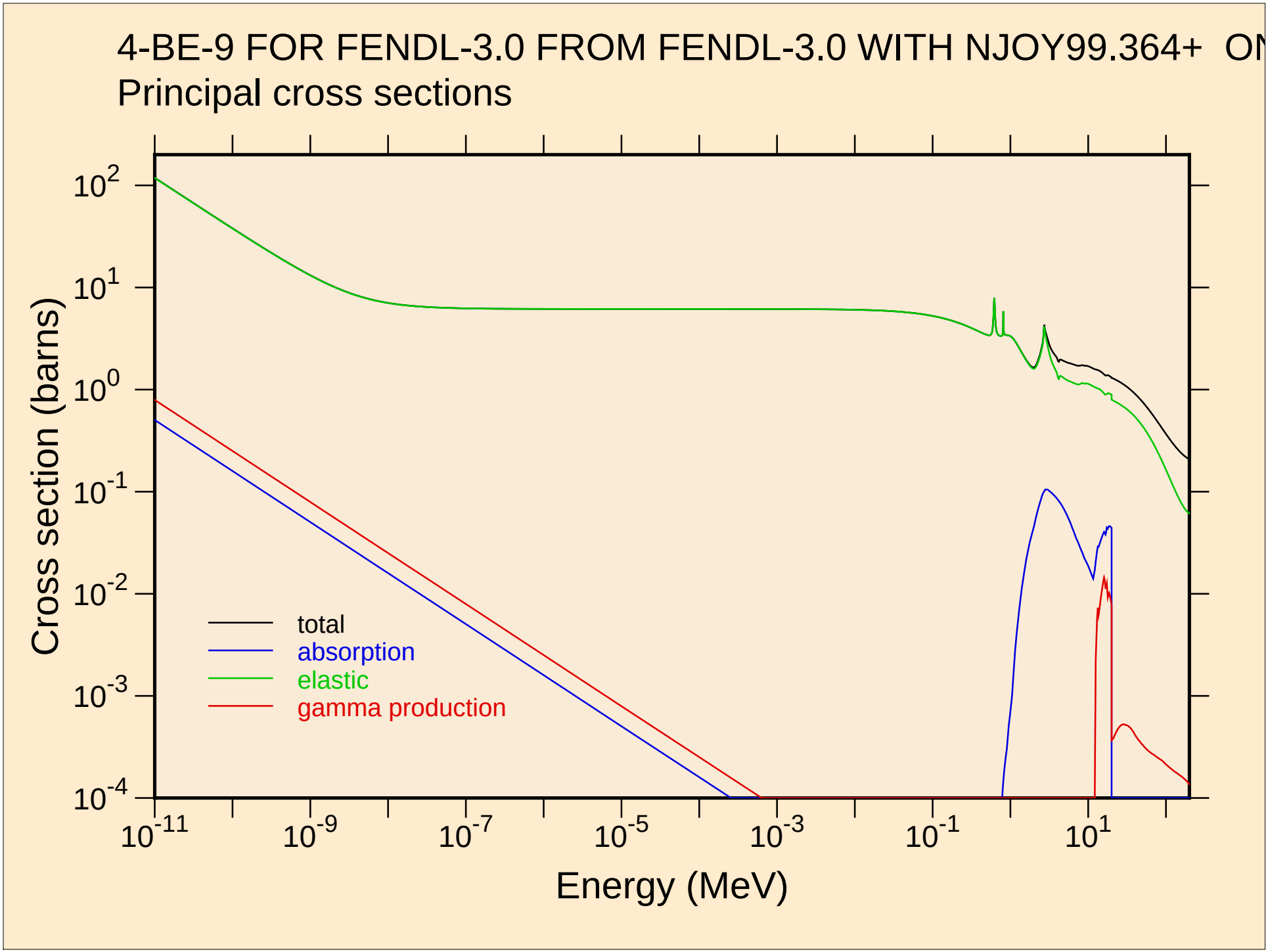
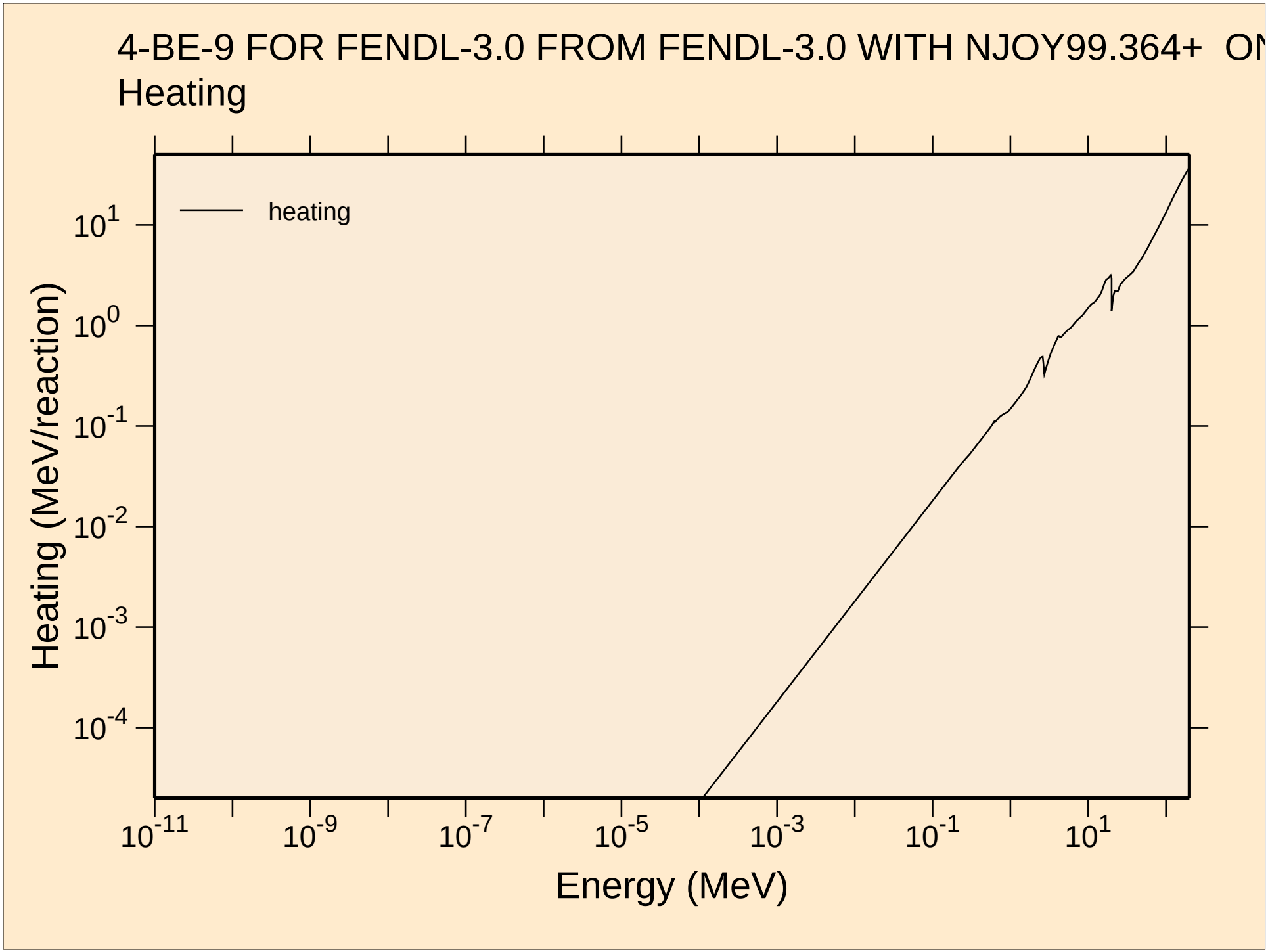
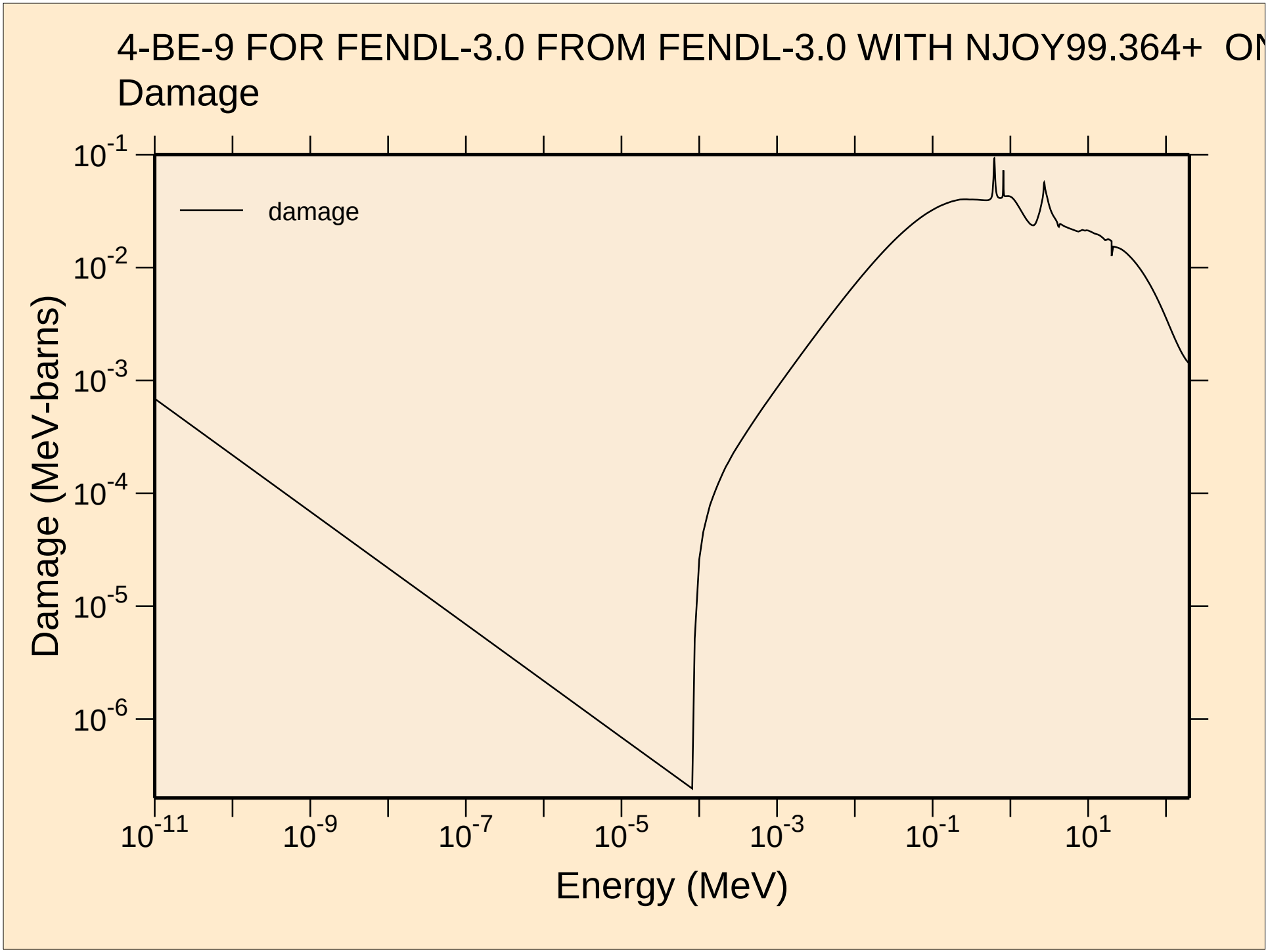
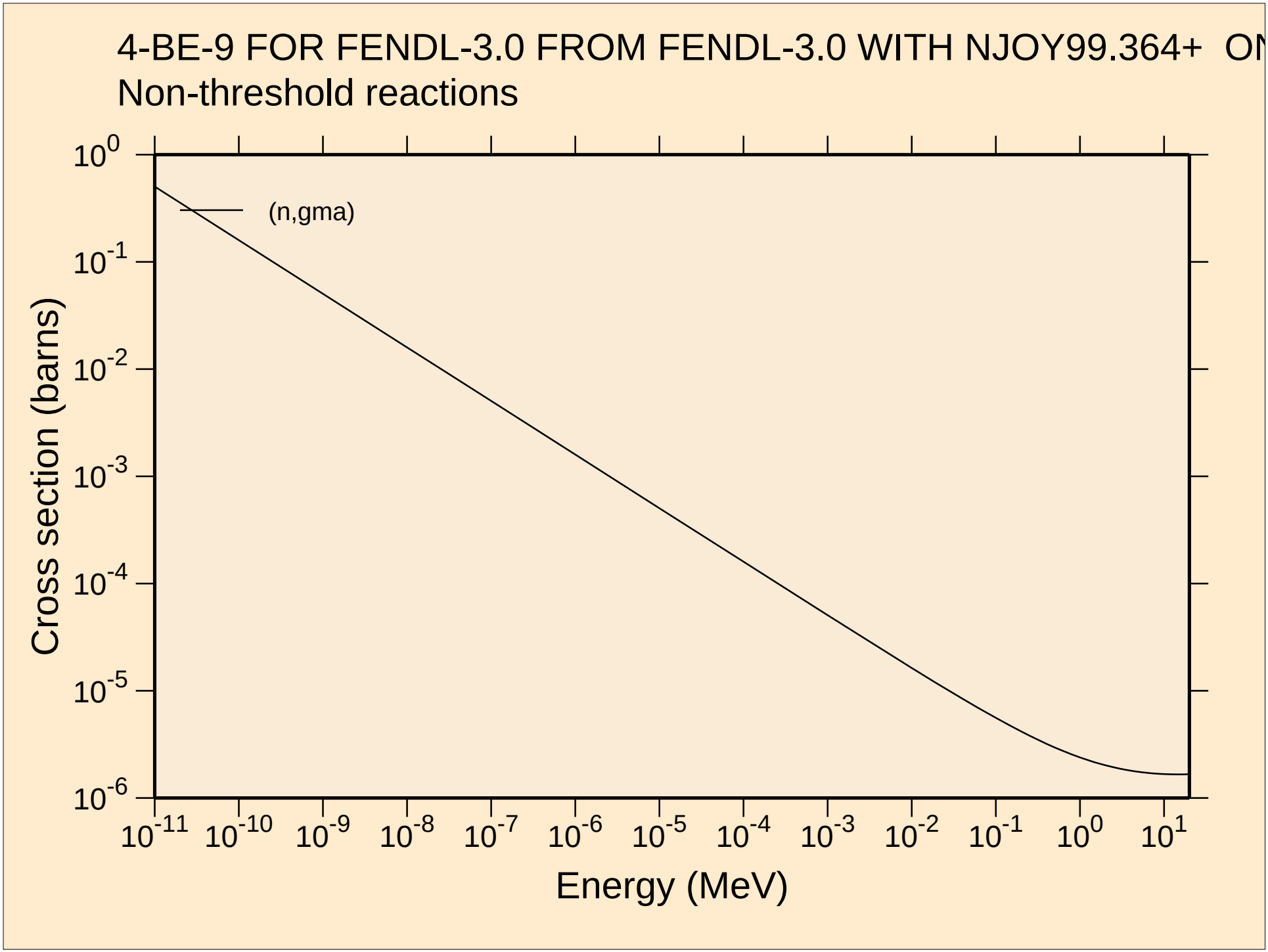
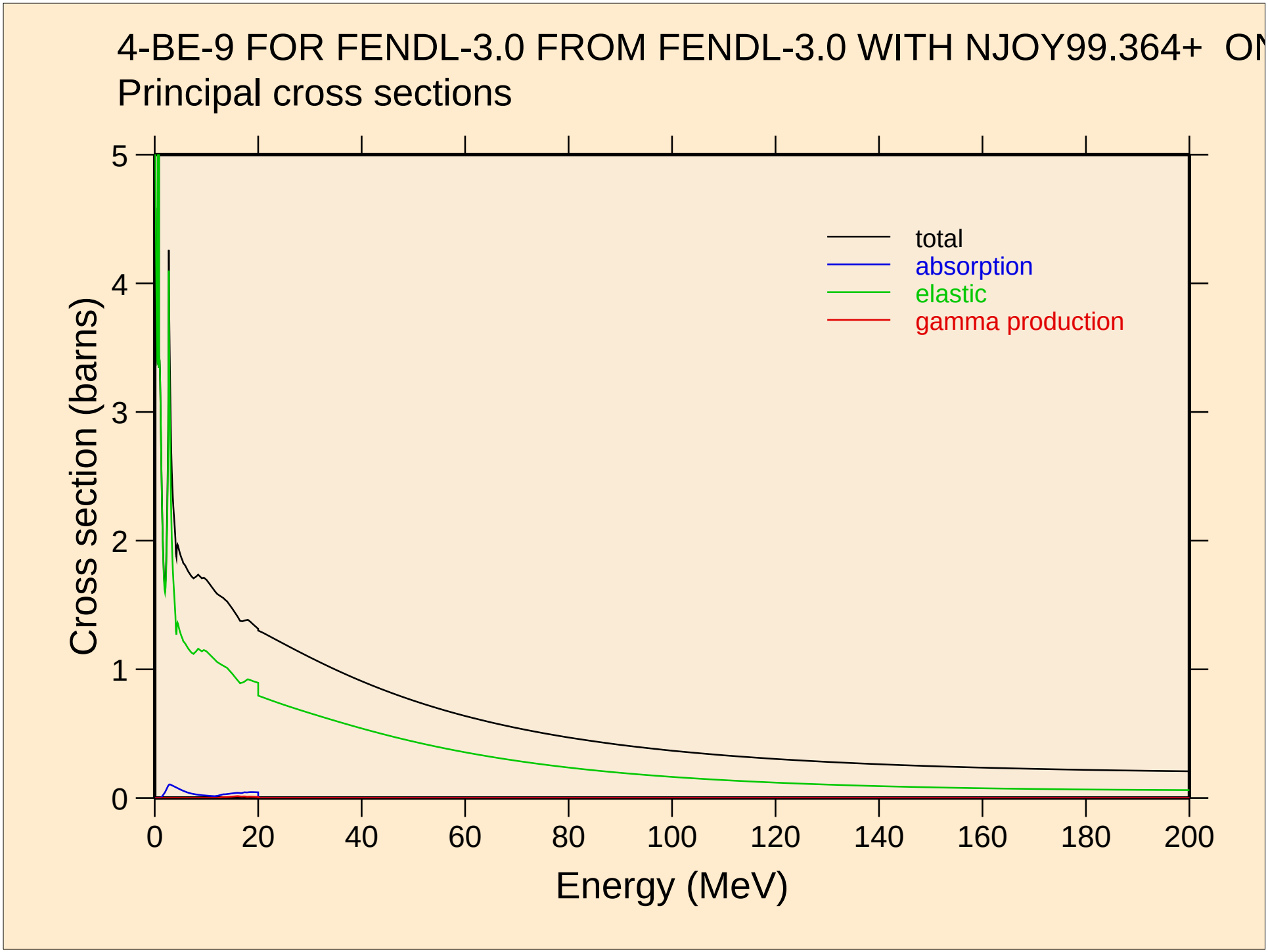
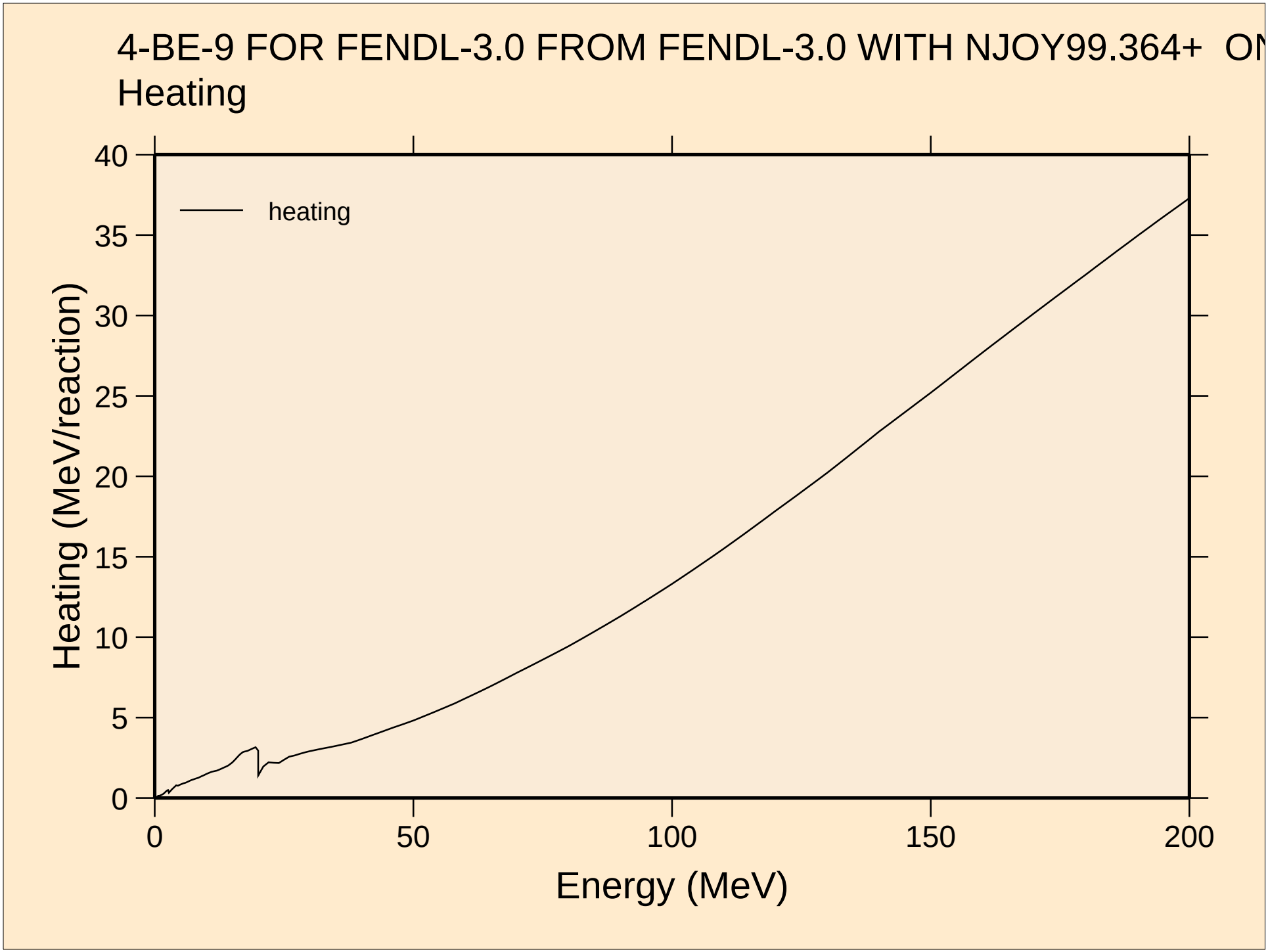

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production

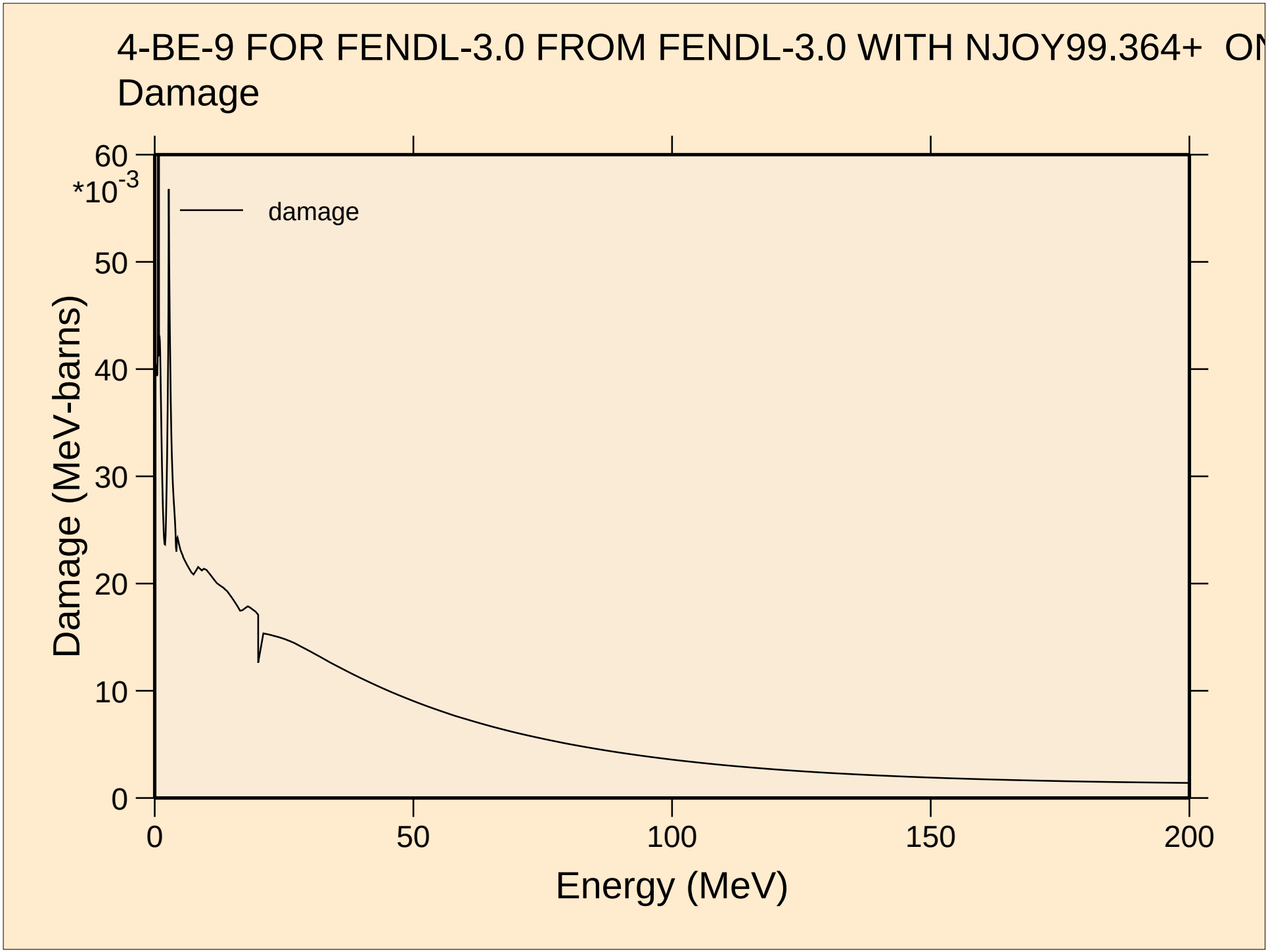

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Heating
heating
Heating (MeV/reaction)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1
Energy (MeV)

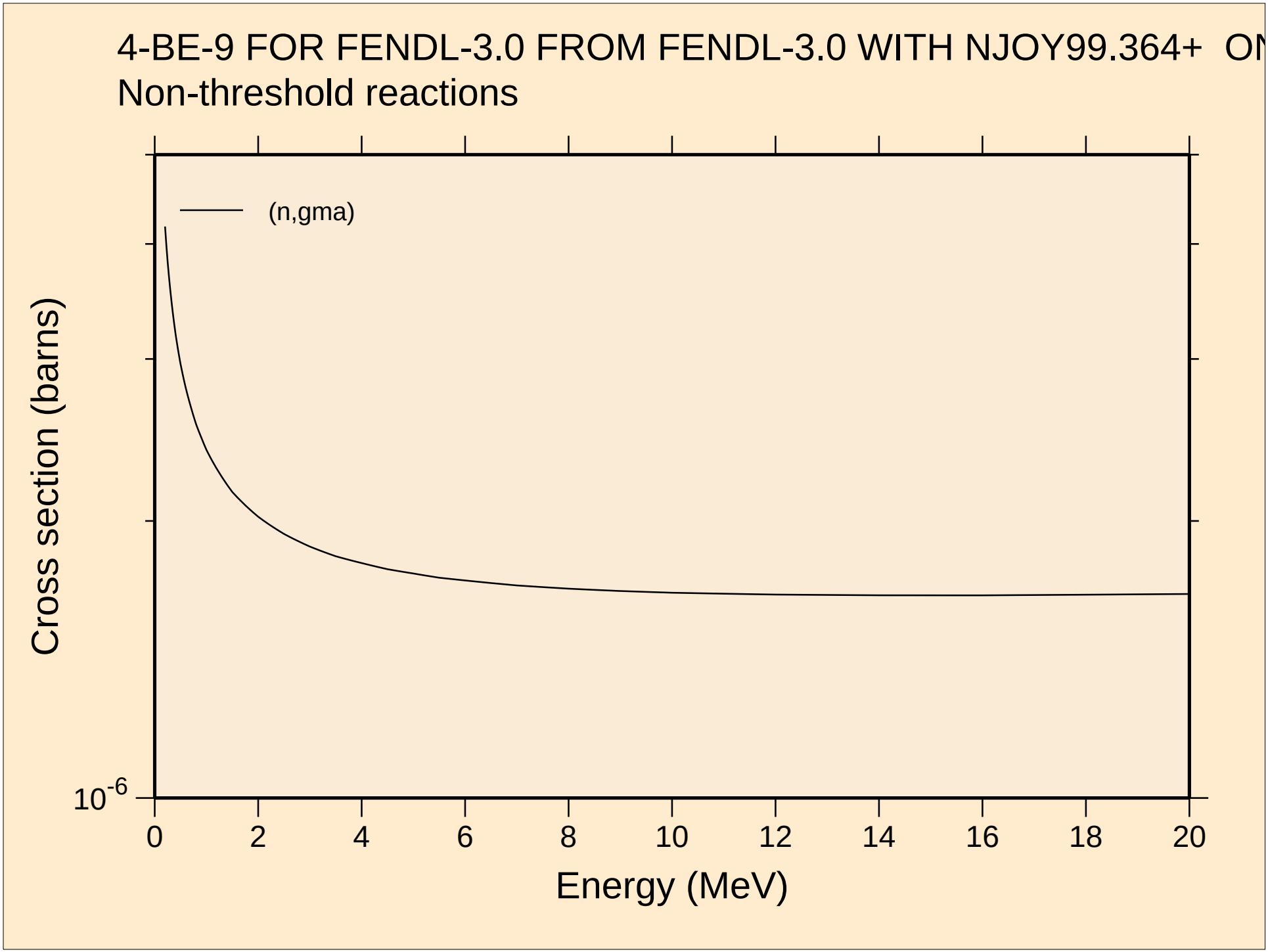

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Damage
damage
Damage (MeV-barns)
10-1
10-2
10-3
10-4
10-5
10-6
10-11
10-9
10-7
10-5
10-3
10-1
101
Energy (MeV)

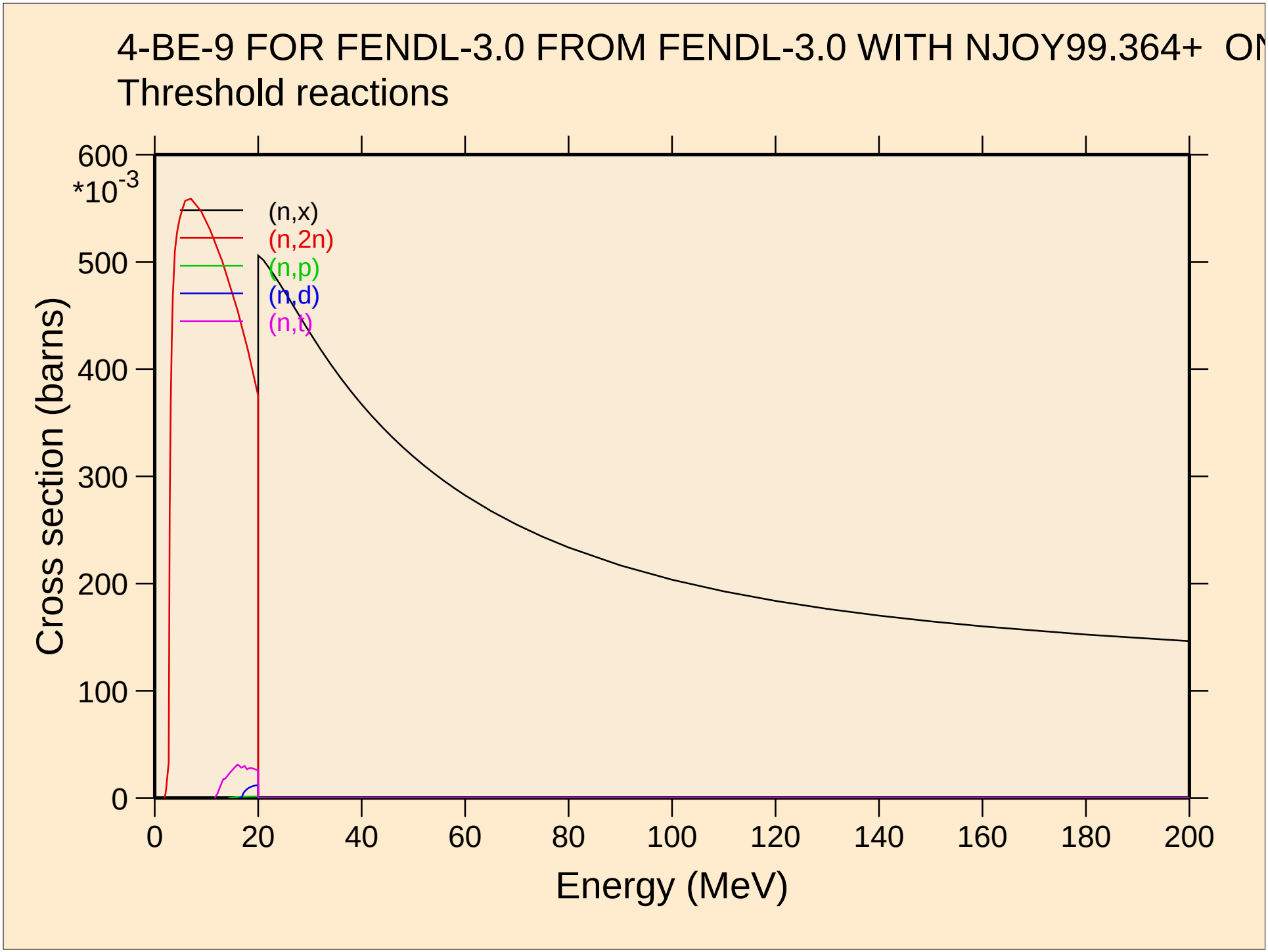

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Non-threshold reactions
(n,gma)
Cross section (barns)
Energy (MeV)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-11 10^-10 10^-9 10^-8 10^-7 10^-6 10^-5 10^-4 10^-3 10^-2 10^-1 10^0 10^1

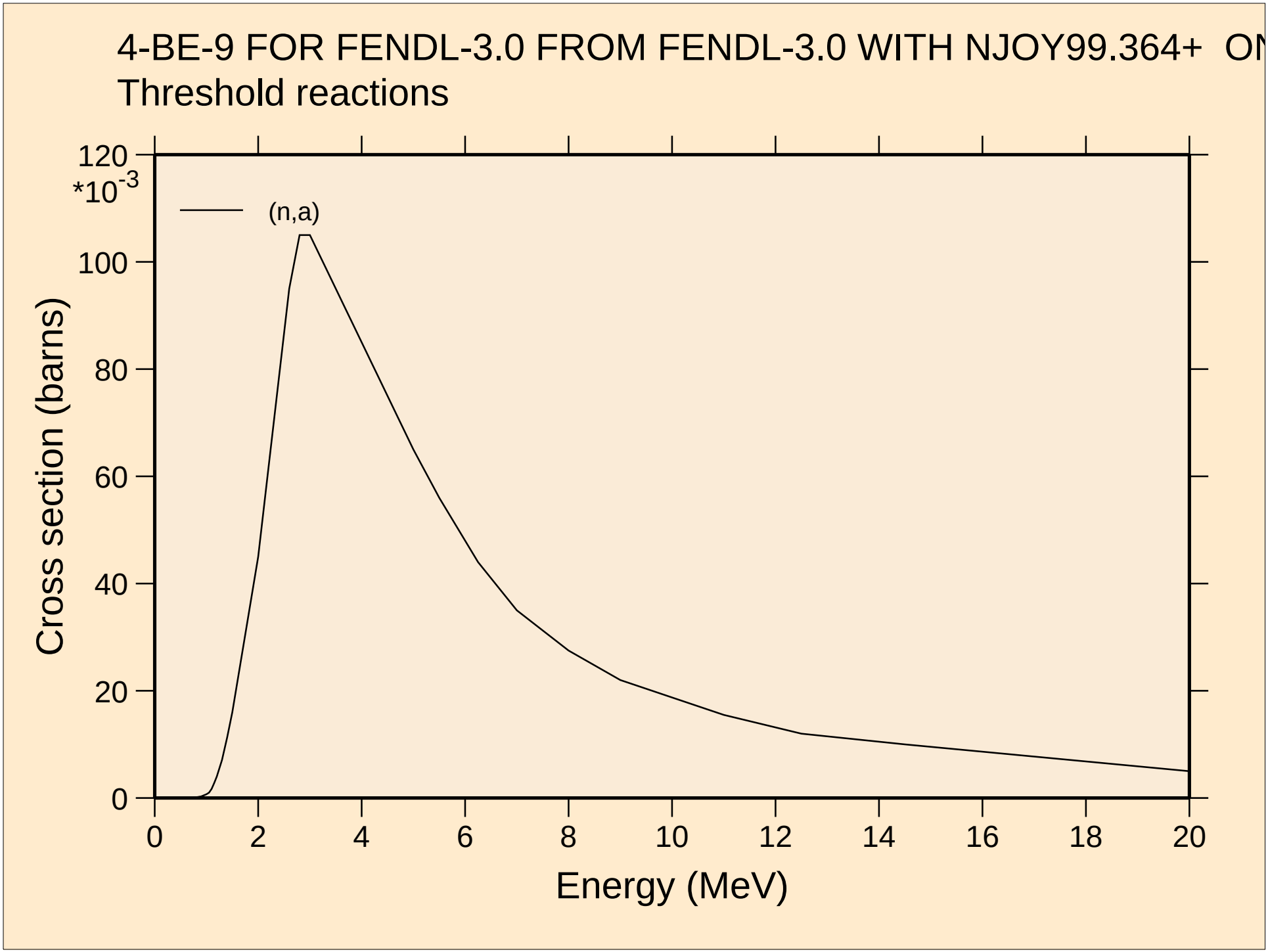

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Principal cross sections
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
0
20
40
60
80
100
120
140
160
180
200
total
absorption
elastic
gamma production

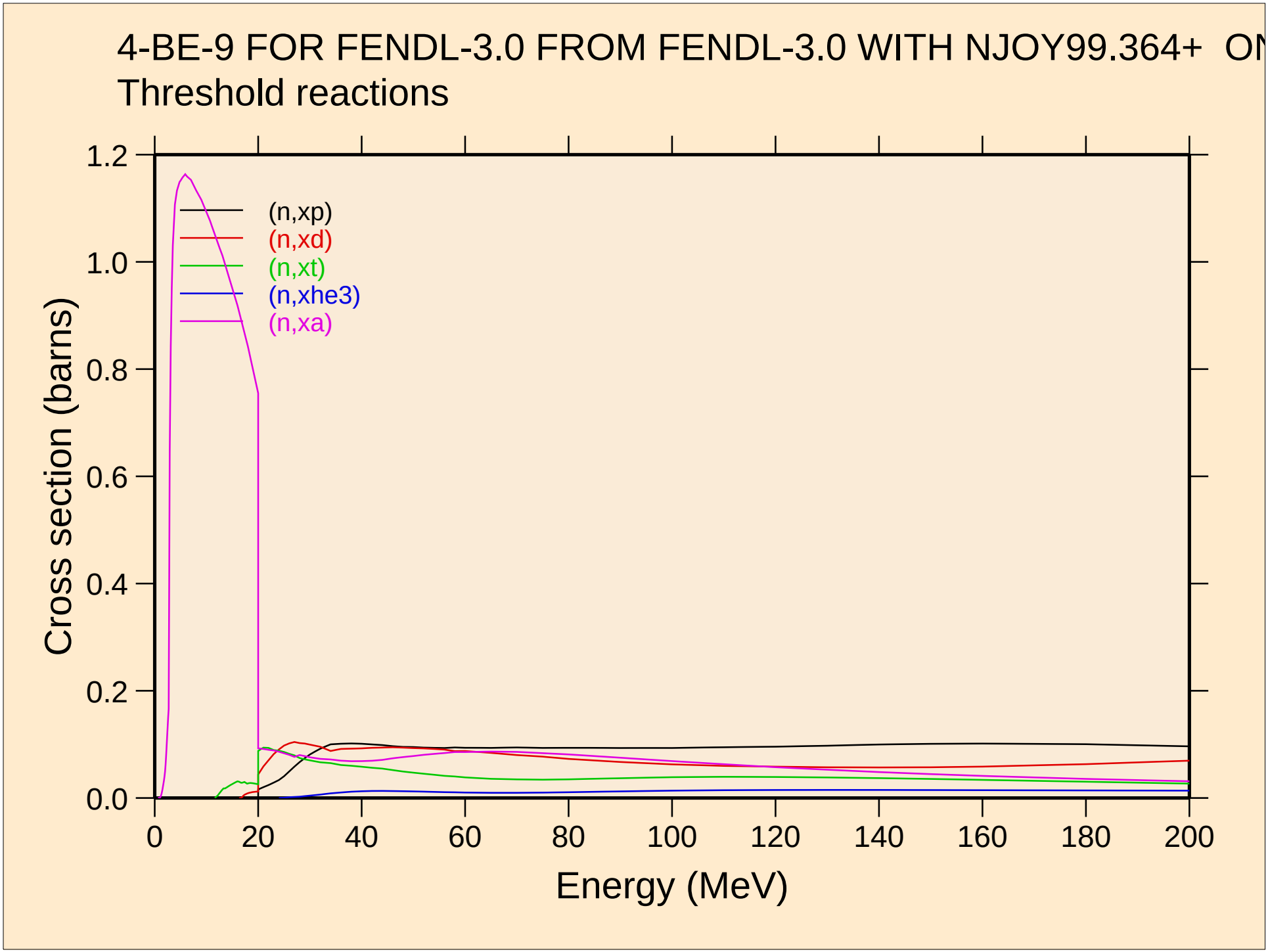

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
5
10
15
20
25
30
35
40
0
50
100
150
200

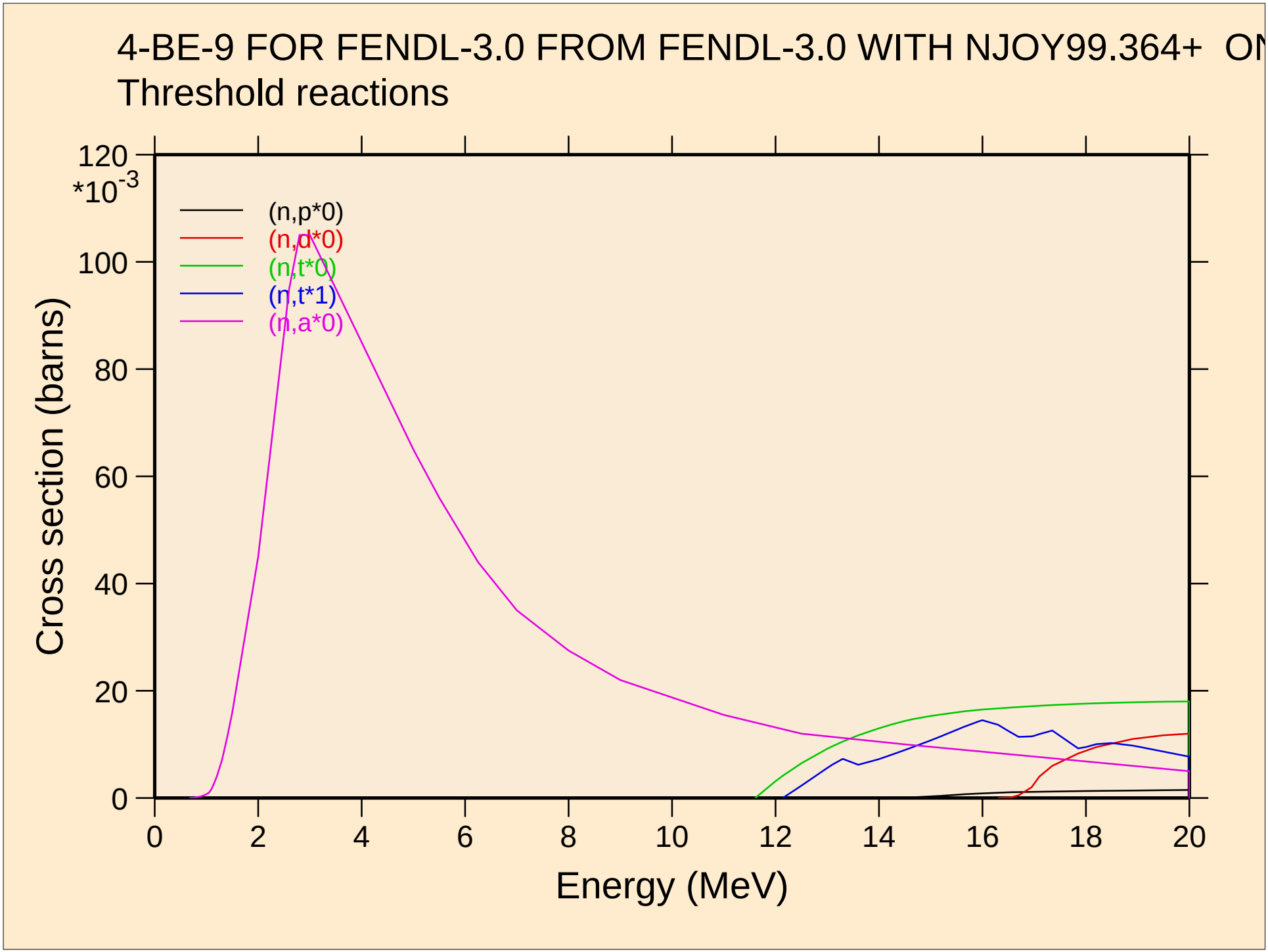

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Damage
*10-3
damage
60
50
40
30
20
10
0
Damage (MeV-barns)
0
50
100
150
200
Energy (MeV)

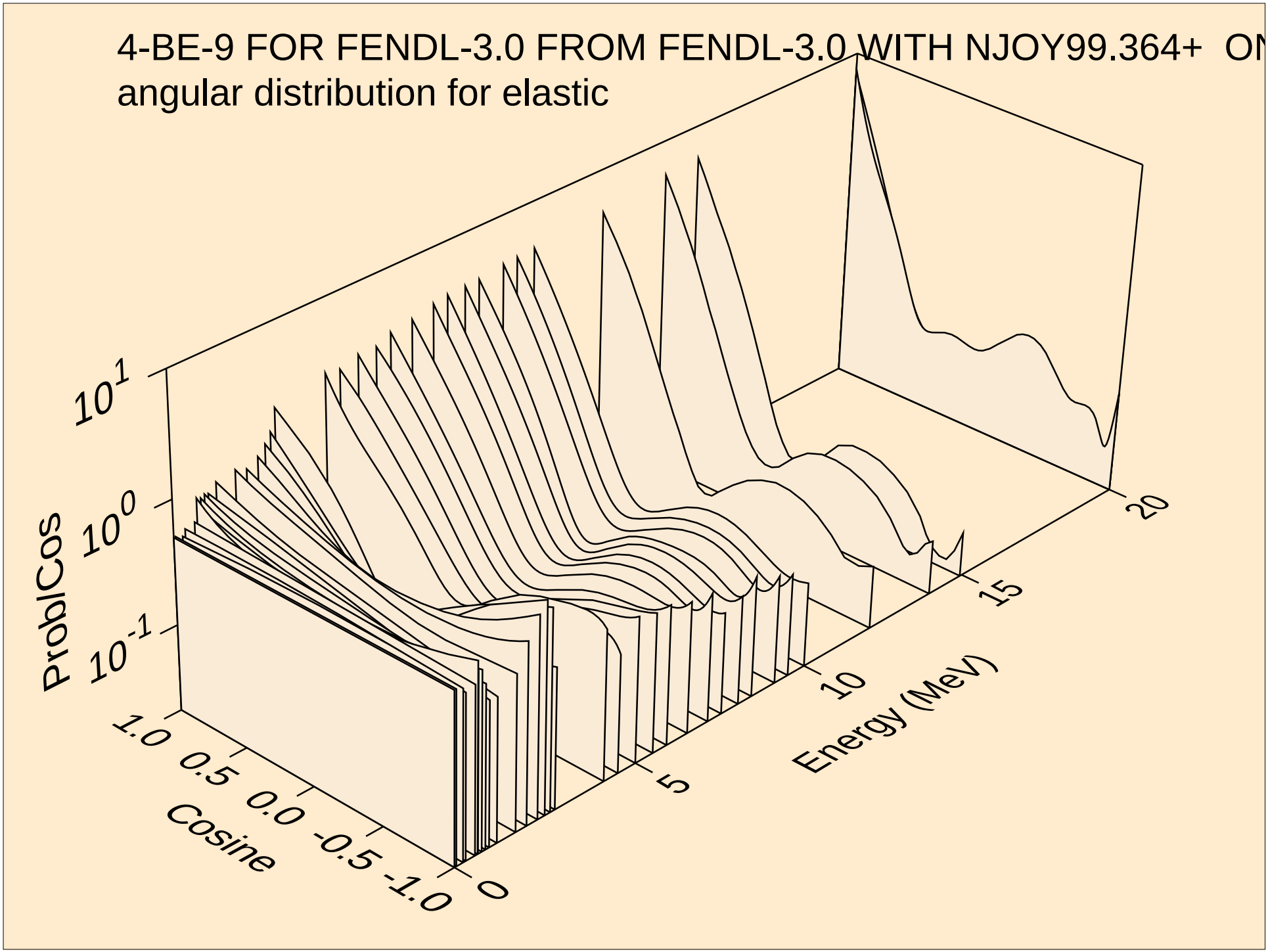

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Non-threshold reactions
(n,gma)
Cross section (barns)
10-6
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

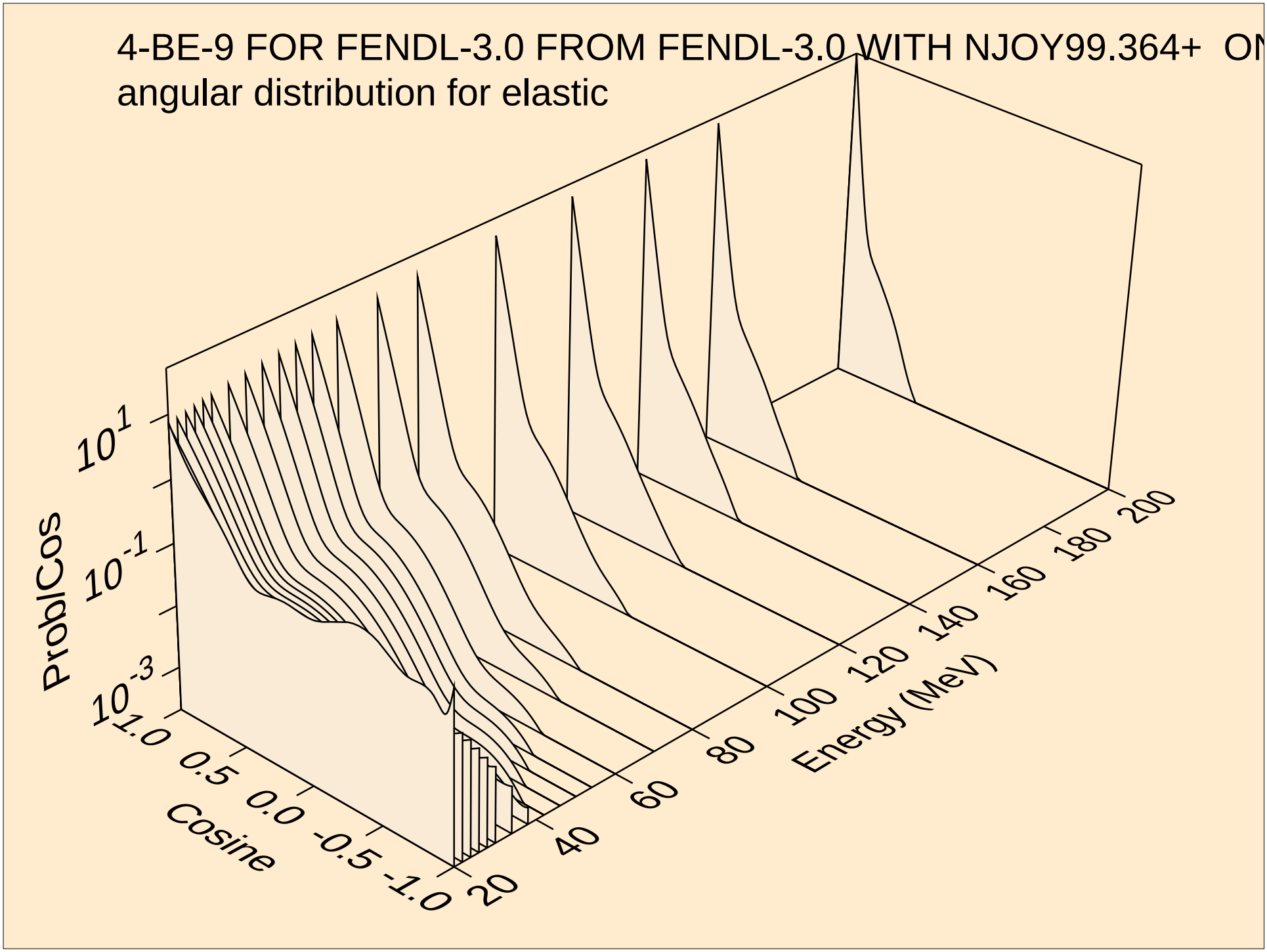

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Threshold reactions
600
*10-3
500
400
300
200
100
0
Cross section (barns)
(n,x)
(n,2n)
(n,p)
(n,d)
(n,t)
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

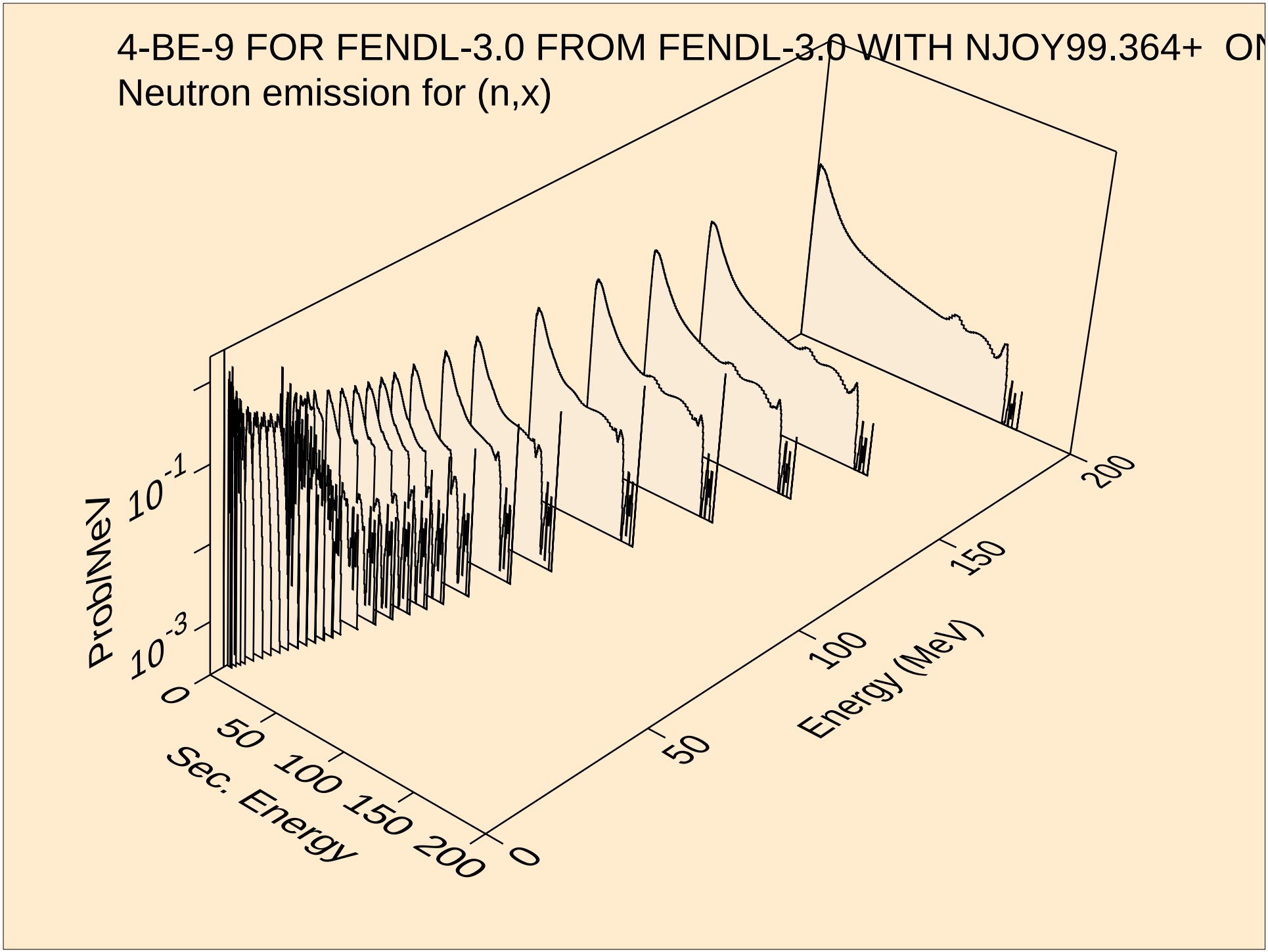

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Threshold reactions
120
*10-3
100
80
60
40
20
0
(n,a)
Cross section (barns)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

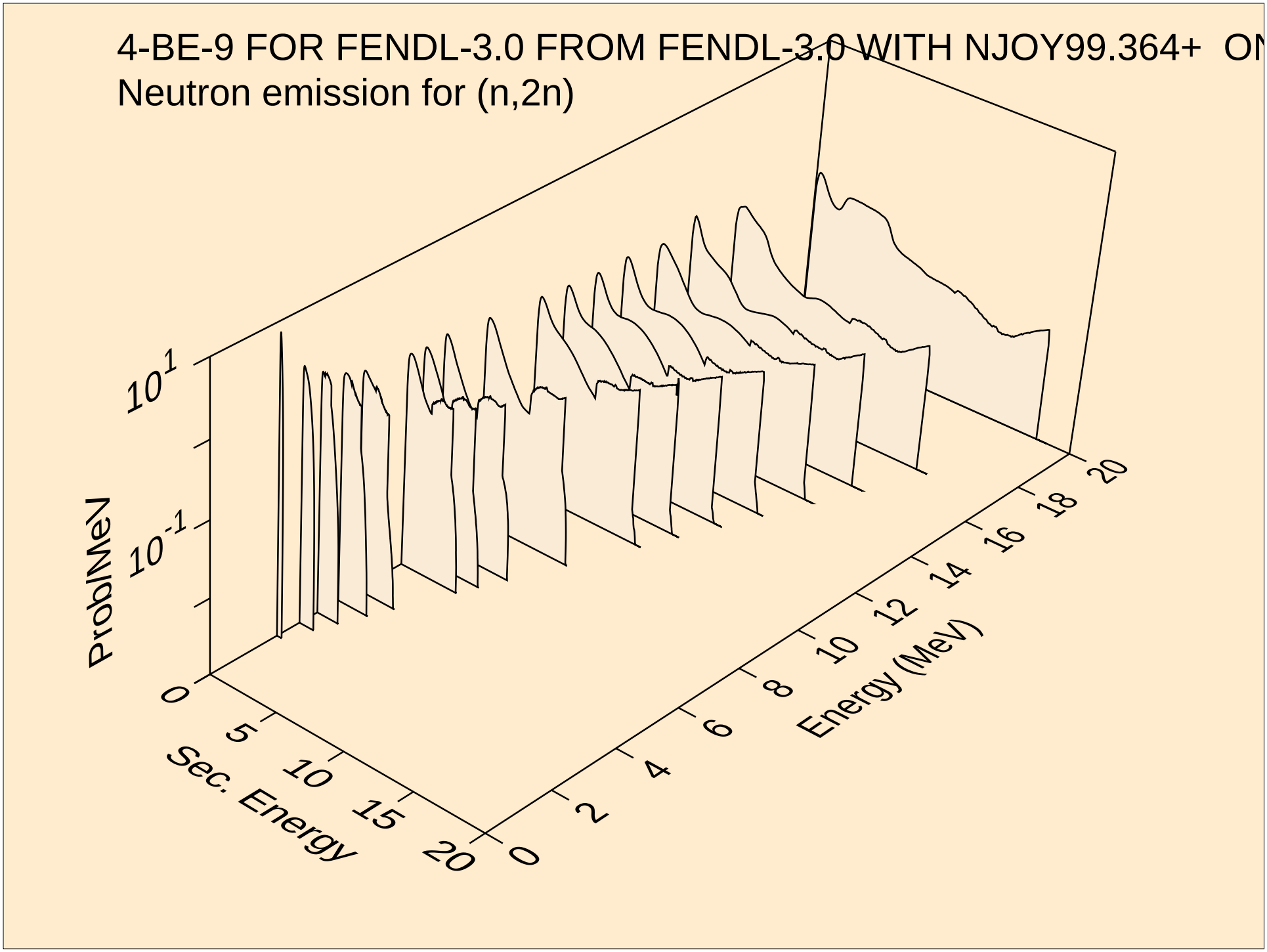

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Threshold reactions
(n,xp)
(n,xd)
(n,xt)
(n,xhe3)
(n,xa)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
20
40
60
80
100
120
140
160
180
200

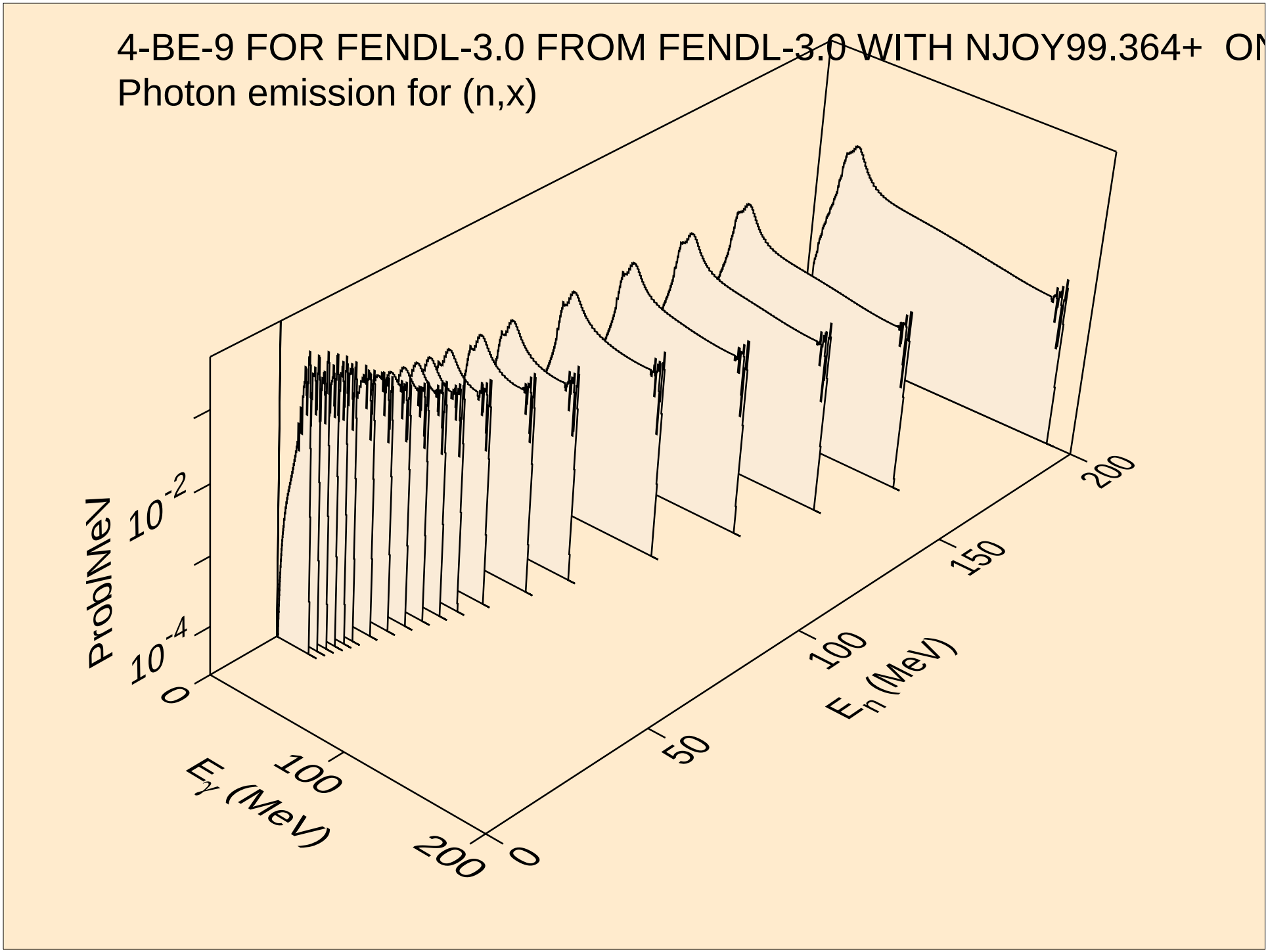

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Threshold reactions
120
*10-3
100
80
60
40
20
0
Cross section (barns)
(n,p*0)
(n,d*0)
(n,t*0)
(n,t*1)
(n,a*0)
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

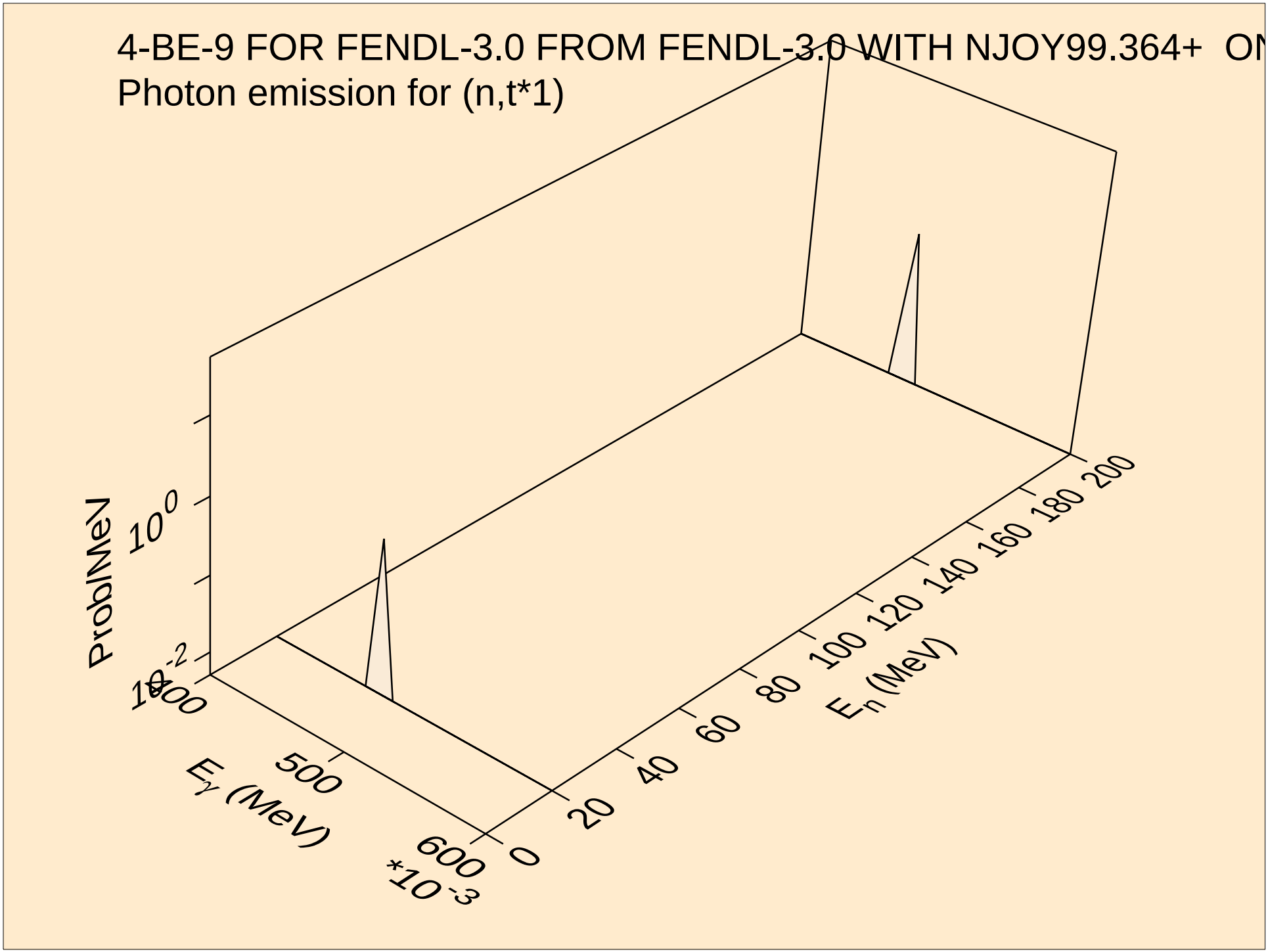

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
angular distribution for elastic
ProbICos
10^{1}
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

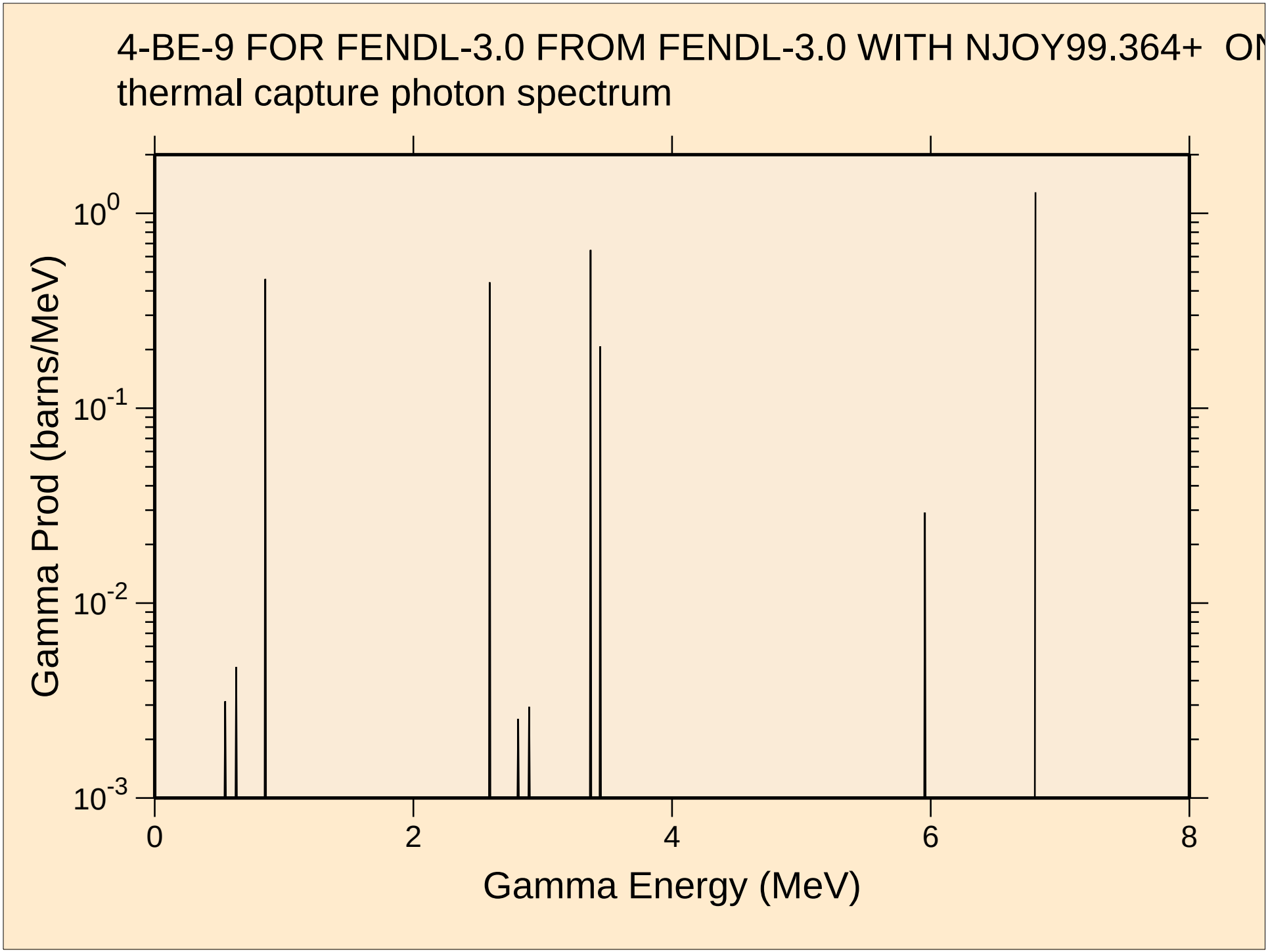

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
angular distribution for elastic
ProbICos
10^1
10^-1
10^-3
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

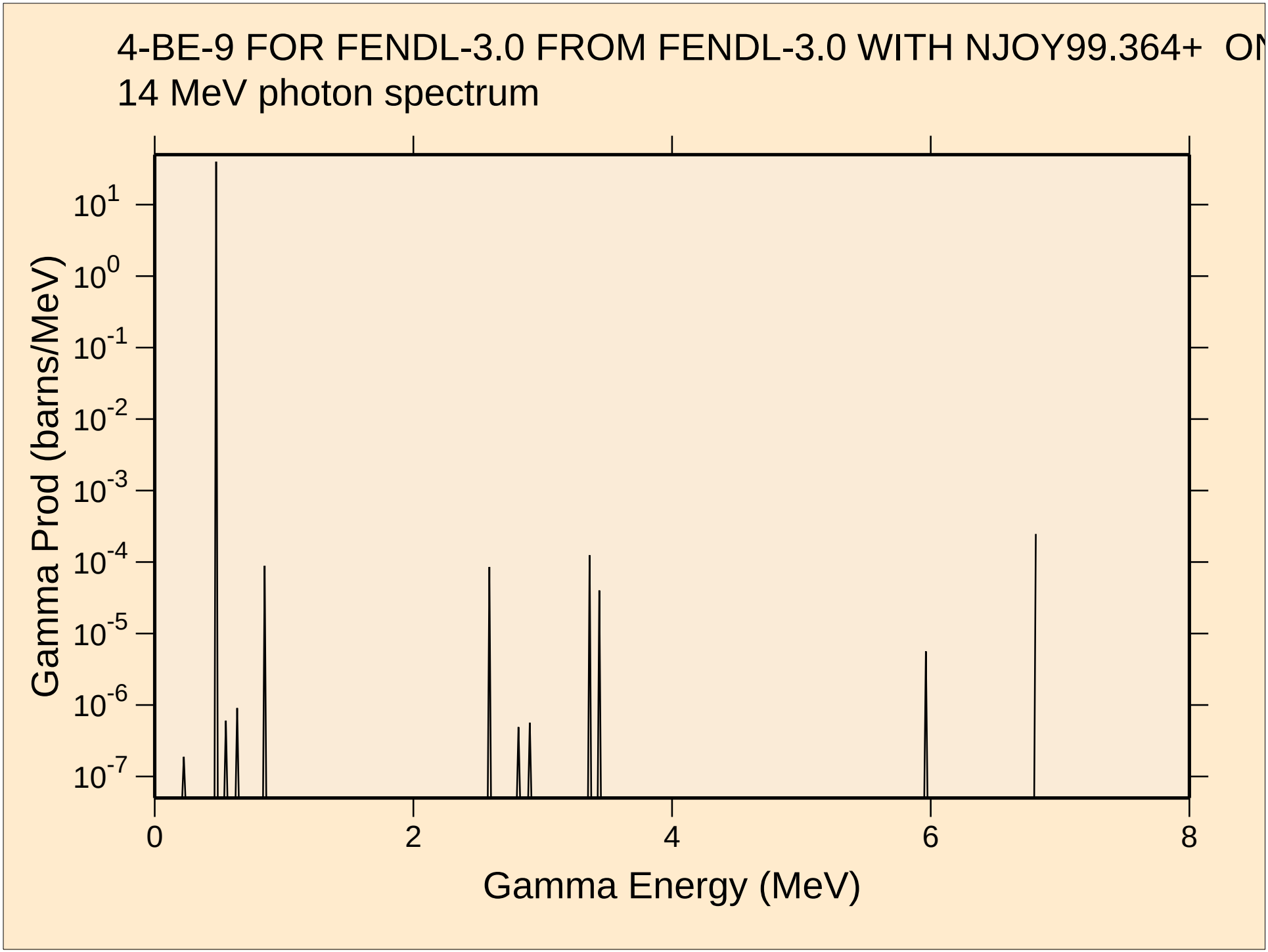

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Neutron emission for (n,x)
Prob/MeV
10-1
10-3
0
50
100
150
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

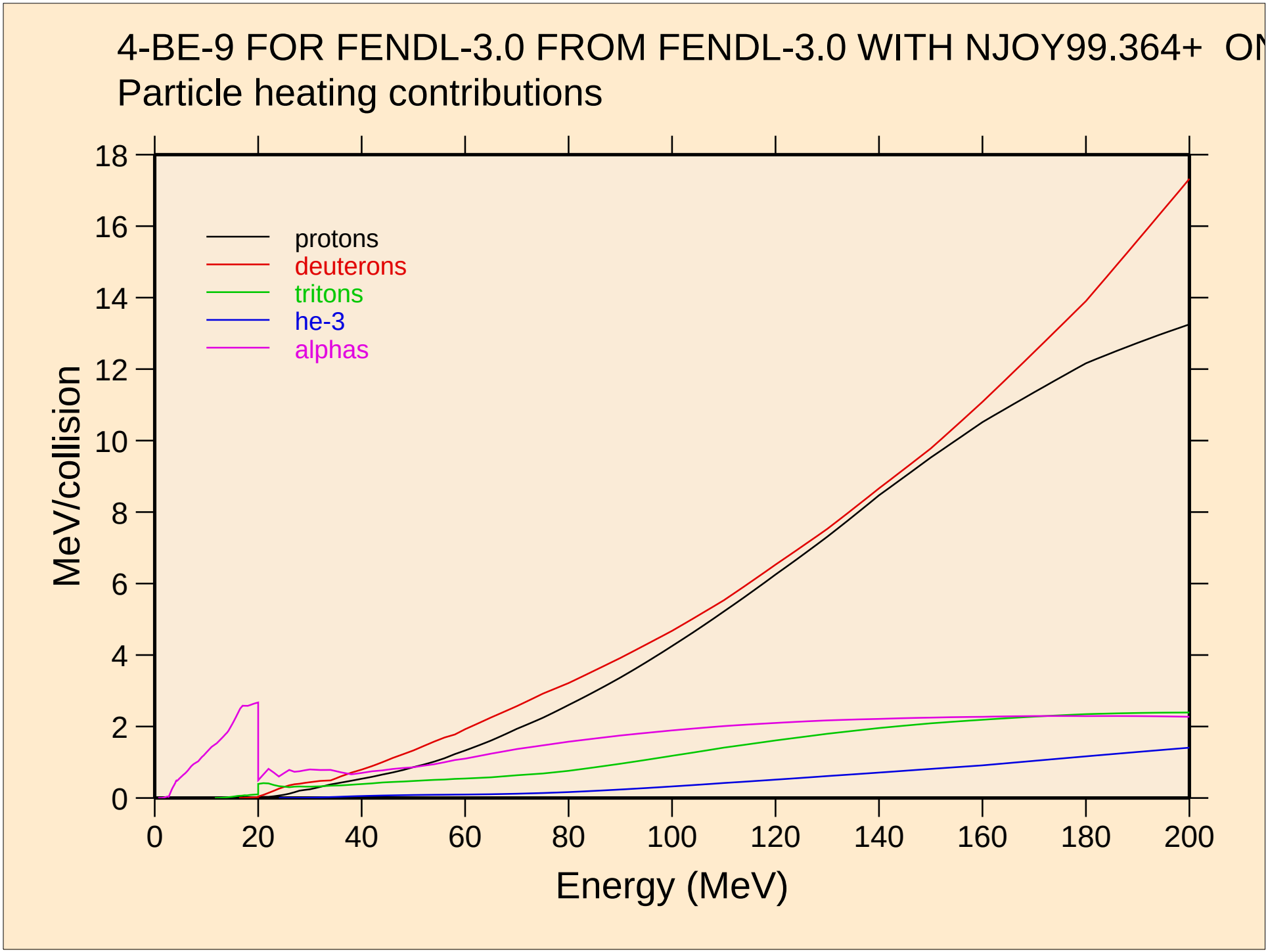

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Neutron emission for (n,2n)
Prob/MeV
10^1
10^-1
0
5
10
15
20
Sec. Energy
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

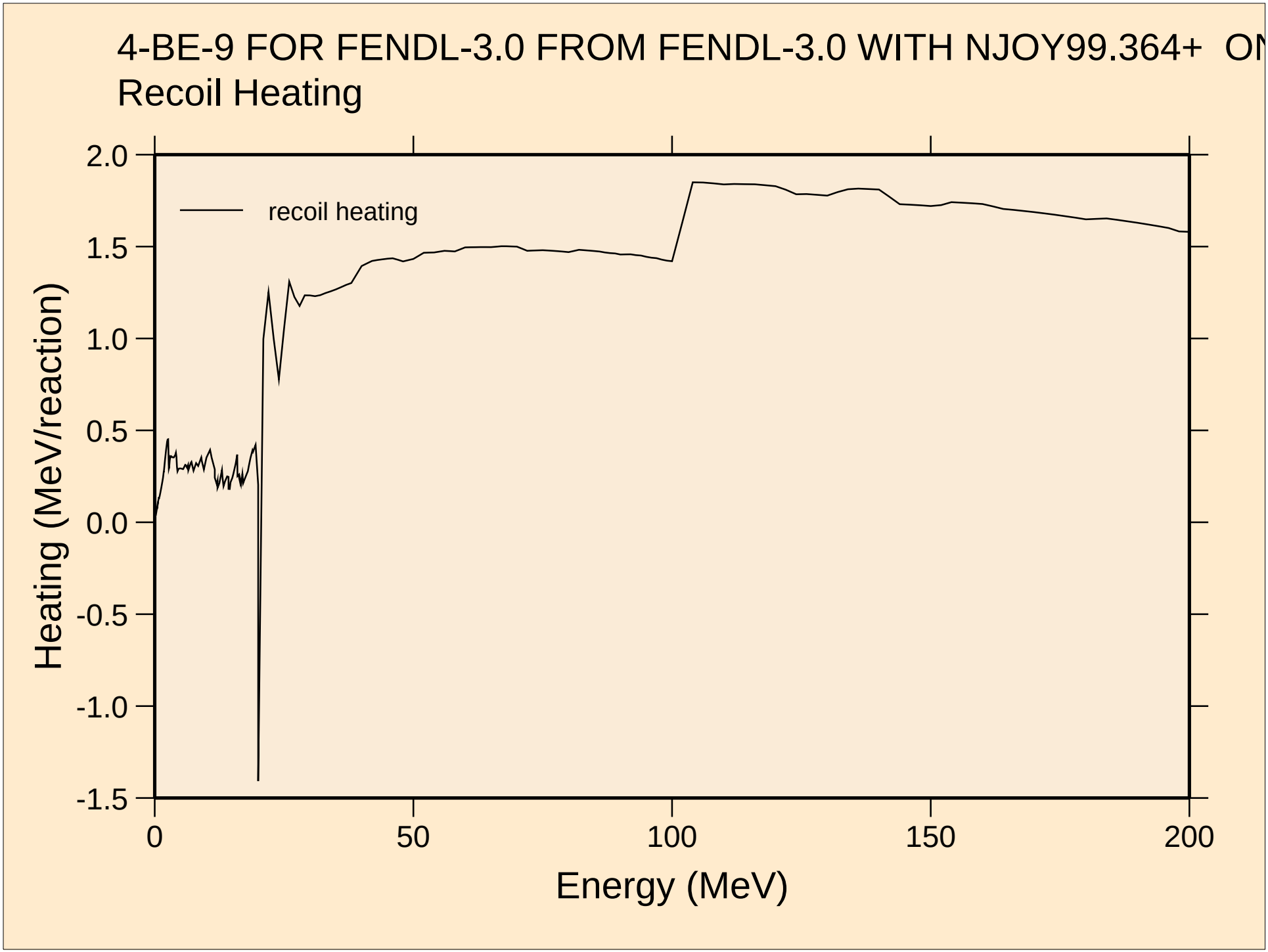

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Photon emission for (n,x)
Prob/MeV
10-2
10-4
0
100
200
Eγ (MeV)
0
50
100
150
200
En (MeV)

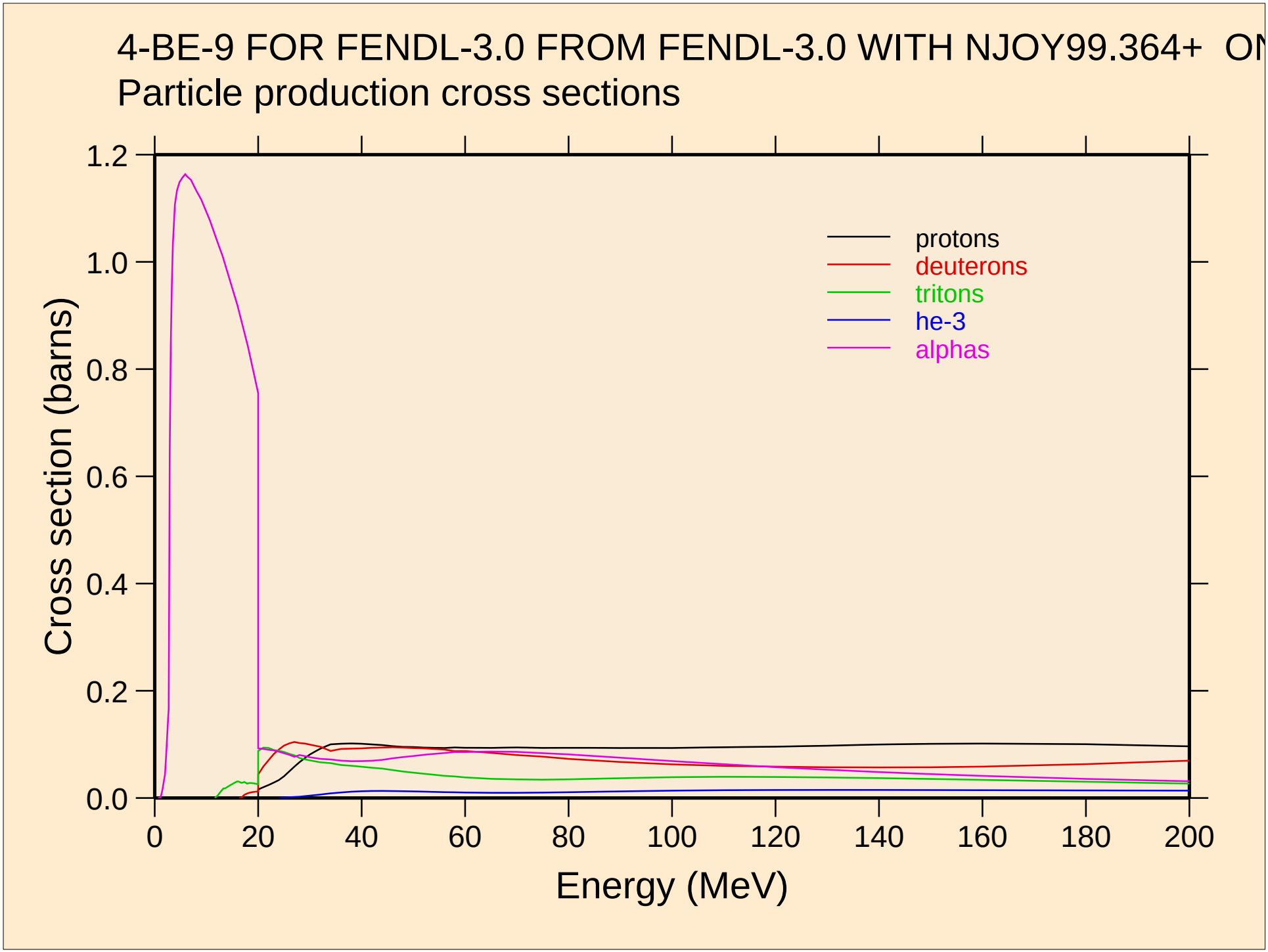

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Photon emission for (n,t*1)
Prob/MeV
10^{0}
10^{-2}
400
500
600
E_γ (MeV)
*10 -3
0
20
40
60
80
100
120
140
160
180
200
E_n (MeV)

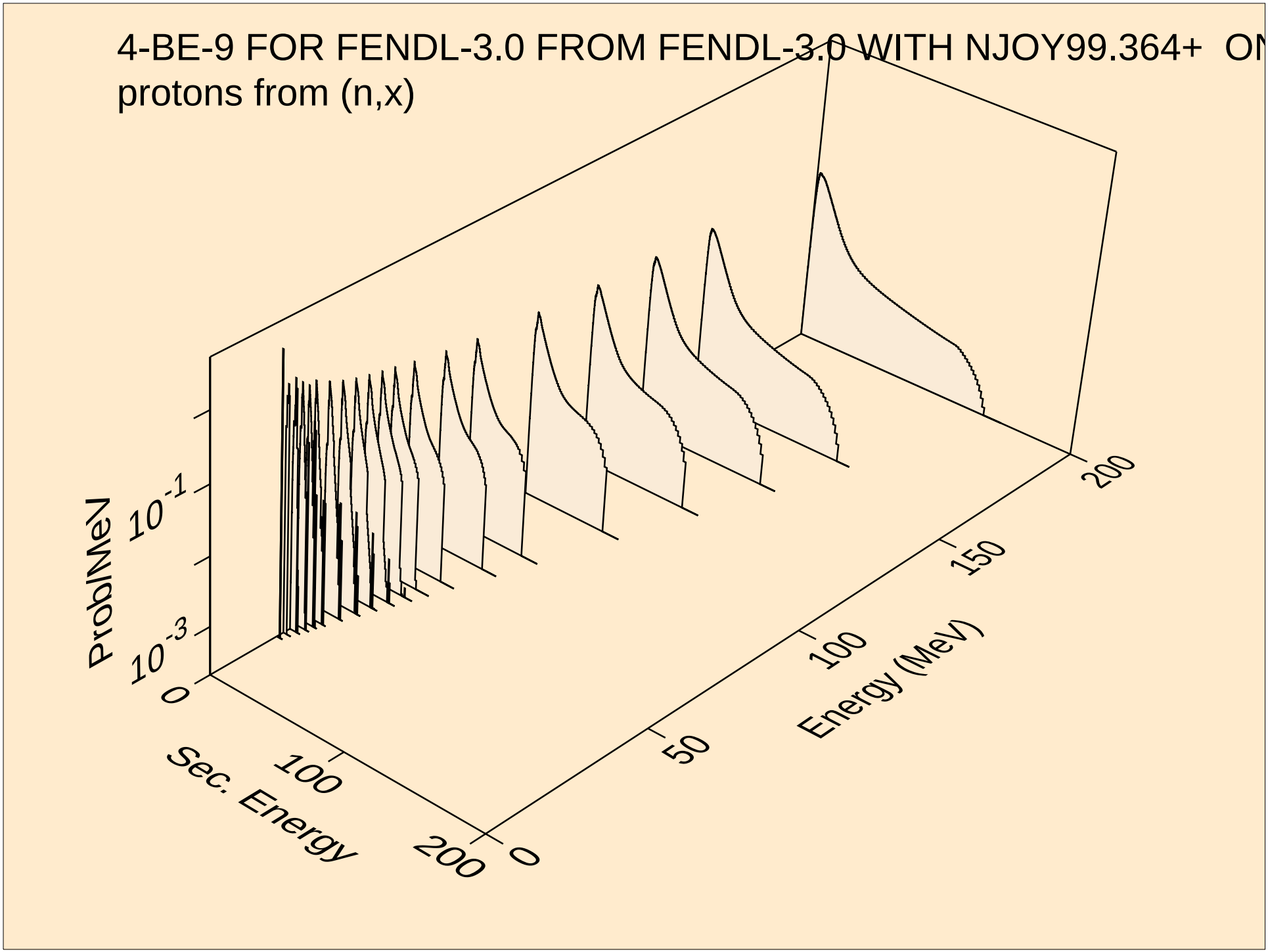

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^0
10^-1
10^-2
10^-3
0
2
4
6
8
Gamma Energy (MeV)

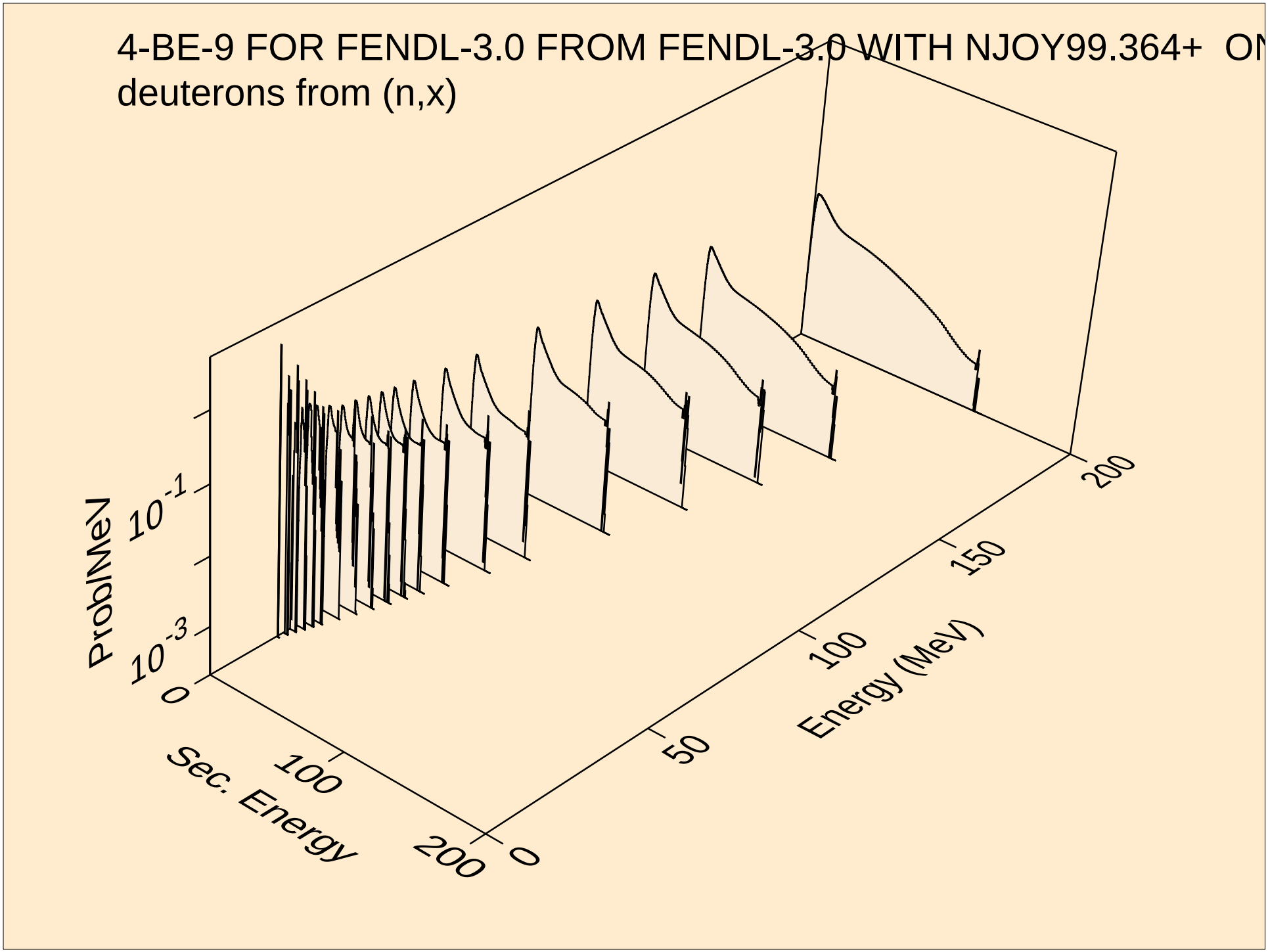

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-7
0
2
4
6
8
Gamma Energy (MeV)

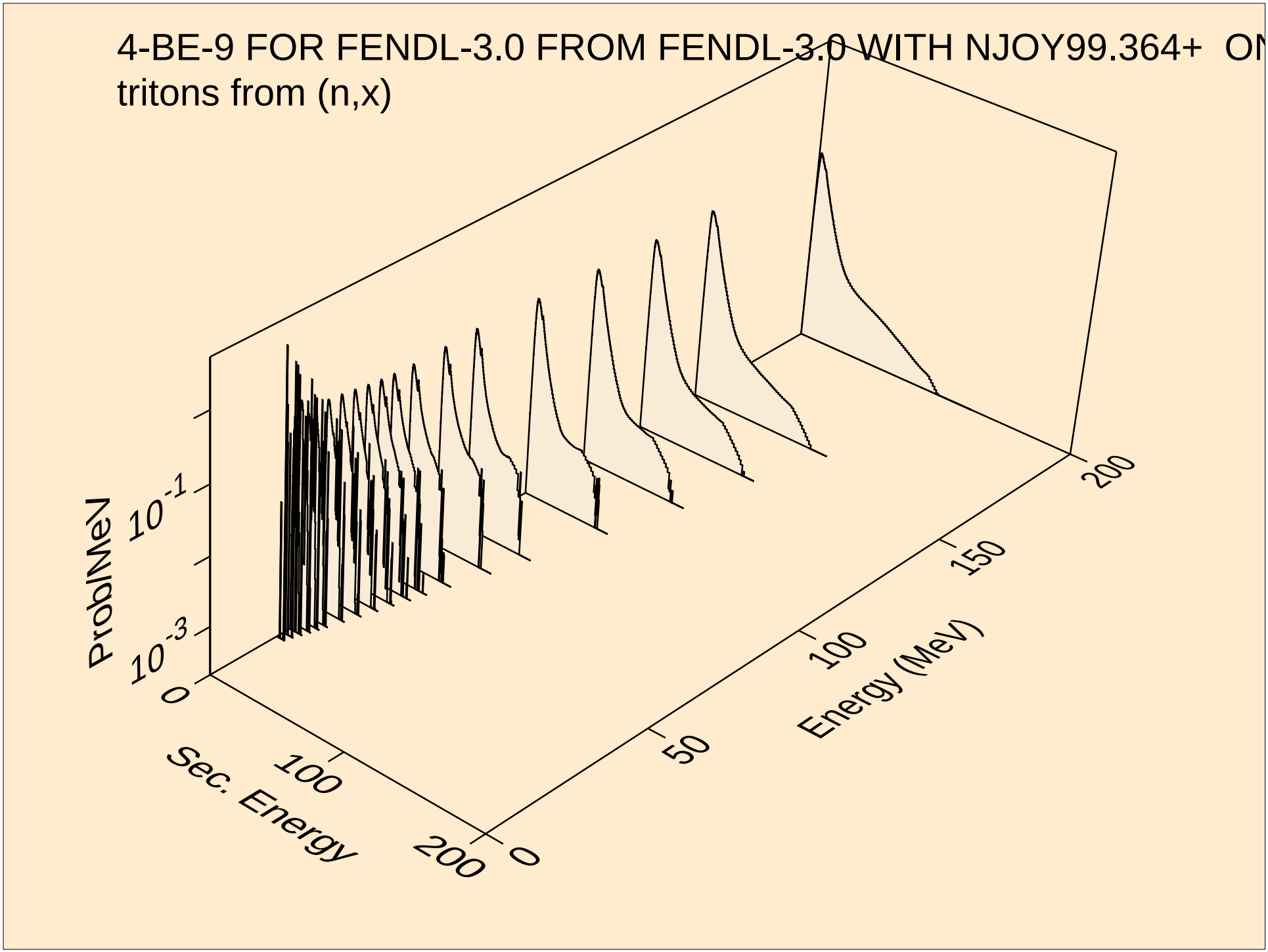

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Particle heating contributions
protons
deuterons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
0
20
40
60
80
100
120
140
160
180
200

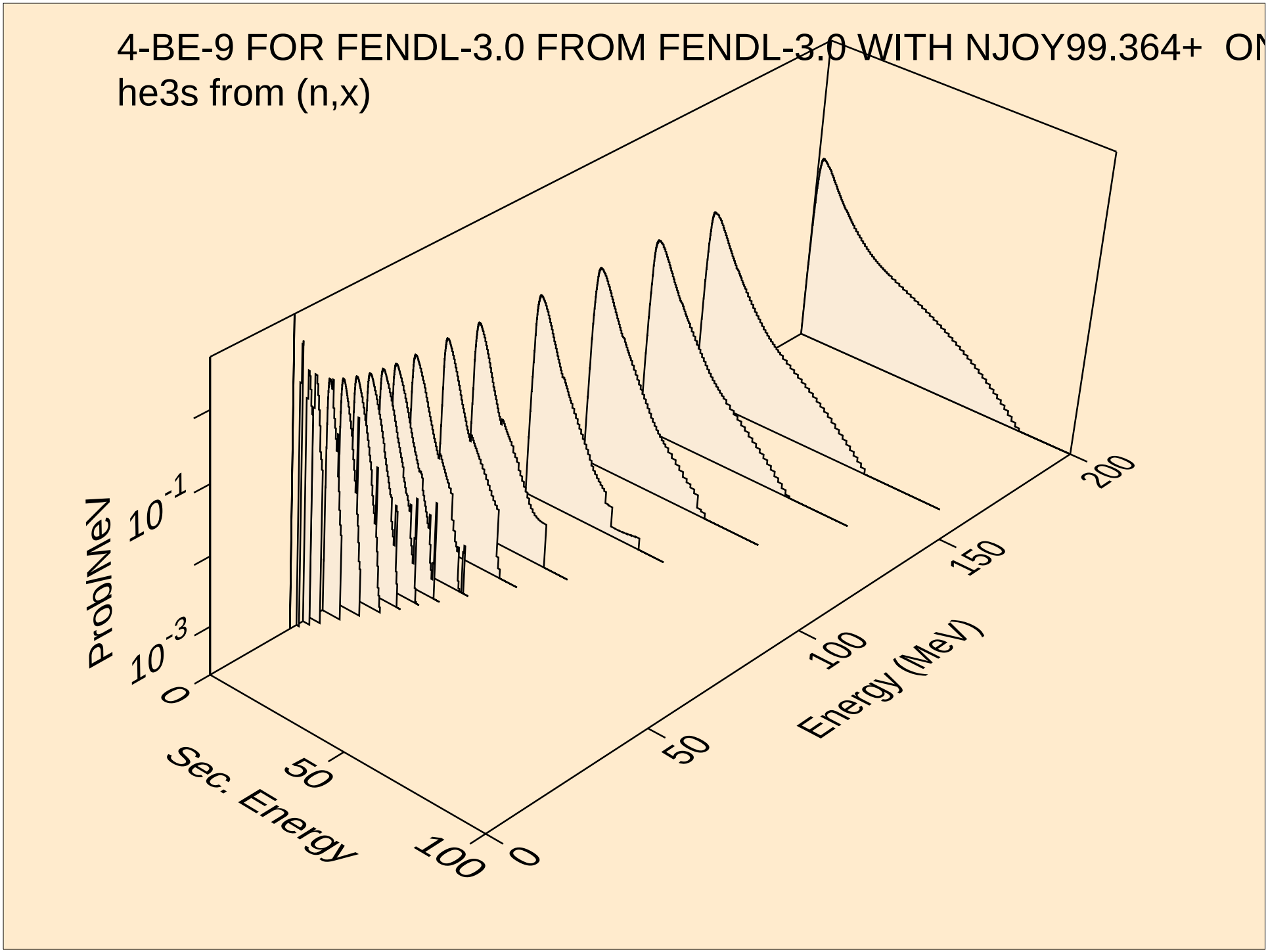

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
0
50
100
150
200

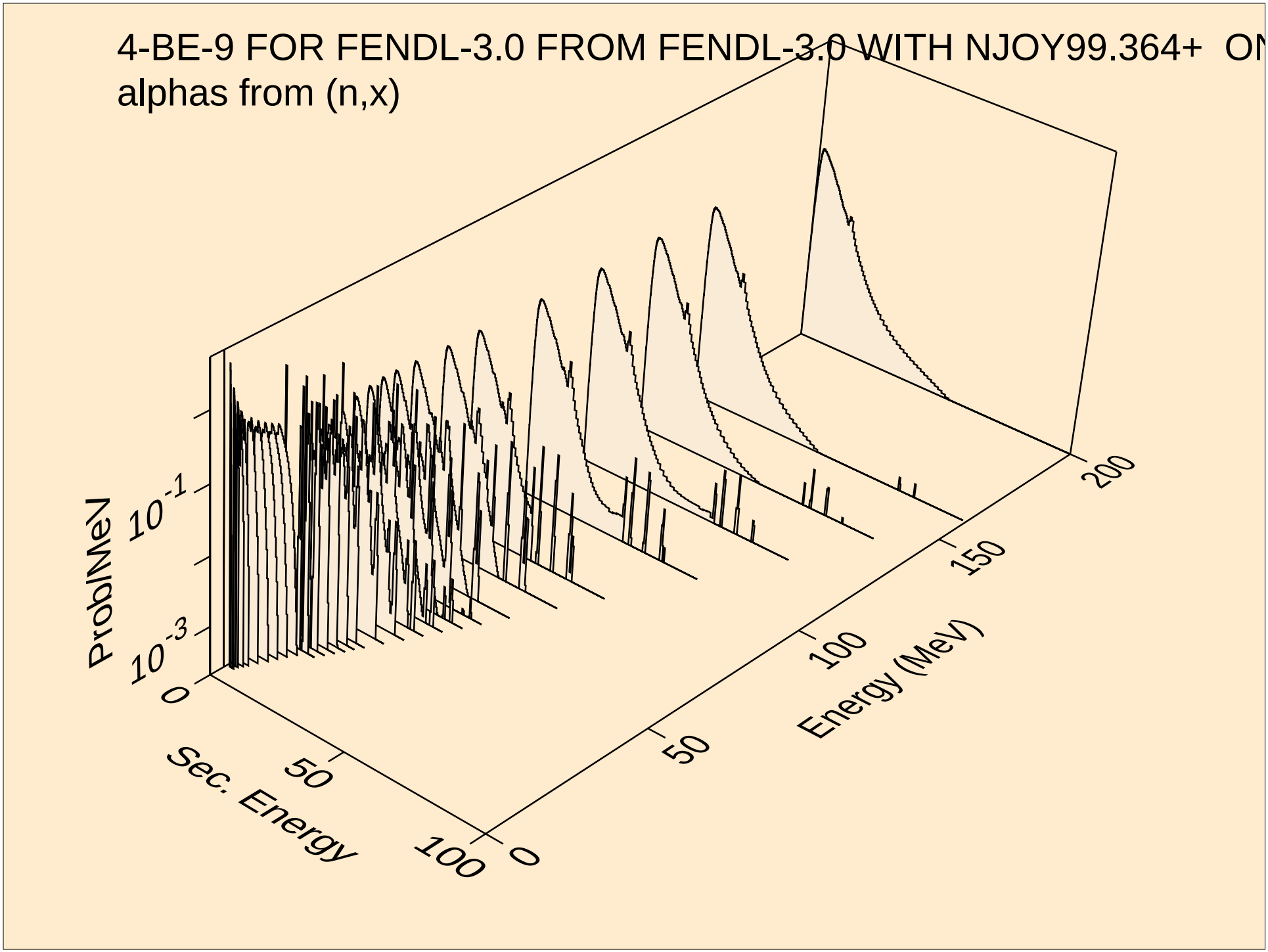

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
Particle production cross sections
Cross section (barns)
Energy (MeV)
protons
deuterons
tritons
he-3
alphas
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
20
40
60
80
100
120
140
160
180
200

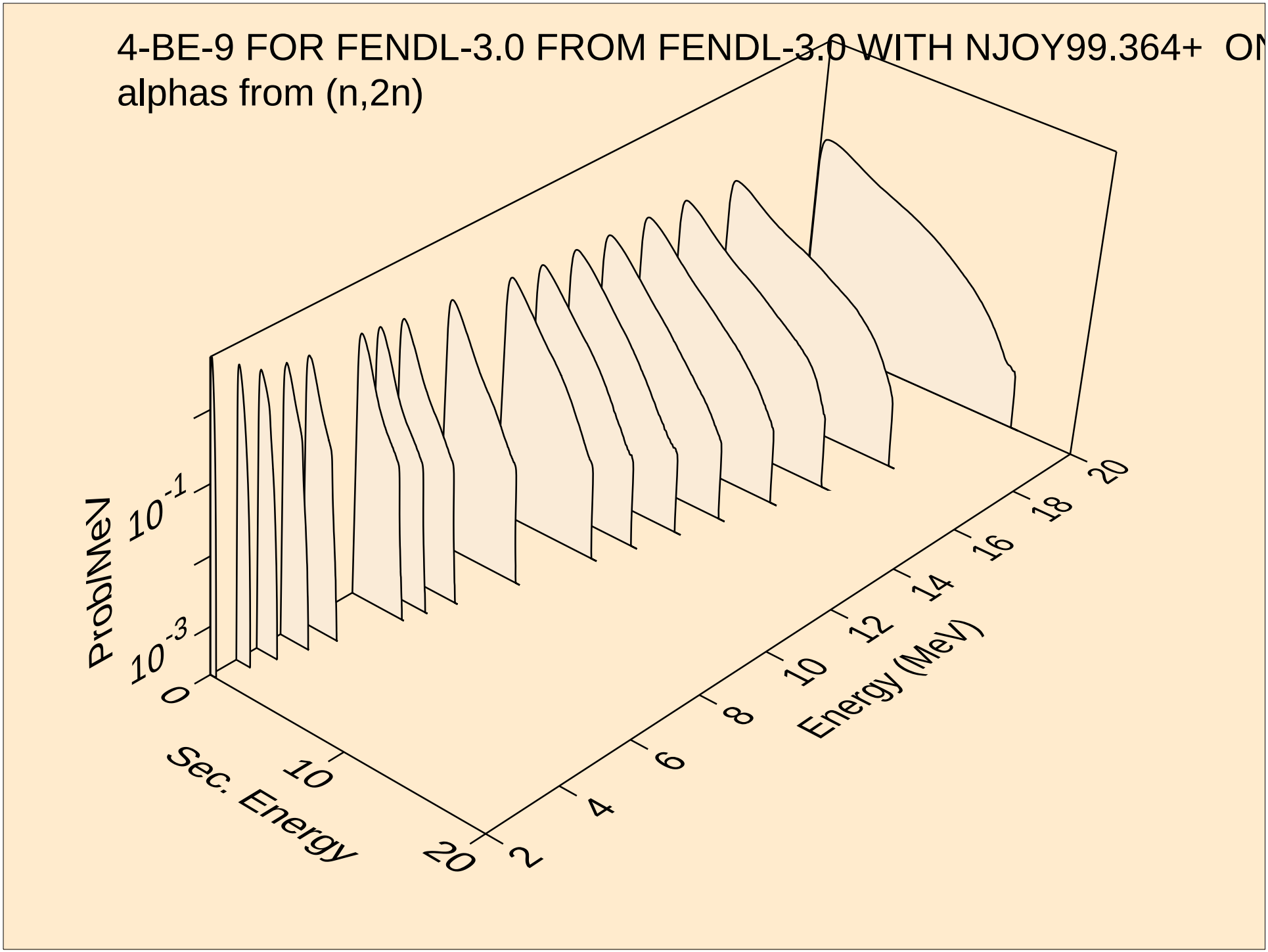

4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
protons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)


4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
deuterons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)


4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
tritons from (n,x)
Prob/MeV
10-1
10-3
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)


4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
he3s from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
50
100
0
50
100
150
200
Energy (MeV)


4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
alphas from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
50
100
0
50
100
150
200
Energy (MeV)


4-BE-9 FOR FENDL-3.0 FROM FENDL-3.0 WITH NJOY99.364+ ON
alphas from (n,2n)
Prob/MeV
10^-1
10^-3
0
Sec. Energy
10
20
2
4
6
8
10
12
14
16
18
20
Energy (MeV)