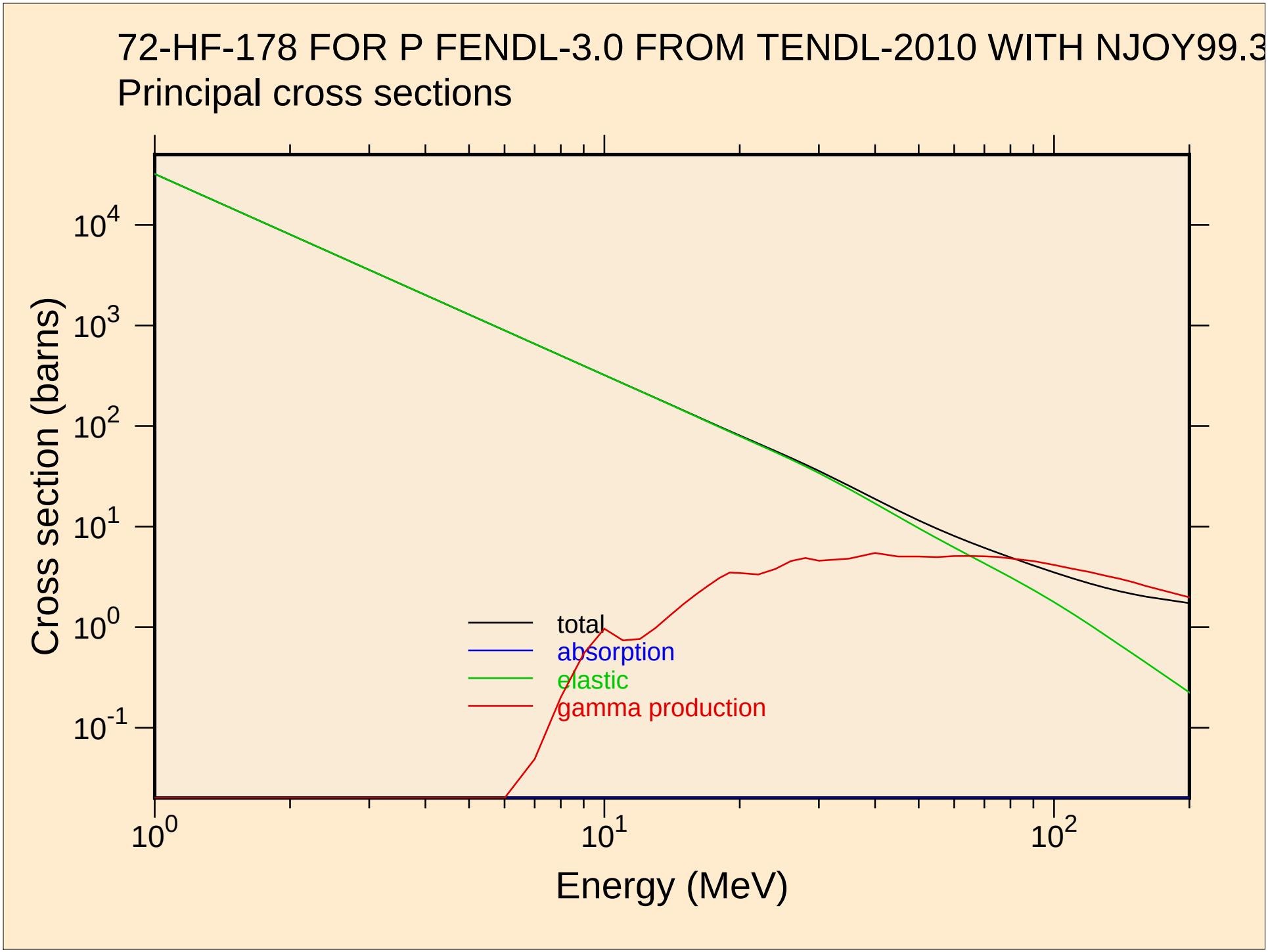
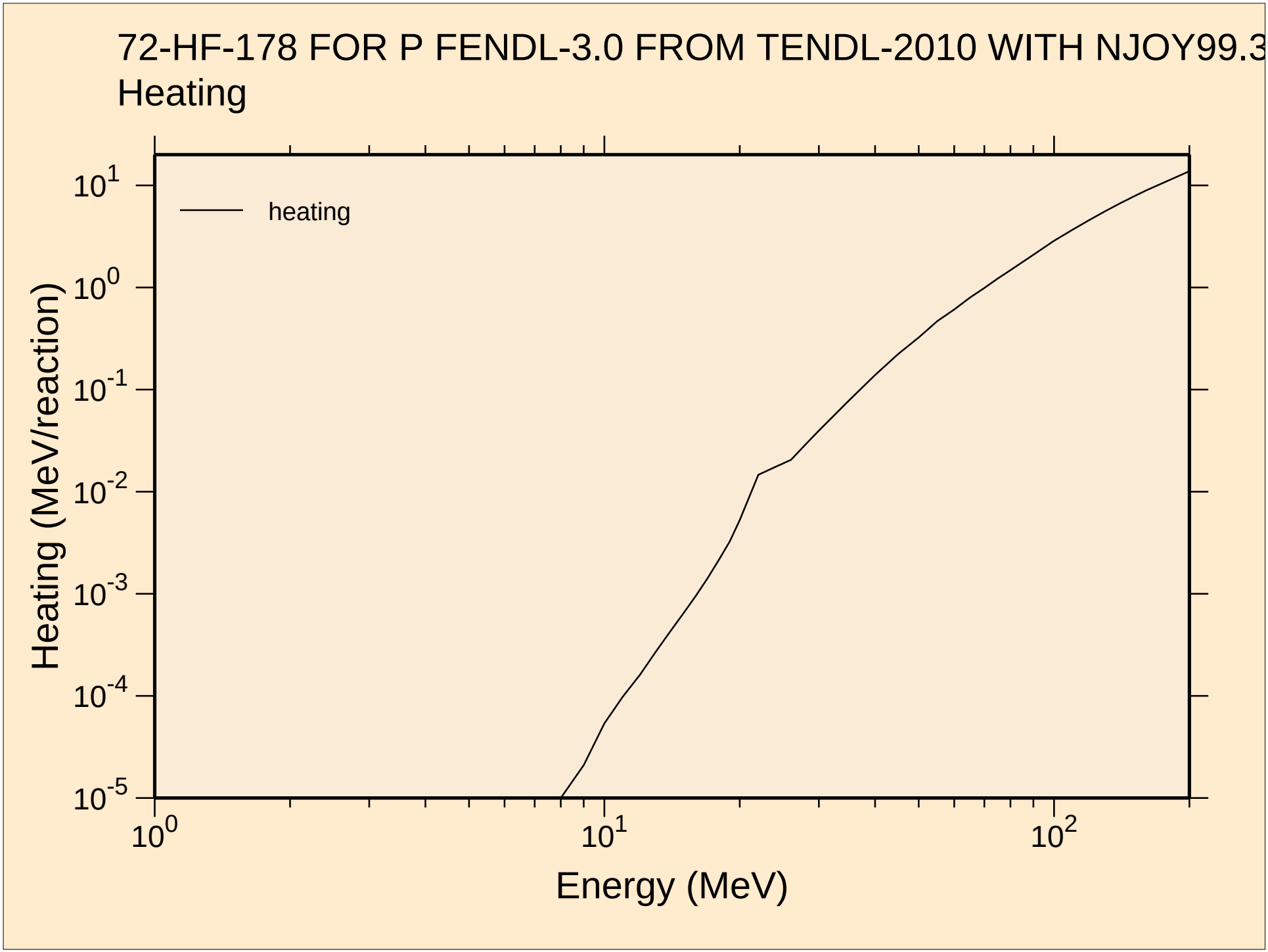
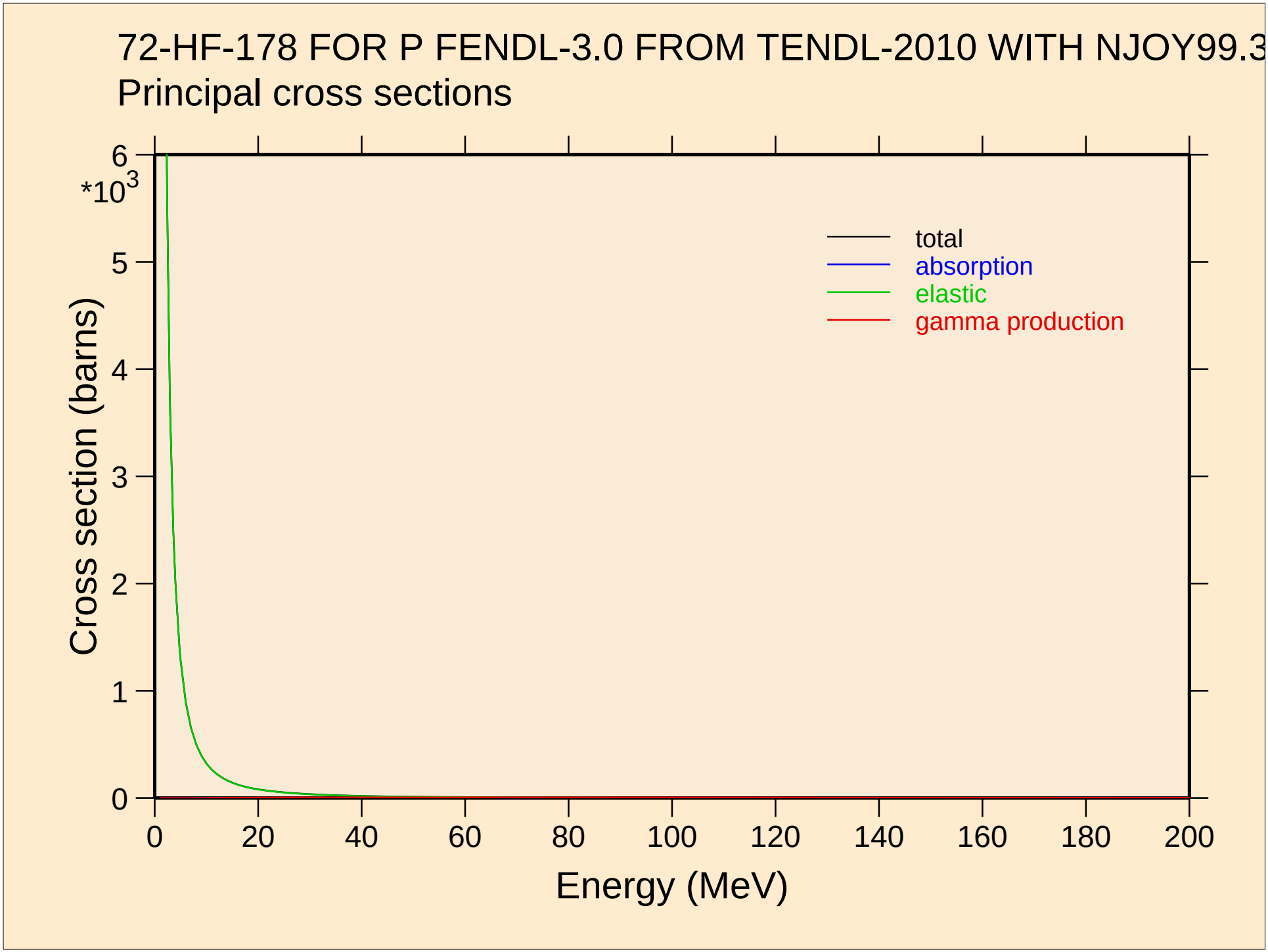
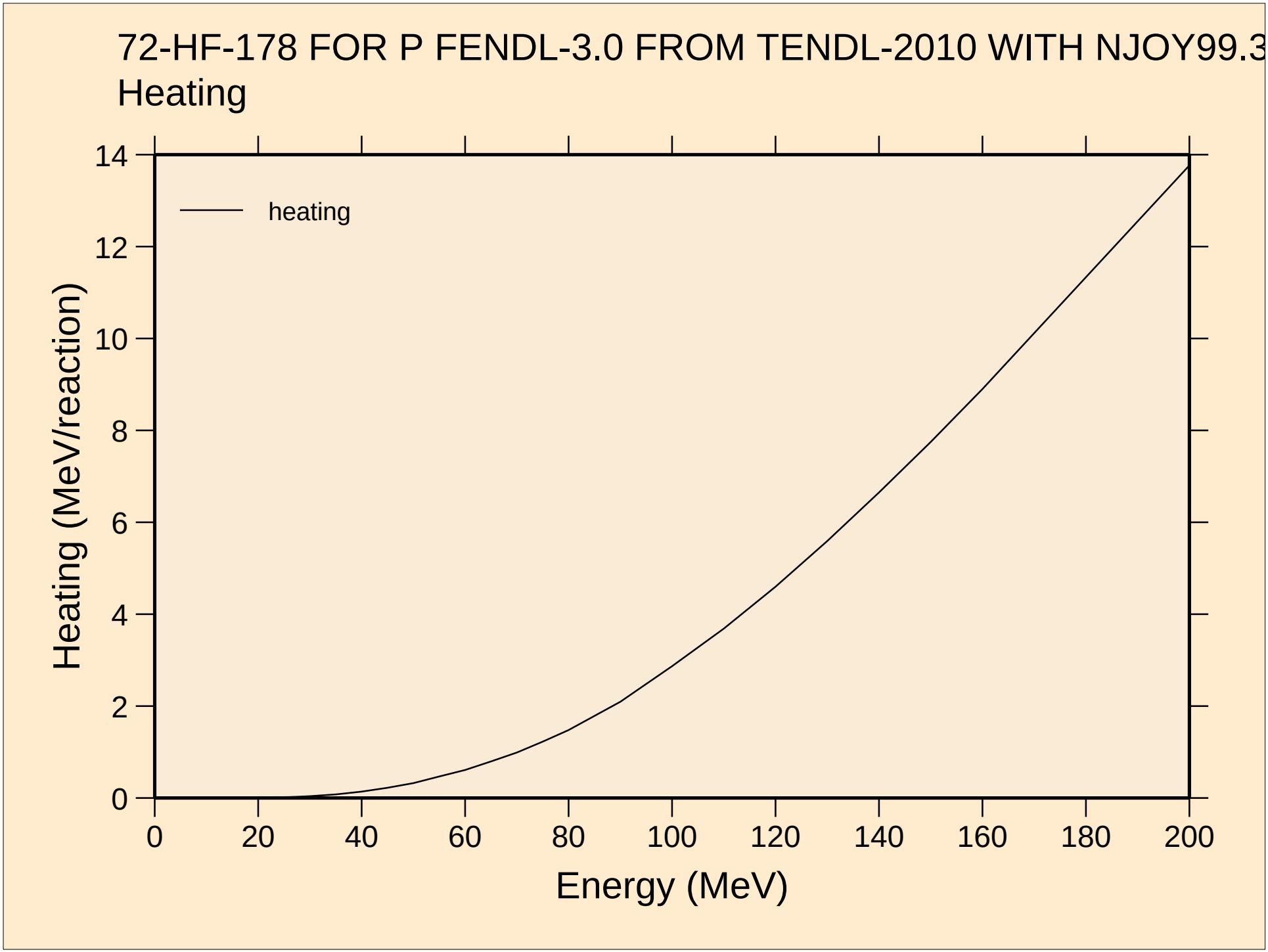
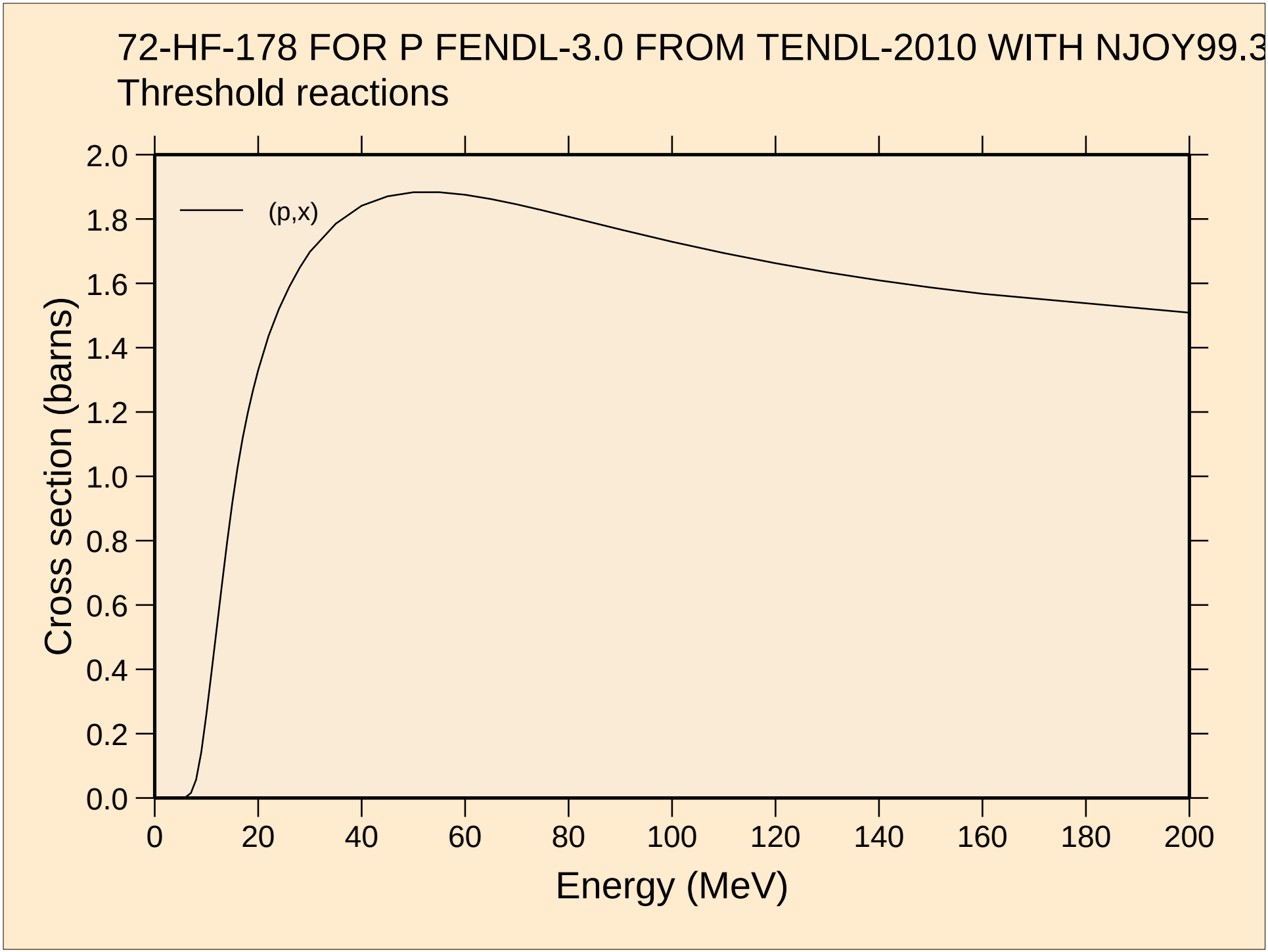
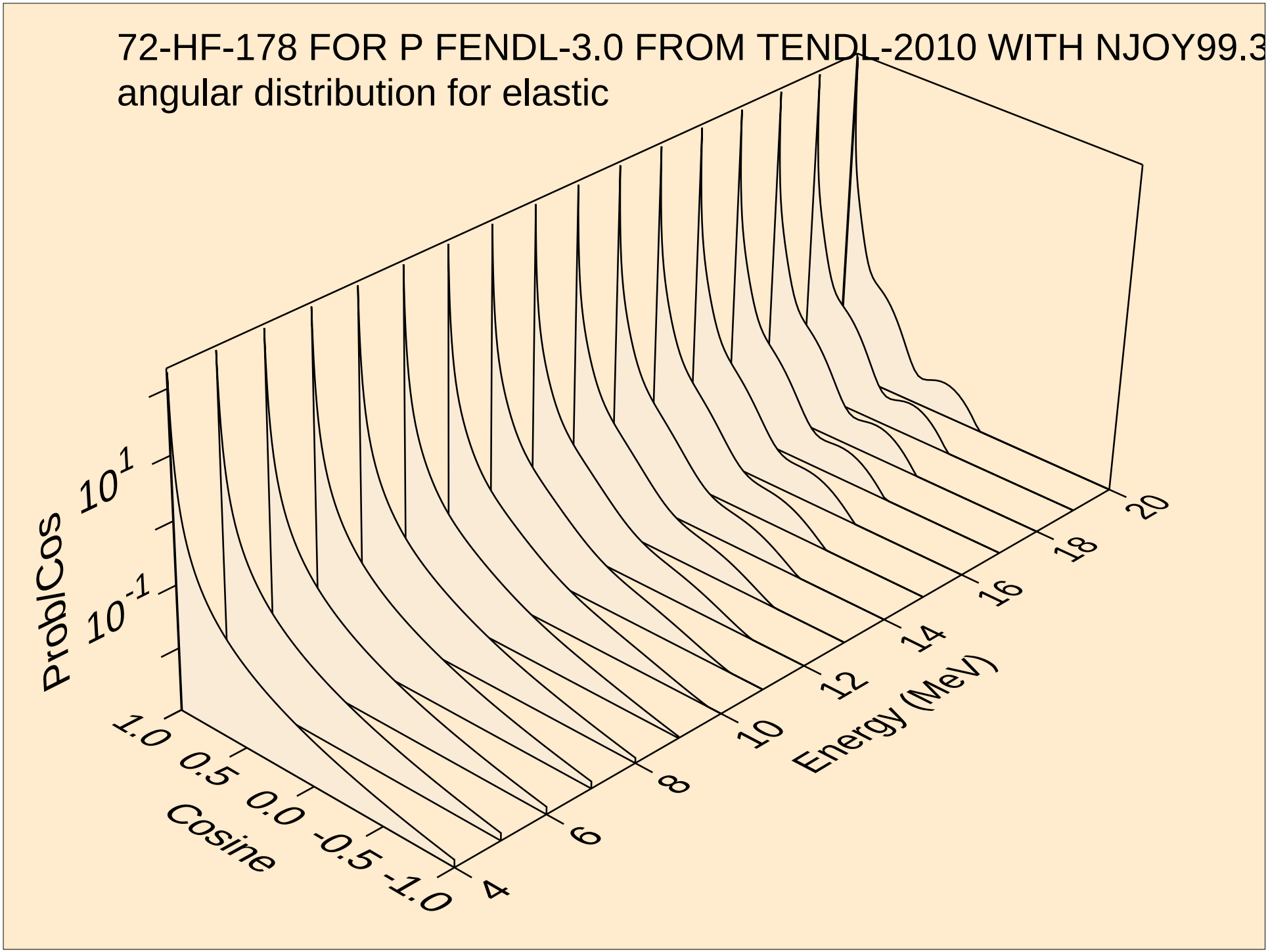

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Principal cross sections
Cross section (barns)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
total
absorption
elastic
gamma production
10^{0}
10^{1}
10^{2}
Energy (MeV)

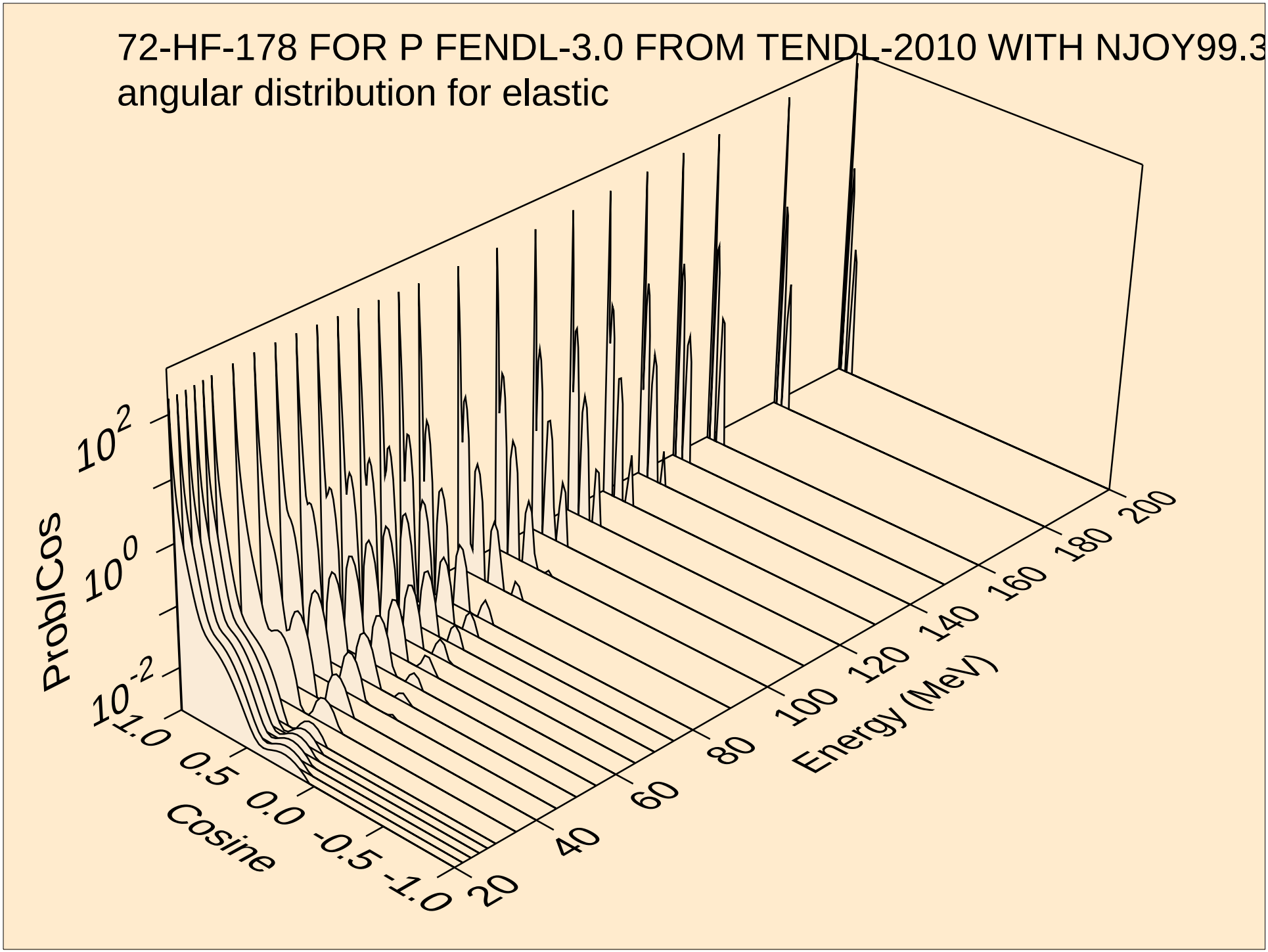

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^0
10^1
10^2

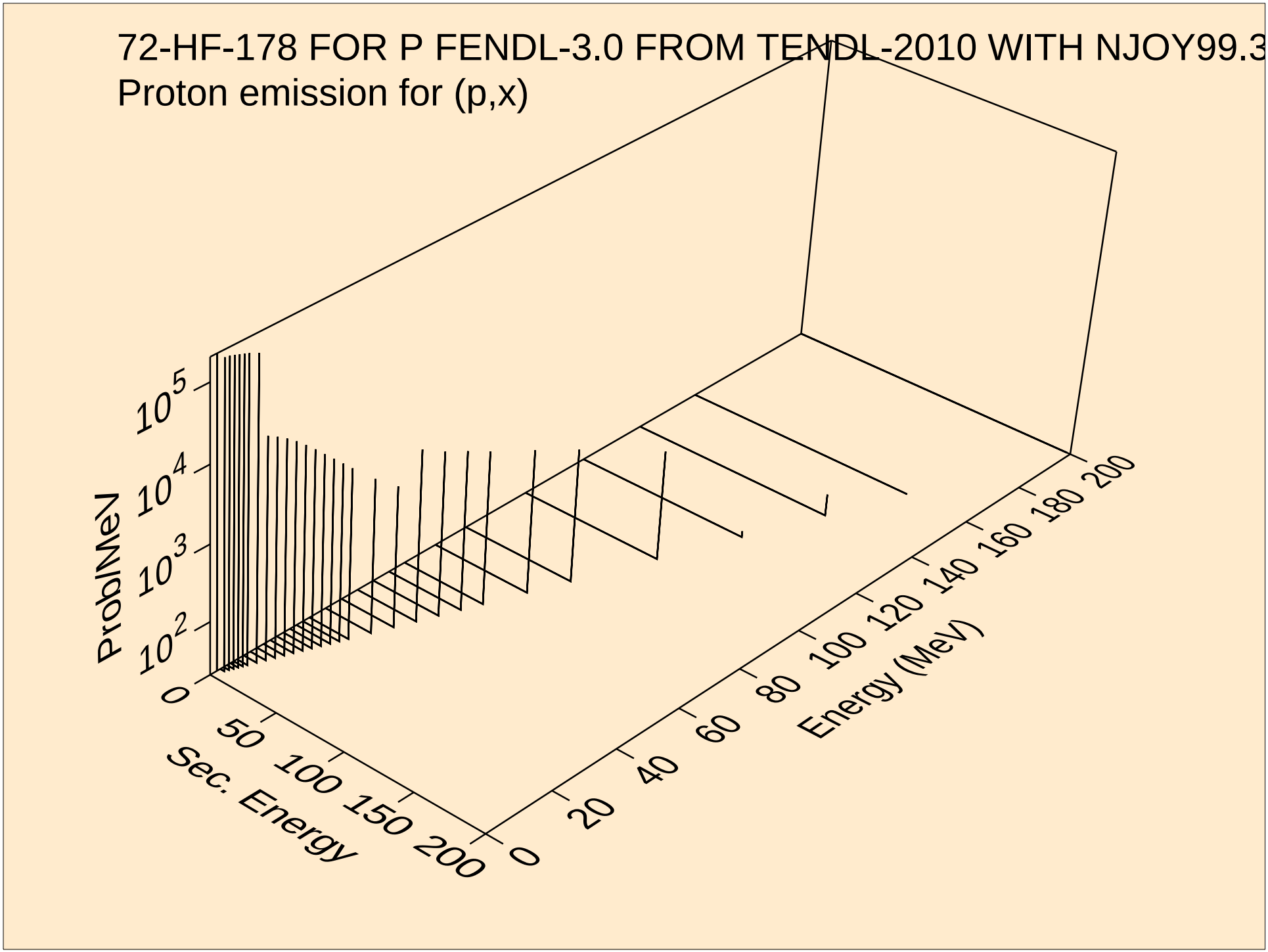

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Principal cross sections
*10^3
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
180
200

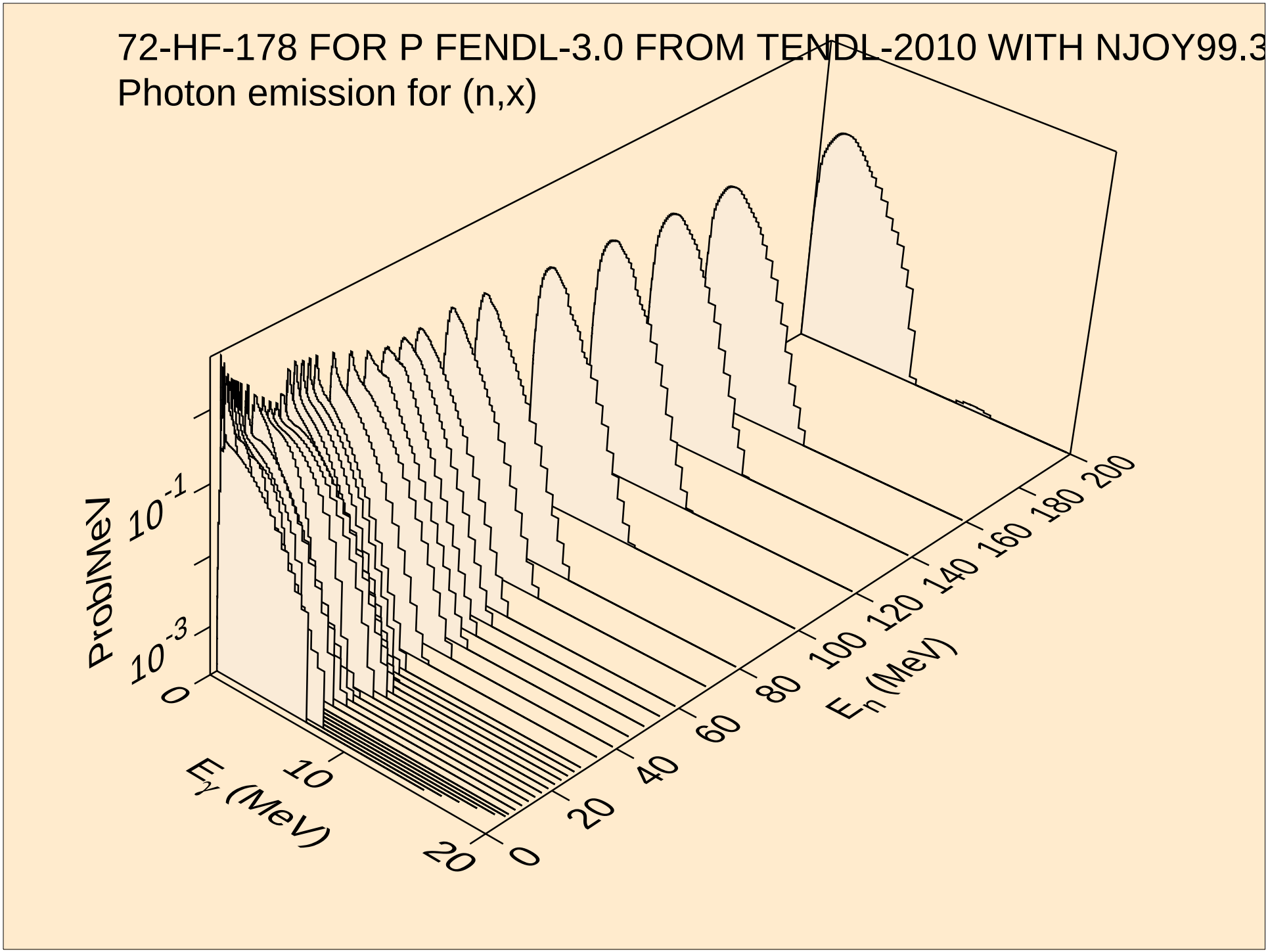

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
2
4
6
8
10
12
14
0
20
40
60
80
100
120
140
160
180
200

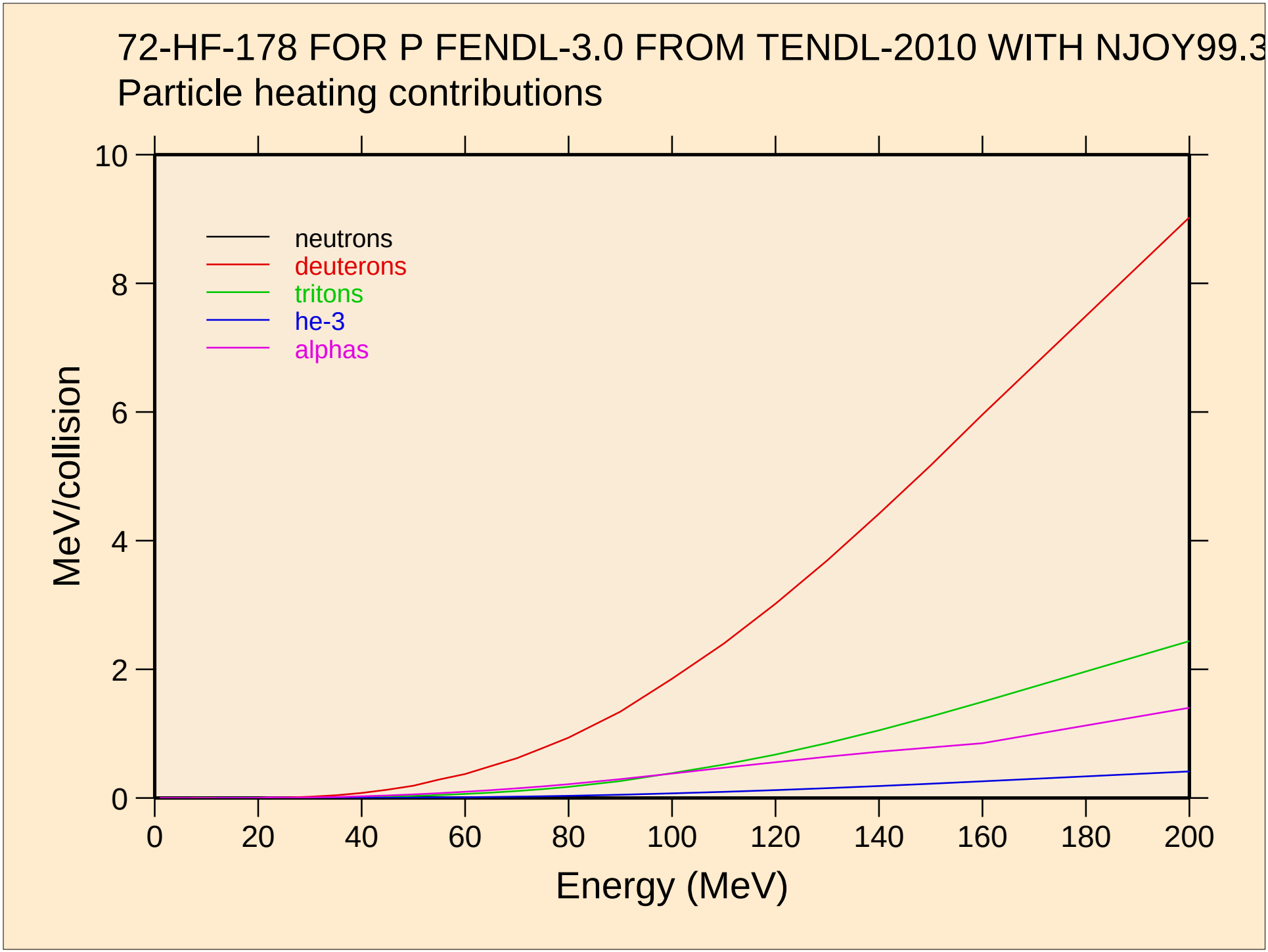

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Threshold reactions
(p,x)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
0
20
40
60
80
100
120
140
160
180
200

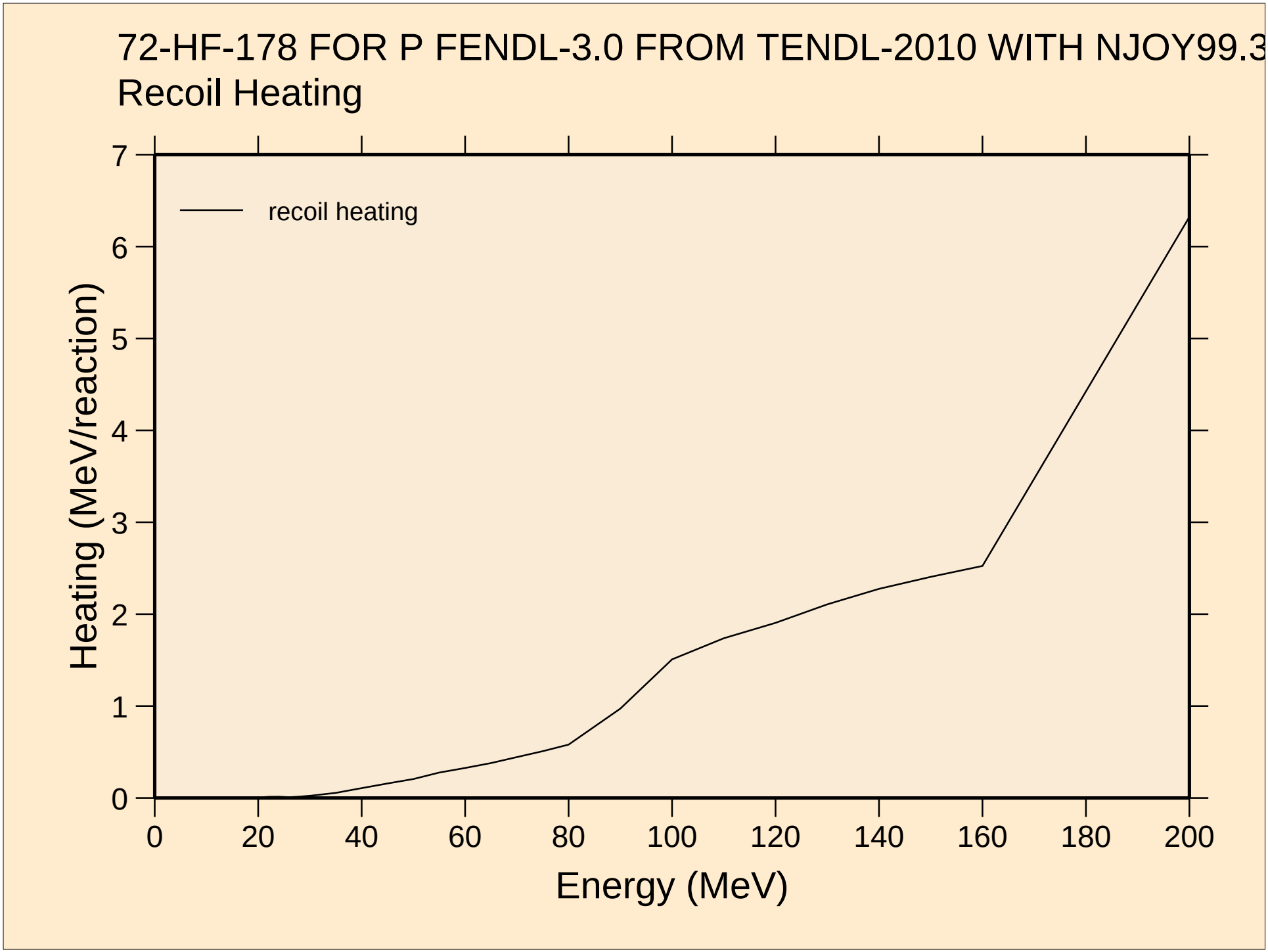

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
angular distribution for elastic
ProbICos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

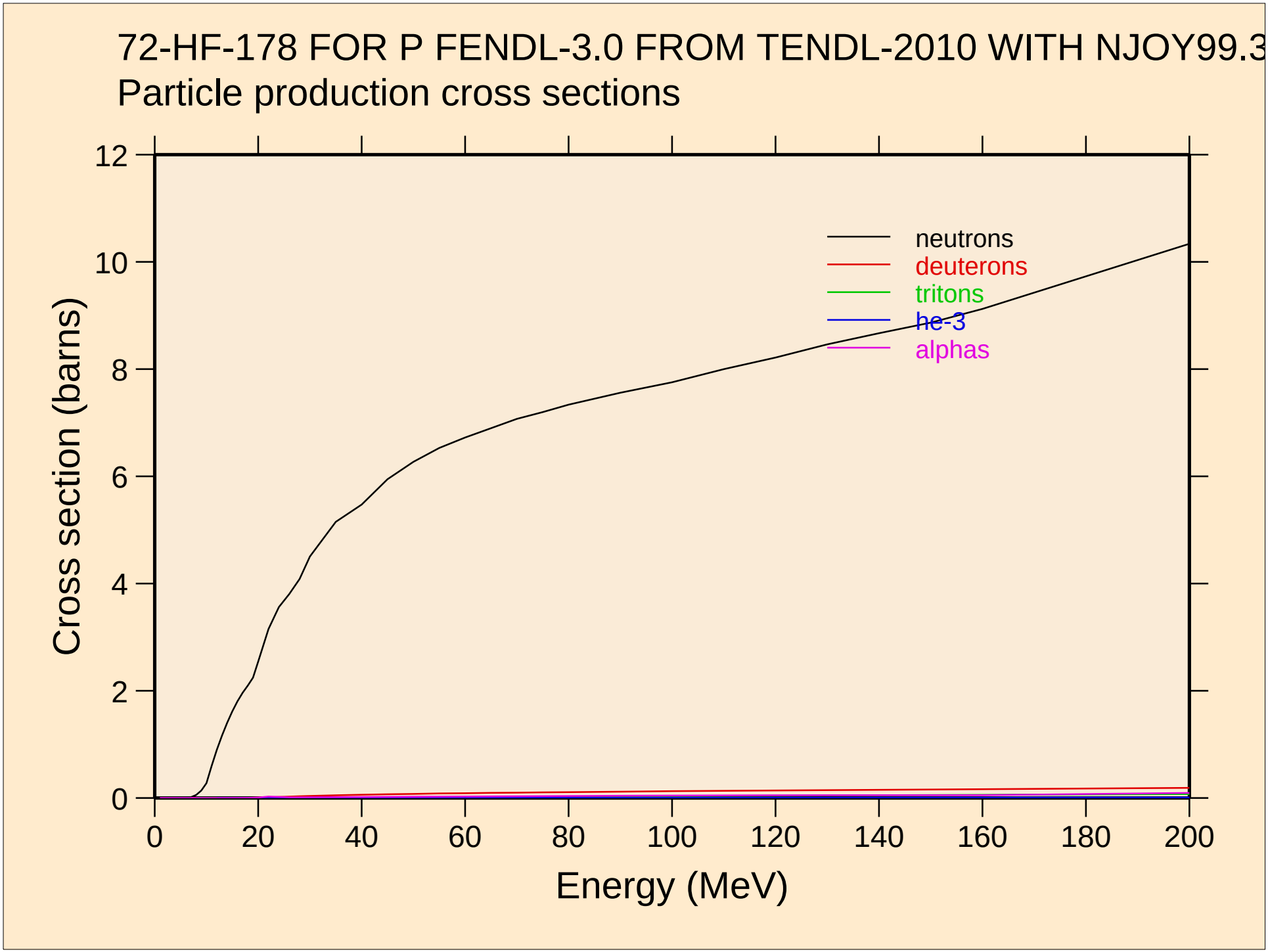

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
angular distribution for elastic
ProbICos
10^{2}
10^{0}
10^{-2}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
20
40
60
80
100
120
140
160
180
200

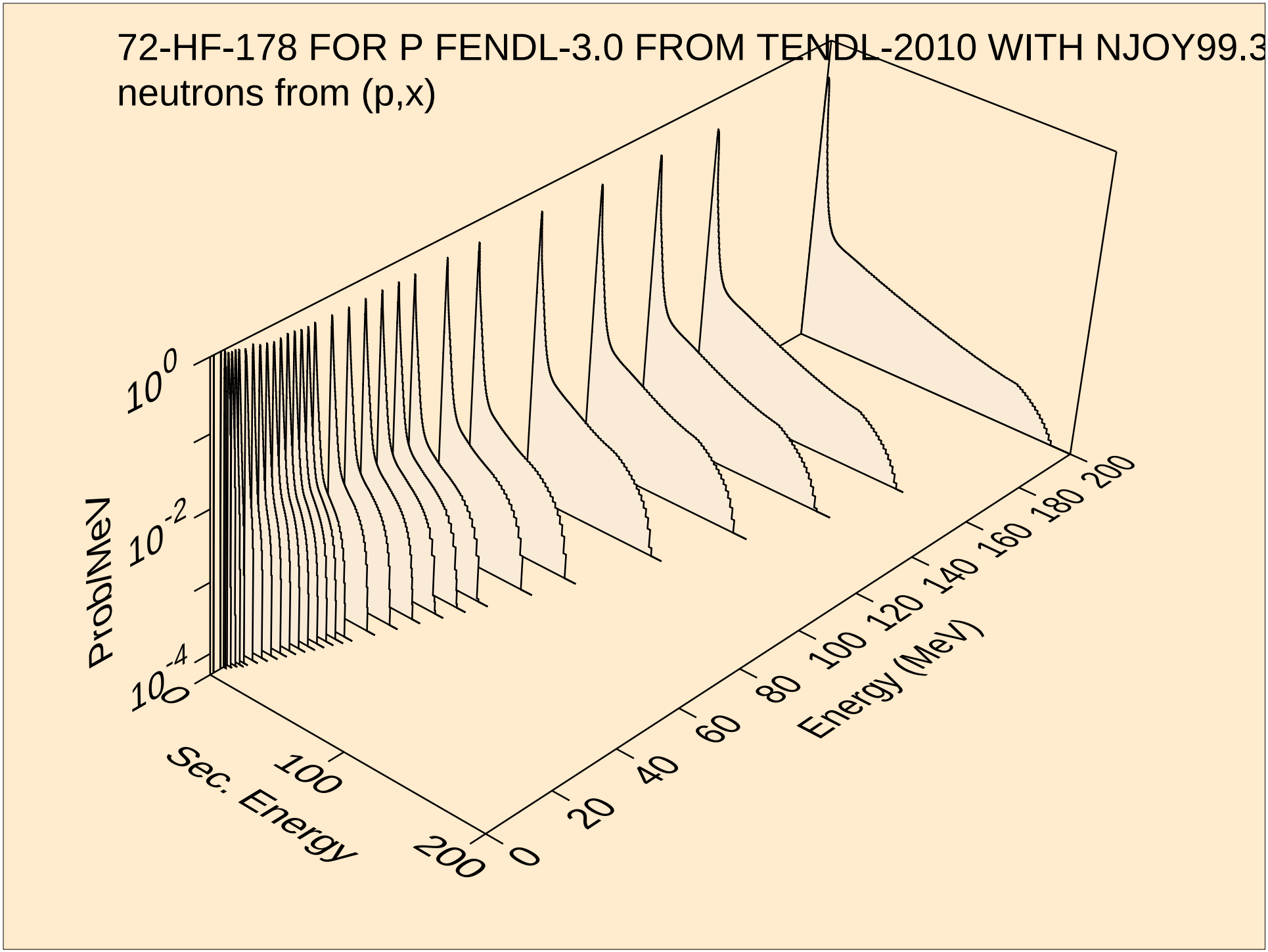

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Proton emission for (p,x)
Prob/MeV
10^5
10^4
10^3
10^2
0
50
100
150
200
Sec. Energy
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

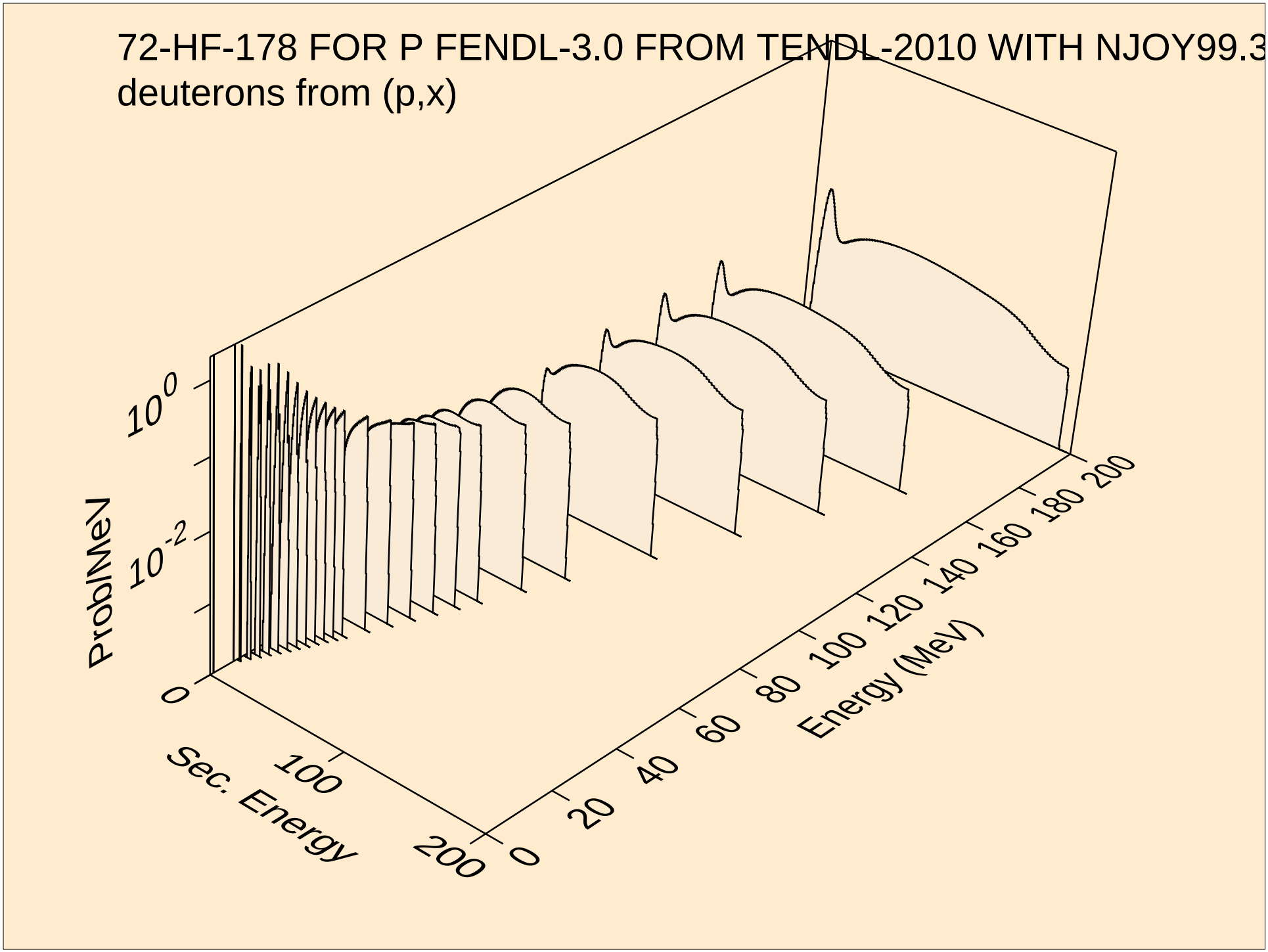

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Photon emission for (n,x)
Prob/MeV
10-1
10-3
0
Eγ (MeV)
10
20
0
20
40
60
80
100
120
140
160
180
200
En (MeV)

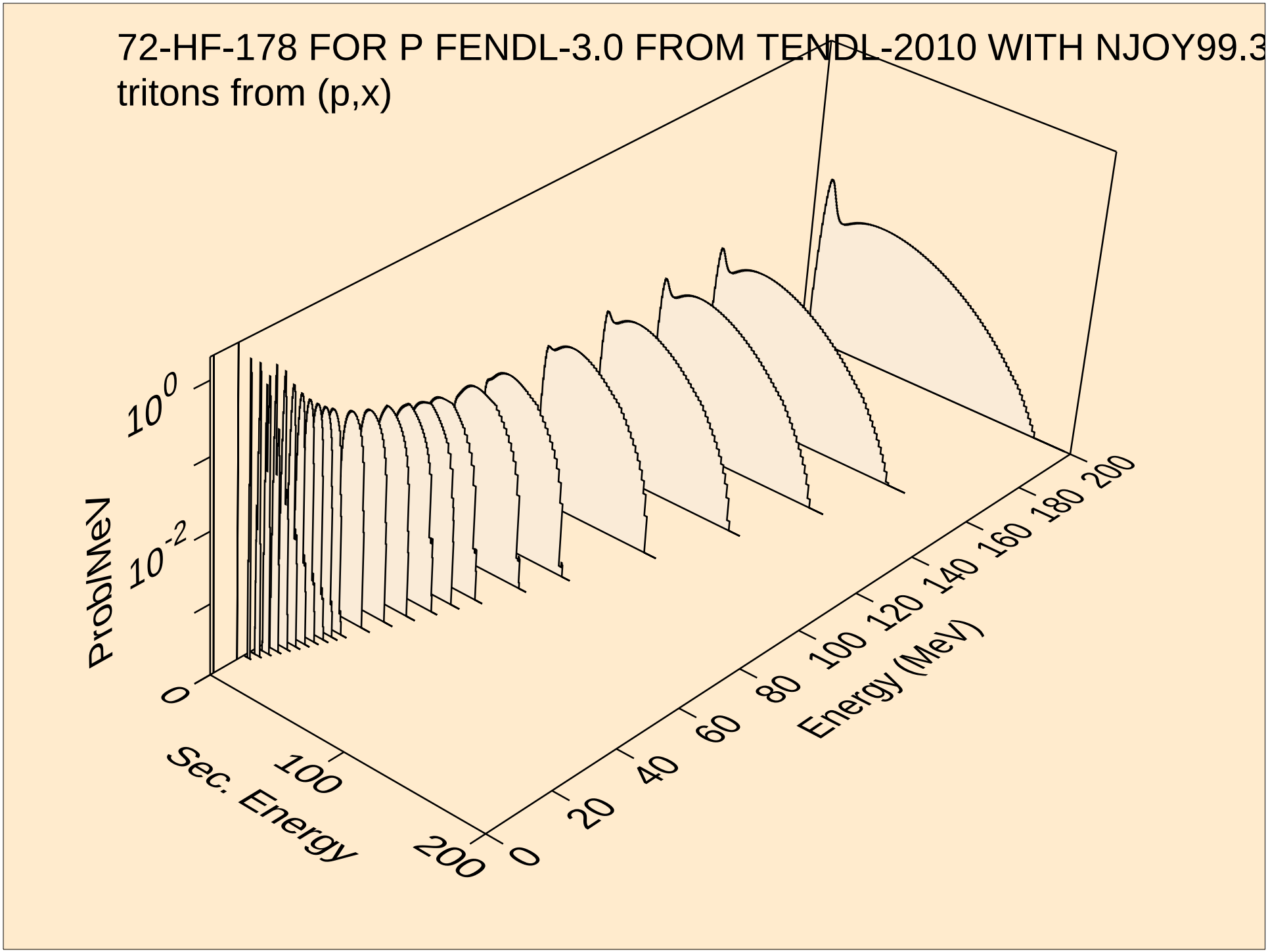

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Particle heating contributions
neutrons
deuterons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
0
20
40
60
80
100
120
140
160
180
200

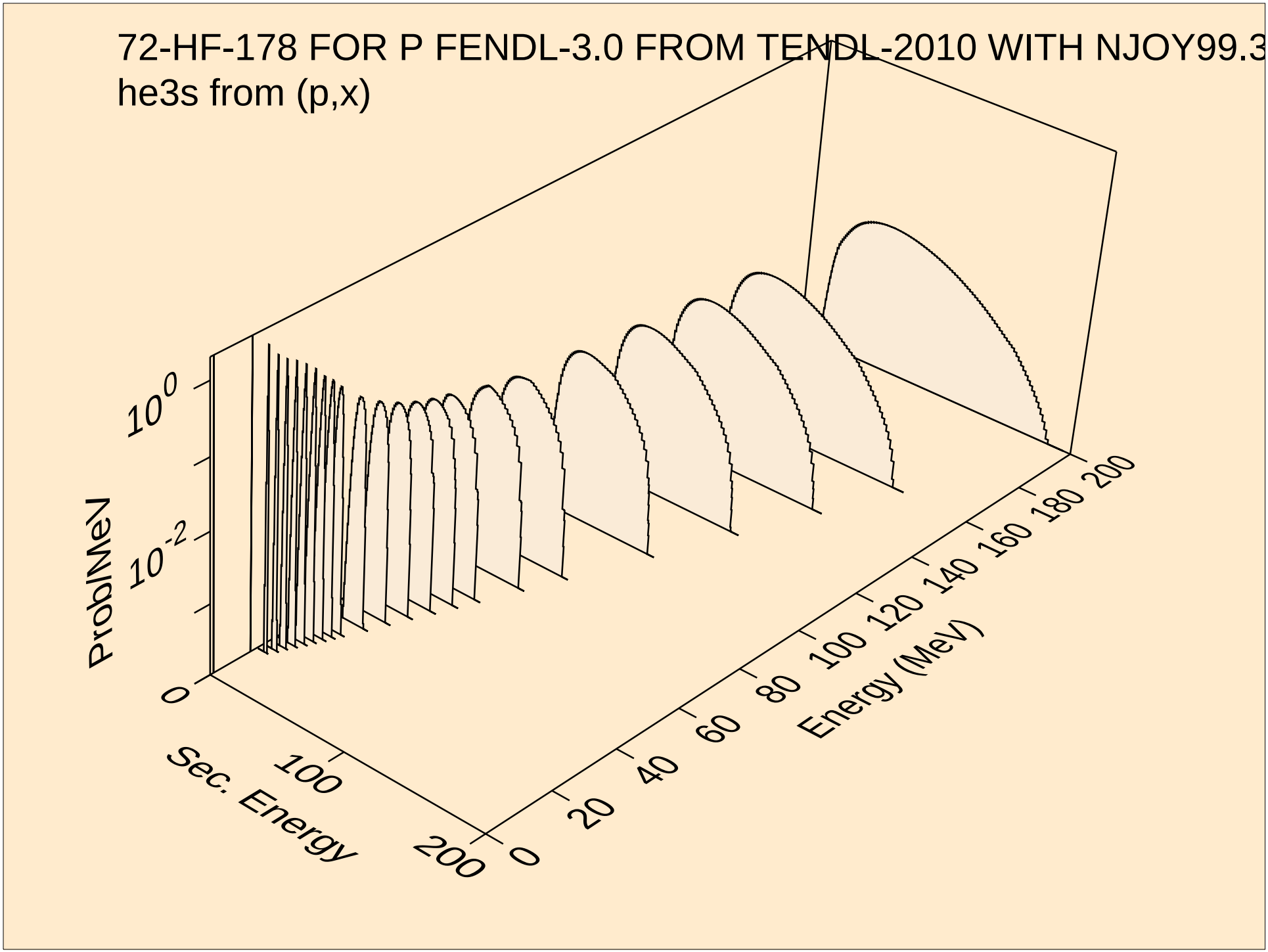

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0
1
2
3
4
5
6
7
0
20
40
60
80
100
120
140
160
180
200

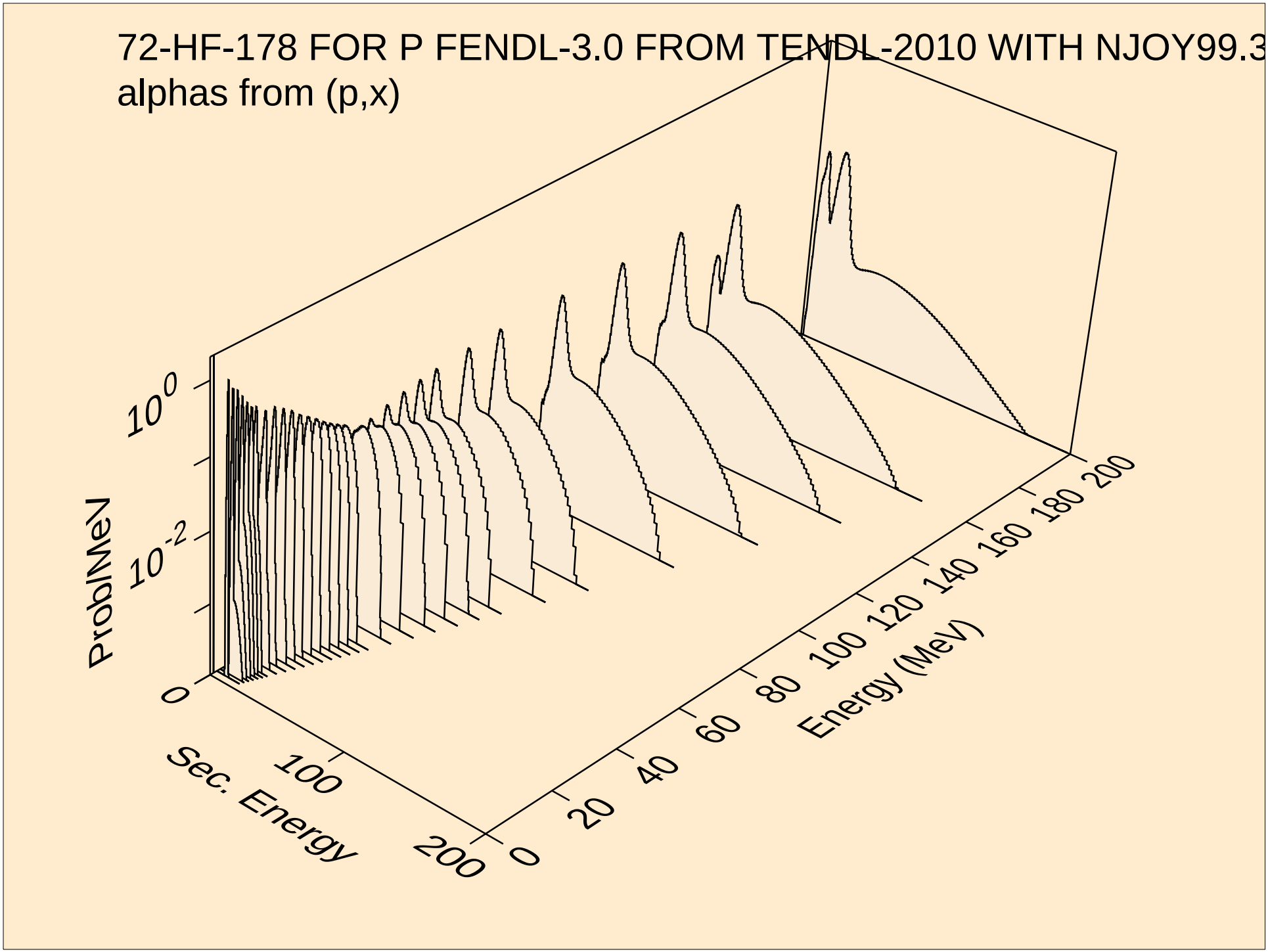

72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Particle production cross sections
Cross section (barns)
Energy (MeV)
0
2
4
6
8
10
12
0
20
40
60
80
100
120
140
160
180
200
neutrons
deuterons
tritons
he-3
alphas


72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
neutrons from (p,x)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
100
200
Sec. Energy
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)


72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
deuterons from (p,x)
Prob/MeV
10^0
10^-2
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)


72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
tritons from (p,x)
Prob/MeV
10^0
10^-2
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)


72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
he3s from (p,x)
Prob/MeV
10^0
10^-2
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)


72-HF-178 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
alphas from (p,x)
Prob/MeV
10^0
10^-2
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)