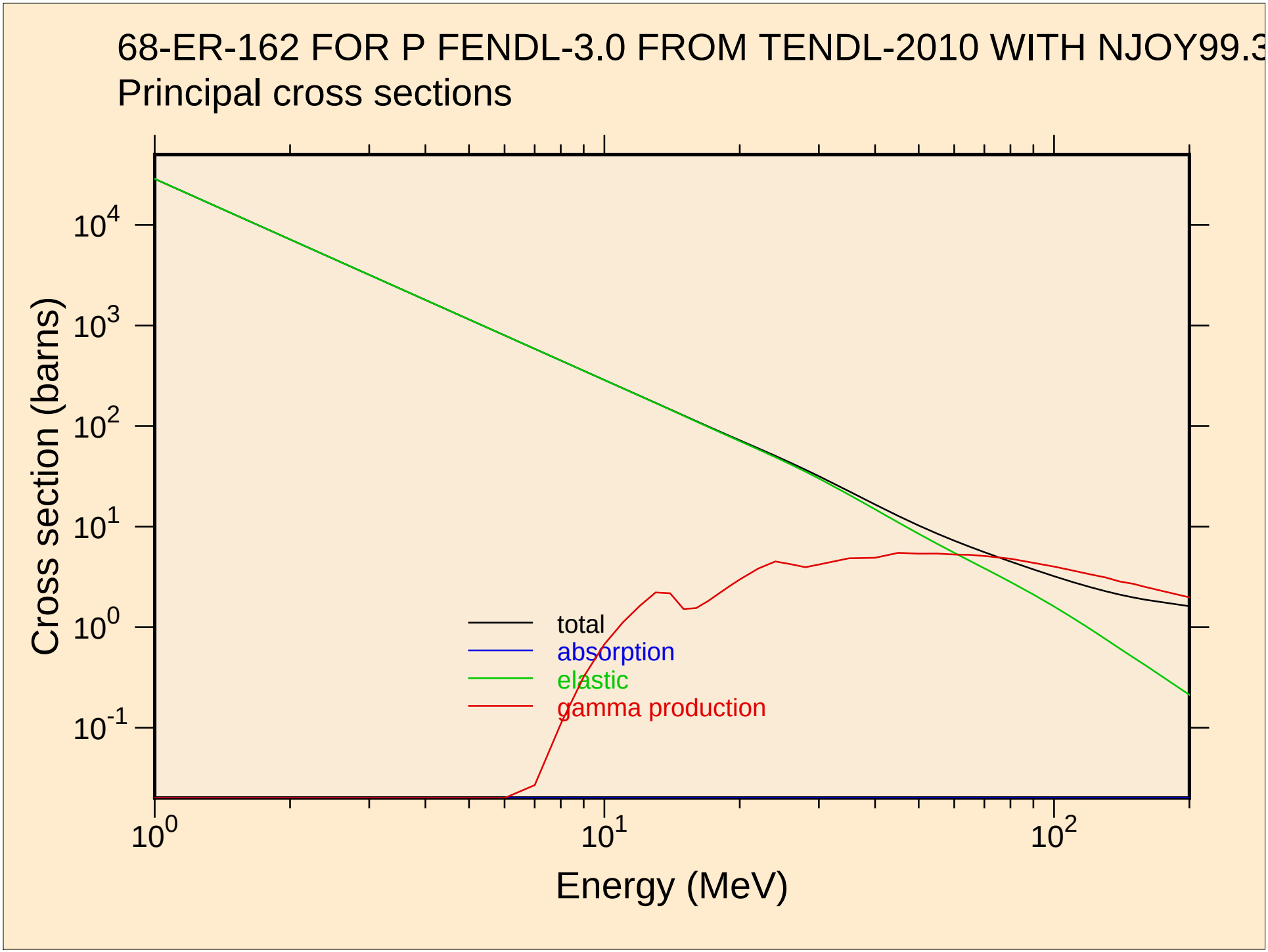
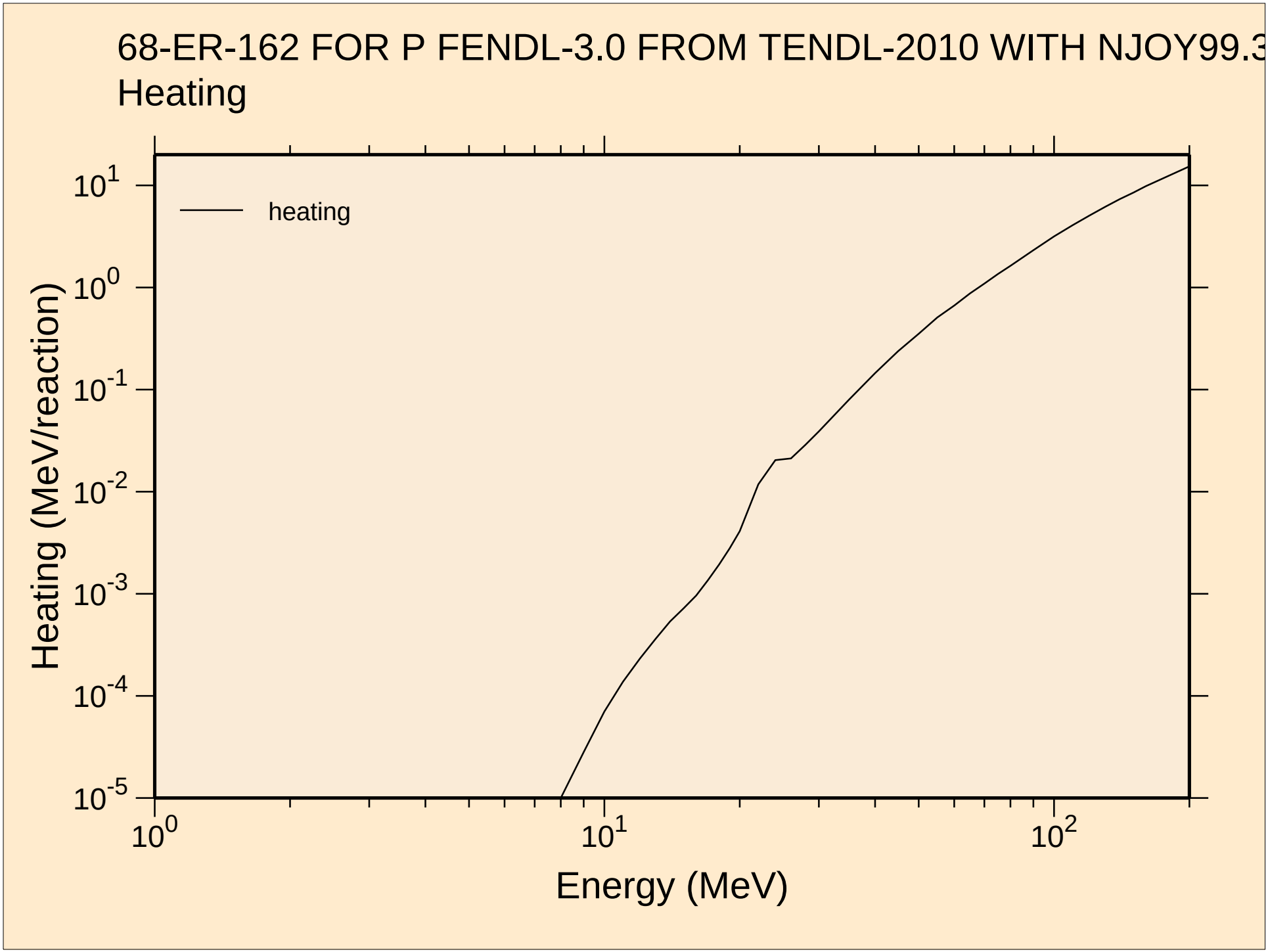
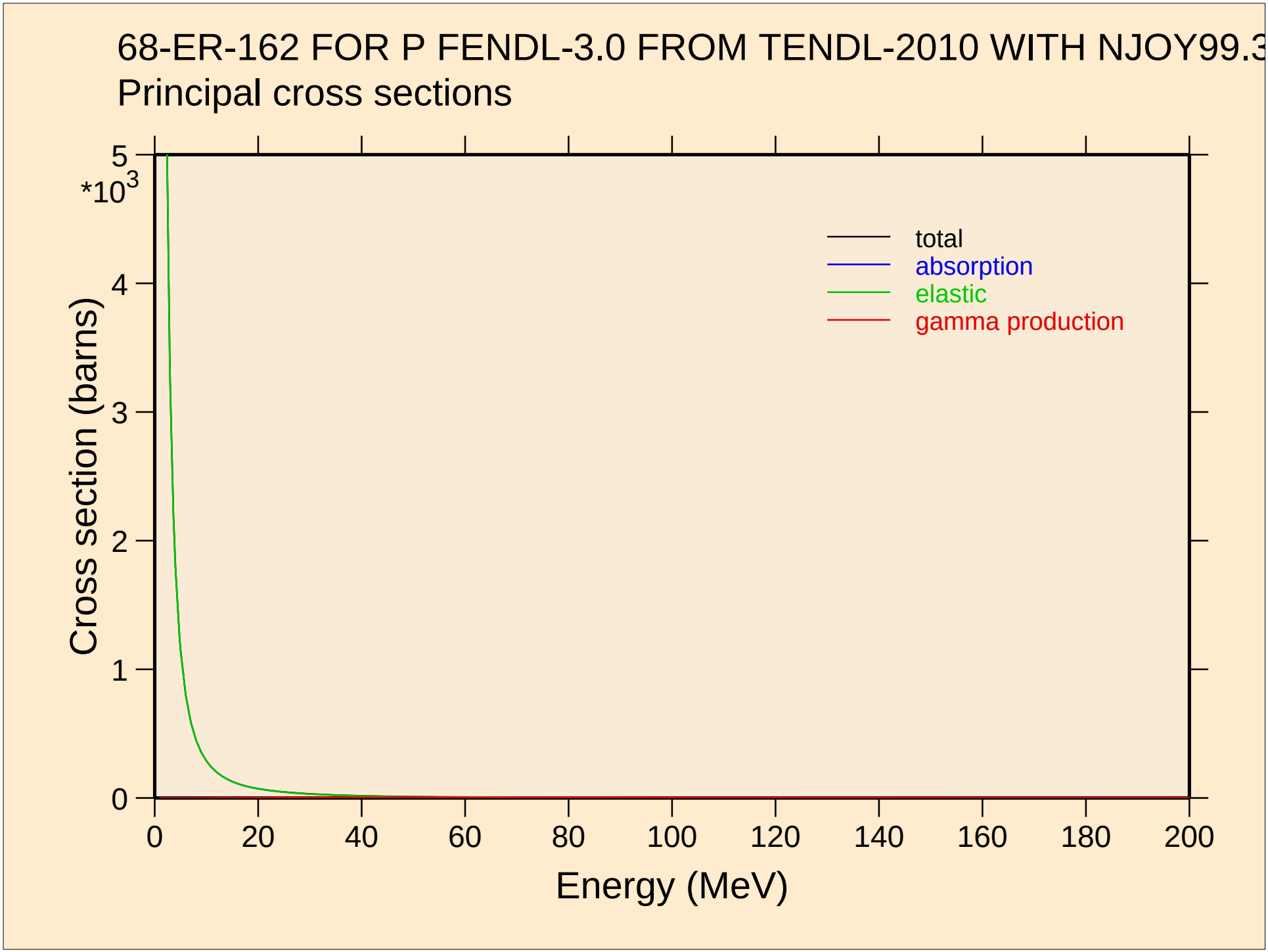
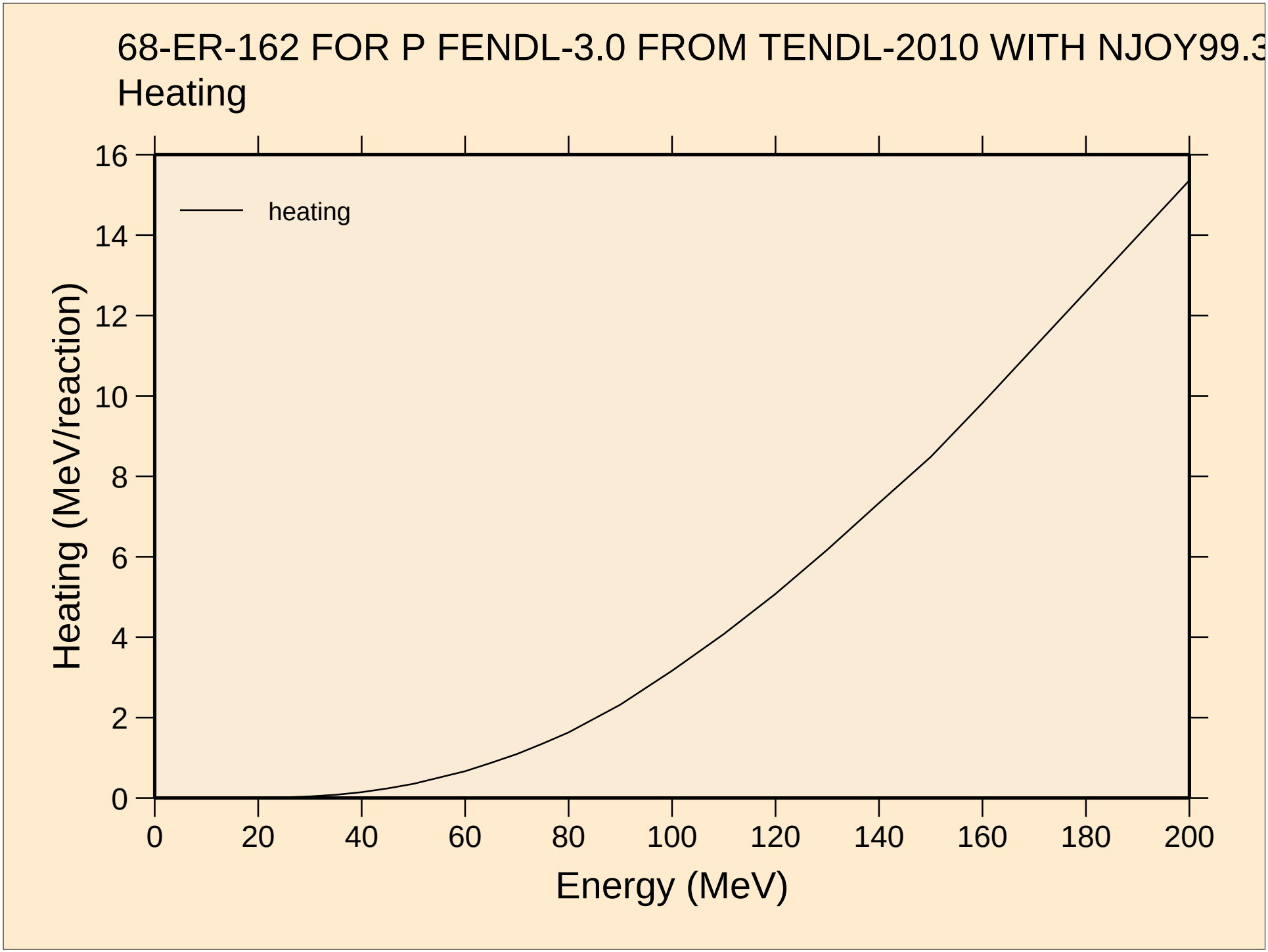
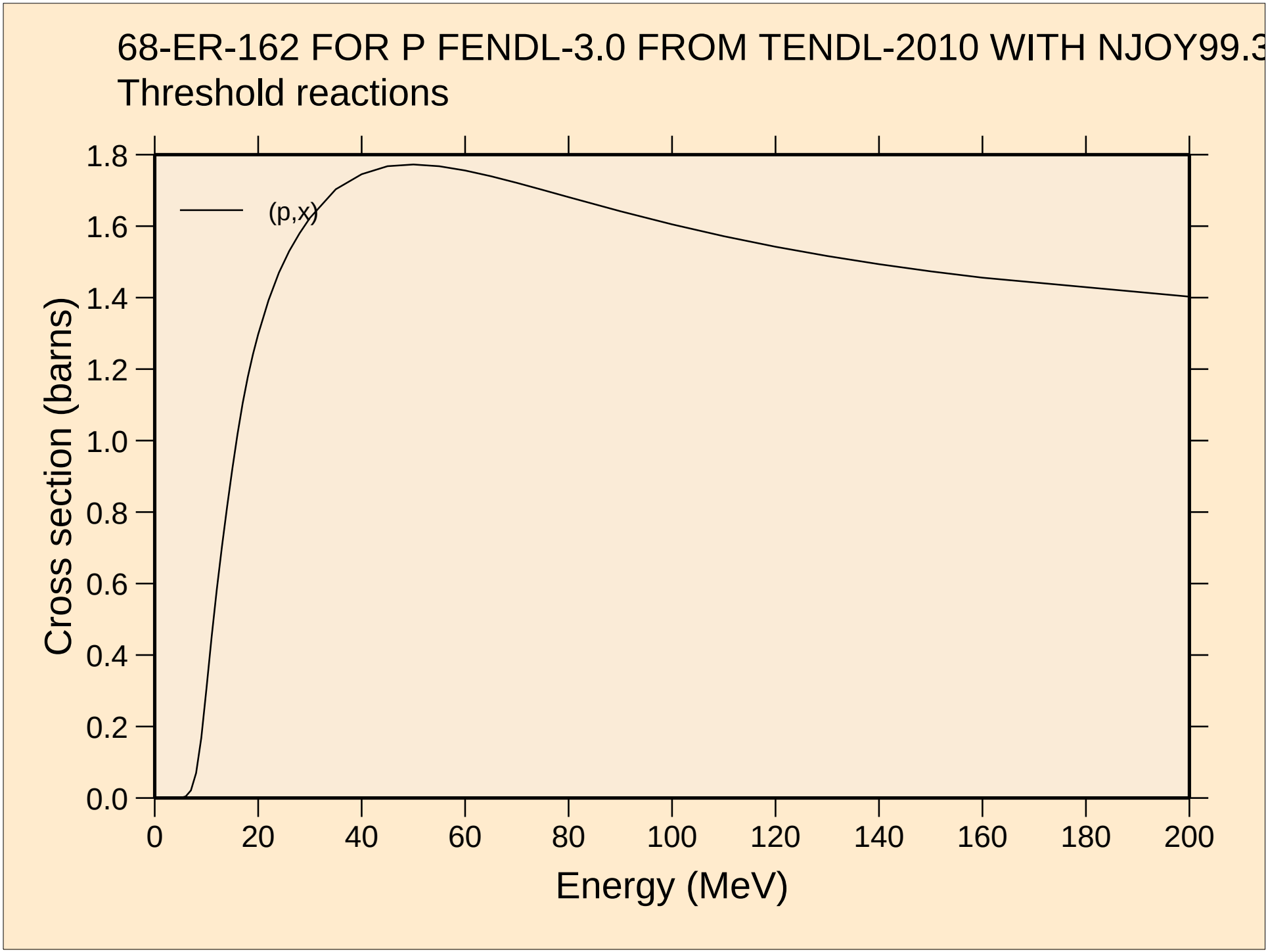
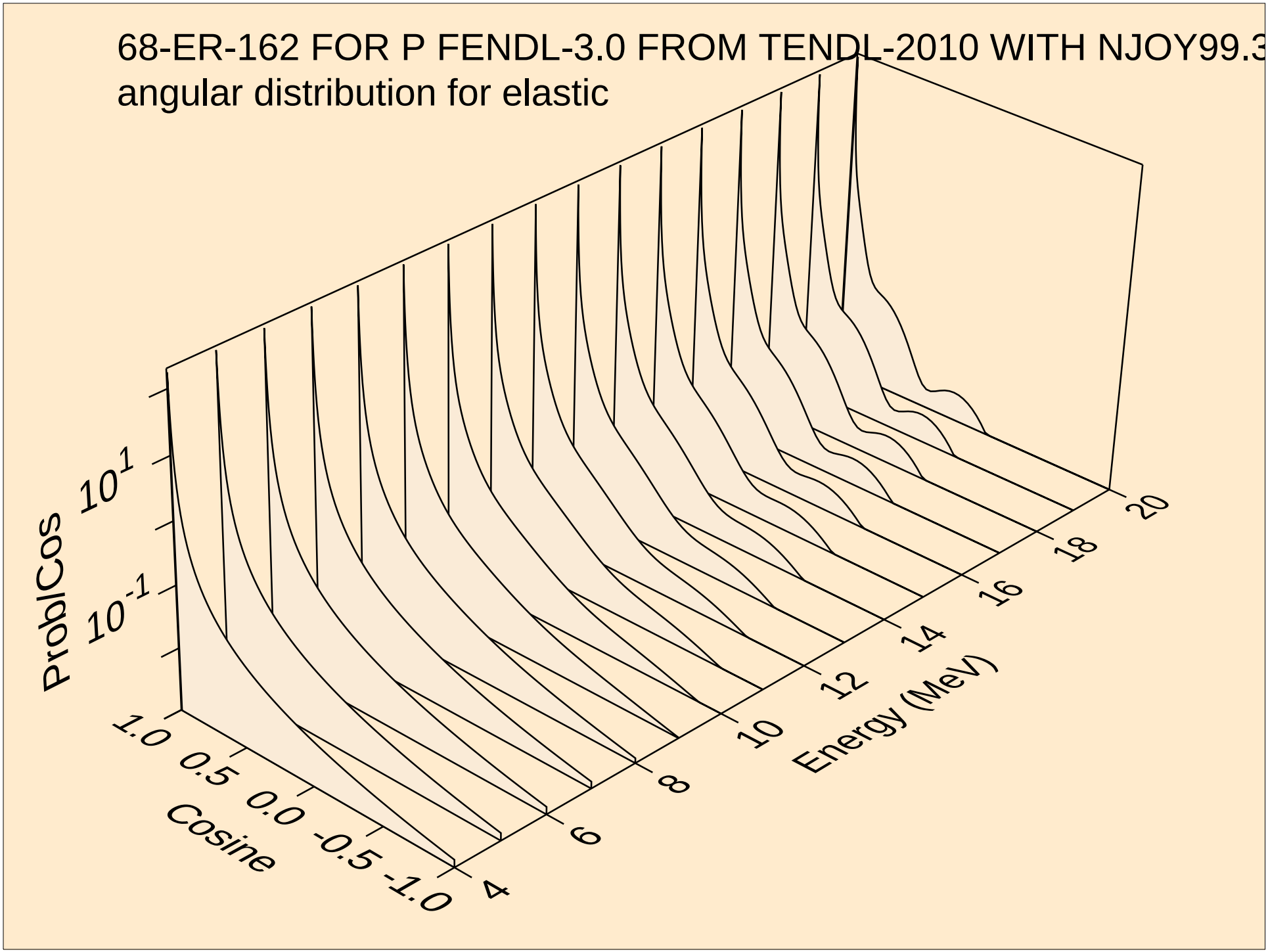

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Principal cross sections
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^0
10^1
10^2
Energy (MeV)
total
absorption
elastic
gamma production

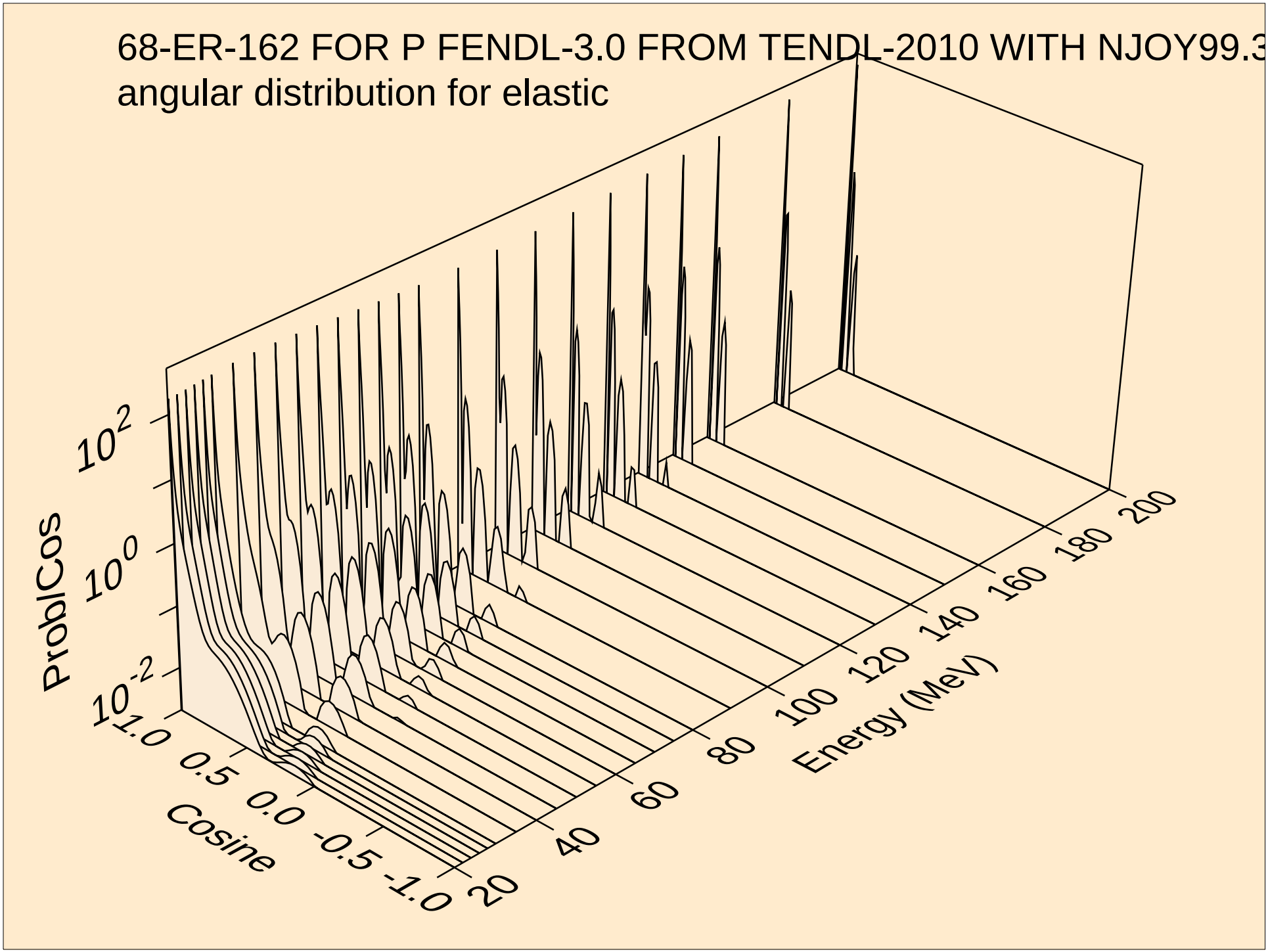

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^0
10^1
10^2

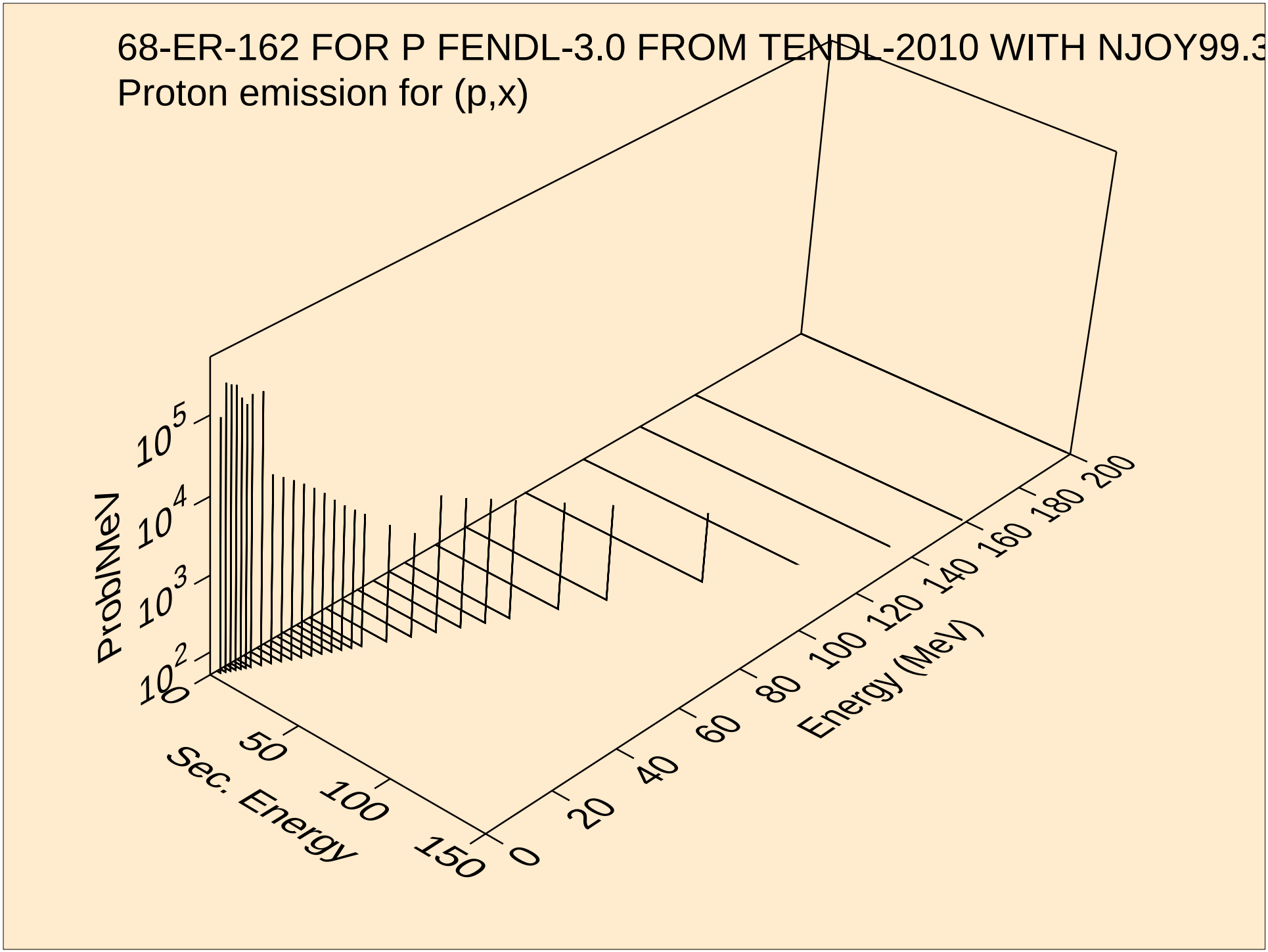

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Principal cross sections
*10^3
5
4
3
2
1
0
Cross section (barns)
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)
total
absorption
elastic
gamma production

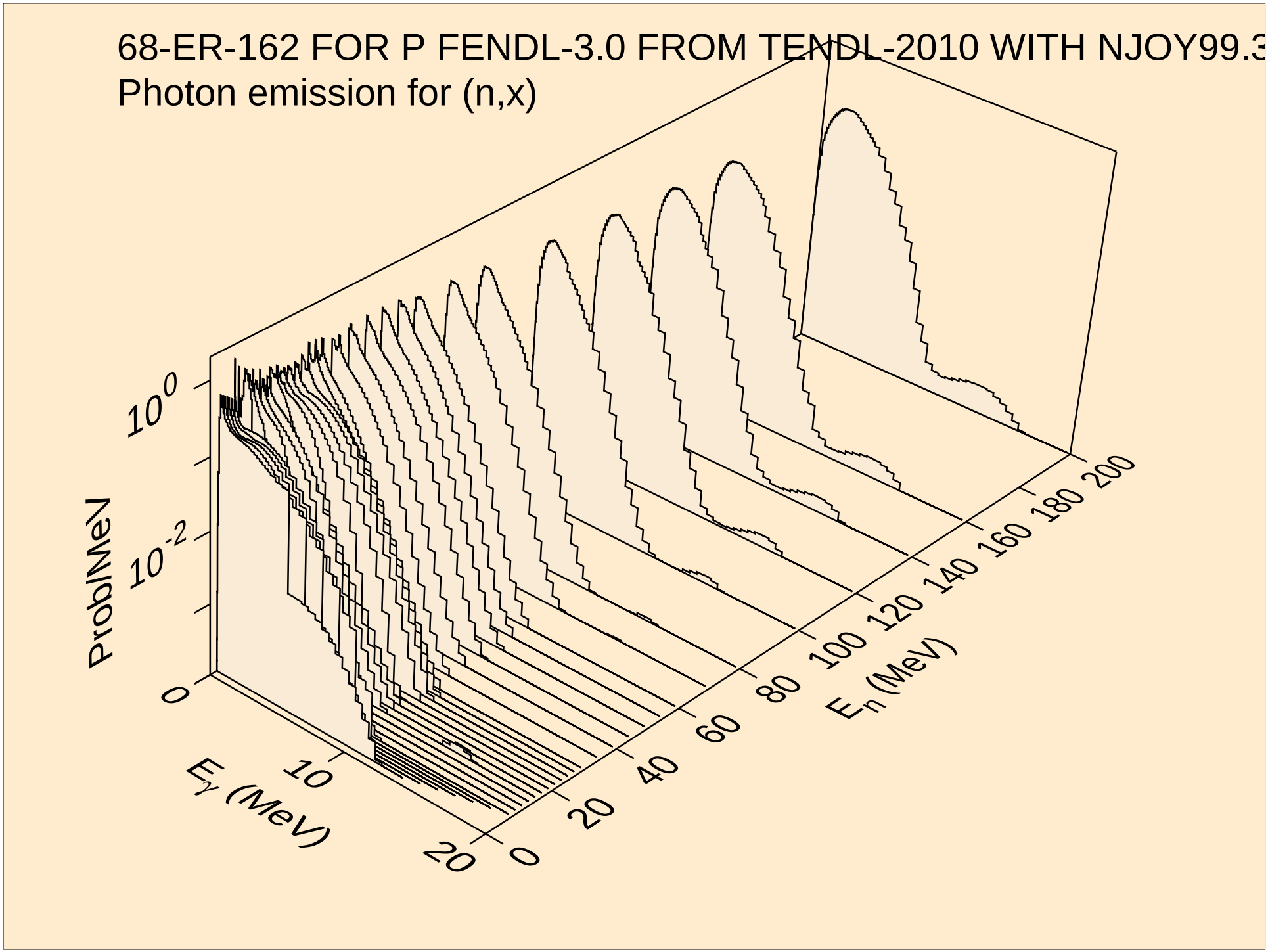

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
2
4
6
8
10
12
14
16
0
20
40
60
80
100
120
140
160
180
200

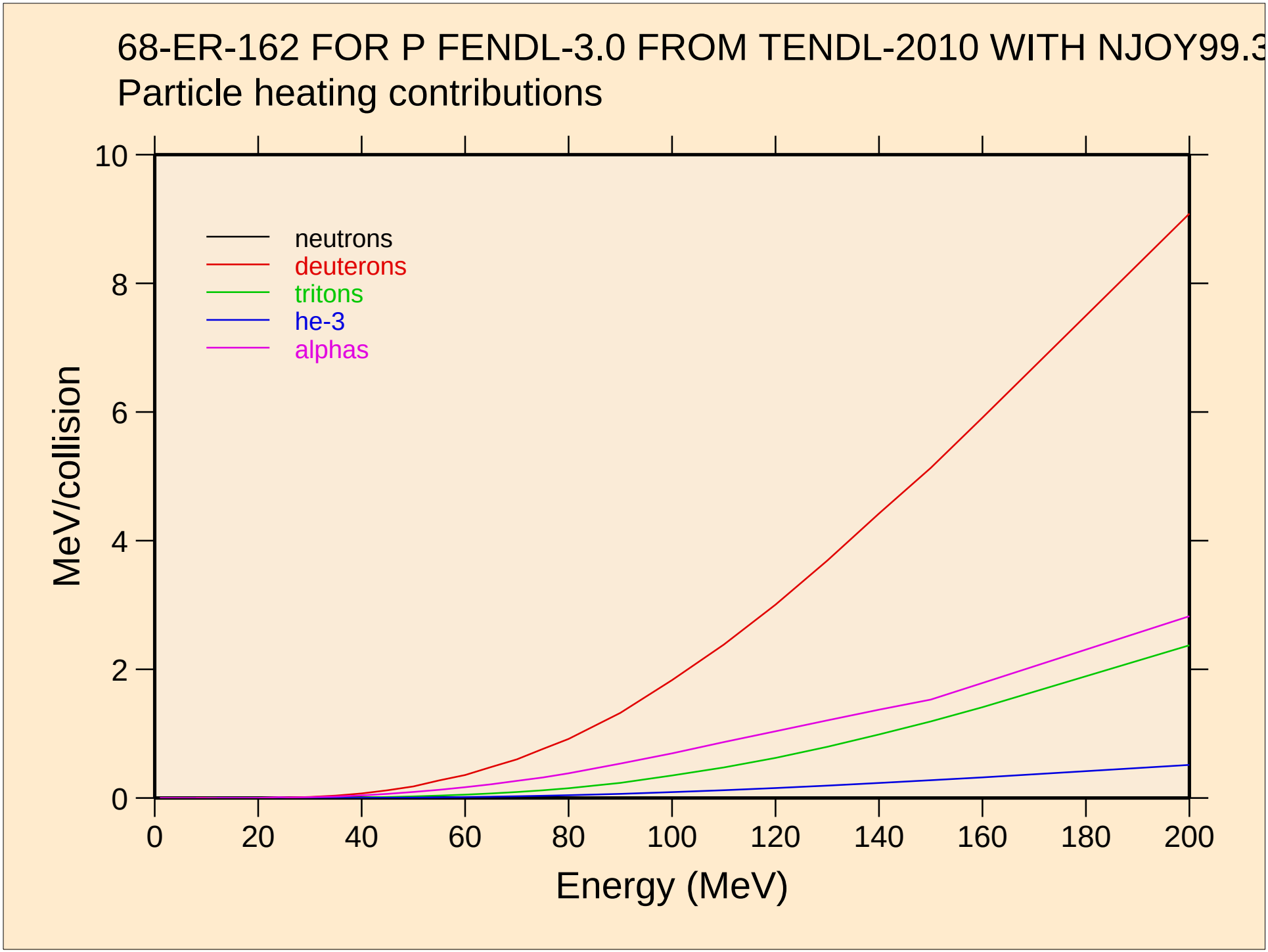

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Threshold reactions
(p,x)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
0
20
40
60
80
100
120
140
160
180
200

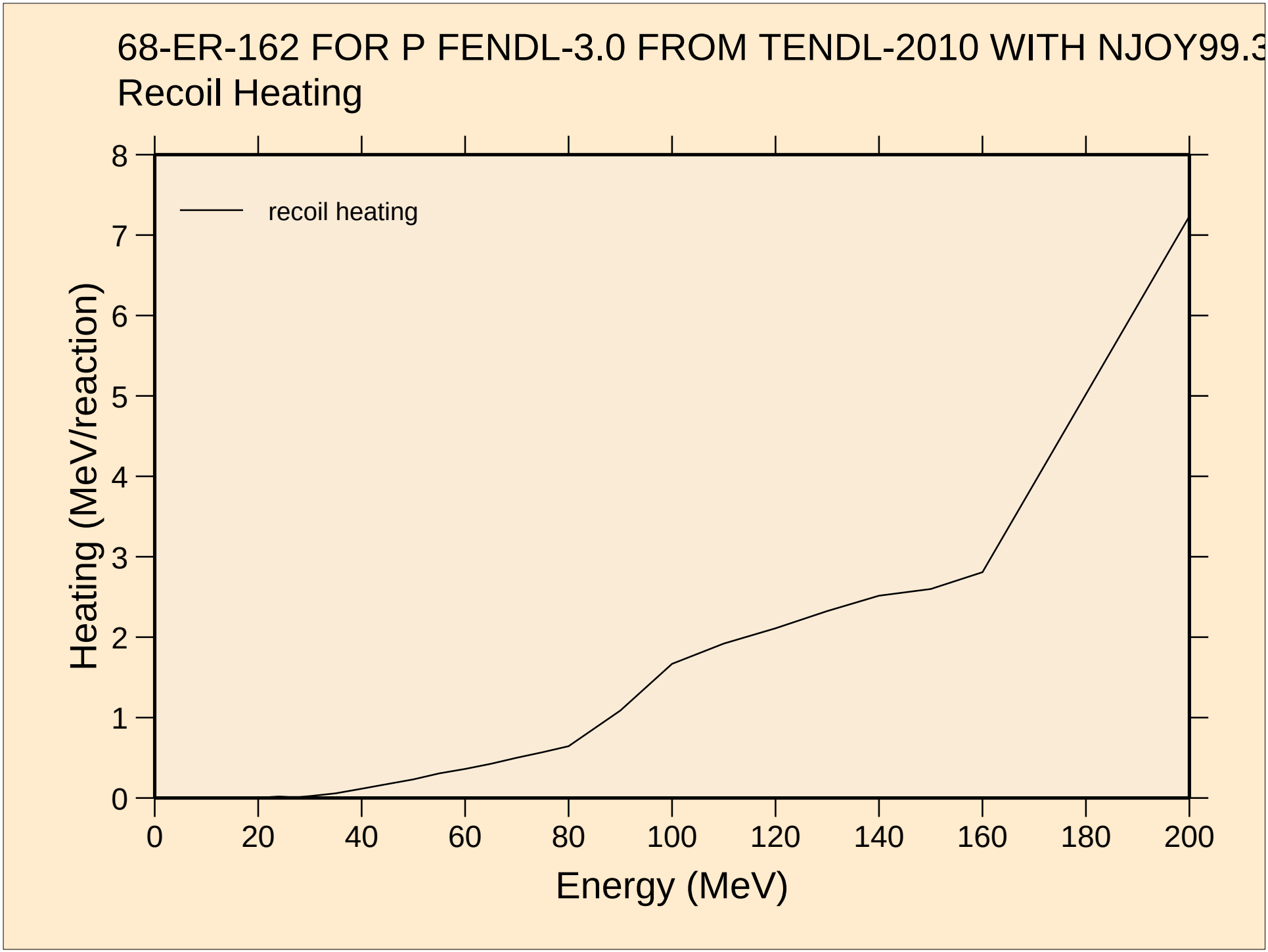

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
angular distribution for elastic
ProbICos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
4
6
8
10
12
14
16
18
20
Energy (MeV)

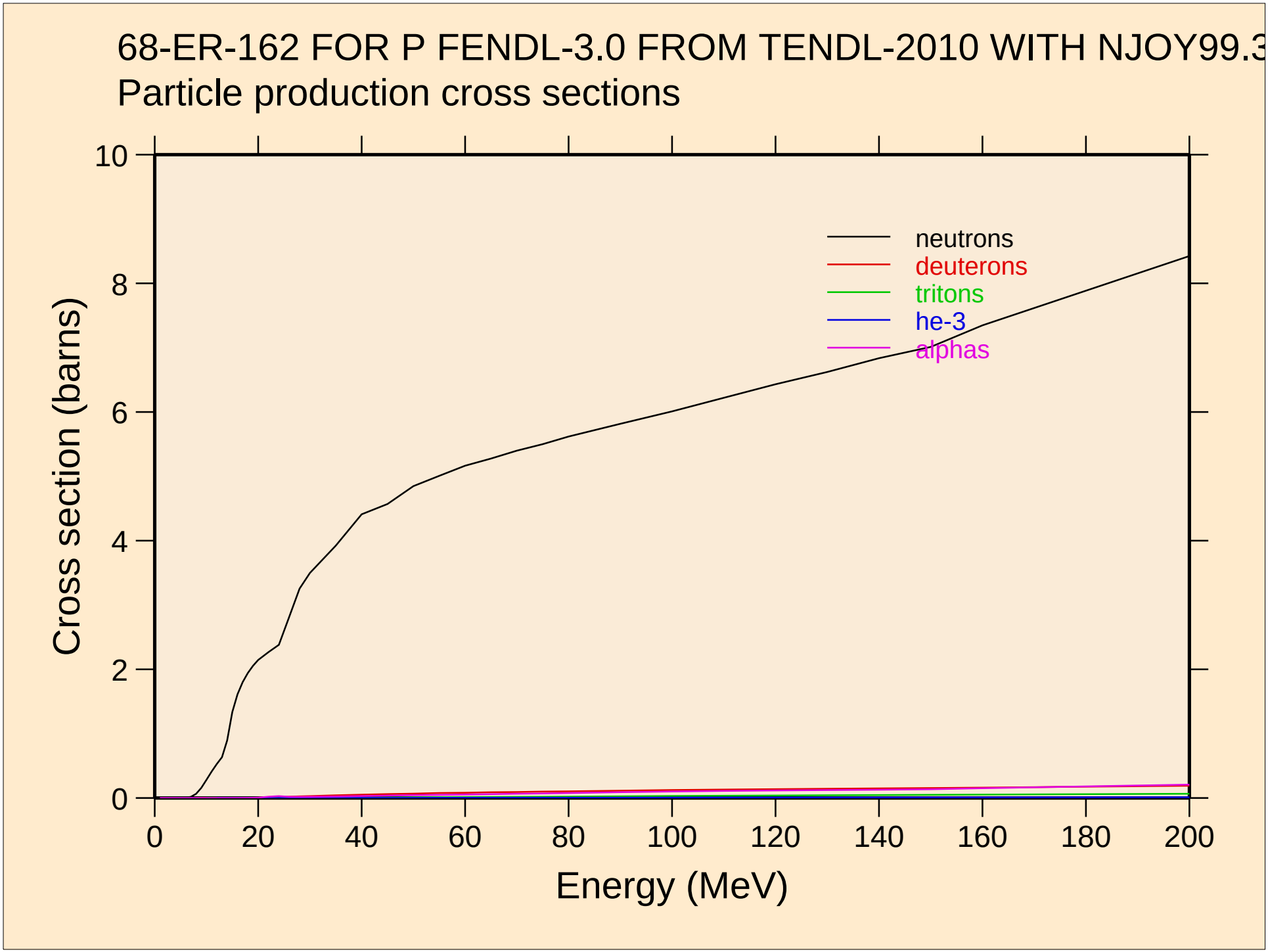

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
angular distribution for elastic
ProbICos
$10^{2}$
$10^{0}$
$10^{-2}$
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

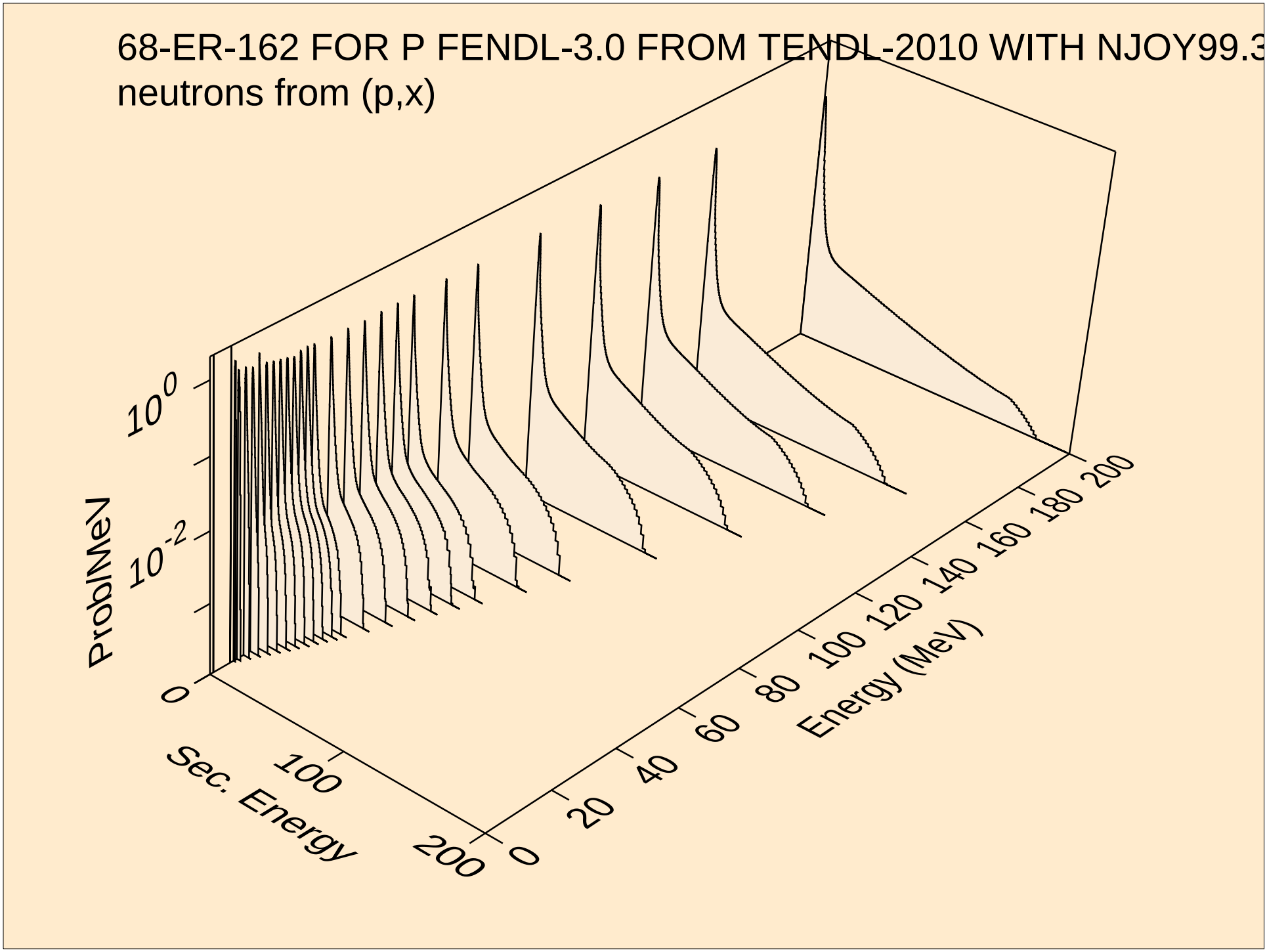

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Proton emission for (p,x)
Prob/MeV
$10^5$
$10^4$
$10^3$
$10^2$
0
50
100
150
Sec. Energy
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

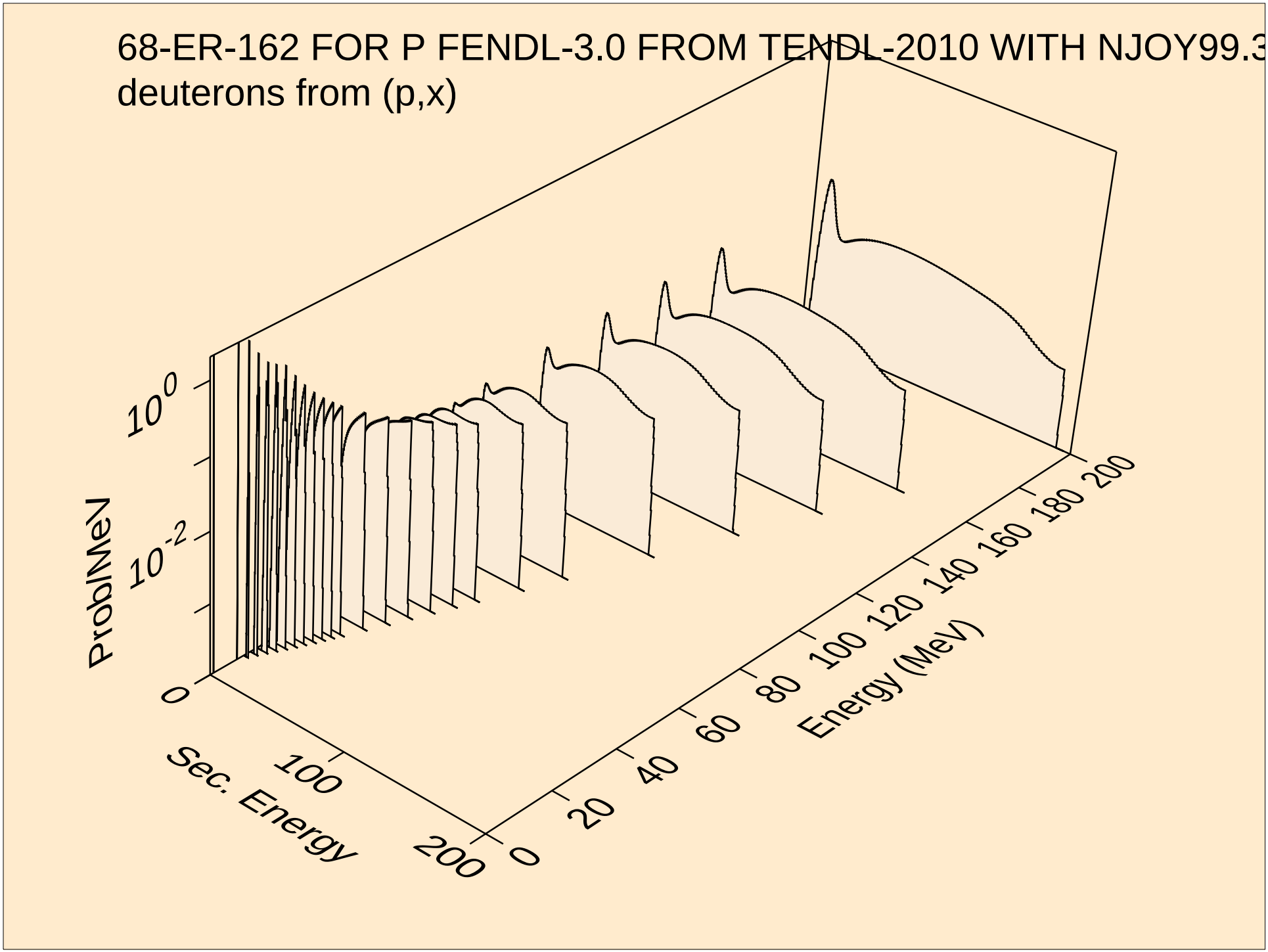

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Photon emission for (n,x)
Prob/MeV
$10^{0}$
$10^{-2}$
0
$E_\gamma$ (MeV)
0
10
20
$E_n$ (MeV)
0
20
40
60
80
100
120
140
160
180
200

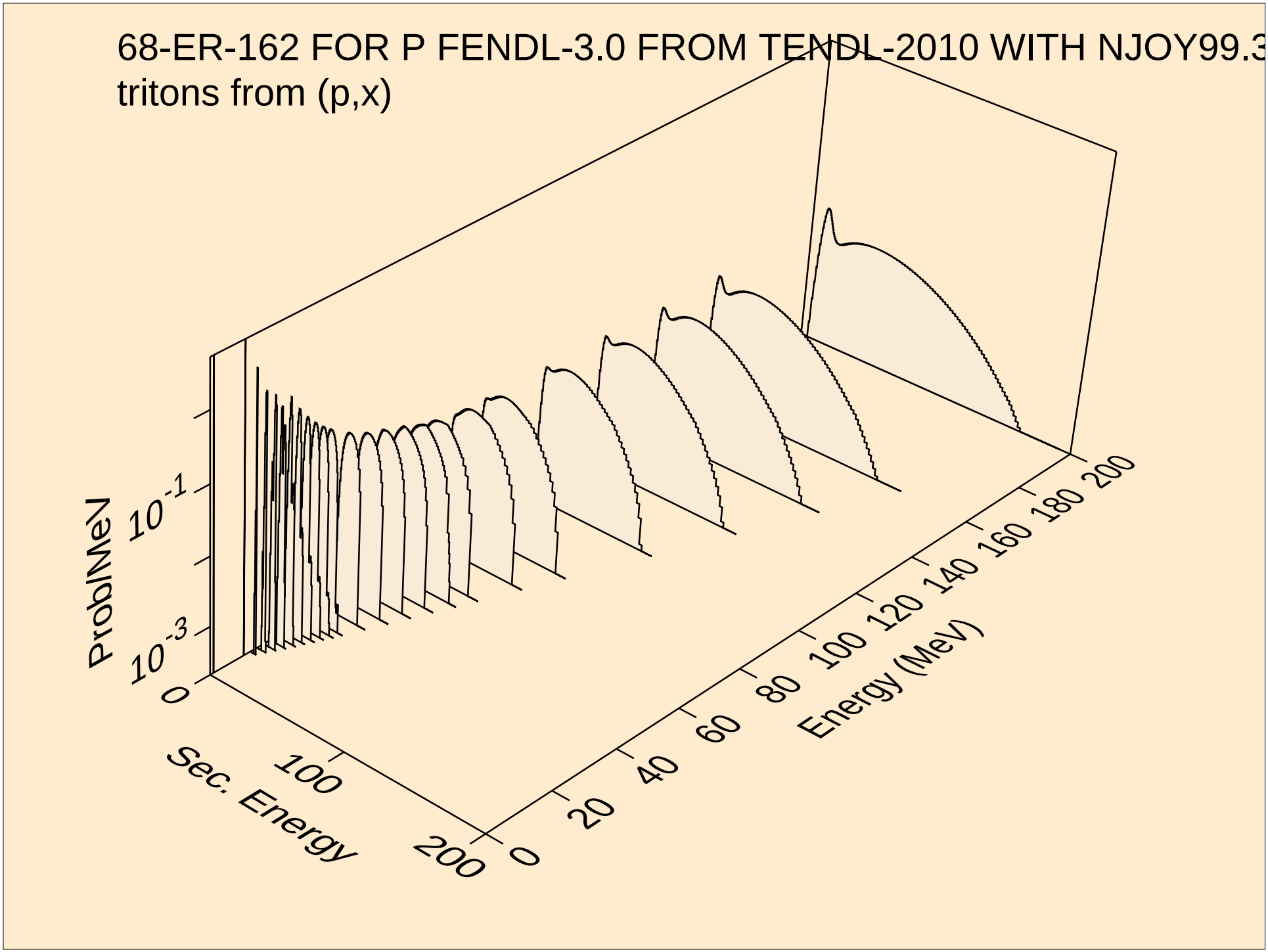

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Particle heating contributions
neutrons
deuterons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
0
20
40
60
80
100
120
140
160
180
200

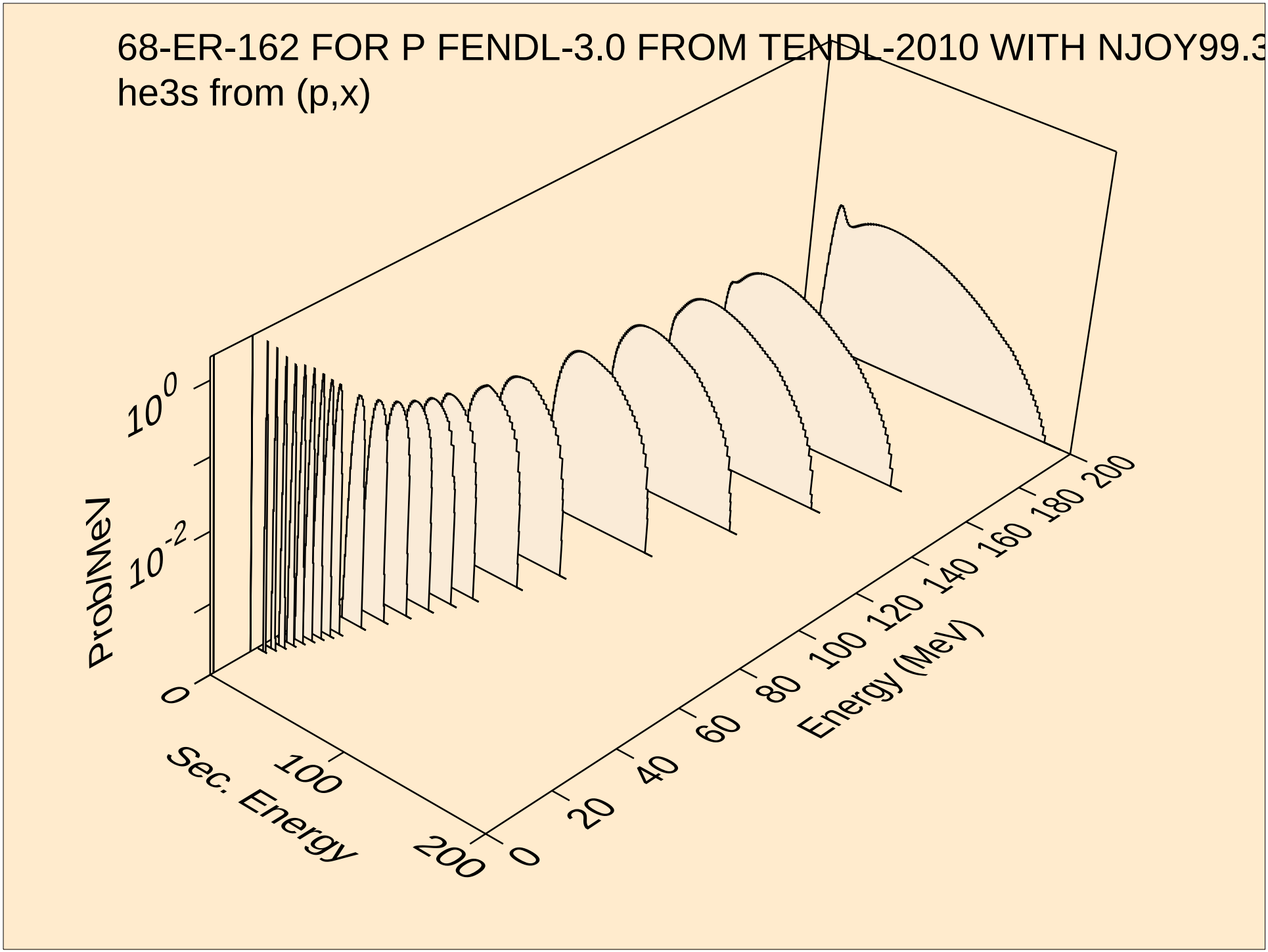

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0
1
2
3
4
5
6
7
8
0
20
40
60
80
100
120
140
160
180
200

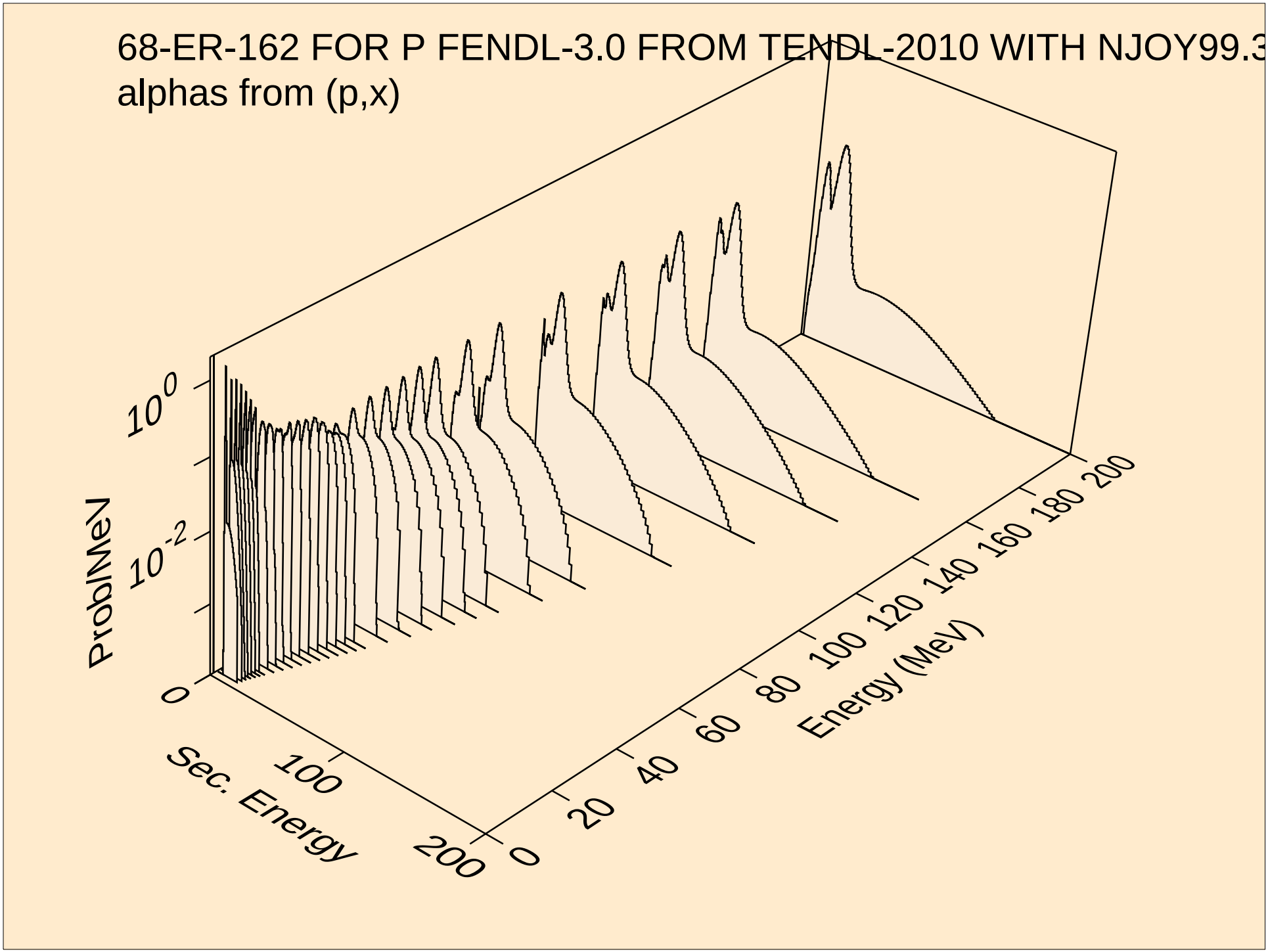

68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
Particle production cross sections
Cross section (barns)
Energy (MeV)
neutrons
deuterons
tritons
he-3
alphas
0
2
4
6
8
10
0
20
40
60
80
100
120
140
160
180
200


68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
neutrons 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)


68-ER-162 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)


68-ER-162 FOR P FENDL-3.0 FROM TENDL-2010 WITH NJOY99.3
tritons from (p,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)


68-ER-162 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)


68-ER-162 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)