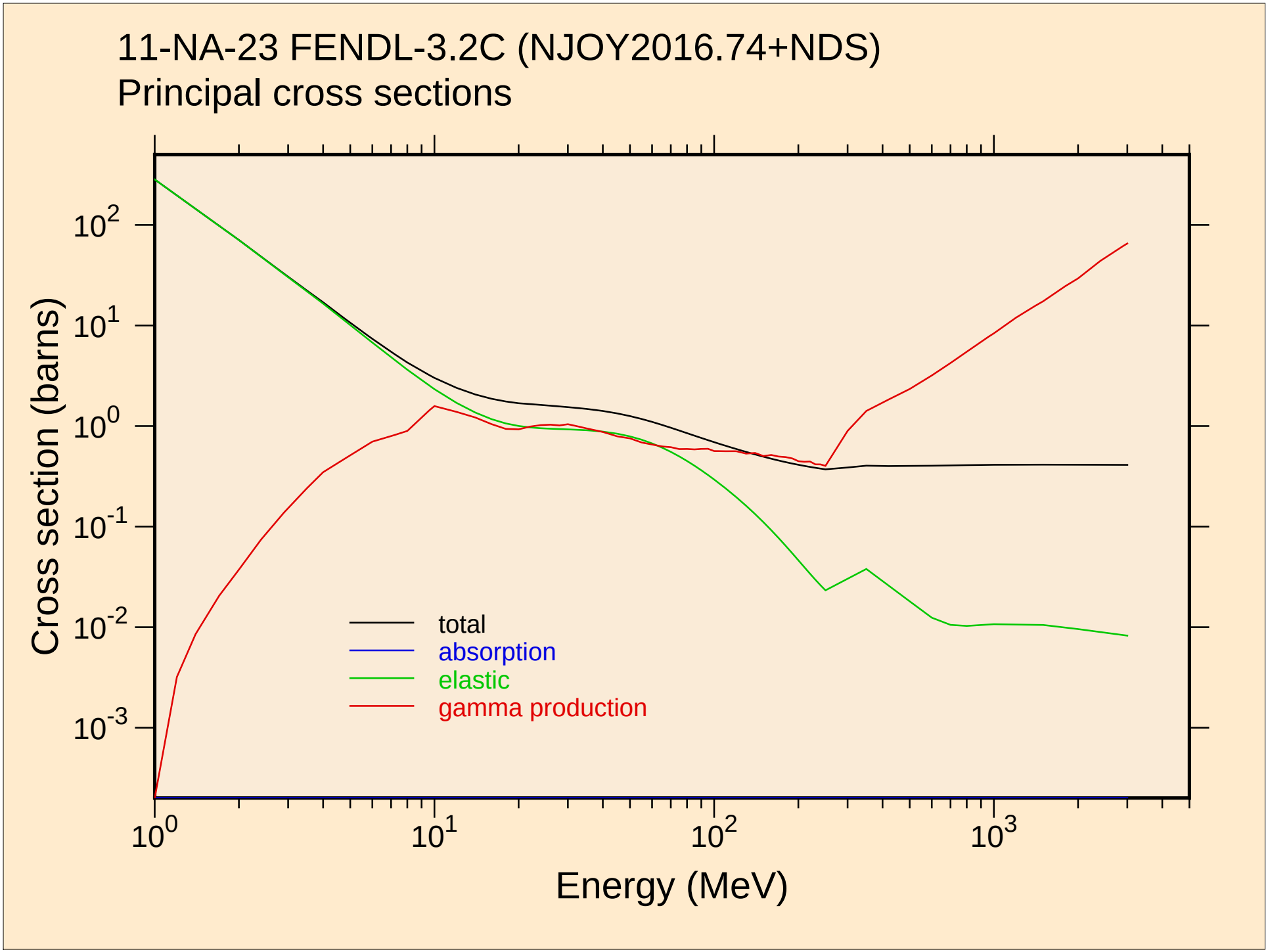
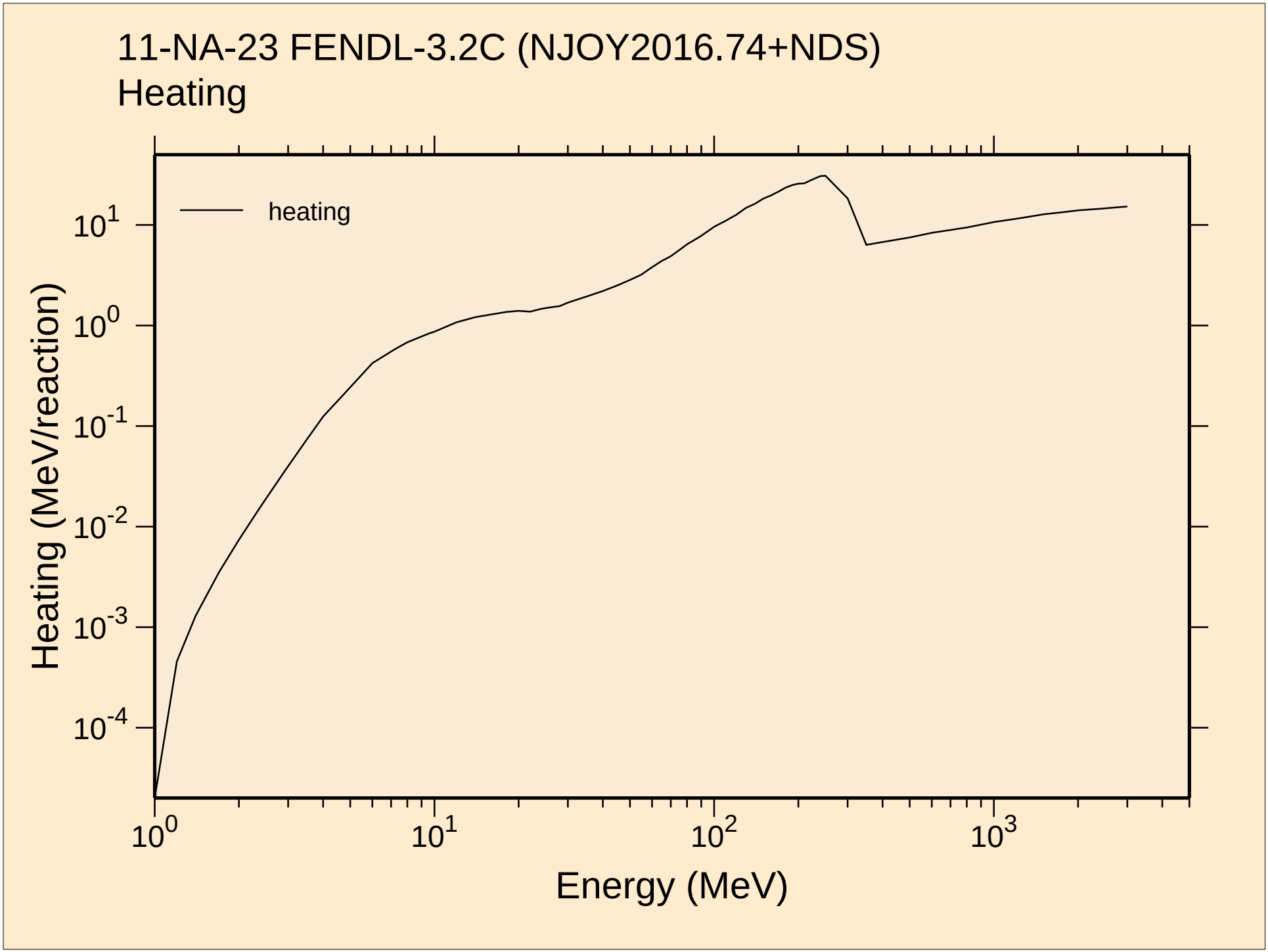
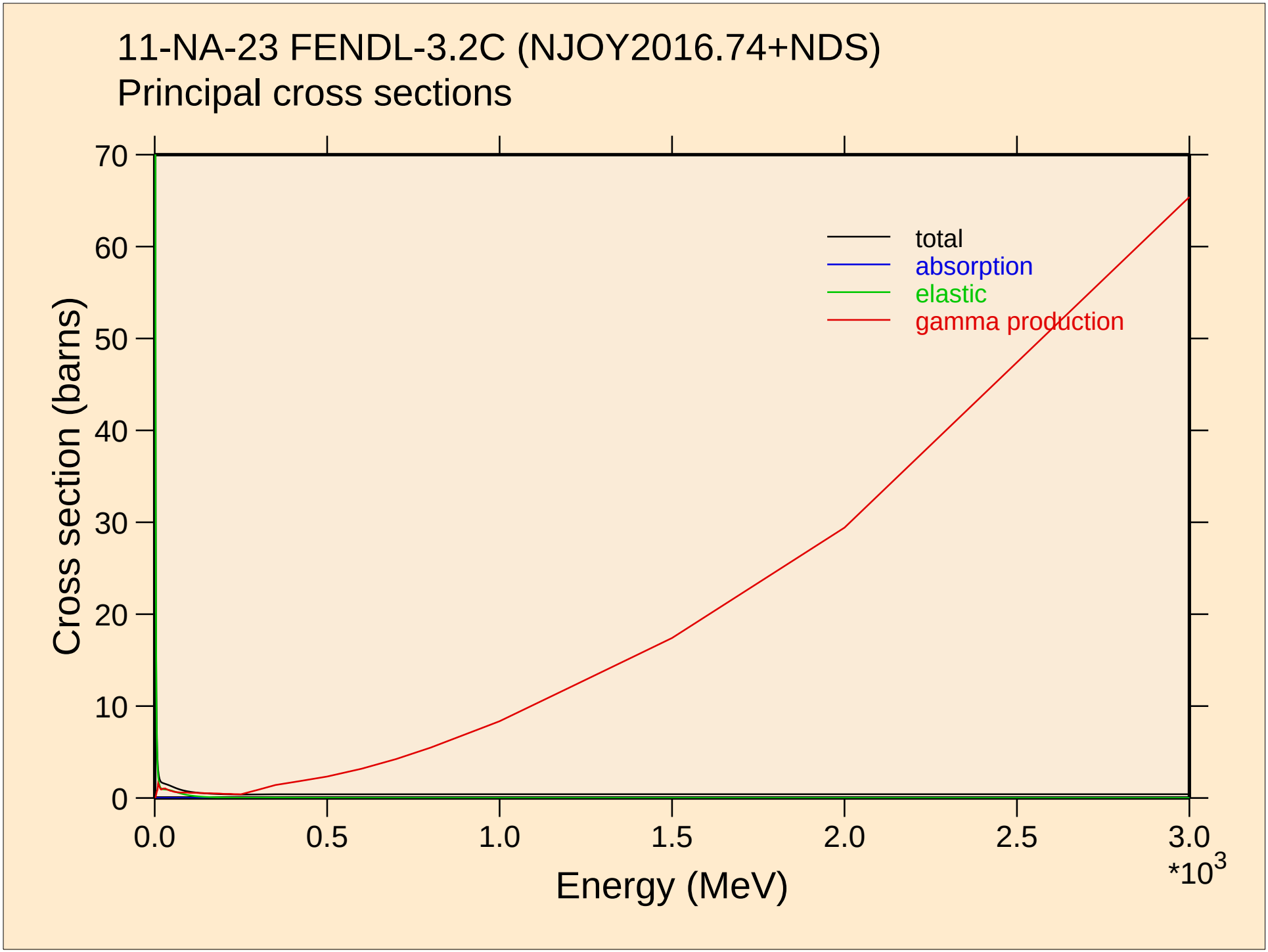
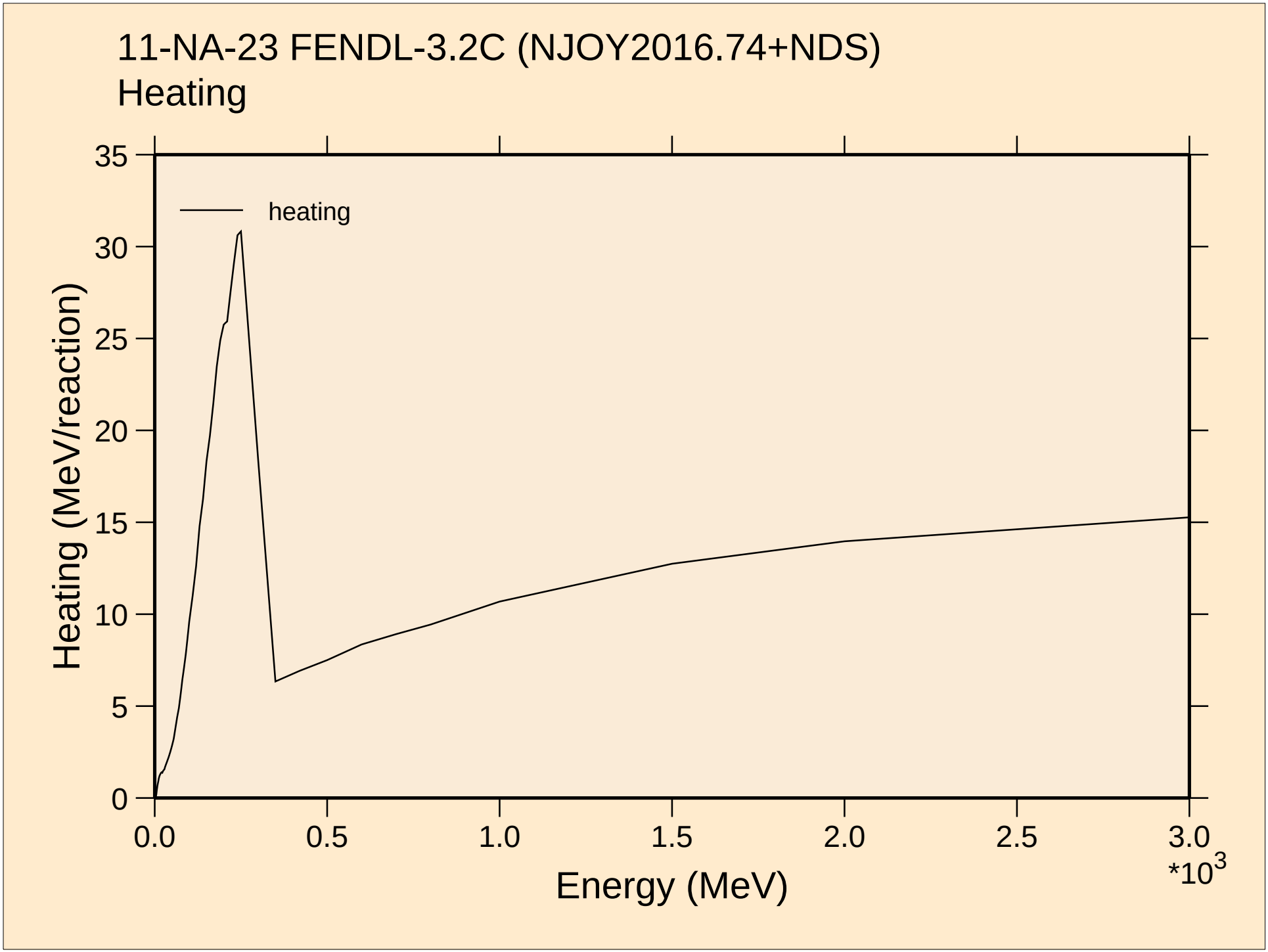
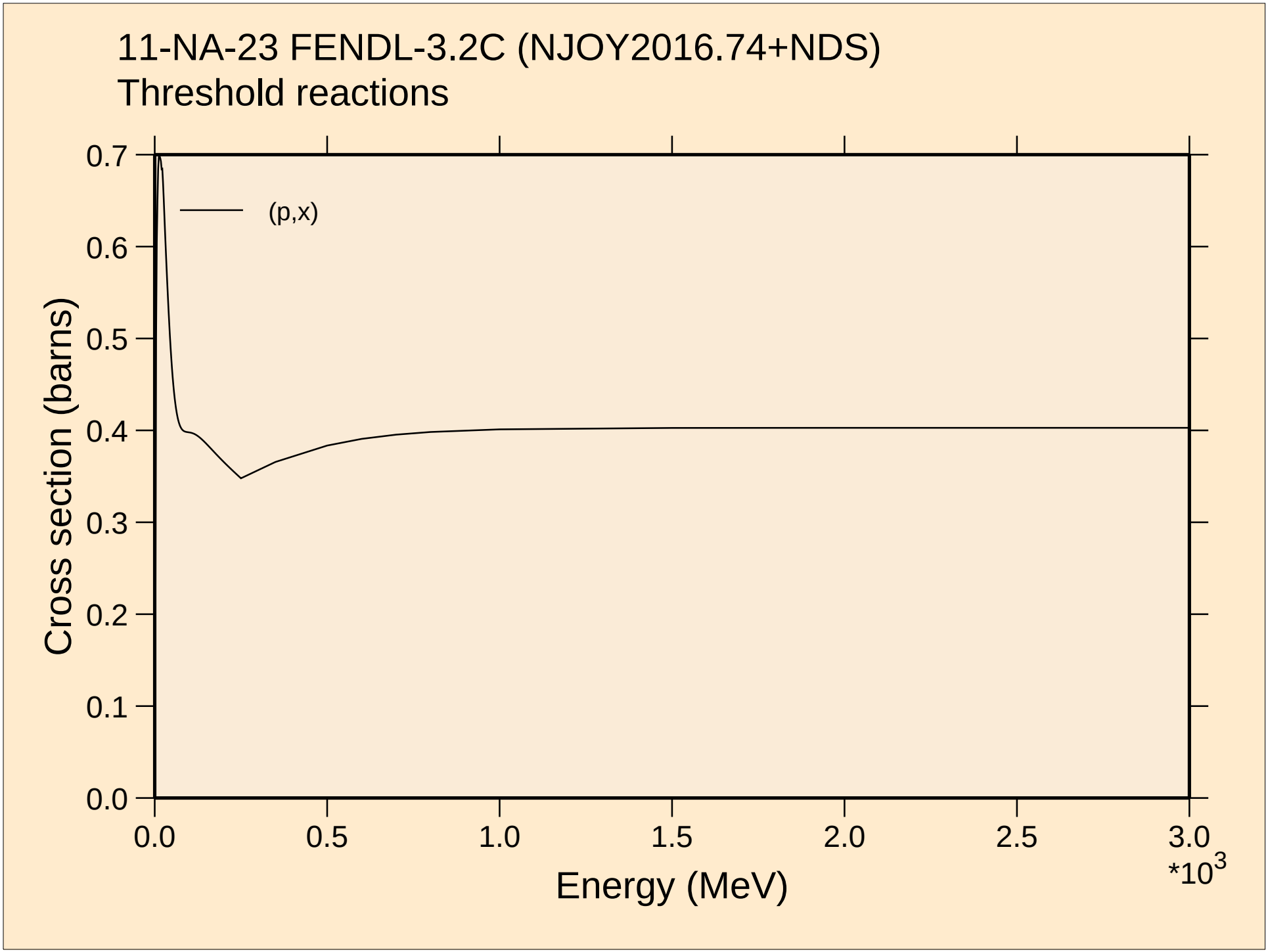
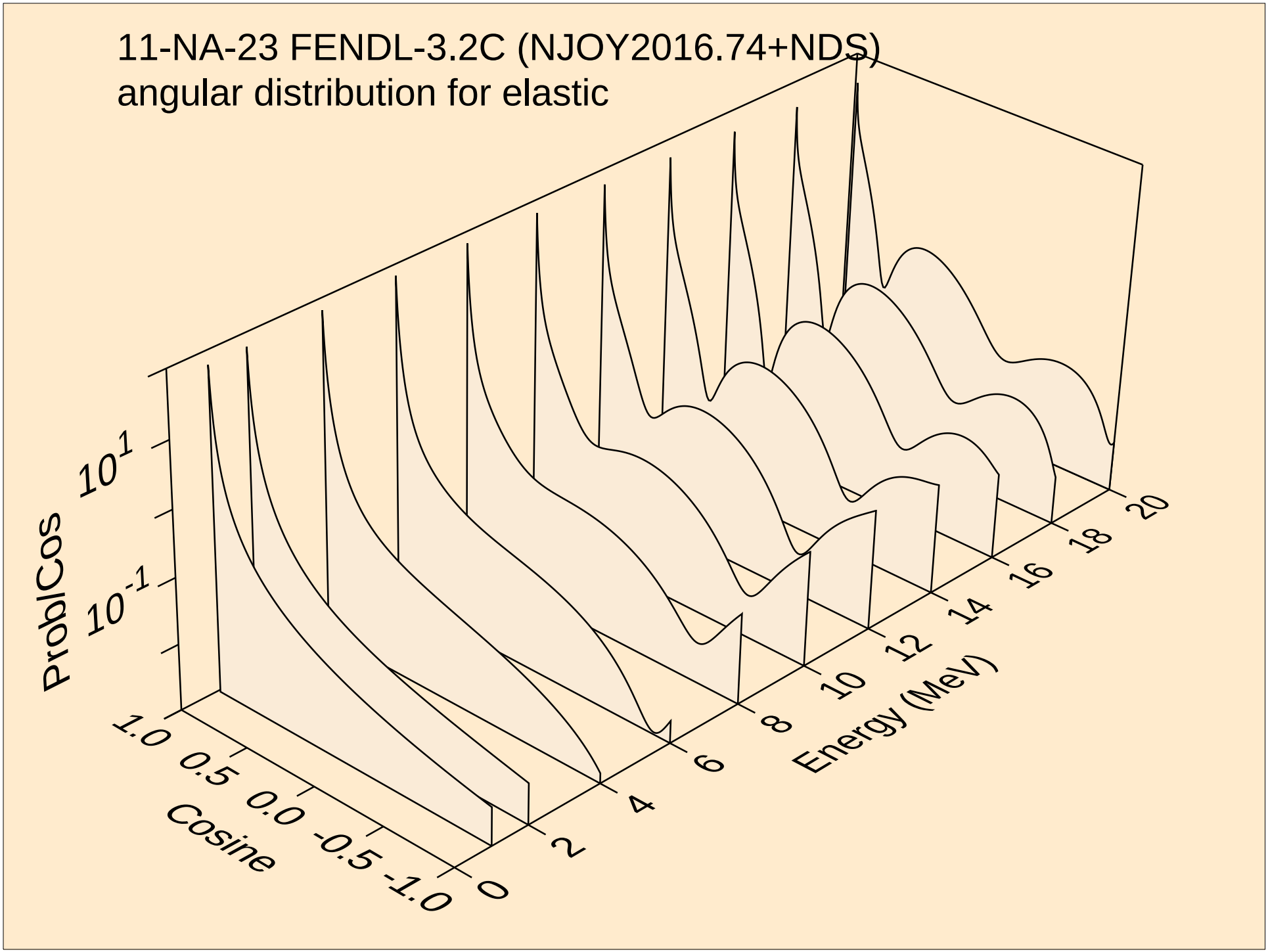

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Principal cross sections
Cross section (barns)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
total
absorption
elastic
gamma production
10^{0}
10^{1}
10^{2}
10^{3}
Energy (MeV)

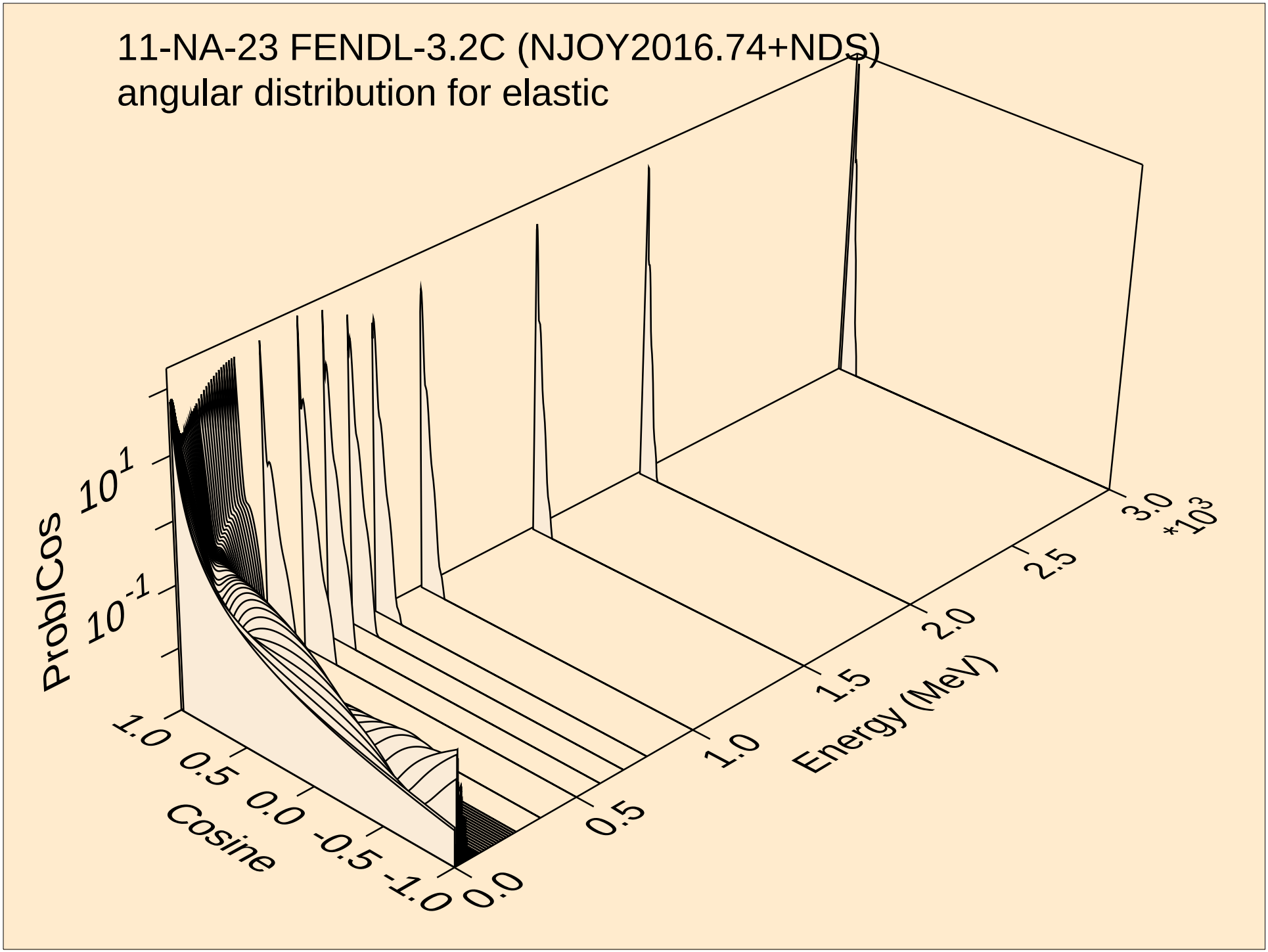

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^0
10^1
10^2
10^3

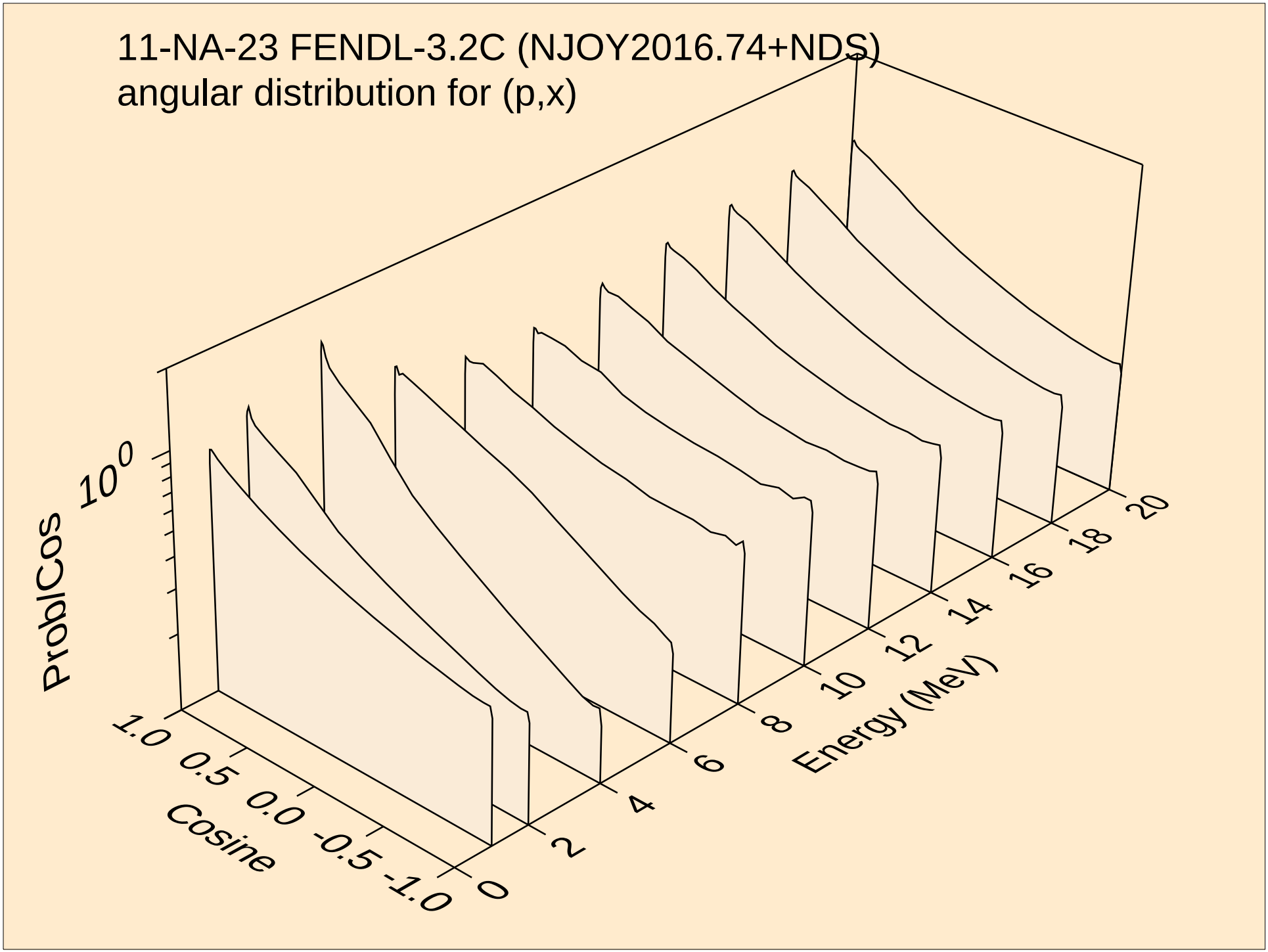

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Principal cross sections
Cross section (barns)
Energy (MeV)
*10^3
total
absorption
elastic
gamma production
0
10
20
30
40
50
60
70
0.0
0.5
1.0
1.5
2.0
2.5
3.0

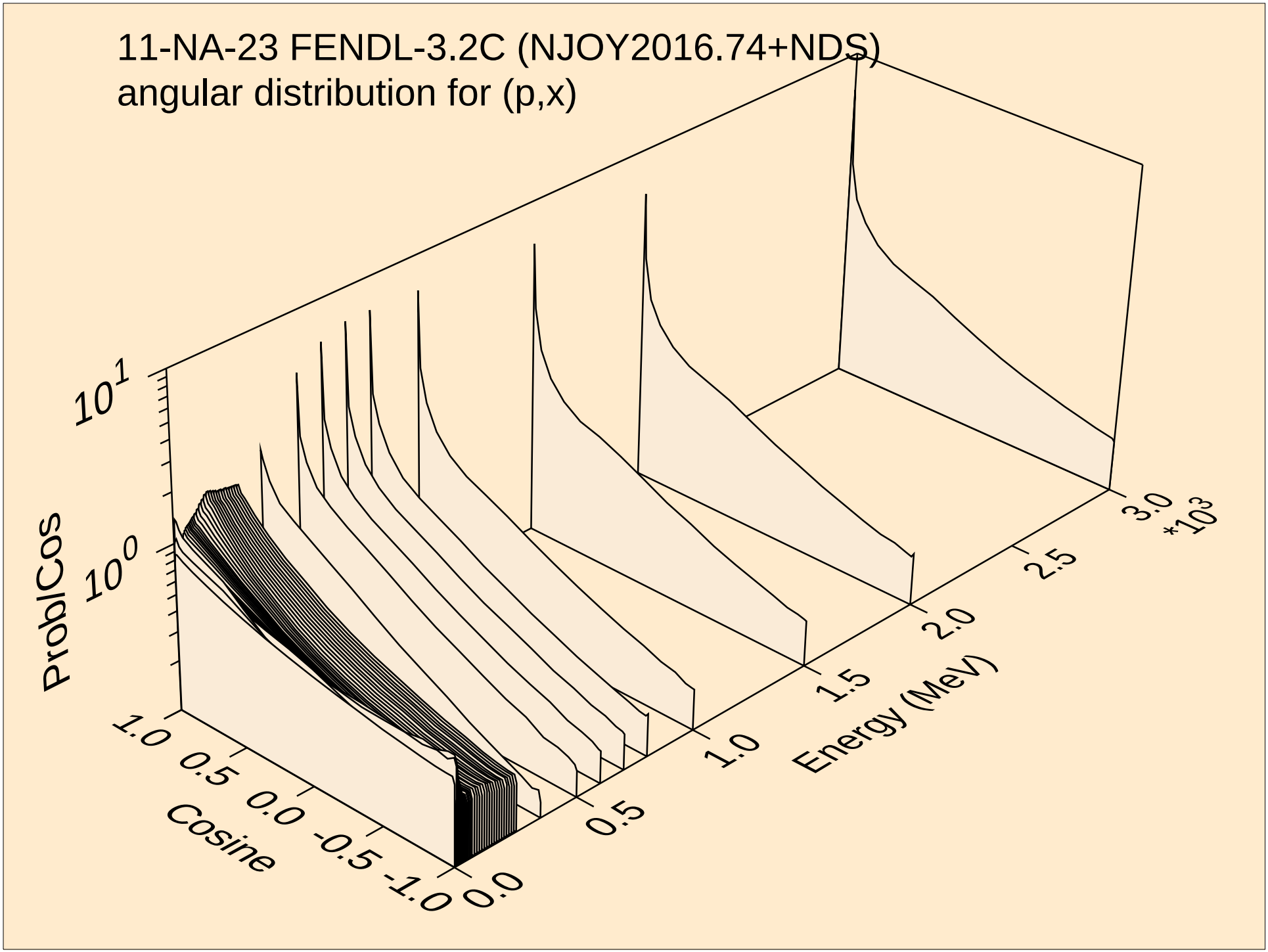

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
*10^3
0
5
10
15
20
25
30
35
0.0
0.5
1.0
1.5
2.0
2.5
3.0

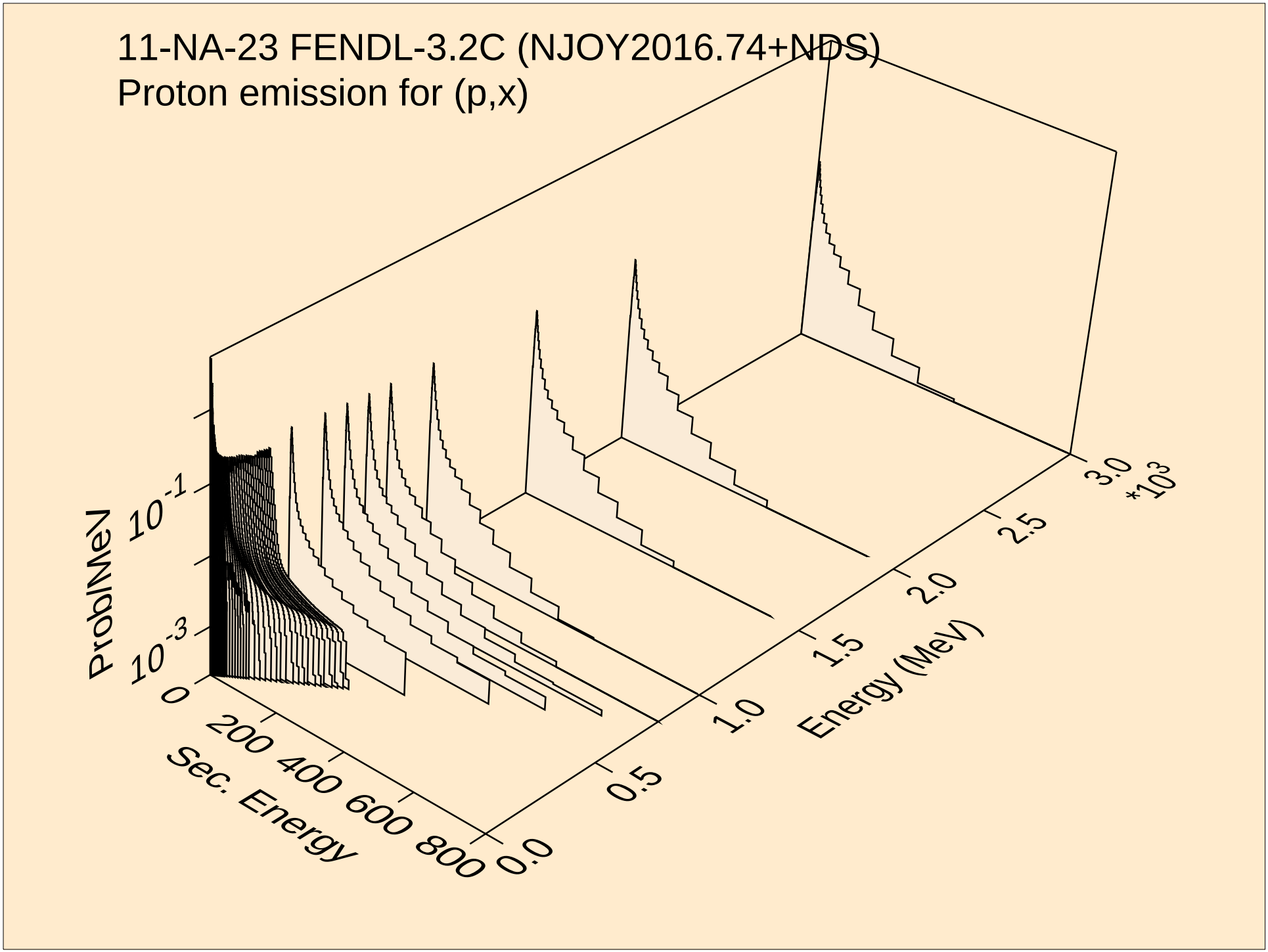

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Threshold reactions
(p,x)
Cross section (barns)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)

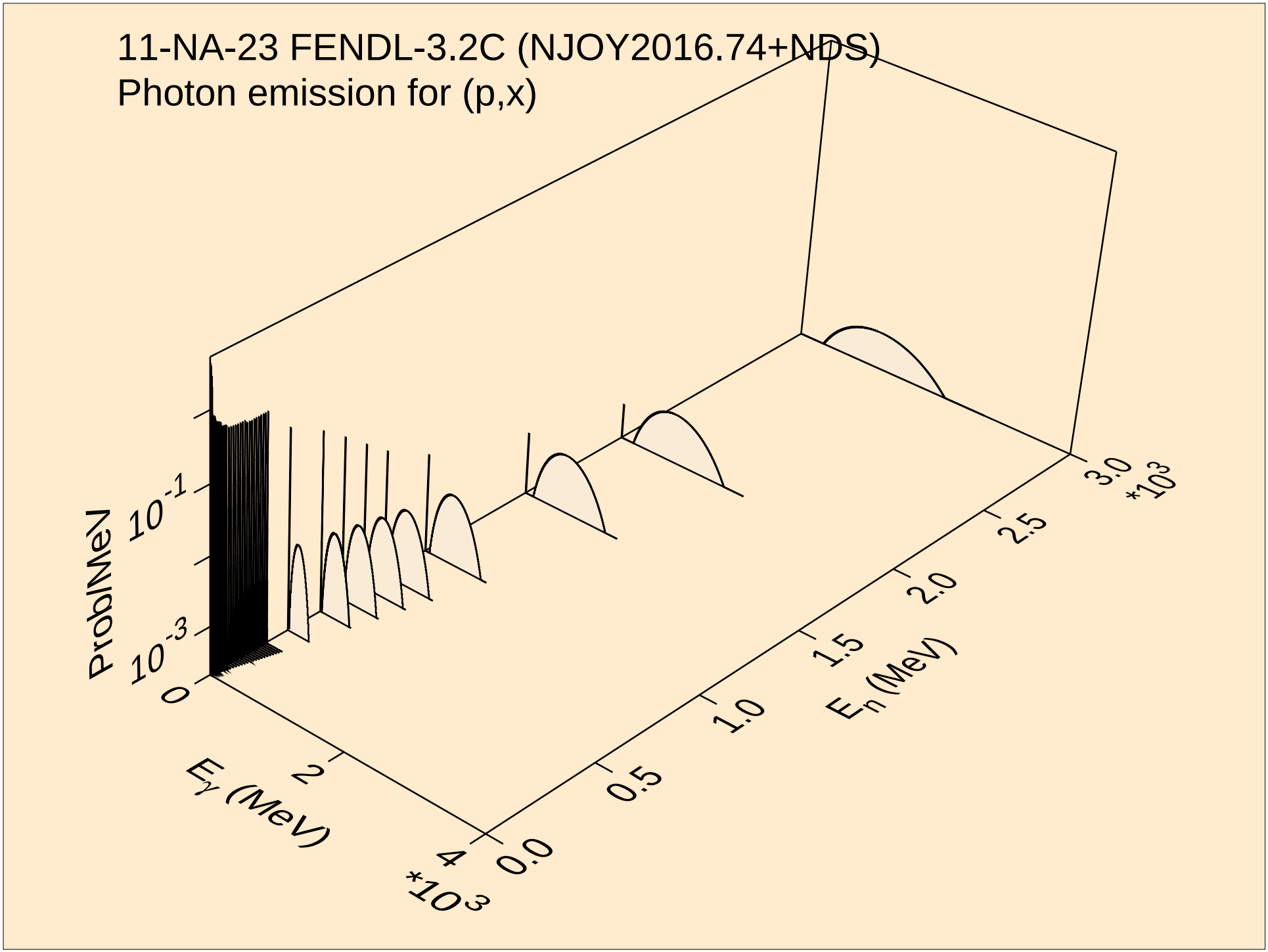

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for elastic
Prob\Cos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

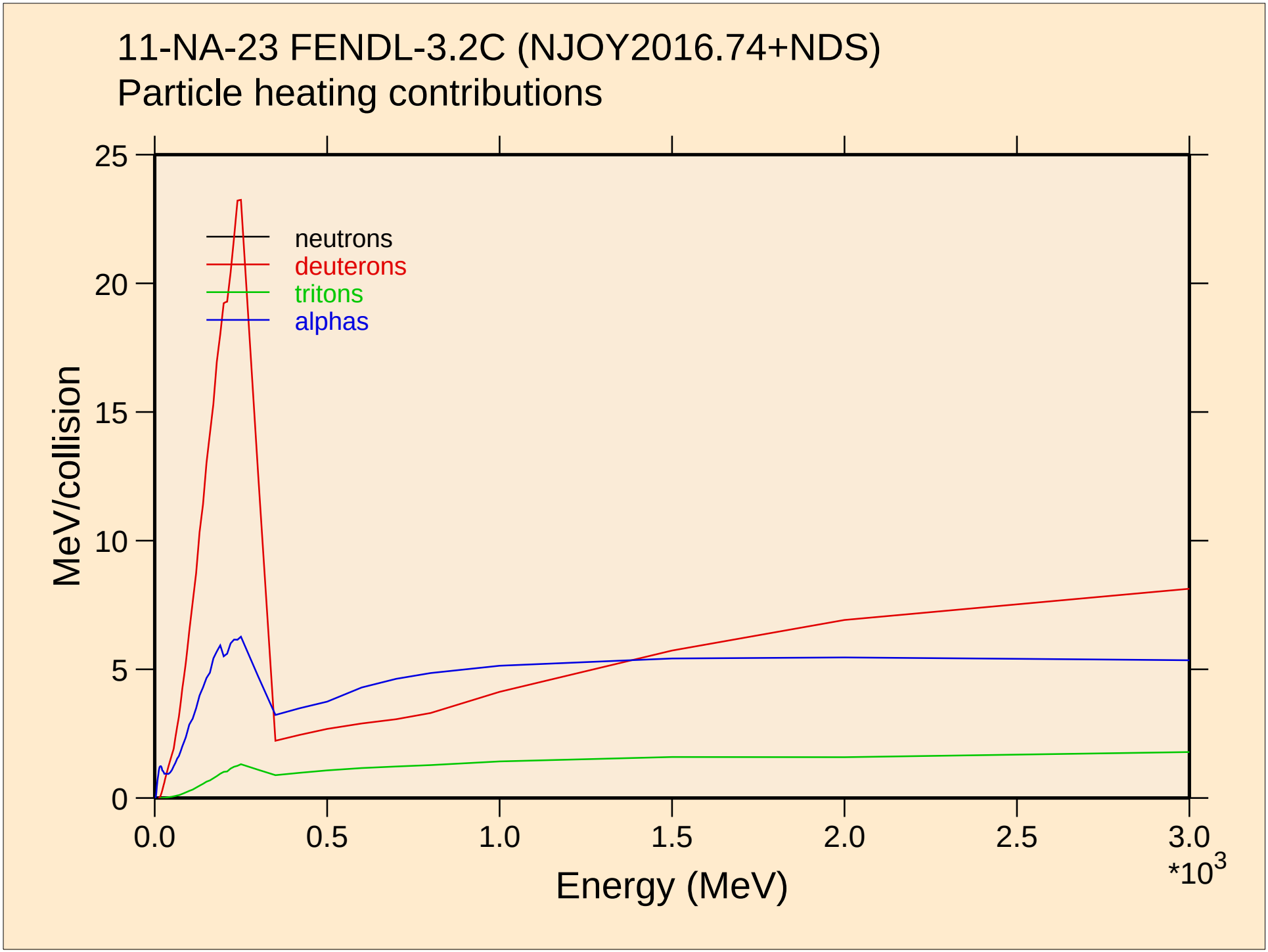

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for elastic
ProbICos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)

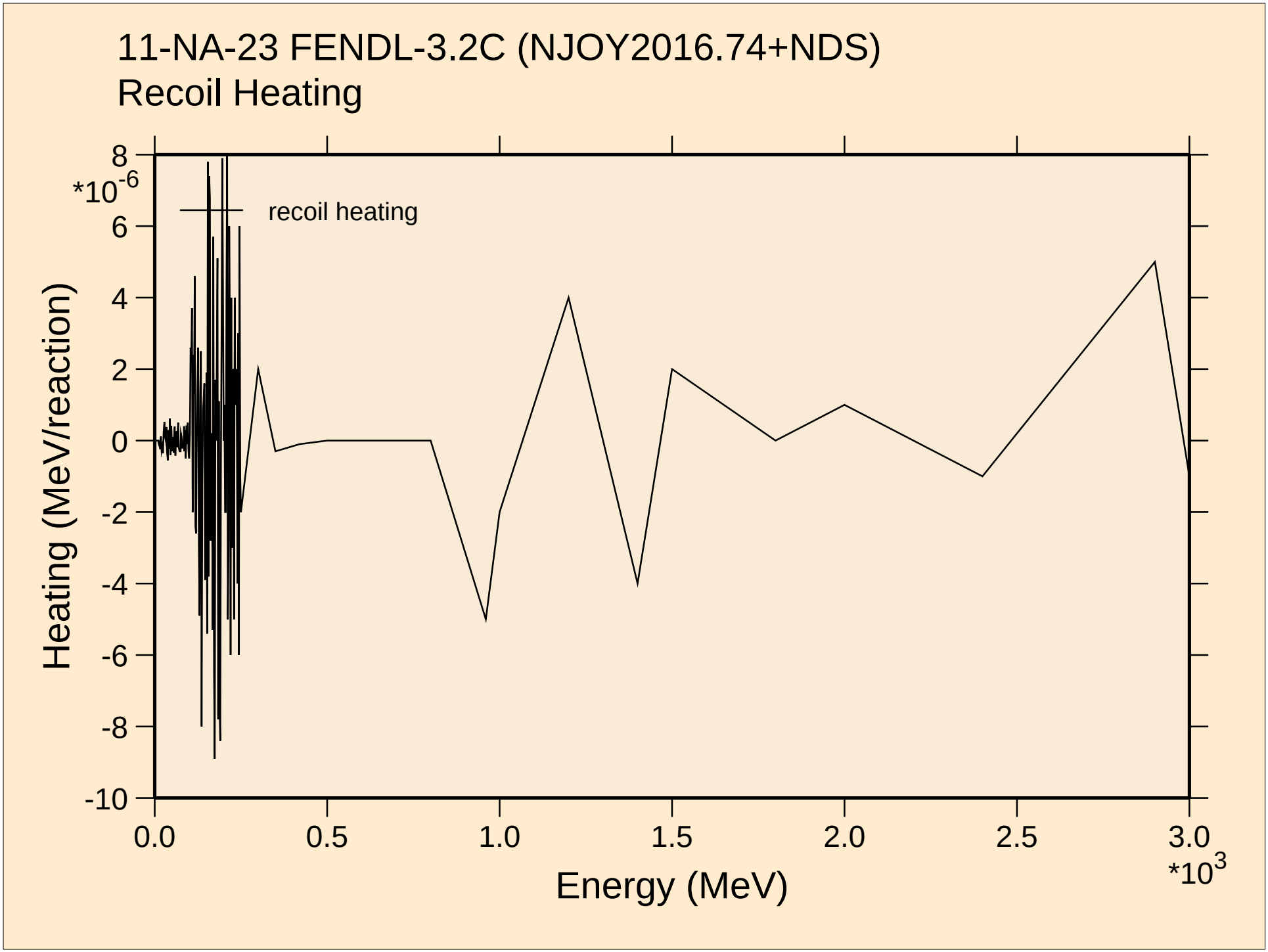

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

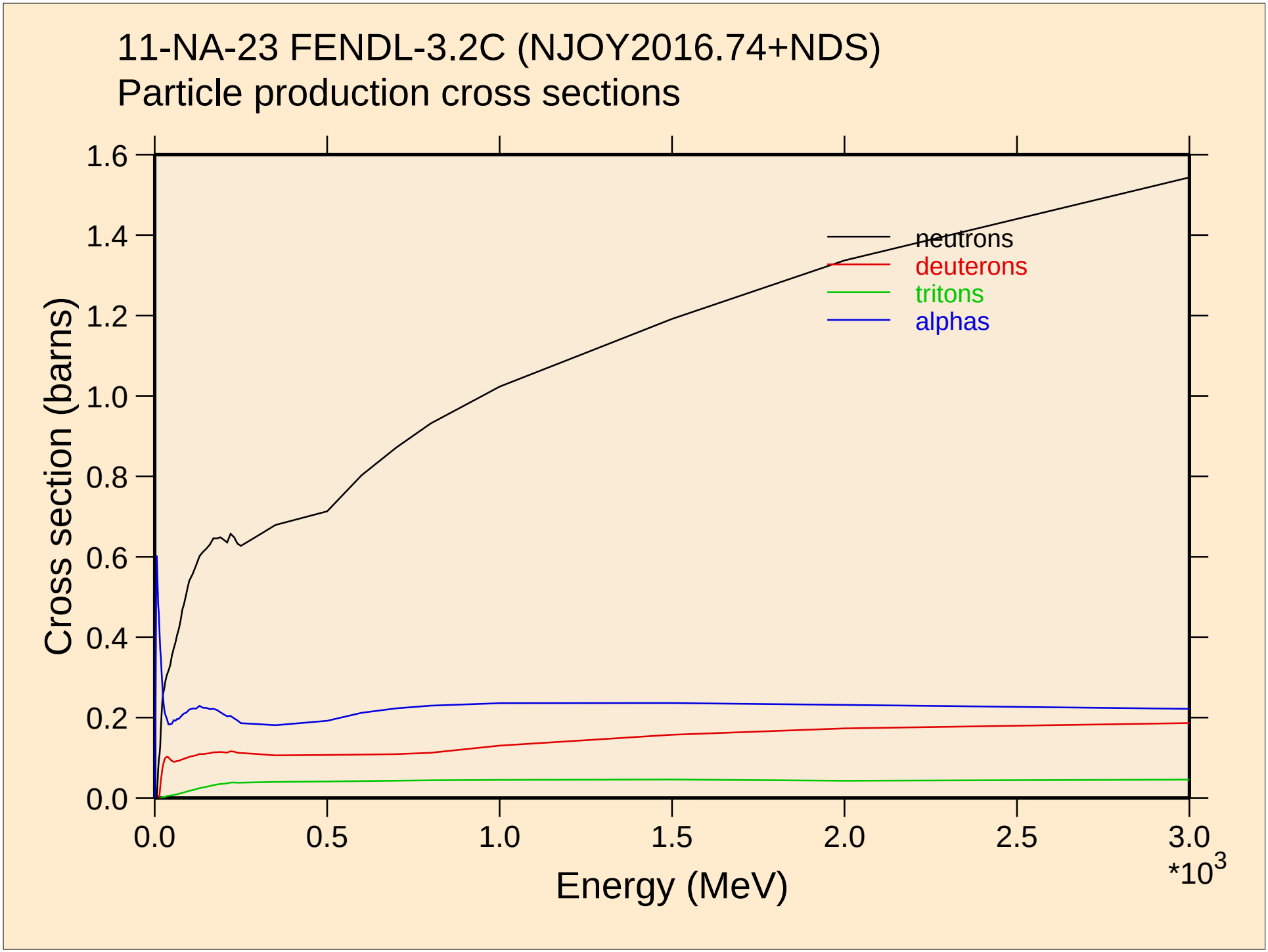

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x)
ProblCos
10^1
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)
*10³

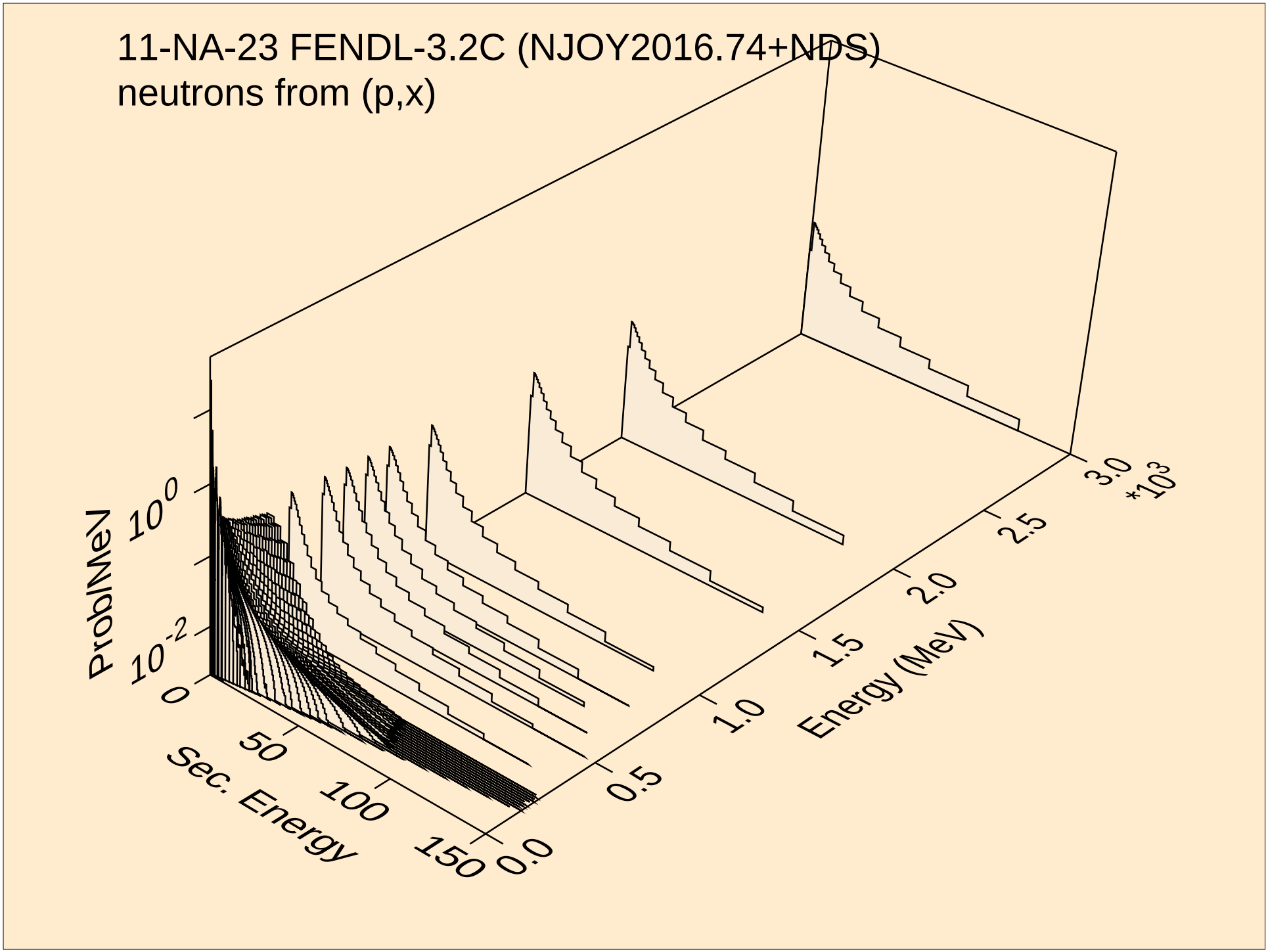

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Proton emission for (p,x)
Prob/MeV
10-1
10-3
0
200
400
600
800
Sec. Energy
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10³
Energy (MeV)

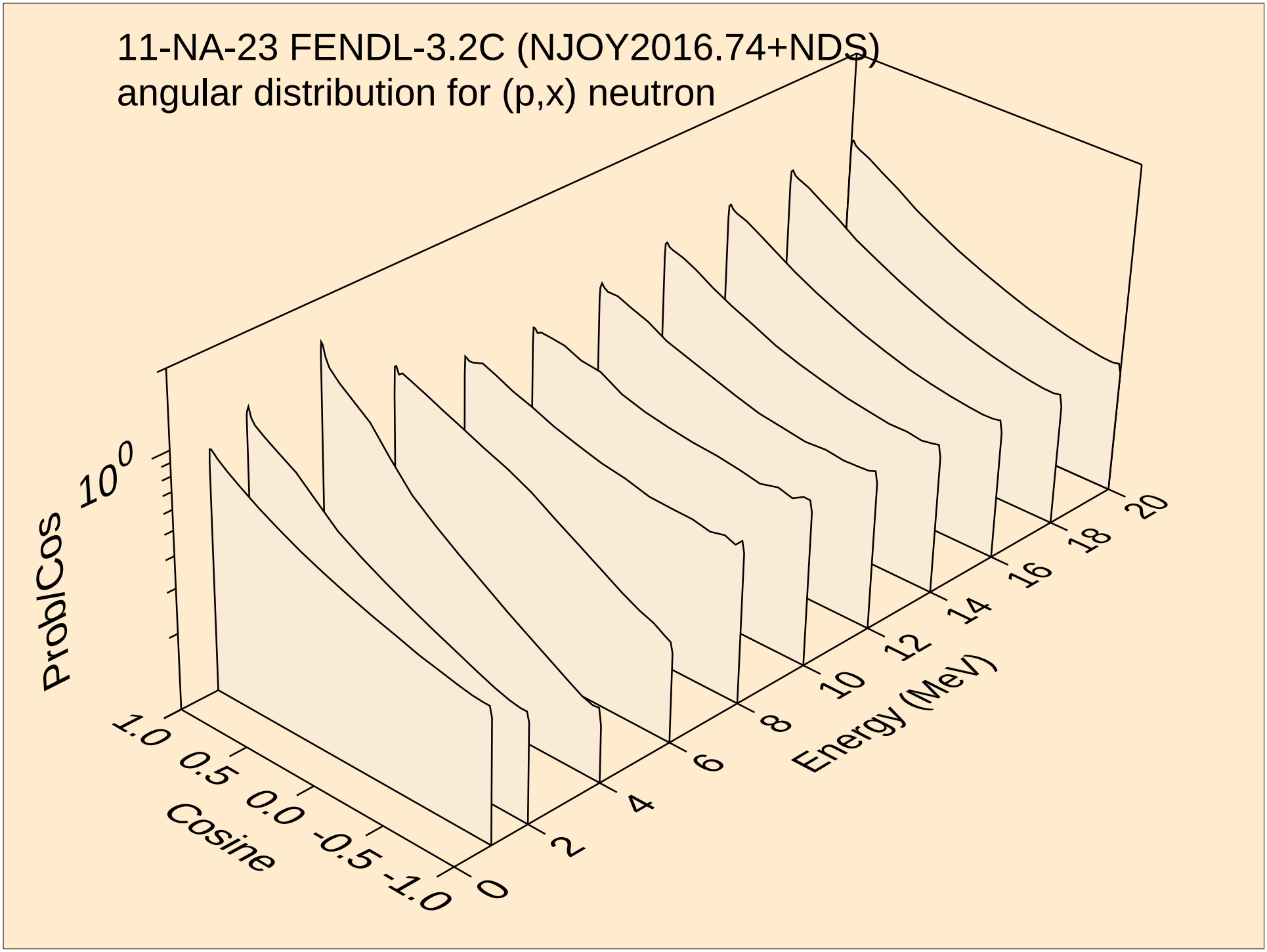

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Photon emission for (p,x)
Prob/MeV
10-1
10-3
0
Eγ (MeV)
2
4
*10³
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10³
En (MeV)

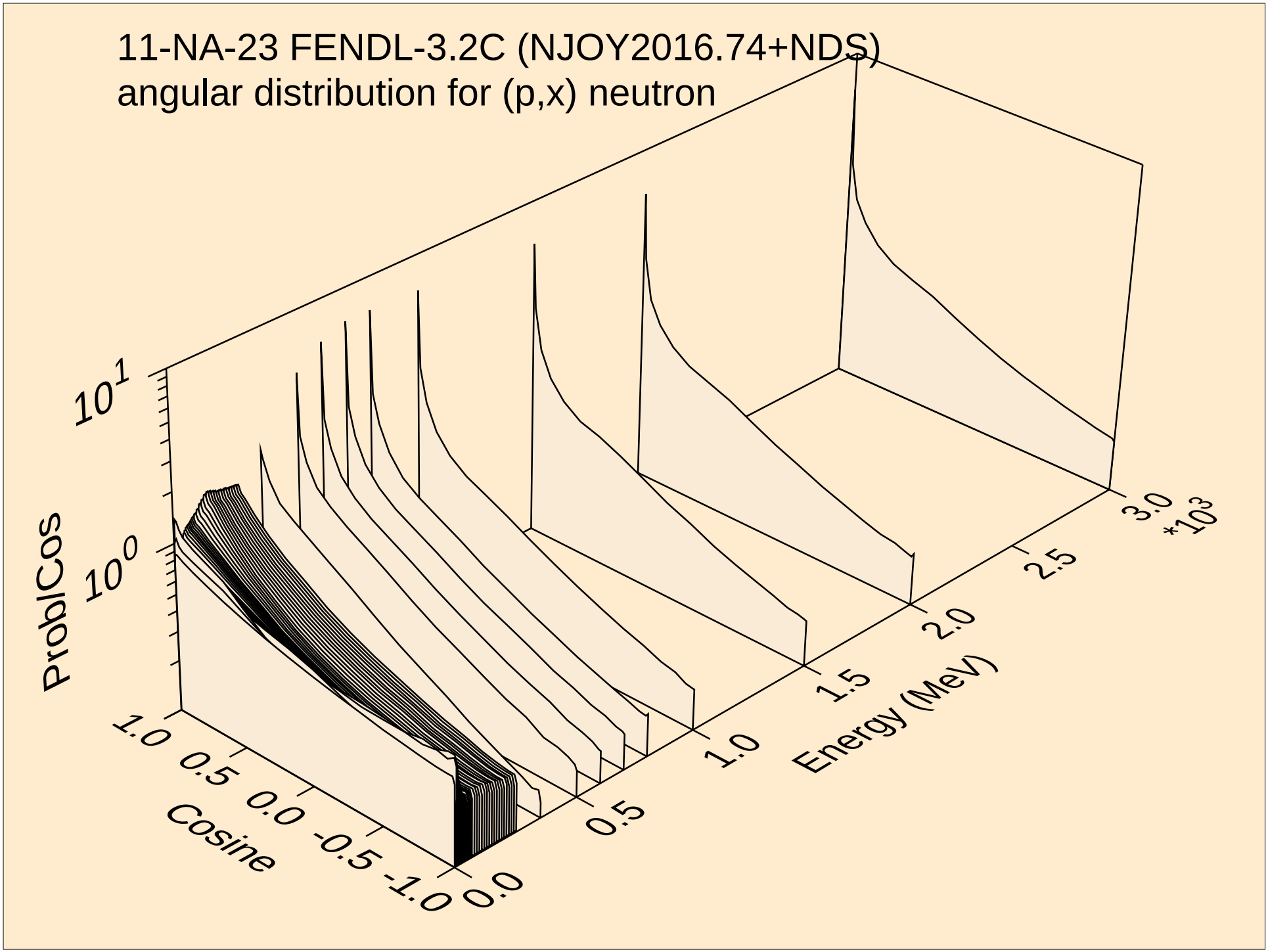

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Particle heating contributions
neutrons
deuterons
tritons
alphas
MeV/collision
Energy (MeV)
*10^3
0
5
10
15
20
25
0.0
0.5
1.0
1.5
2.0
2.5
3.0

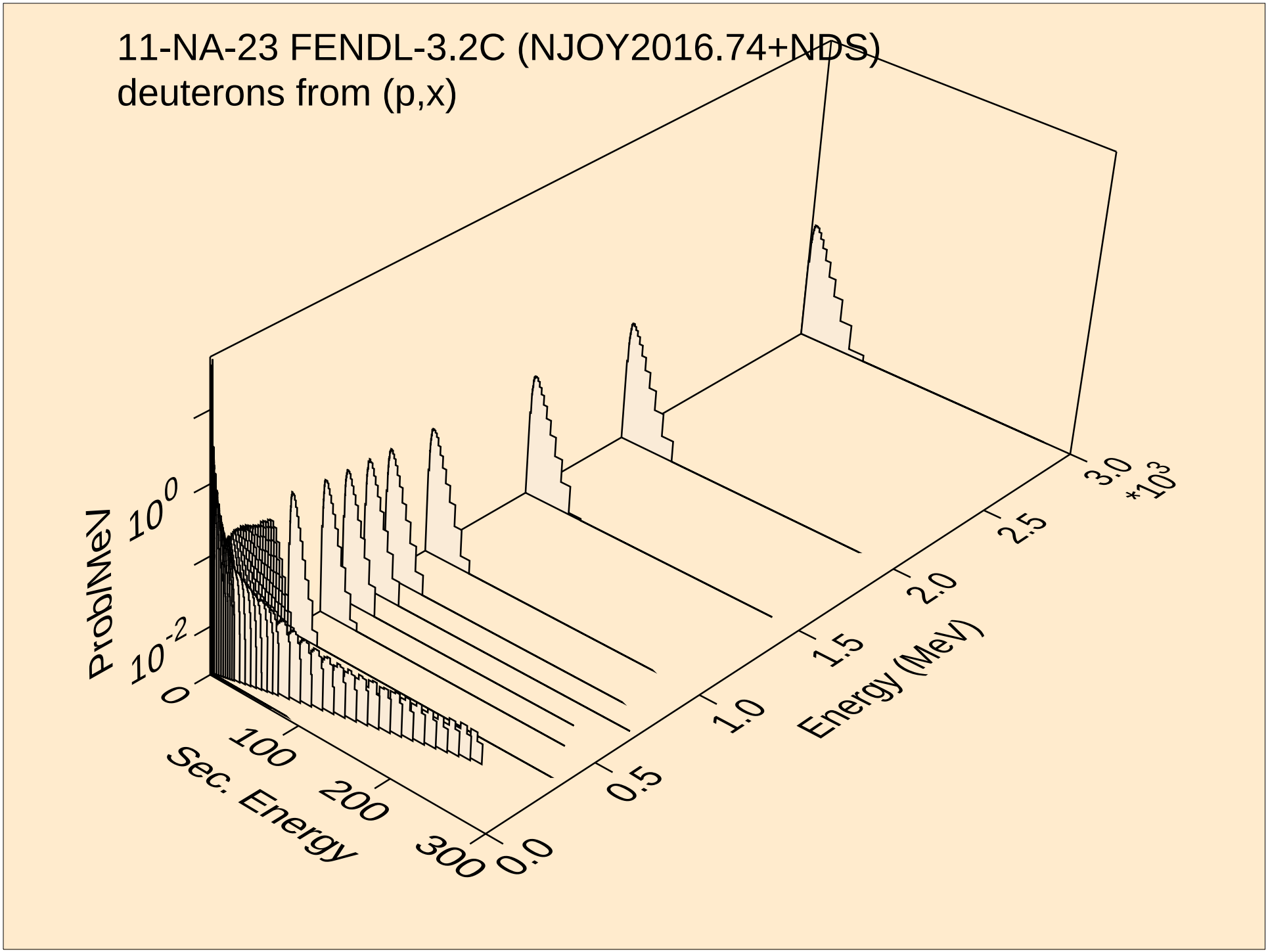

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Recoil Heating
recoil heating
*10-6
8
6
4
2
0
-2
-4
-6
-8
-10
Heating (MeV/reaction)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)

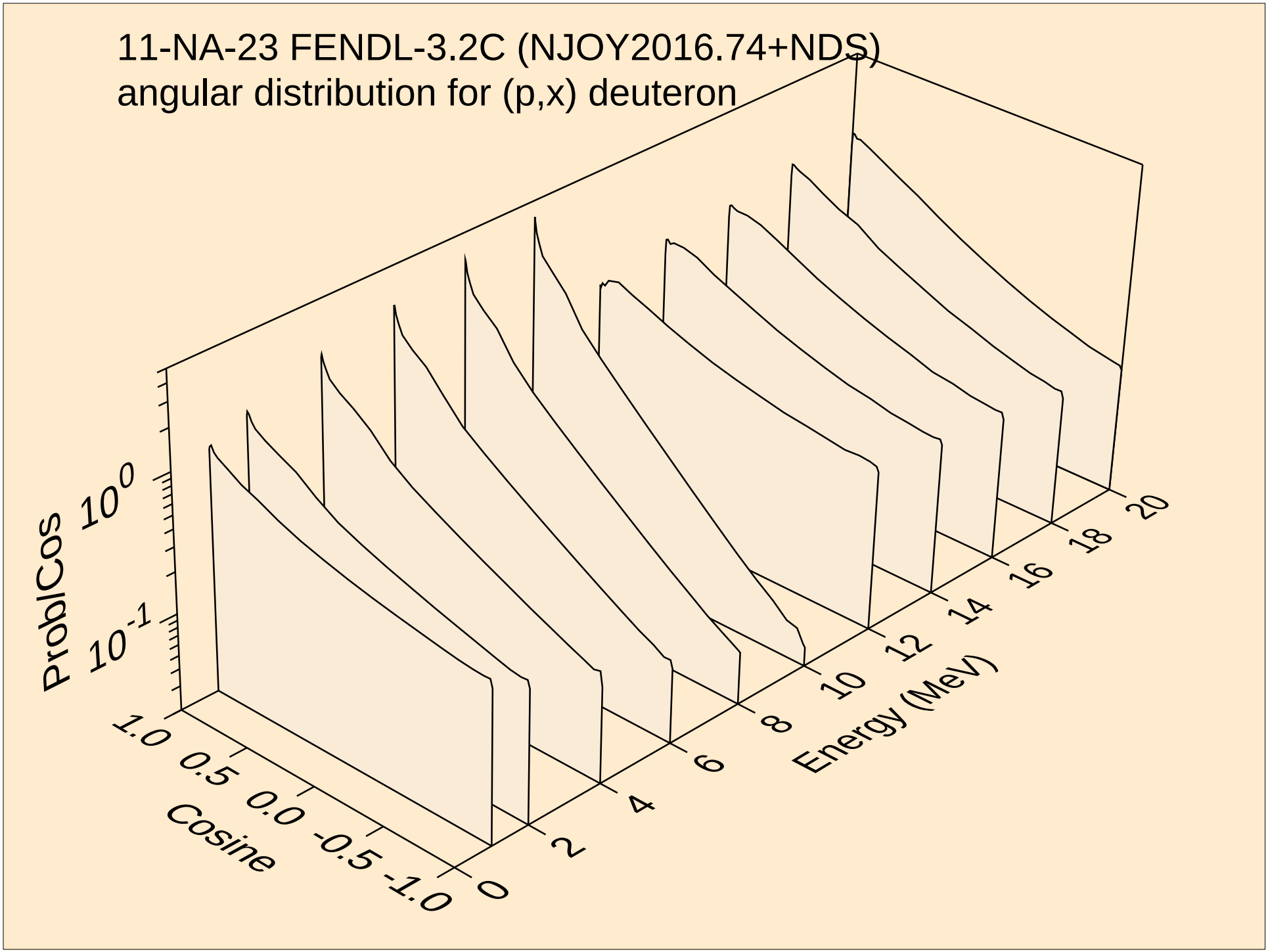

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
Particle production cross sections
Cross section (barns)
Energy (MeV)
*10^3
neutrons
deuterons
tritons
alphas
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
0.0
0.5
1.0
1.5
2.0
2.5
3.0

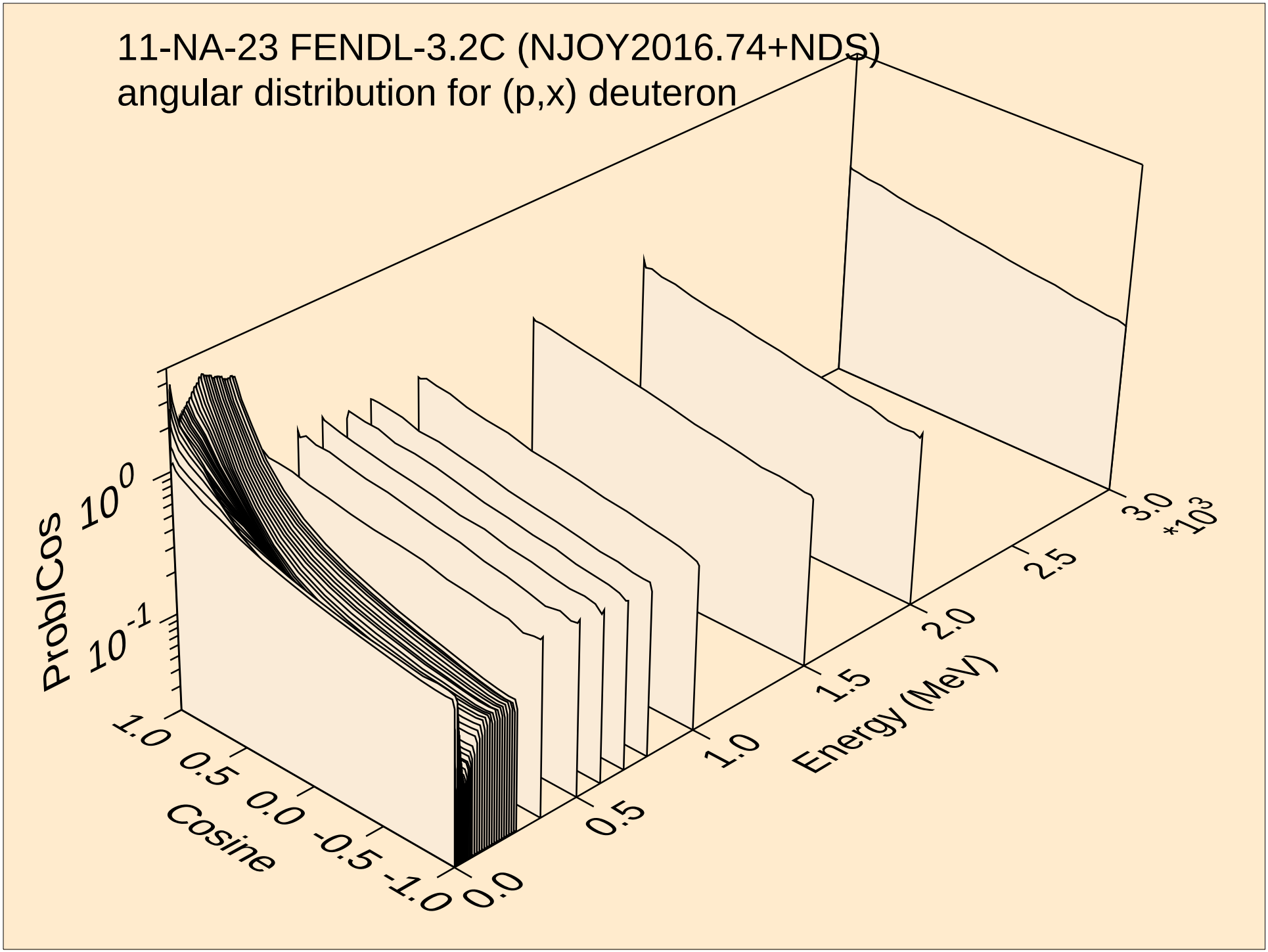

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
neutrons from (p,x)
Prob/MeV
10^0
10^-2
0
50
100
150
Sec. Energy
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)

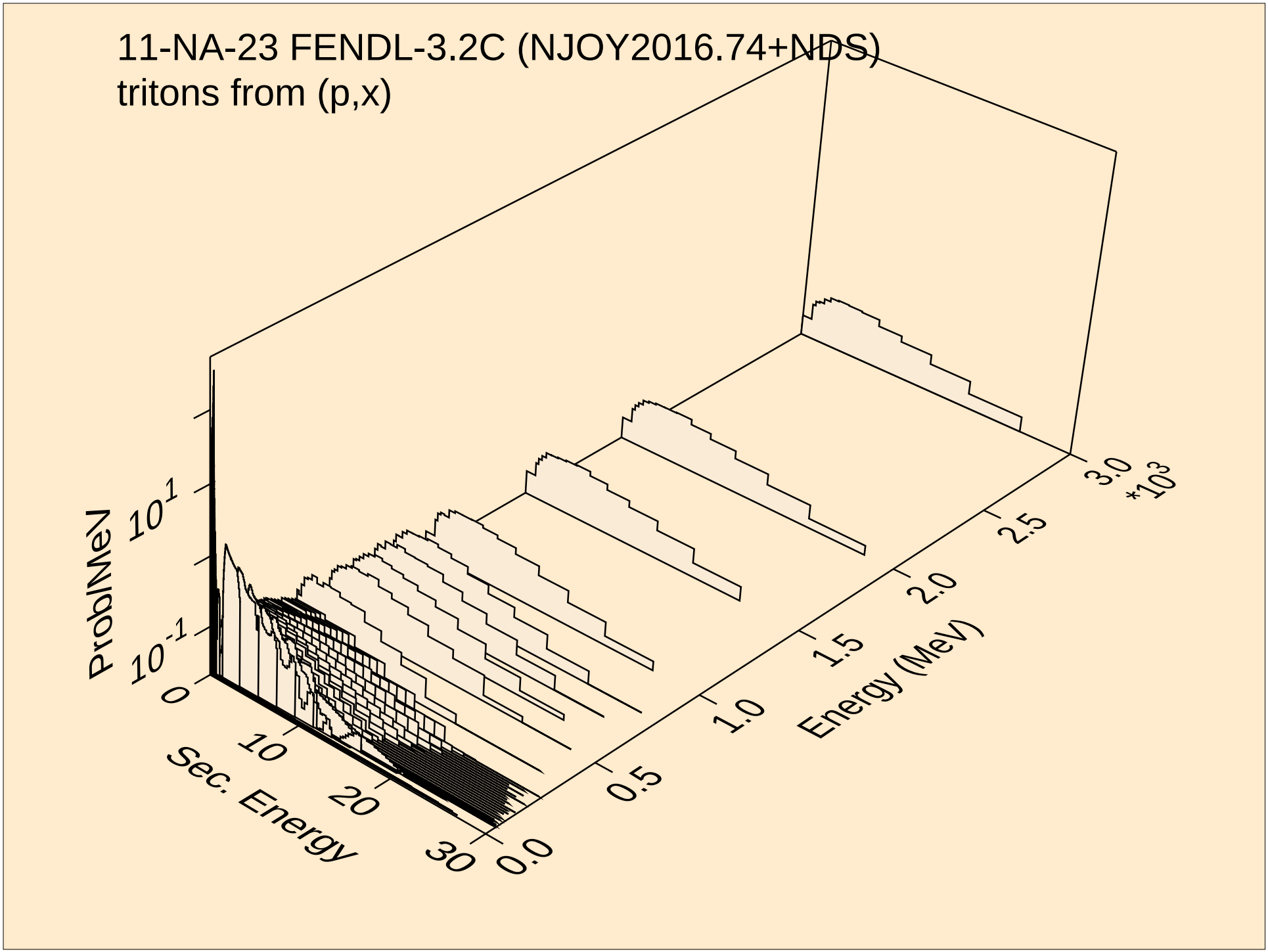

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) neutron
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

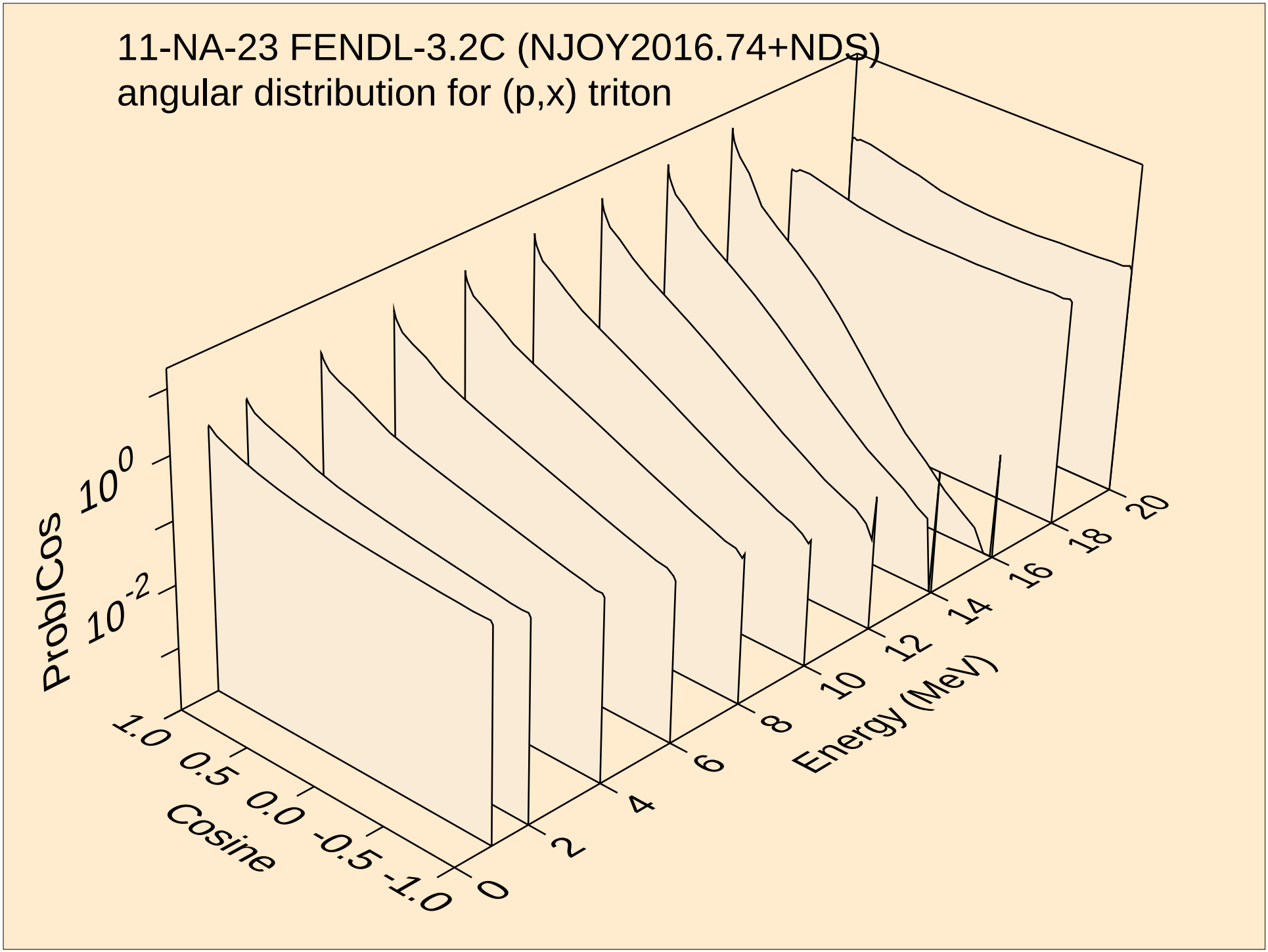

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) neutron
ProbICos
10^1
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)
*10^3

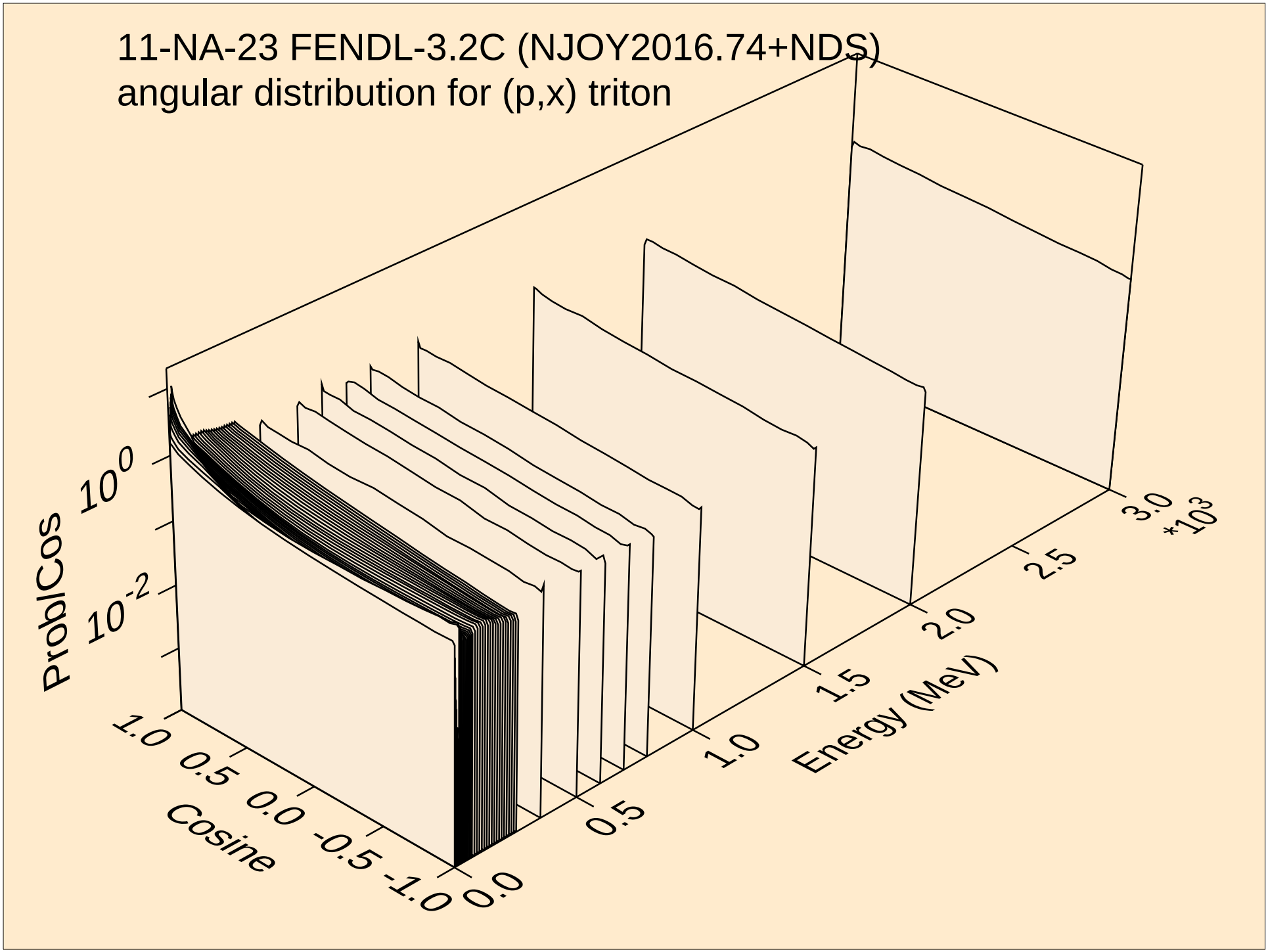

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
deuterons from (p,x)
Prob/MeV
10^0
10^-2
0
100
200
300
Sec. Energy
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)

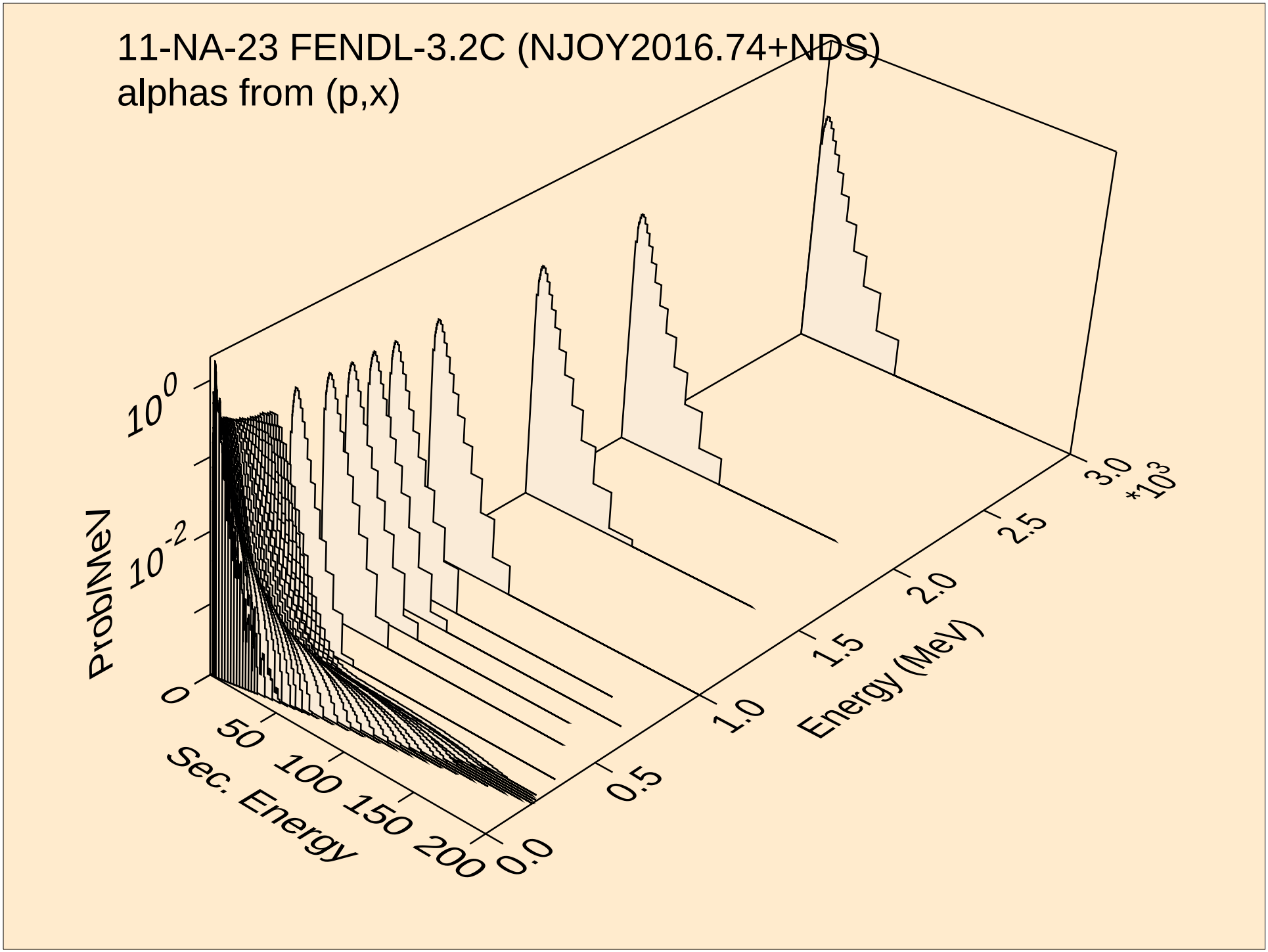

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) deuteron
ProbICos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

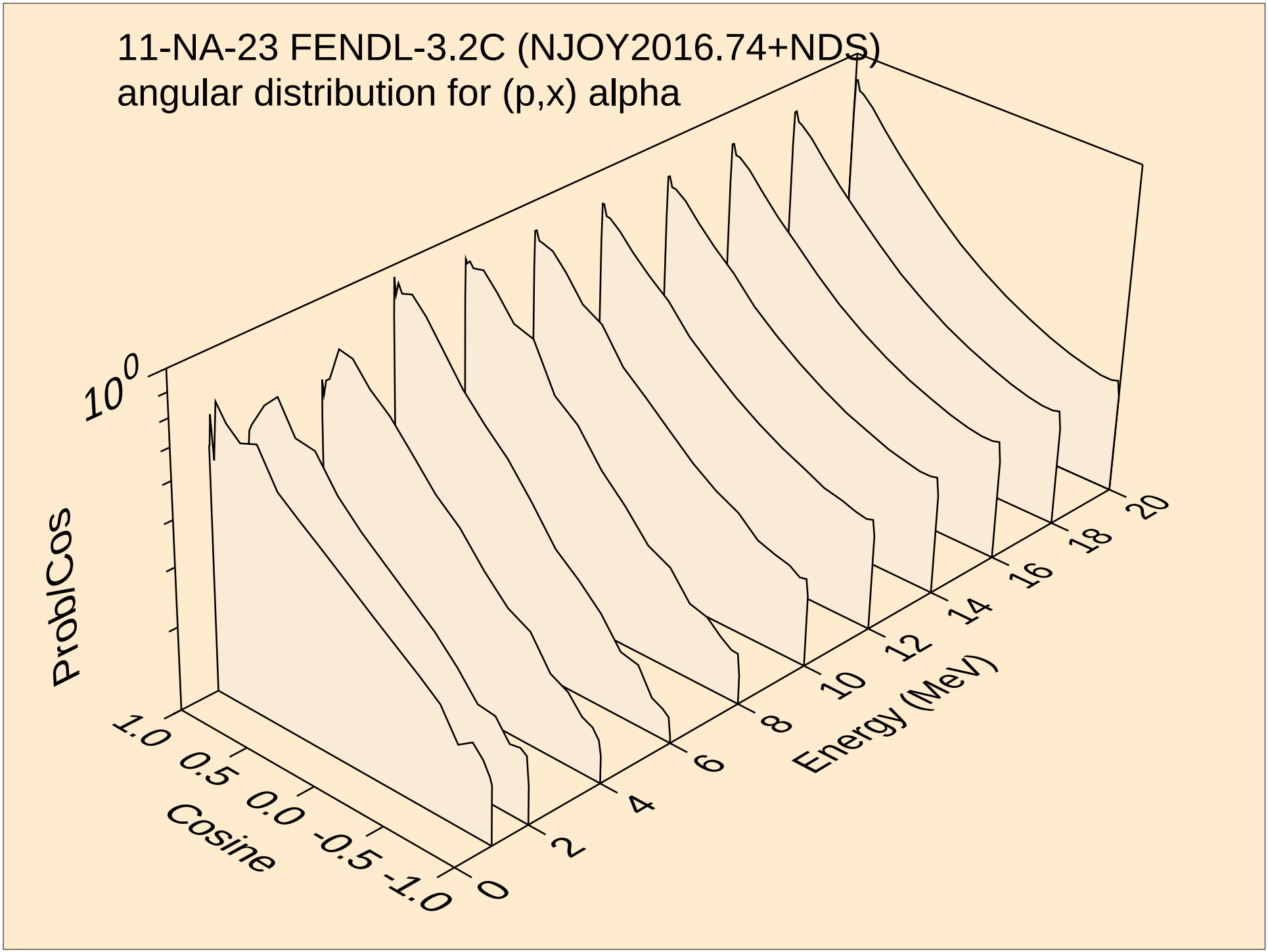

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) deuteron
ProbICos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)

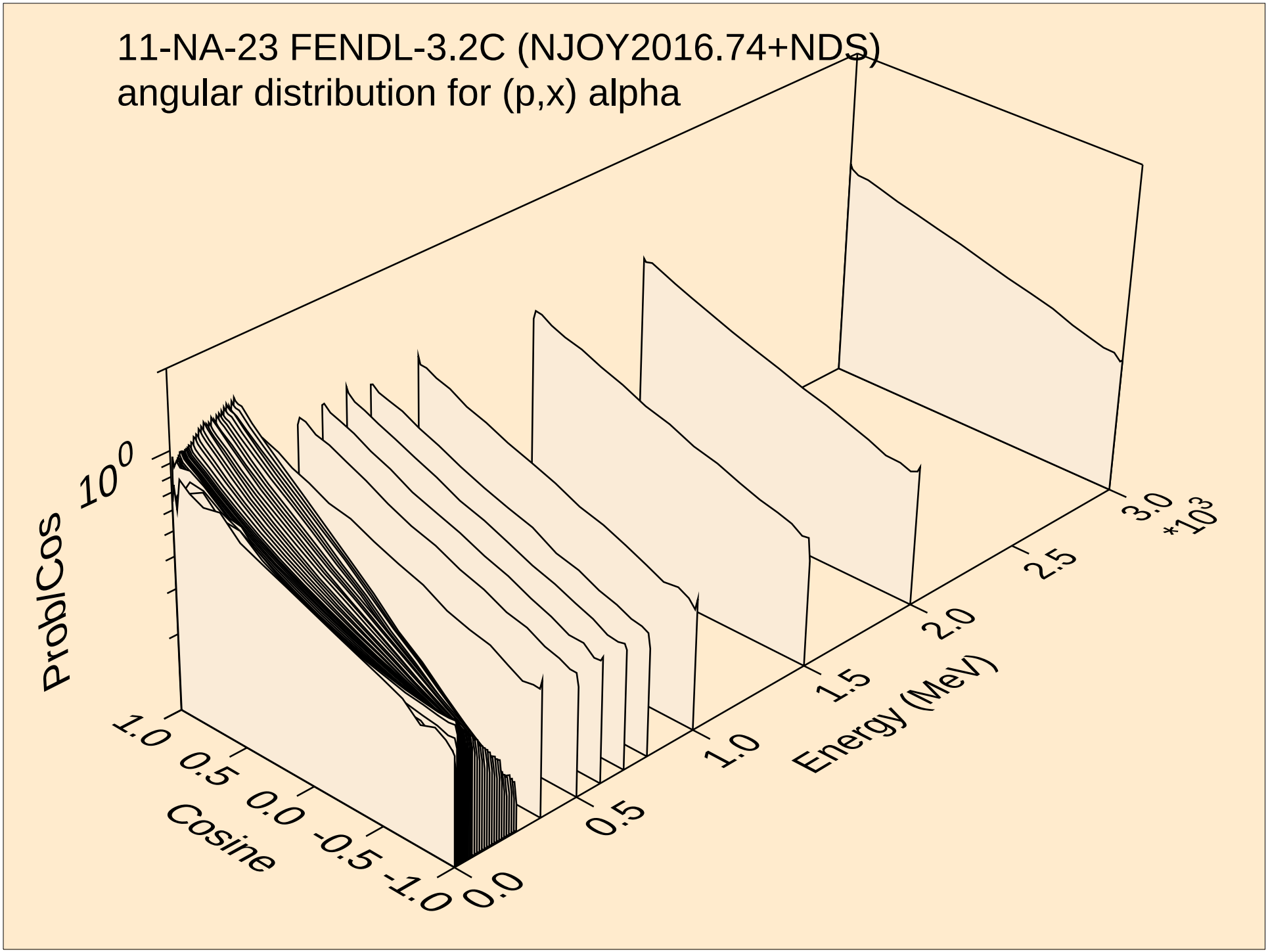

11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
tritons from (p,x)
Prob/MeV
10^1
10^-1
0
10
20
30
Sec. Energy
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)


11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) triton
Prob\Cos
10^0
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)


11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) triton
ProbICos
10^0
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10^3
Energy (MeV)


11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
alphas from (p,x)
Prob/MeV
10^{0}
10^{-2}
0
50
100
150
200
Sec. Energy
0.0
0.5
1.0
1.5
2.0
2.5
3.0
*10³
Energy (MeV)


11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) alpha
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


11-NA-23 FENDL-3.2C (NJOY2016.74+NDS)
angular distribution for (p,x) alpha
ProblCos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Energy (MeV)
*10³