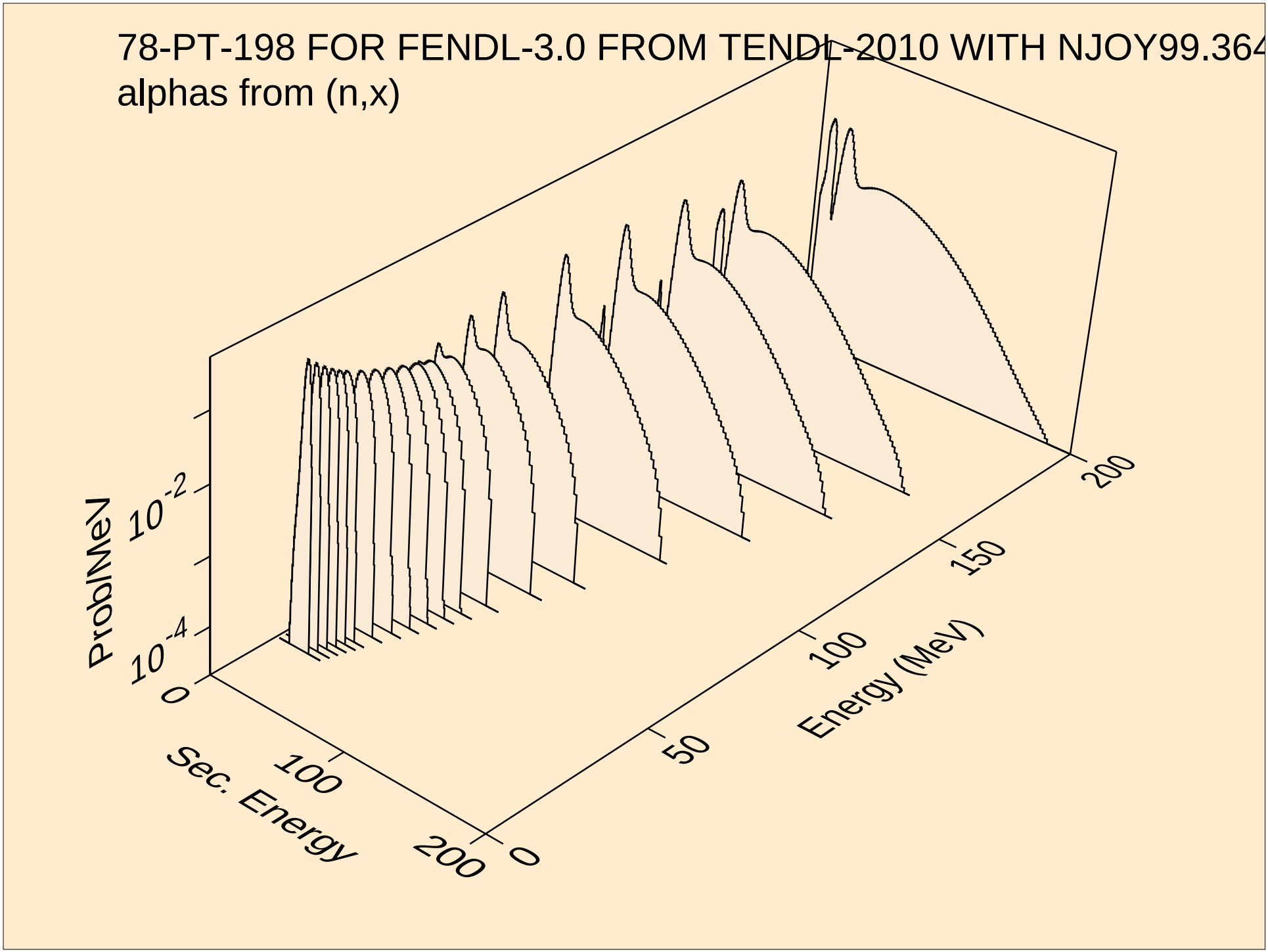

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
deuterons from (n,x)
Prob/MeV
10^0
10^-2
10^-4
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

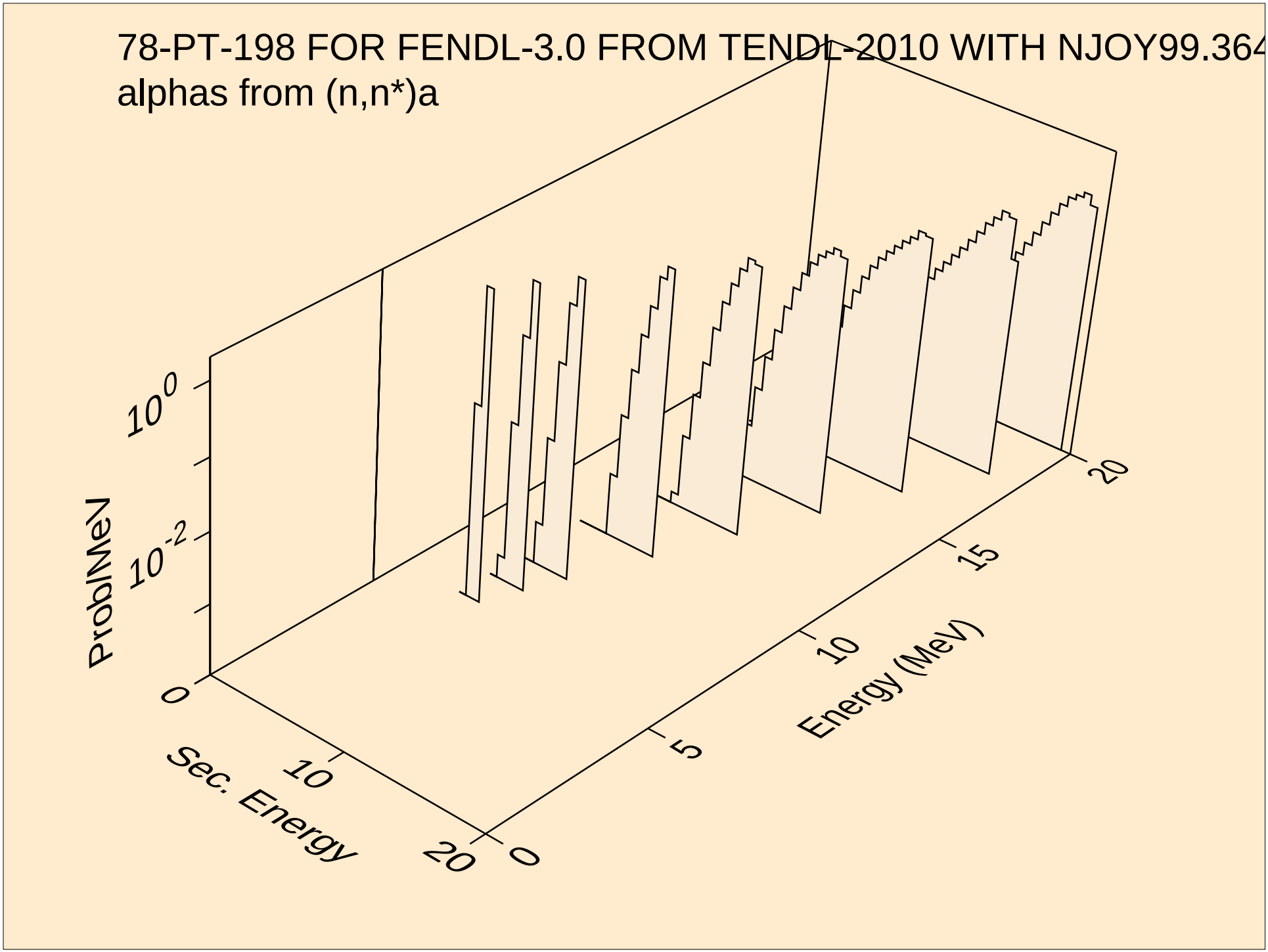

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
deuterons from (n,n*)d
Prob/MeV
10^0
10^-2
2
4
6
8
Sec. Energy
13
14
15
16
17
18
19
20
Energy (MeV)

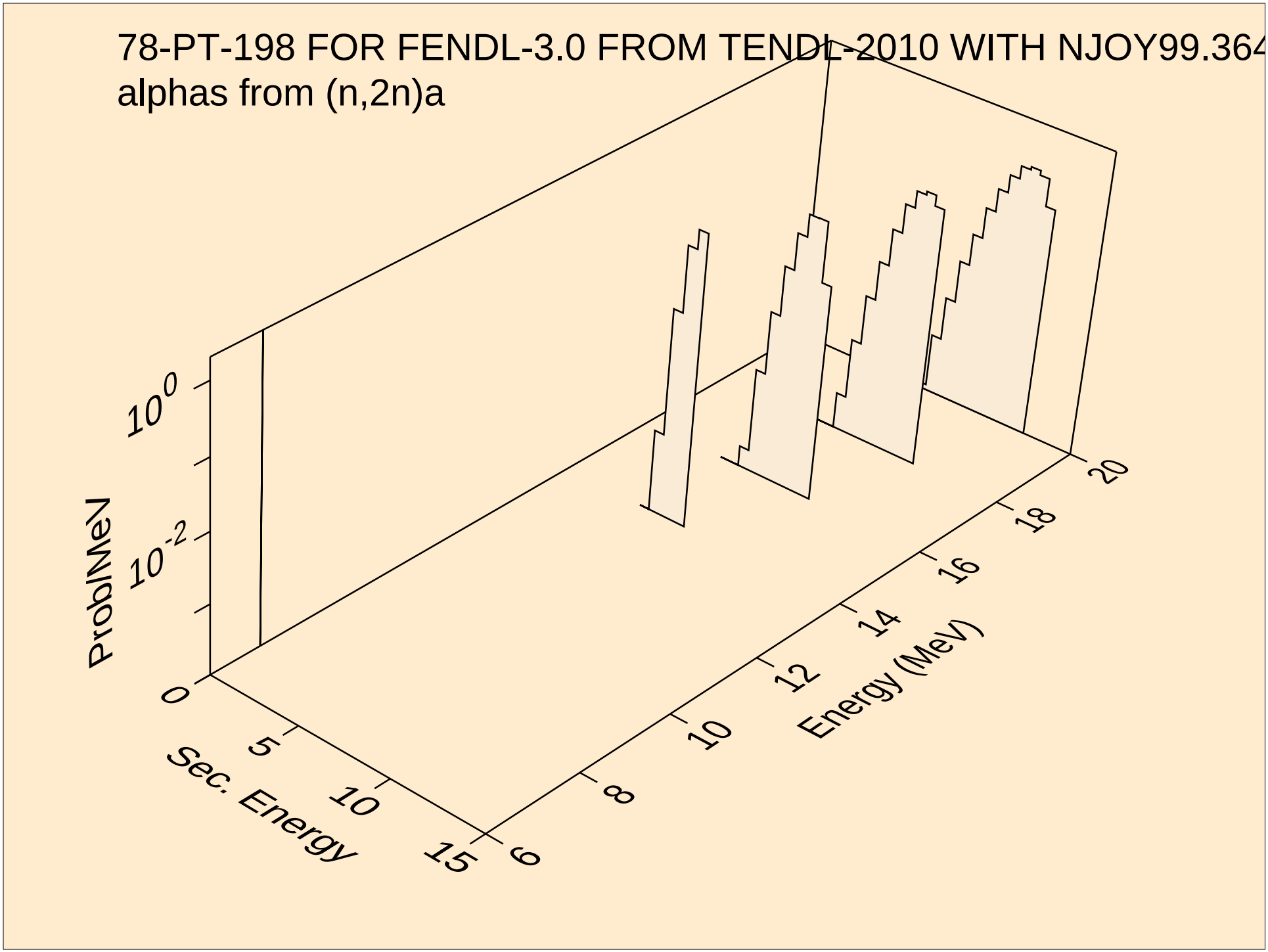

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
tritons from (n,x)
Prob/MeV
10-2
10-4
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

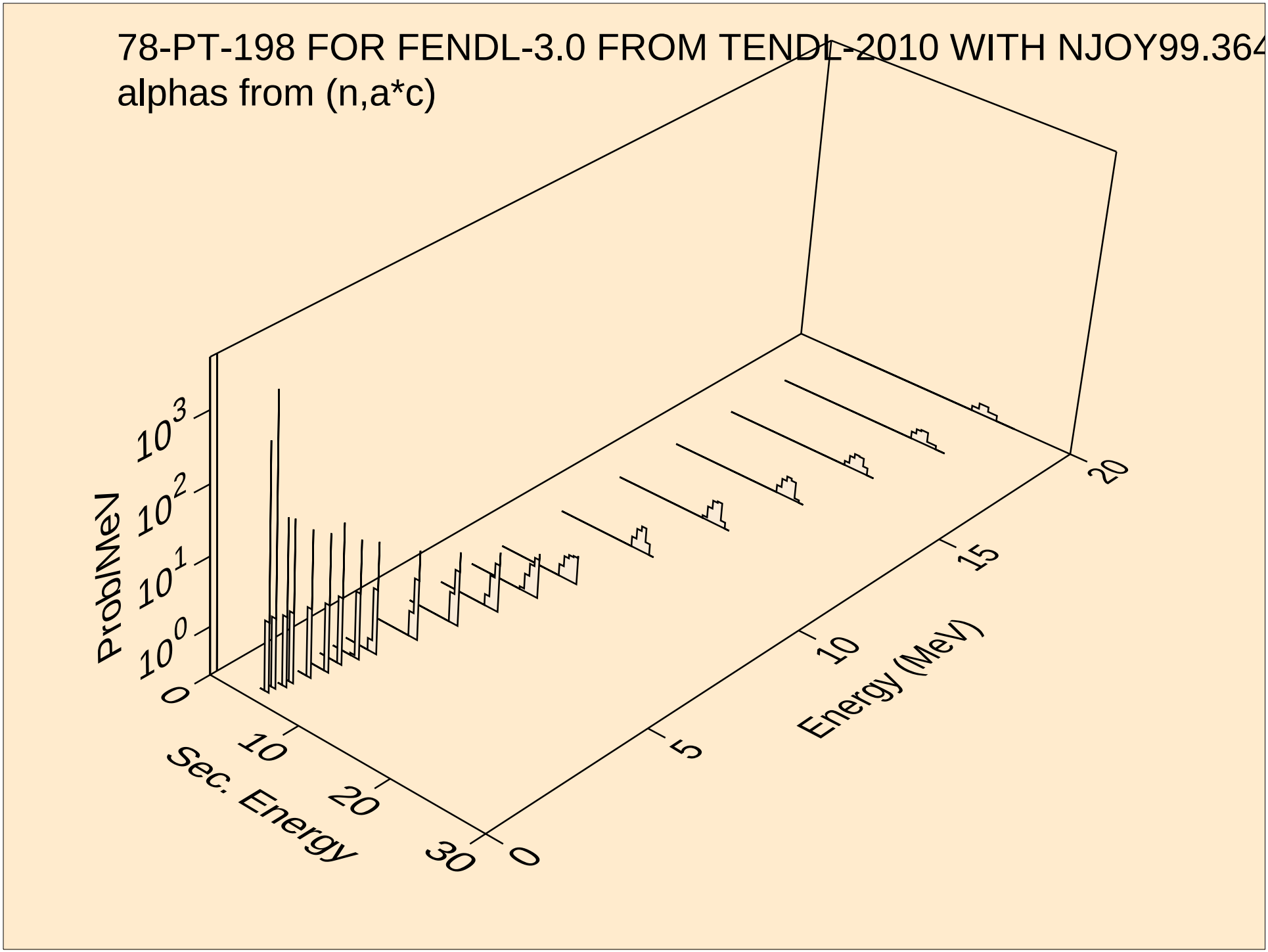

78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
tritons from (n,n*)t
Prob/MeV
10^3
10^1
2
4
6
8
Sec. Energy
13
14
15
16
17
18
19
20
Energy (MeV)


78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
he3s from (n,x)
Prob/MeV
10^0
10^-2
10^-4
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)


78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
alphas from (n,x)
Prob/MeV
10-2
10-4
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)


78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
alphas from (n,n*)a
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
0
5
10
15
20
Energy (MeV)


78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
alphas from (n,2n)a
Prob/MeV
10^{0}
10^{-2}
0
5
10
15
Sec. Energy
6
8
10
12
14
16
18
20
Energy (MeV)


78-PT-198 FOR FENDL-3.0 FROM TENDL-2010 WITH NJOY99.364
alphas from (n,a*c)
Prob/MeV
10^3
10^2
10^1
10^0
0
10
20
30
Sec. Energy
0
5
10
15
20
Energy (MeV)