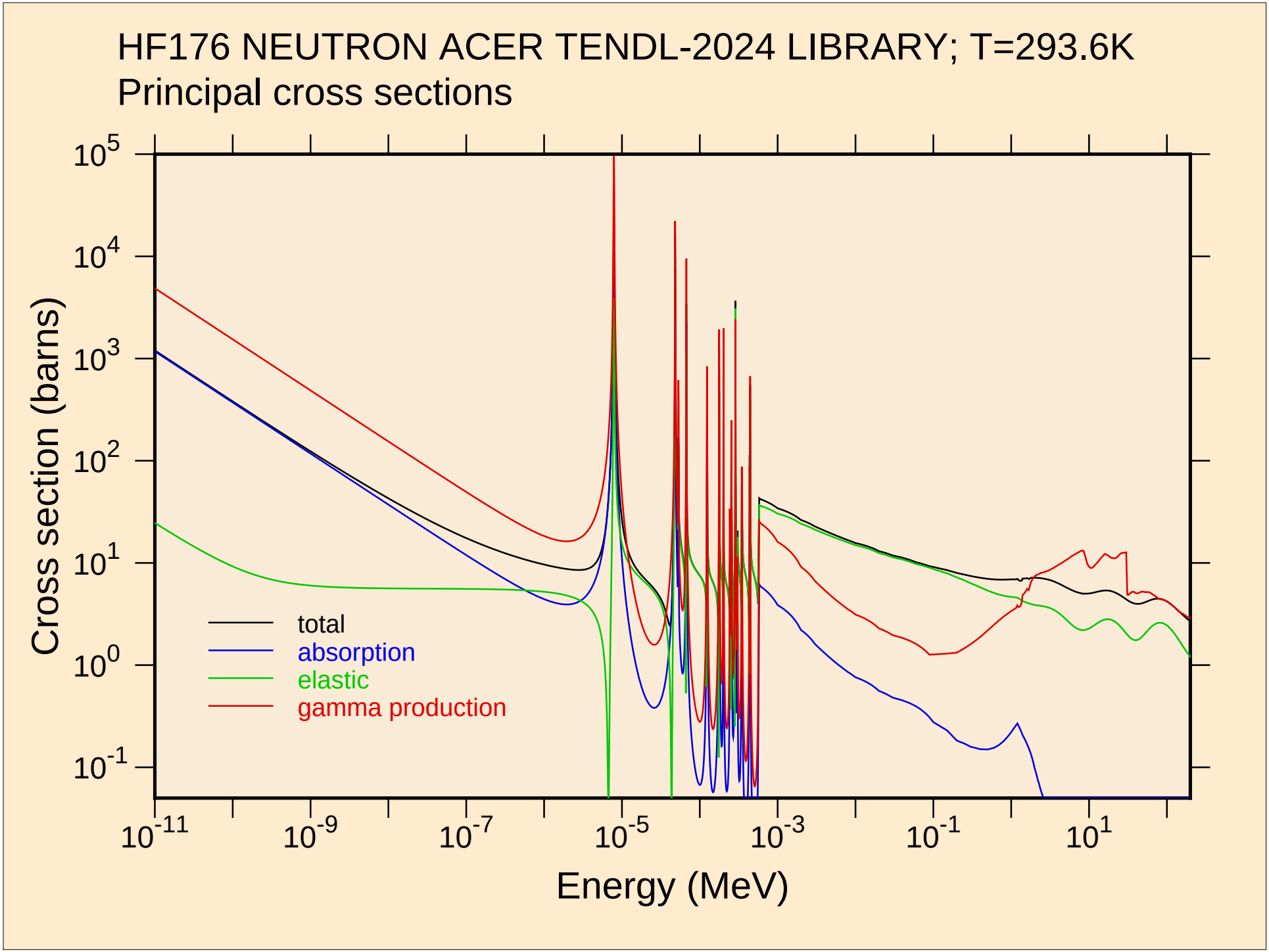
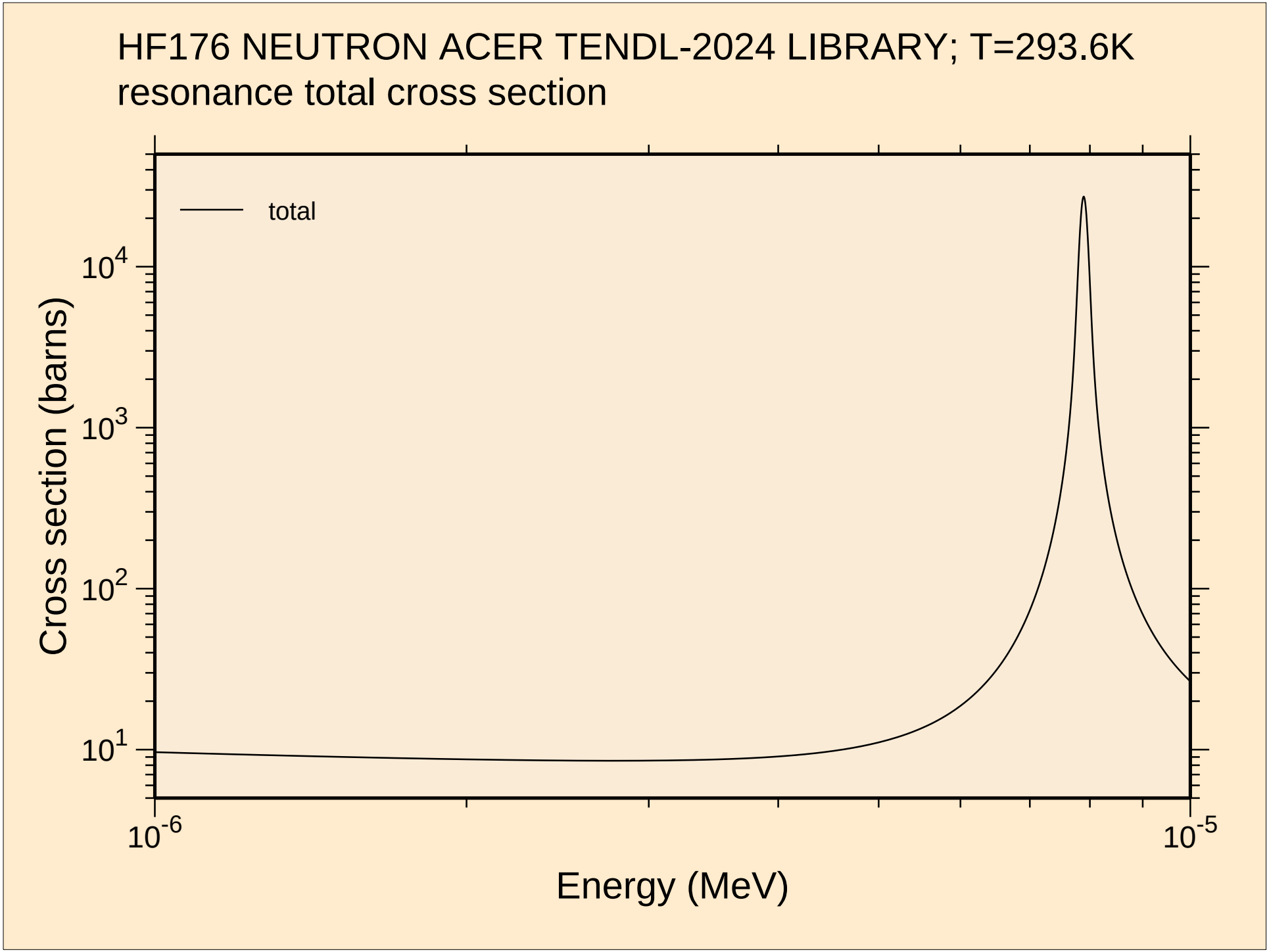
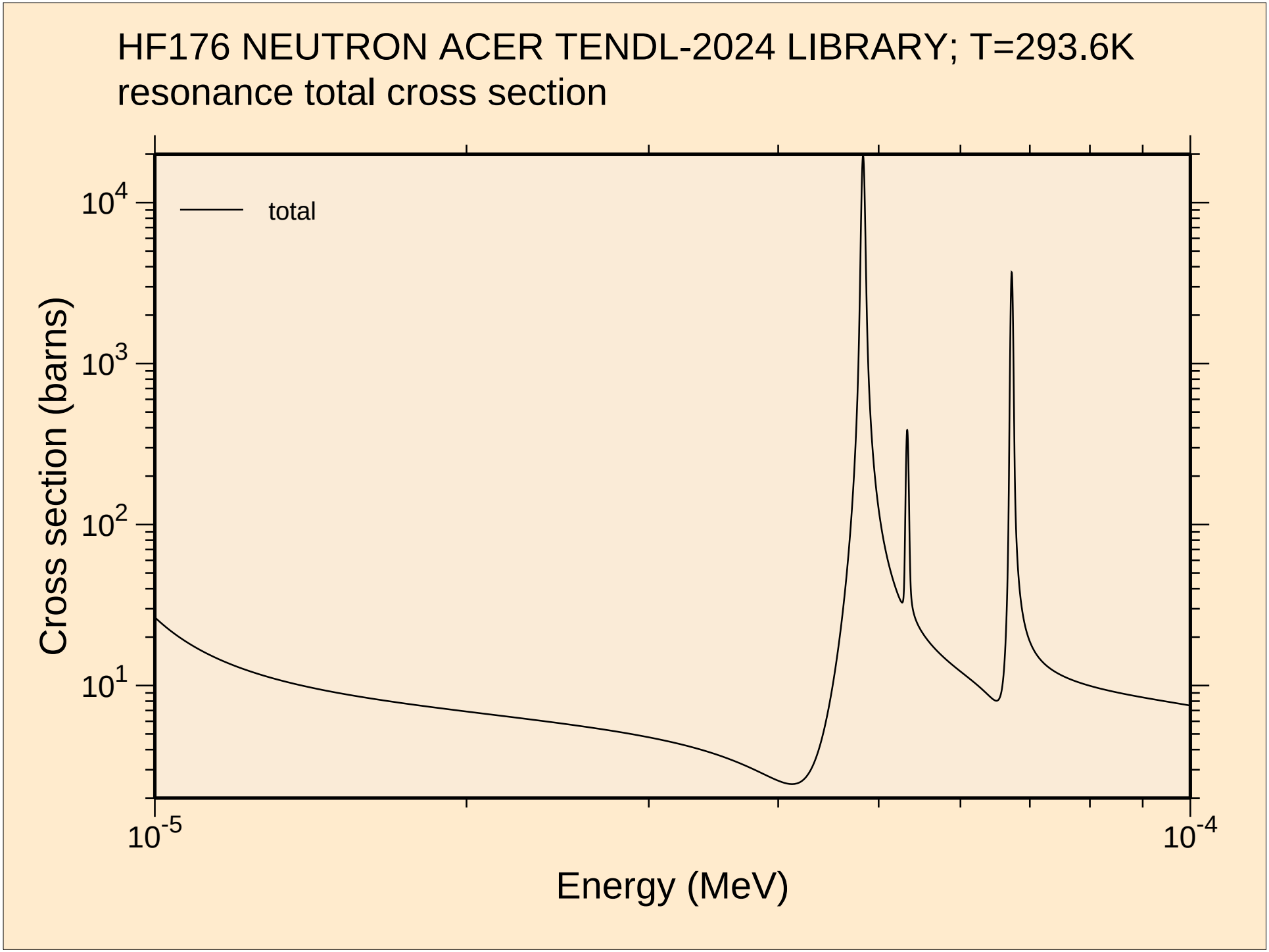
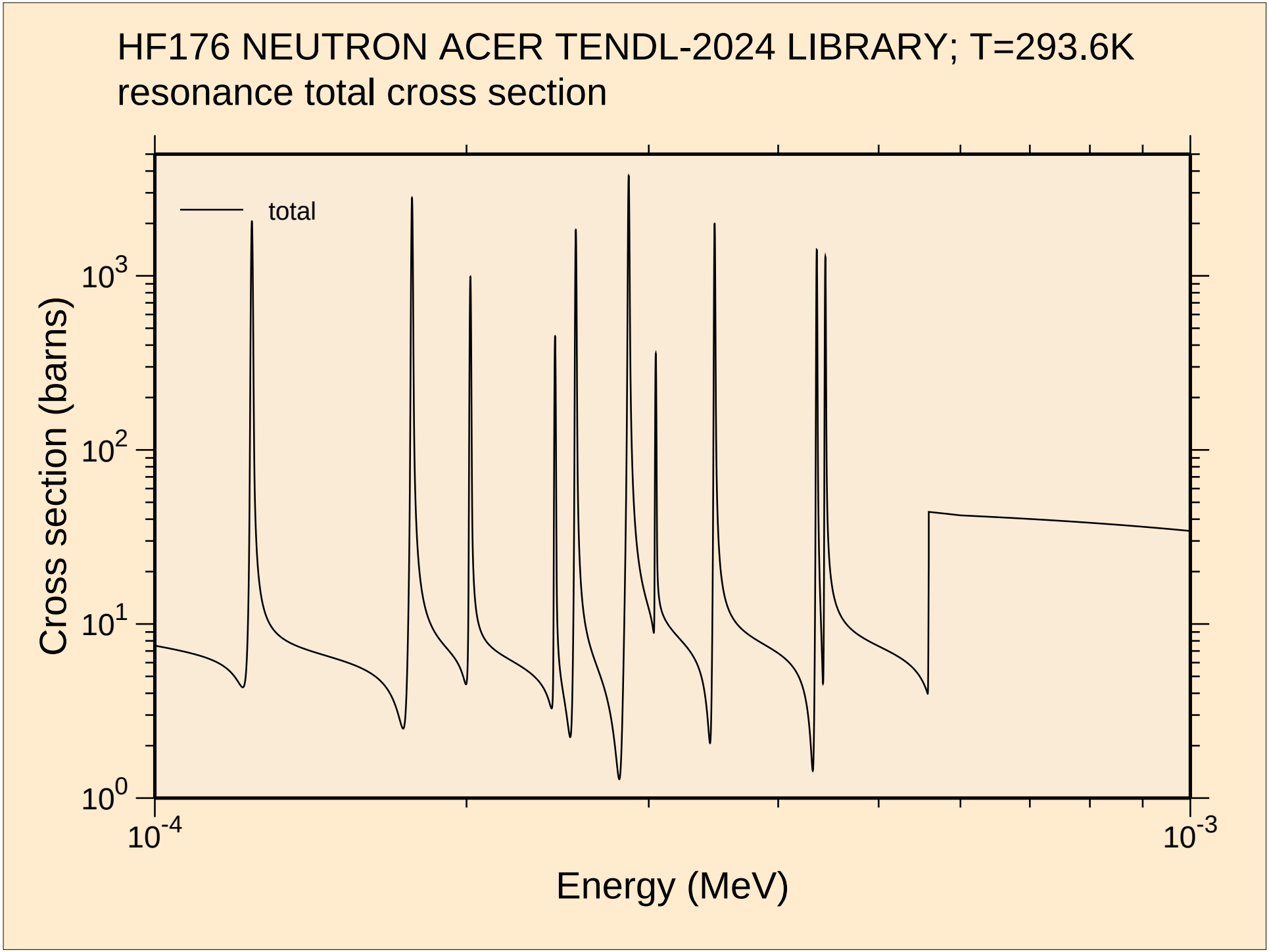
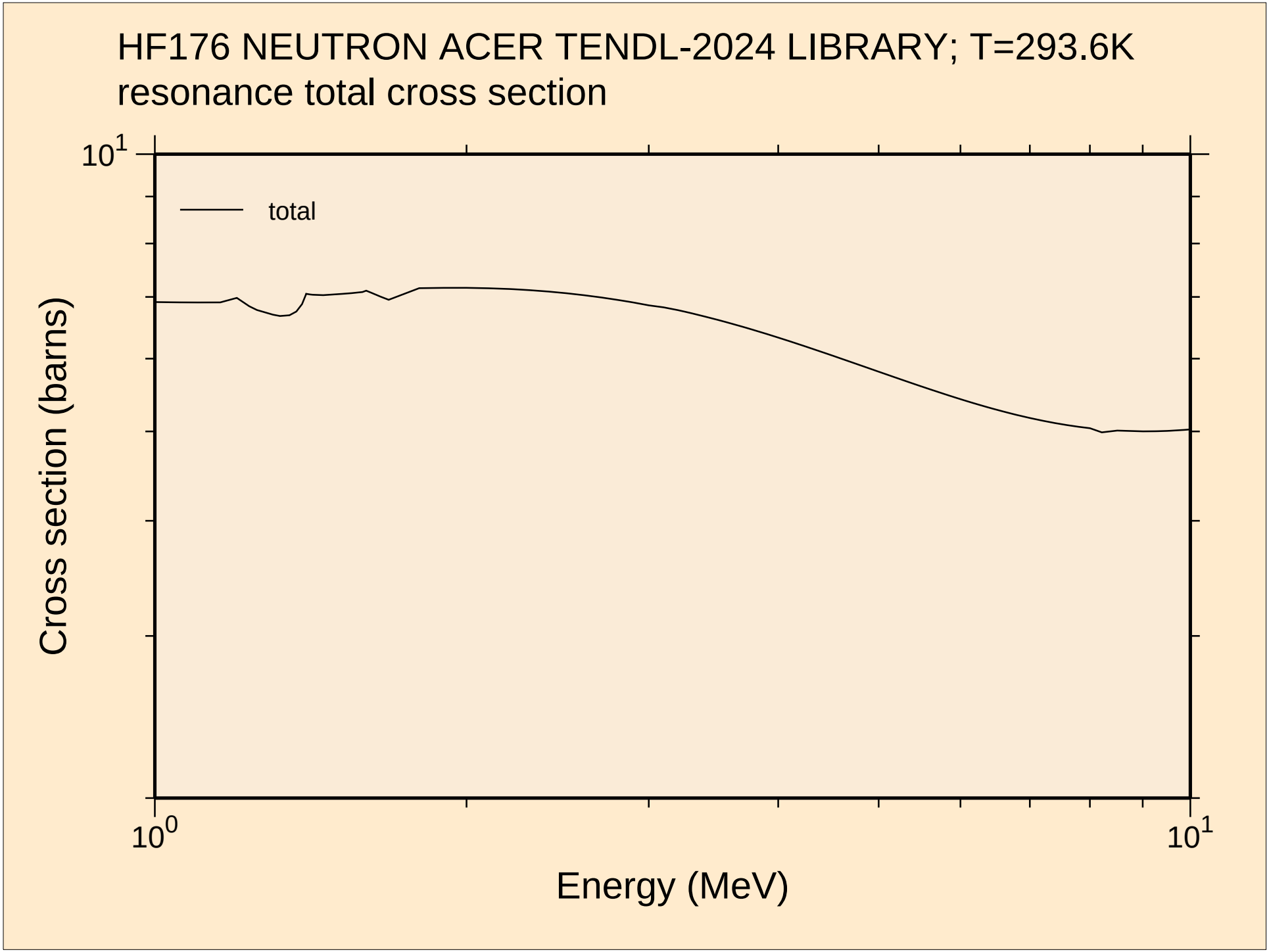
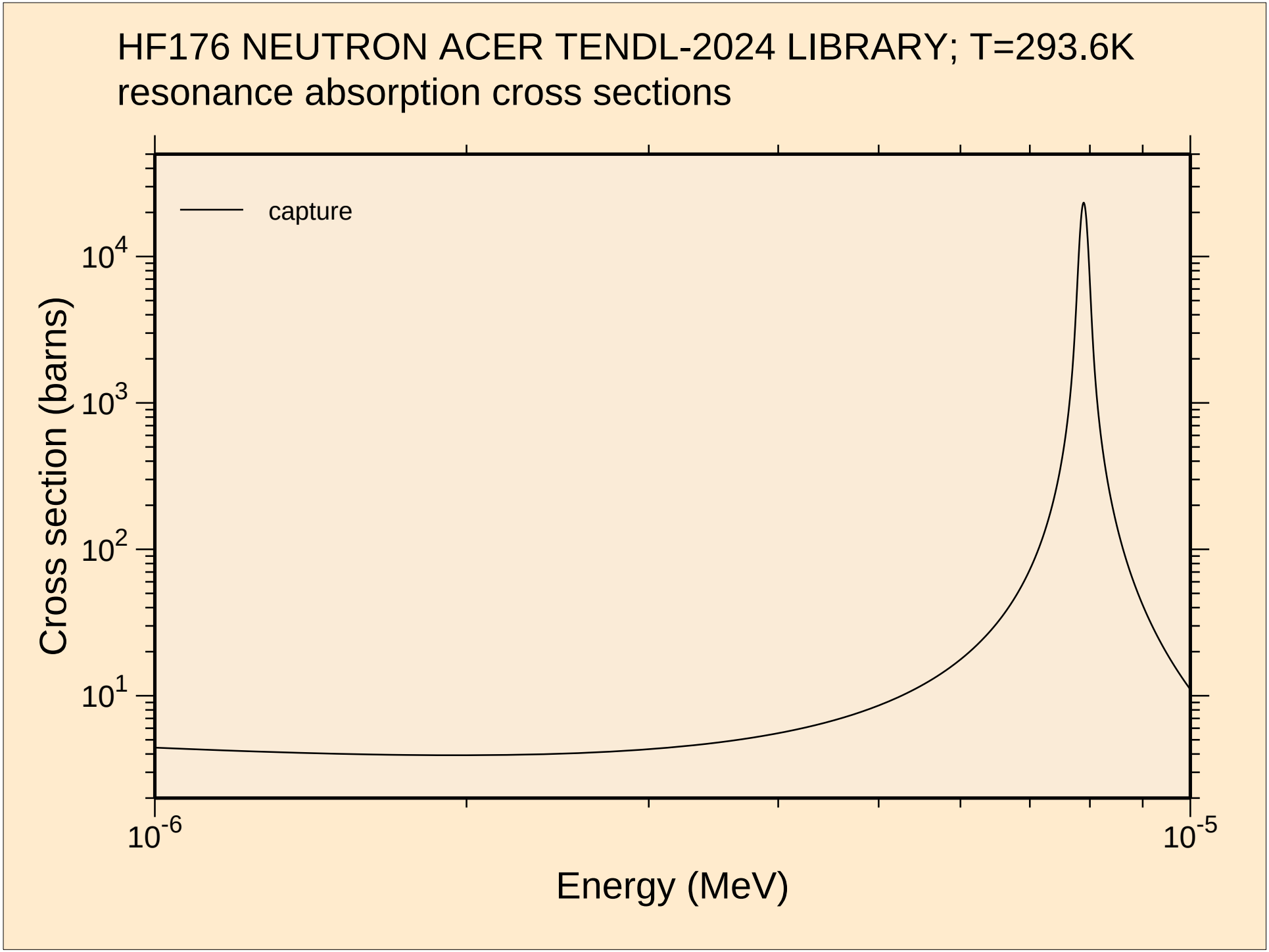

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production

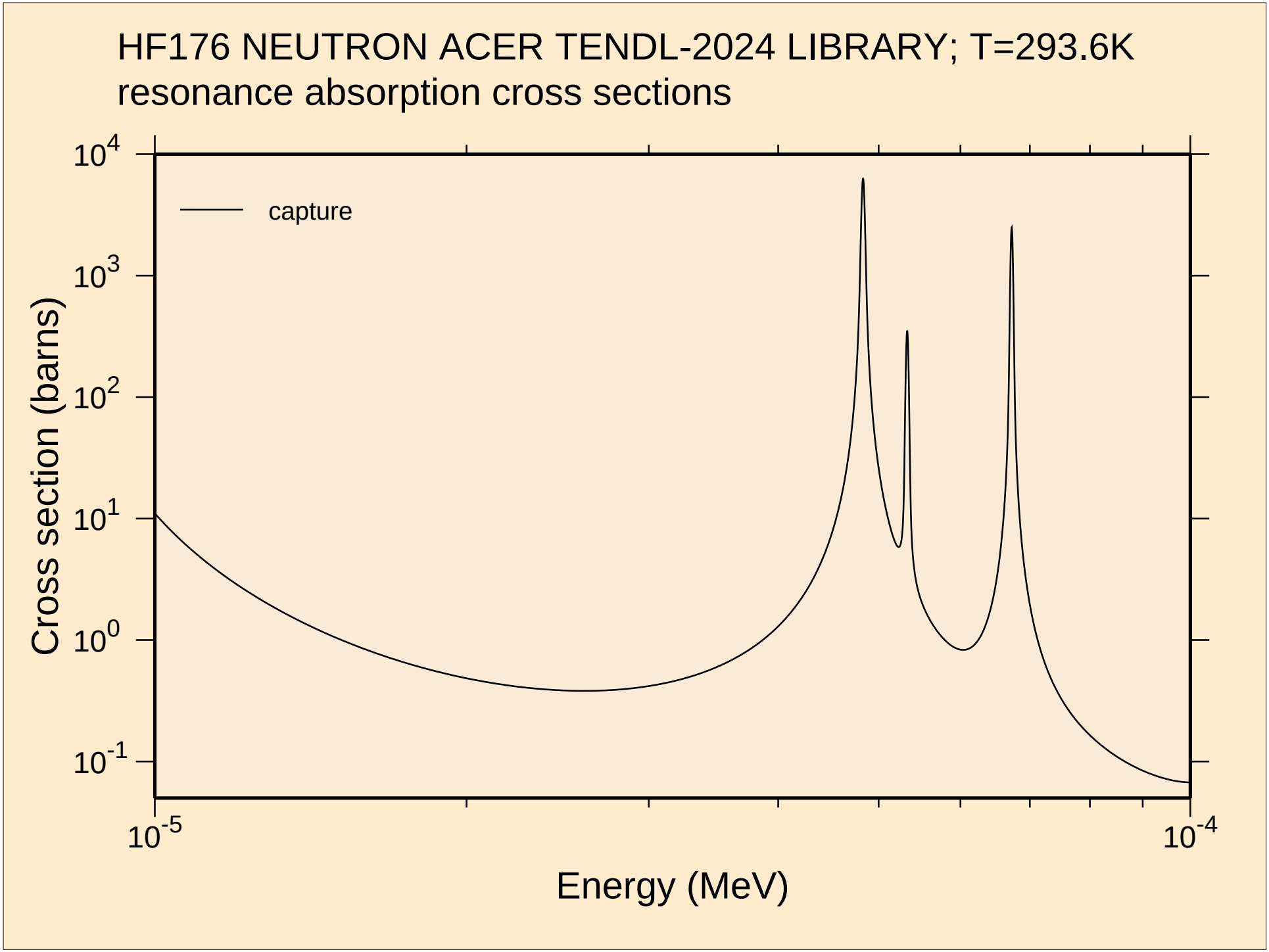

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^-6
10^-5
Energy (MeV)

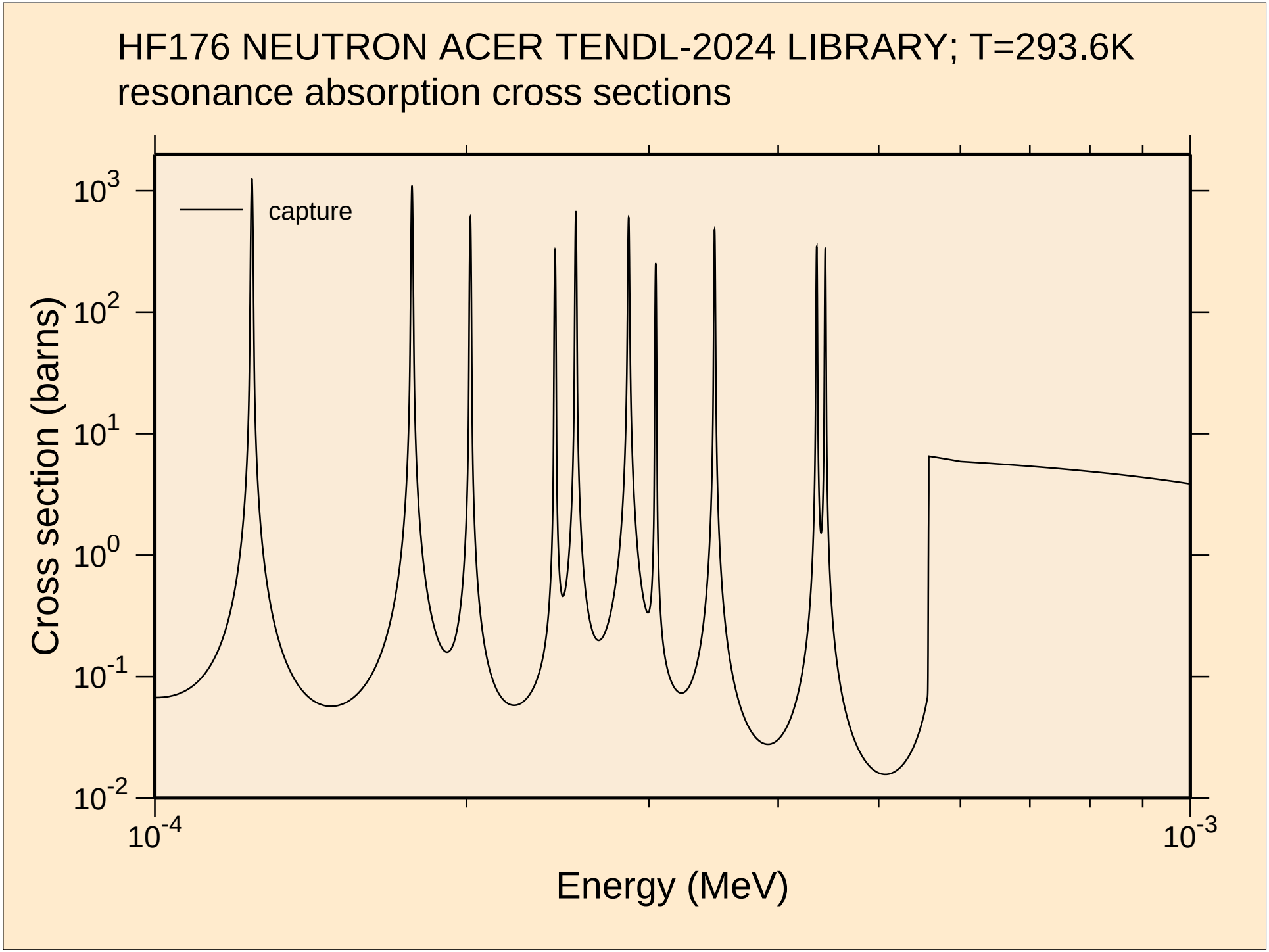

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance total cross section
total
Cross section (barns)
10^4
10^3
10^2
10^1
10^-5
10^-4
Energy (MeV)

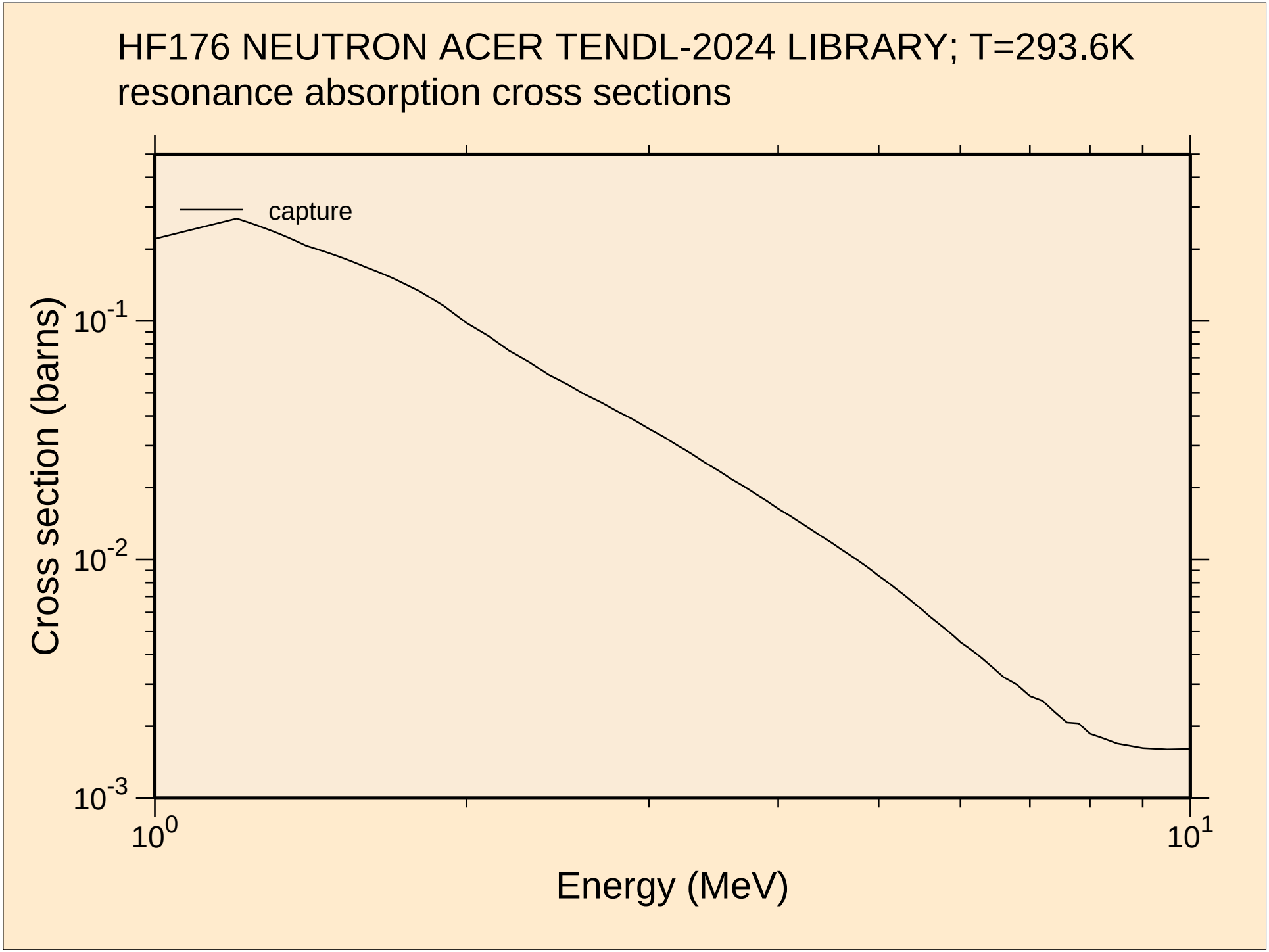

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance total cross section
total
Cross section (barns)
10^3
10^2
10^1
10^0
10^-4
10^-3
Energy (MeV)

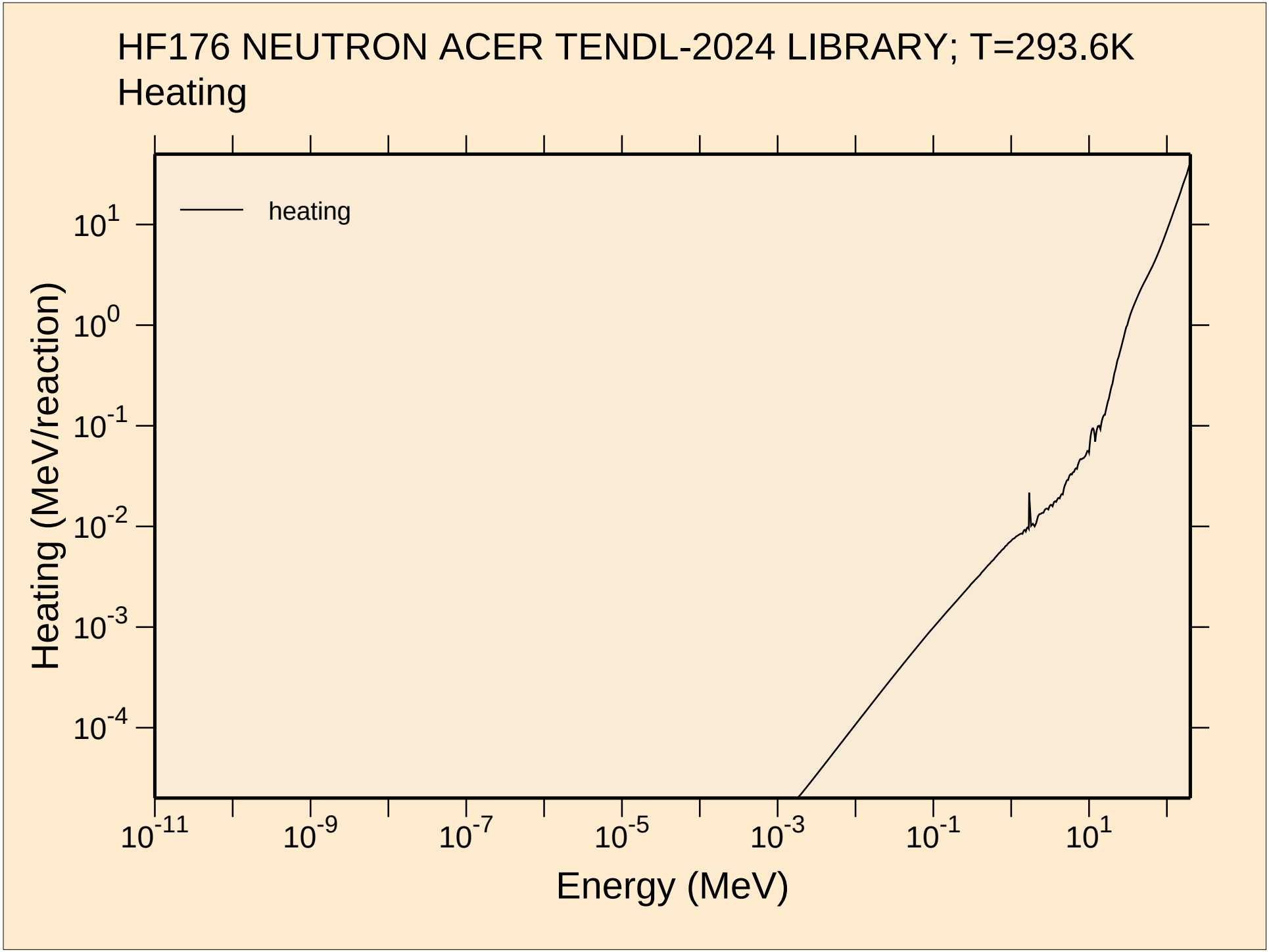

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance total cross section
10^1
total
Cross section (barns)
10^0
10^1
Energy (MeV)

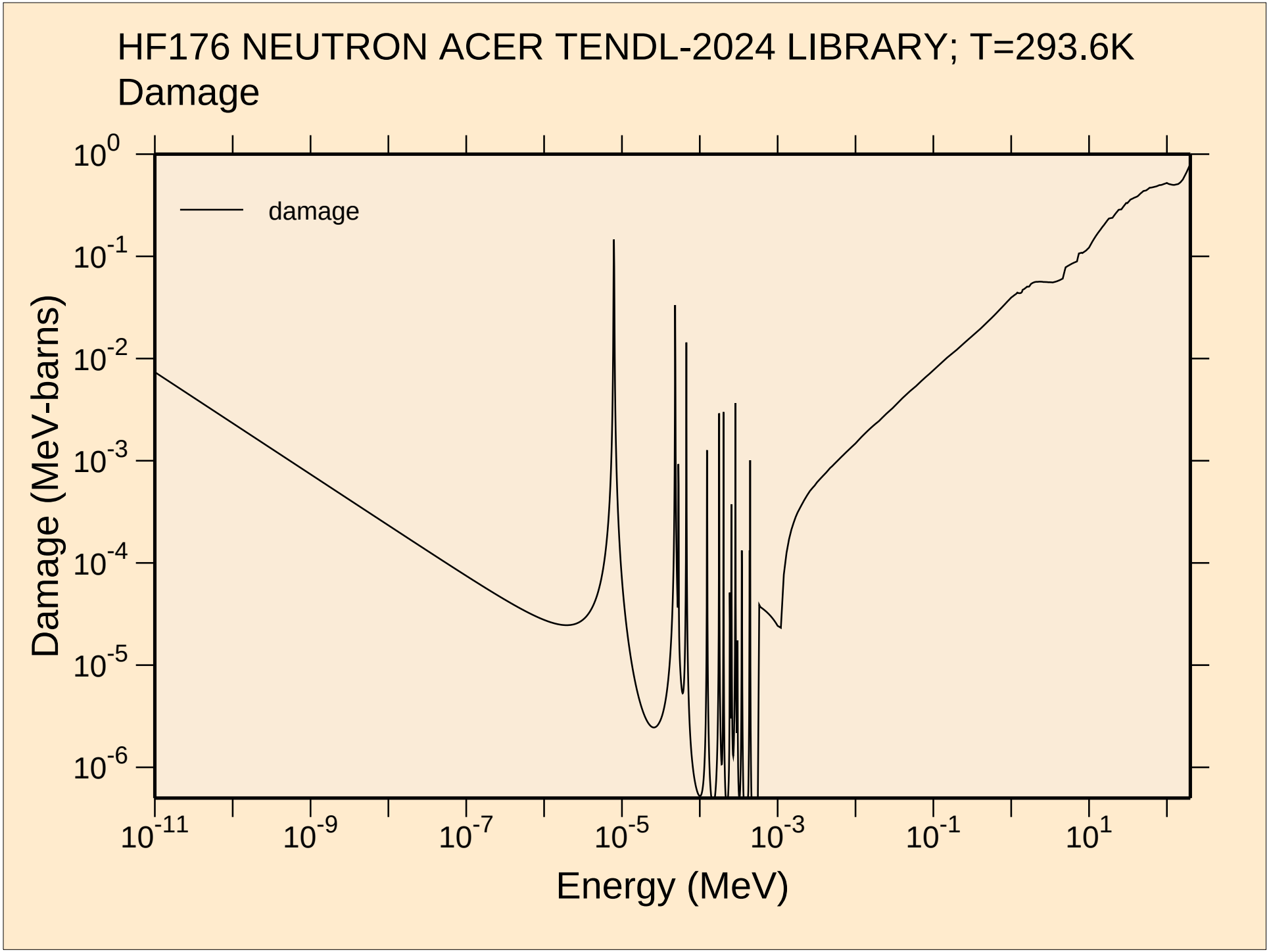

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance absorption cross sections
capture
Cross section (barns)
10^4
10^3
10^2
10^1
10^-6
10^-5
Energy (MeV)

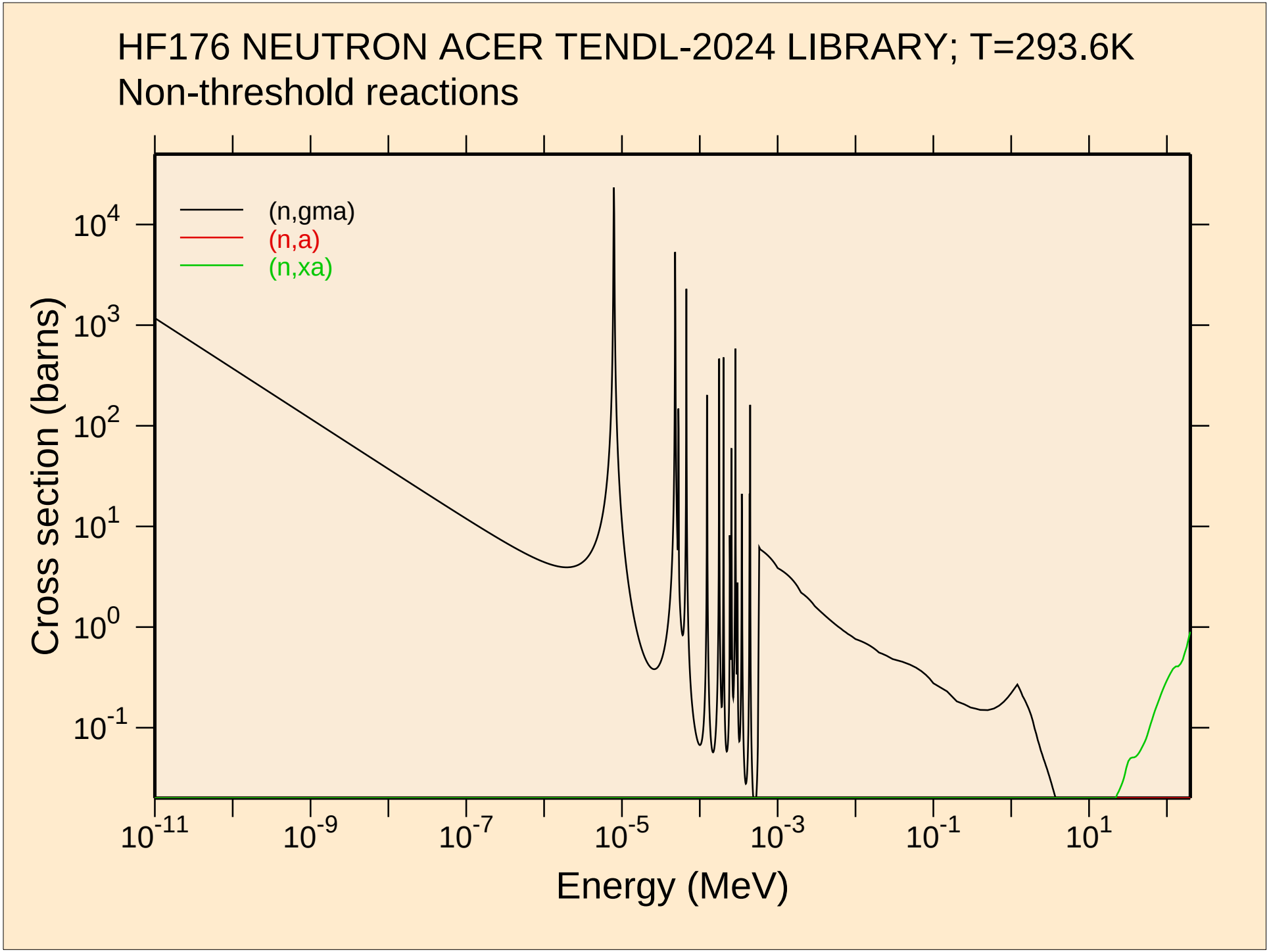

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance absorption cross sections
capture
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-5
10^-4
Energy (MeV)

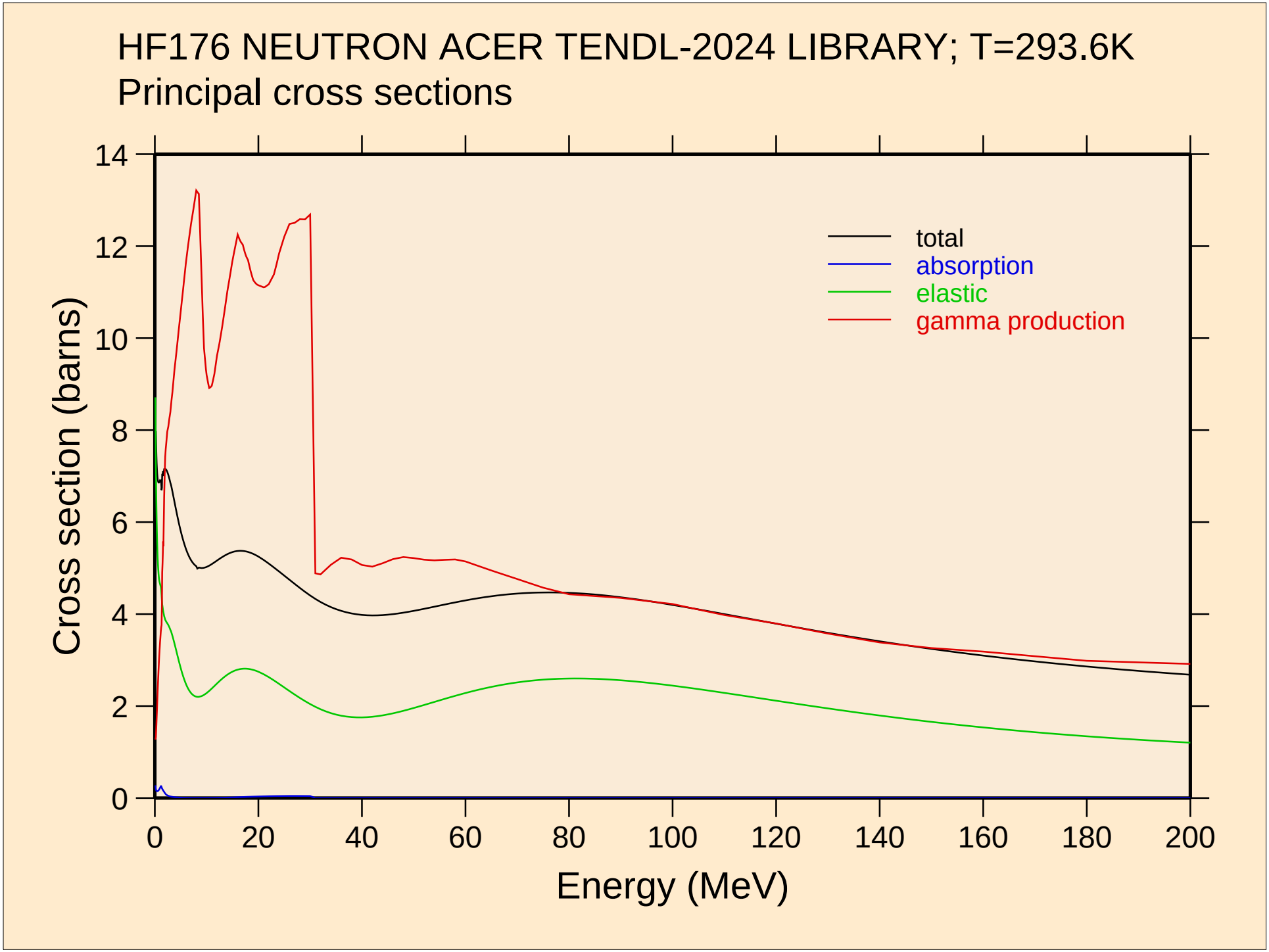

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance absorption cross sections
capture
Cross section (barns)
10^3
10^2
10^1
10^0
10^-1
10^-2
10^-4
10^-3
Energy (MeV)

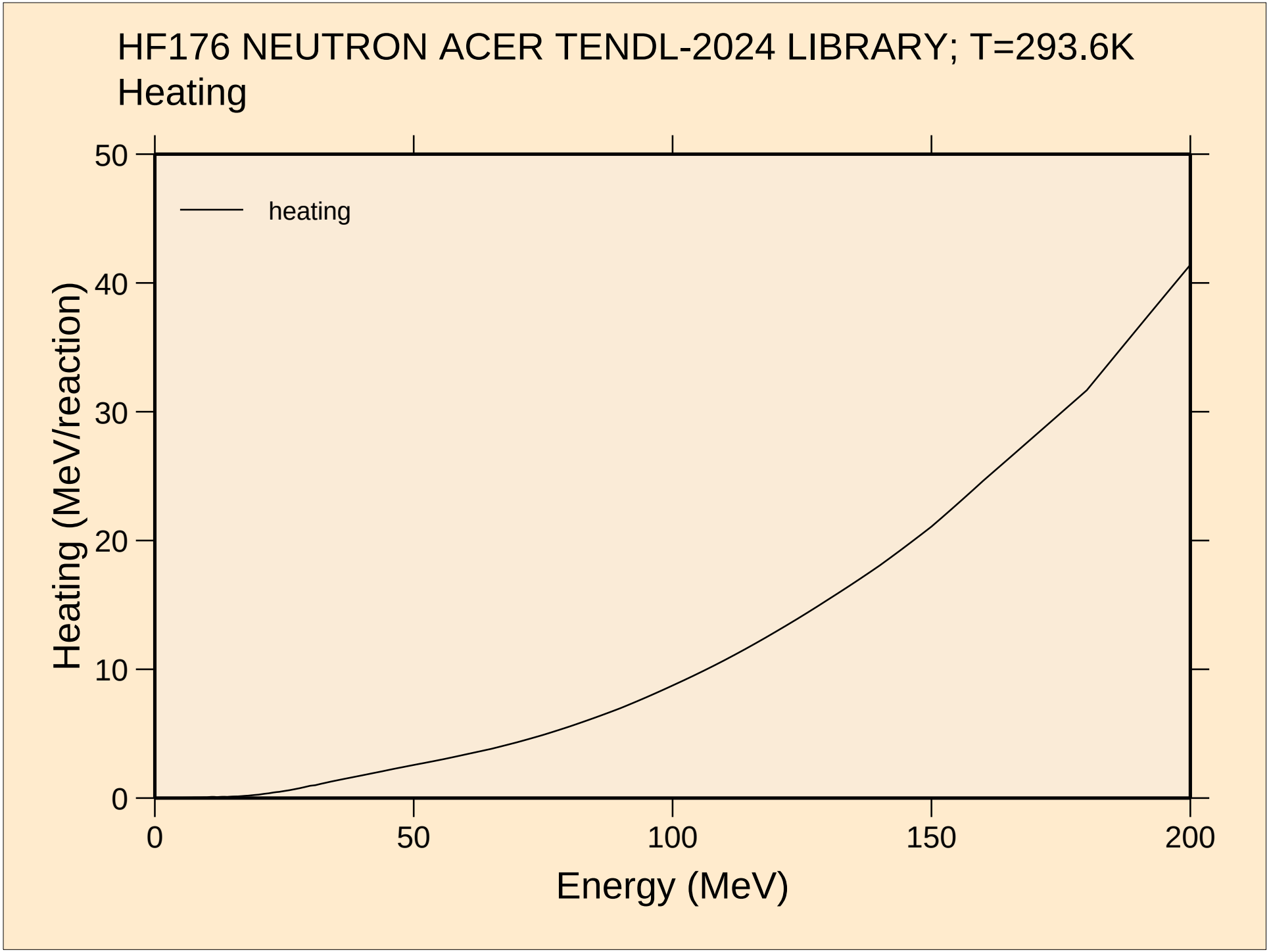

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
resonance absorption cross sections
capture
Cross section (barns)
10-1
10-2
10-3
100
101
Energy (MeV)

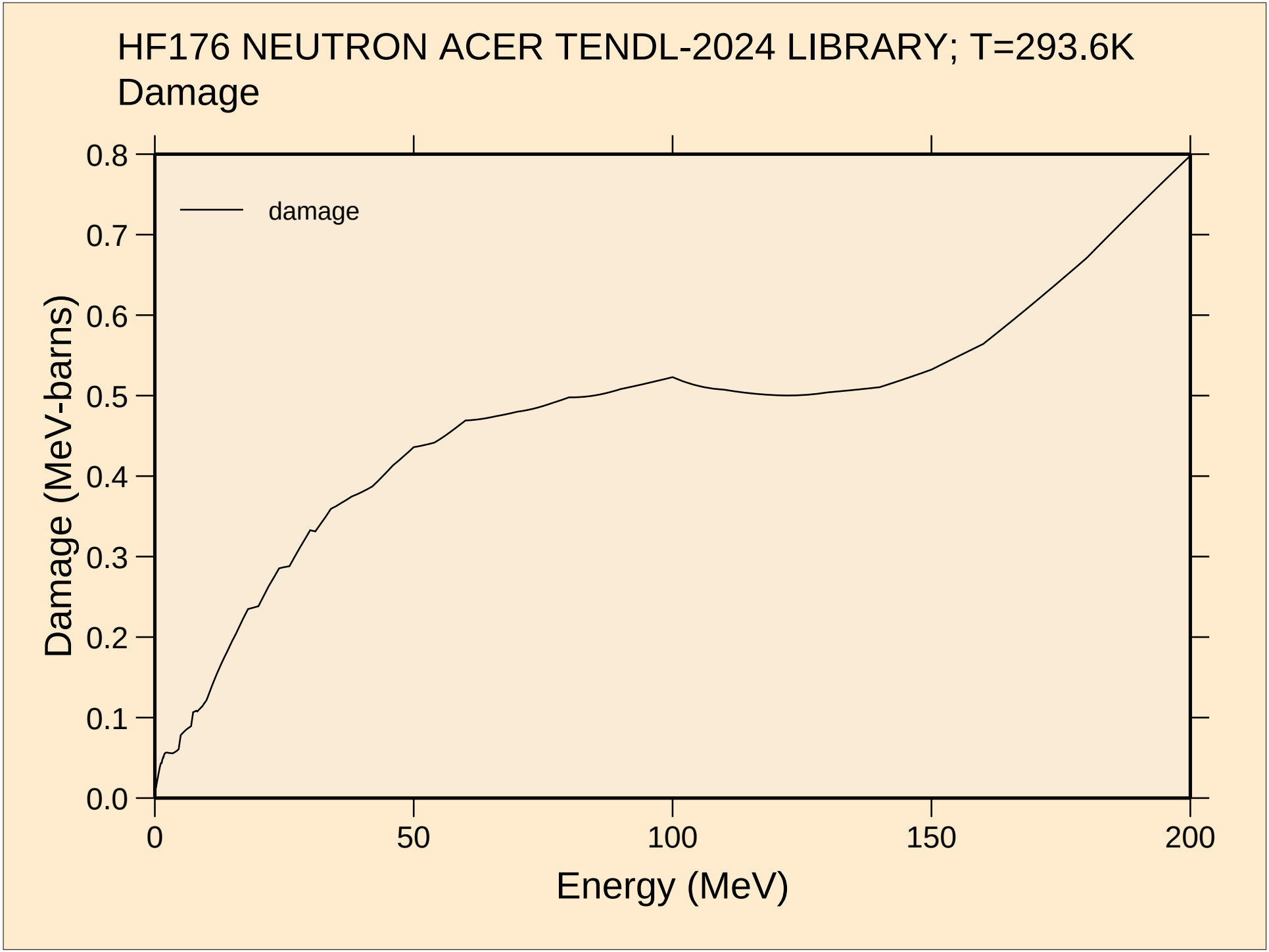

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Heating
heating
Heating (MeV/reaction)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-11}
10^{-9}
10^{-7}
10^{-5}
10^{-3}
10^{-1}
10^{1}
Energy (MeV)

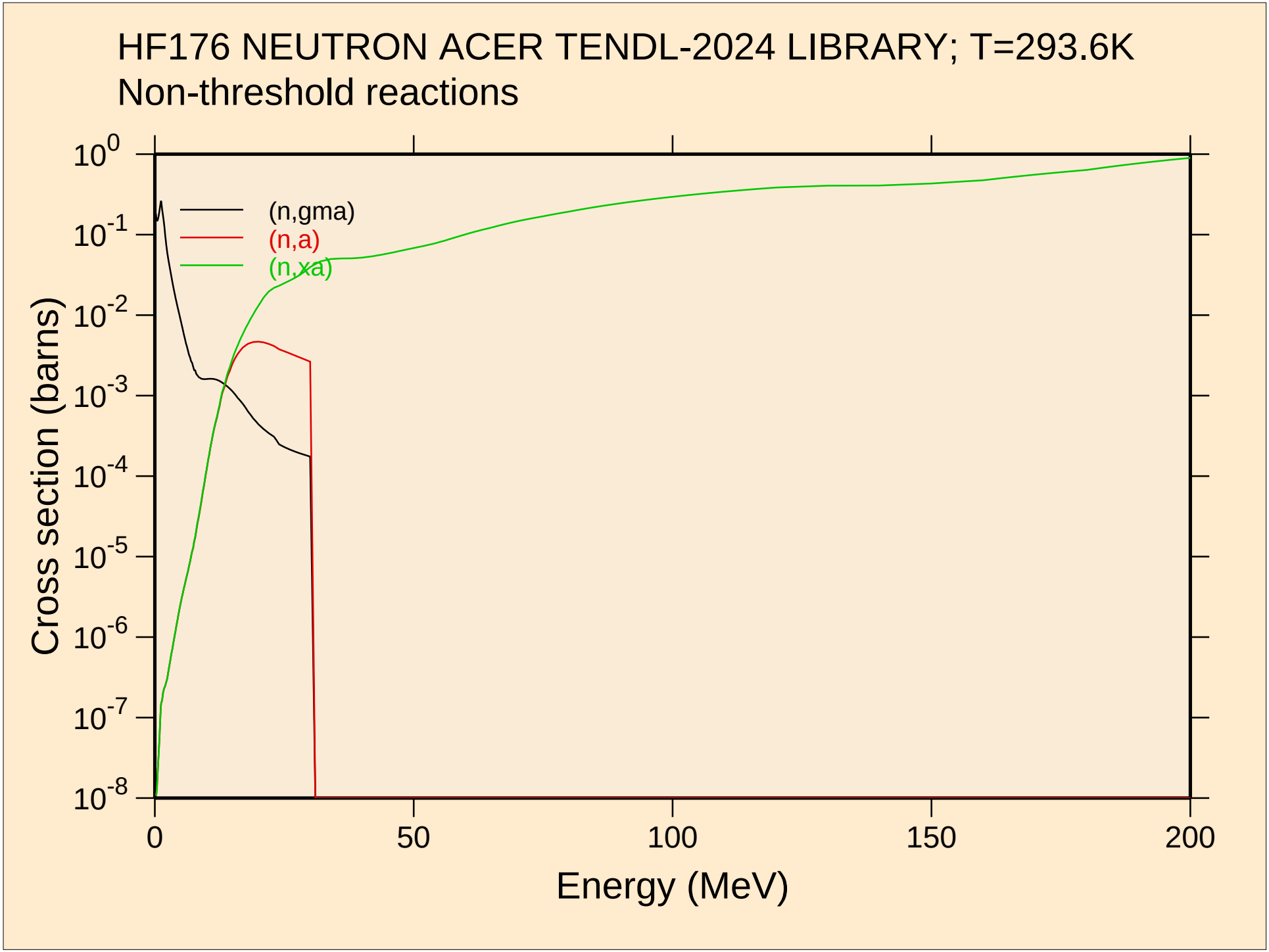

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Damage
damage
Damage (MeV-barns)
Energy (MeV)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1

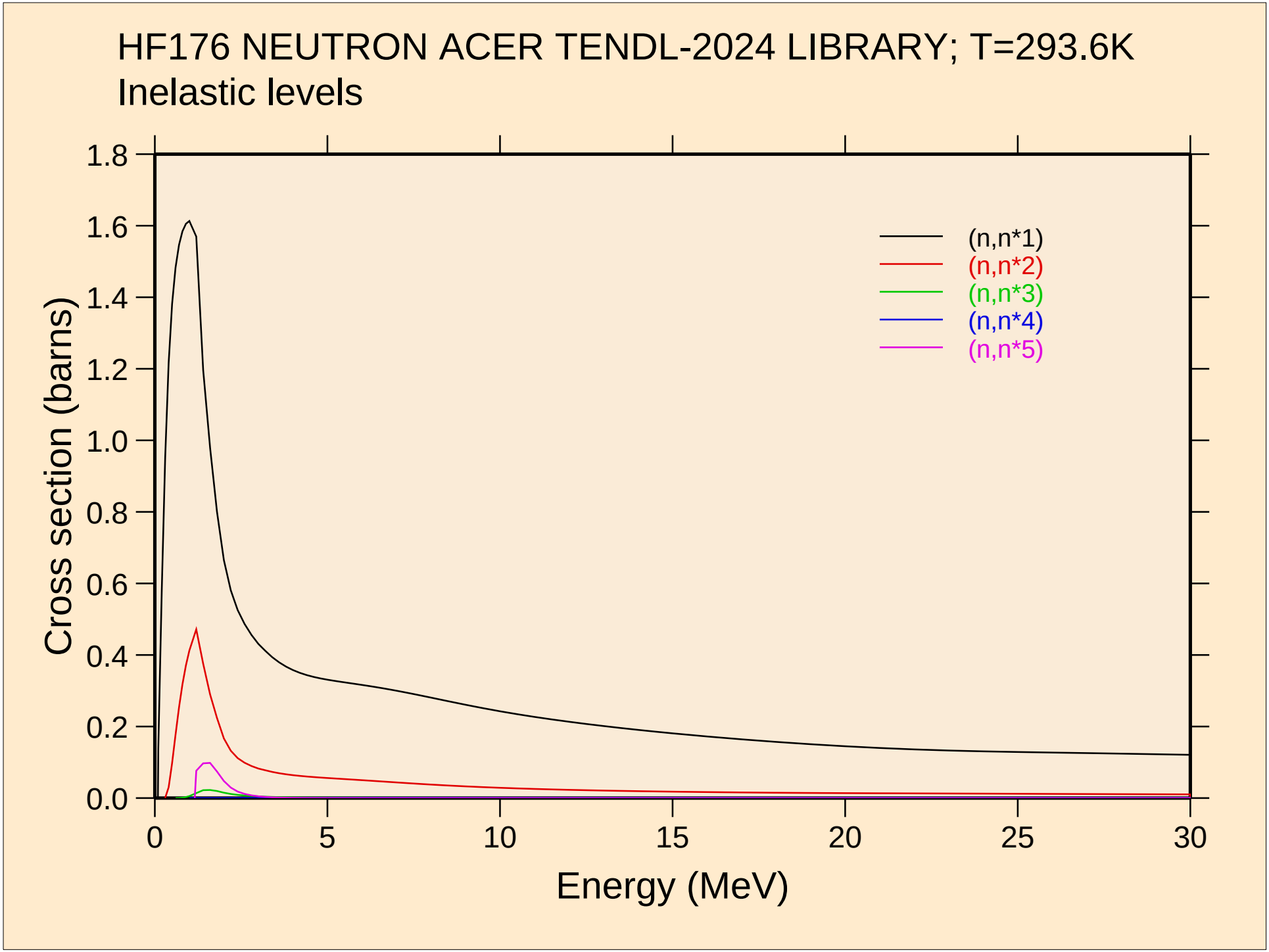

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Non-threshold reactions
(n,gma)
(n,a)
(n,xa)
Cross section (barns)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-11
10^-9
10^-7
10^-5
10^-3
10^-1
10^1
Energy (MeV)

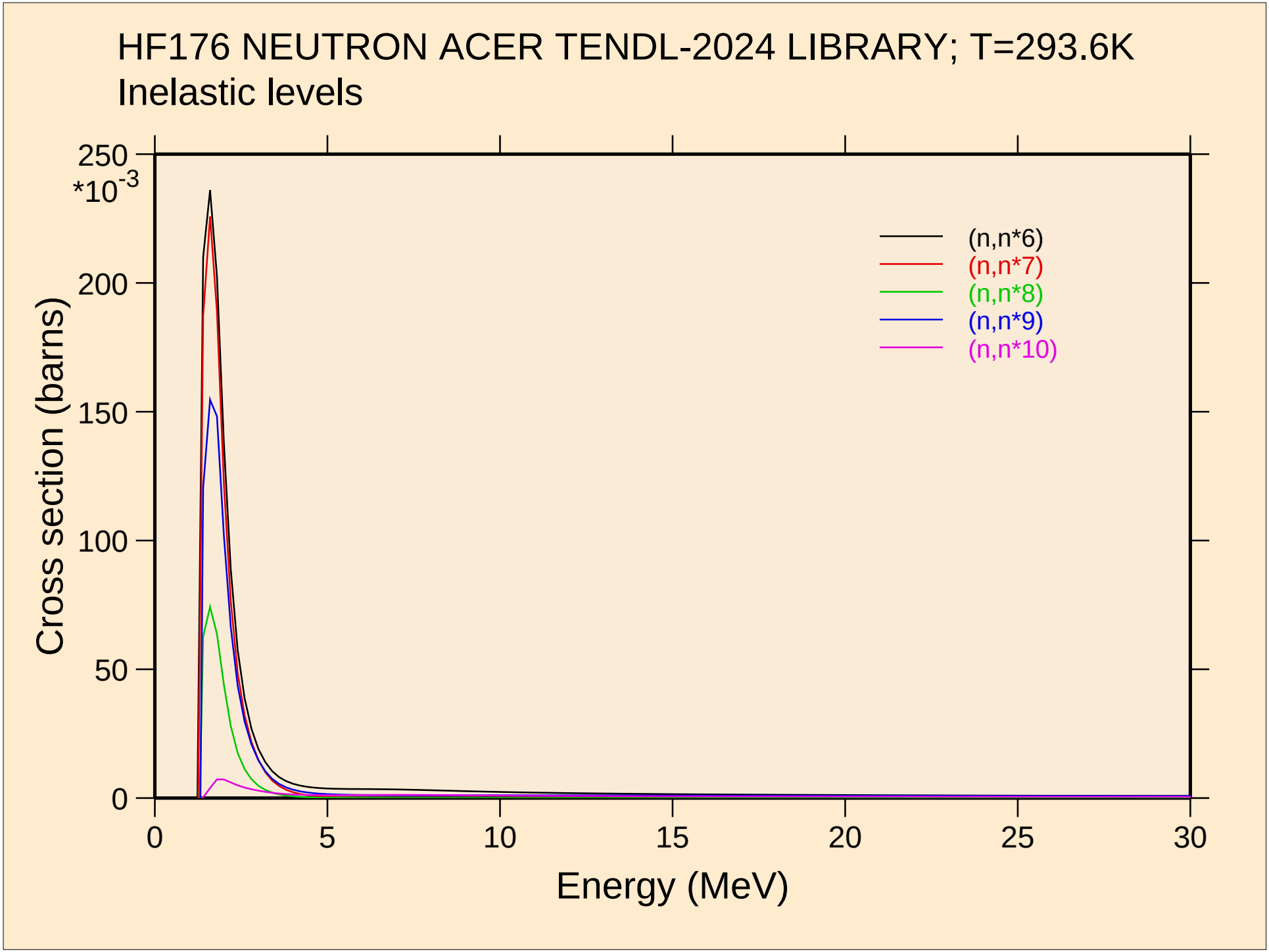

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Principal cross sections
Cross section (barns)
Energy (MeV)
0
2
4
6
8
10
12
14
0
20
40
60
80
100
120
140
160
180
200
total
absorption
elastic
gamma production

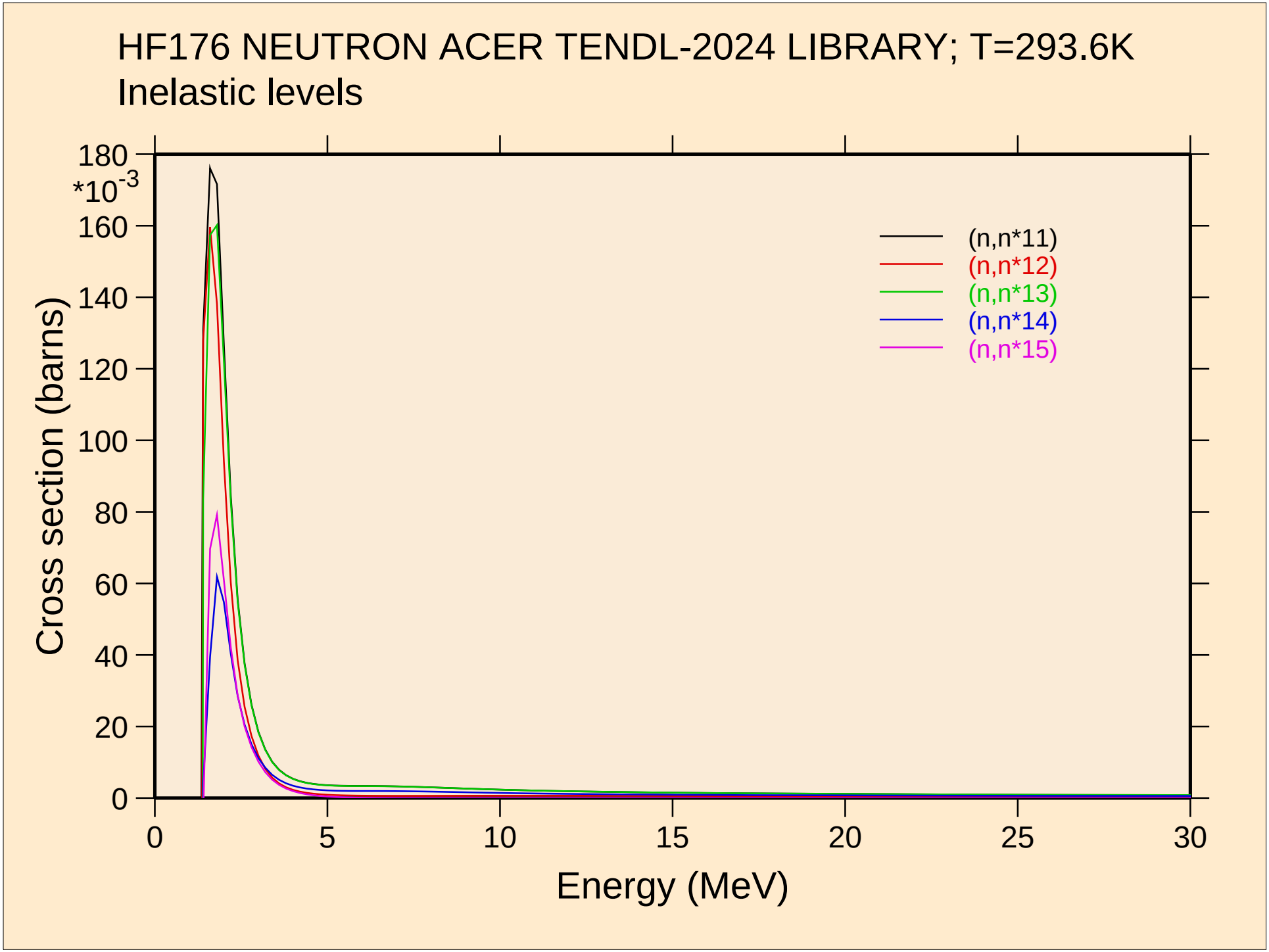

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
10
20
30
40
50
0
50
100
150
200

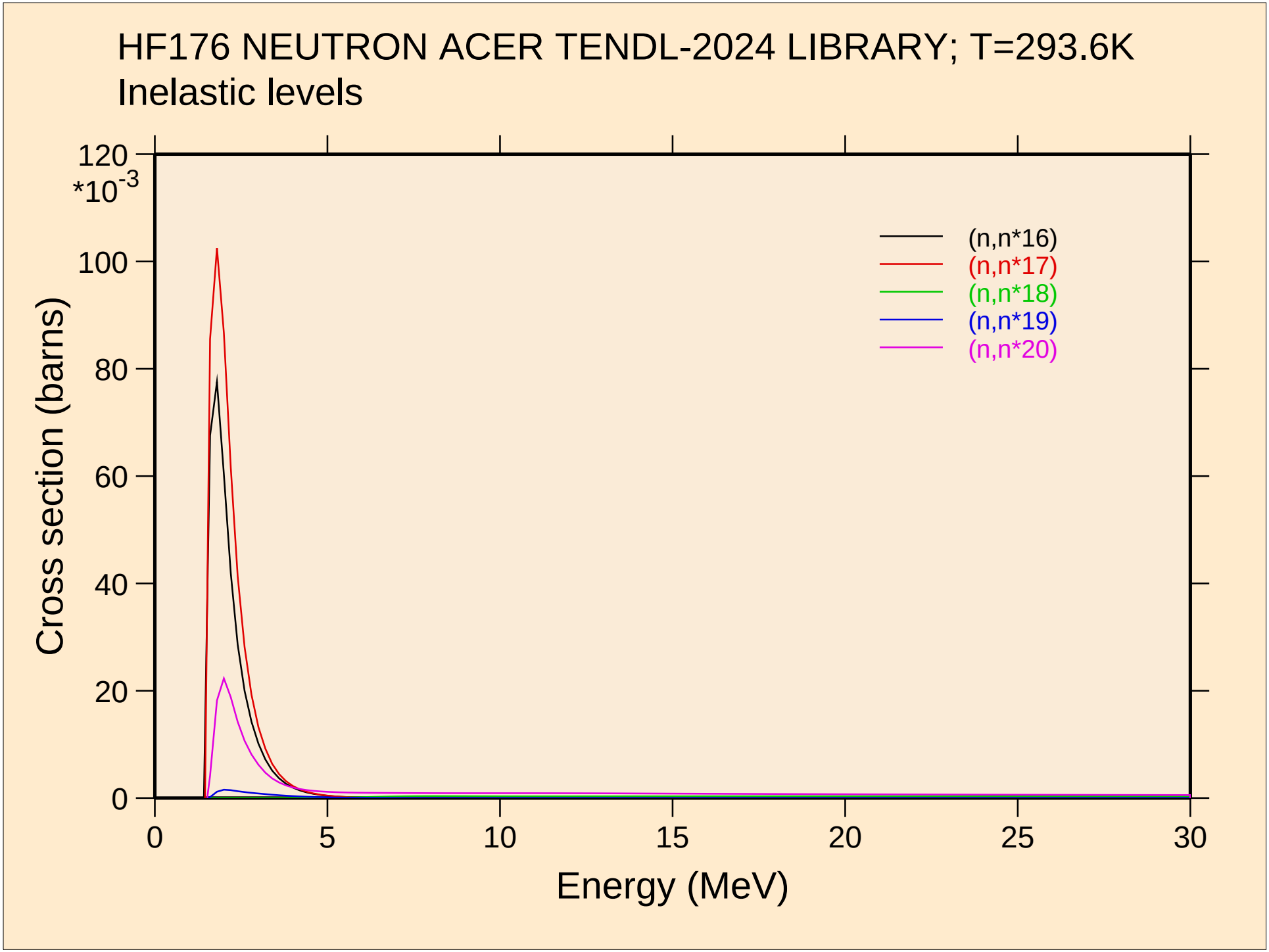

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Damage
damage
Damage (MeV-barns)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
50
100
150
200
Energy (MeV)

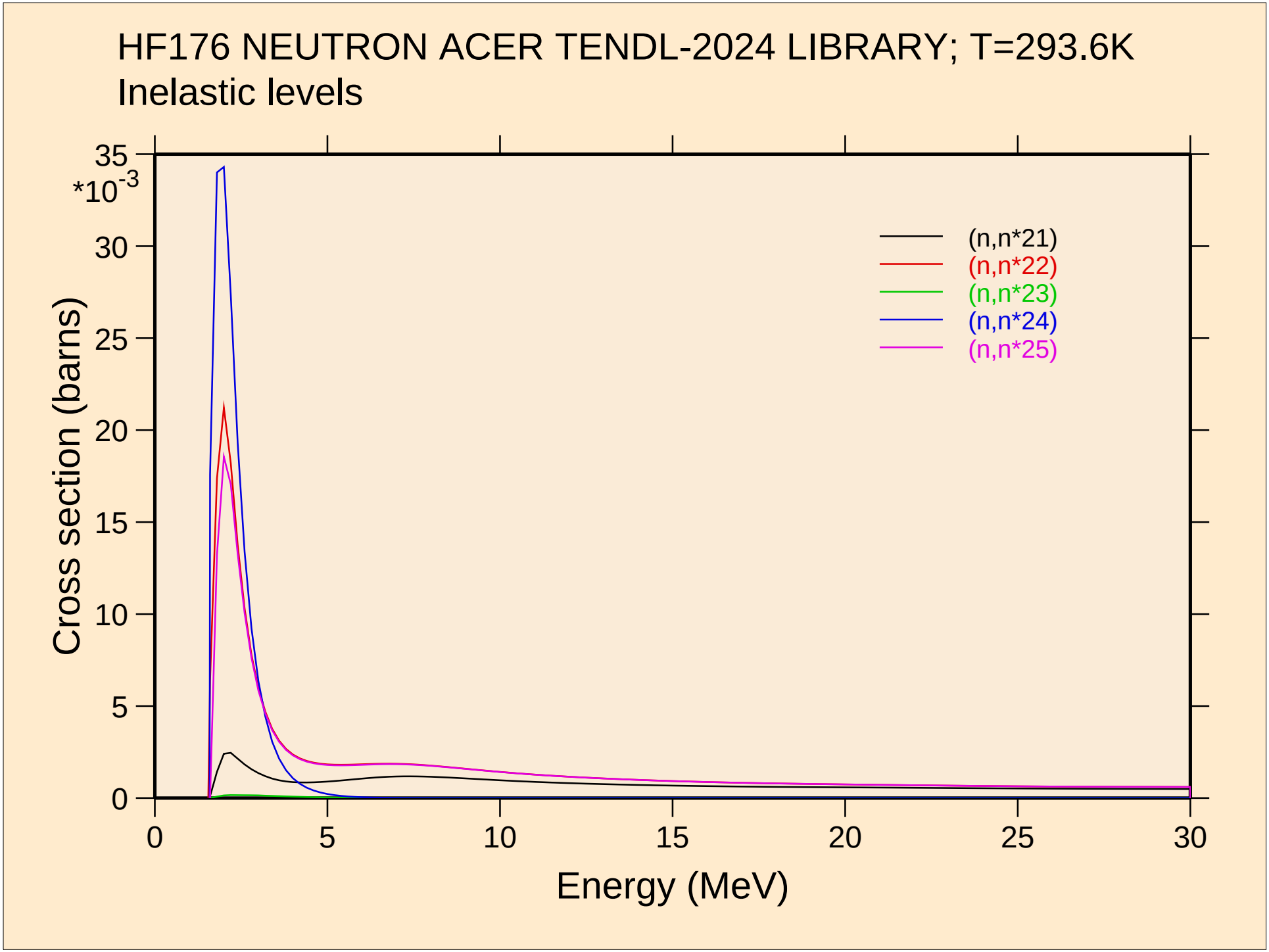

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Non-threshold reactions
(n,gma)
(n,a)
(n,xa)
Cross section (barns)
10^0
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
0
50
100
150
200
Energy (MeV)

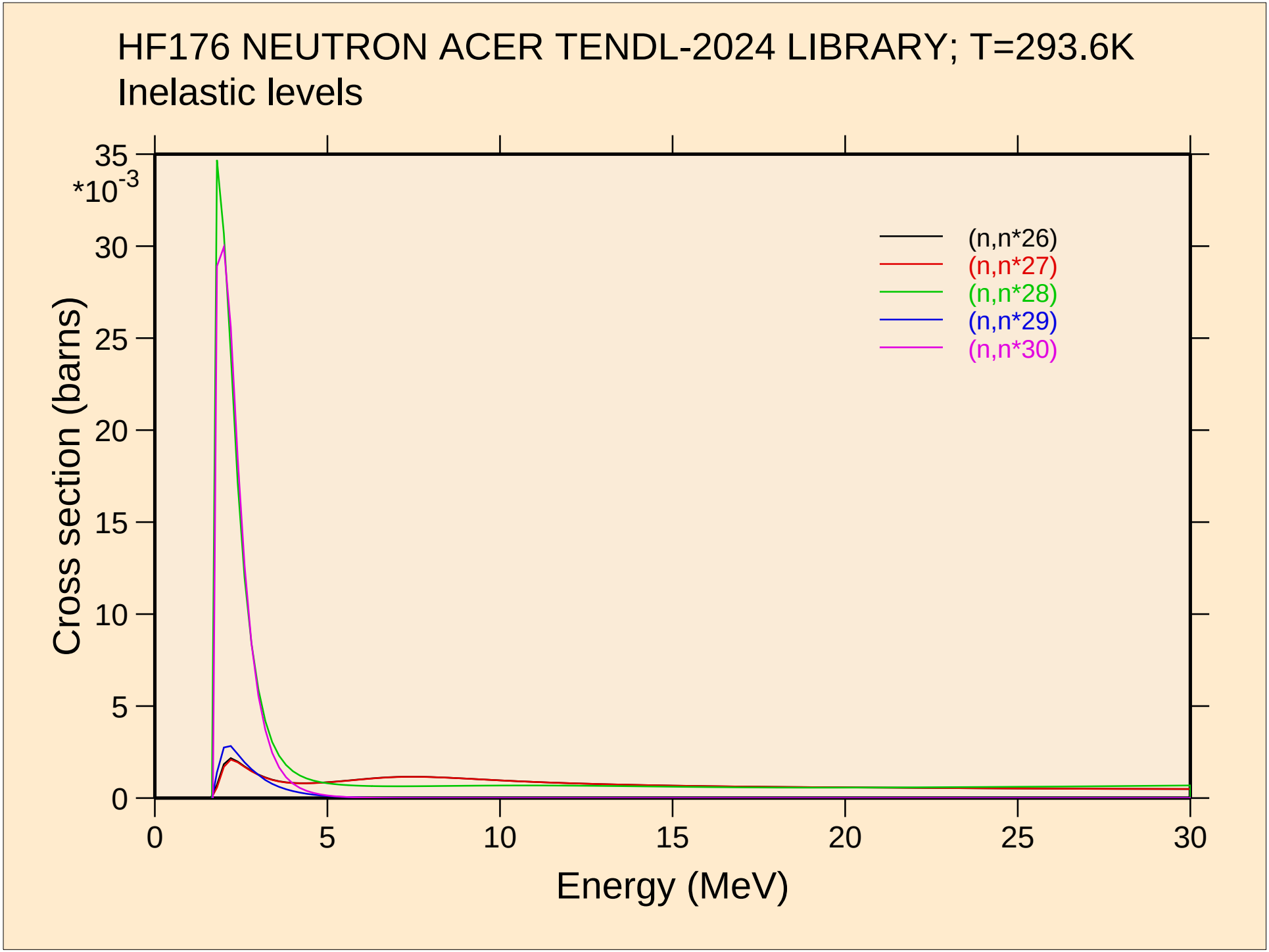

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Inelastic levels
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
0
5
10
15
20
25
30
(n,n*1)
(n,n*2)
(n,n*3)
(n,n*4)
(n,n*5)

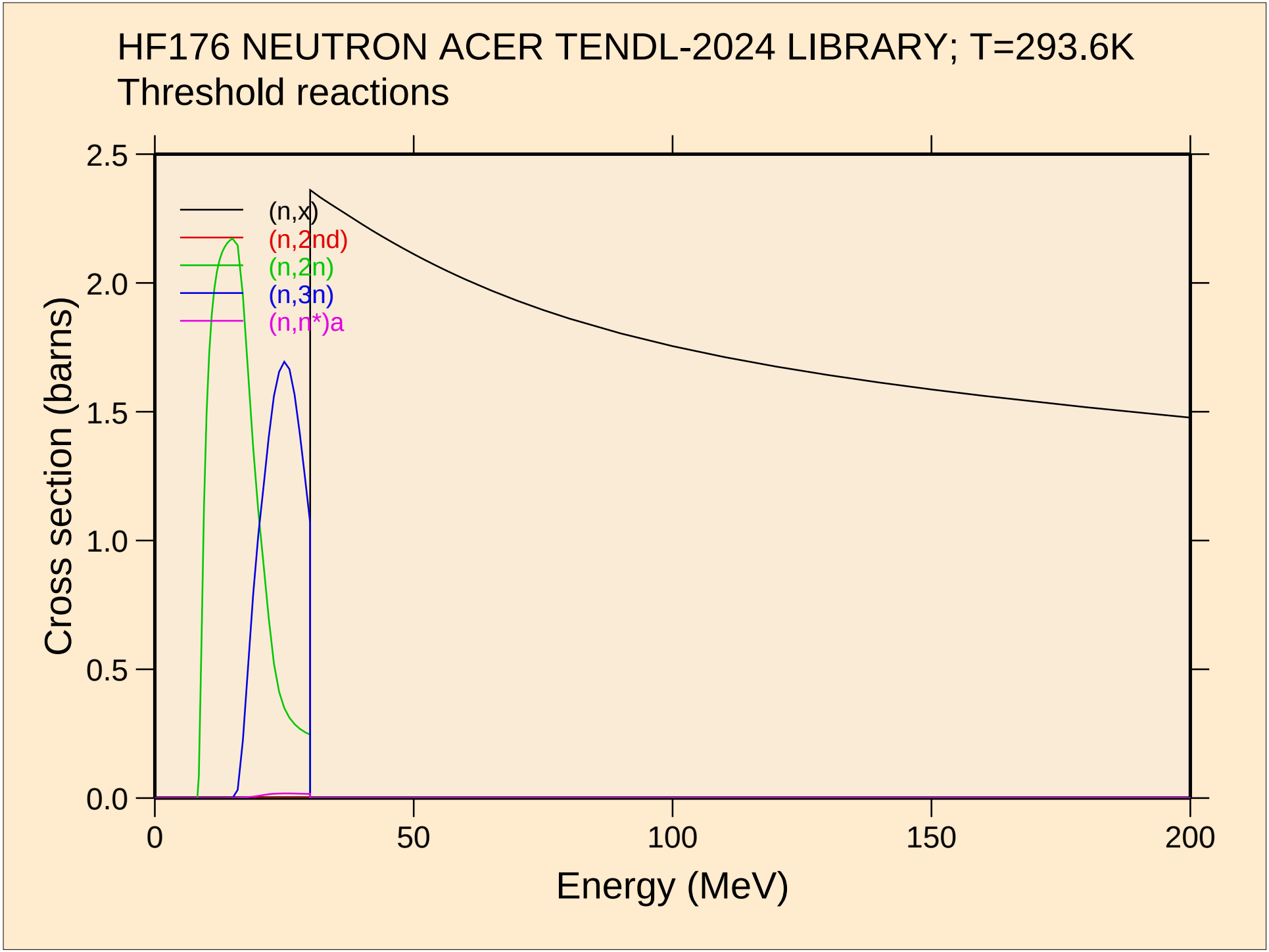

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Inelastic levels
Cross section (barns)
*10-3
250
200
150
100
50
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*6)
(n,n*7)
(n,n*8)
(n,n*9)
(n,n*10)

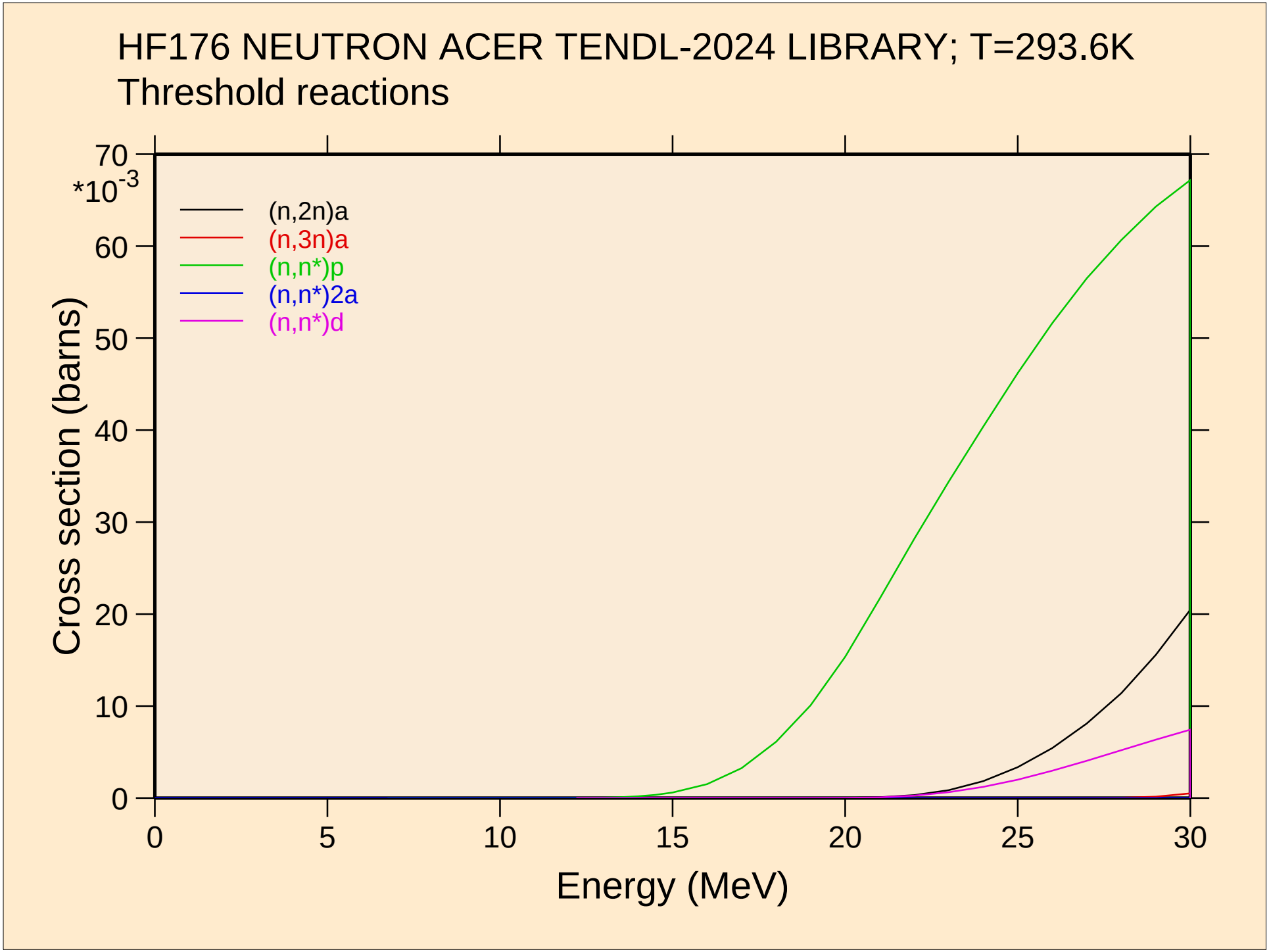

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Inelastic levels
Cross section (barns)
*10-3
180
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*11)
(n,n*12)
(n,n*13)
(n,n*14)
(n,n*15)

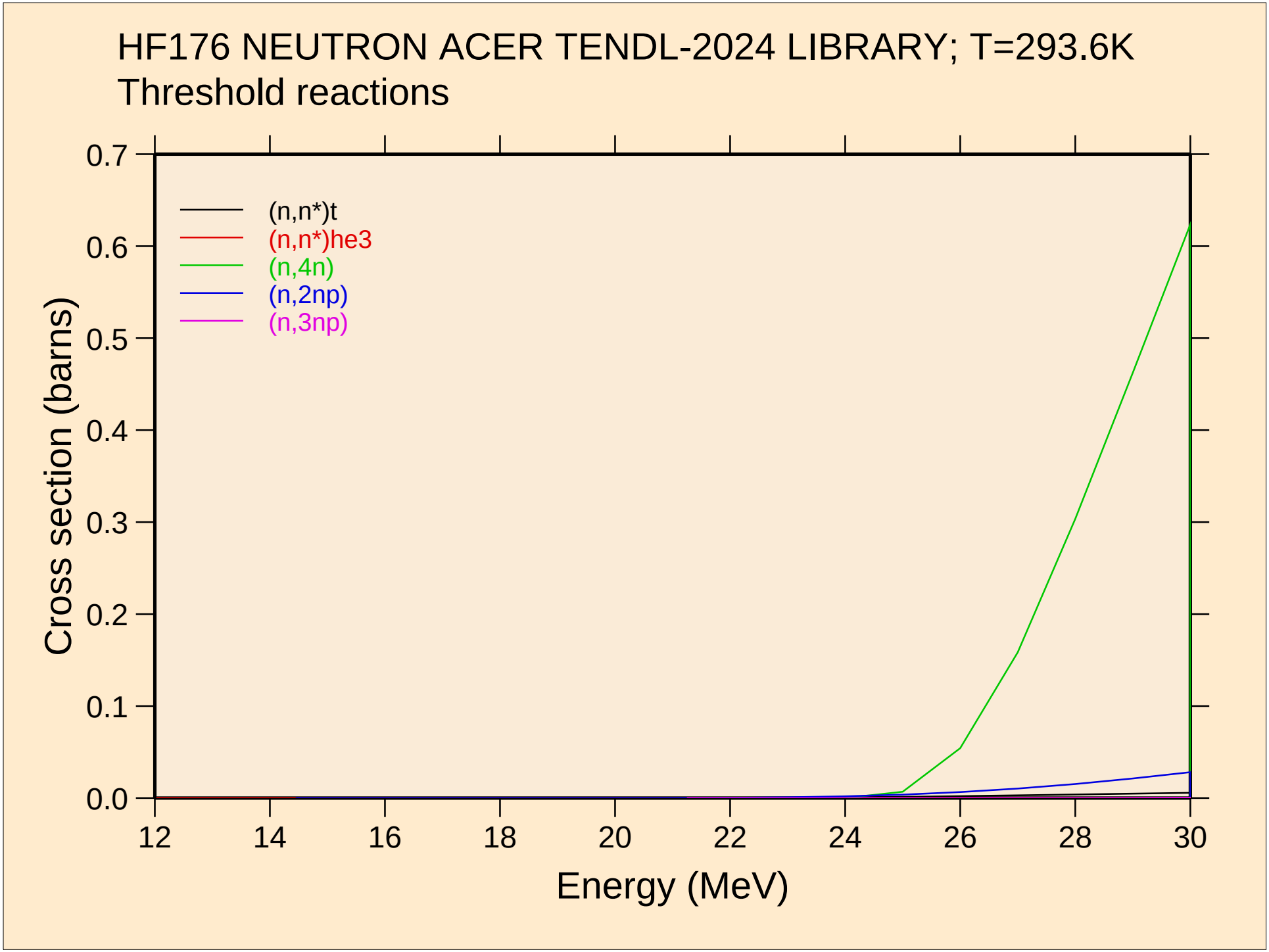

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Inelastic levels
120
*10-3
100
80
60
40
20
0
Cross section (barns)
0
5
10
15
20
25
30
Energy (MeV)
(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)

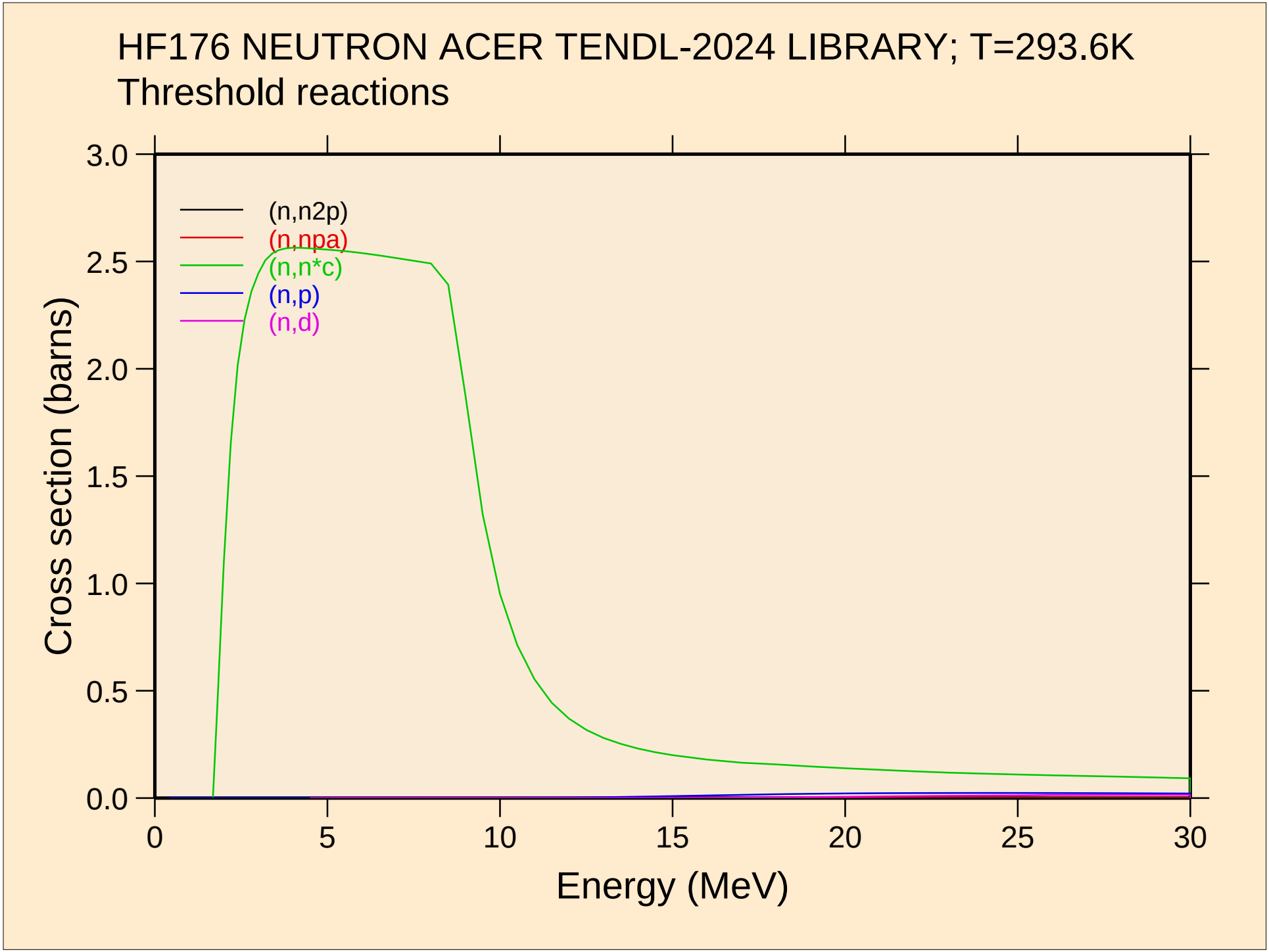

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Inelastic levels
Cross section (barns)
*10-3
35
30
25
20
15
10
5
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*21)
(n,n*22)
(n,n*23)
(n,n*24)
(n,n*25)

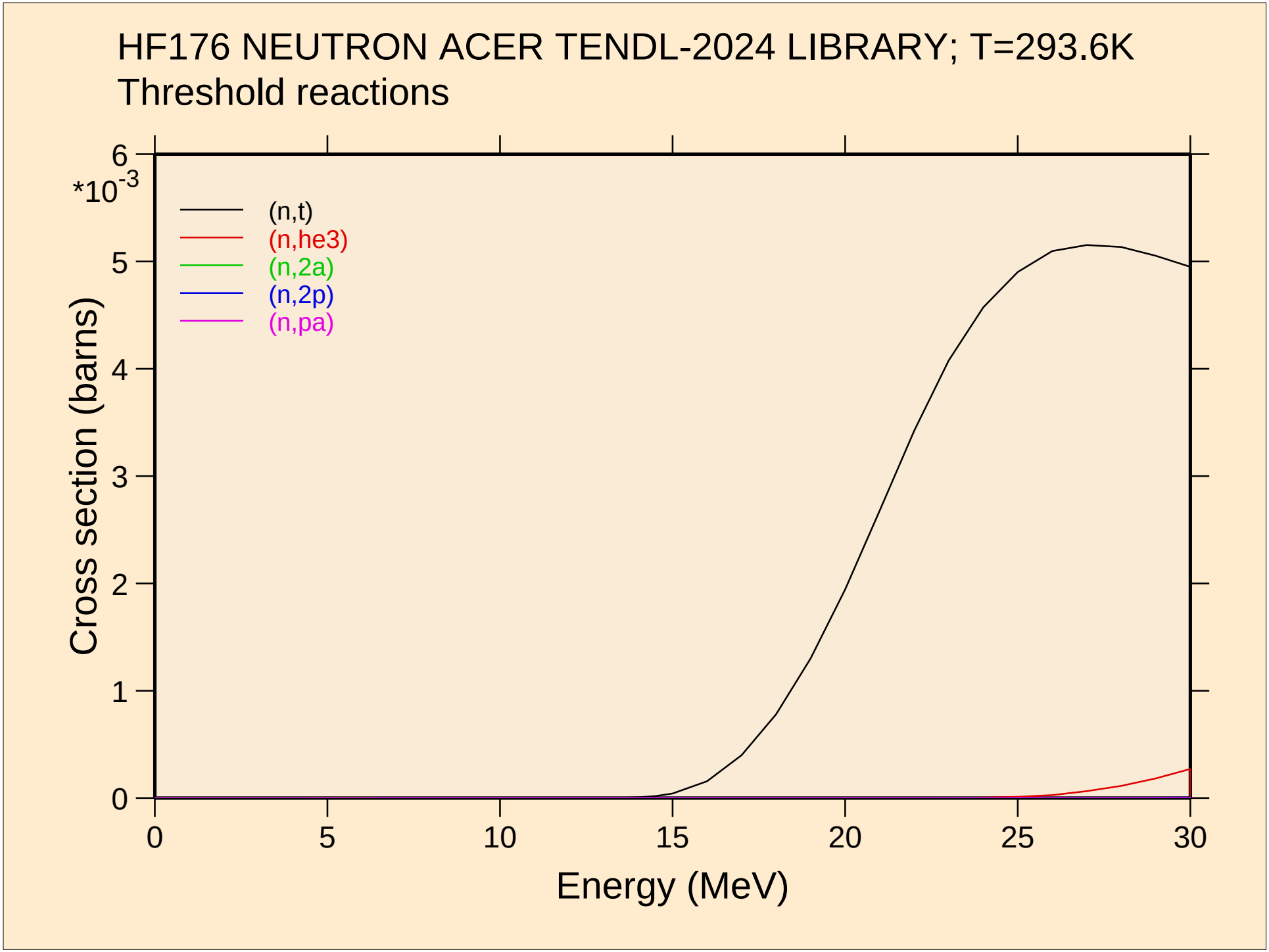

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Inelastic levels
Cross section (barns)
*10-3
35
30
25
20
15
10
5
0
0
5
10
15
20
25
30
Energy (MeV)
(n,n*26)
(n,n*27)
(n,n*28)
(n,n*29)
(n,n*30)

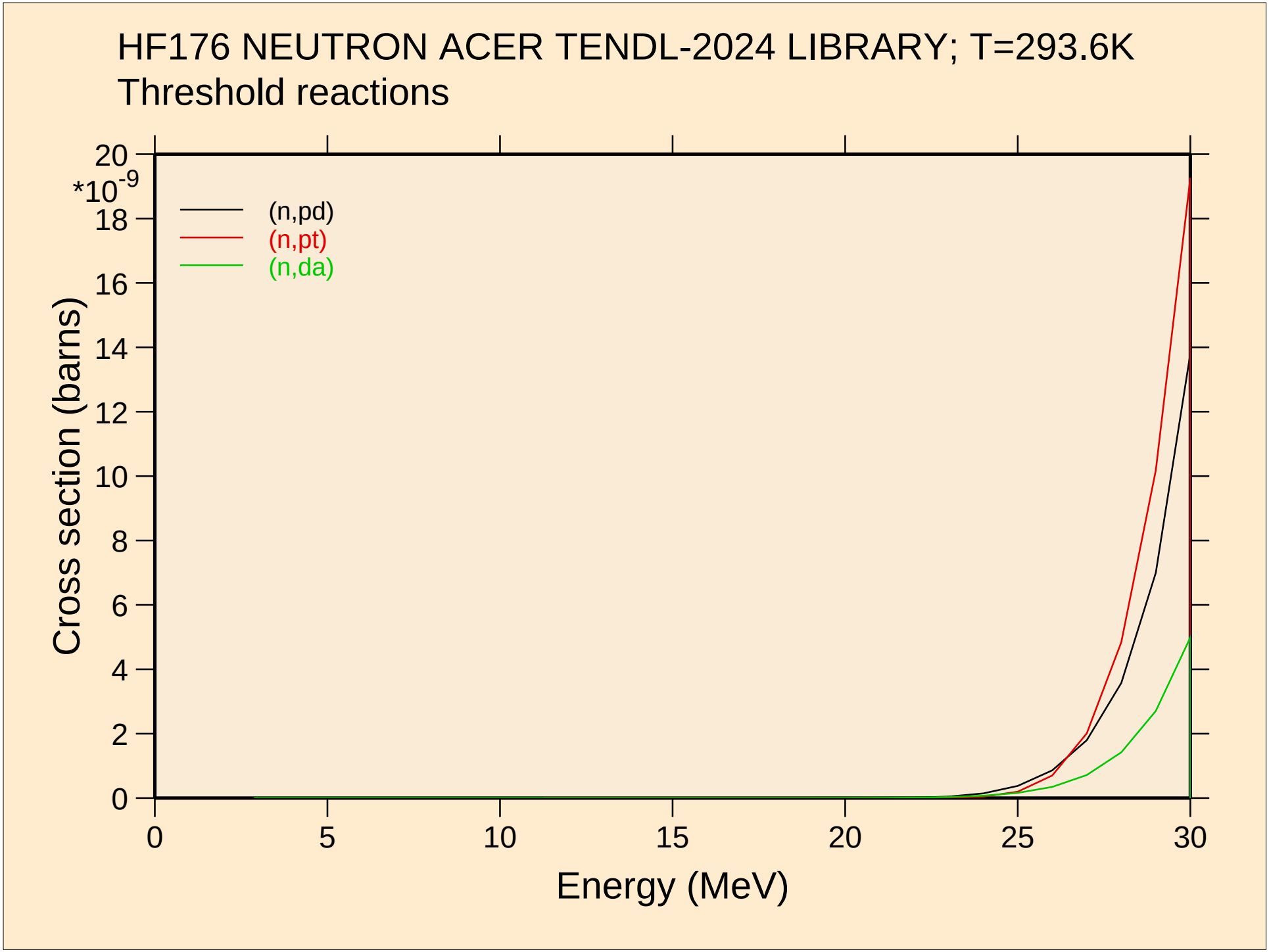

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
(n,x)
(n,2nd)
(n,2n)
(n,3n)
(n,n*)a
Cross section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
0
50
100
150
200
Energy (MeV)

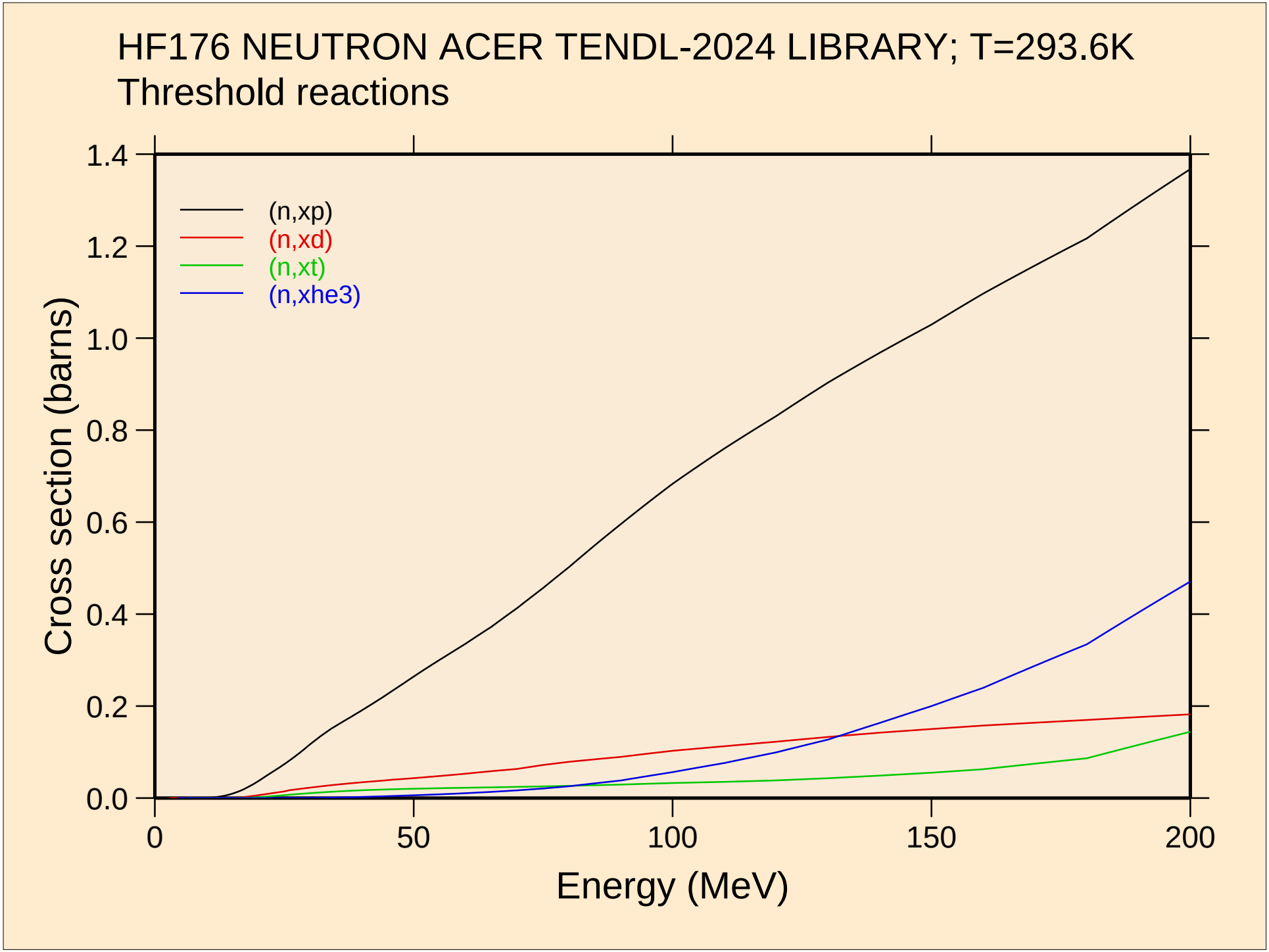

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
*10-3
70
60
50
40
30
20
10
0
(n,2n)a
(n,3n)a
(n,n*)p
(n,n*)2a
(n,n*)d
Cross section (barns)
0
5
10
15
20
25
30
Energy (MeV)

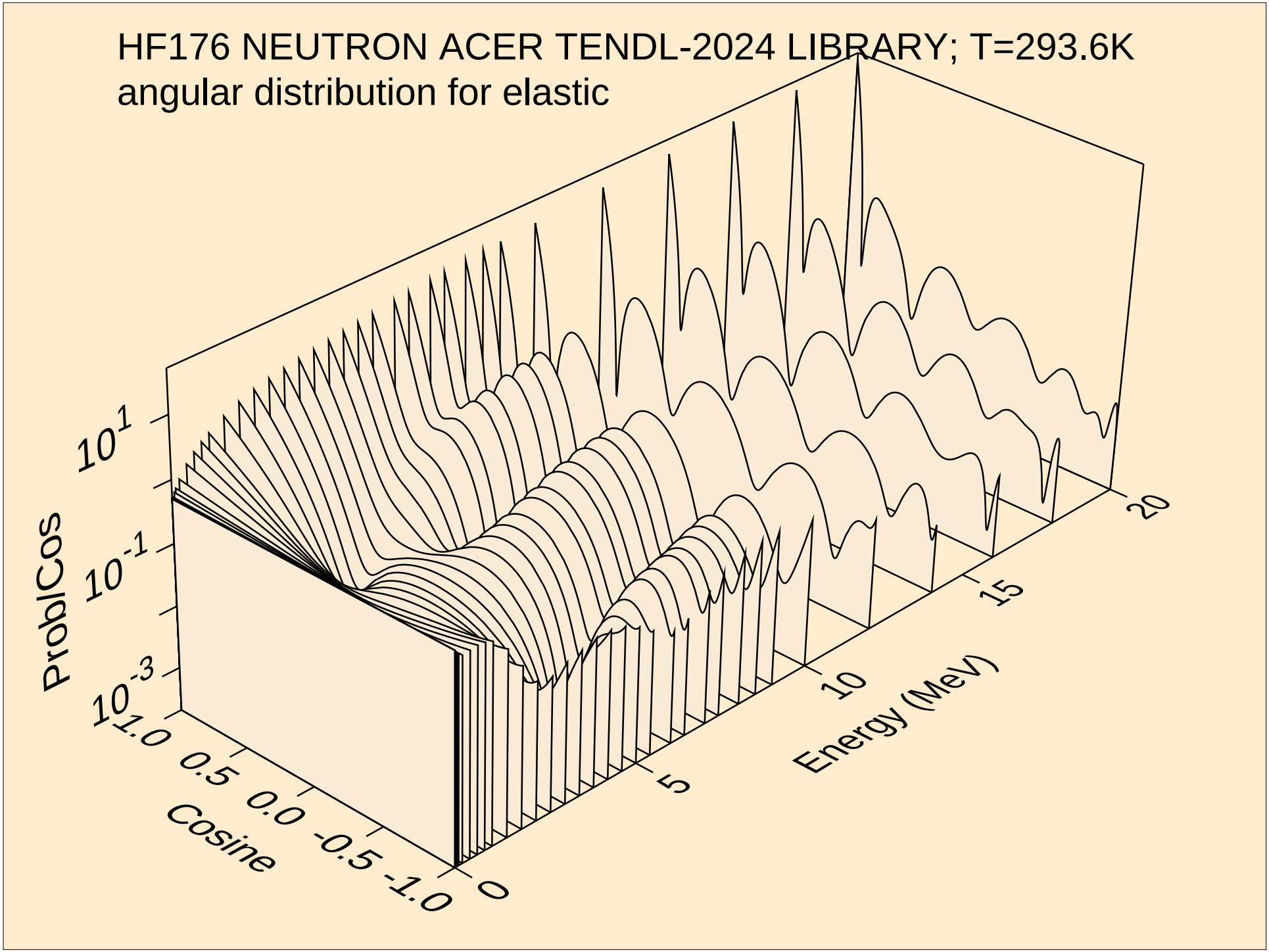

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
(n,n*)t
(n,n*)he3
(n,4n)
(n,2np)
(n,3np)
Cross section (barns)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

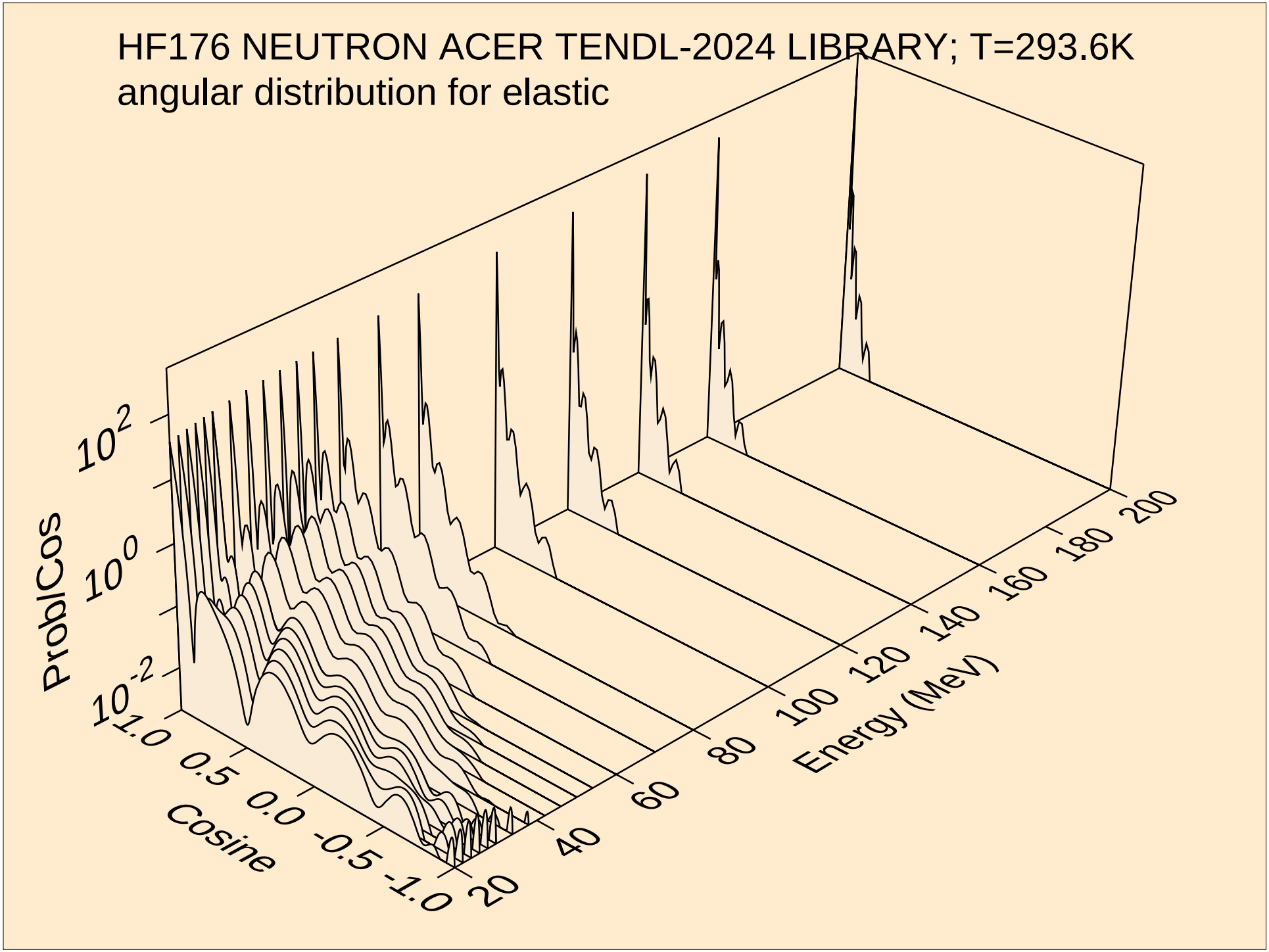

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
(n,n2p)
(n,npa)
(n,n*c)
(n,p)
(n,d)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
5
10
15
20
25
30

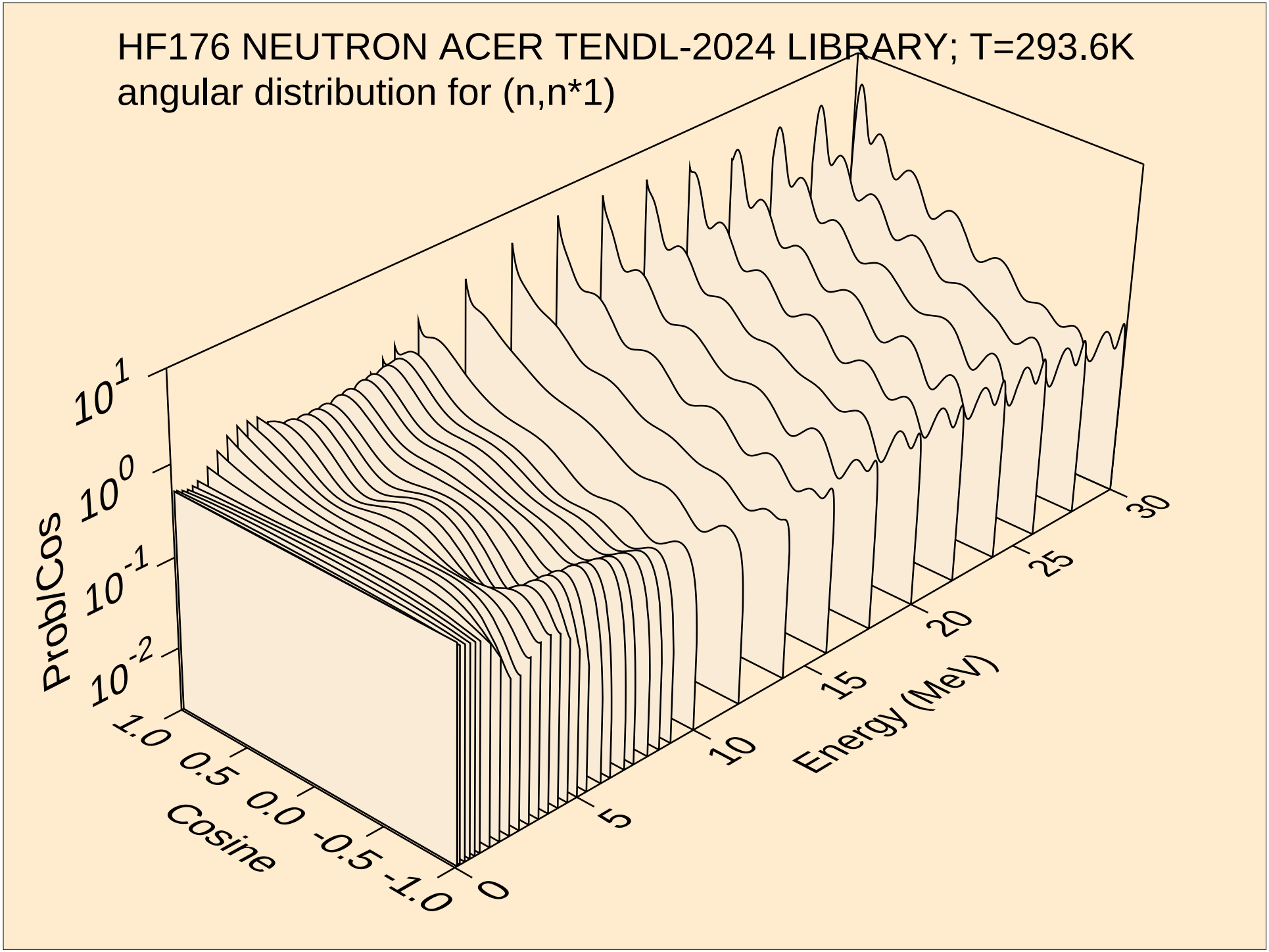

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
*10-3
(n,t)
(n,he3)
(n,2a)
(n,2p)
(n,pa)
Cross section (barns)
Energy (MeV)
0
1
2
3
4
5
6
0
5
10
15
20
25
30

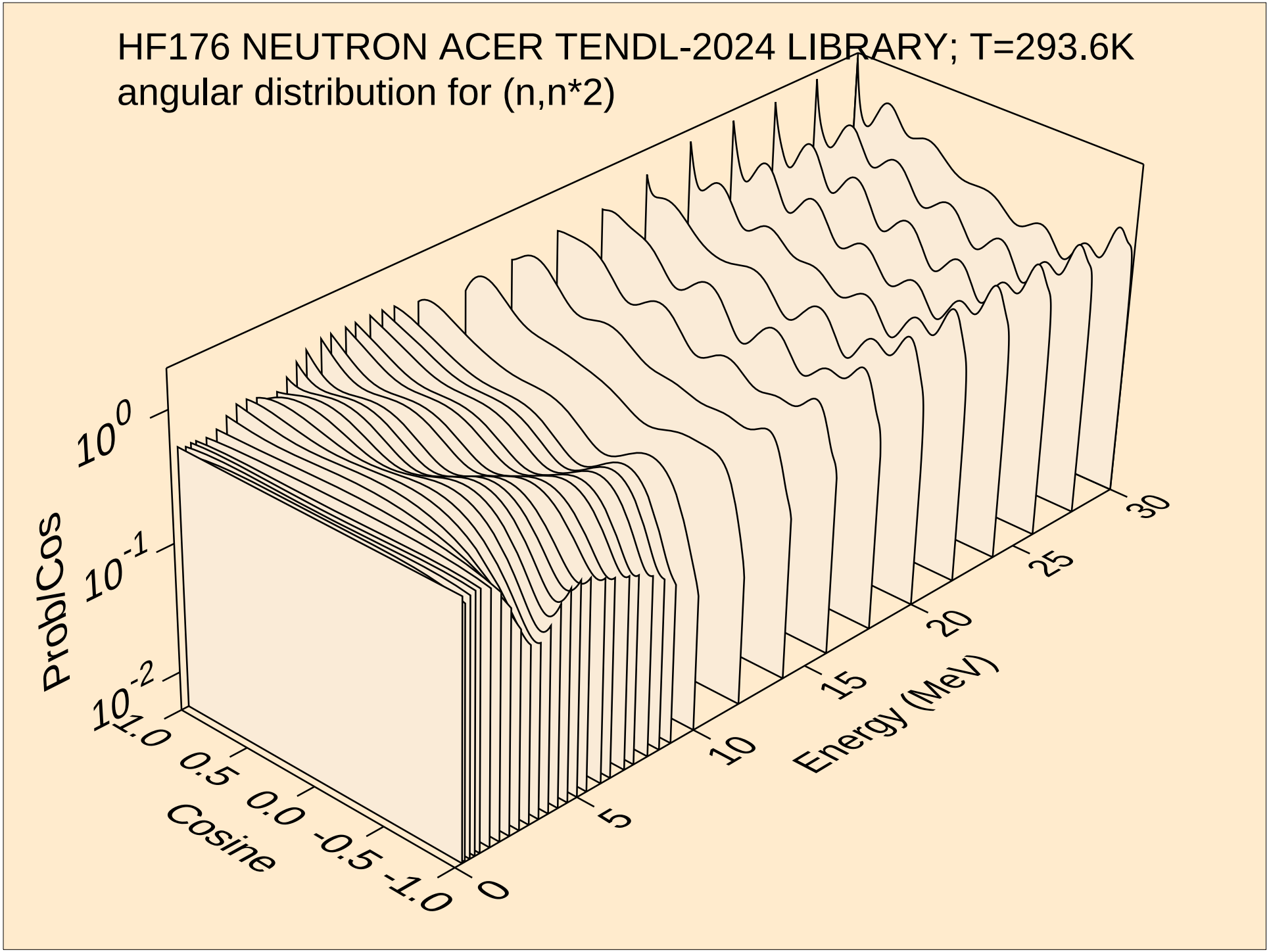

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
*10-9
(n,pd)
(n,pt)
(n,da)
Cross section (barns)
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20
0
5
10
15
20
25
30

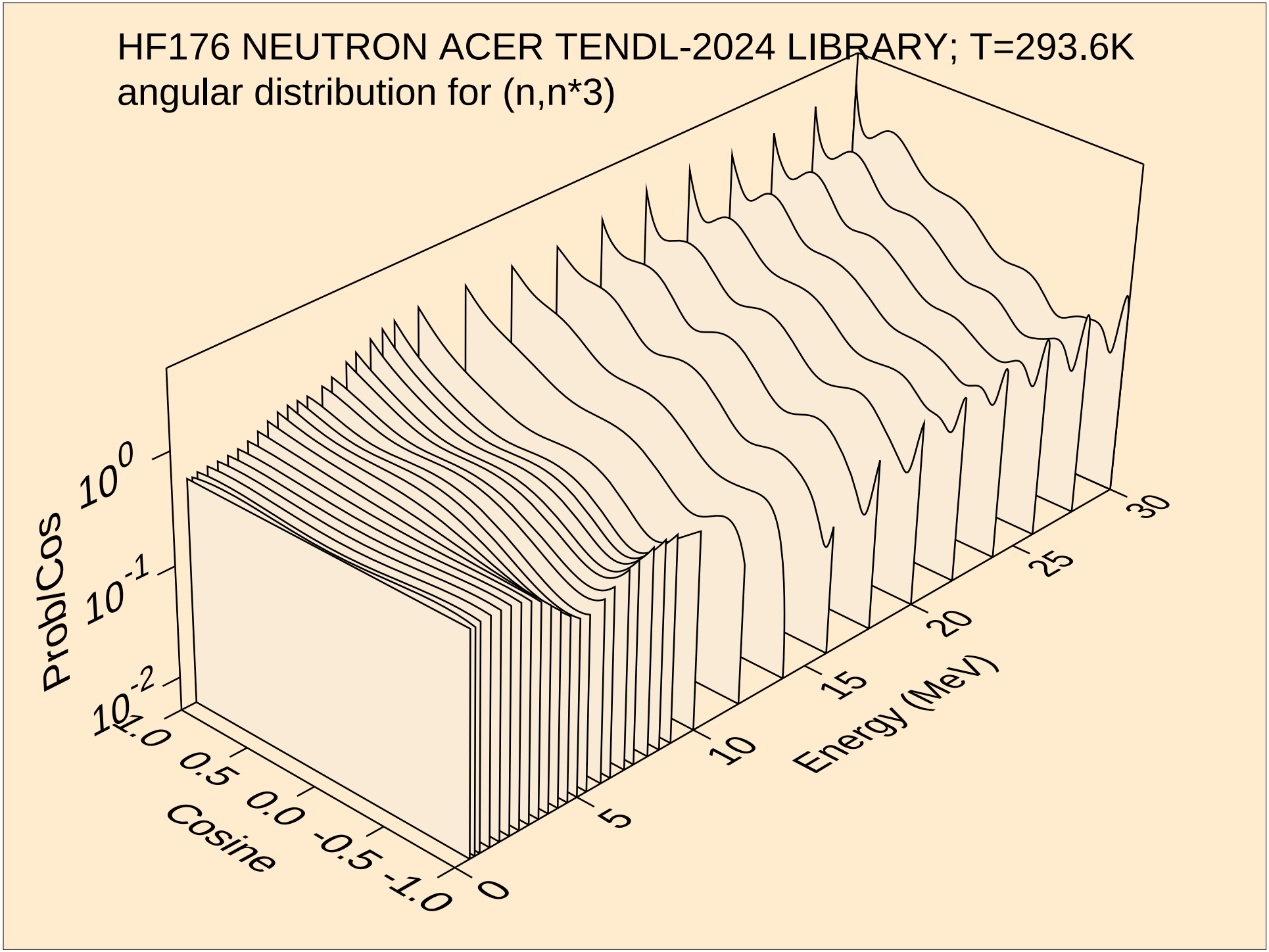

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Threshold reactions
(n,xp)
(n,xd)
(n,xt)
(n,xhe3)
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0
50
100
150
200

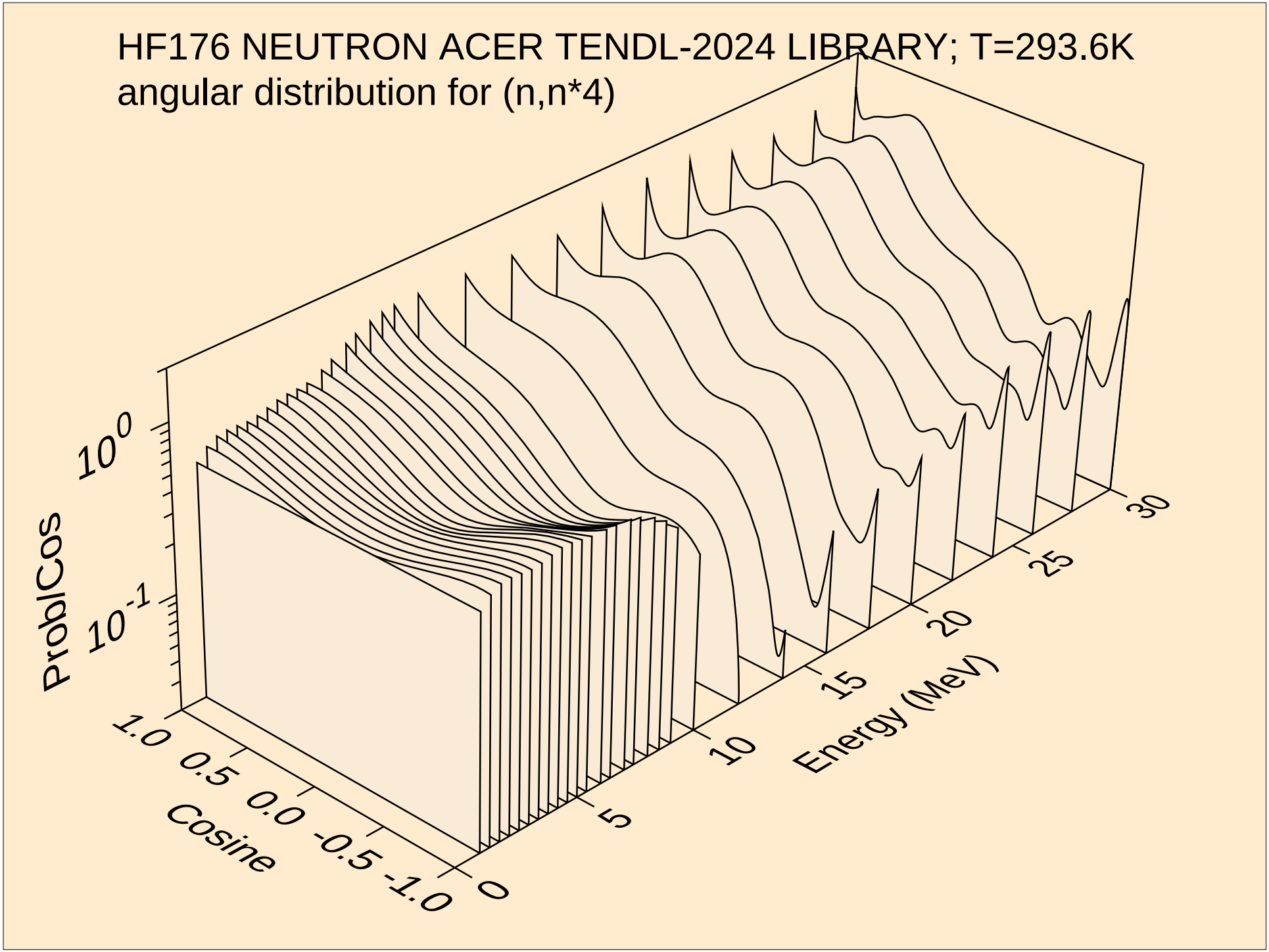

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for elastic
ProbICos
10^{1}
10^{-1}
10^{-3}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
Energy (MeV)

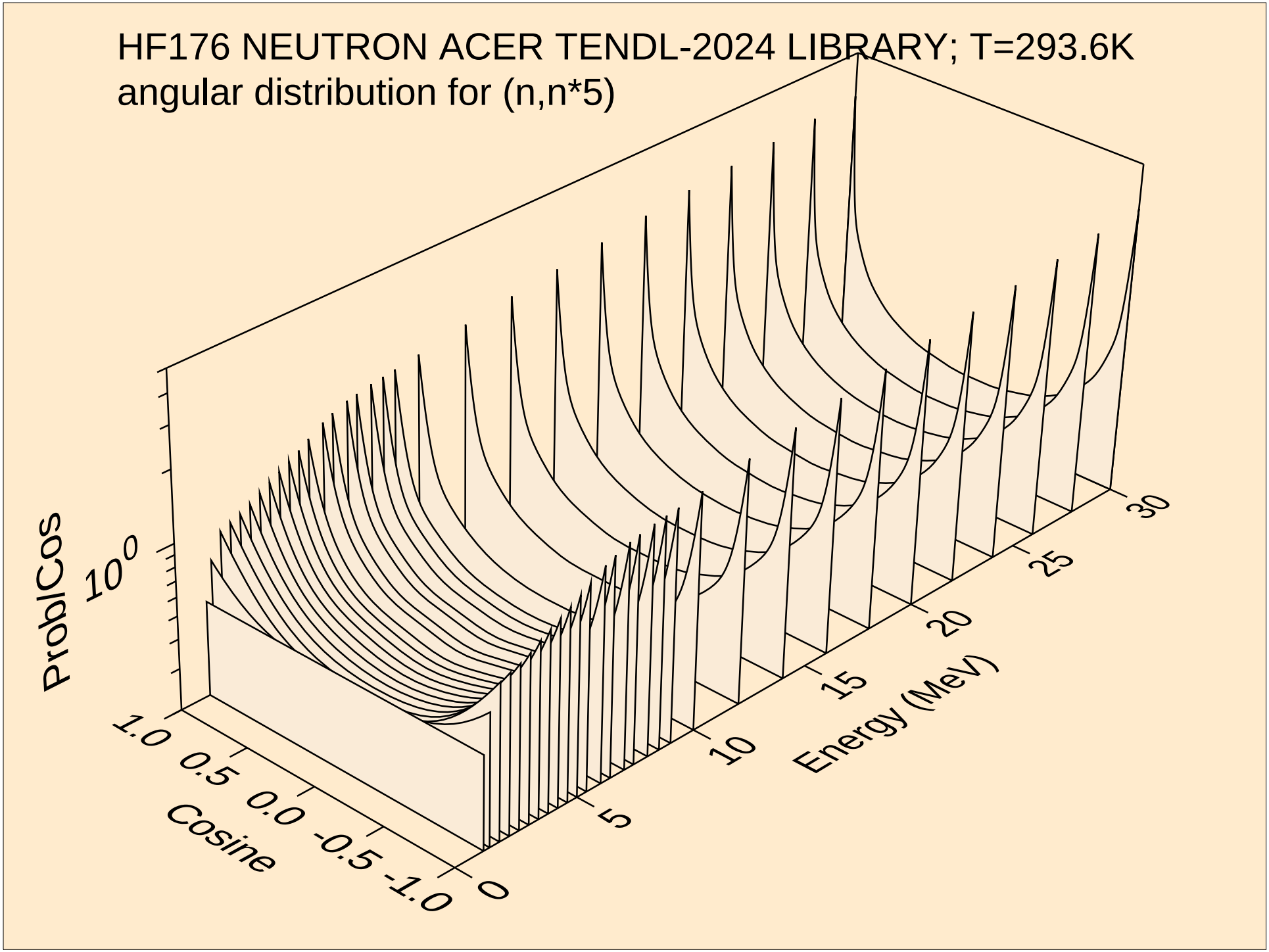

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for elastic
ProblCos
10^{2}
10^{0}
10^{-2}
Cosine
1.0
0.5
0.0
-0.5
-1.0
Energy (MeV)
20
40
60
80
100
120
140
160
180
200

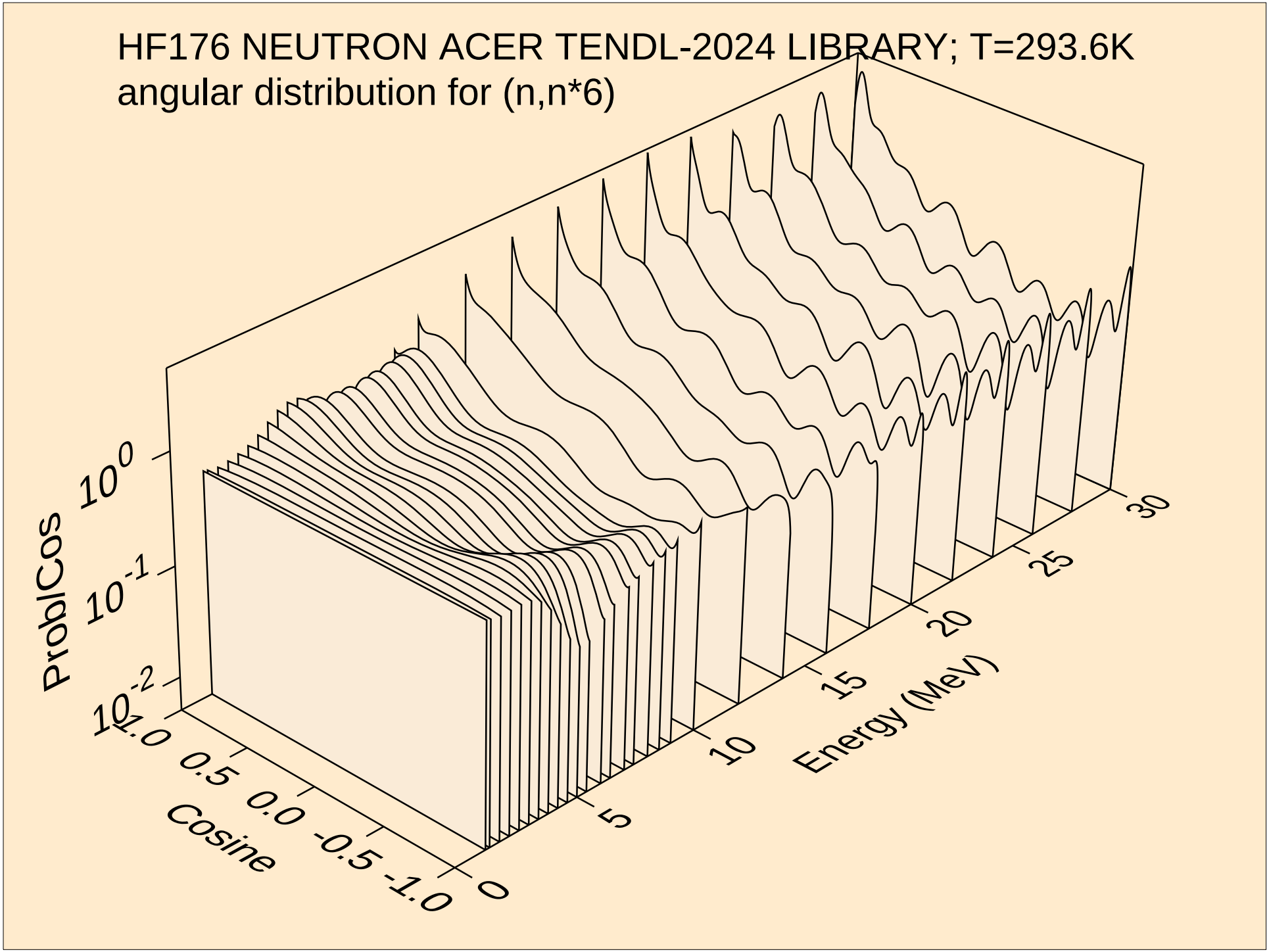

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*1)
Prob\Cos
10^{1}
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

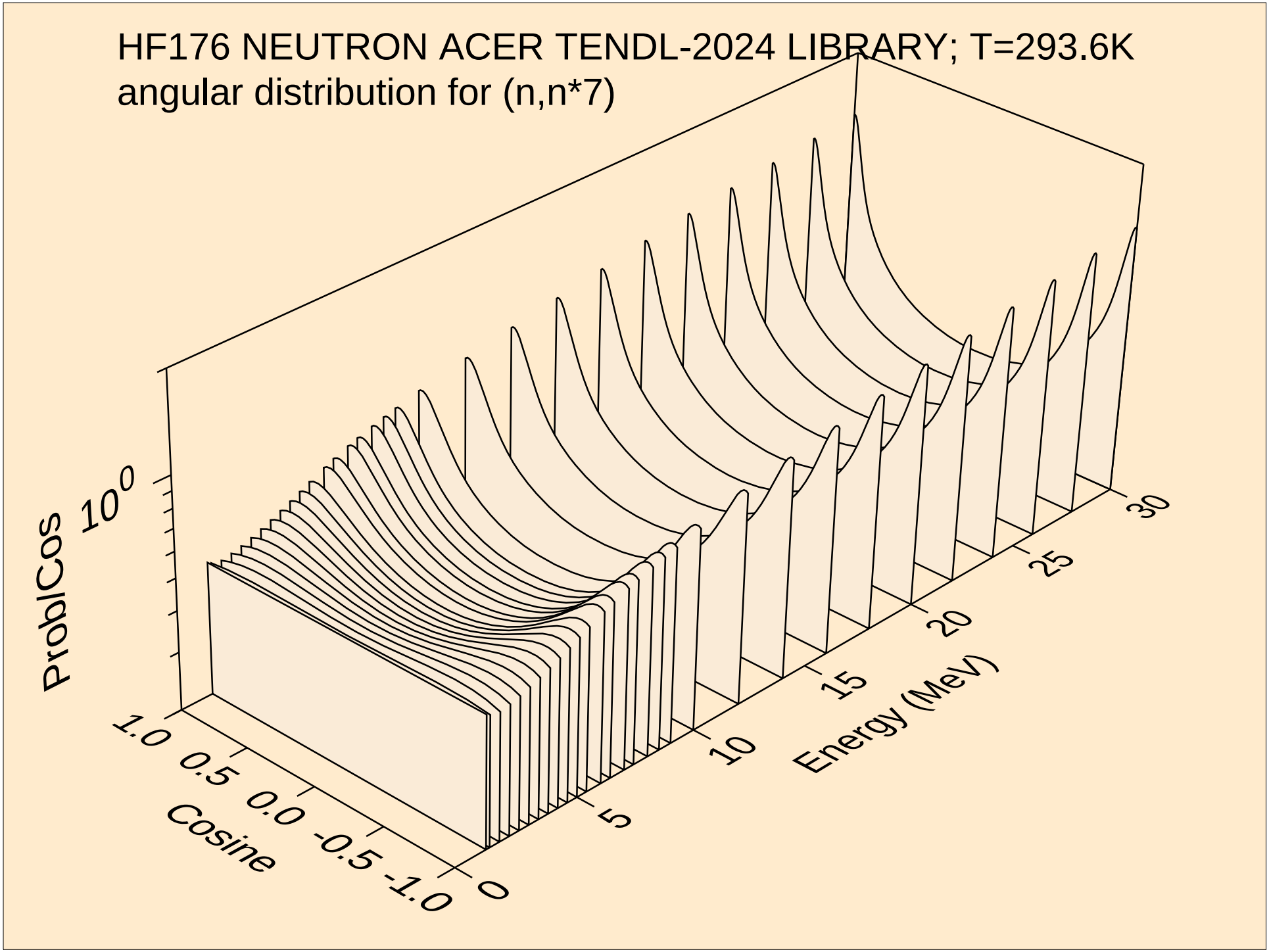

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*2)
ProbCos
10^{0}
10^{-1}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

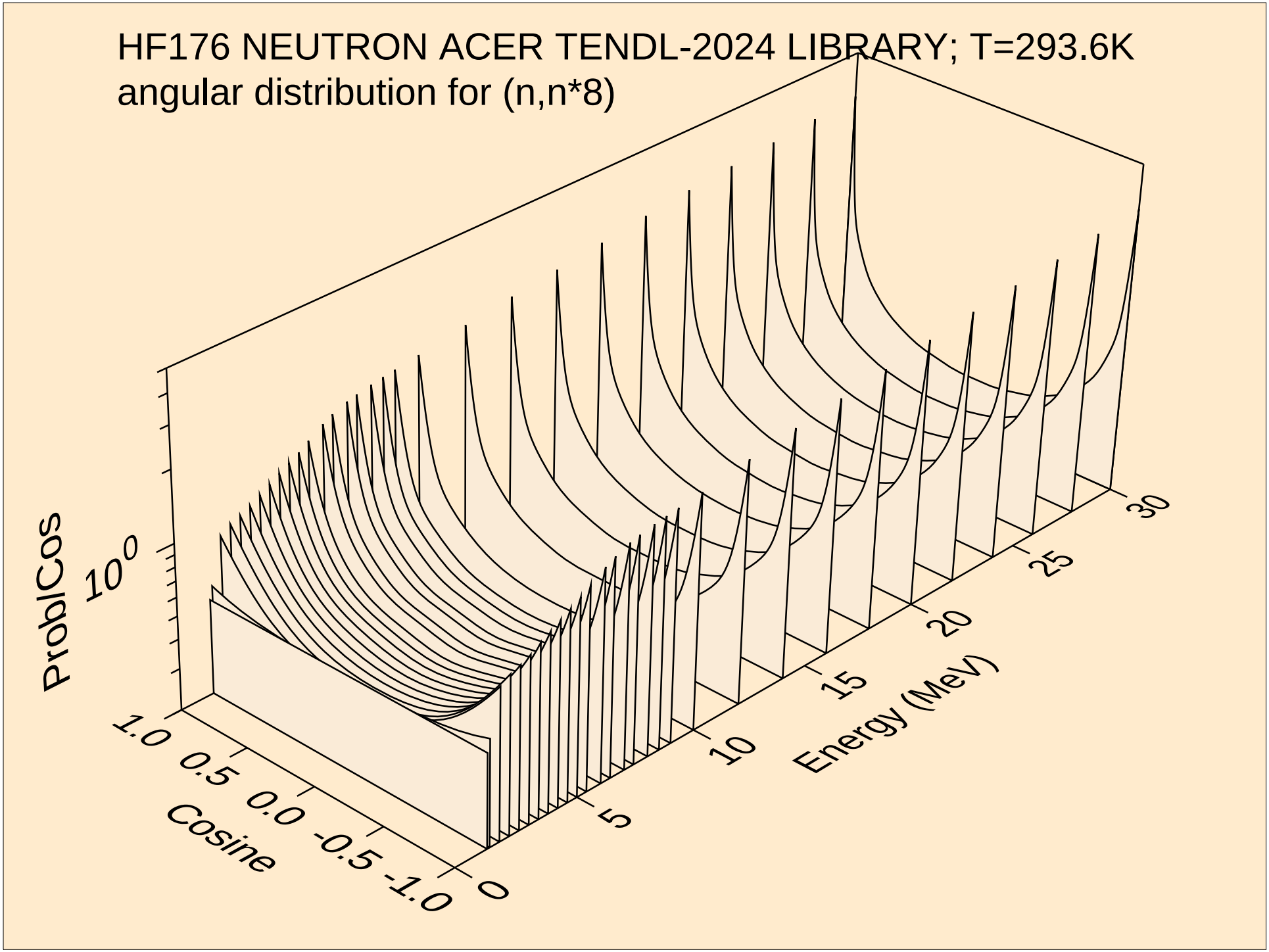

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*3)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

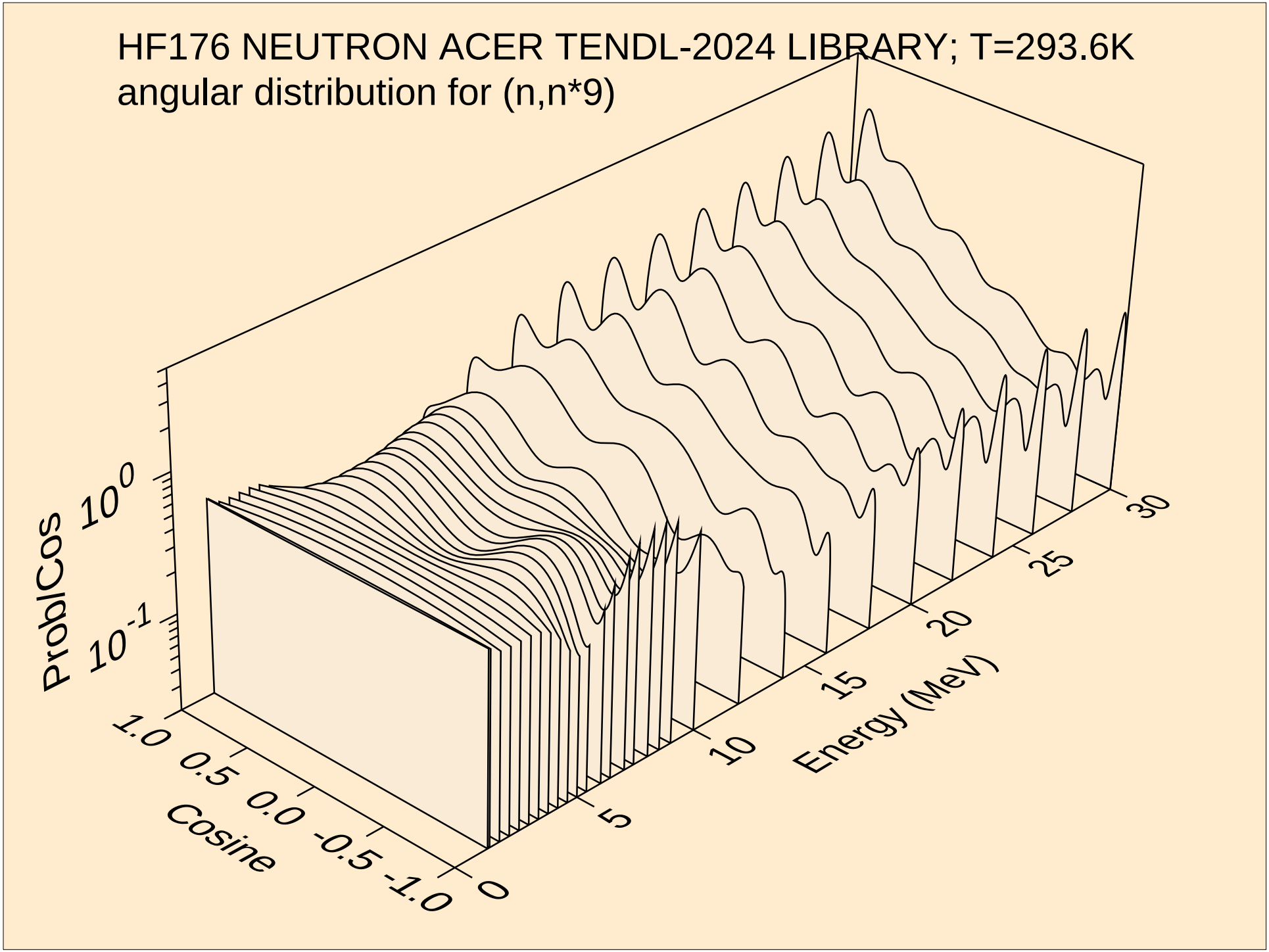

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*4)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

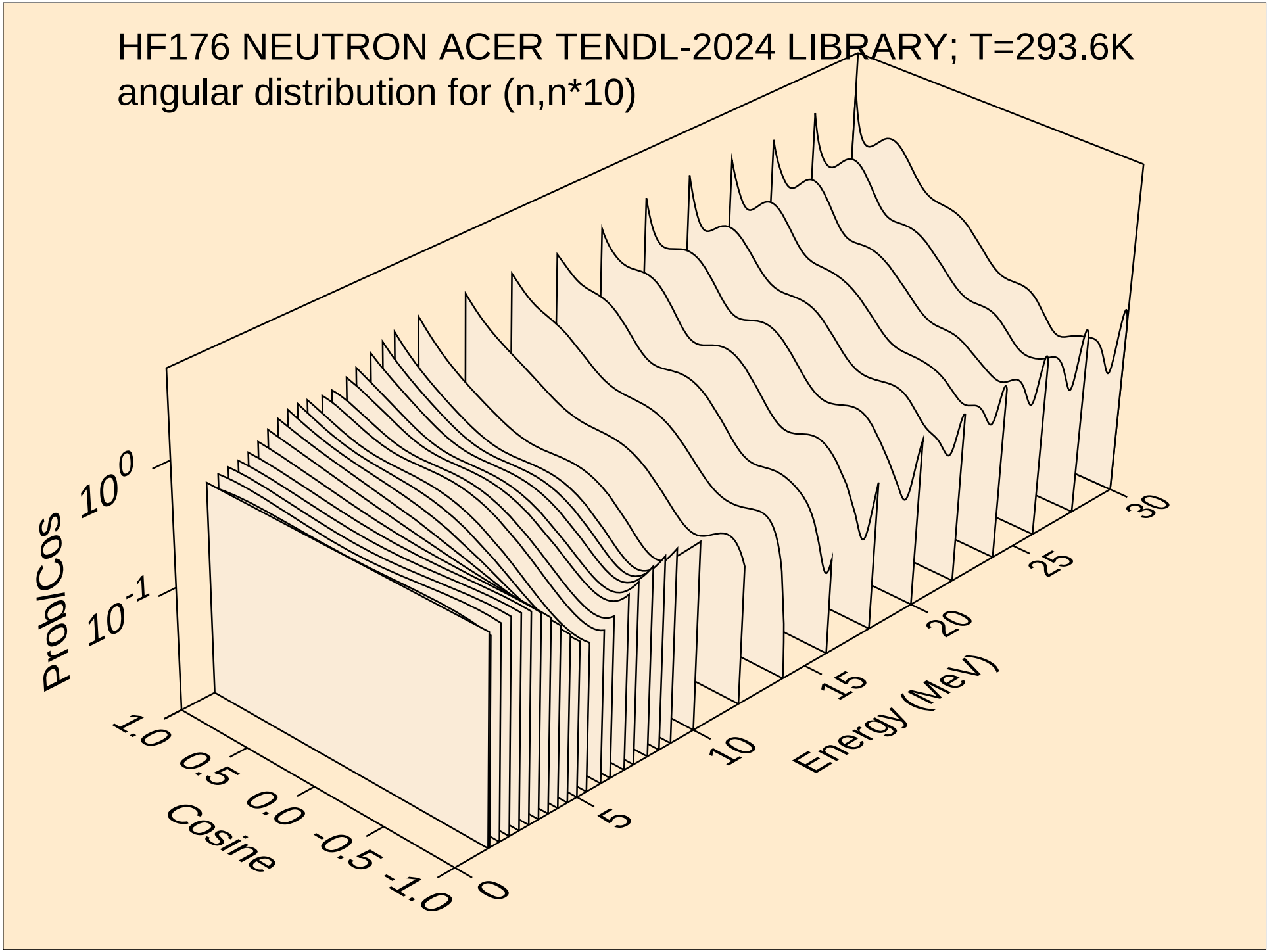

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*5)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

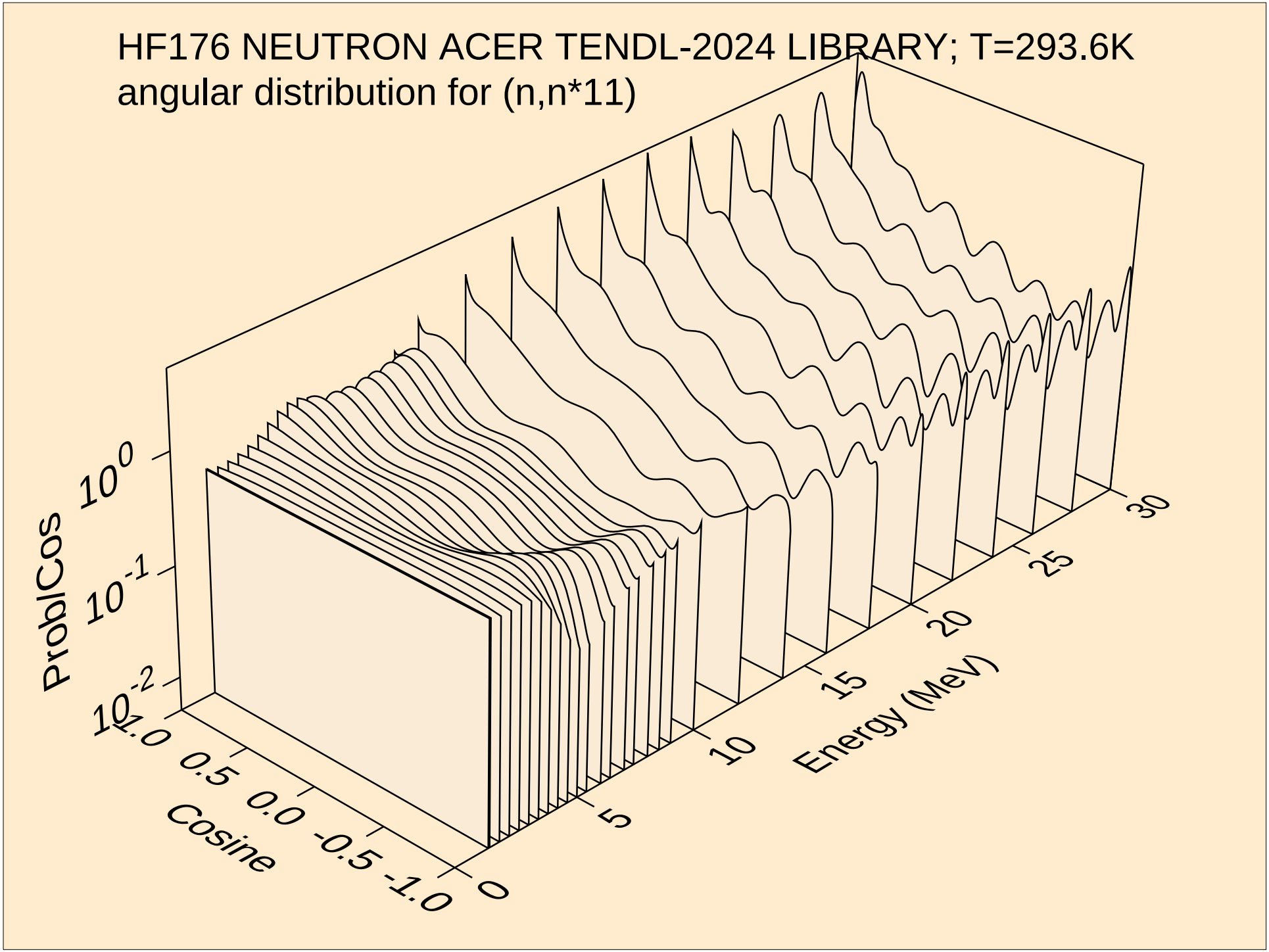

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*6)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

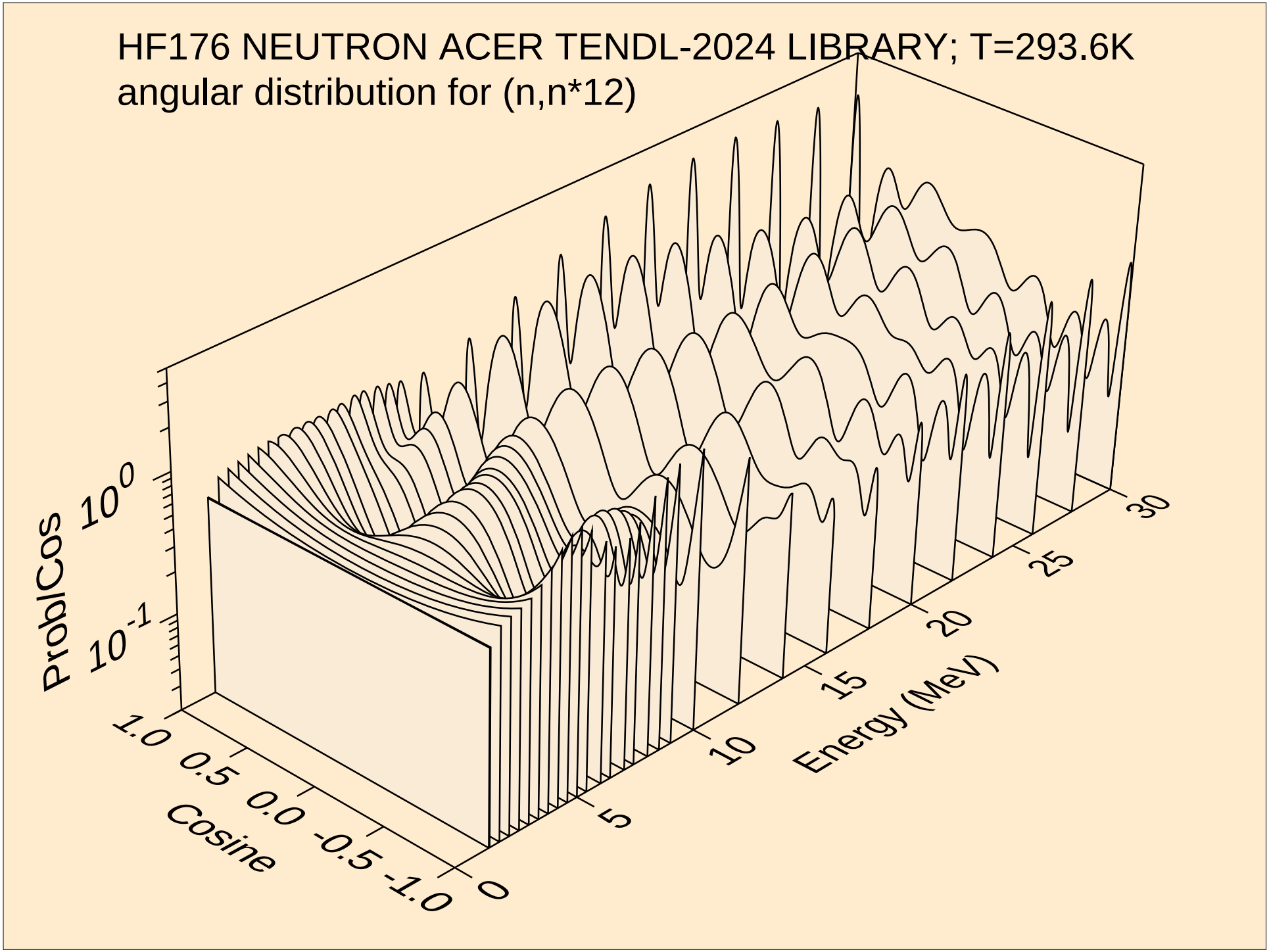

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*7)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

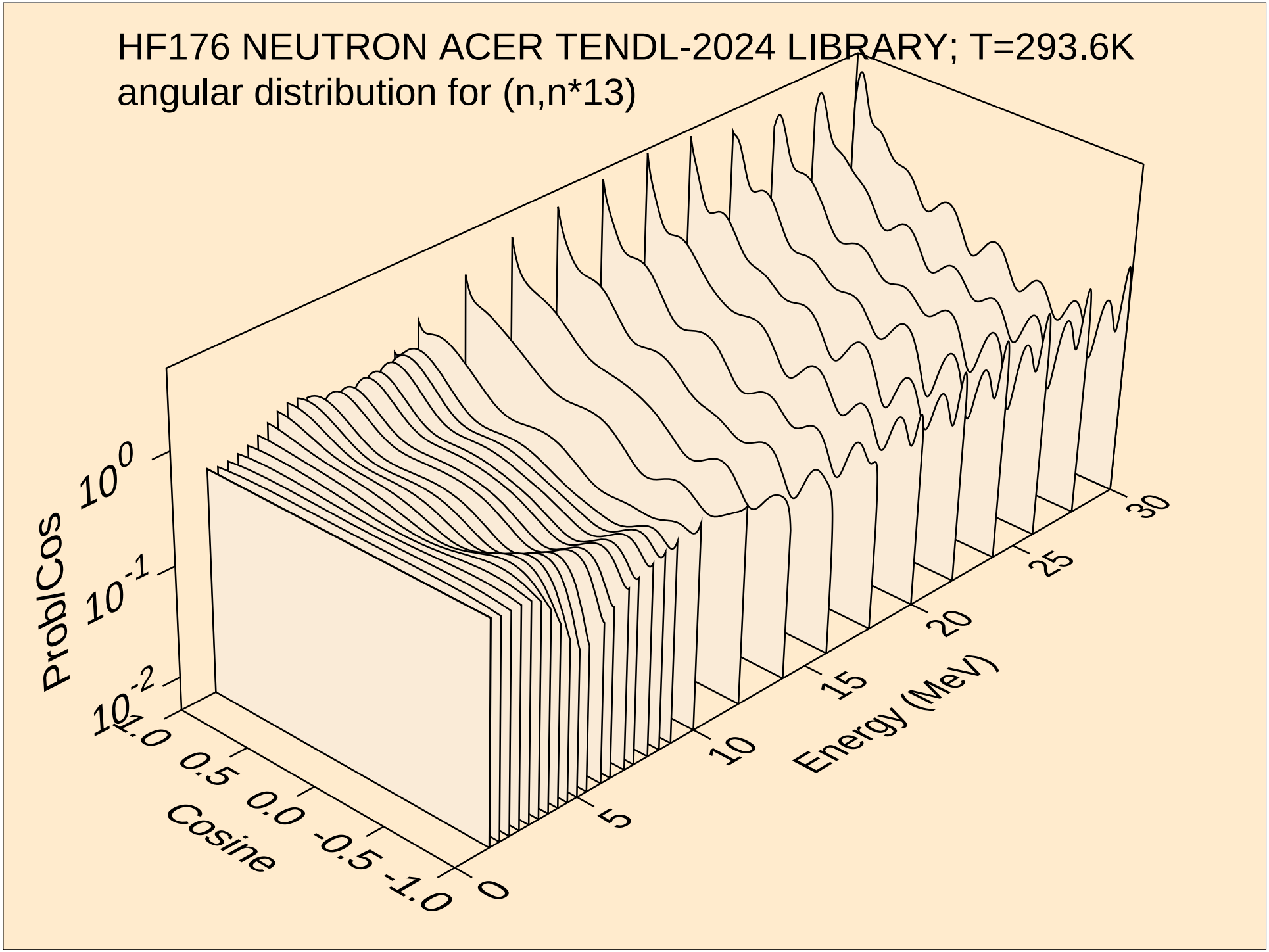

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*8)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

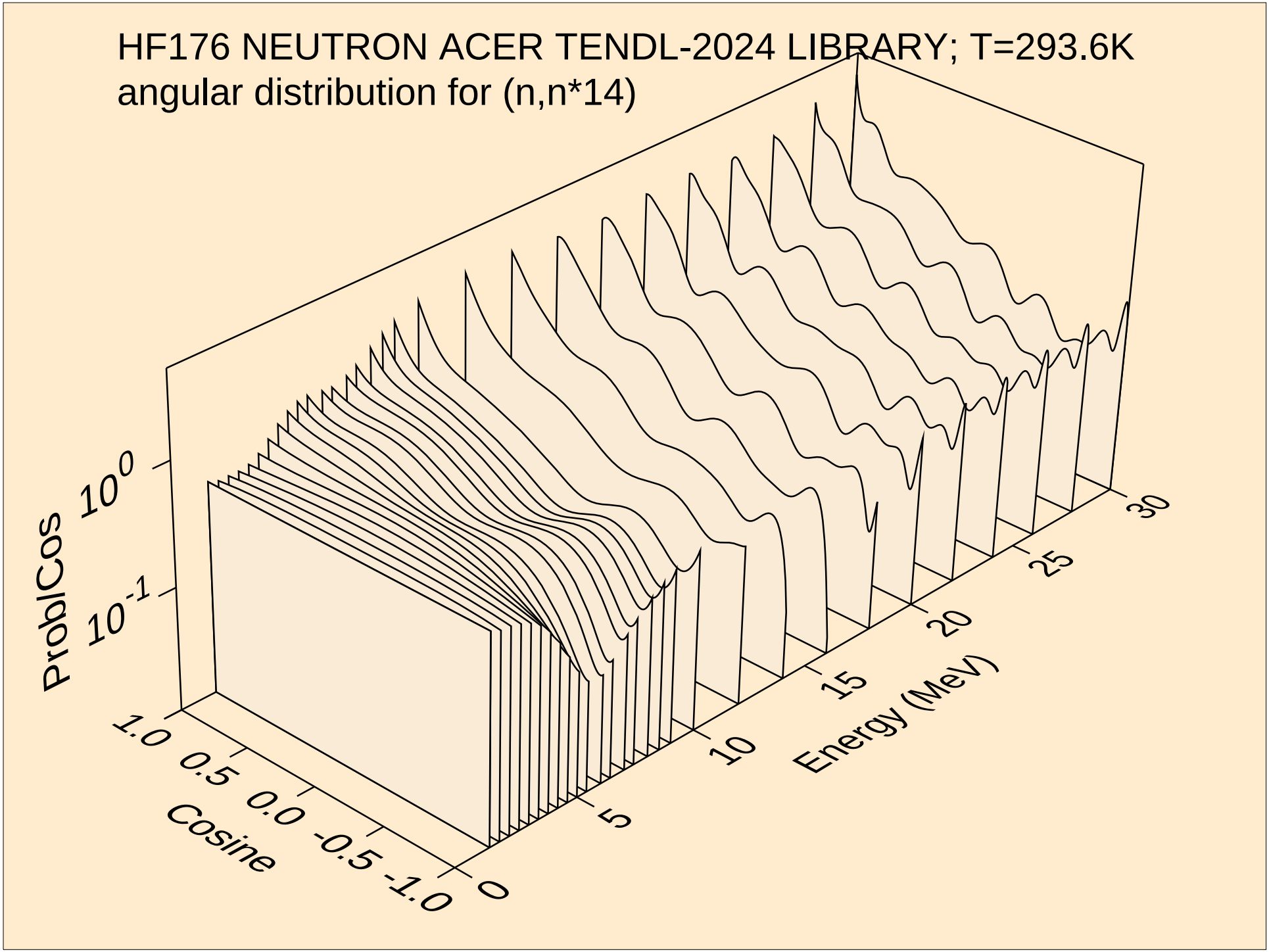

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*9)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

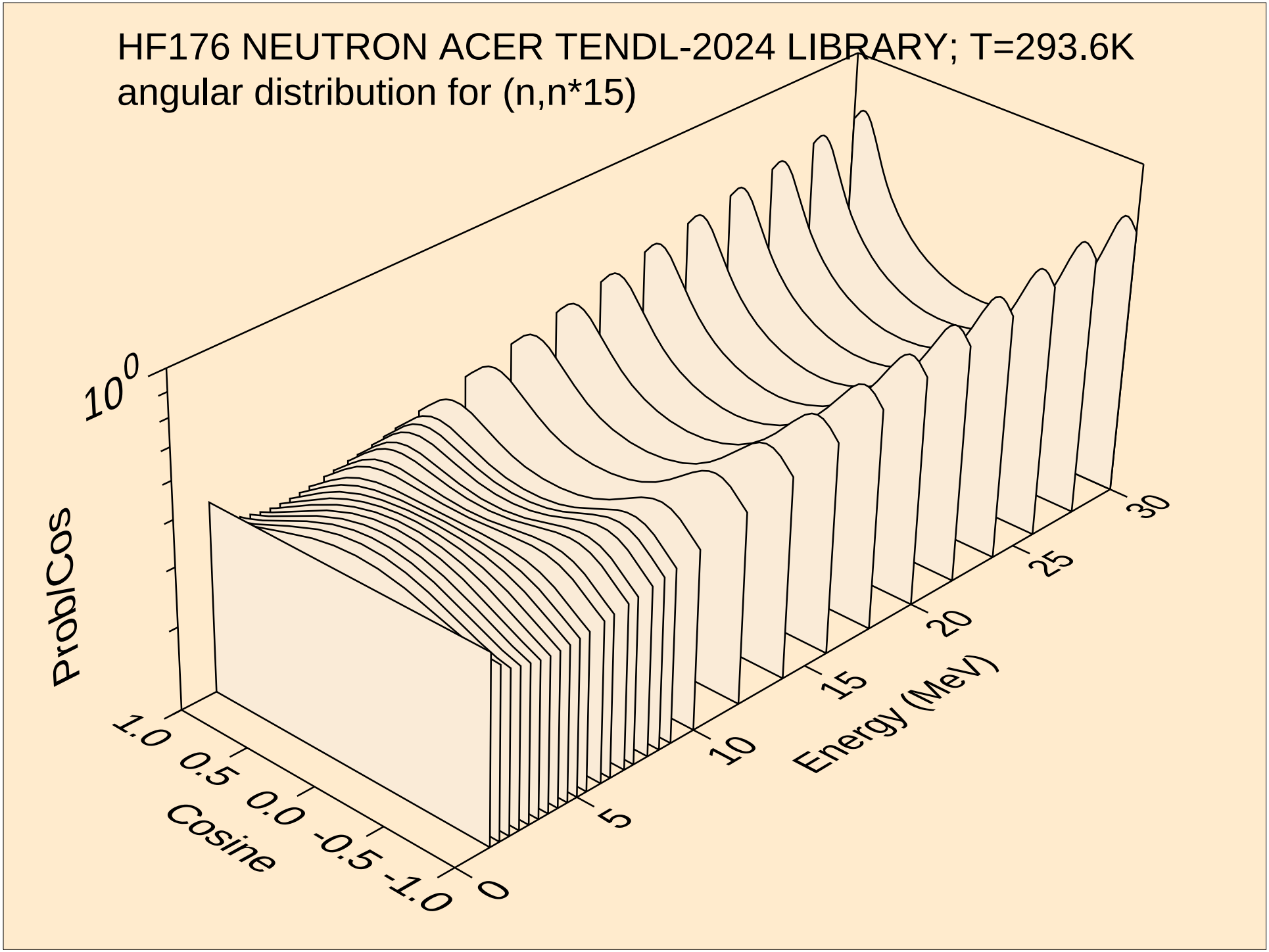

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*10)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

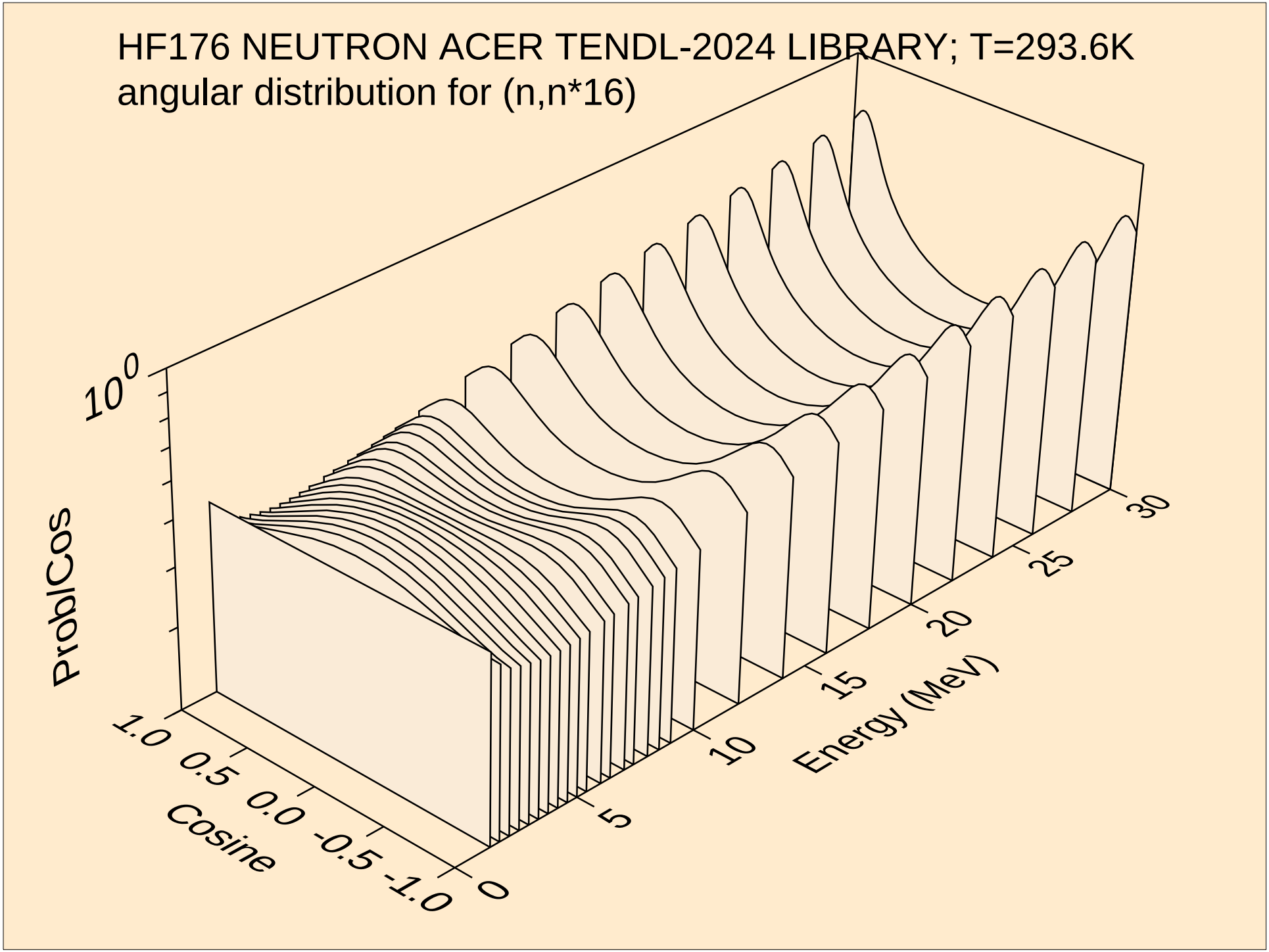

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*11)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

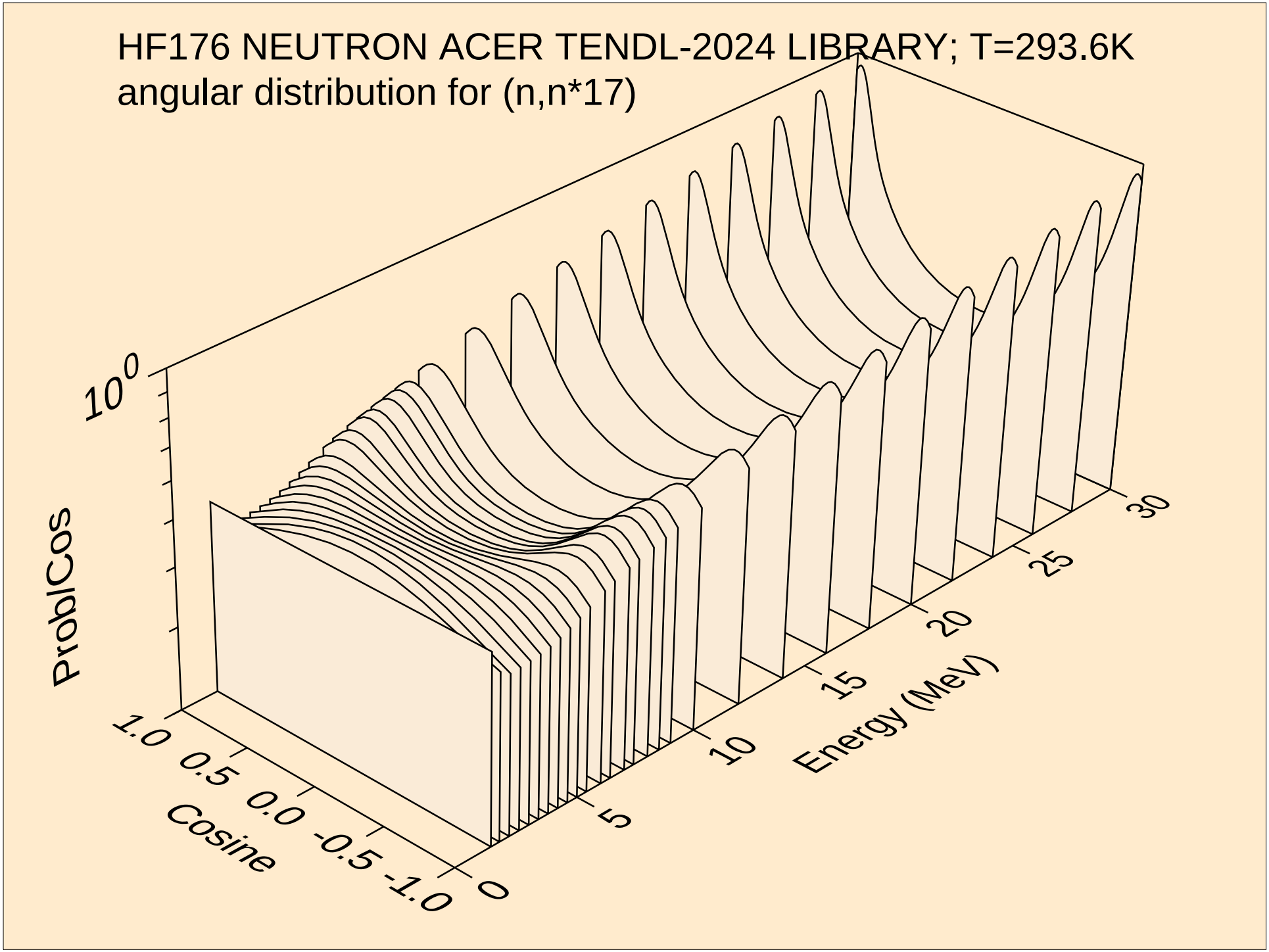

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*12)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

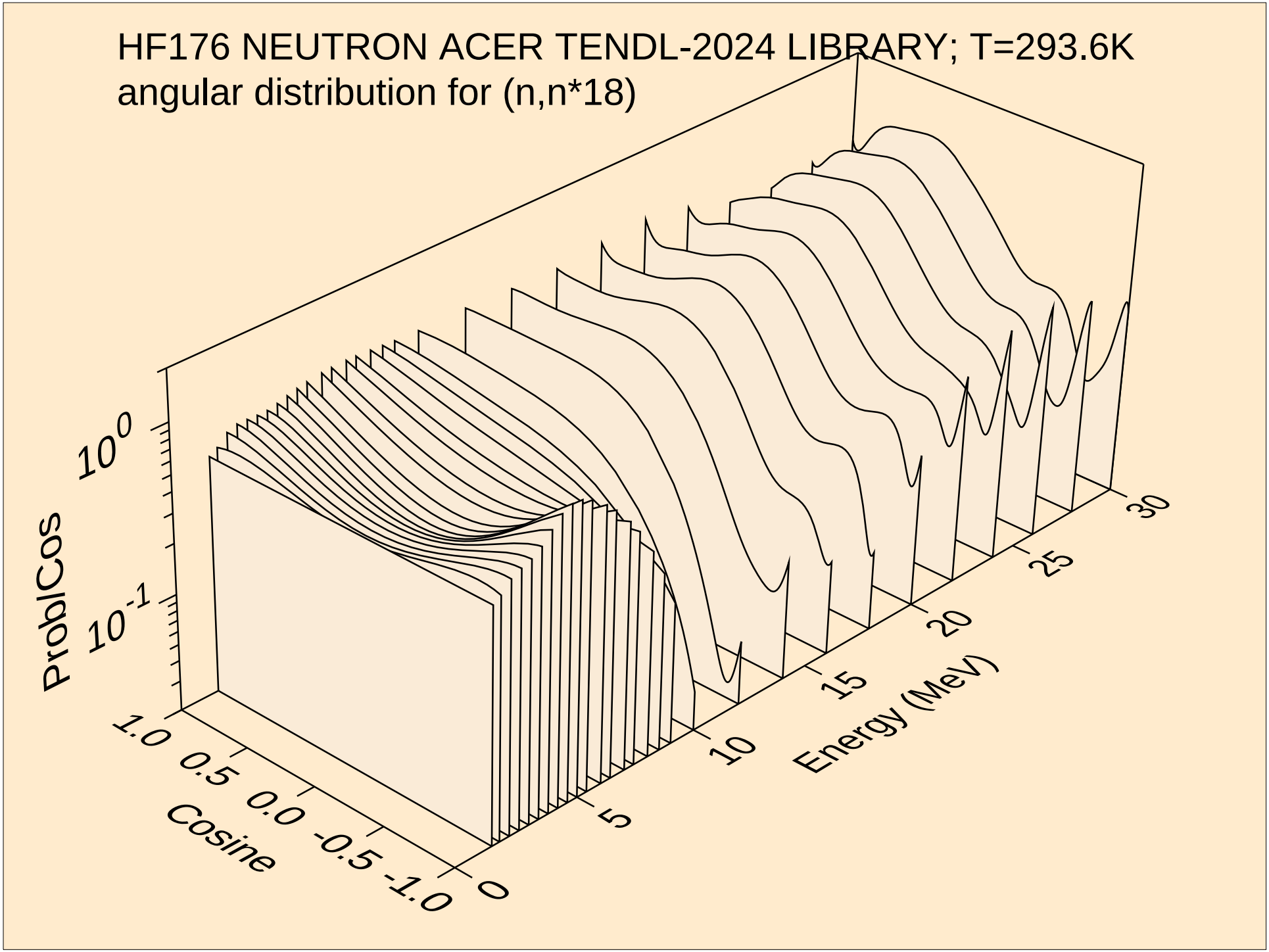

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*13)
Prob\Cos
10^0
10^-1
10^-2
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

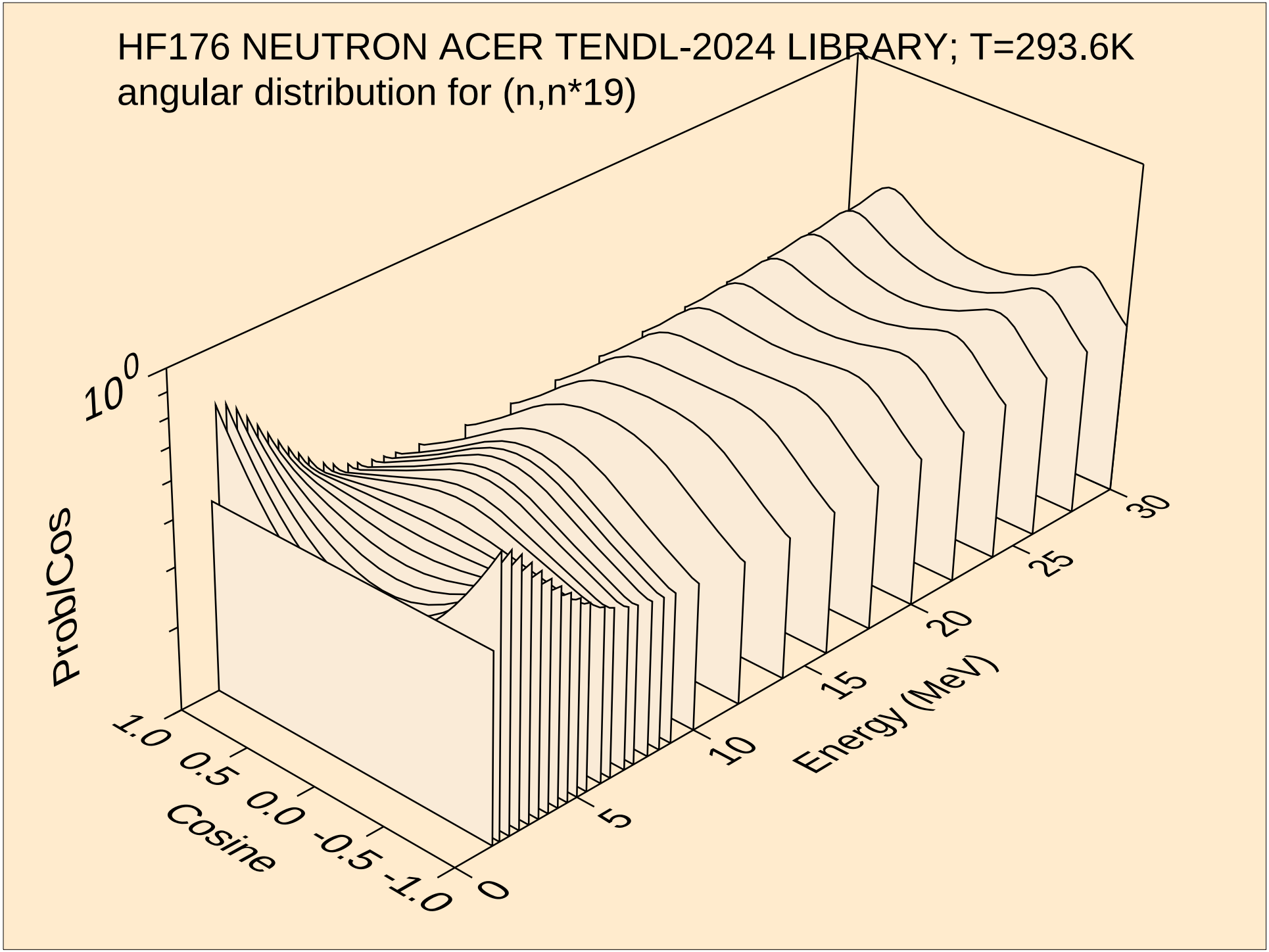

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*14)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

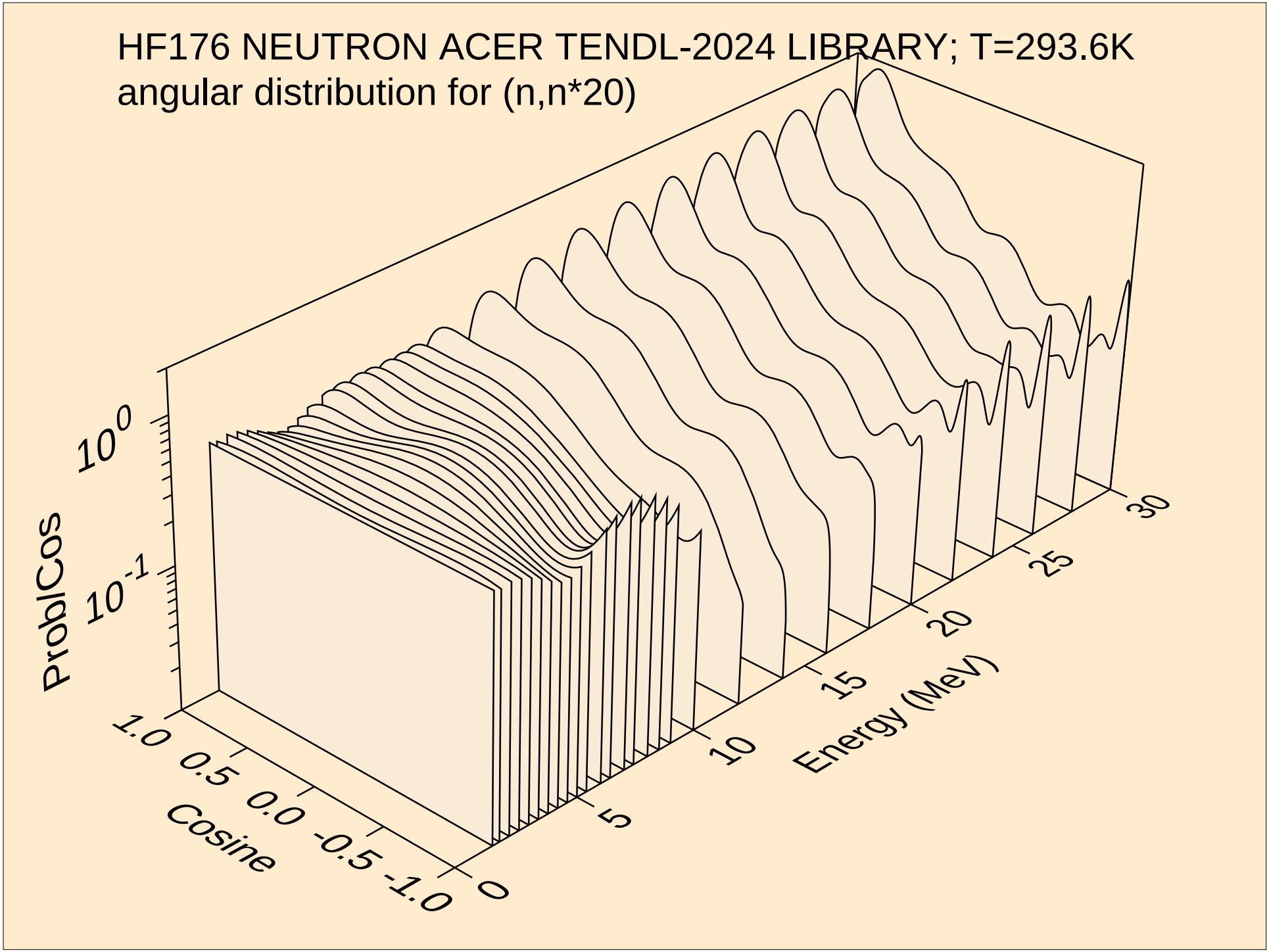

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*15)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

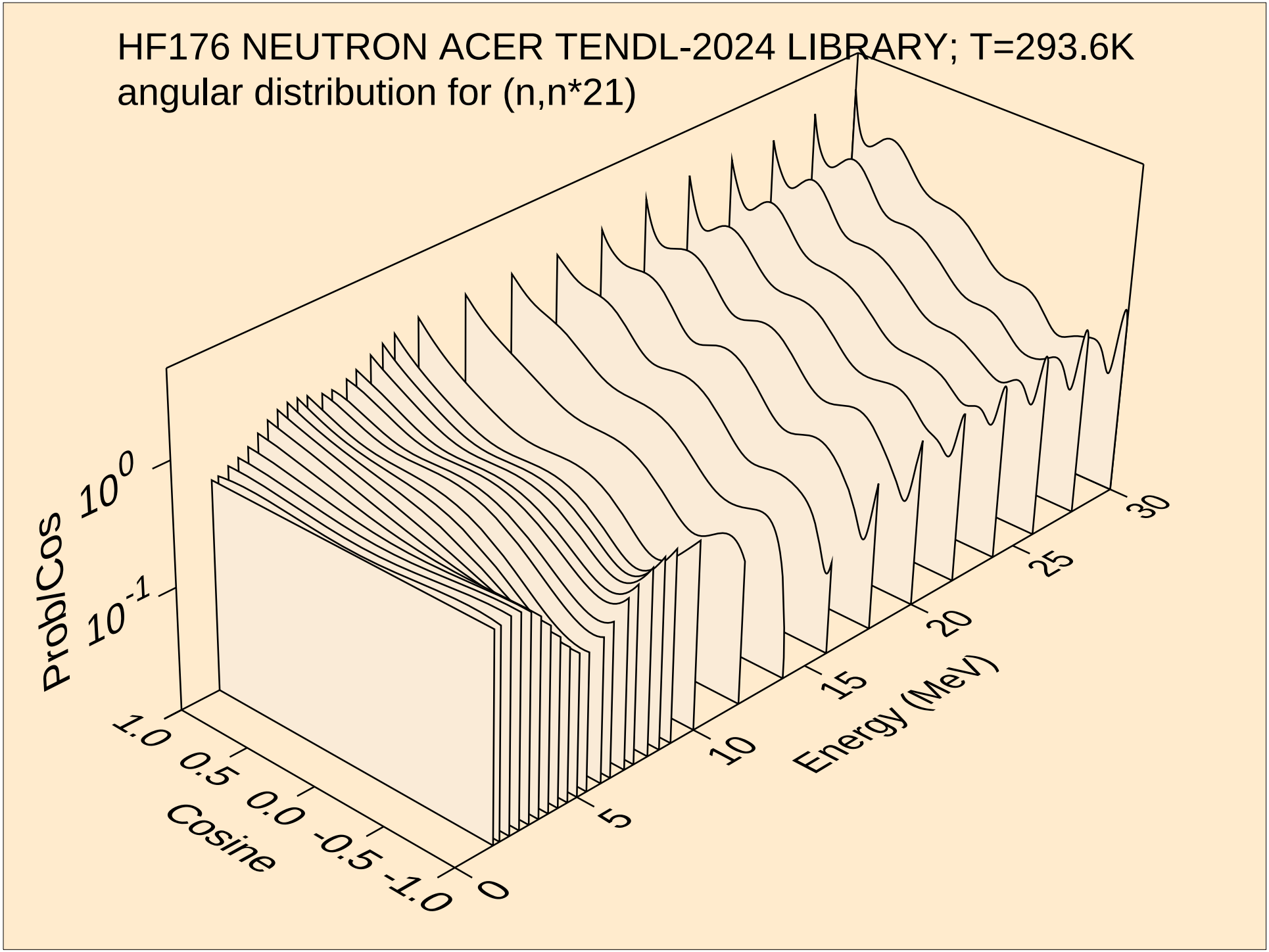

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*16)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

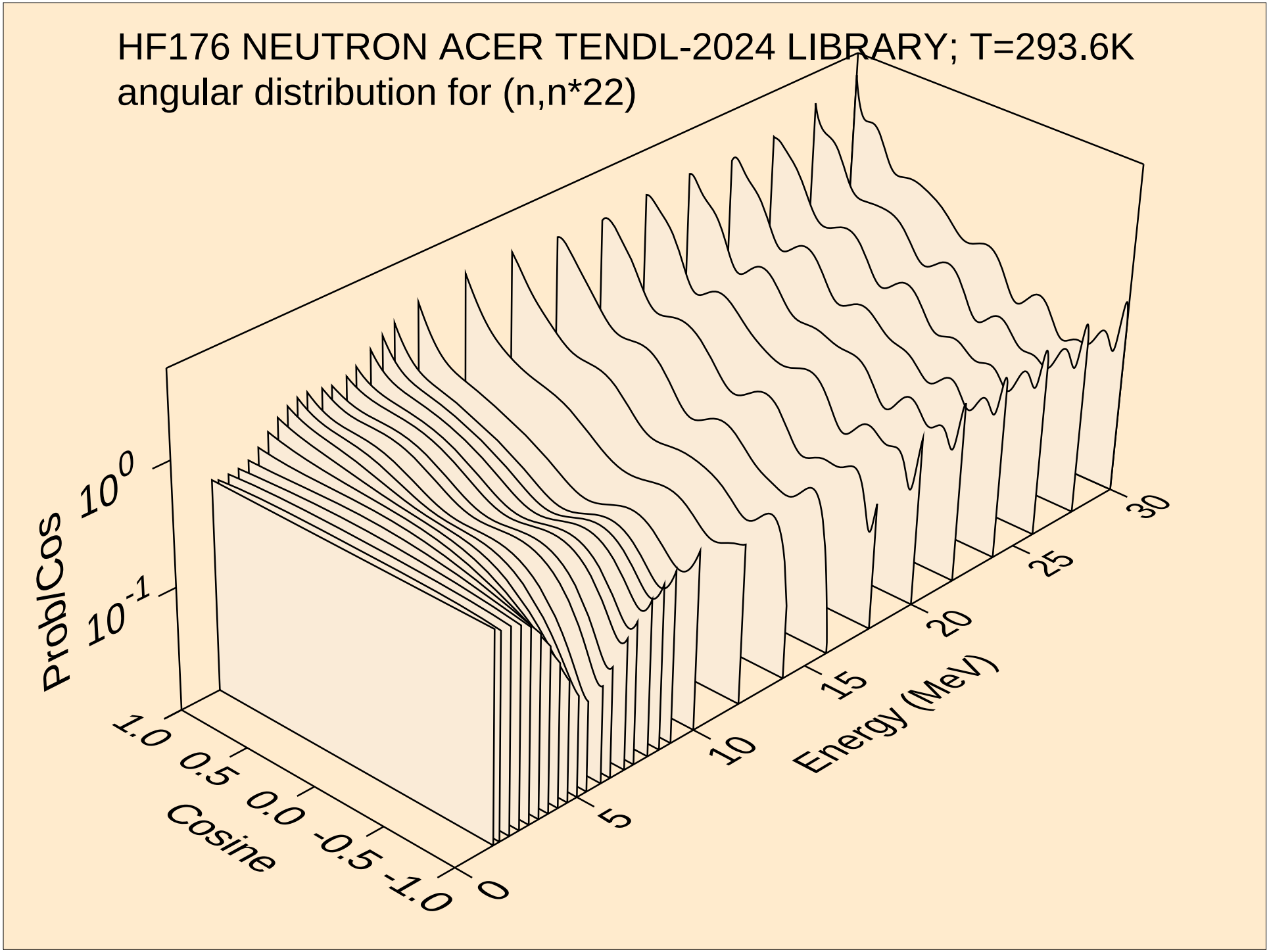

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*17)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

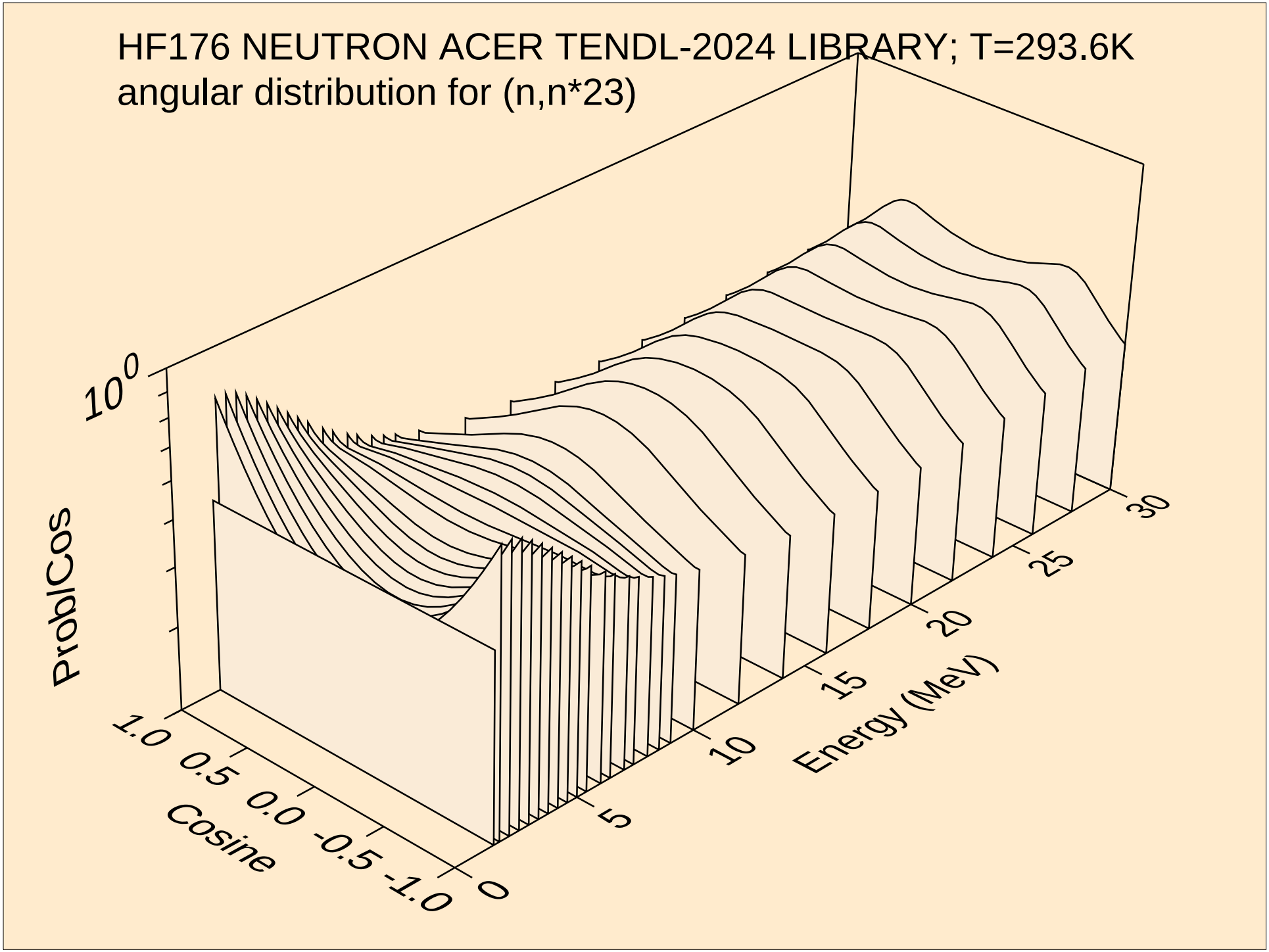

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*18)
ProbICos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

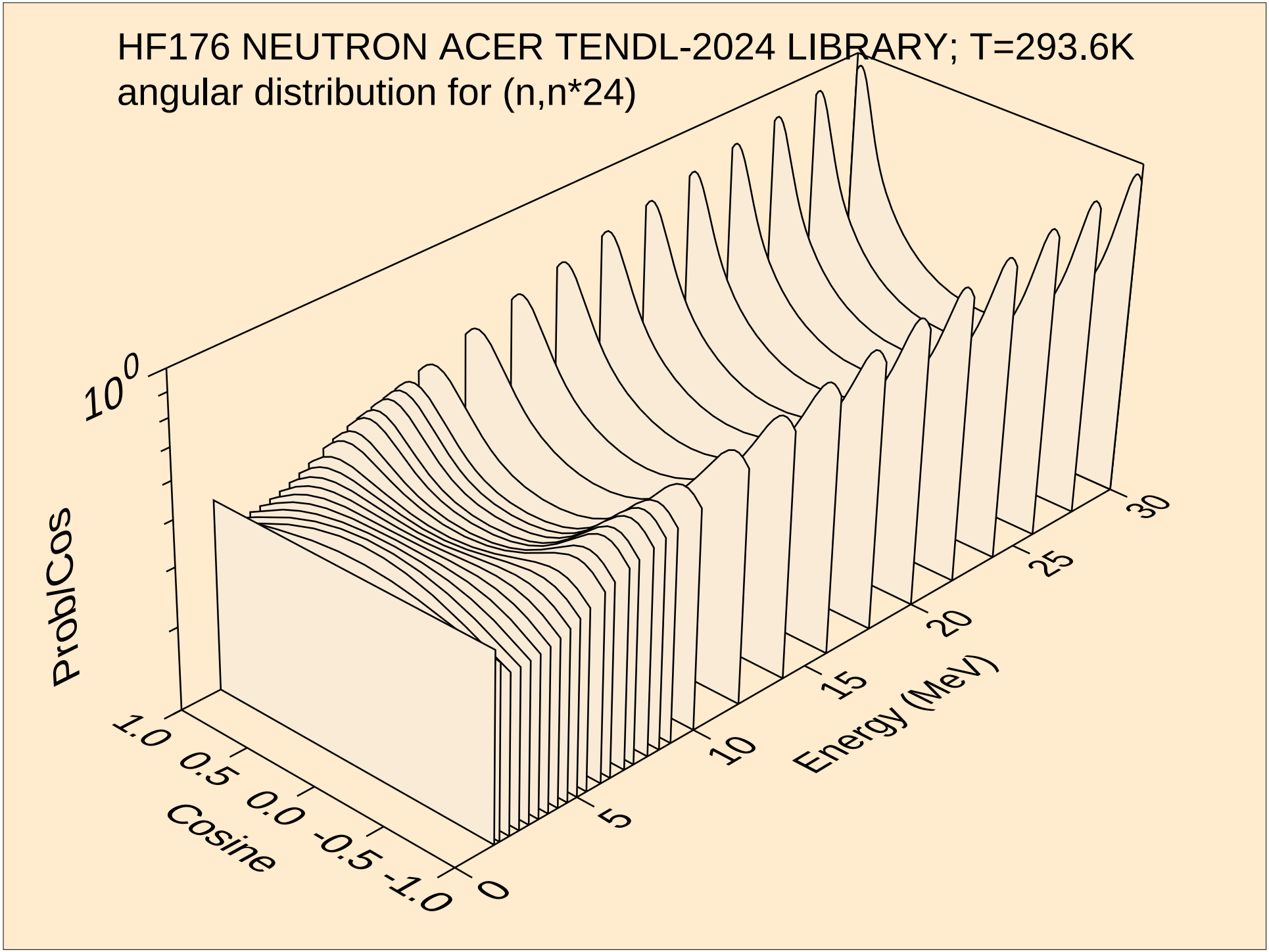

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*19)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

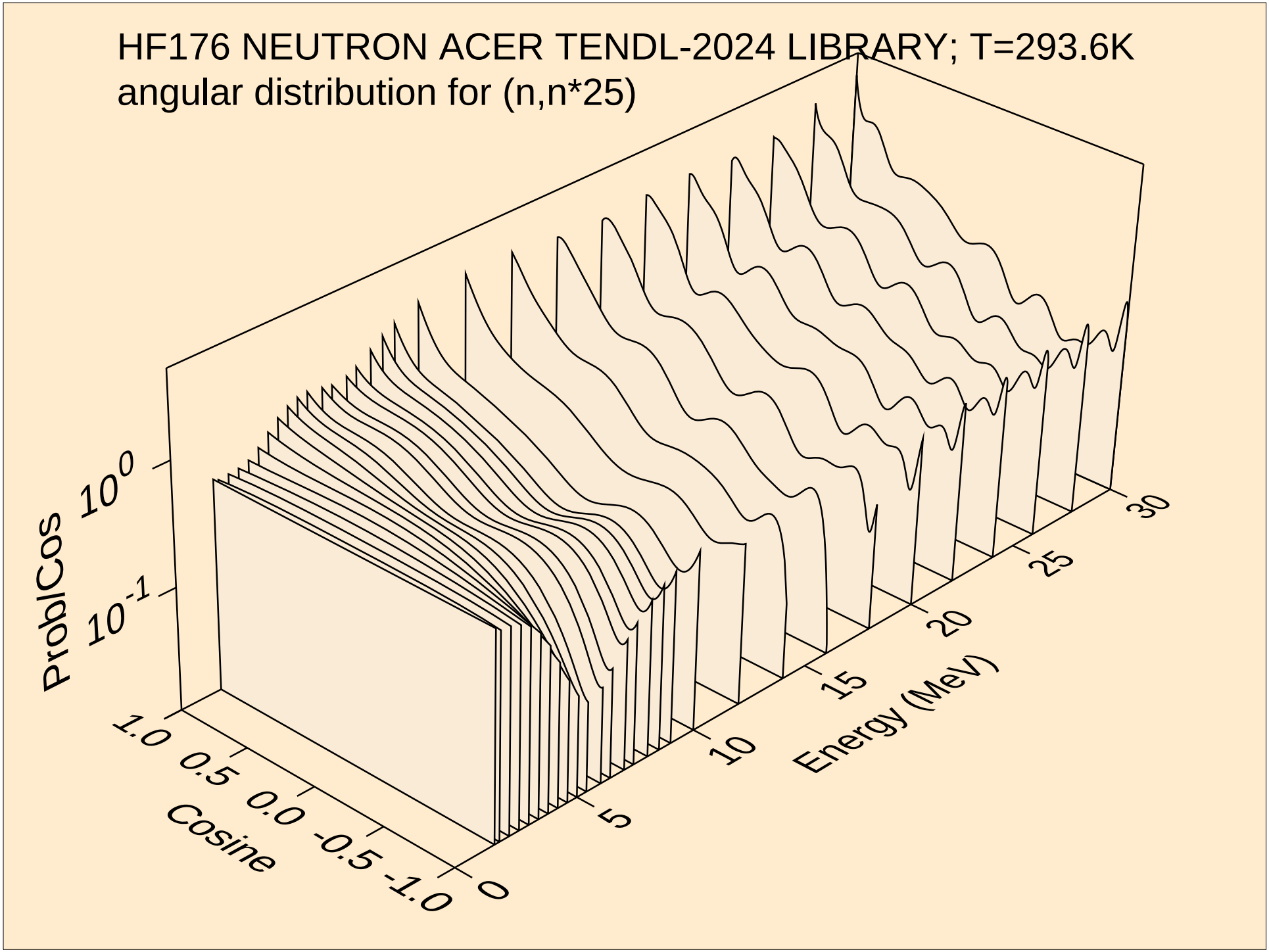

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*20)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

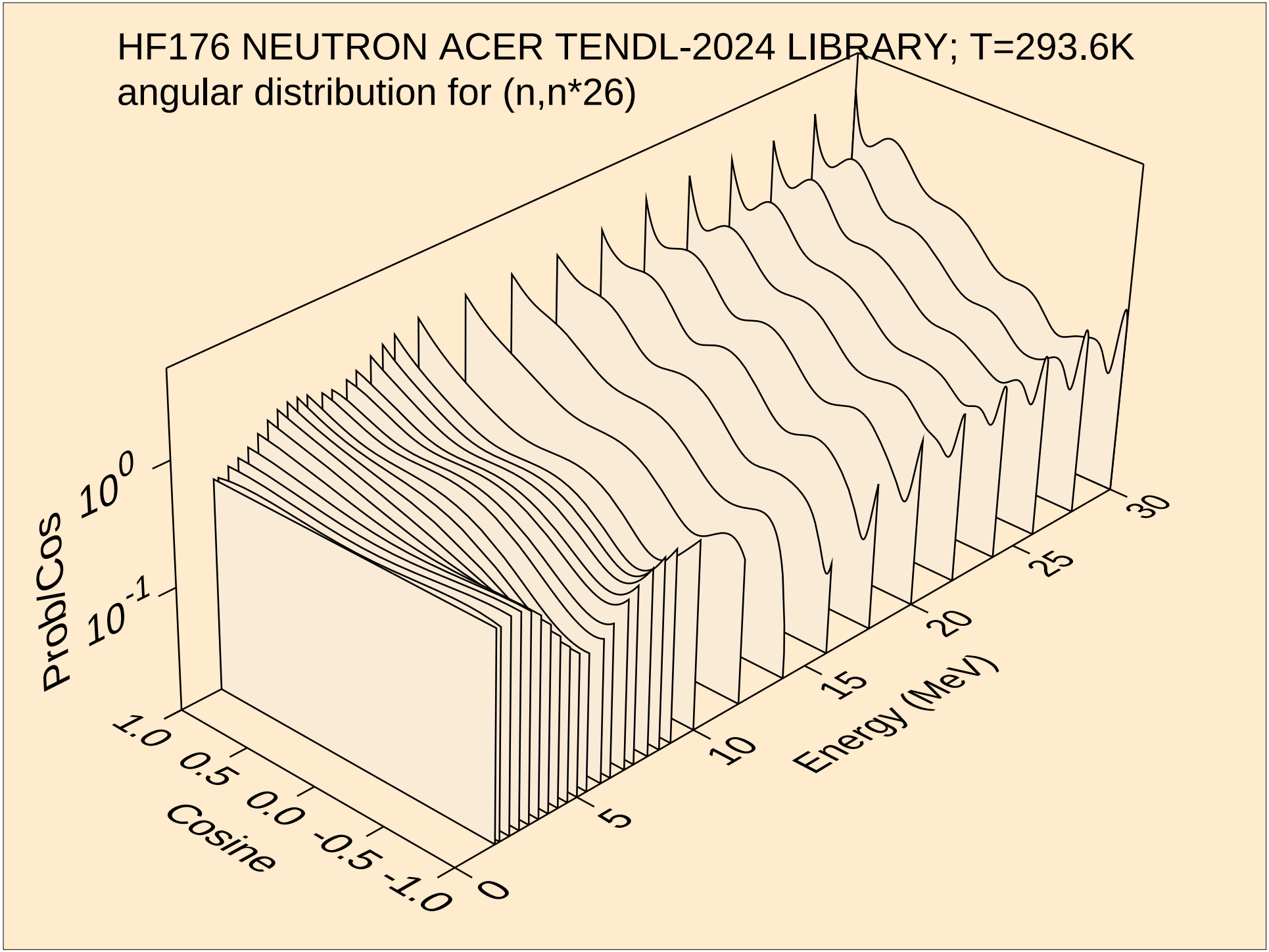

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*21)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

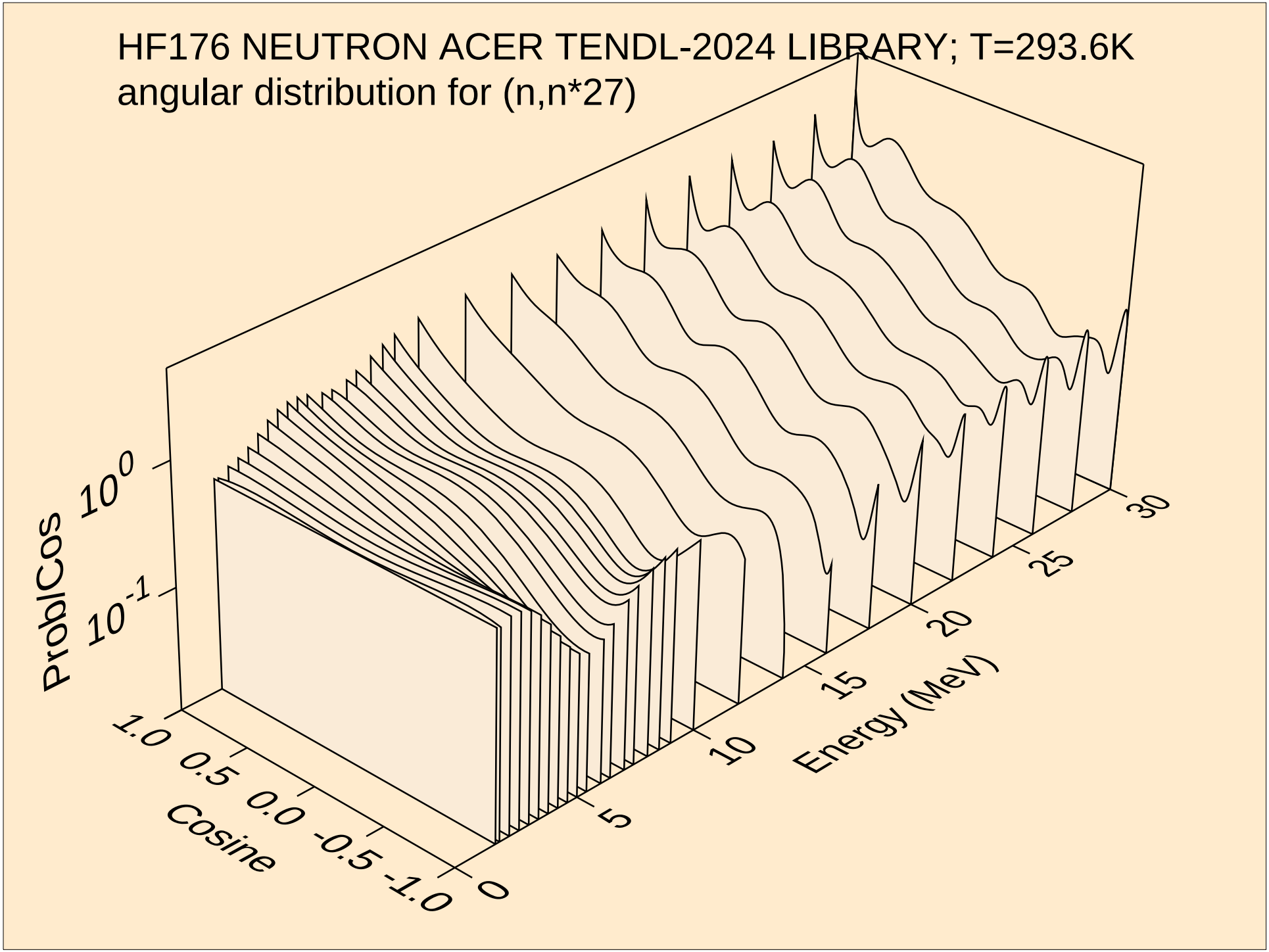

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*22)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

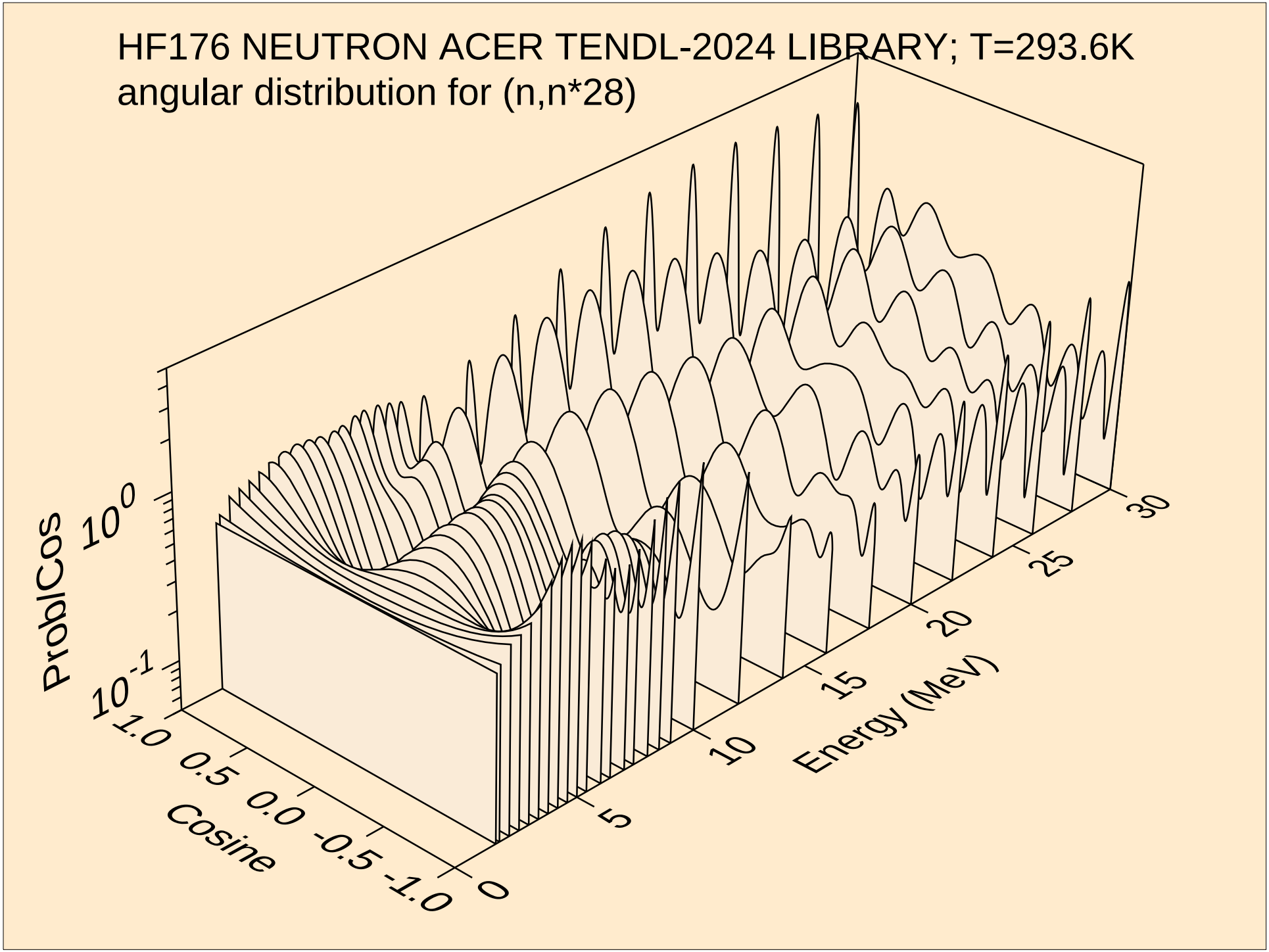

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*23)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

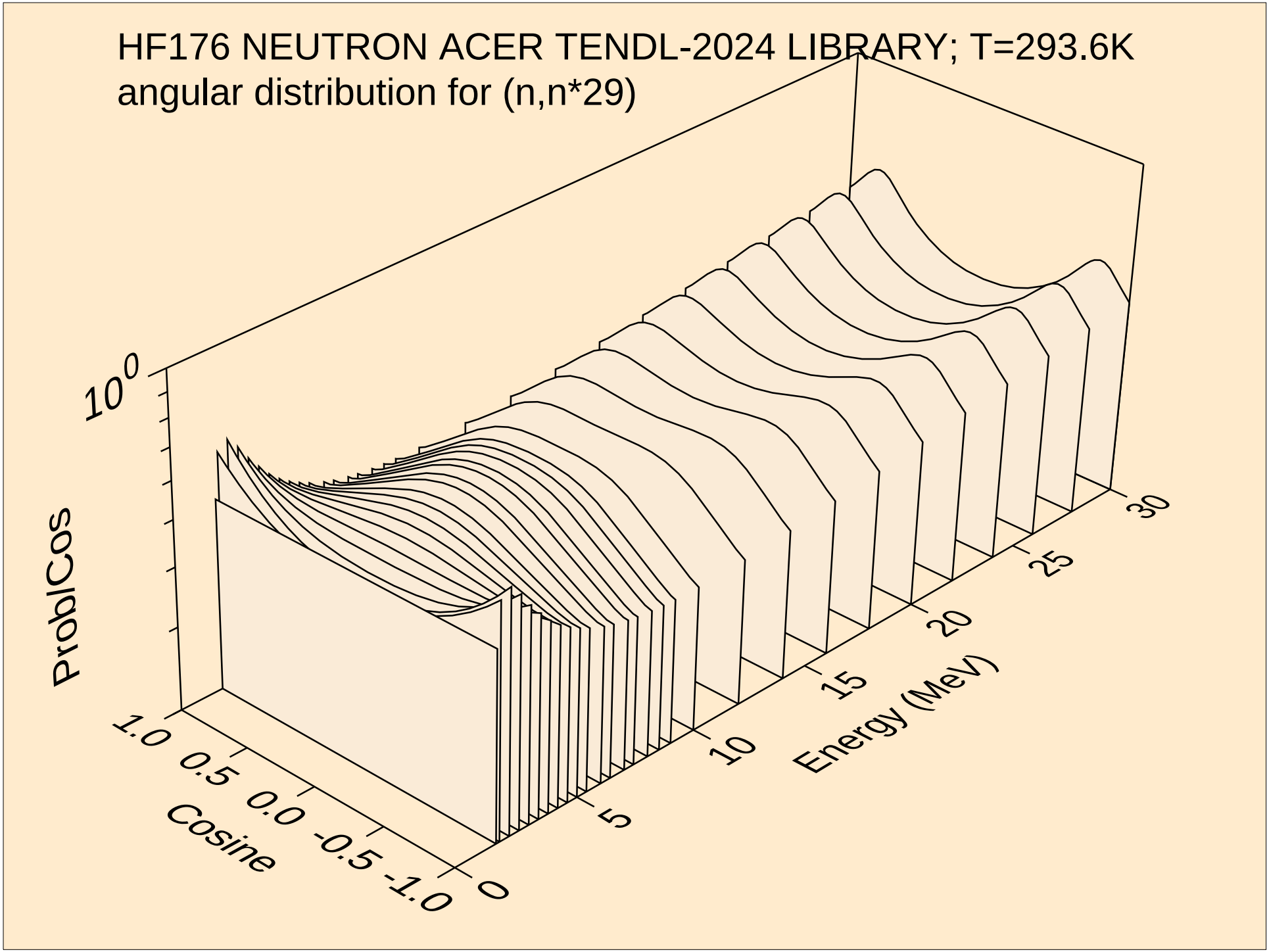

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*24)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

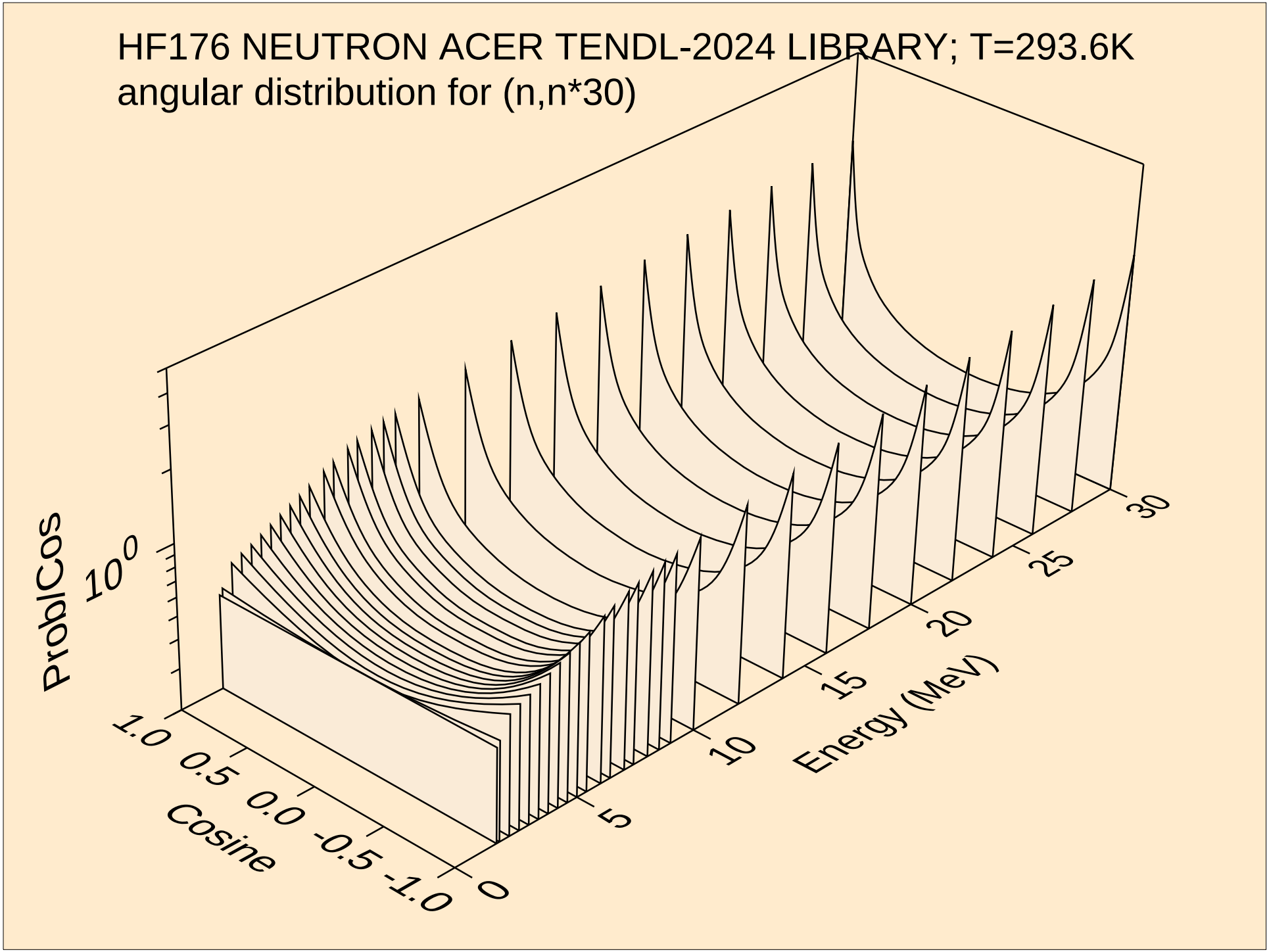

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*25)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

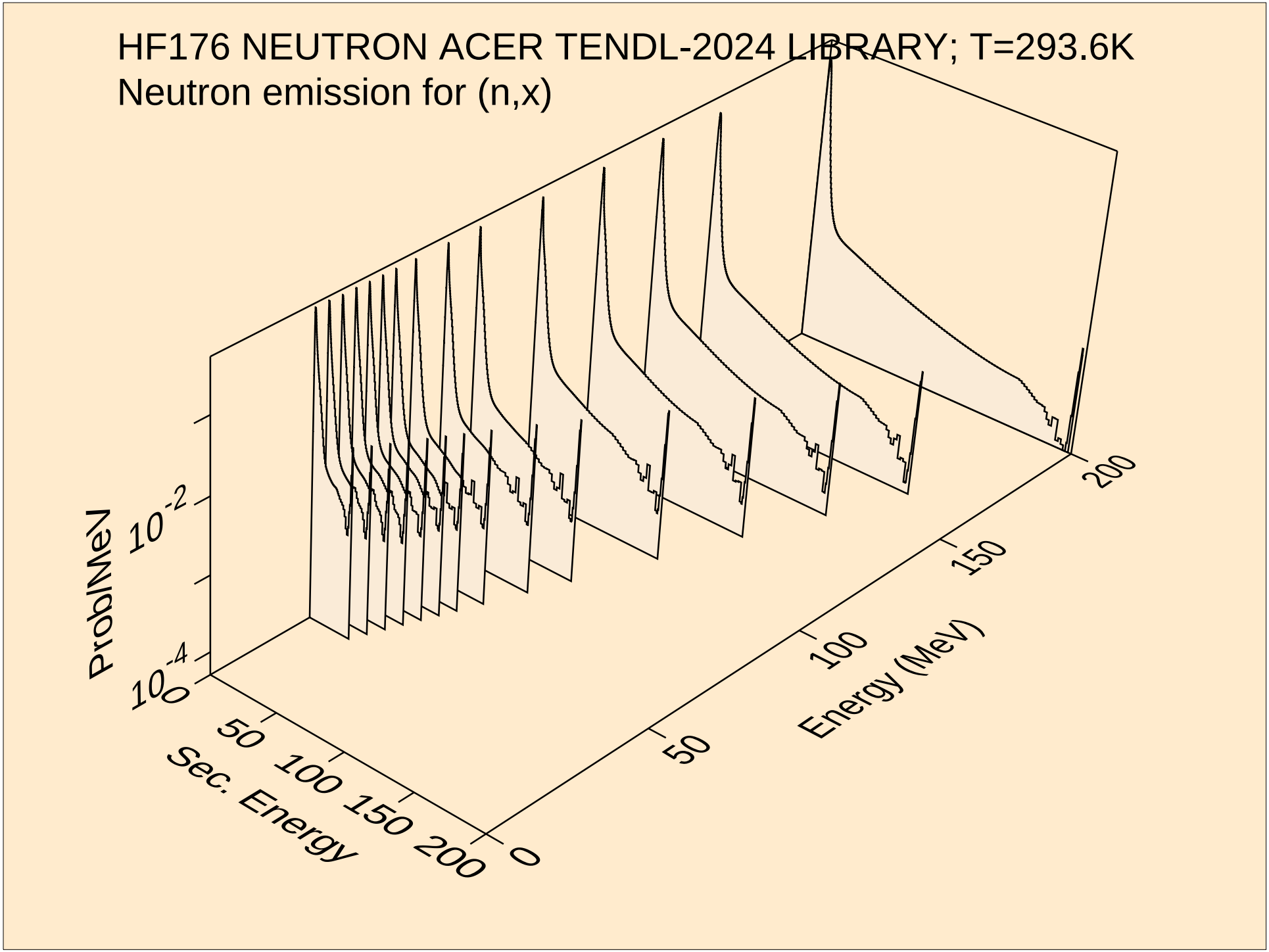

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*26)
Prob\Cos
10^{0}
10^{-1}
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

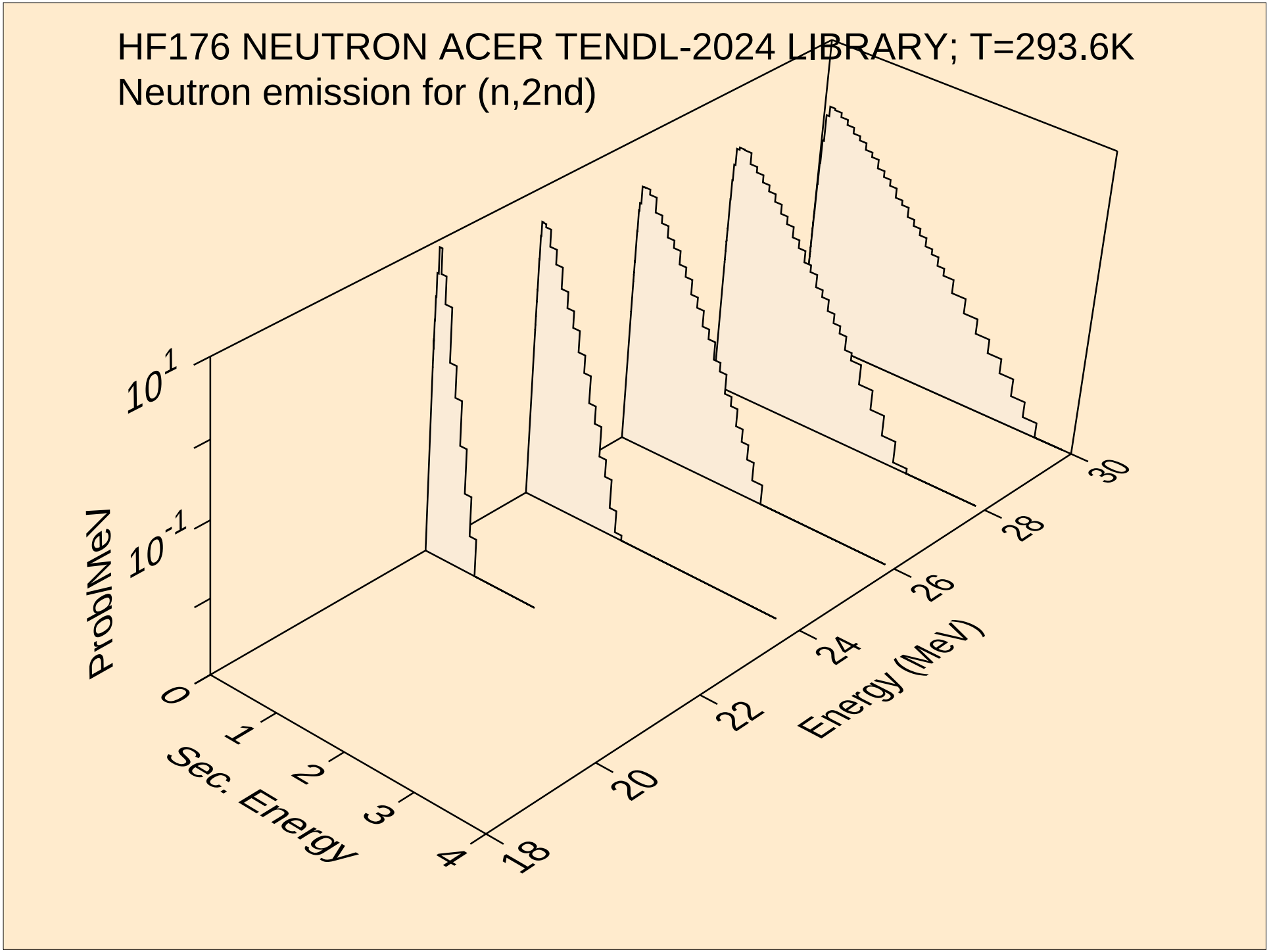

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*27)
Prob\Cos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

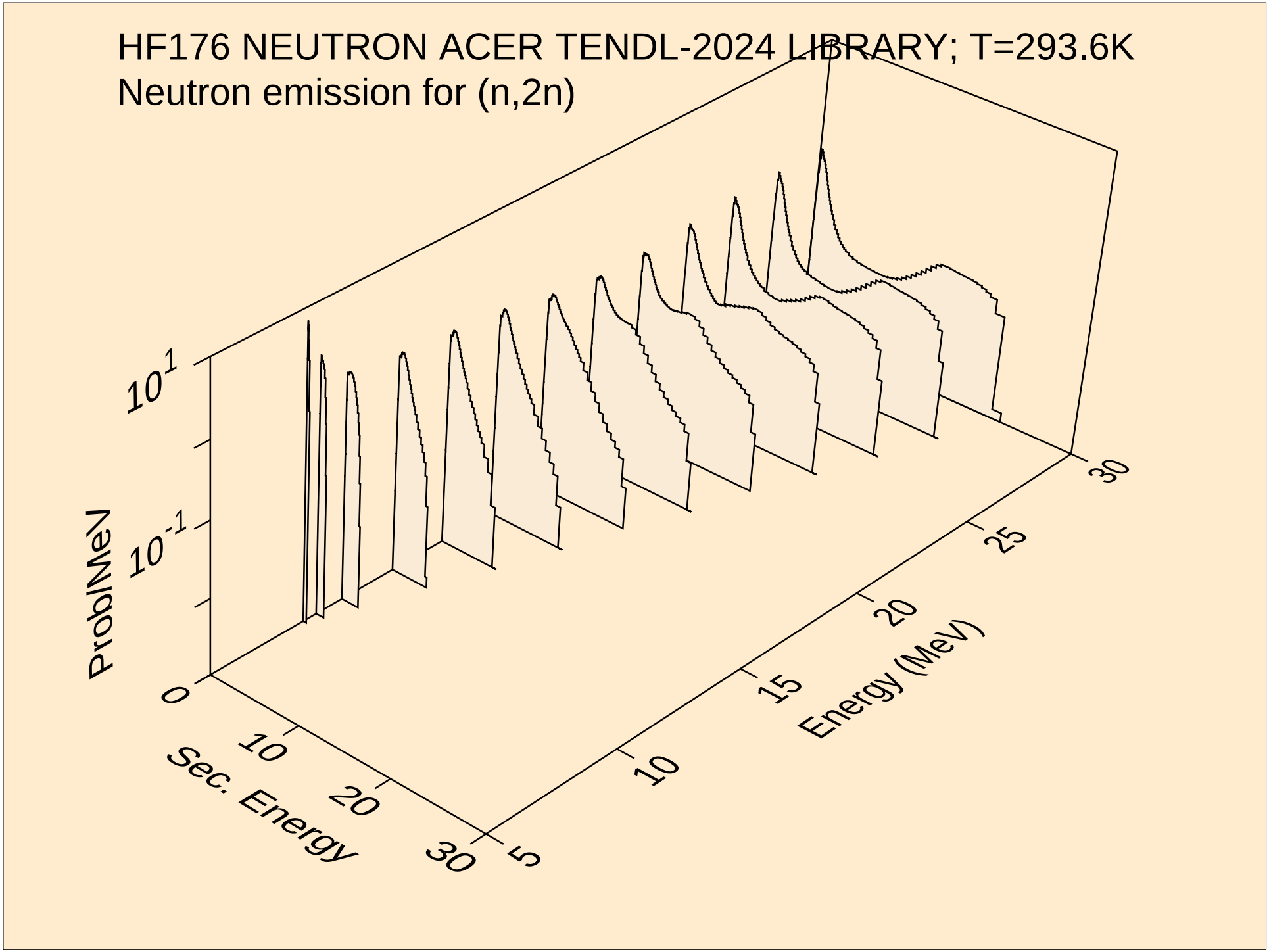

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*28)
ProbICos
10^0
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

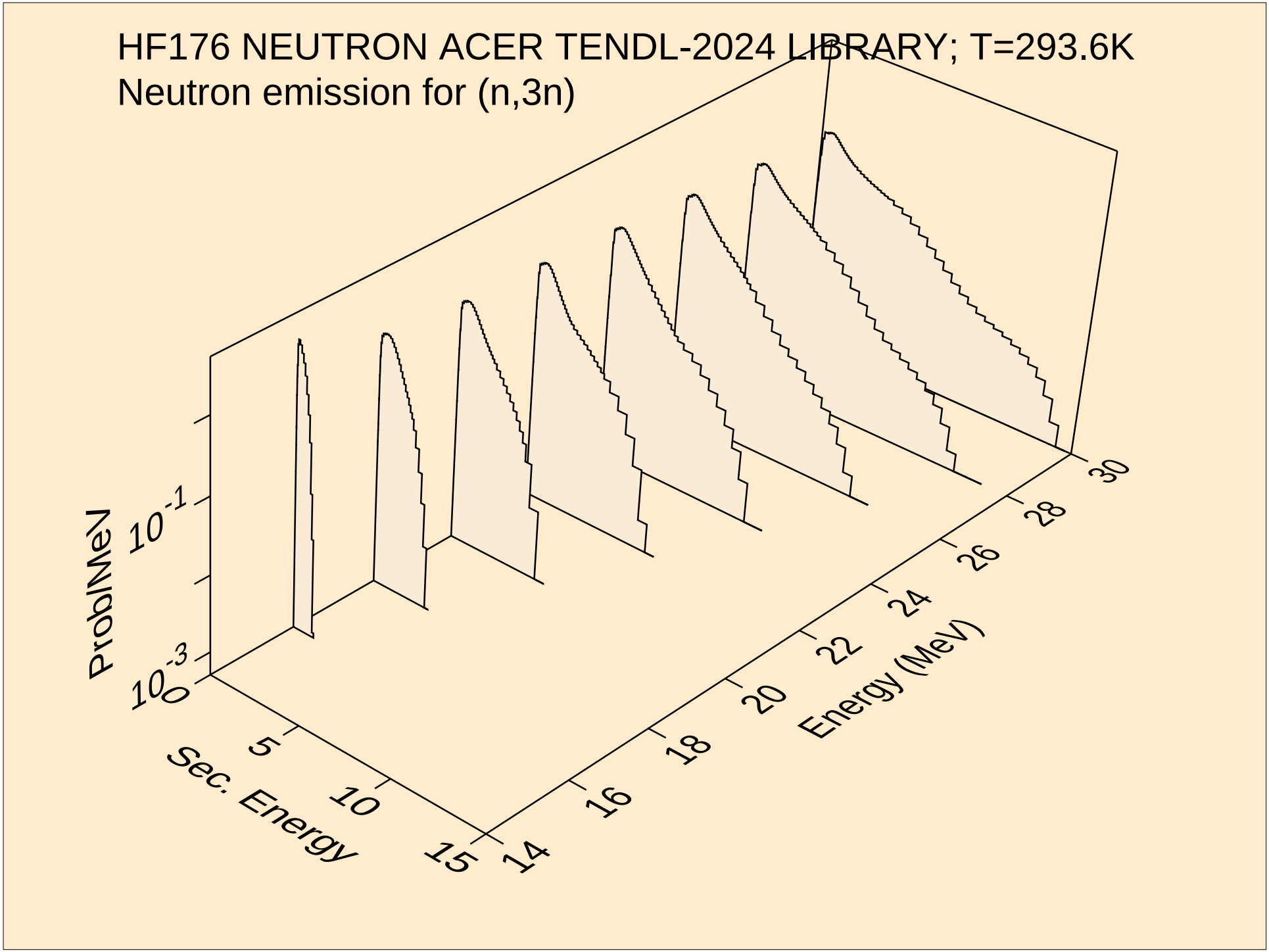

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*29)
10^0
ProbICos
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

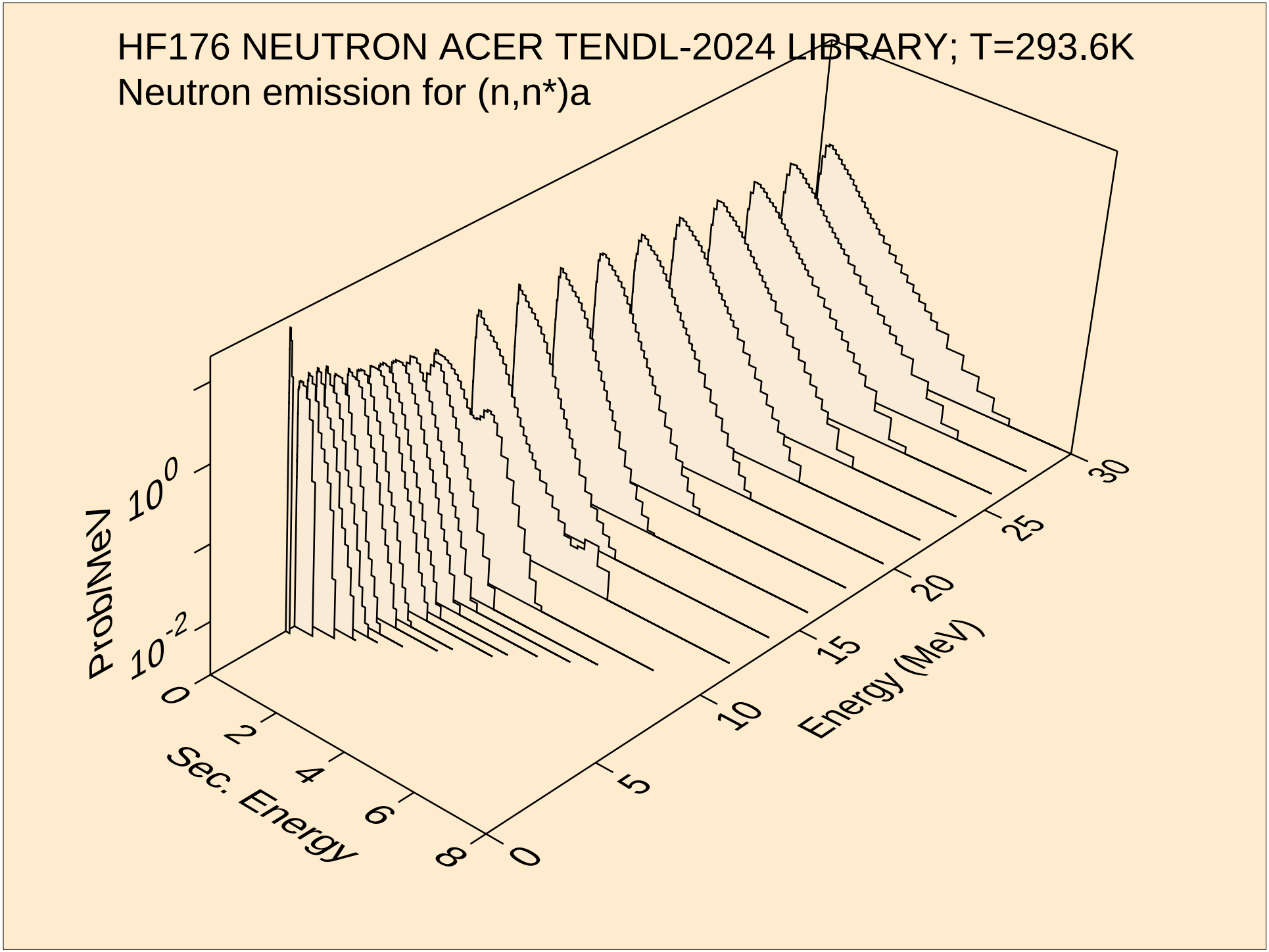

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
angular distribution for (n,n*30)
ProbICos
10^0
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
5
10
15
20
25
30
Energy (MeV)

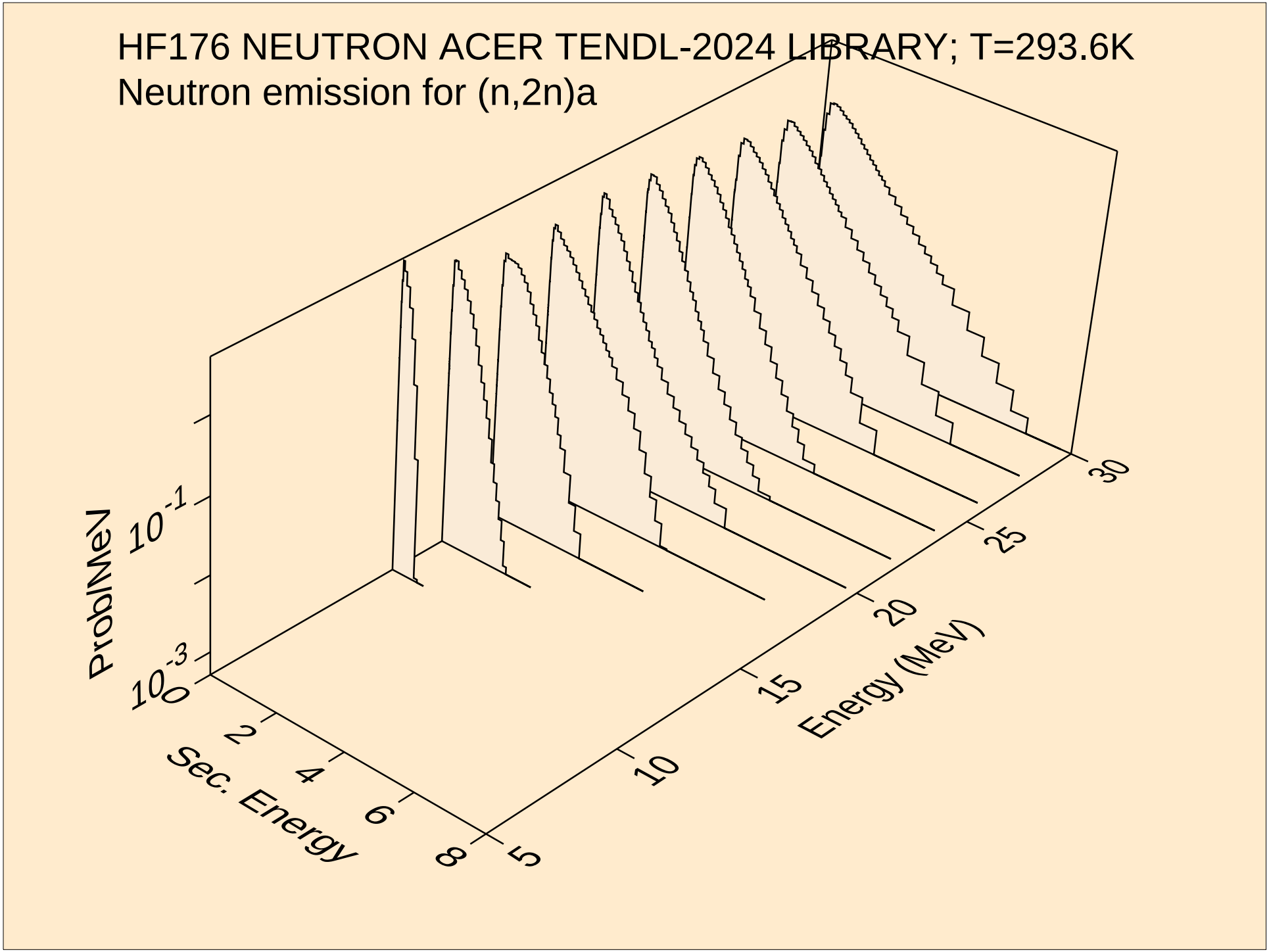

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,x)
Prob/MeV
10-2
10-4
0
50
100
150
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

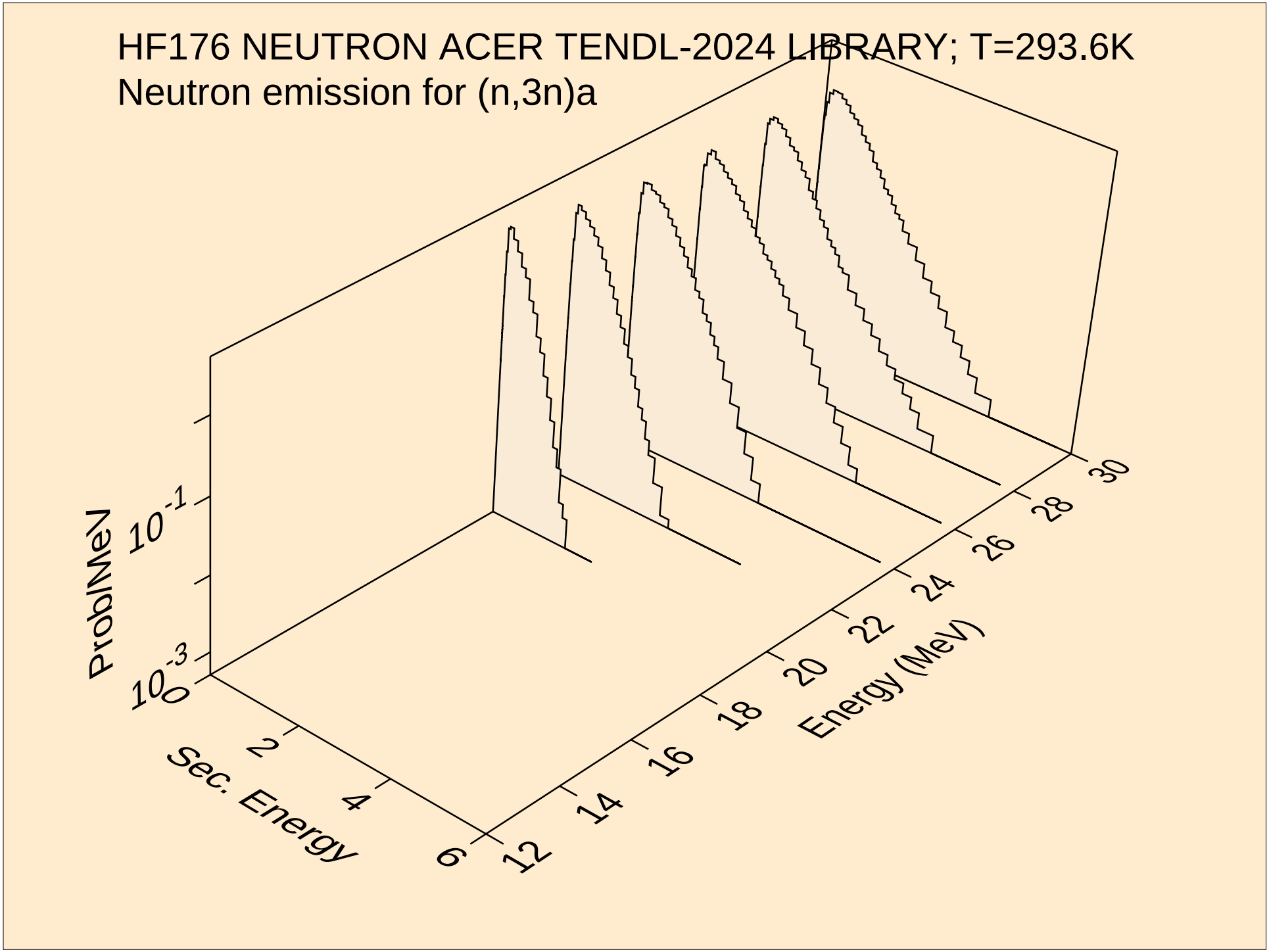

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,2nd)
Prob/MeV
10^1
10^-1
0
Sec. Energy
1
2
3
4
18
20
22
24
26
28
30
Energy (MeV)

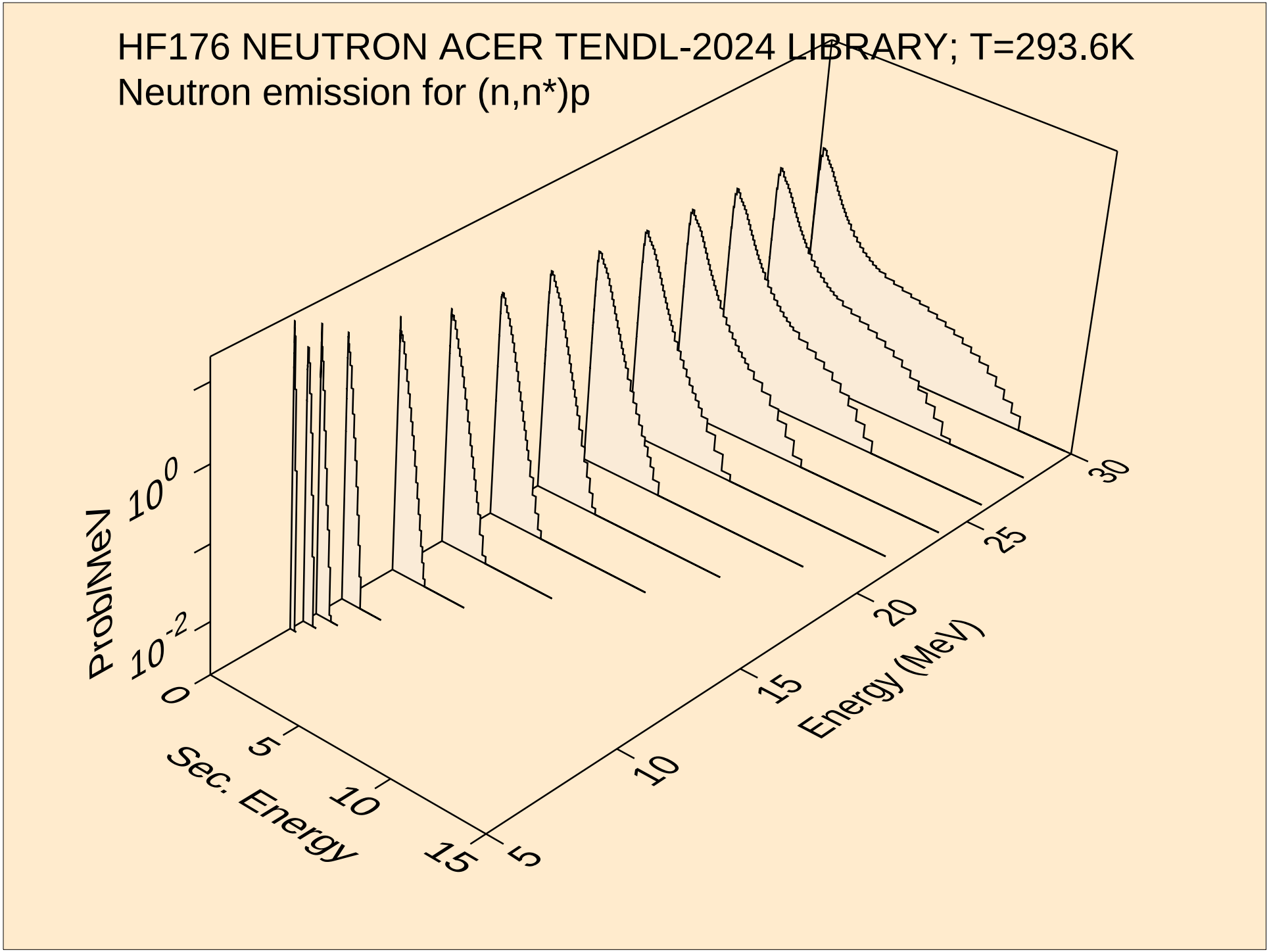

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,2n)
Prob/MeV
10^1
10^-1
0
10
20
30
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

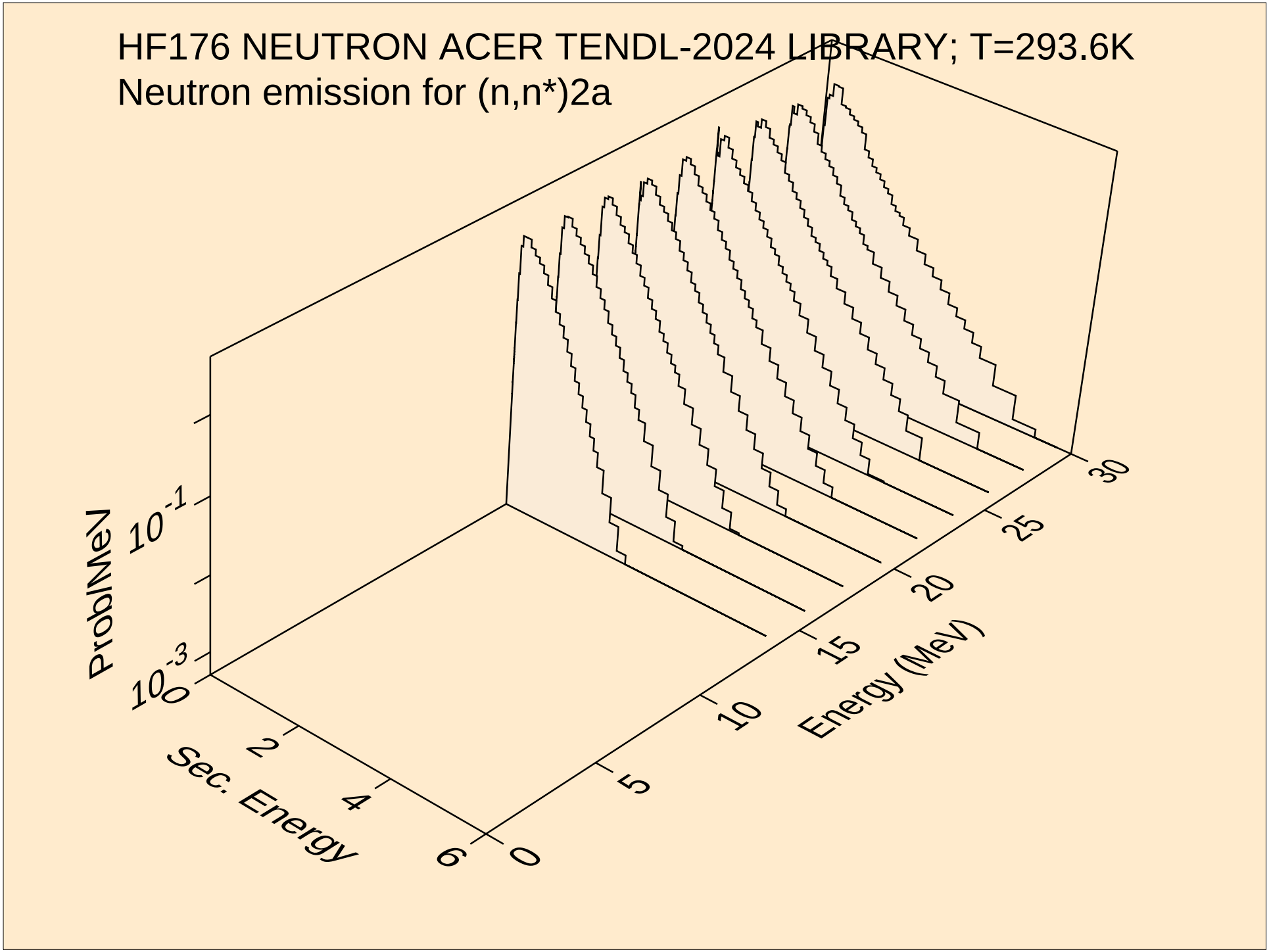

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,3n)
Prob/MeV
10-1
10-3
0
5
10
15
Sec. Energy
14
16
18
20
22
24
26
28
30
Energy (MeV)

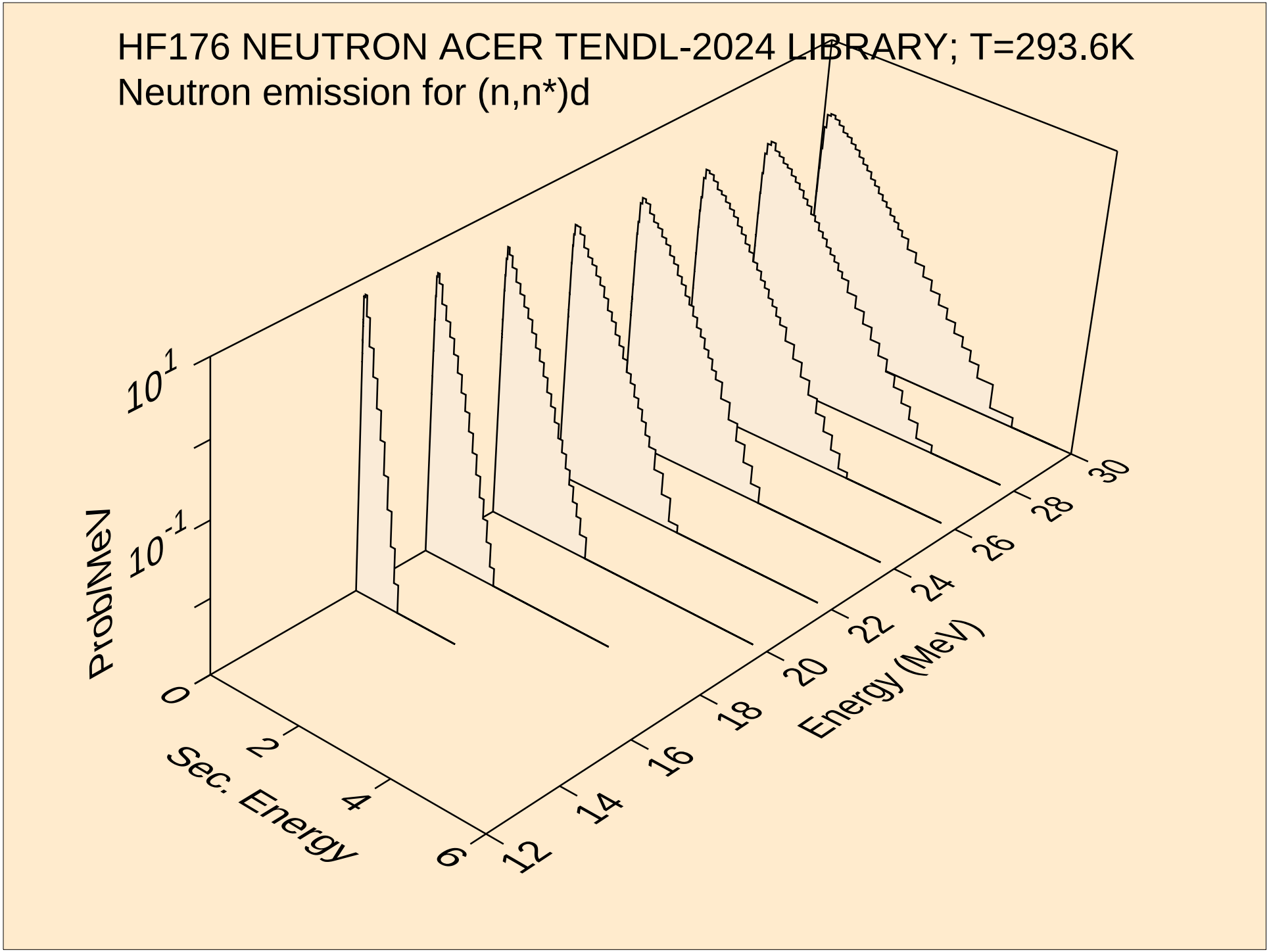

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*)a
Prob/MeV
10^0
10^-2
0
2
4
6
8
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

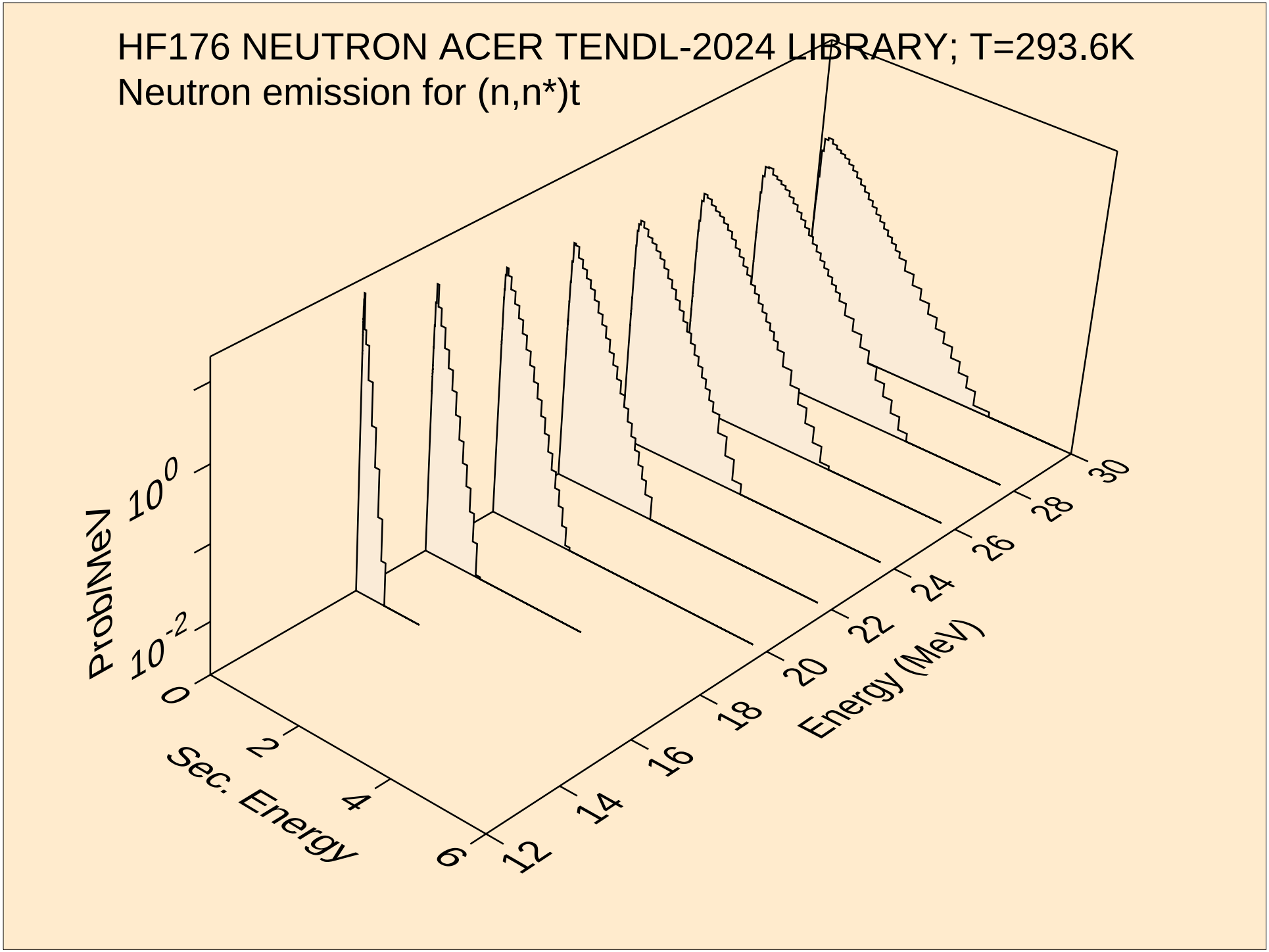

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,2n)a
Prob/MeV
10-1
10-3
0
2
4
6
8
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

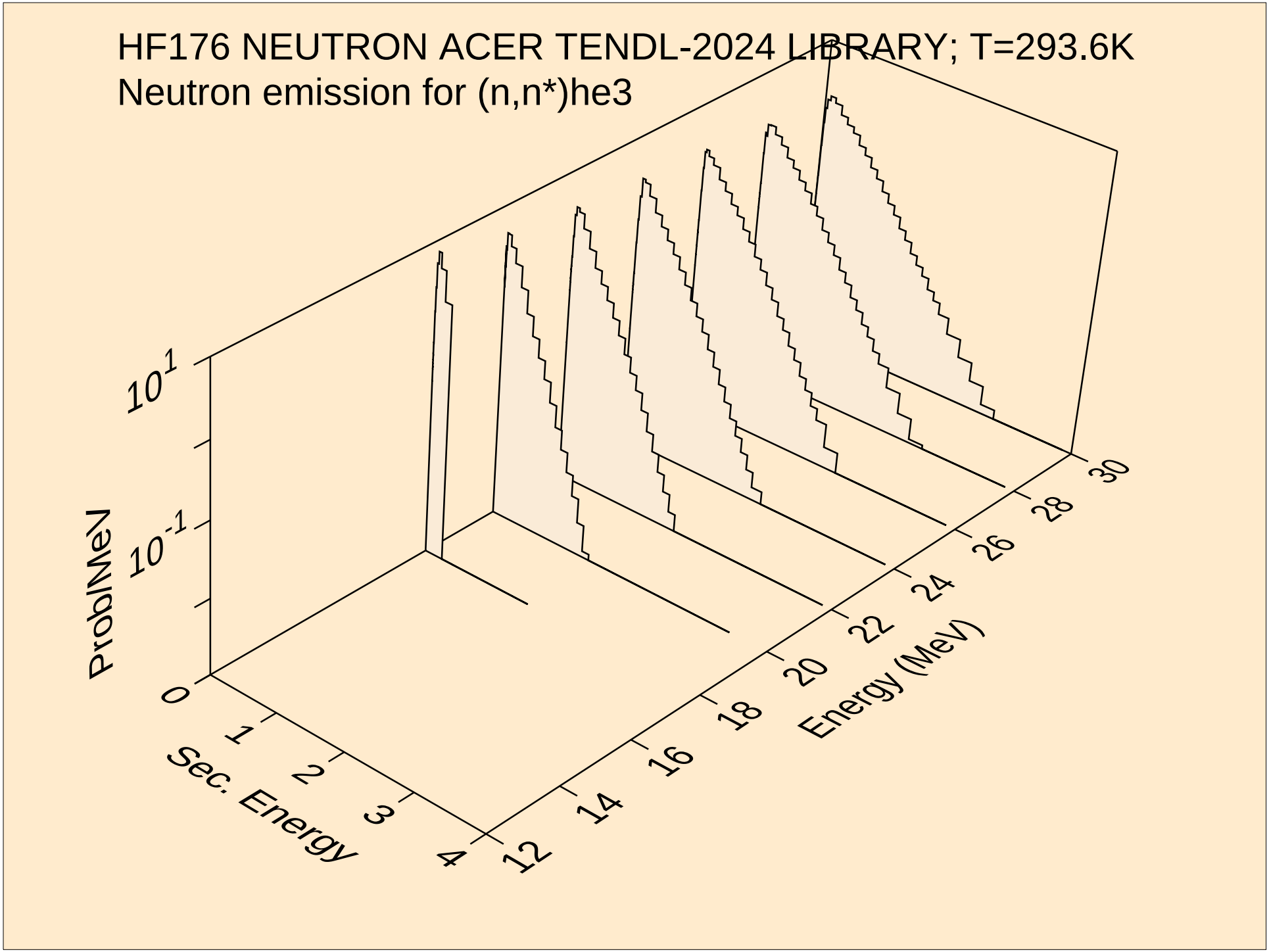

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,3n)a
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

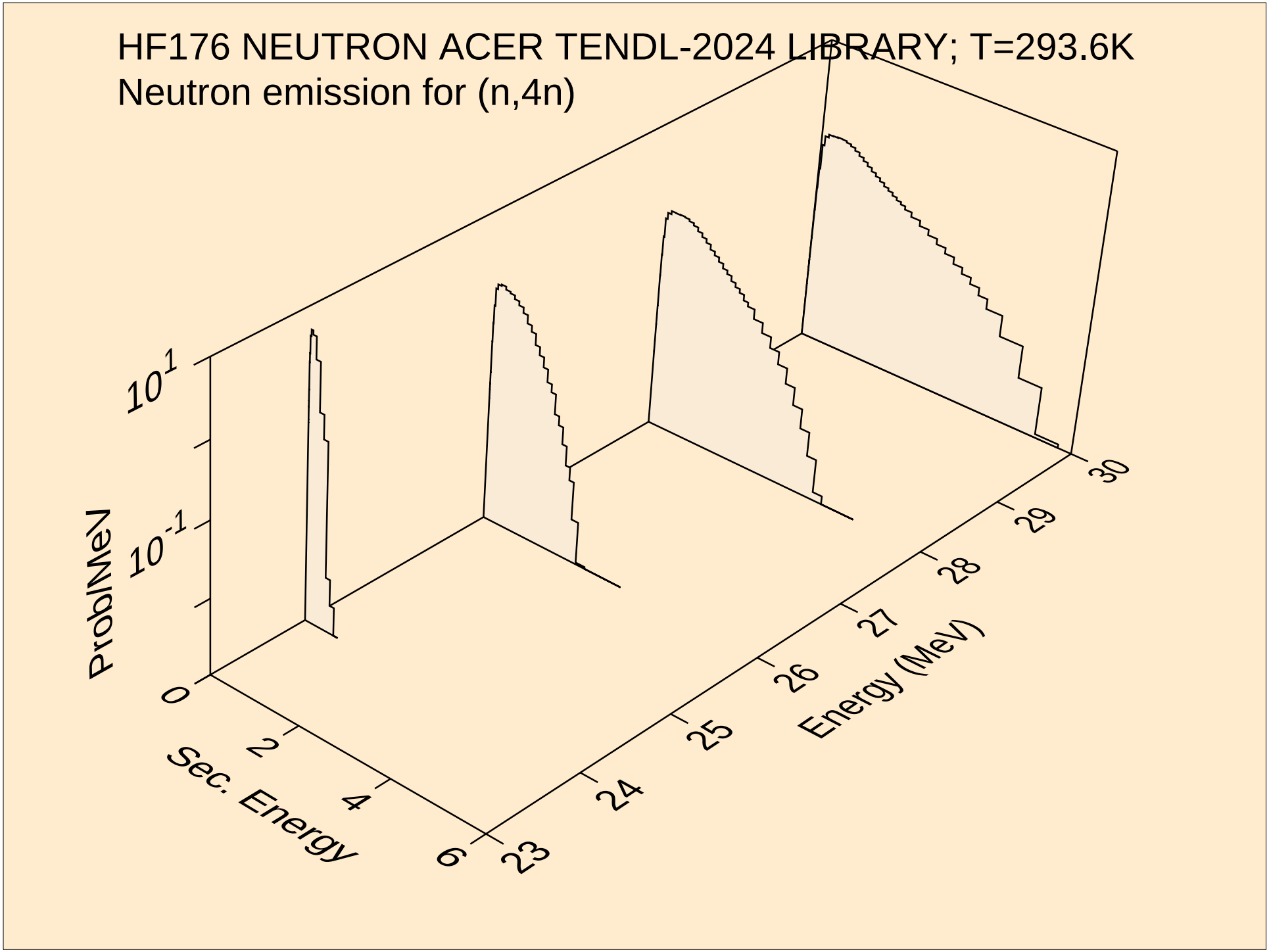

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*)p
Prob/MeV
10^0
10^-2
0
5
10
15
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

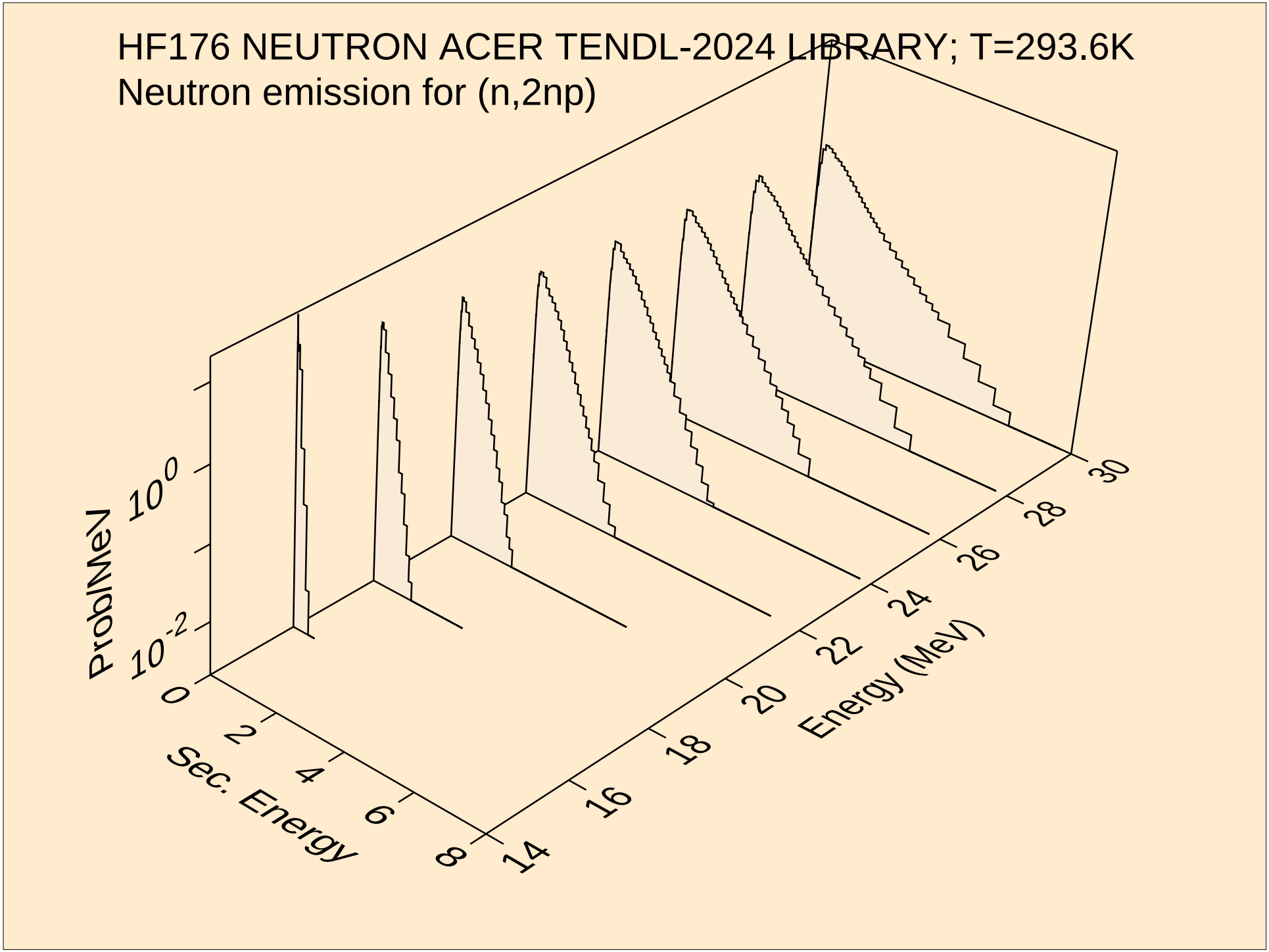

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*)2a
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

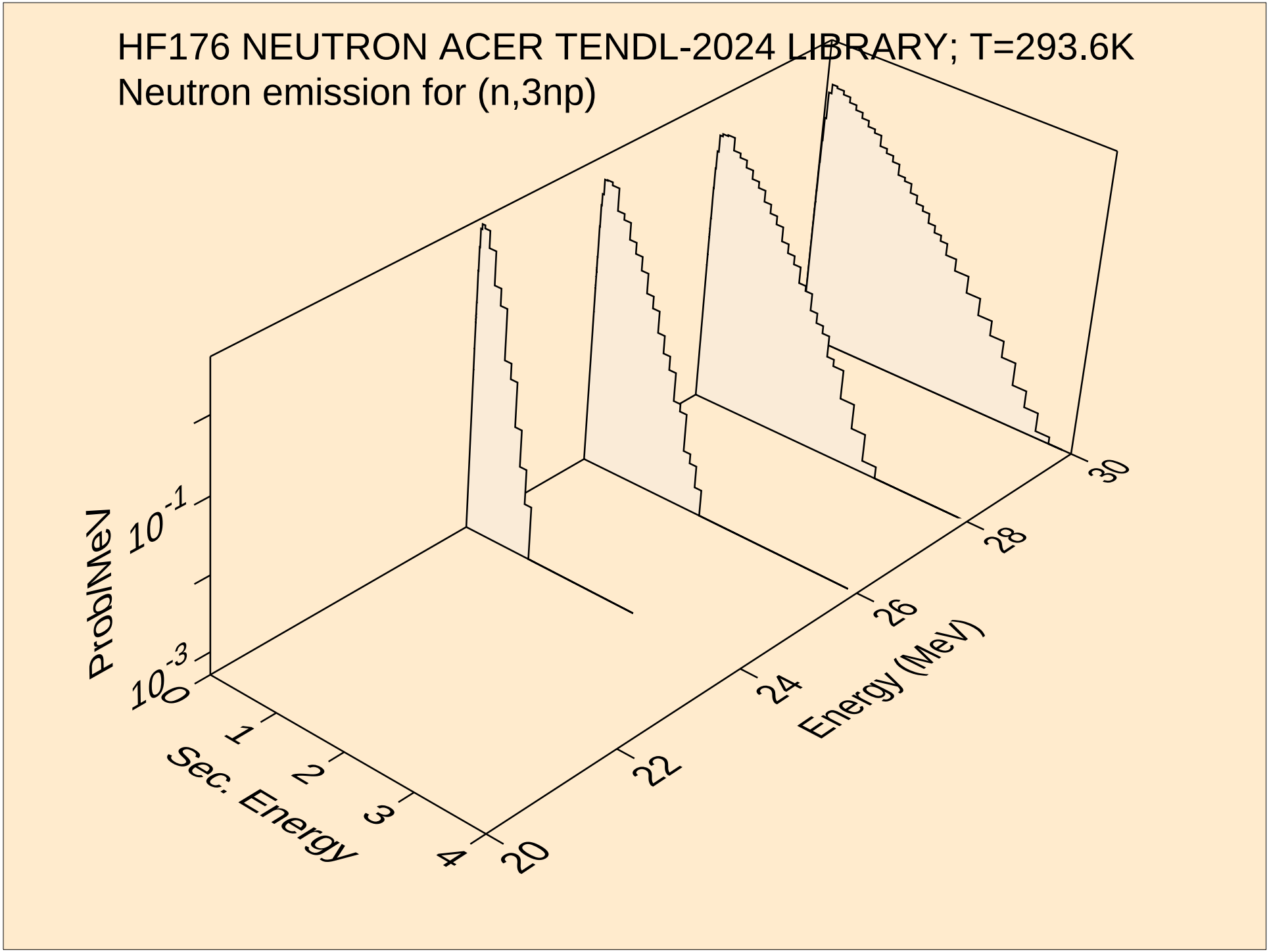

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*)d
Prob/MeV
10^1
10^-1
0
2
4
6
Sec. Energy
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

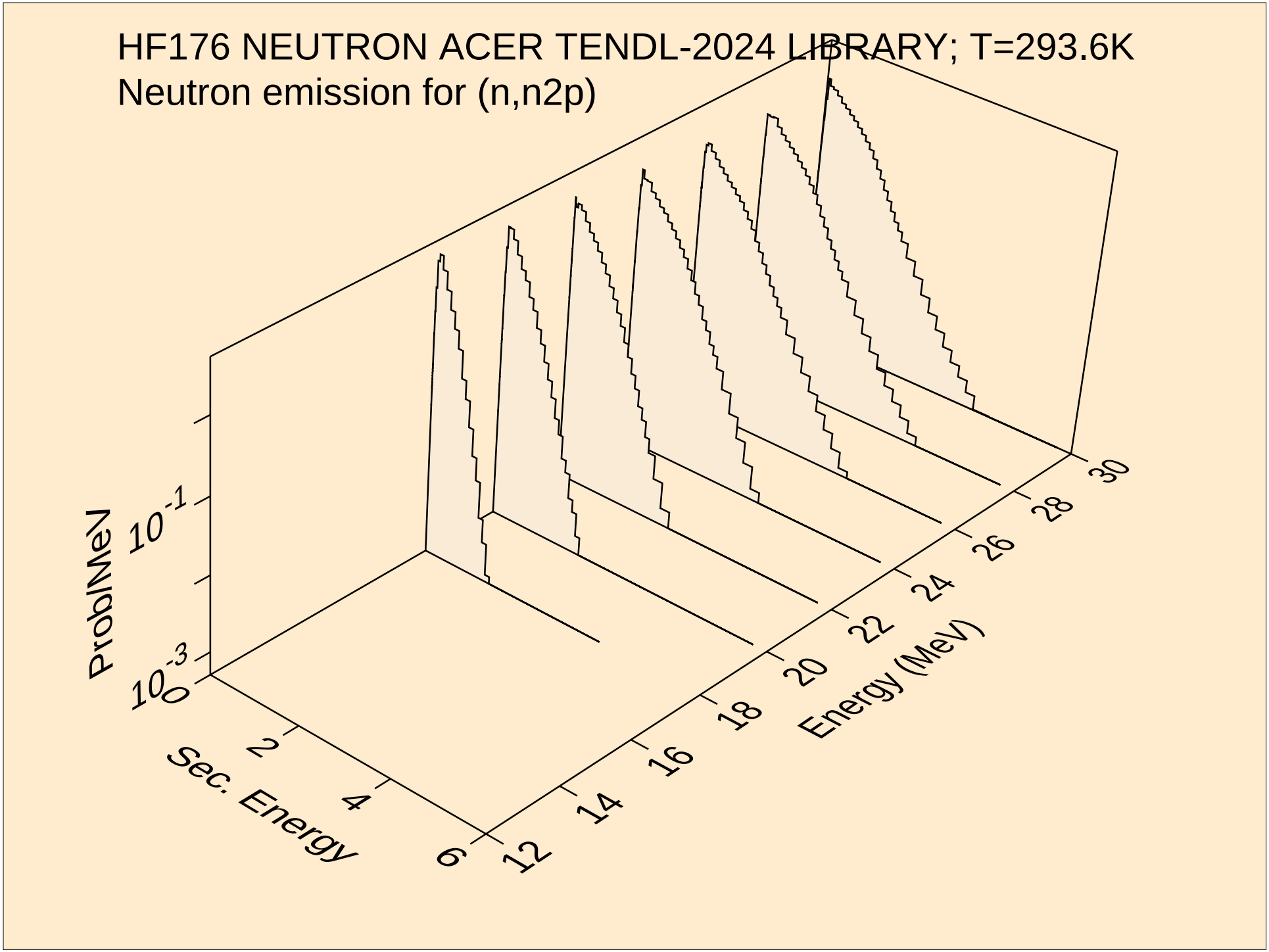

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*)t
Prob/MeV
10^0
10^-2
0
2
4
6
Sec. Energy
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

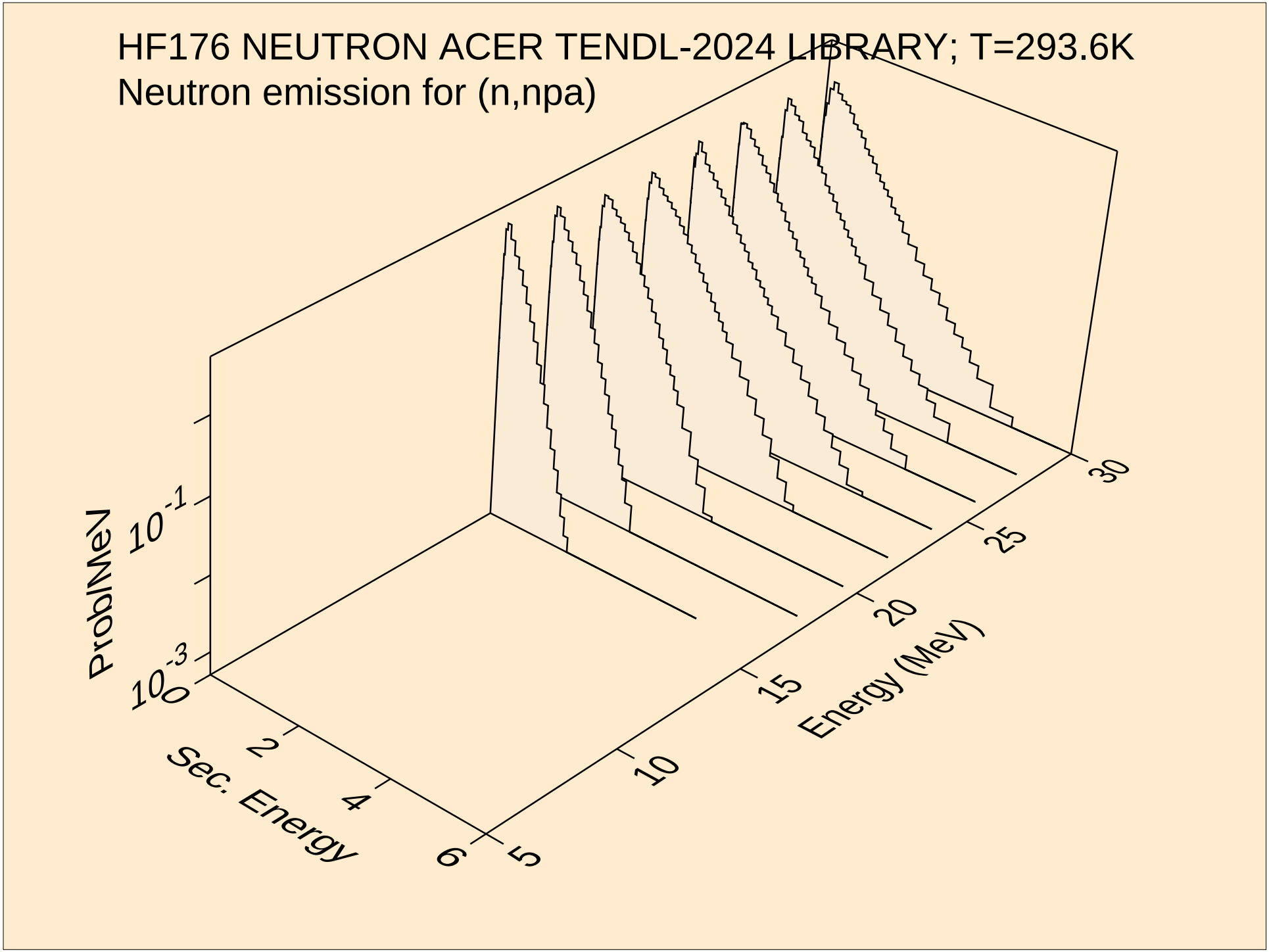

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*)he3
Prob/MeV
10^1
10^-1
0
Sec. Energy
1
2
3
4
Energy (MeV)
12
14
16
18
20
22
24
26
28
30

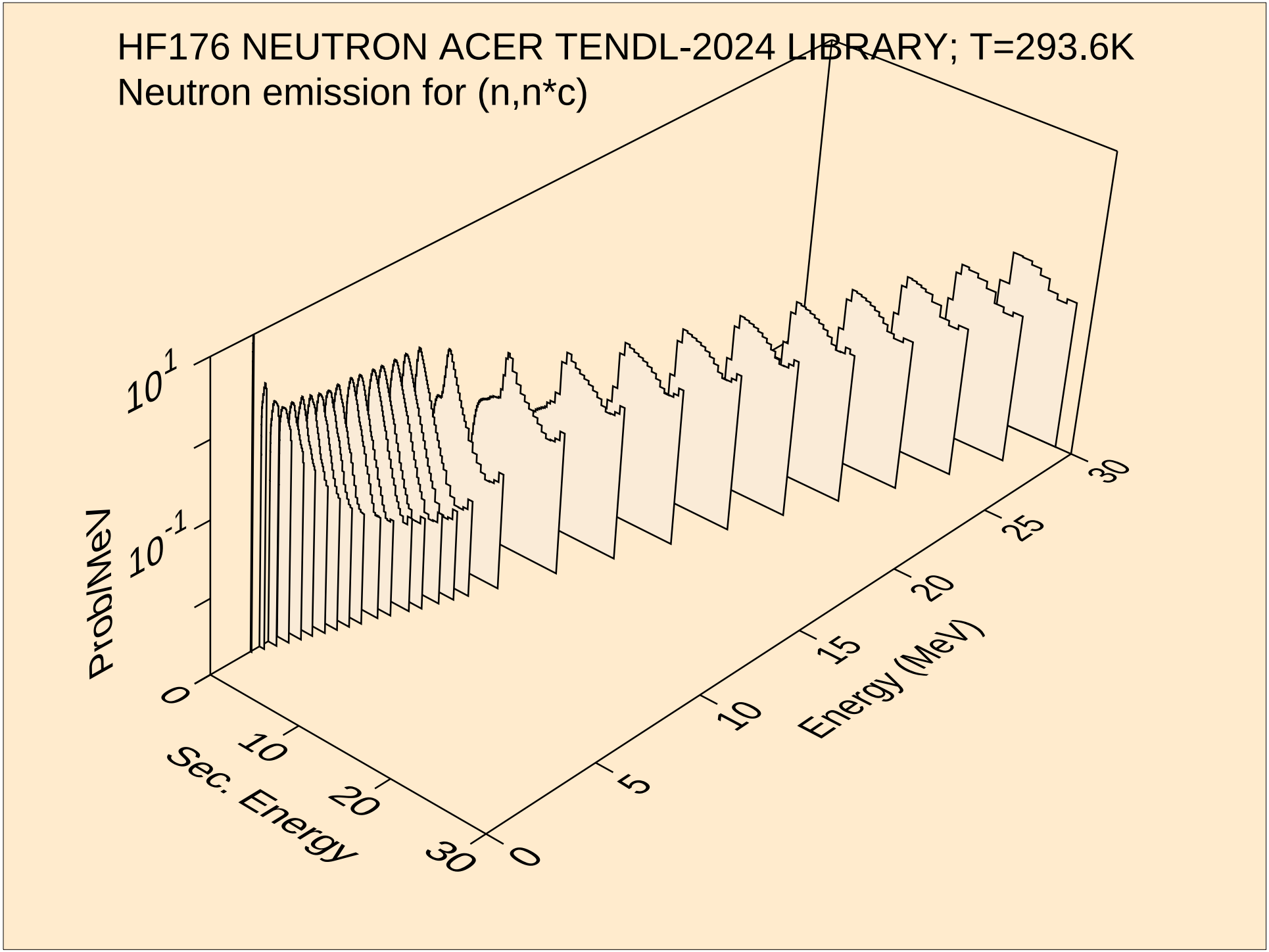

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,4n)
Prob/MeV
10^{1}
10^{-1}
0
2
4
6
Sec. Energy
23
24
25
26
27
28
29
30
Energy (MeV)

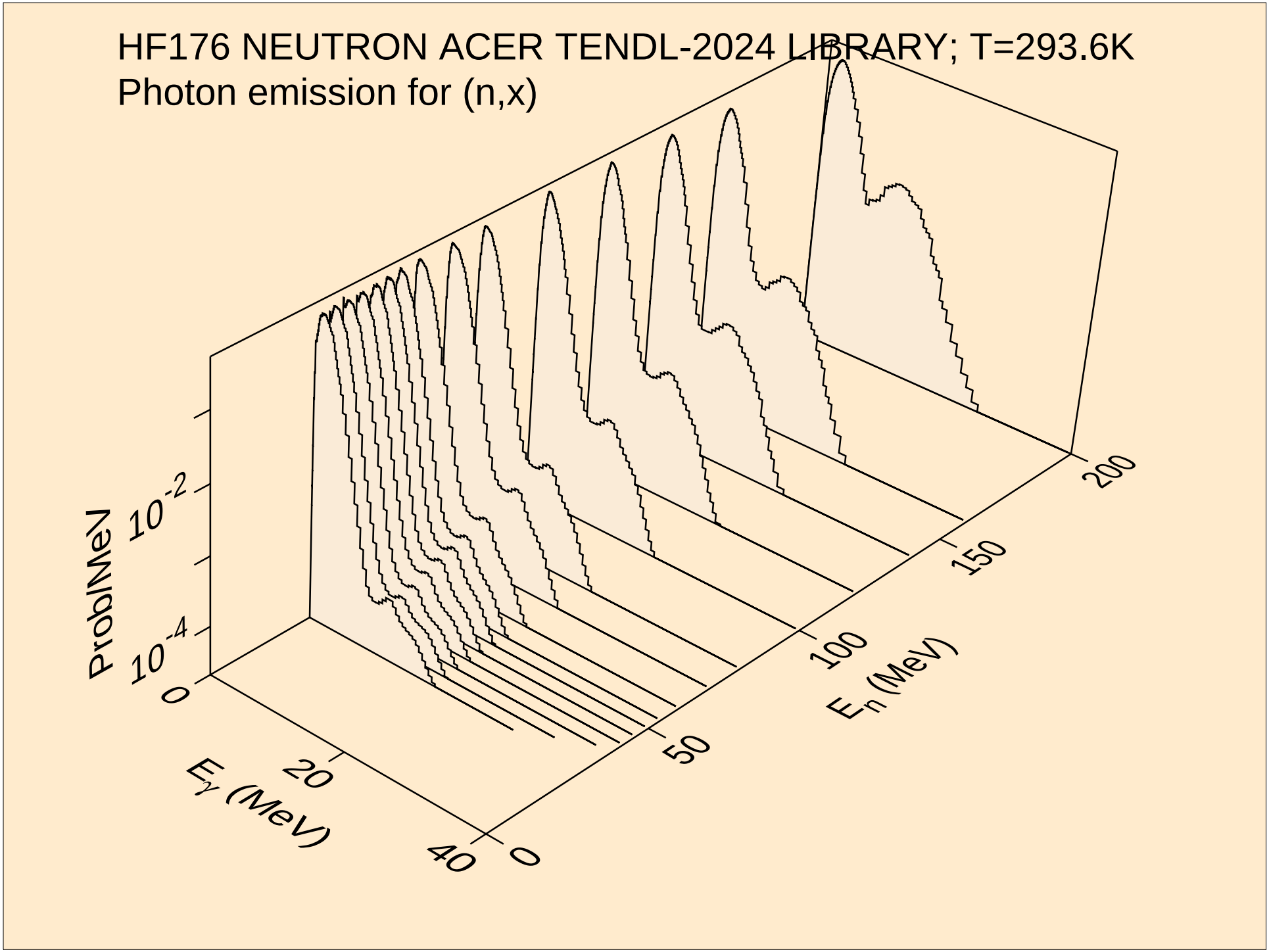

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,2np)
Prob/MeV
10^0
10^-2
0
2
4
6
8
Sec. Energy
14
16
18
20
22
24
26
28
30
Energy (MeV)

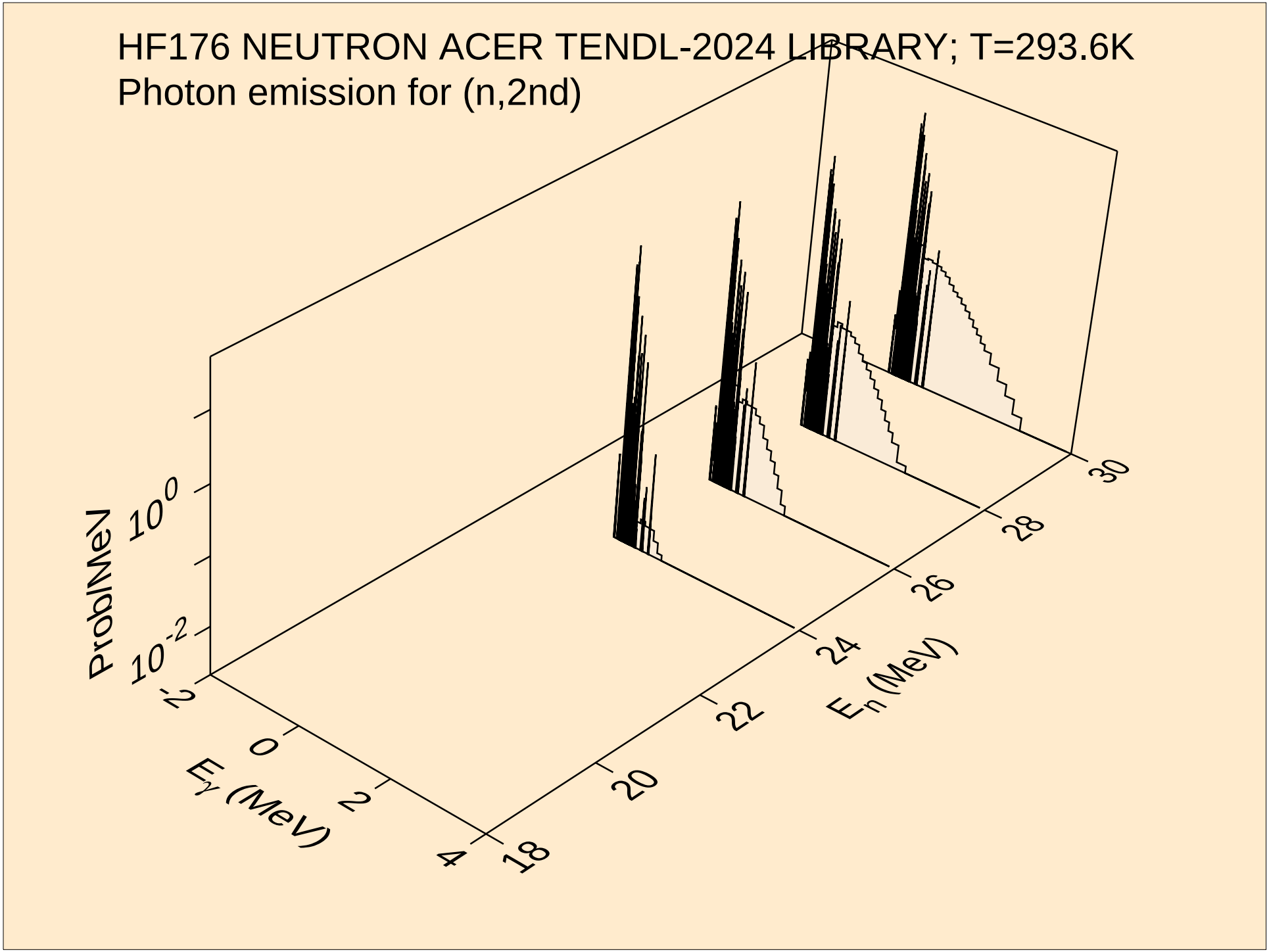

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,3np)
Prob/MeV
10-1
10-3
0
1
2
3
4
Sec. Energy
20
22
24
26
28
30
Energy (MeV)

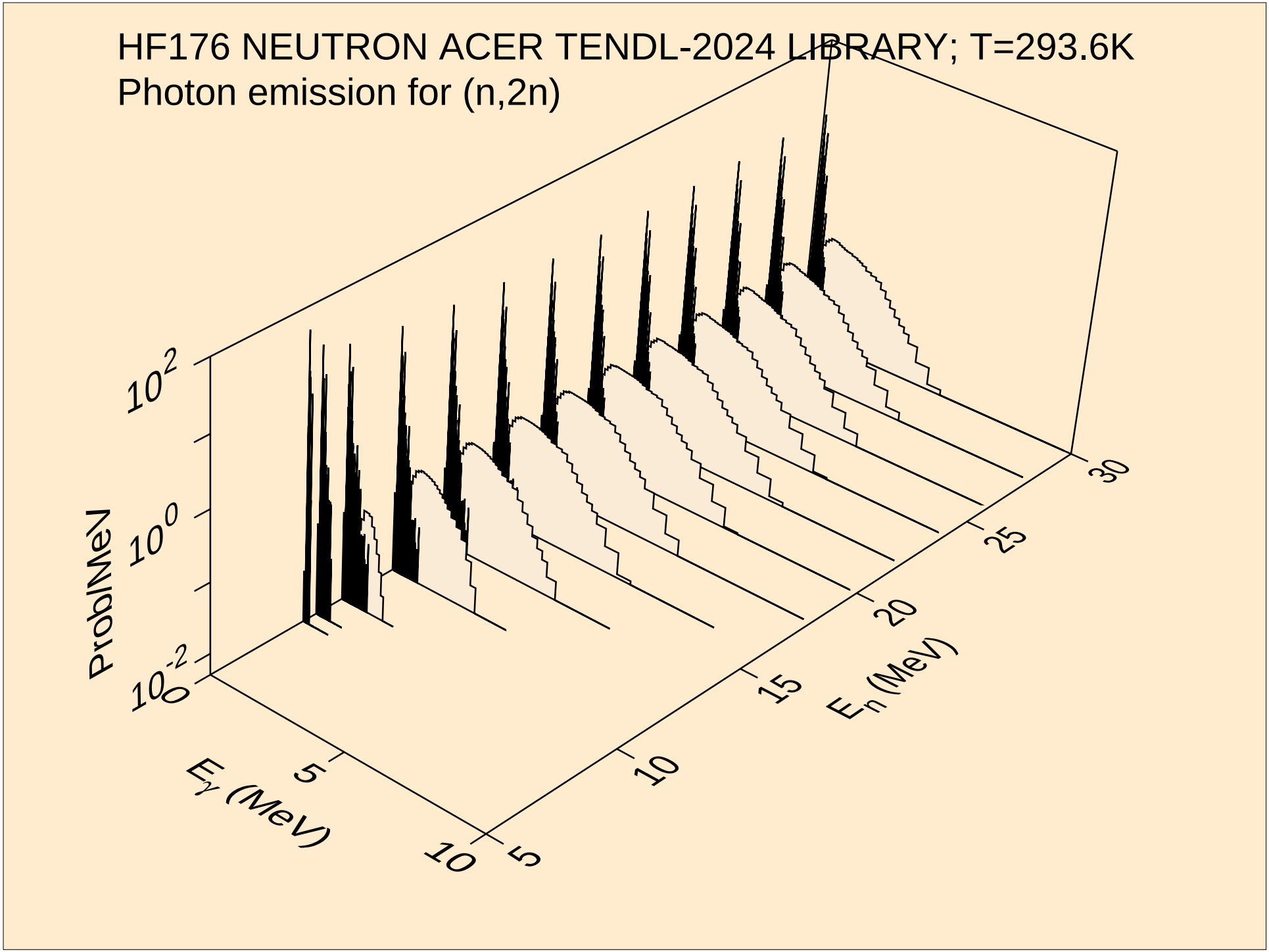

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n2p)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

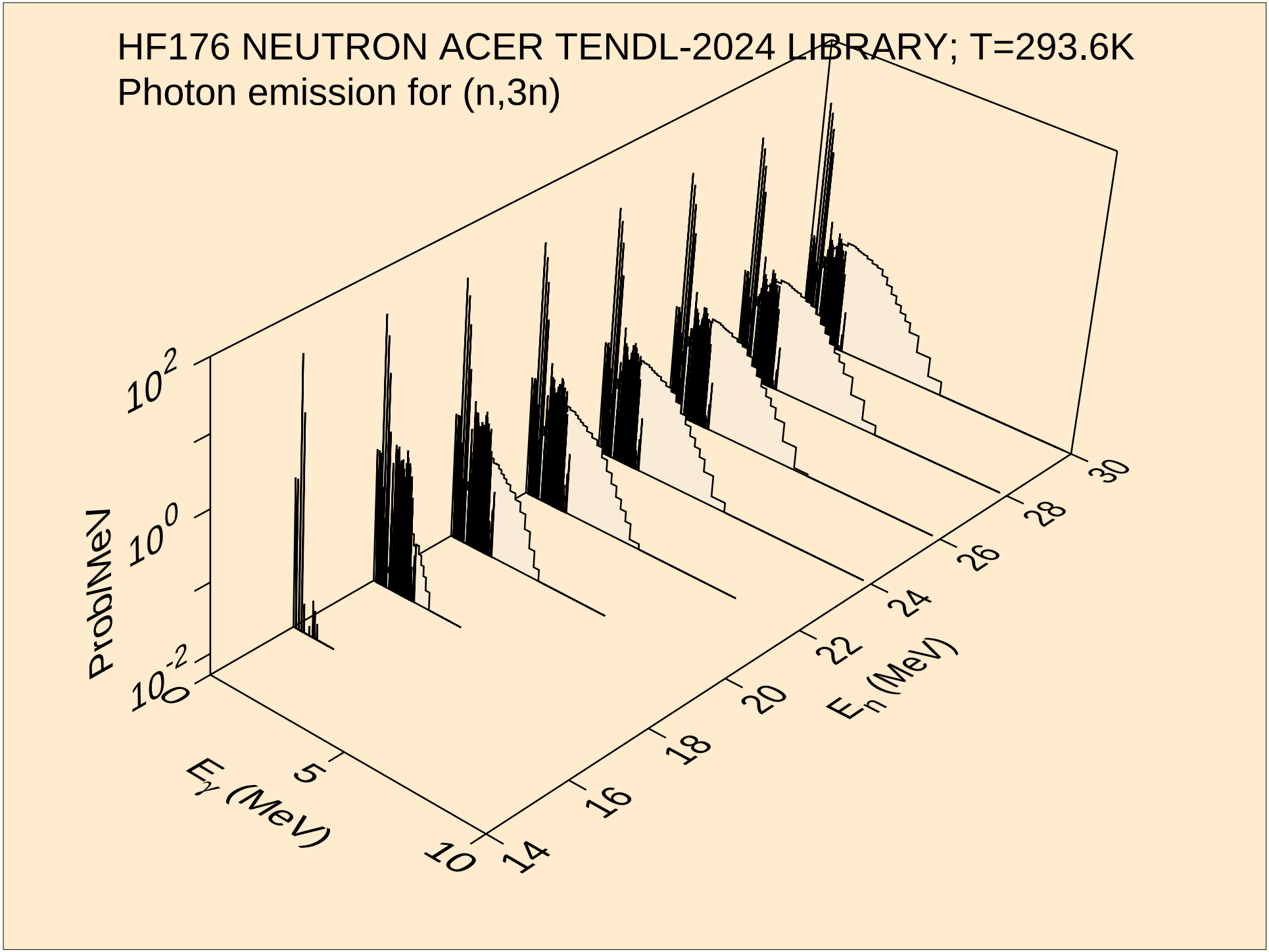

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,npa)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

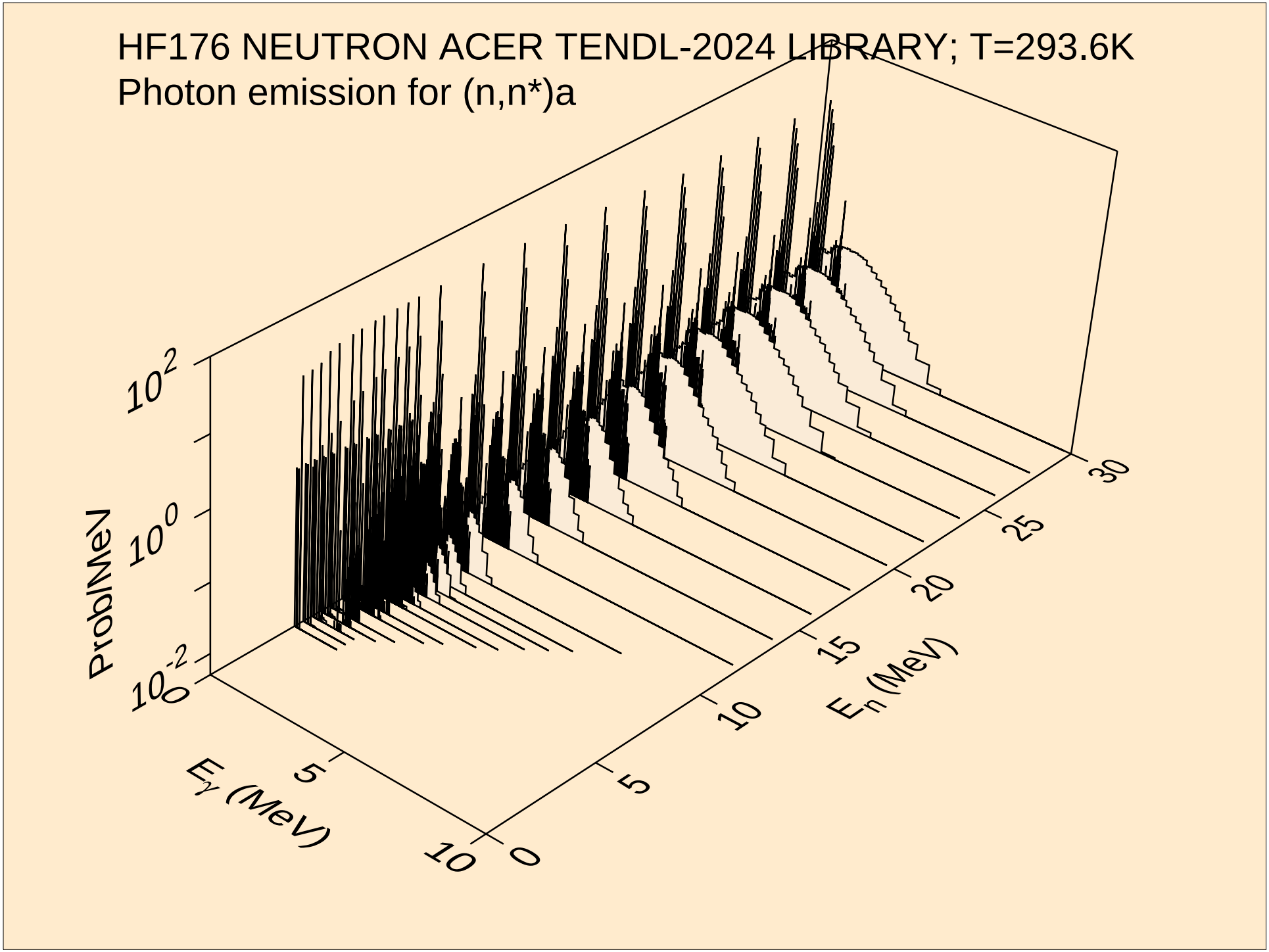

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Neutron emission for (n,n*c)
Prob/MeV
10^1
10^-1
0
Sec. Energy
10
20
30
0
5
10
15
20
25
30
Energy (MeV)

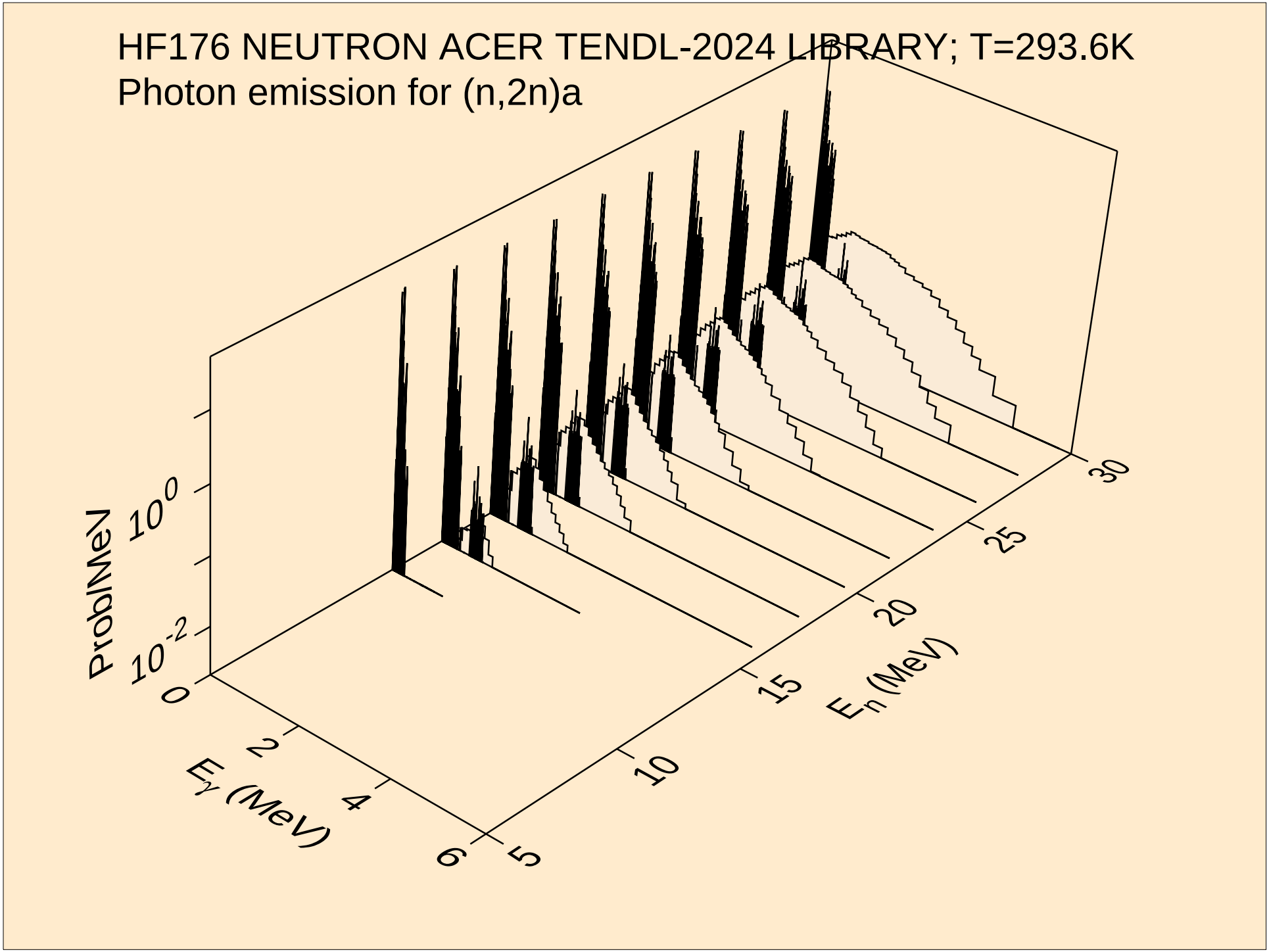

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,x)
Prob/MeV
10-2
10-4
0
20
40
Eγ (MeV)
0
50
100
150
200
En (MeV)

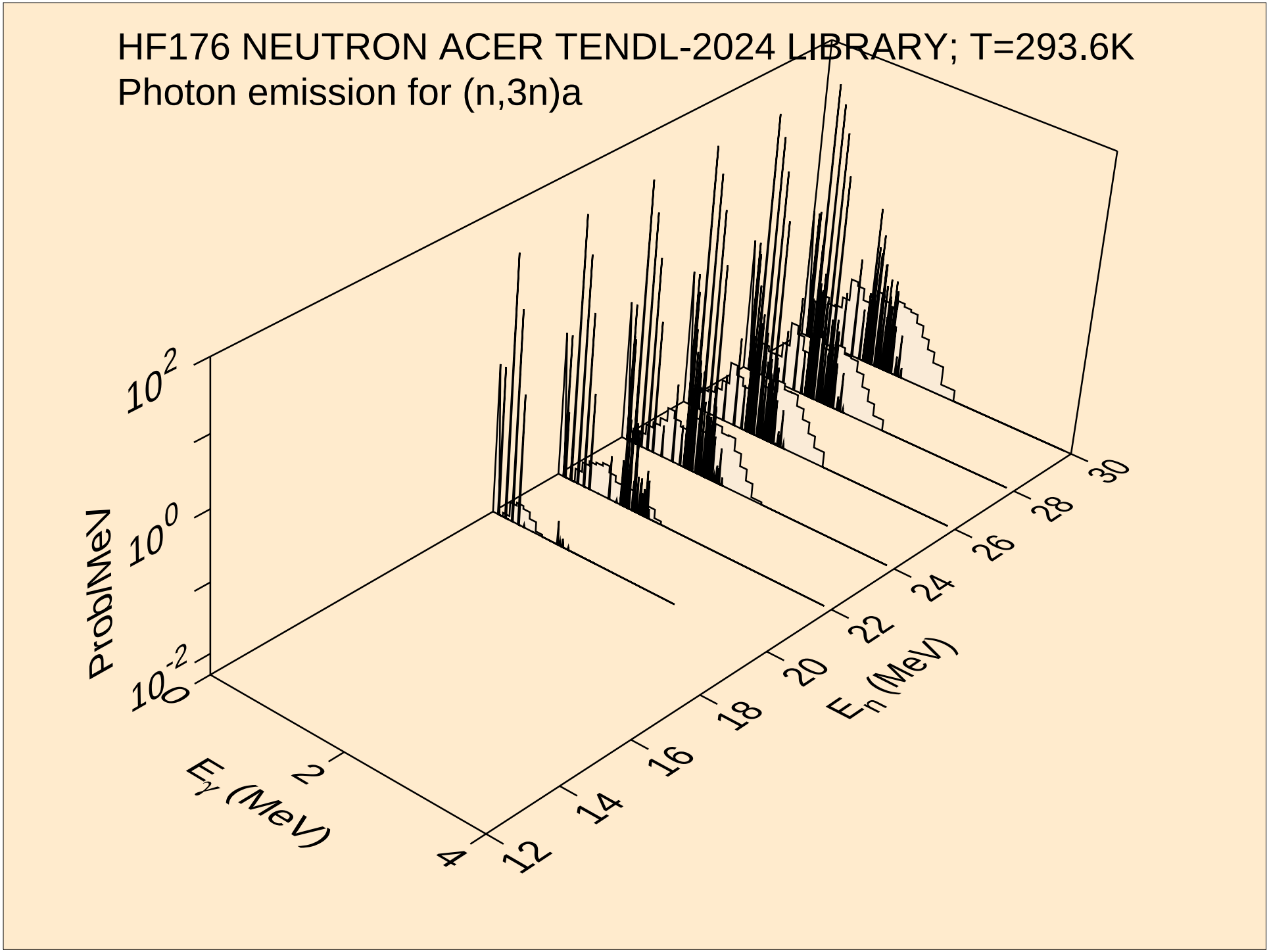

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,2nd)
Prob/MeV
10^0
10^-2
-2
0
2
4
E_γ (MeV)
18
20
22
24
26
28
30
E_n (MeV)

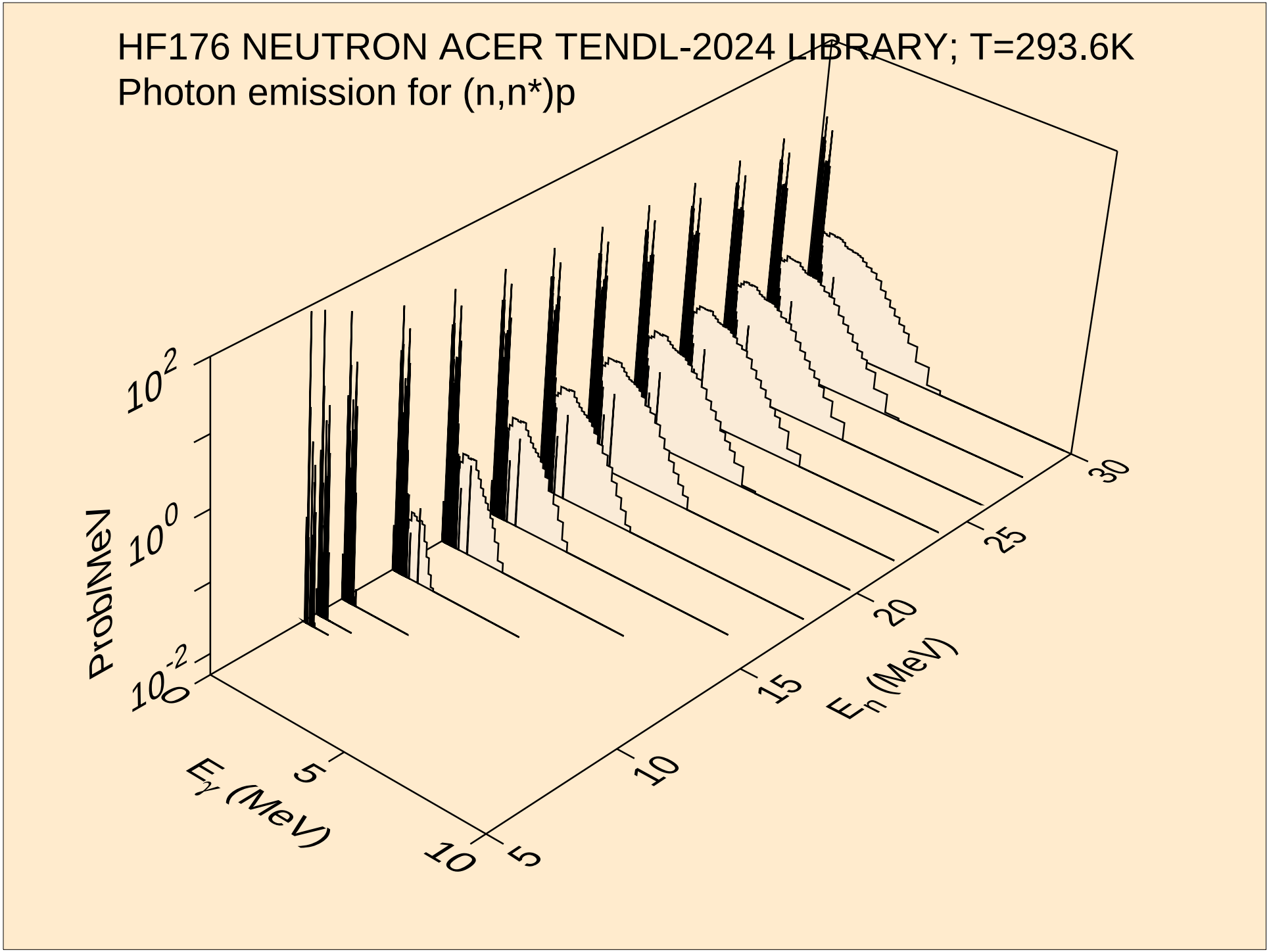

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,2n)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

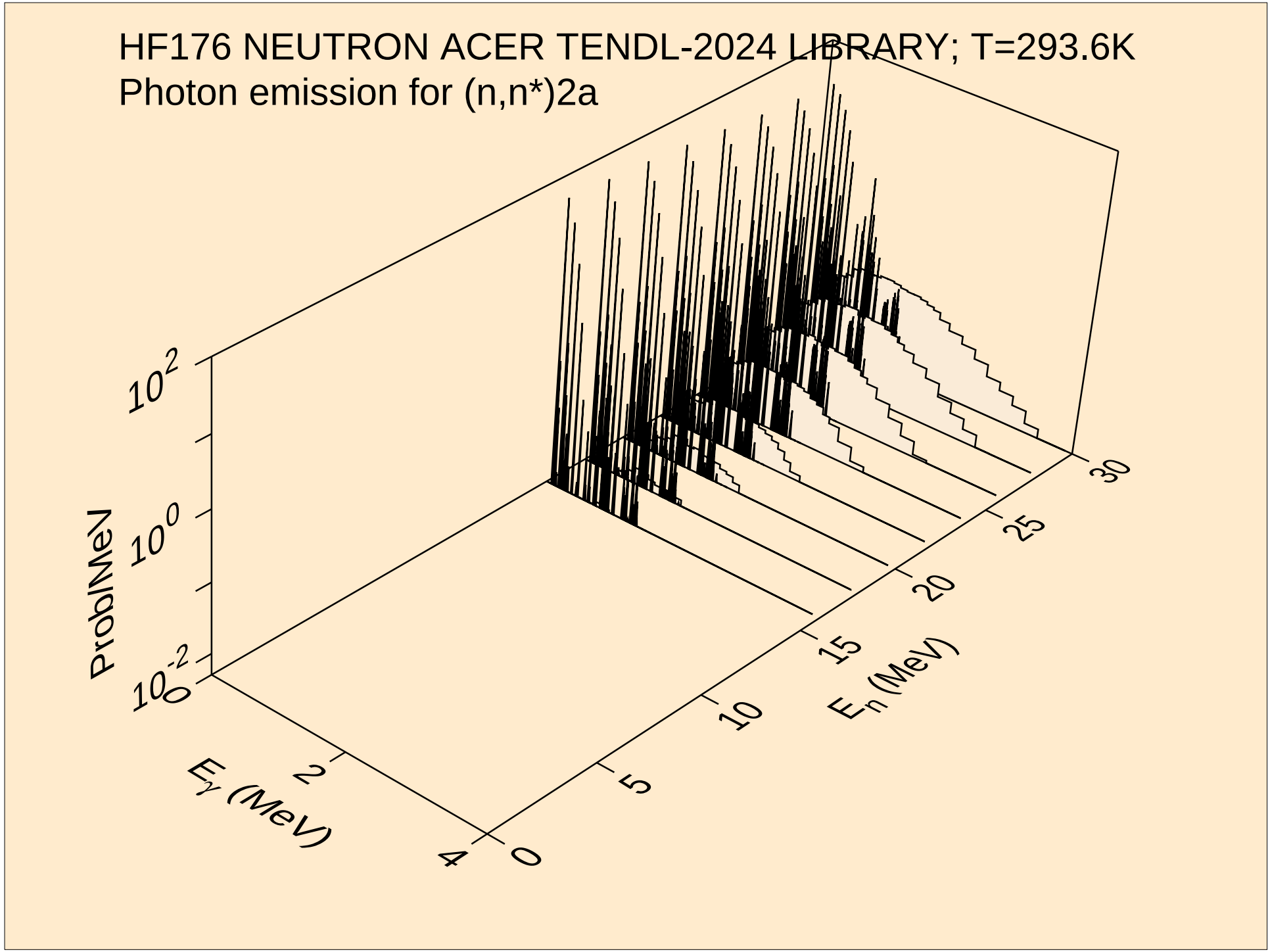

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,3n)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
14
16
18
20
22
24
26
28
30
E_n (MeV)

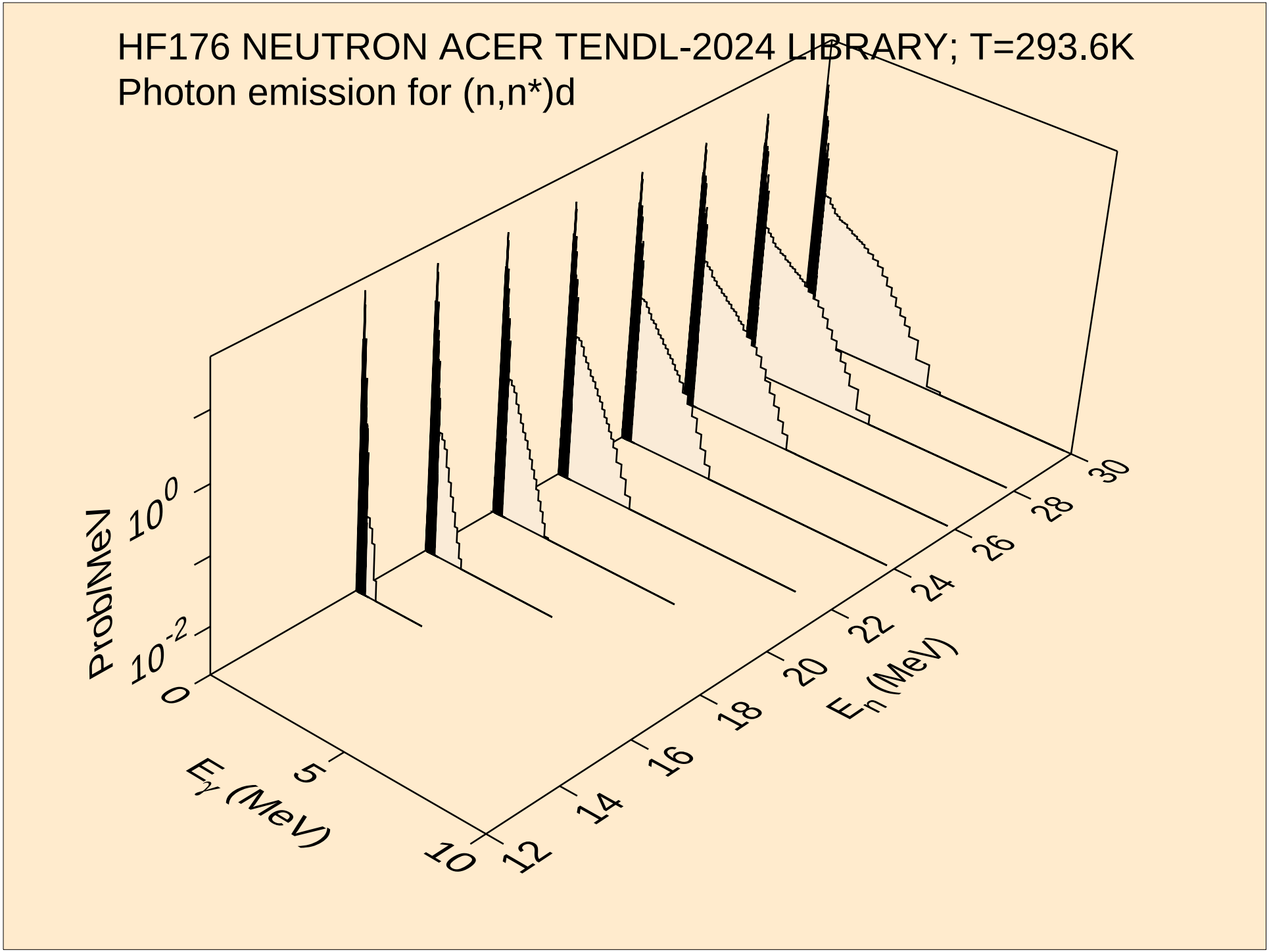

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*)a
Prob/MeV
10^{2}
10^{0}
10^{-2}
E_γ (MeV)
0
5
10
E_n (MeV)
0
5
10
15
20
25
30

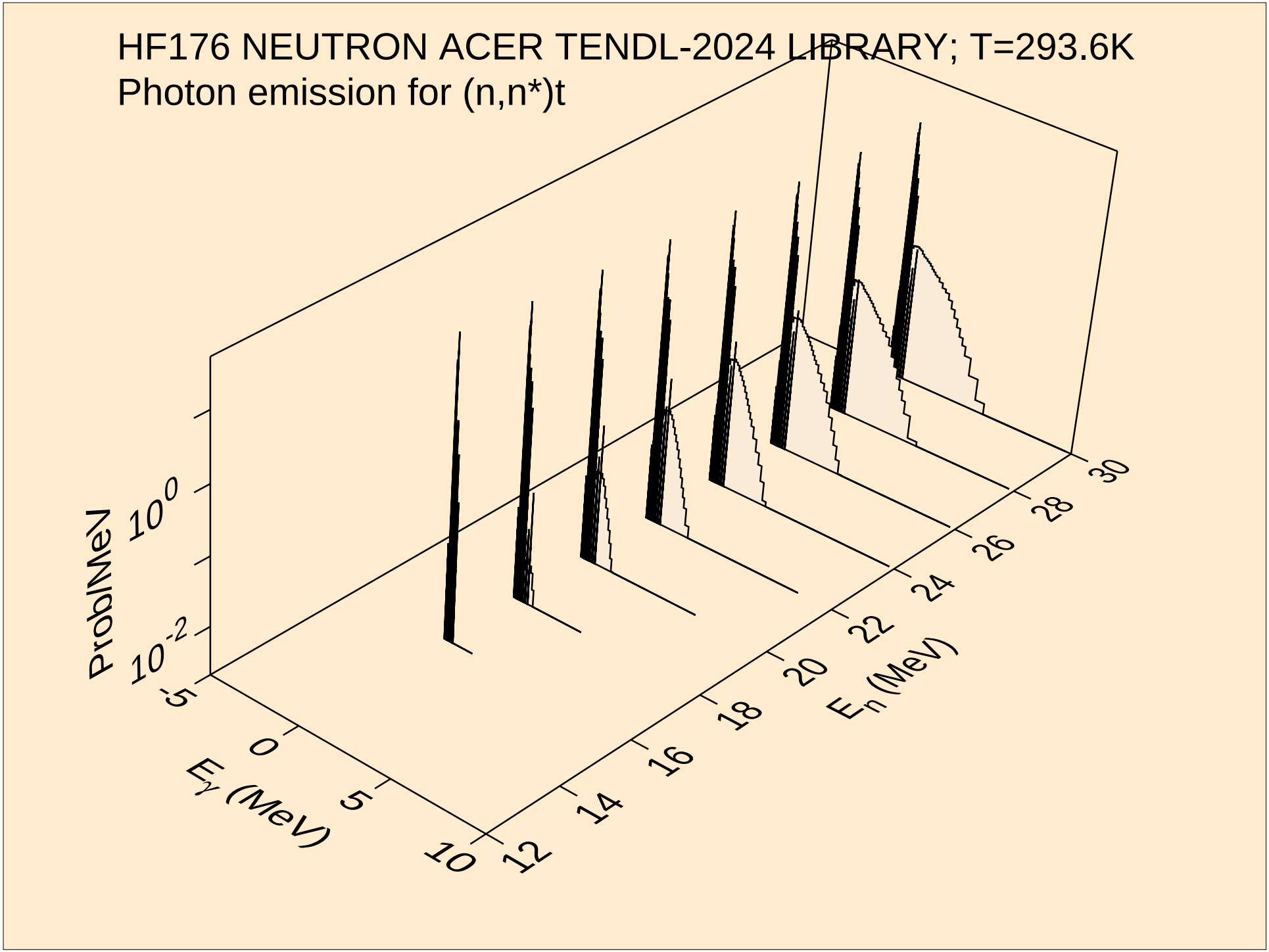

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,2n)a
Prob/MeV
10^0
10^-2
0
2
4
6
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

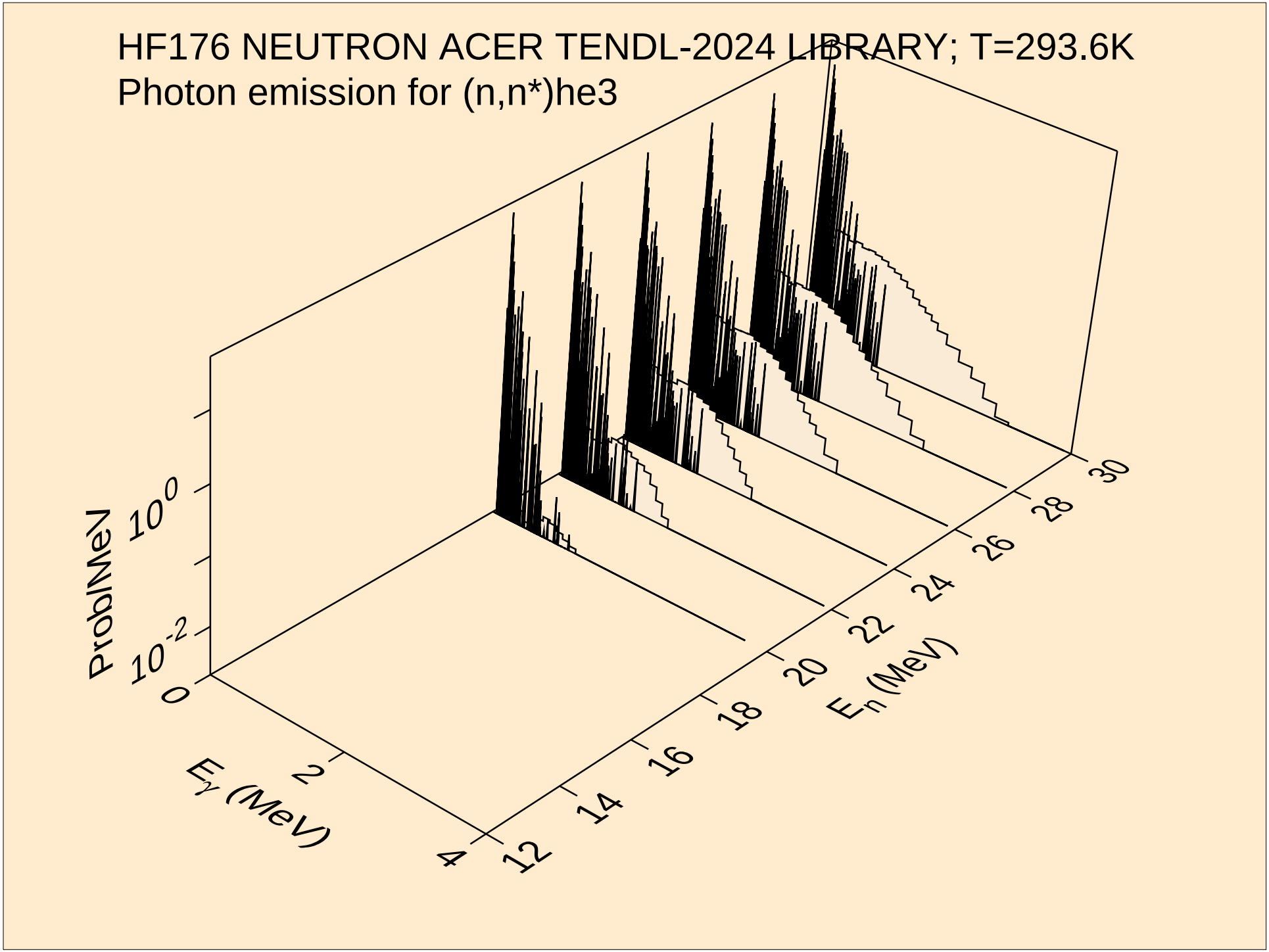

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,3n)a
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
2
4
E_γ (MeV)
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

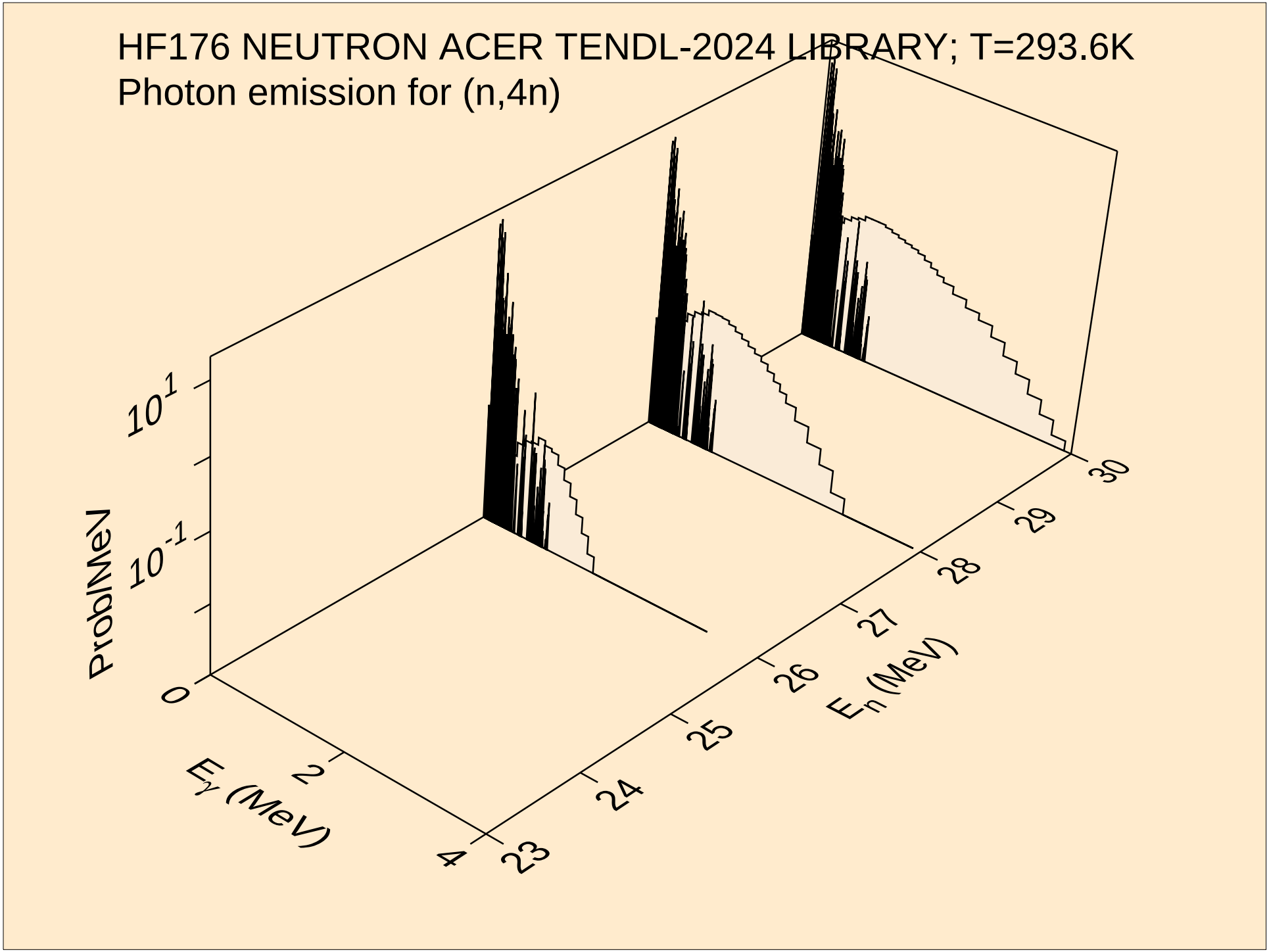

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*)p
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

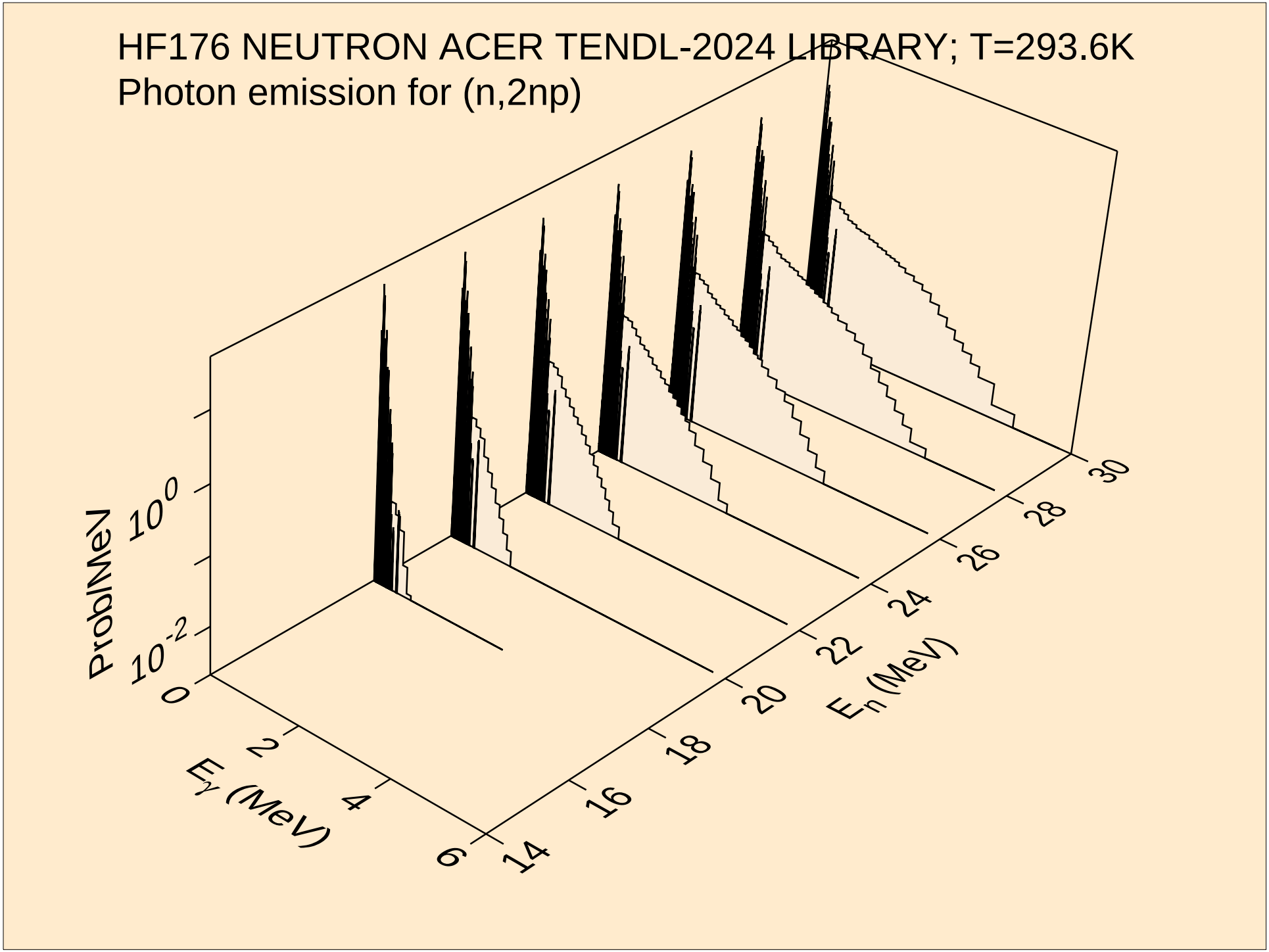

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*)2a
Prob/MeV
10^{2}
10^{0}
10^{-2}
E_γ (MeV)
0
2
4
E_n (MeV)
0
5
10
15
20
25
30

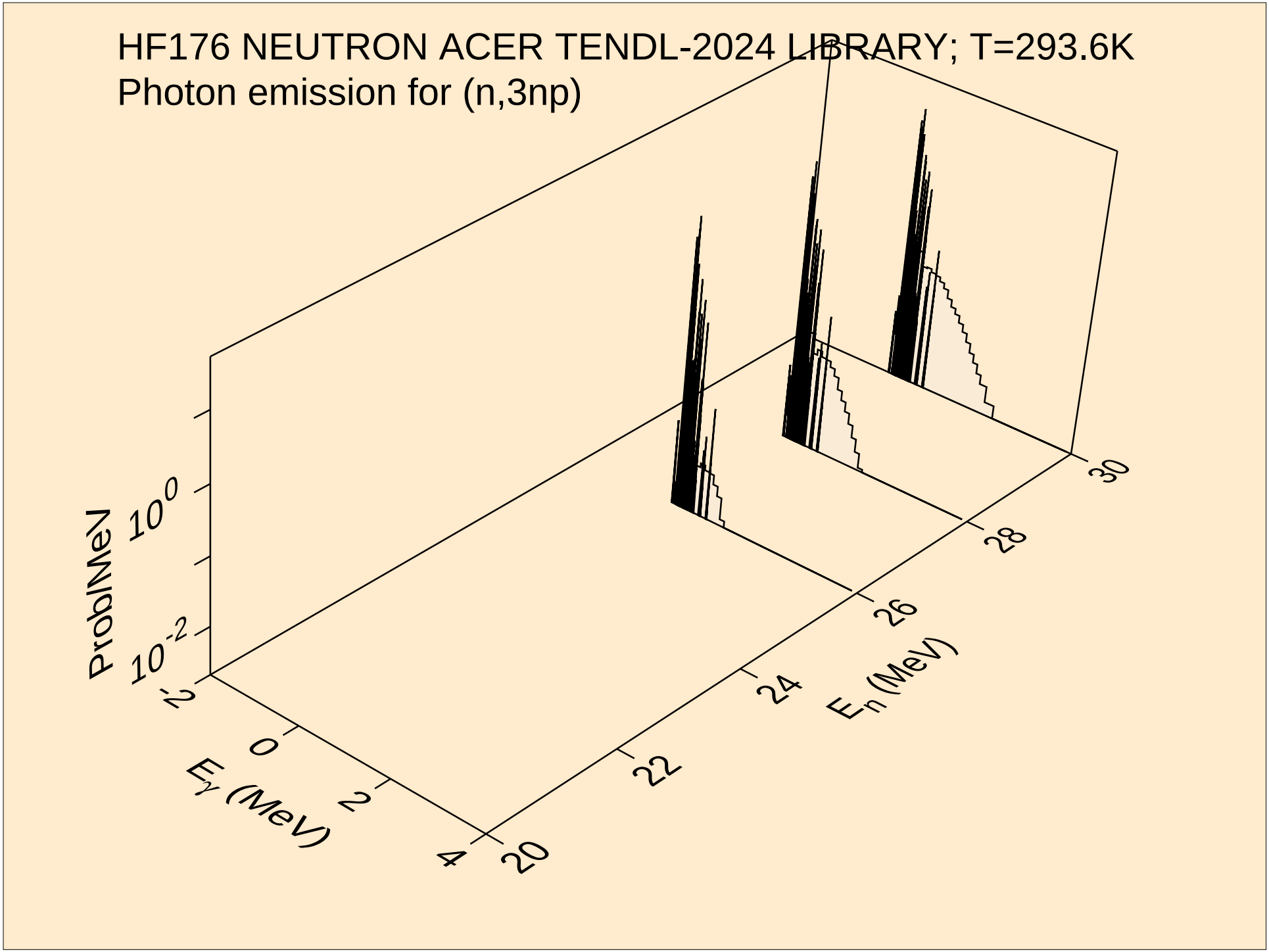

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*)d
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

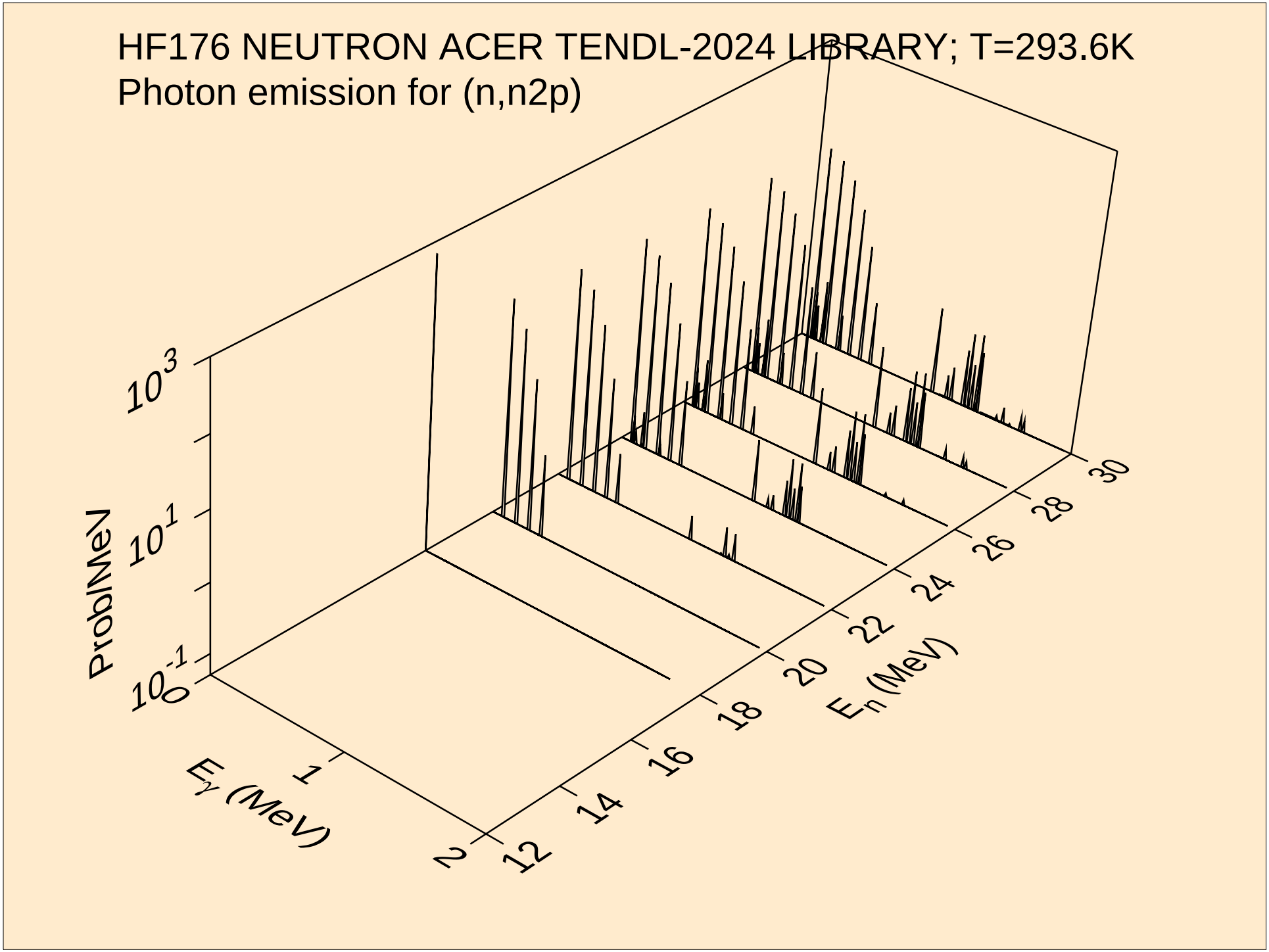

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*)t
Prob/MeV
10^0
10^-2
-5
0
5
10
E_γ (MeV)
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

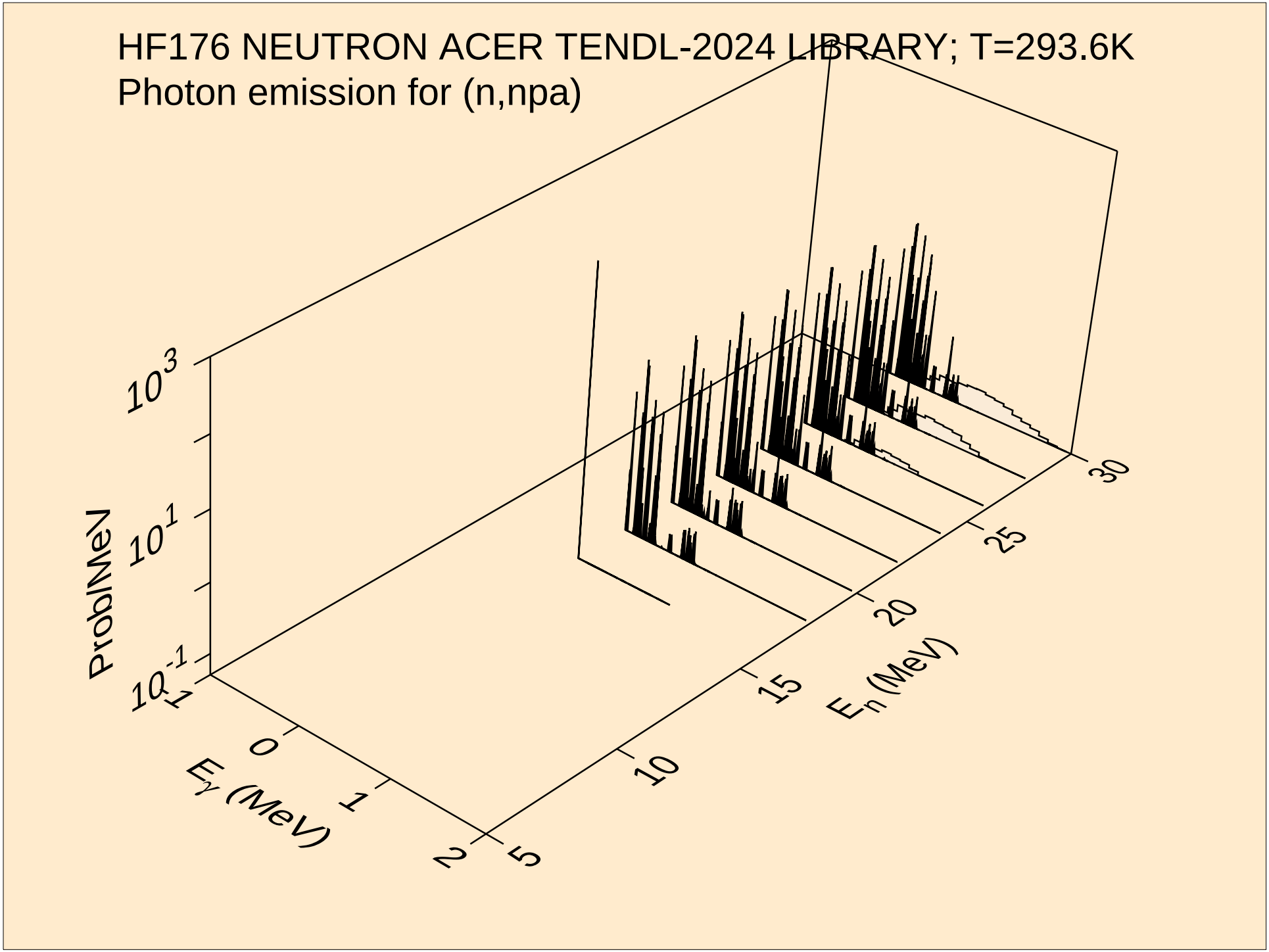

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*)he3
Prob/MeV
10^0
10^-2
0
2
4
E_γ (MeV)
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

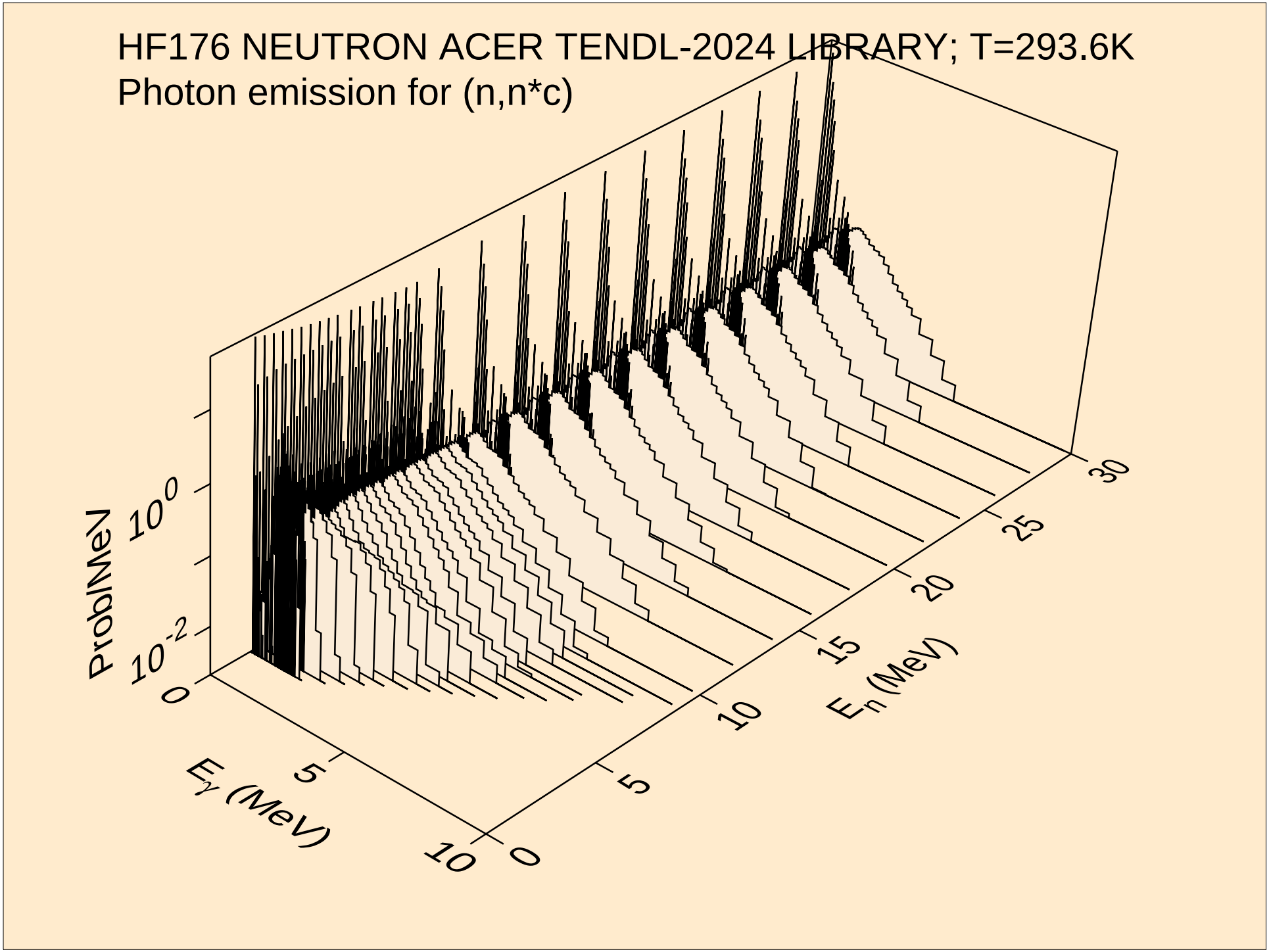

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,4n)
Prob/MeV
10^1
10^-1
0
2
4
E_γ (MeV)
23
24
25
26
27
28
29
30
E_n (MeV)

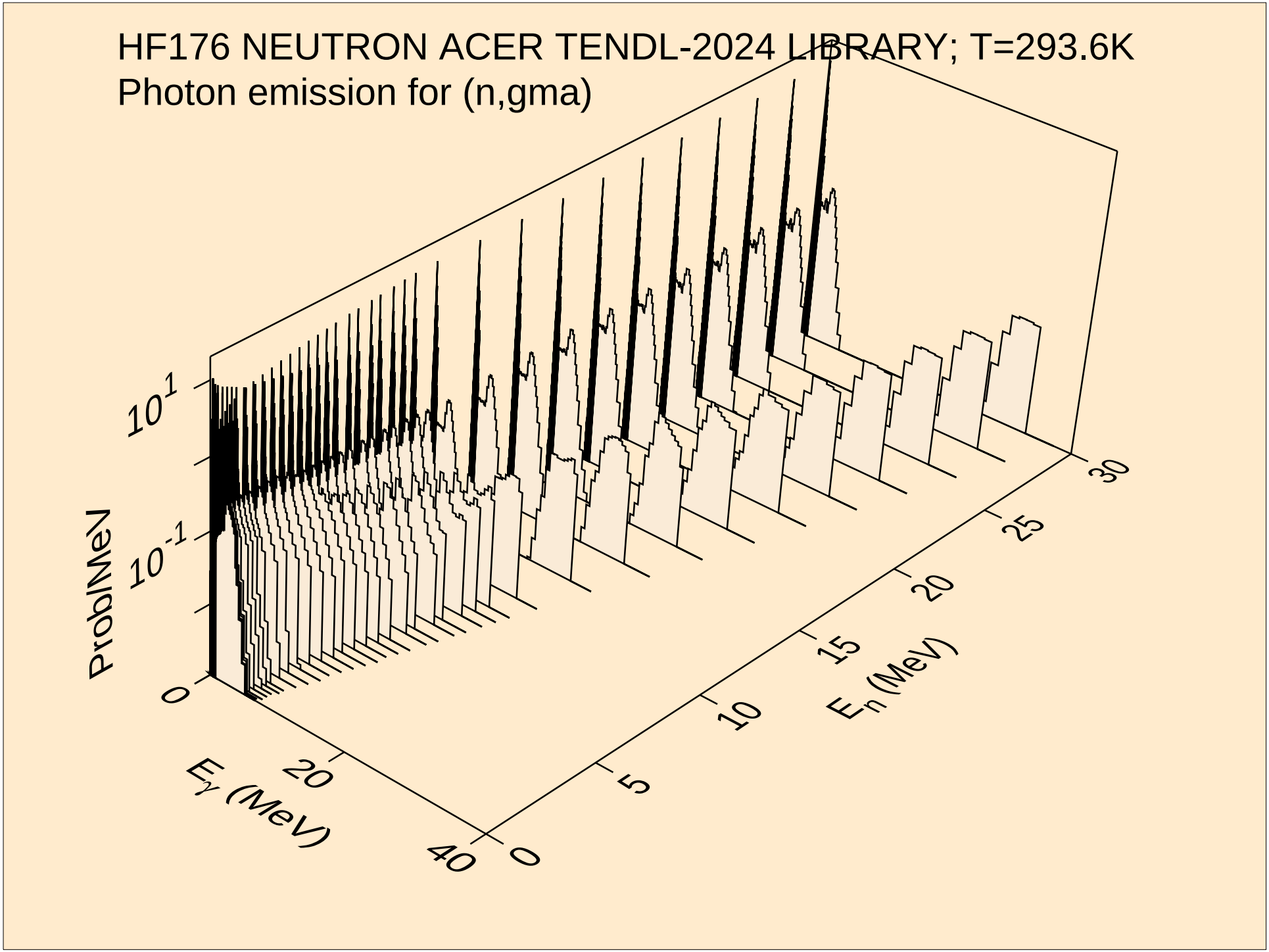

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,2np)
Prob/MeV
10^0
10^-2
0
2
4
6
E_γ (MeV)
14
16
18
20
22
24
26
28
30
E_n (MeV)

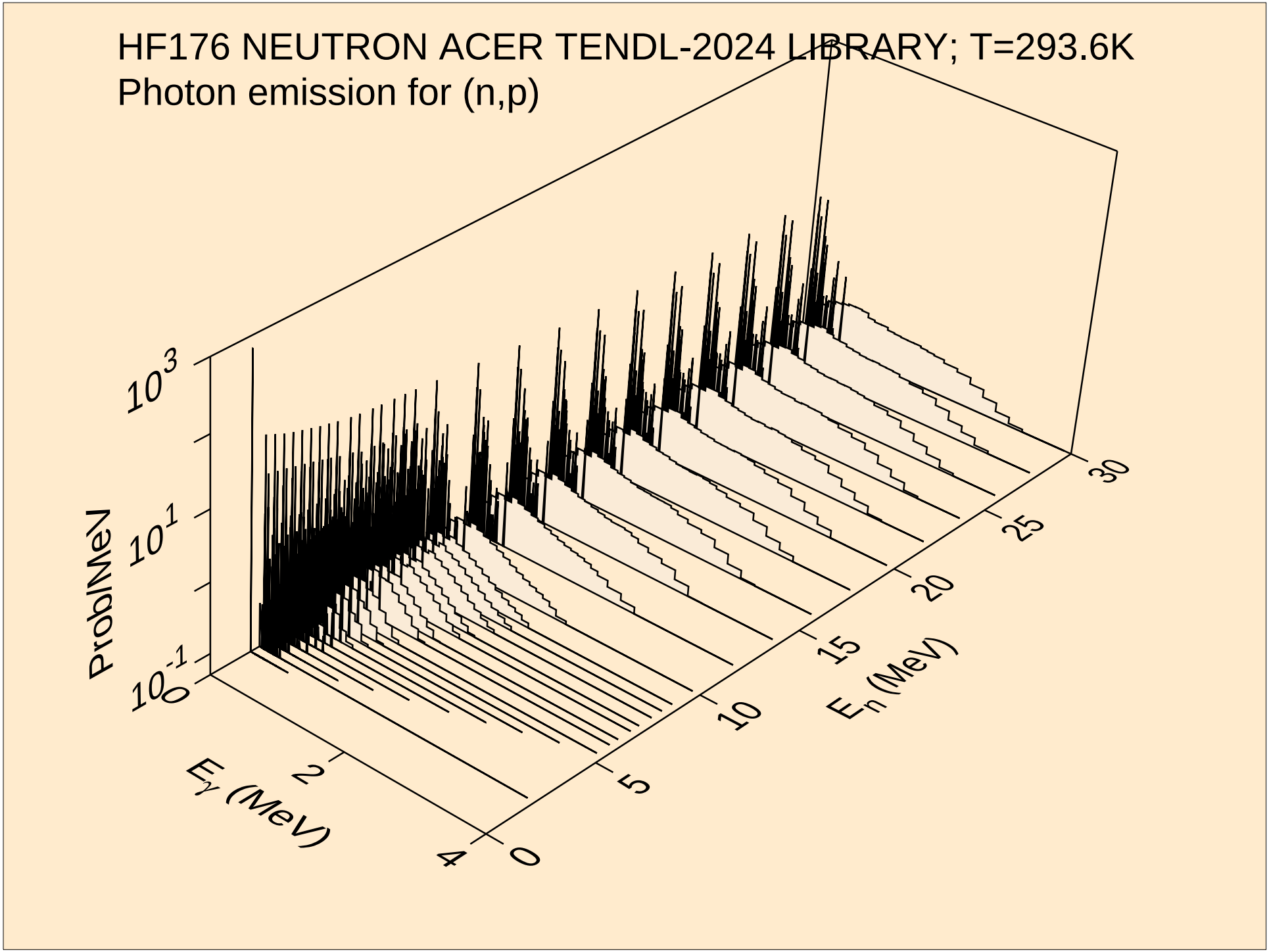

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,3np)
Prob/MeV
10^{0}
10^{-2}
-2
0
2
4
E_γ (MeV)
20
22
24
26
28
30
E_n (MeV)

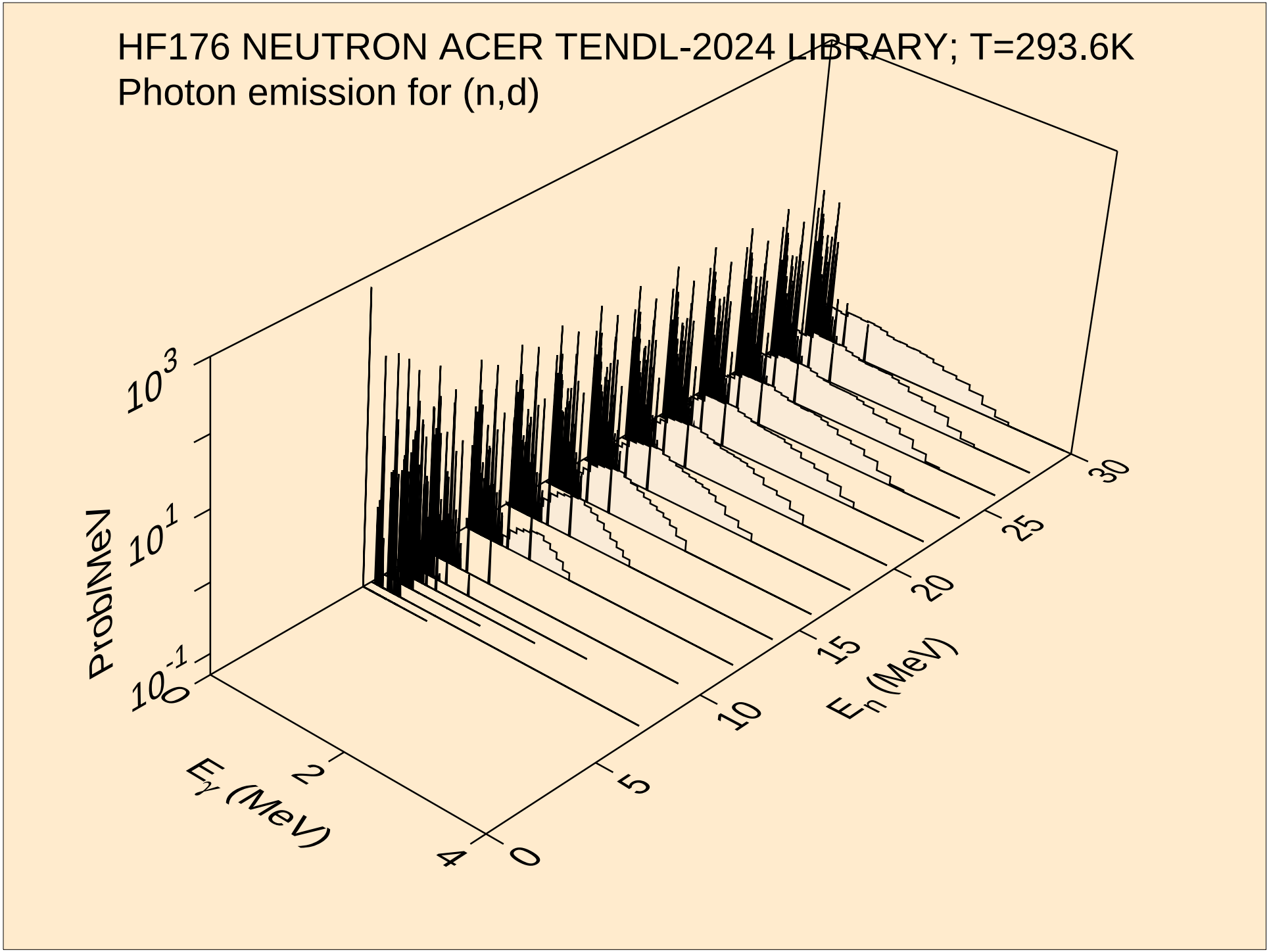

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n2p)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
1
2
E_γ (MeV)
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

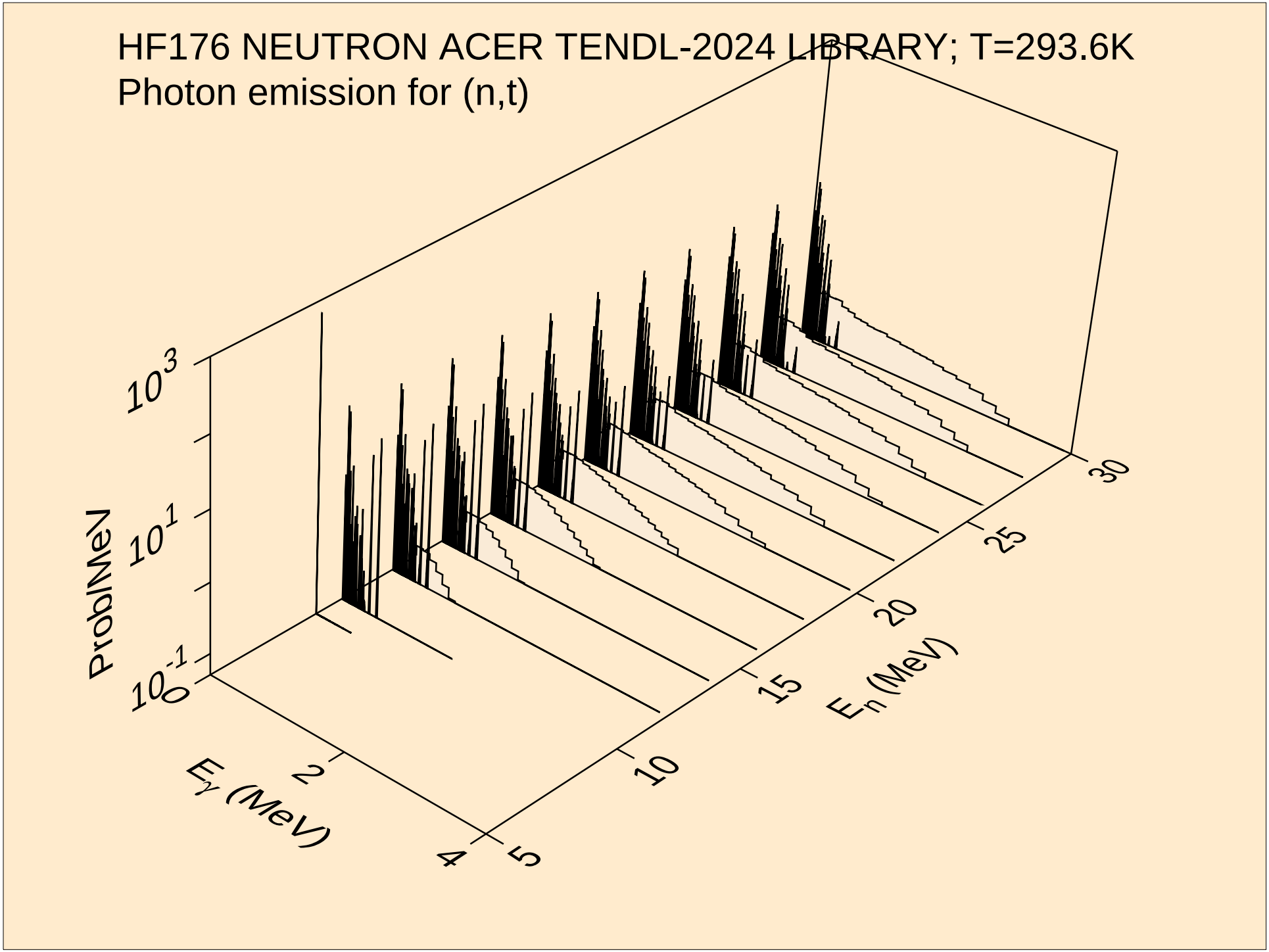

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,npa)
Prob/MeV
10^{3}
10^{1}
10^{-1}
E_γ (MeV)
0
1
2
5
10
15
20
25
30
E_n (MeV)

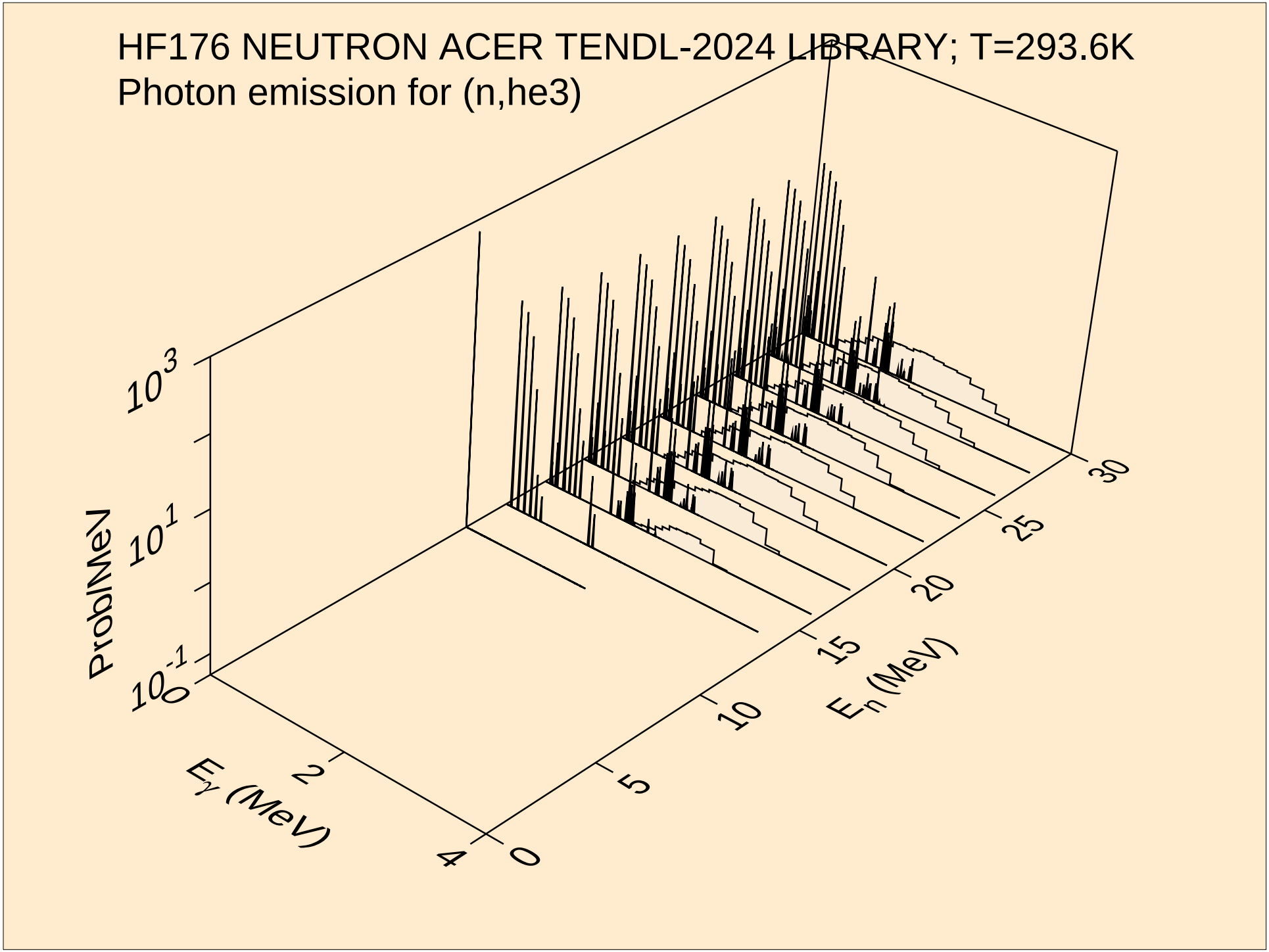

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,n*c)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

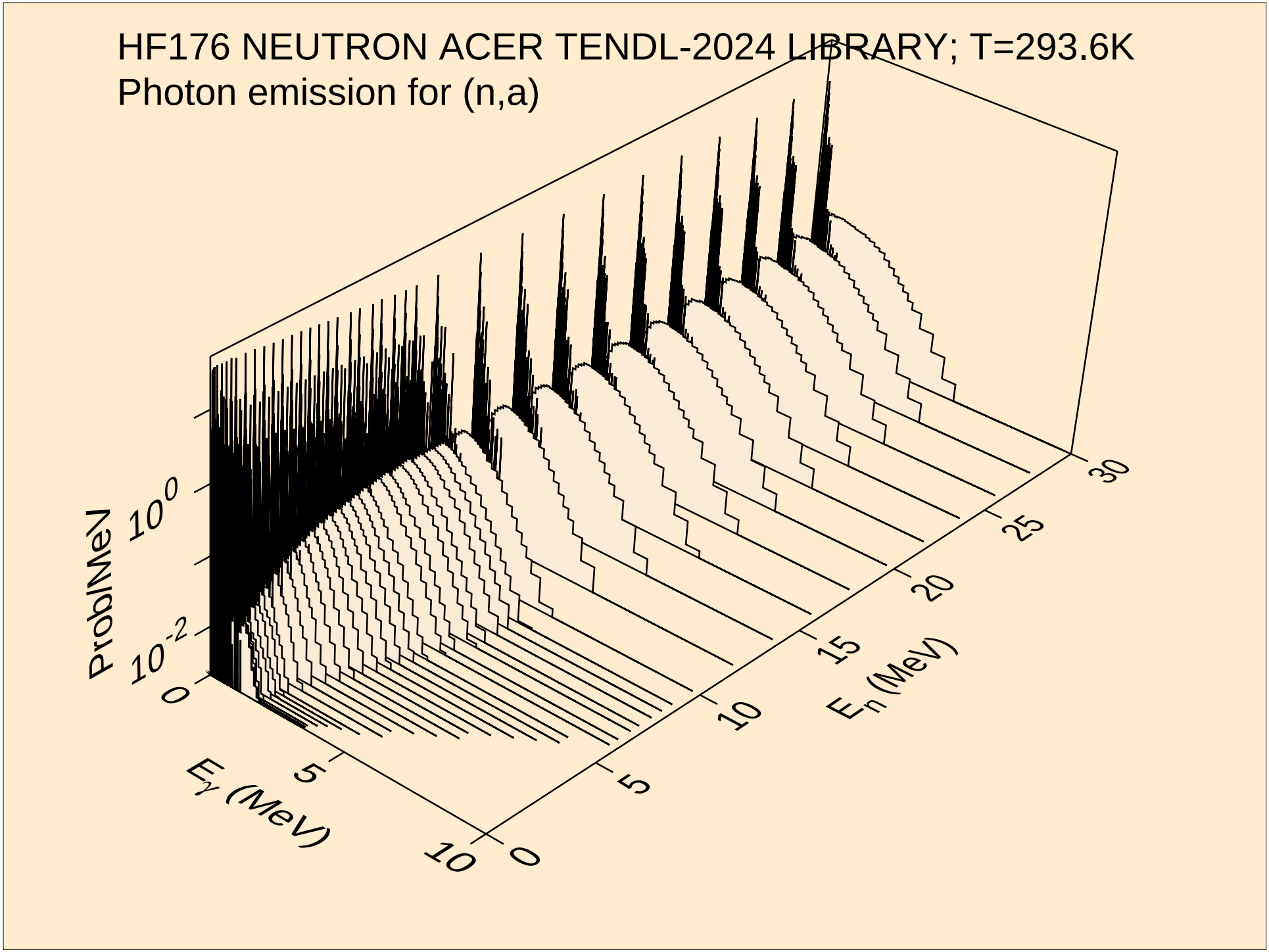

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,gma)
Prob/MeV
10^{1}
10^{-1}
0
E_γ (MeV)
20
40
0
5
10
15
20
25
30
E_n (MeV)

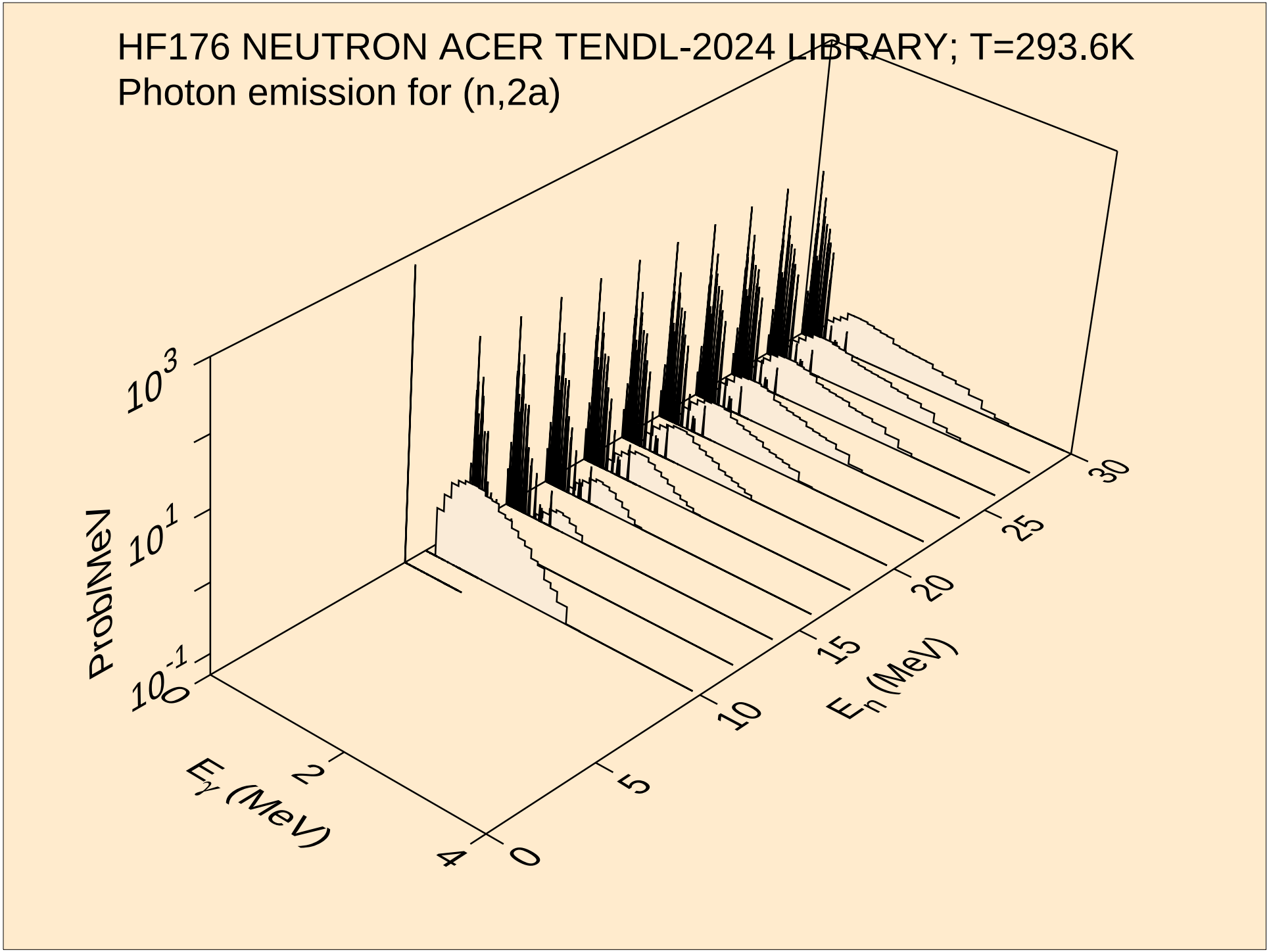

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,p)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

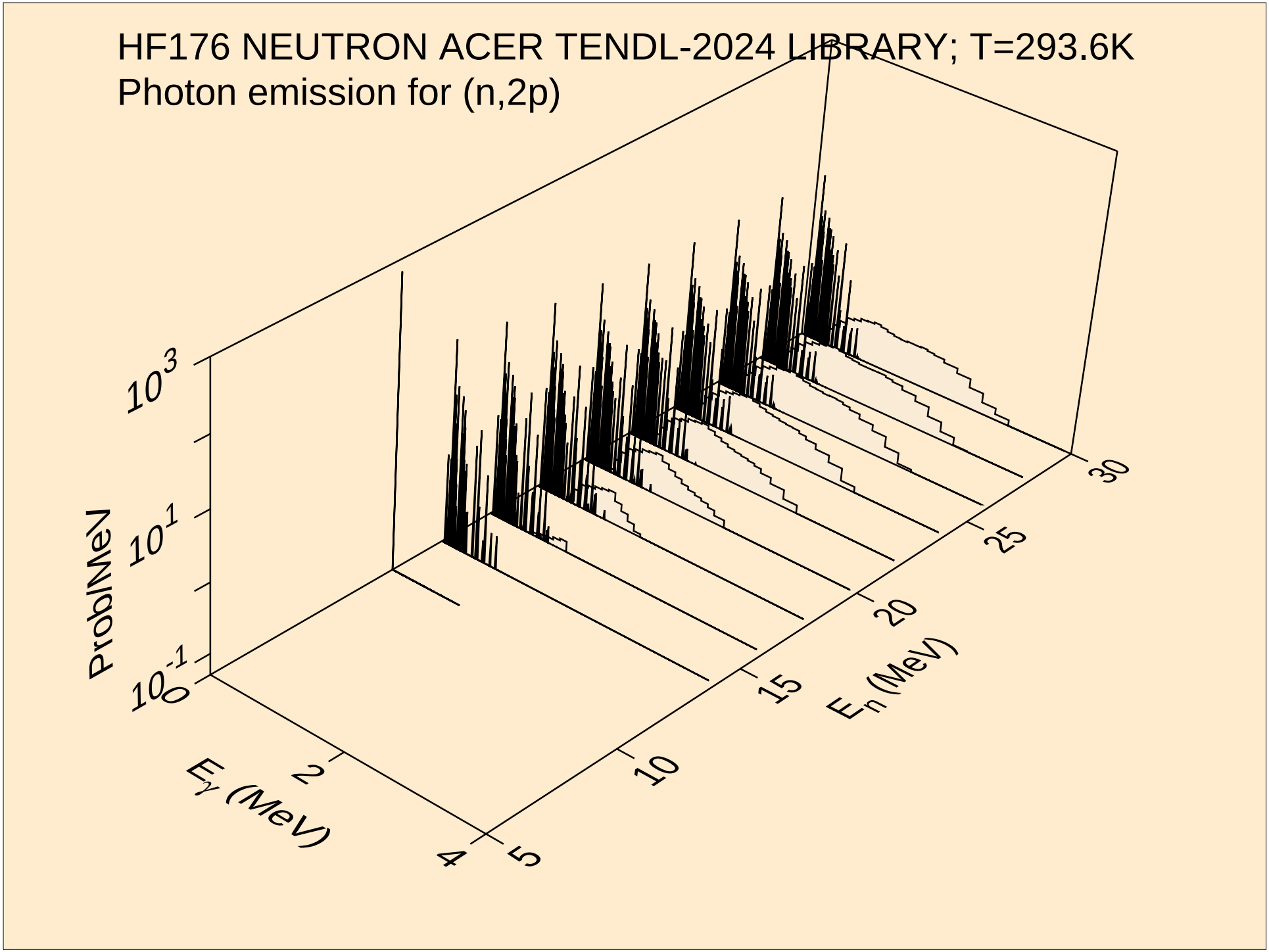

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,d)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

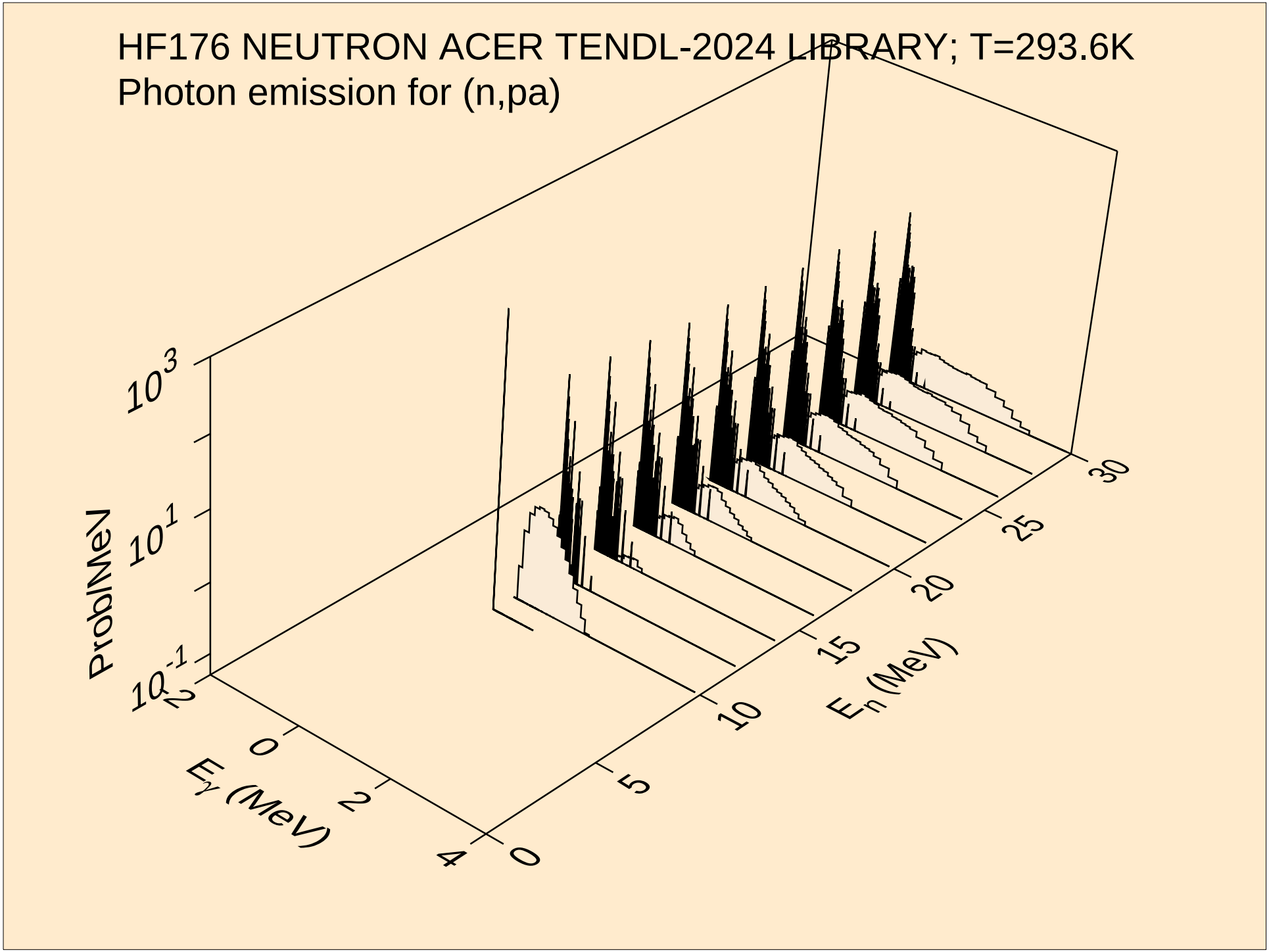

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,t)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

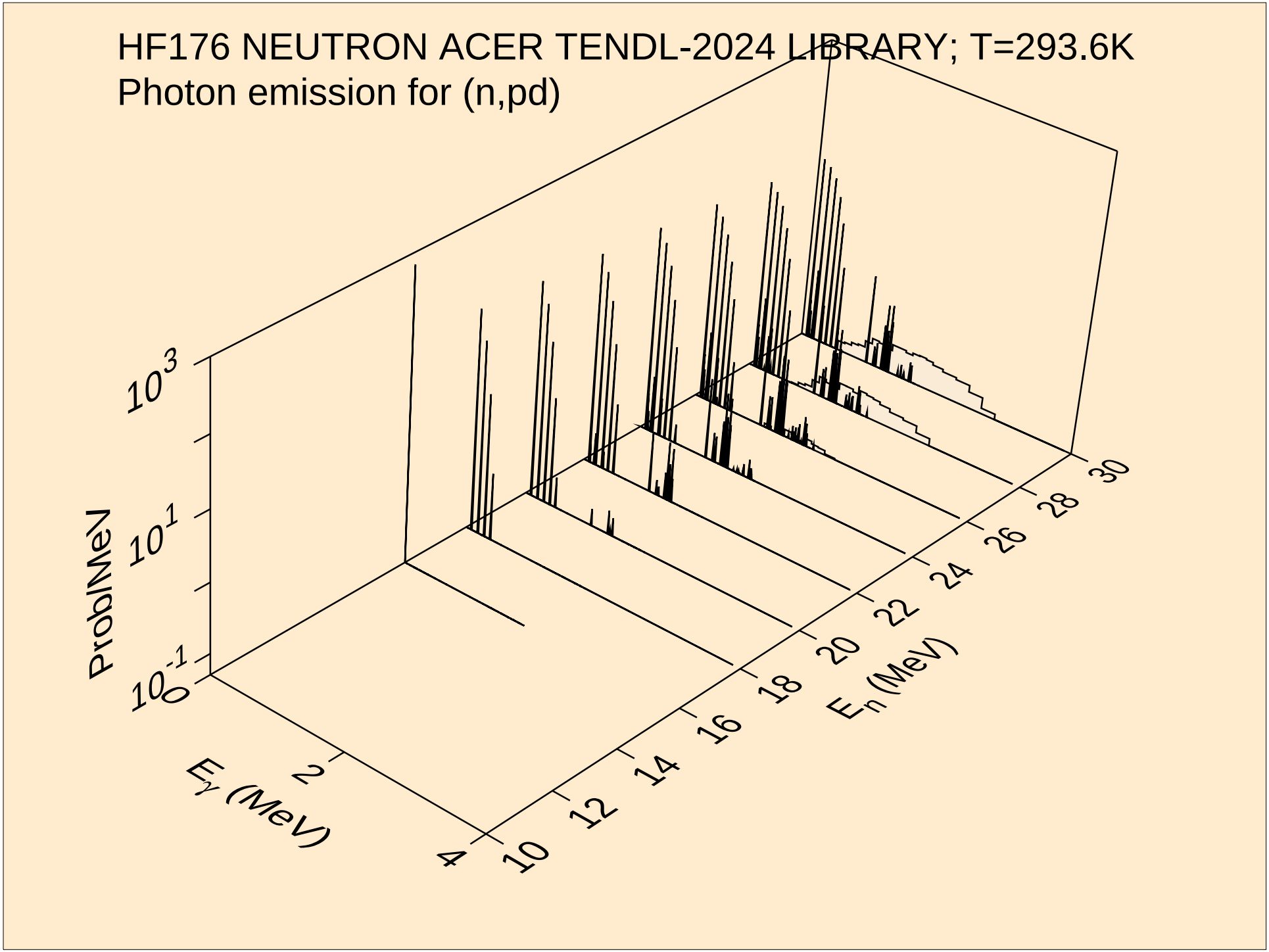

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,he3)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

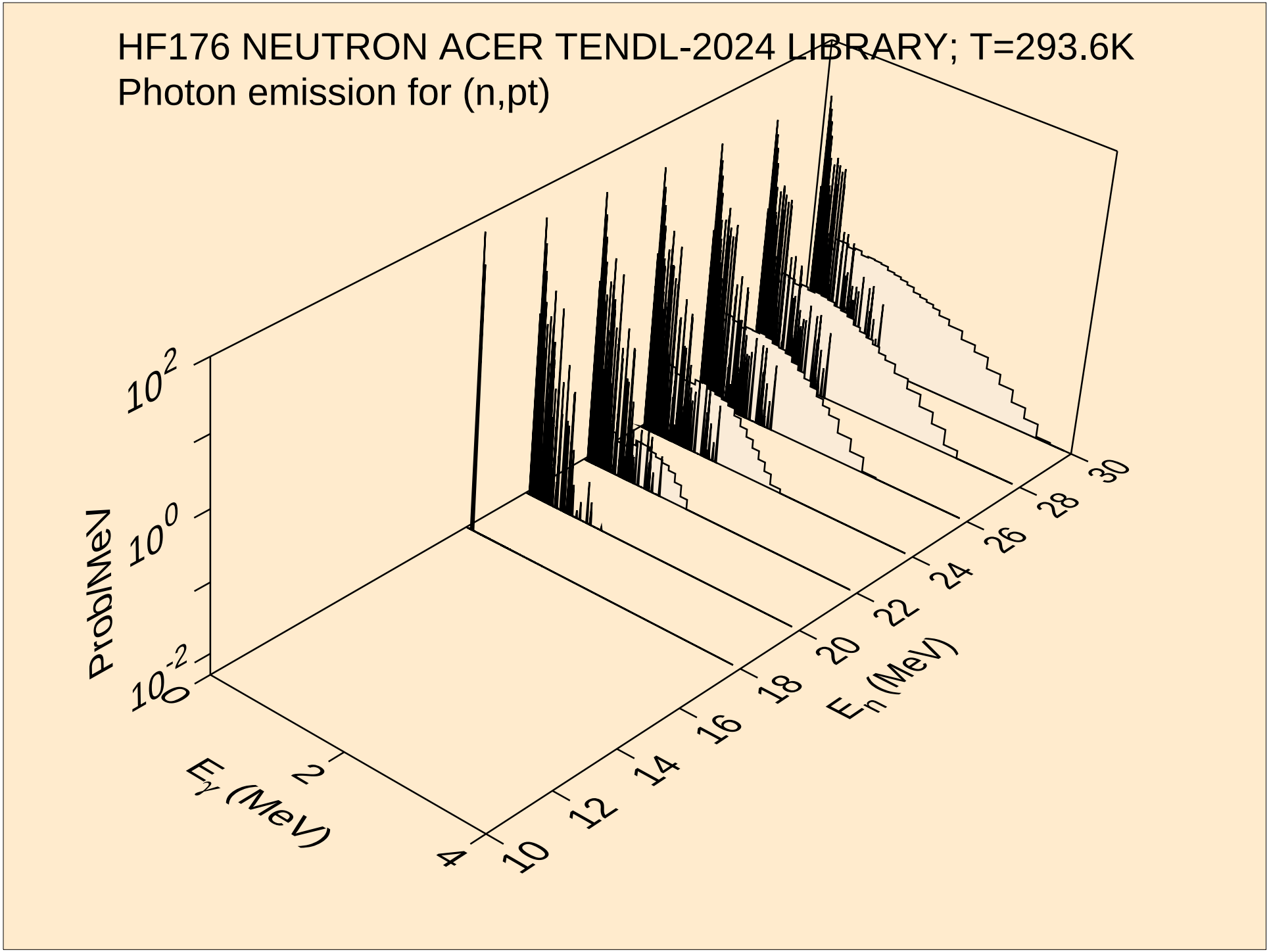

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,a)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

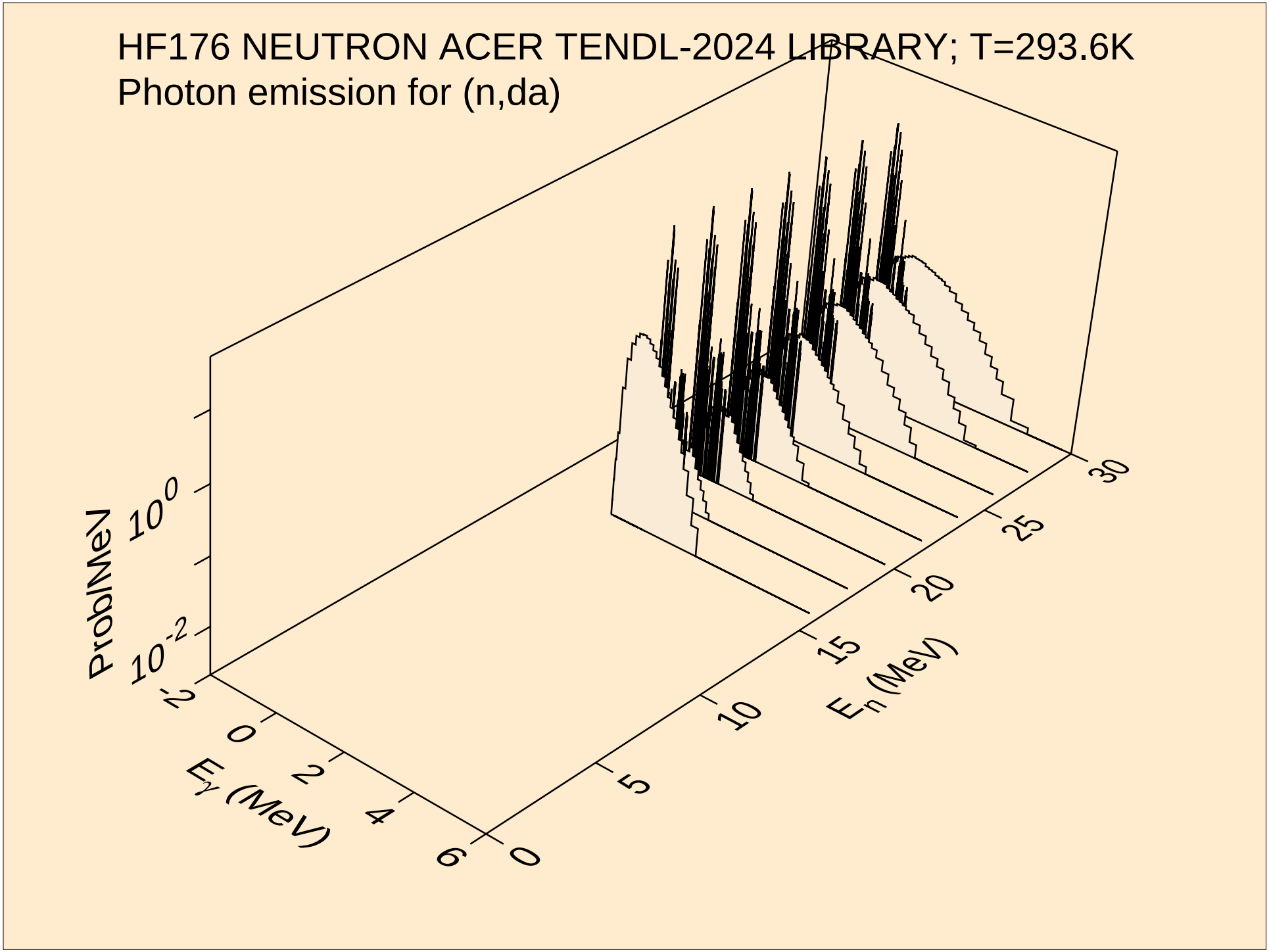

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,2a)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

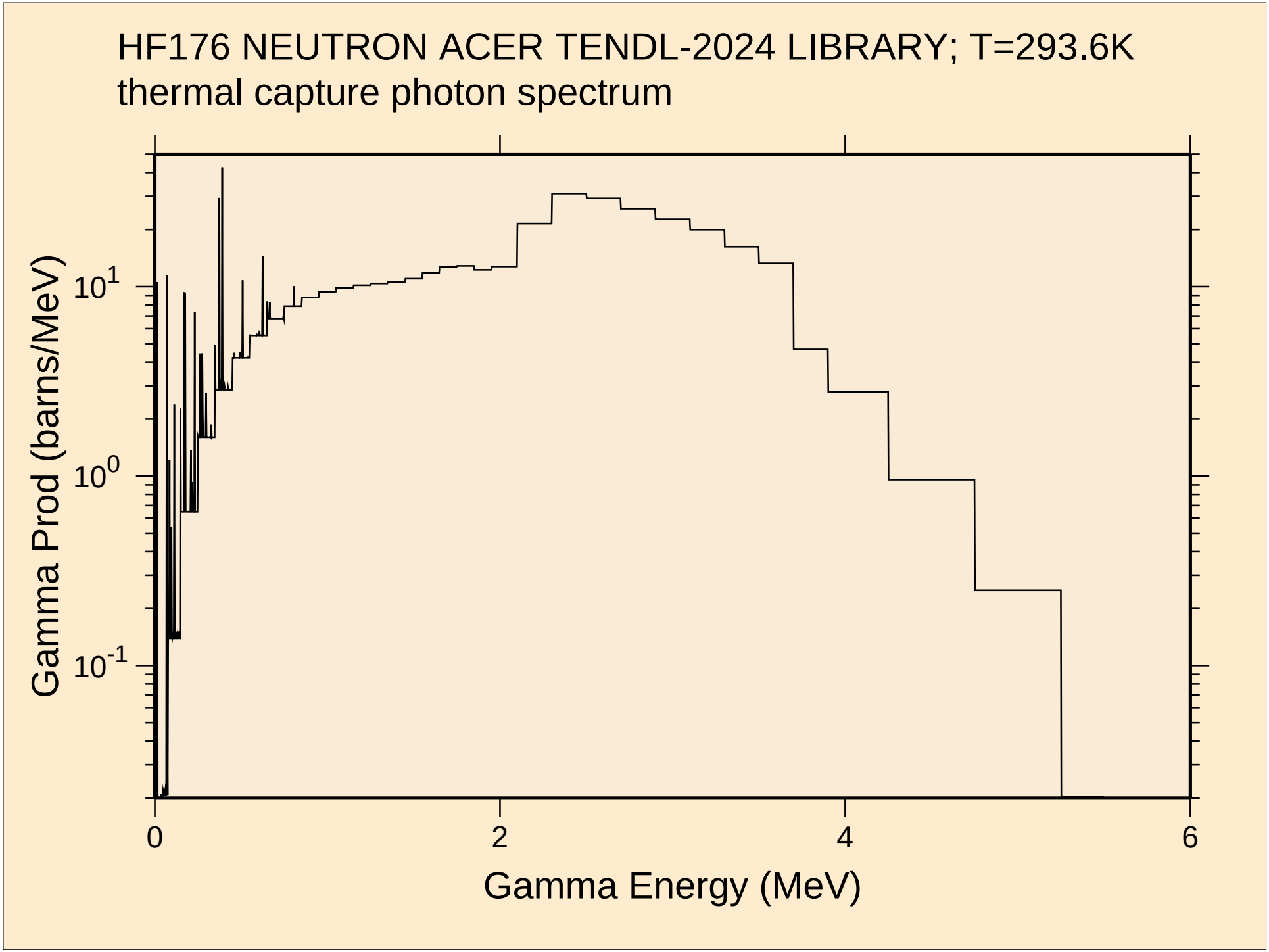

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,2p)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

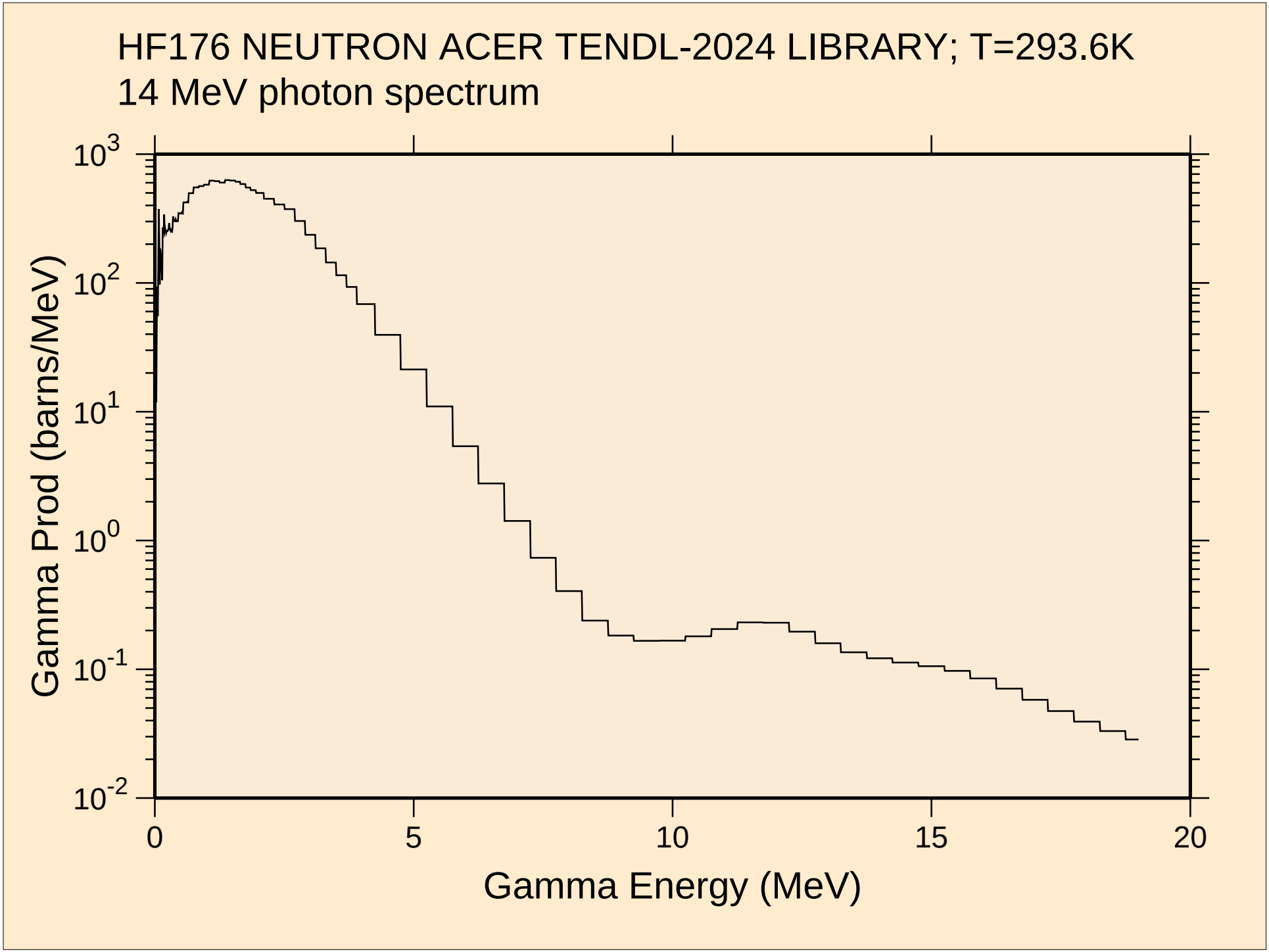

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,pa)
Prob/MeV
10^{3}
10^{1}
10^{-1}
E_γ (MeV)
-2
0
2
4
E_n (MeV)
0
5
10
15
20
25
30

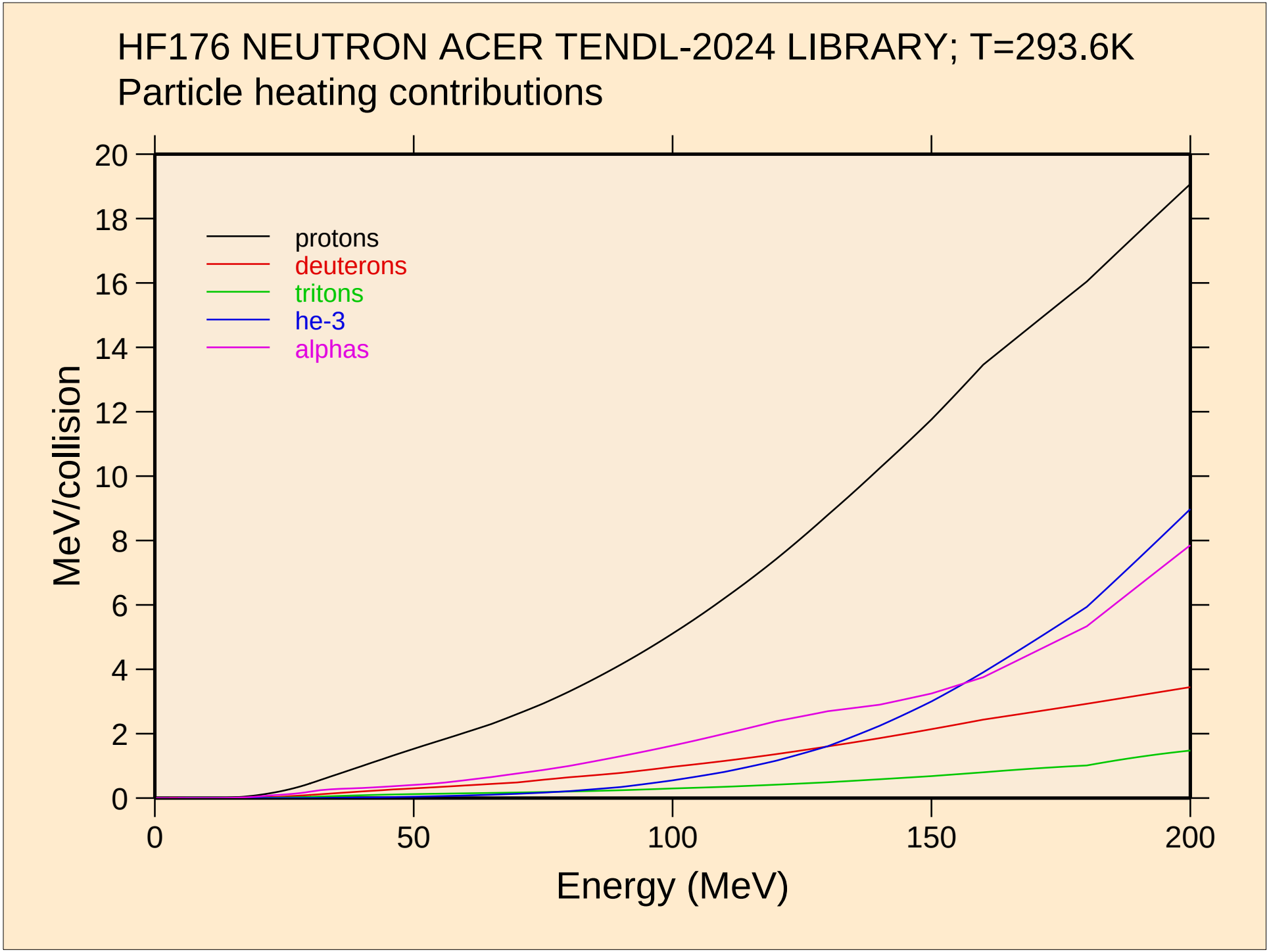

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,pd)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
10
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

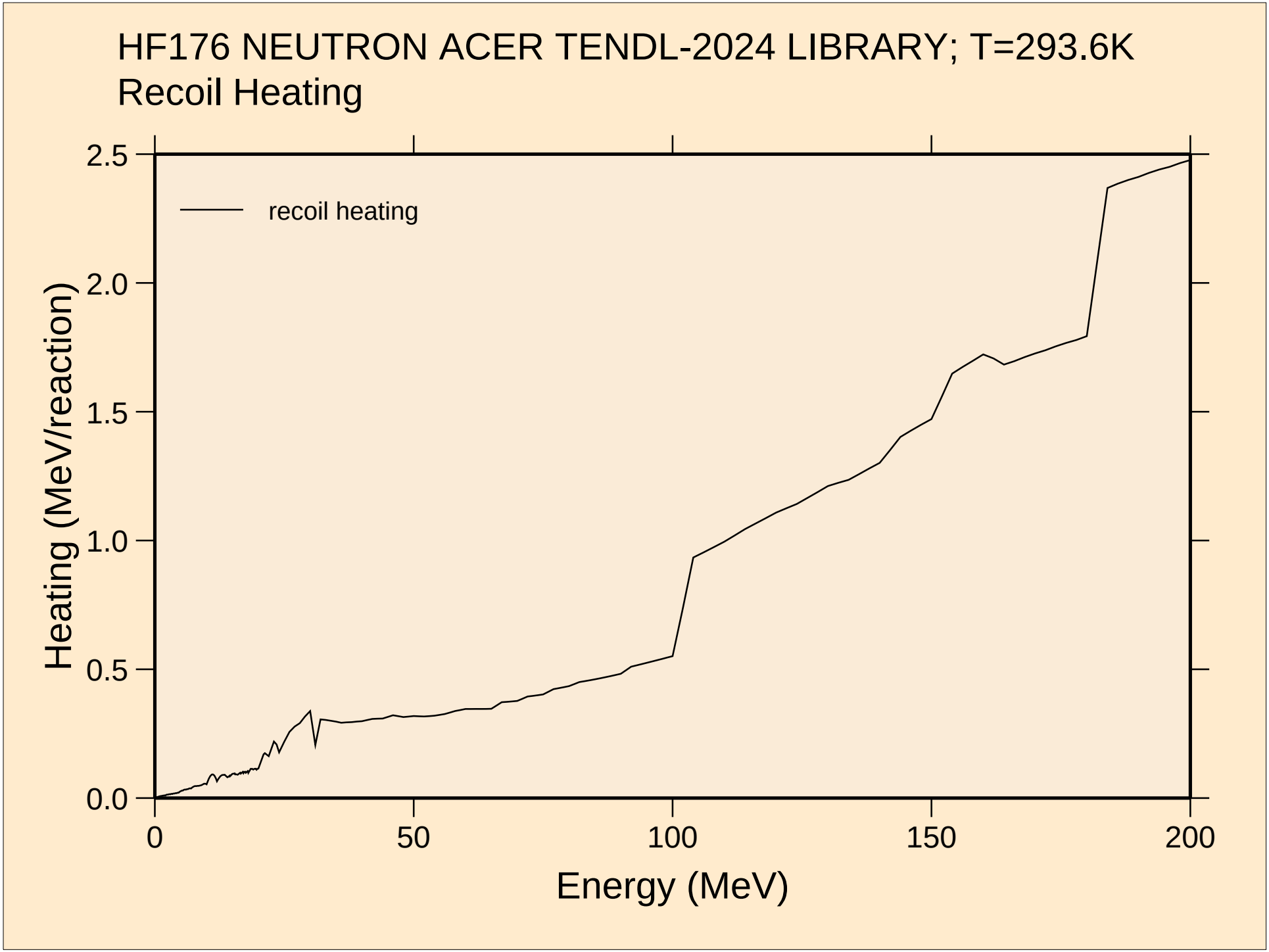

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,pt)
Prob/MeV
10^{2}
10^{0}
10^{-2}
E_γ (MeV)
0
2
4
E_n (MeV)
10
12
14
16
18
20
22
24
26
28
30

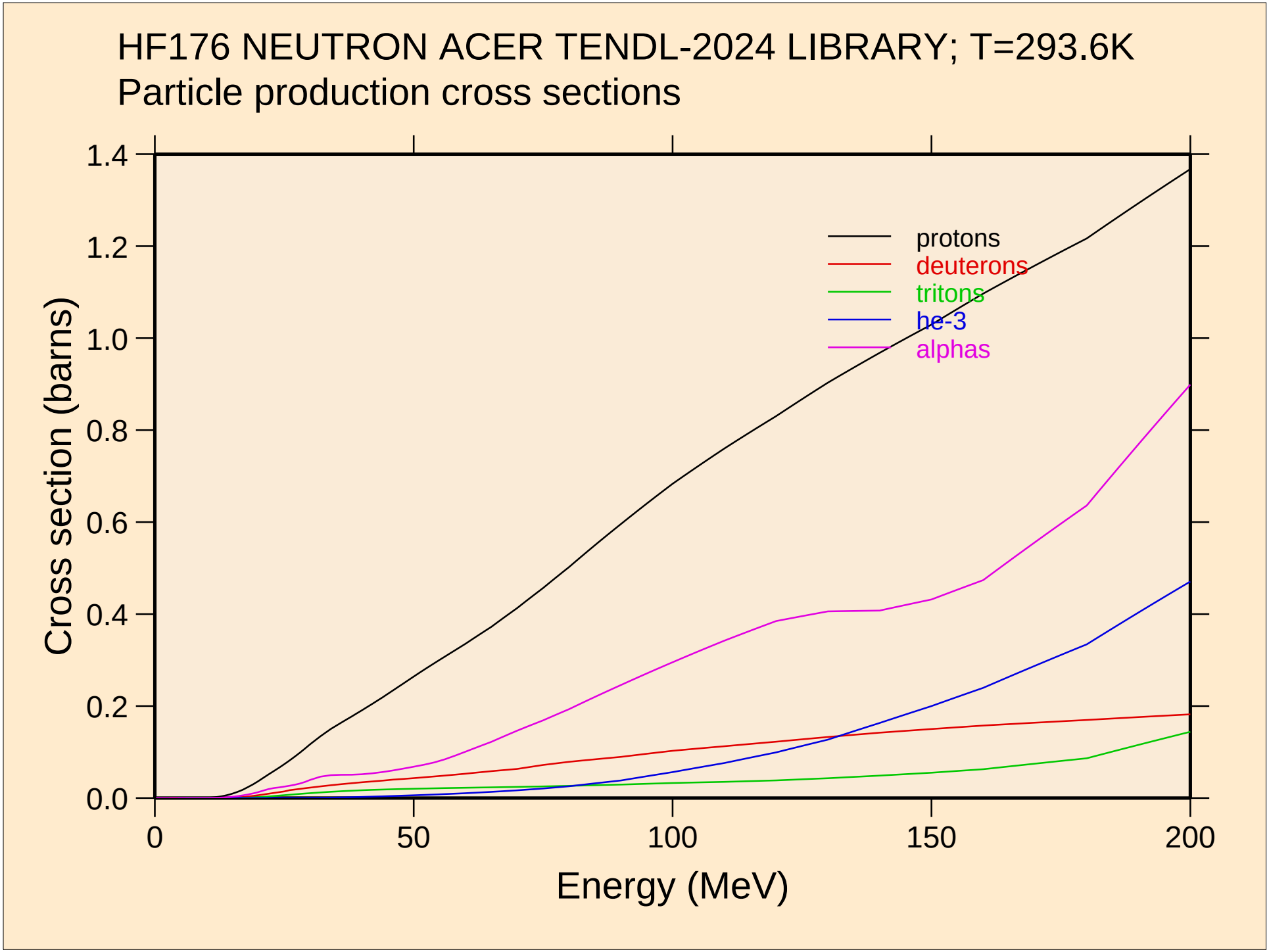

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Photon emission for (n,da)
Prob/MeV
10^0
10^-2
-2
0
2
4
6
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

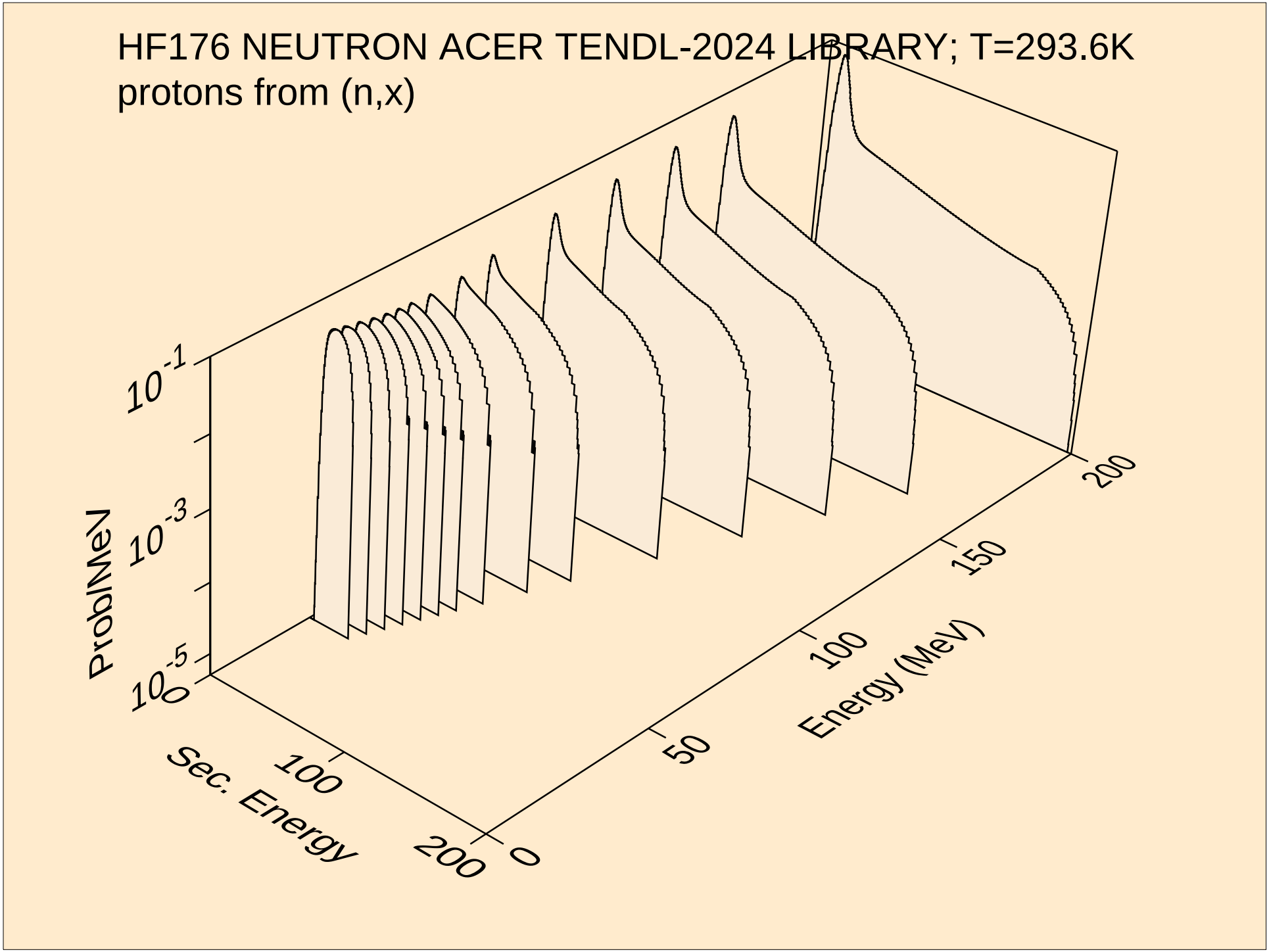

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
thermal capture photon spectrum
Gamma Prod (barns/MeV)
10^1
10^0
10^-1
0
2
4
6
Gamma Energy (MeV)

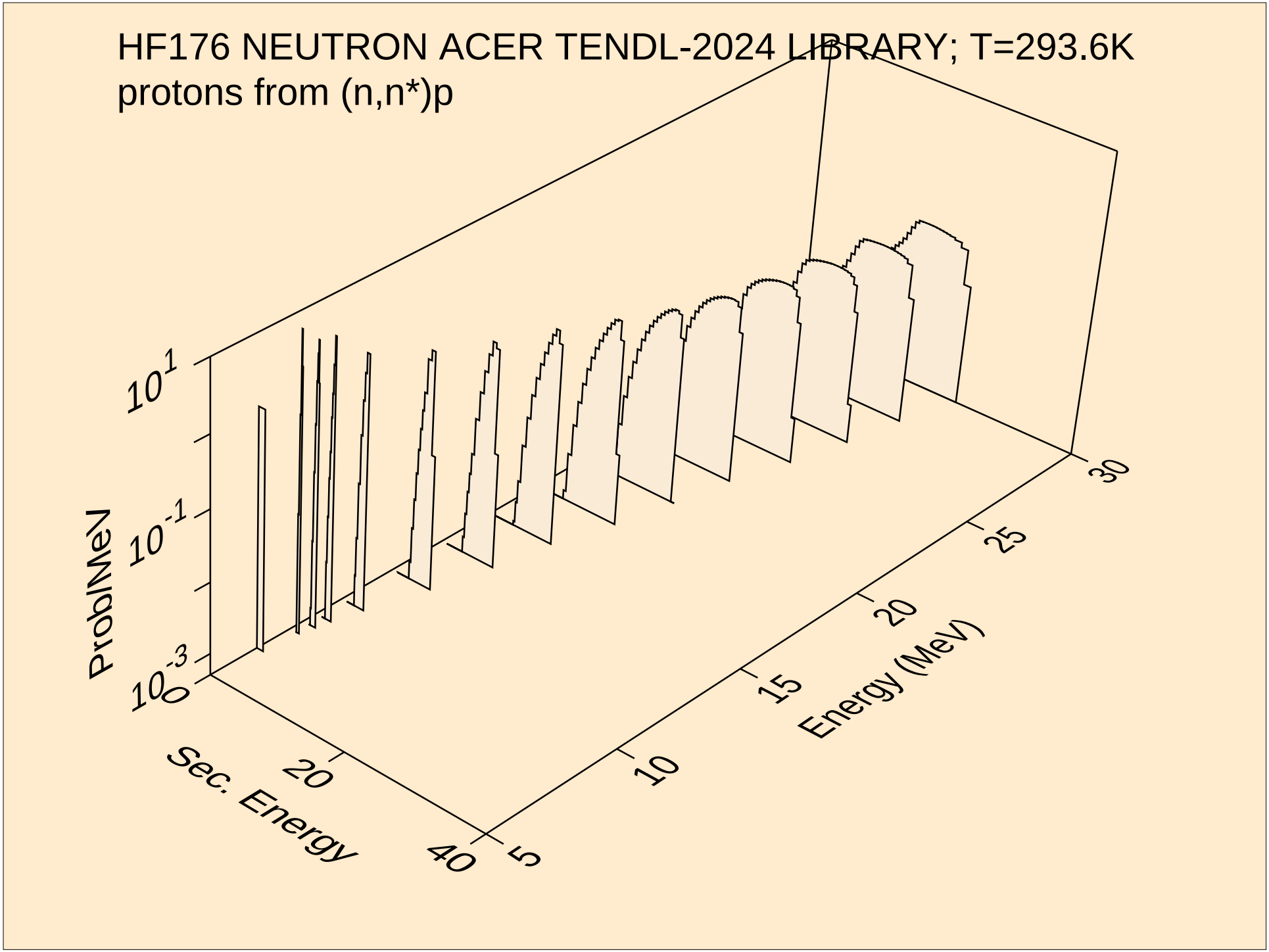

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
14 MeV photon spectrum
Gamma Prod (barns/MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
0
5
10
15
20
Gamma Energy (MeV)

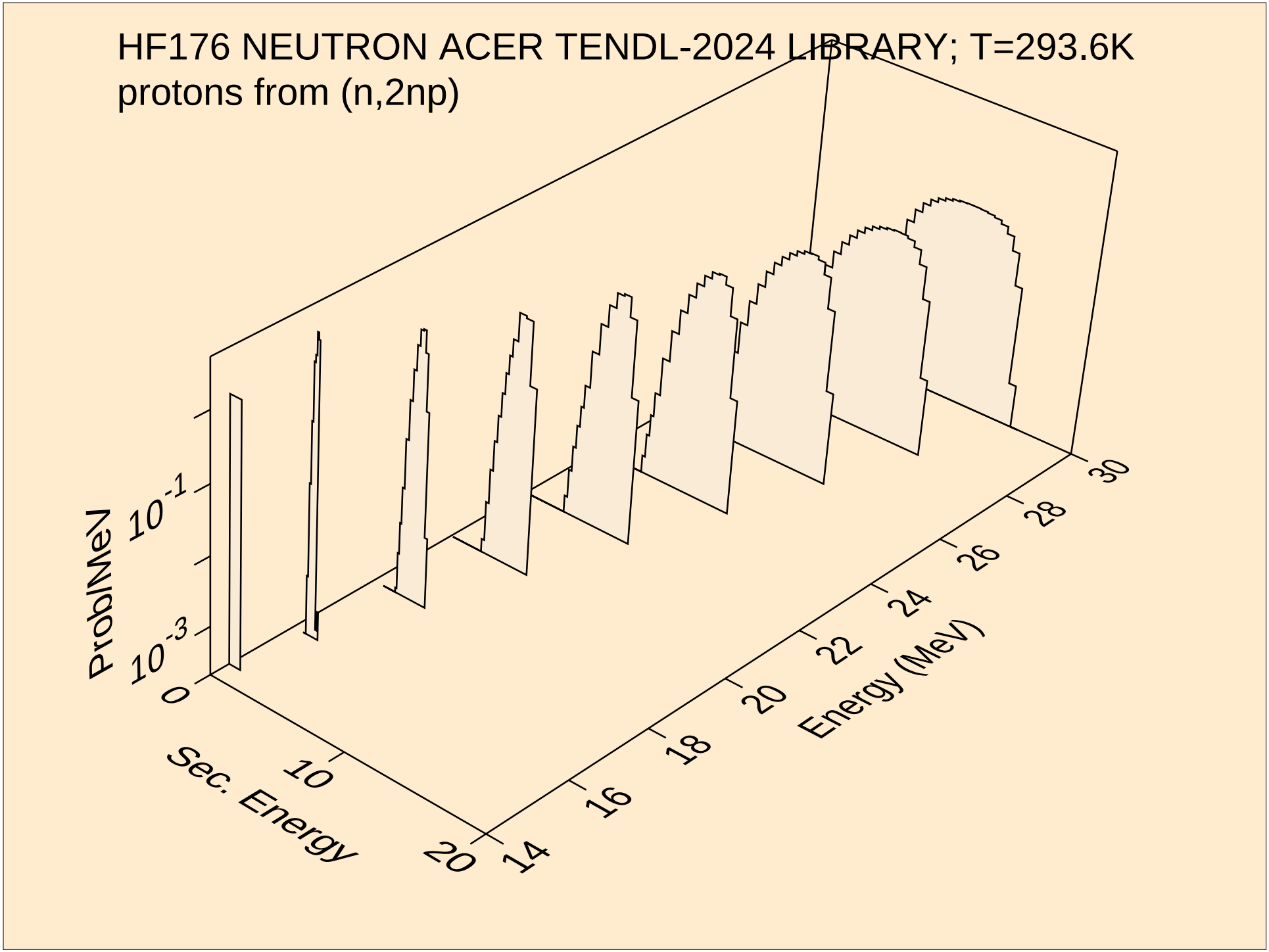

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Particle heating contributions
protons
deuterons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
2
4
6
8
10
12
14
16
18
20
0
50
100
150
200

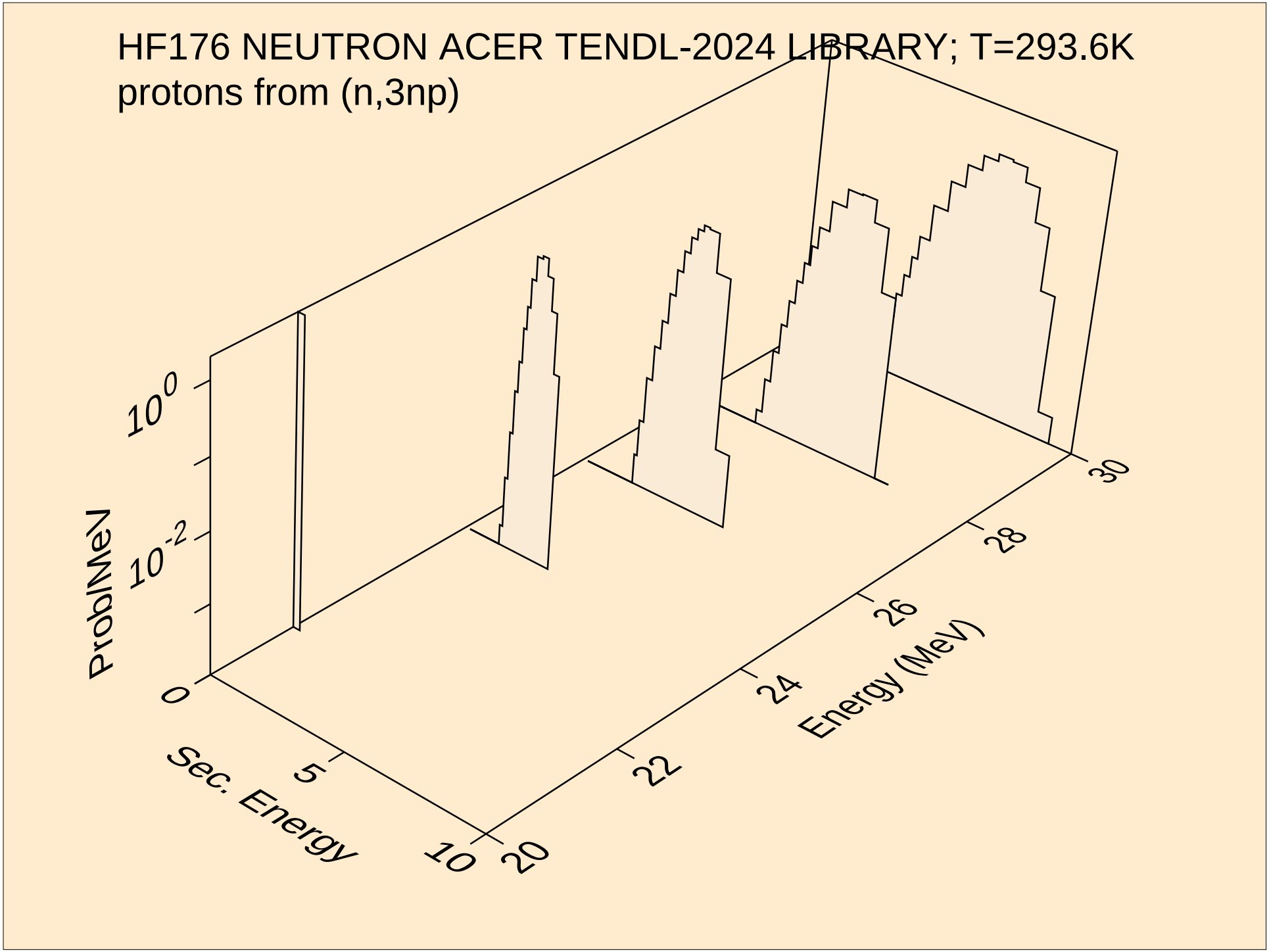

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
0
50
100
150
200

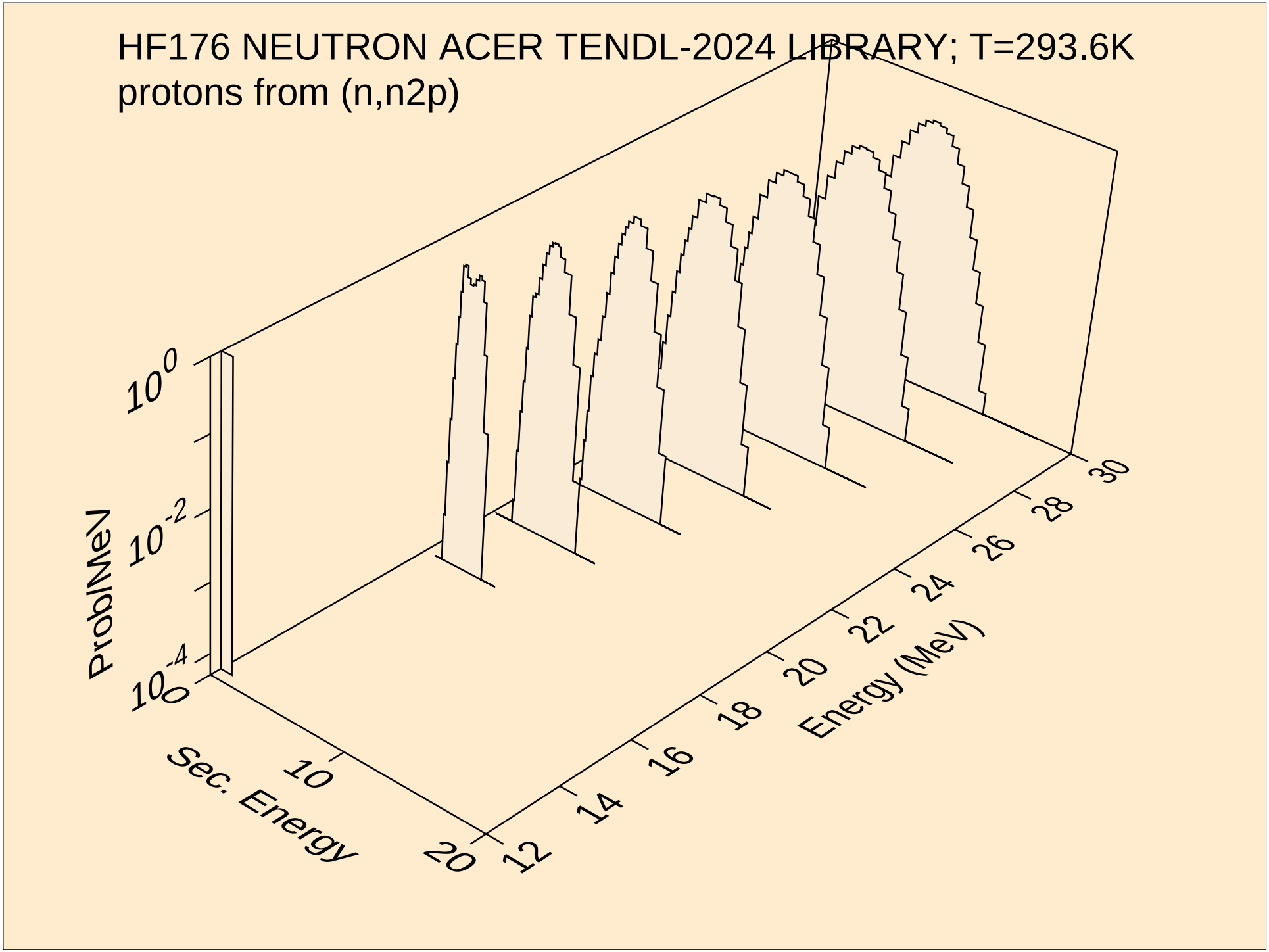

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
Particle production cross sections
Cross section (barns)
Energy (MeV)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
0
50
100
150
200
protons
deuterons
tritons
he-3
alphas

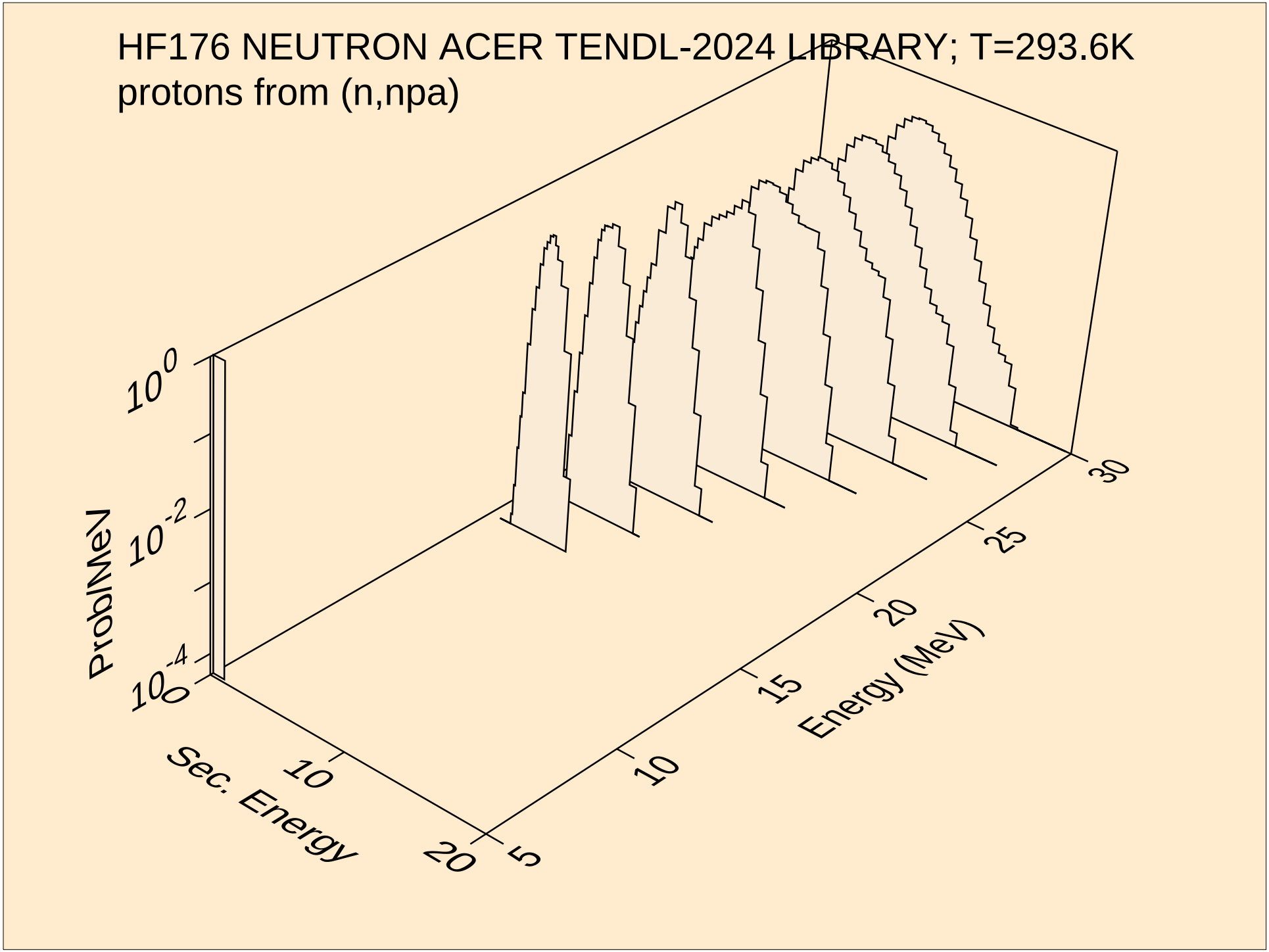

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,x)
Prob/MeV
10-1
10-3
10-5
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

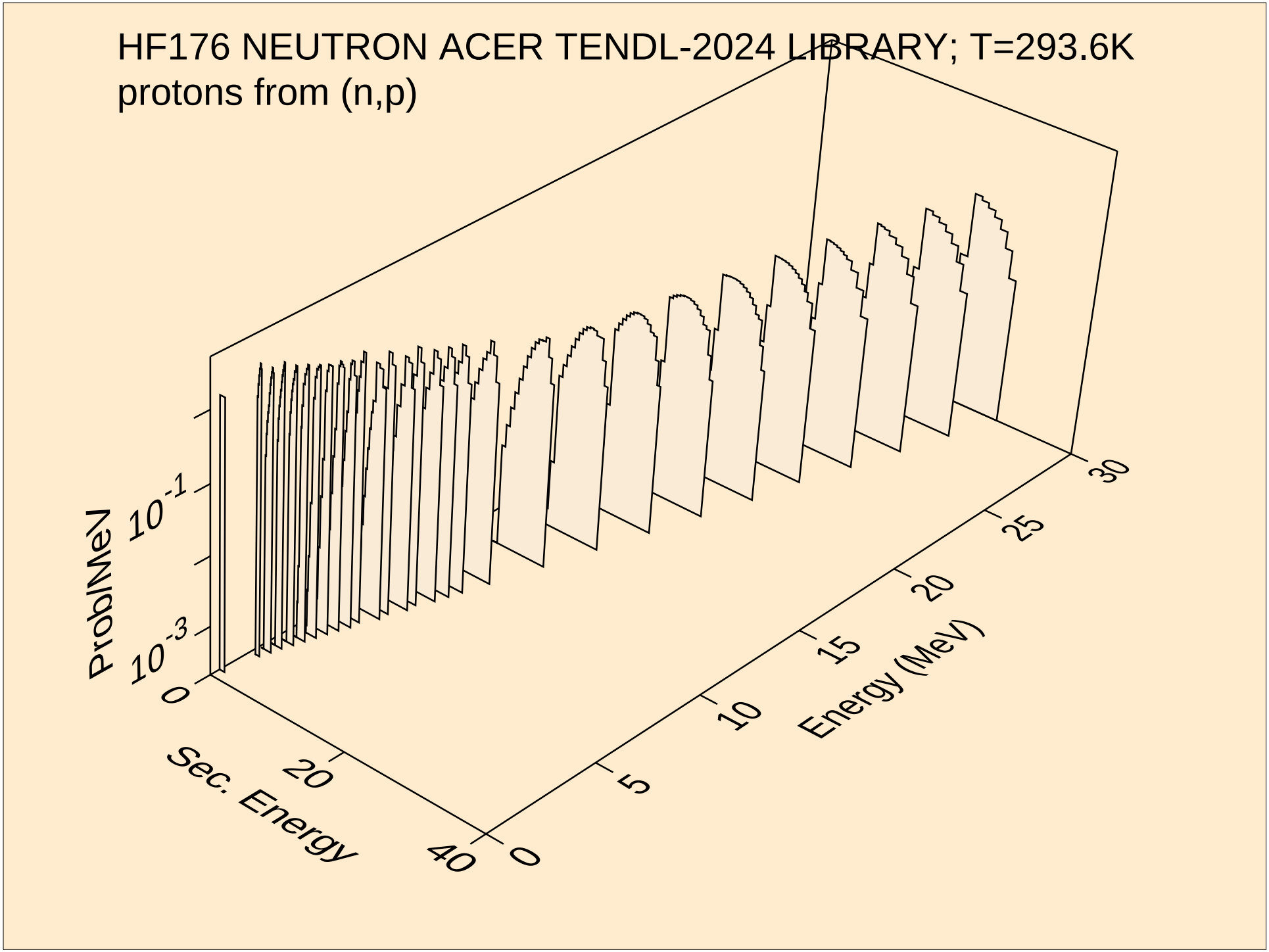

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,n*)p
Prob/MeV
10^1
10^-1
10^-3
0
20
40
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

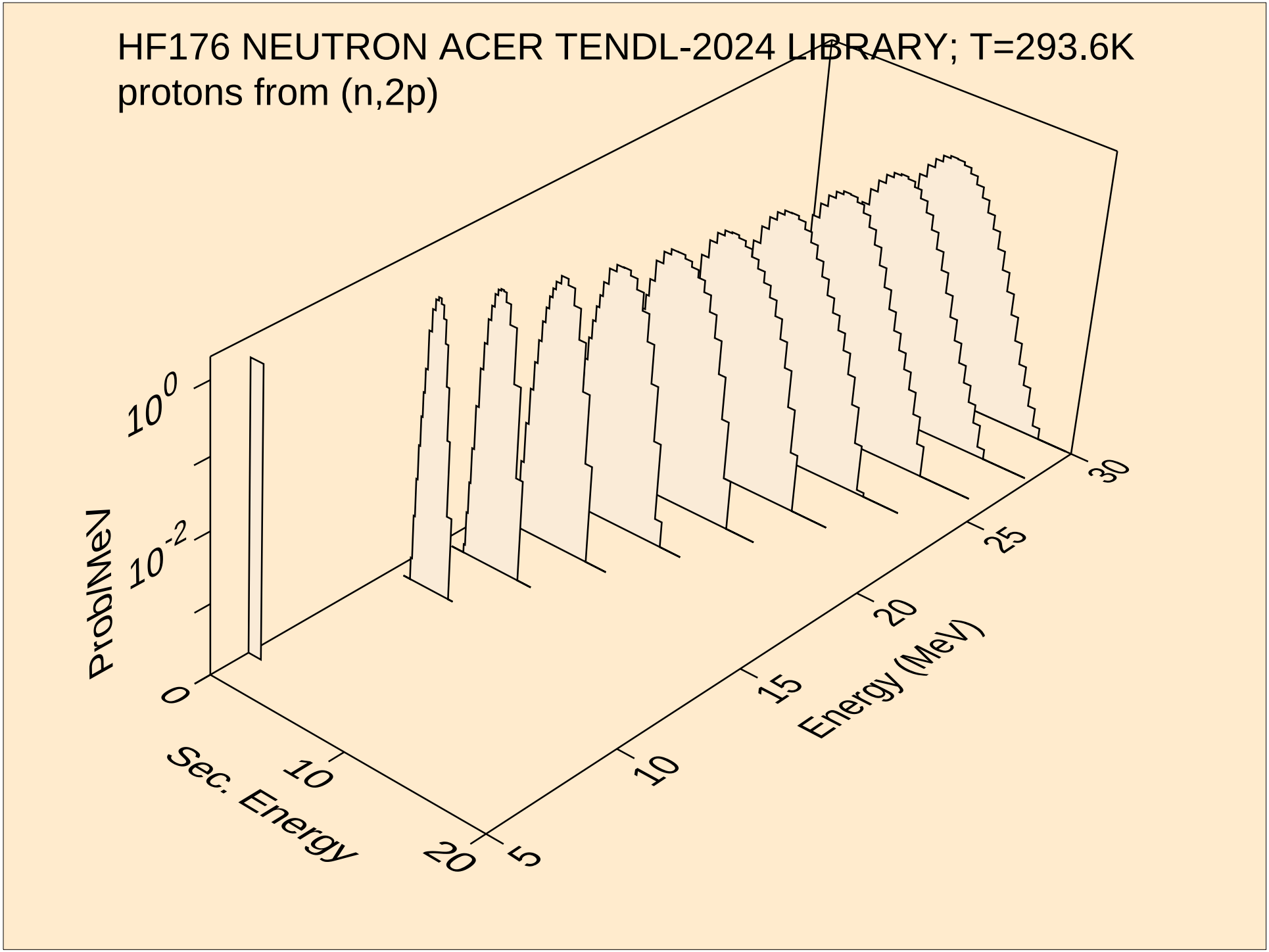

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,2np)
Prob/MeV
10-1
10-3
0
Sec. Energy
10
20
14
16
18
20
22
24
26
28
30
Energy (MeV)

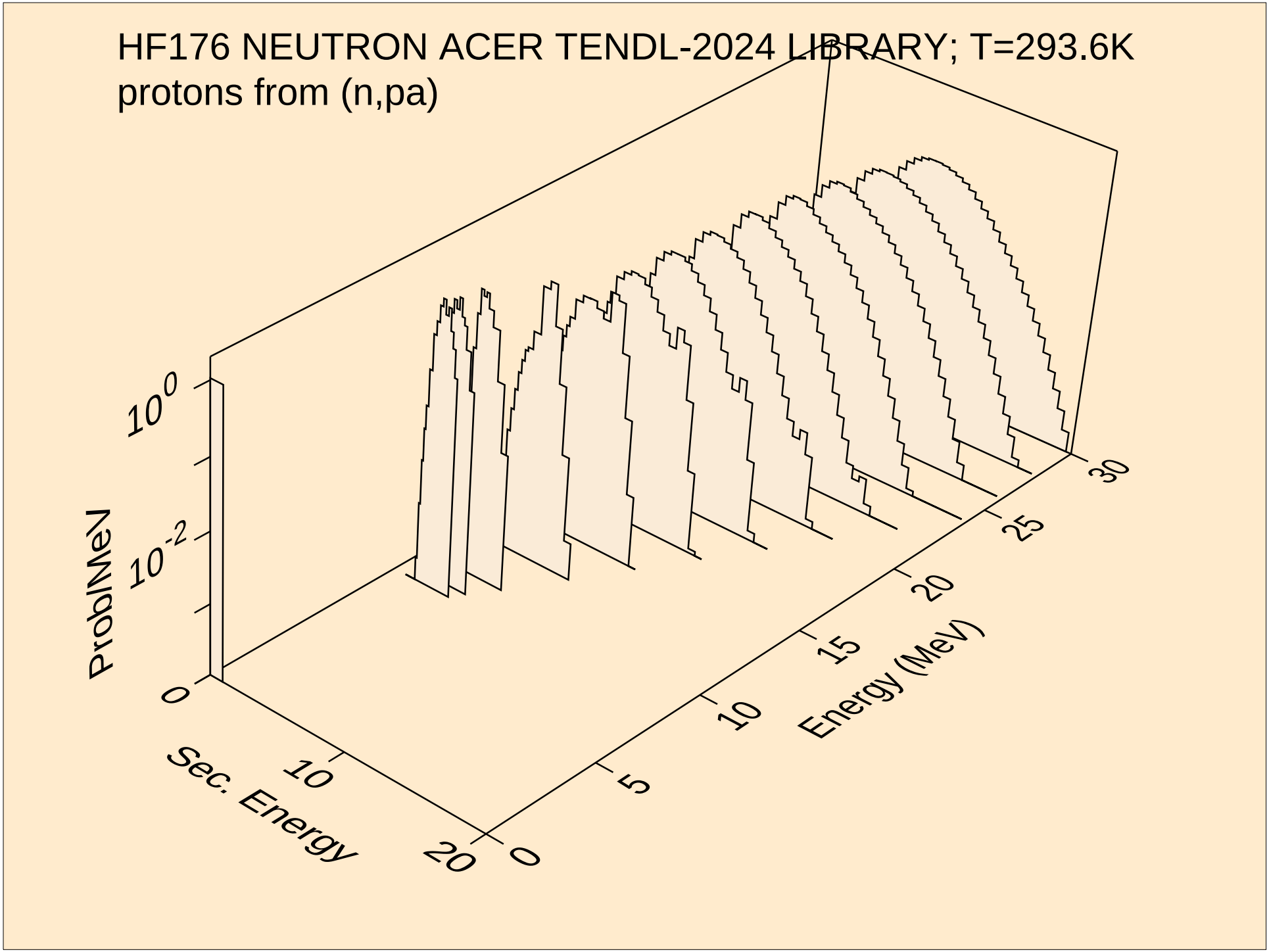

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,3np)
Prob/MeV
10^0
10^-2
0
Sec. Energy
5
10
20
22
24
Energy (MeV)
26
28
30

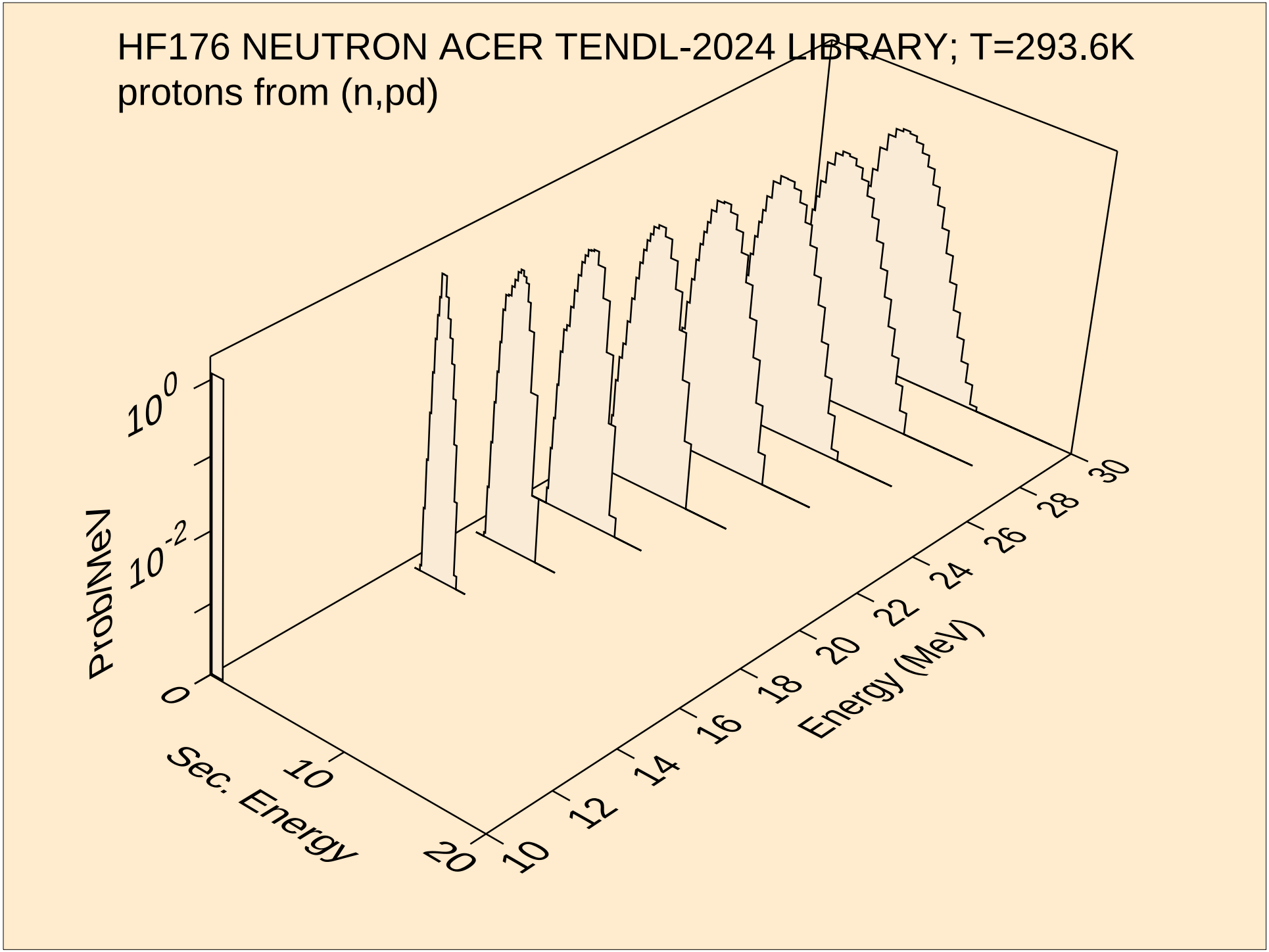

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,n2p)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
Sec. Energy
10
20
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

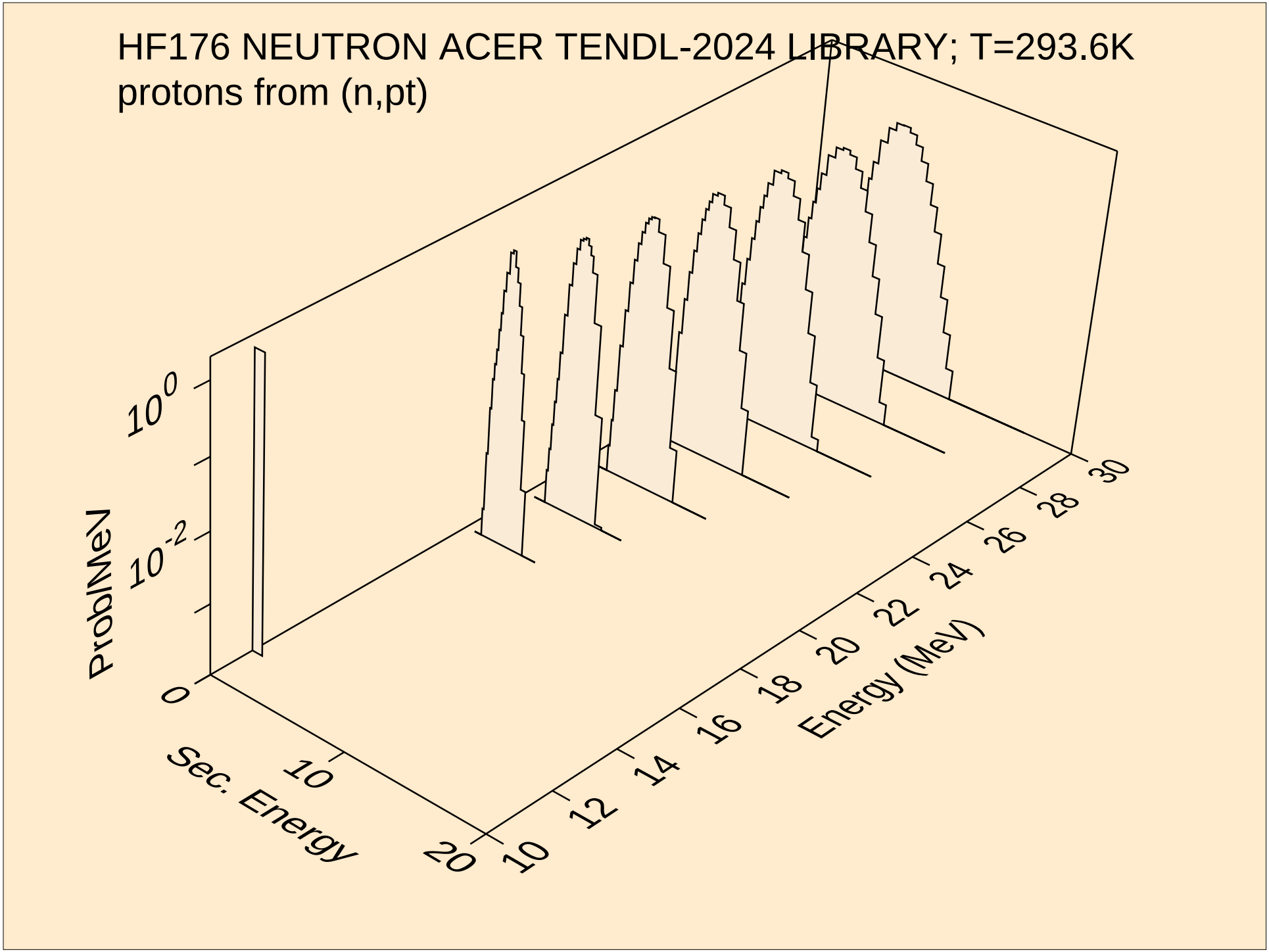

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,npa)
Prob/MeV
10^0
10^-2
10^-4
Sec. Energy
10
20
5
10
15
20
25
30
Energy (MeV)

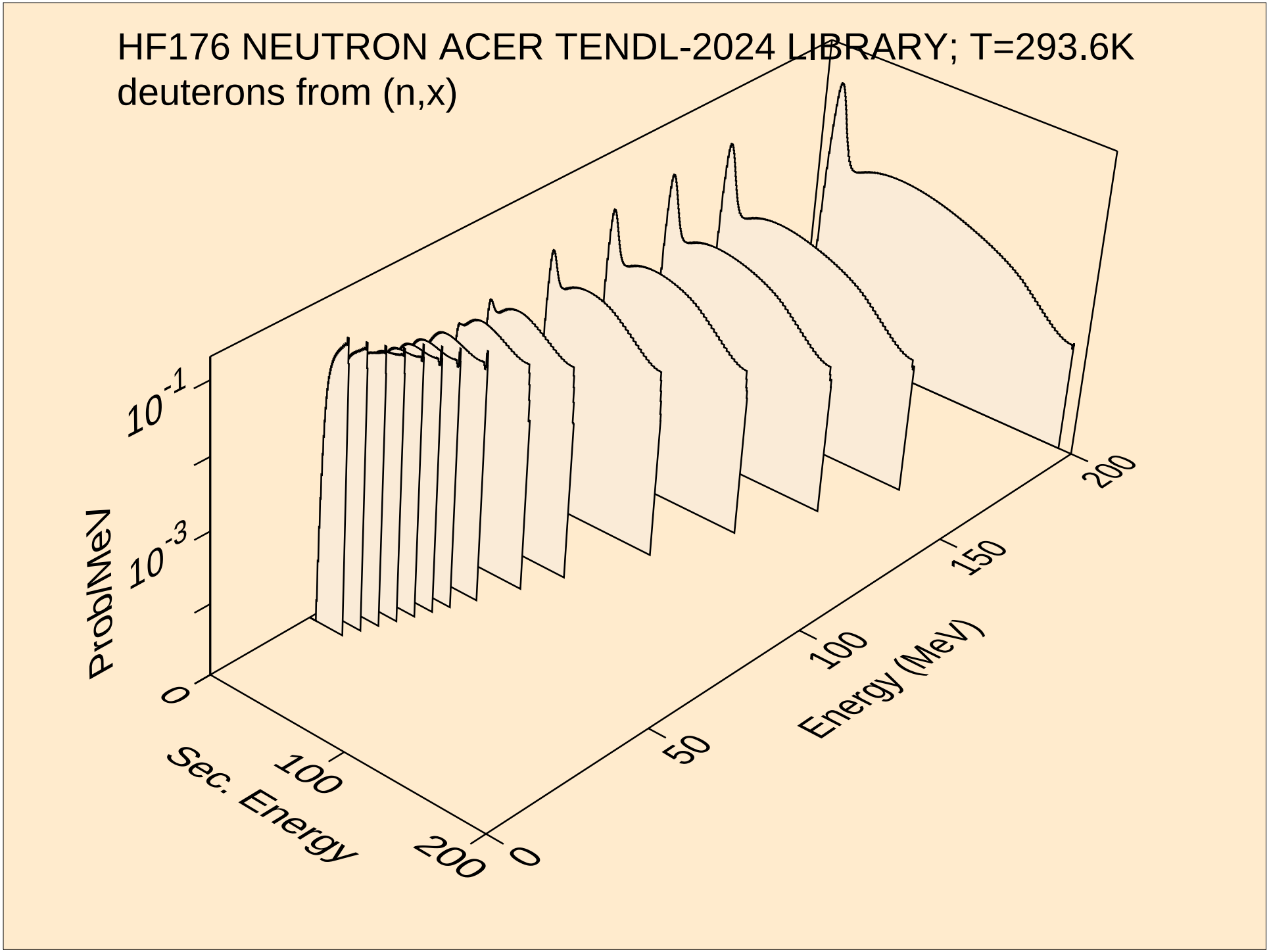

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,p)
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

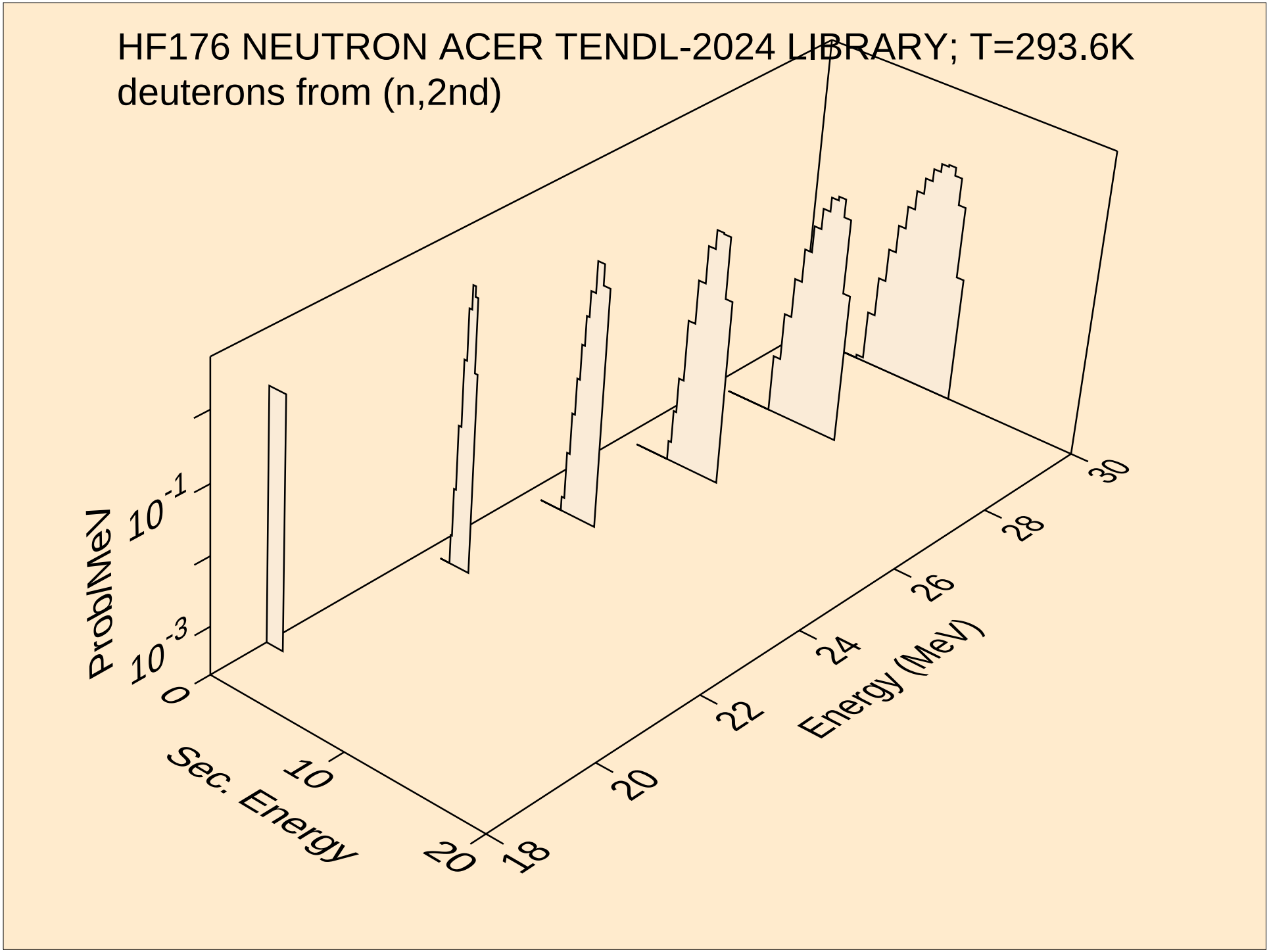

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,2p)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
5
10
15
20
25
30
Energy (MeV)

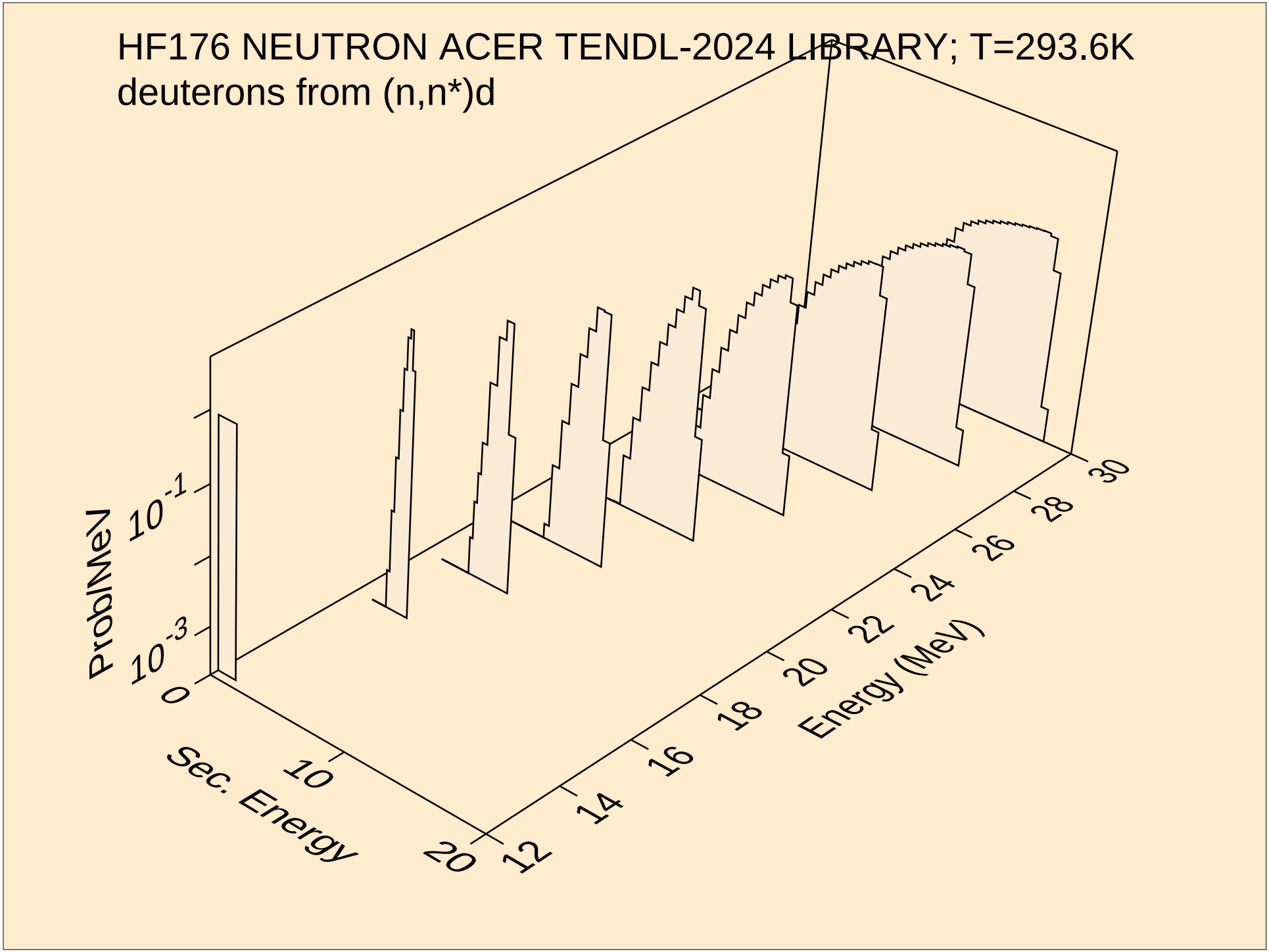

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,pa)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
0
5
10
15
20
25
30
Energy (MeV)

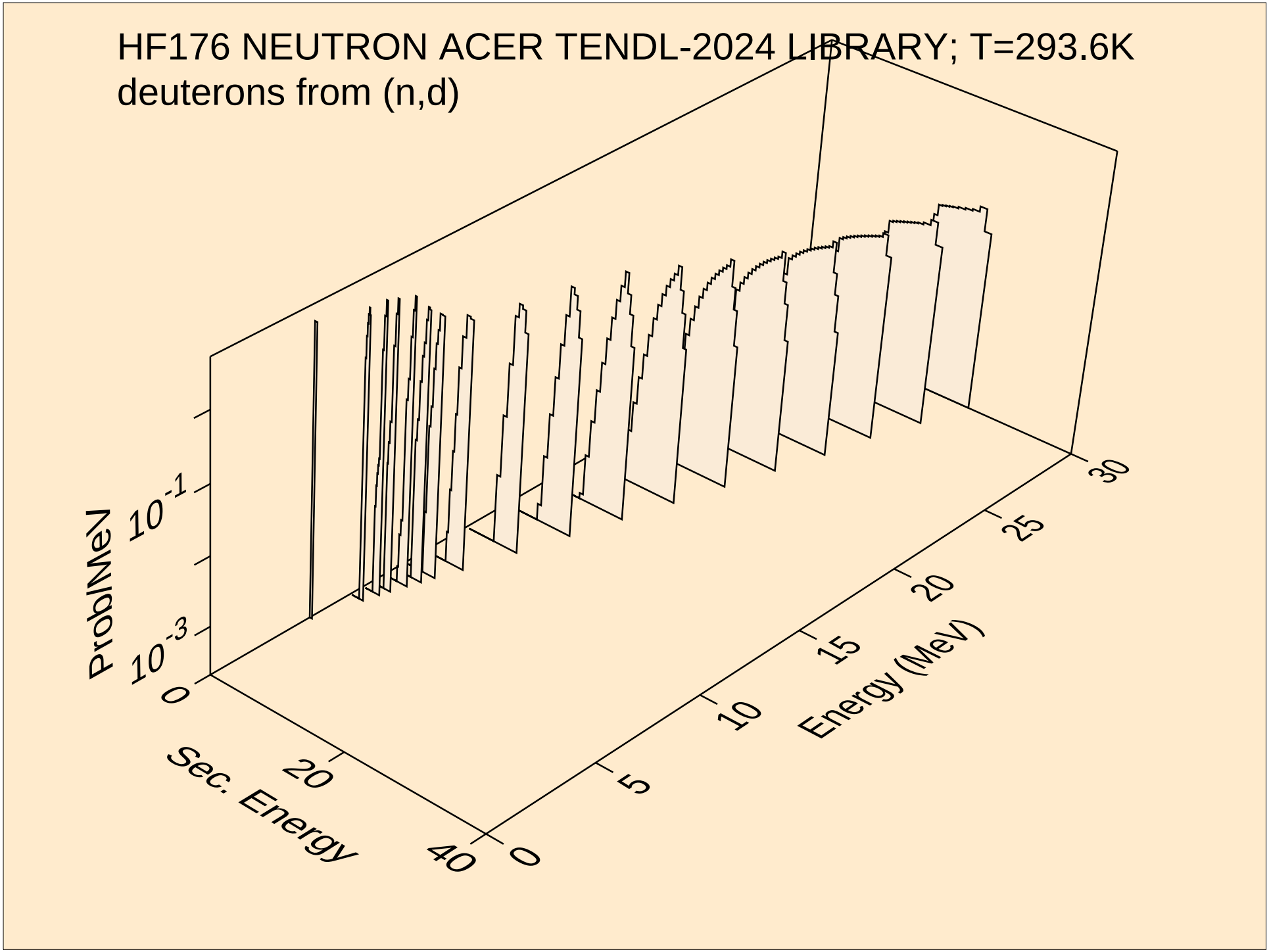

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,pd)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
Energy (MeV)
10
12
14
16
18
20
22
24
26
28
30

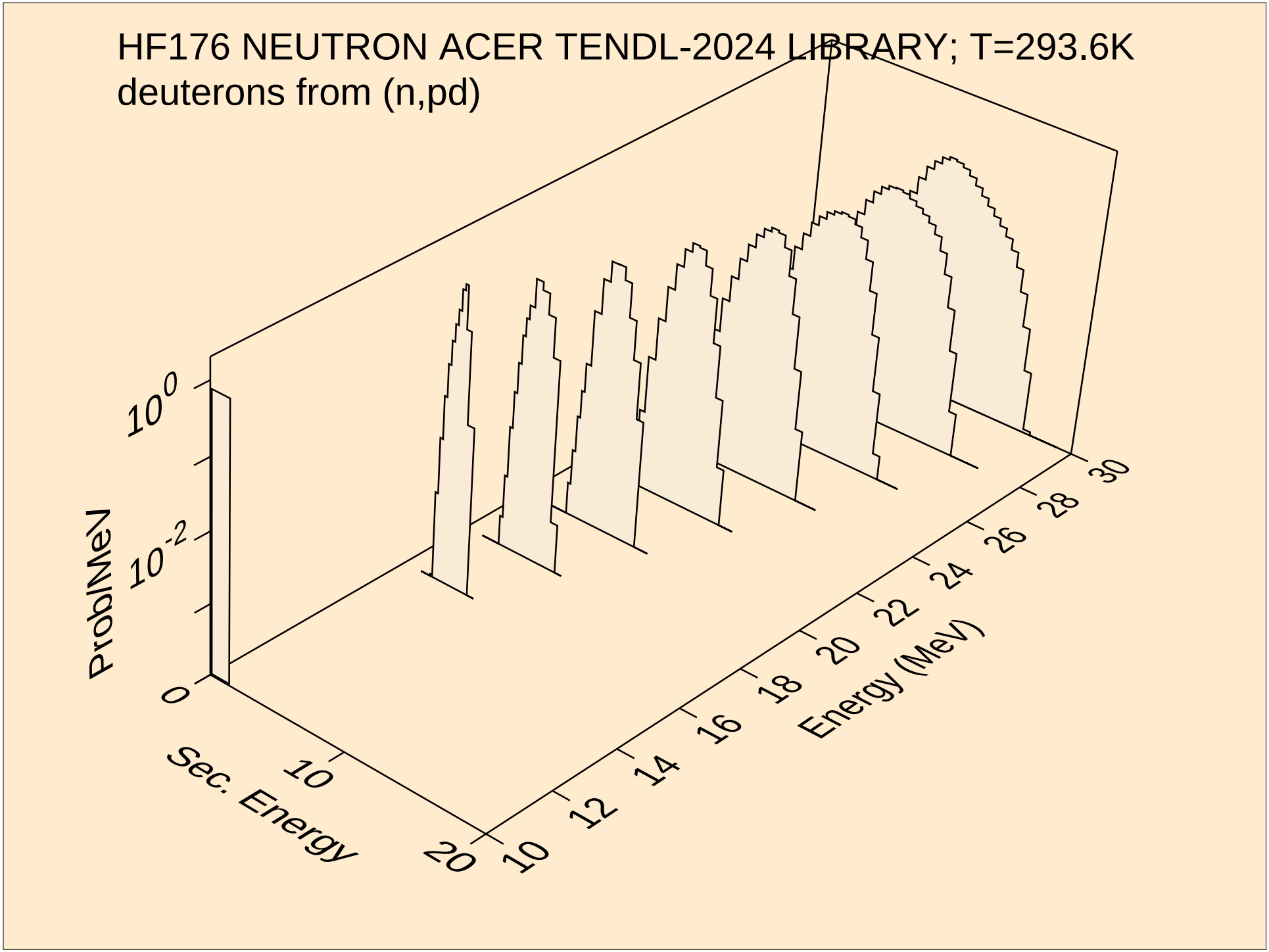

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
protons from (n,pt)
Prob/MeV
10^{0}
10^{-2}
0
Sec. Energy
10
20
Energy (MeV)
10
12
14
16
18
20
22
24
26
28
30

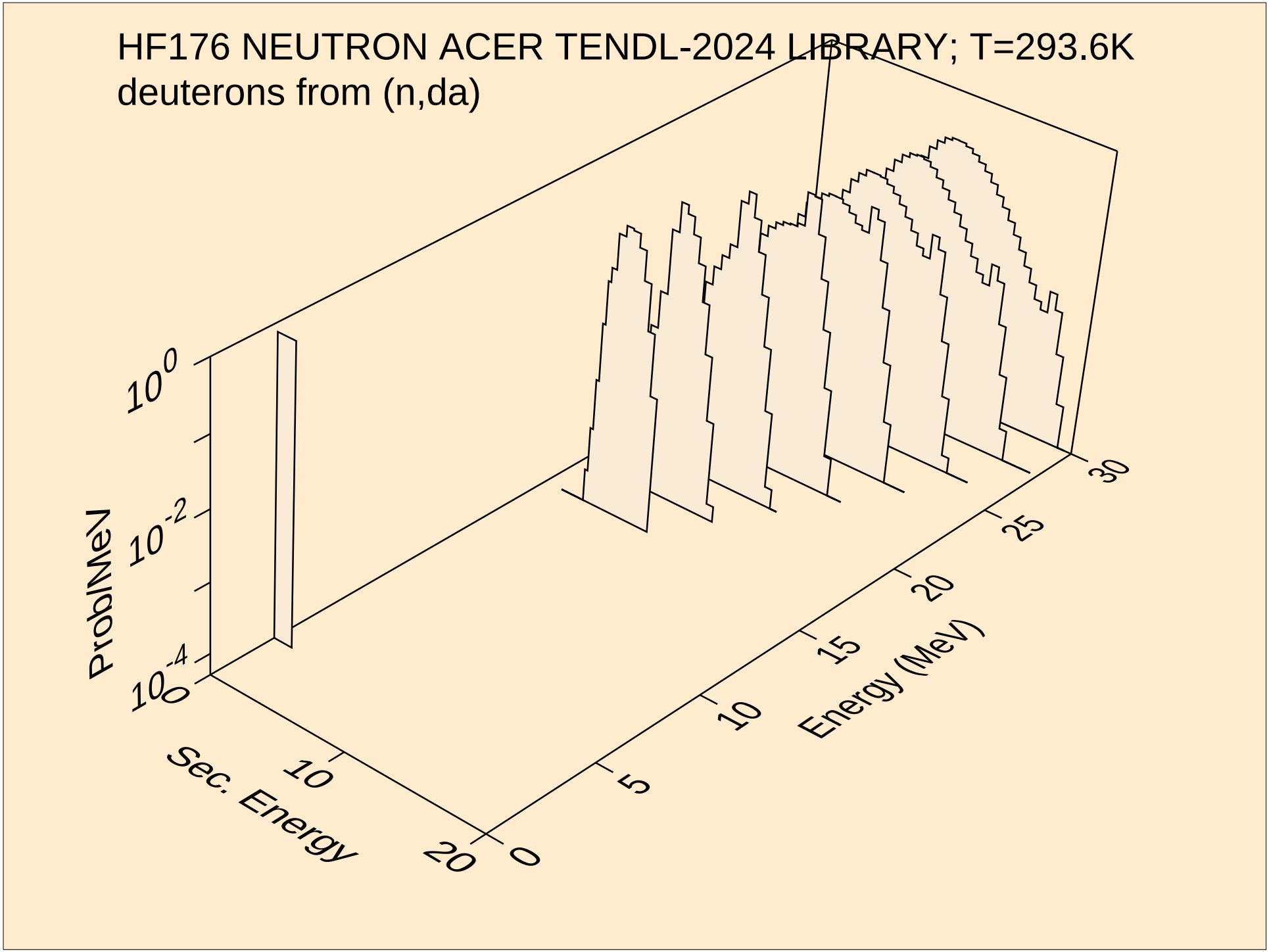

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
deuterons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

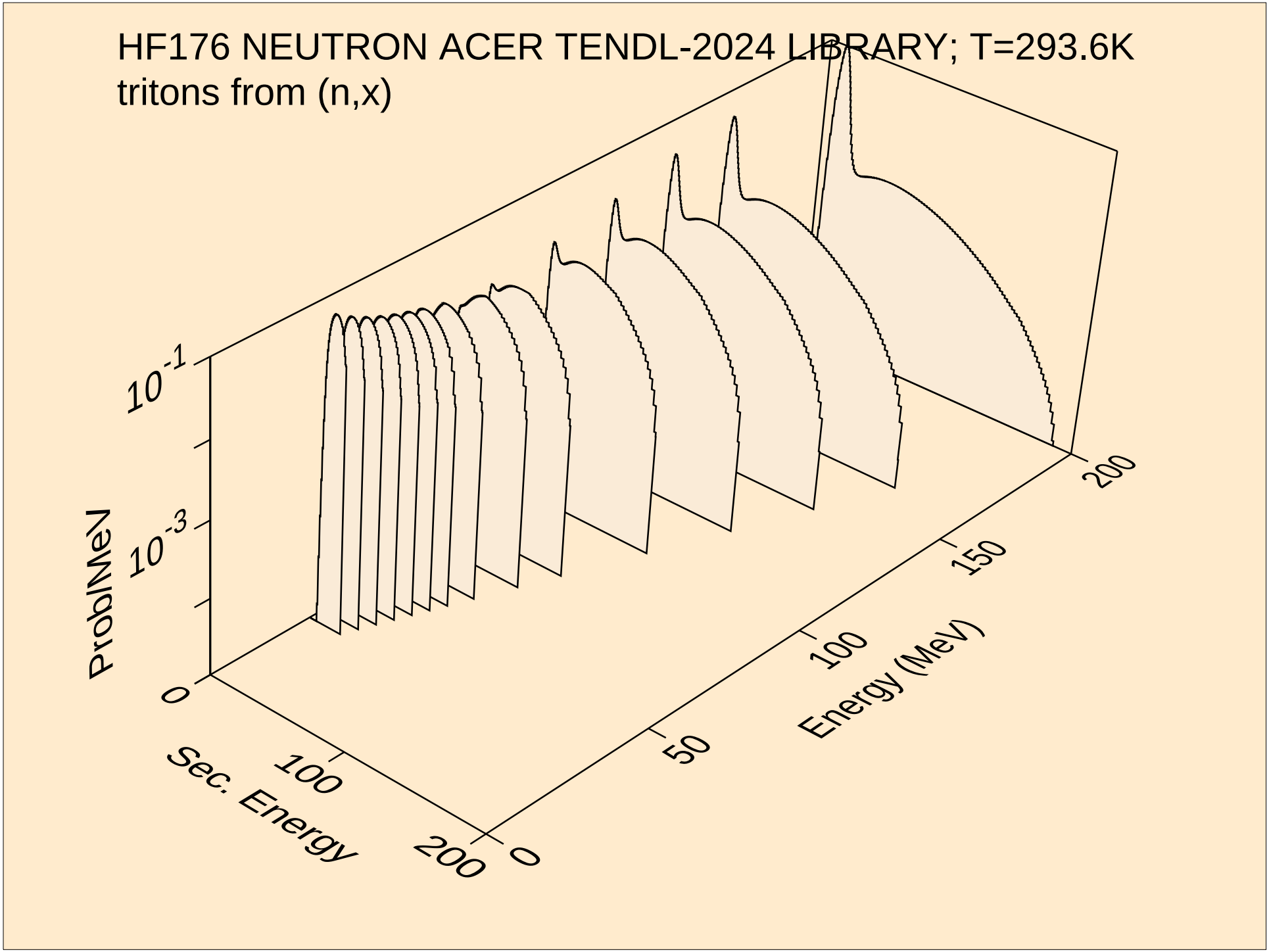

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
deuterons from (n,2nd)
Prob/MeV
10-1
10-3
0
Sec. Energy
10
20
18
20
22
24
26
28
30
Energy (MeV)

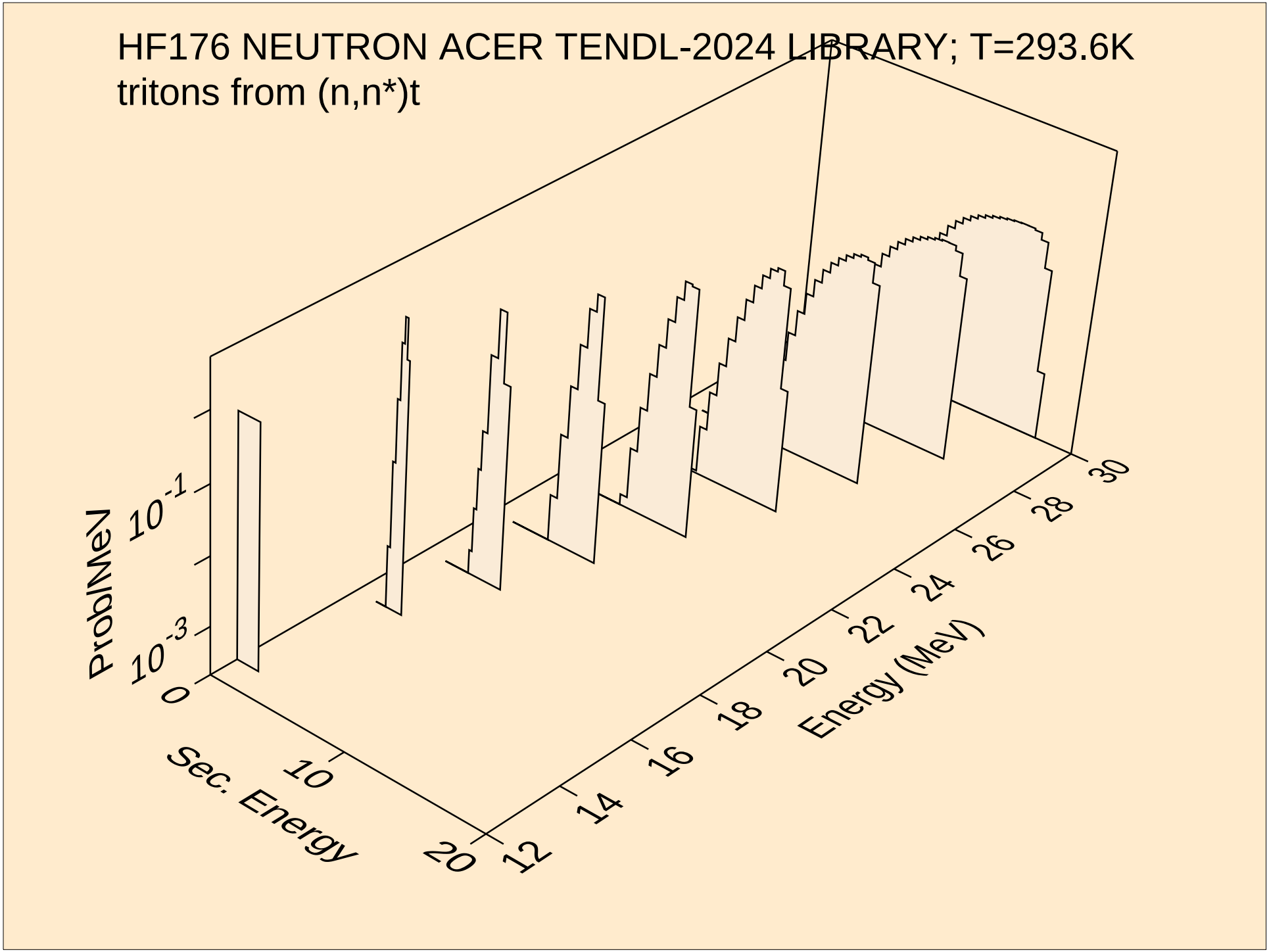

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
deuterons from (n,n*)d
Prob/MeV
10^-1
10^-3
0
Sec. Energy
10
20
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

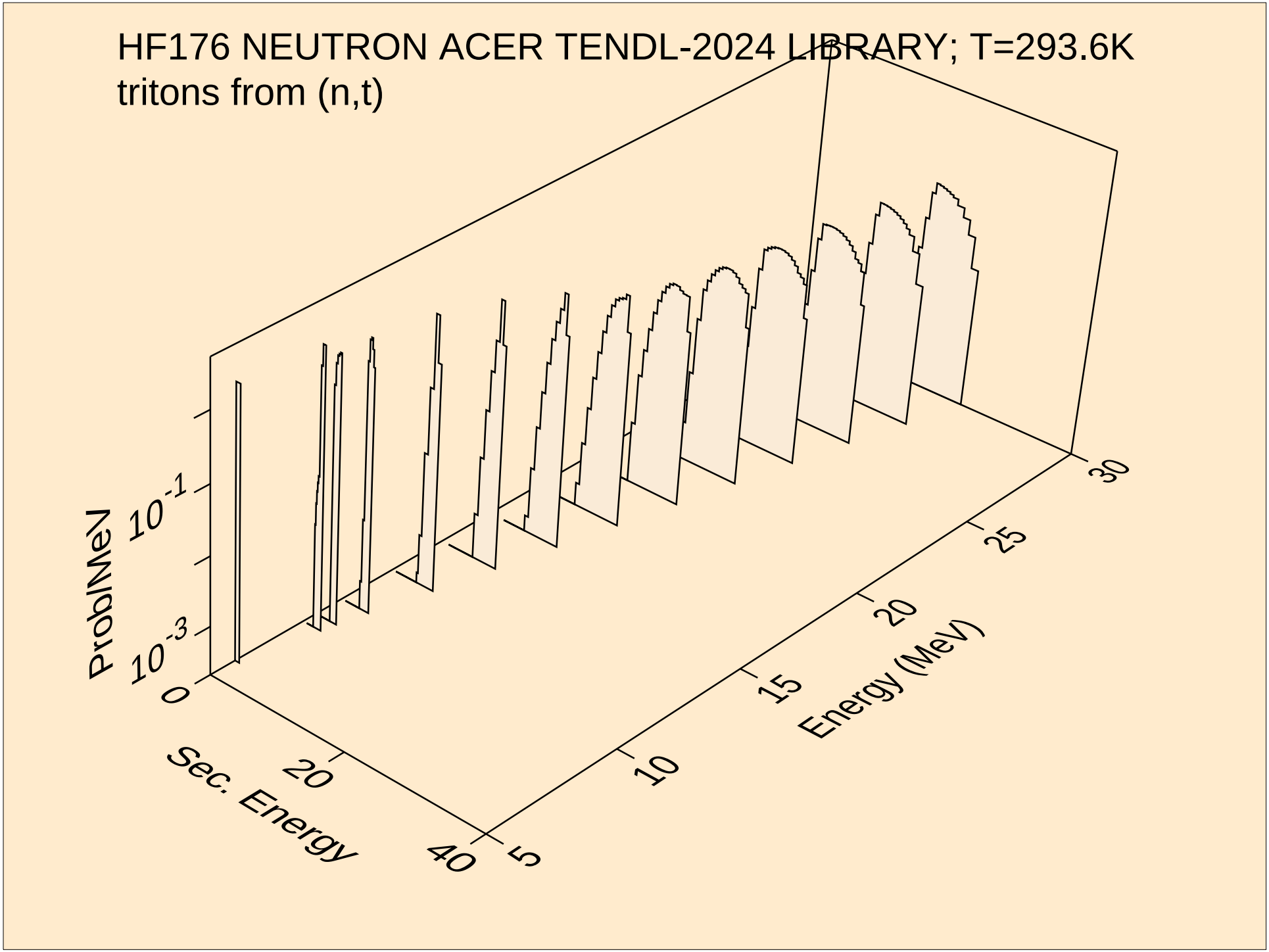

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
deuterons from (n,d)
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

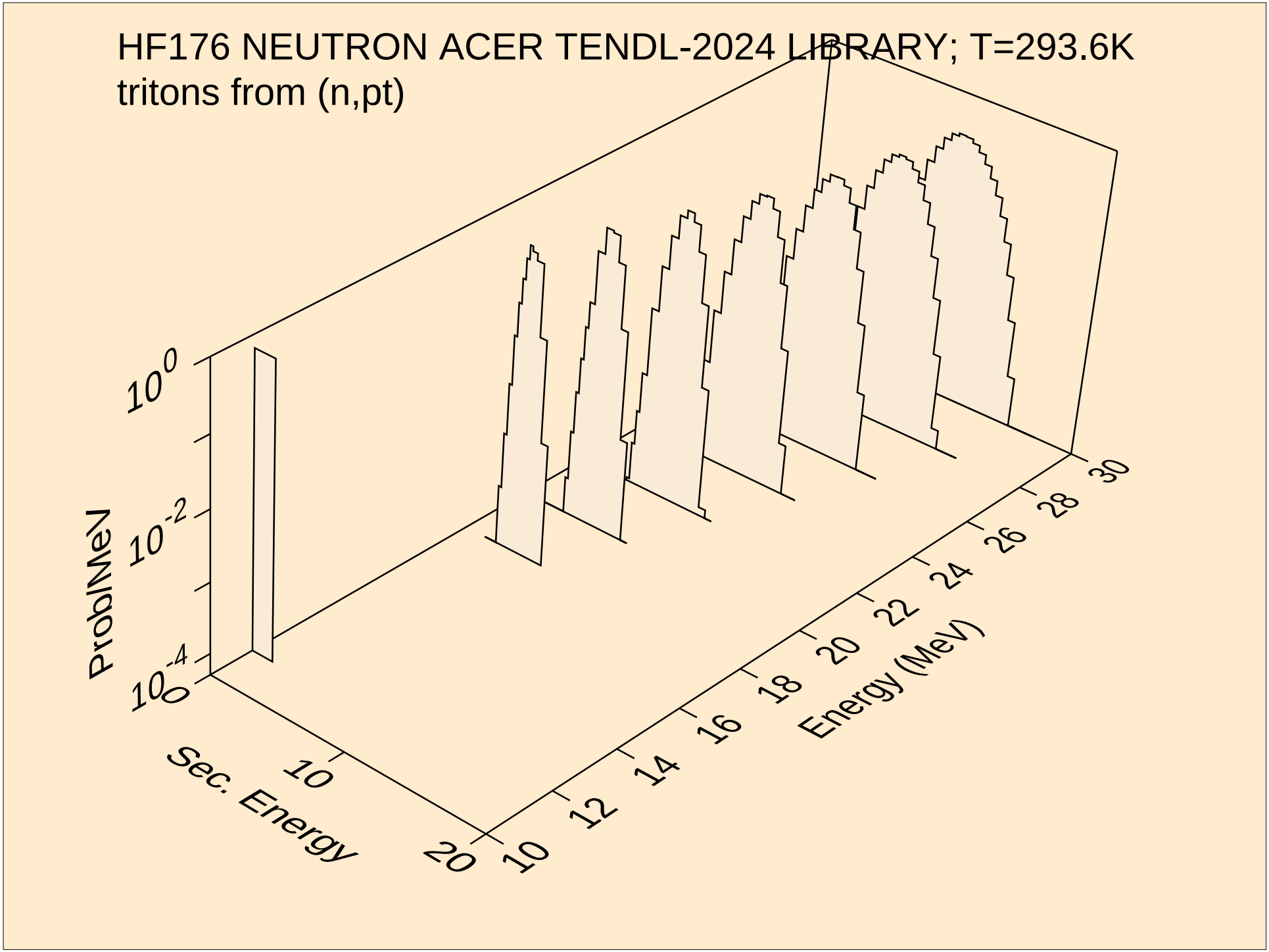

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
deuterons from (n,pd)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
Energy (MeV)
10
12
14
16
18
20
22
24
26
28
30

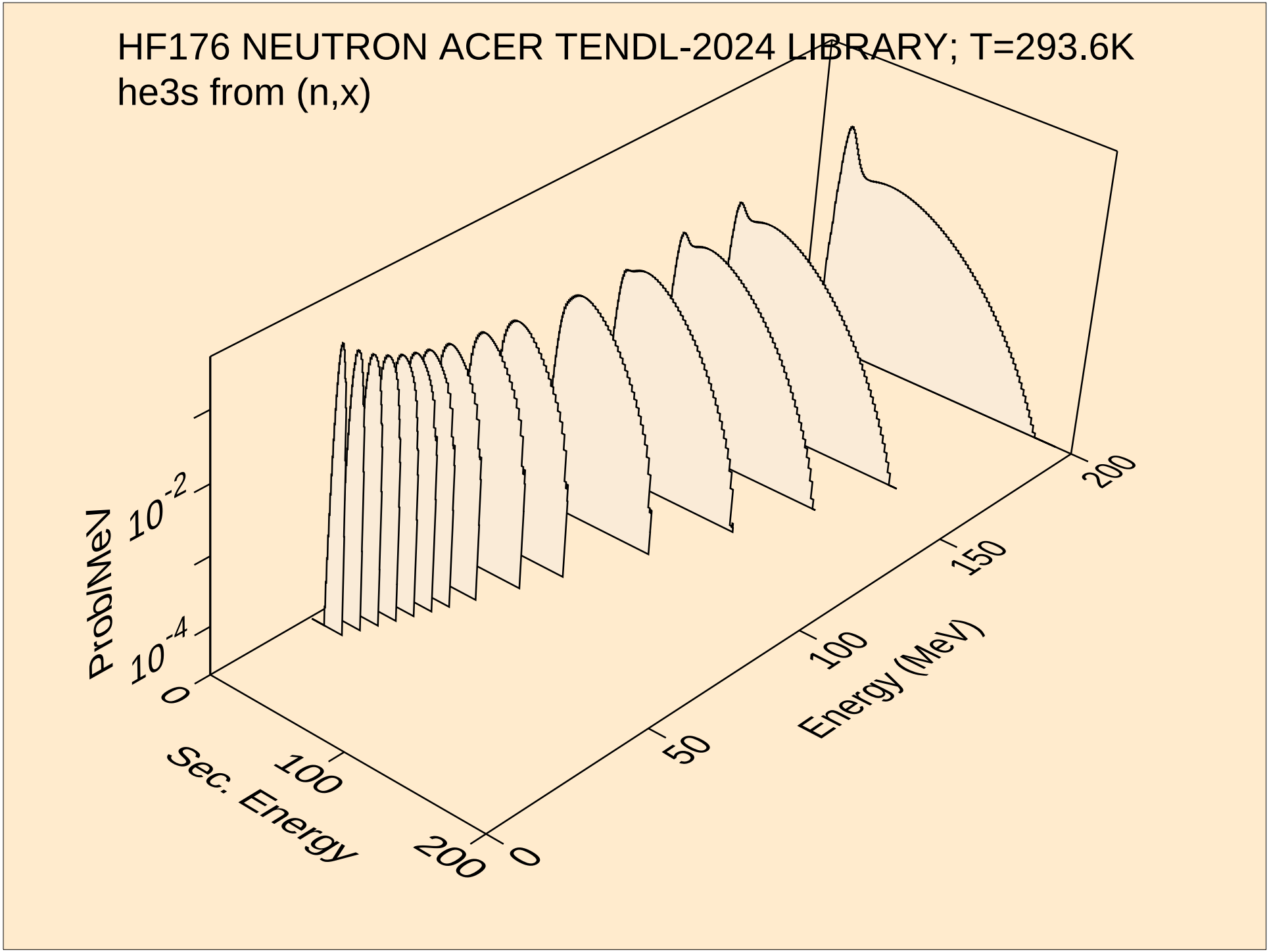

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
deuterons from (n,da)
Prob/MeV
10^0
10^-2
10^-4
0
10
20
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

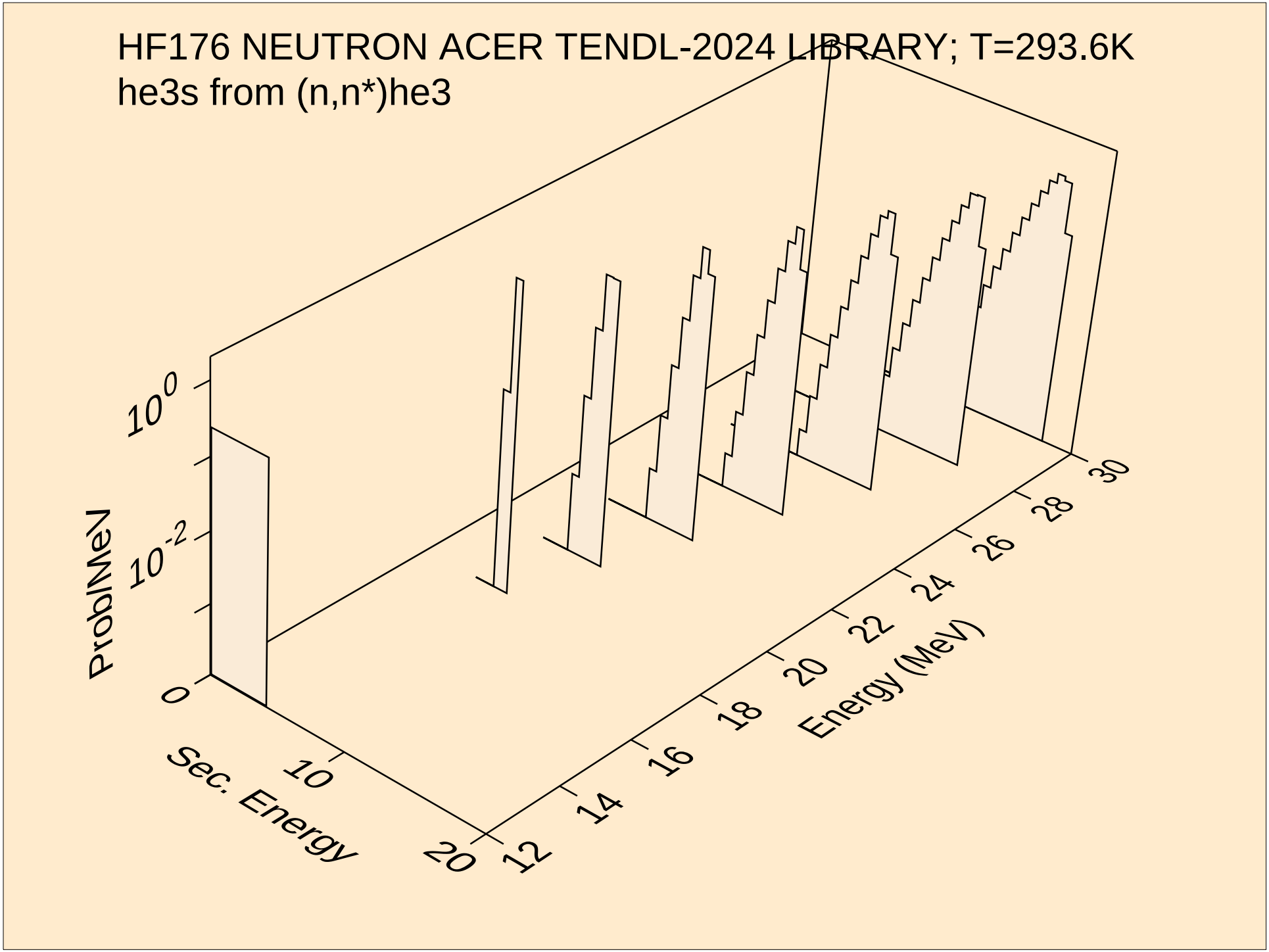

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
tritons from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

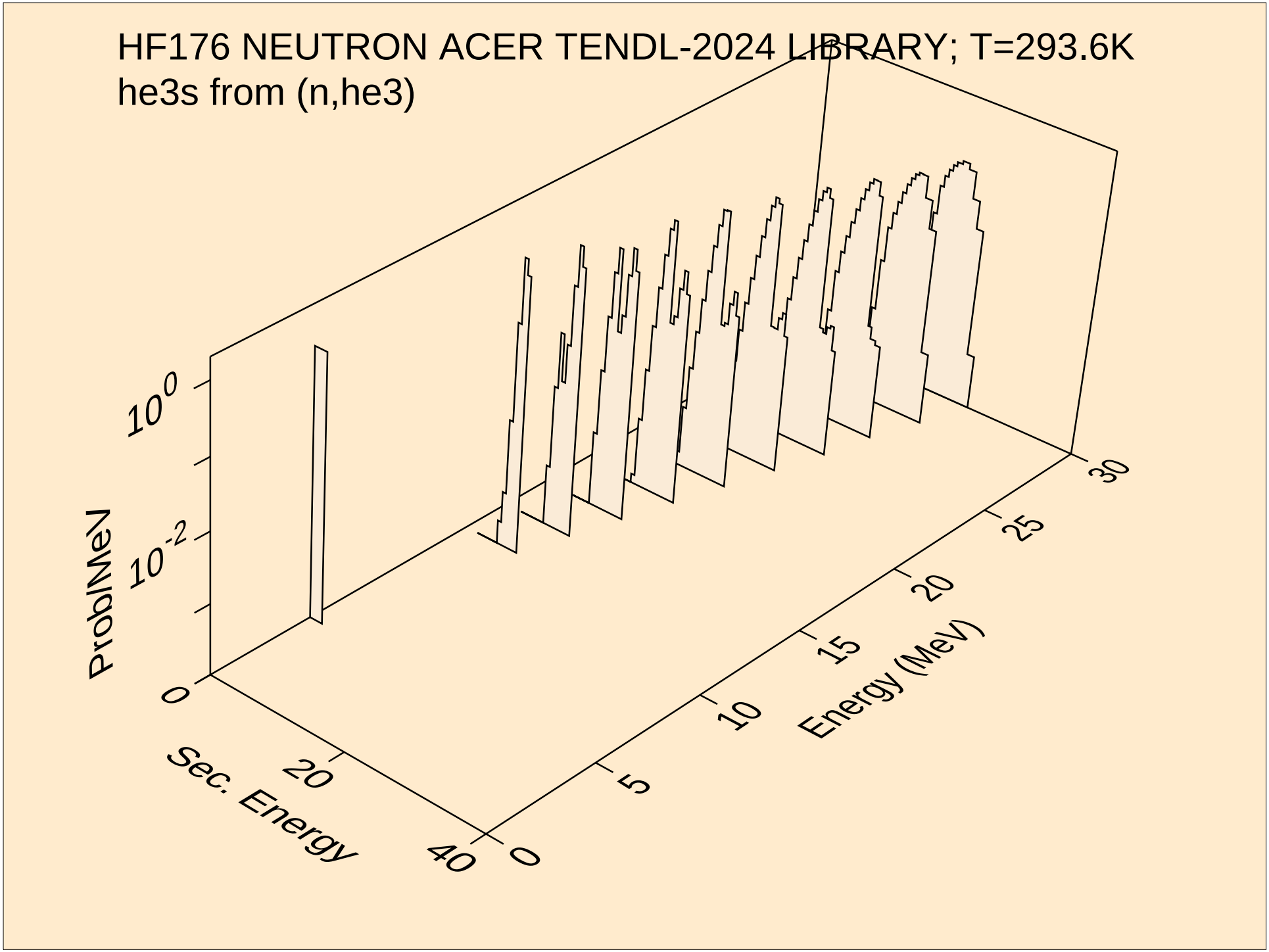

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
tritons from (n,n*)t
Prob/MeV
10-1
10-3
0
Sec. Energy
10
20
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

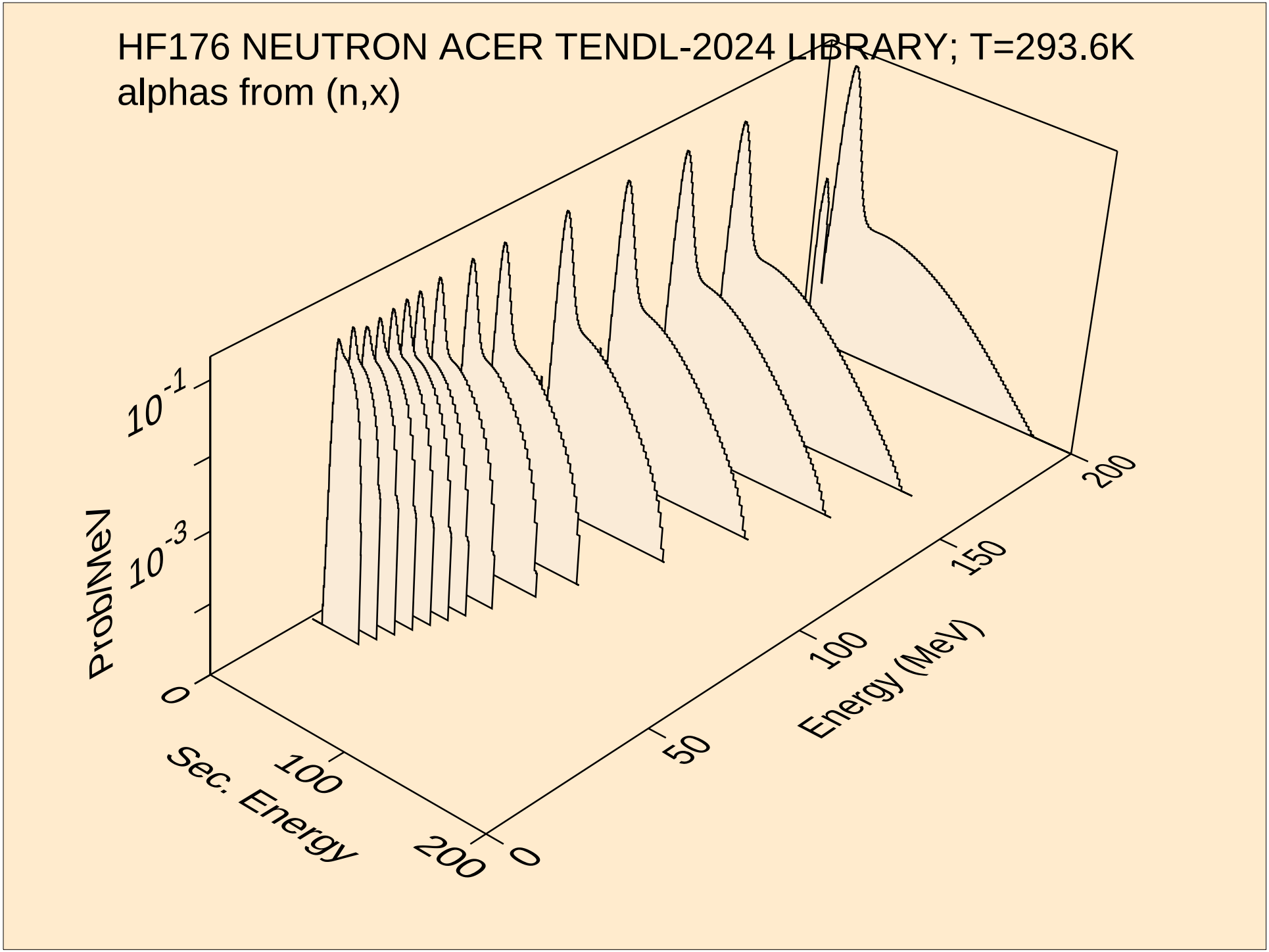

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
tritons from (n,t)
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
5
10
15
Energy (MeV)
20
25
30

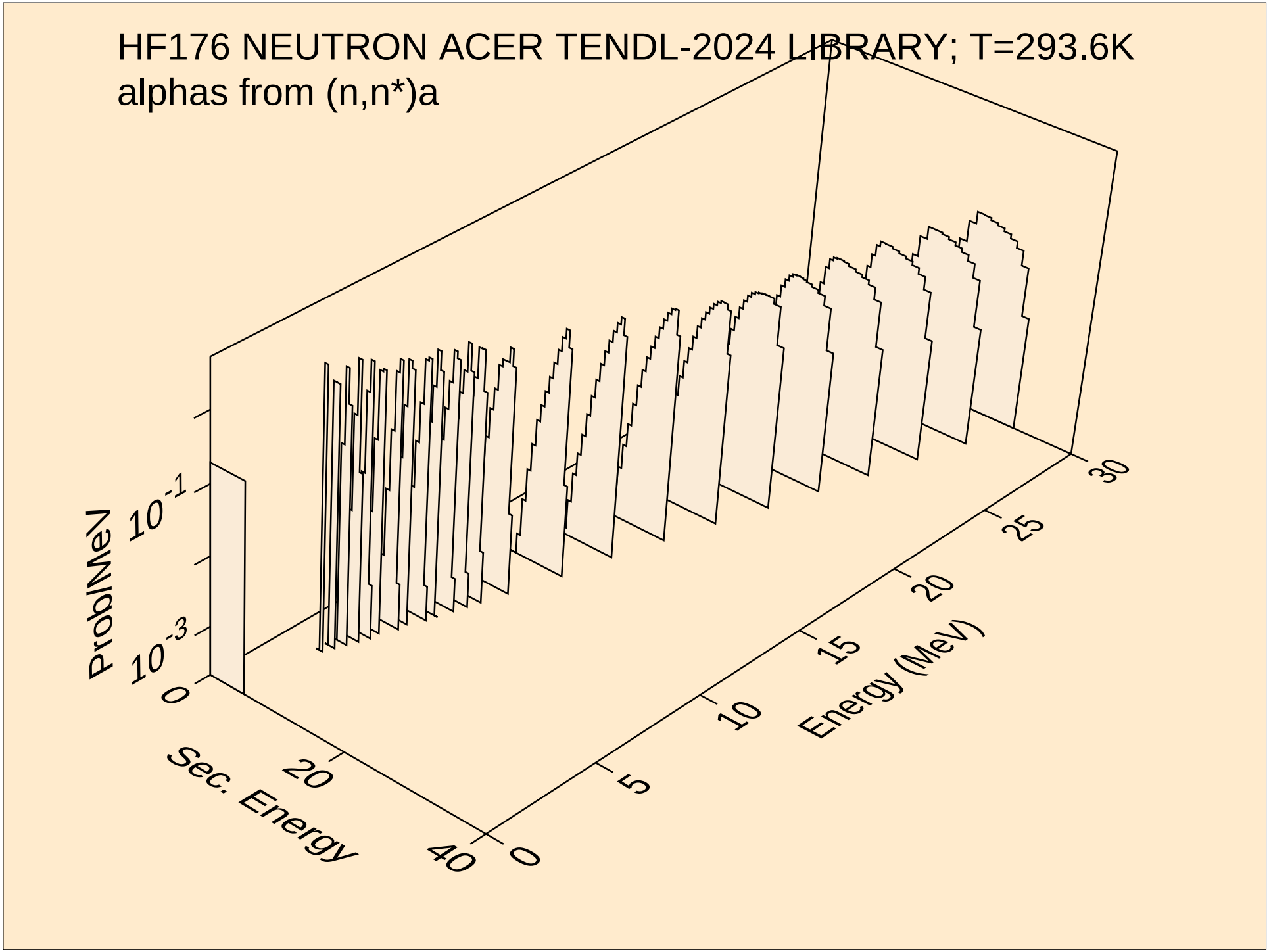

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
tritons from (n,pt)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
Sec. Energy
10
20
Energy (MeV)
10
12
14
16
18
20
22
24
26
28
30

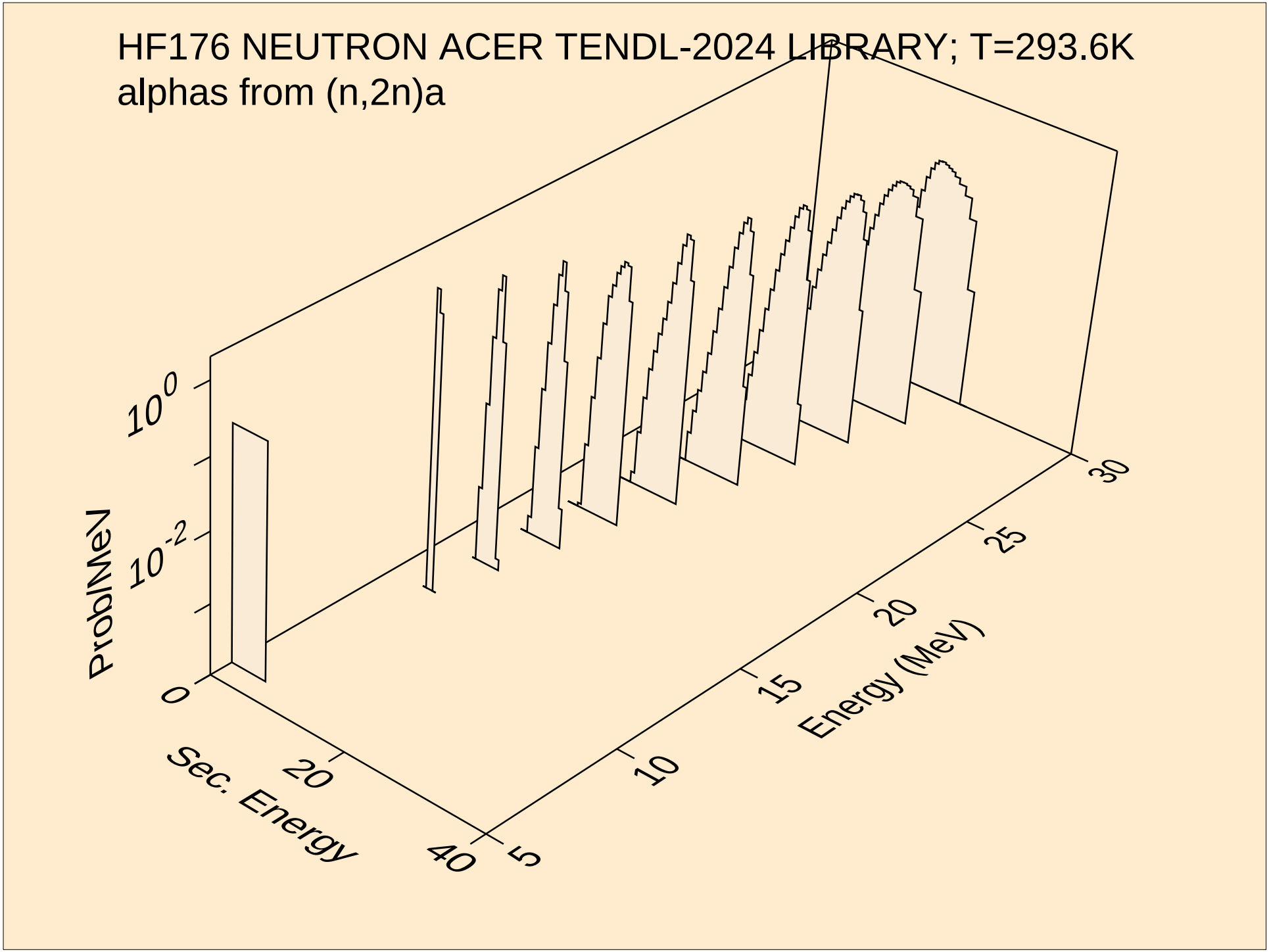

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
he3s from (n,x)
Prob/MeV
10-2
10-4
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

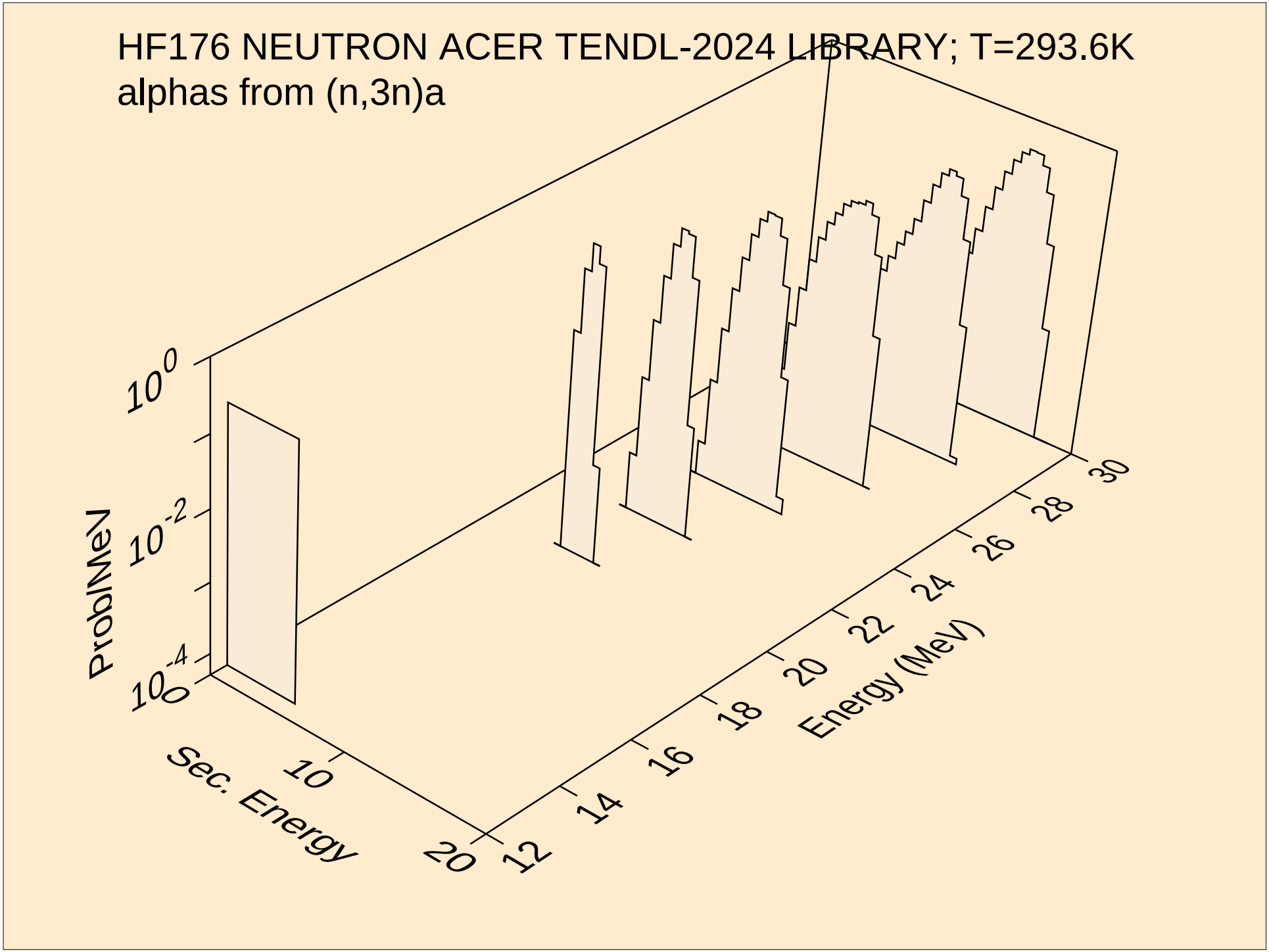

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
he3s from (n,n*)he3
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

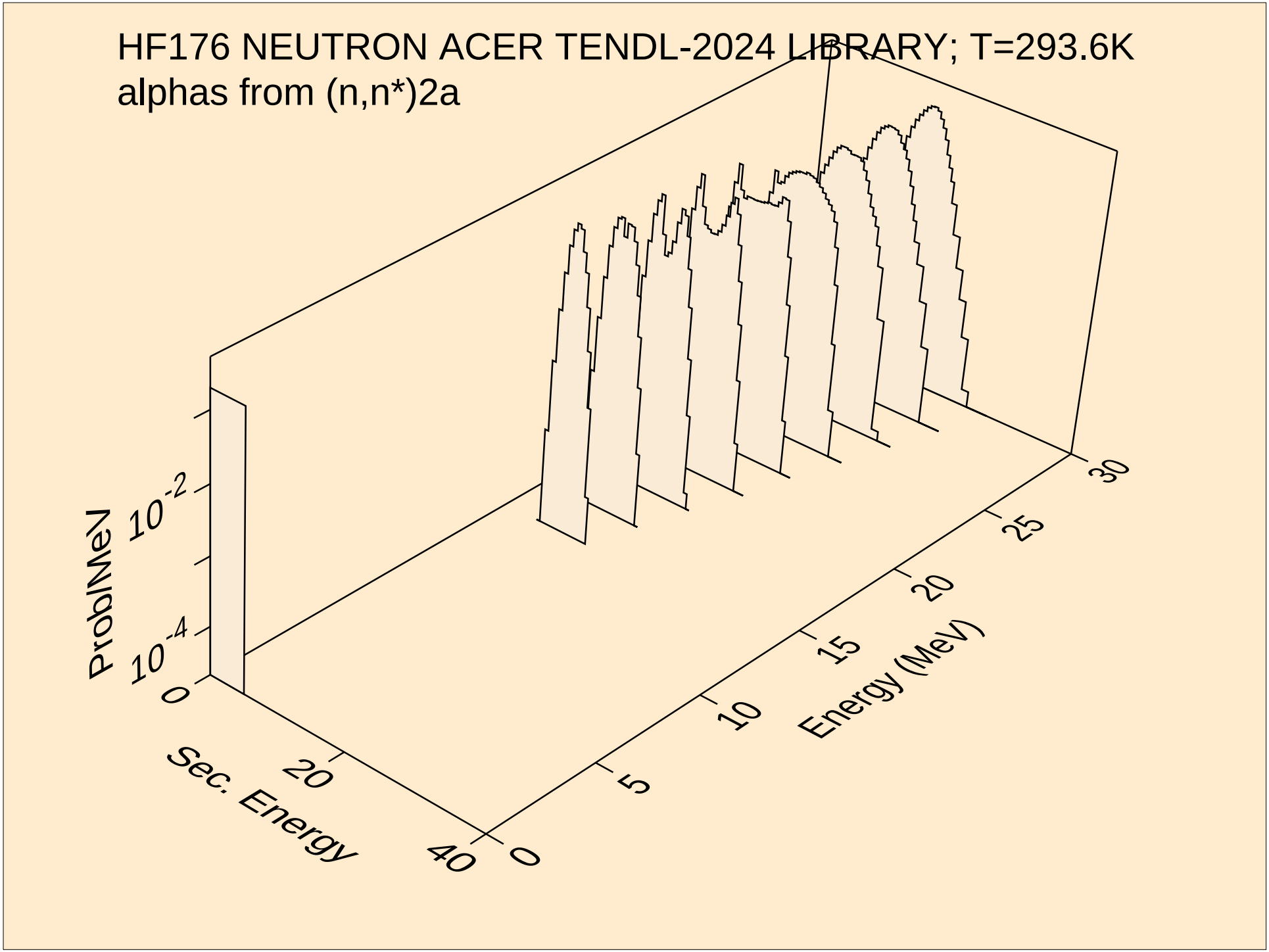

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
he3s from (n,he3)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

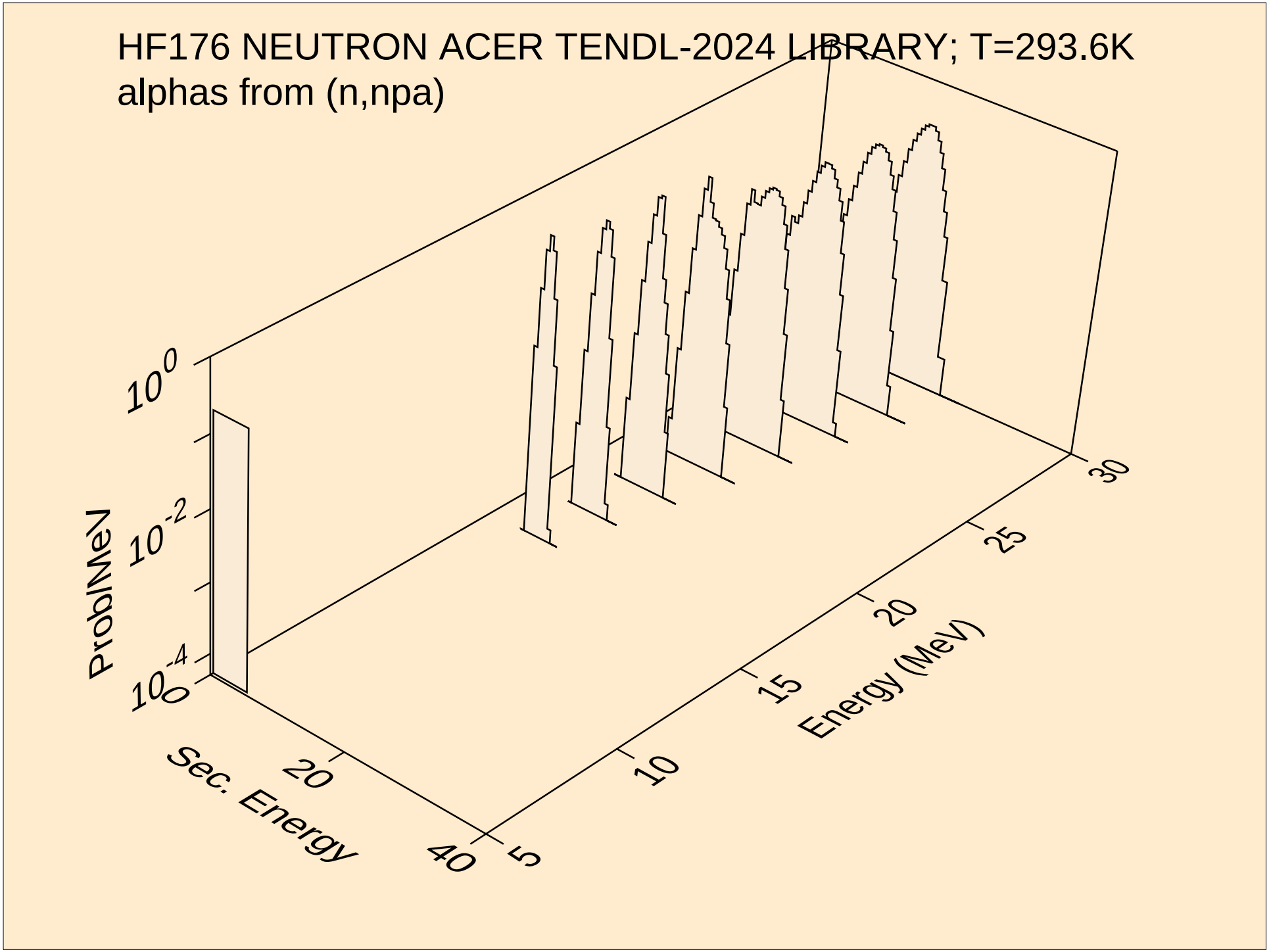

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

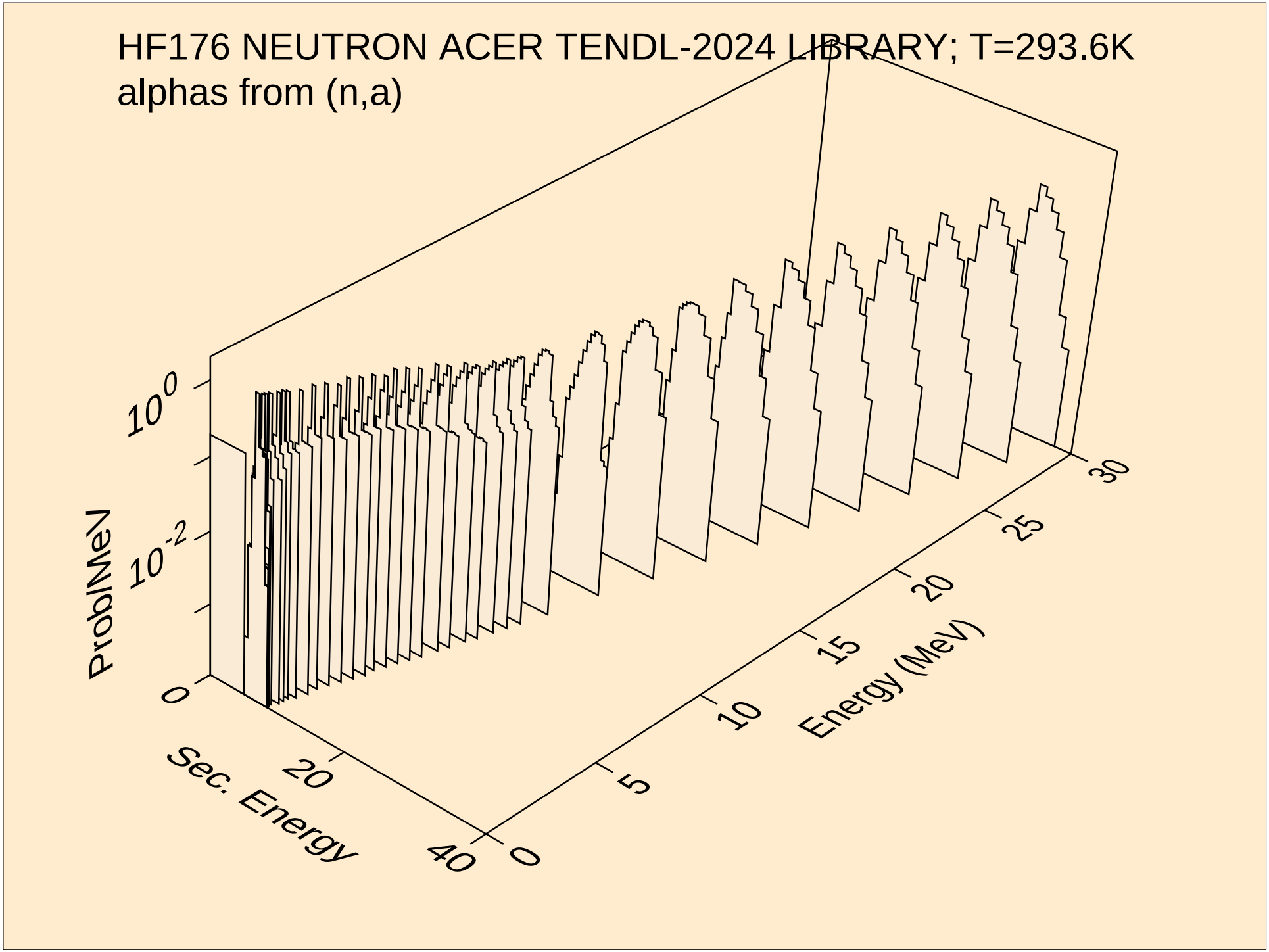

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,n*)a
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

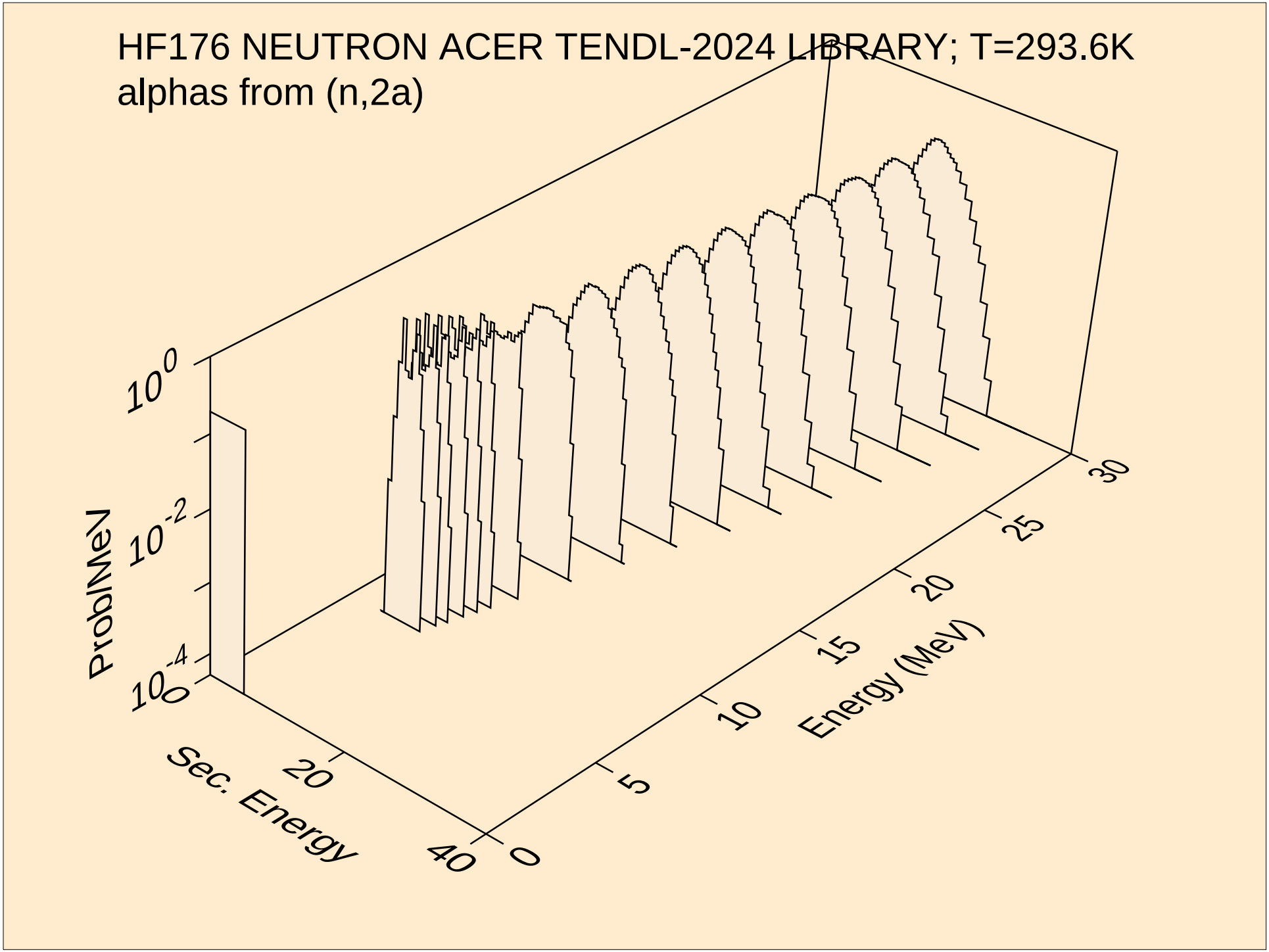

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,2n)a
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
5
10
15
Energy (MeV)
20
25
30

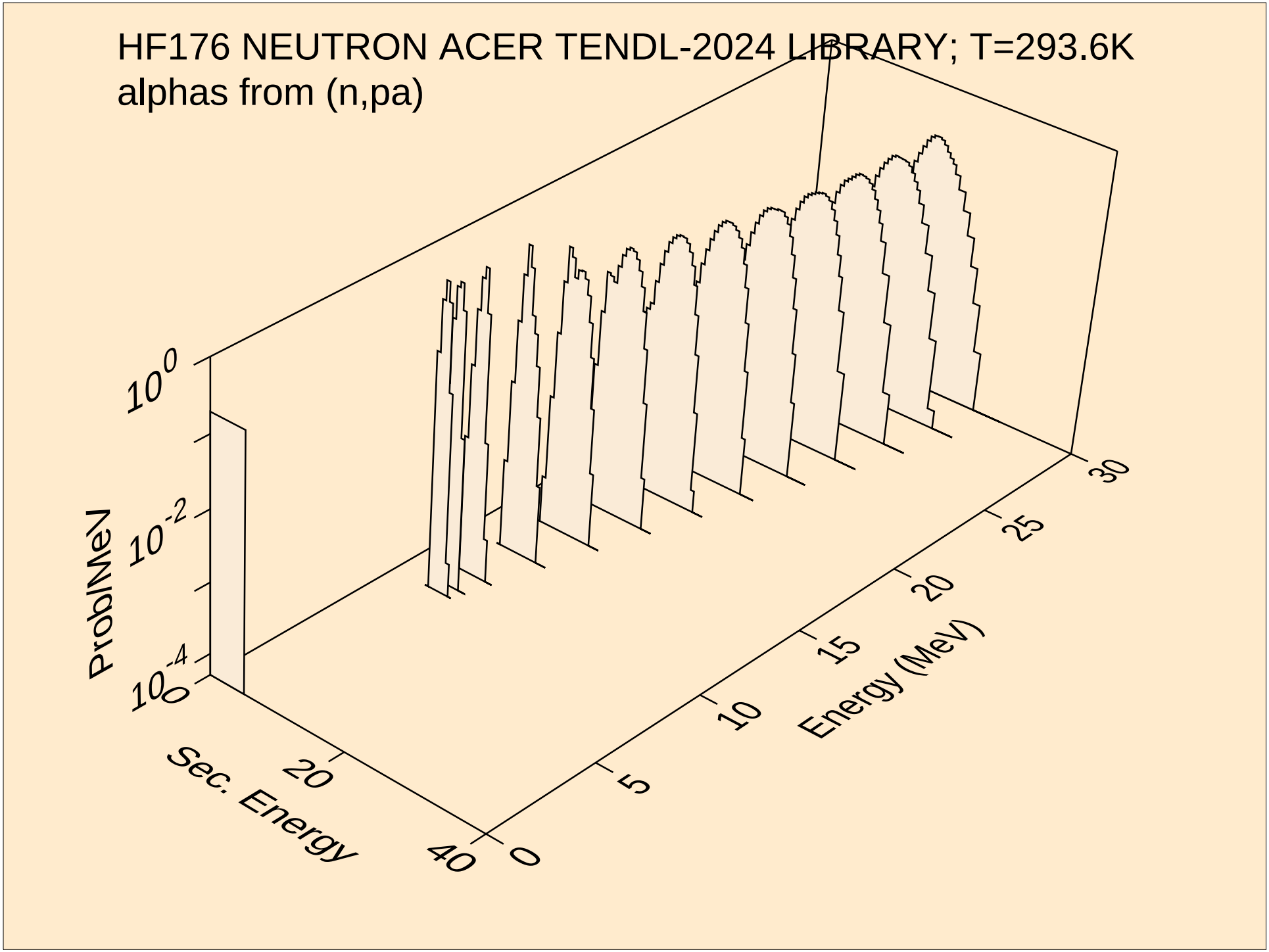

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,3n)a
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
Sec. Energy
10
20
12
14
16
18
20
22
24
26
28
30
Energy (MeV)

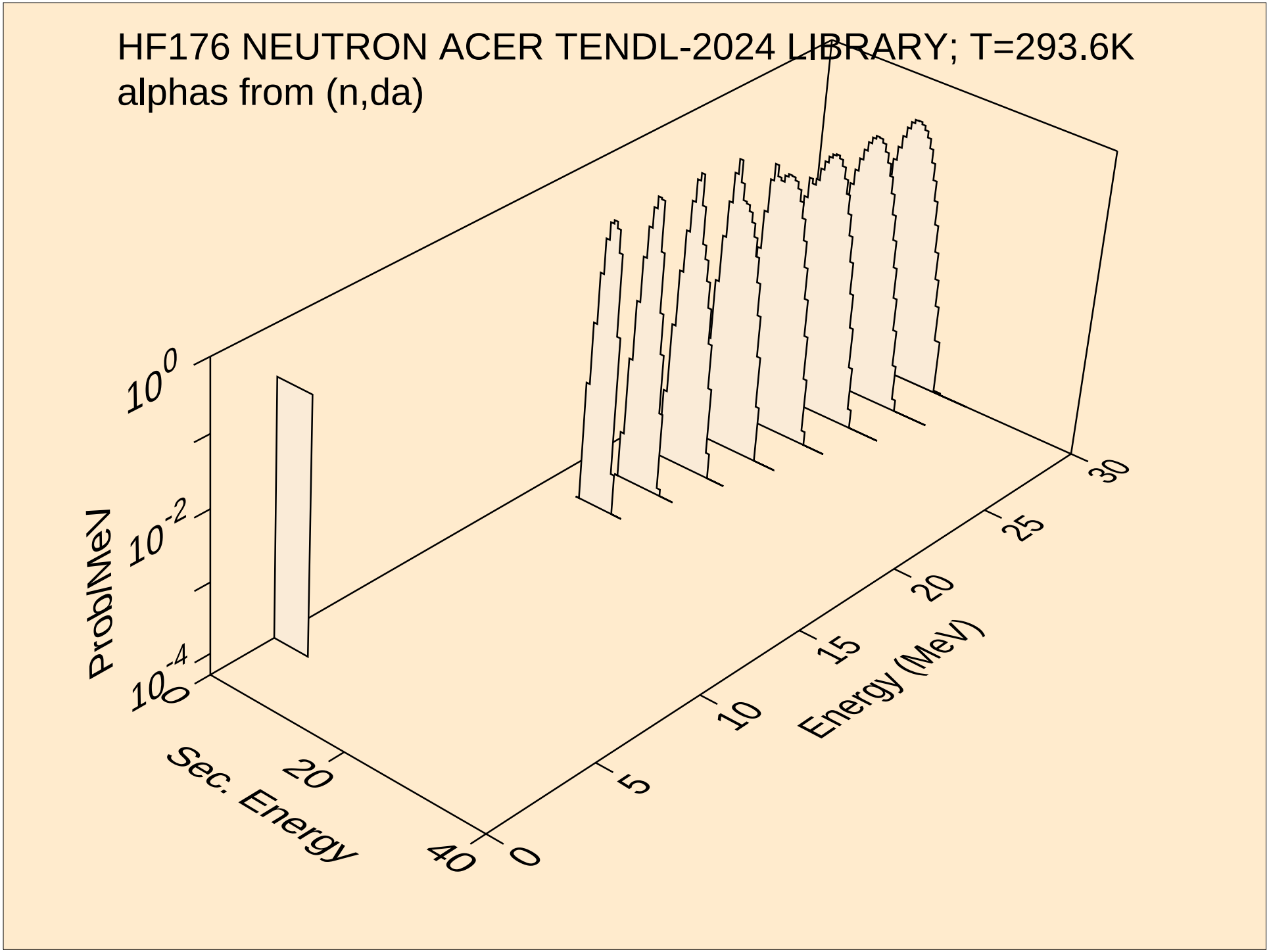

HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,n*)2a
Prob/MeV
10-2
10-4
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)


HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,npa)
Prob/MeV
10^0
10^-2
10^-4
0
Sec. Energy
20
40
5
10
15
20
25
30
Energy (MeV)


HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,a)
Prob/MeV
10^0
10^-2
0
Sec. Energy
0
20
40
Energy (MeV)
0
5
10
15
20
25
30


HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,2a)
Prob/MeV
10^0
10^-2
10^-4
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)


HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,pa)
Prob/MeV
10^0
10^-2
10^-4
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)


HF176 NEUTRON ACER TENDL-2024 LIBRARY; T=293.6K
alphas from (n,da)
Prob/MeV
10^0
10^-2
10^-4
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)