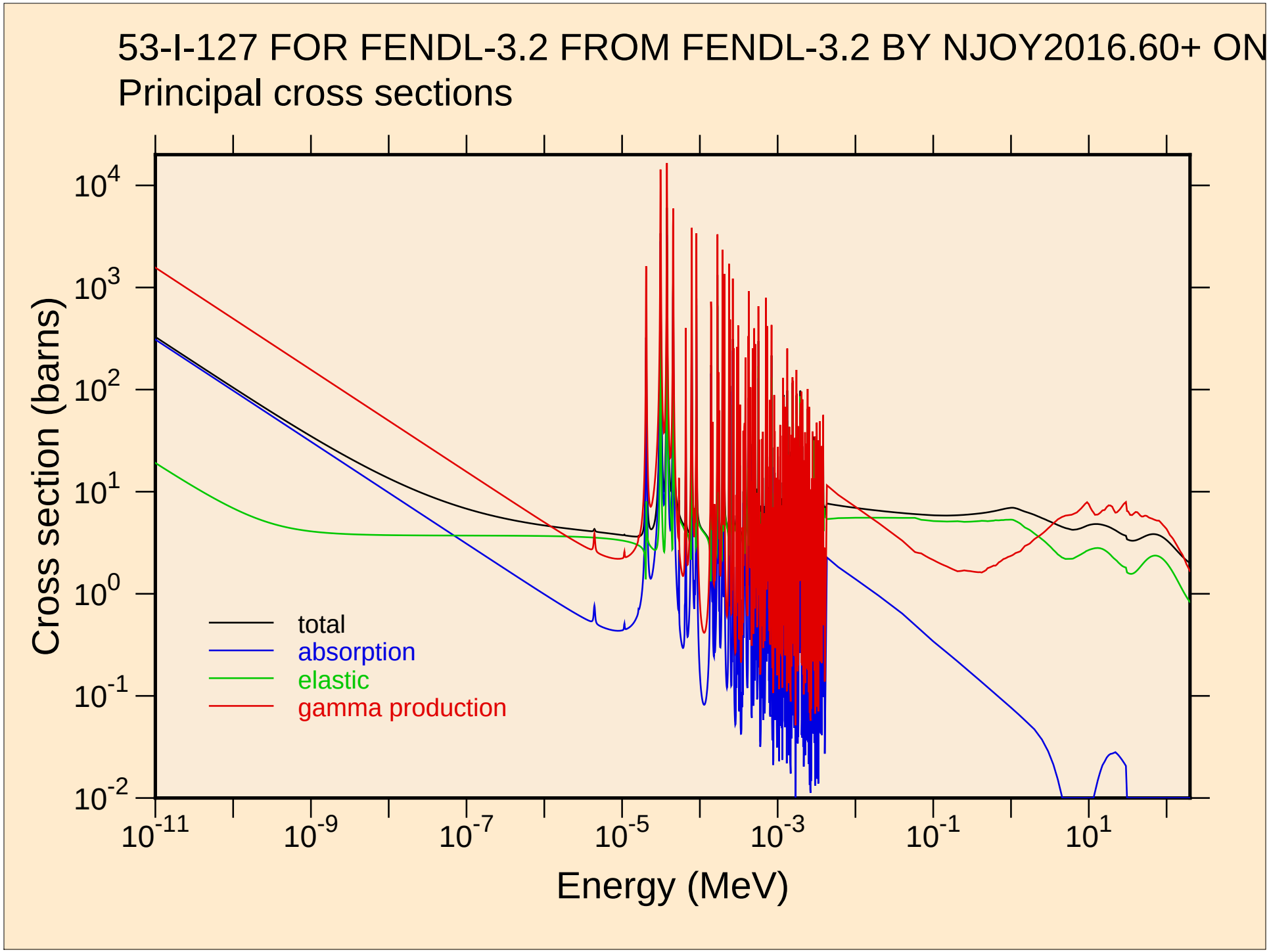
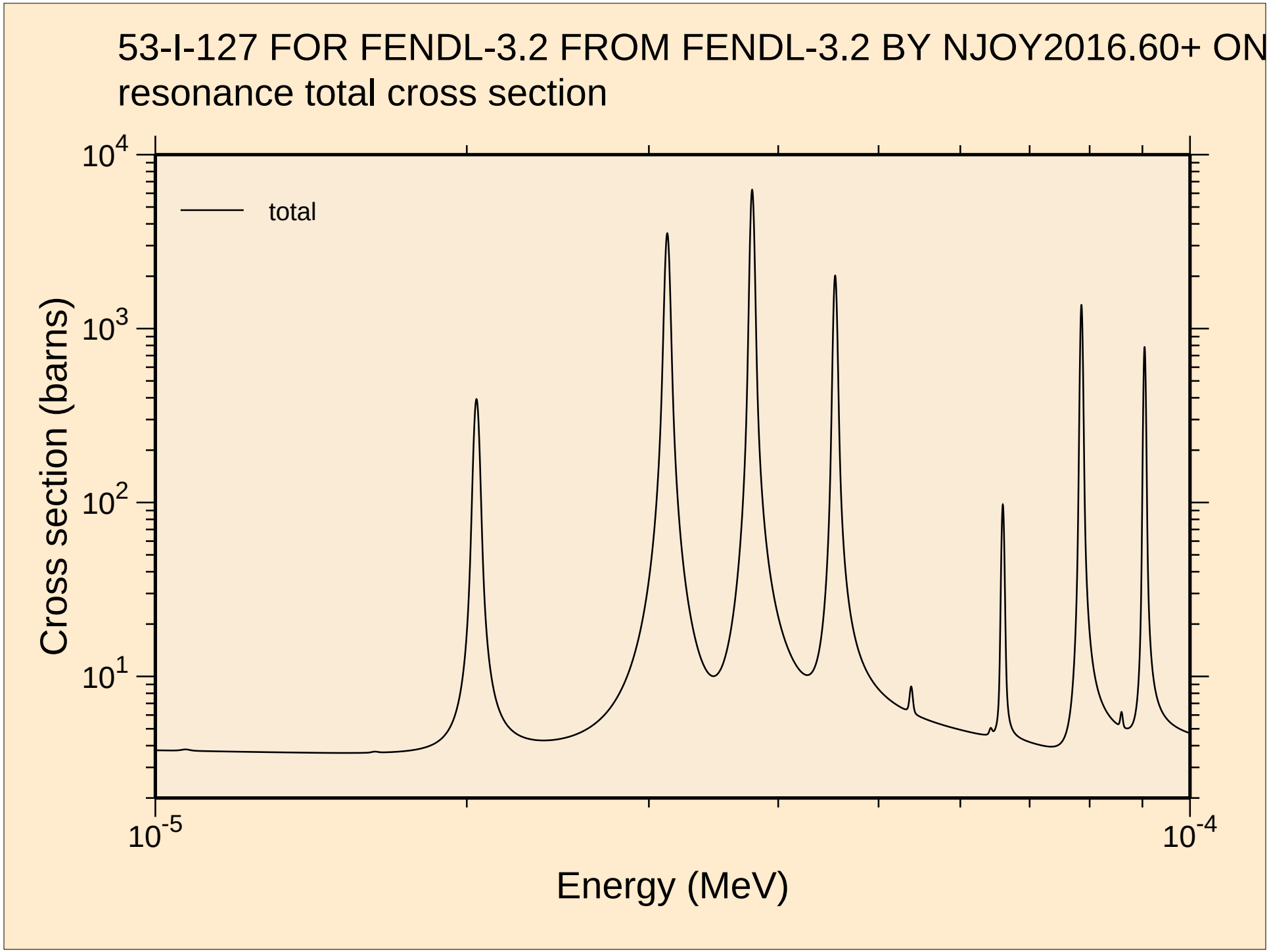
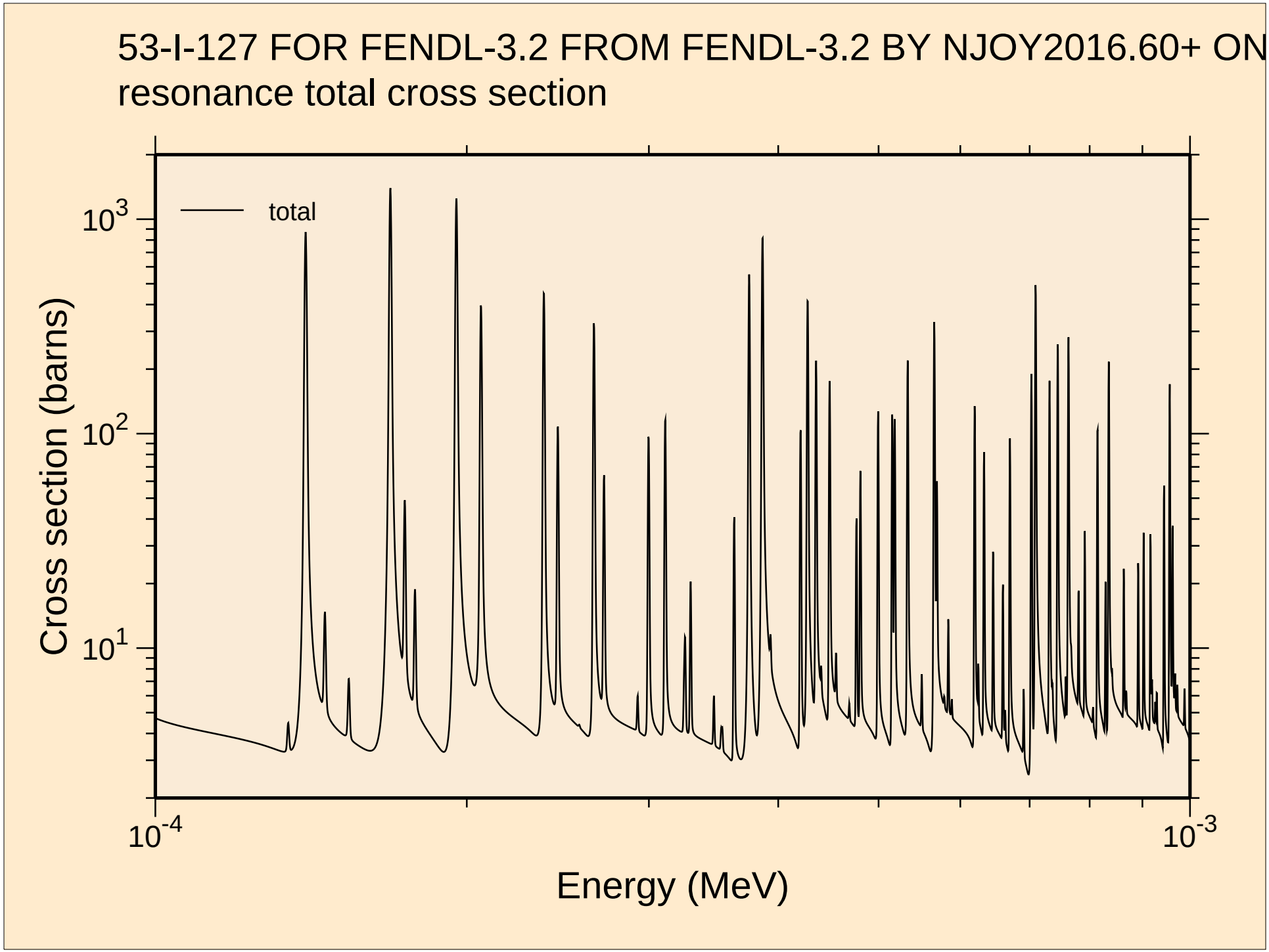
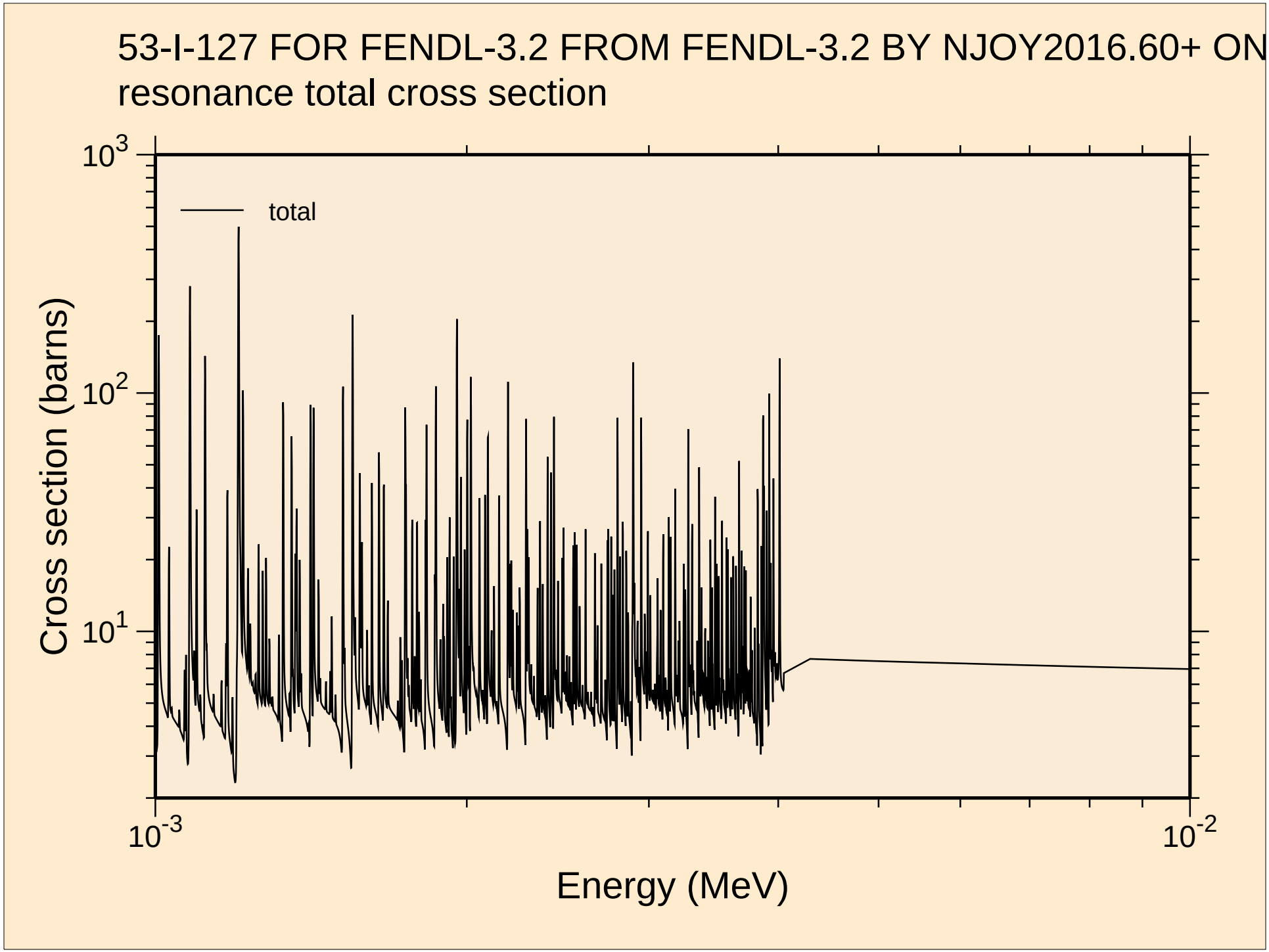
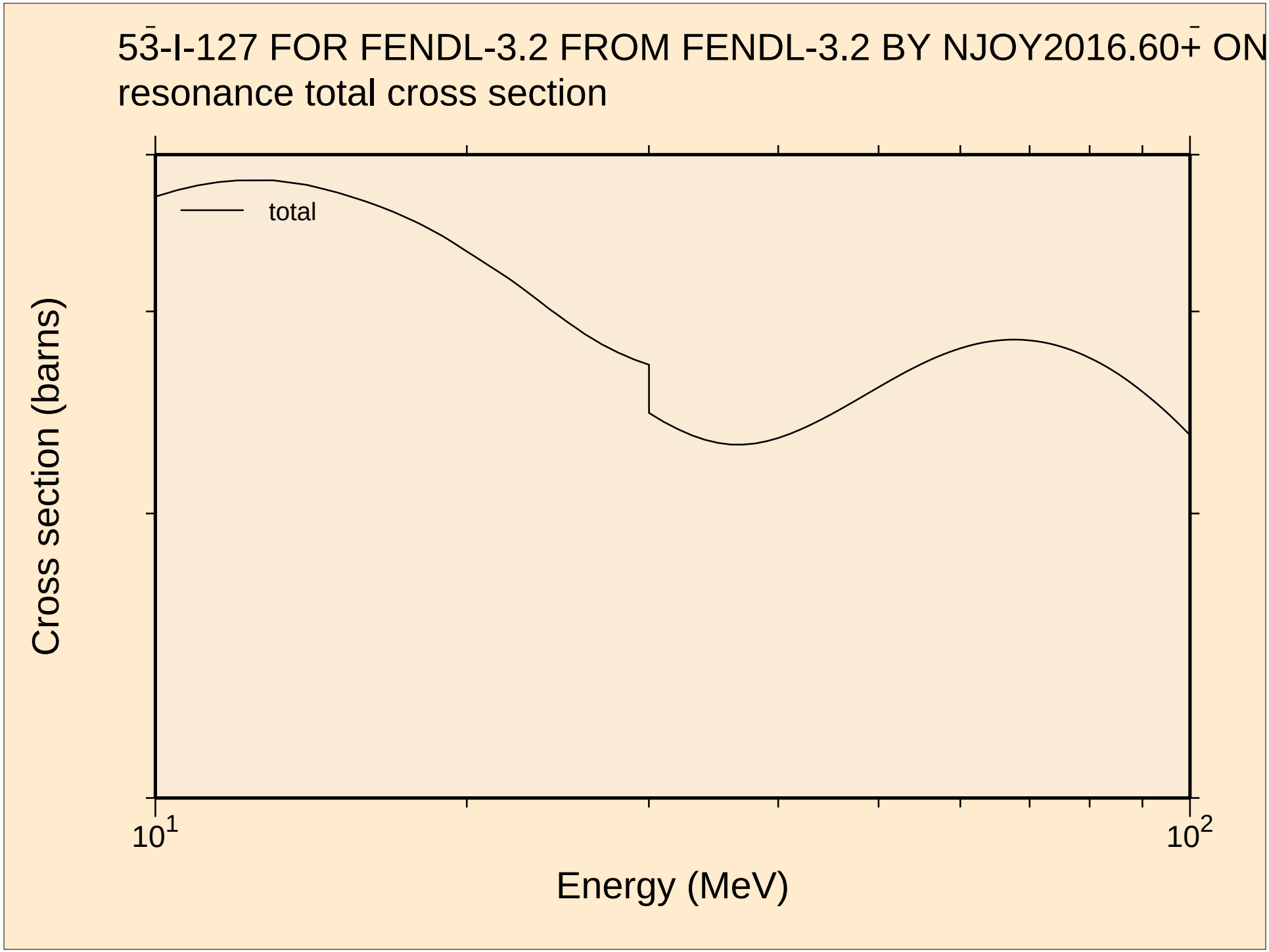
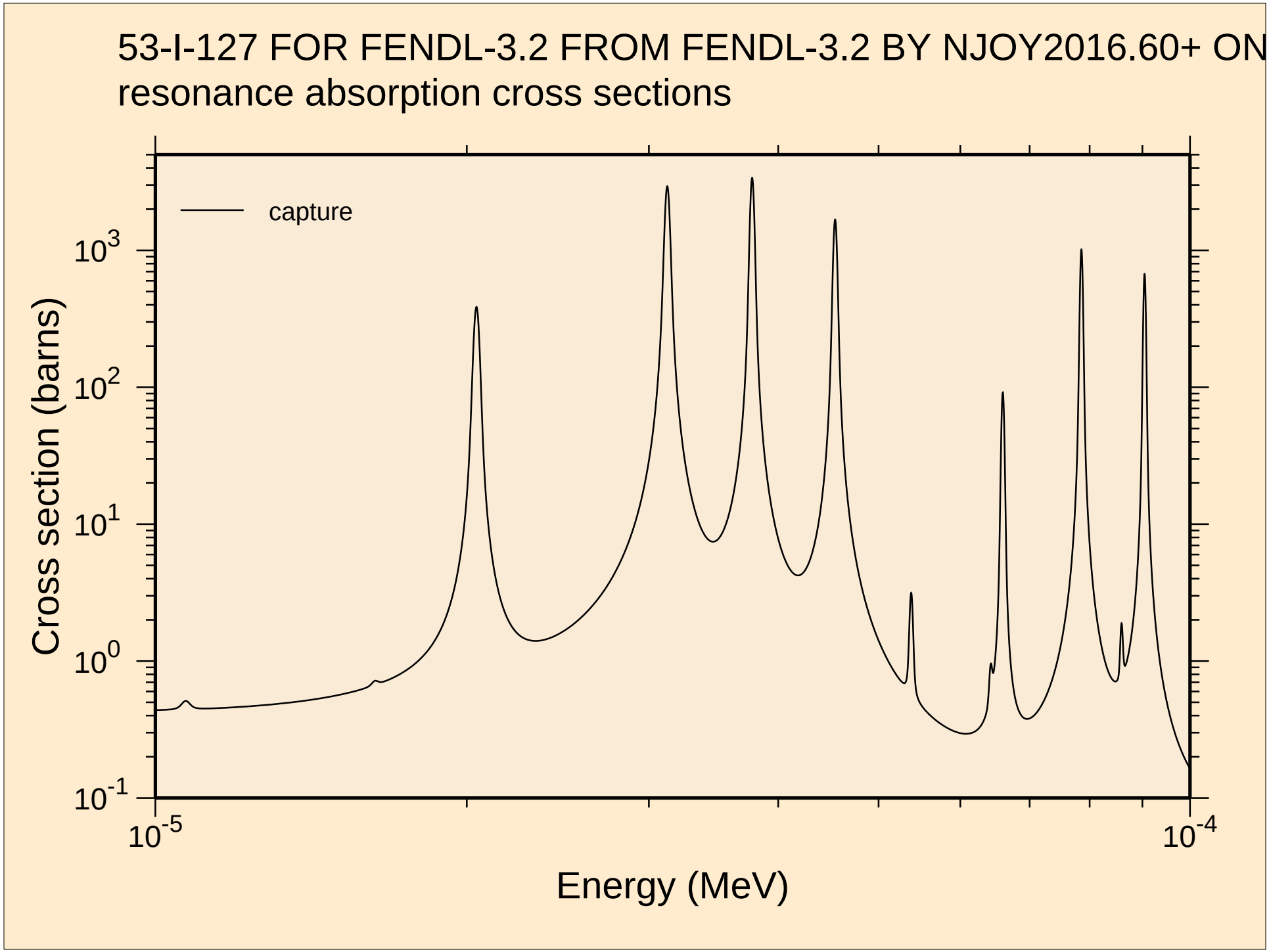

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production

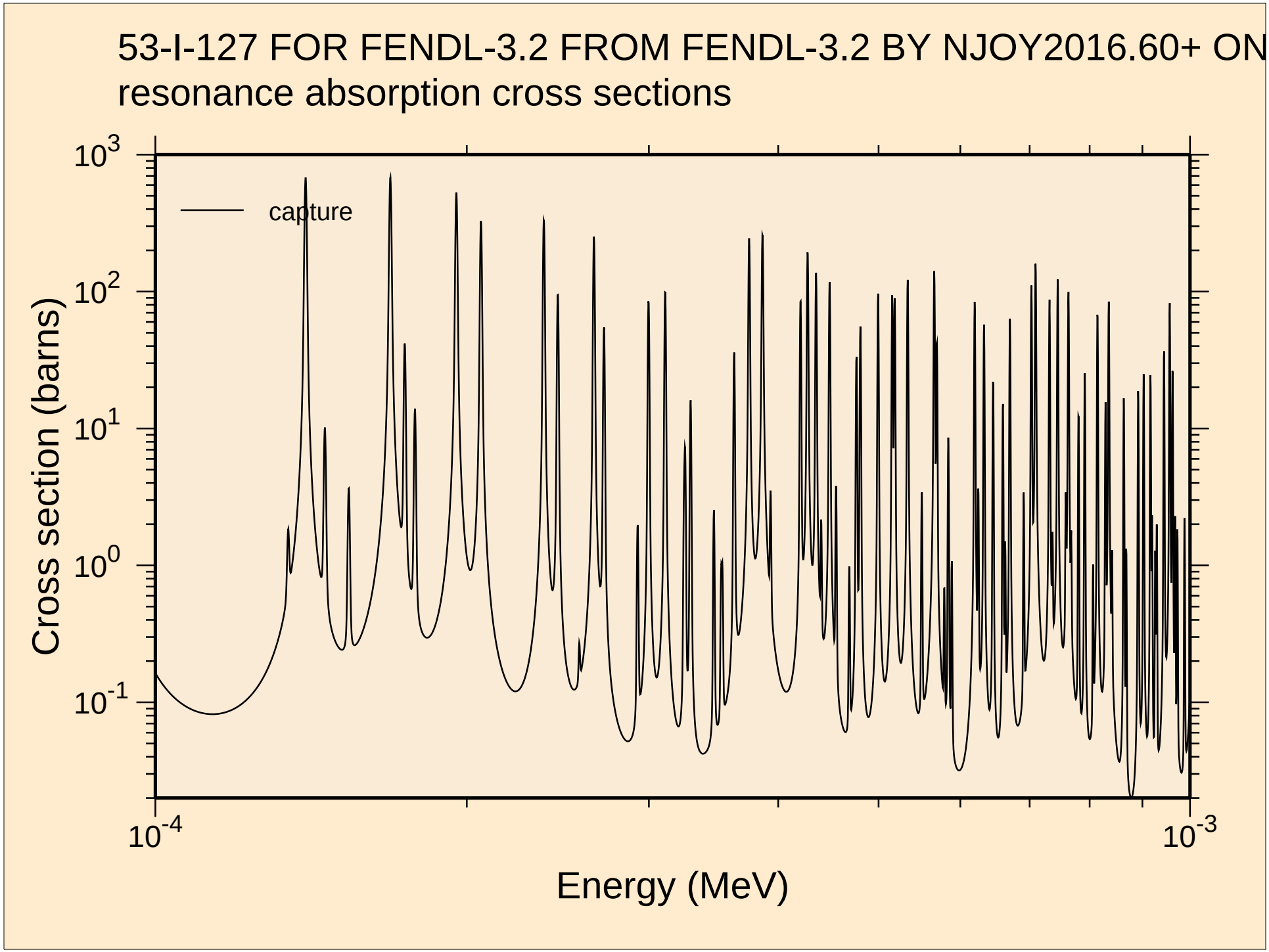

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^-5
10^-4
Energy (MeV)

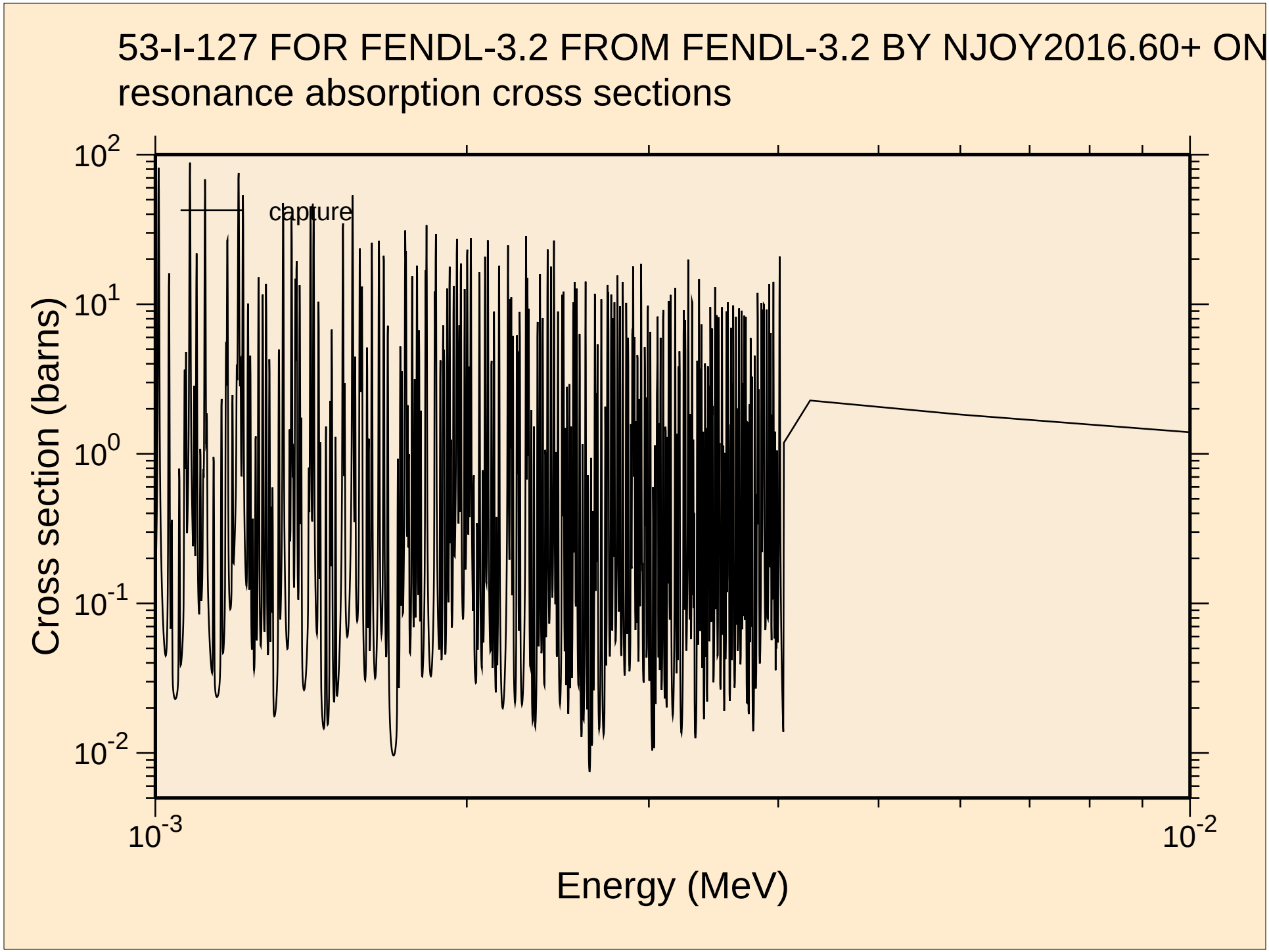

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^-4
10^-3
Energy (MeV)

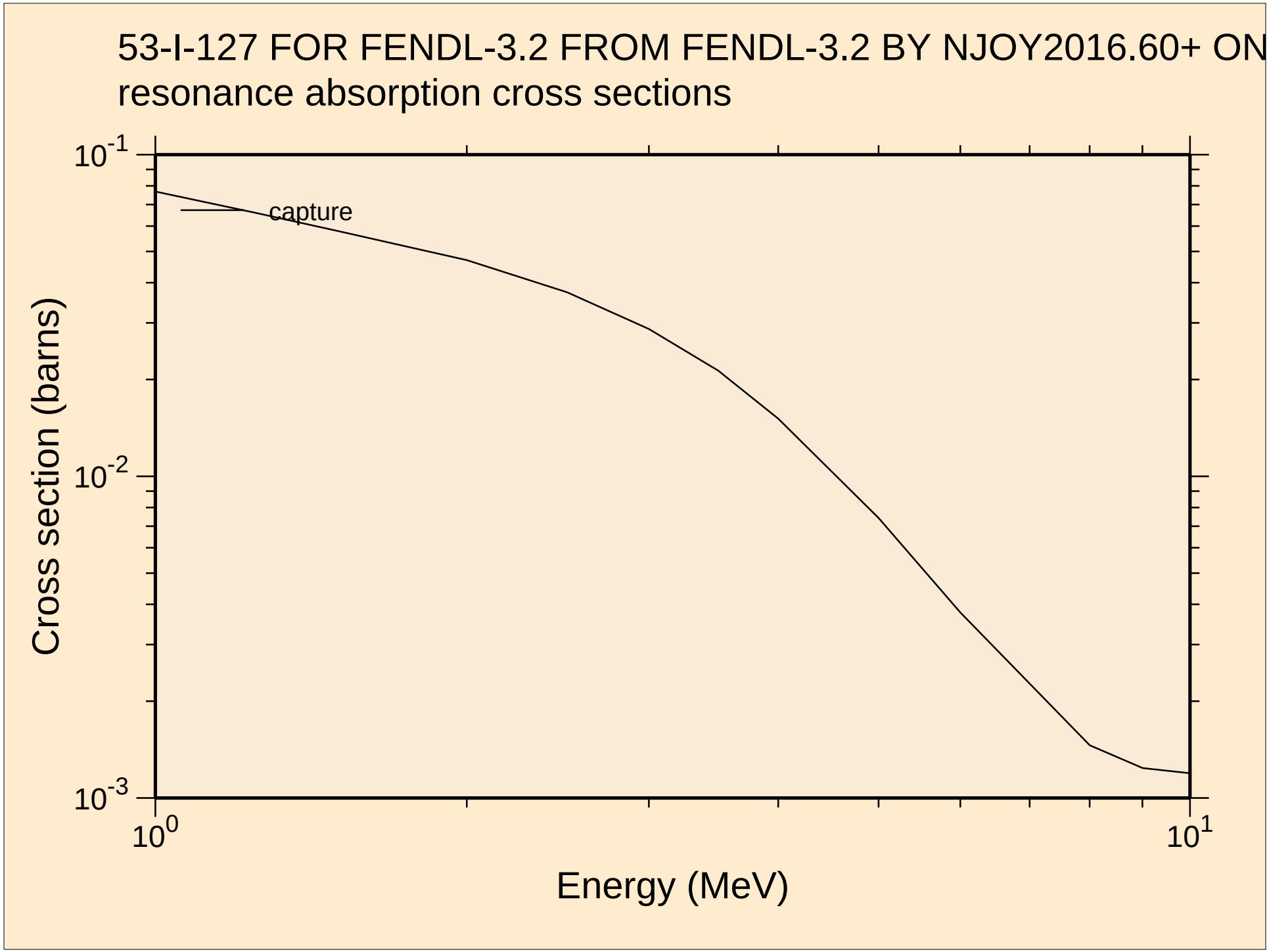

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^-3
10^-2
Energy (MeV)

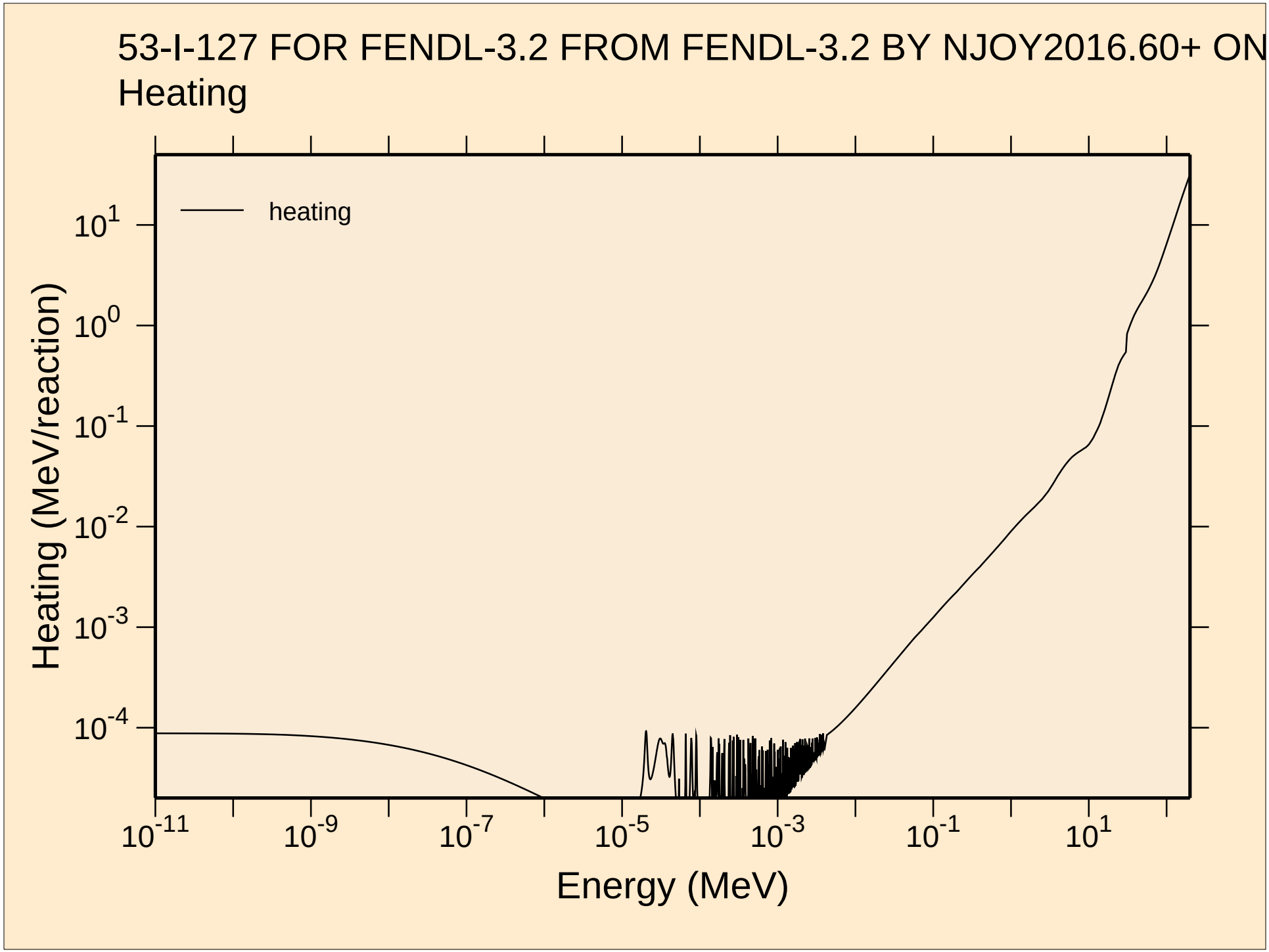

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance total cross section
total
Cross section (barns)
10^1
10^2
Energy (MeV)

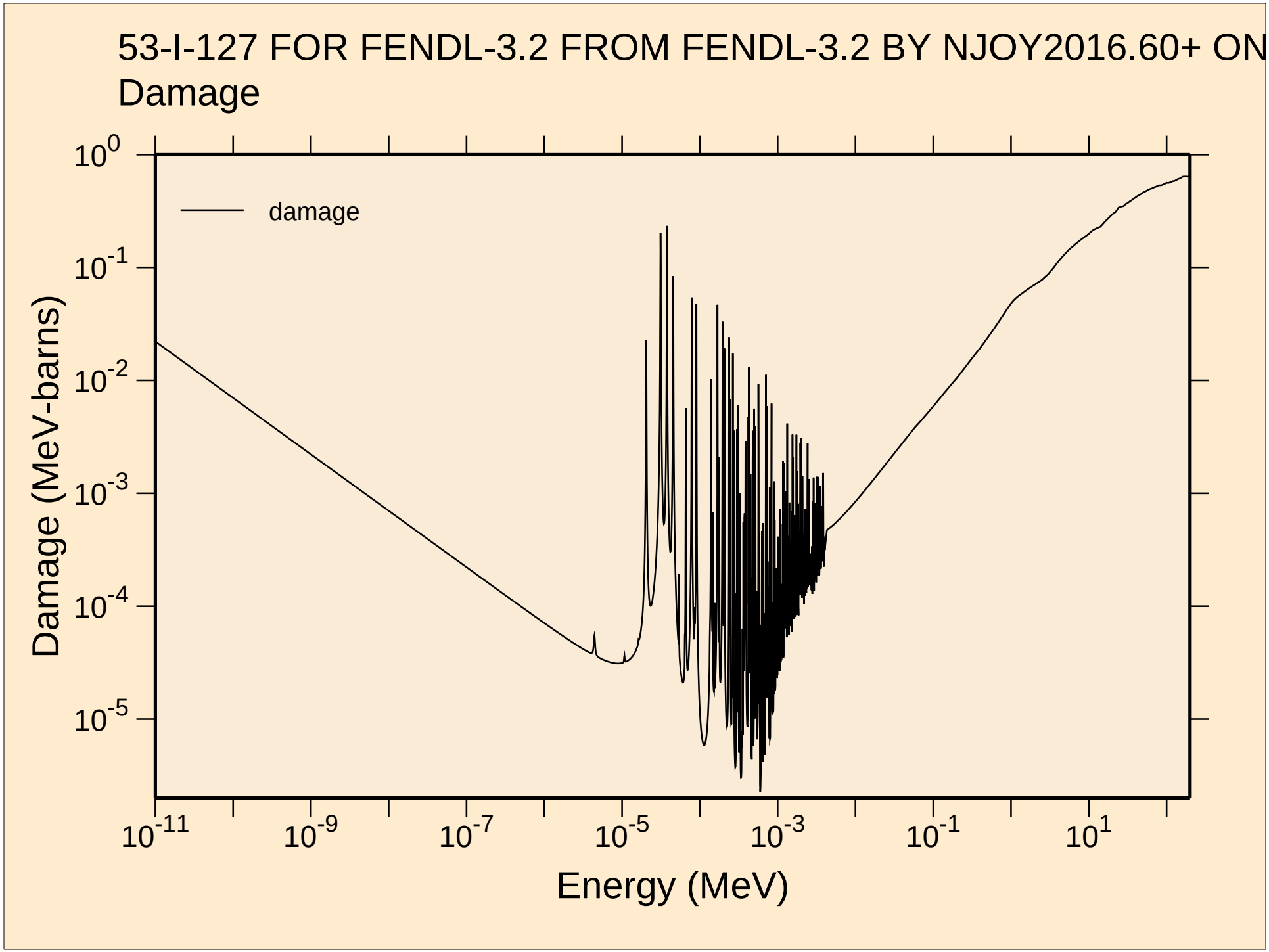

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance absorption cross sections
capture
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-5
10^-4
Energy (MeV)

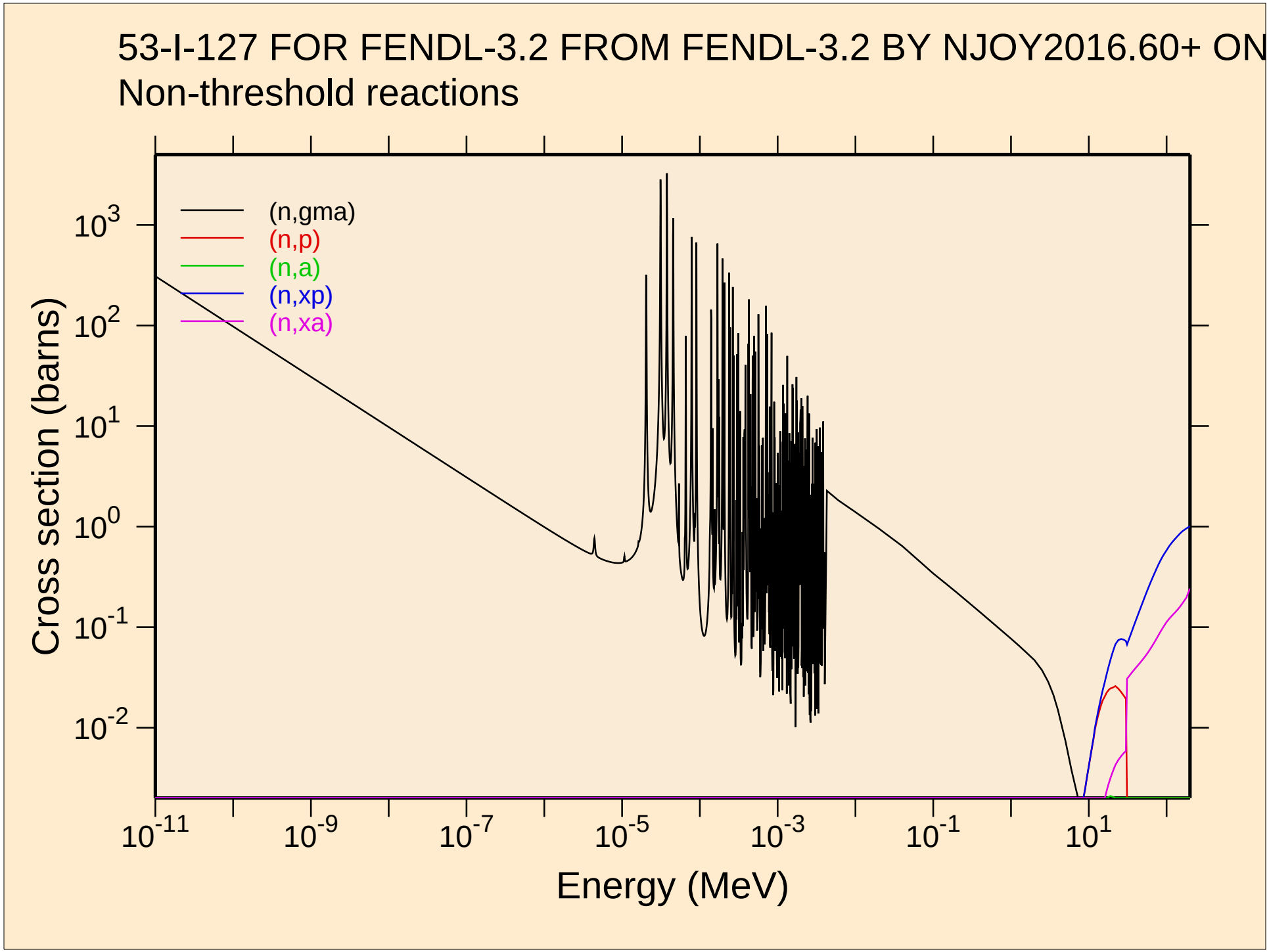

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance absorption cross sections
capture
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-4
10^-3
Energy (MeV)

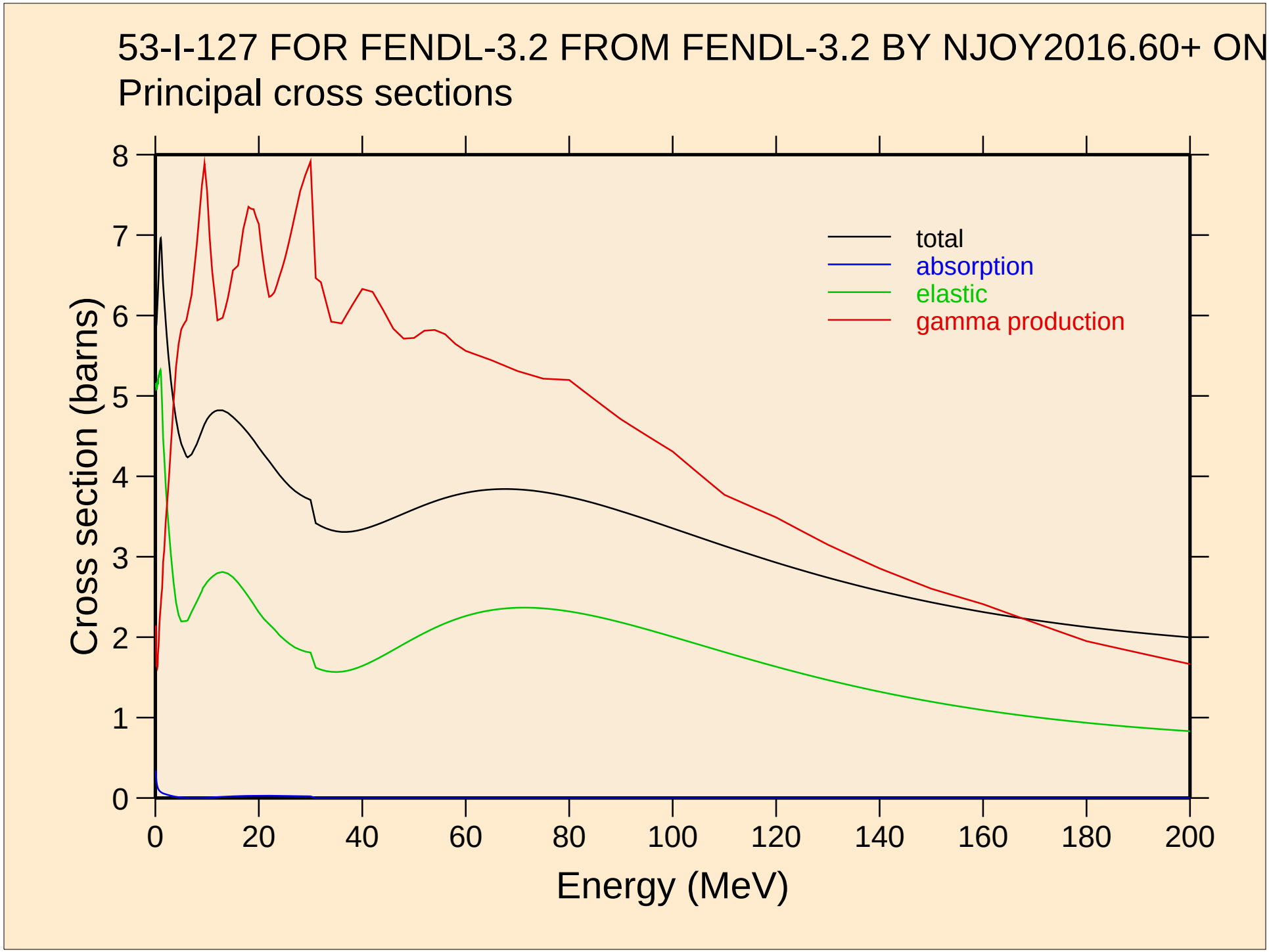

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance absorption cross sections
capture
Cross section (barns)
10^2
10^1
10^0
10^-1
10^-2
10^-3
10^-2
Energy (MeV)

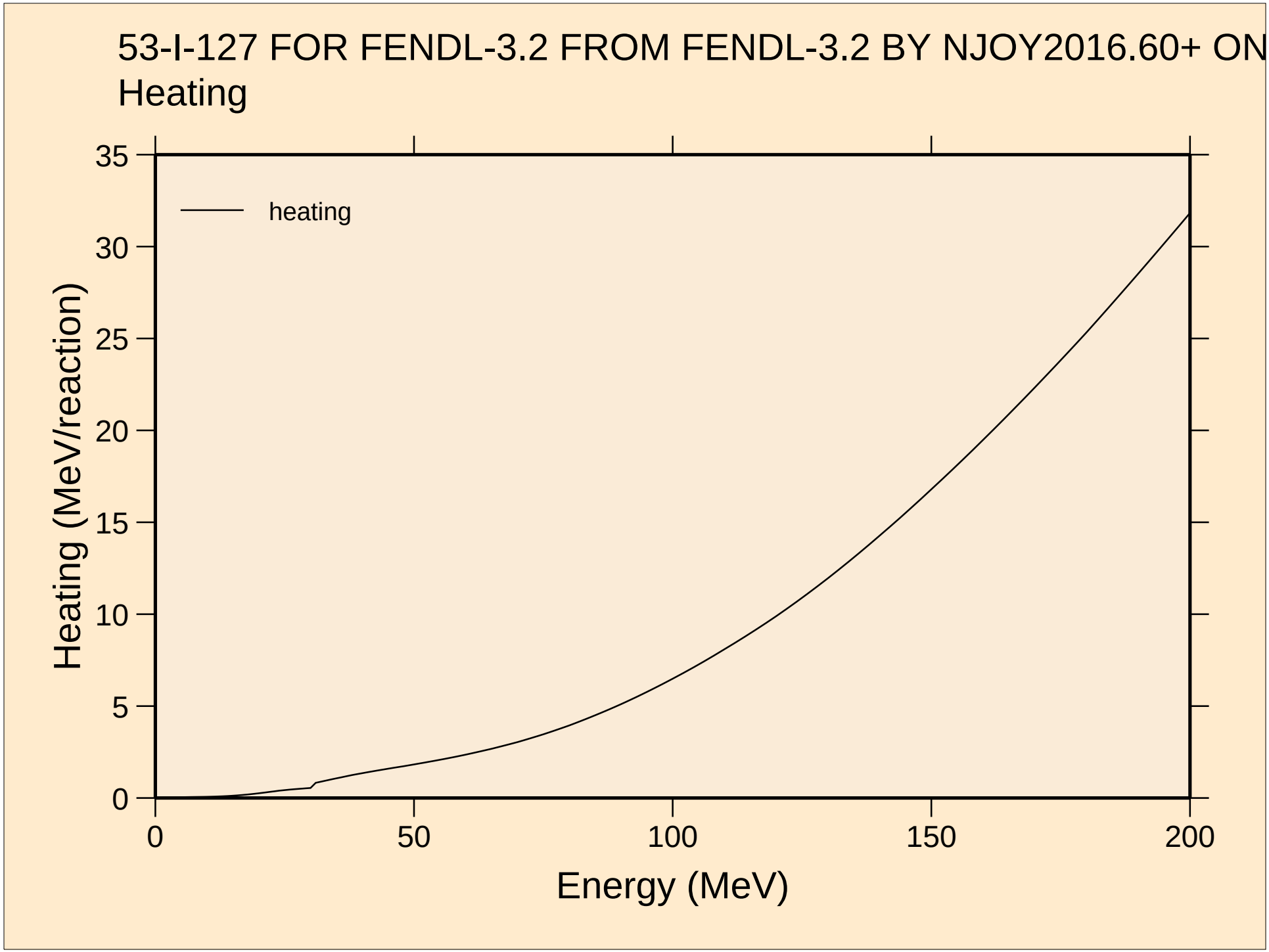

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
resonance absorption cross sections
capture
Cross section (barns)
10-1
10-2
10-3
100
101
Energy (MeV)

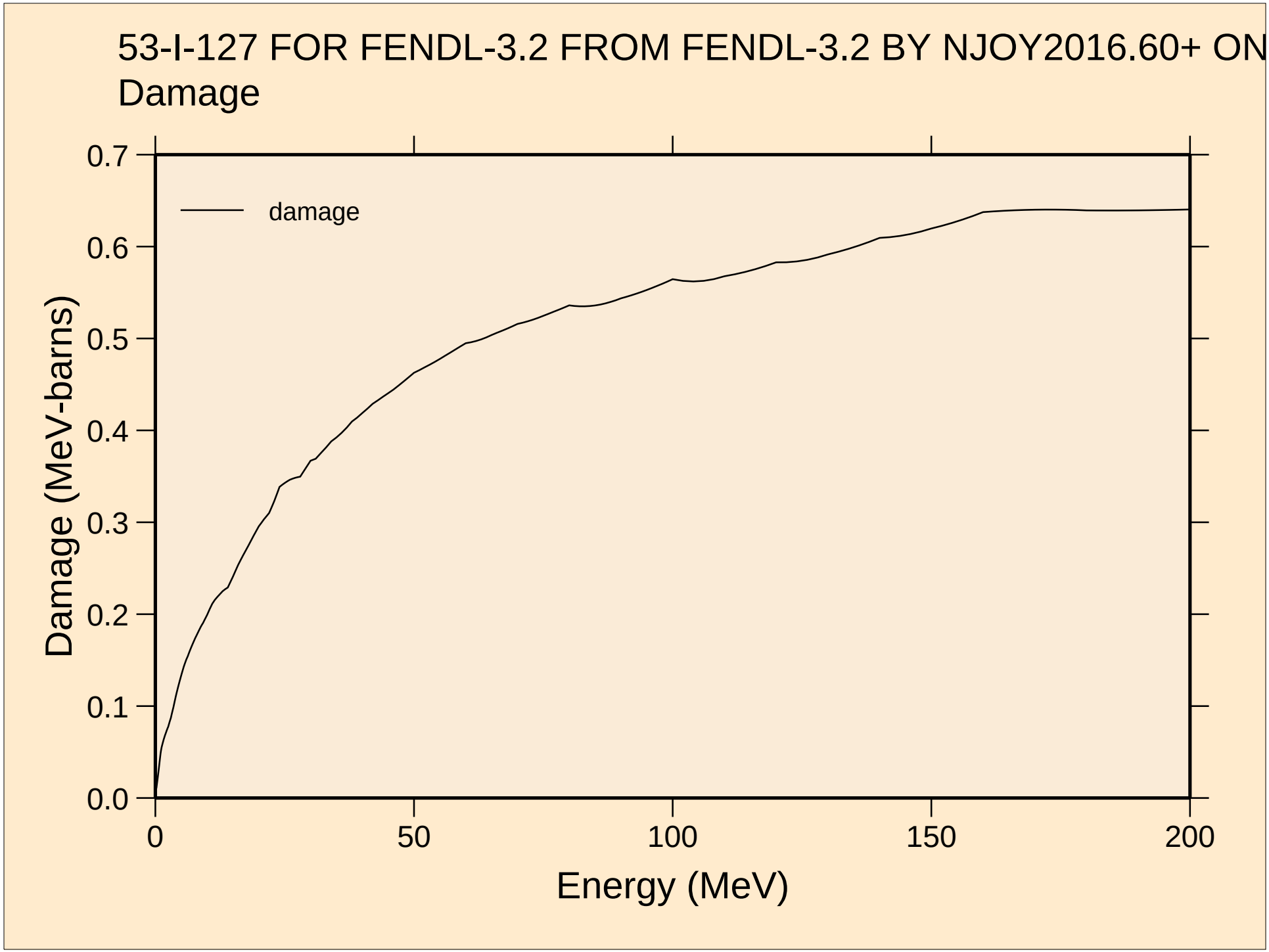

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Heating
heating
Heating (MeV/reaction)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1
Energy (MeV)

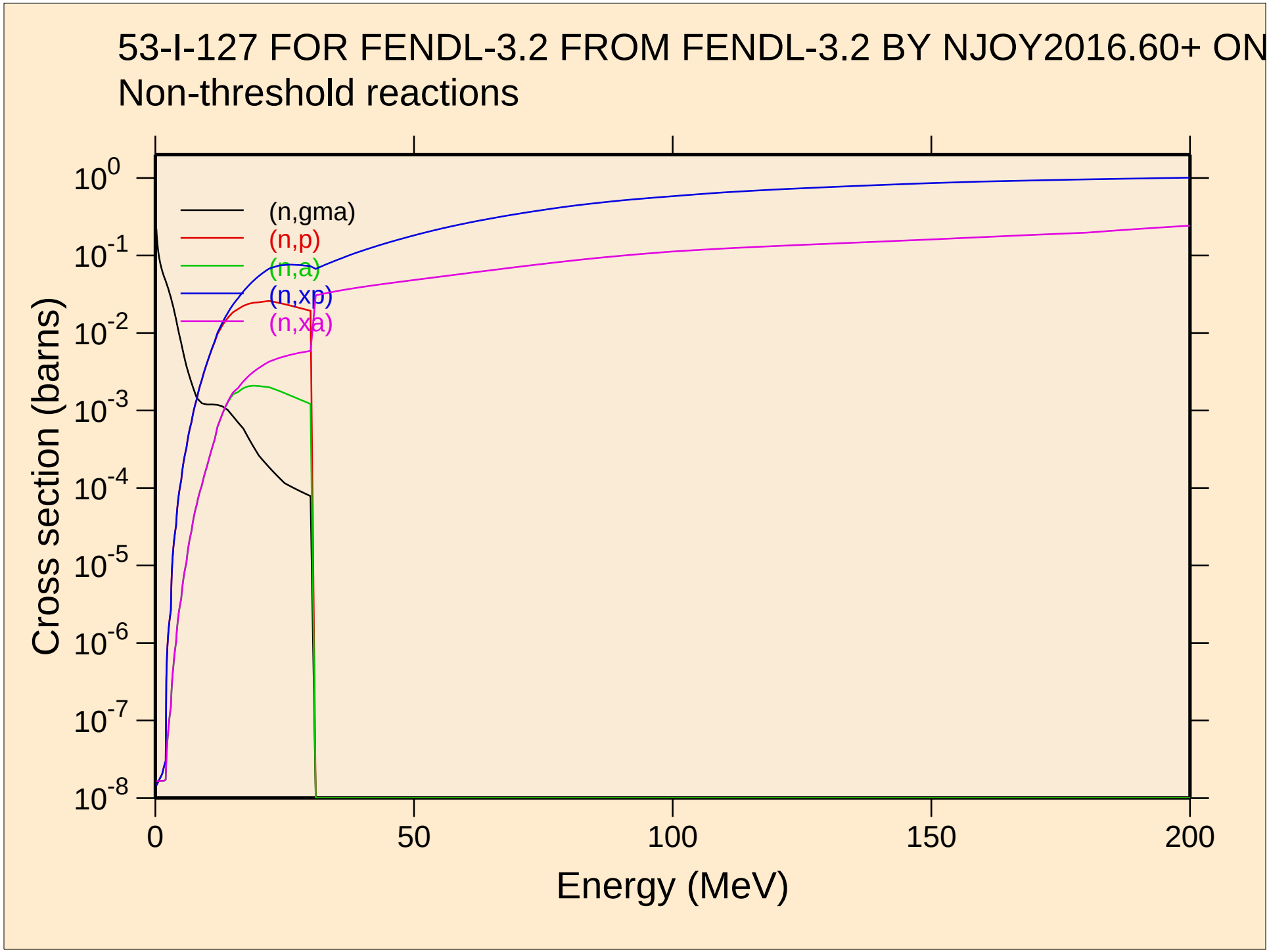

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Damage
damage
Damage (MeV-barns)
Energy (MeV)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1

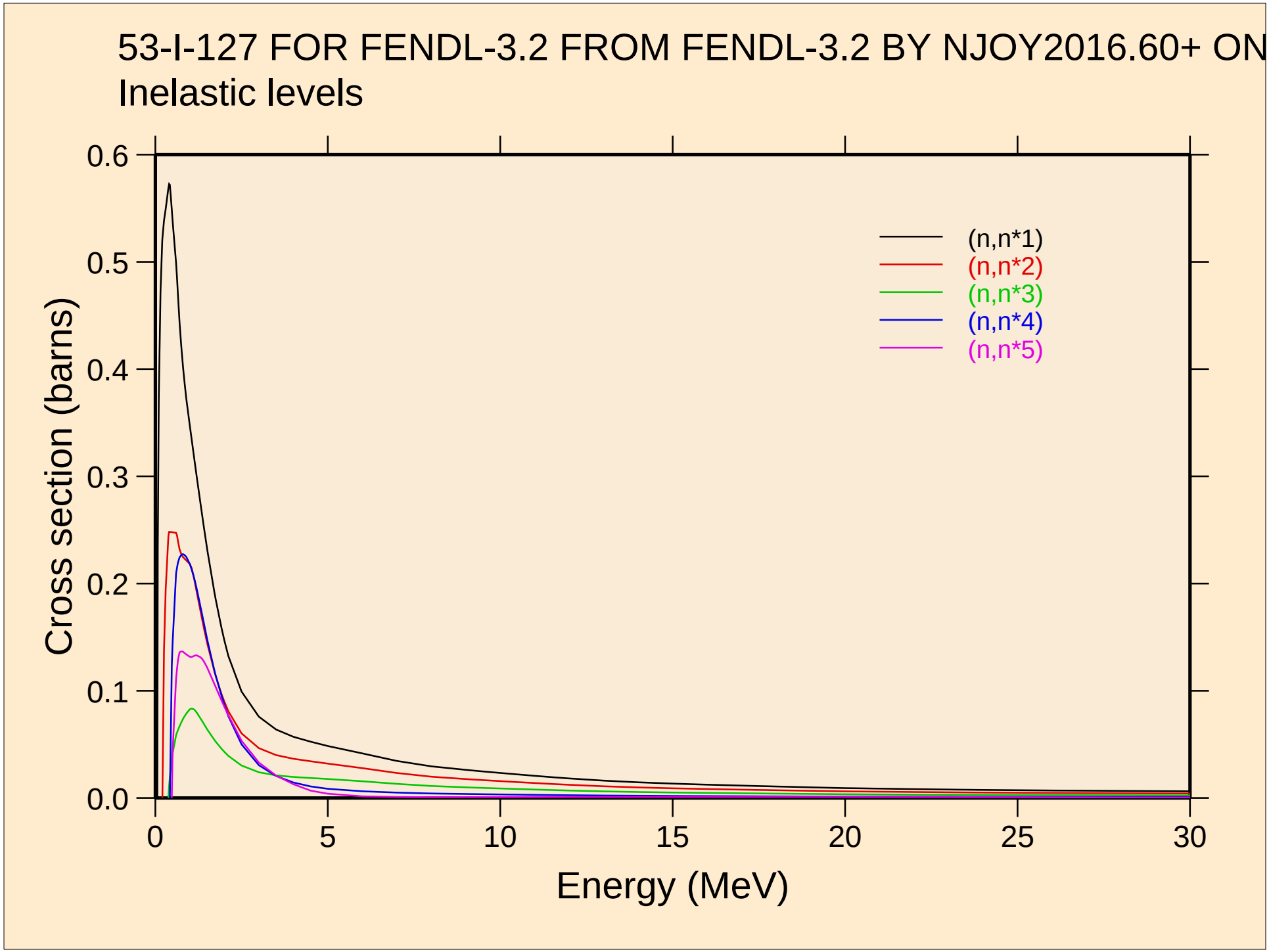

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Non-threshold reactions
(n,gma)
(n,p)
(n,a)
(n,xp)
(n,xa)
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1
Energy (MeV)

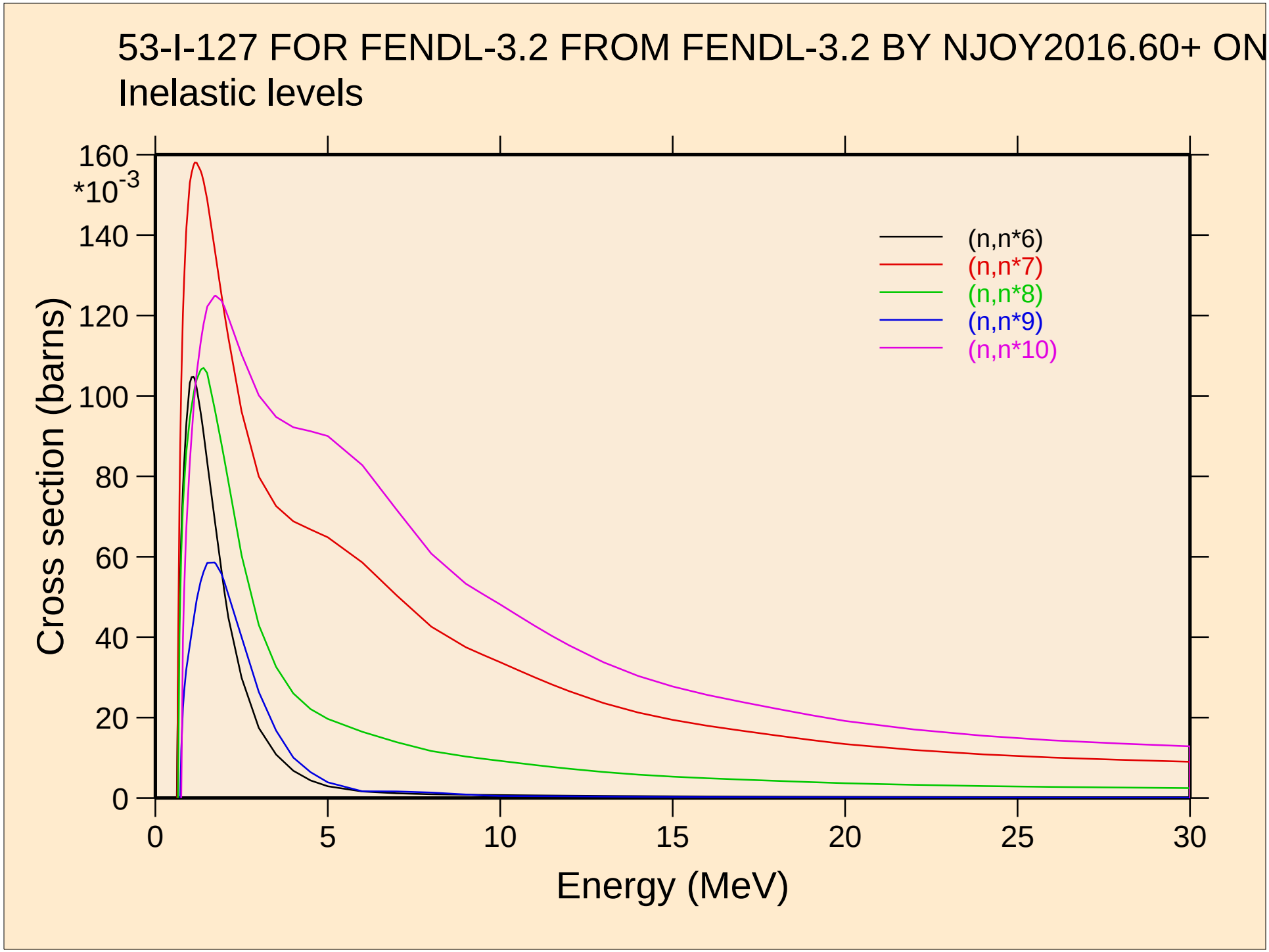

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Principal cross sections
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
6
7
8
0
20
40
60
80
100
120
140
160
180
200
total
absorption
elastic
gamma production

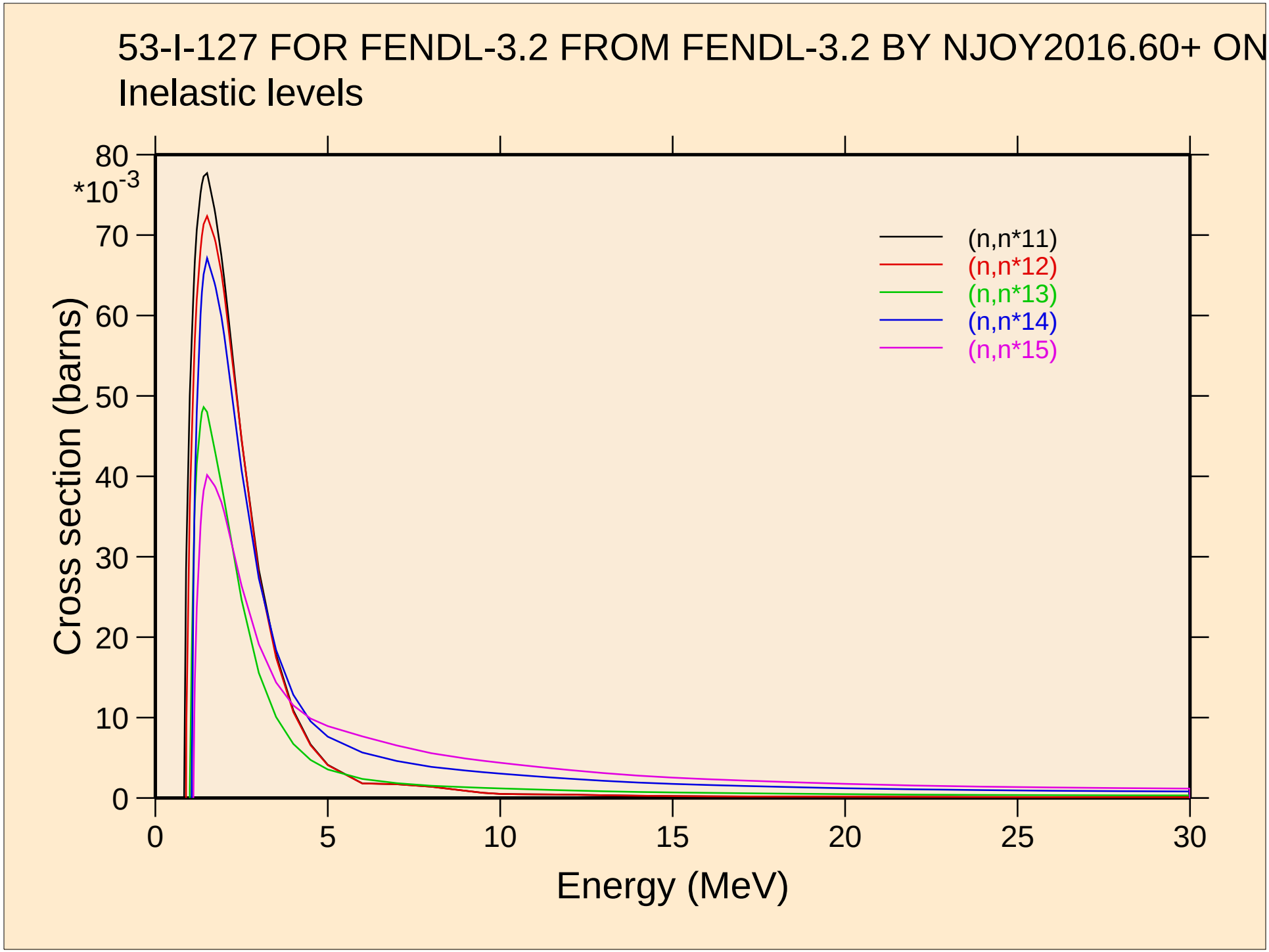

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
5
10
15
20
25
30
35
0
50
100
150
200

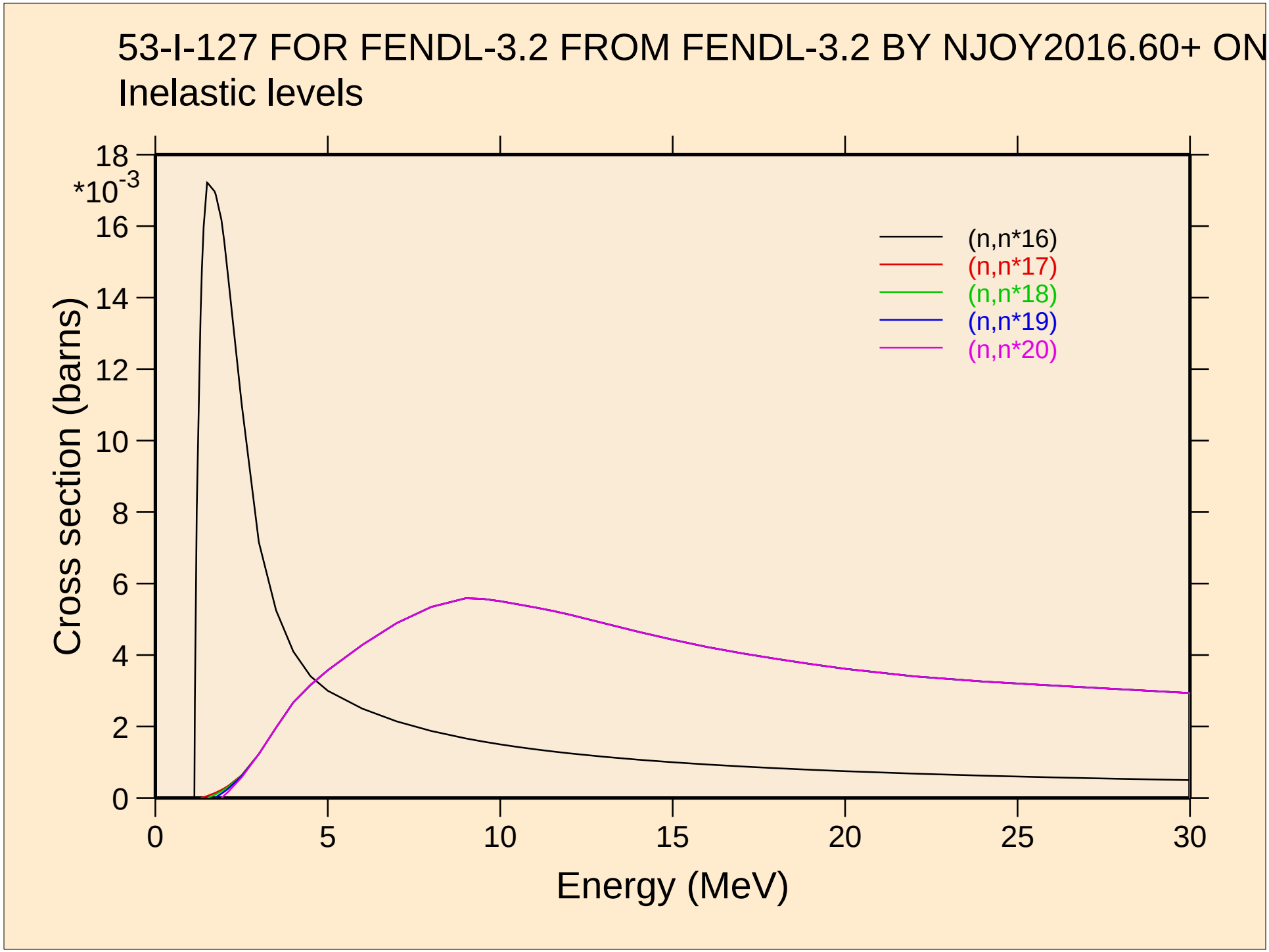

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Damage
damage
Damage (MeV-barns)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
50
100
150
200
Energy (MeV)

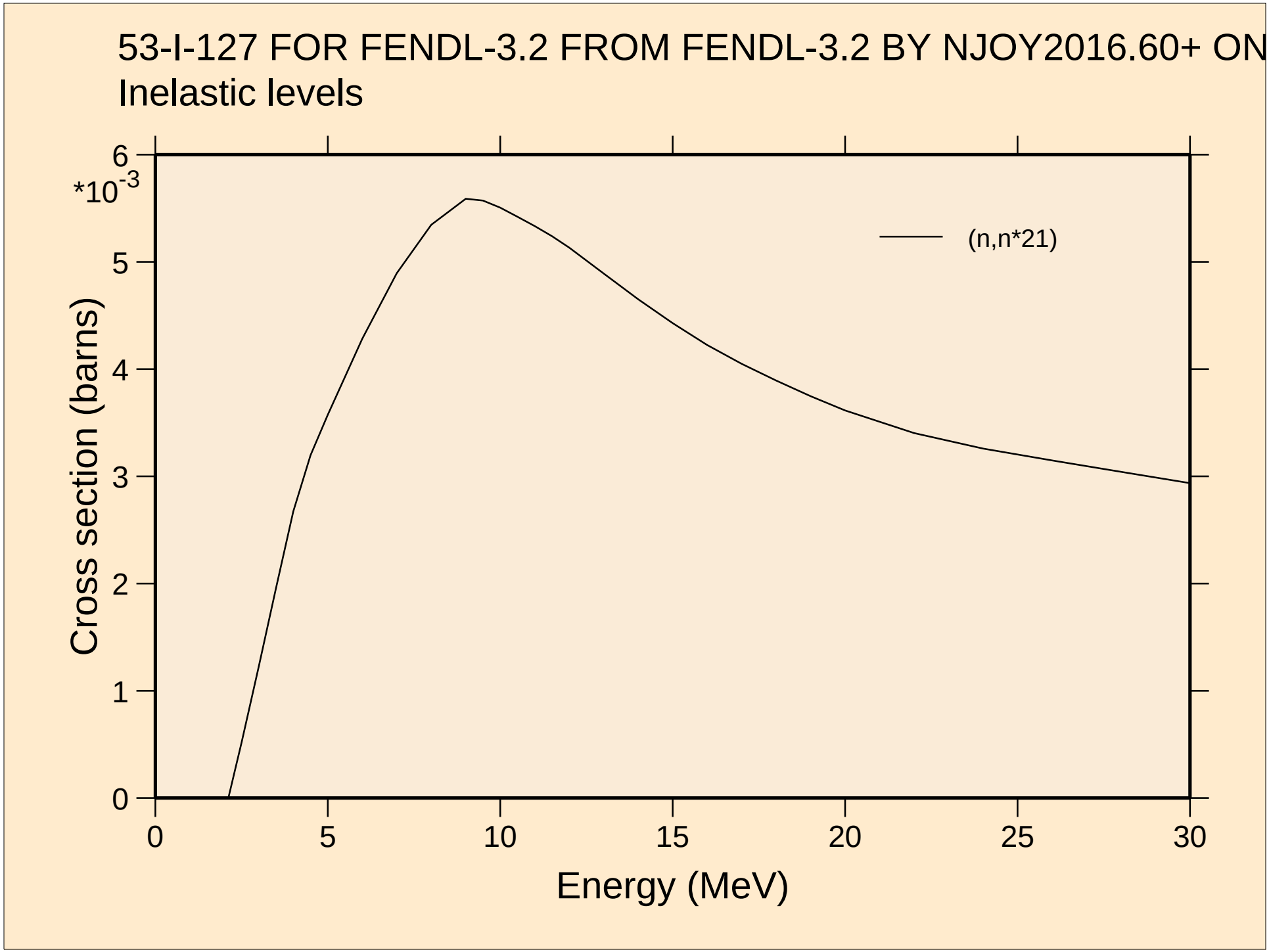

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Non-threshold reactions
(n,gma)
(n,p)
(n,a)
(n,xp)
(n,xa)
Cross section (barns)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
0
50
100
150
200
Energy (MeV)

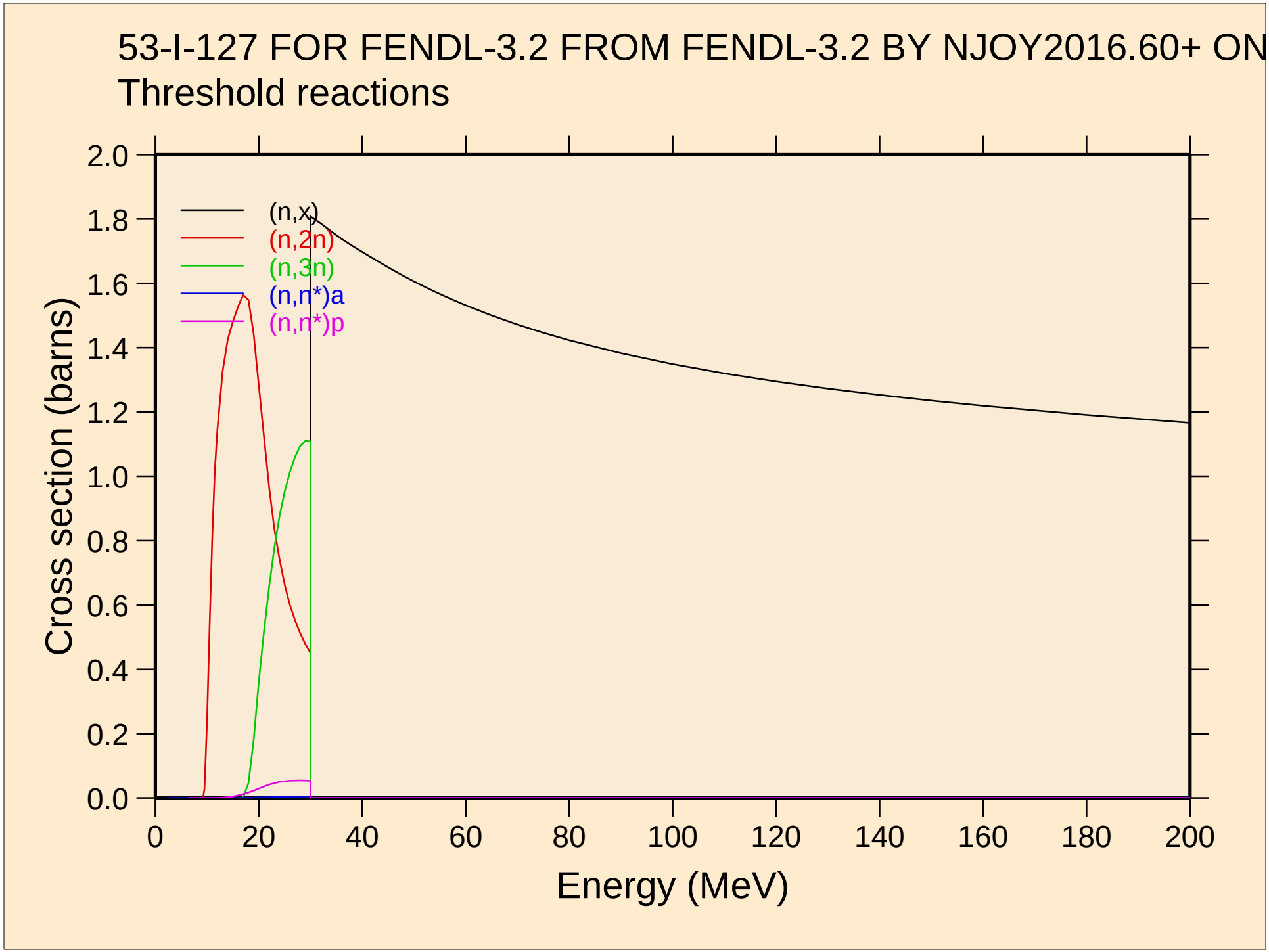

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Inelastic levels
Cross section (barns)
Energy (MeV)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
5
10
15
20
25
30
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

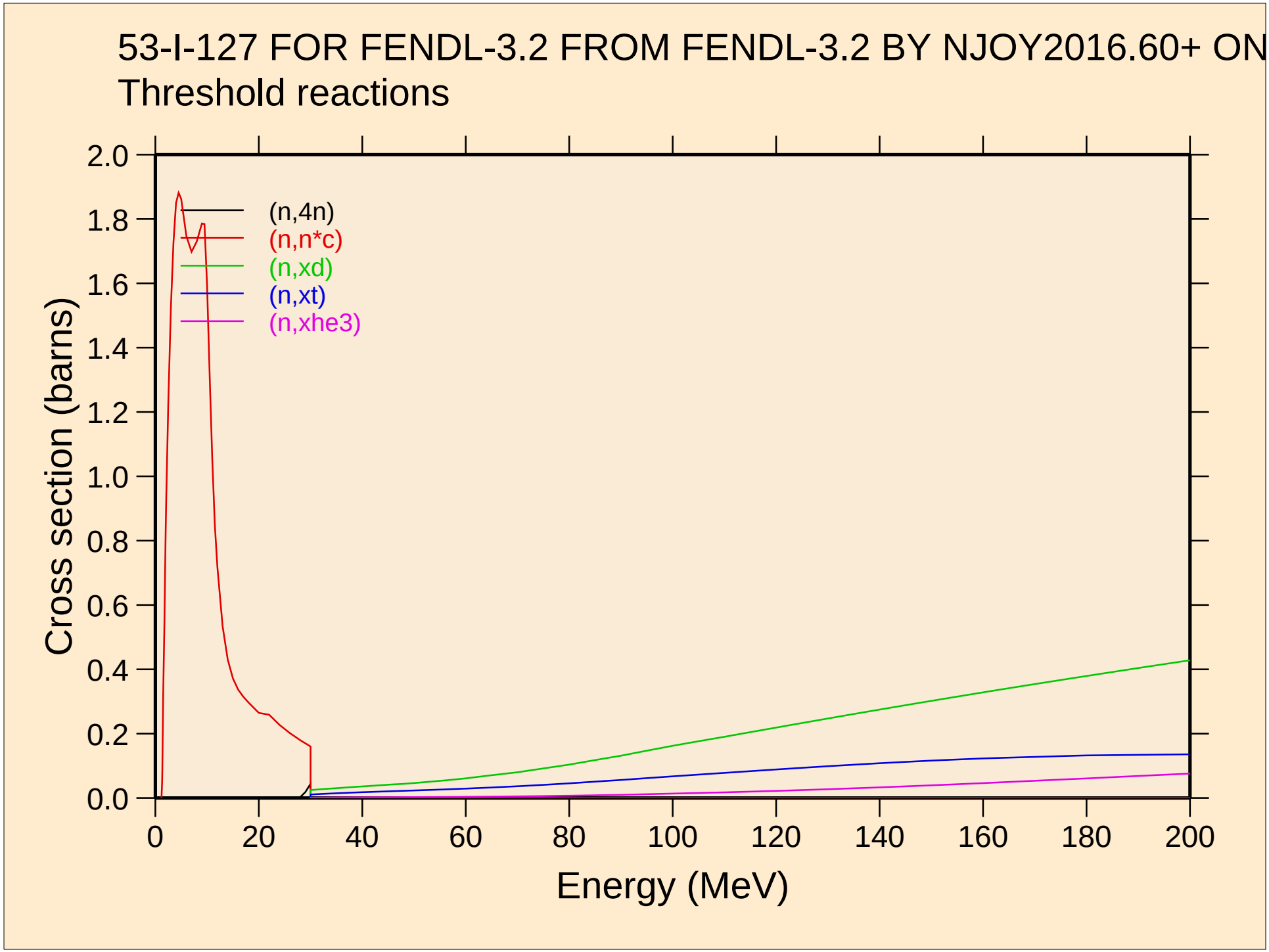

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Inelastic levels
Cross section (barns)
*10-3
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

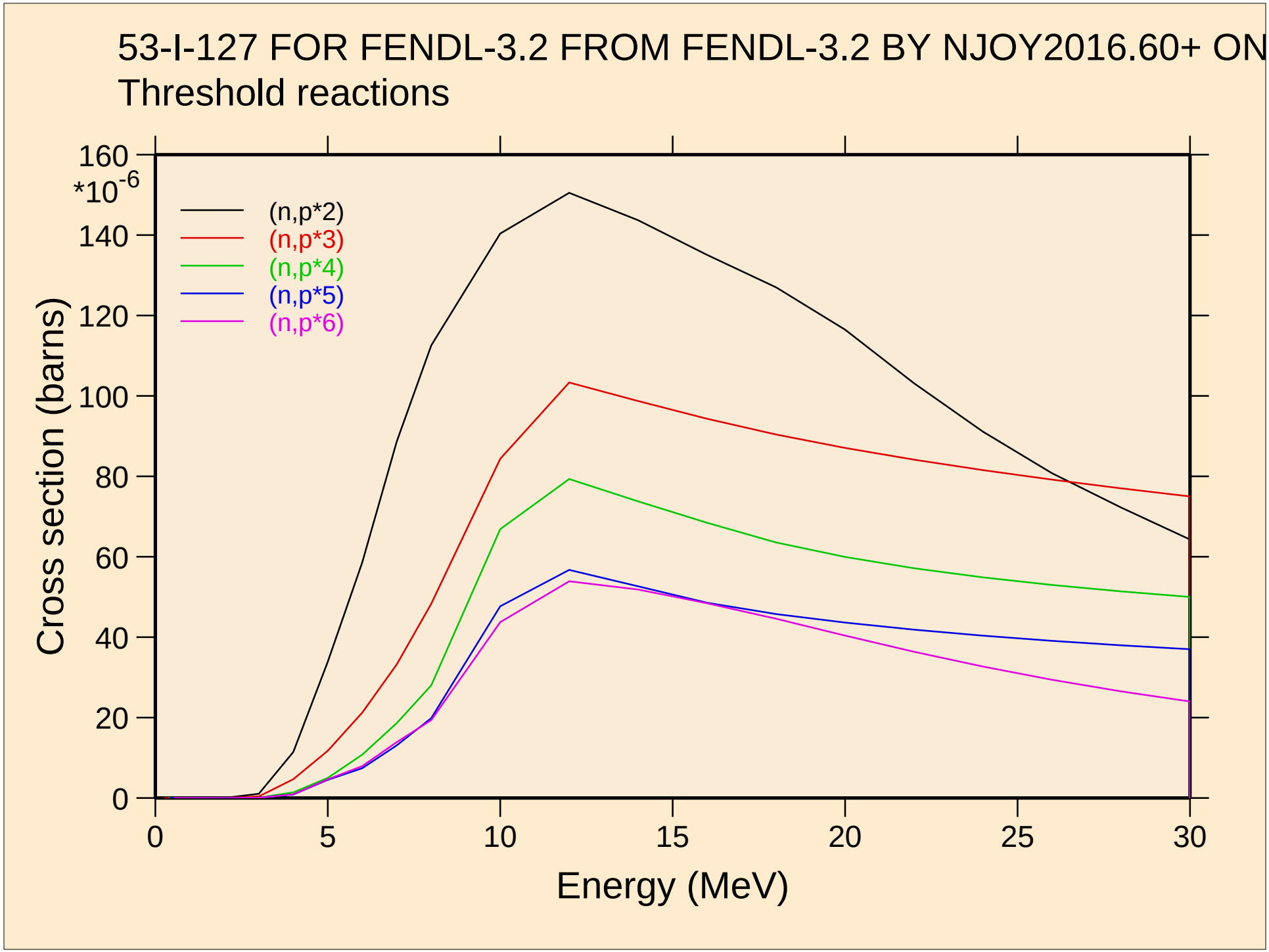

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Inelastic levels
Cross section (barns)
*10-3
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

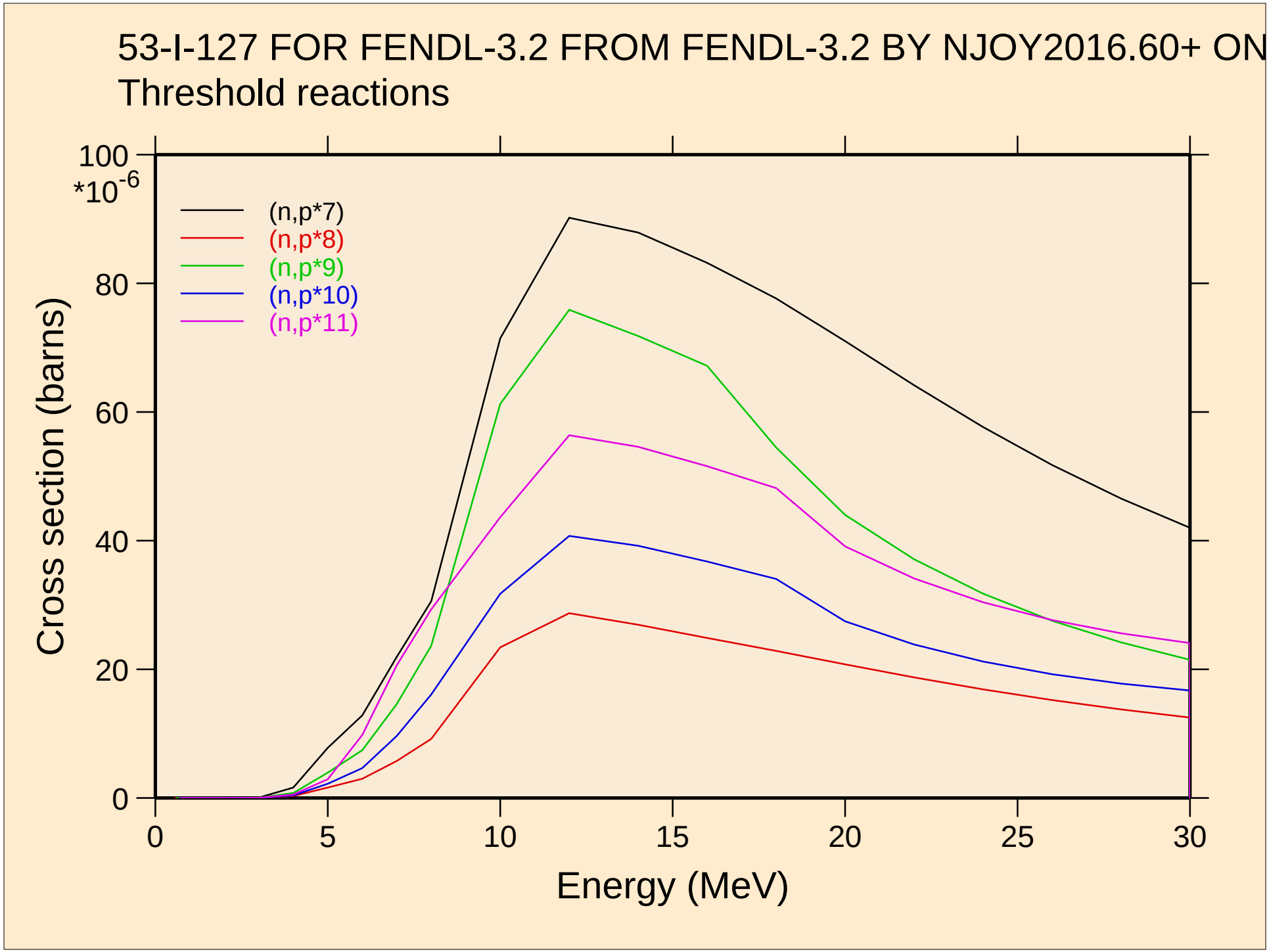

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Inelastic levels
Cross section (barns)
*10-3
18
16
14
12
10
8
6
4
2
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)

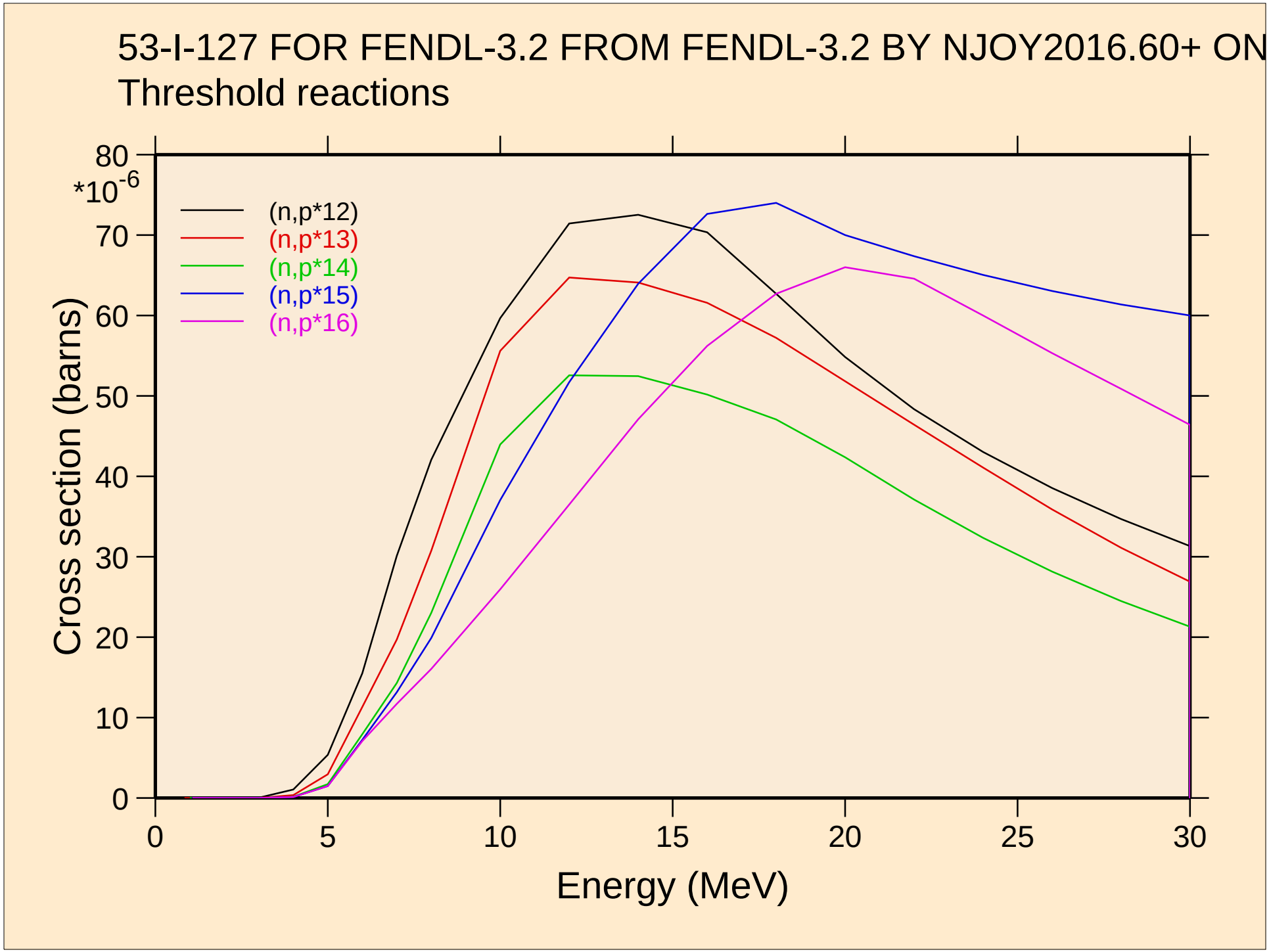

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Inelastic levels
*10-3
Cross section (barns)
(n,n*21)
Energy (MeV)
0
1
2
3
4
5
6
0
5
10
15
20
25
30

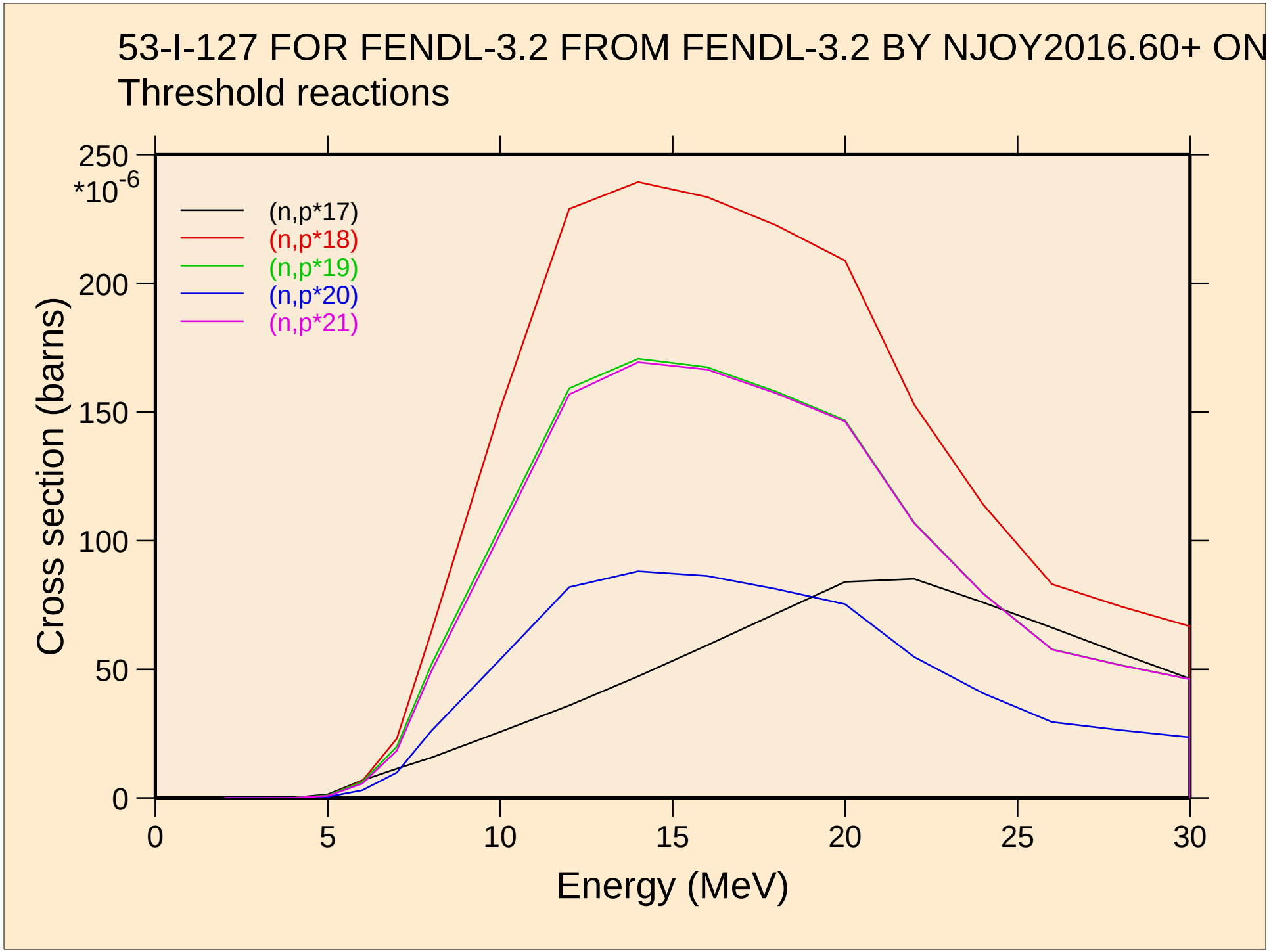

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
(n,x)
(n,2n)
(n,3n)
(n,n*)a
(n,n*)p
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
0
20
40
60
80
100
120
140
160
180
200

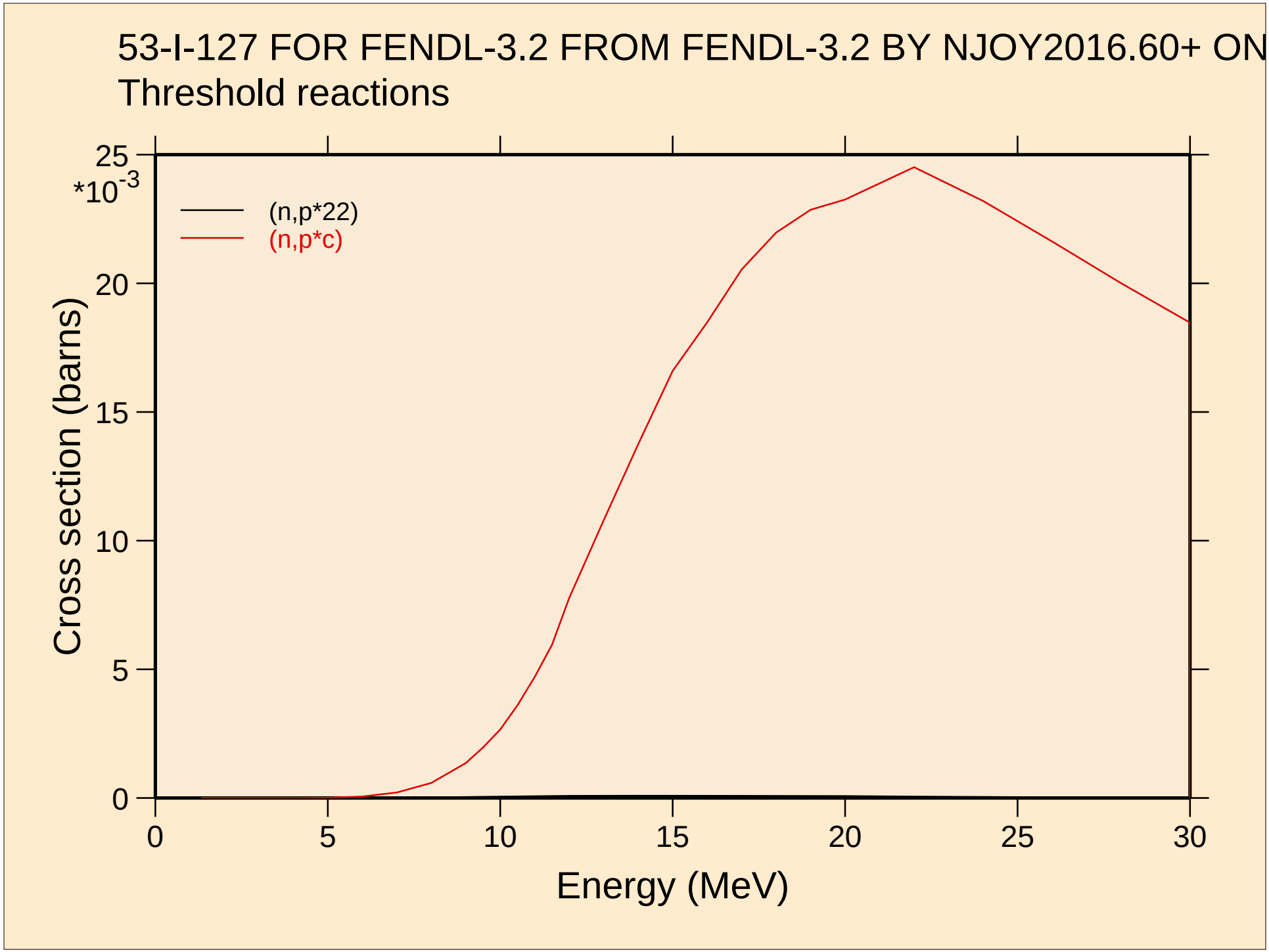

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
(n,4n)
(n,n*c)
(n,xd)
(n,xt)
(n,xhe3)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
0
20
40
60
80
100
120
140
160
180
200

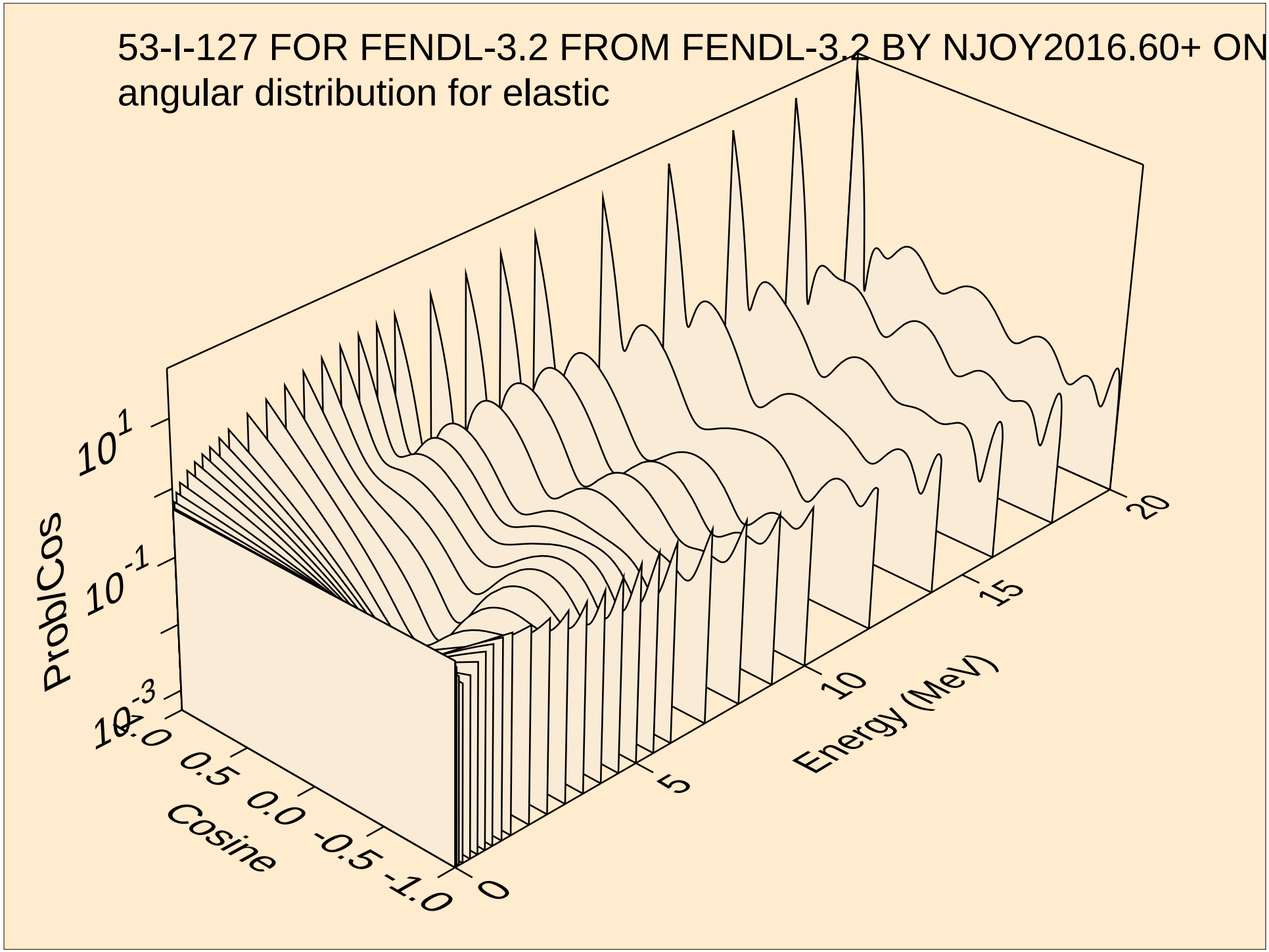

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
160
*10-6
140
120
100
80
60
40
20
0
Cross section (barns)
(n,p*2)
(n,p*3)
(n,p*4)
(n,p*5)
(n,p*6)
0
5
10
15
20
25
30
Energy (MeV)

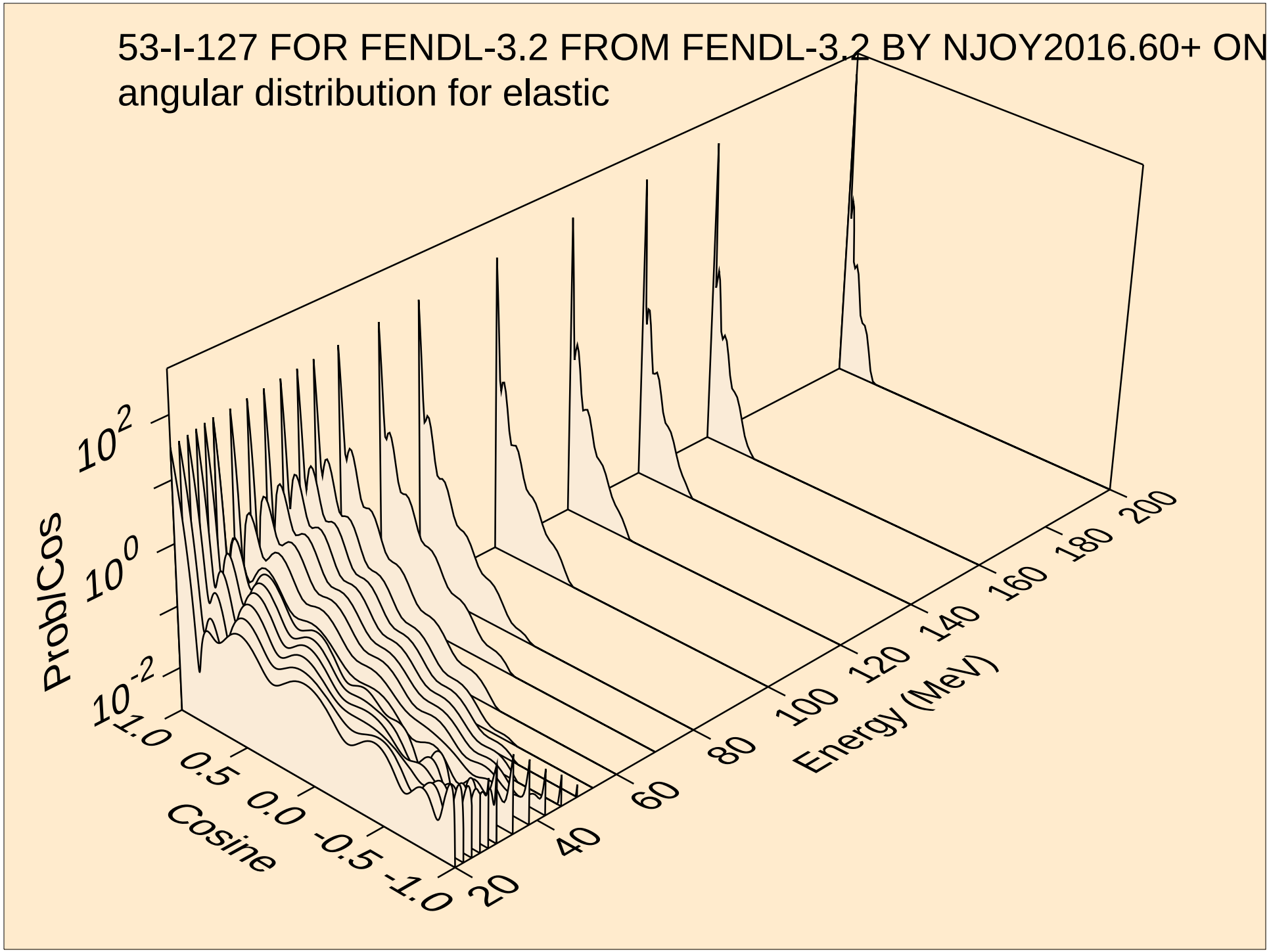

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
100
*10-6
80
60
40
20
0
Cross section (barns)
(n,p*7)
(n,p*8)
(n,p*9)
(n,p*10)
(n,p*11)
0
5
10
15
20
25
30
Energy (MeV)

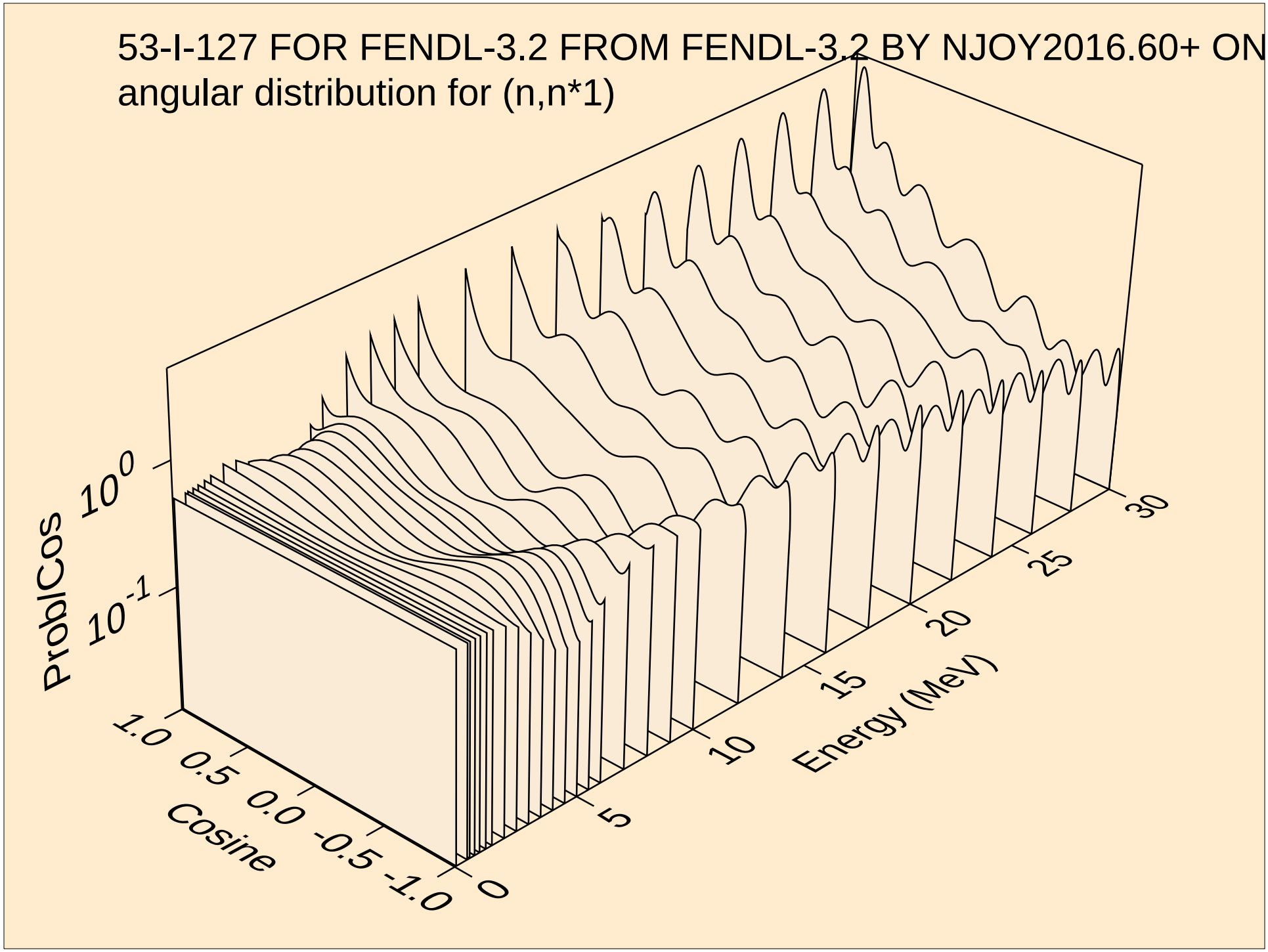

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
*10-6
(n,p*12)
(n,p*13)
(n,p*14)
(n,p*15)
(n,p*16)
Cross section (barns)
Energy (MeV)
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30

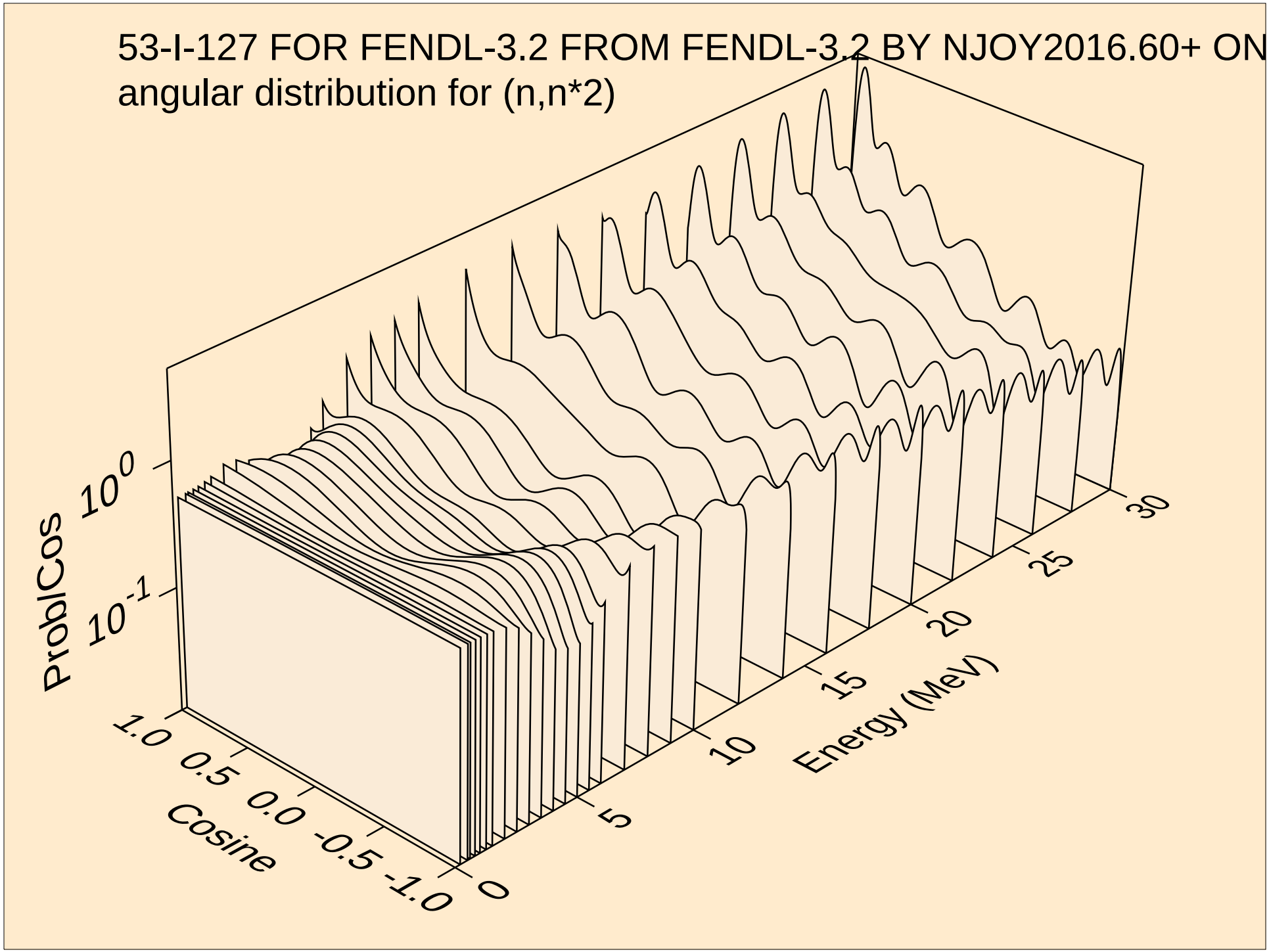

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
250
*10-6
200
150
100
50
0
Cross section (barns)
(n,p*17)
(n,p*18)
(n,p*19)
(n,p*20)
(n,p*21)
0
5
10
15
20
25
30
Energy (MeV)

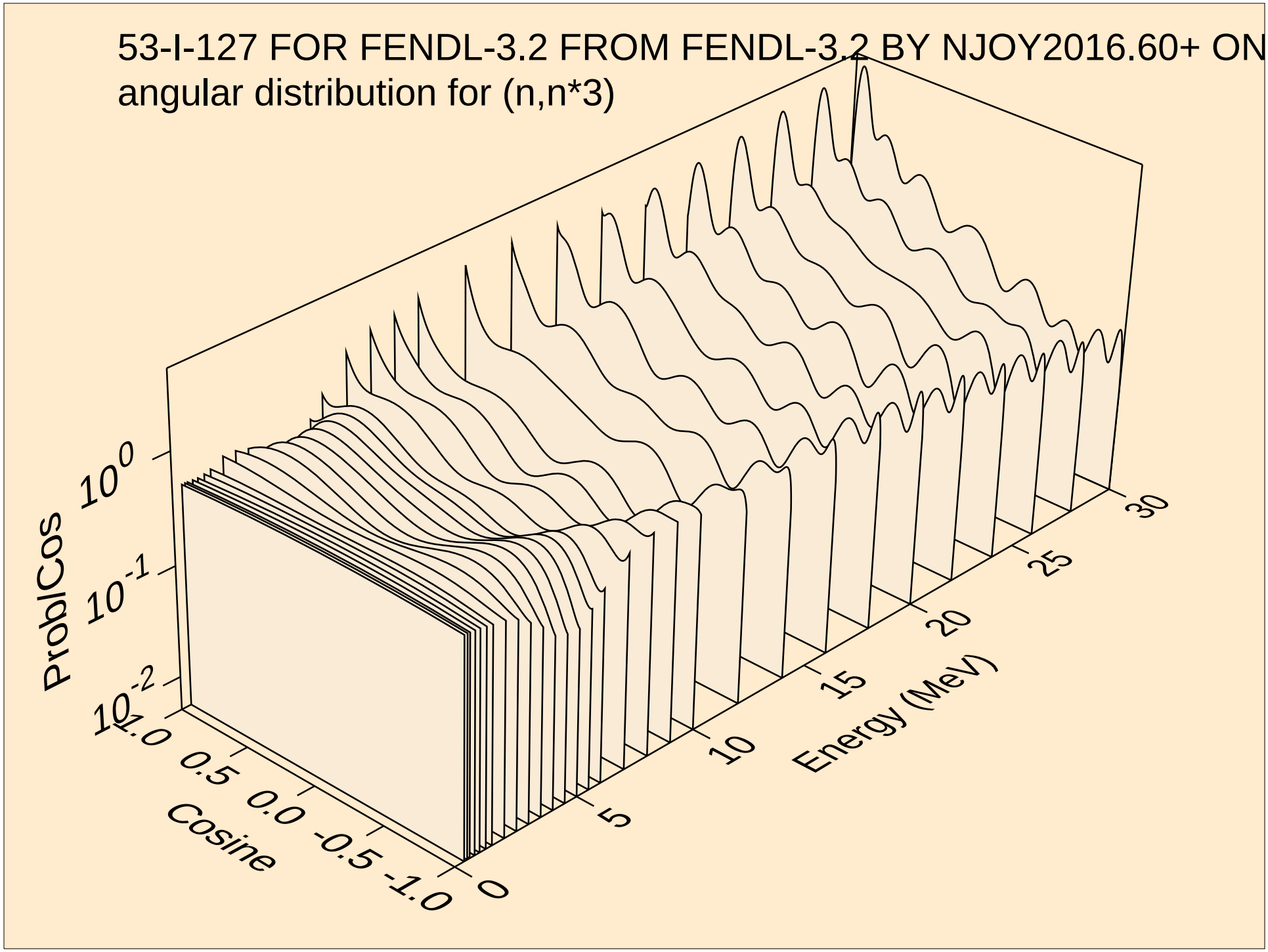

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Threshold reactions
*10-3
(n,p*22)
(n,p*c)
Cross section (barns)
Energy (MeV)
0
5
10
15
20
25
30

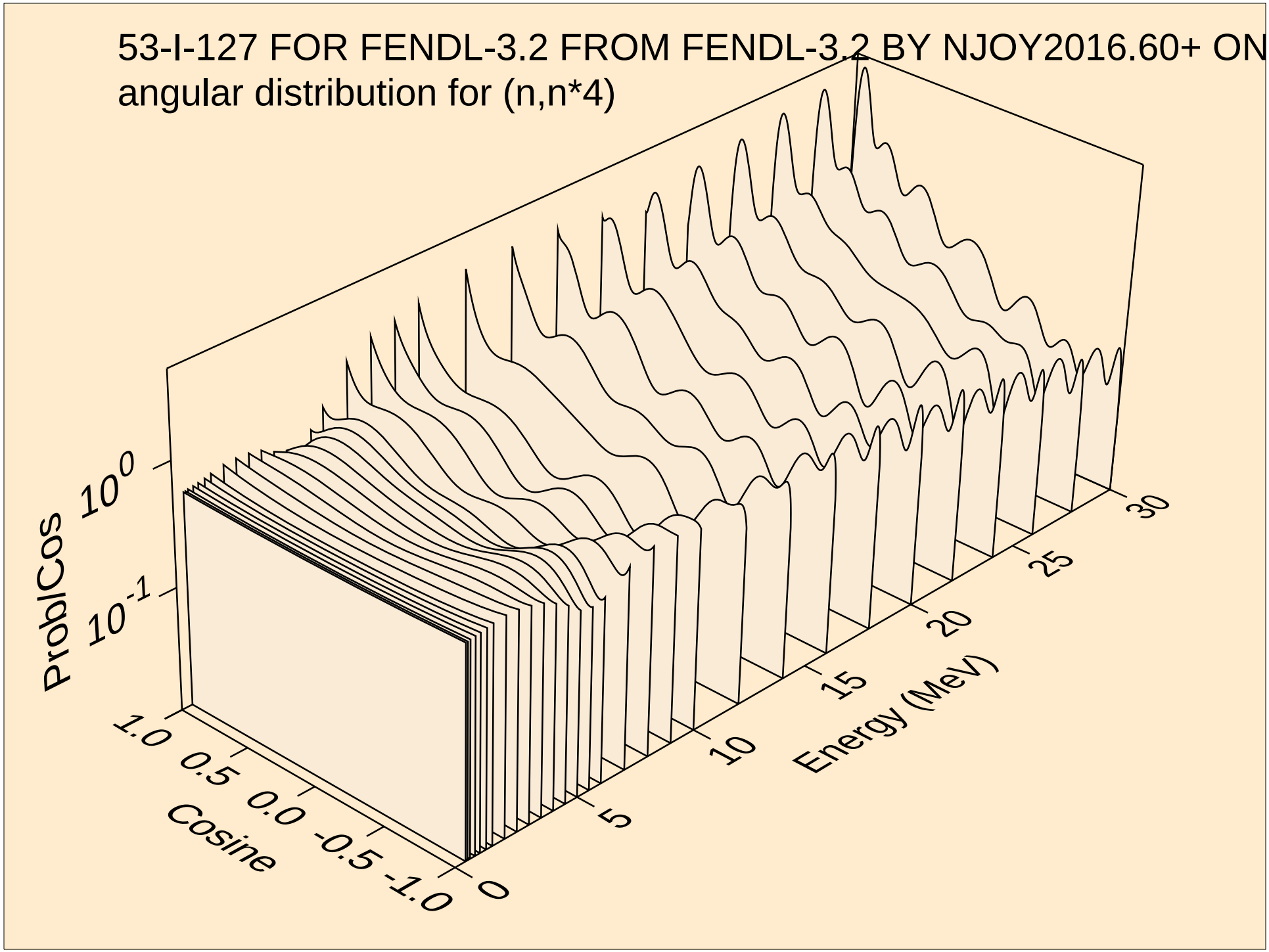

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for elastic
ProbICos
10^{1}
10^{-1}
10^{-3}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

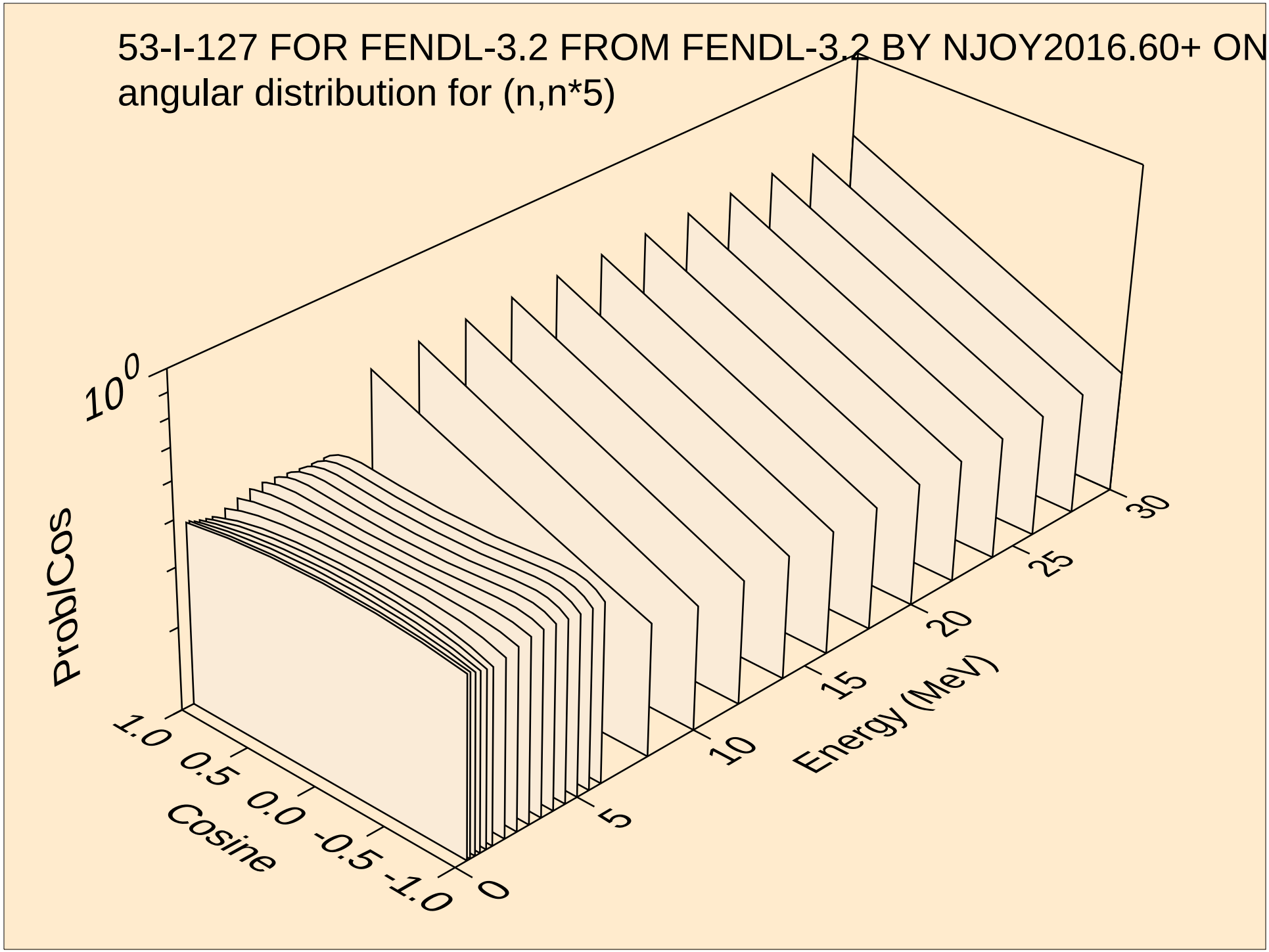

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for elastic
ProblCos
10^{2}
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

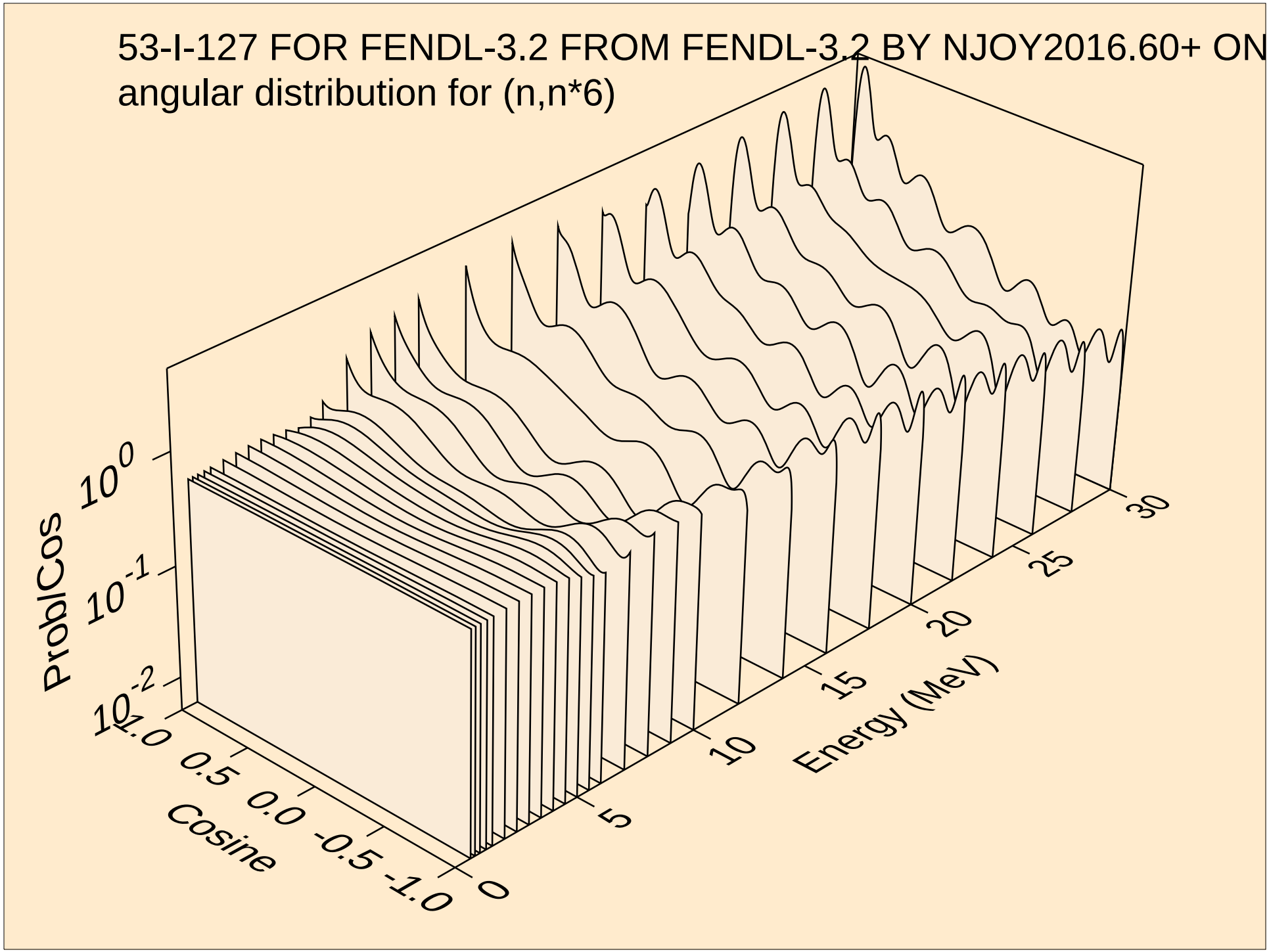

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*1)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

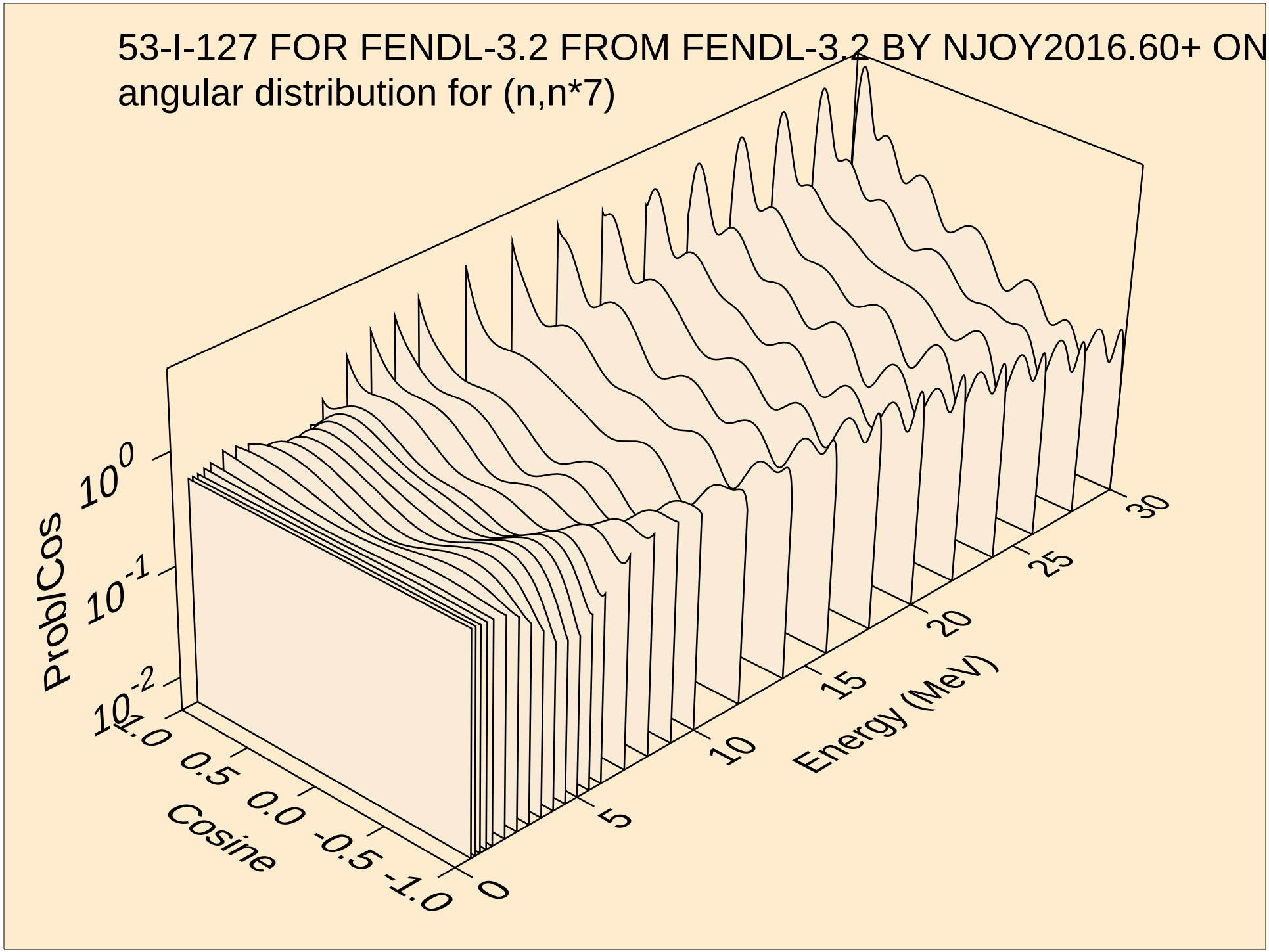

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*2)
ProbICos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

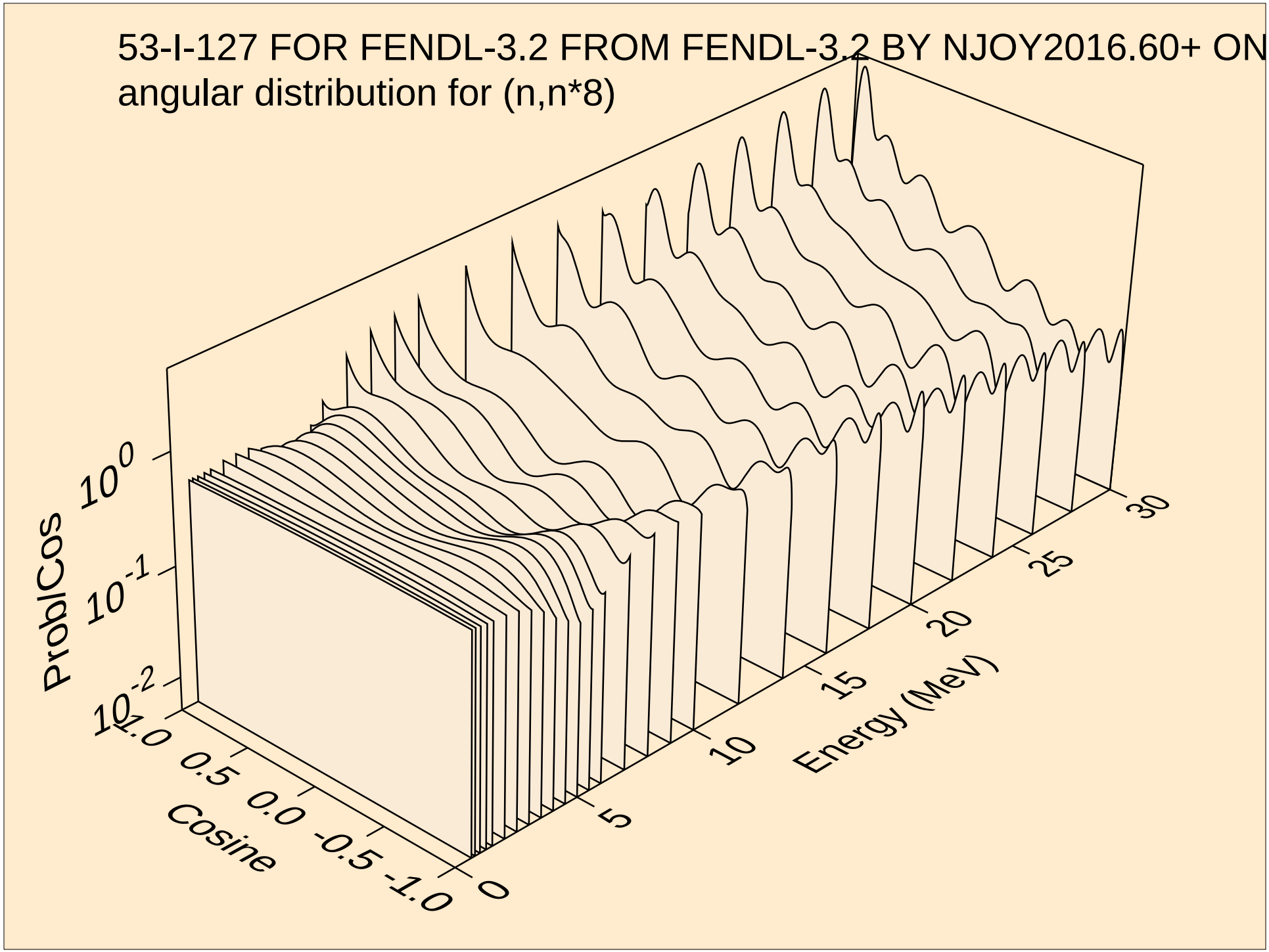

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*3)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

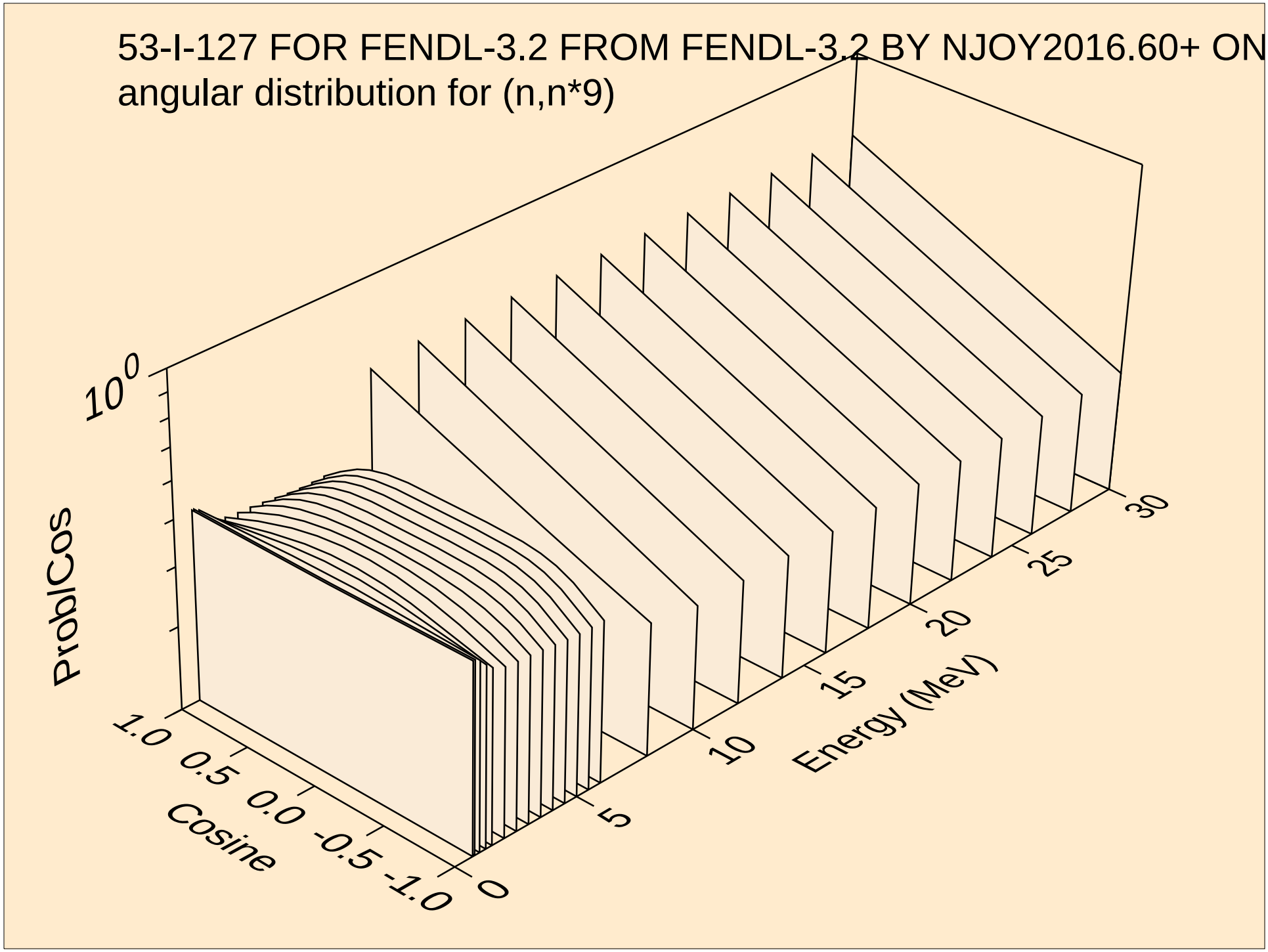

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*4)
Prob|Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

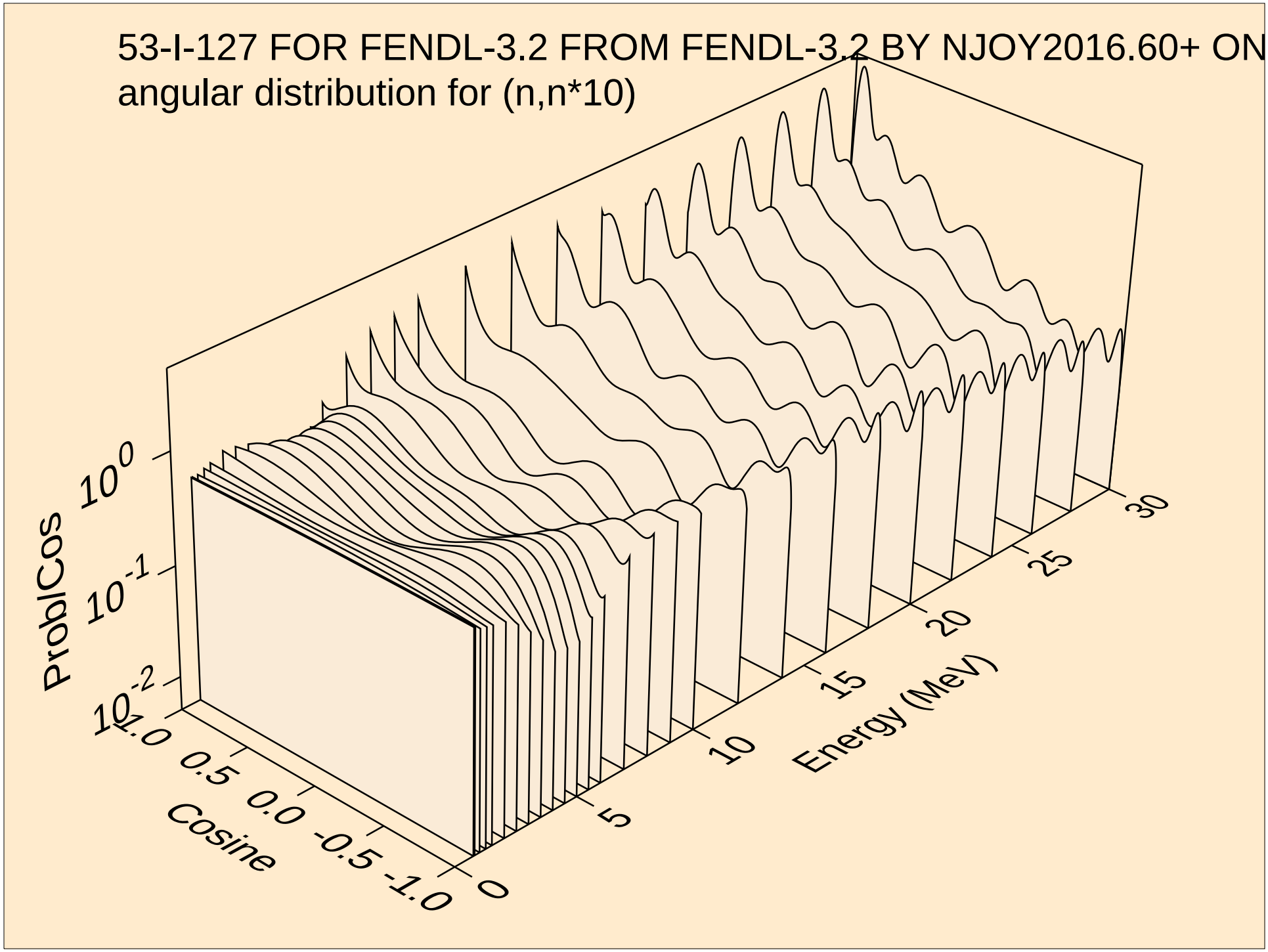

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*5)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

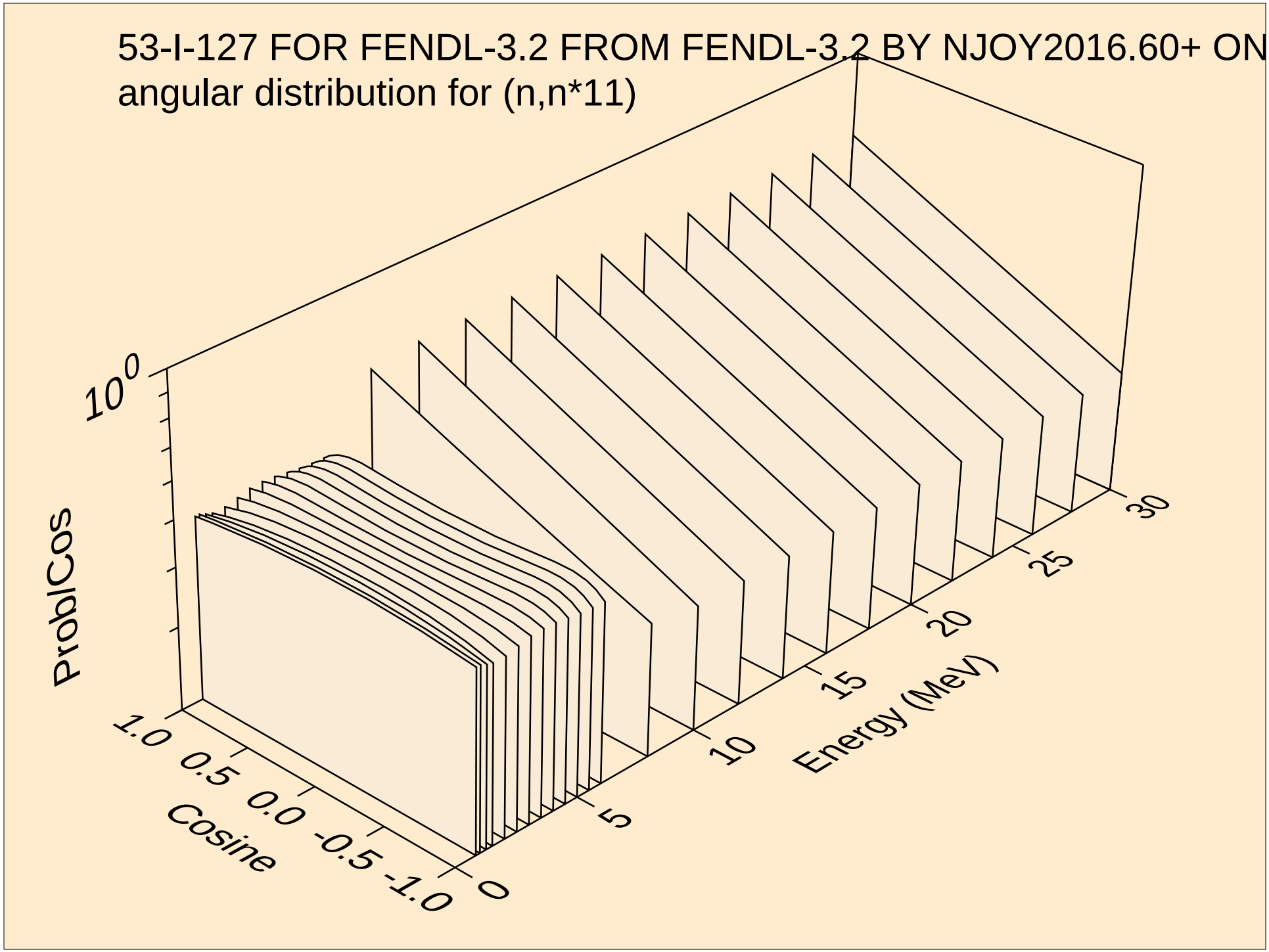

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*6)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

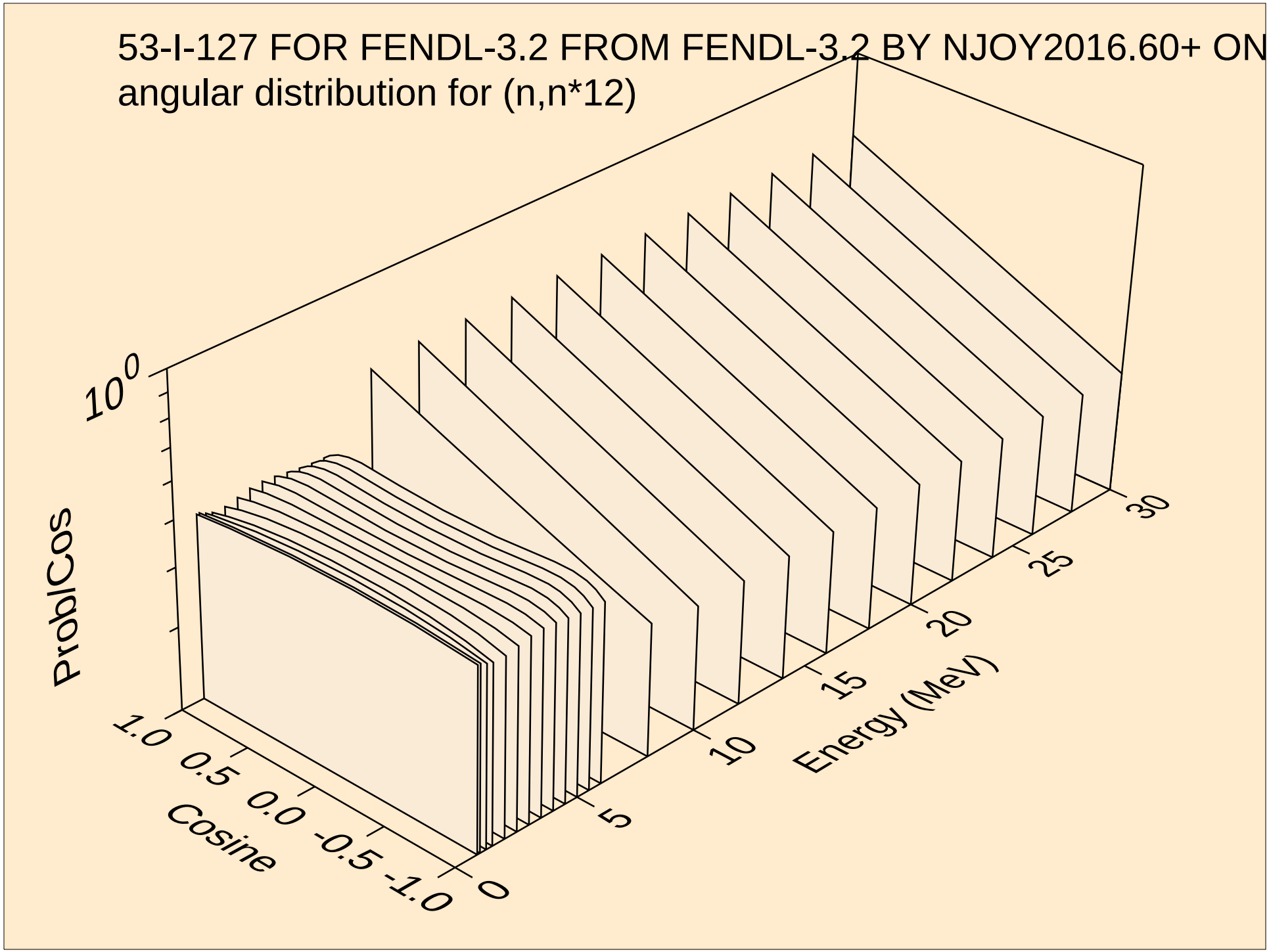

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*7)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

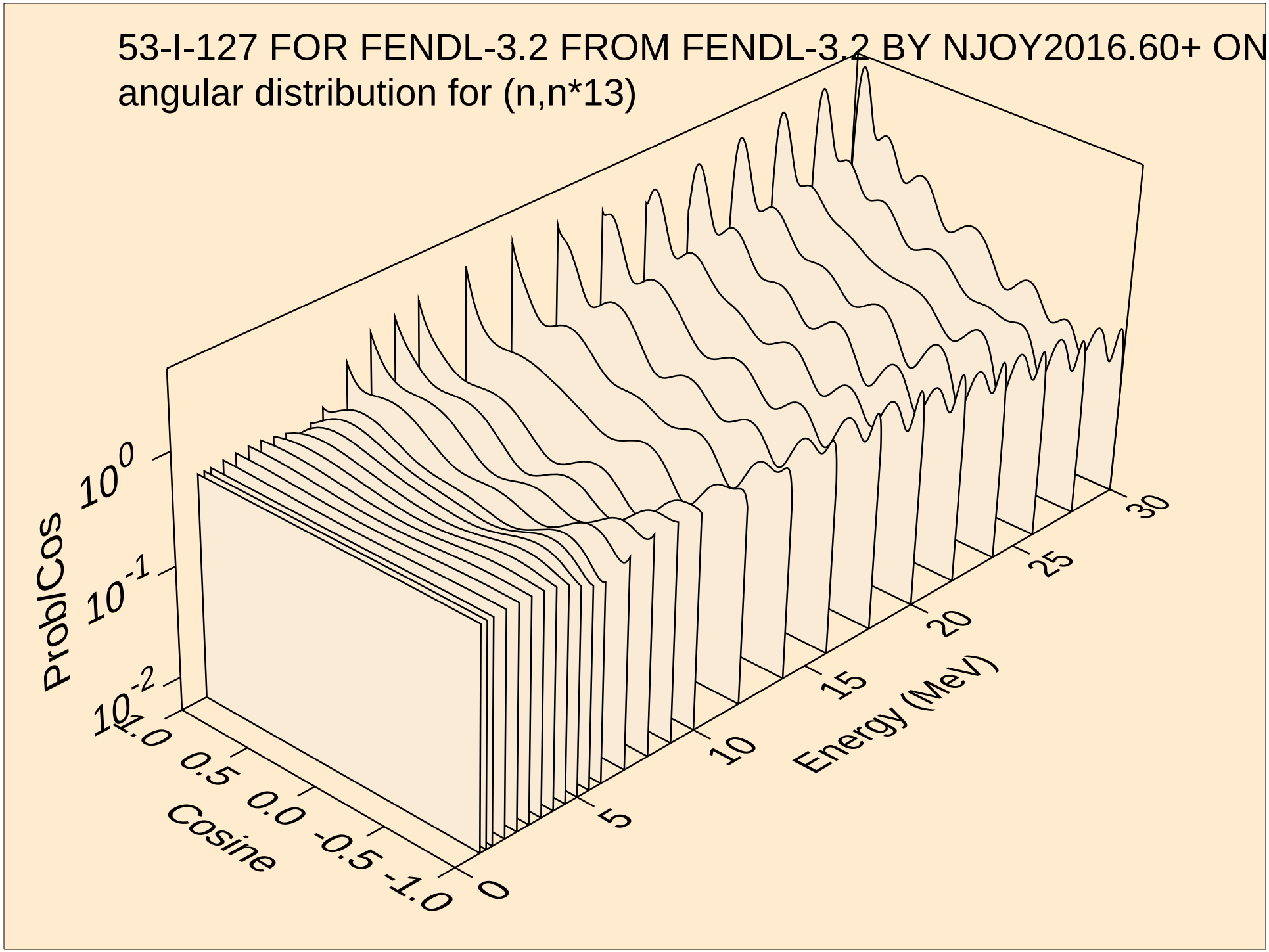

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*8)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

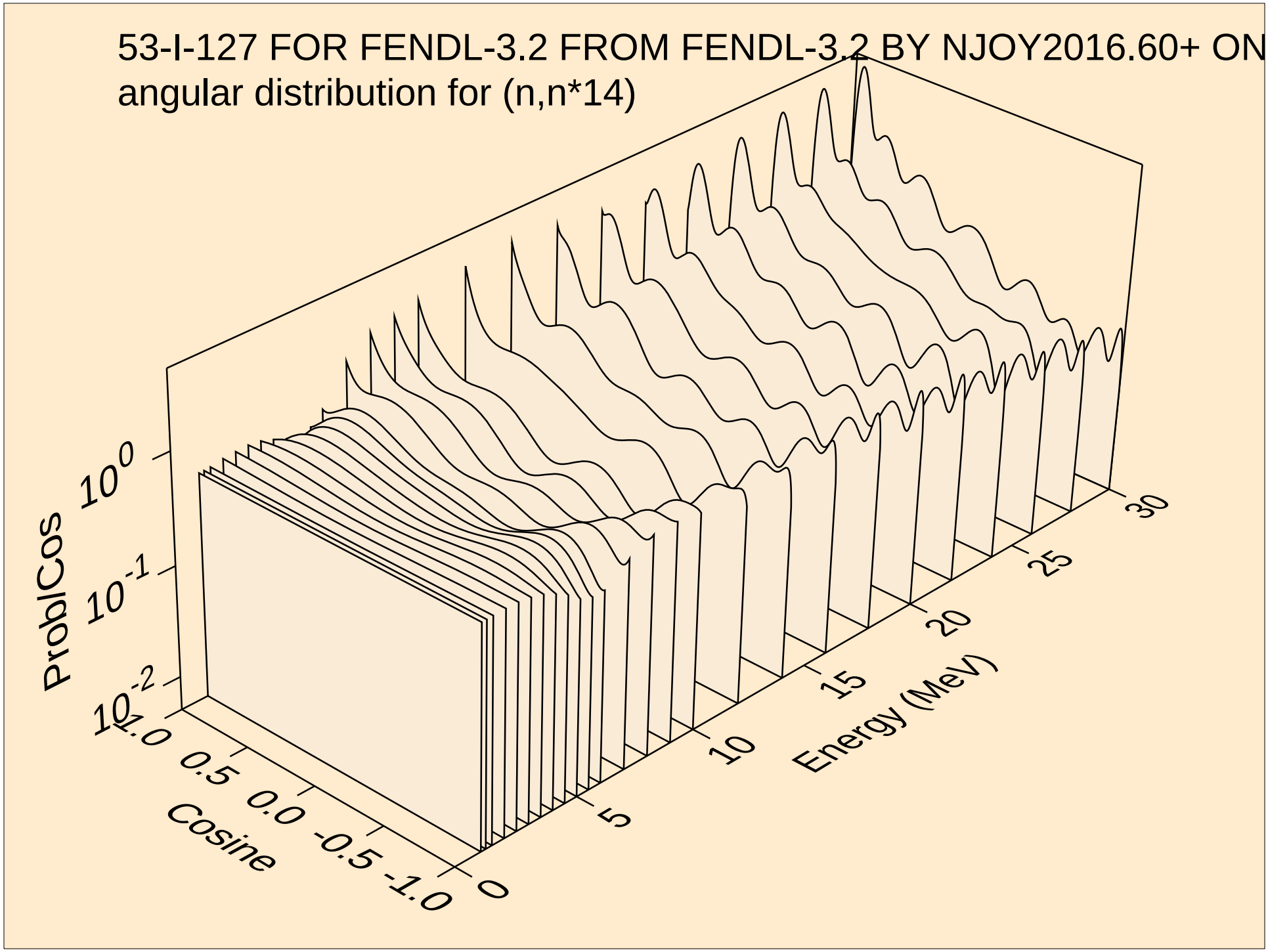

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*9)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

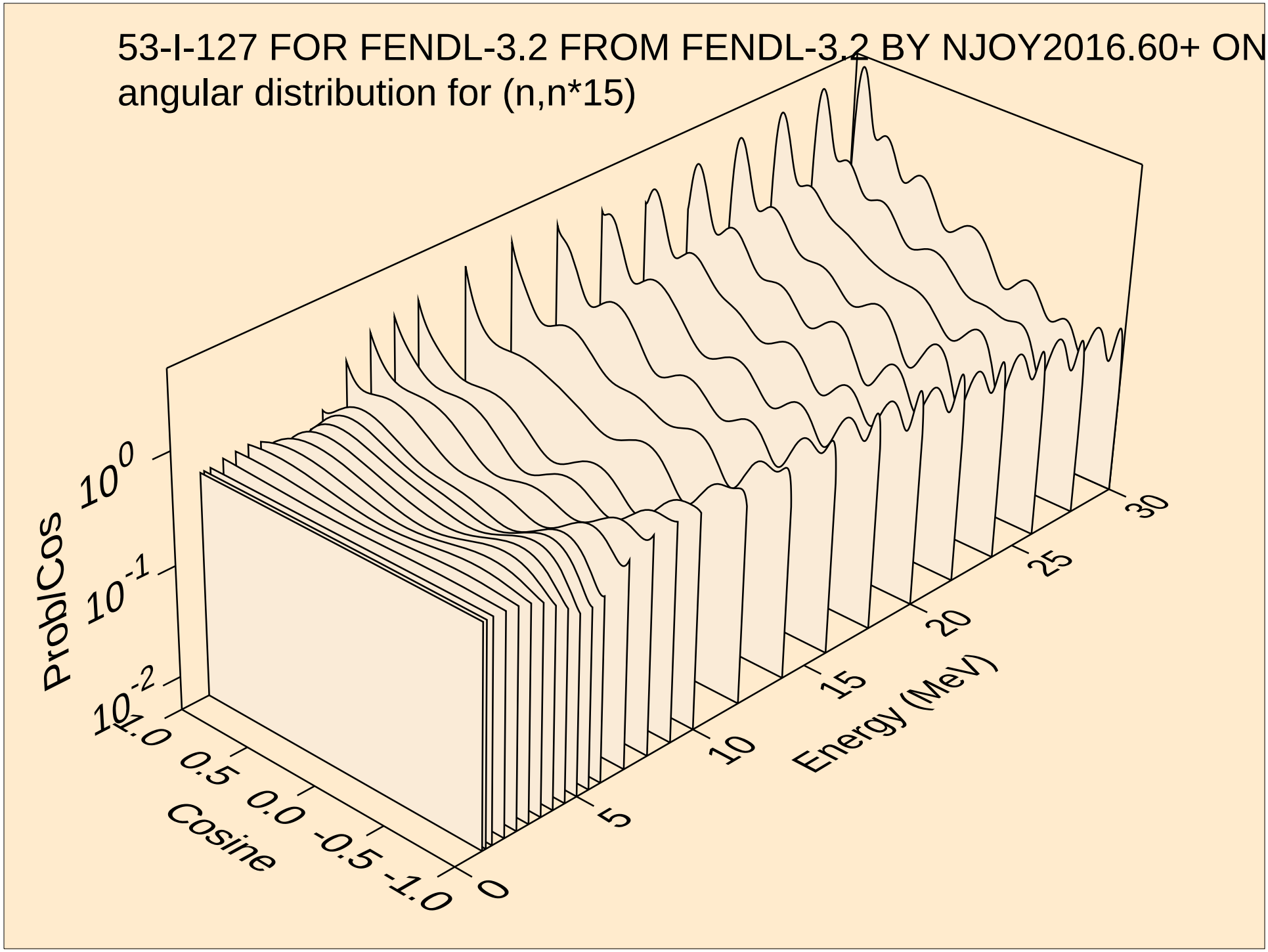

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*10)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

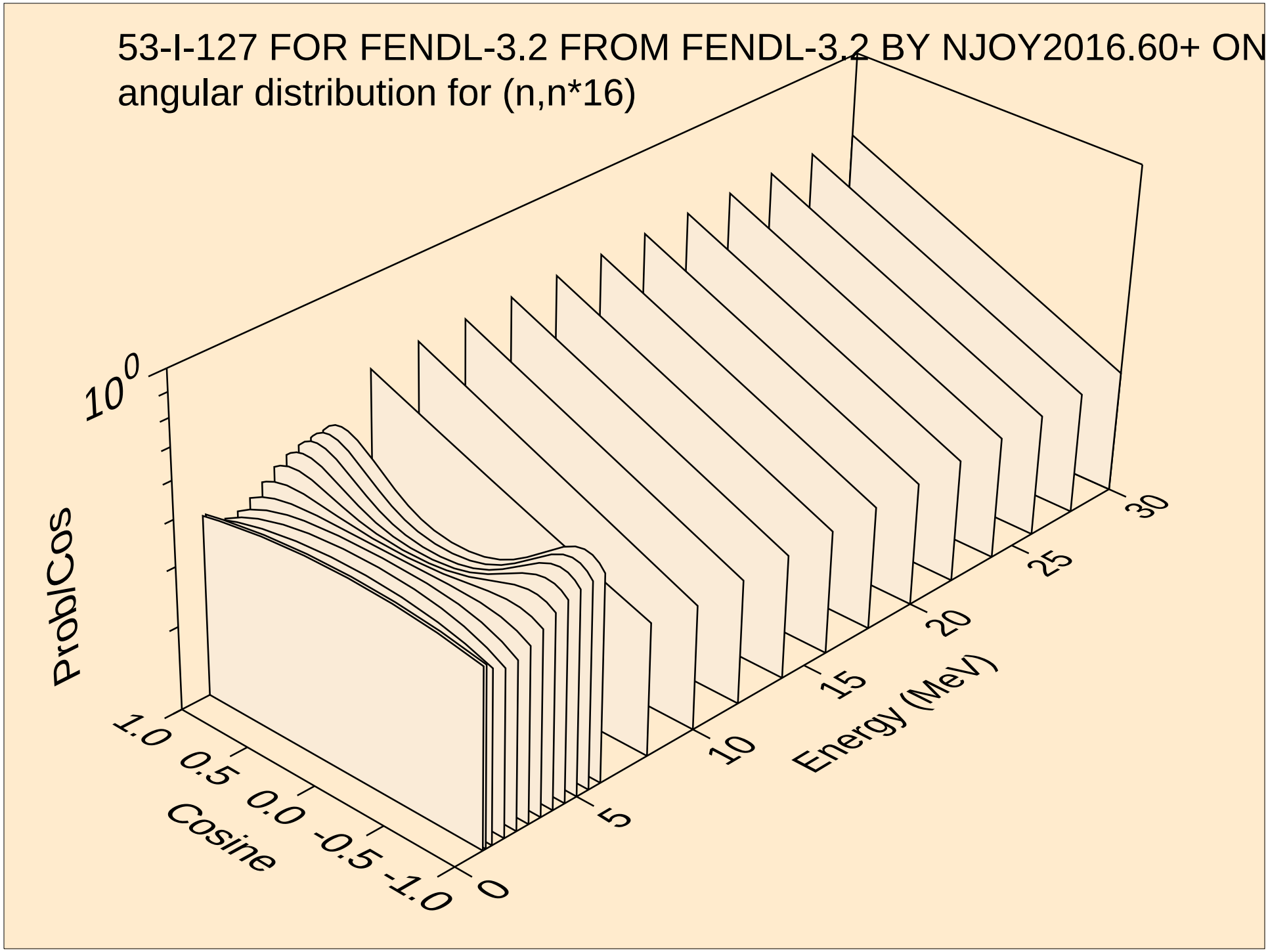

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*11)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

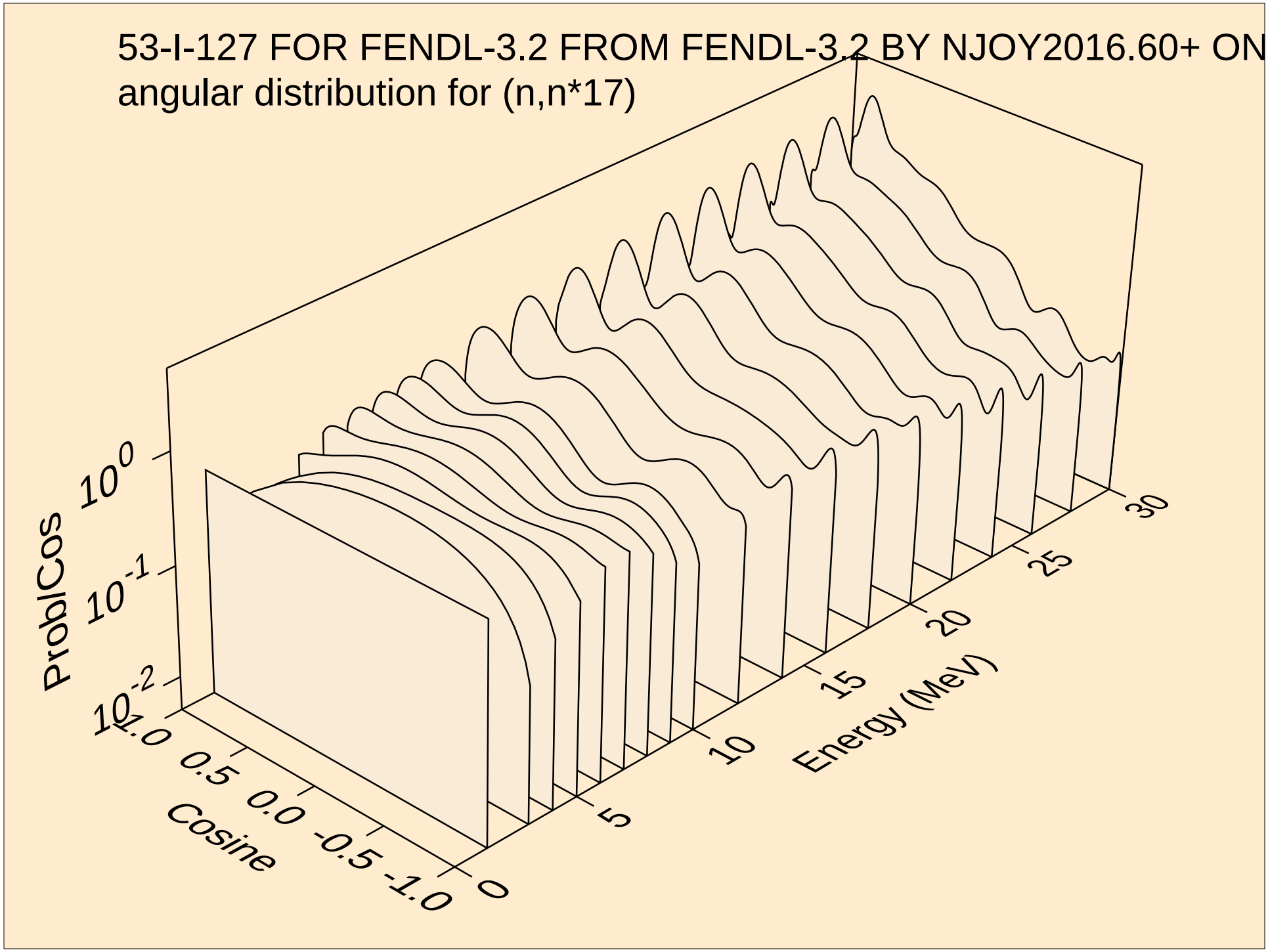

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*12)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

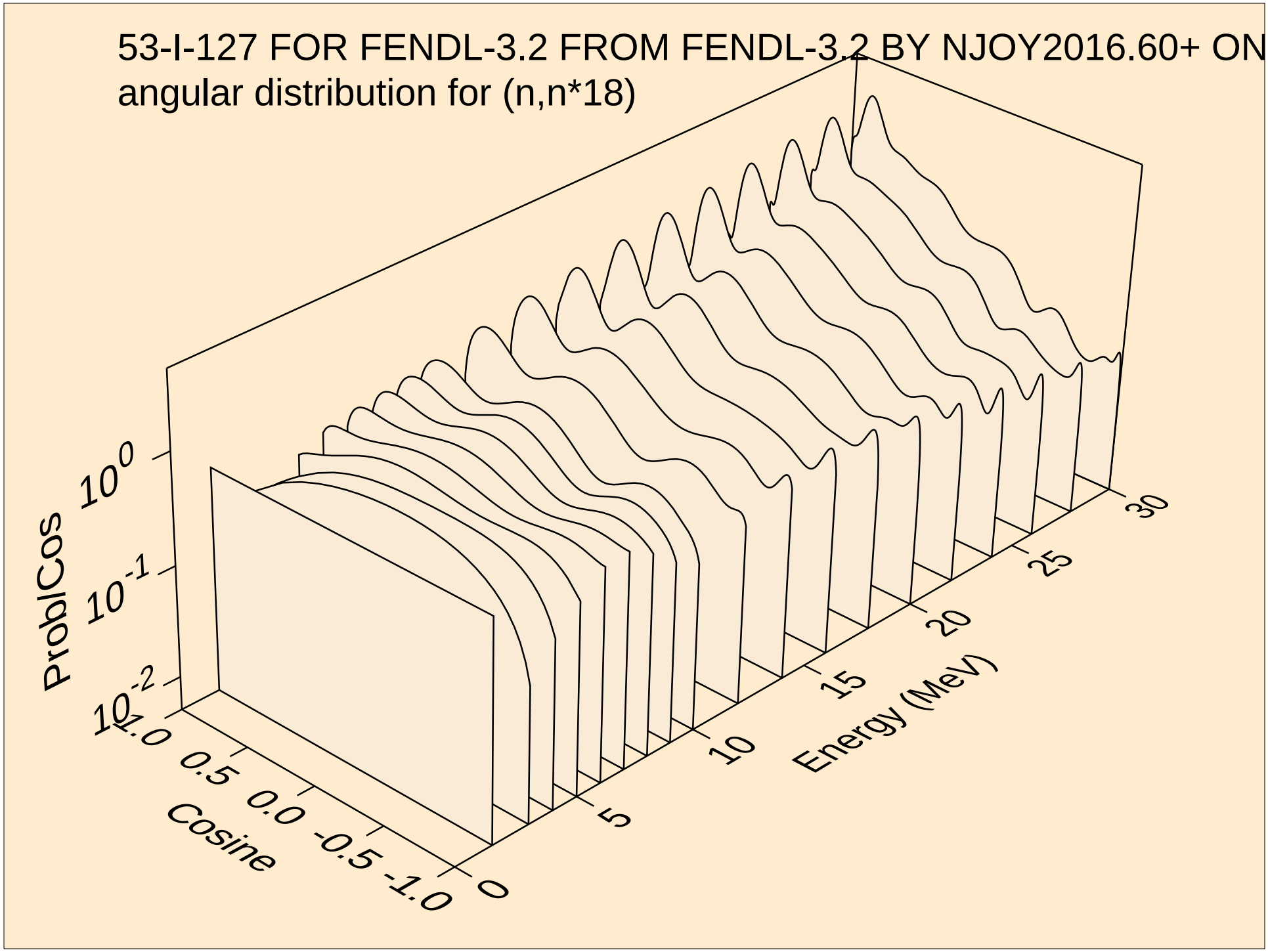

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*13)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

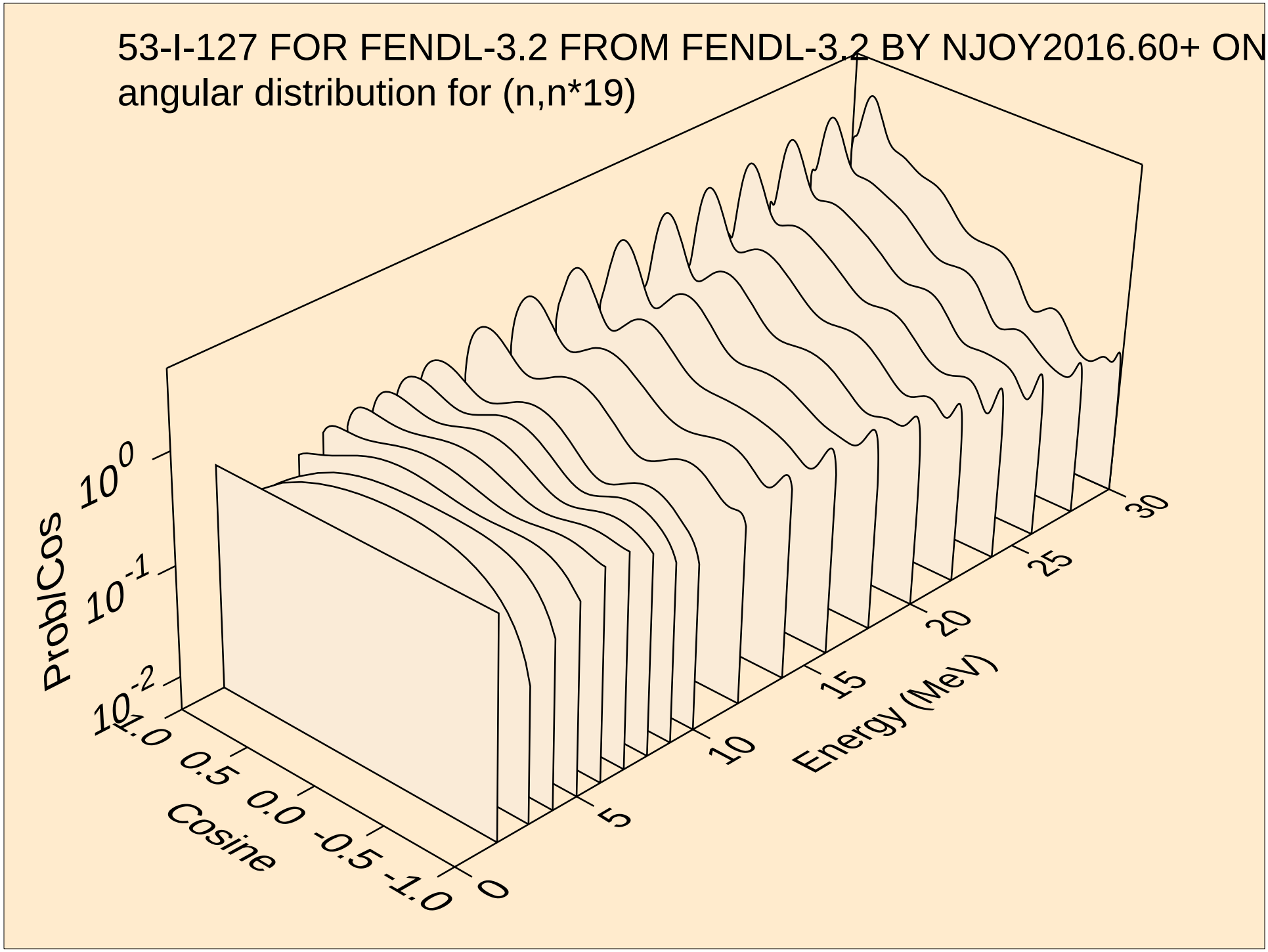

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*14)
Prob\Cos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

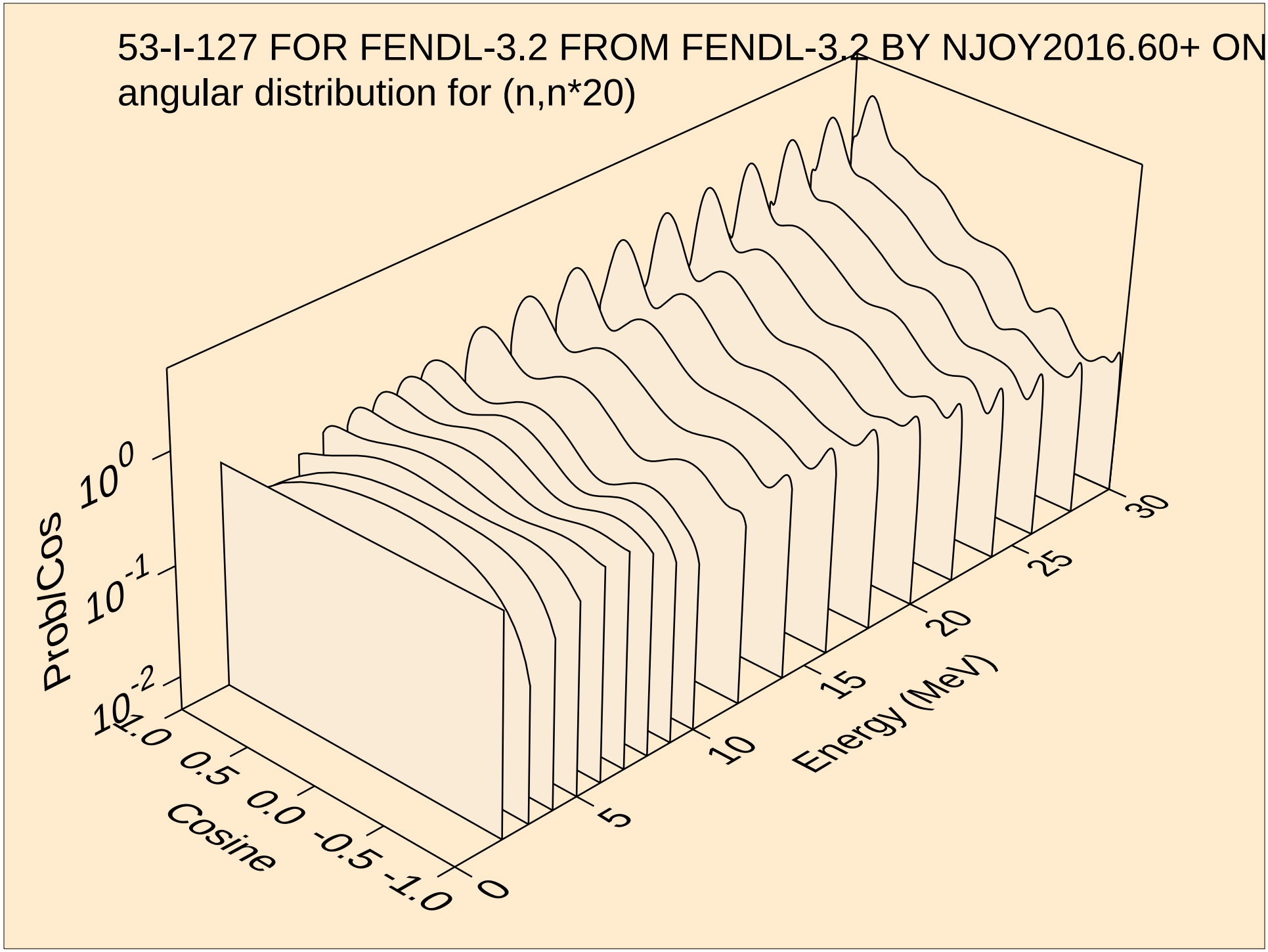

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*15)
Prob|Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

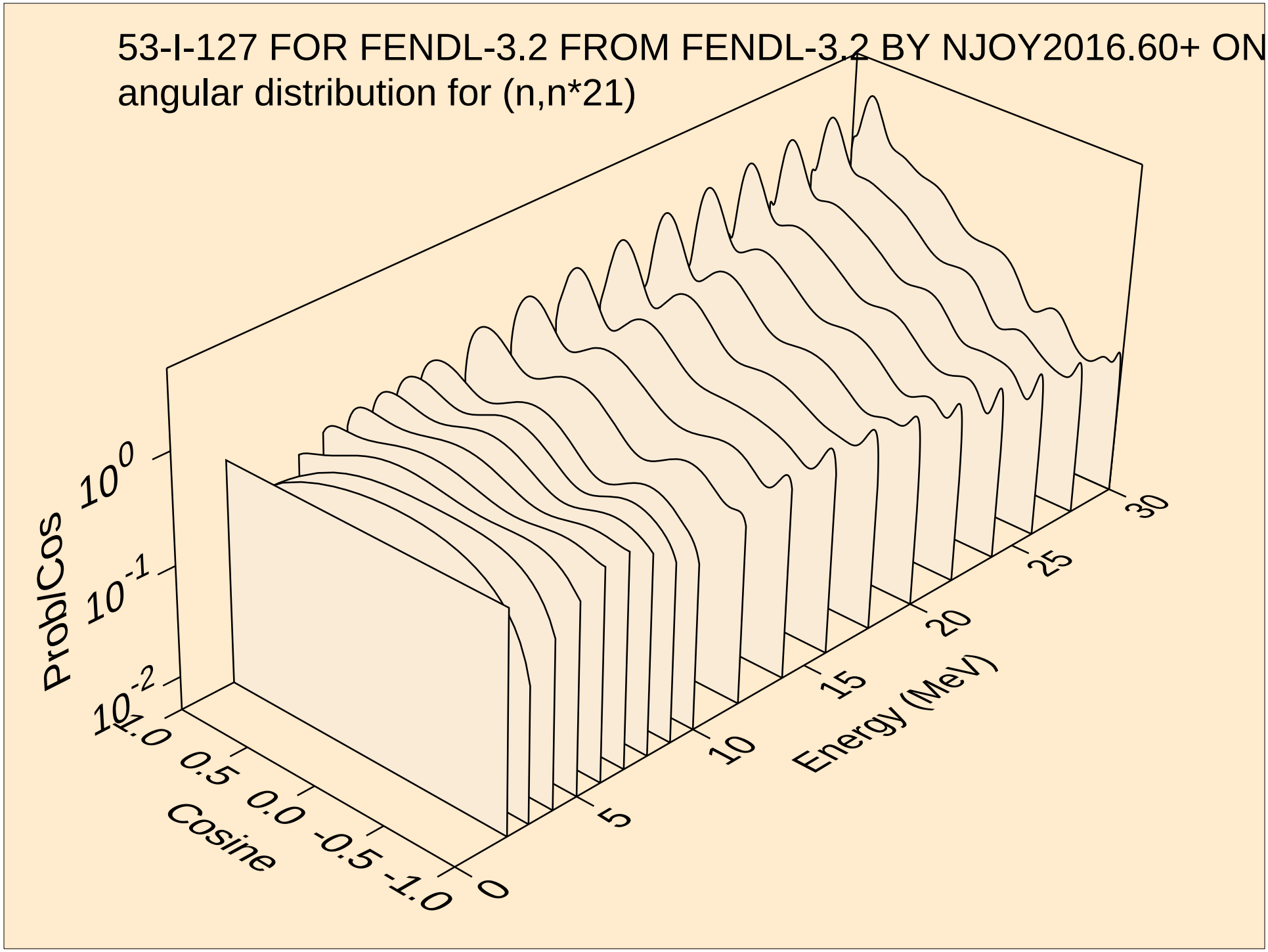

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*16)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

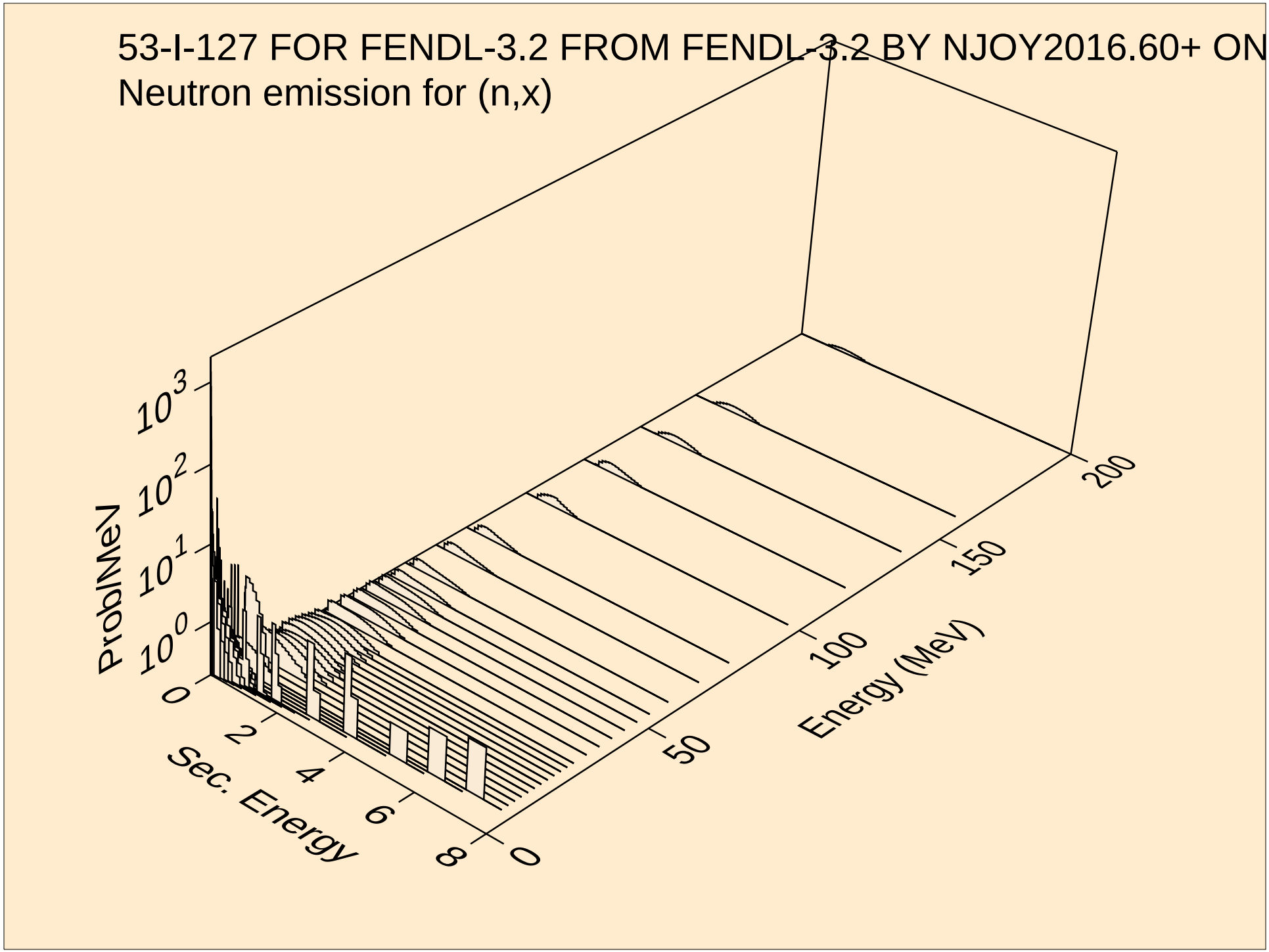

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*17)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

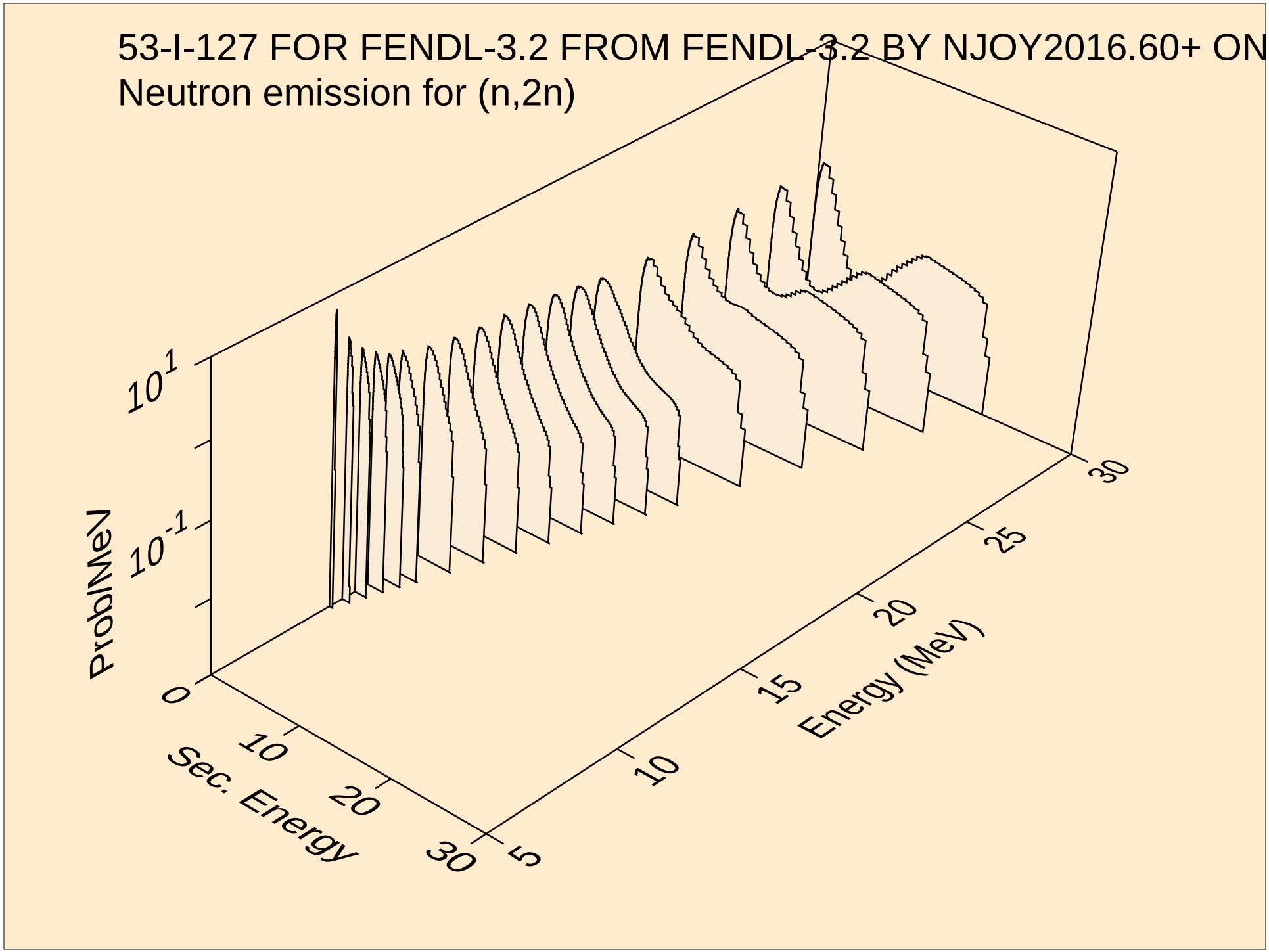

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*18)
Prob\Cos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

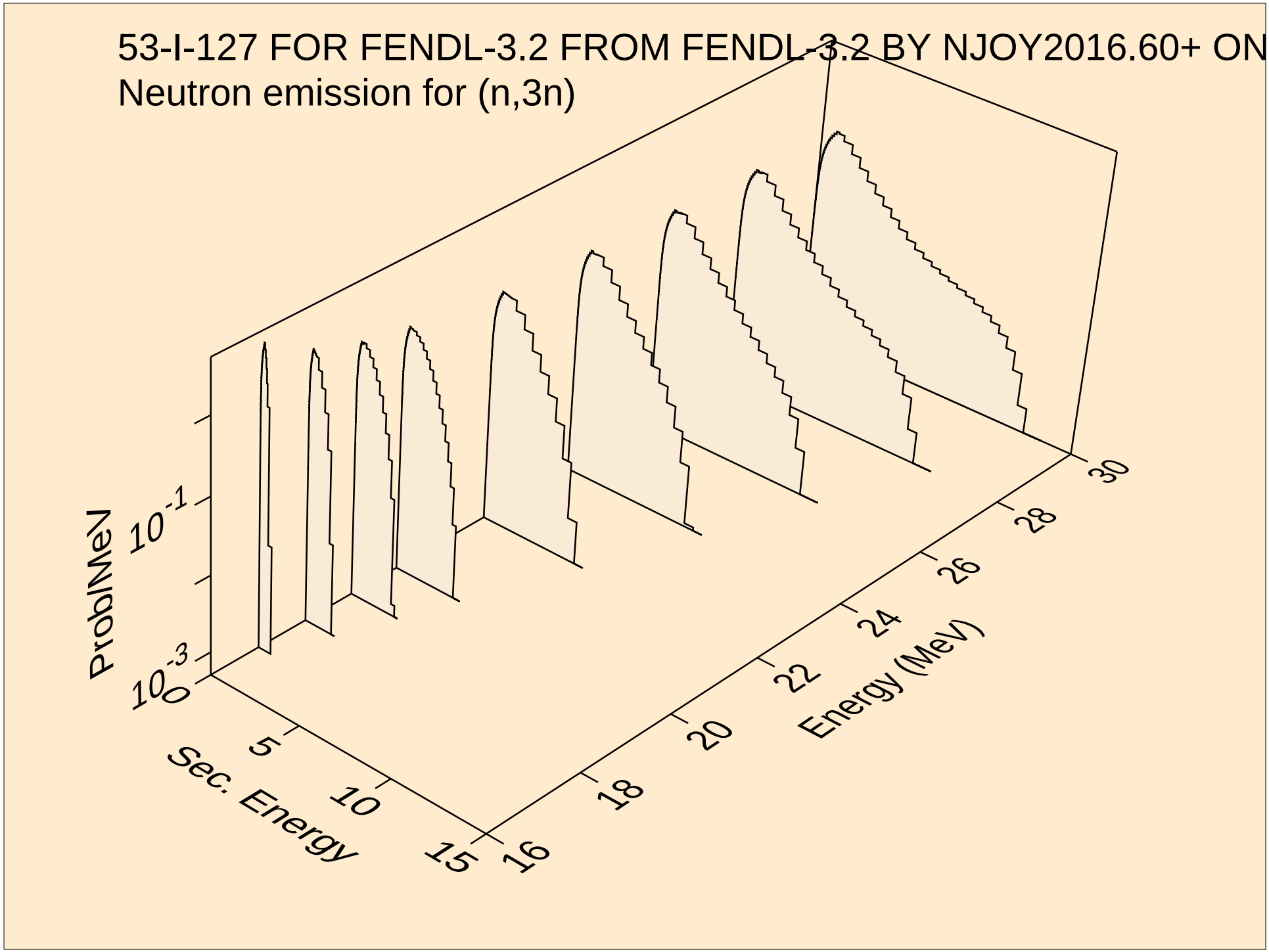

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*19)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

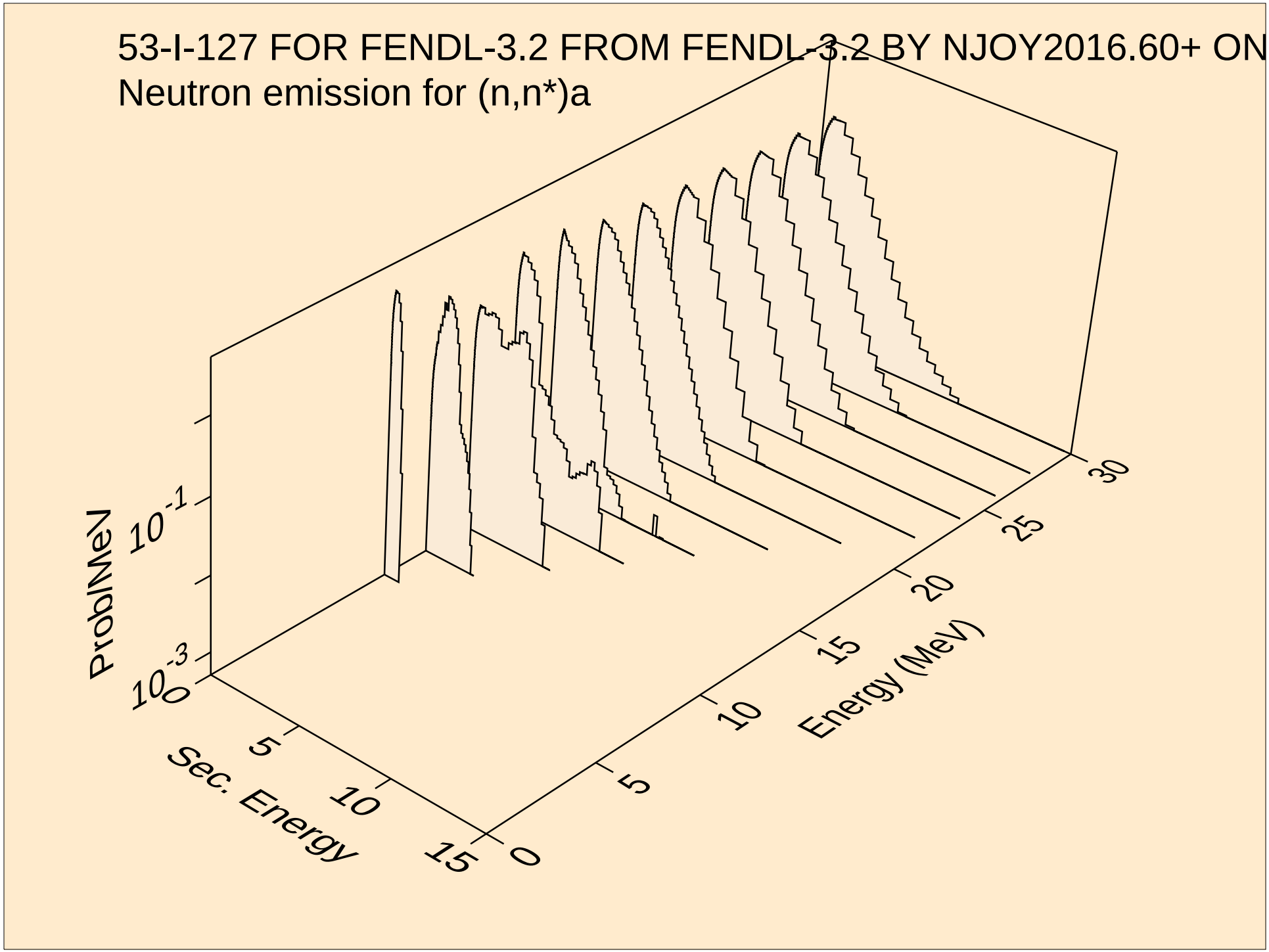

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*20)
Prob|Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

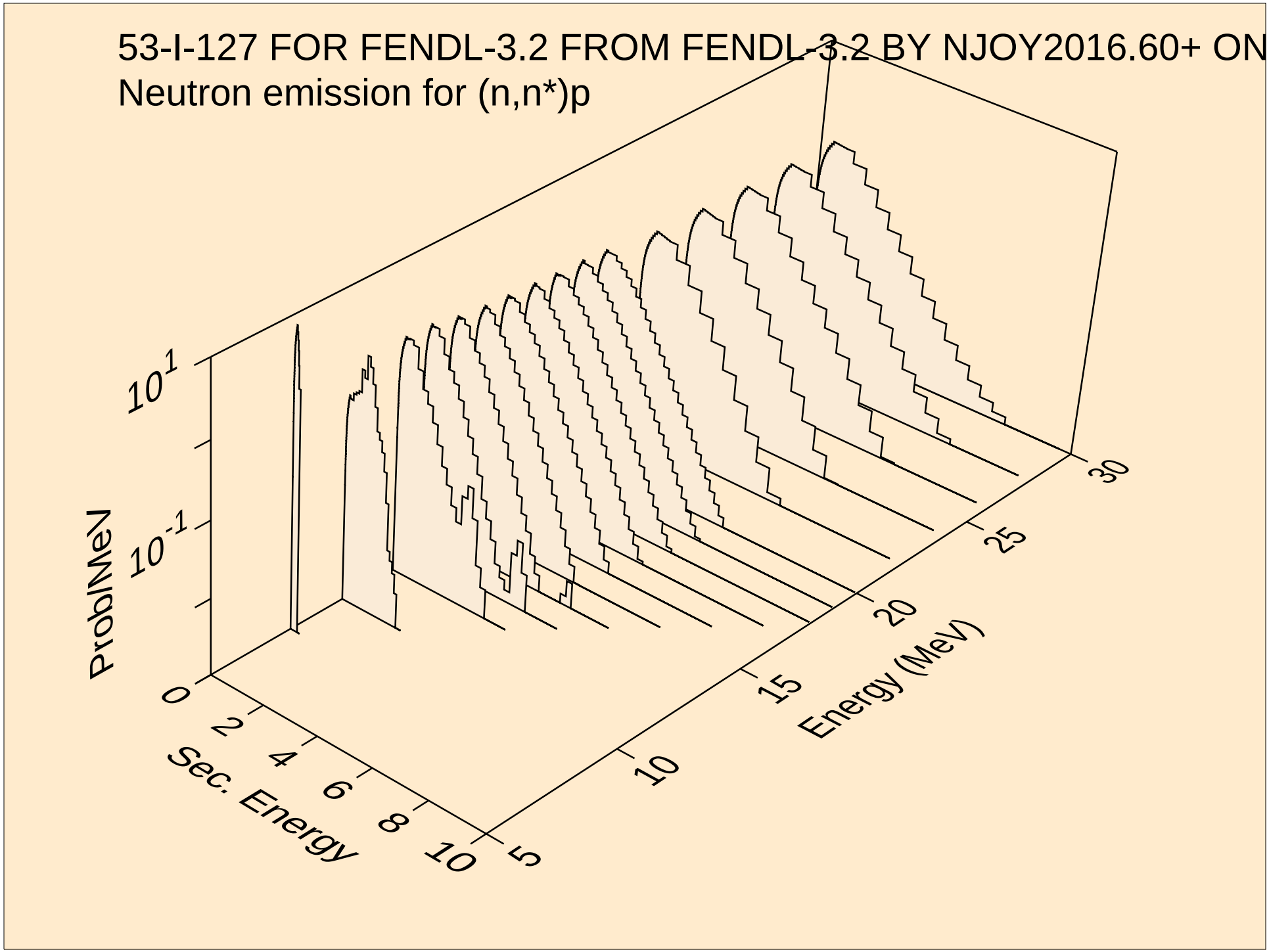

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,n*21)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

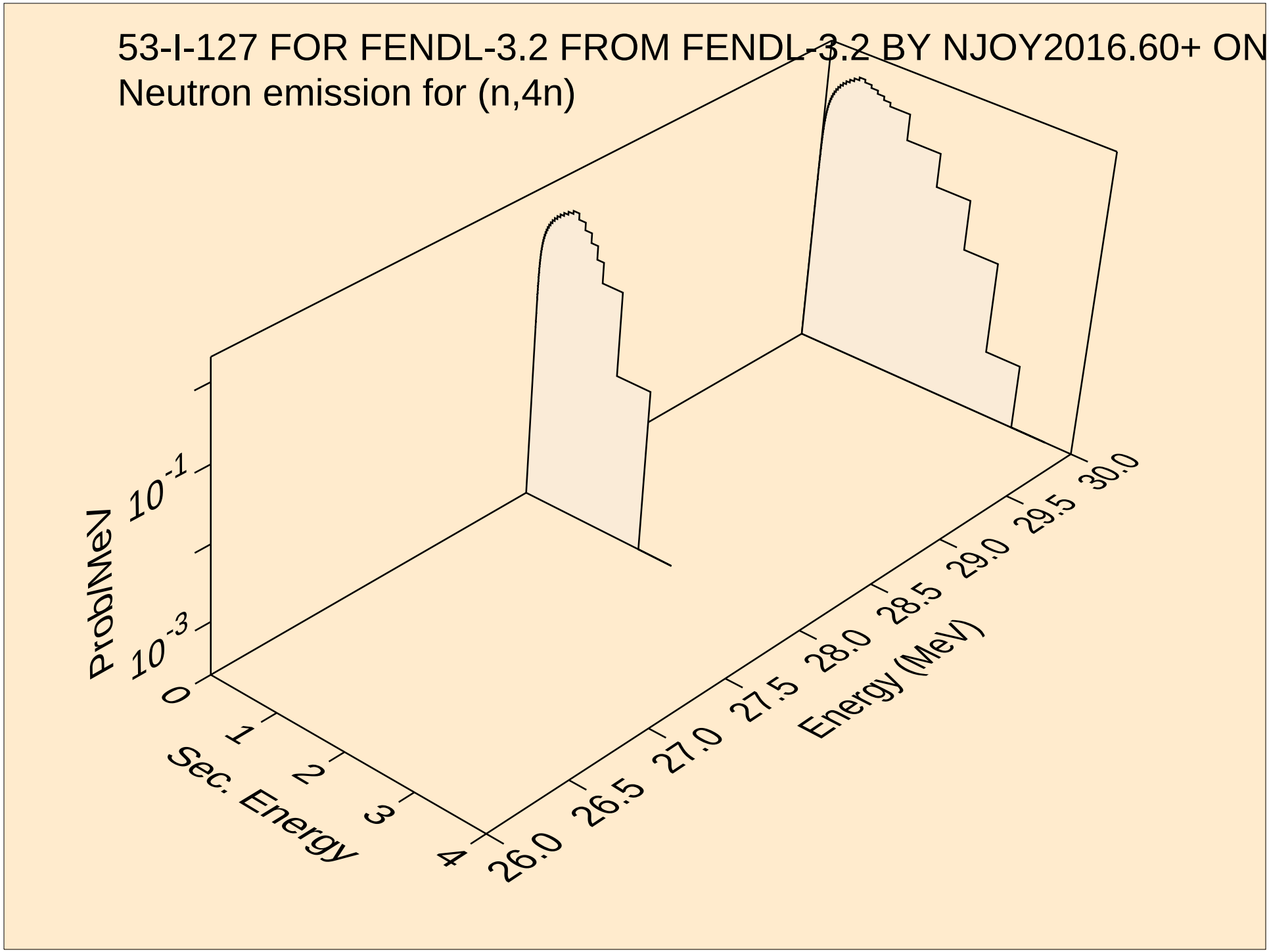

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,x)
Prob/MeV
10^3
10^2
10^1
10^0
0
2
4
6
8
Sec. Energy
0
50
100
150
200
Energy (MeV)

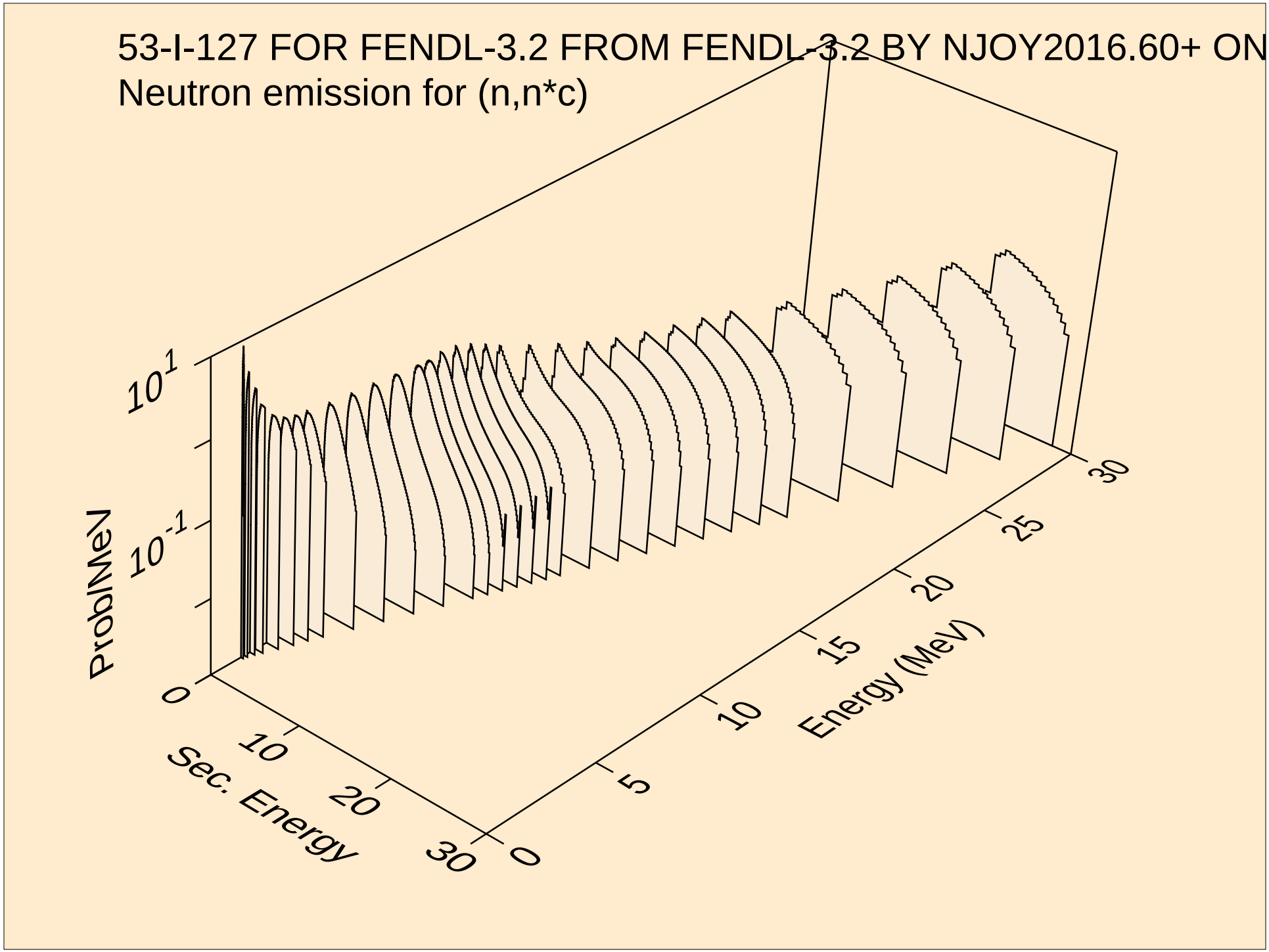

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,2n)
Prob/MeV
10^1
10^-1
0
10
20
30
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

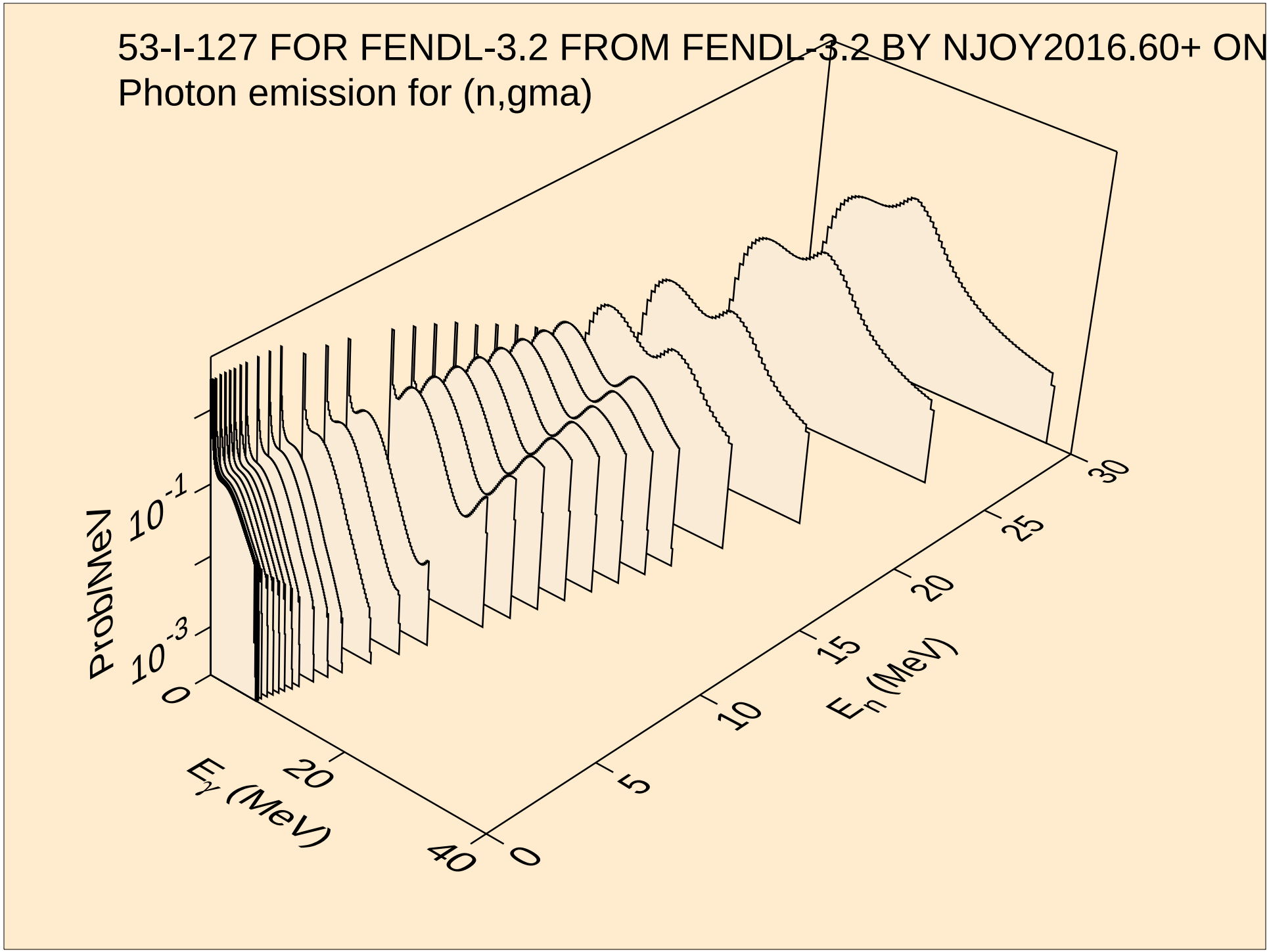

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
5
10
15
16
Sec. Energy
18
20
22
24
26
28
30
Energy (MeV)

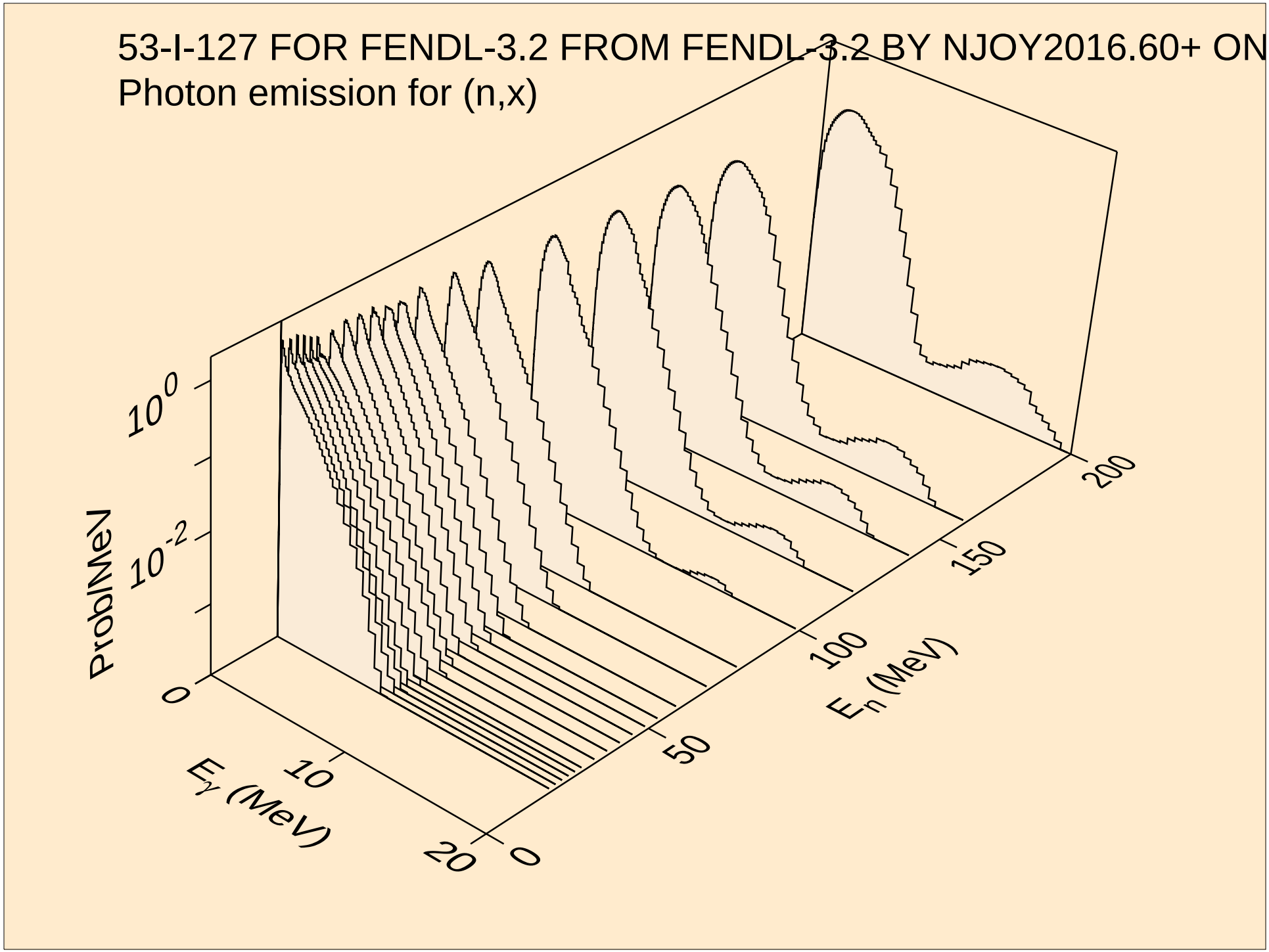

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,n*)a
Prob/MeV
10-1
10-3
0
5
10
15
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

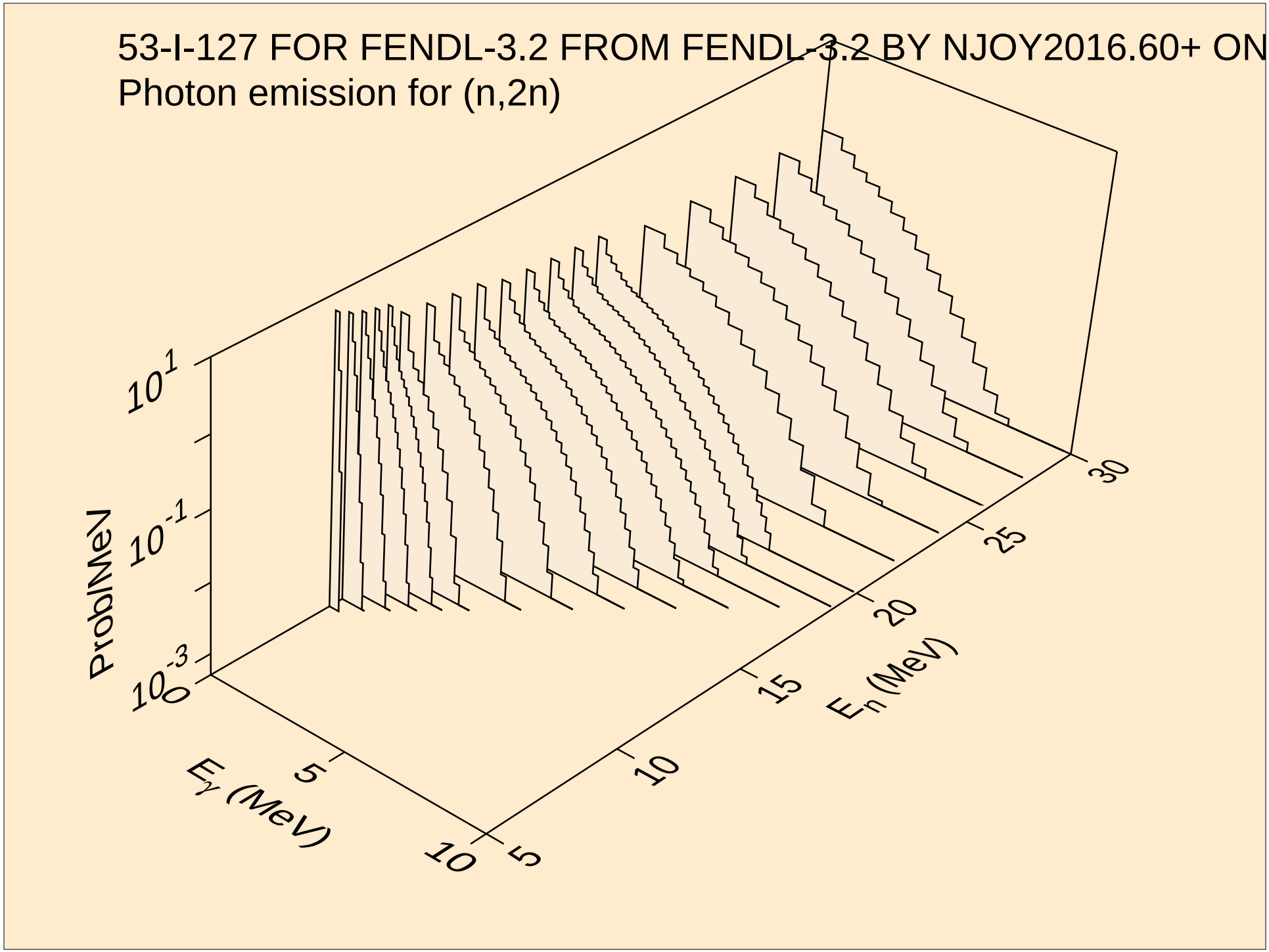

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,n*)p
Prob/MeV
10^1
10^-1
0
2
4
6
8
10
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

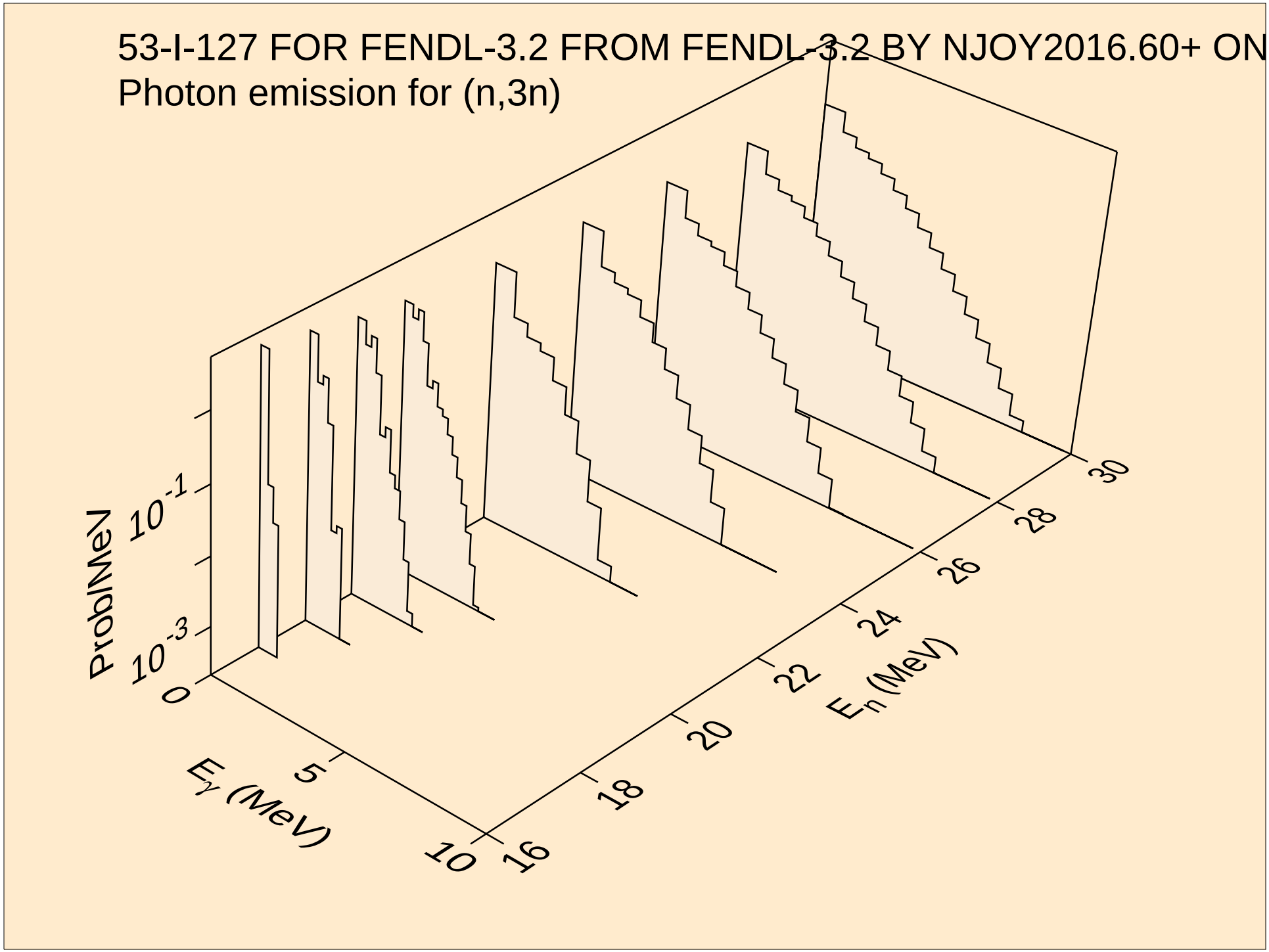

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,4n)
Prob/MeV
10-1
10-3
0
1
2
3
4
Sec. Energy
26.0
26.5
27.0
27.5
28.0
28.5
29.0
29.5
30.0
Energy (MeV)

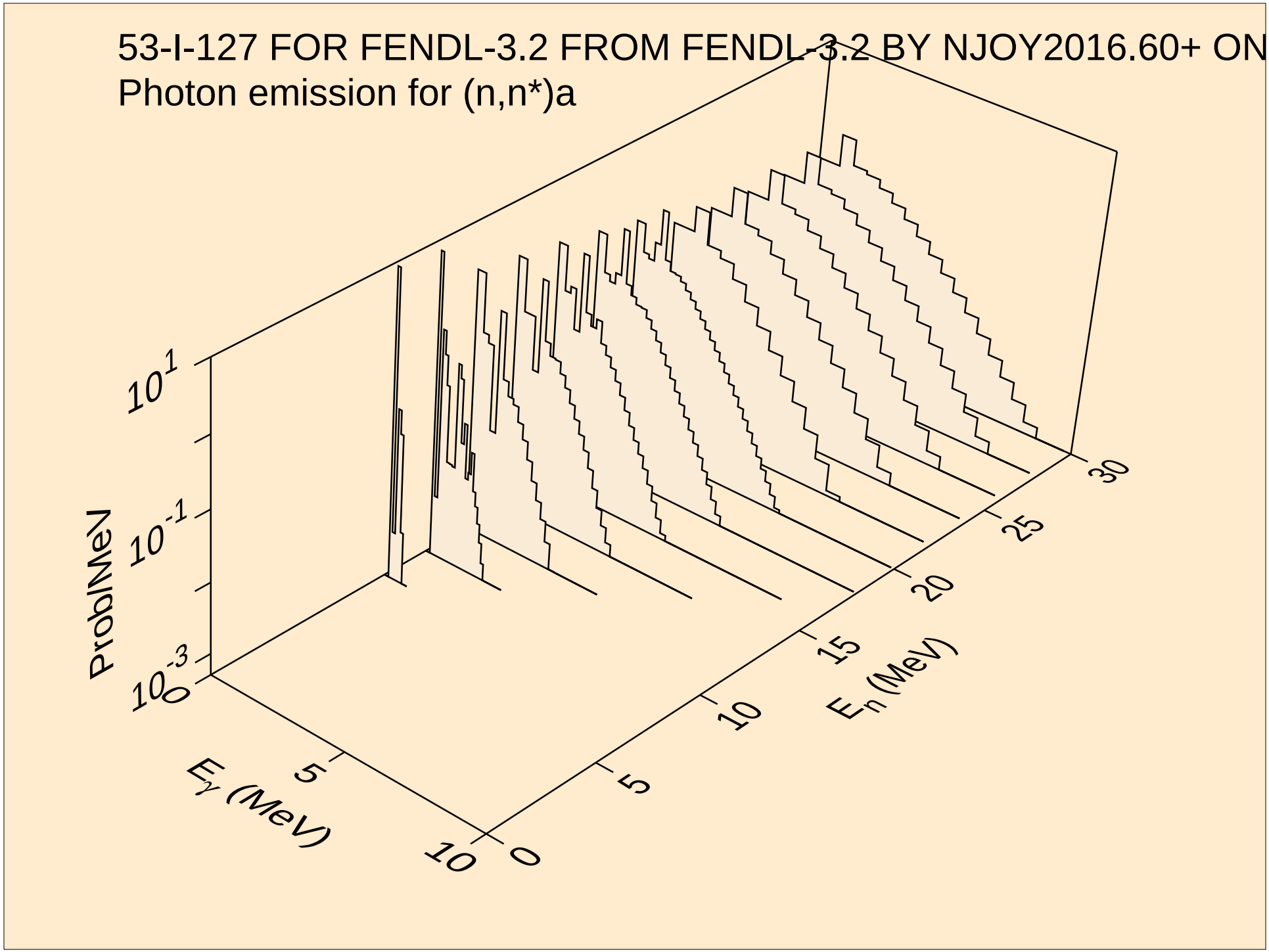

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Neutron emission for (n,n*c)
Prob/MeV
10^{1}
10^{-1}
0
10
20
30
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

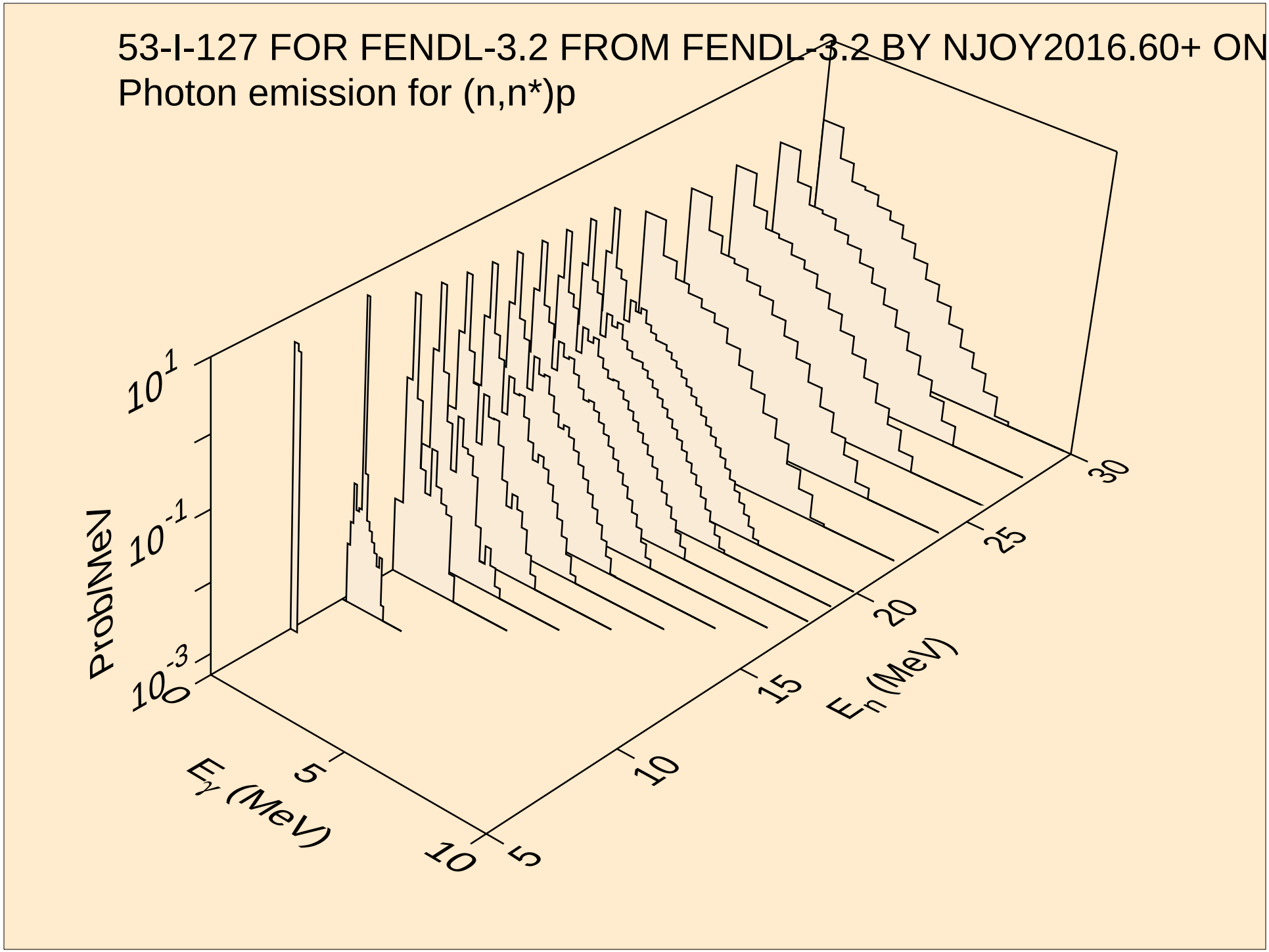

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,gma)
Prob/MeV
10-1
10-3
0
Eγ (MeV)
20
40
0
5
10
15
20
25
30
En (MeV)

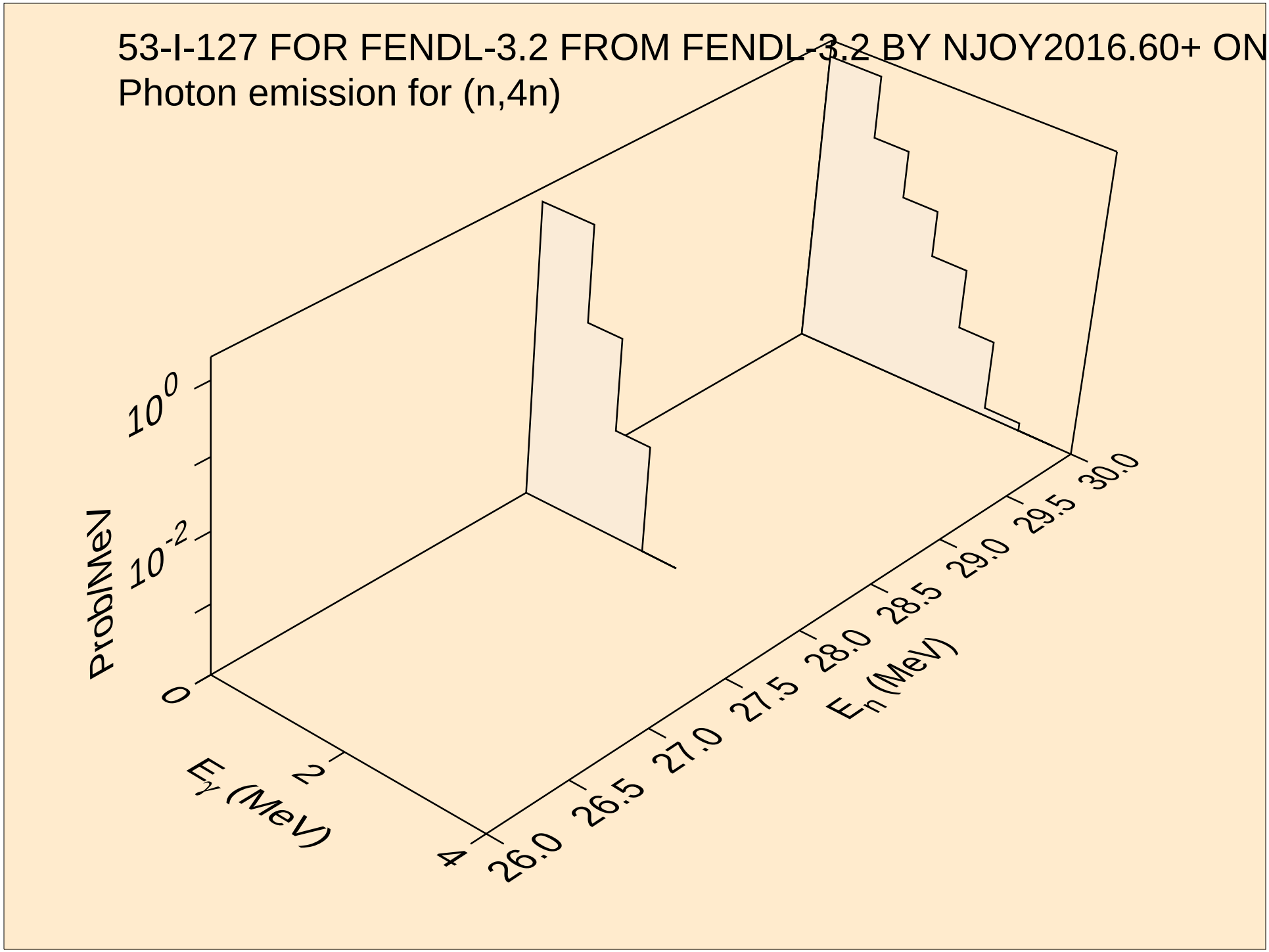

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,x)
Prob/MeV
10^{0}
10^{-2}
0
10
20
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

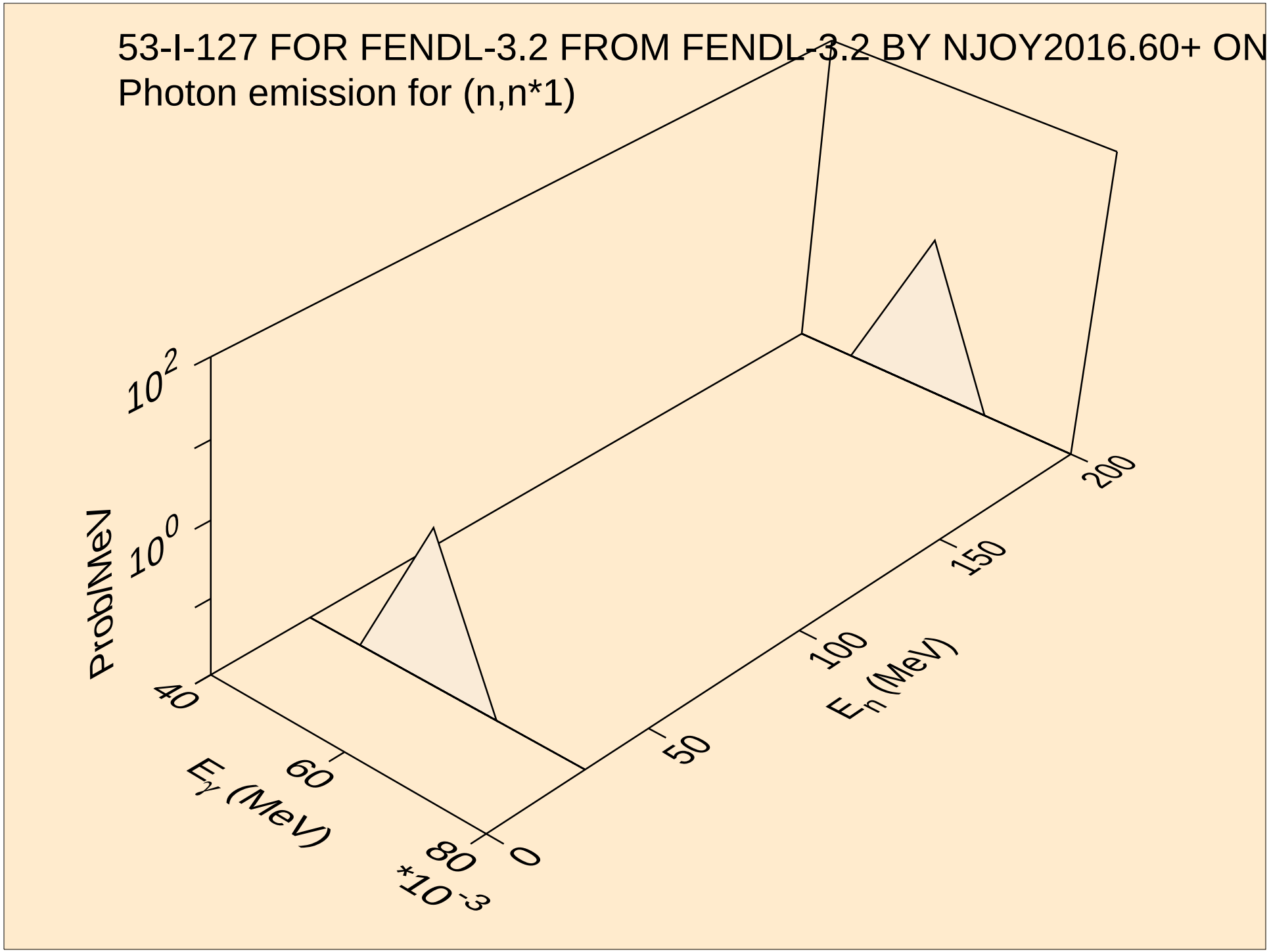

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,2n)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

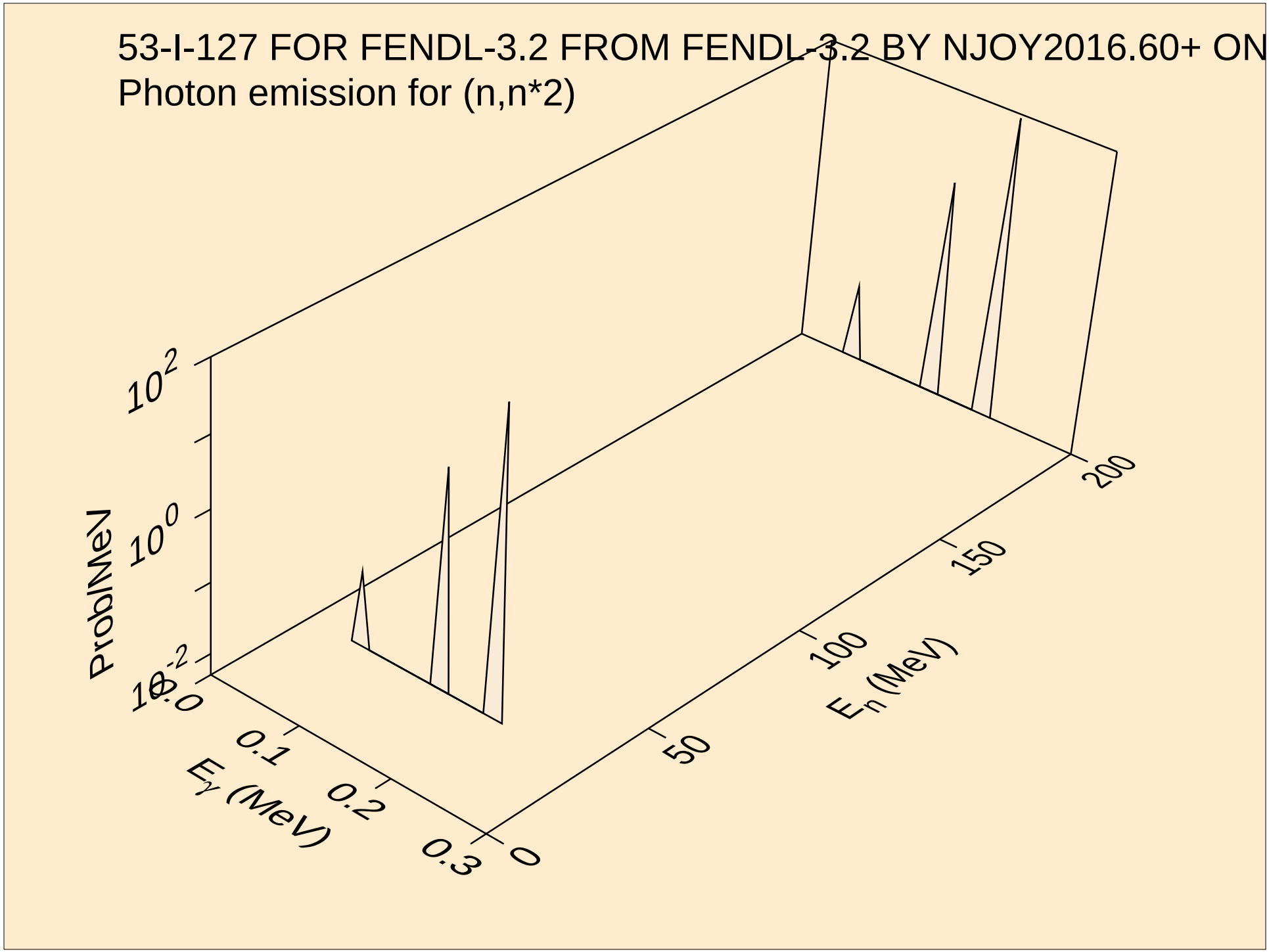

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,3n)
Prob/MeV
10-1
10-3
0
5
10
16
Eγ (MeV)
18
20
22
24
26
28
30
En (MeV)

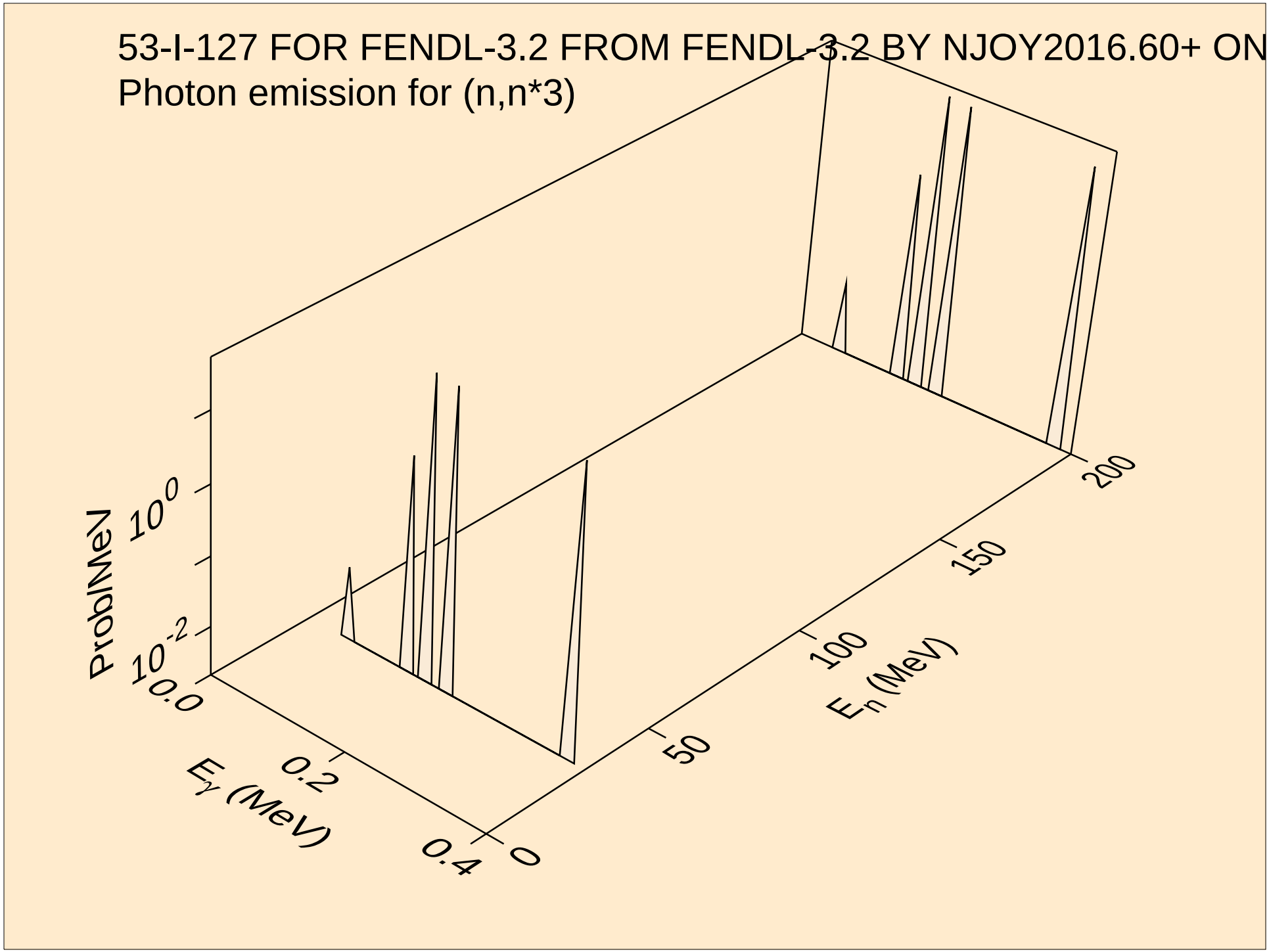

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*)a
Prob/MeV
10^{1}
10^{-1}
10^{-3}
E_γ (MeV)
0
5
10
E_n (MeV)
0
5
10
15
20
25
30

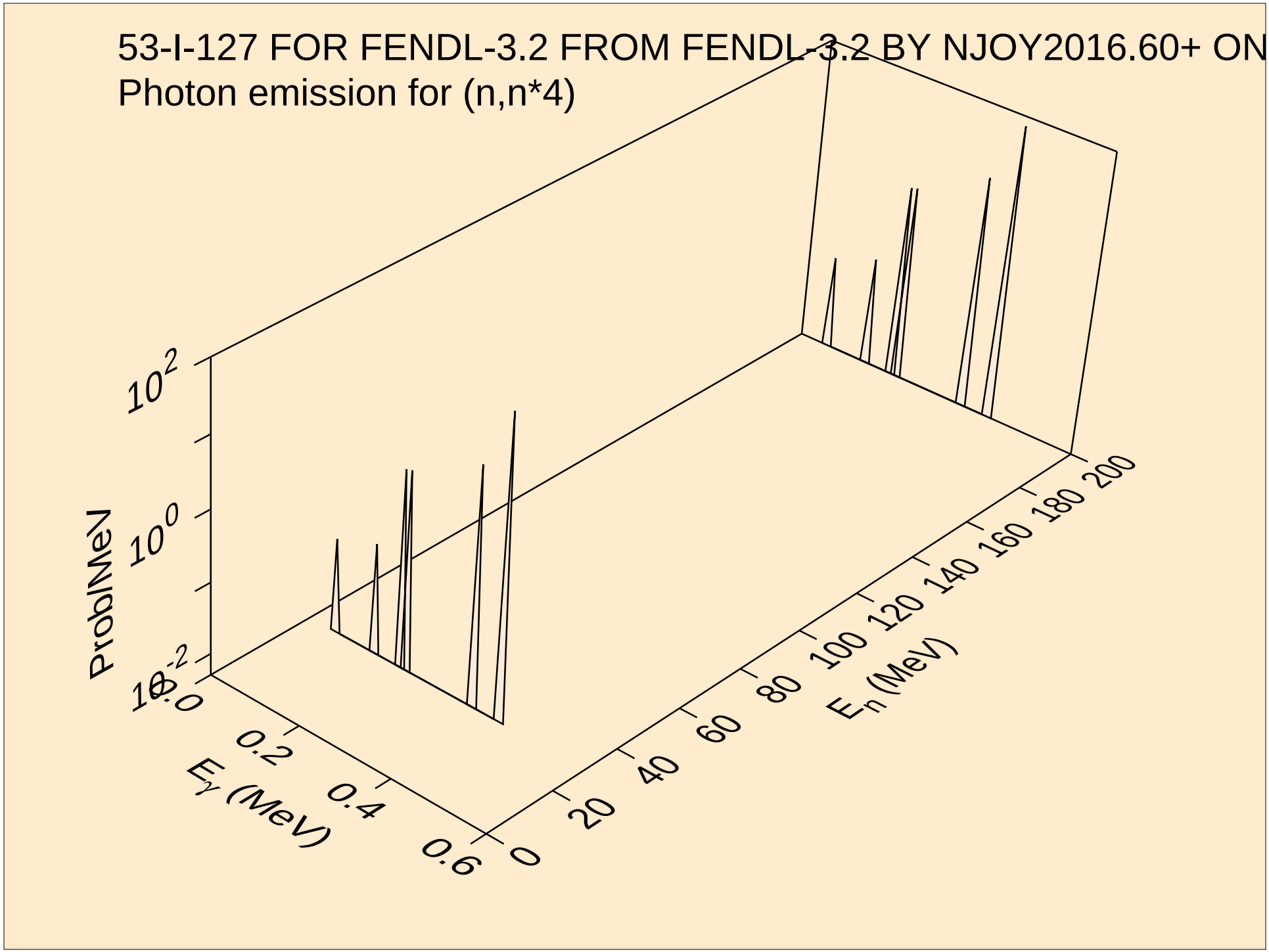

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*)p
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

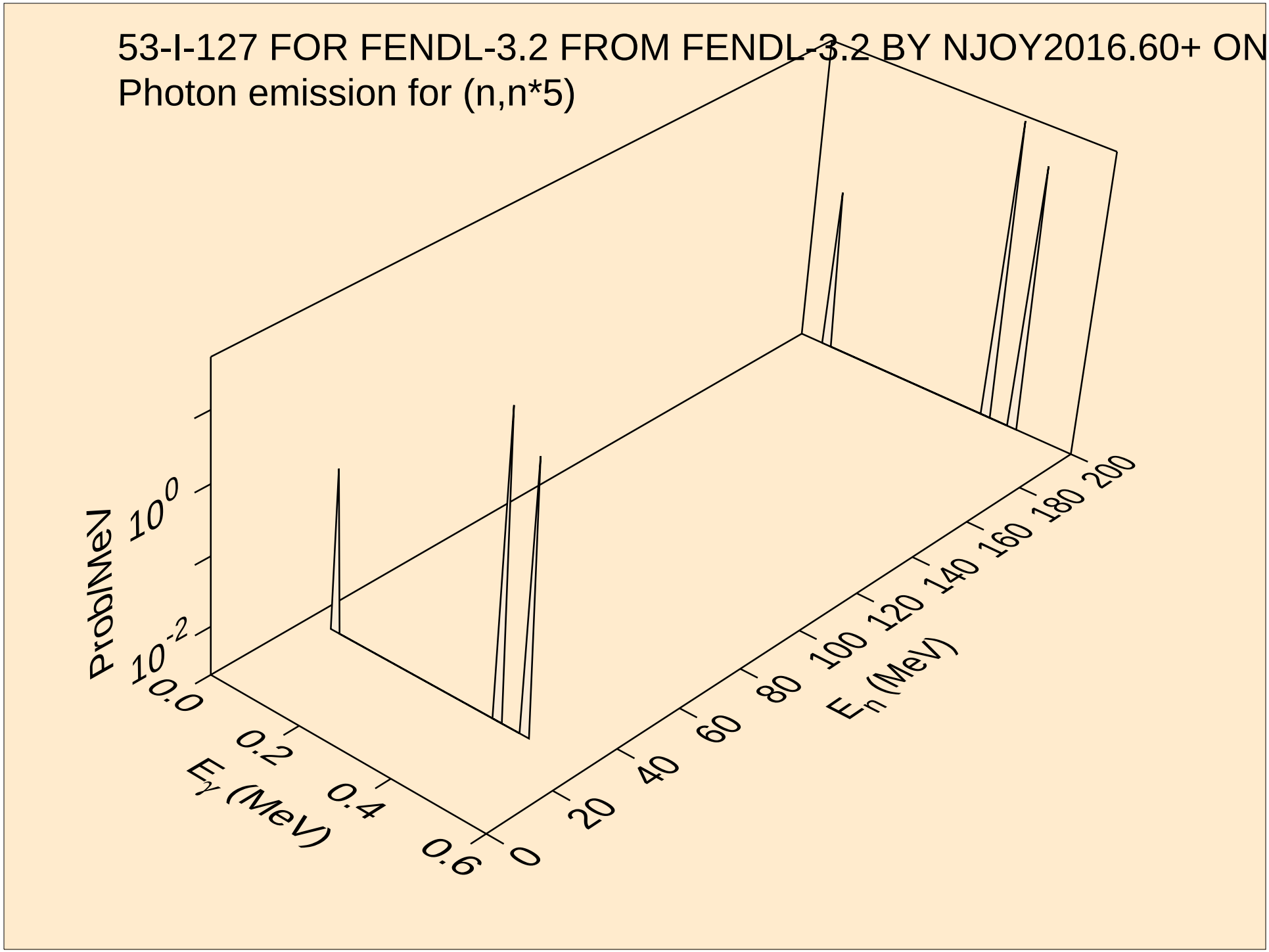

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,4n)
Prob/MeV
10^{0}
10^{-2}
0
2
4
E_γ (MeV)
26.0
26.5
27.0
27.5
28.0
28.5
29.0
29.5
30.0
E_n (MeV)

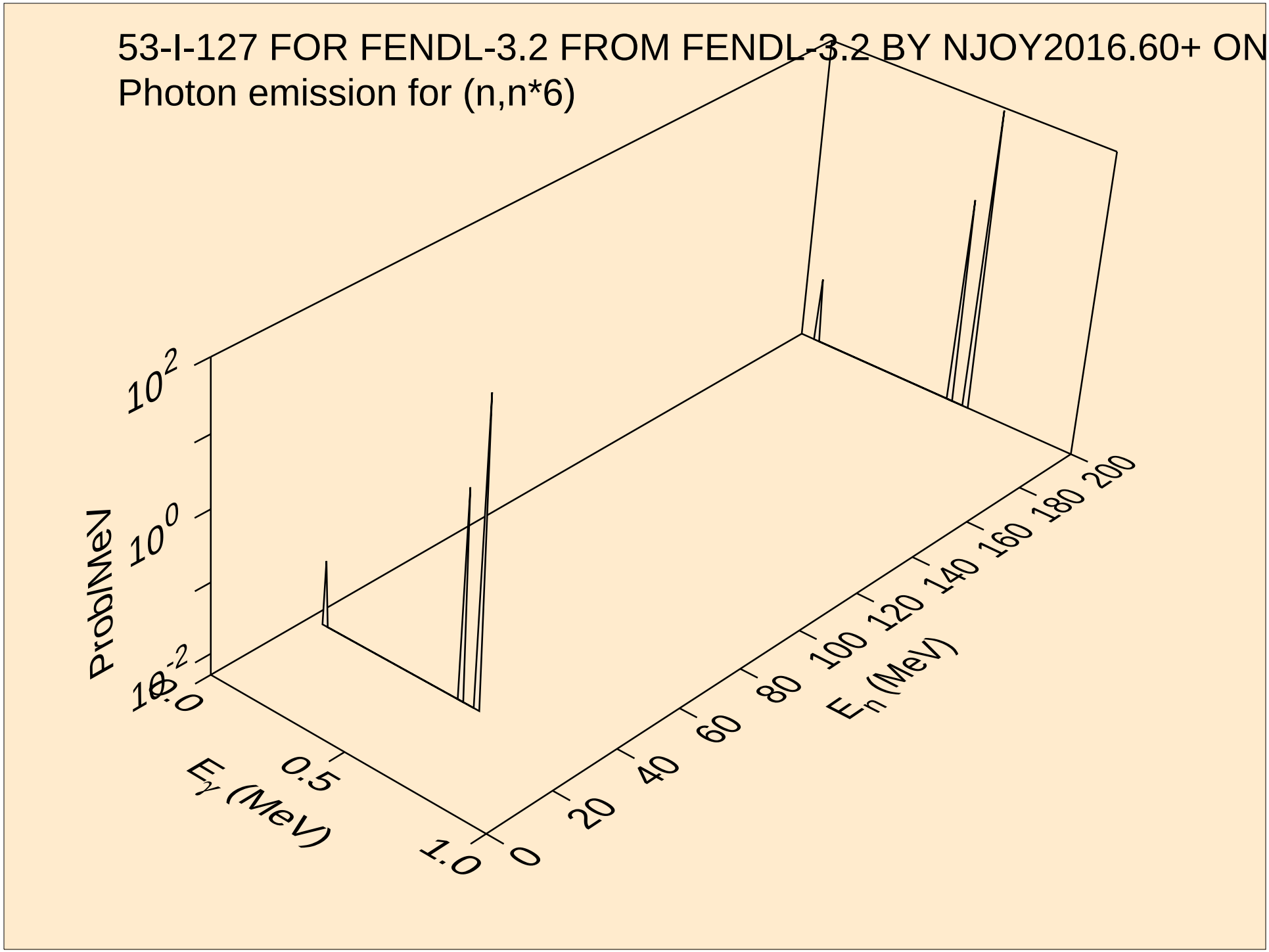

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*1)
Prob/MeV
10^2
10^0
40
60
80
E_γ (MeV)
*10 -3
0
50
100
150
200
E_n (MeV)

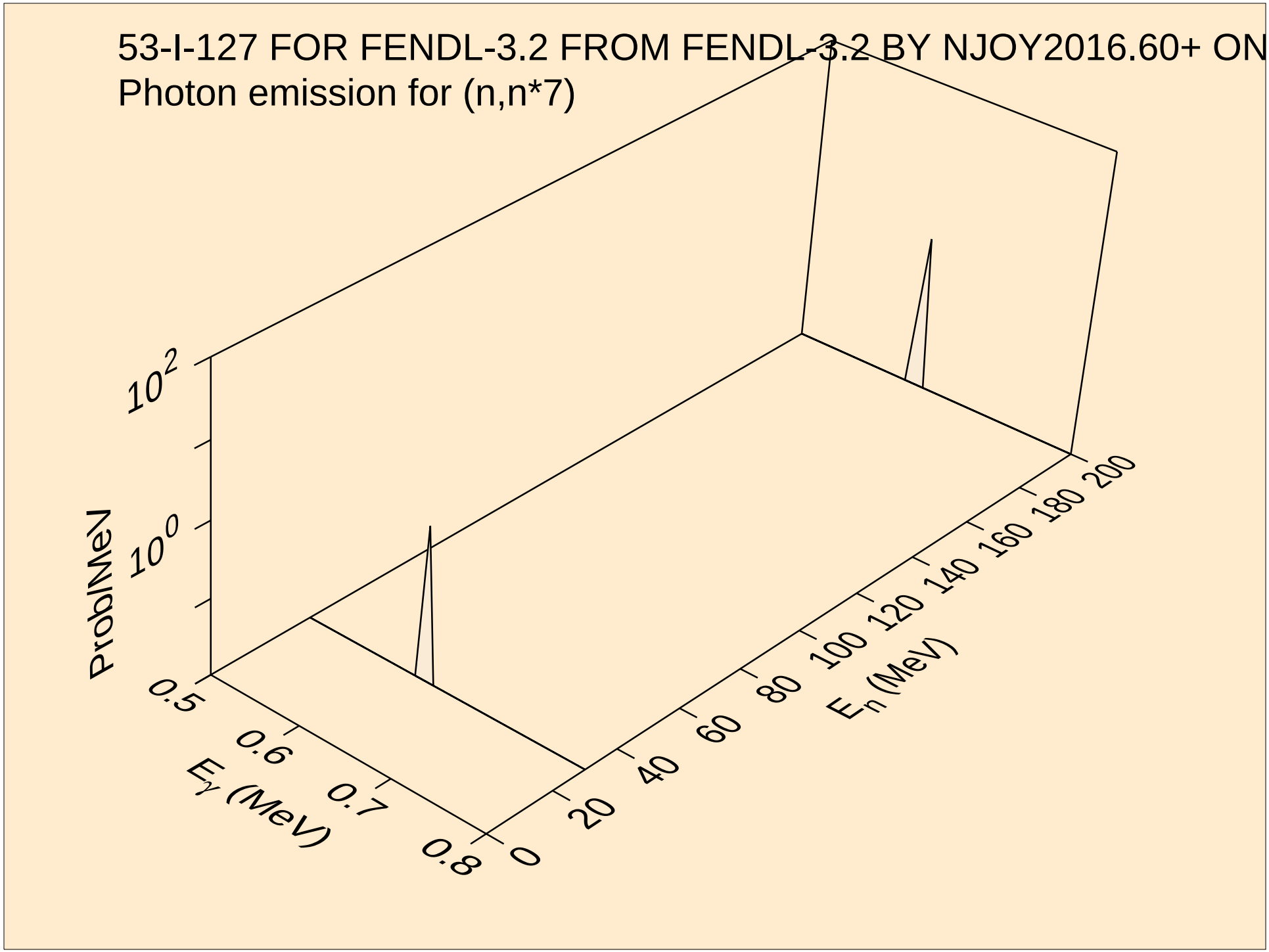

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*2)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.1
0.2
0.3
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

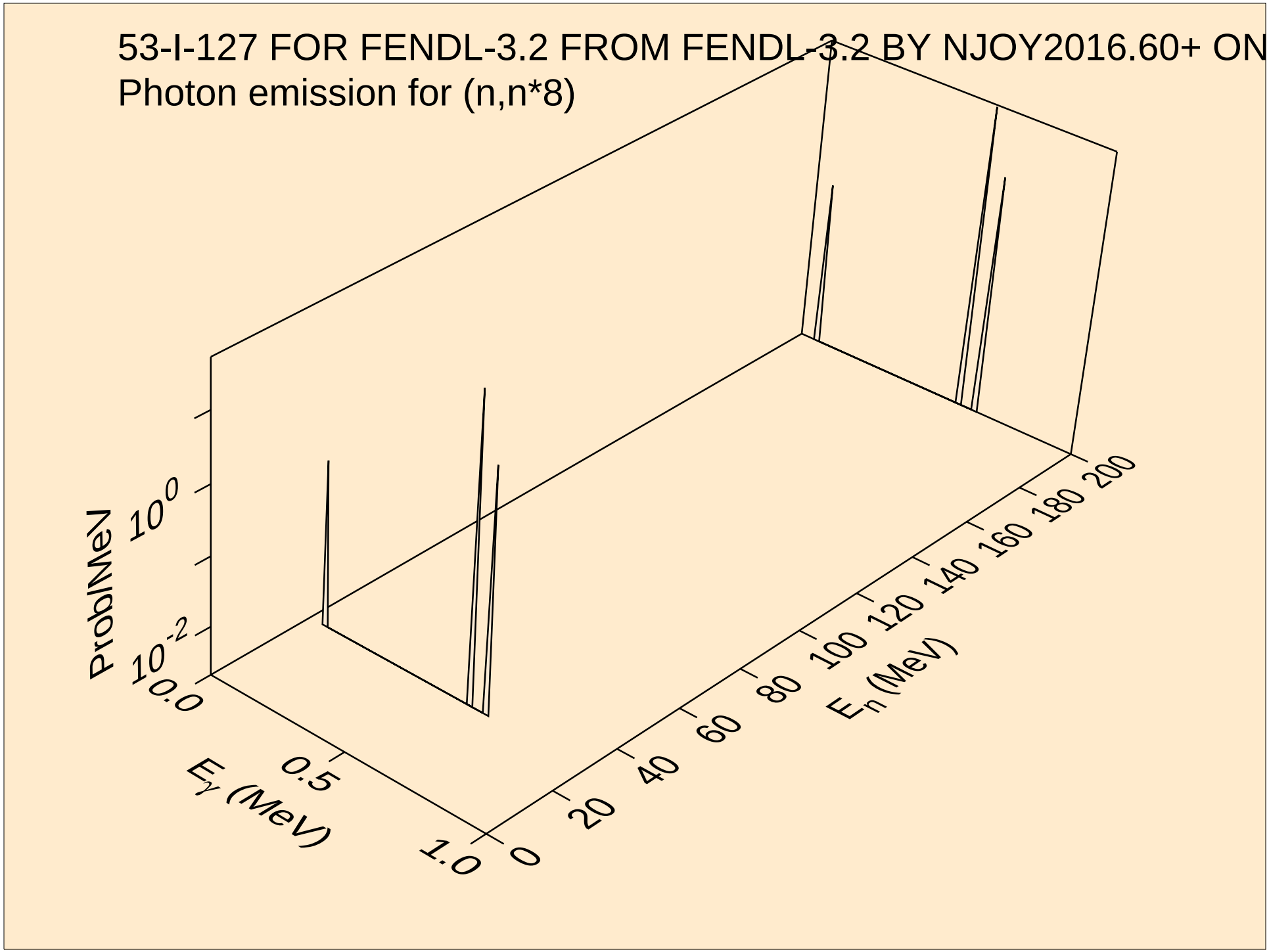

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*3)
Prob/MeV
10^0
10^-2
0.0
0.2
0.4
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

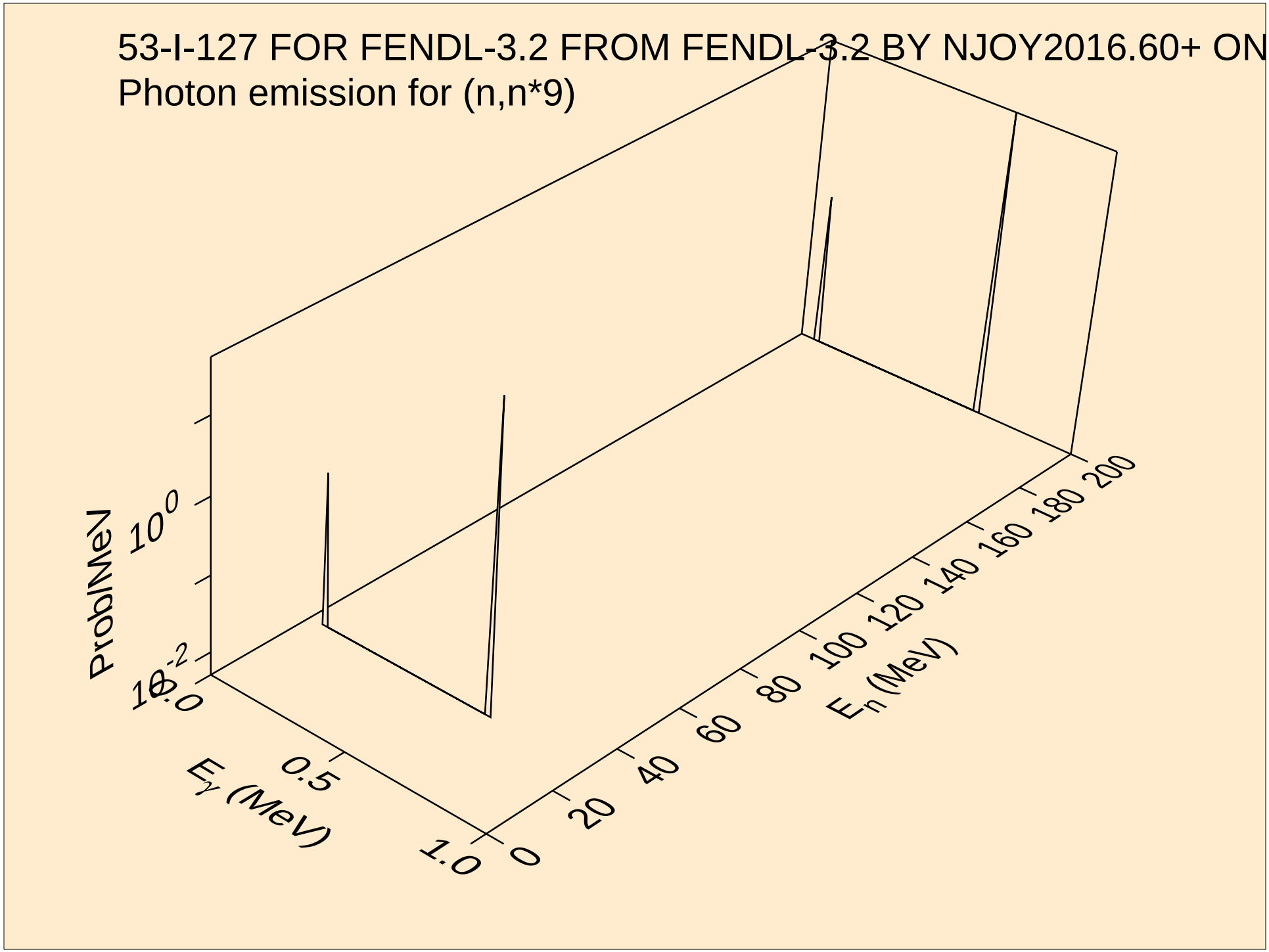

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*4)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.2
0.4
0.6
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

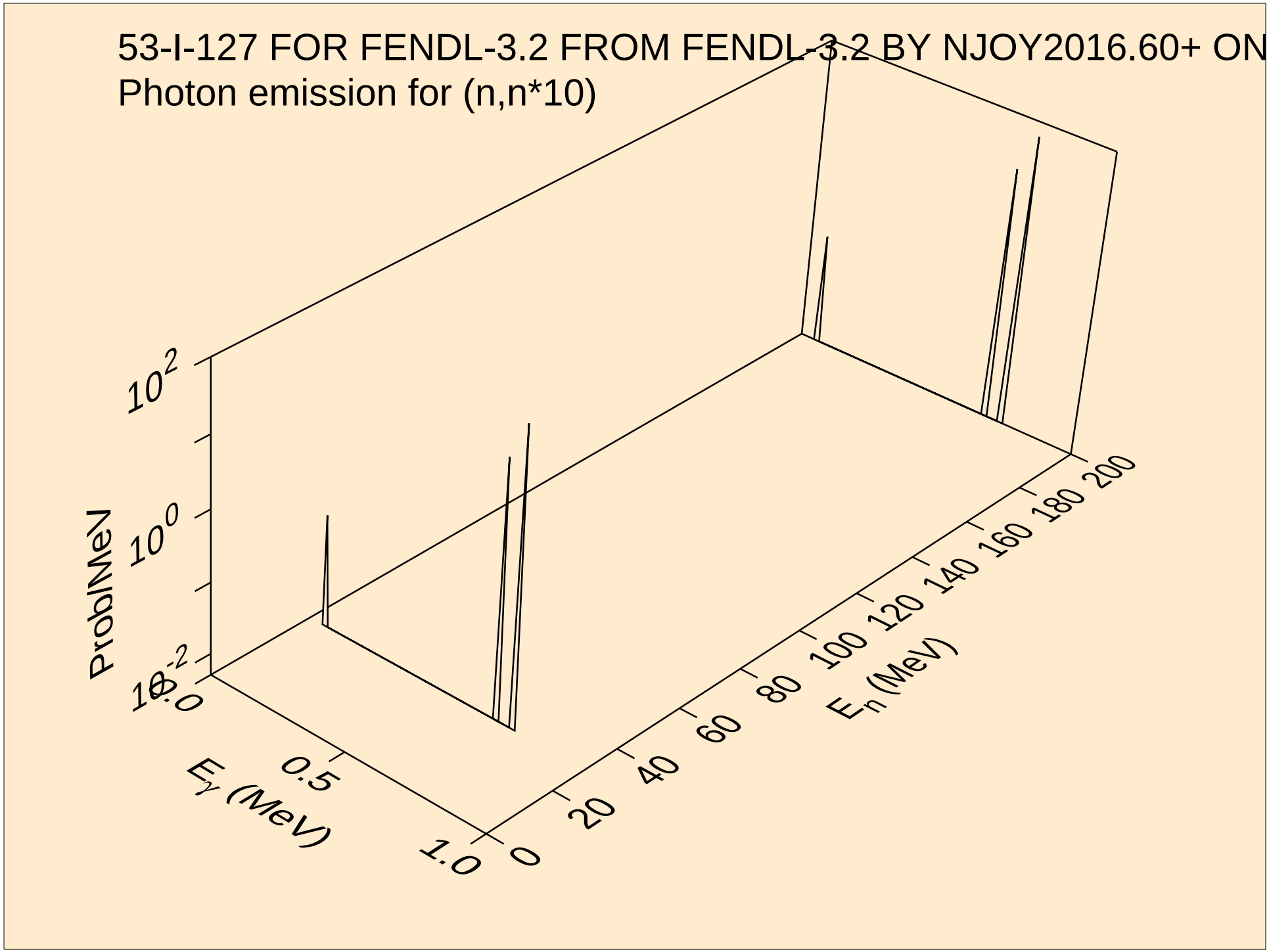

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*5)
Prob/MeV
10^0
10^-2
0.0
0.2
0.4
0.6
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

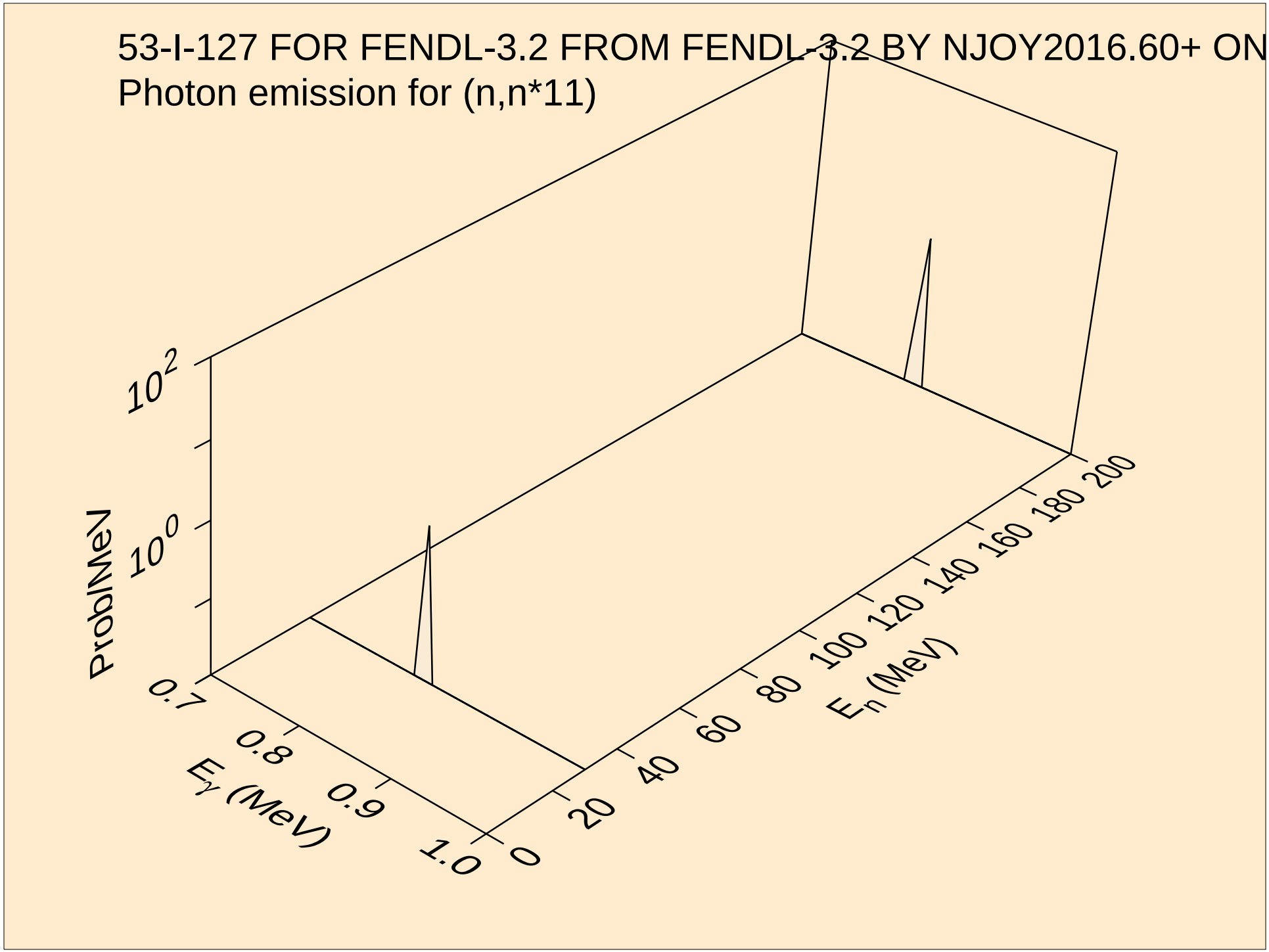

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*6)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

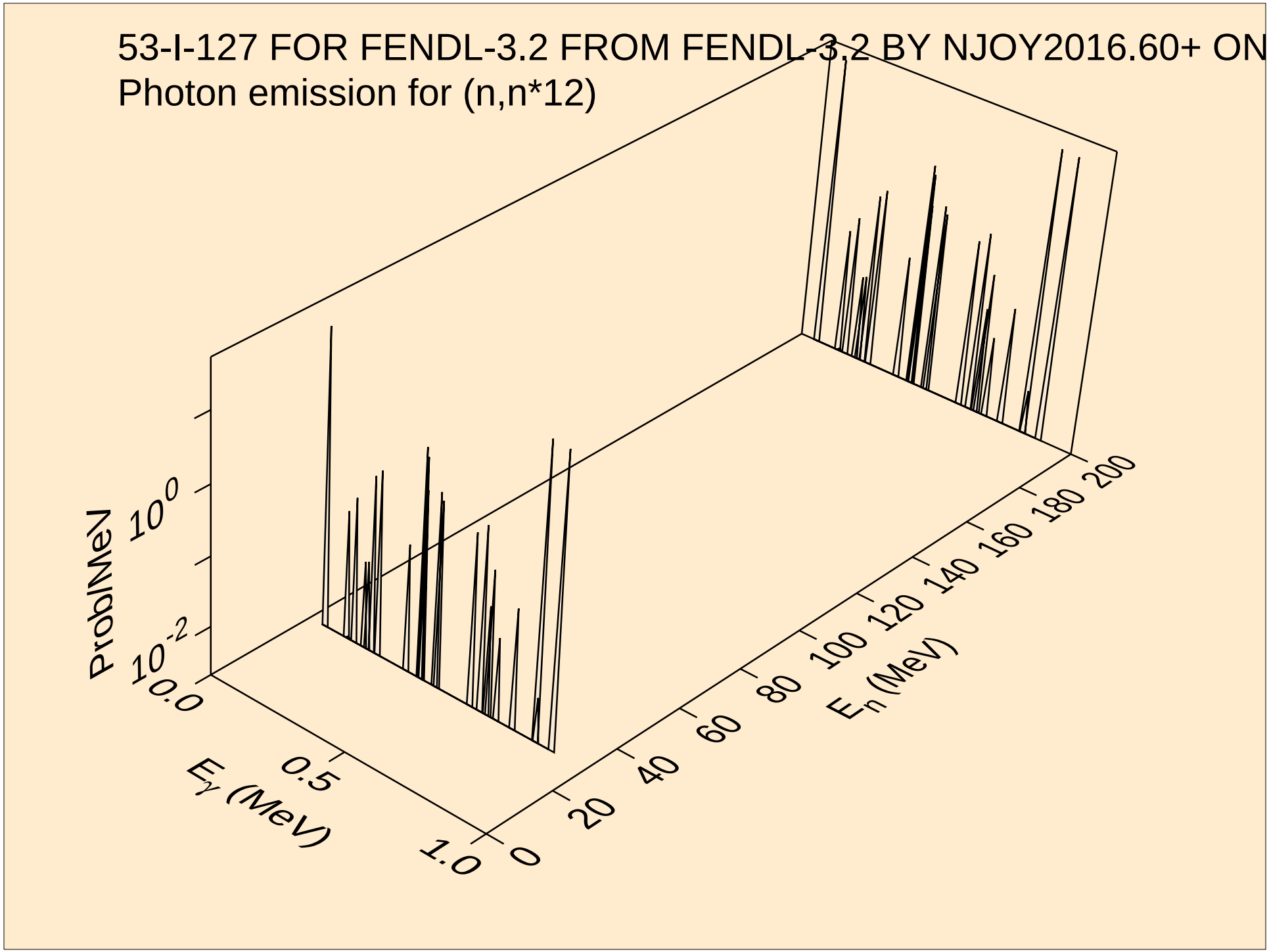

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*7)
Prob/MeV
10^2
10^0
0.5
0.6
0.7
0.8
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

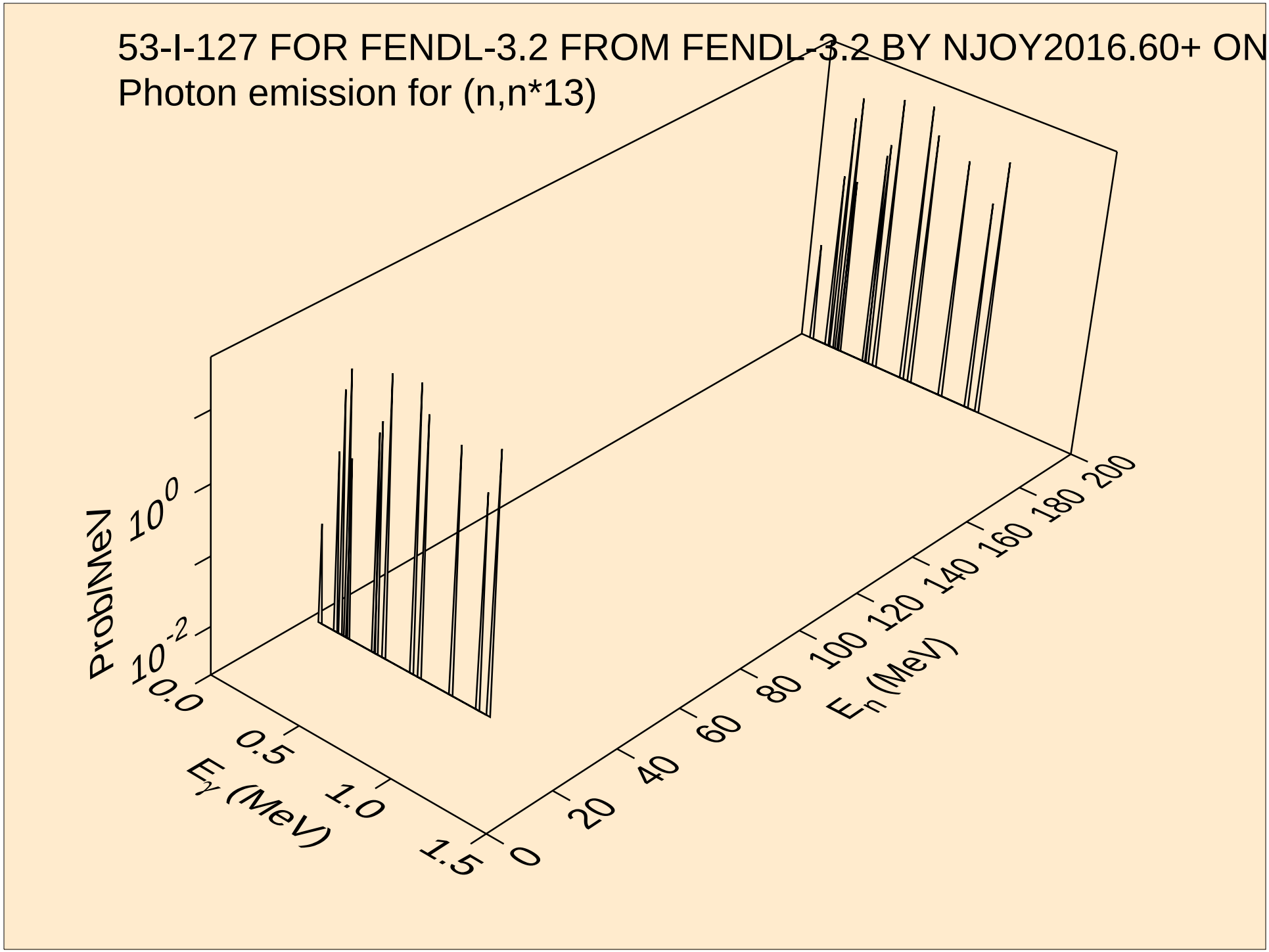

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*8)
Prob/MeV
10^{0}
10^{-2}
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

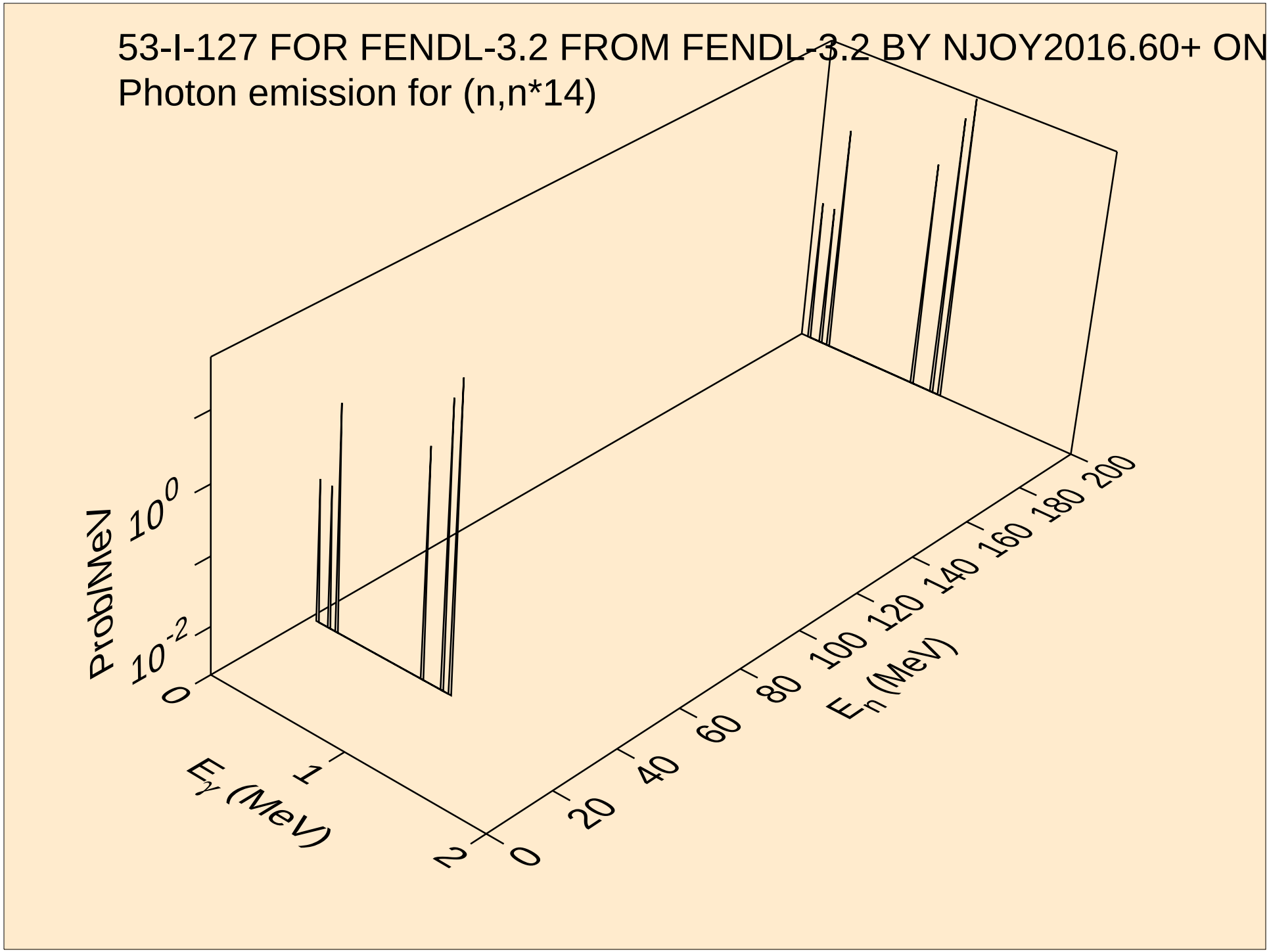

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*9)
Prob/MeV
10^{0}
10^{-2}
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

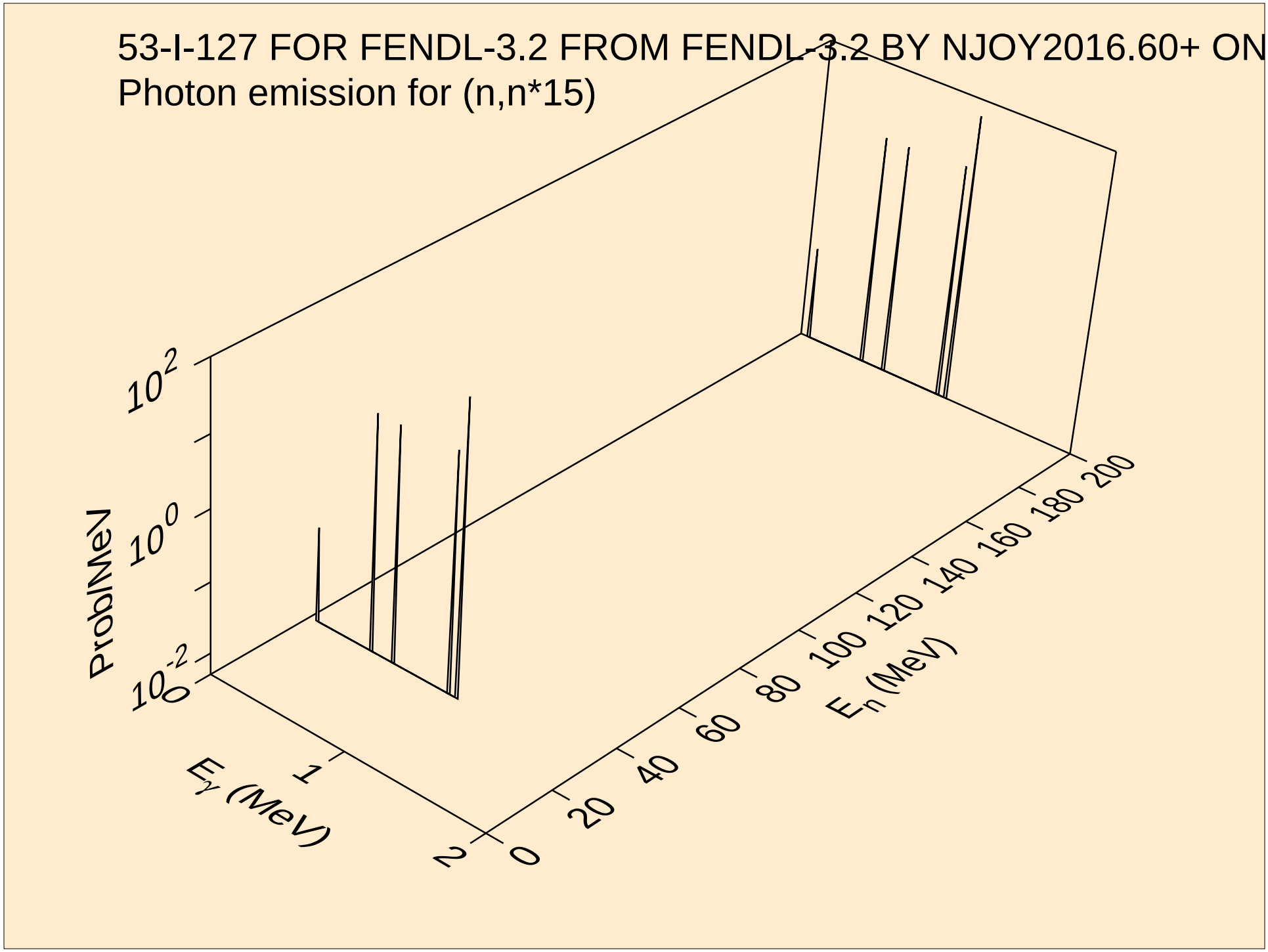

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*10)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

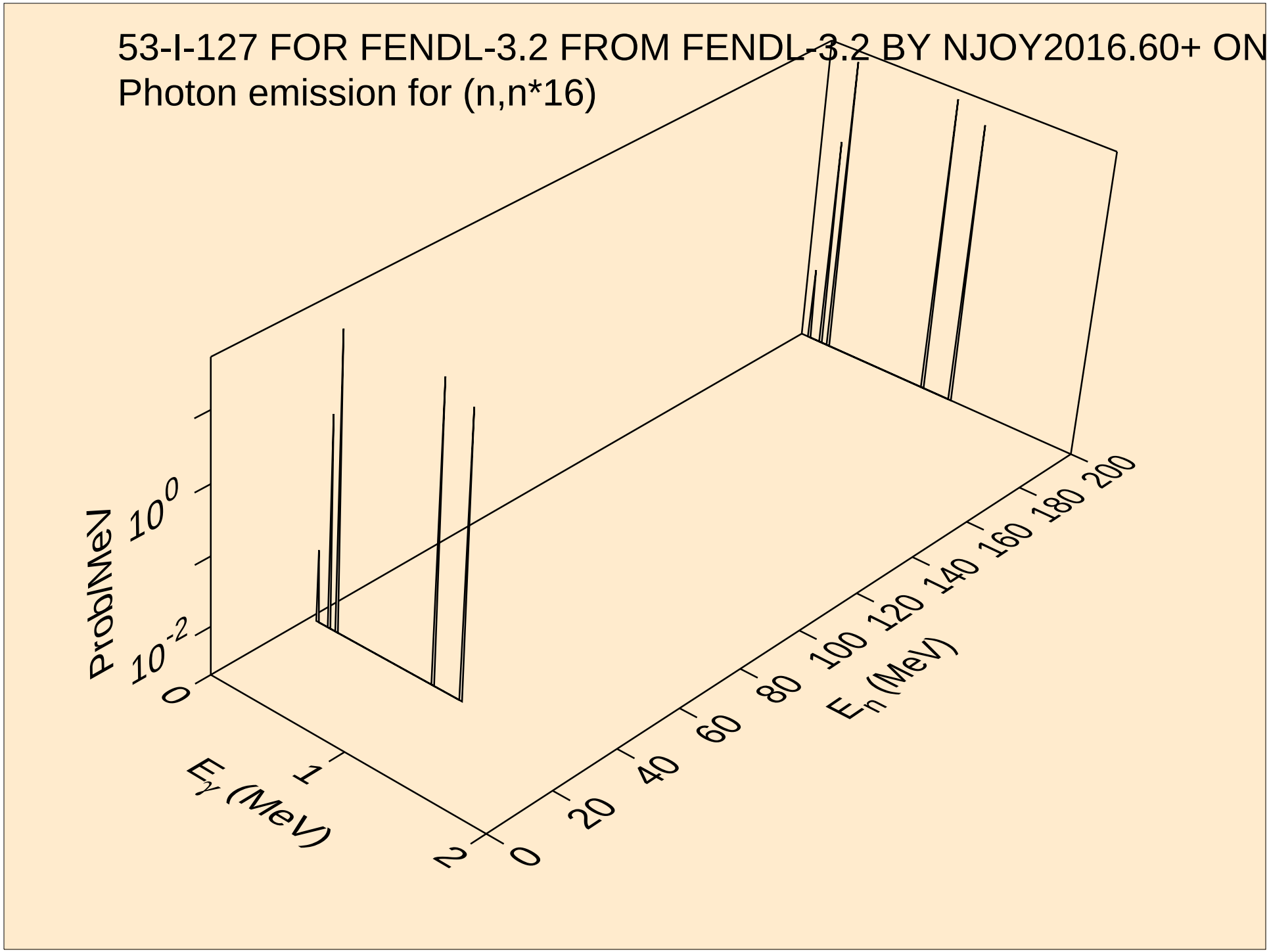

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*11)
Prob/MeV
10^2
10^0
0.7
0.8
0.9
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

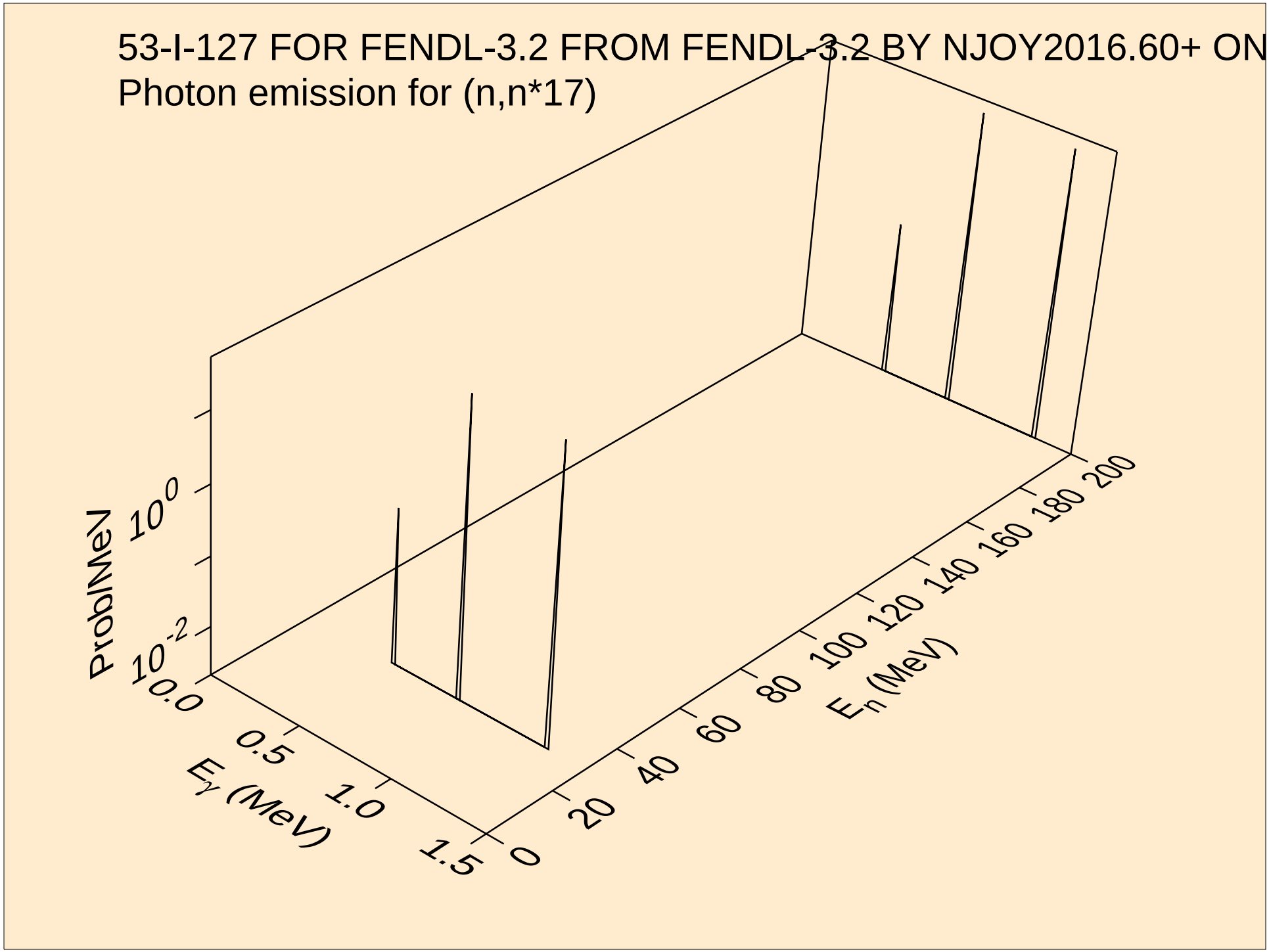

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*12)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

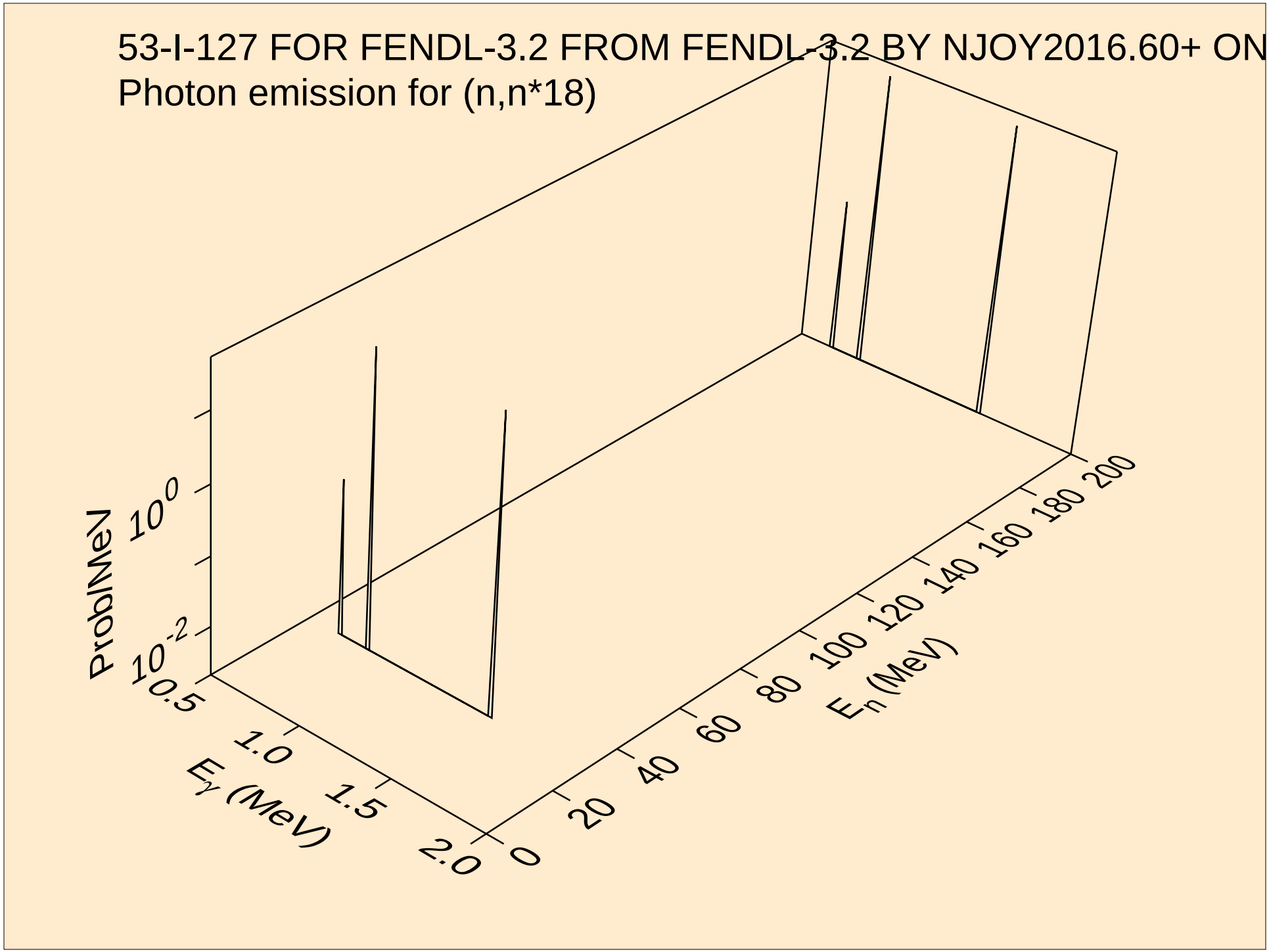

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*13)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
1.5
Eγ (MeV)
0
20
40
60
80
100
120
140
160
180
200
En (MeV)

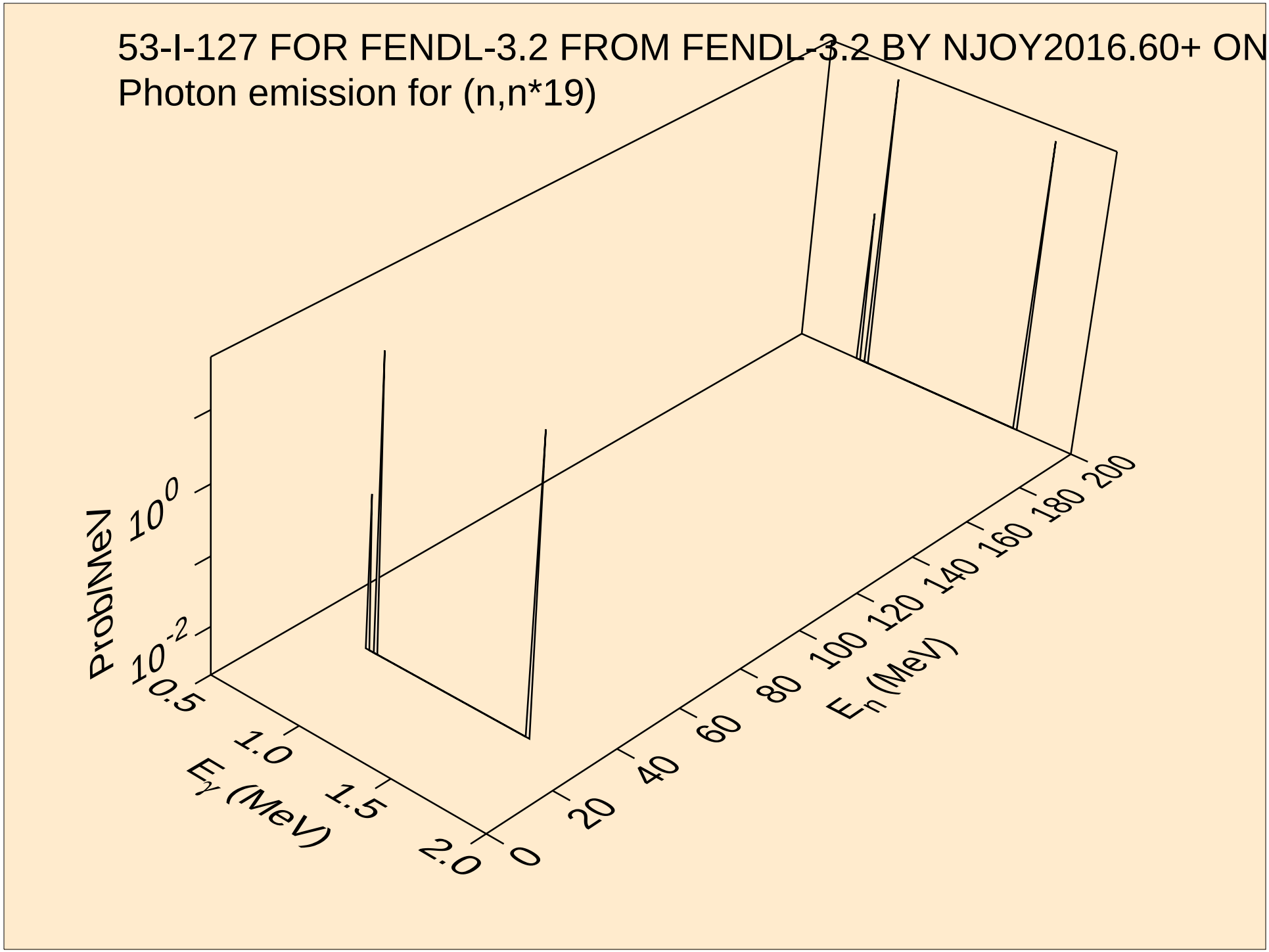

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*14)
Prob/MeV
10^0
10^-2
0
1
2
Eγ (MeV)
0
20
40
60
80
100
120
140
160
180
200
En (MeV)

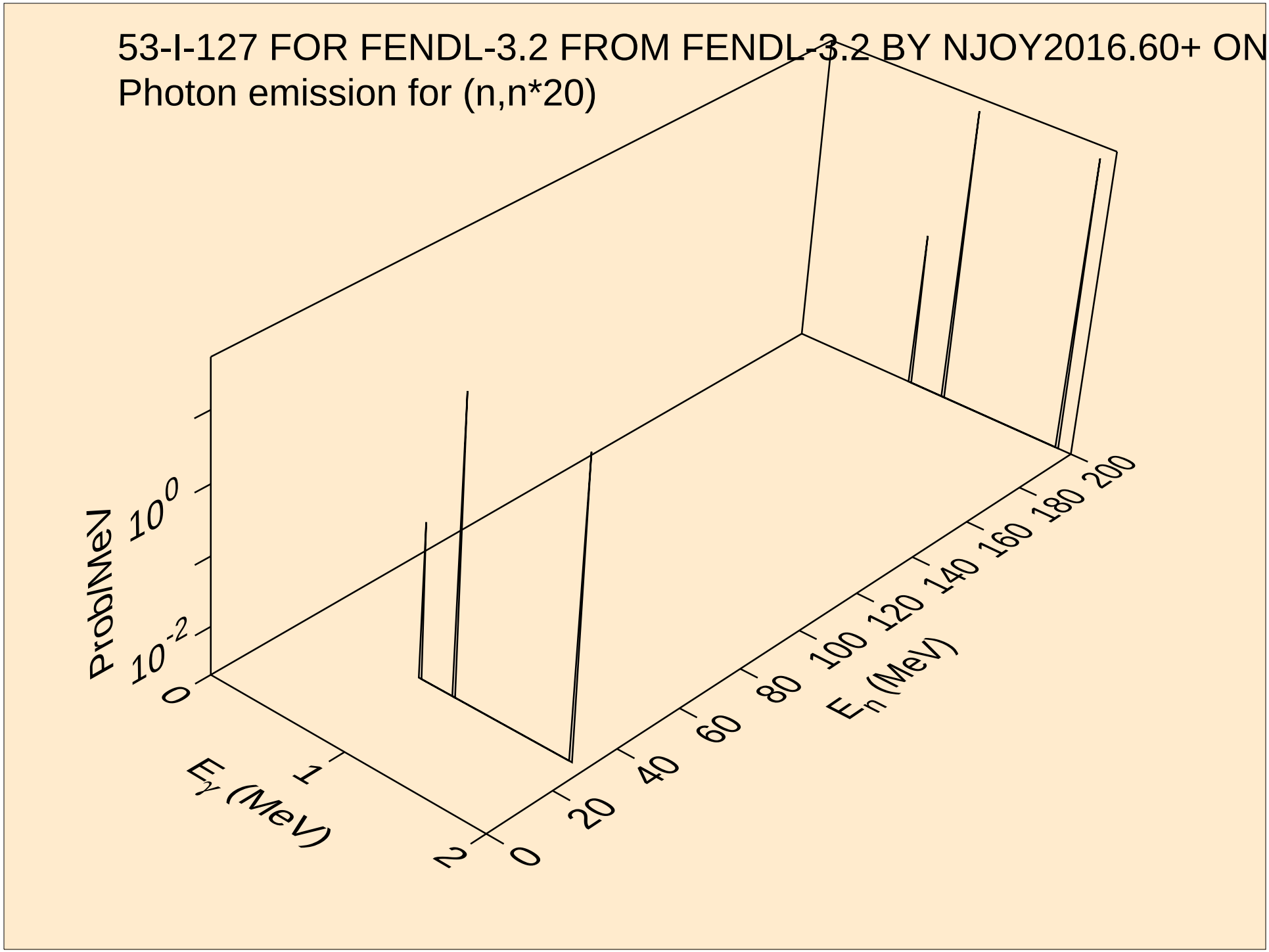

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*15)
Prob/MeV
10^{2}
10^{0}
10^{-2}
E_γ (MeV)
0
1
2
E_n (MeV)
0
20
40
60
80
100
120
140
160
180
200

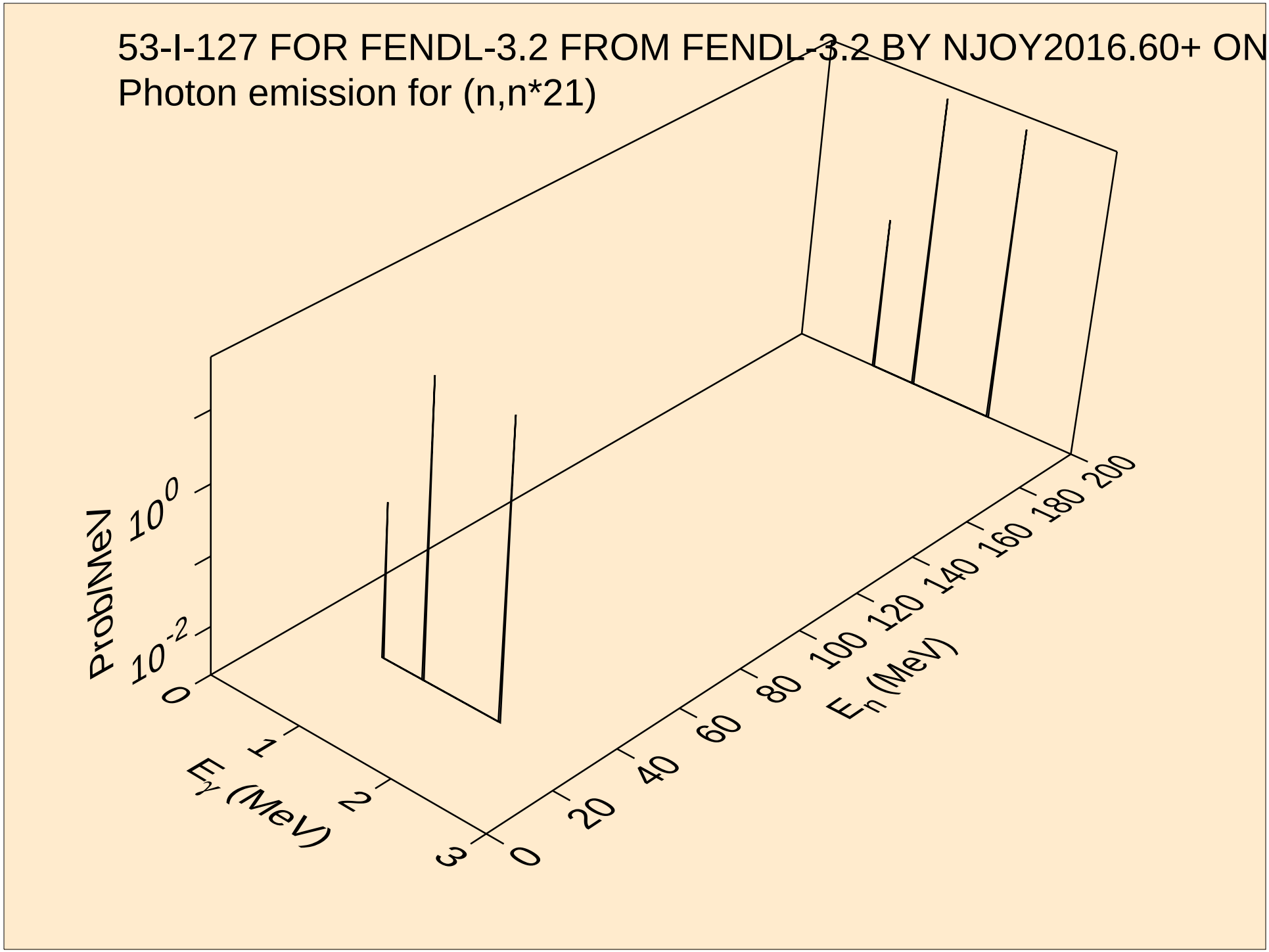

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*16)
Prob/MeV
10^{0}
10^{-2}
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

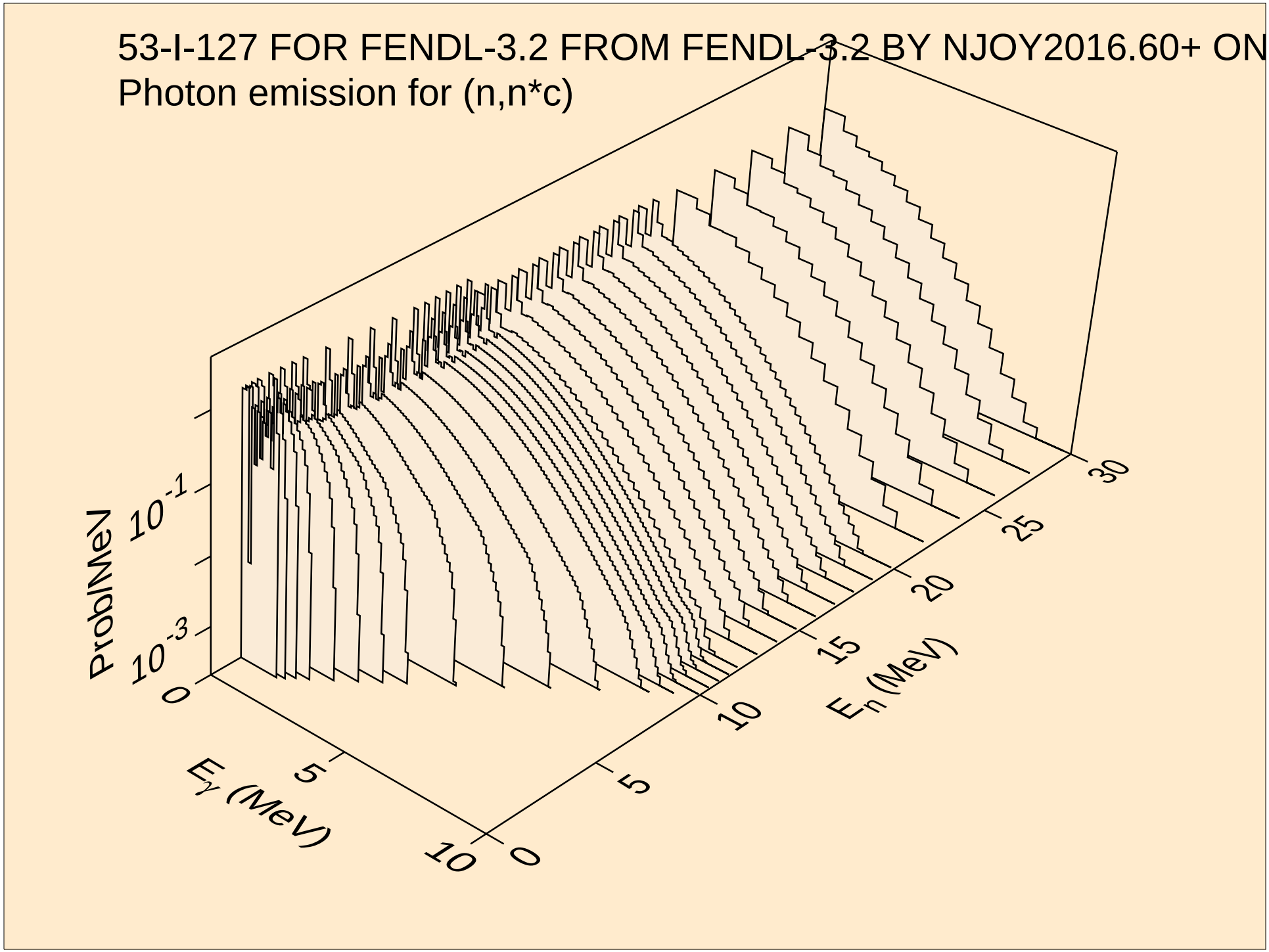

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*17)
Prob/MeV
10^{0}
10^{-2}
0.0
0.5
1.0
1.5
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

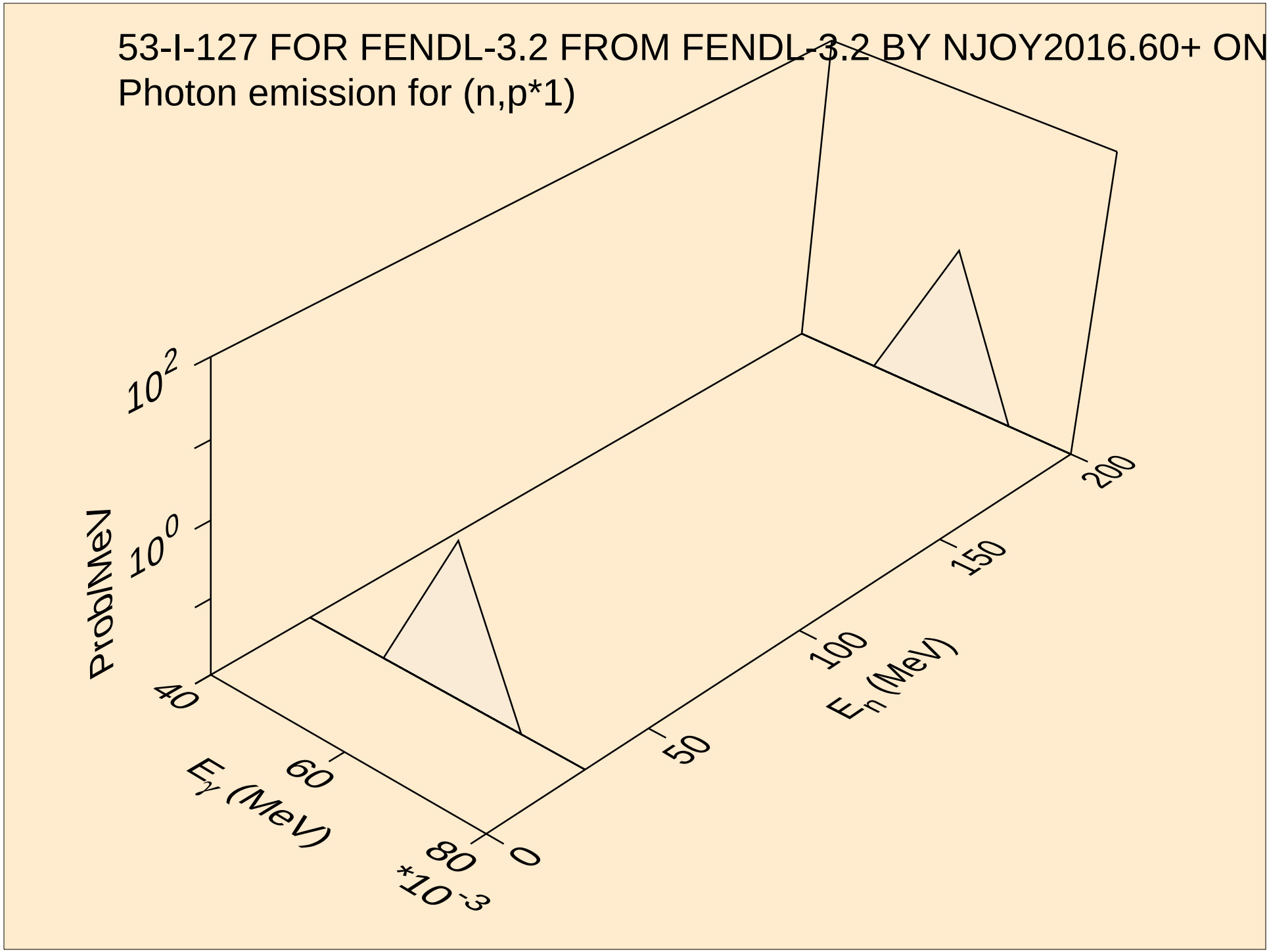

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*18)
Prob/MeV
10^{0}
10^{-2}
0.5
1.0
1.5
2.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

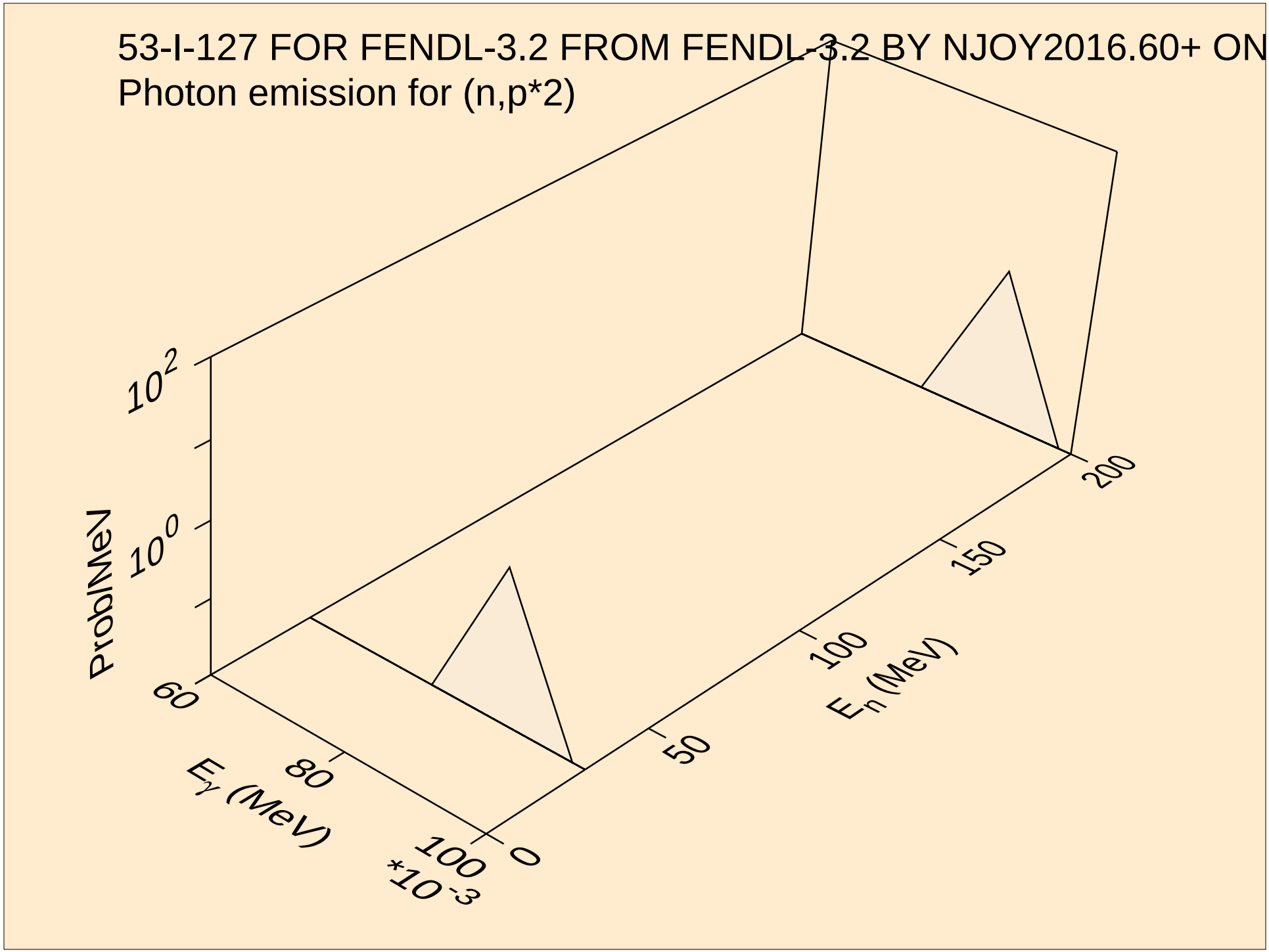

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*19)
Prob/MeV
10^{0}
10^{-2}
0.5
1.0
1.5
2.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

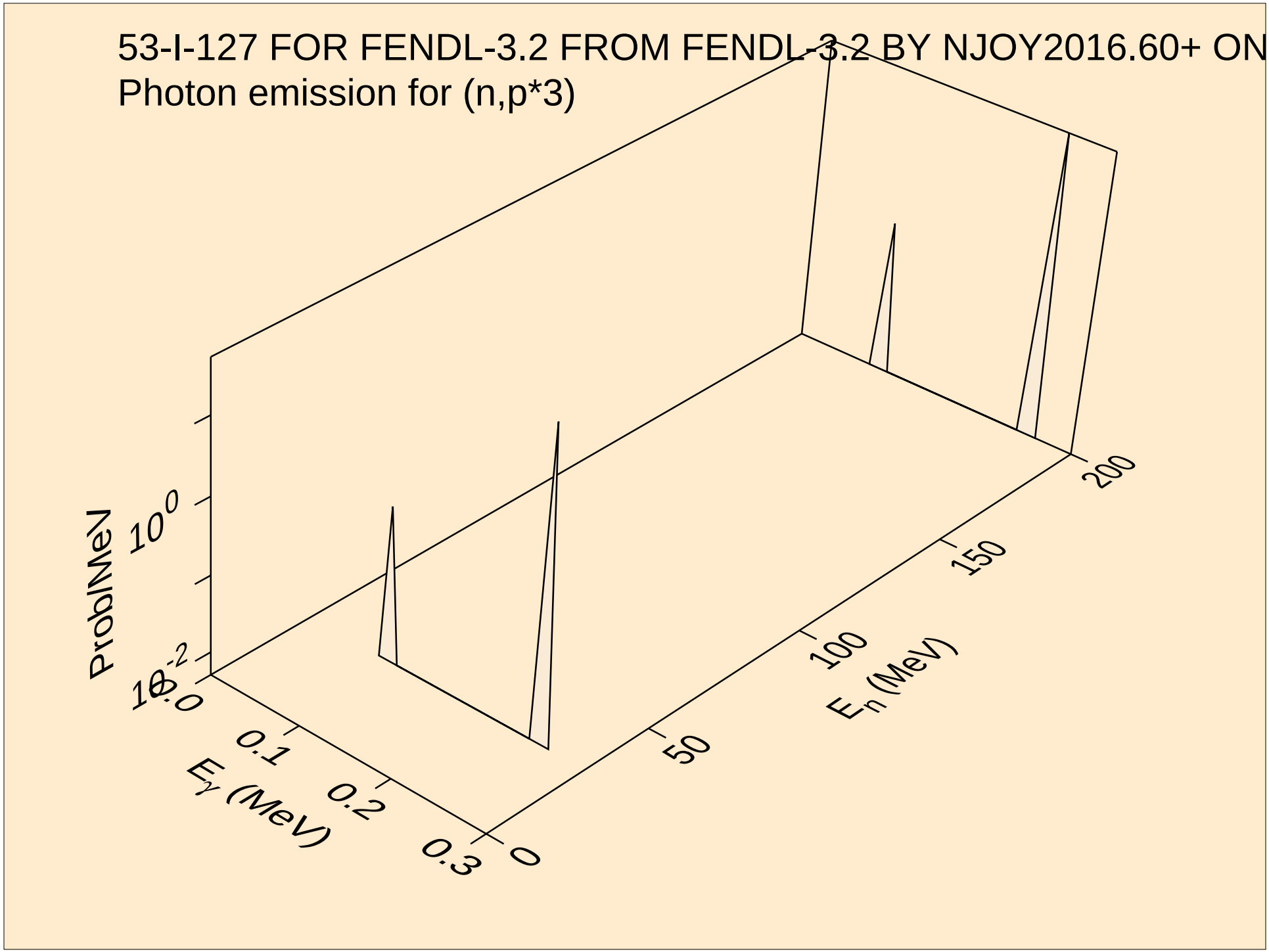

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*20)
Prob/MeV
10^{0}
10^{-2}
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

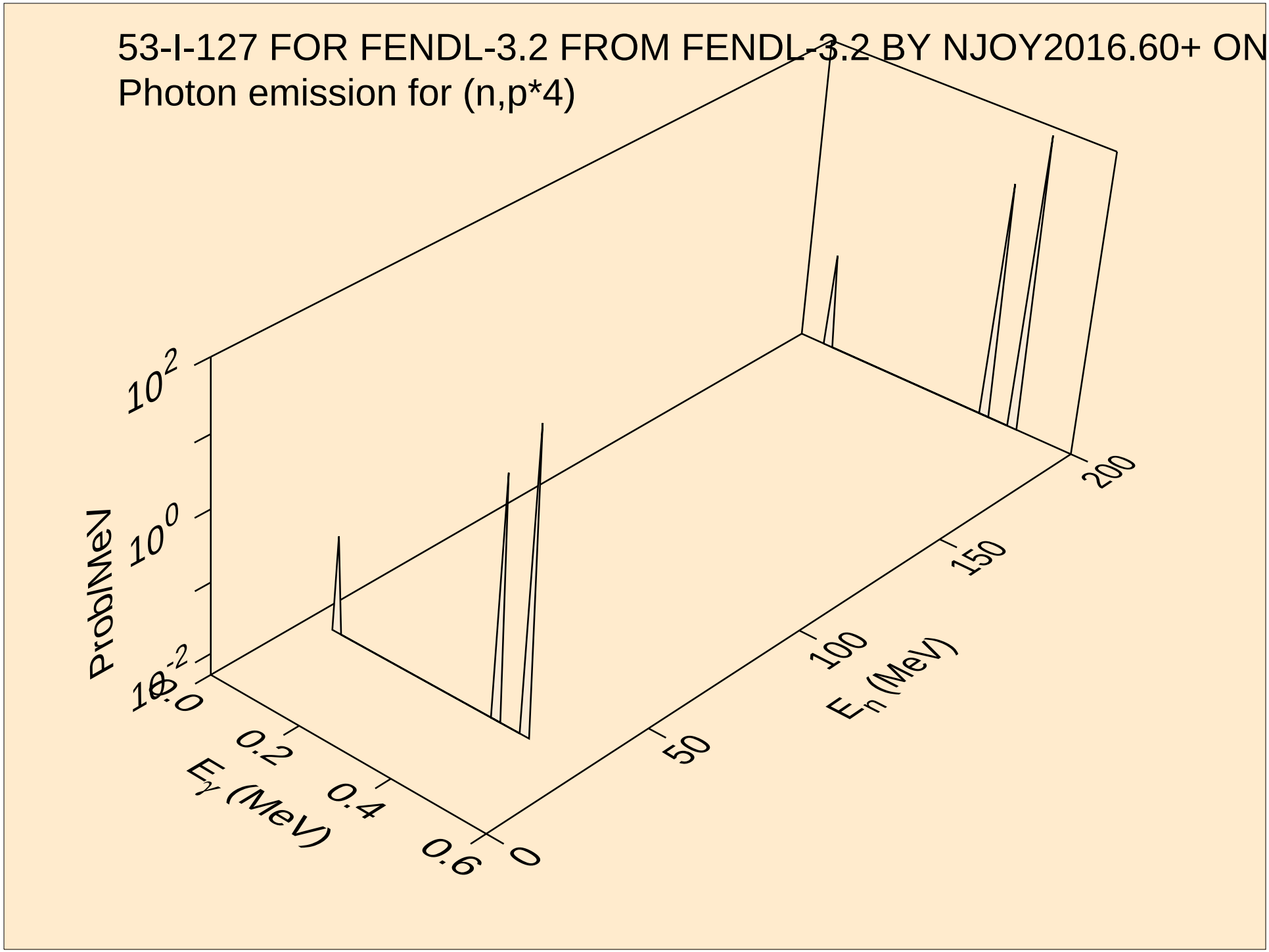

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*21)
Prob/MeV
10^{0}
10^{-2}
0
1
2
3
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

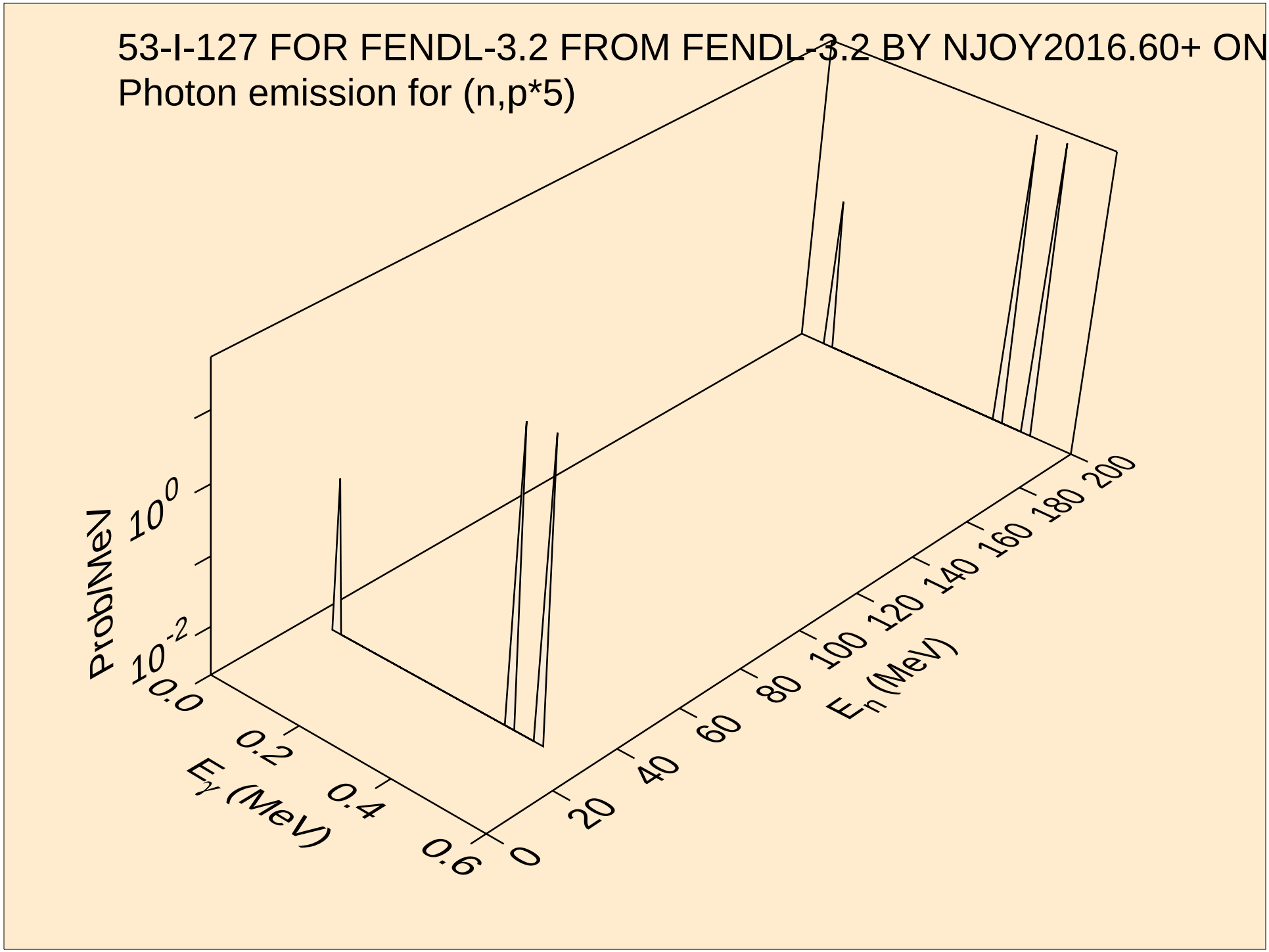

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,n*c)
Prob/MeV
10-1
10-3
0
5
10
Eγ (MeV)
0
5
10
15
20
25
30
En (MeV)

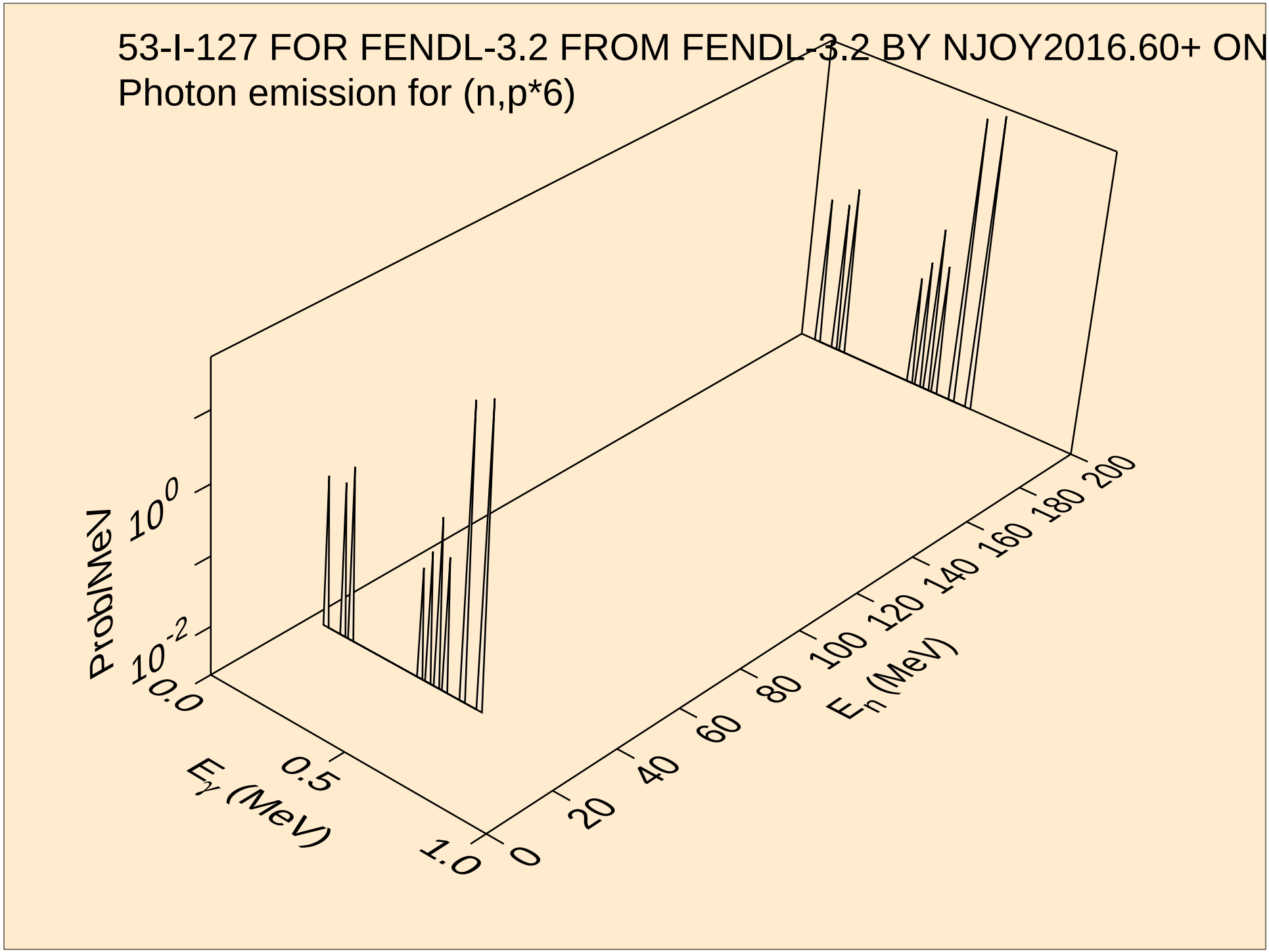

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*1)
Prob/MeV
10^2
10^0
40
60
80
E_γ (MeV)
*10 -3
0
50
100
150
200
E_n (MeV)

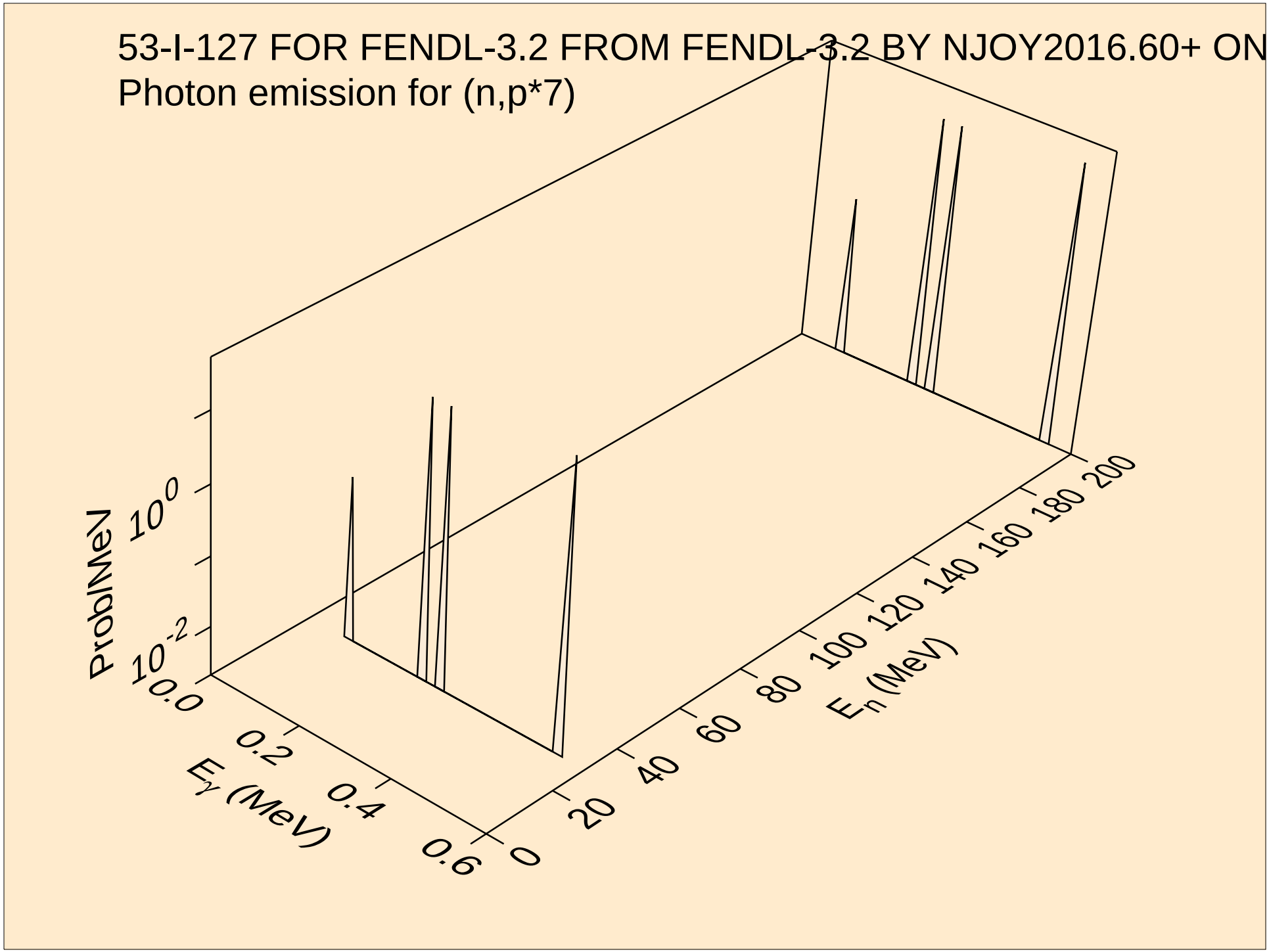

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*2)
Prob/MeV
10^2
10^0
60
80
100
E_γ (MeV)
*10 -3
0
50
100
150
200
E_n (MeV)

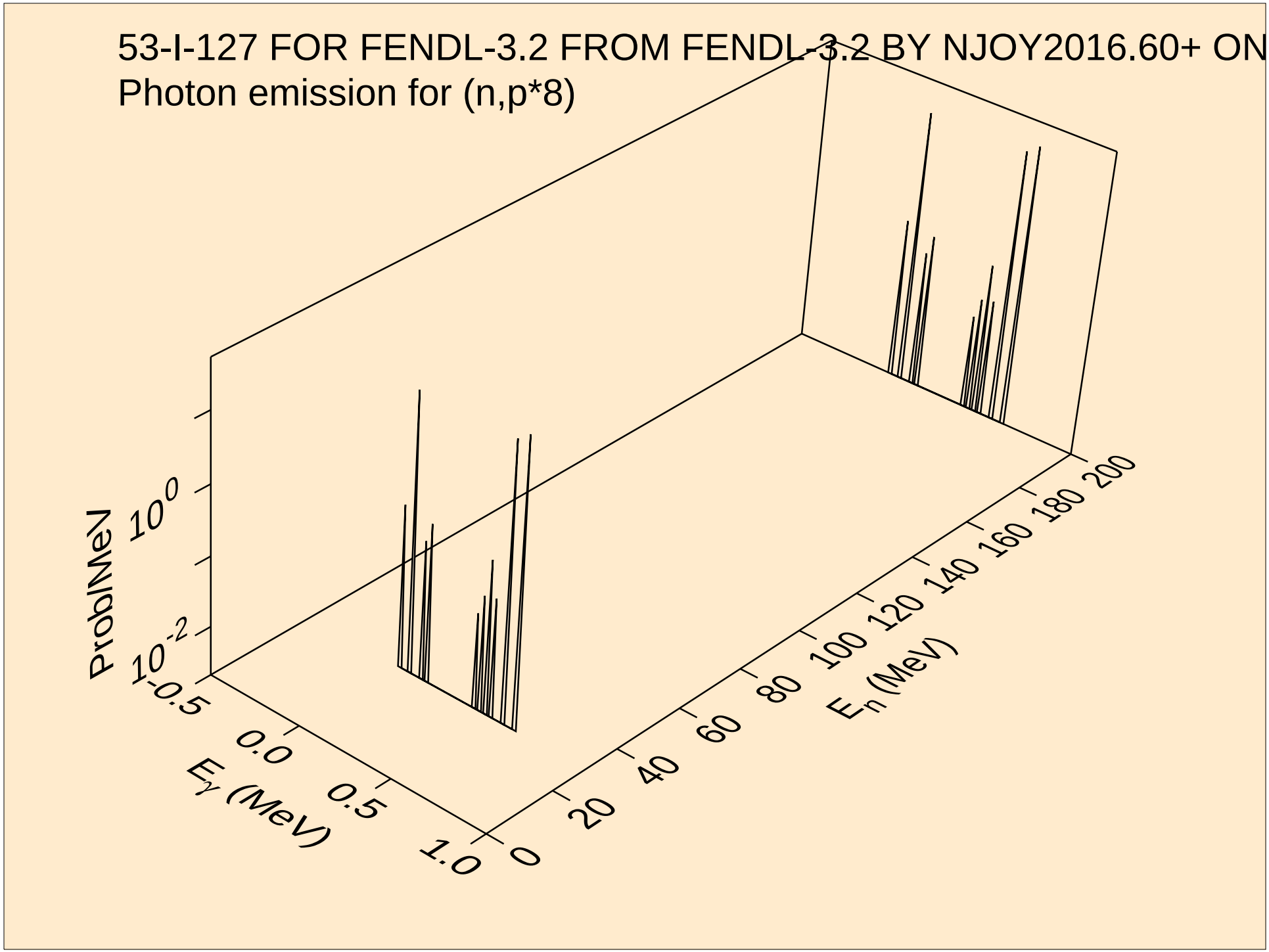

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*3)
Prob/MeV
10^0
10^-2
0.0
0.1
0.2
0.3
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

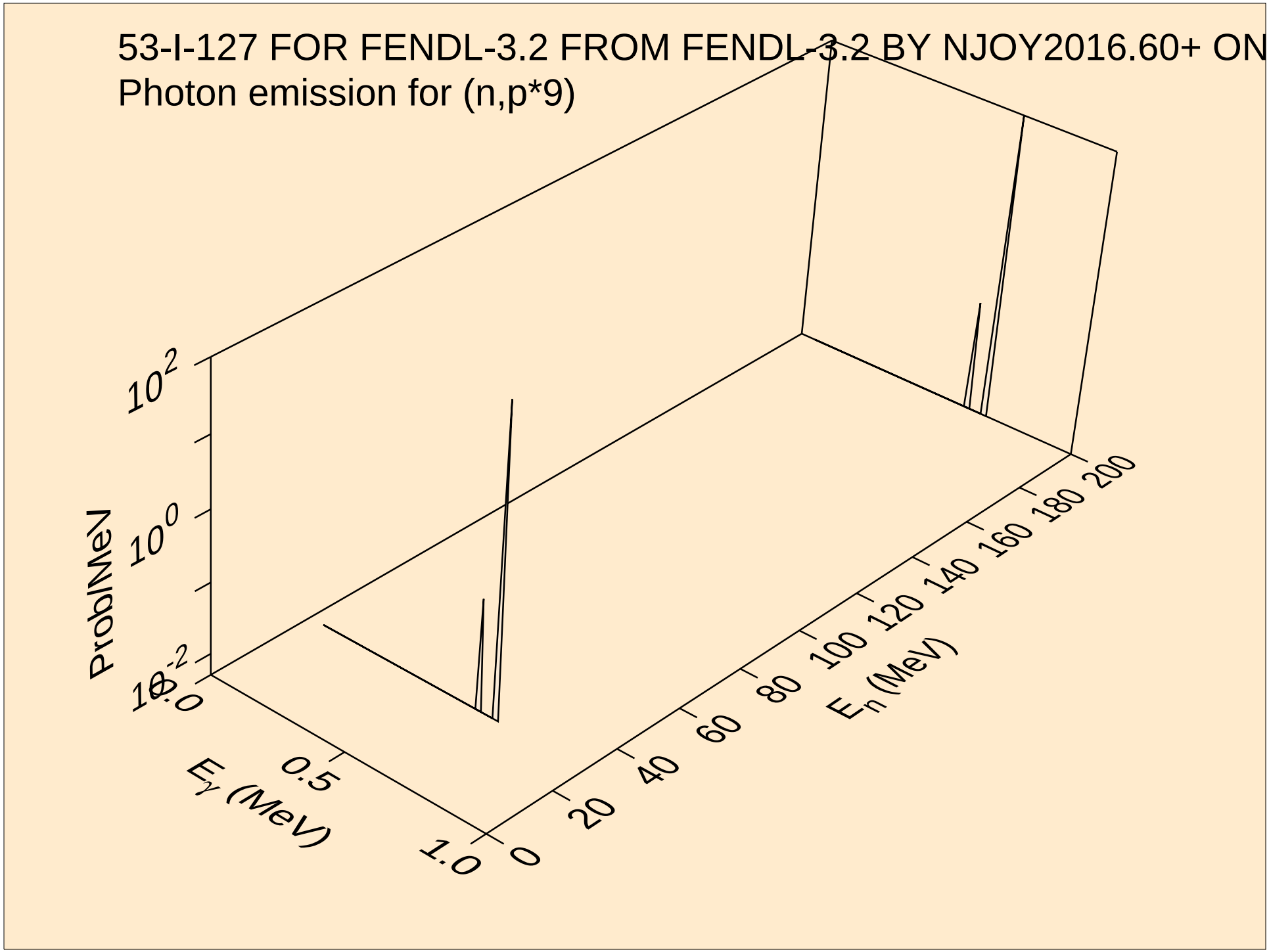

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*4)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.2
0.4
0.6
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

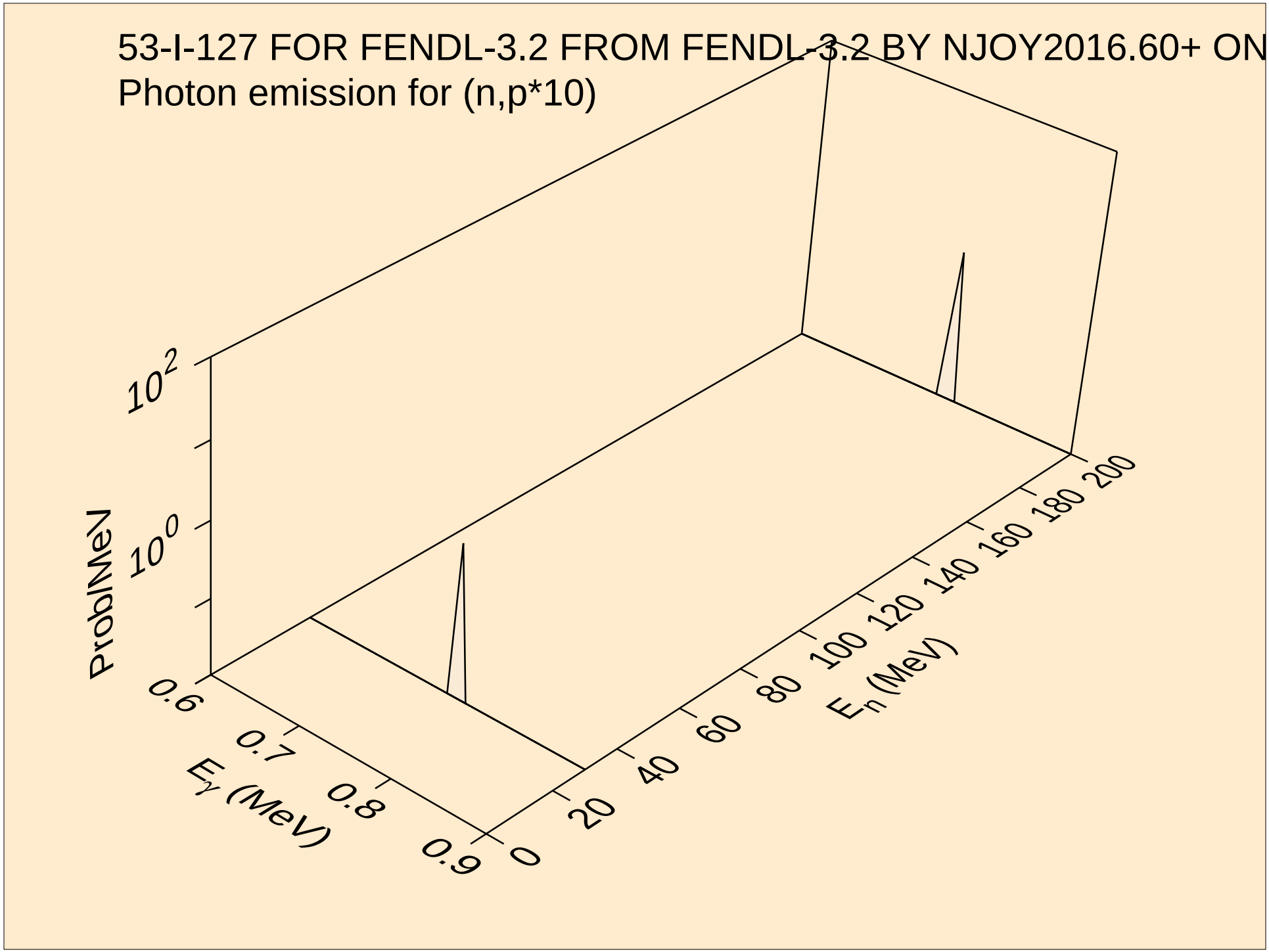

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*5)
Prob/MeV
10^0
10^-2
0.0
0.2
0.4
0.6
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

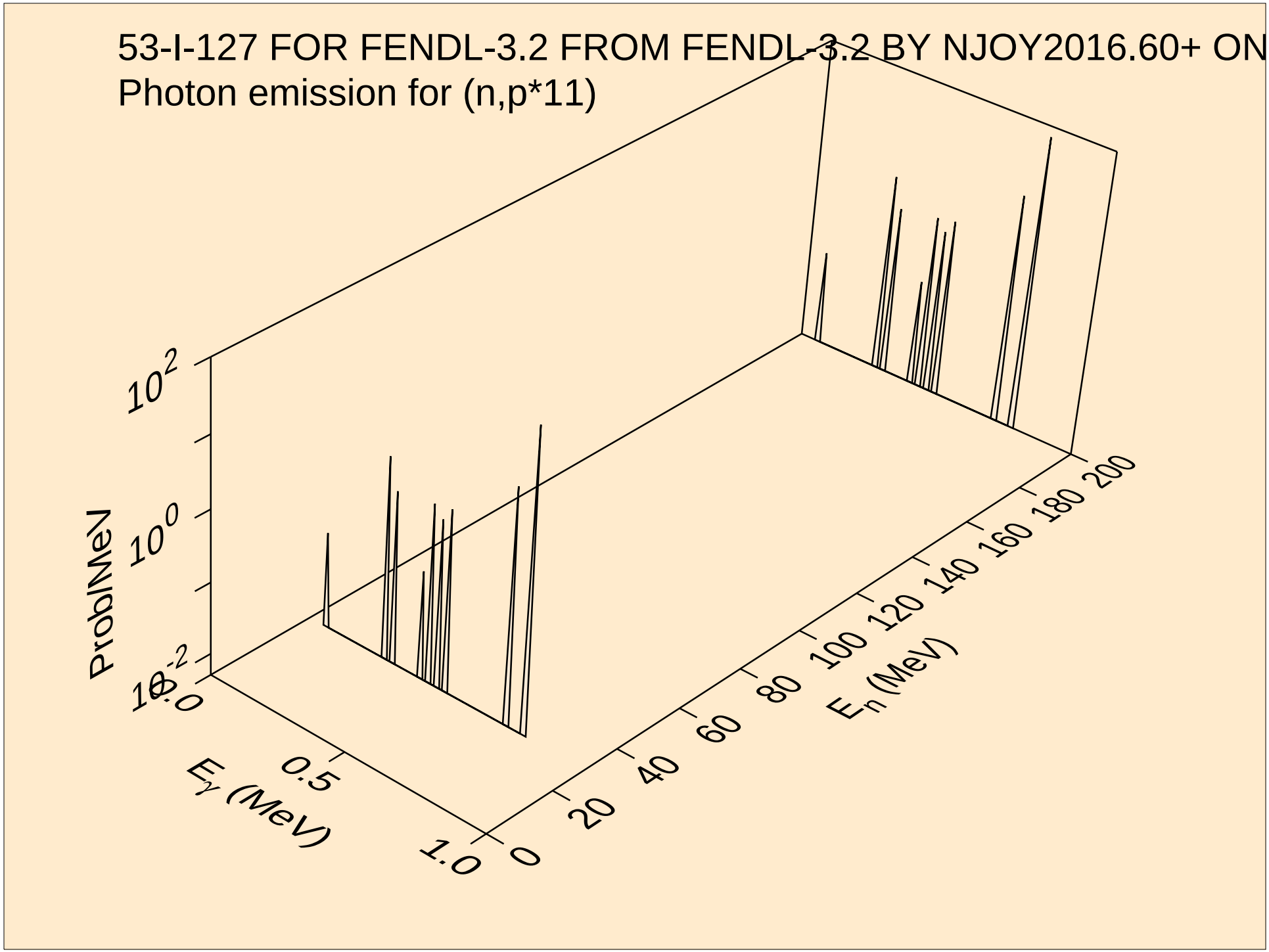

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*6)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

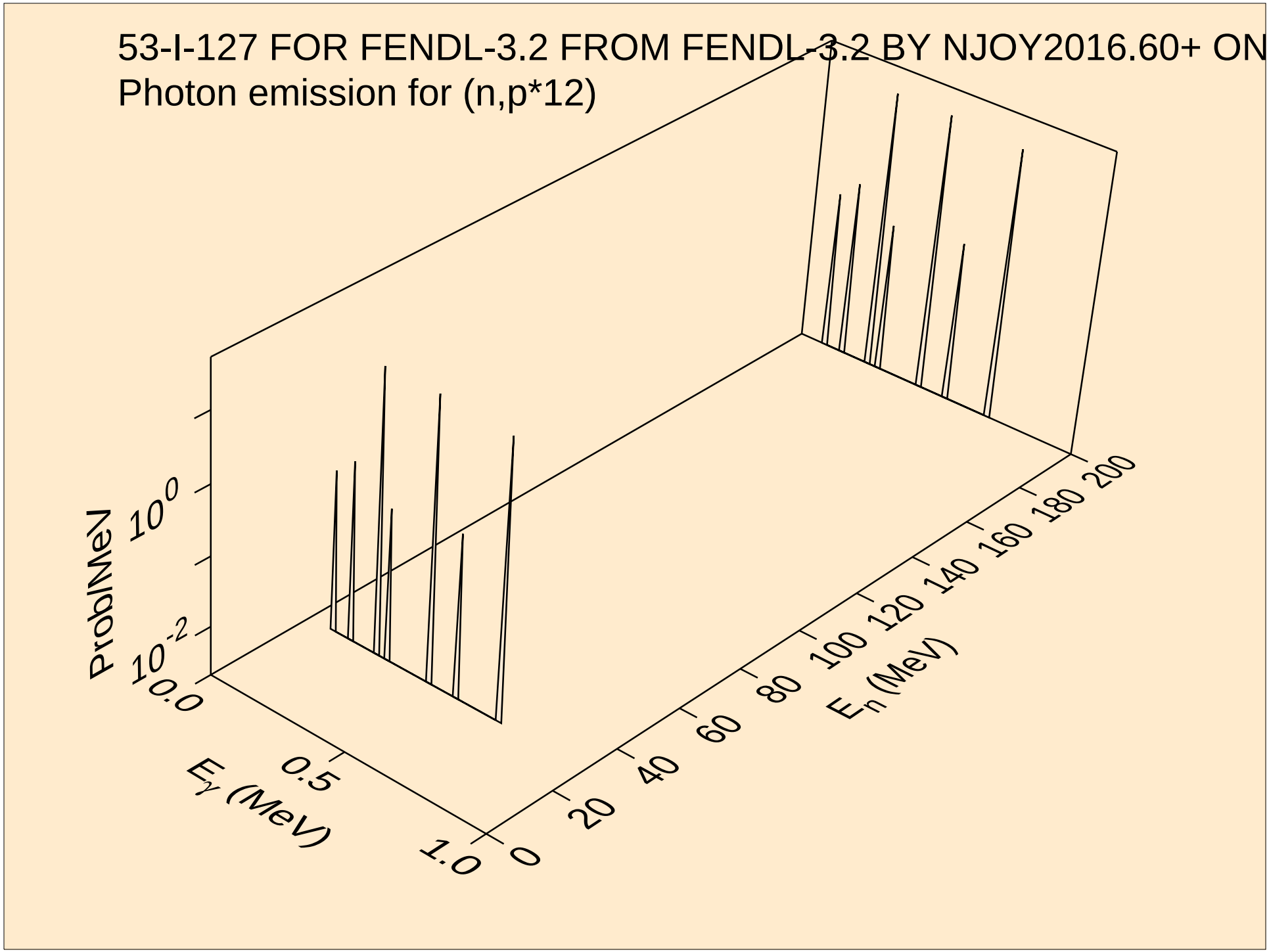

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*7)
Prob/MeV
10^0
10^-2
0.0
0.2
0.4
0.6
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

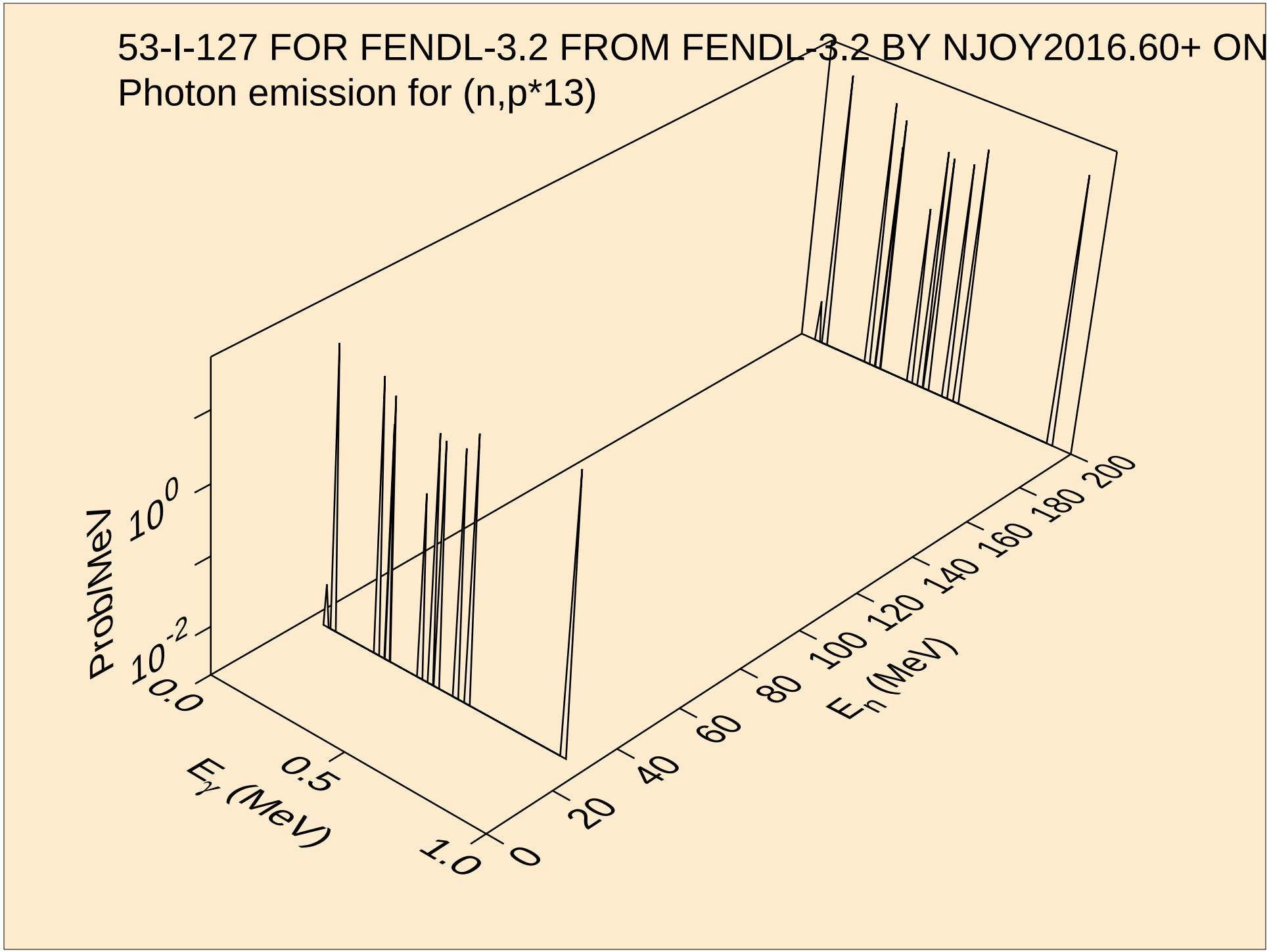

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*8)
Prob/MeV
10^0
10^-2
-0.5
0.0
0.5
1.0
Eγ (MeV)
0
20
40
60
80
100
120
140
160
180
200
En (MeV)

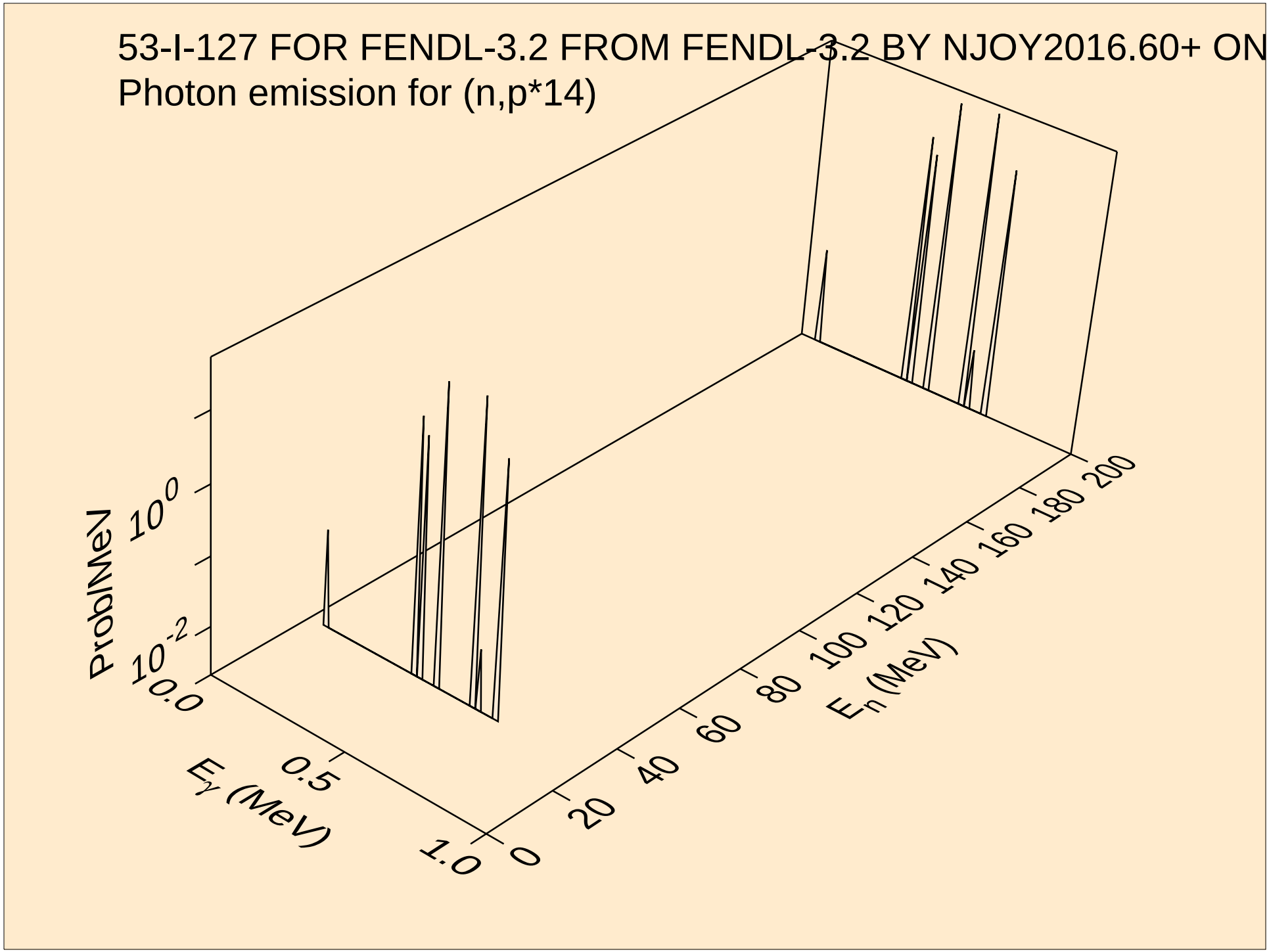

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*9)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

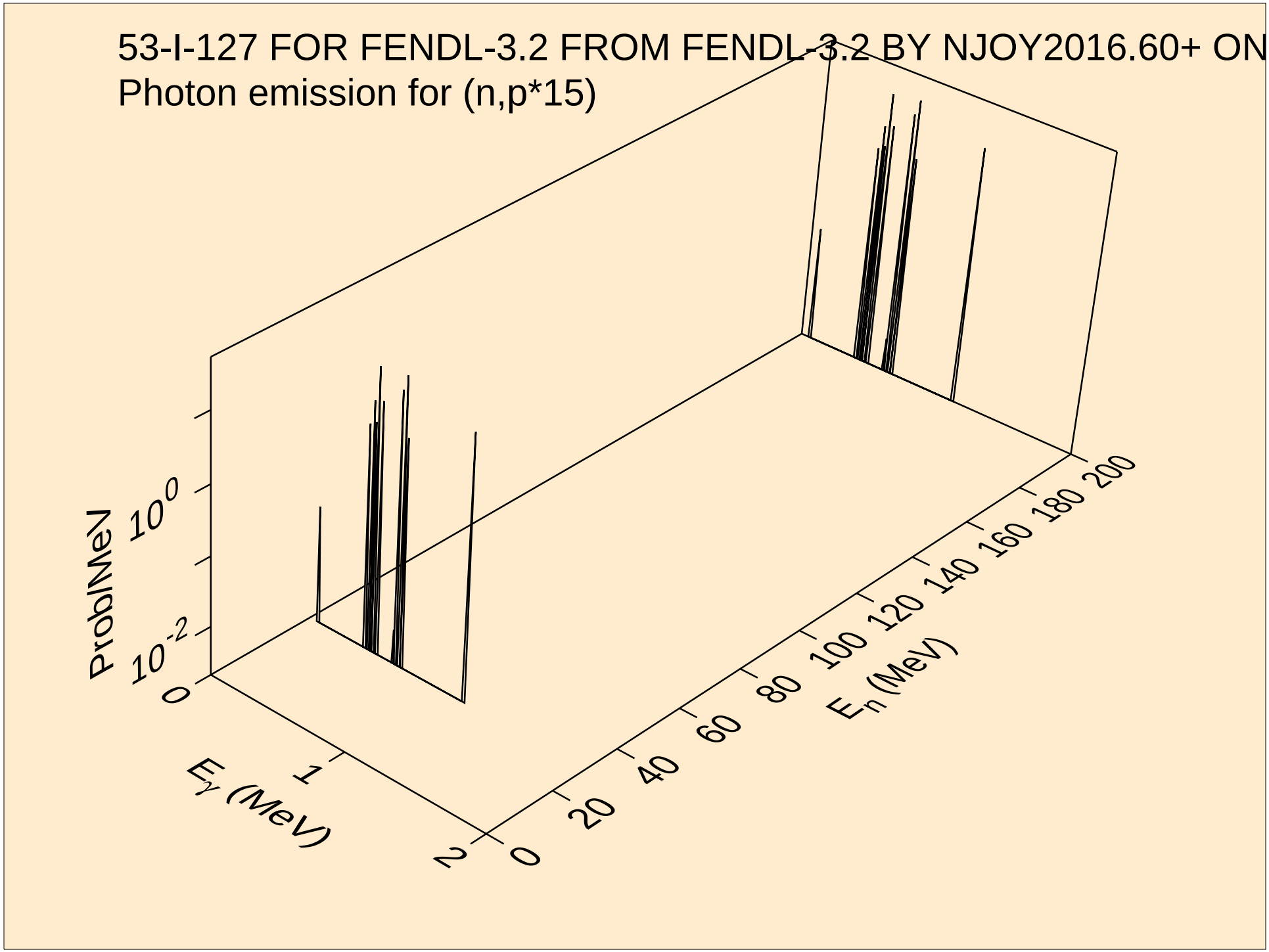

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*10)
Prob/MeV
10^2
10^0
0.6
0.7
0.8
0.9
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

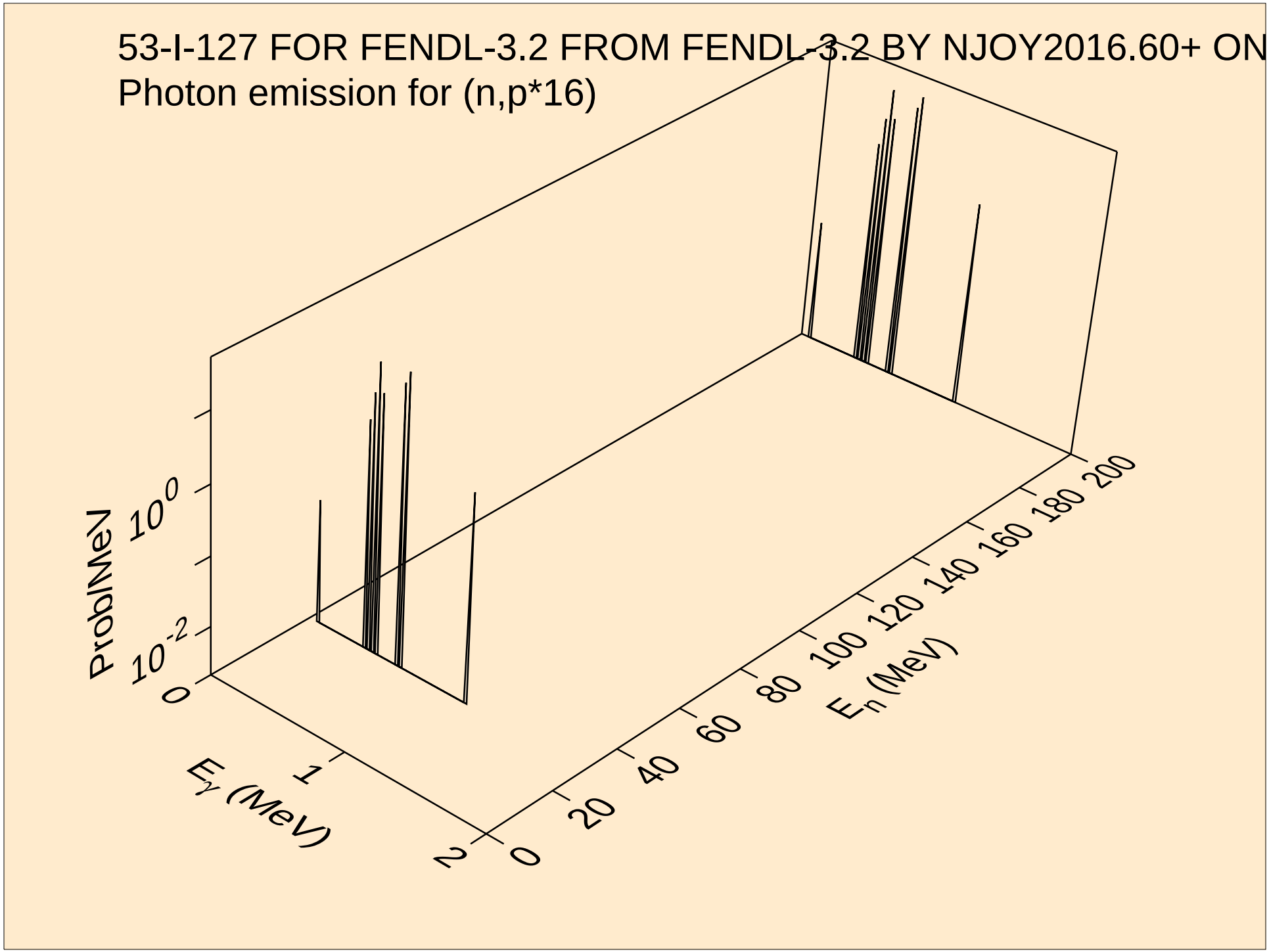

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*11)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

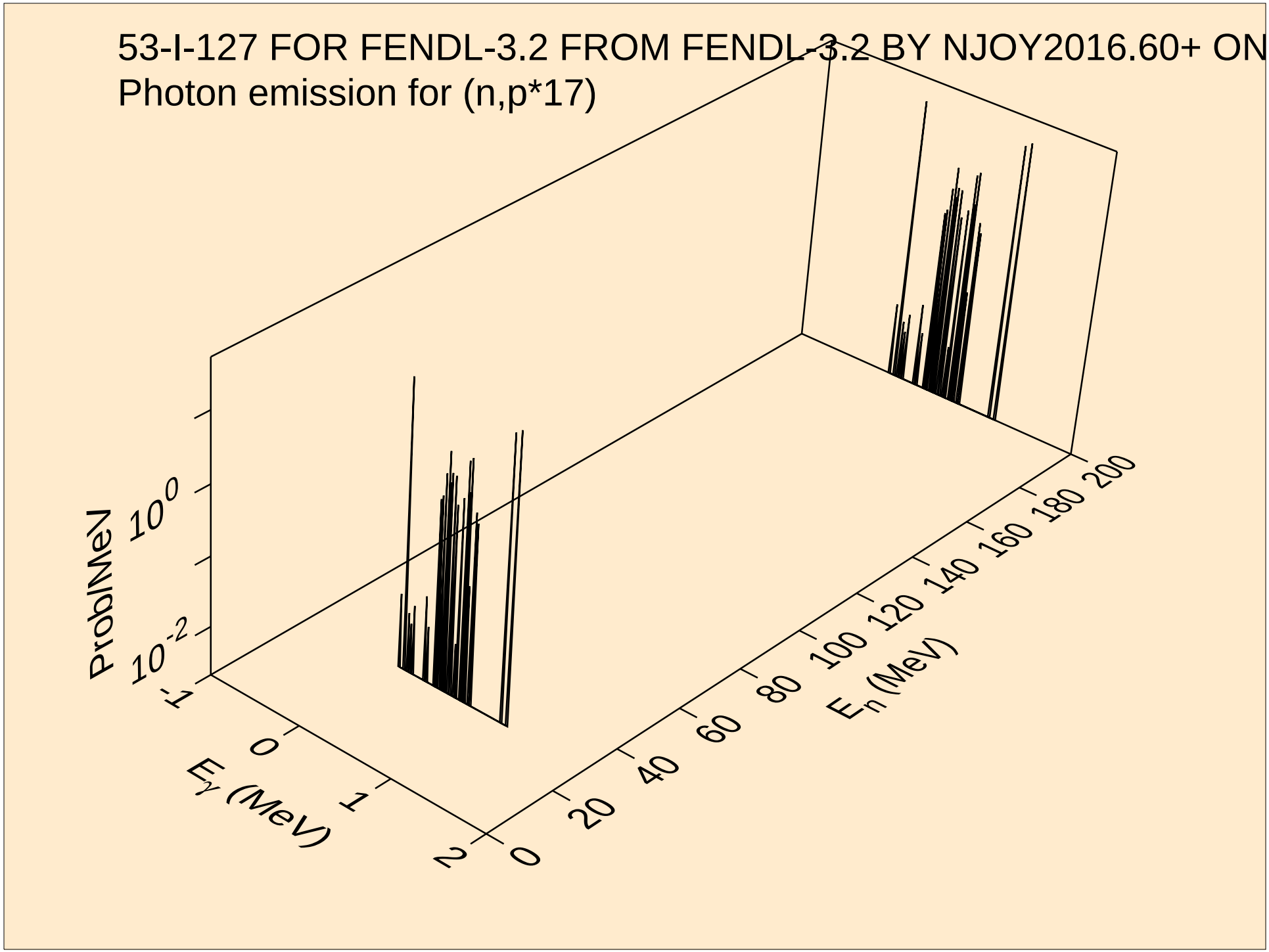

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*12)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

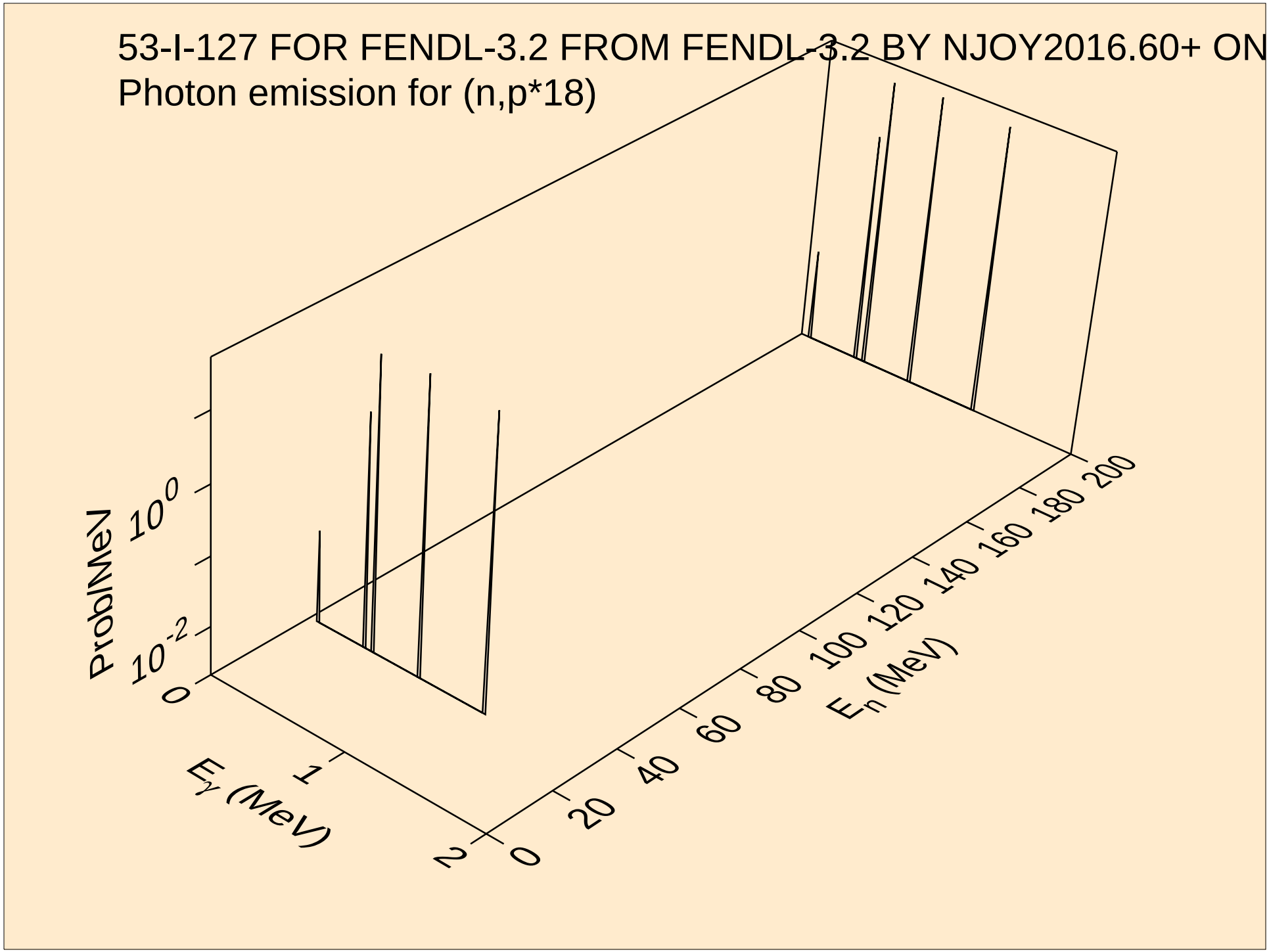

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*13)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

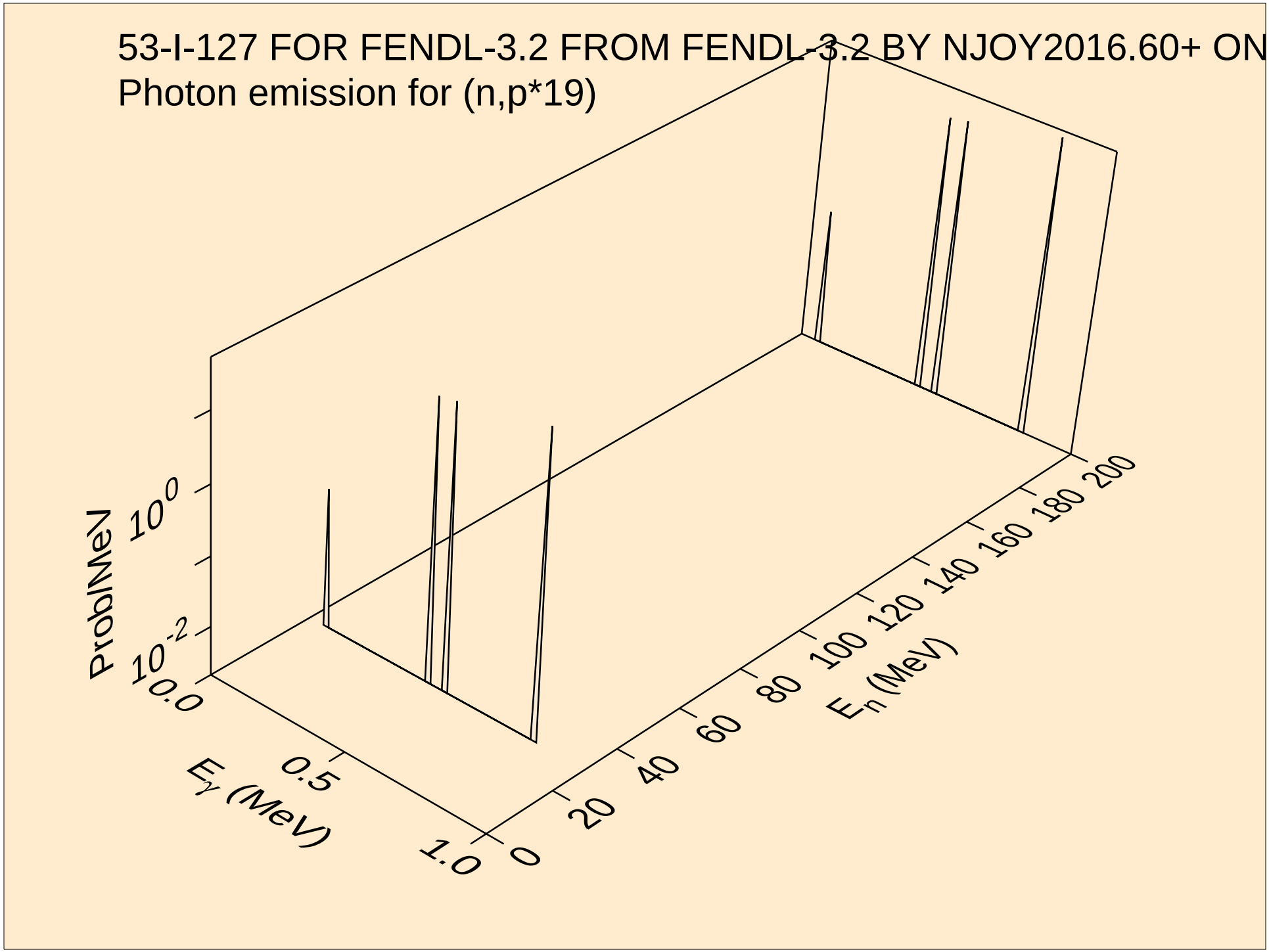

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*14)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

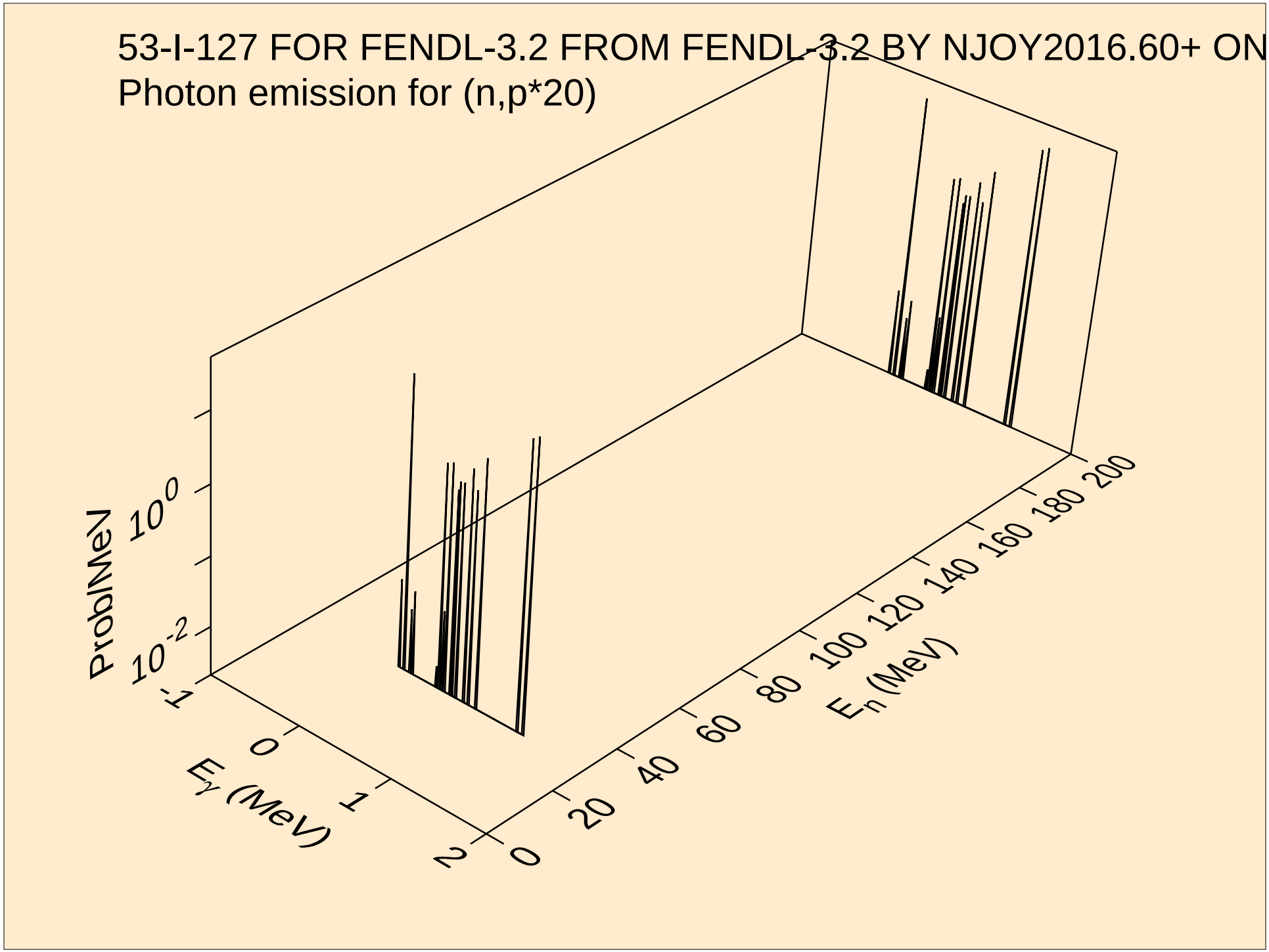

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*15)
Prob/MeV
10^{0}
10^{-2}
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

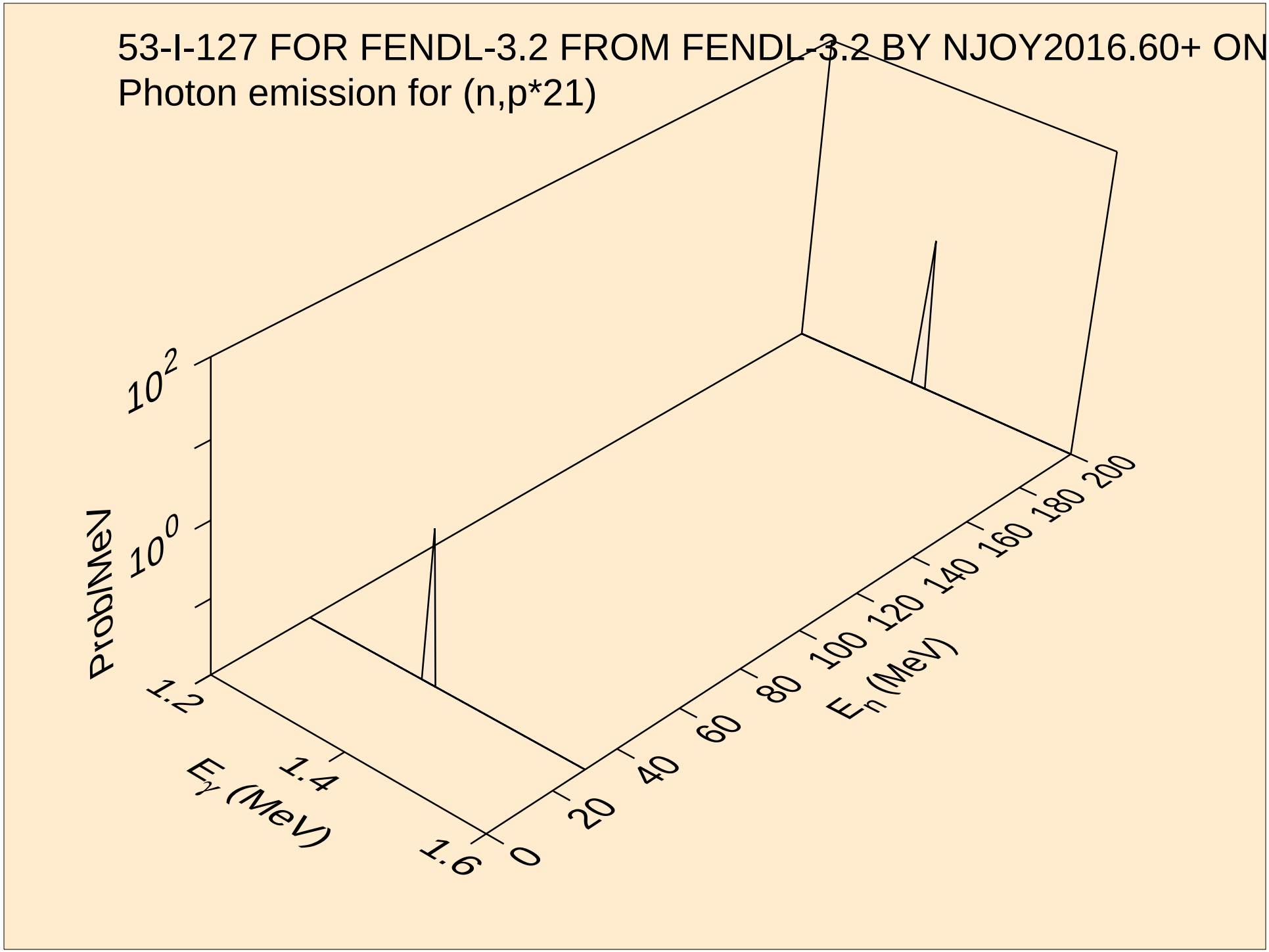

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*16)
Prob/MeV
10^{0}
10^{-2}
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

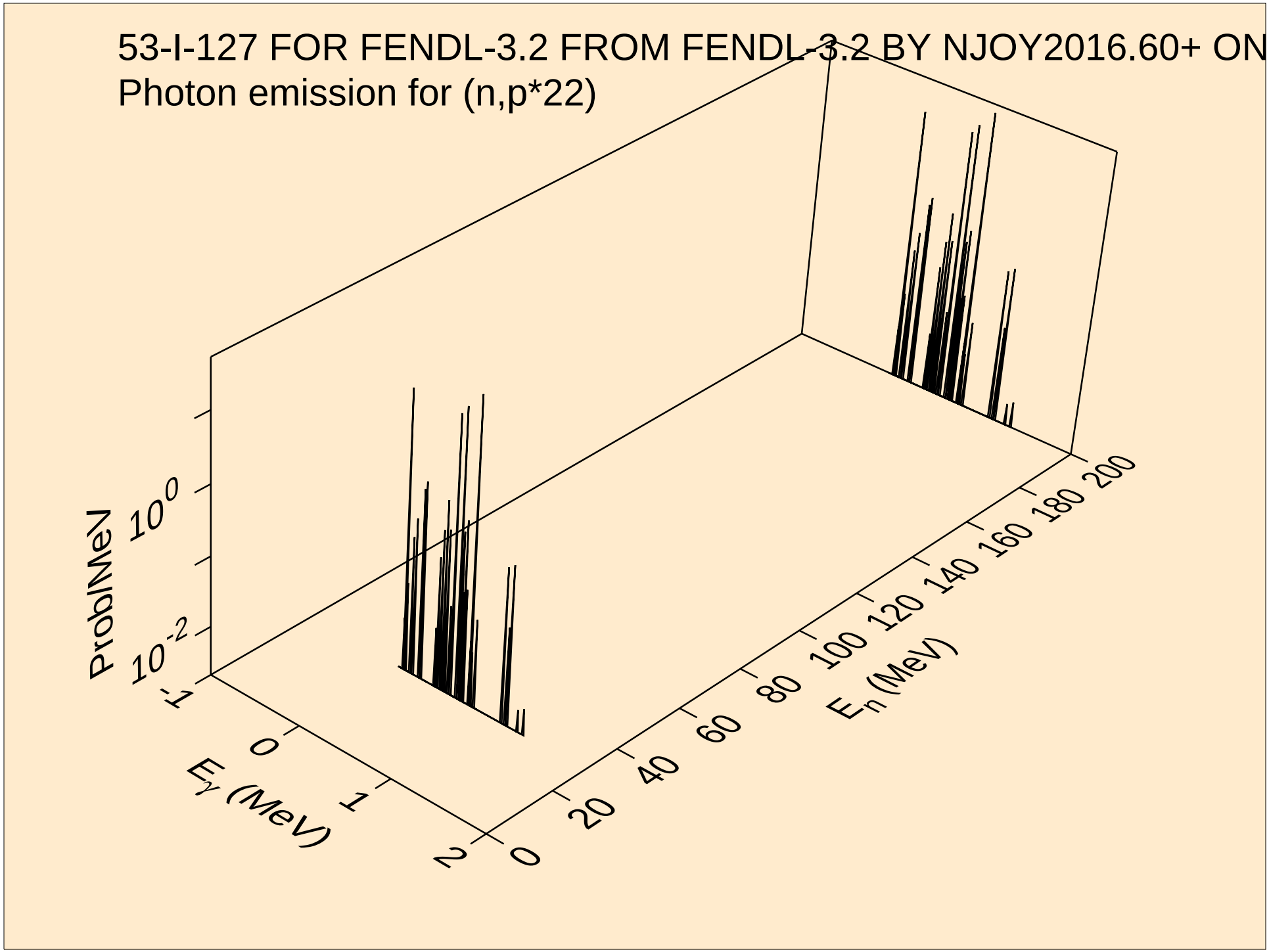

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*17)
Prob/MeV
10^{0}
10^{-2}
-1
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

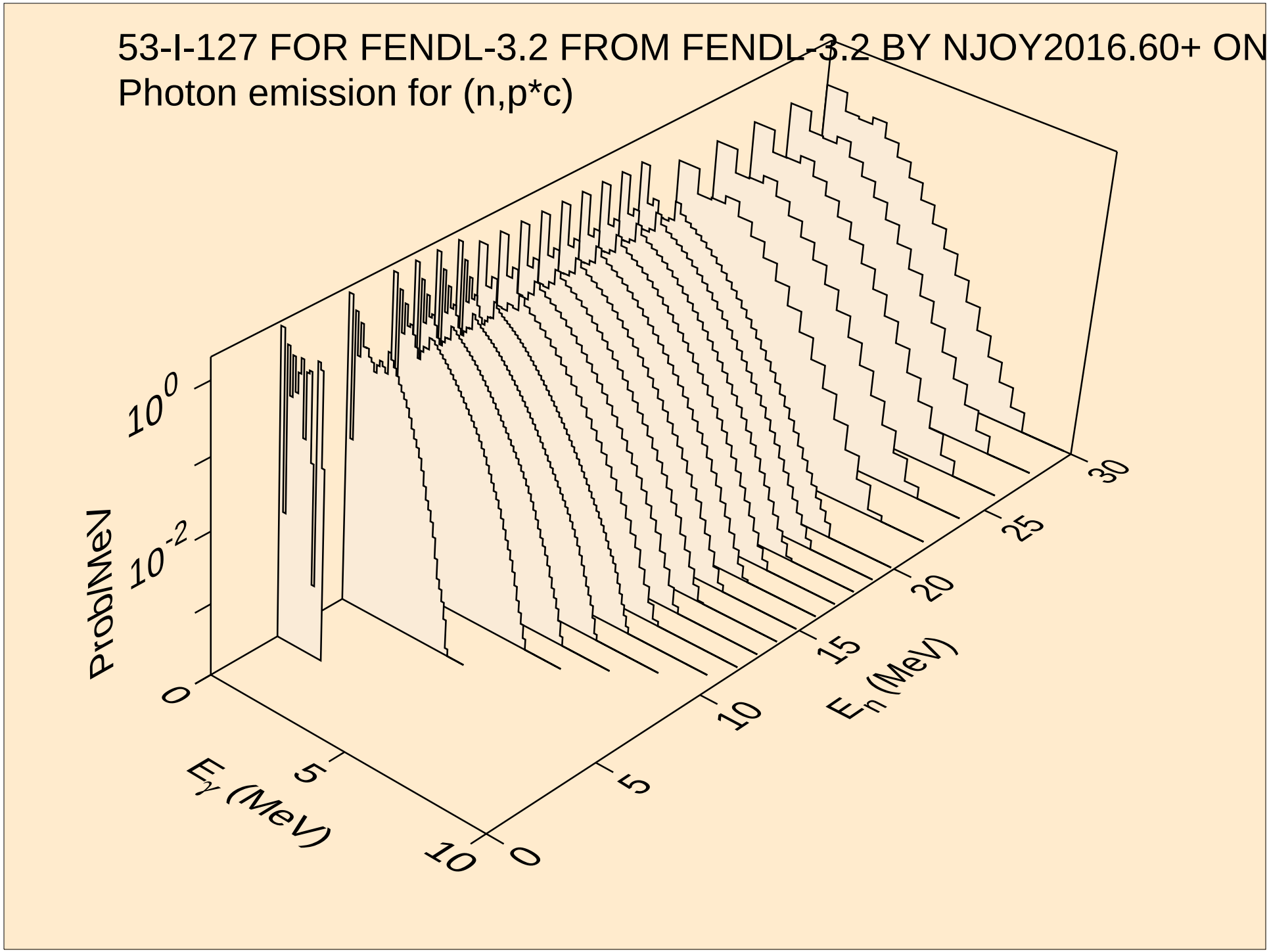

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*18)
Prob/MeV
10^{0}
10^{-2}
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

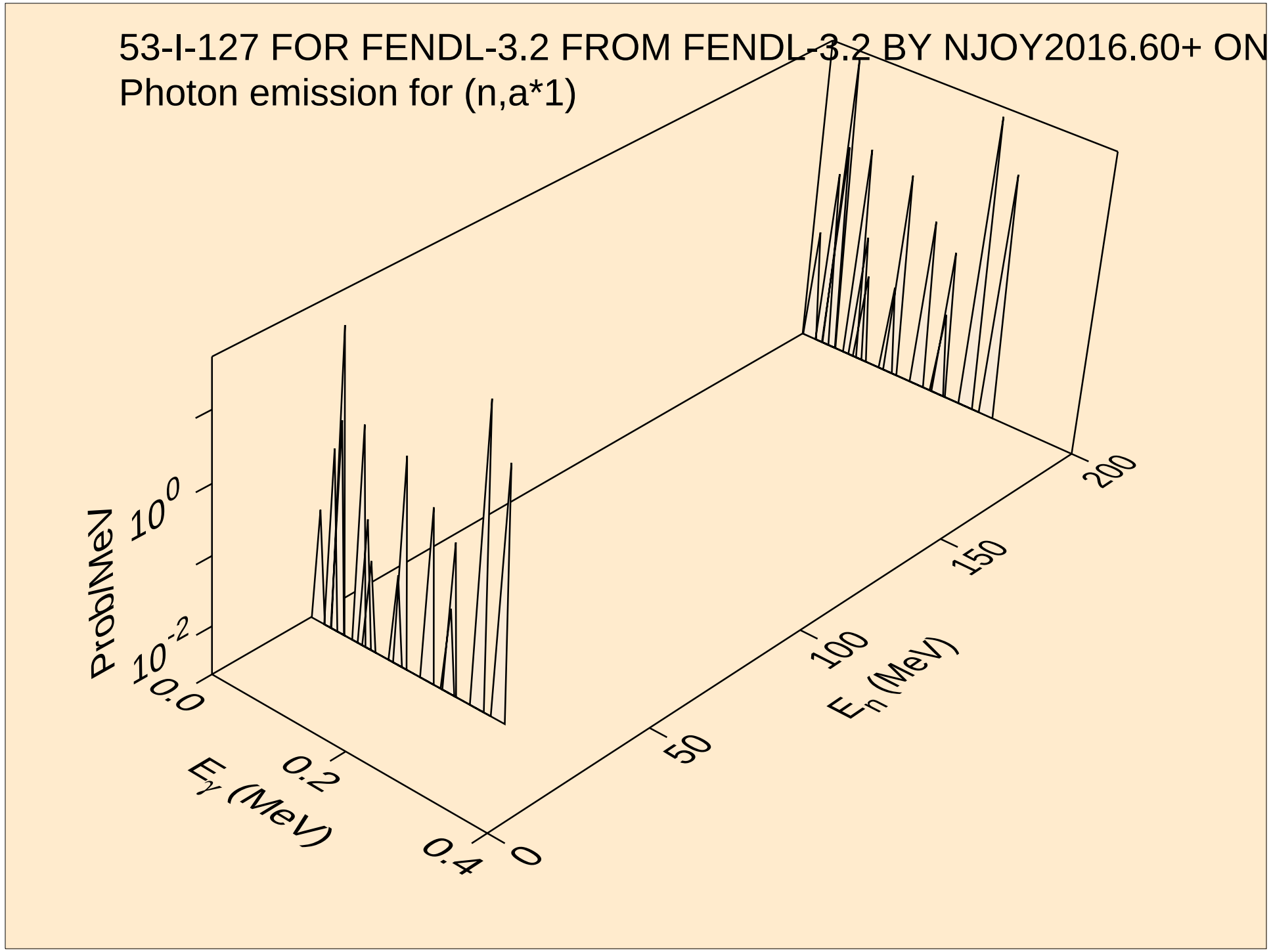

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*19)
Prob/MeV
10^0
10^-2
0.0
0.5
1.0
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

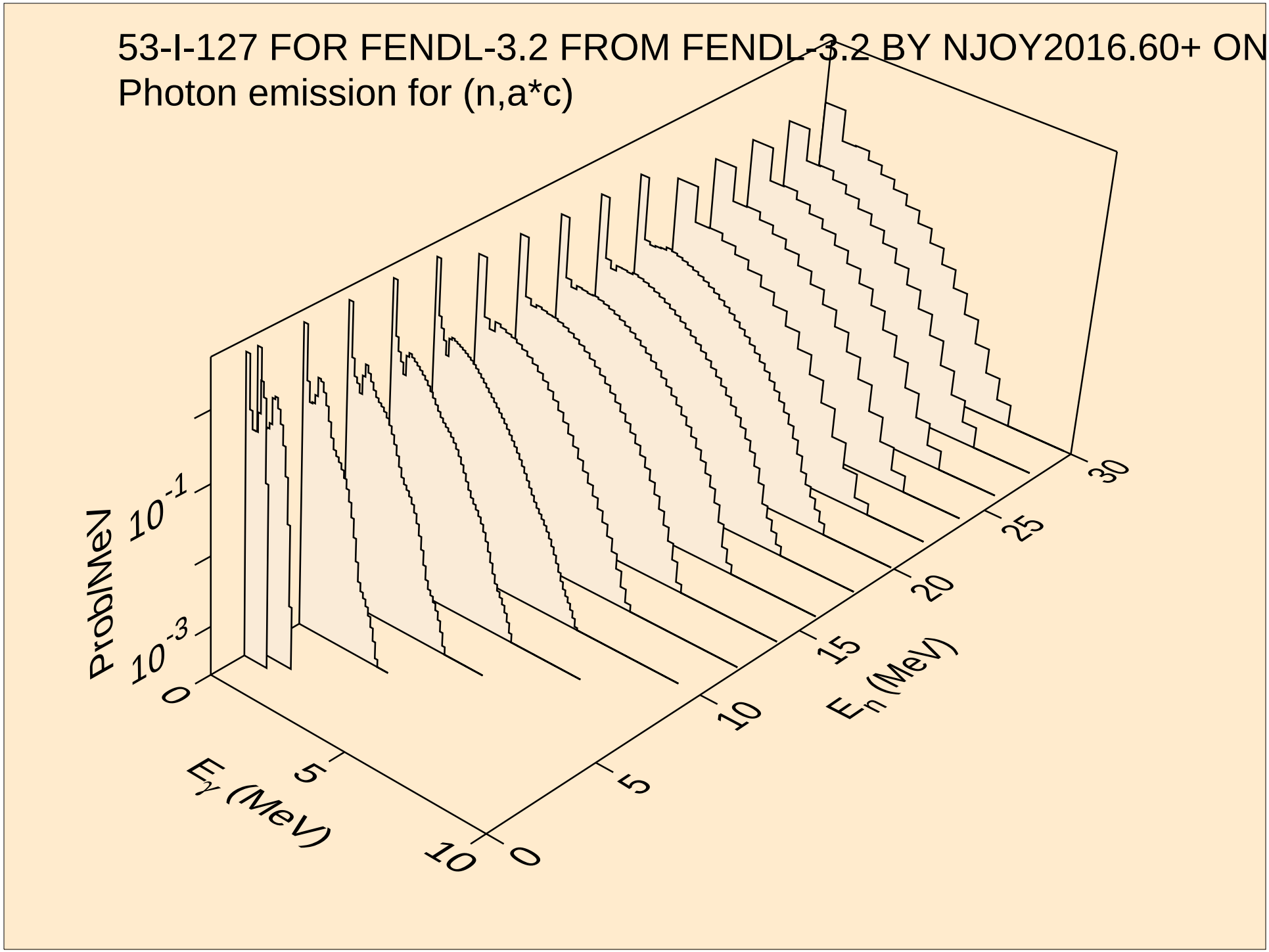

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*20)
Prob/MeV
10^0
10^-2
-1
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

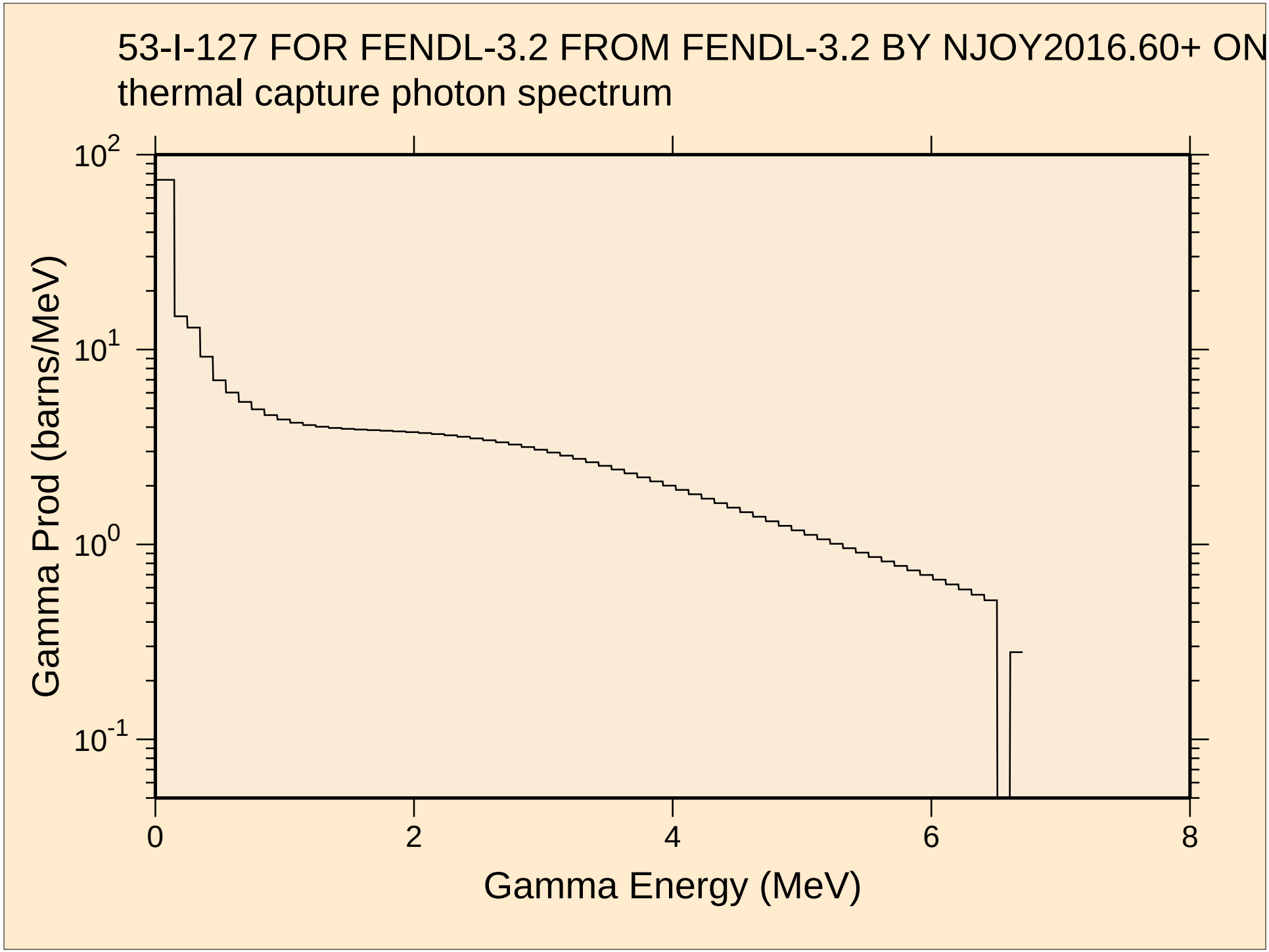

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*21)
Prob/MeV
10^2
10^0
1.2
1.4
1.6
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

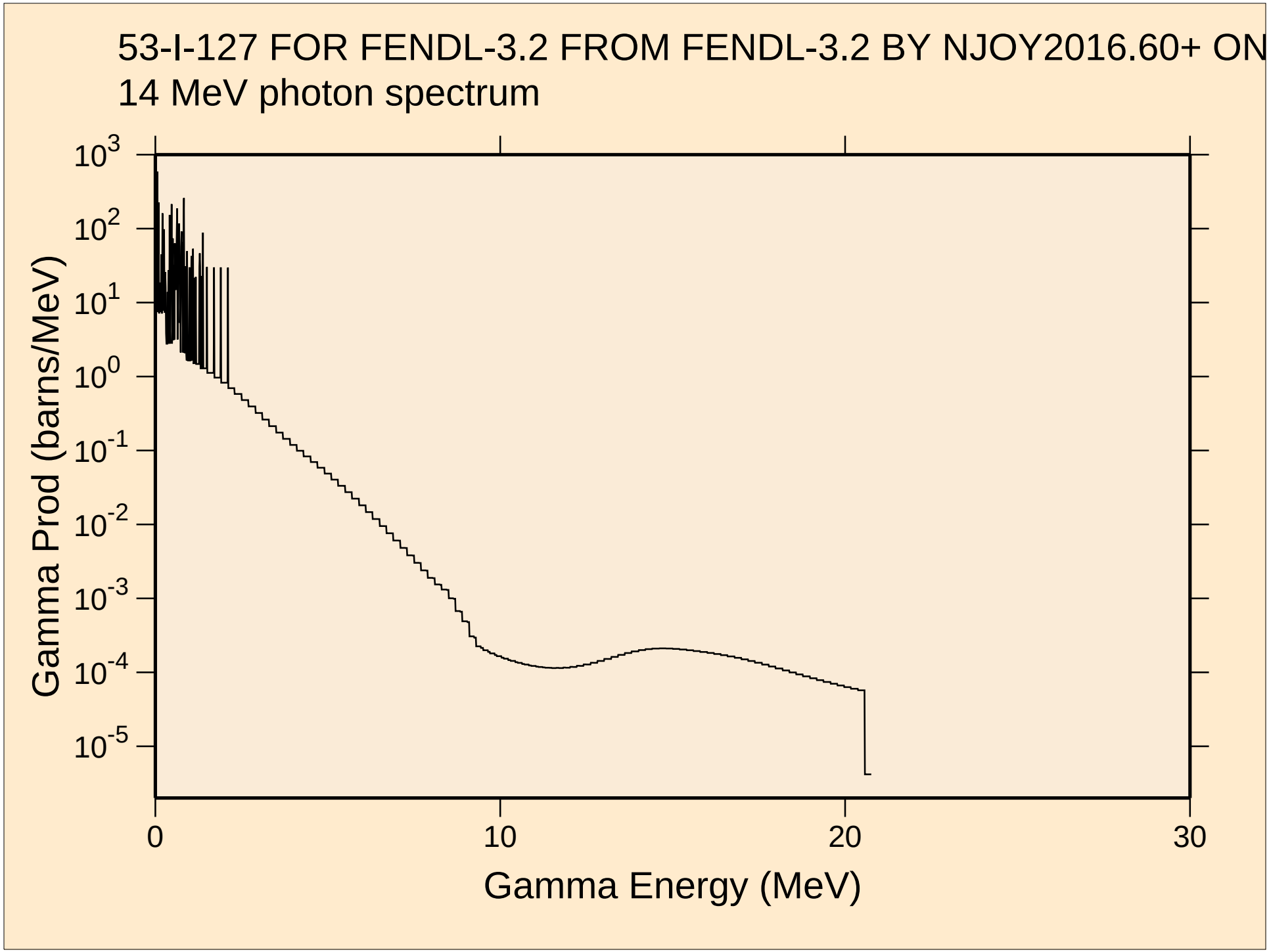

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*22)
Prob/MeV
10^{0}
10^{-2}
-1
0
1
2
E_γ (MeV)
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

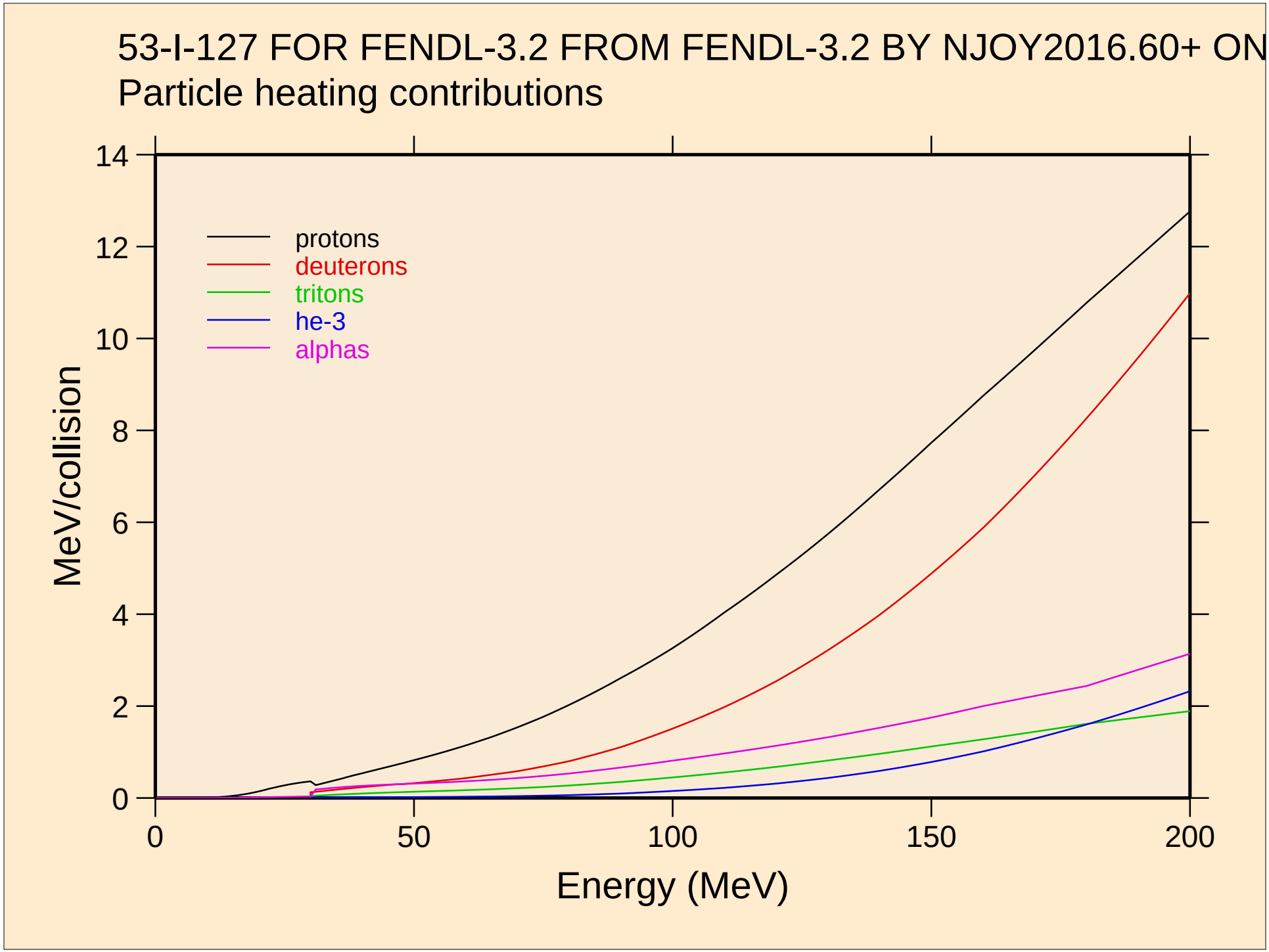

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,p*c)
Prob/MeV
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

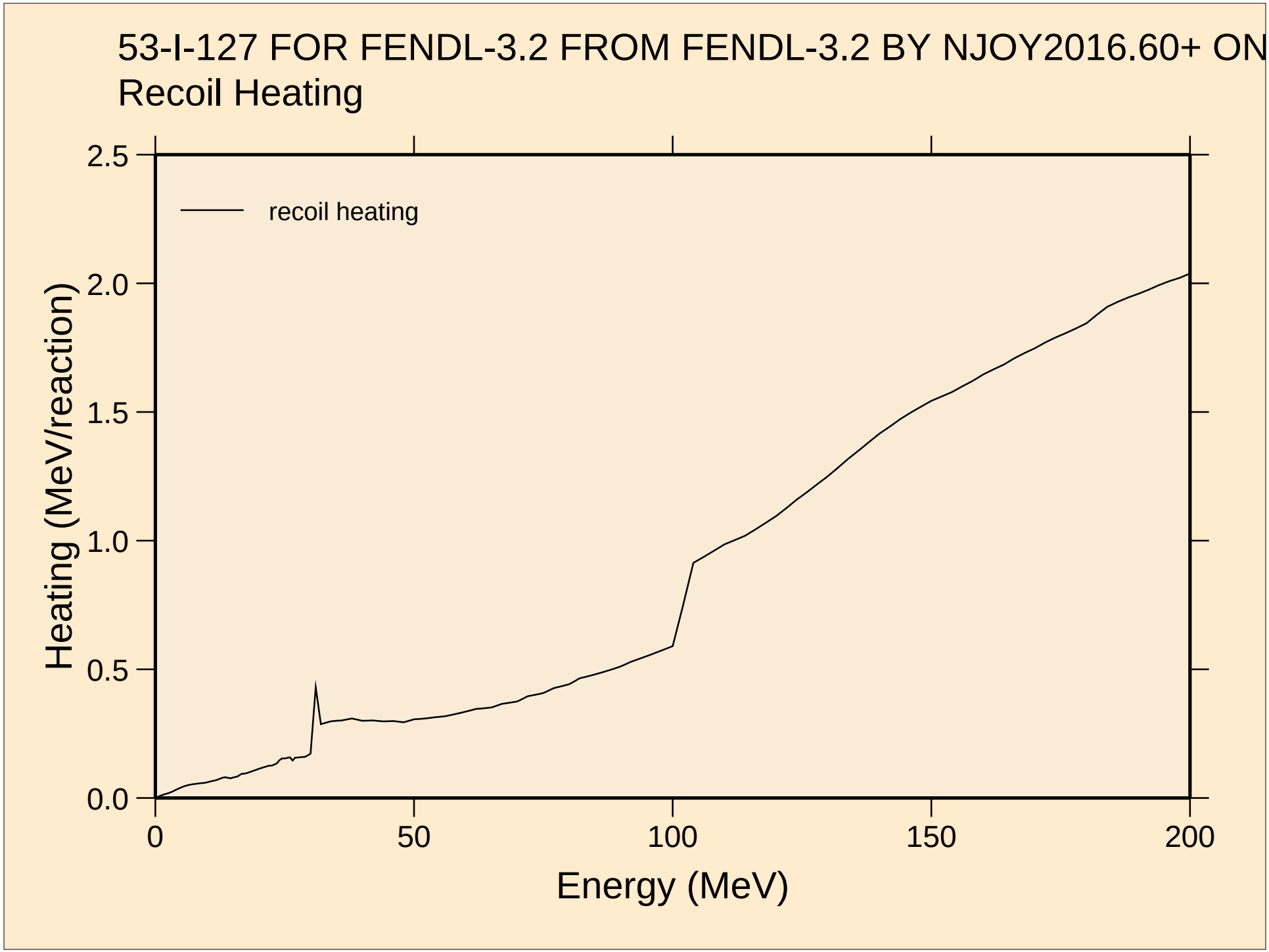

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,a*1)
Prob/MeV
10^0
10^-2
0.0
0.2
0.4
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

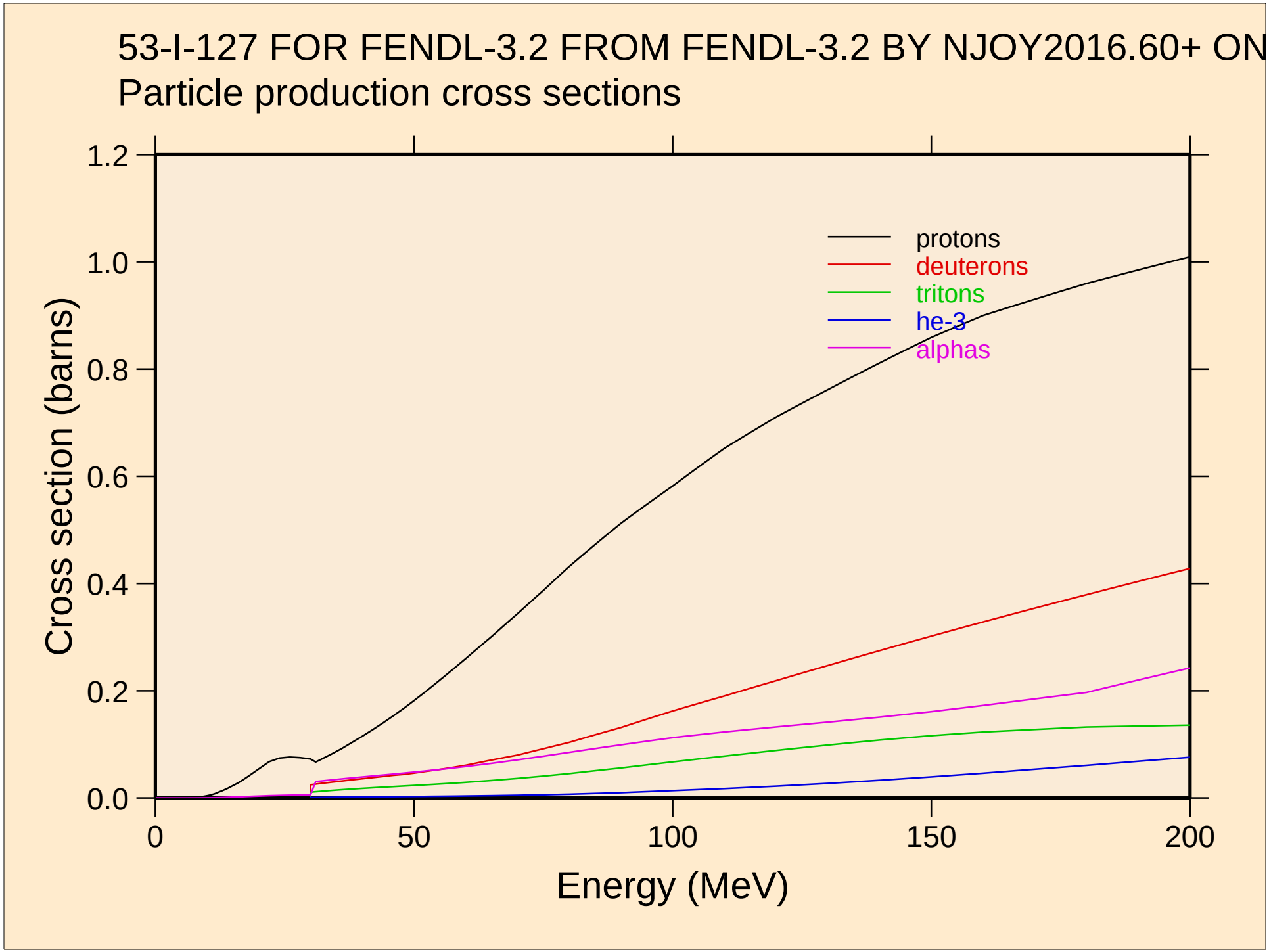

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Photon emission for (n,a*c)
Prob/MeV
10-1
10-3
0
5
10
Eγ (MeV)
0
5
10
15
20
25
30
En (MeV)

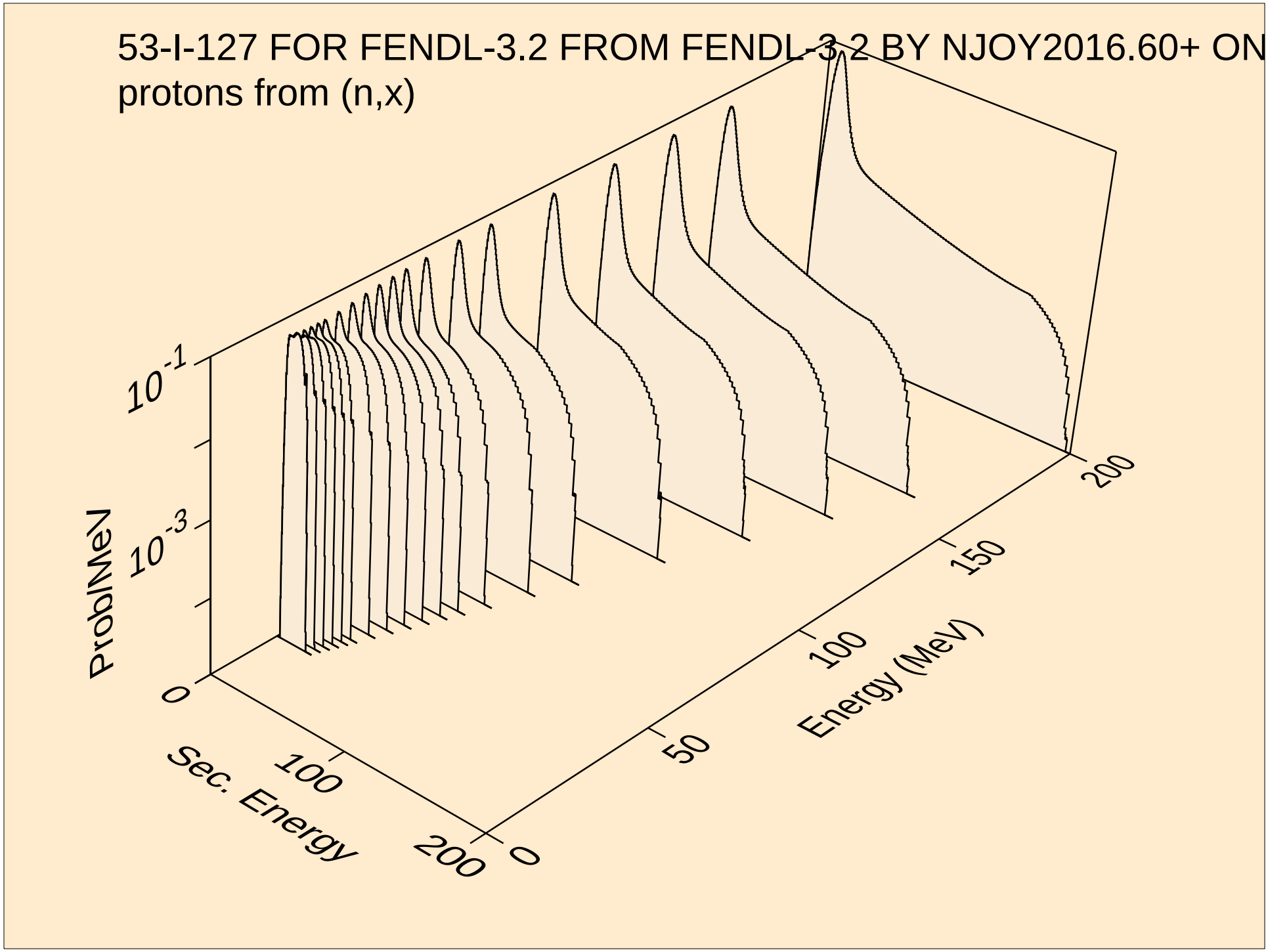

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^2
10^1
10^0
10^-1
0
2
4
6
8
Gamma Energy (MeV)

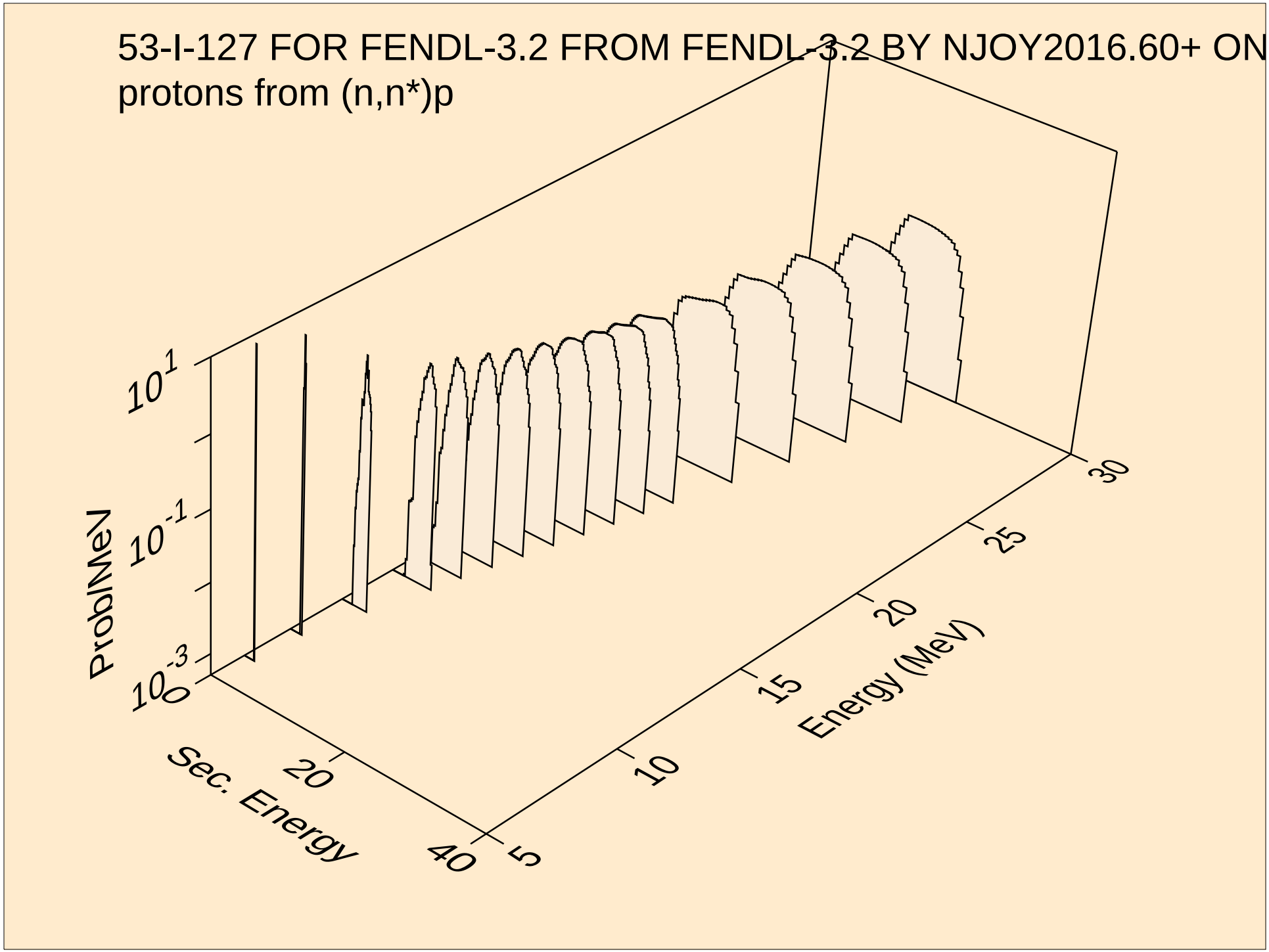

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
0
10
20
30
Gamma Energy (MeV)

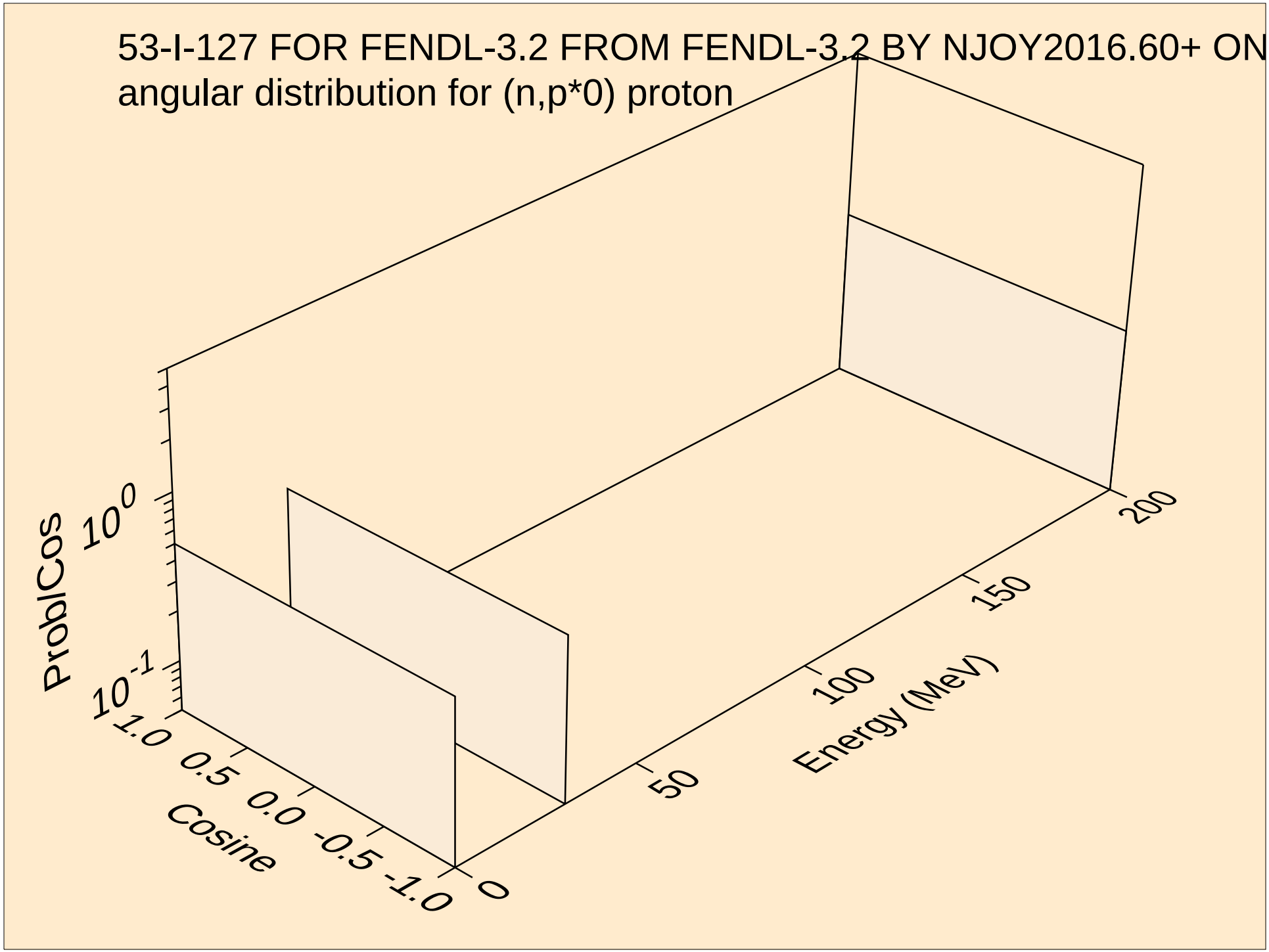

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Particle heating contributions
protons
deuterons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
12
14
0
50
100
150
200

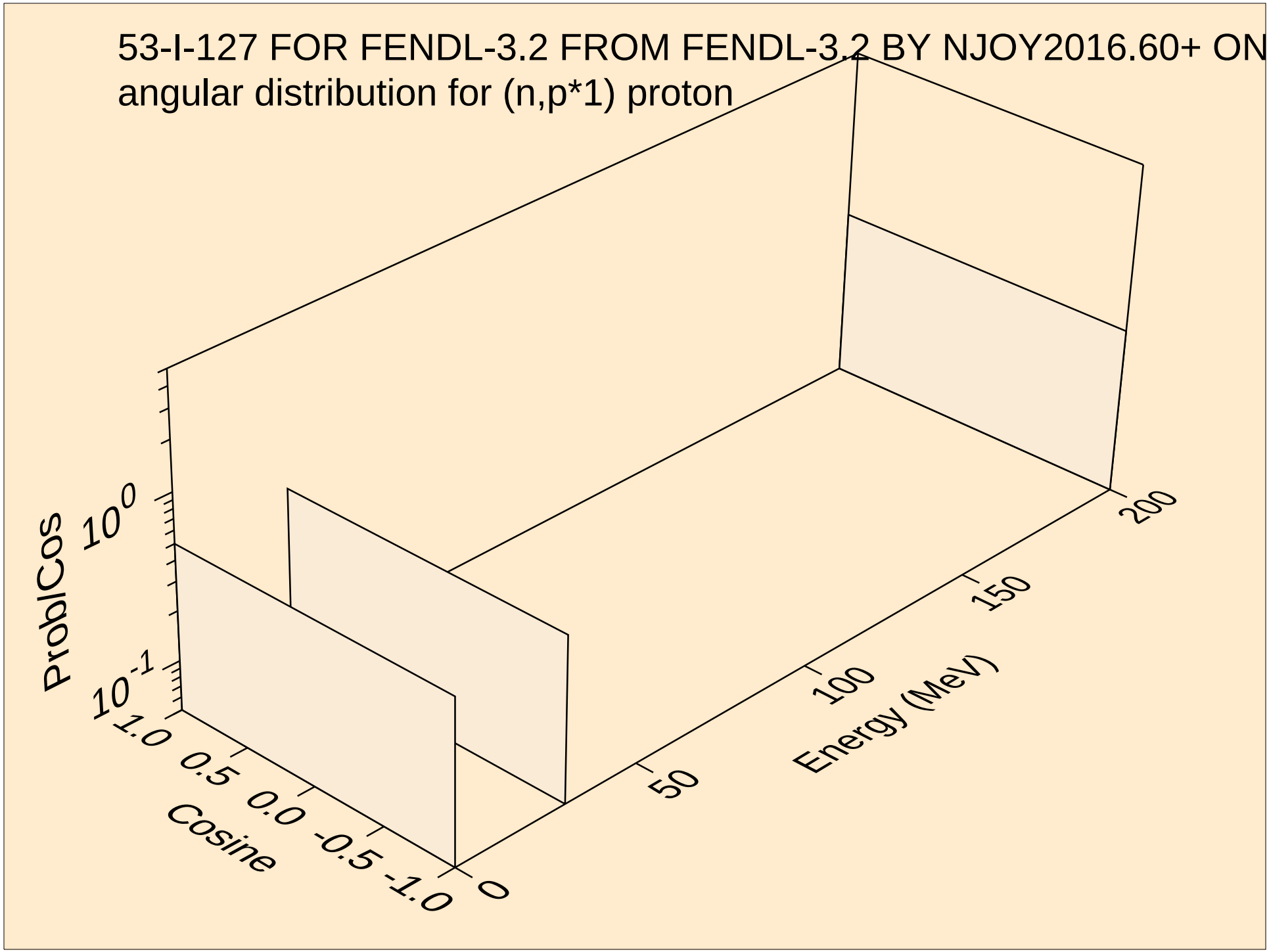

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
0
50
100
150
200

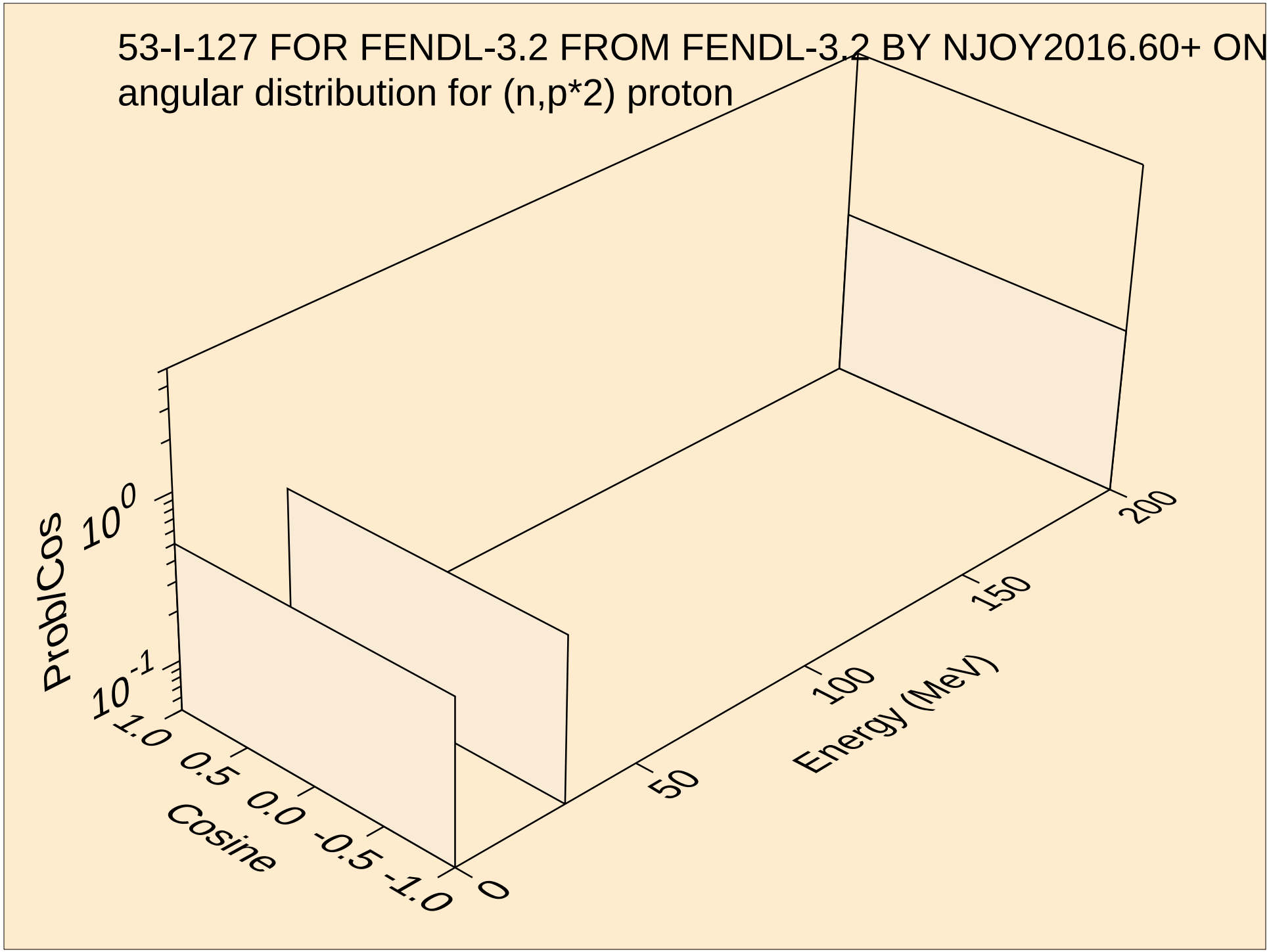

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
Particle production cross sections
Cross section (barns)
Energy (MeV)
protons
deuterons
tritons
he-3
alphas
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
50
100
150
200

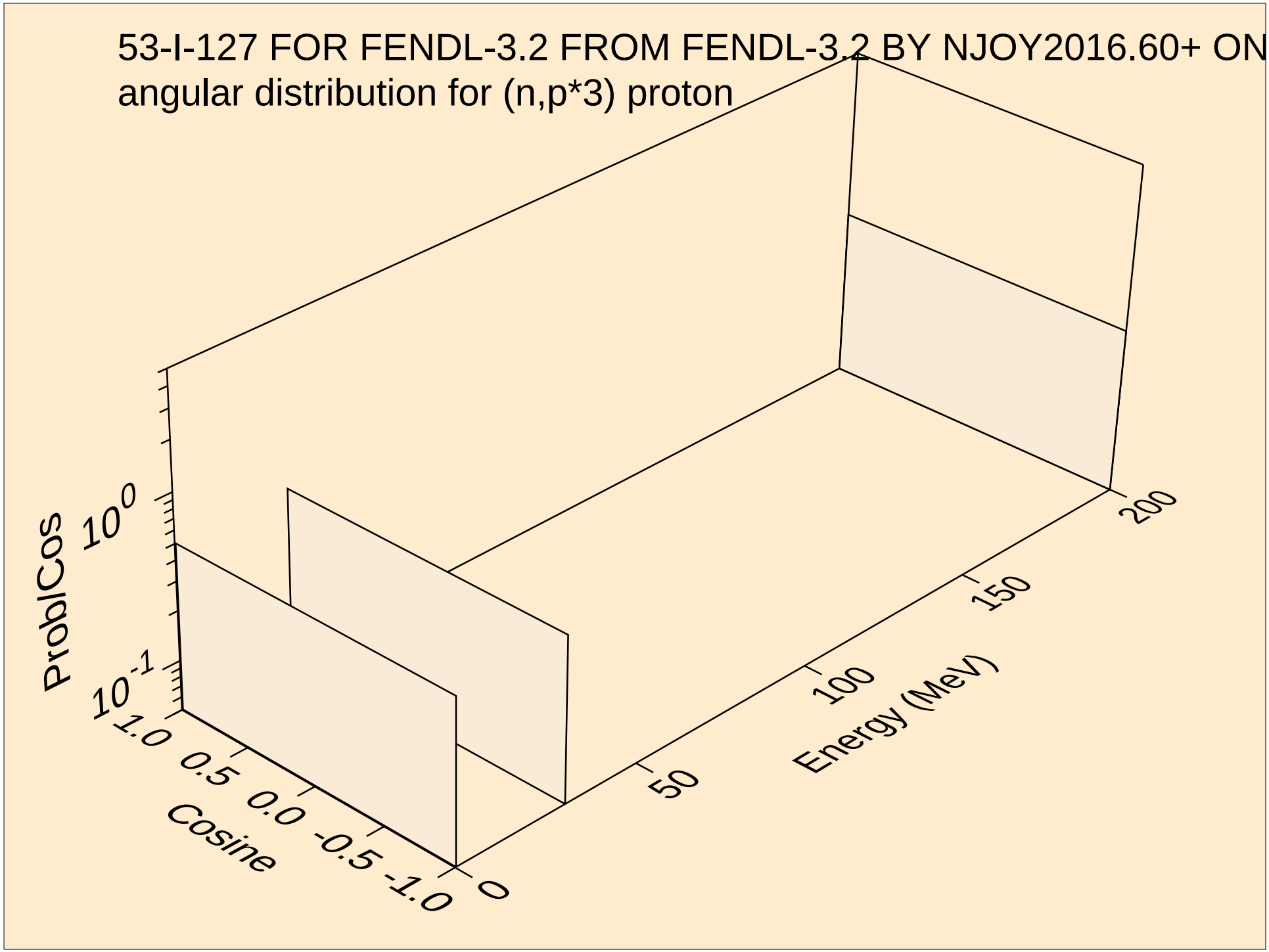

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
protons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

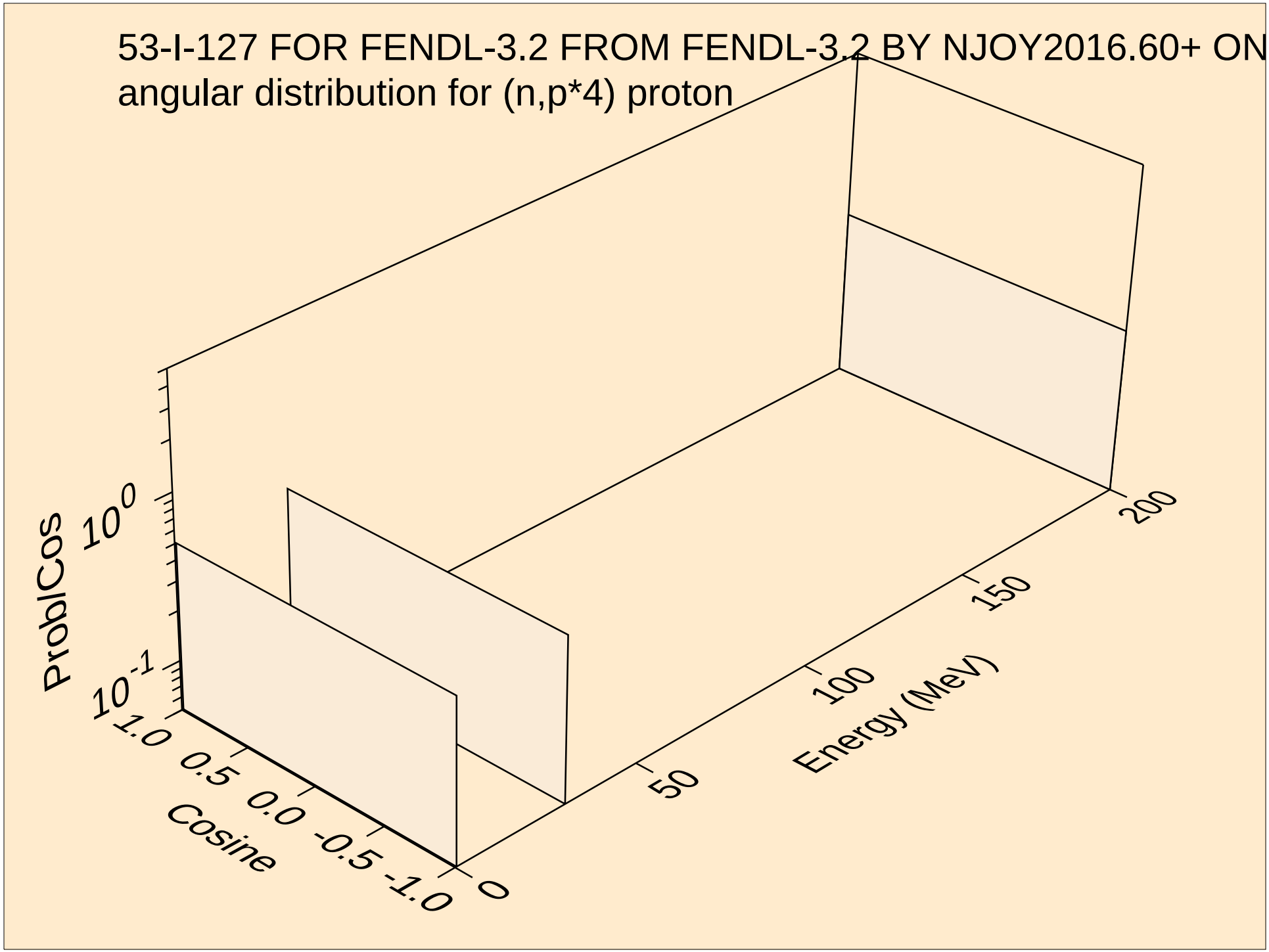

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
protons from (n,n*)p
Prob/MeV
10^1
10^-1
10^-3
0
20
40
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

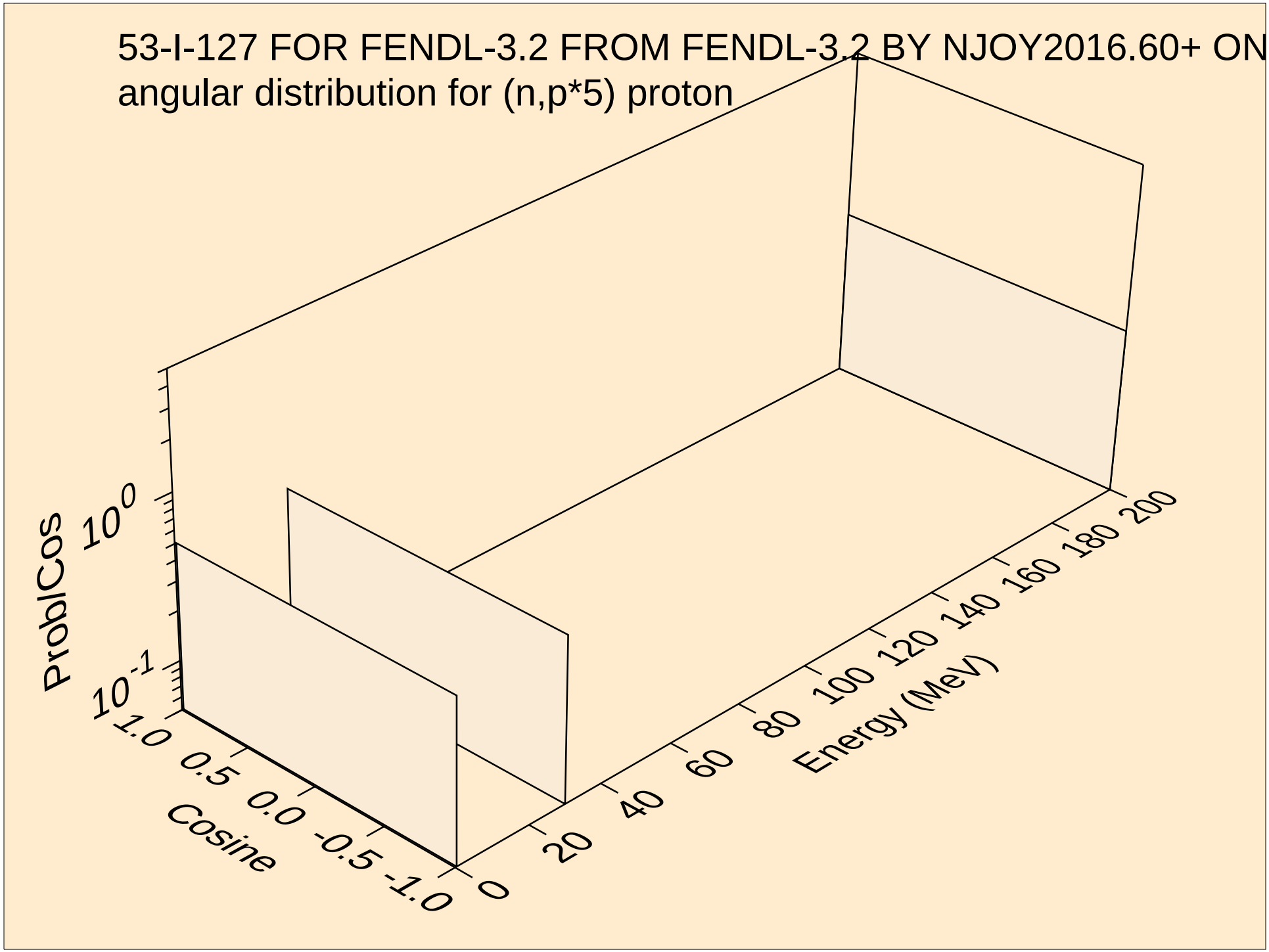

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*0) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)

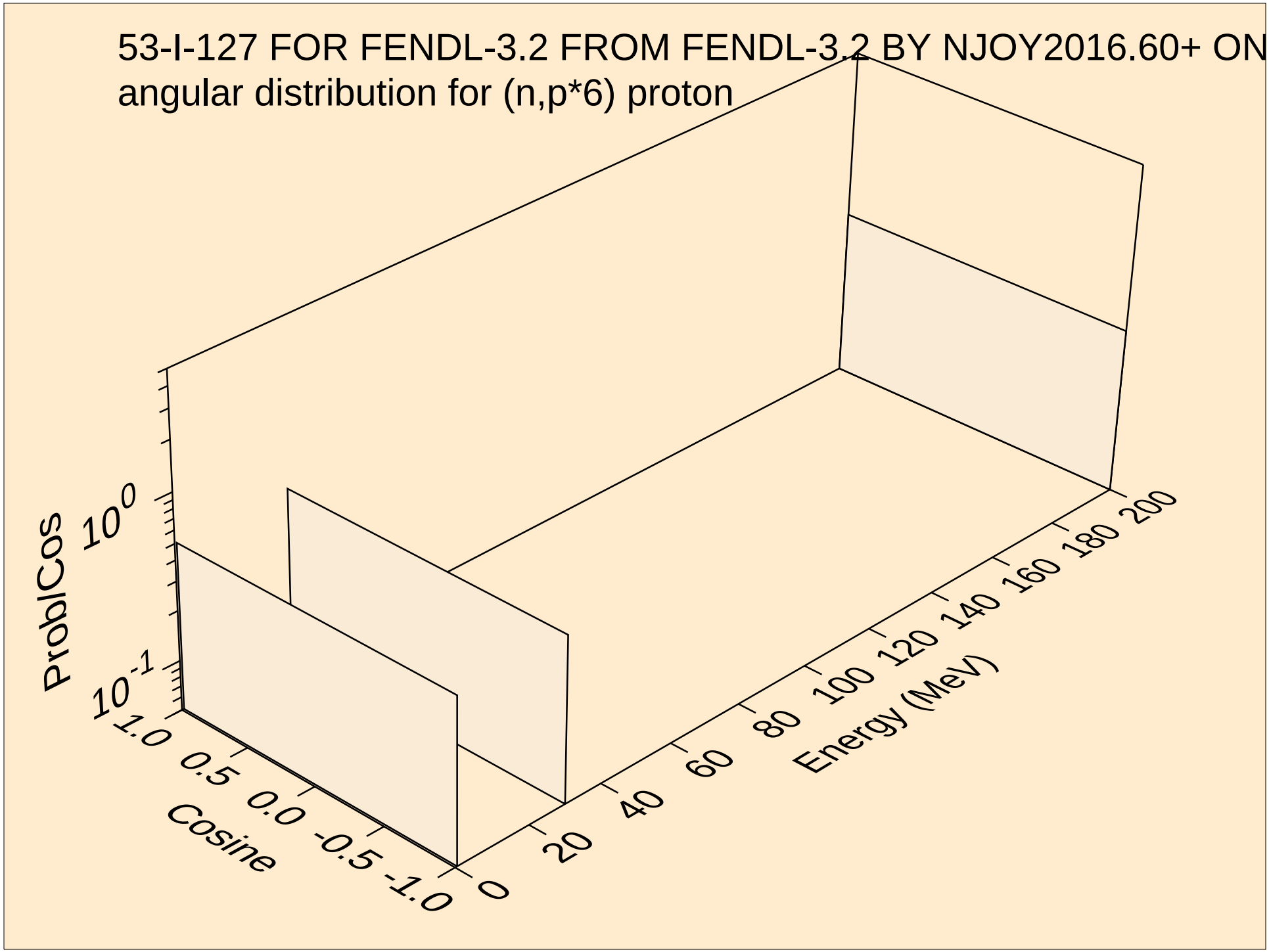

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*1) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)

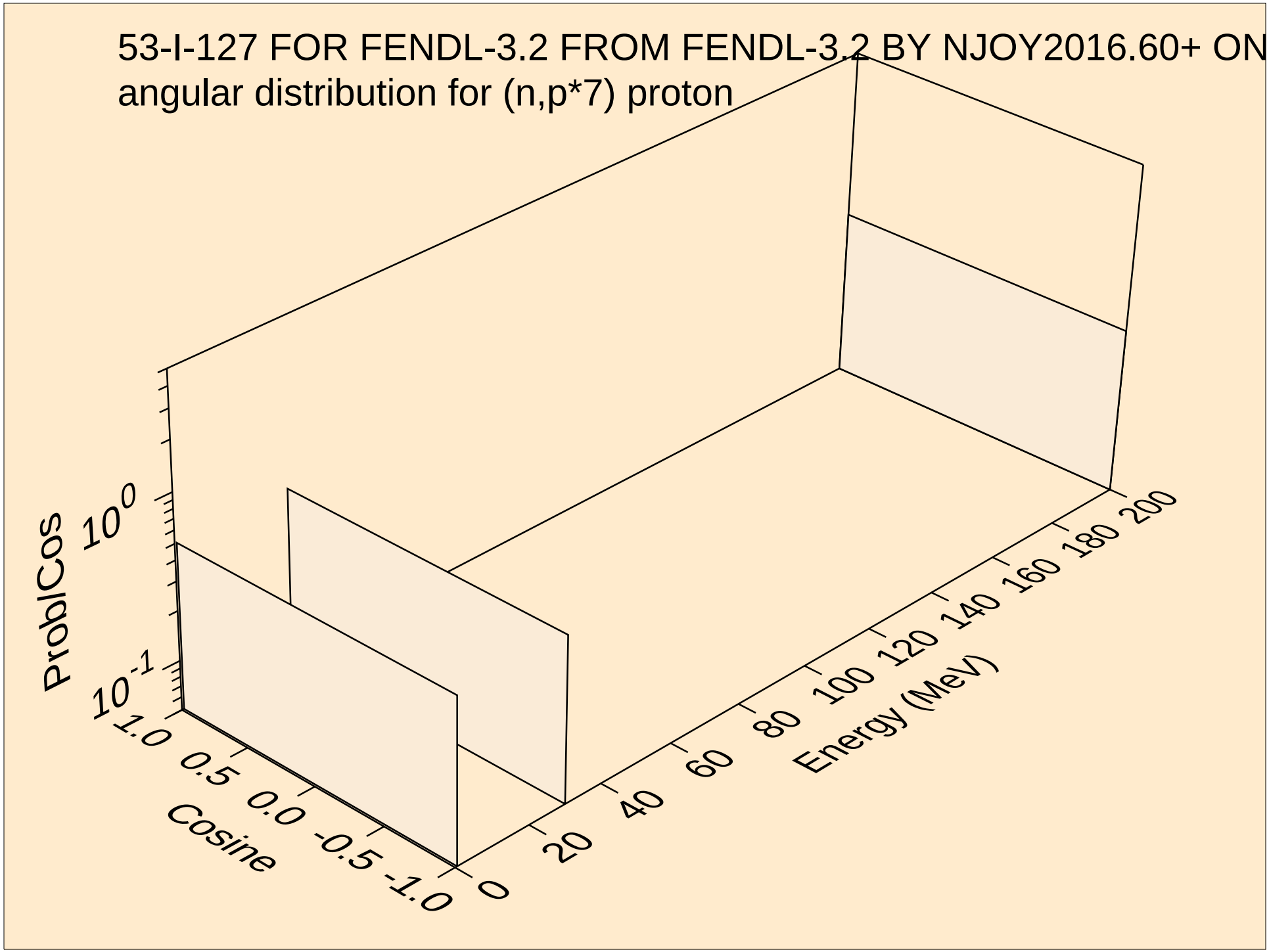

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*2) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)

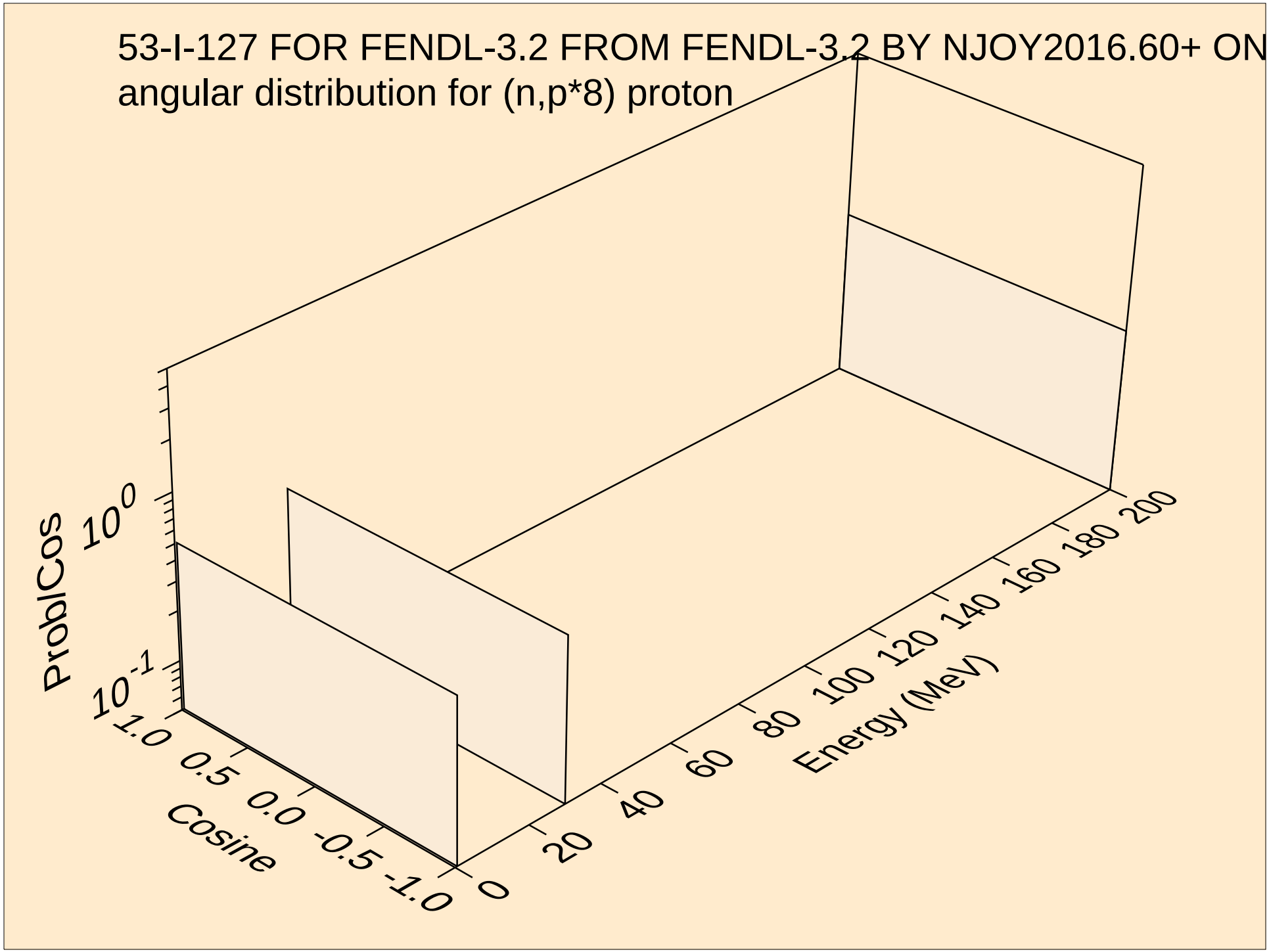

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*3) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)

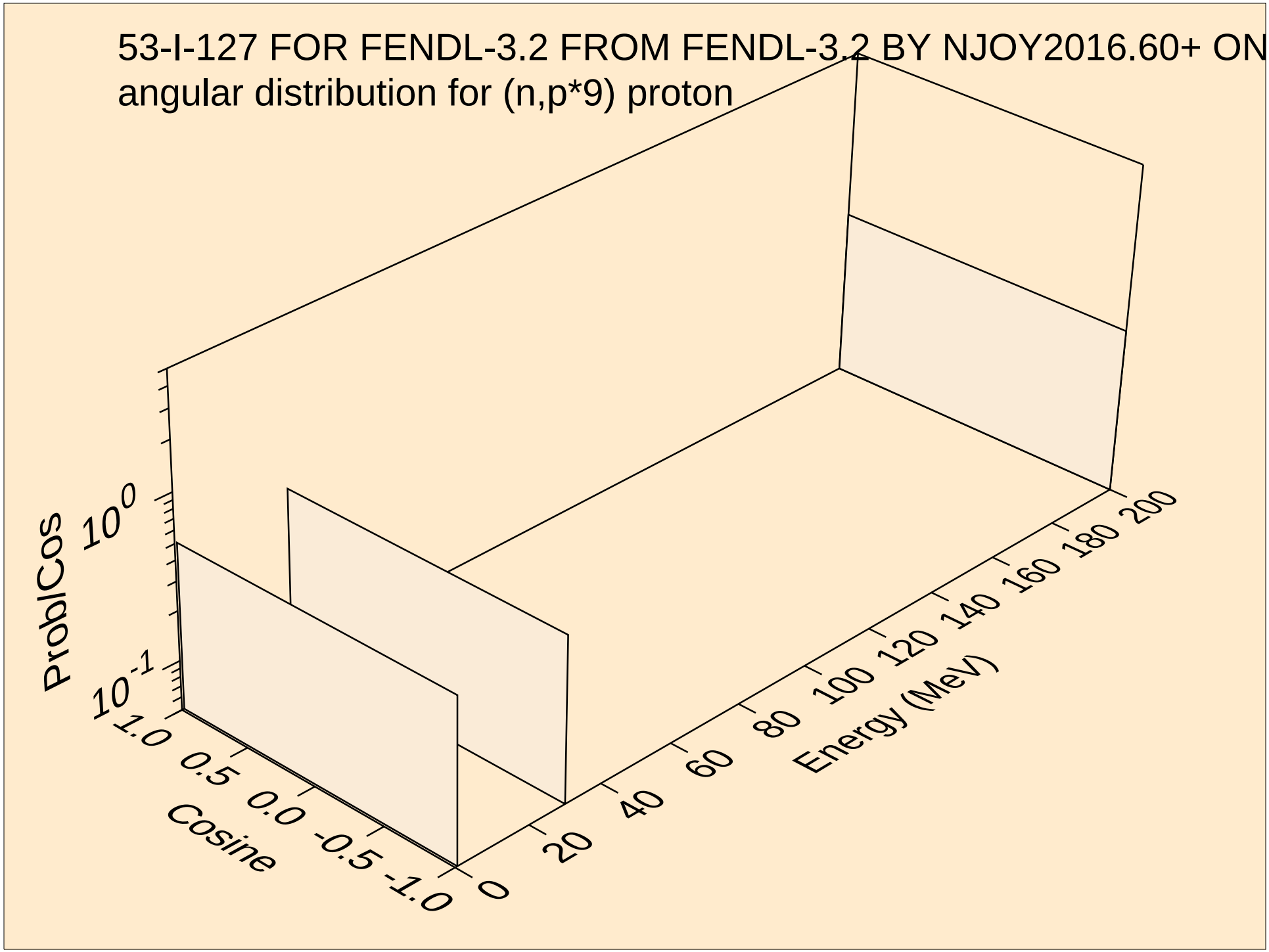

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*4) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)

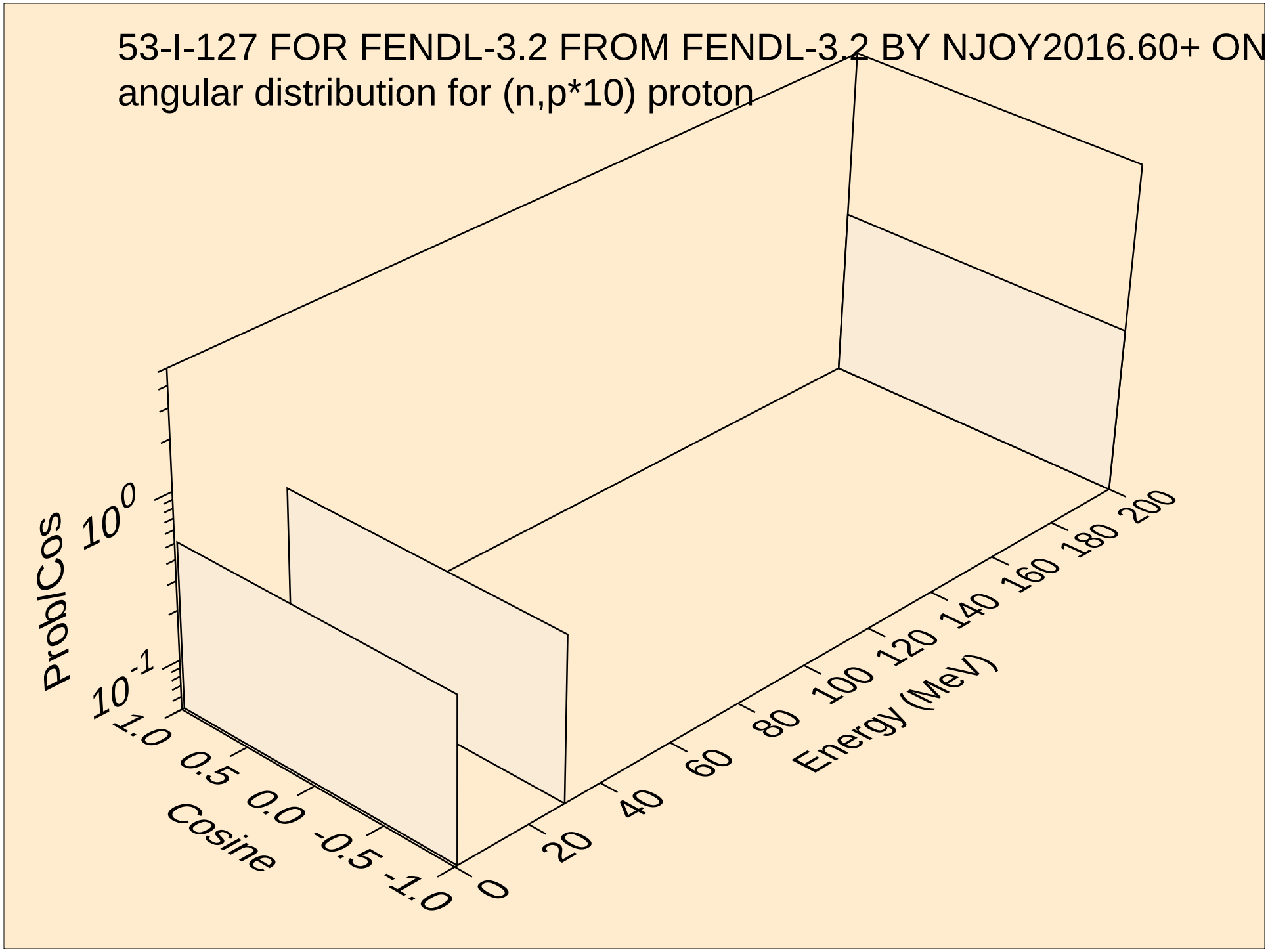

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*5) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

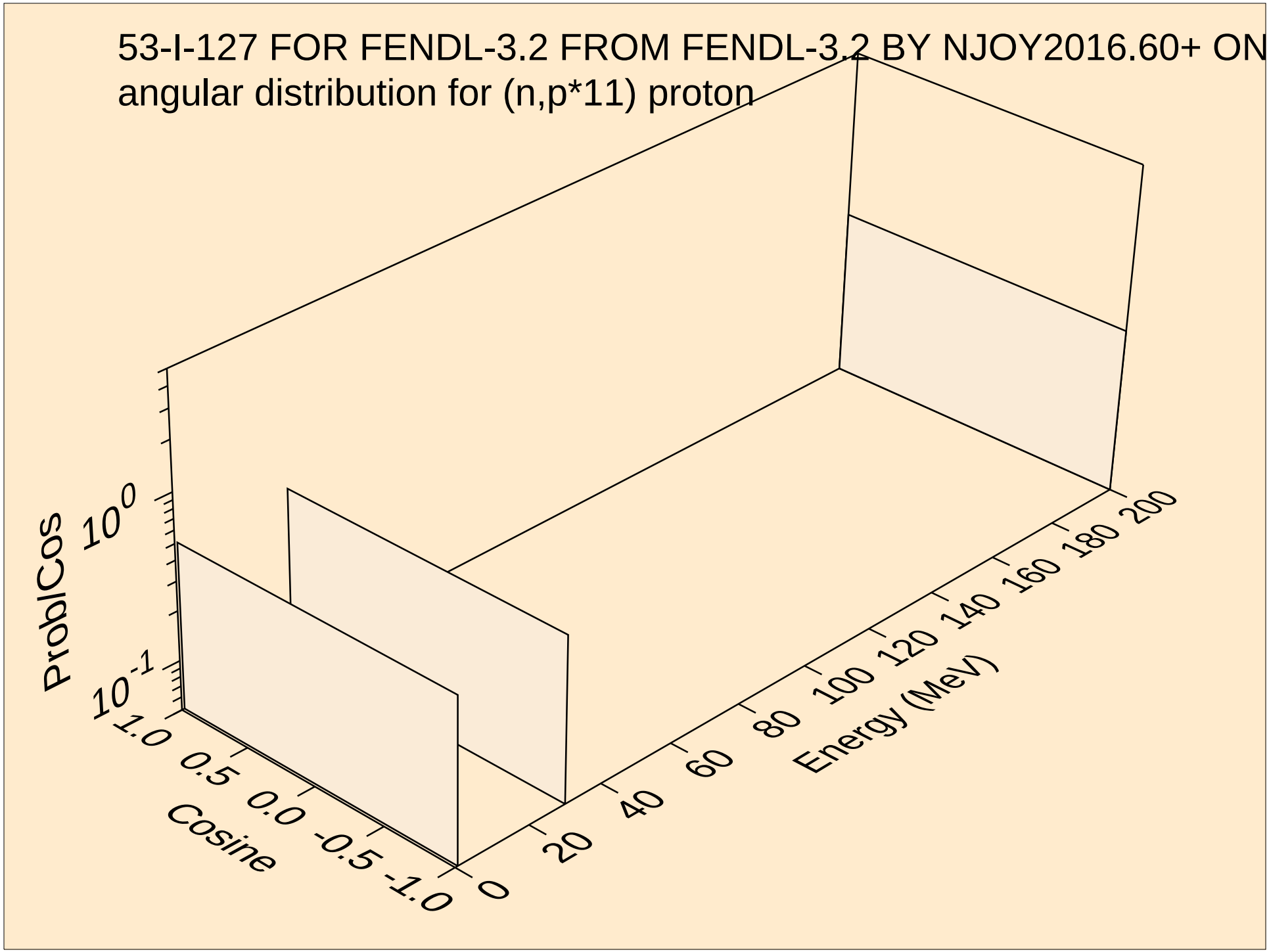

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*6) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

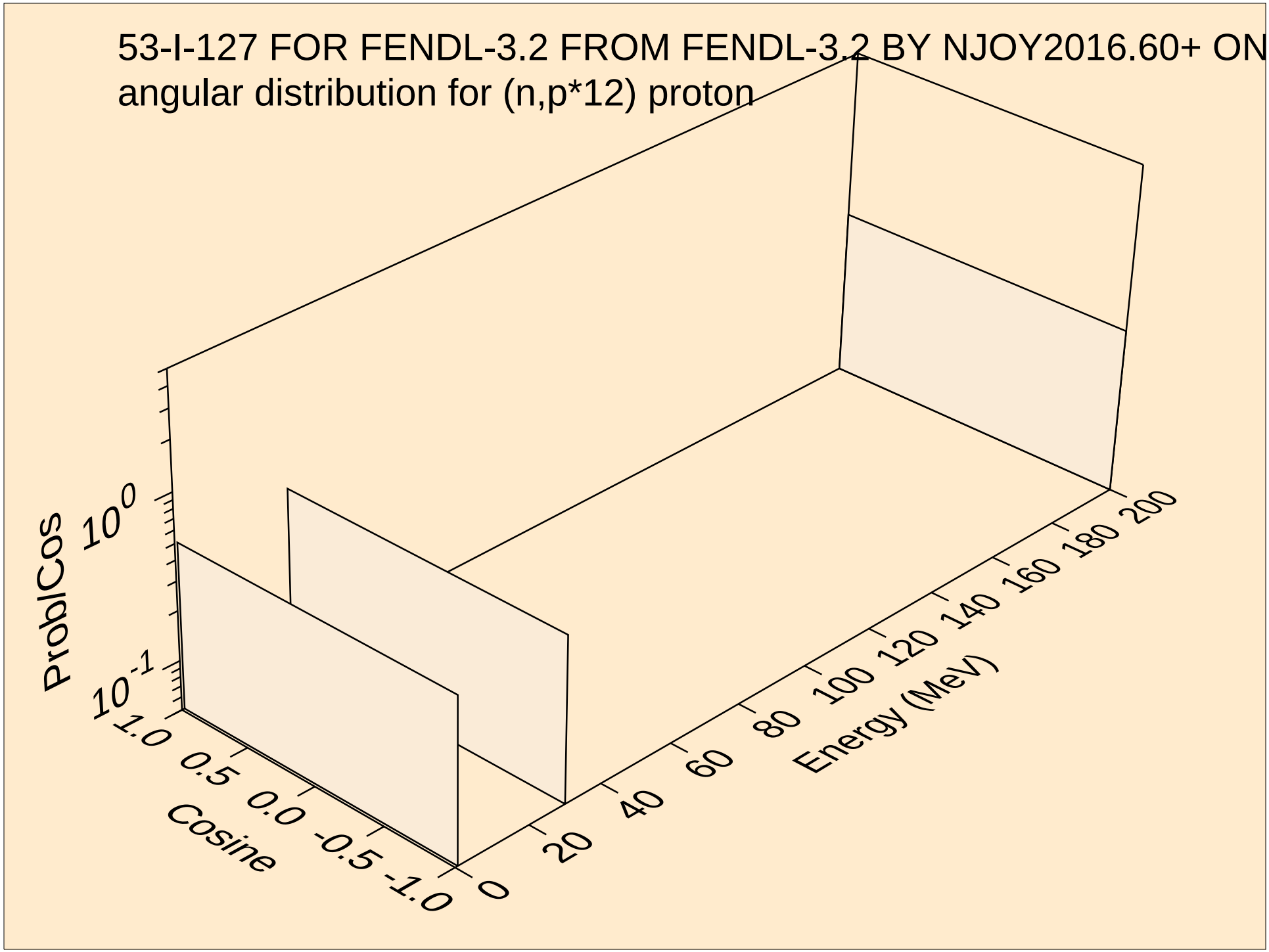

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*7) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

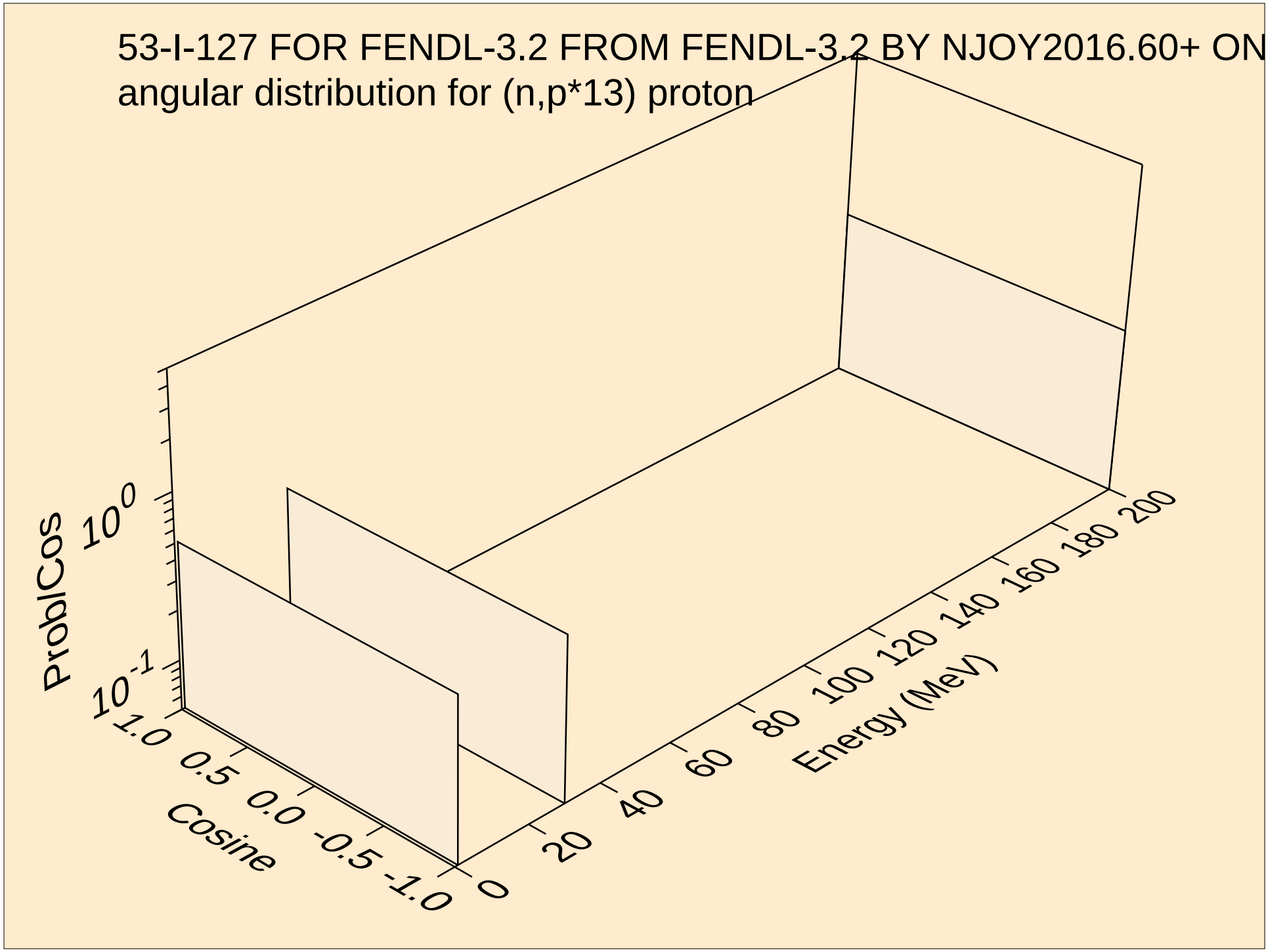

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*8) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

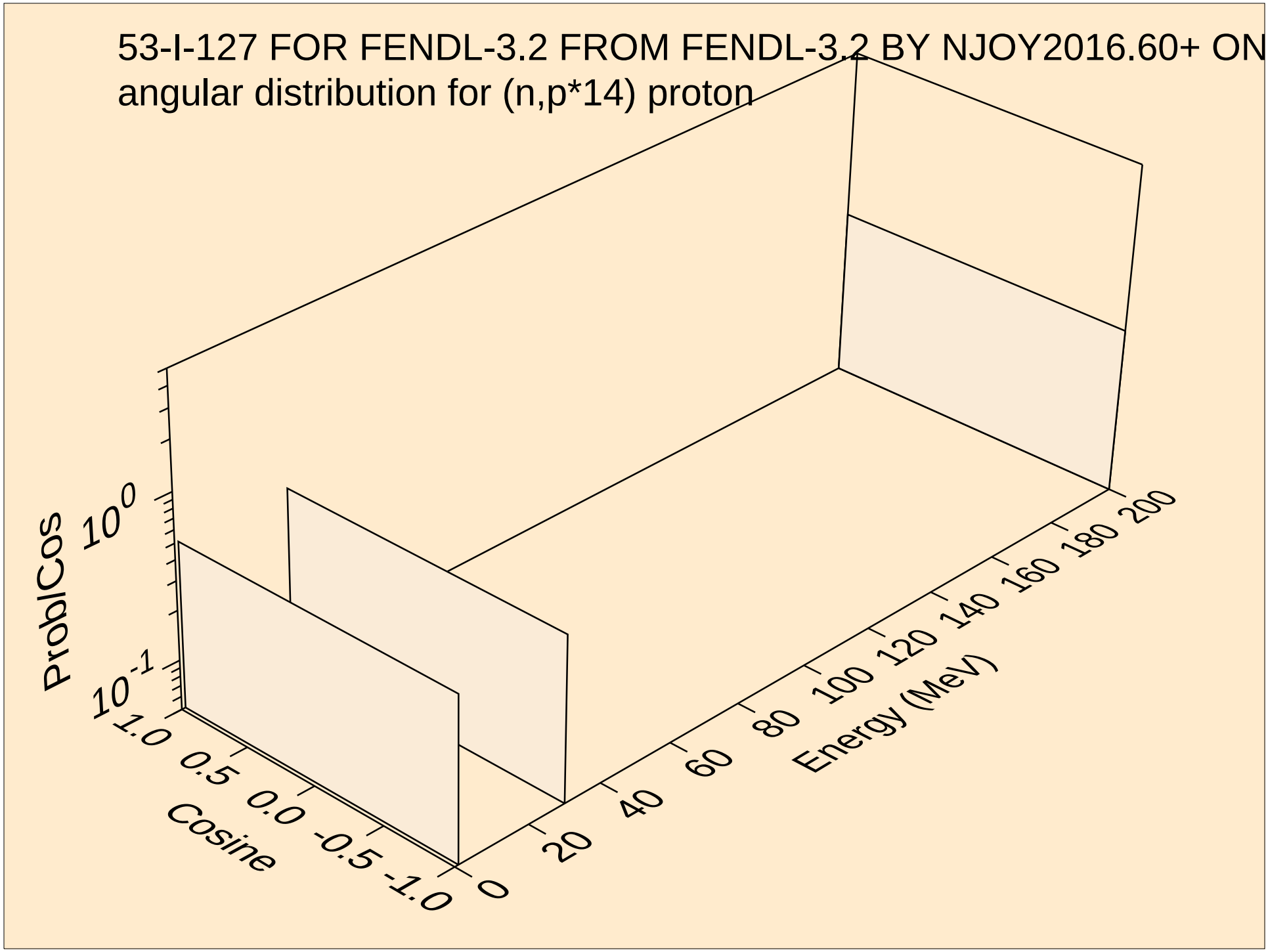

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*9) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

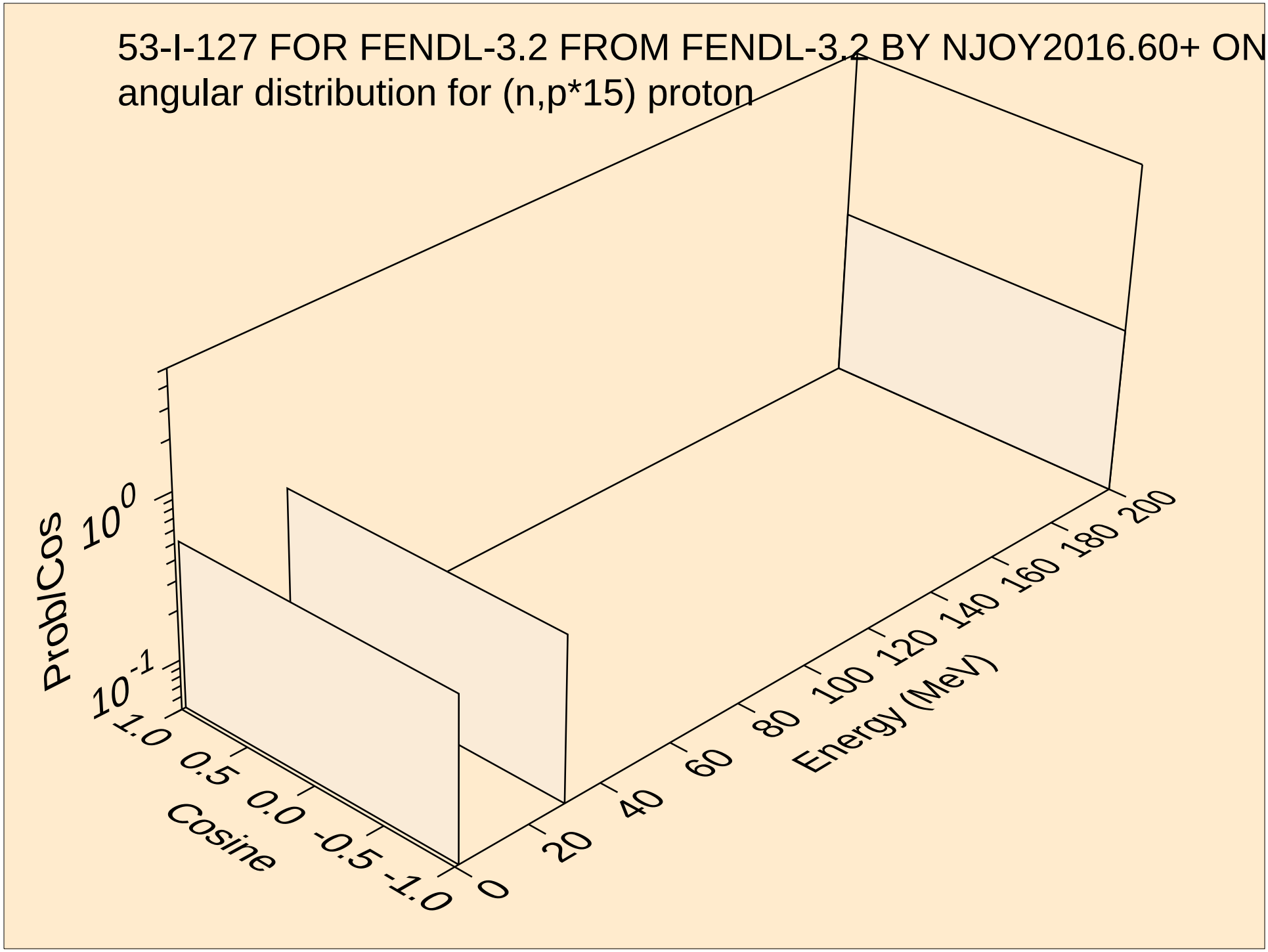

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*10) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

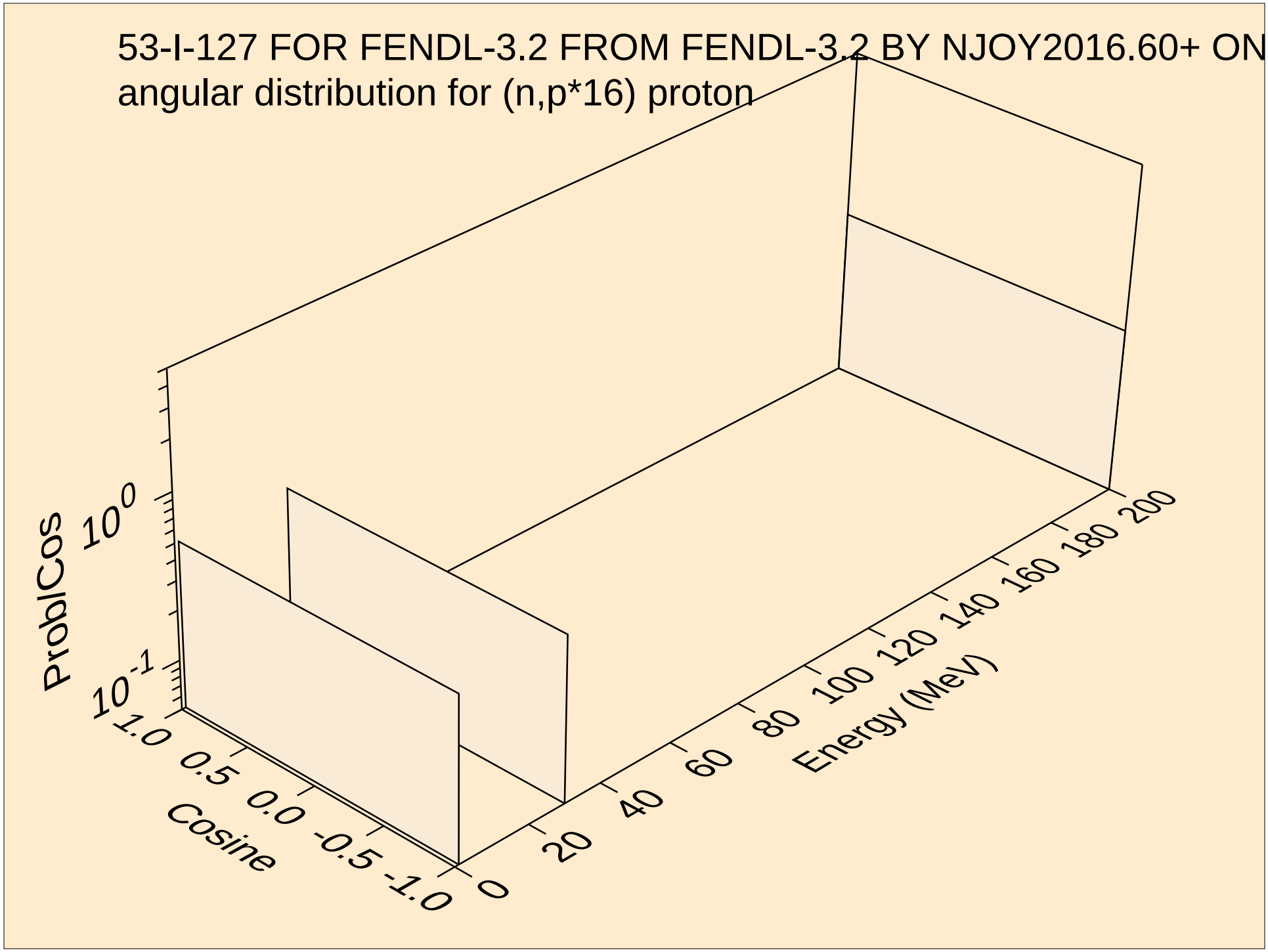

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*11) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

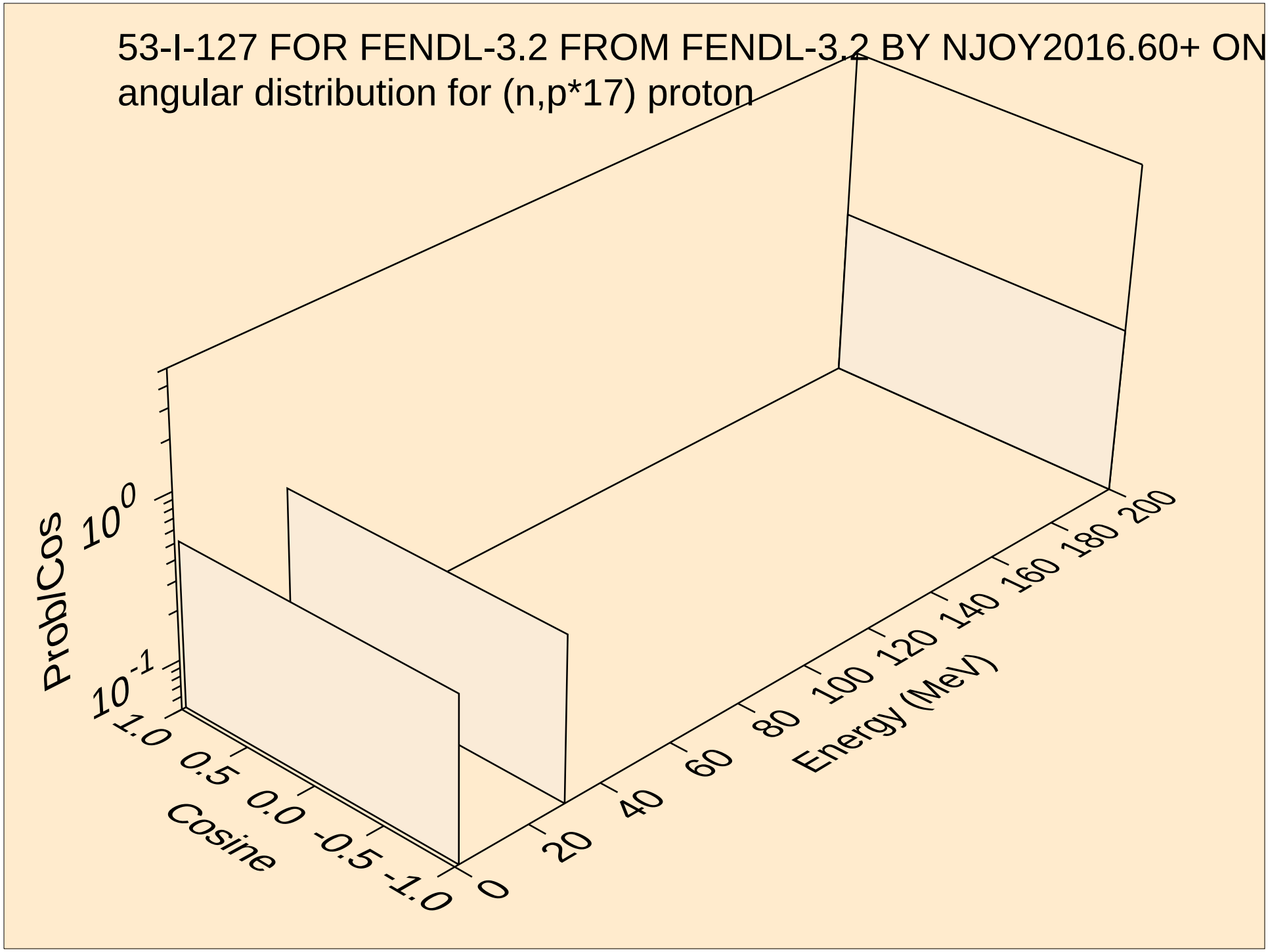

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*12) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

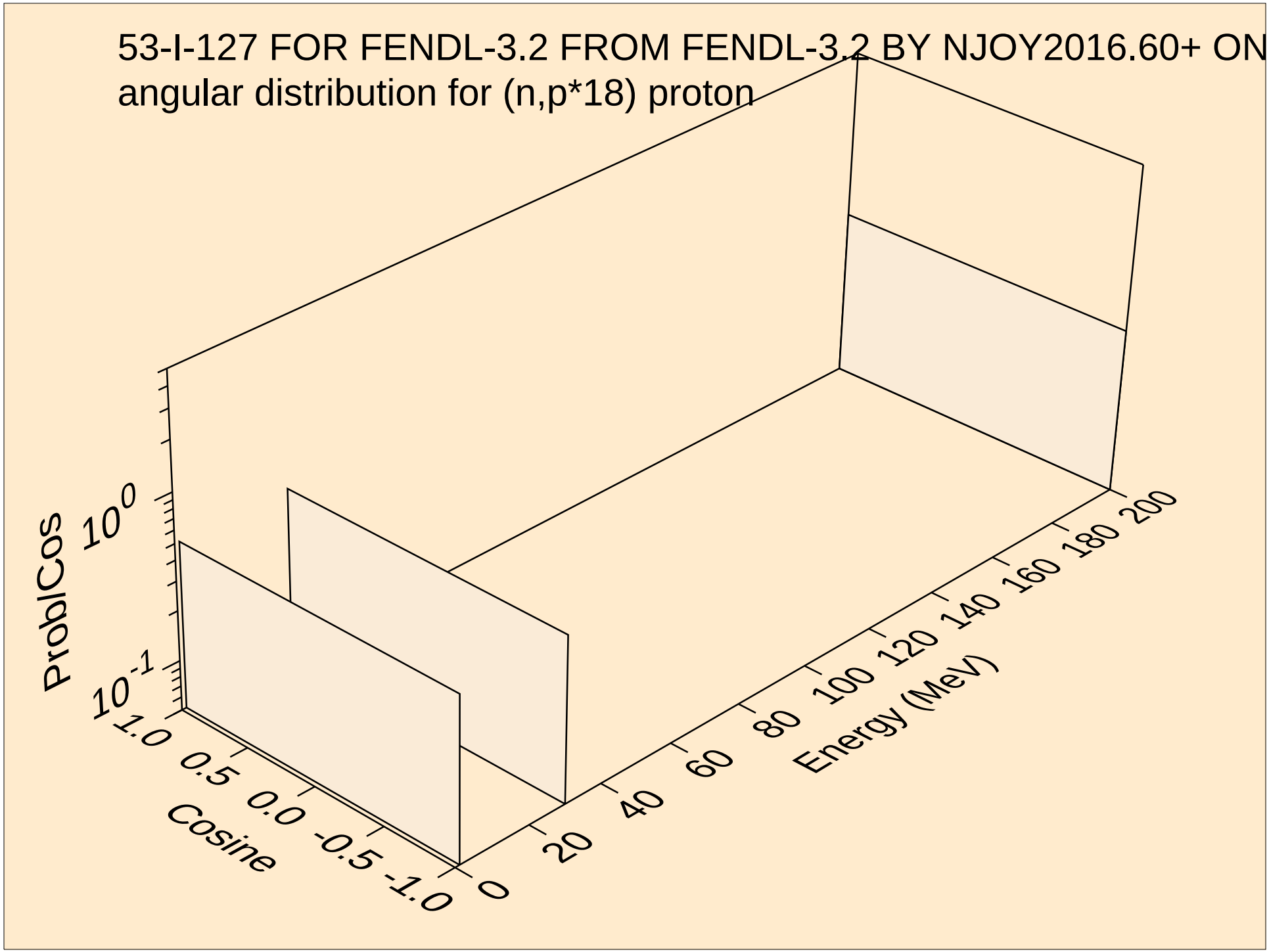

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*13) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

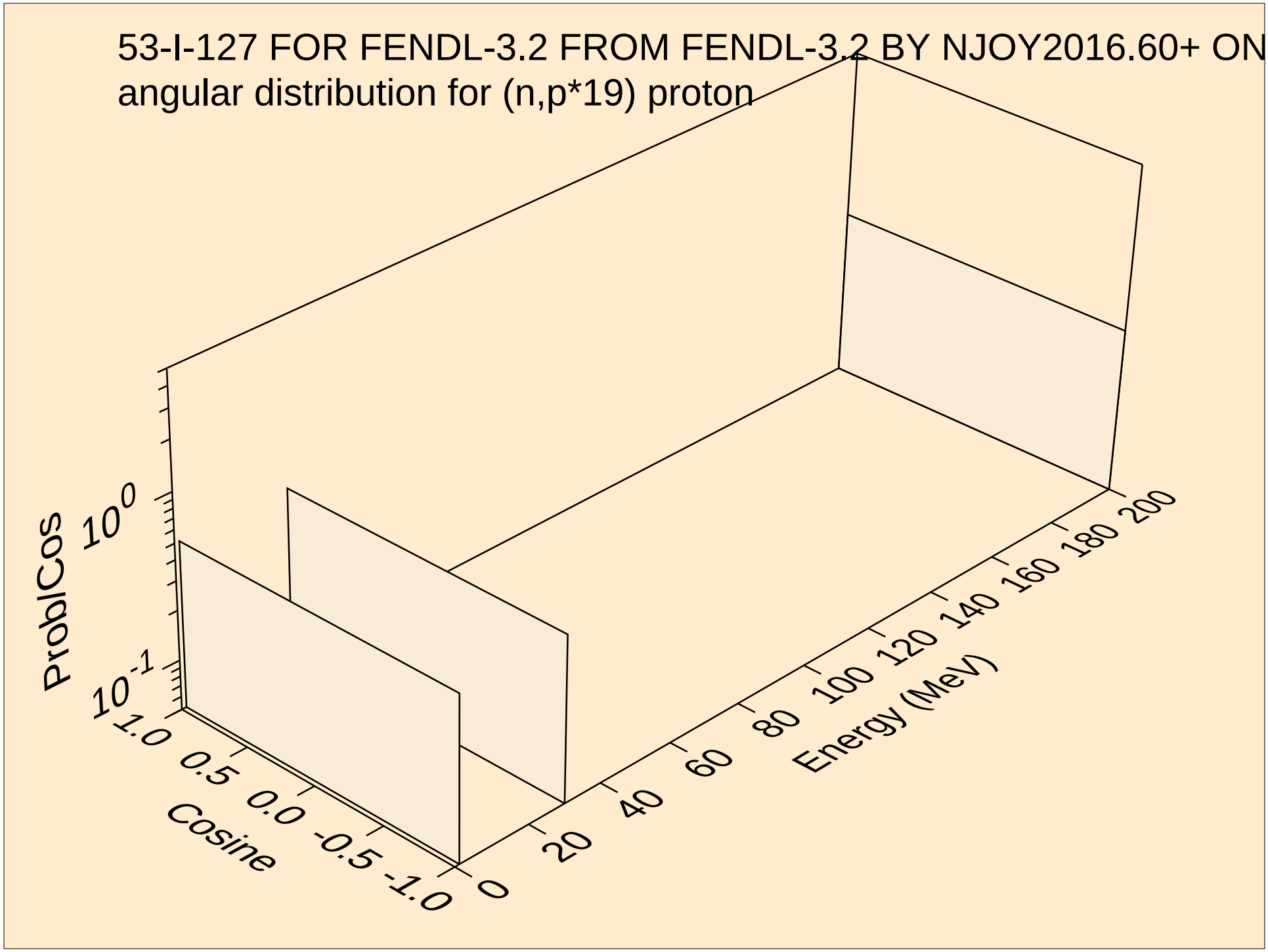

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*14) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

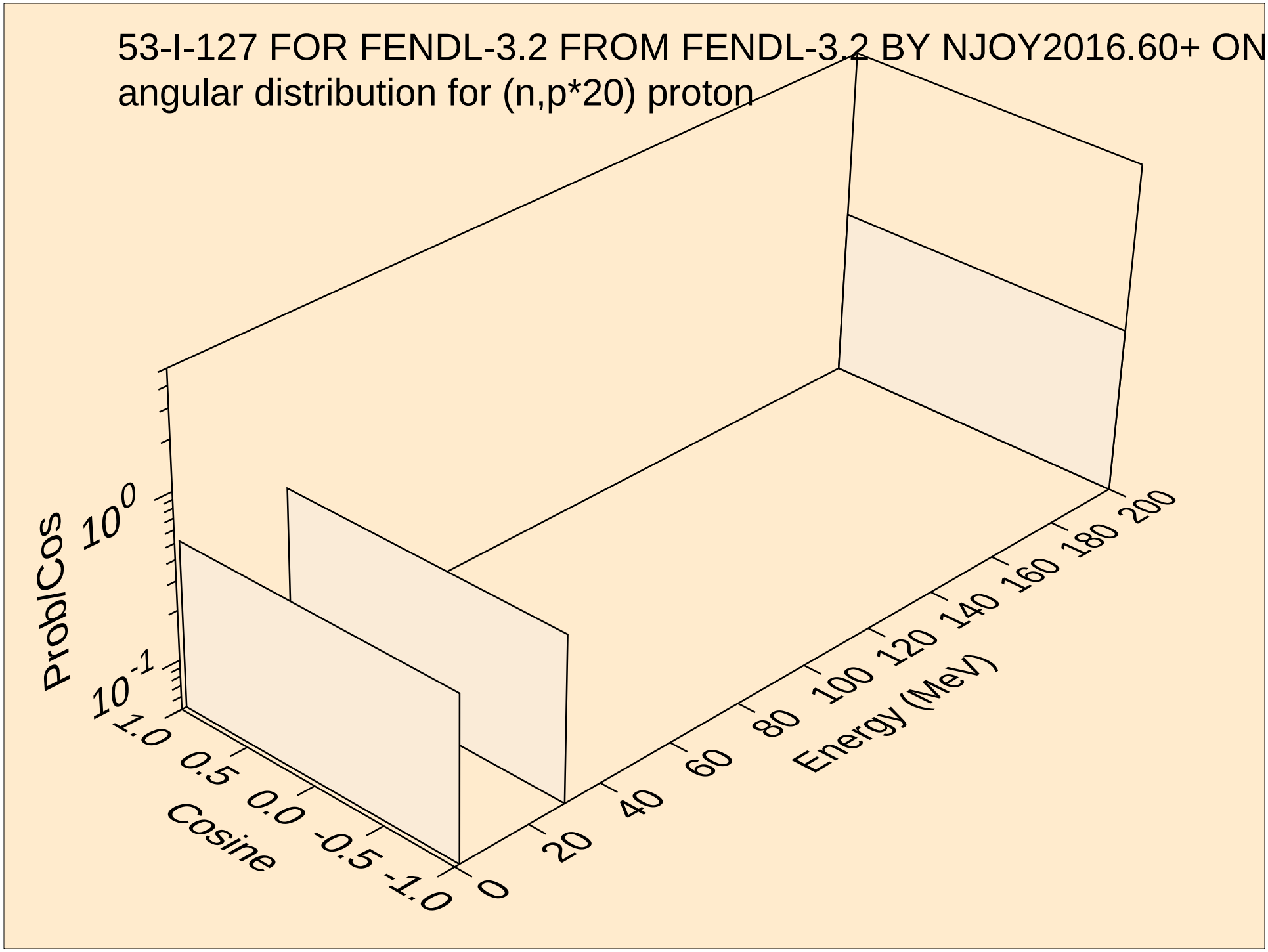

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*15) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

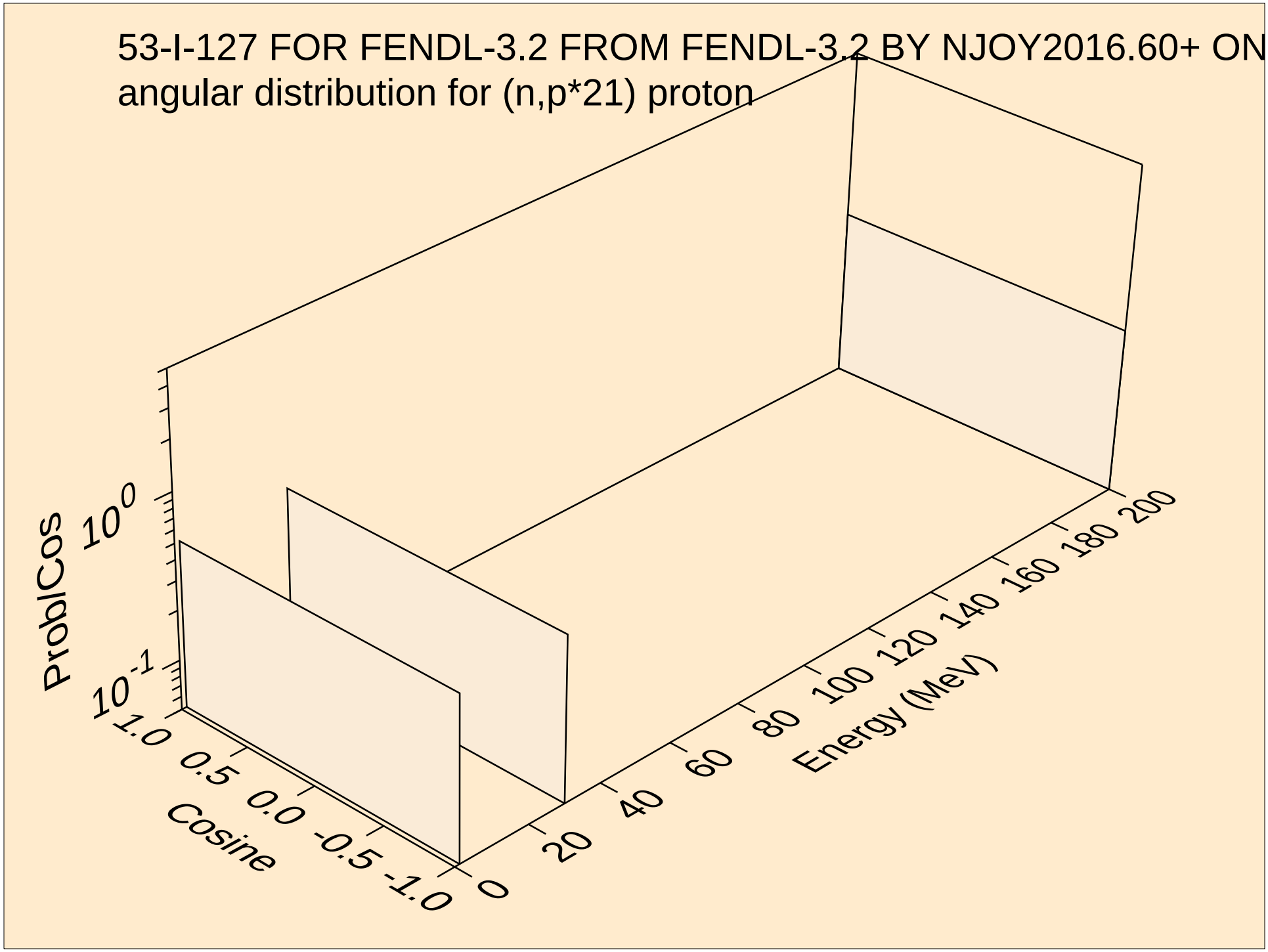

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*16) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

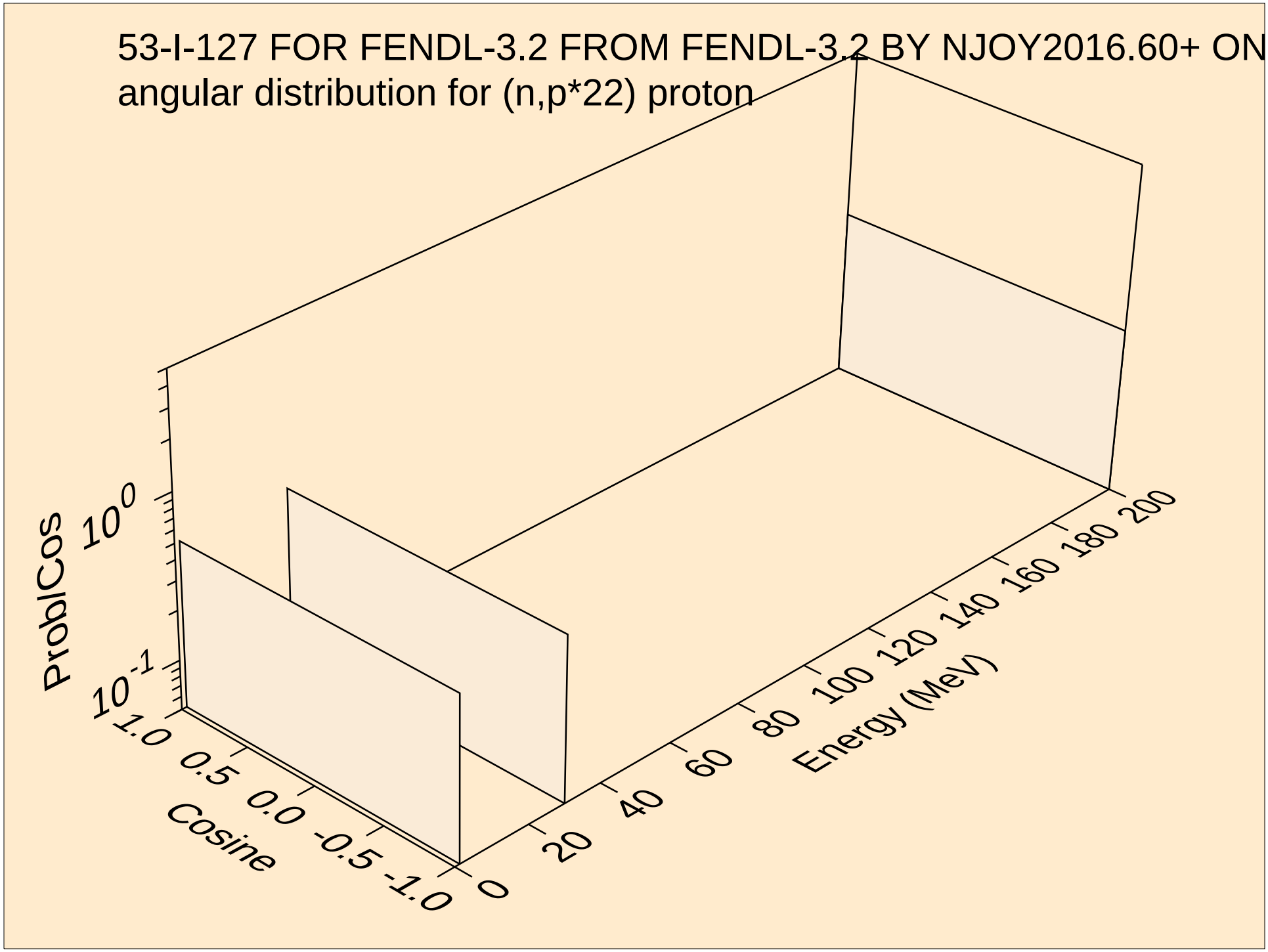

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*17) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

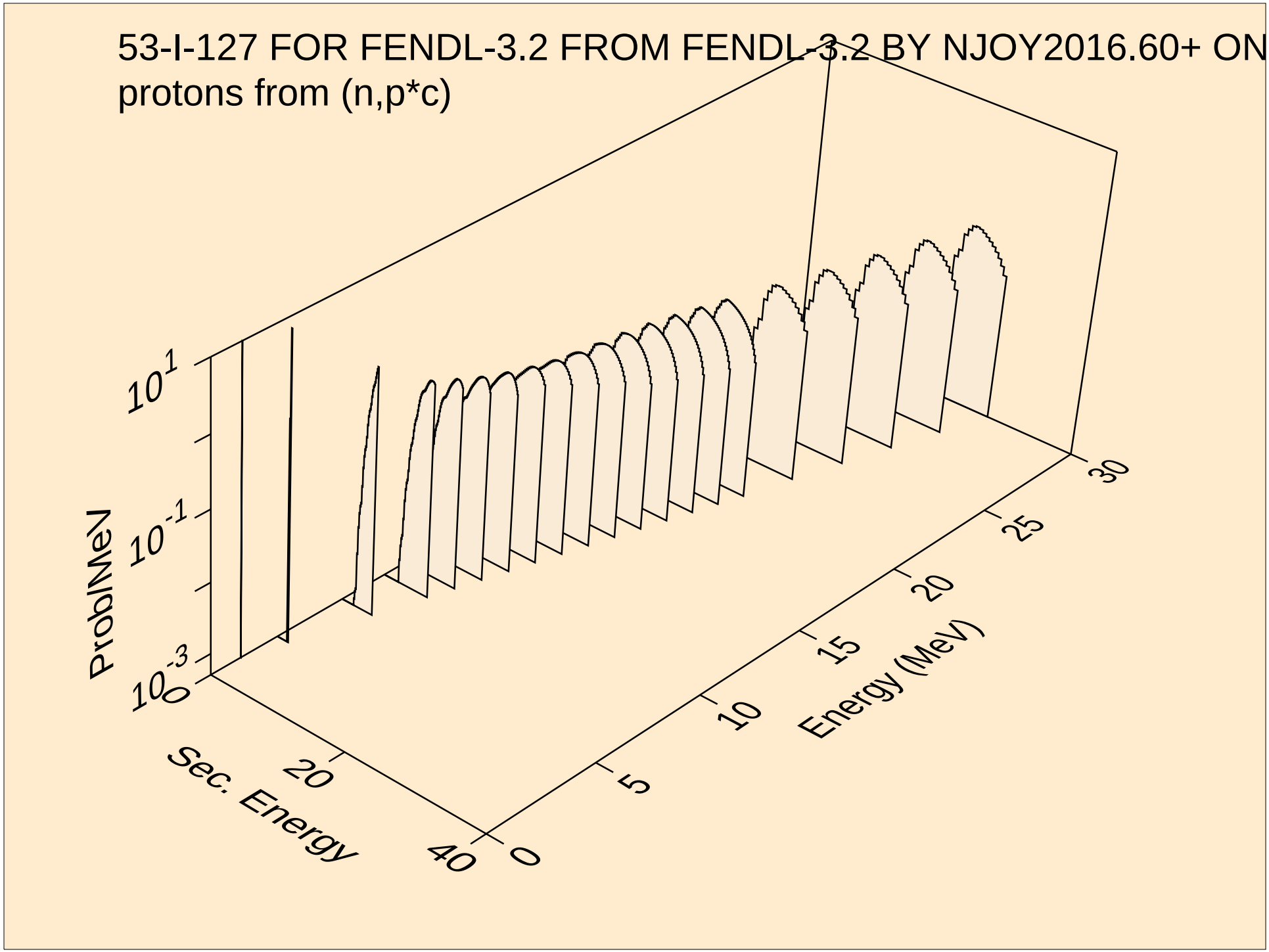

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*18) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

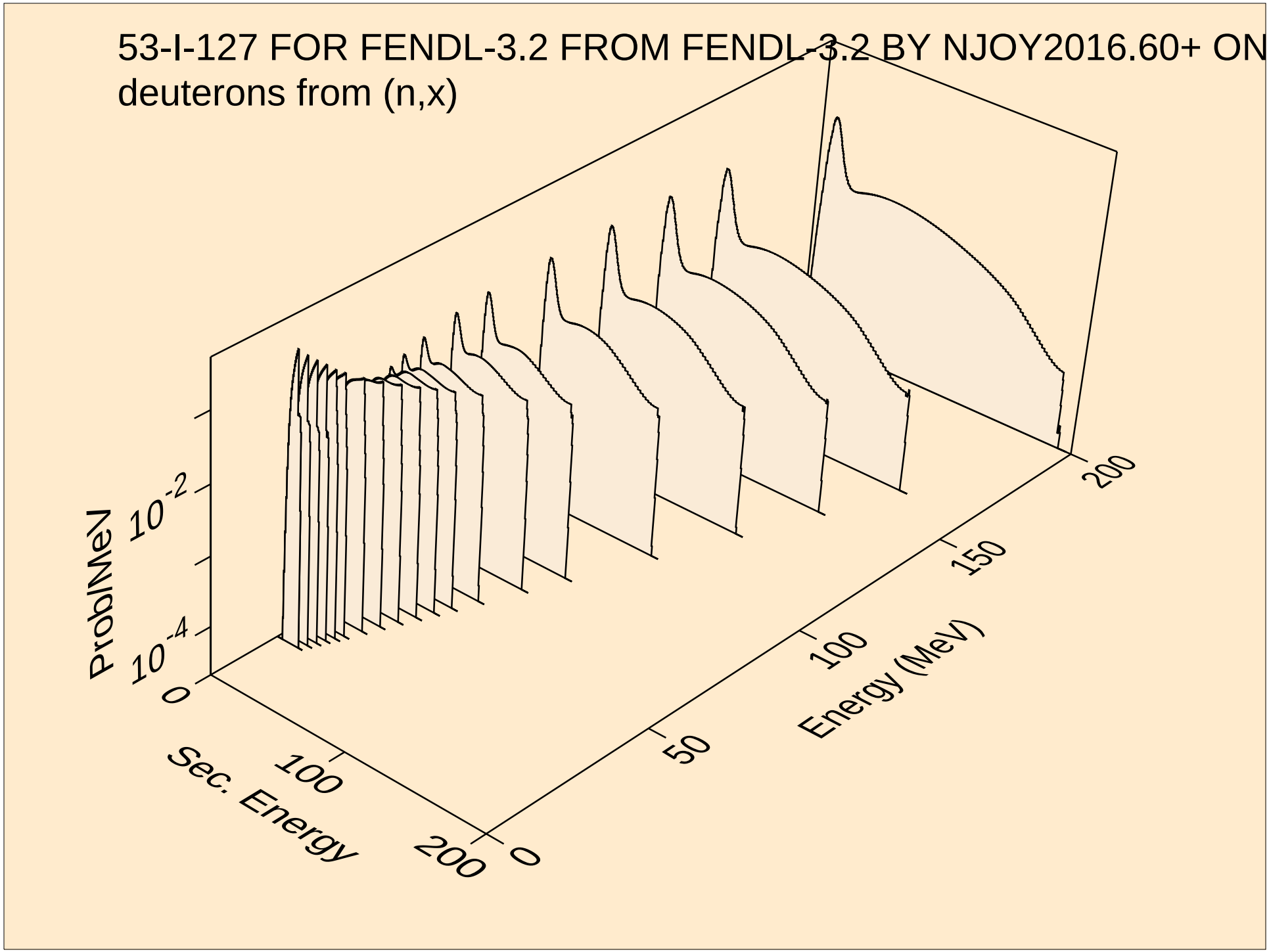

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*19) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

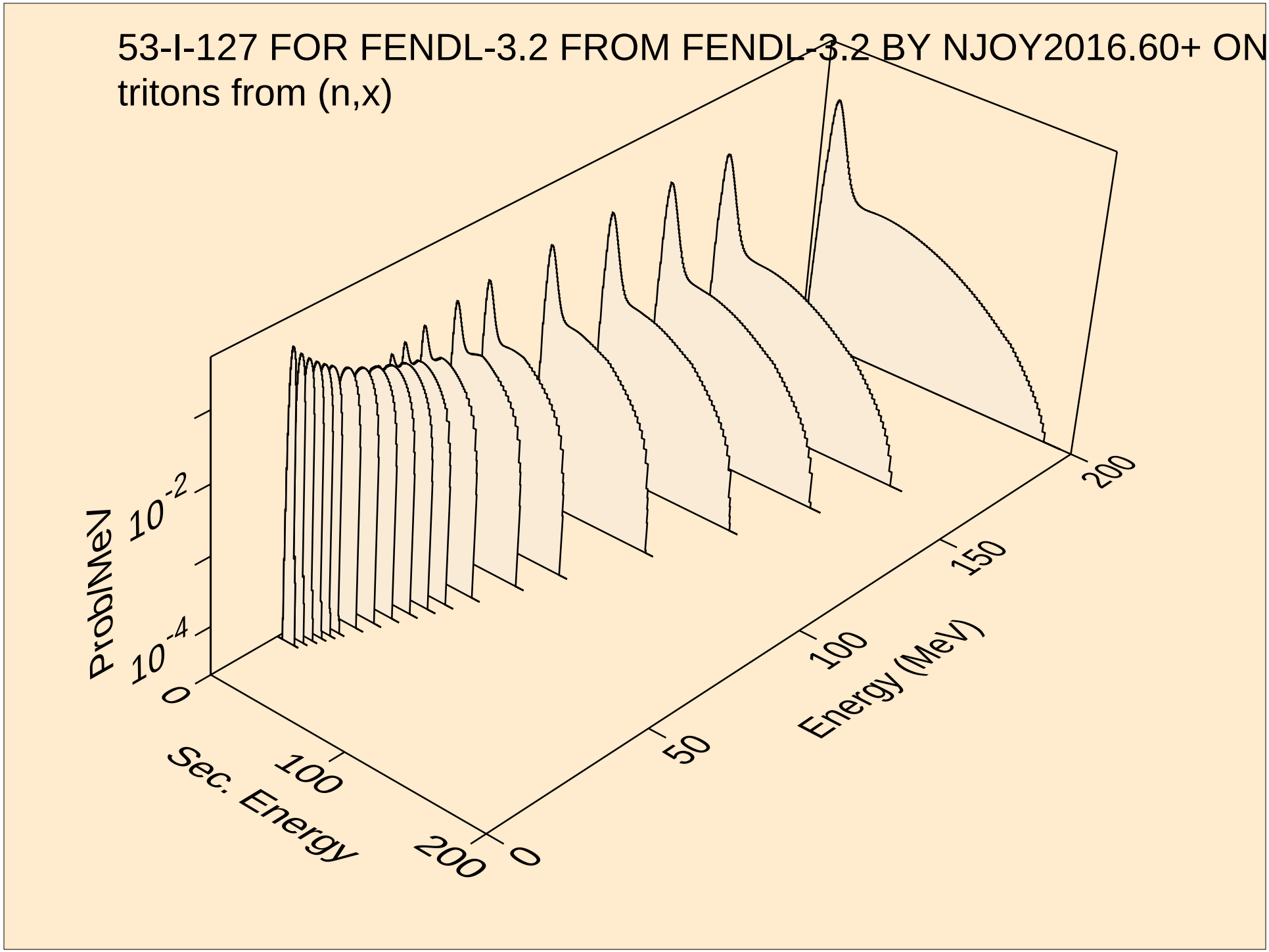

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*20) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

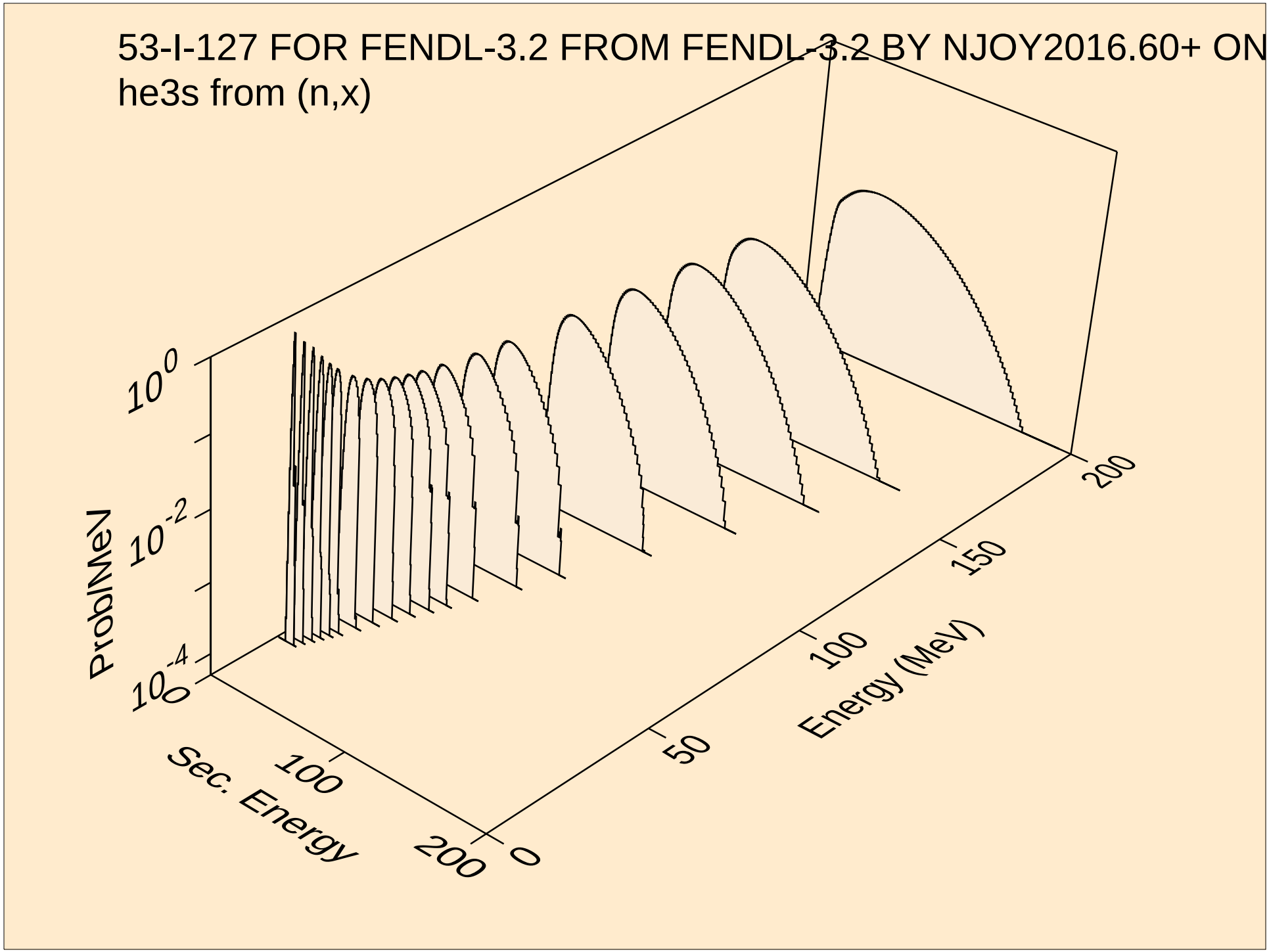

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*21) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

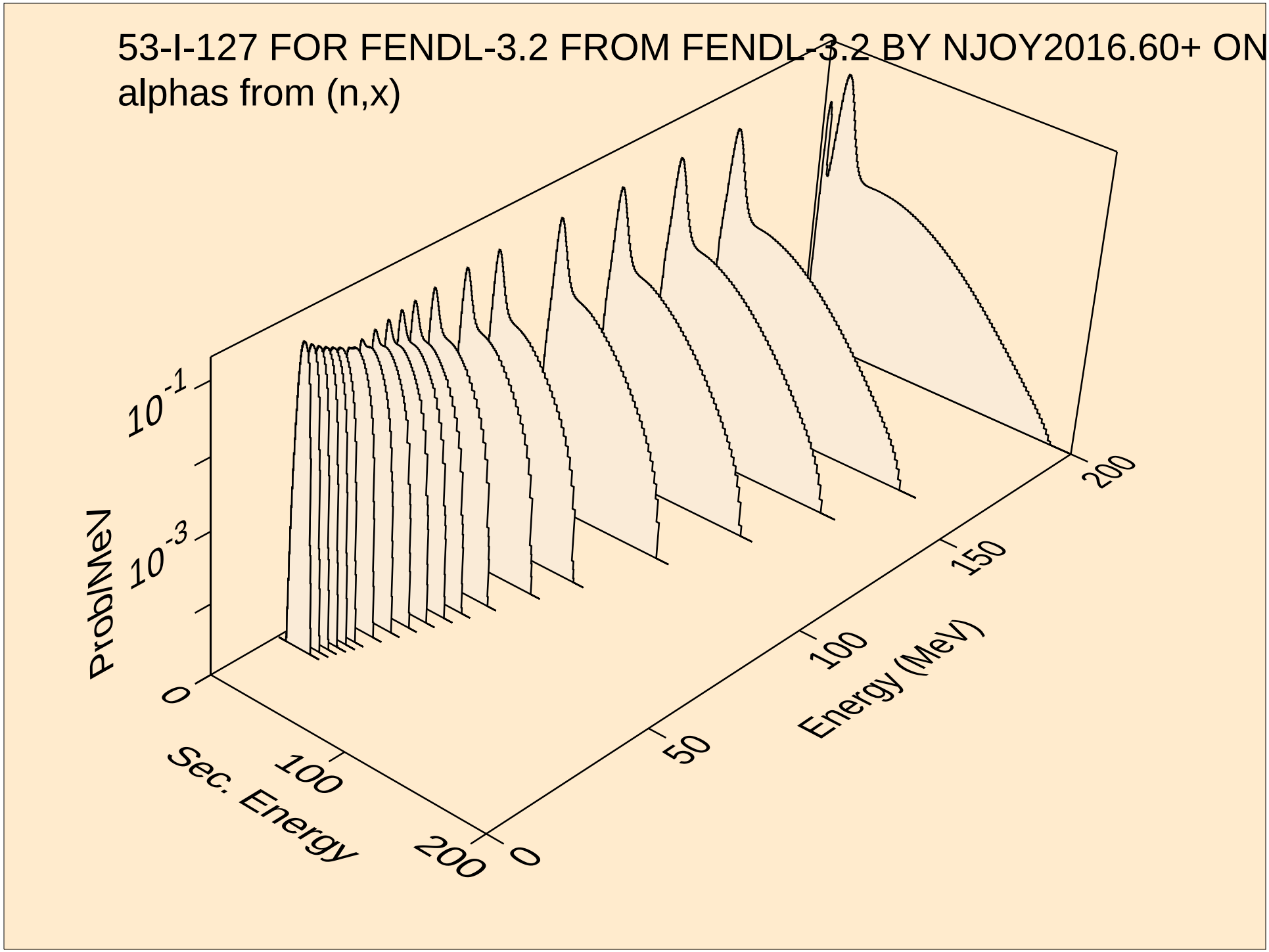

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,p*22) proton
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

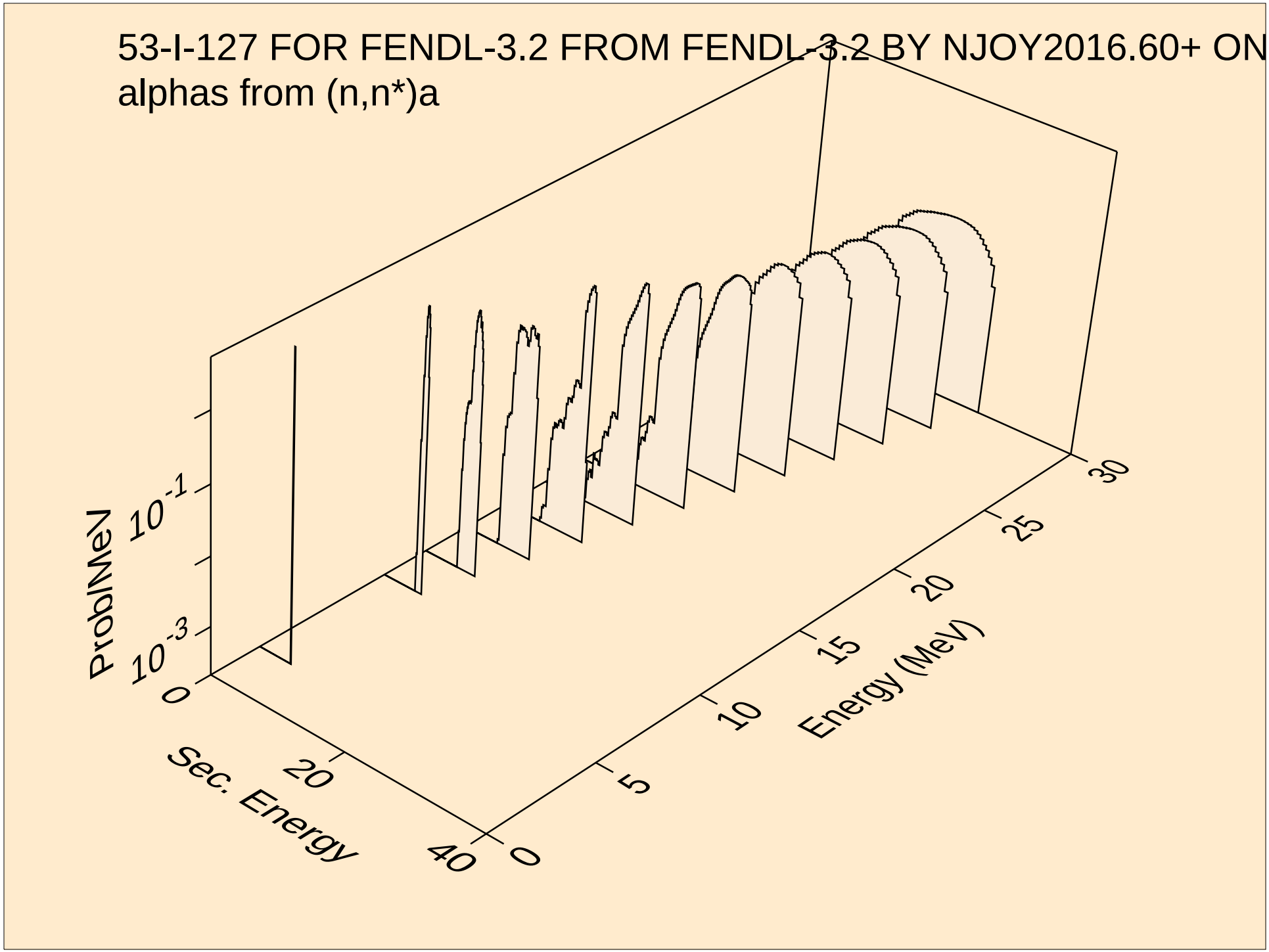

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
protons from (n,p*c)
Prob/MeV
10^1
10^-1
10^-3
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

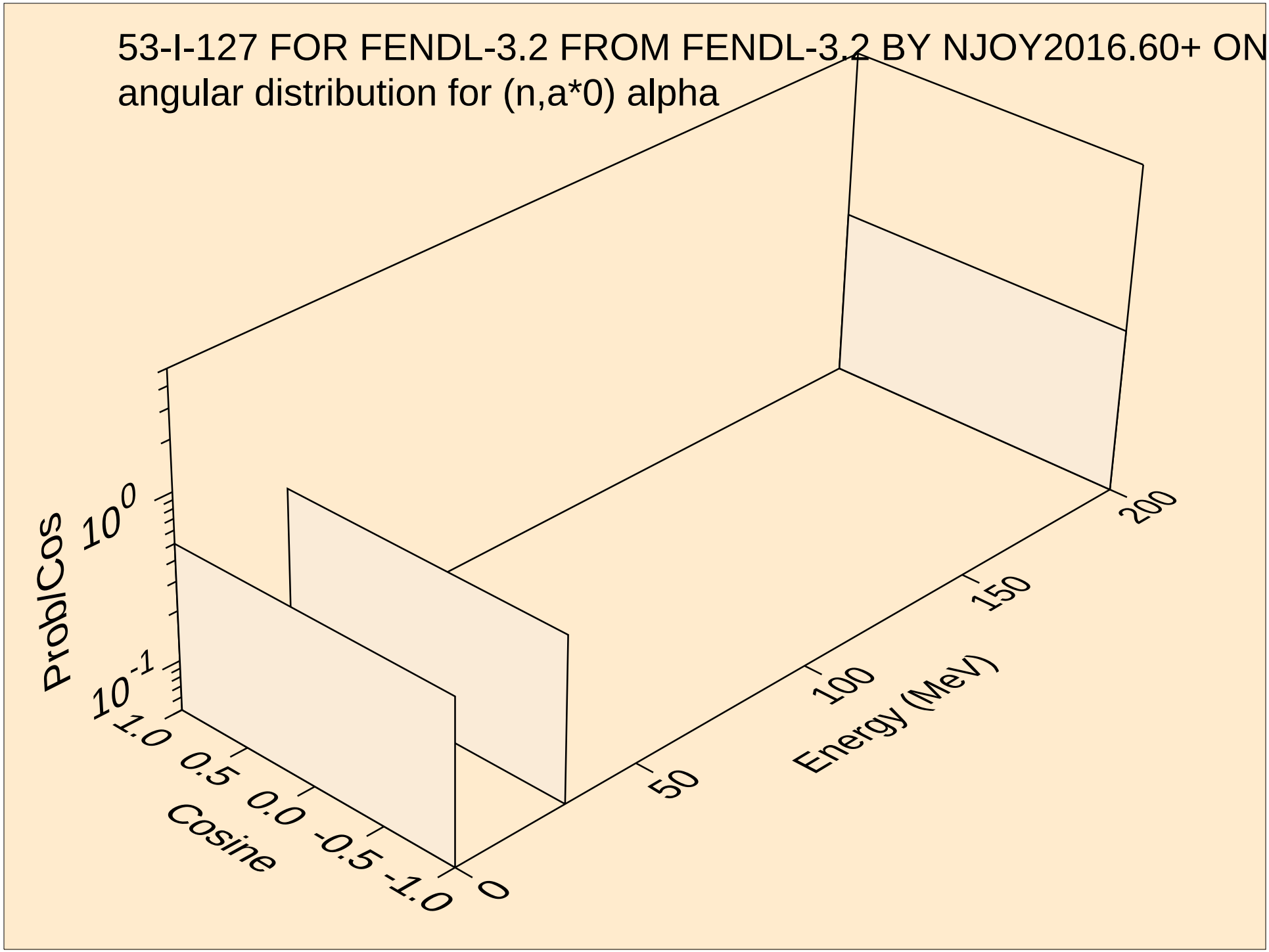

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
deuterons from (n,x)
Prob/MeV
10-2
10-4
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

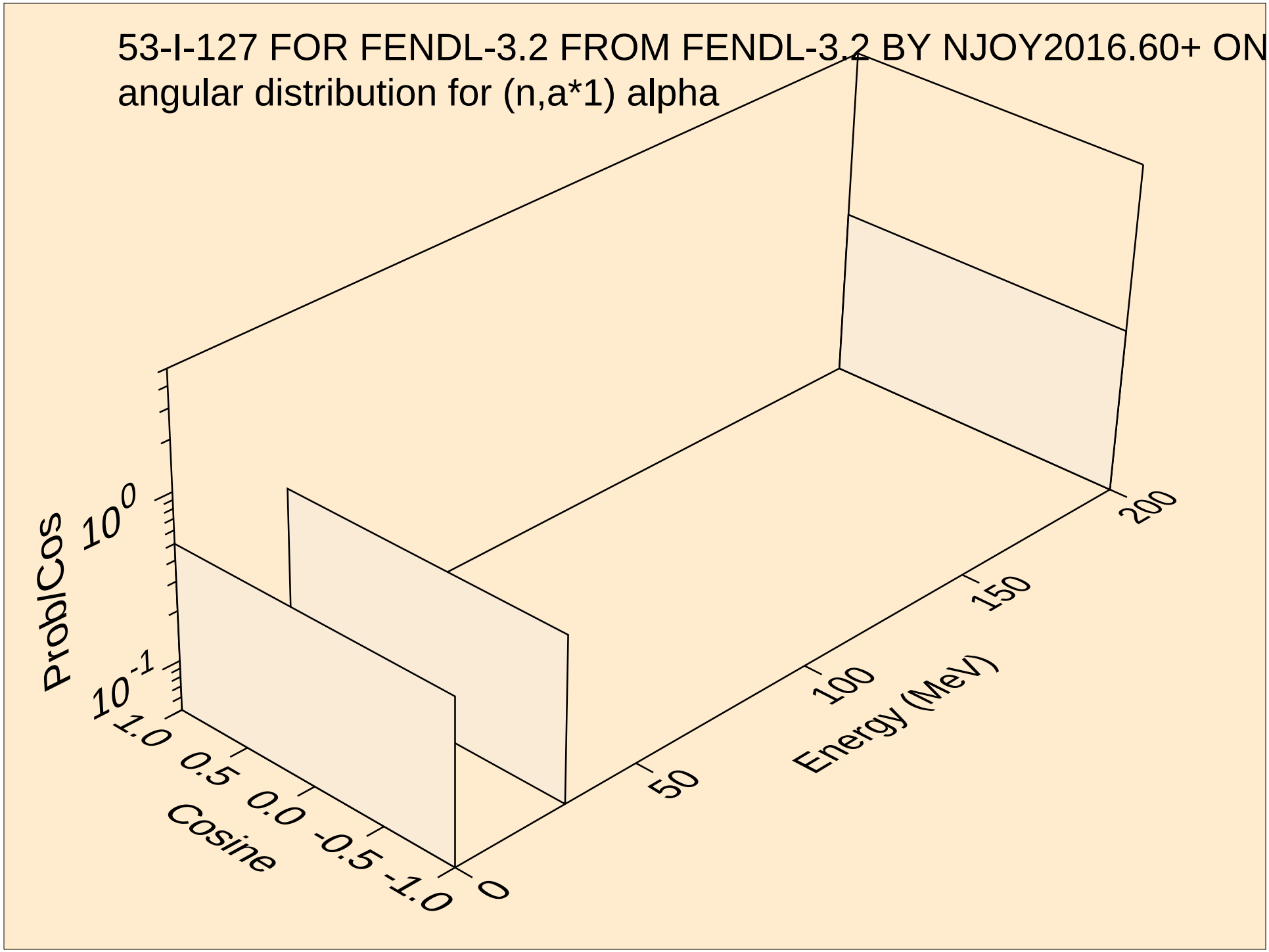

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
tritons from (n,x)
Prob/MeV
10-2
10-4
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

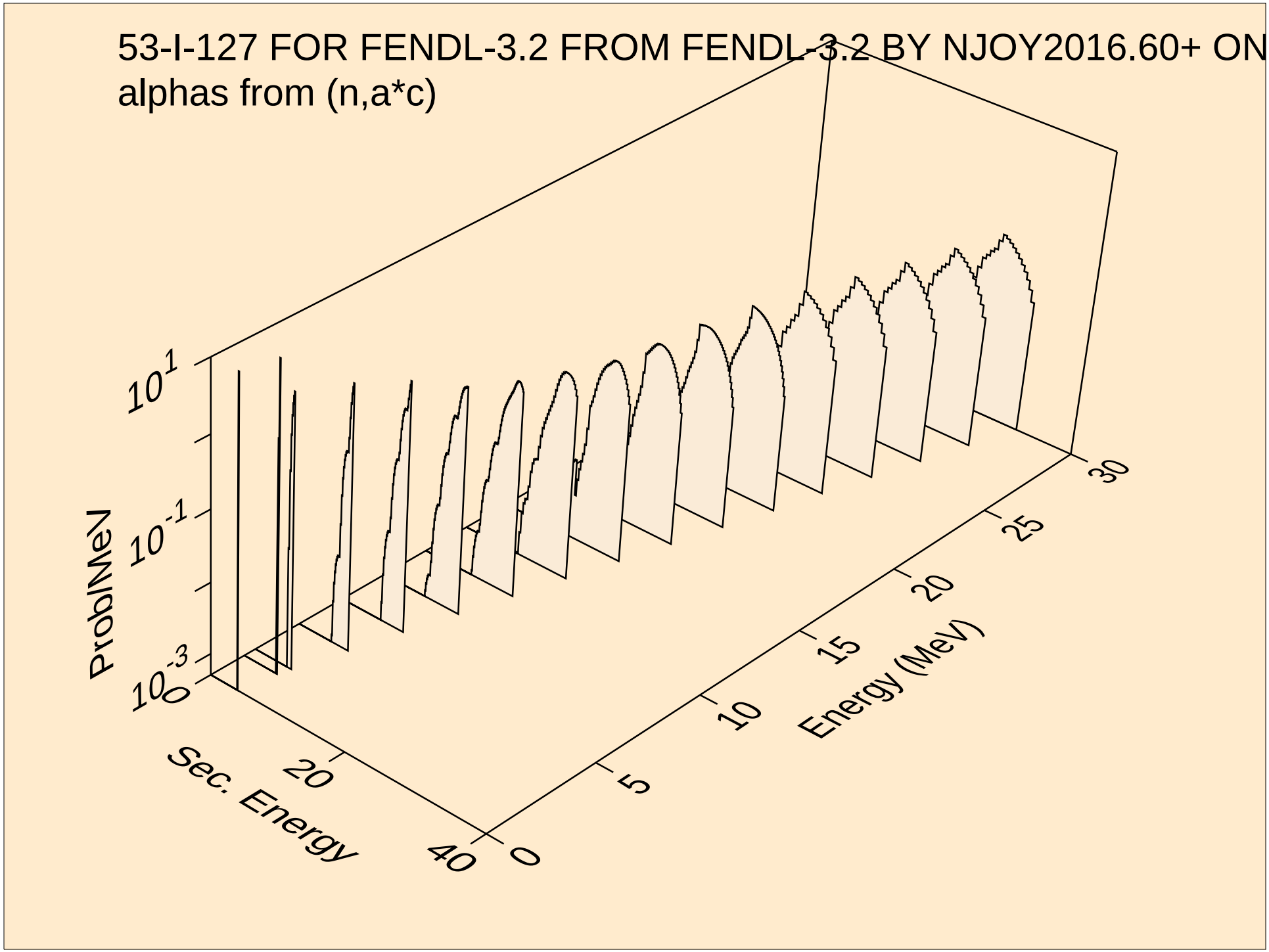

53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
he3s from (n,x)
Prob/MeV
10^0
10^-2
10^-4
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)


53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
alphas from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)


53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
alphas from (n,n*)a
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)


53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,a*0) alpha
ProblCos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)


53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
angular distribution for (n,a*1) alpha
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
50
100
150
200
Energy (MeV)


53-I-127 FOR FENDL-3.2 FROM FENDL-3.2 BY NJOY2016.60+ ON
alphas from (n,a*c)
Prob/MeV
10^1
10^-1
10^-3
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)