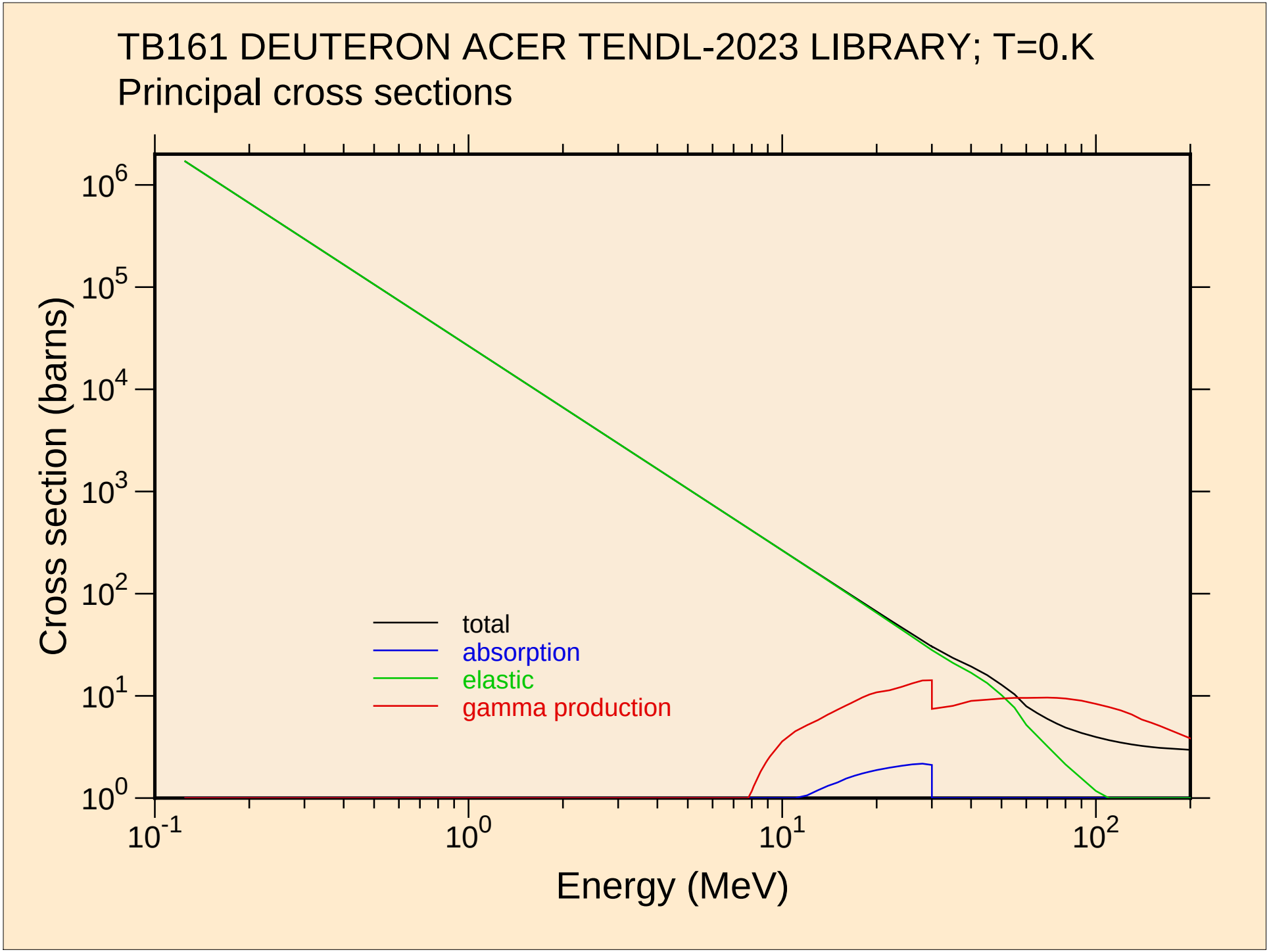
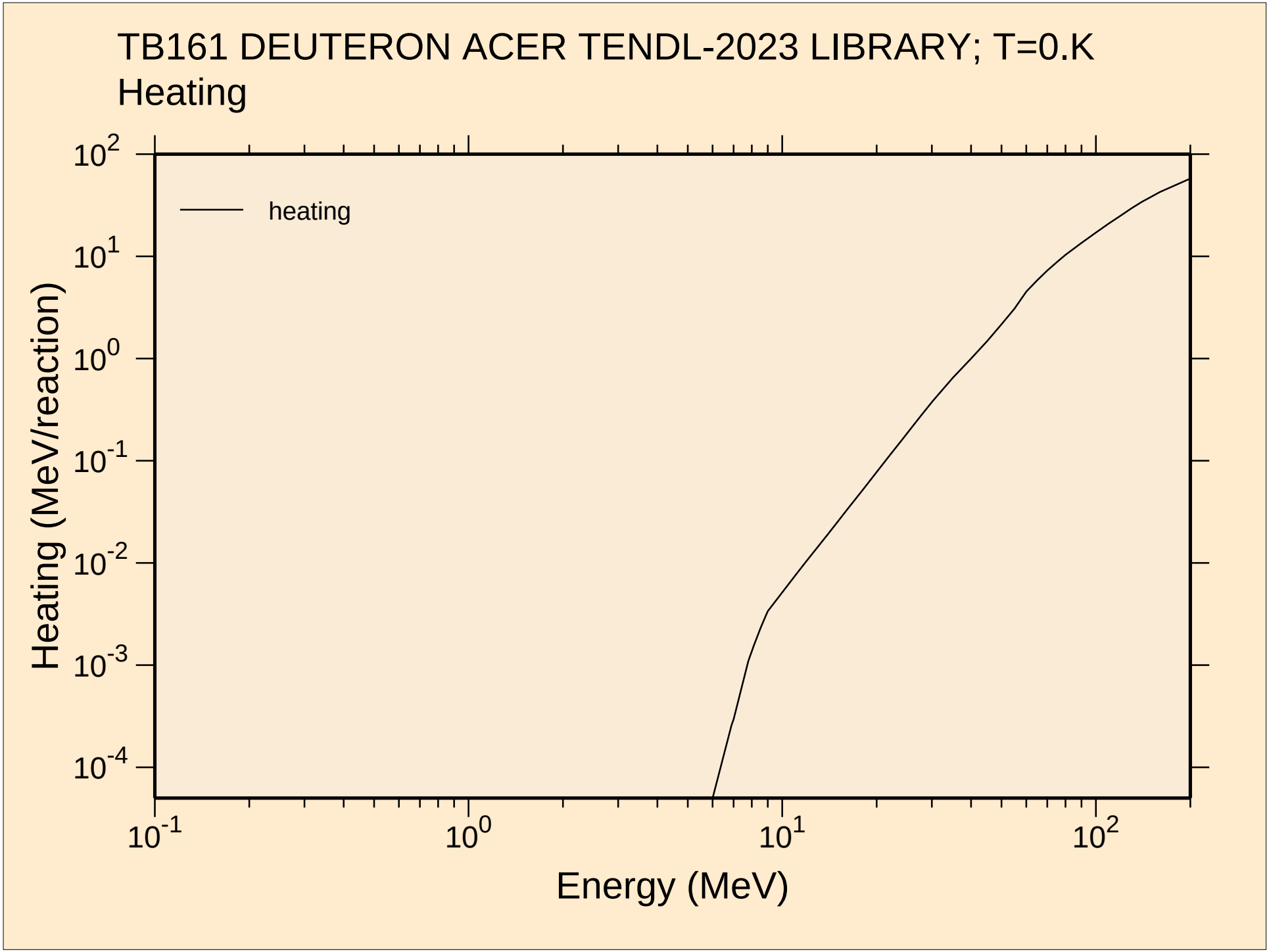
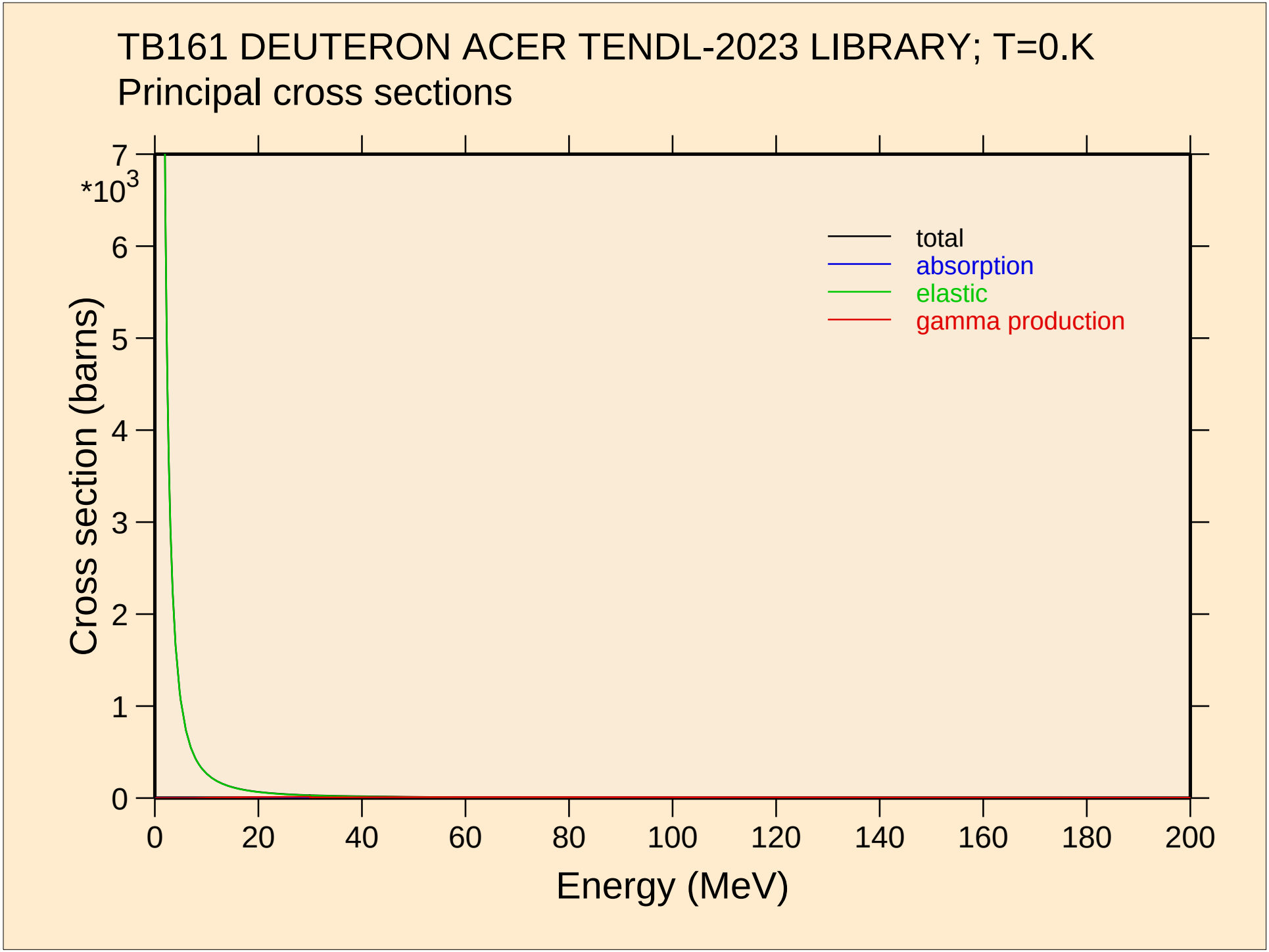
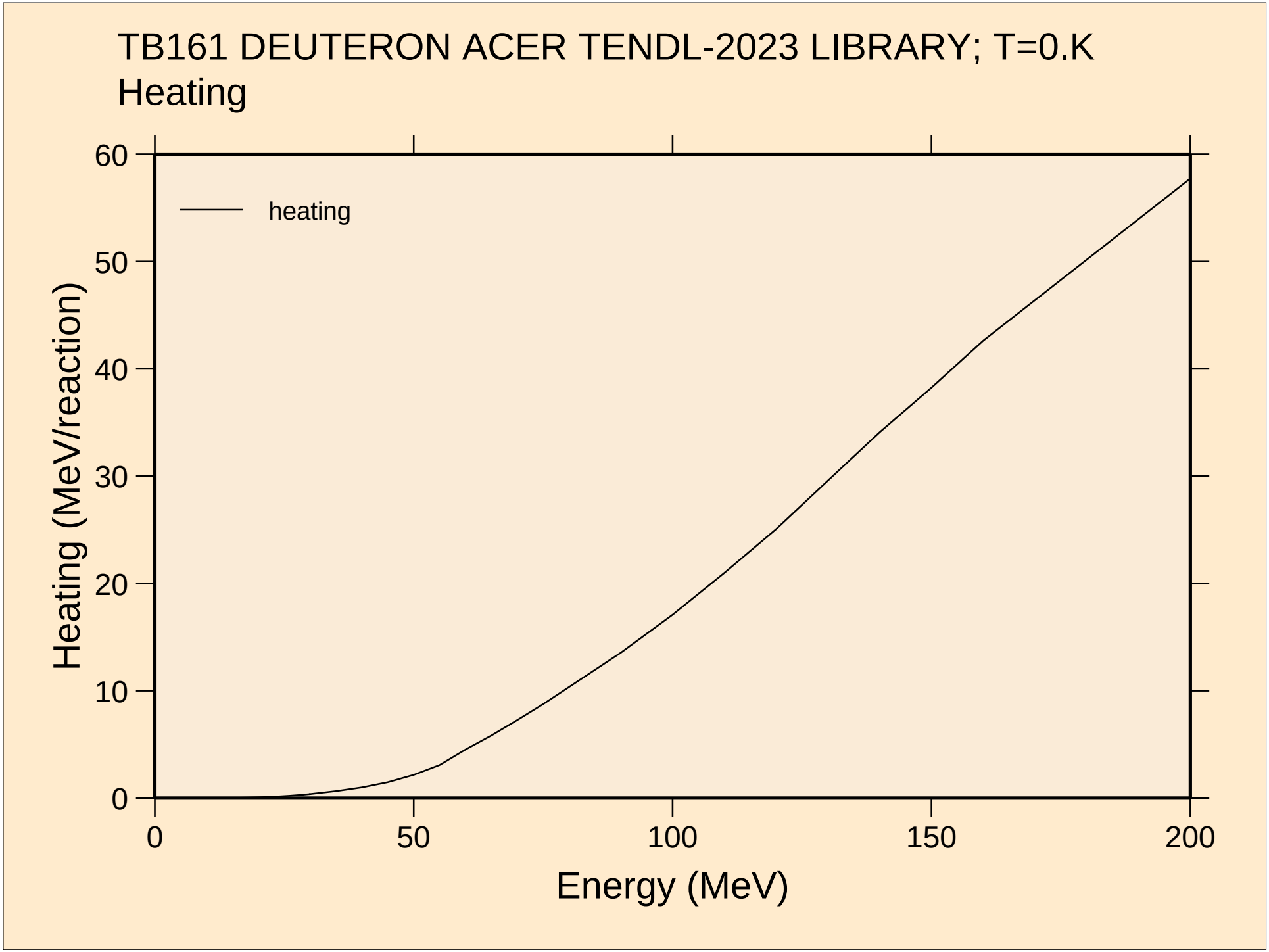
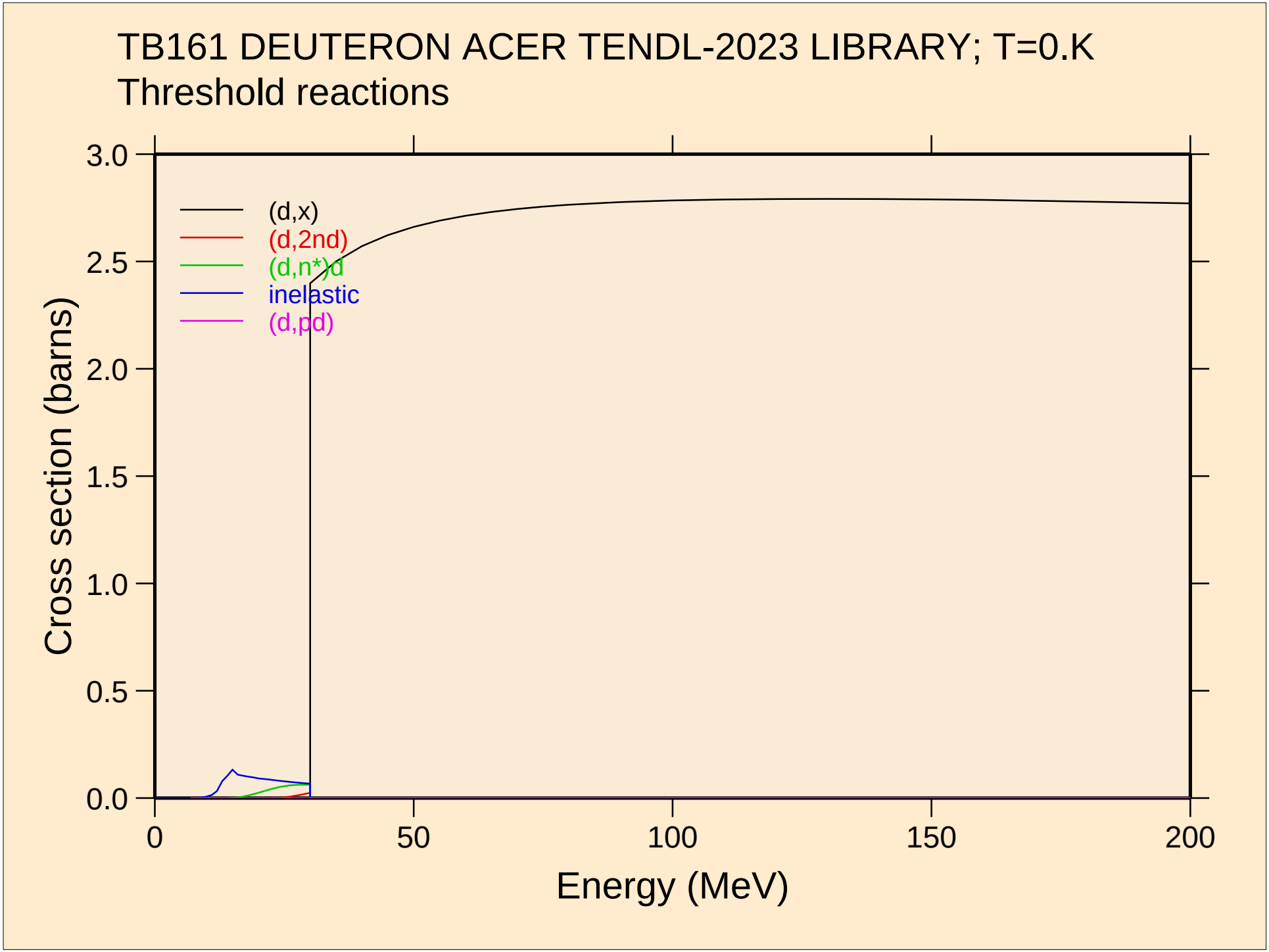
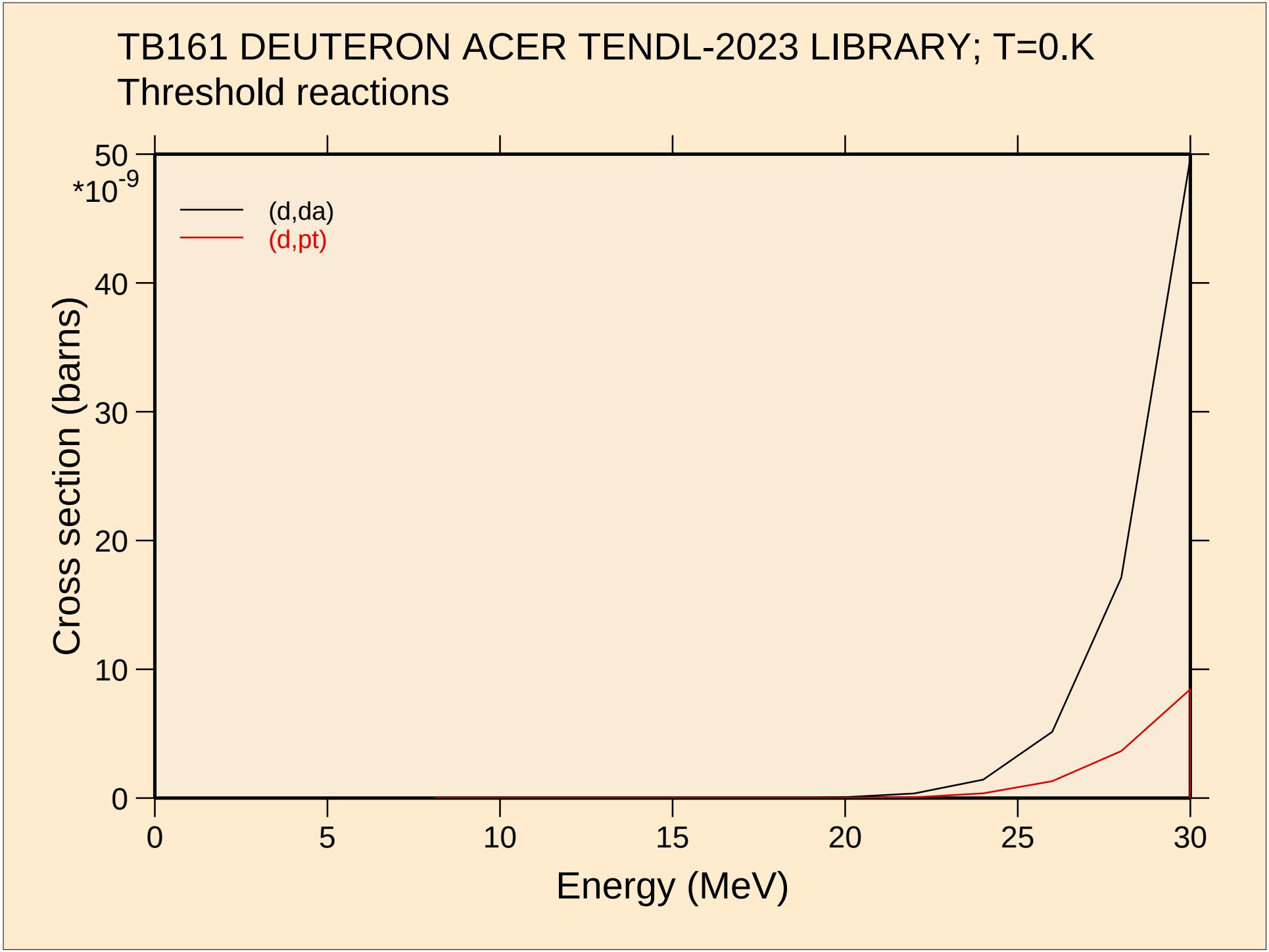

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Principal cross sections
Cross section (barns)
Energy (MeV)
total
absorption
elastic
gamma production

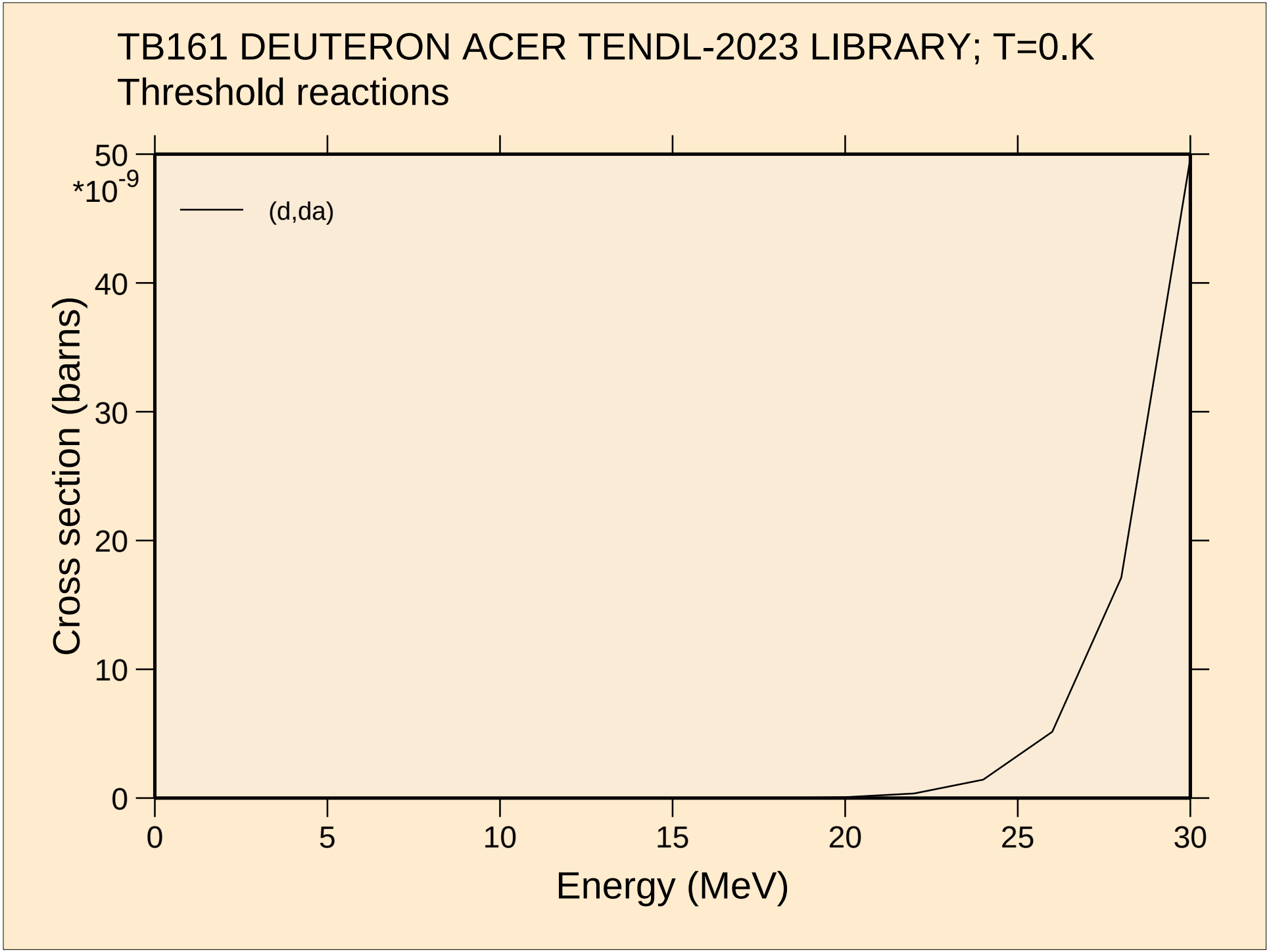

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
10^-3
10^-4
10^-1
10^0
10^1
10^2

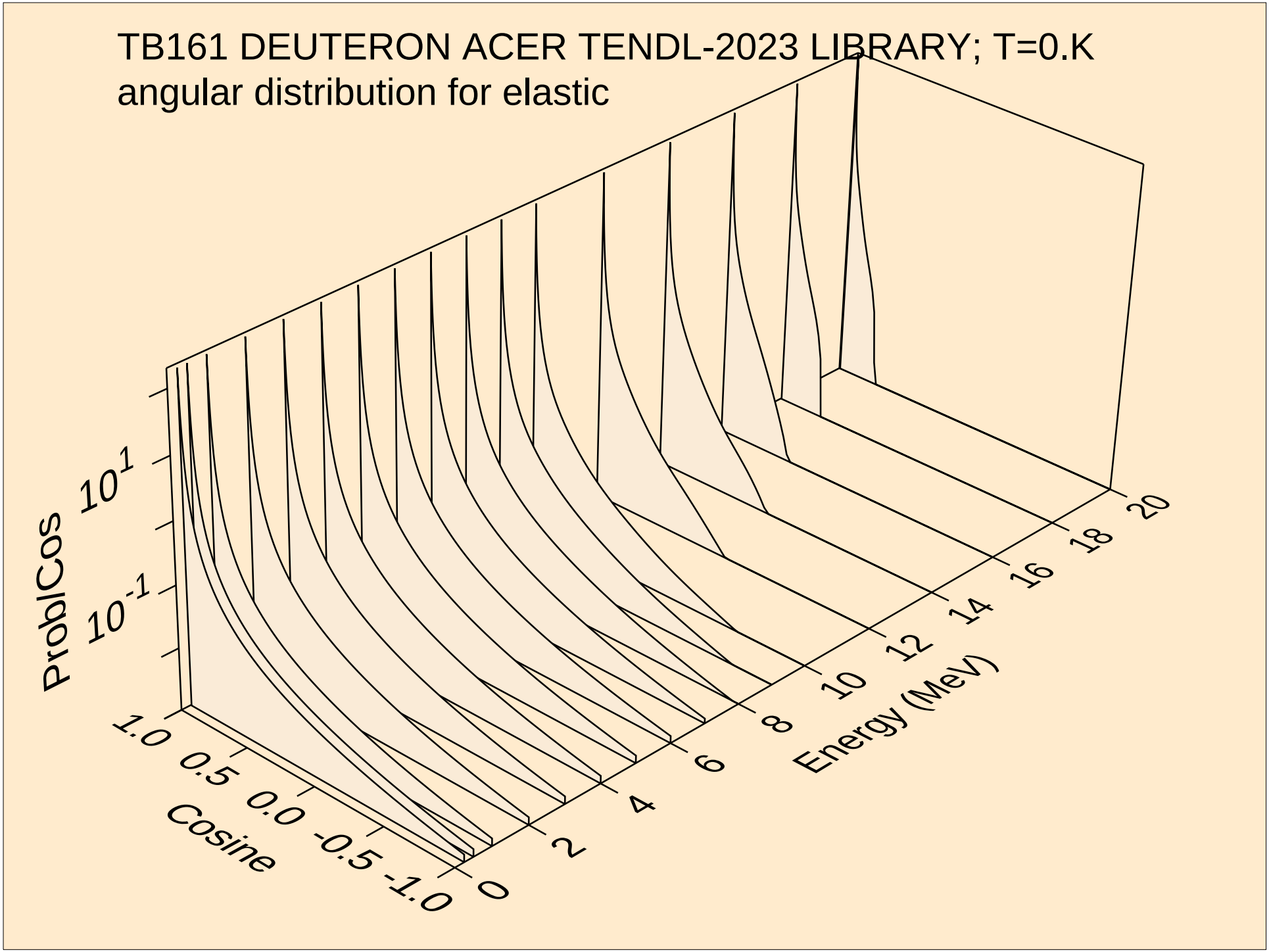

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Principal cross sections
Cross section (barns)
*10^3
7
6
5
4
3
2
1
0
0
20
40
60
80
100
120
140
160
180
200
Energy (MeV)
total
absorption
elastic
gamma production

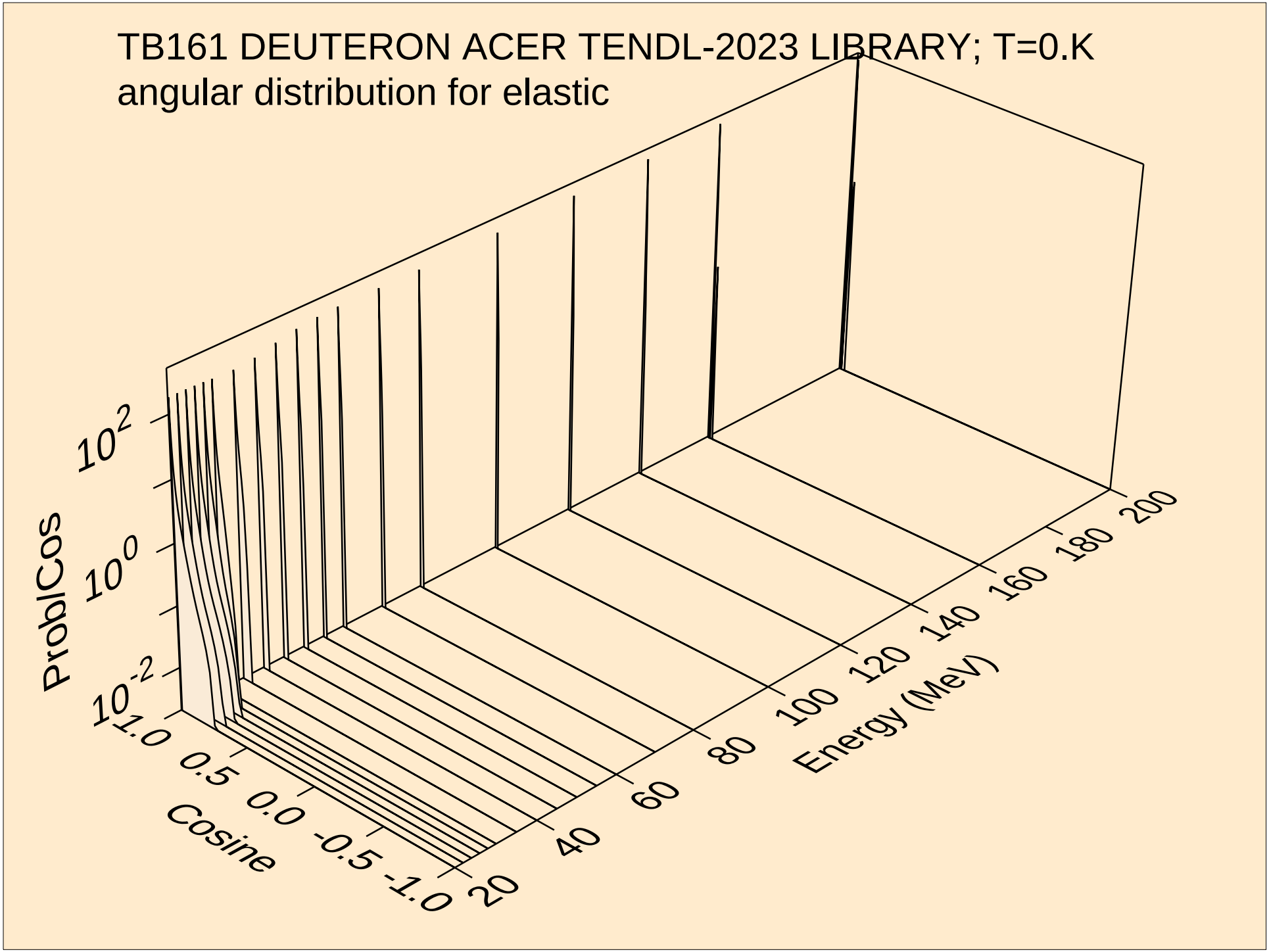

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Heating
heating
Heating (MeV/reaction)
Energy (MeV)
0
10
20
30
40
50
60
0
50
100
150
200

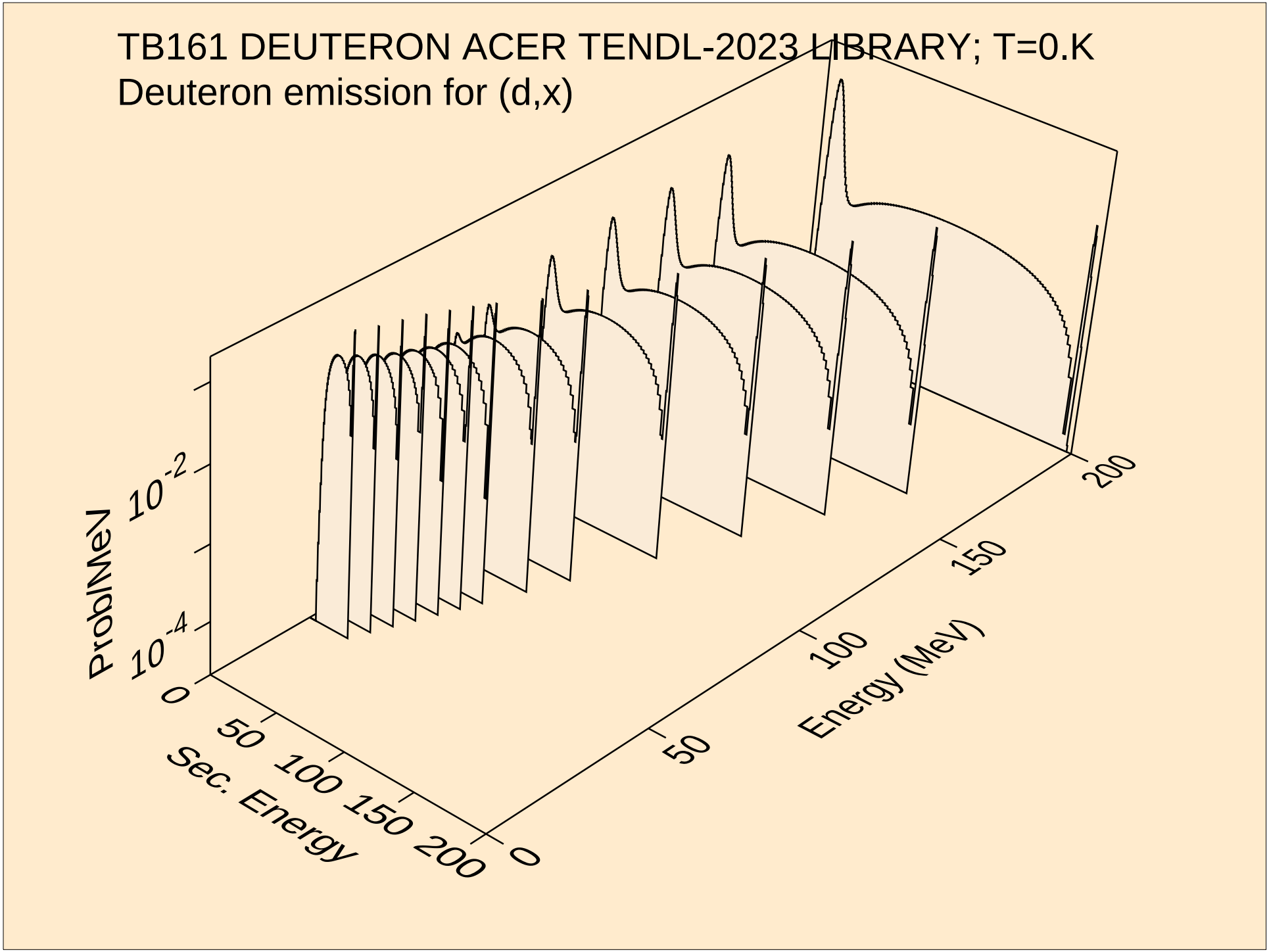

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Threshold reactions
(d,x)
(d,2nd)
(d,n*)d
inelastic
(d,pd)
Cross section (barns)
Energy (MeV)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
50
100
150
200

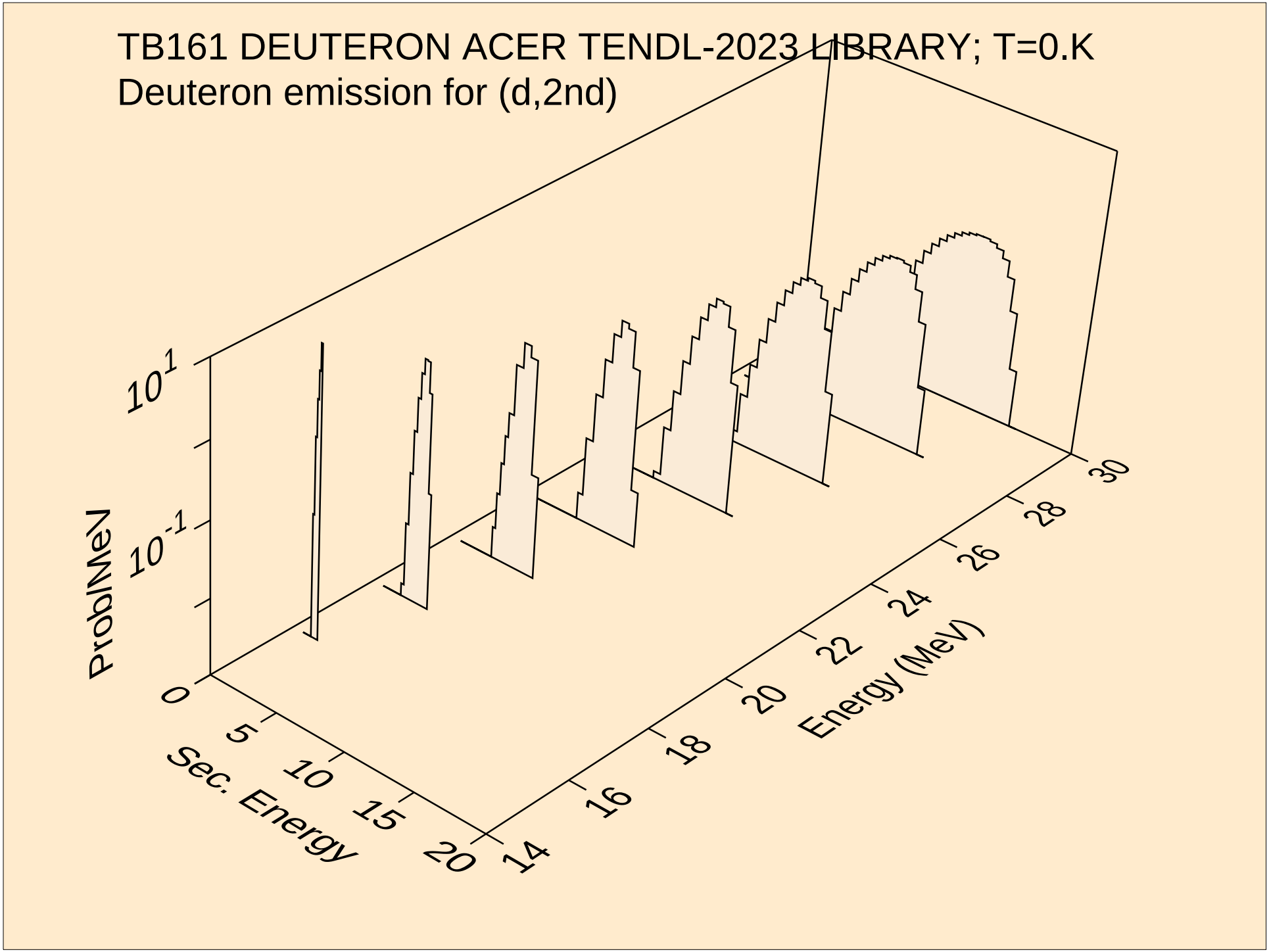

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Threshold reactions
*10-9
(d,da)
(d,pt)
Cross section (barns)
50
40
30
20
10
0
0
5
10
15
20
25
30
Energy (MeV)

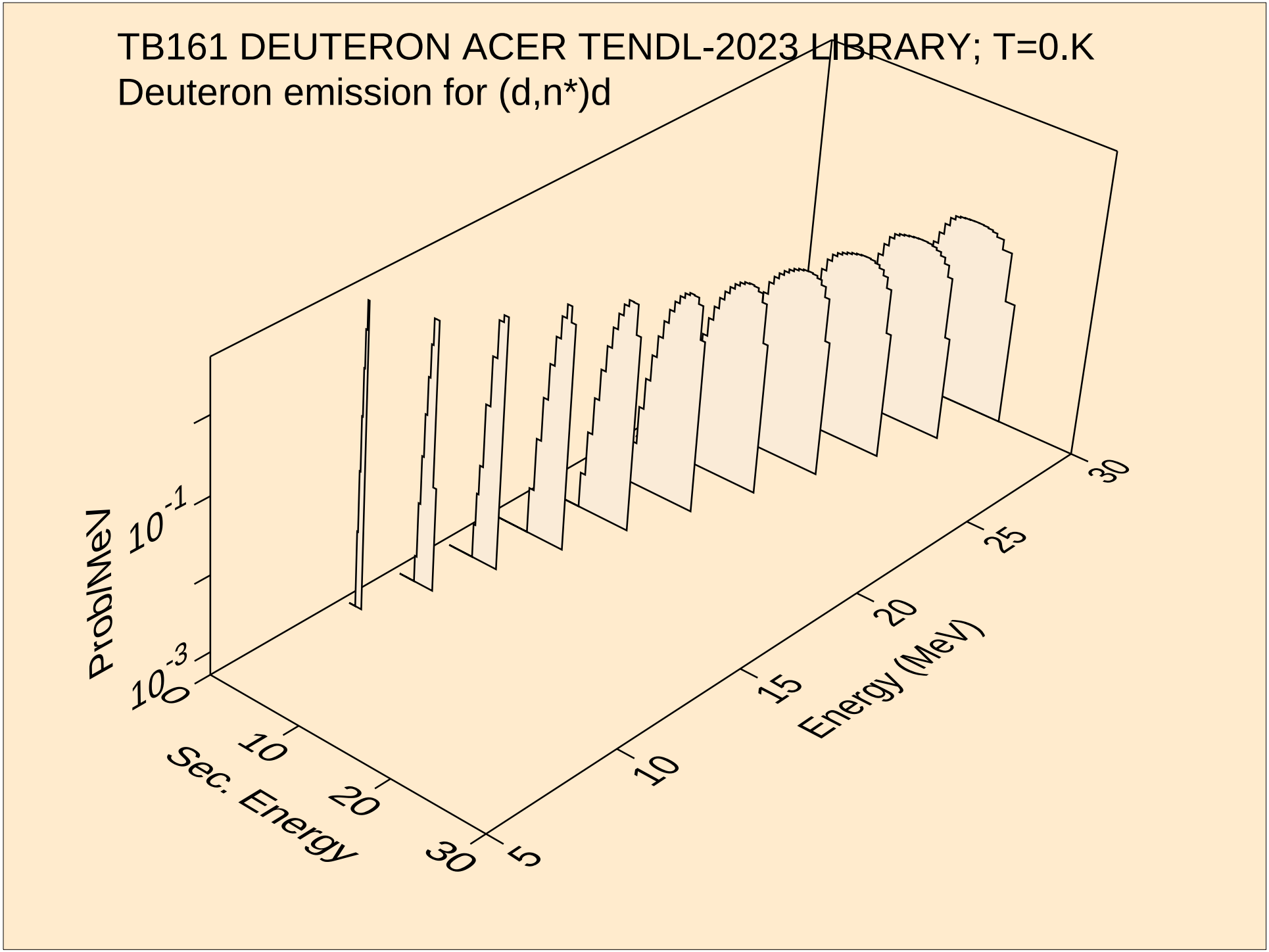

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Threshold reactions
50
*10-9
40
30
20
10
0
(d,da)
Cross section (barns)
0
5
10
15
20
25
30
Energy (MeV)

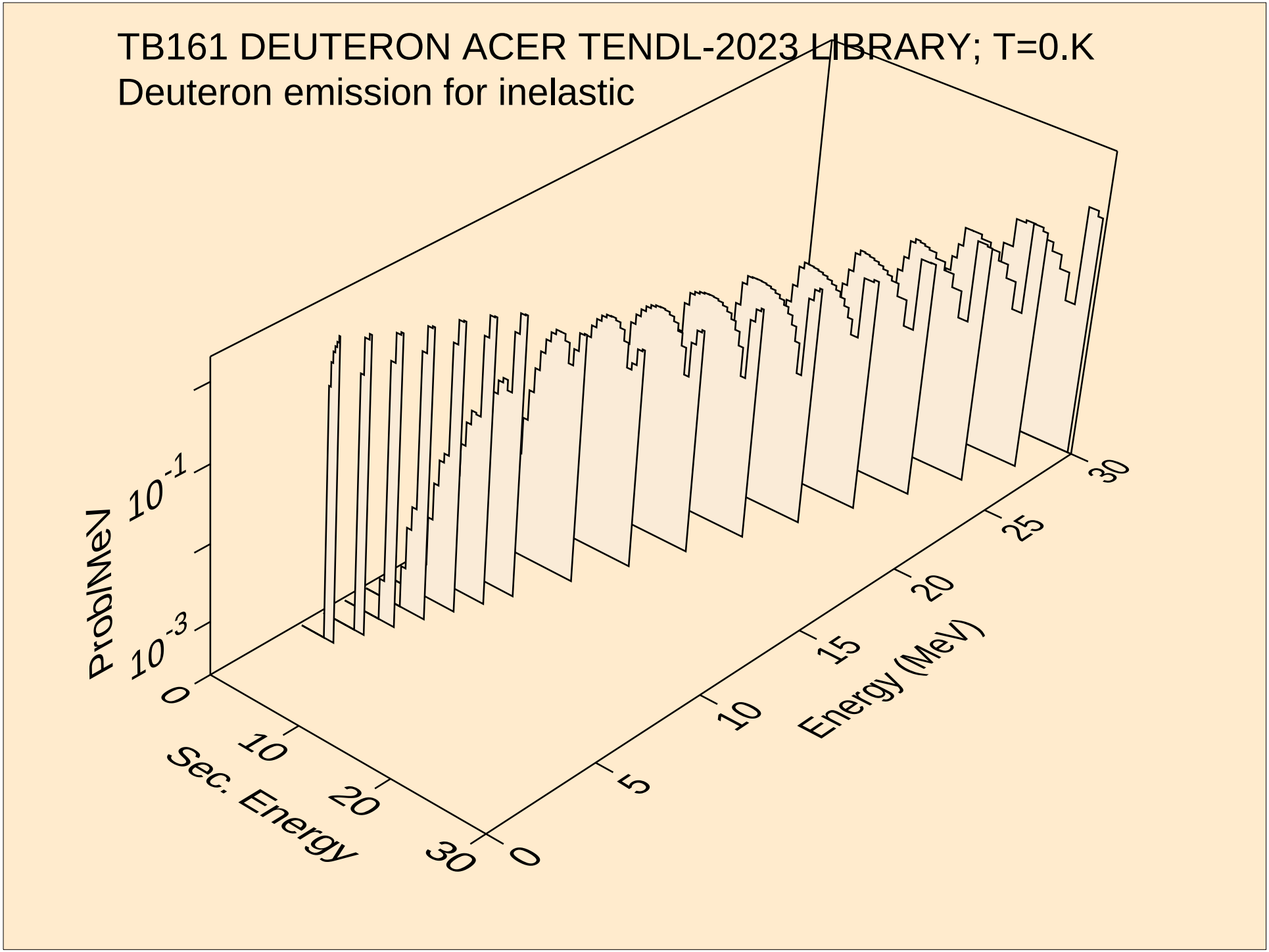

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
angular distribution for elastic
ProbICos
10^1
10^-1
1.0
0.5
0.0
-0.5
-1.0
Cosine
0
2
4
6
8
10
12
14
16
18
20
Energy (MeV)

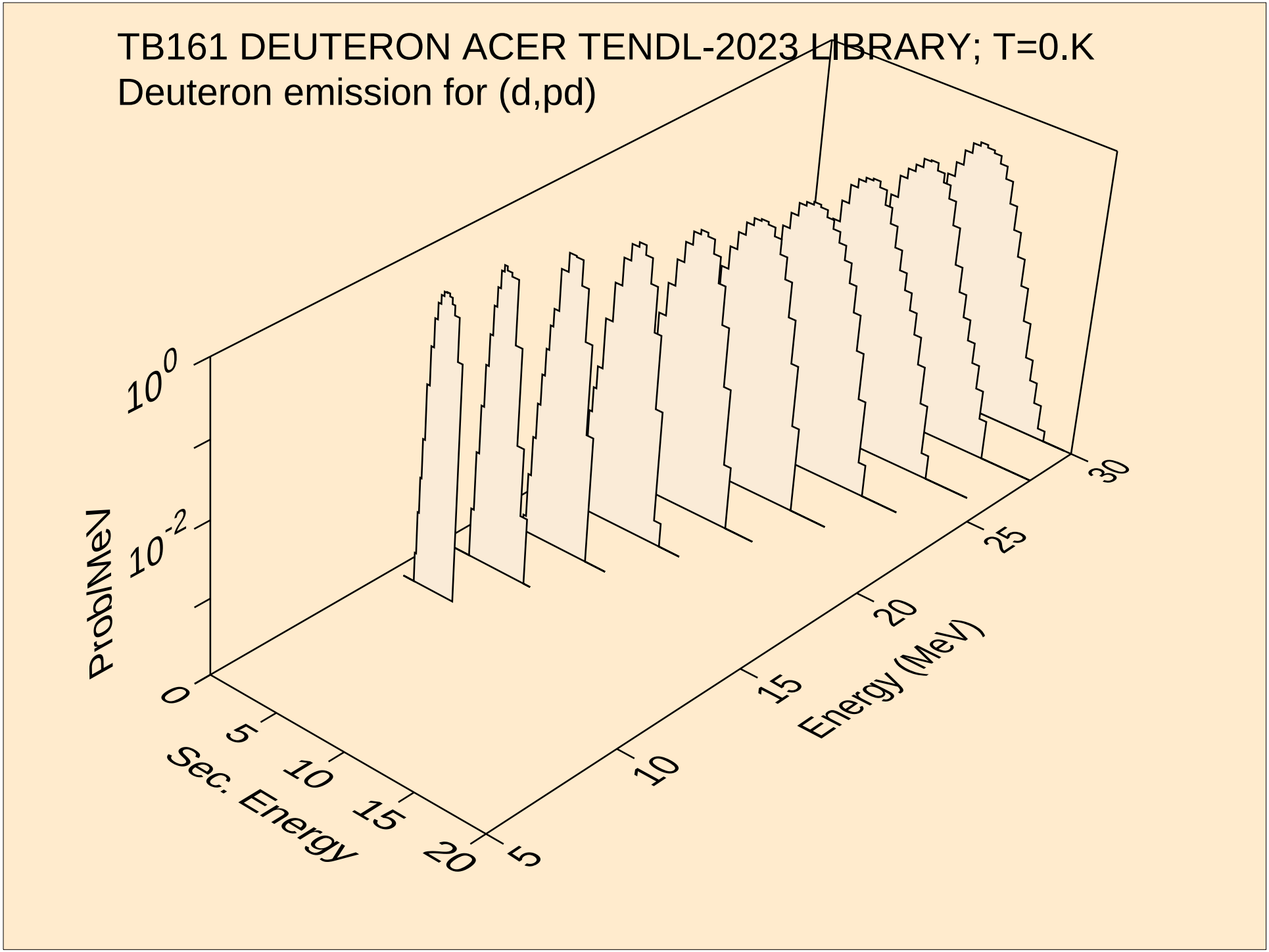

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
angular distribution for elastic
ProbICos
10^{2}
10^{0}
10^{-2}
1.0
0.5
0.0
-0.5
-1.0
Cosine
20
40
60
80
100
120
140
160
180
200
Energy (MeV)

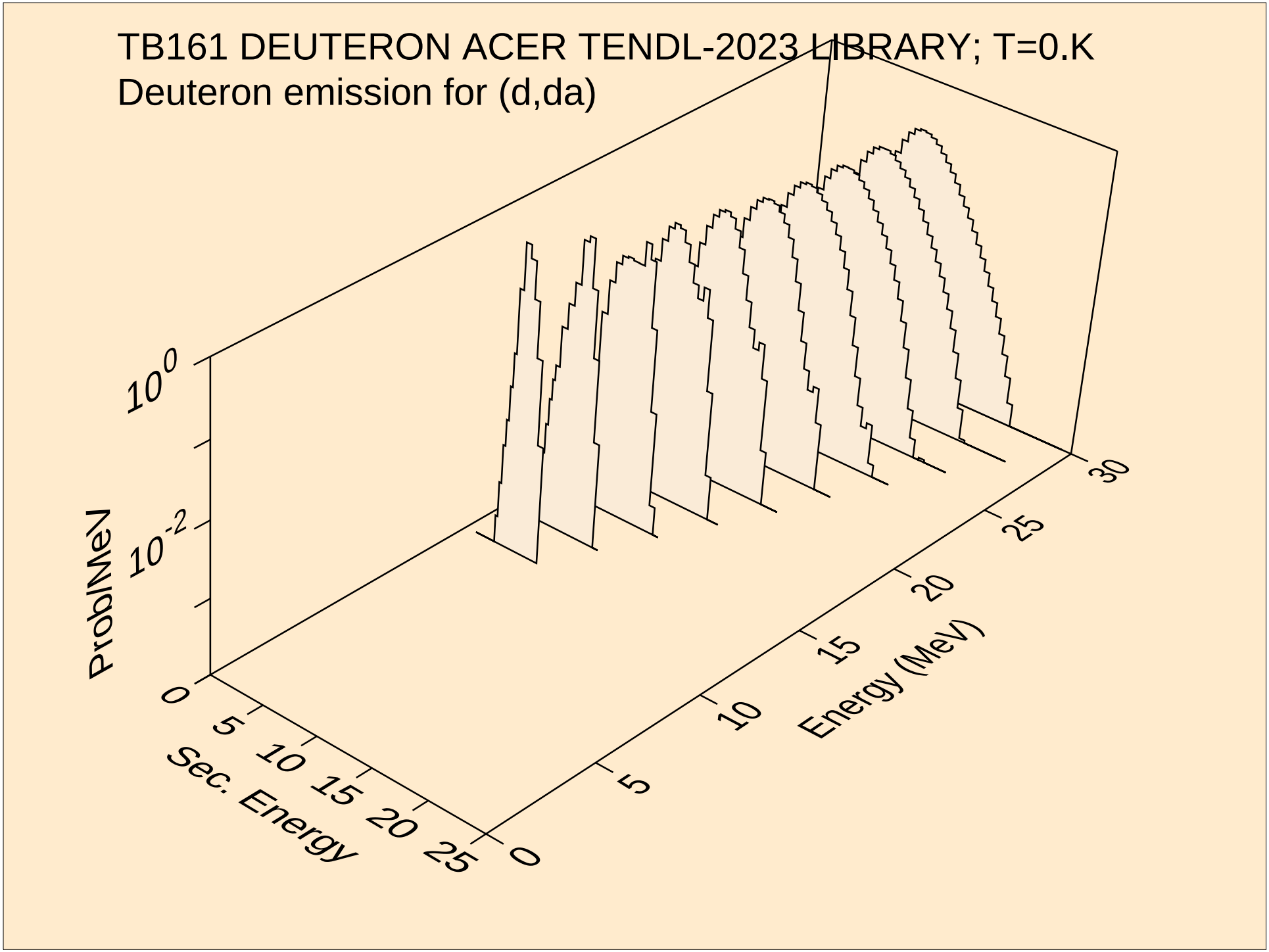

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Deuteron emission for (d,x)
Prob/MeV
10-2
10-4
0
50
100
150
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

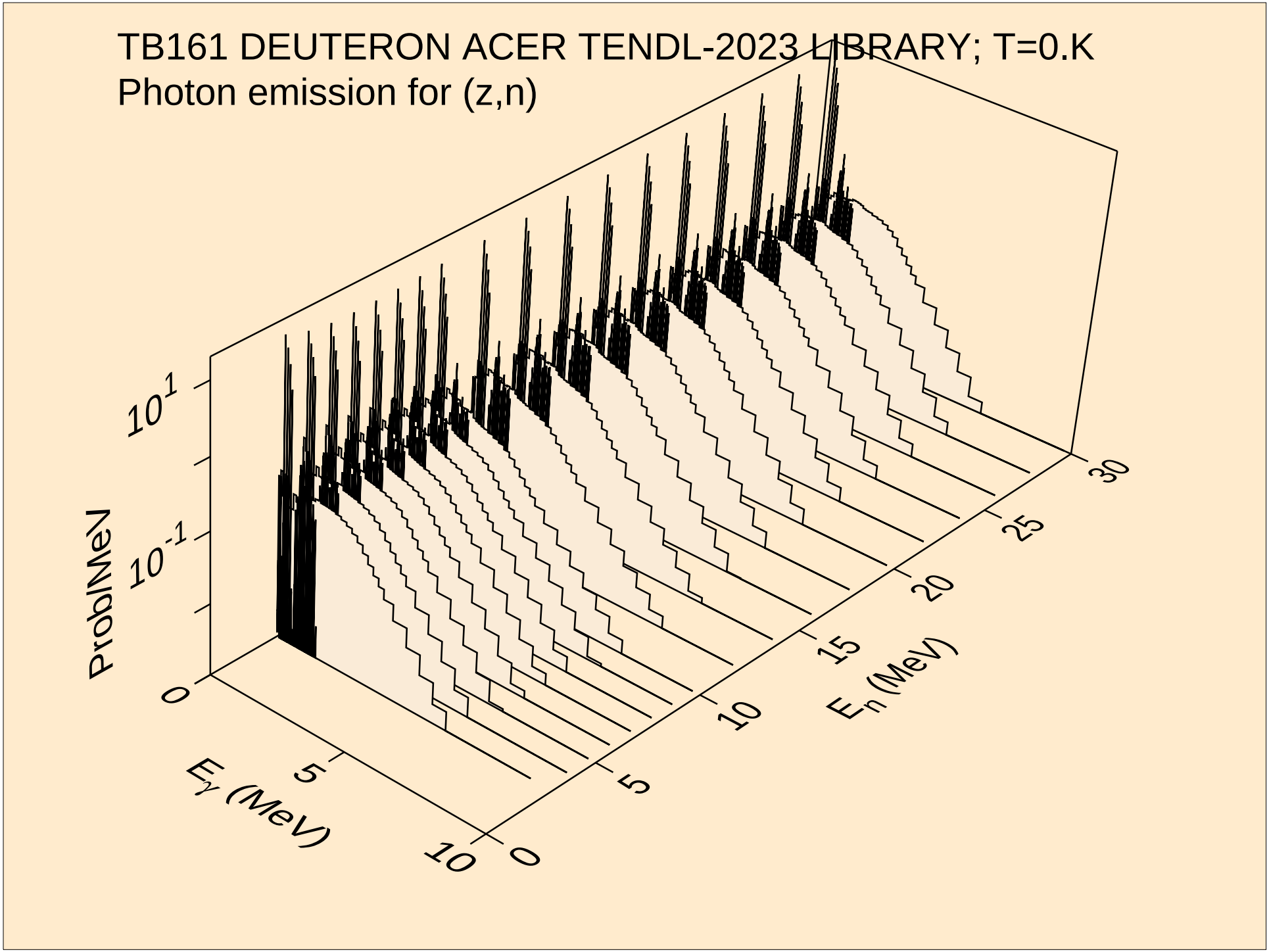

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Deuteron emission for (d,2nd)
Prob/MeV
10^1
10^-1
0
5
10
15
20
Sec. Energy
14
16
18
20
22
24
26
28
30
Energy (MeV)

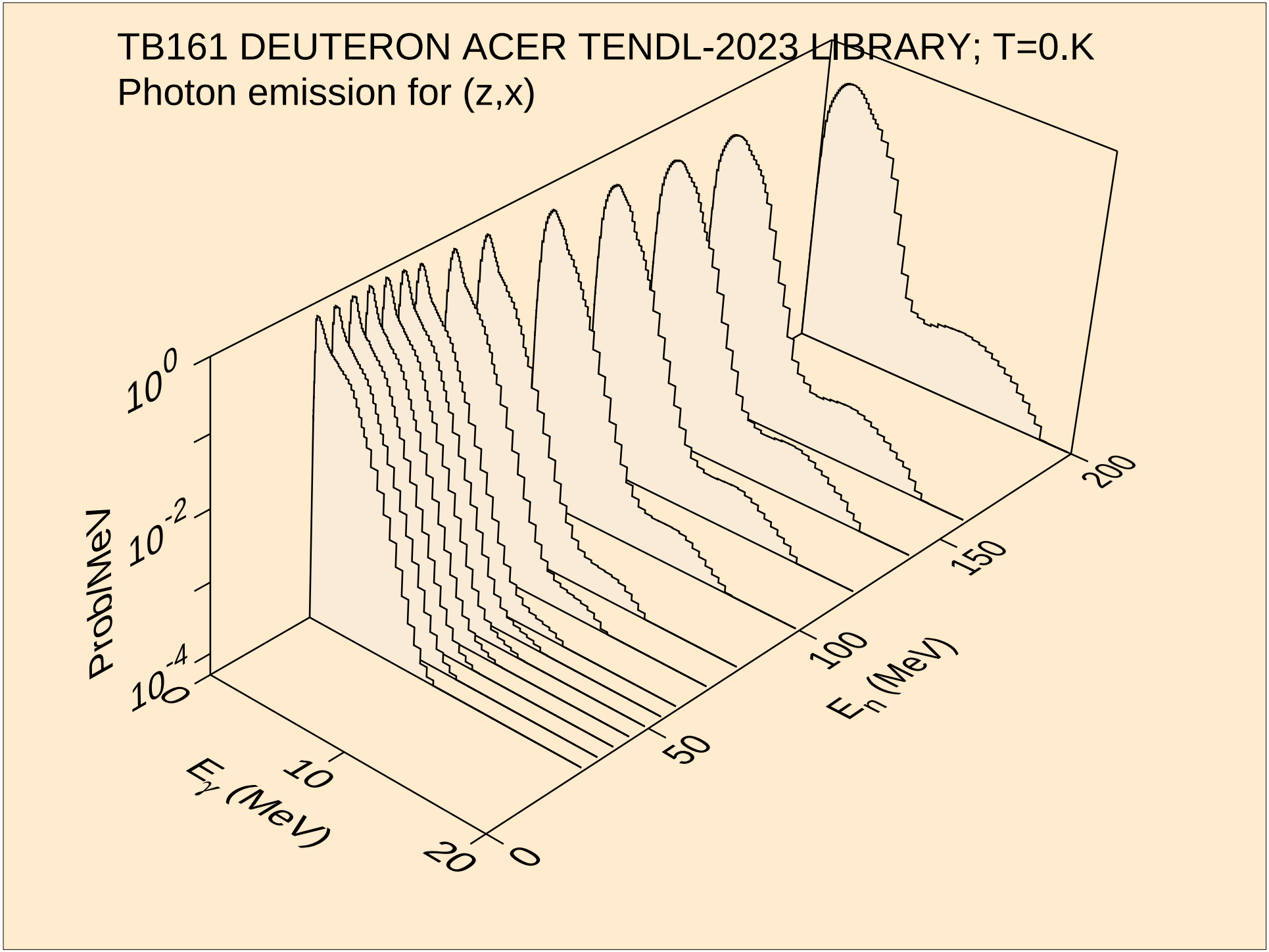

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Deuteron emission for (d,n*)d
Prob/MeV
10-1
10-3
0
10
20
30
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

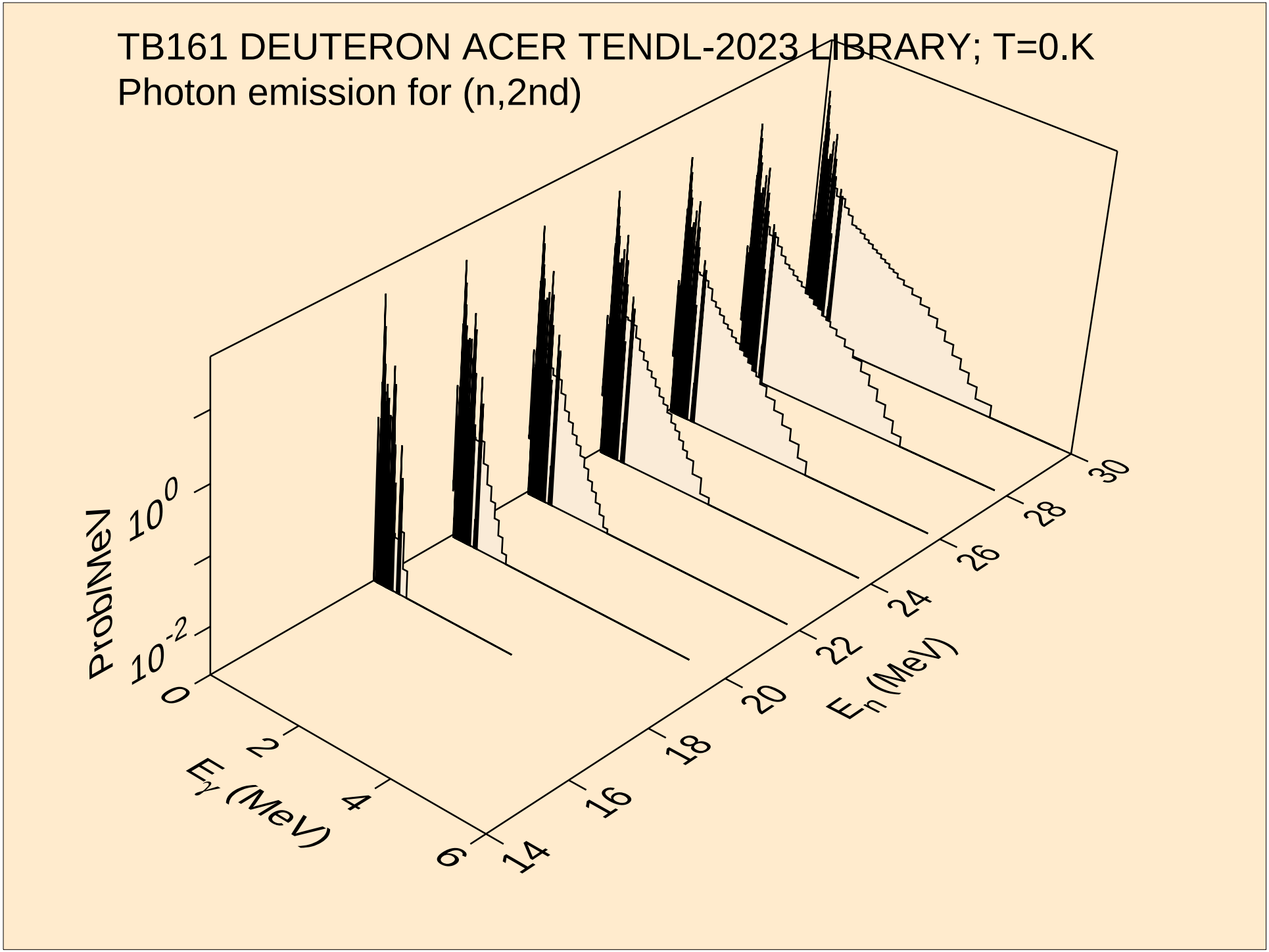

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Deuteron emission for inelastic
Prob/MeV
10-1
10-3
0
10
20
30
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

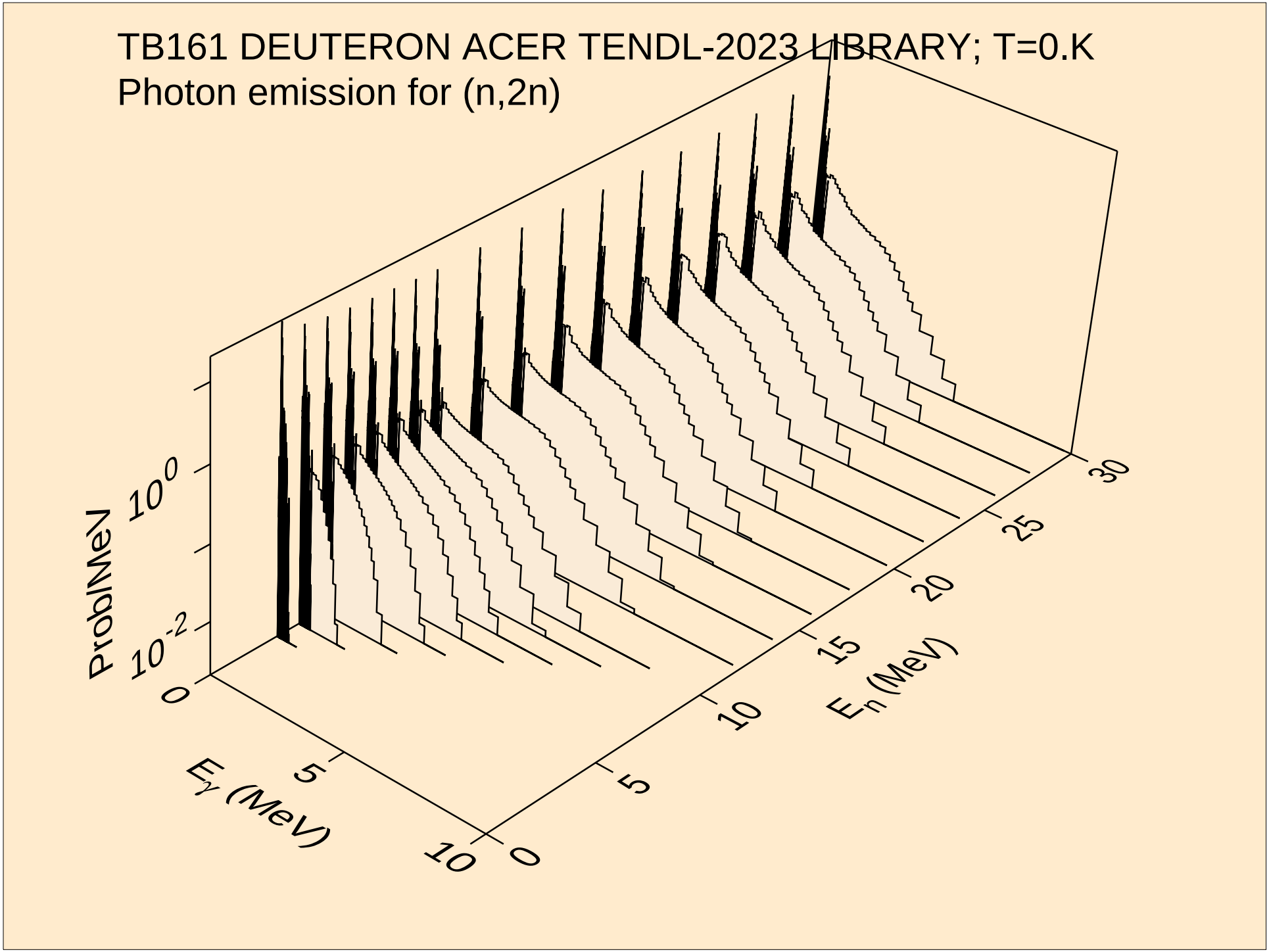

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Deuteron emission for (d,pd)
Prob/MeV
10^{0}
10^{-2}
0
5
10
15
20
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

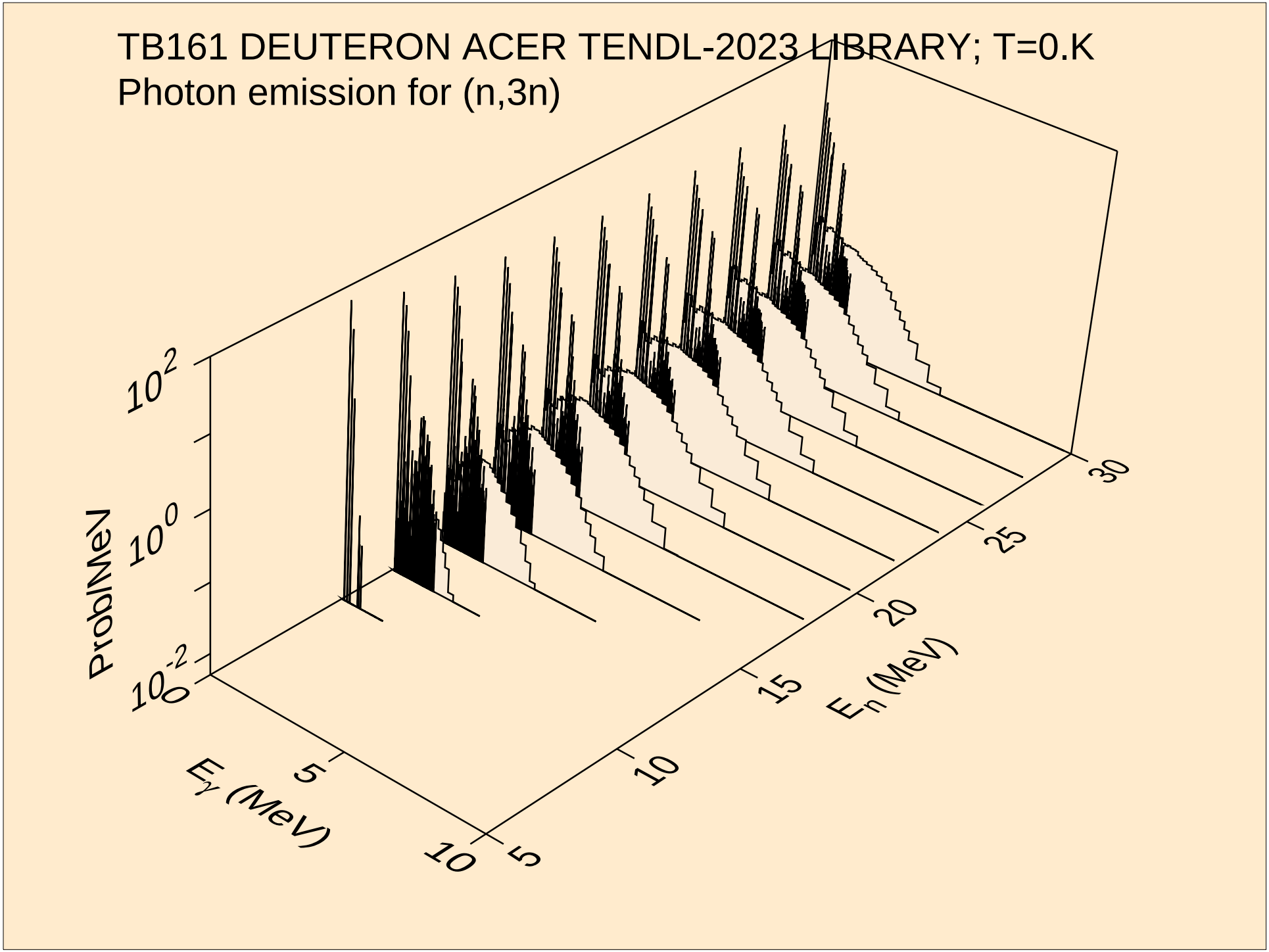

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Deuteron emission for (d,da)
Prob/MeV
10^0
10^-2
0
Sec. Energy
5
10
15
20
25
0
5
10
15
20
25
30
Energy (MeV)

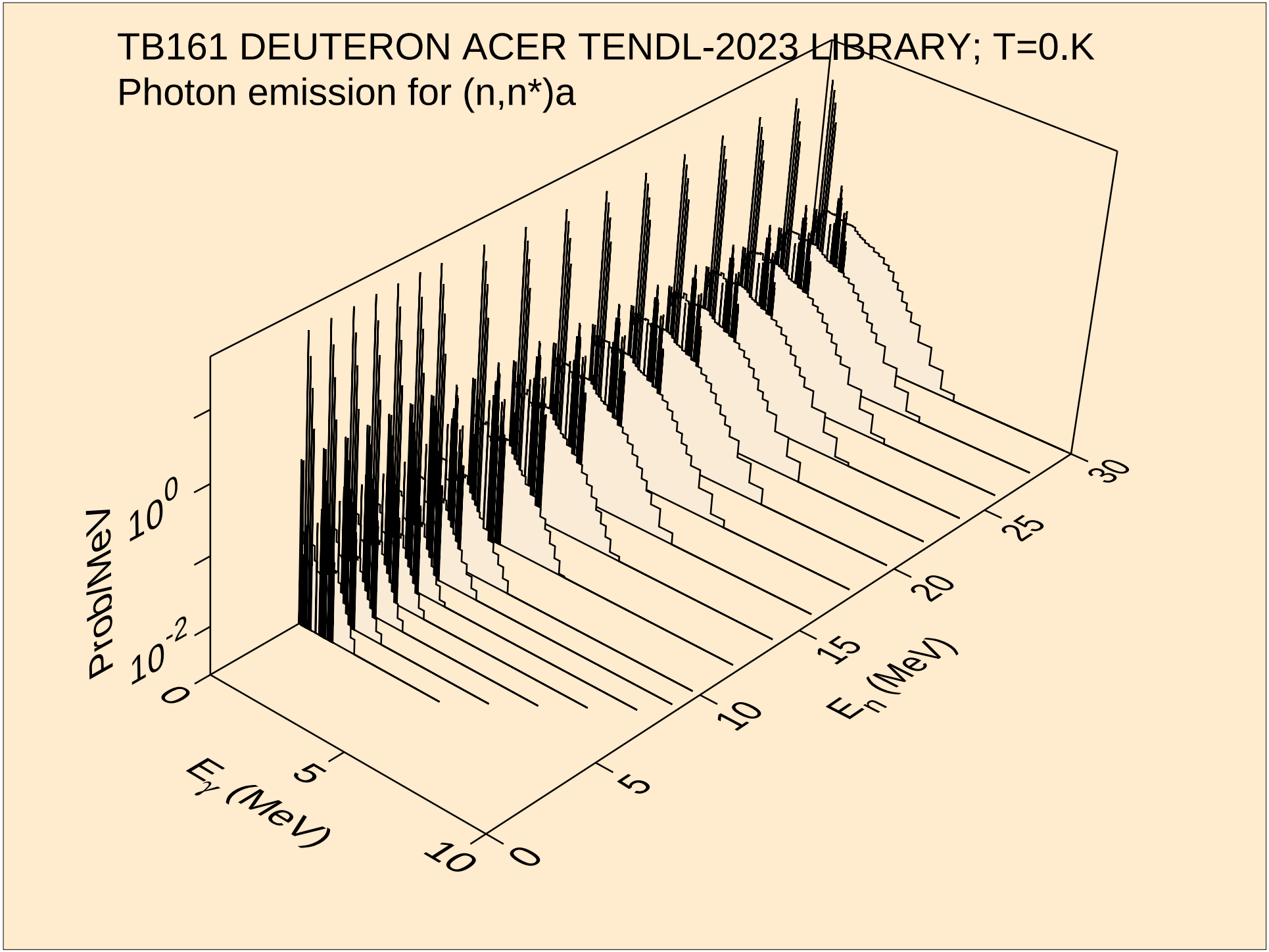

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (z,n)
Prob/MeV
10^{1}
10^{-1}
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

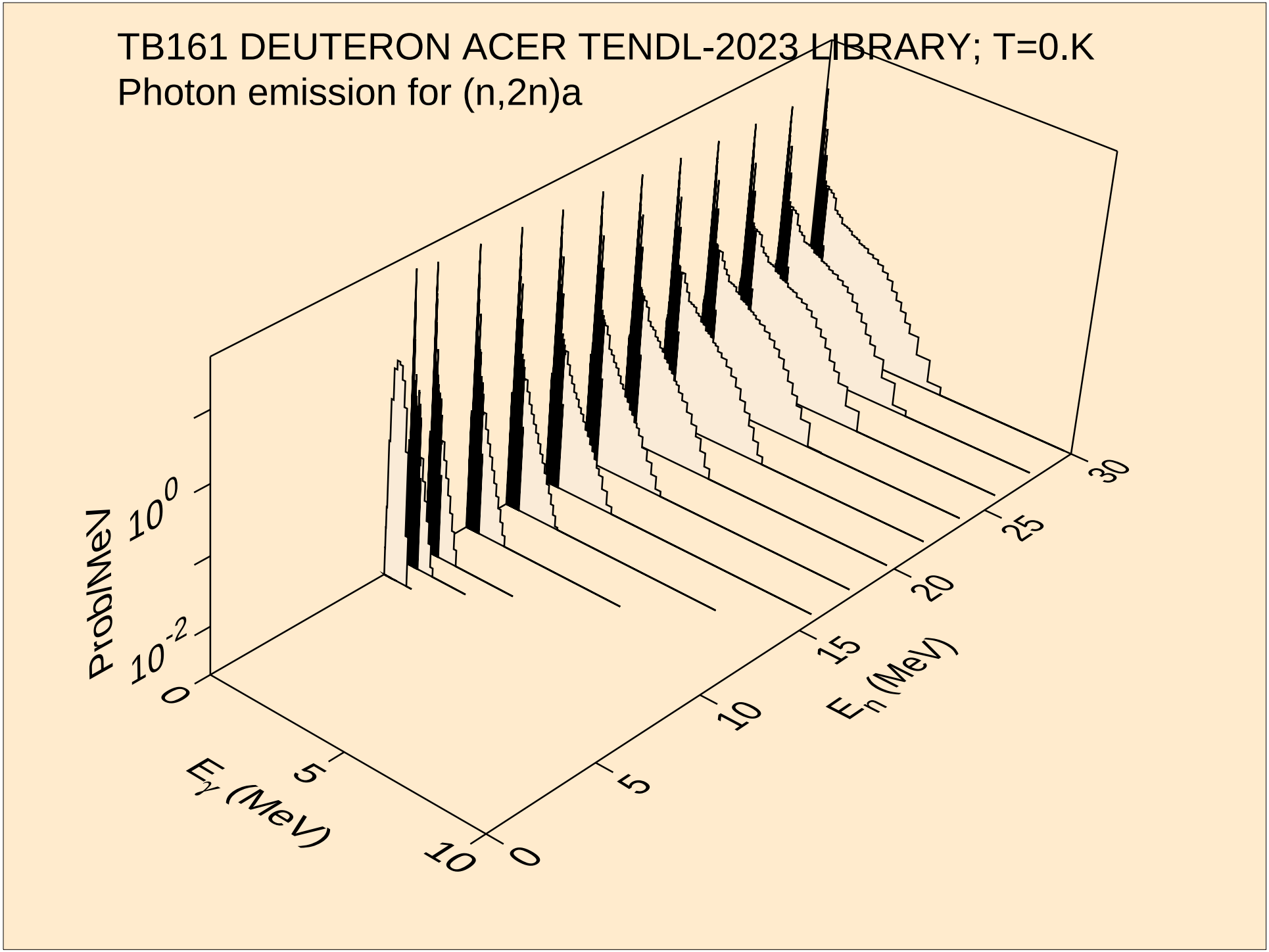

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (z,x)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
10
20
E_γ (MeV)
0
50
100
150
200
E_n (MeV)

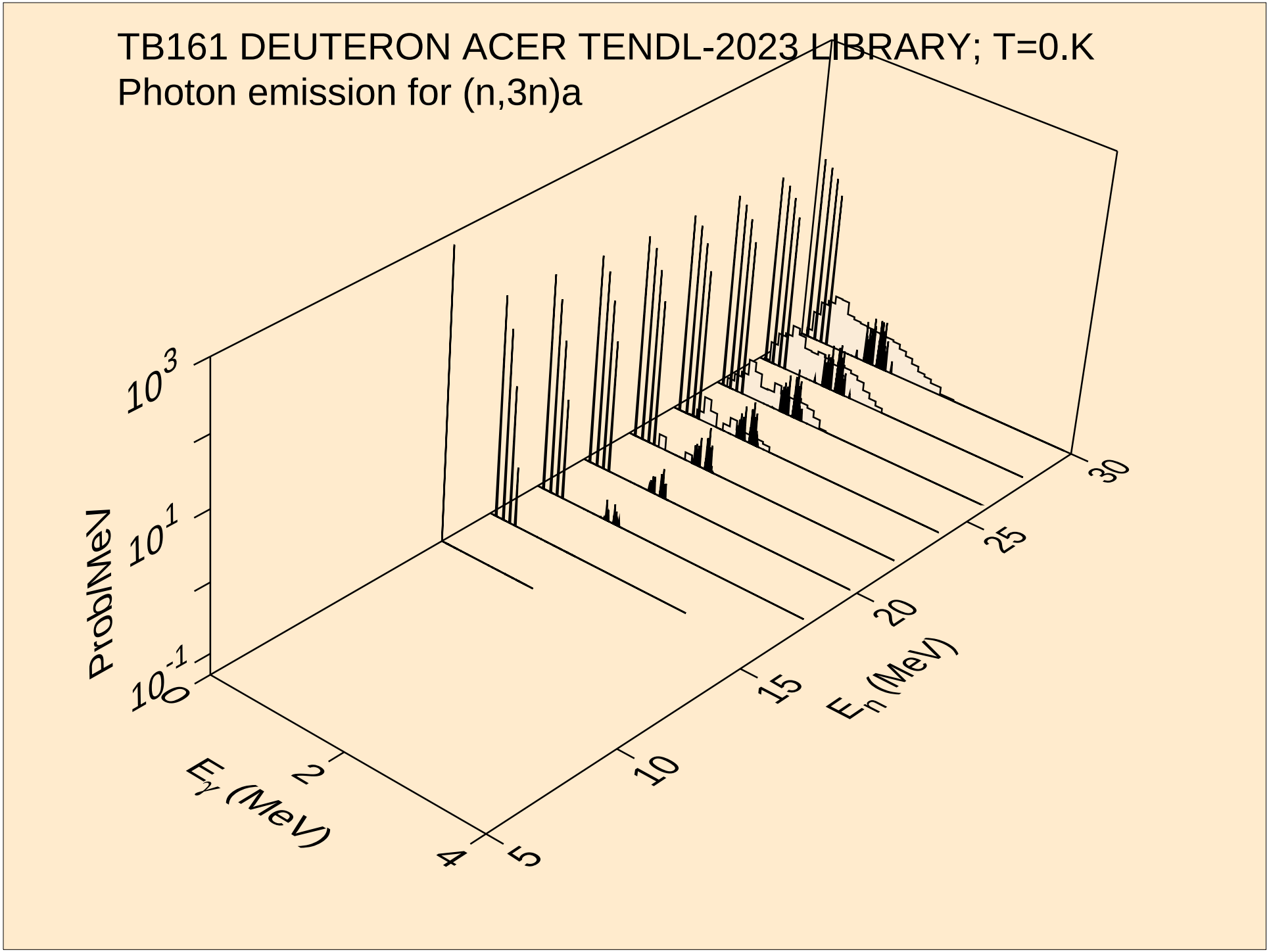

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,2nd)
Prob/MeV
10^{0}
10^{-2}
0
2
4
6
E_γ (MeV)
14
16
18
20
22
24
26
28
30
E_n (MeV)

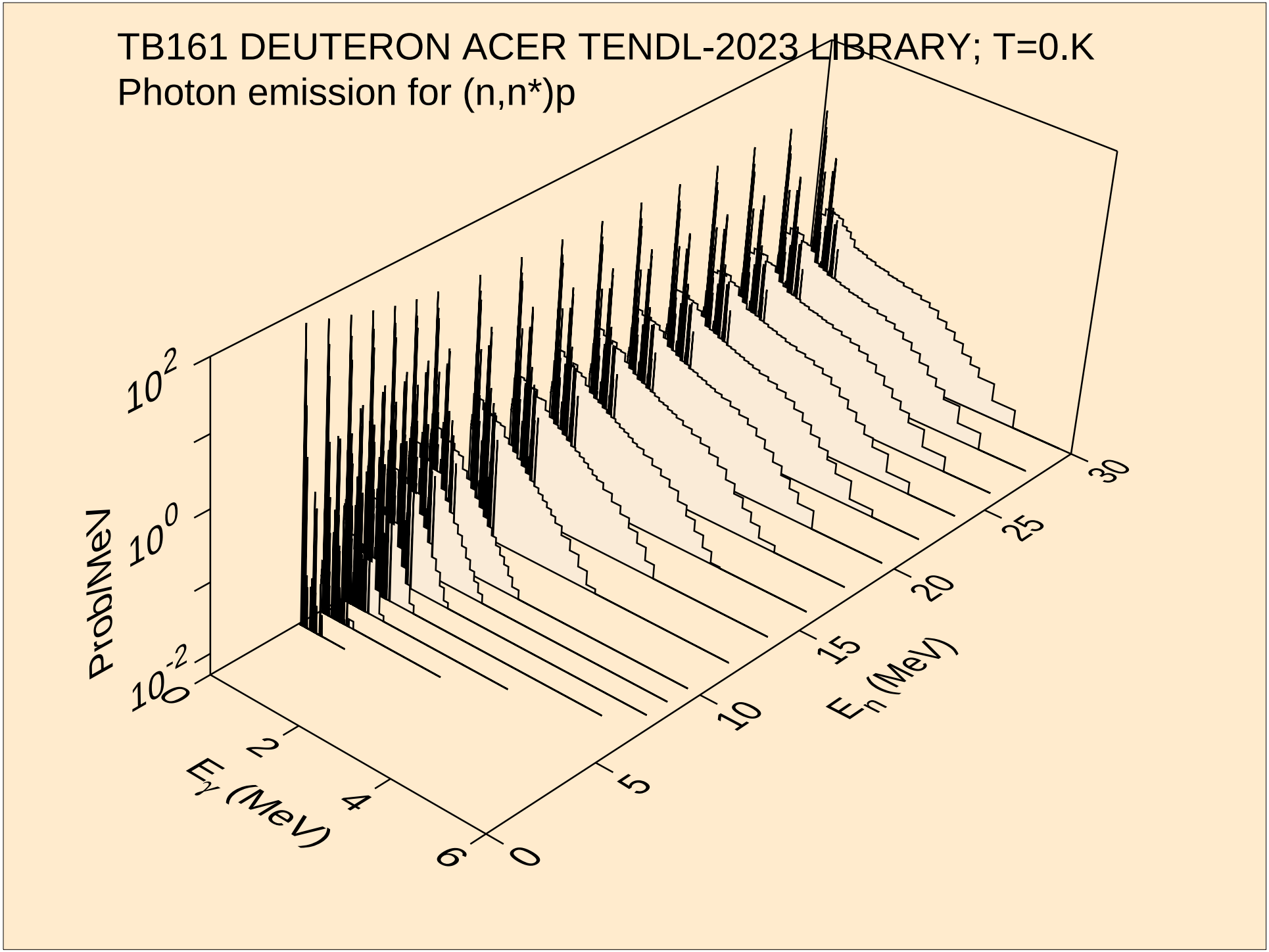

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,2n)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

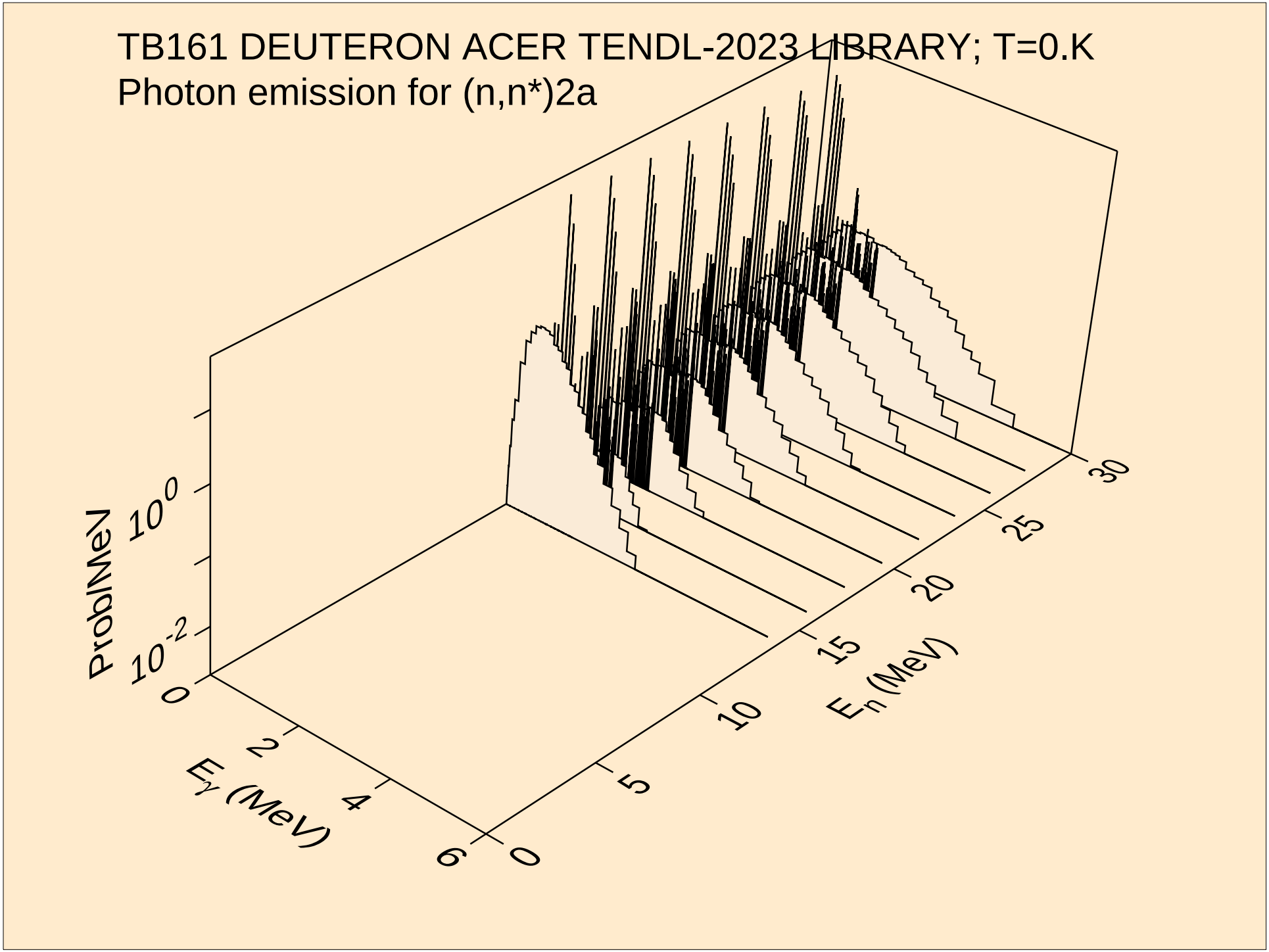

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,3n)
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

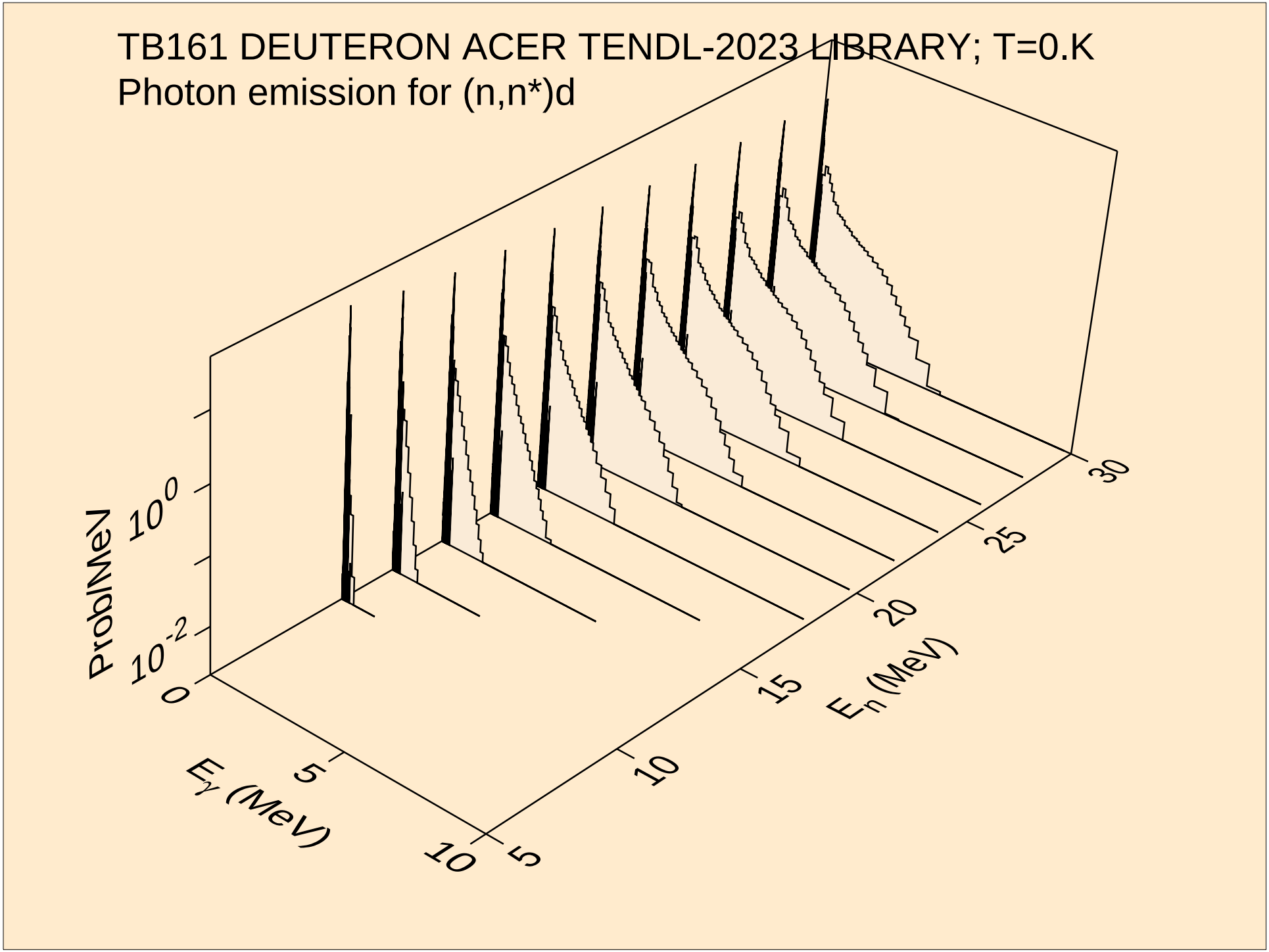

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n*)a
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

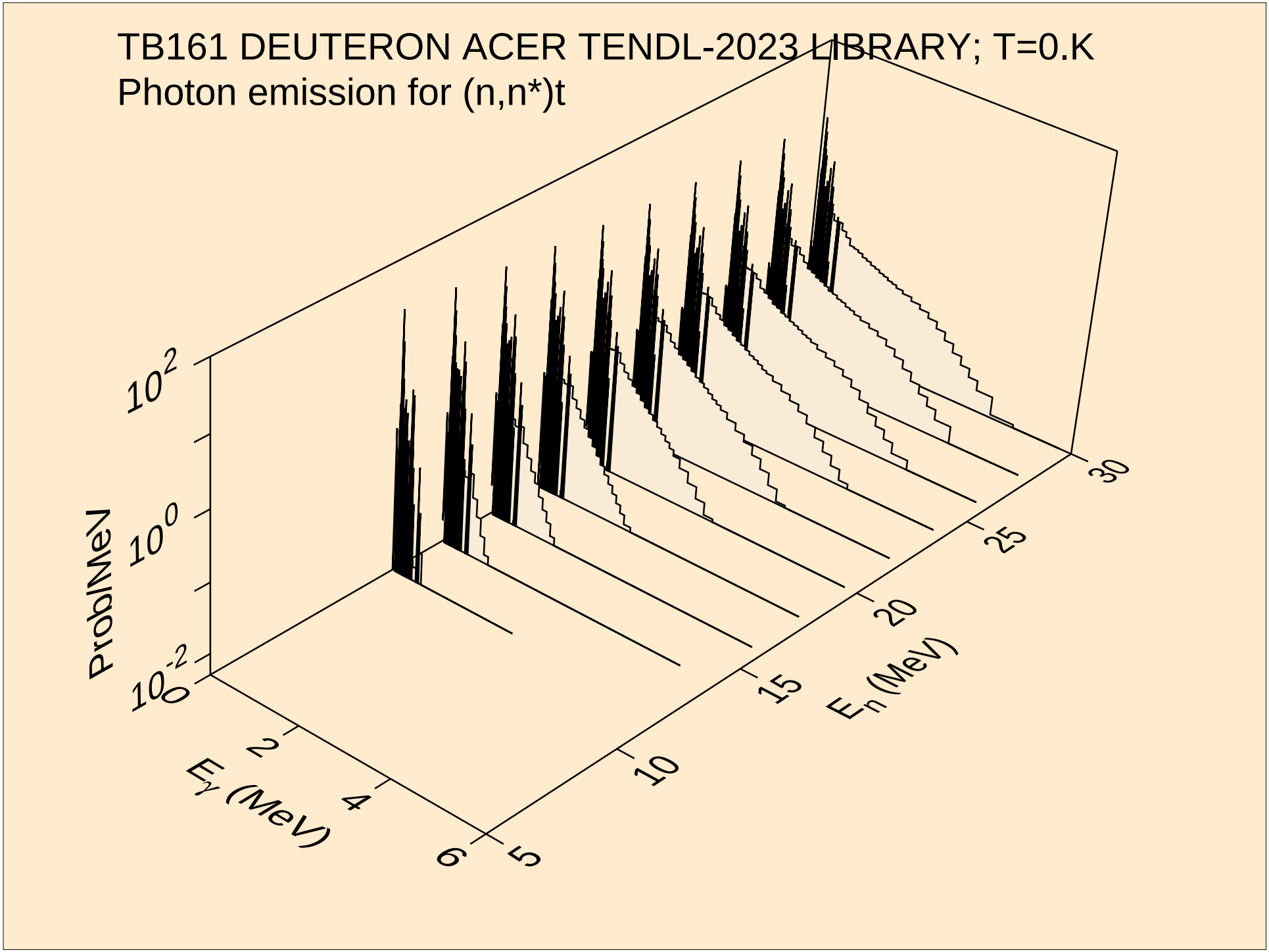

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,2n)a
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

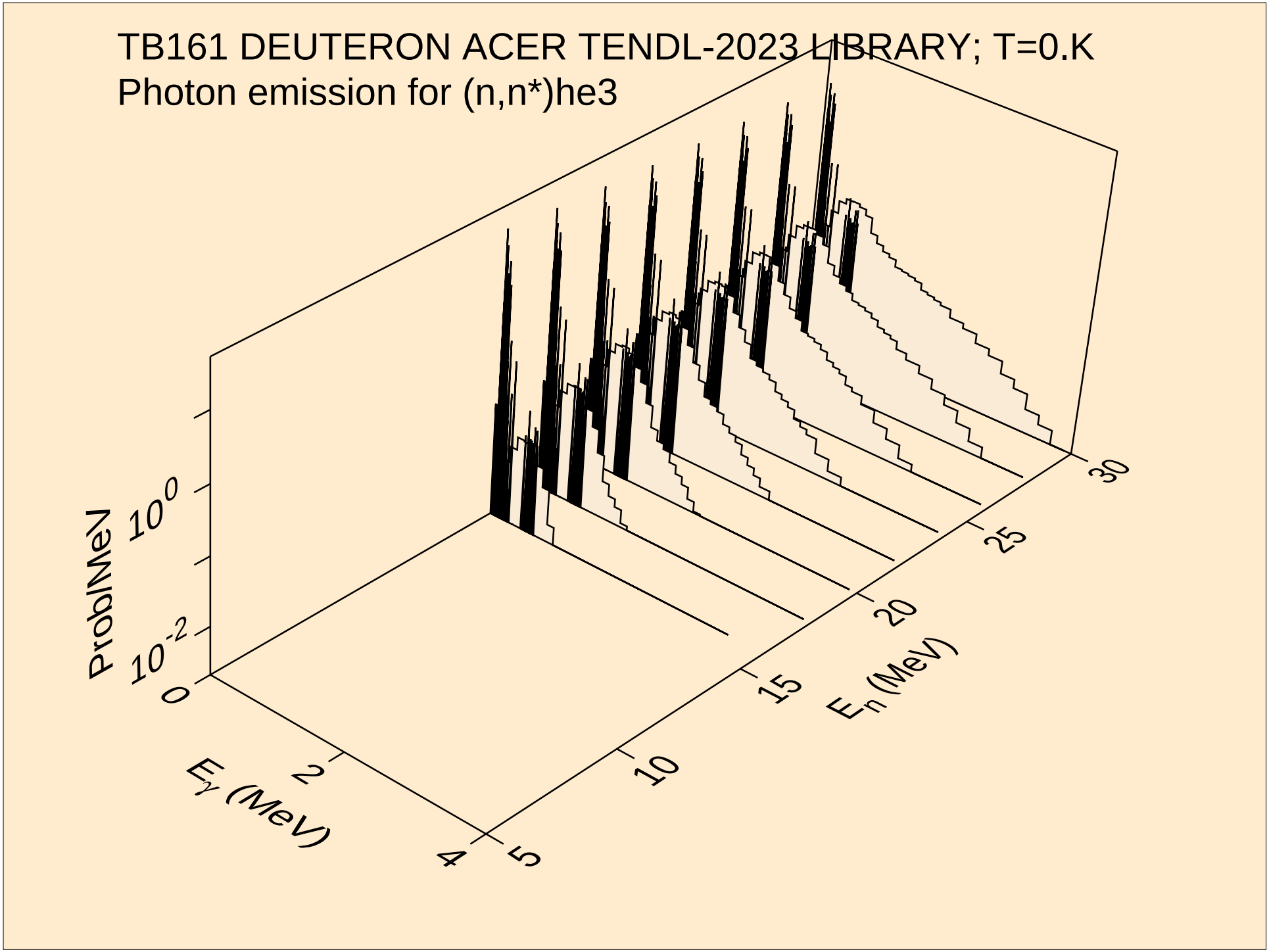

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,3n)a
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

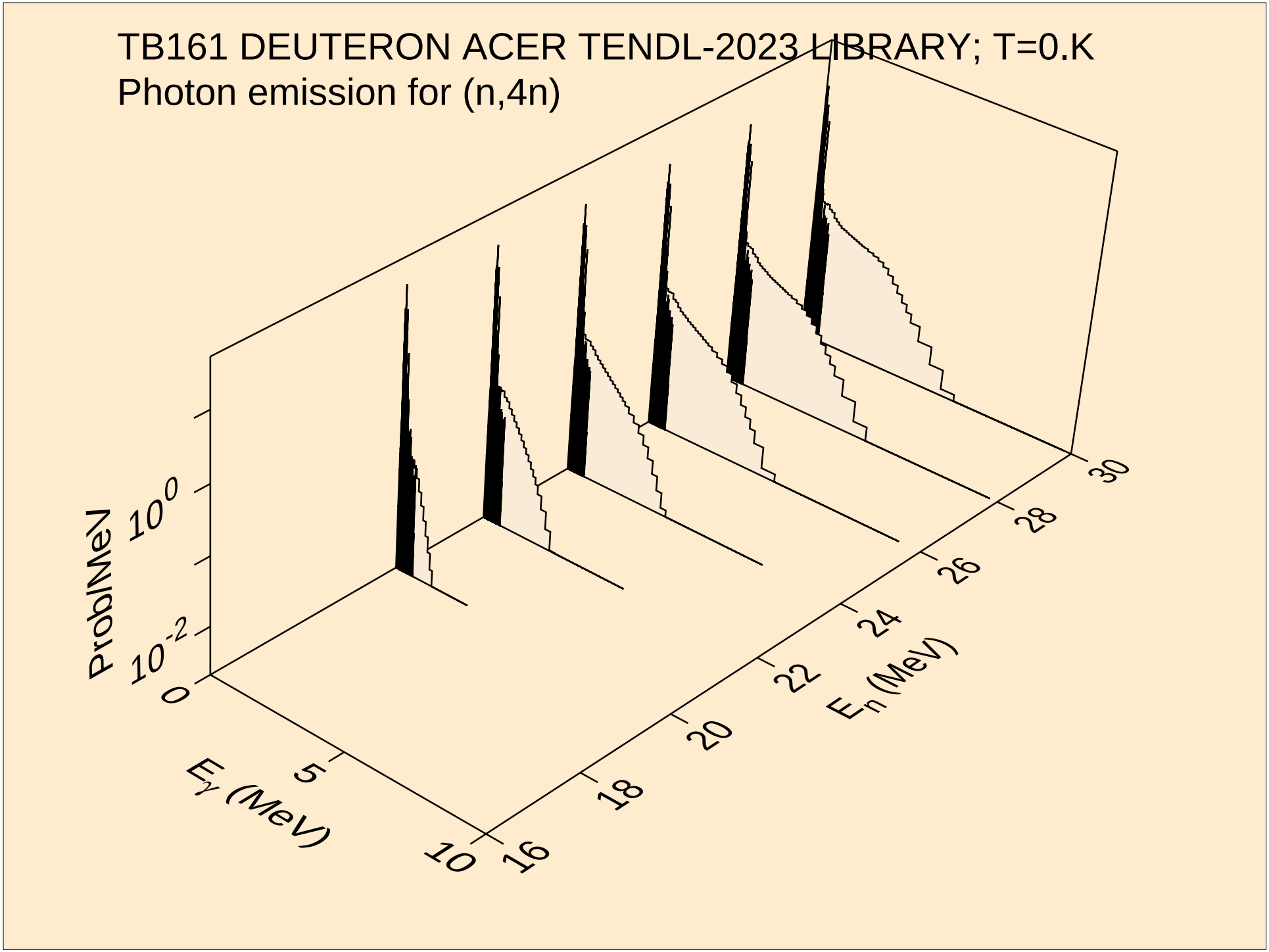

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n*)p
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
2
4
6
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

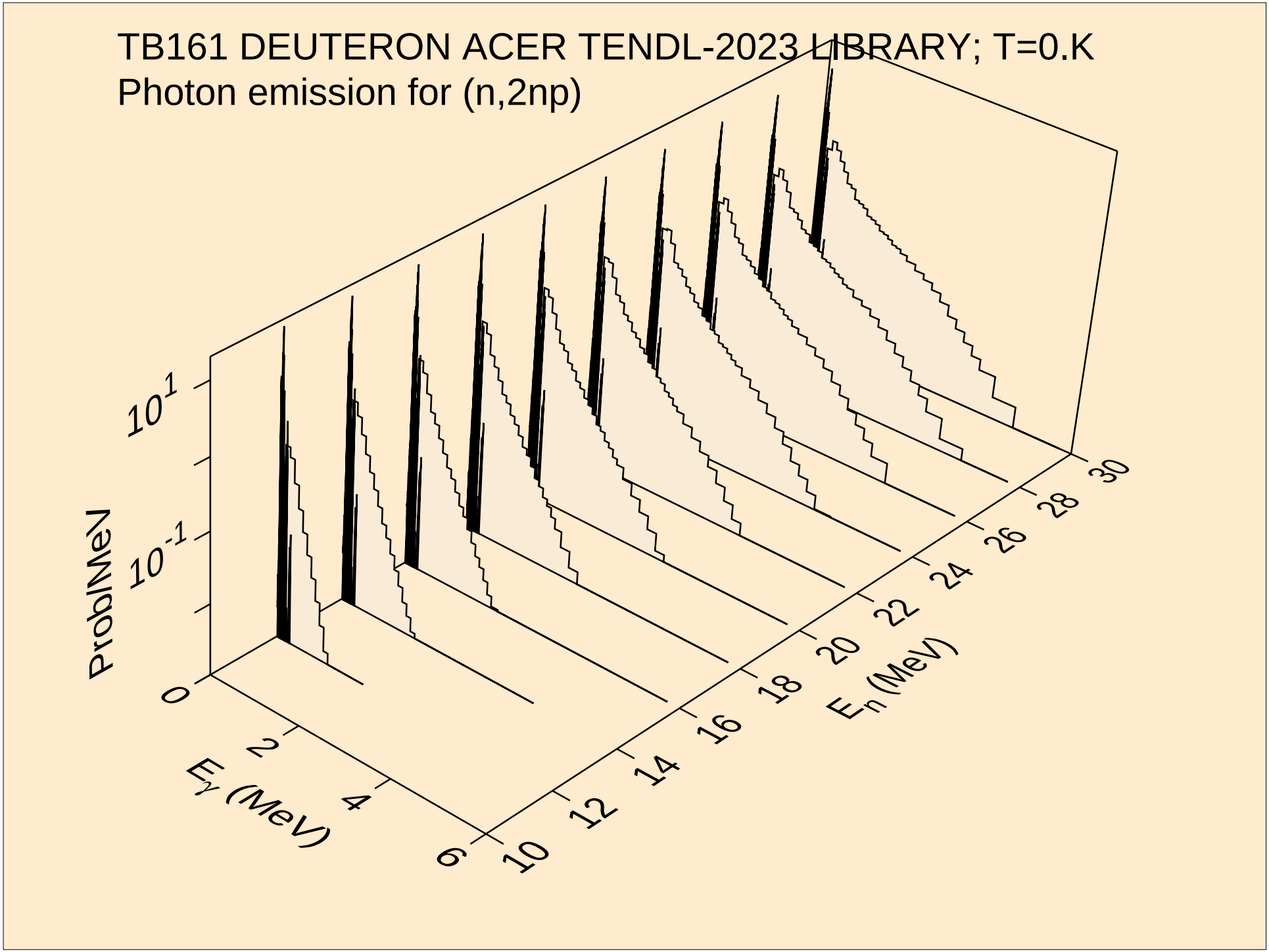

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n*)2a
Prob/MeV
10^0
10^-2
0
2
4
6
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

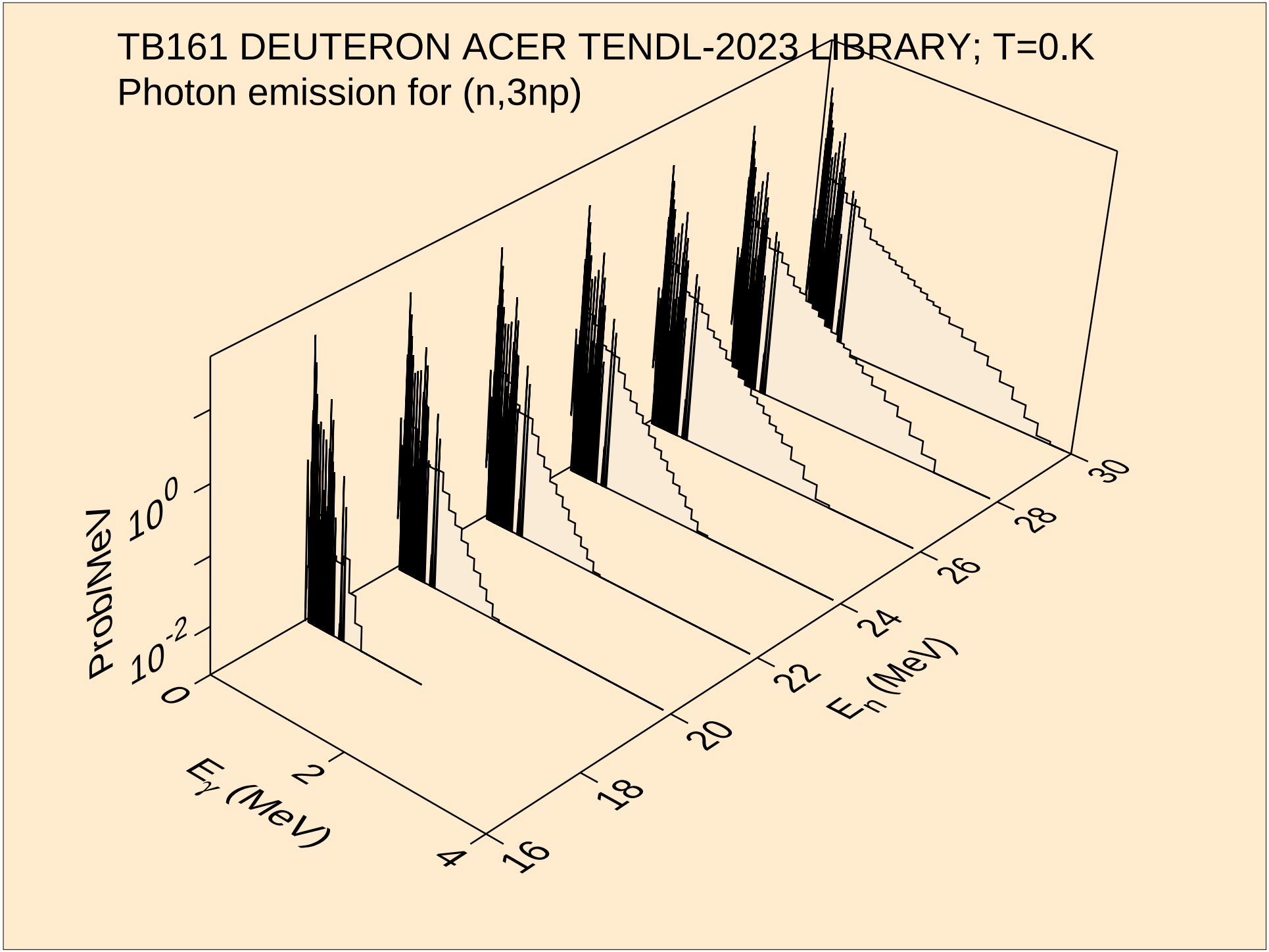

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n*)d
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

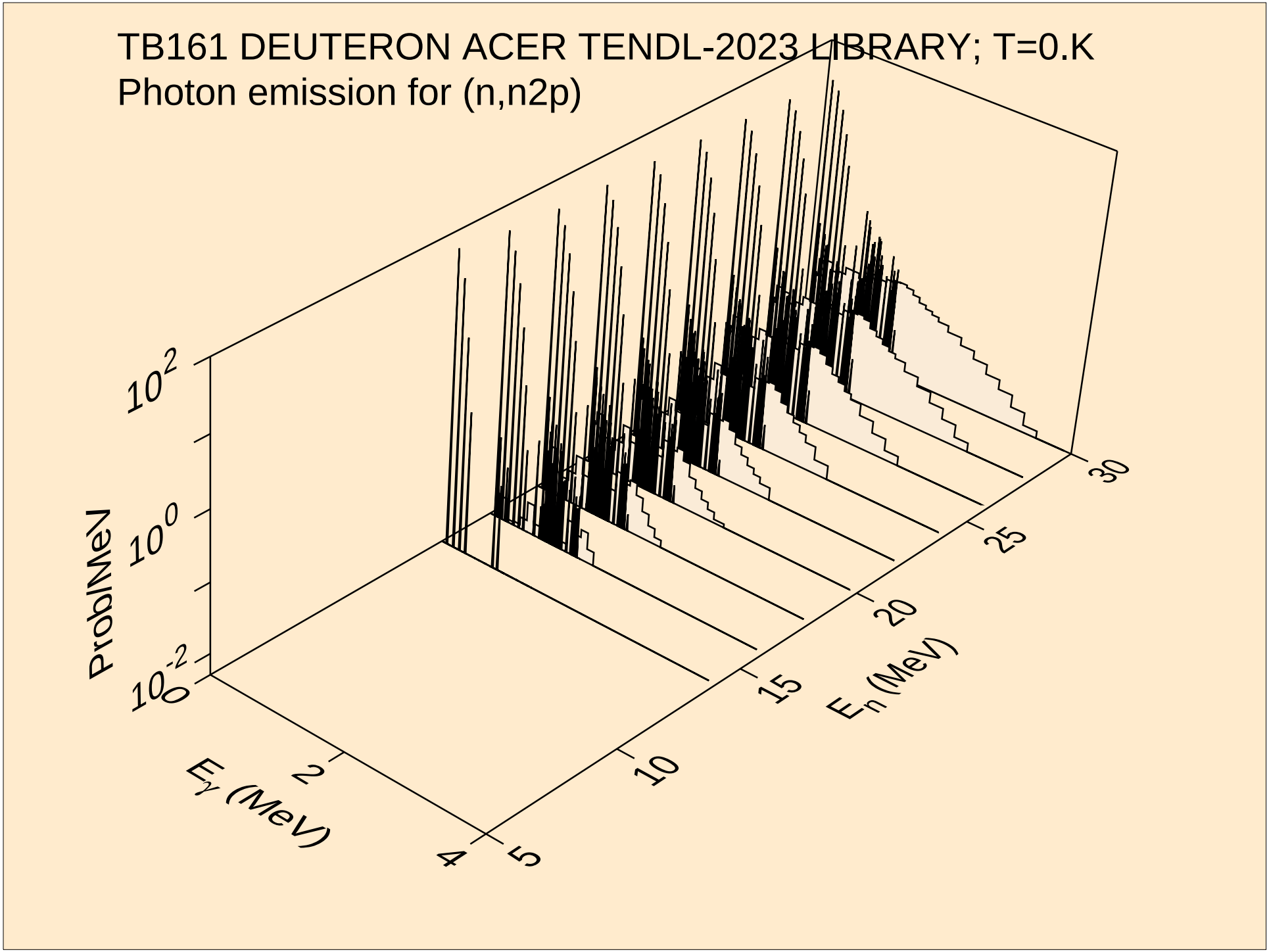

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n*)t
Prob/MeV
10^{2}
10^{0}
10^{-2}
0
2
4
6
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

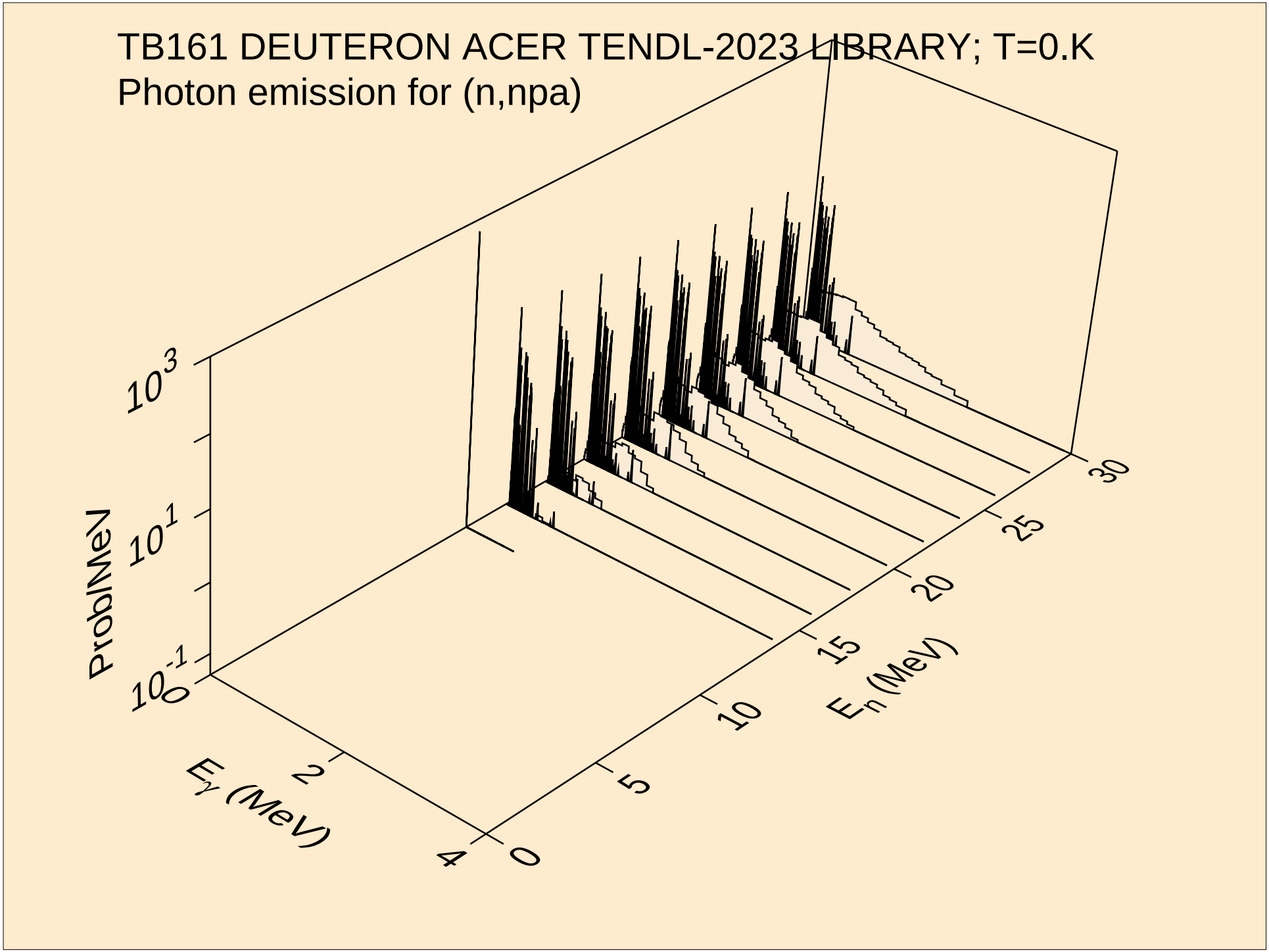

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n*)he3
Prob/MeV
10^0
10^-2
0
2
4
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

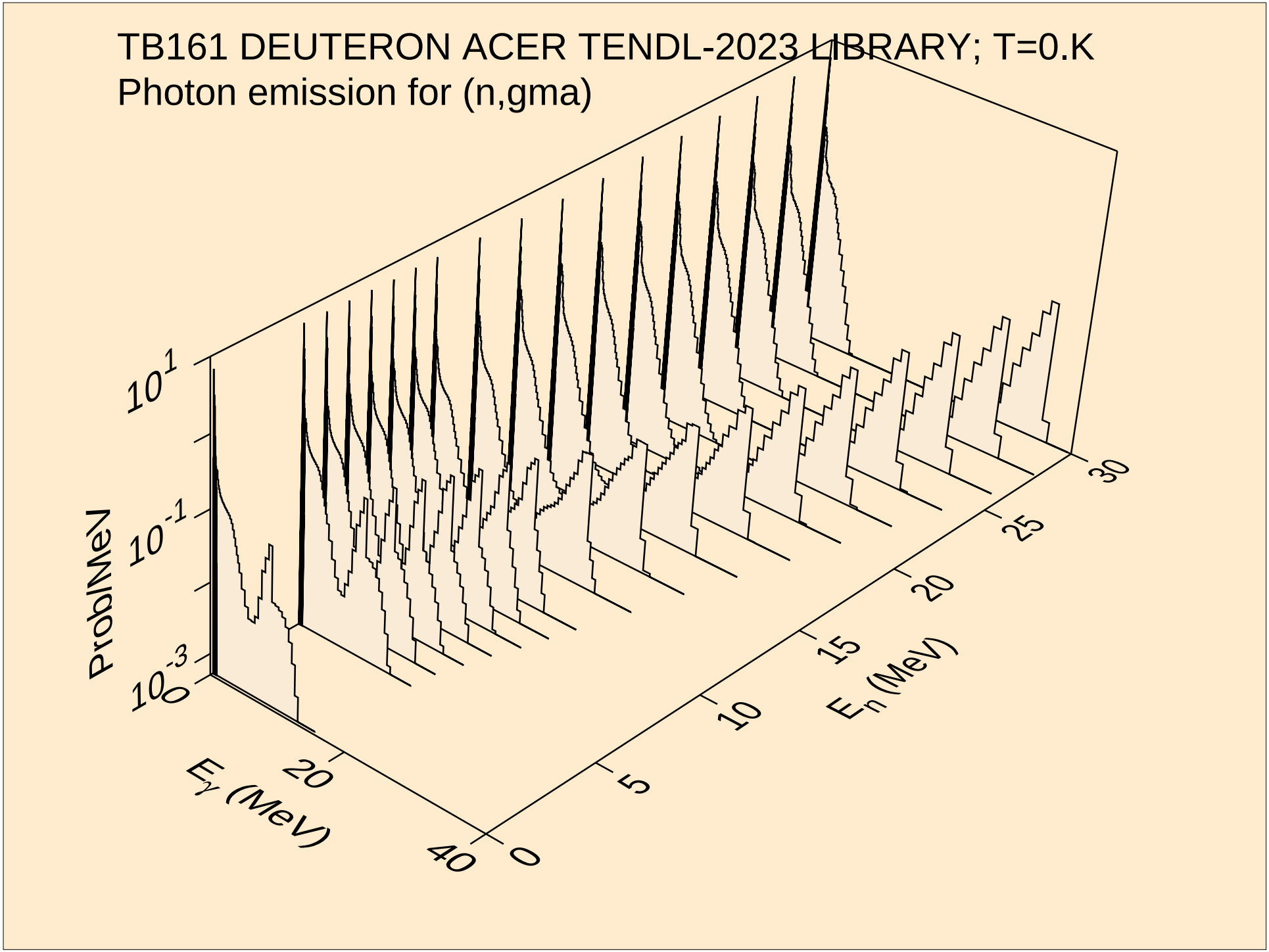

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,4n)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
16
18
20
22
24
26
28
30
E_n (MeV)

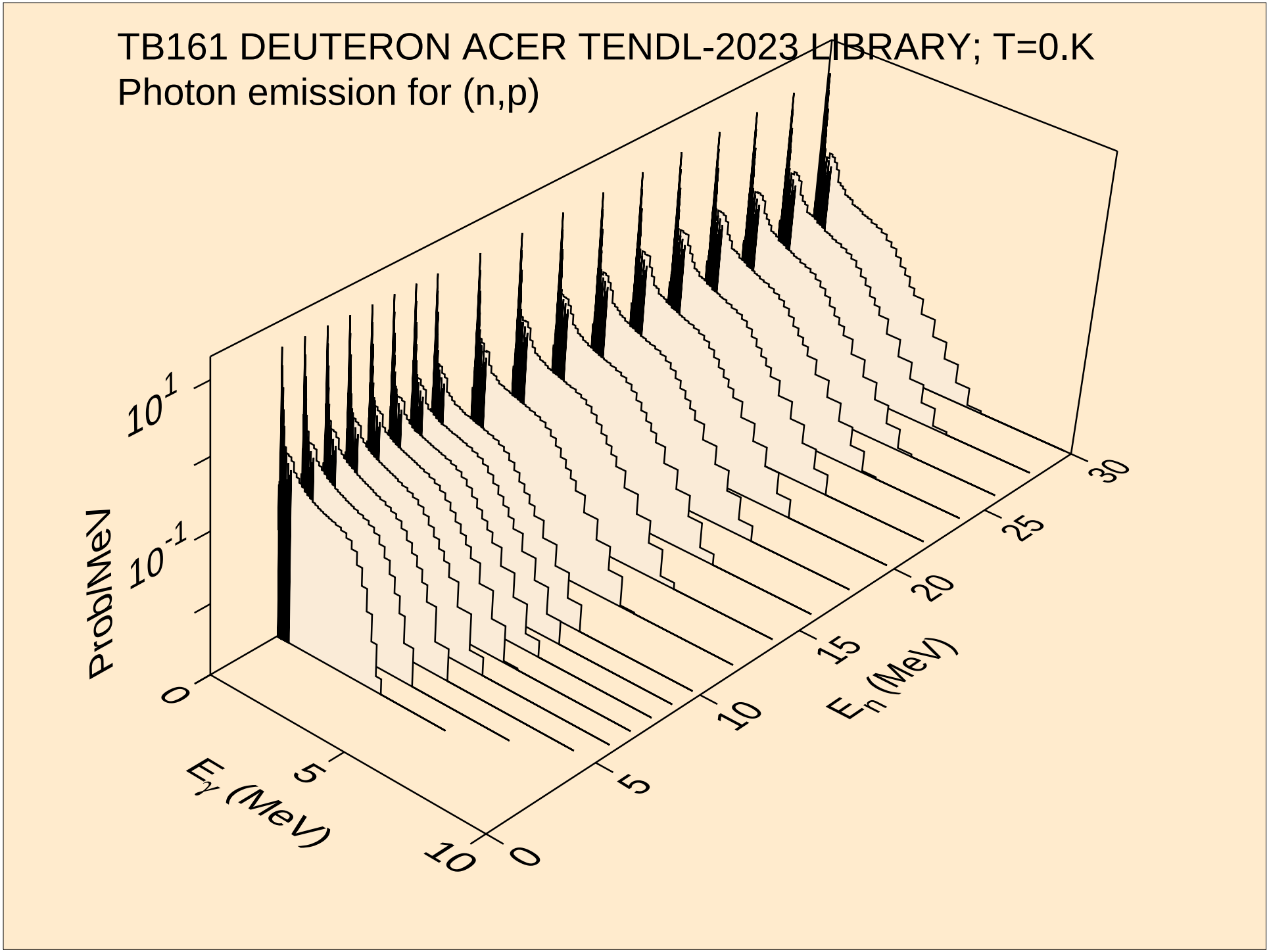

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,2np)
Prob/MeV
10^{1}
10^{-1}
0
2
4
6
E_γ (MeV)
10
12
14
16
18
20
22
24
26
28
30
E_n (MeV)

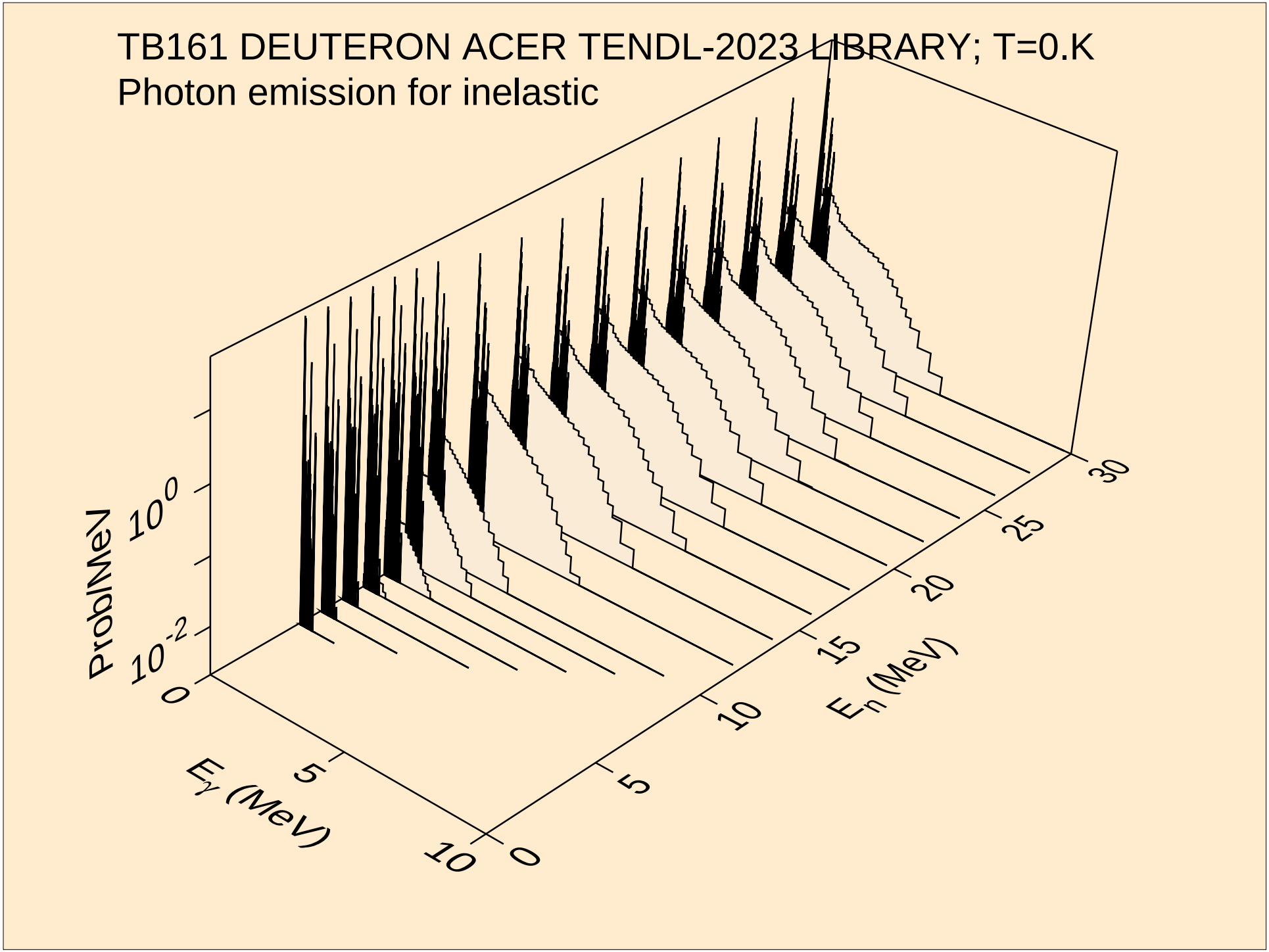

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,3np)
Prob/MeV
10^0
10^-2
0
2
4
E_γ (MeV)
16
18
20
22
24
26
28
30
E_n (MeV)

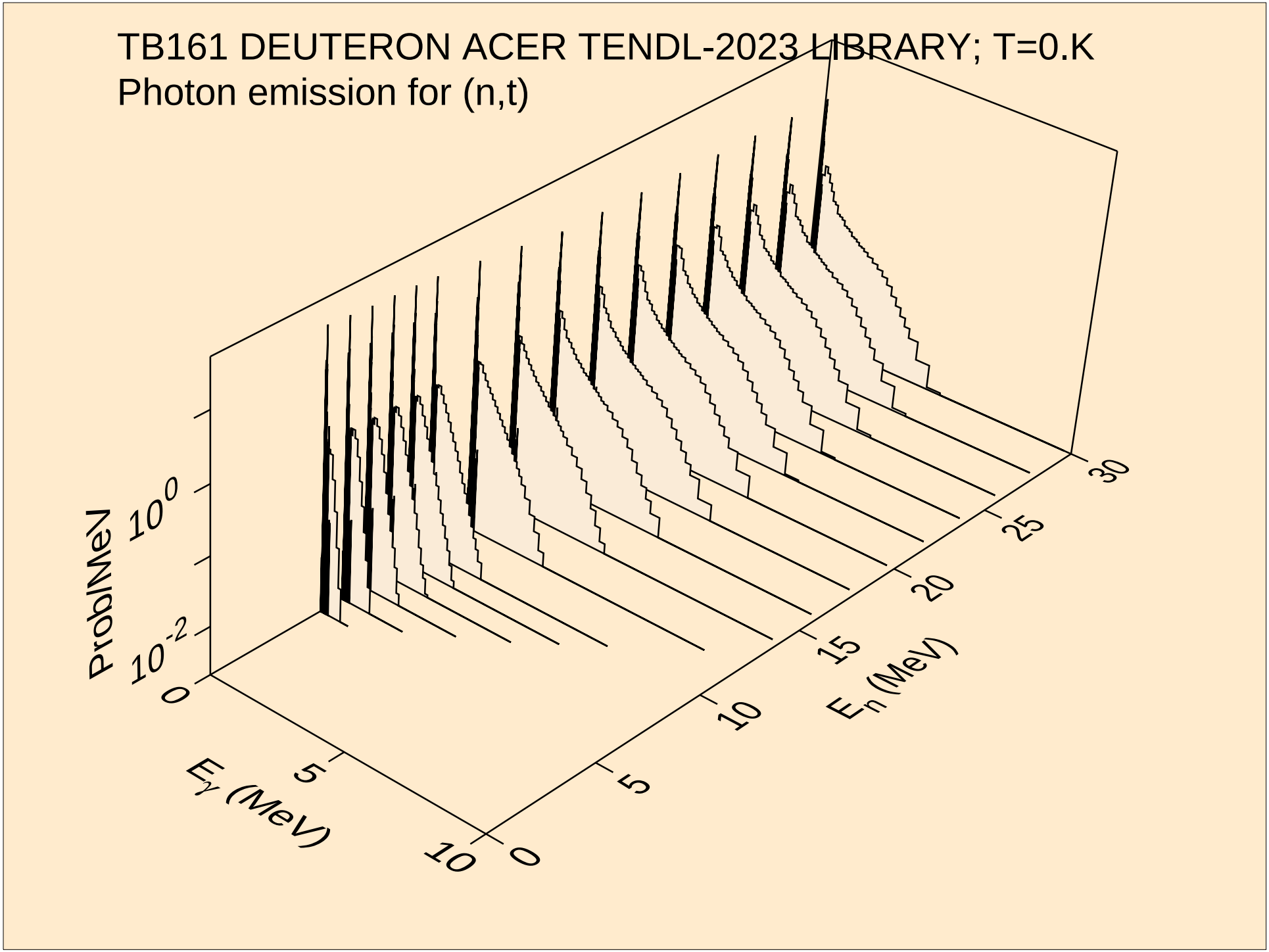

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,n2p)
Prob/MeV
10^{2}
10^{0}
10^{-2}
E_γ (MeV)
0
2
4
5
10
15
20
25
30
E_n (MeV)

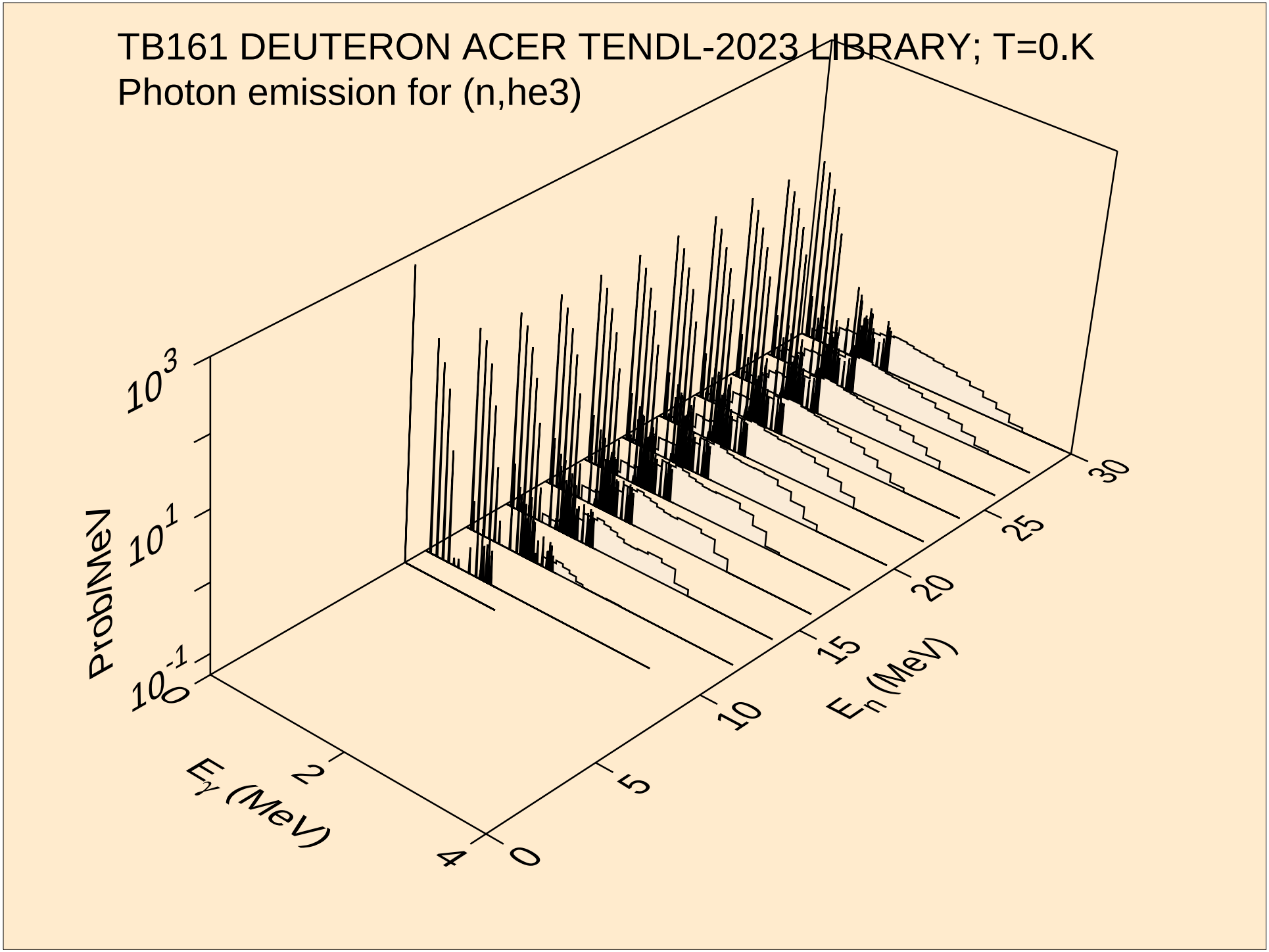

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,npa)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

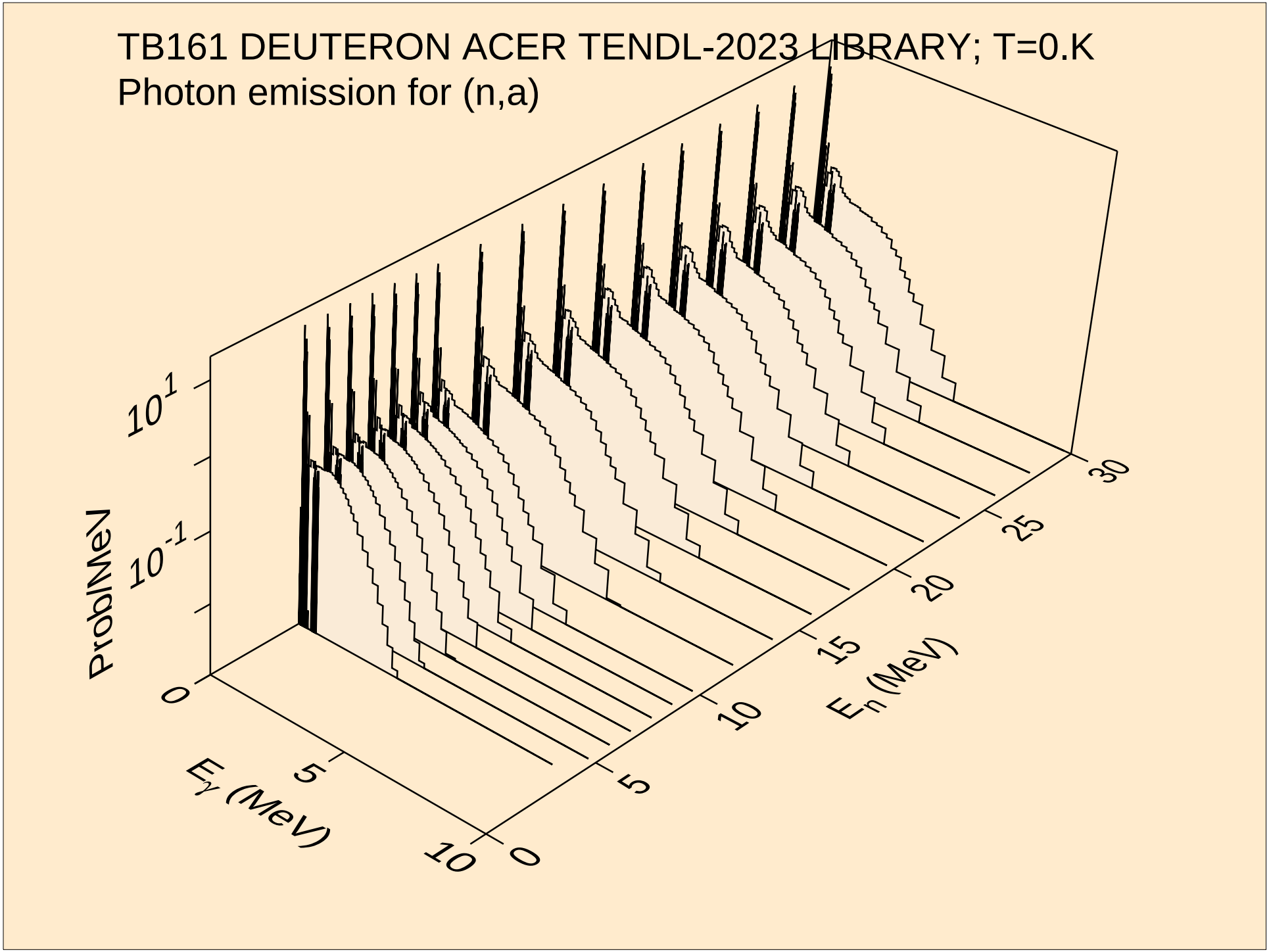

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,gma)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
20
40
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

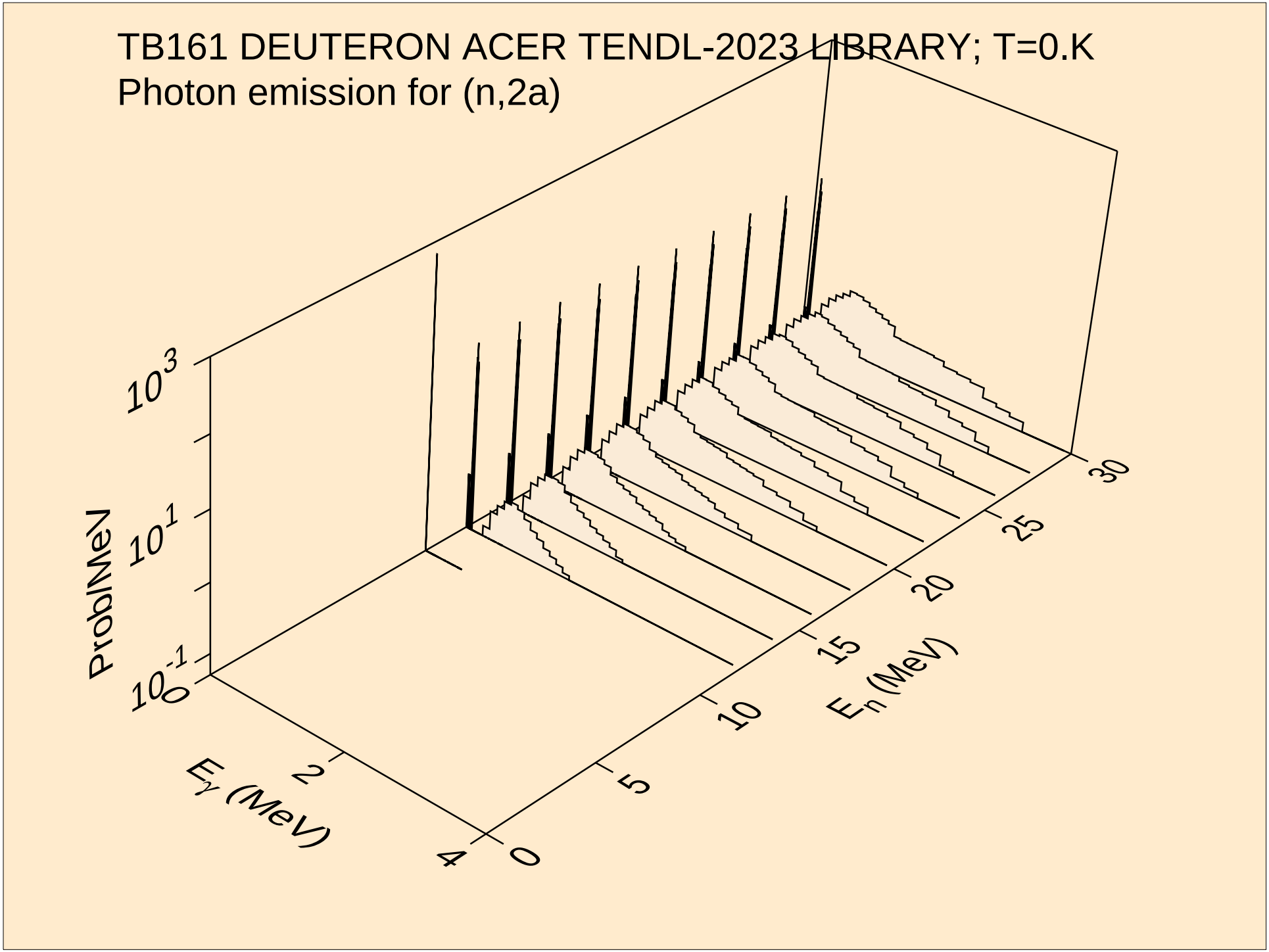

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,p)
Prob/MeV
10^{1}
10^{-1}
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

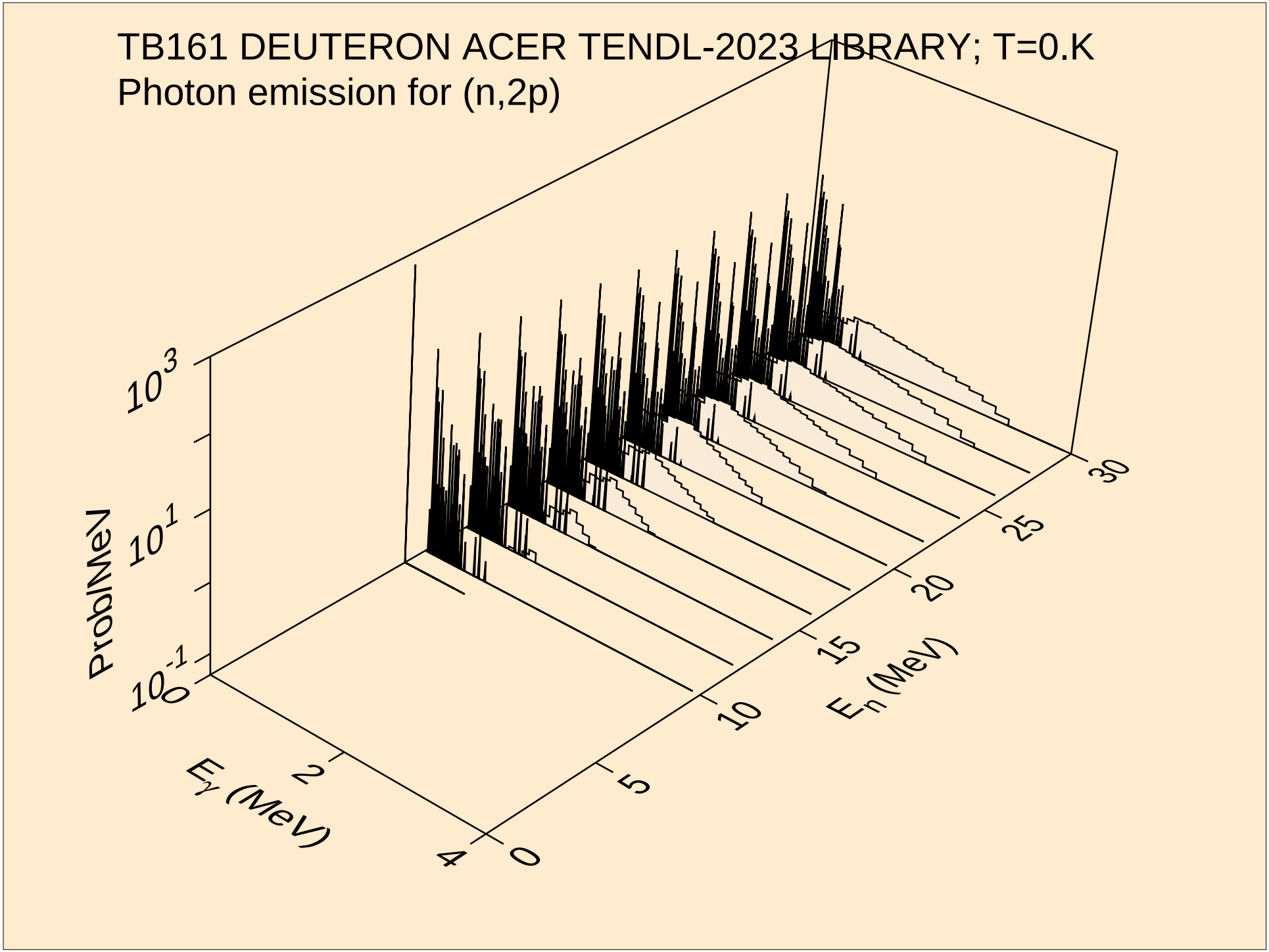

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for inelastic
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

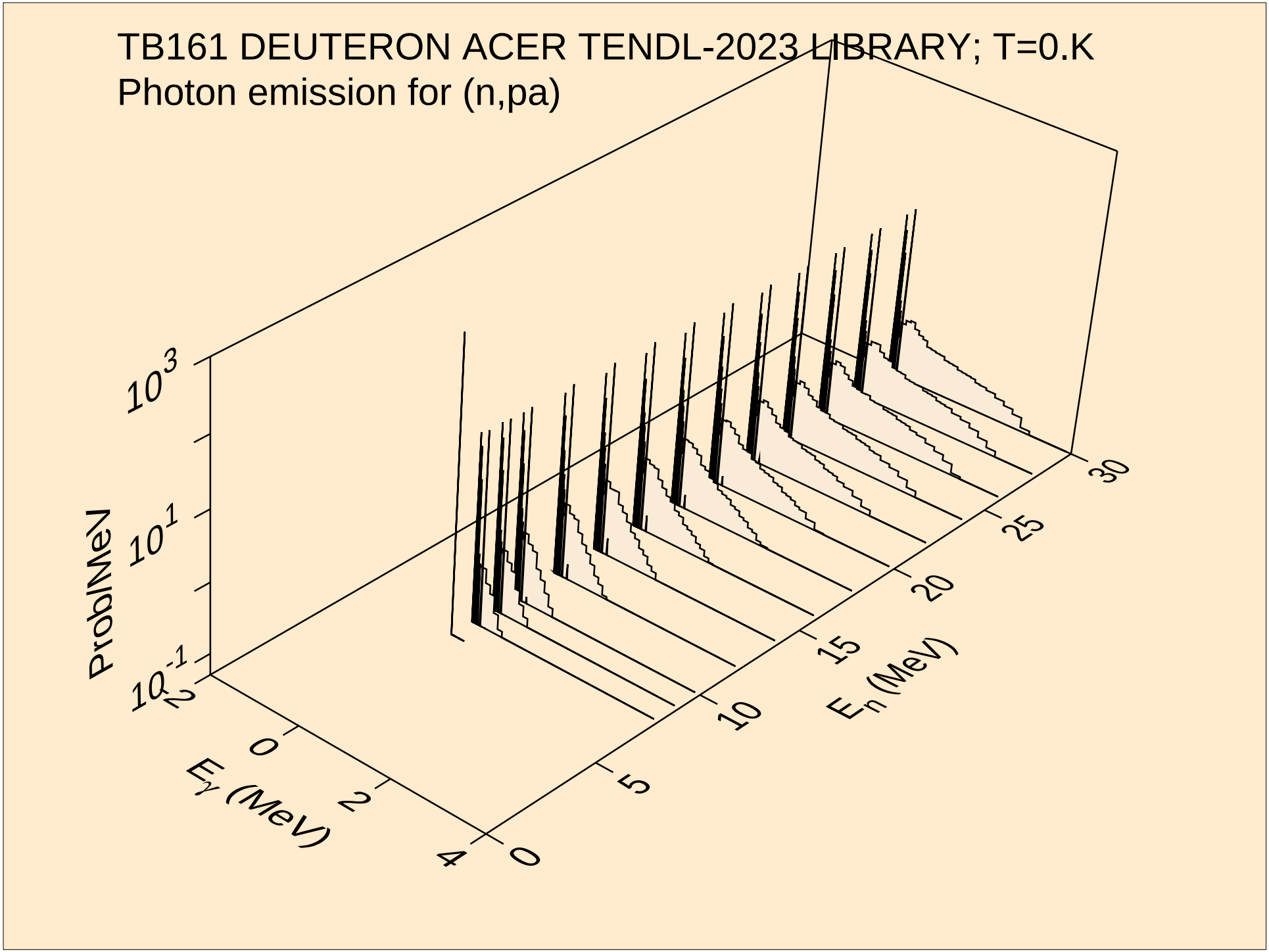

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,t)
Prob/MeV
10^{0}
10^{-2}
0
E_γ (MeV)
5
10
0
5
10
15
20
25
30
E_n (MeV)

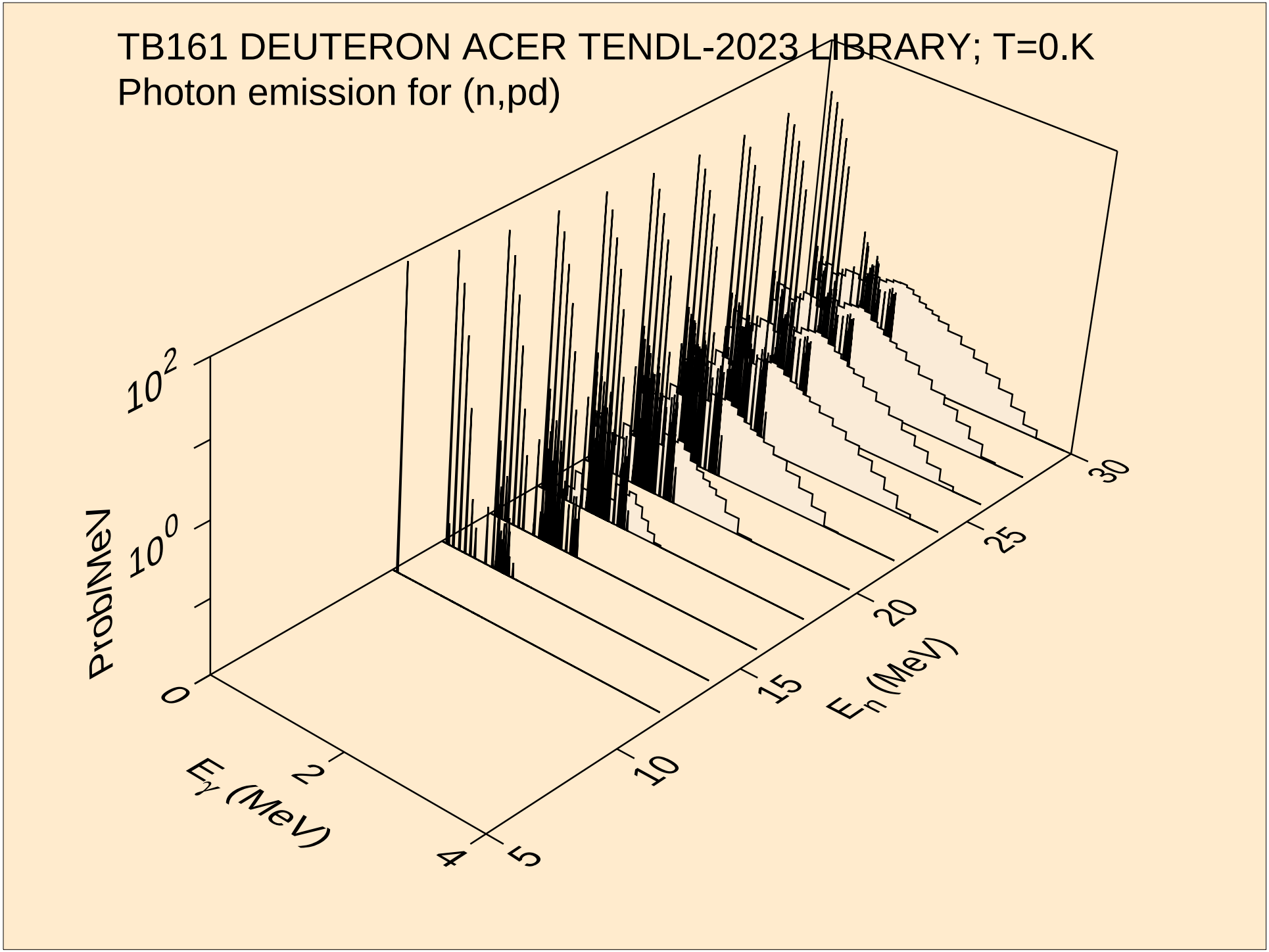

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,he3)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

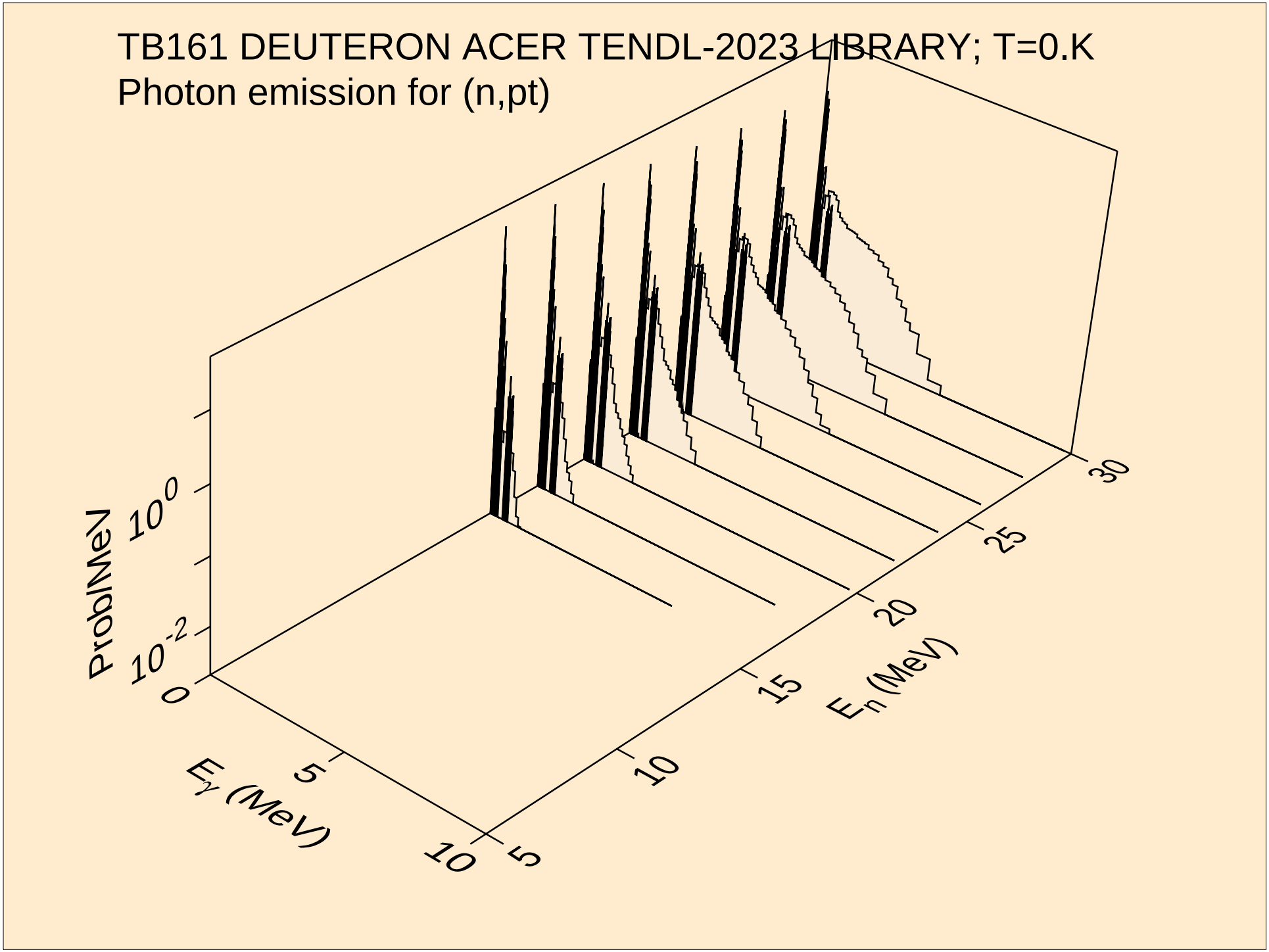

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,a)
Prob/MeV
10^{1}
10^{-1}
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

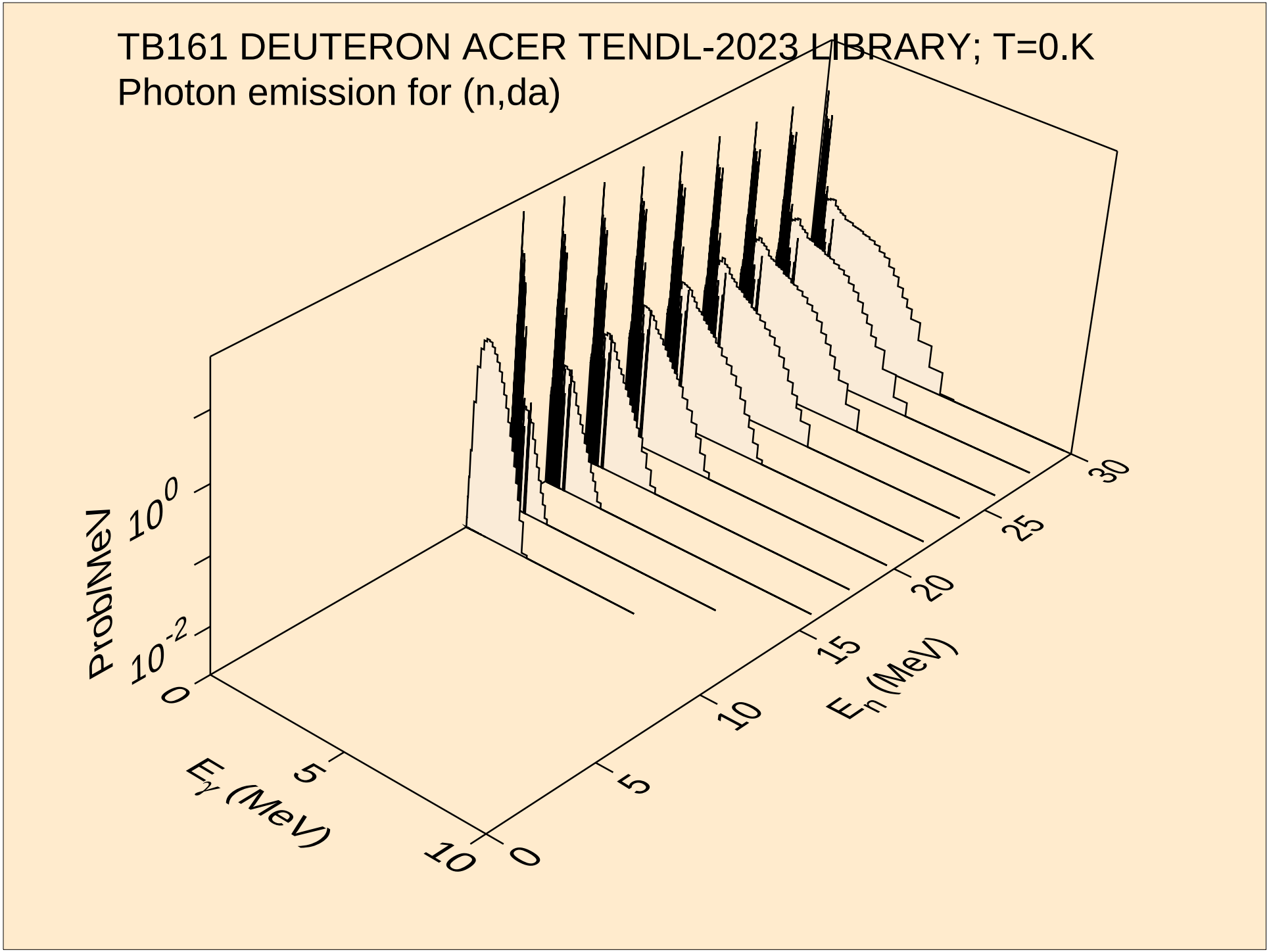

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,2a)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

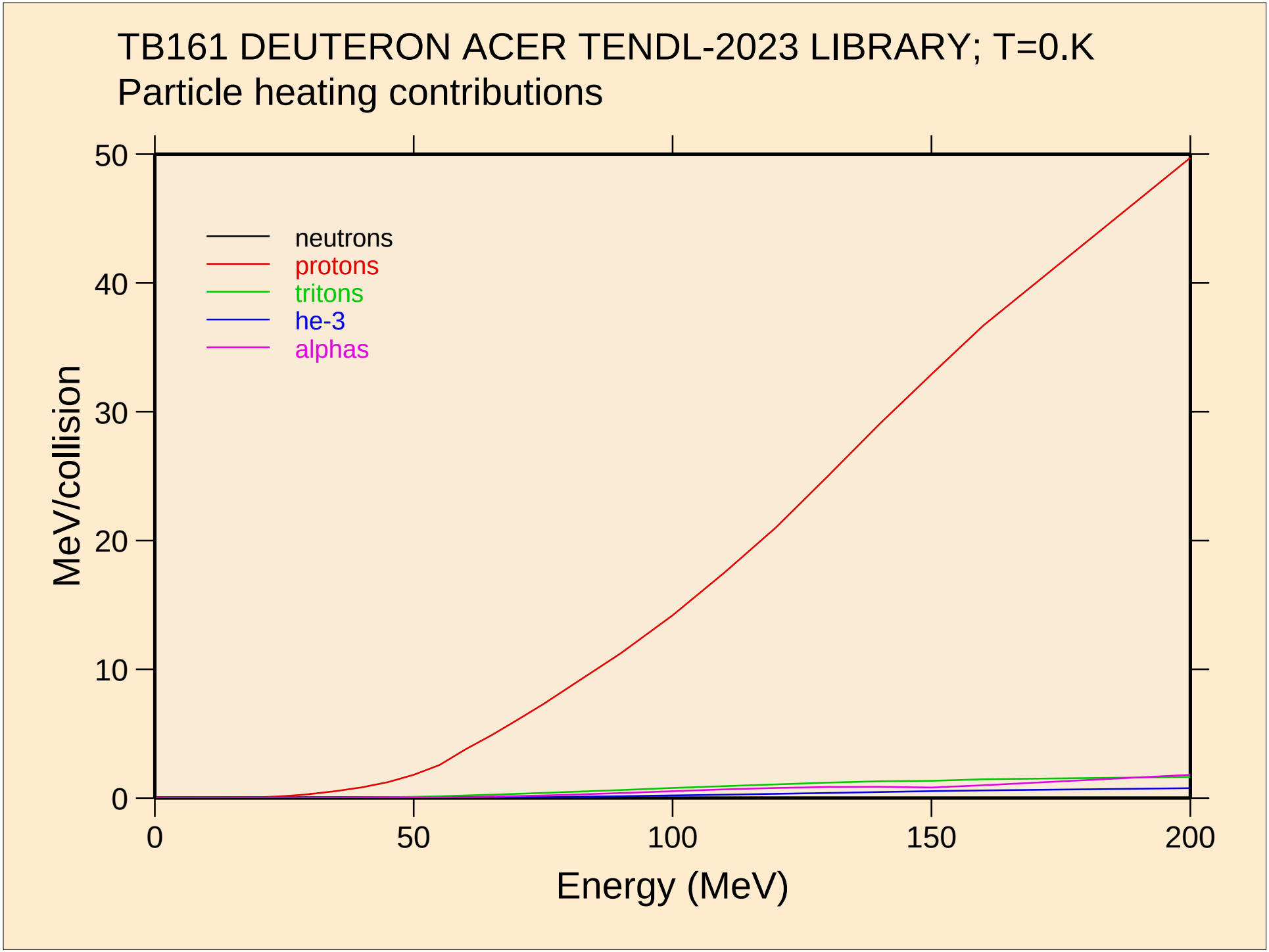

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,2p)
Prob/MeV
10^{3}
10^{1}
10^{-1}
0
2
4
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

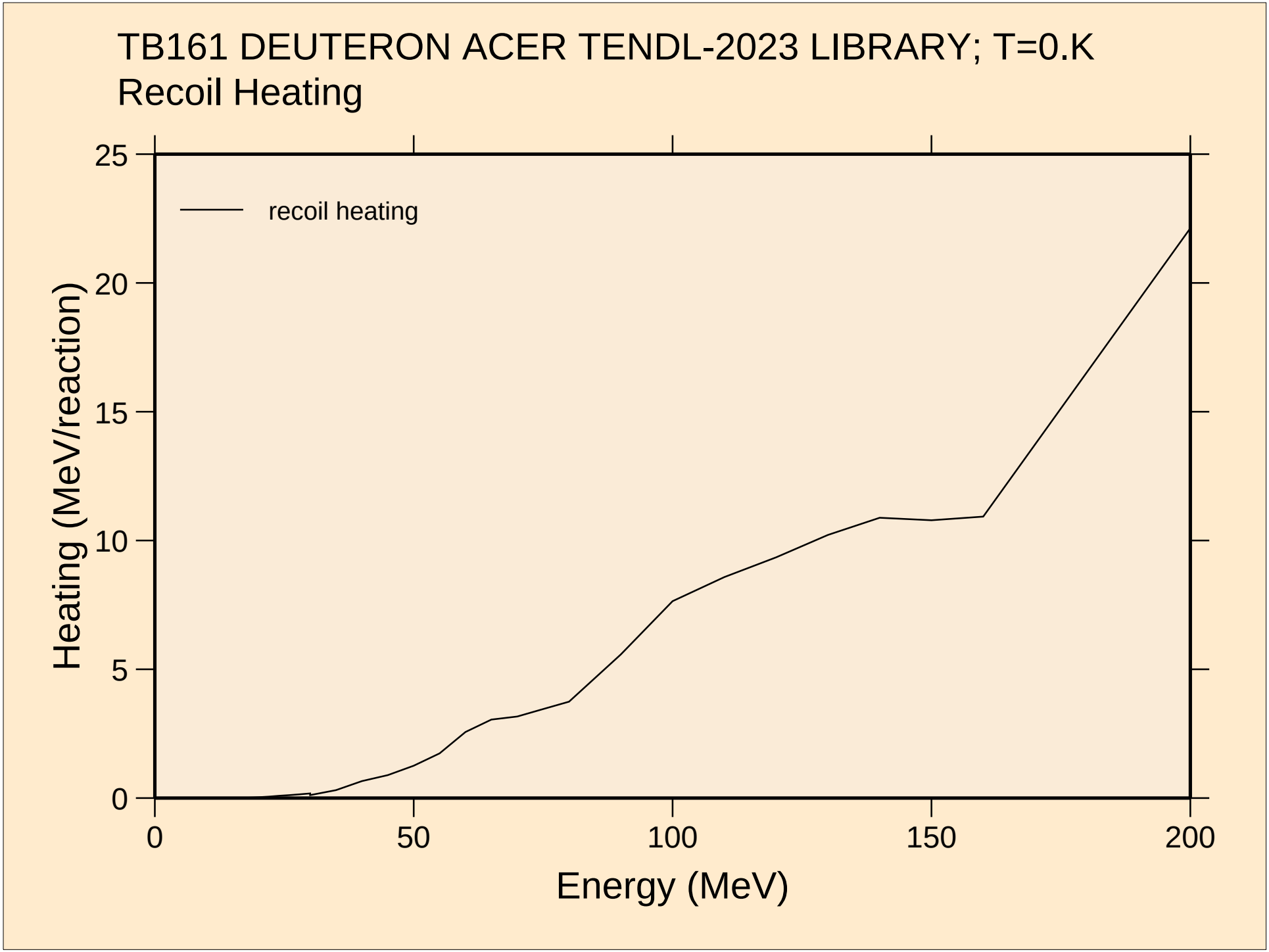

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,pa)
Prob/MeV
10^{3}
10^{1}
10^{-1}
E_γ (MeV)
0
2
4
E_n (MeV)
0
5
10
15
20
25
30

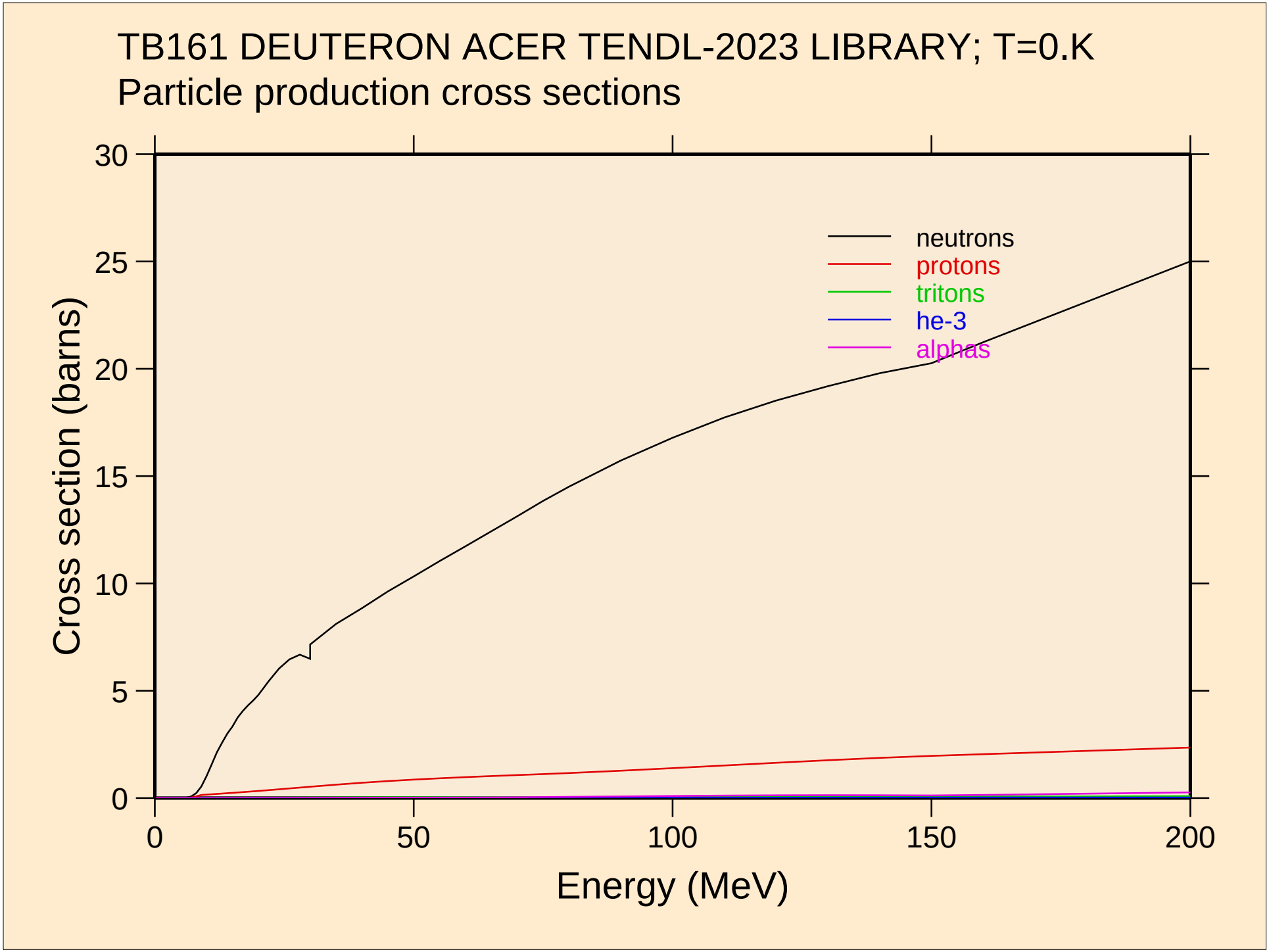

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,pd)
Prob/MeV
10^2
10^0
0
2
4
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

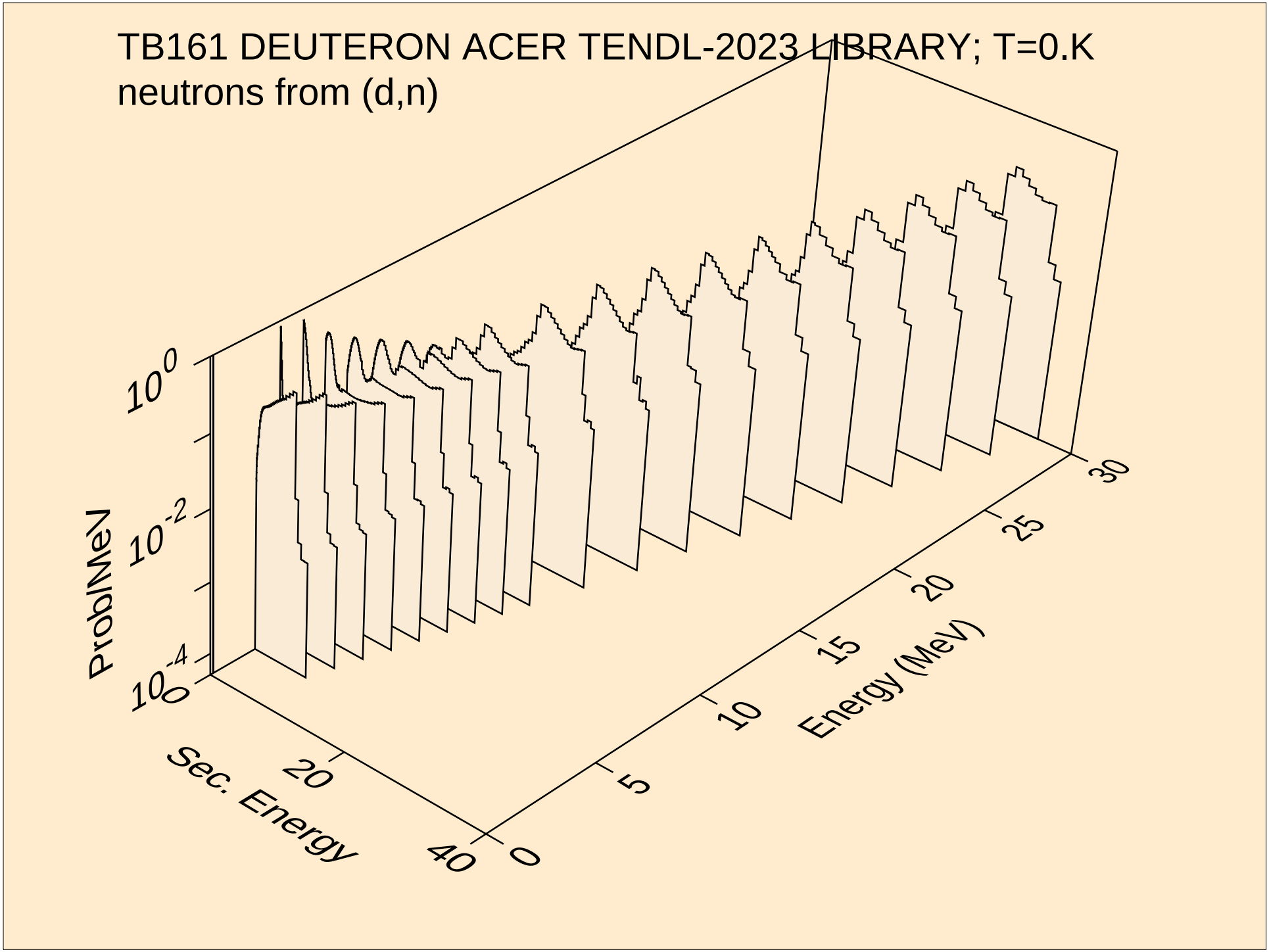

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,pt)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
5
10
15
20
25
30
E_n (MeV)

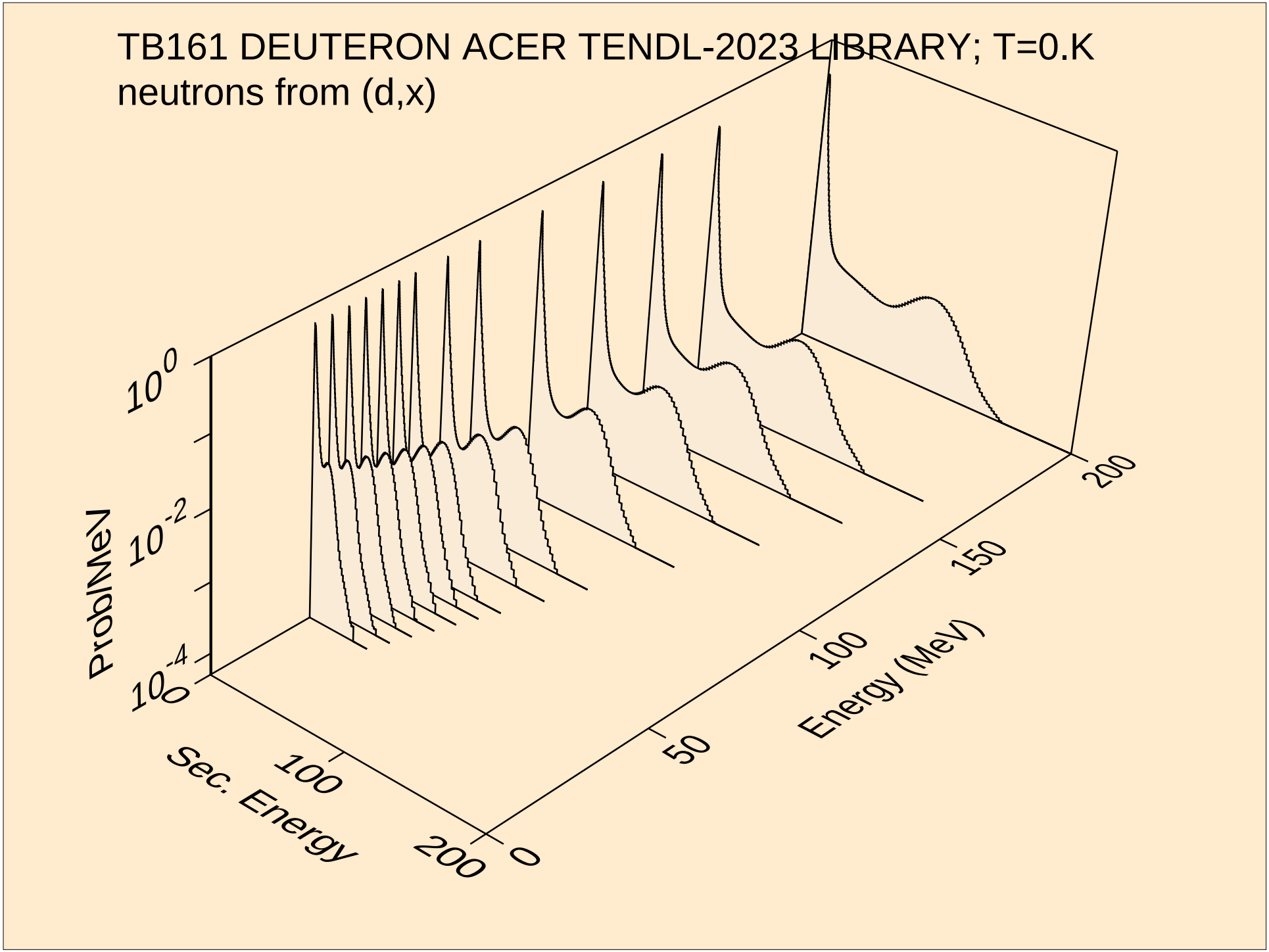

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Photon emission for (n,da)
Prob/MeV
10^0
10^-2
0
5
10
E_γ (MeV)
0
5
10
15
20
25
30
E_n (MeV)

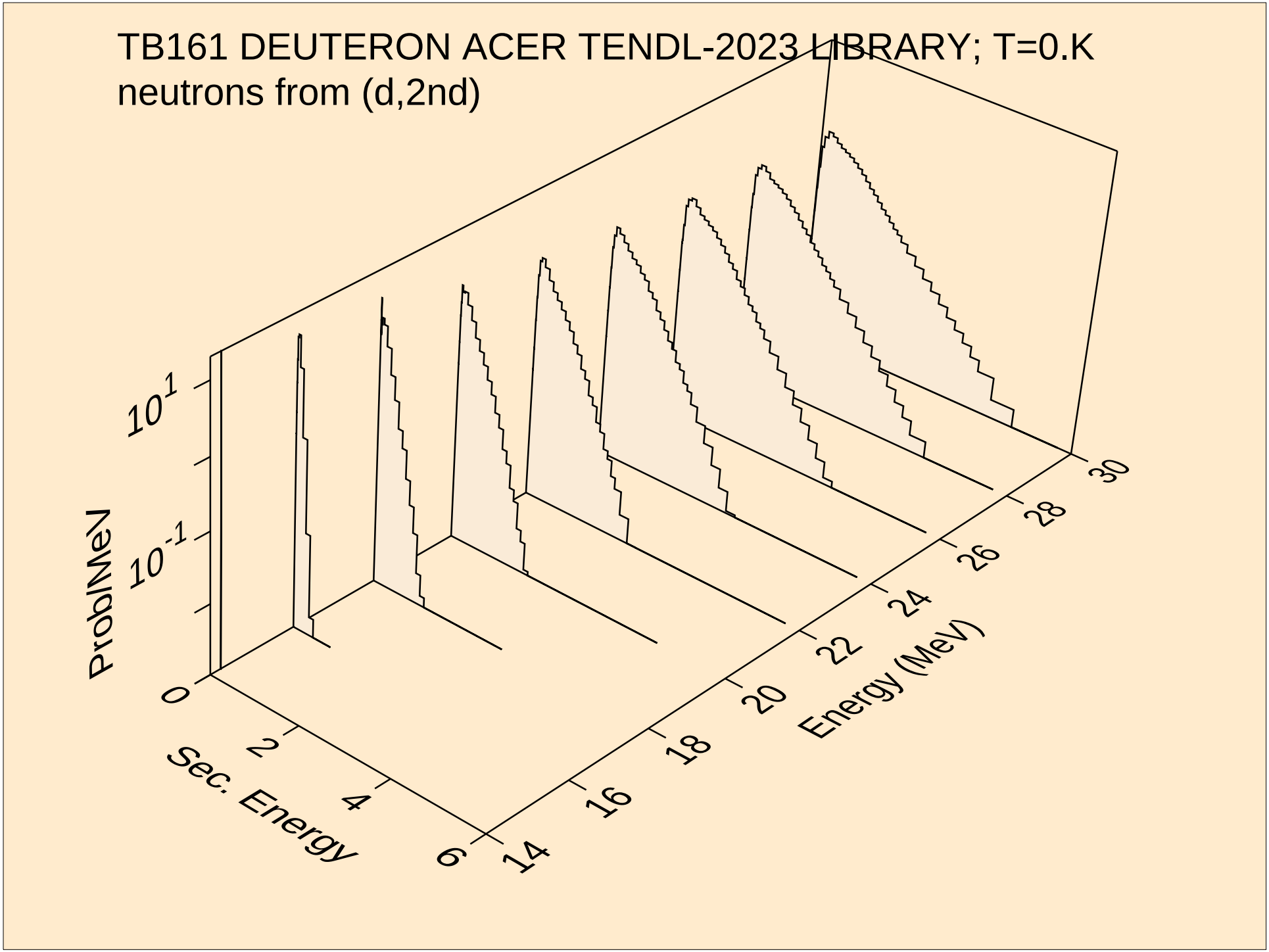

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Particle heating contributions
neutrons
protons
tritons
he-3
alphas
MeV/collision
Energy (MeV)
0
10
20
30
40
50
0
50
100
150
200

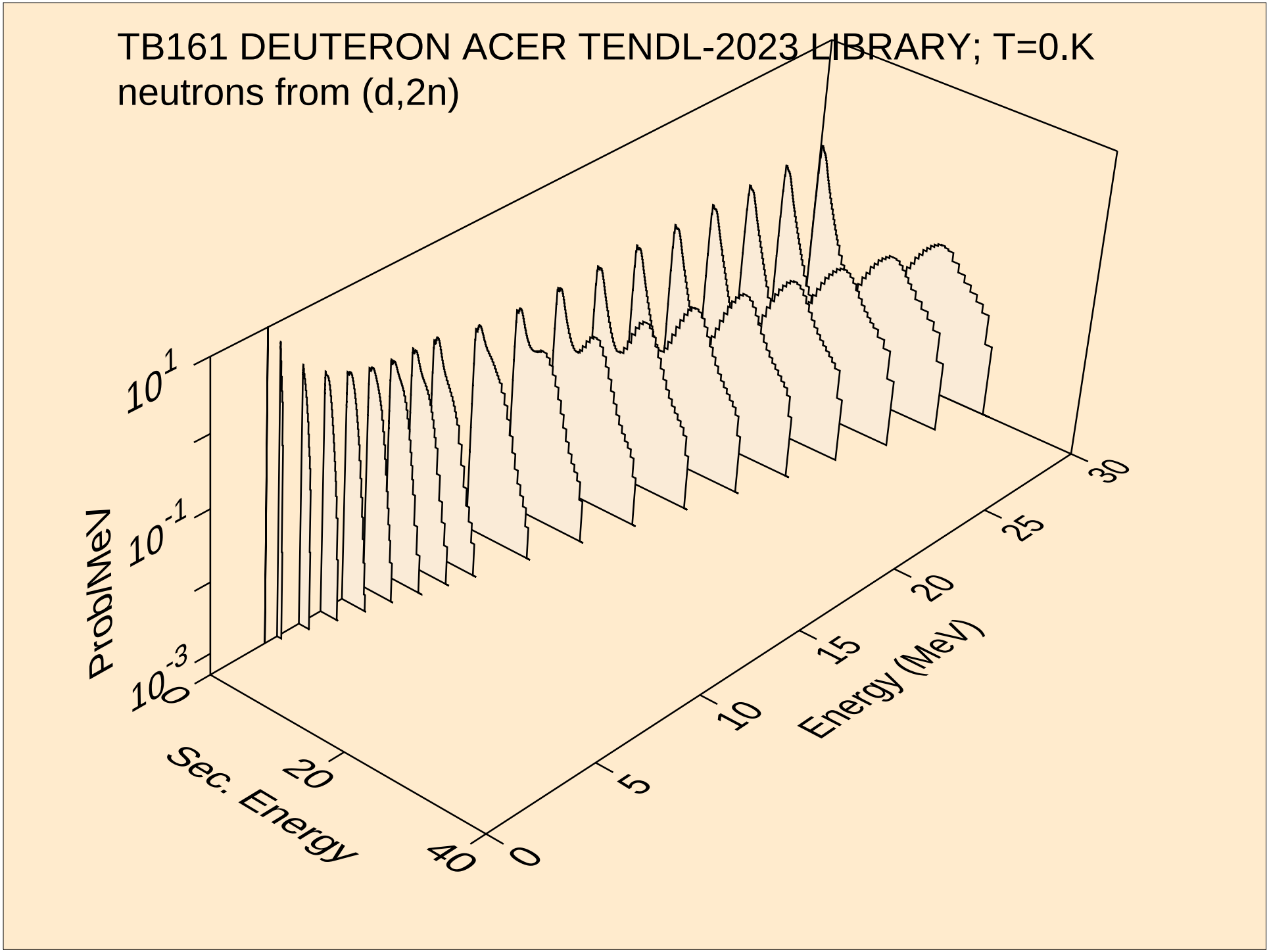

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Recoil Heating
recoil heating
Heating (MeV/reaction)
Energy (MeV)
0
5
10
15
20
25
0
50
100
150
200

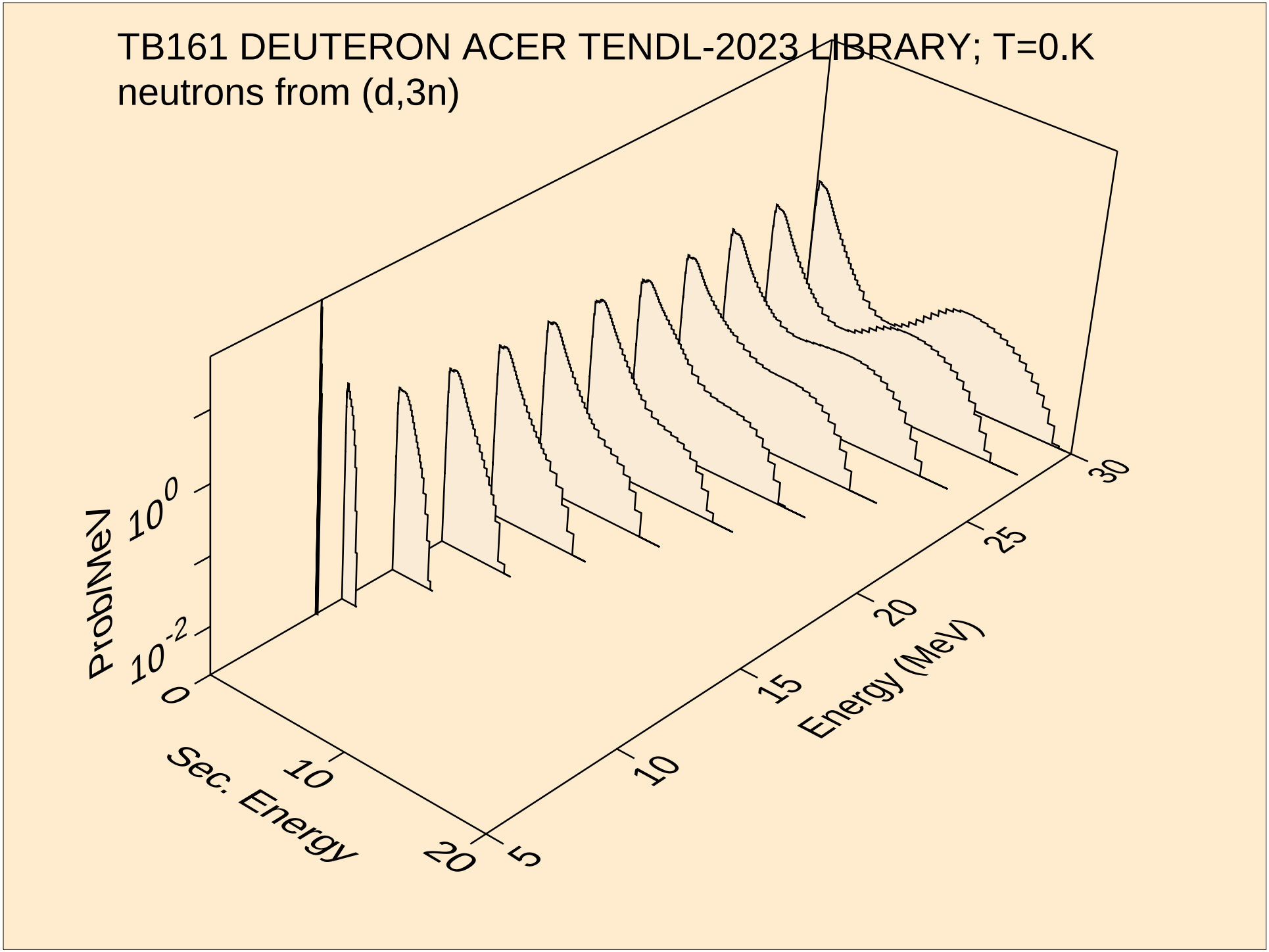

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
Particle production cross sections
Cross section (barns)
Energy (MeV)
0
5
10
15
20
25
30
0
50
100
150
200
neutrons
protons
tritons
he-3
alphas

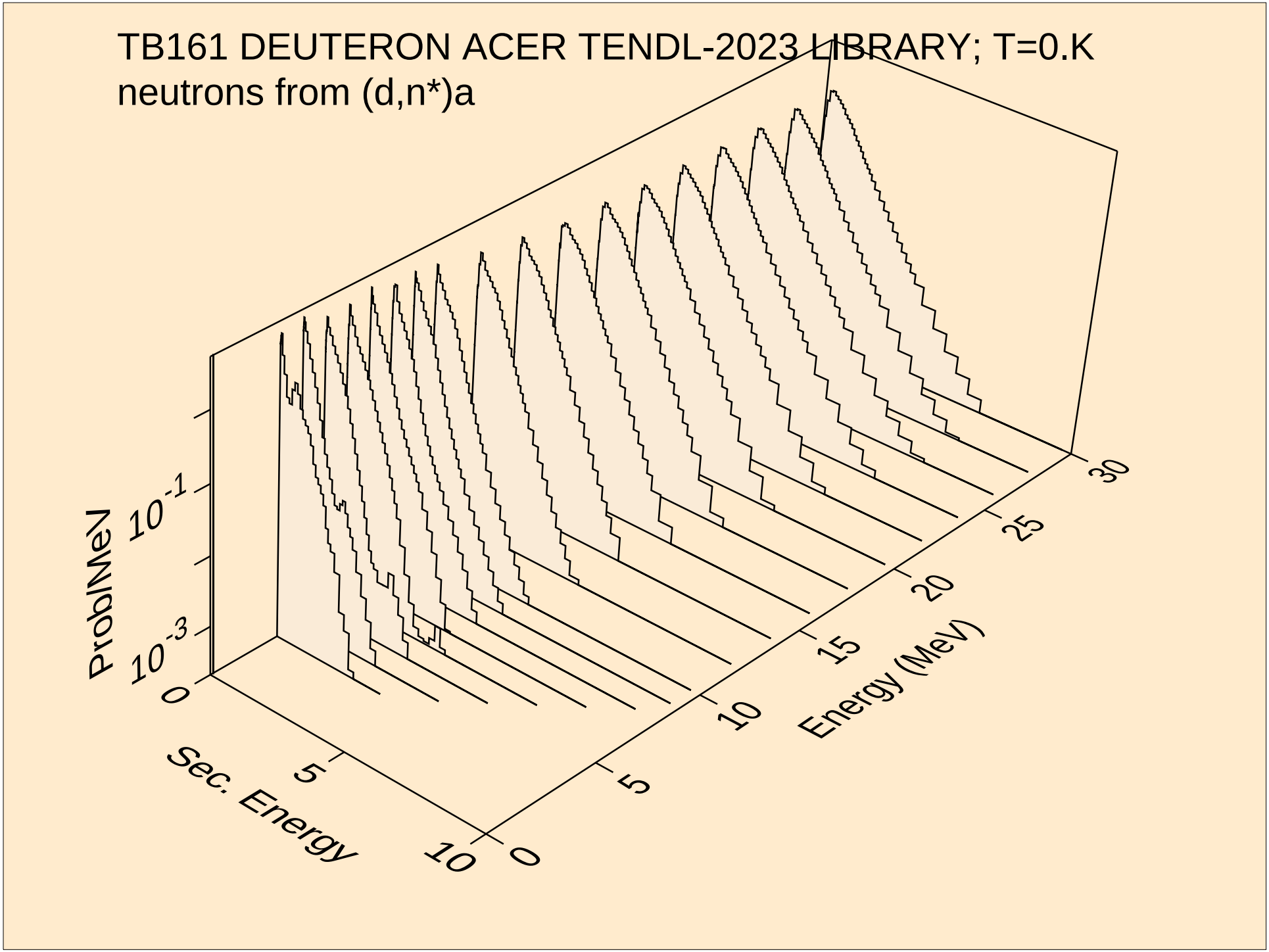

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

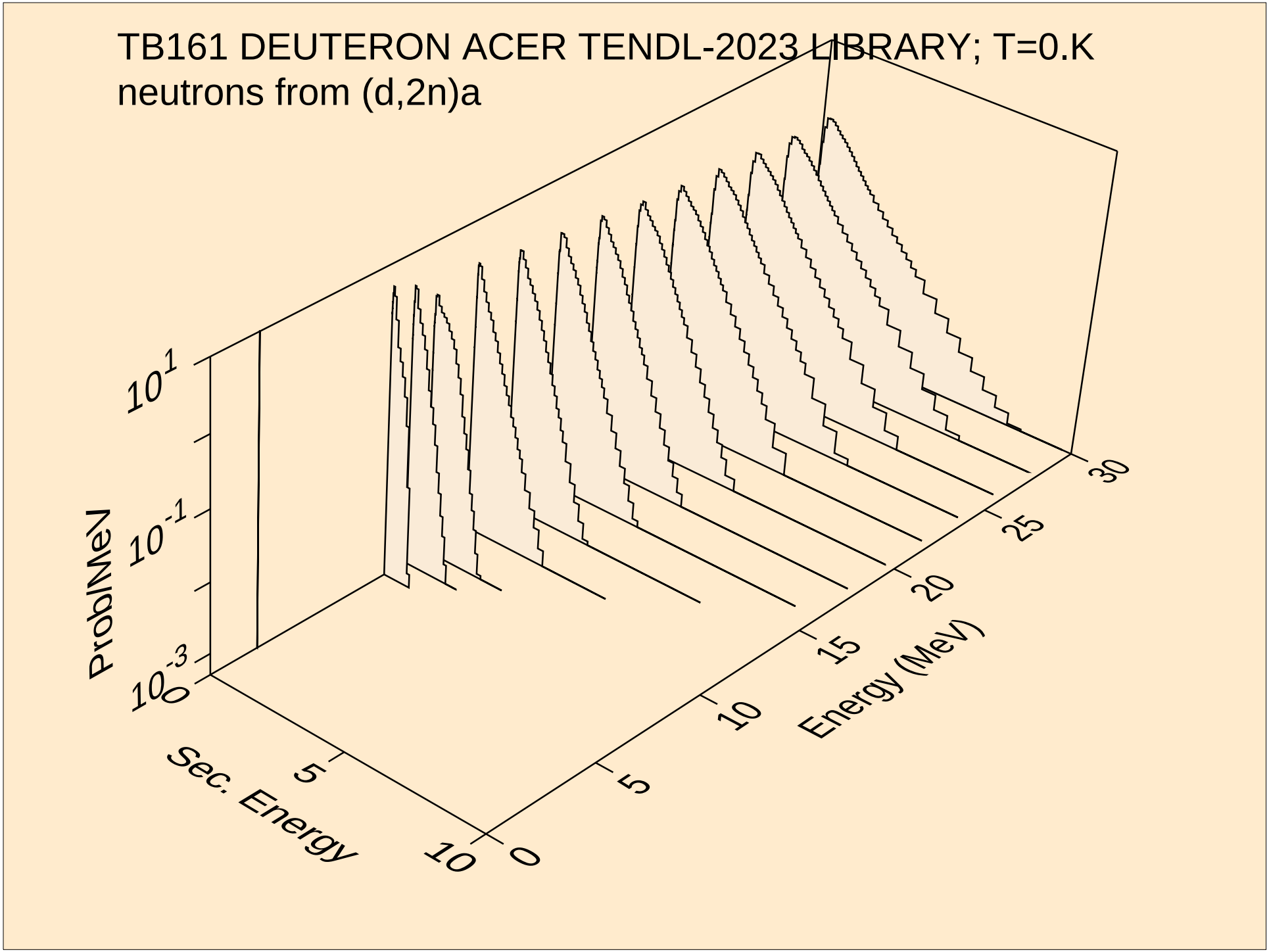

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,x)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

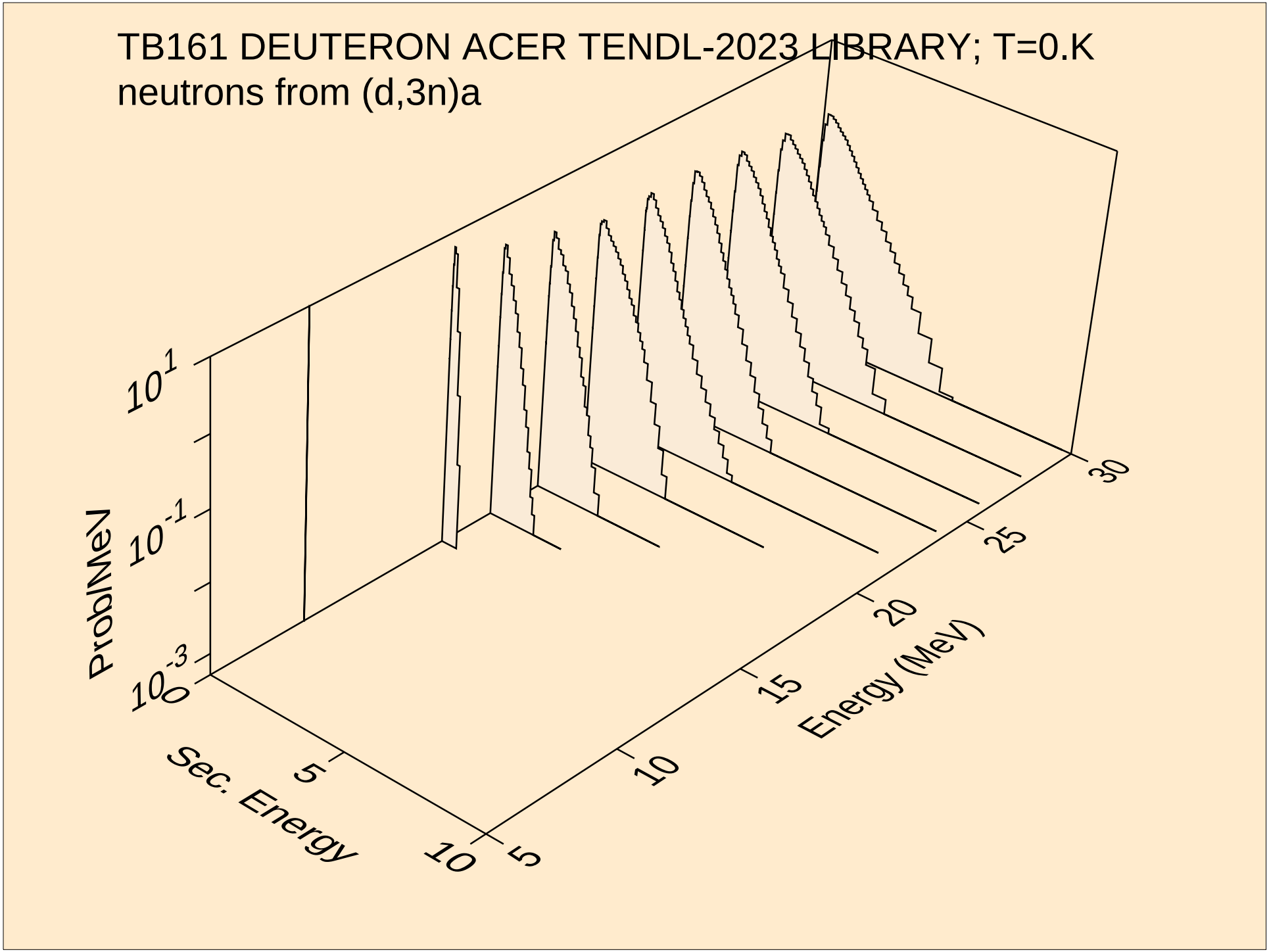

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,2nd)
Prob/MeV
10^1
10^-1
0
2
4
6
Sec. Energy
14
16
18
20
22
24
26
28
30
Energy (MeV)

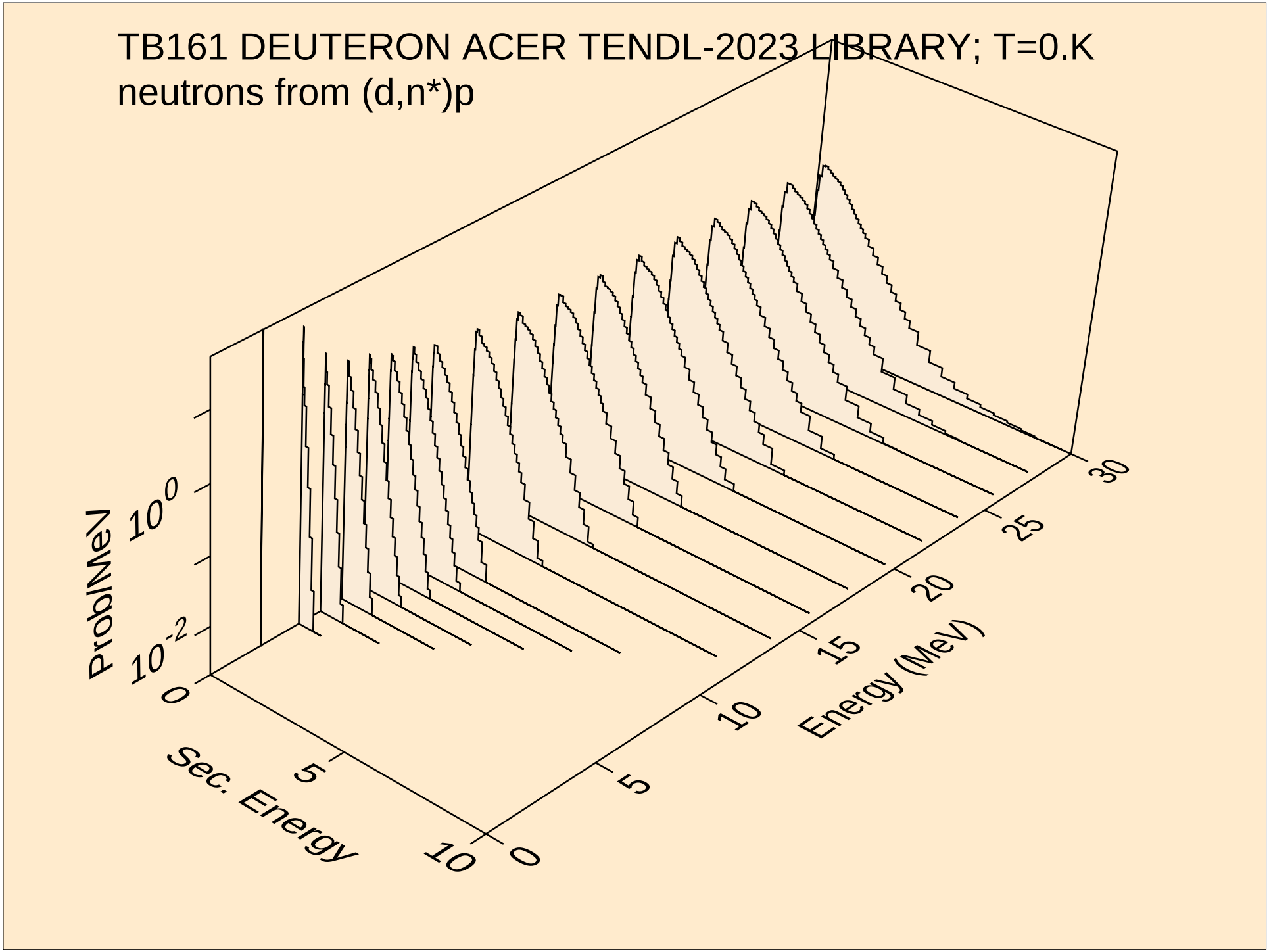

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,2n)
Prob/MeV
10^1
10^-1
10^-3
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

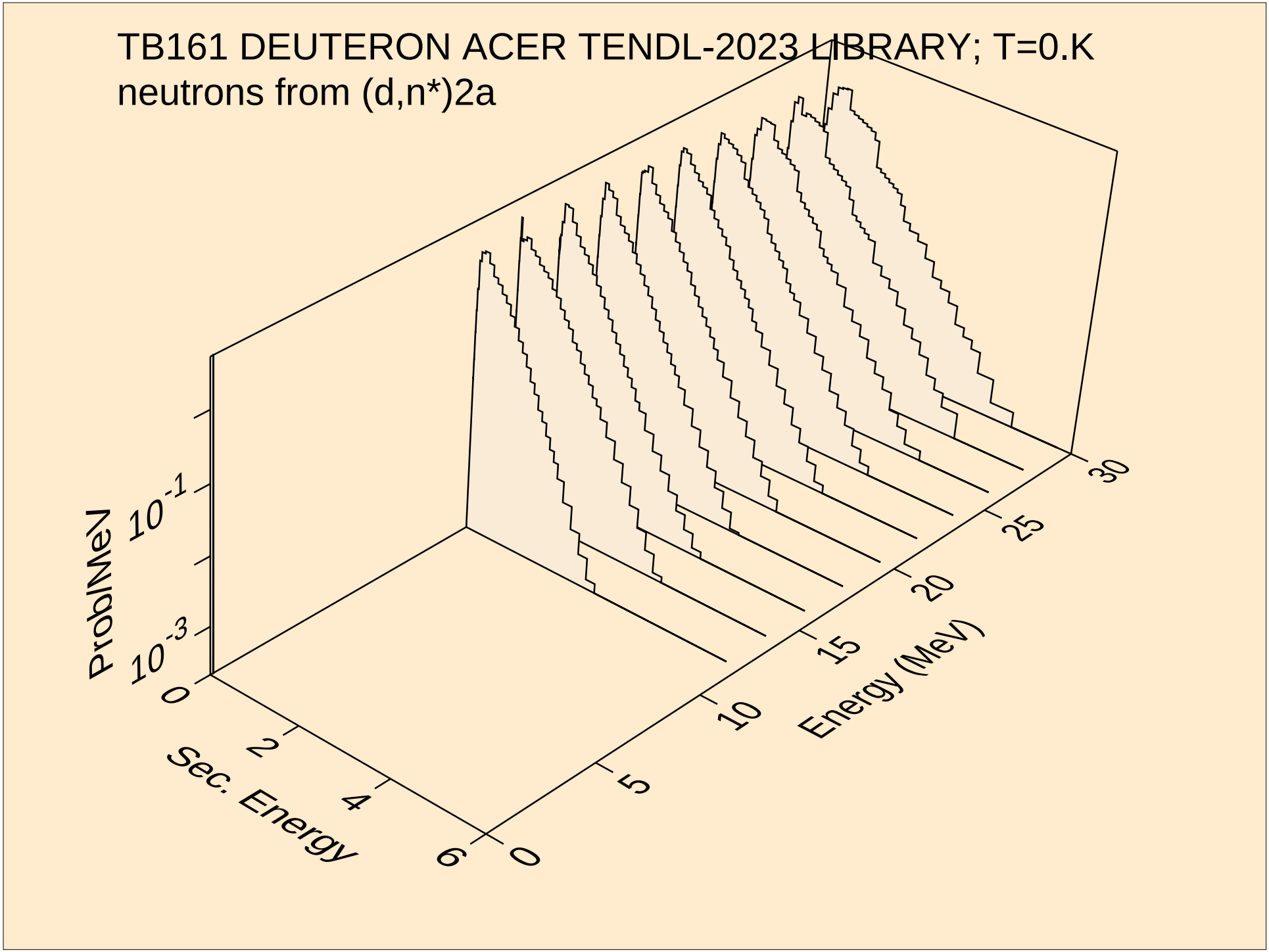

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,3n)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
5
10
15
20
25
30
Energy (MeV)

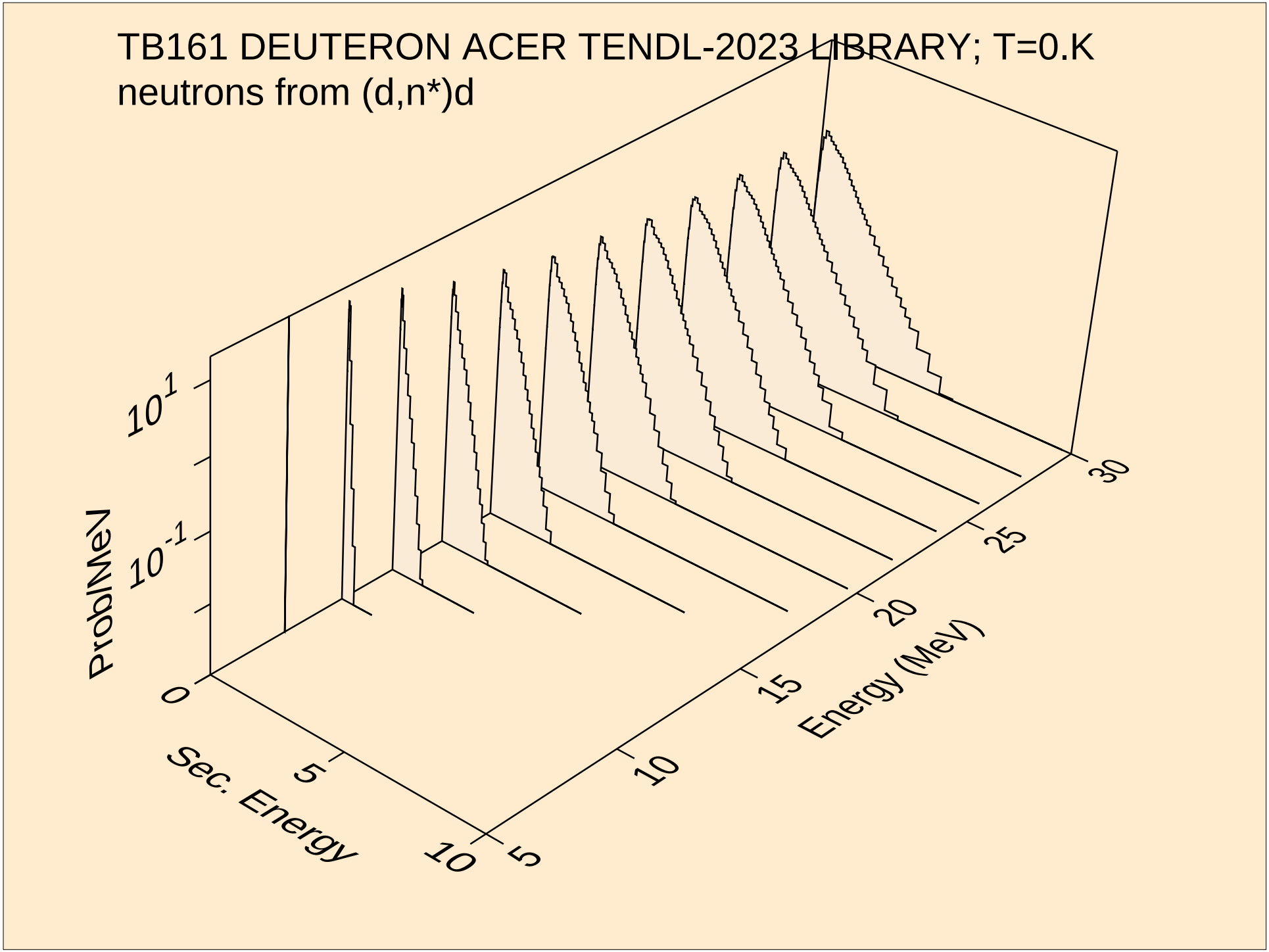

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n*)a
Prob/MeV
10-1
10-3
0
Sec. Energy
5
10
0
5
10
15
20
25
30
Energy (MeV)

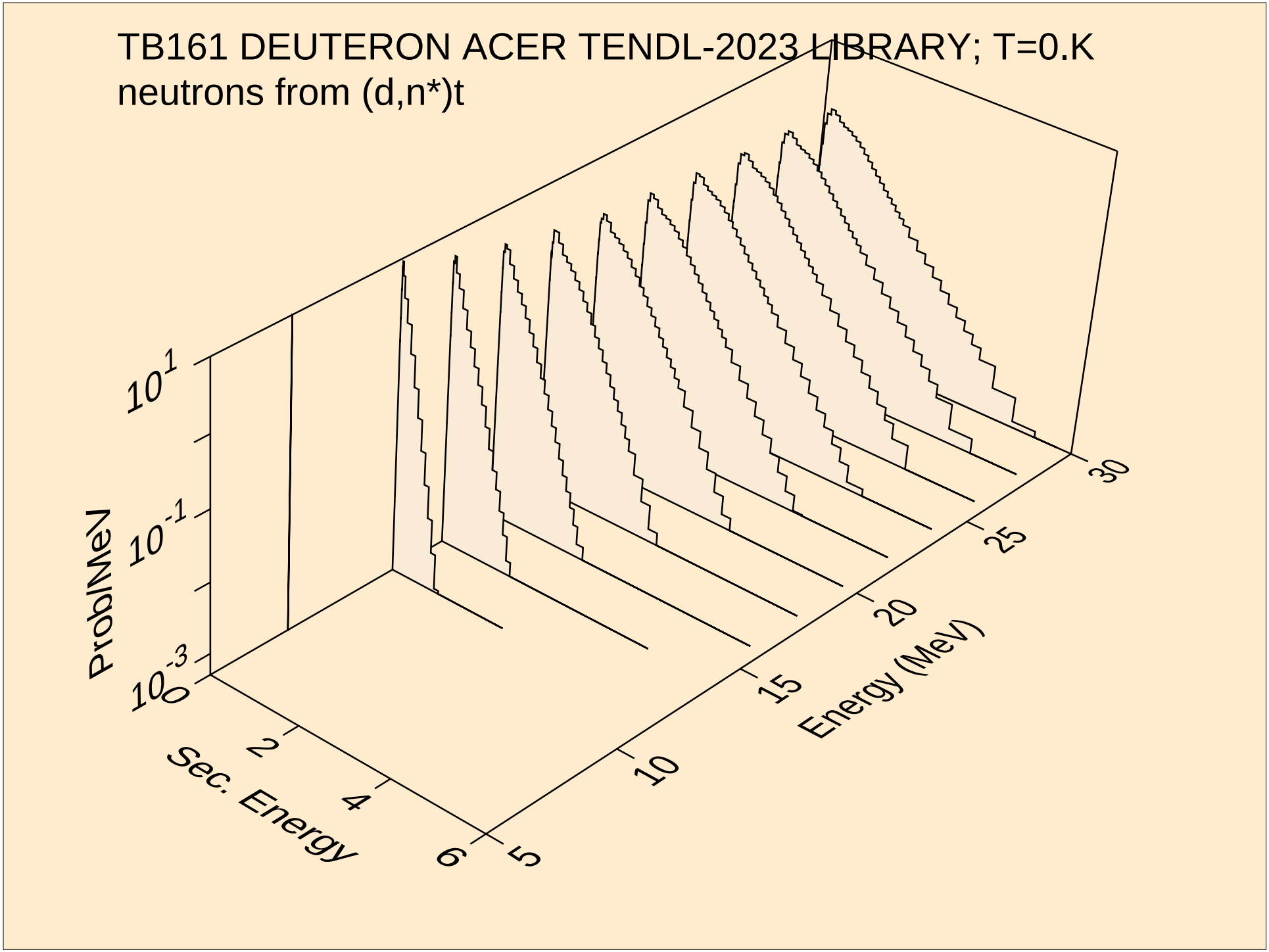

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,2n)a
Prob/MeV
10^1
10^-1
10^-3
0
5
10
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

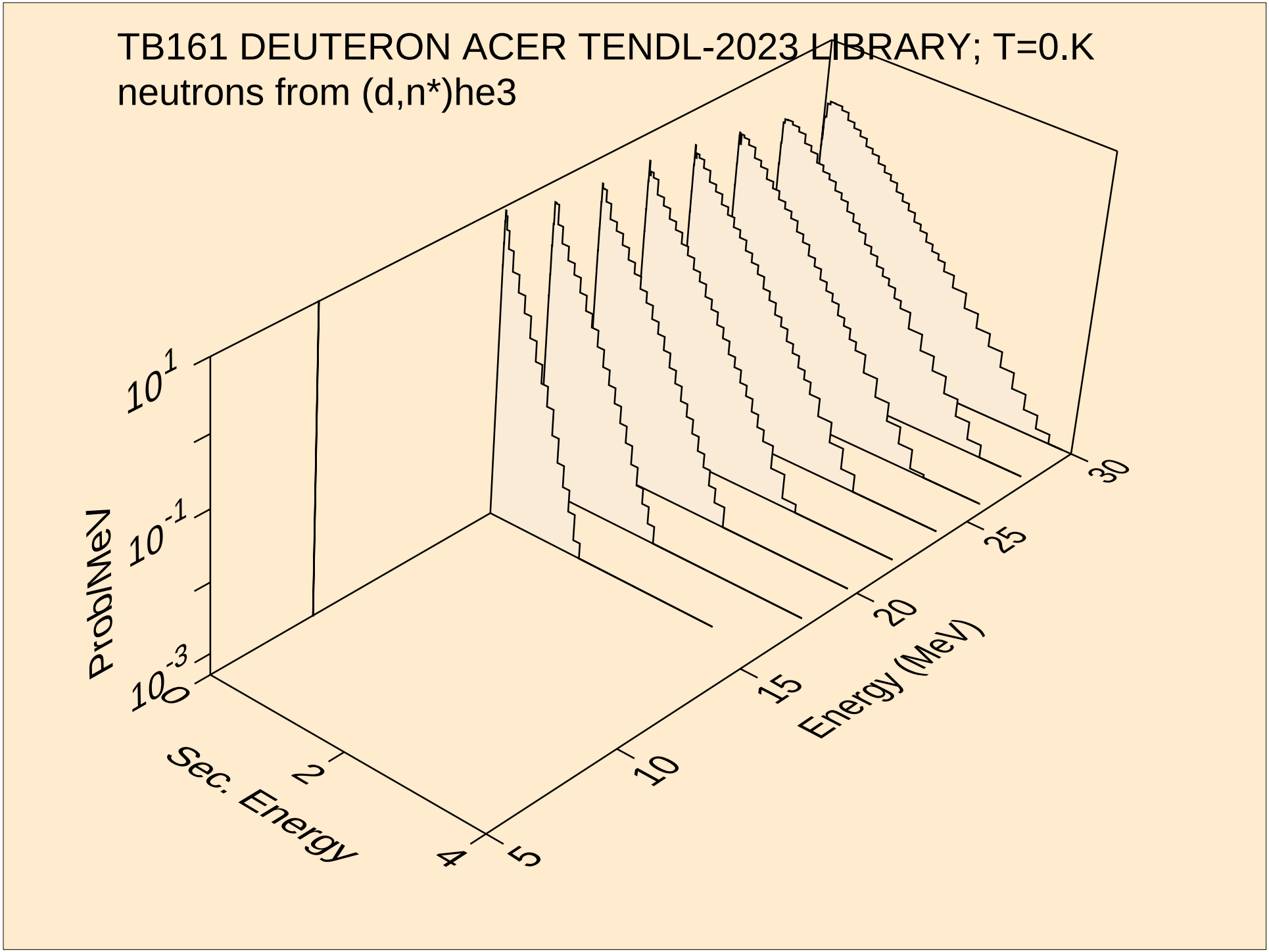

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,3n)a
Prob/MeV
10^1
10^-1
10^-3
0
Sec. Energy
5
10
5
10
15
20
25
30
Energy (MeV)

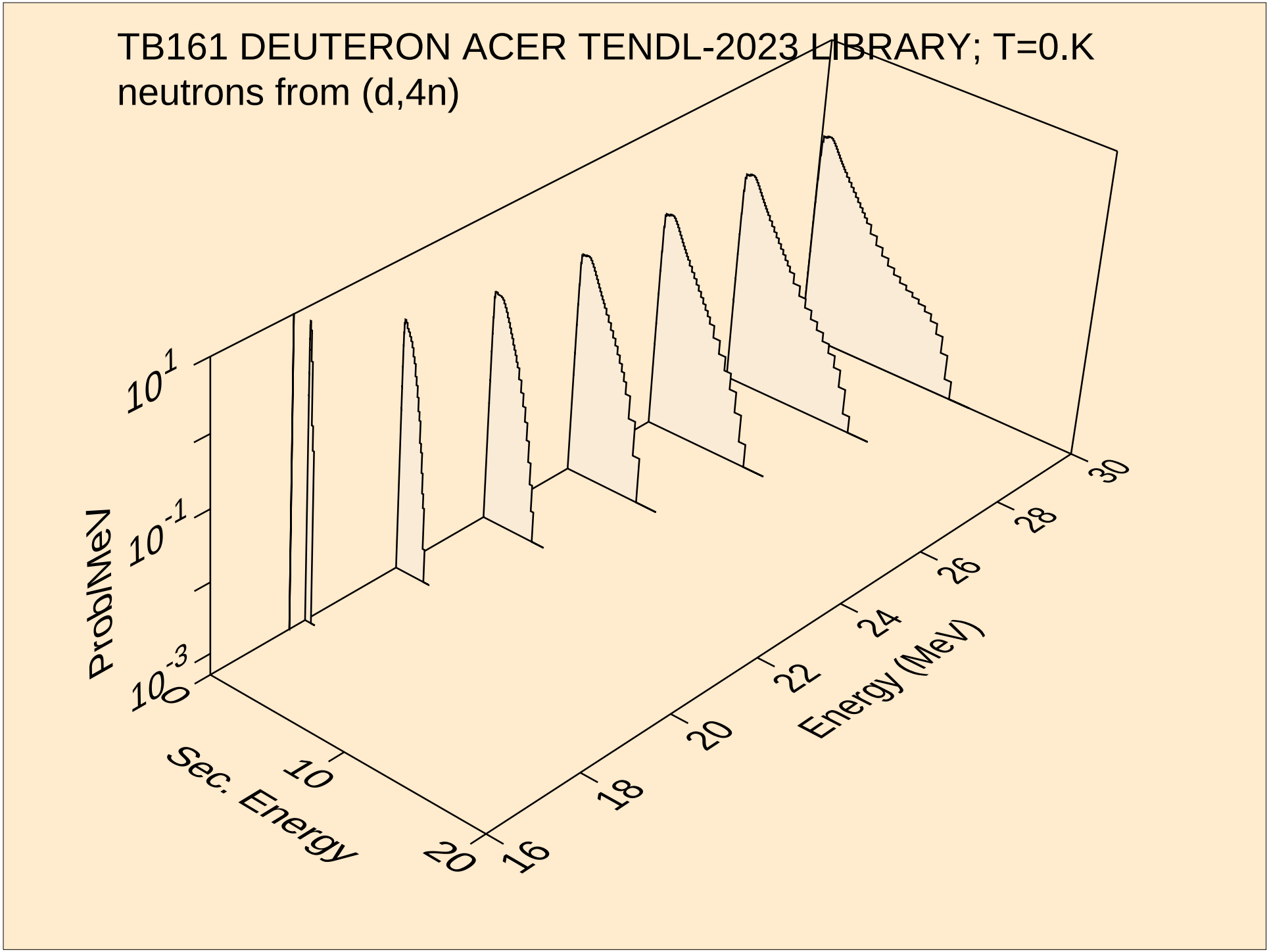

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n*)p
Prob/MeV
10^0
10^-2
0
Sec. Energy
5
10
0
5
10
15
20
25
30
Energy (MeV)

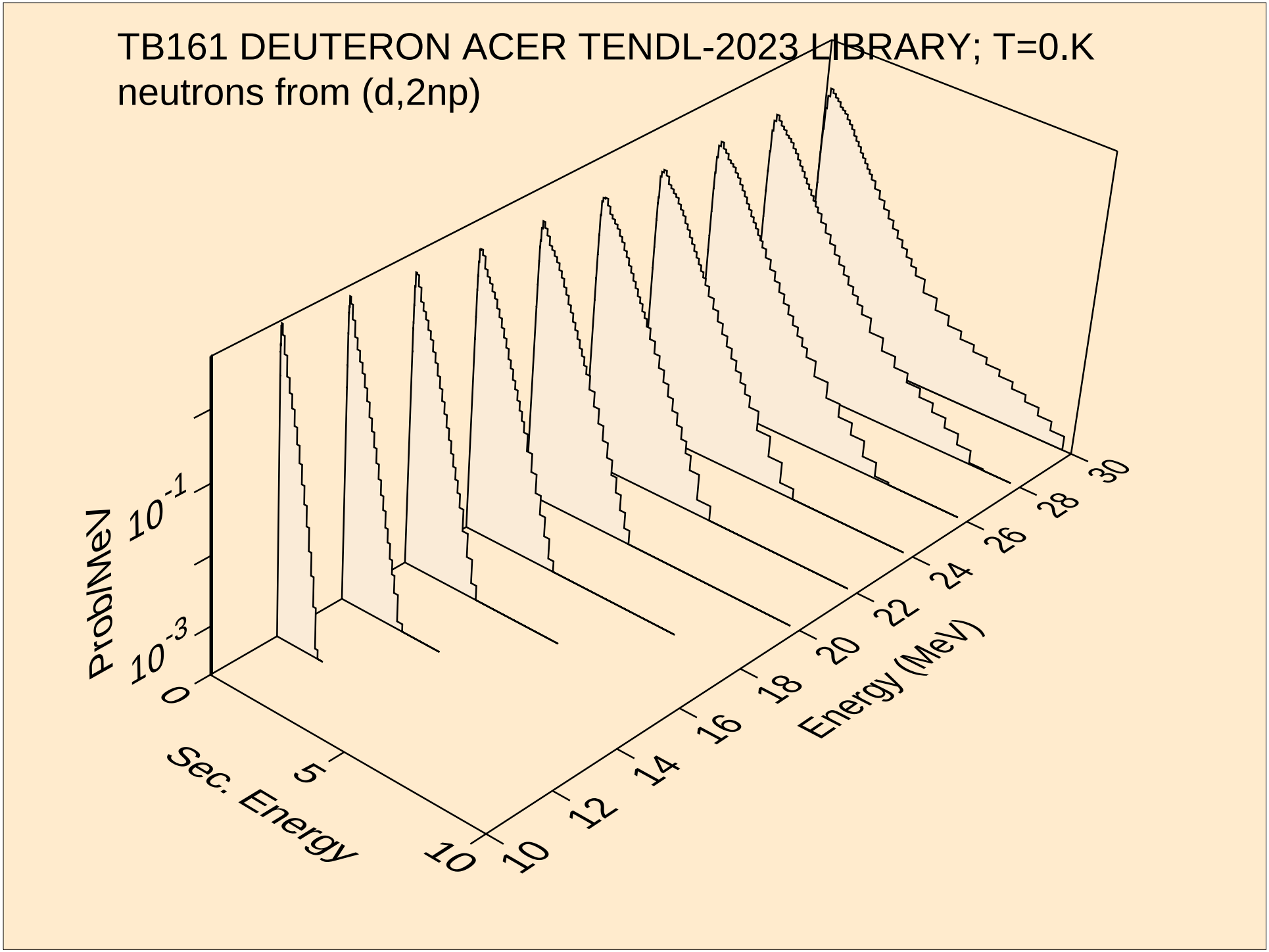

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n*)2a
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

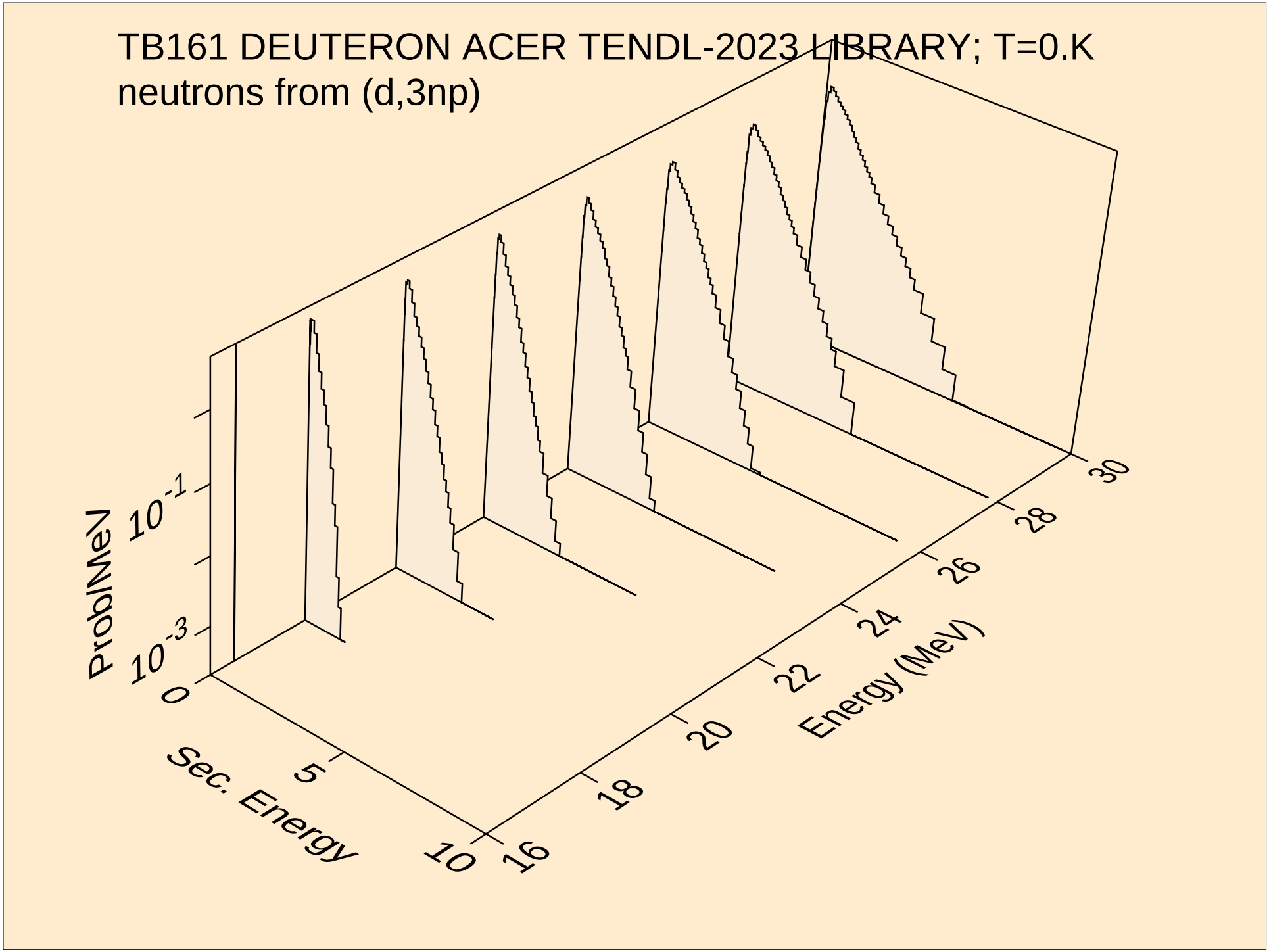

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n*)d
Prob/MeV
10^1
10^-1
0
Sec. Energy
5
10
5
10
15
20
25
30
Energy (MeV)

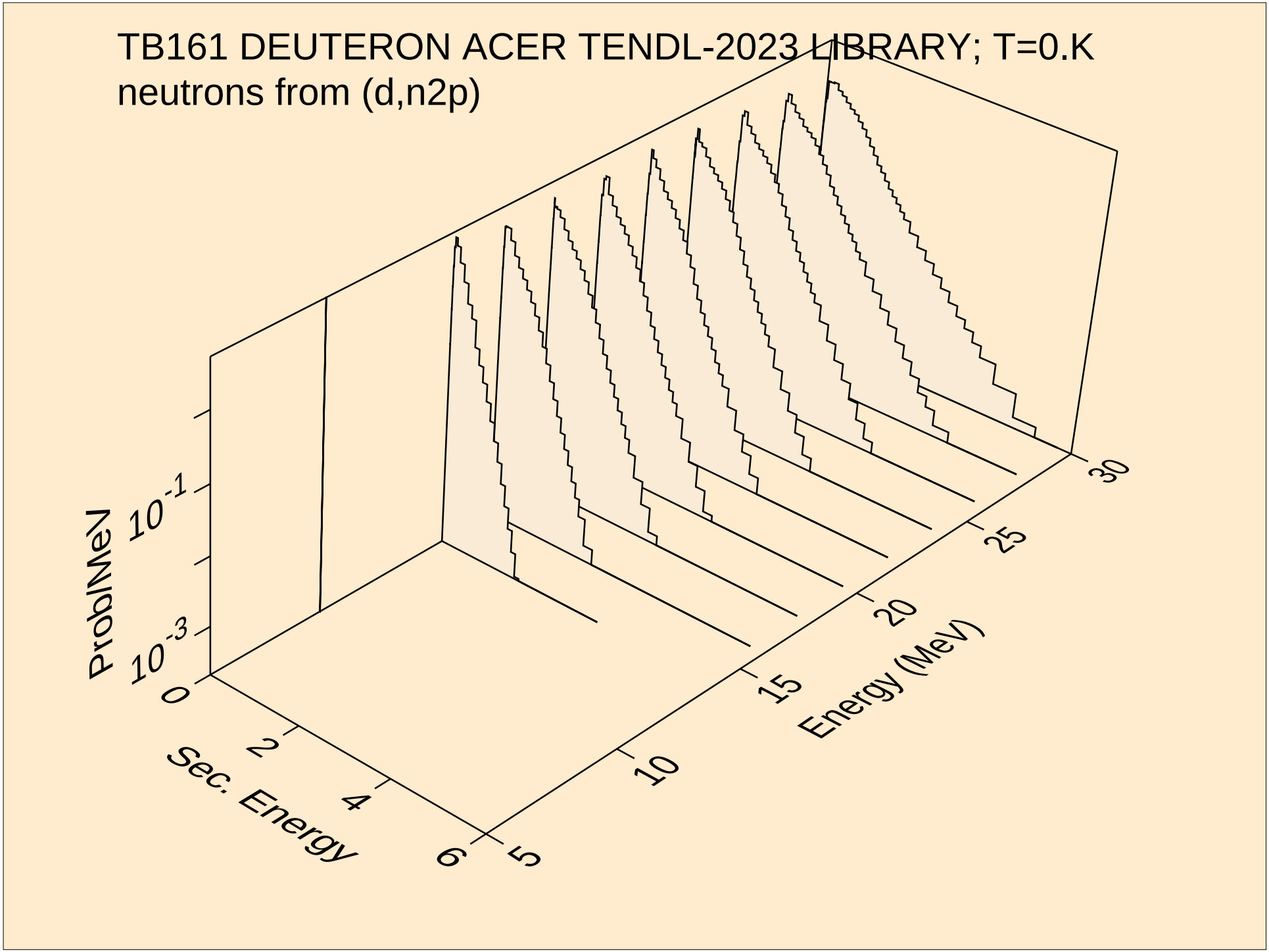

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n*)t
Prob/MeV
10^1
10^-1
10^-3
0
2
4
6
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

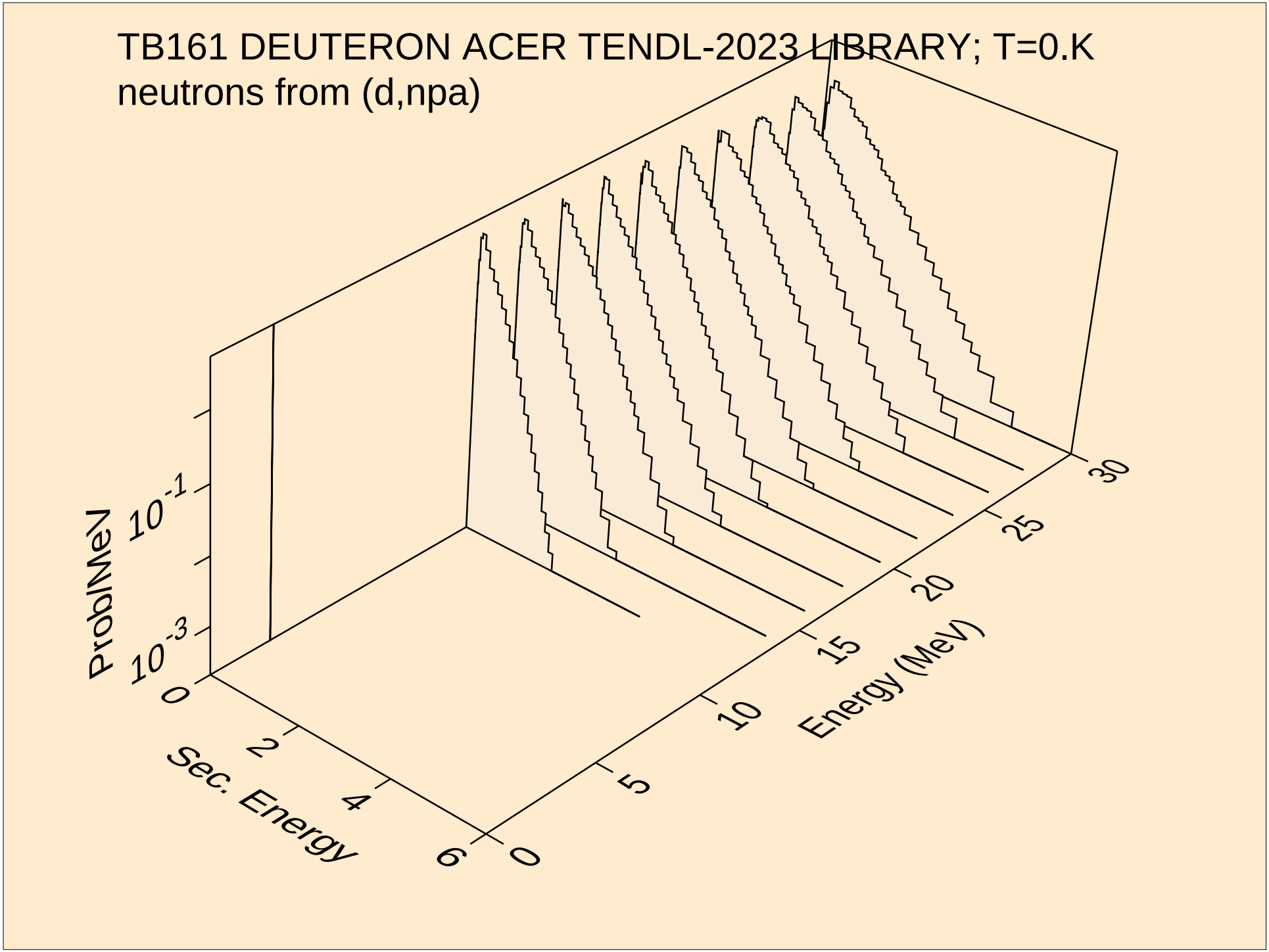

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n*)he3
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
Sec. Energy
2
4
5
10
15
20
25
30
Energy (MeV)

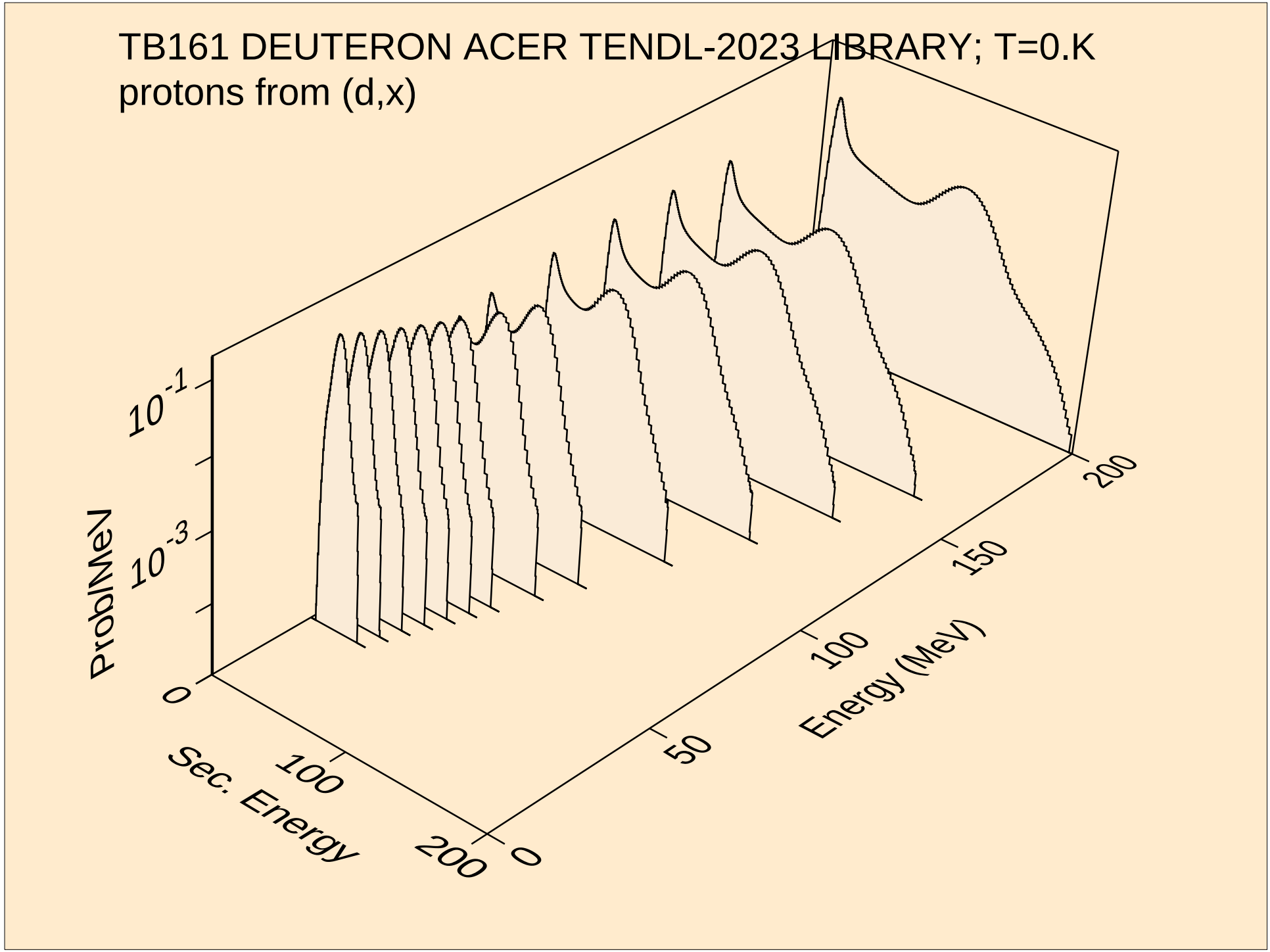

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,4n)
Prob/MeV
10^{1}
10^{-1}
10^{-3}
0
10
20
Sec. Energy
16
18
20
22
24
26
28
30
Energy (MeV)

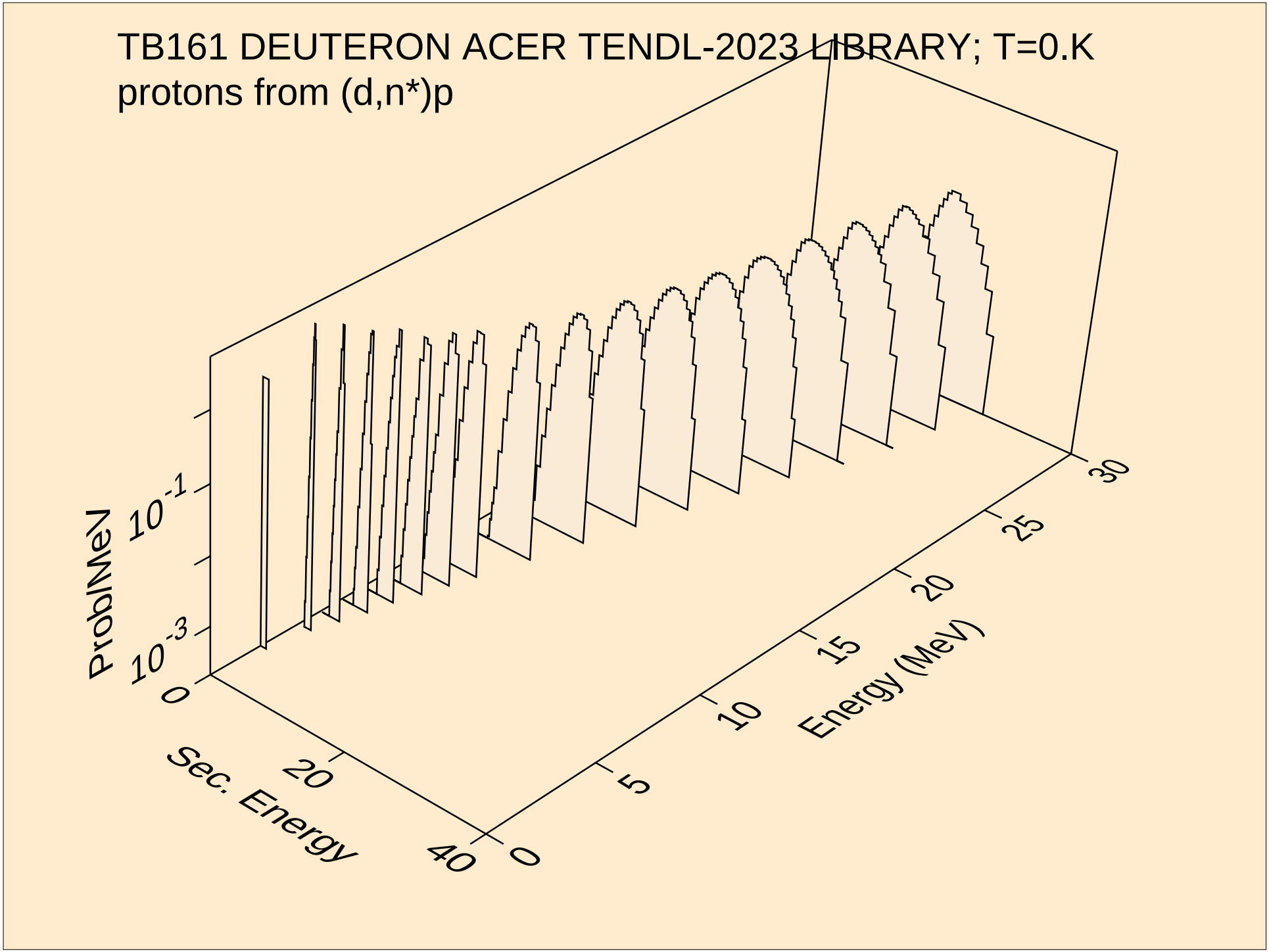

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,2np)
Prob/MeV
10^-1
10^-3
0
Sec. Energy
5
10
Energy (MeV)
10
12
14
16
18
20
22
24
26
28
30

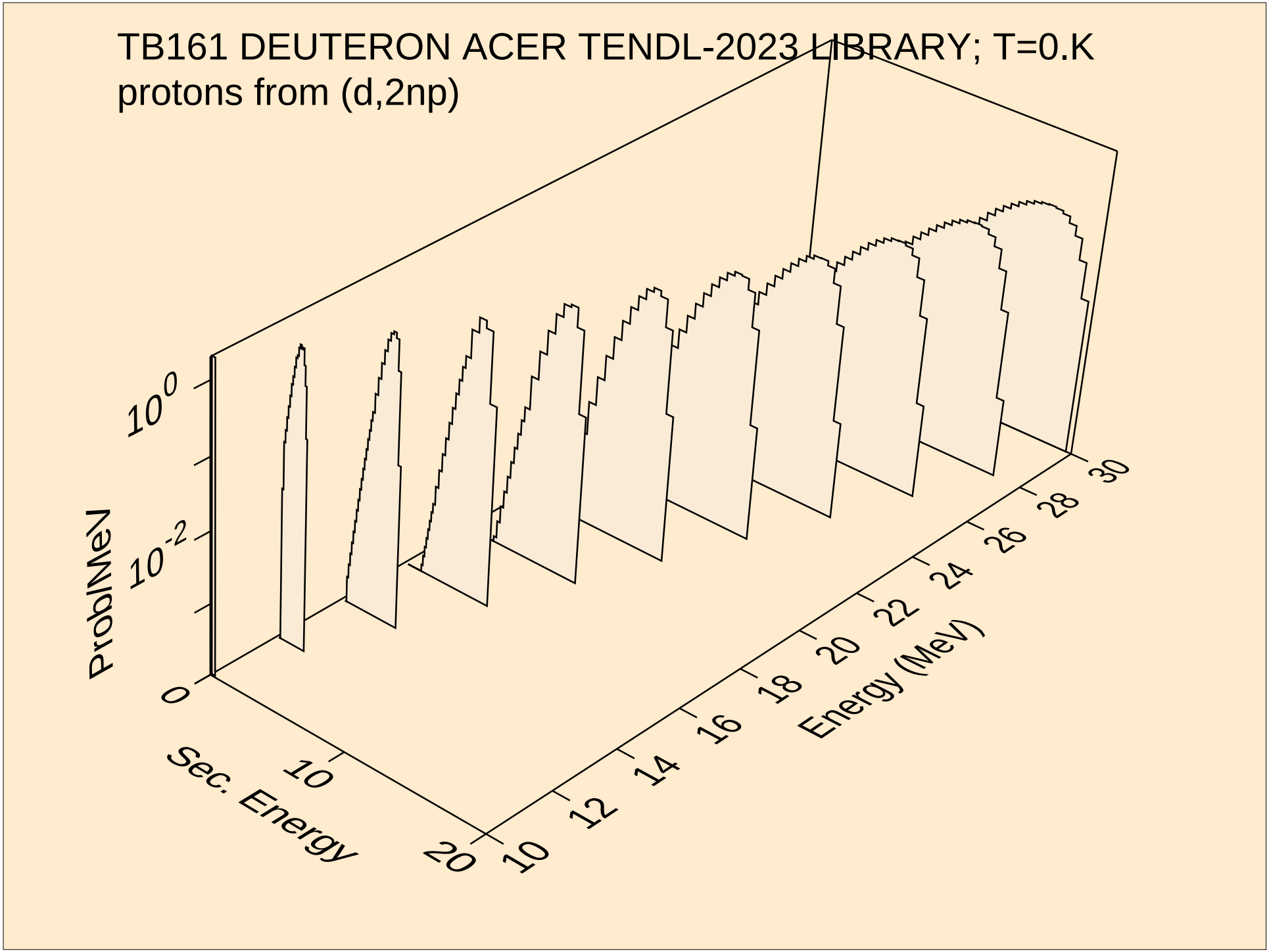

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,3np)
Prob/MeV
10-1
10-3
0
Sec. Energy
5
10
16
18
20
22
24
26
28
30
Energy (MeV)

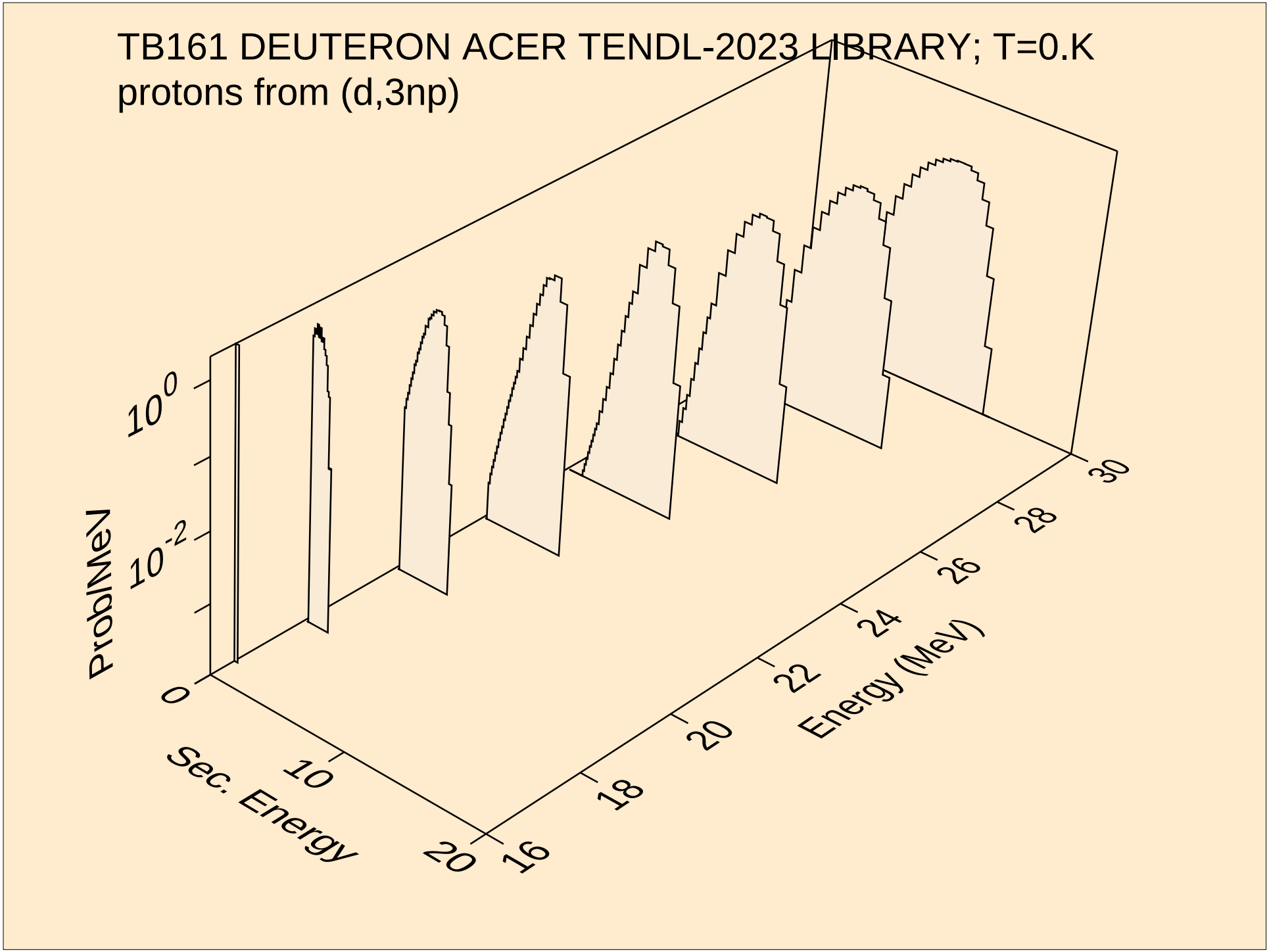

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,n2p)
Prob/MeV
10-1
10-3
0
Sec. Energy
2
4
6
5
10
15
20
25
30
Energy (MeV)

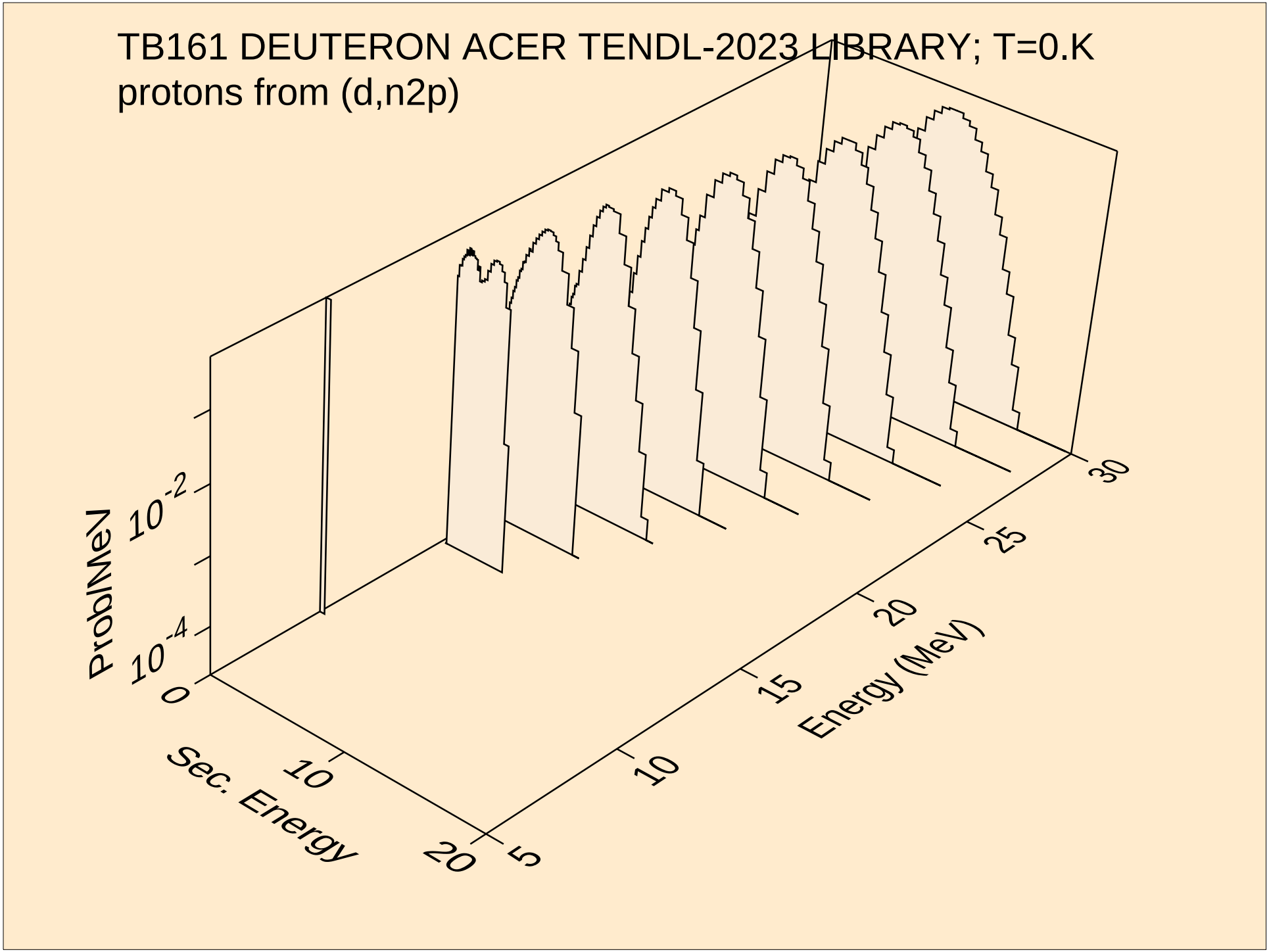

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
neutrons from (d,npa)
Prob/MeV
10-1
10-3
0
2
4
6
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

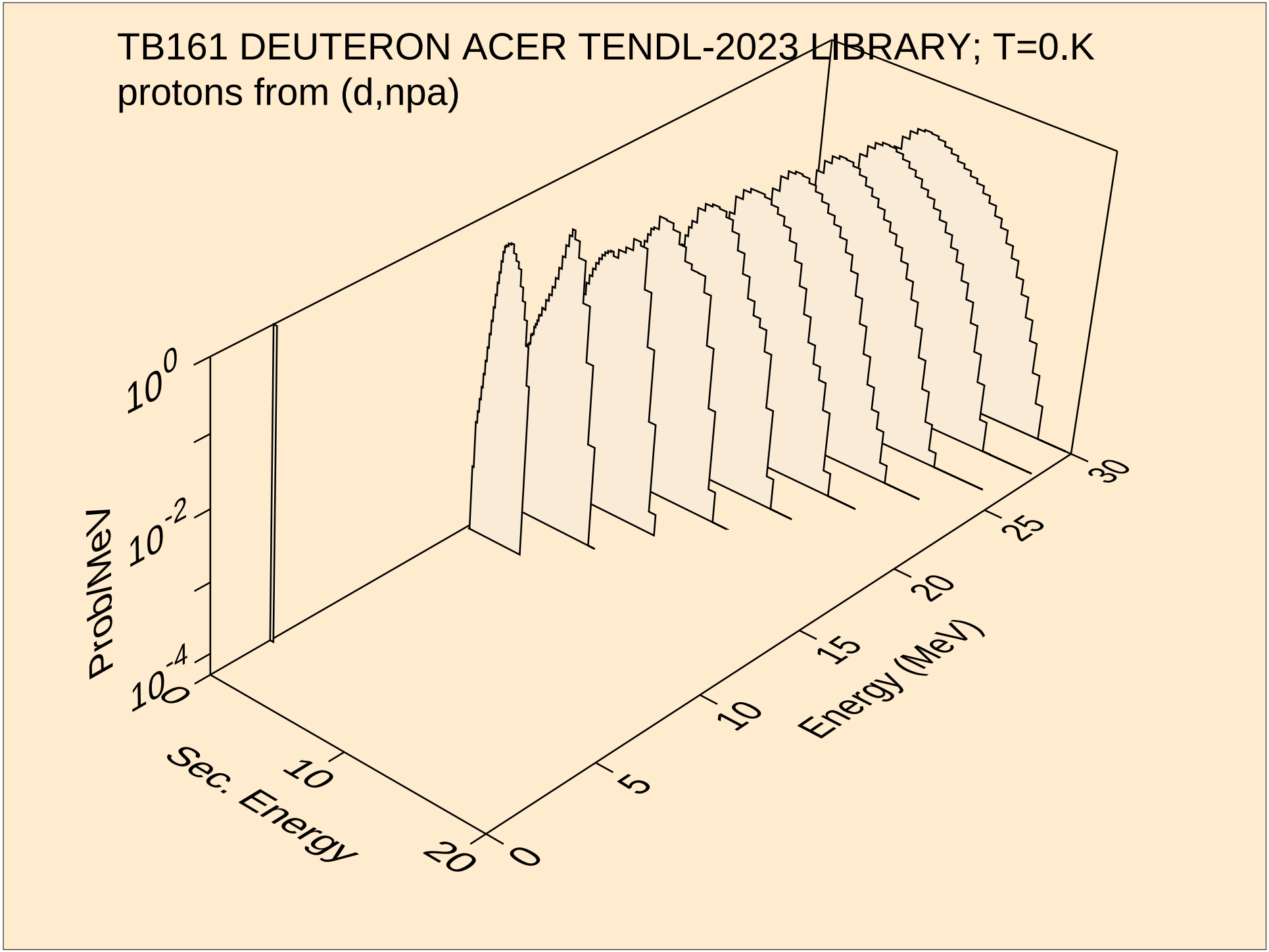

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

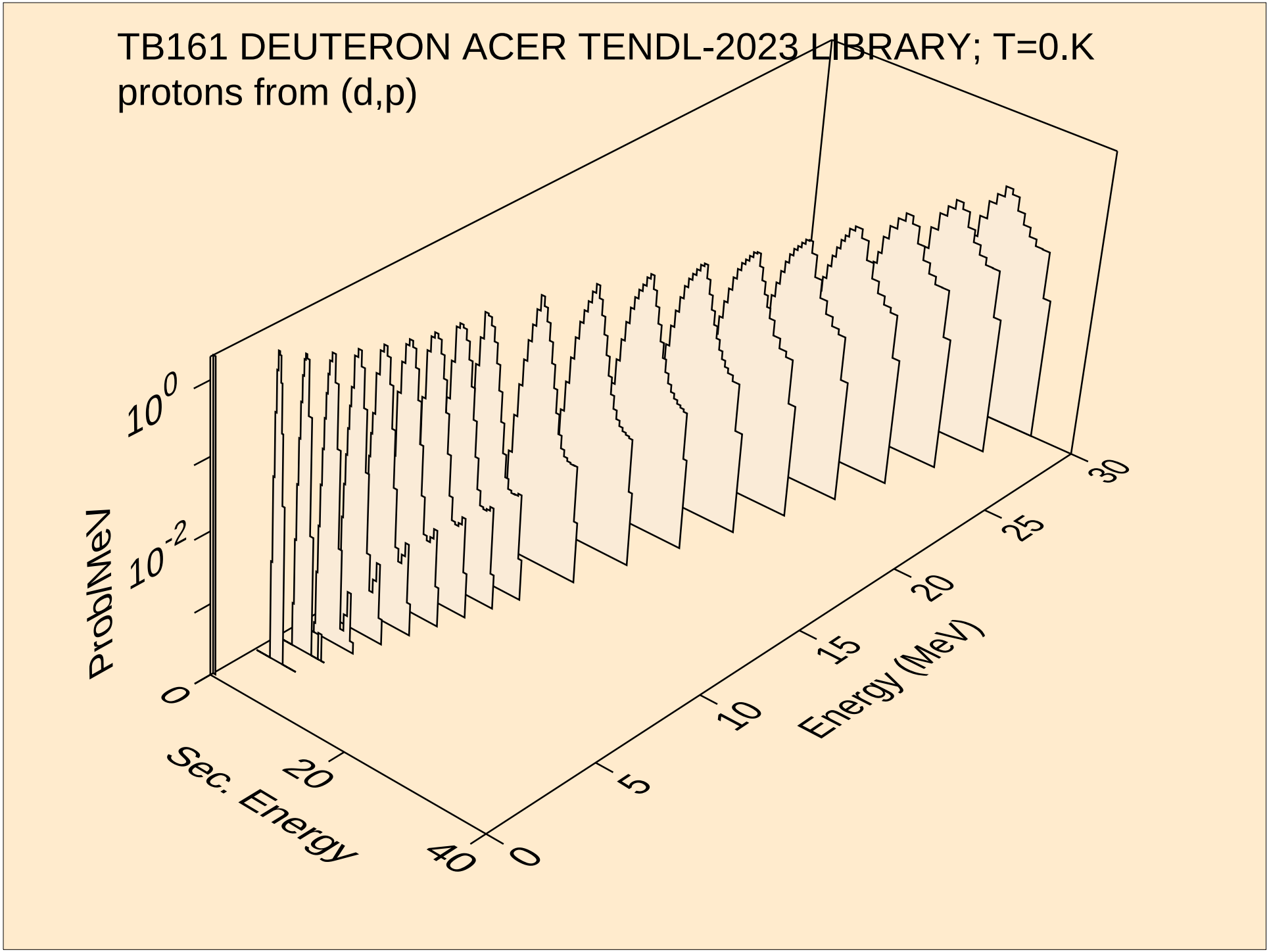

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,n*)p
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

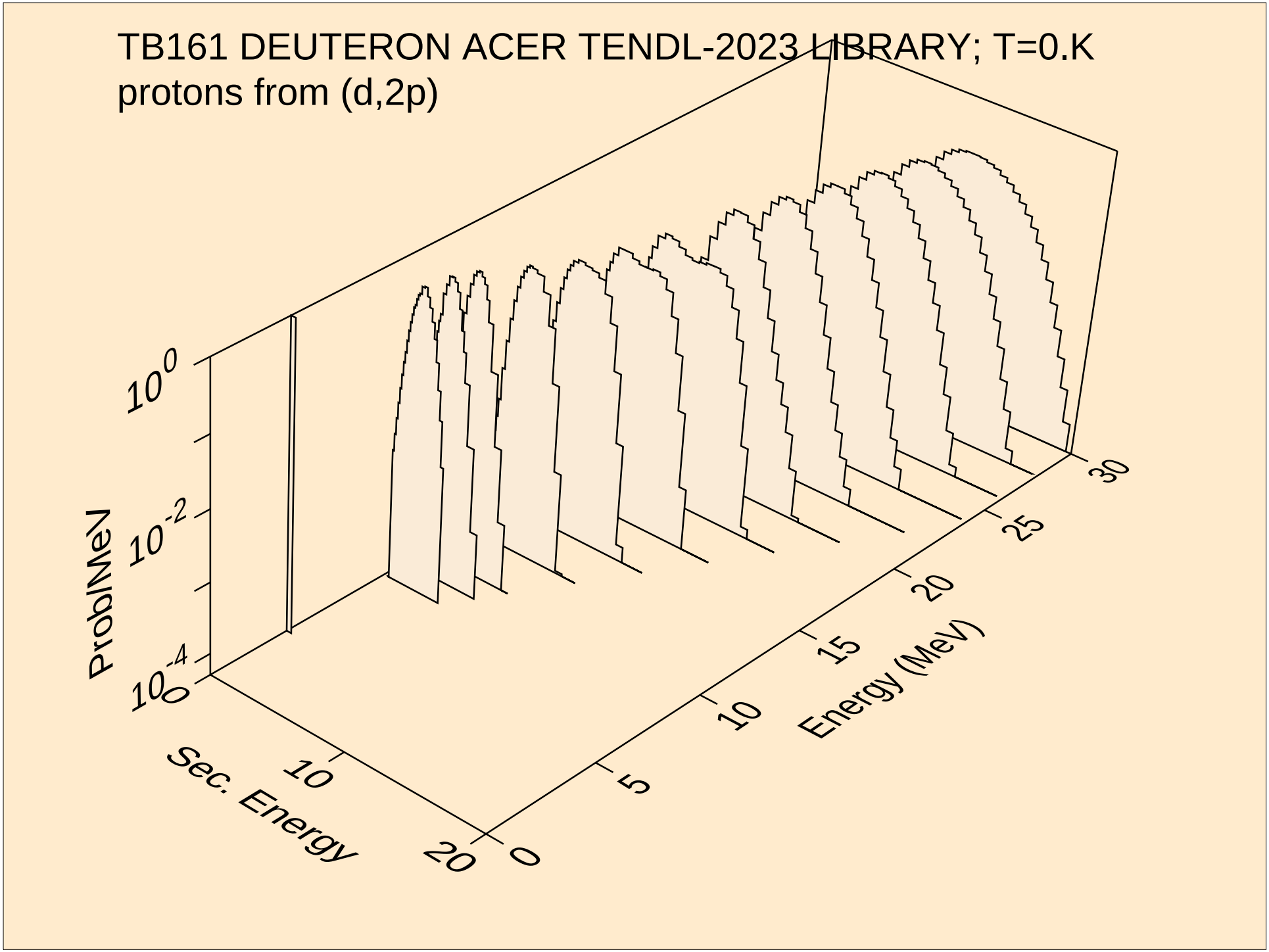

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,2np)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
Energy (MeV)
10
12
14
16
18
20
22
24
26
28
30

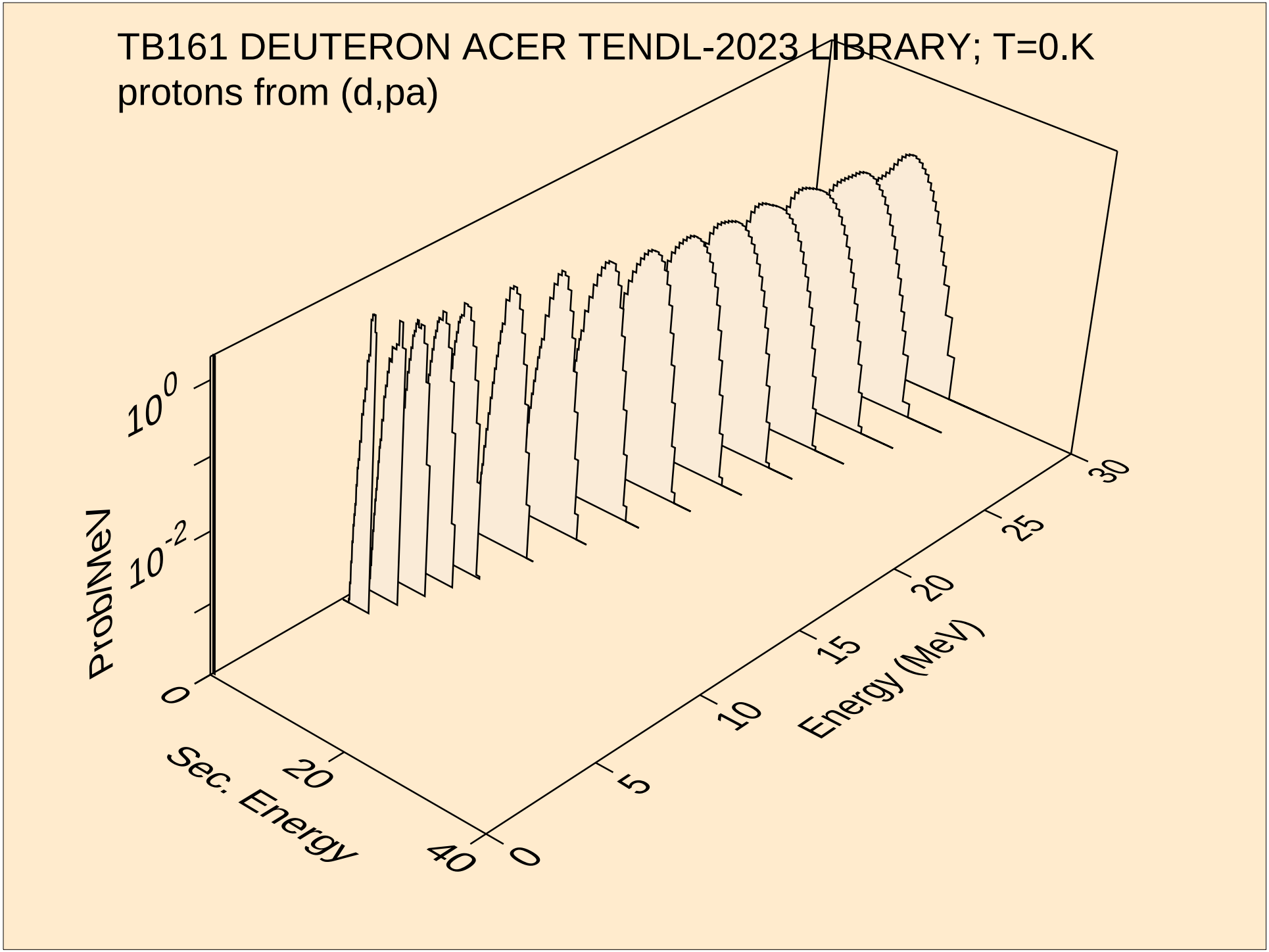

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,3np)
Prob/MeV
10^0
10^-2
0
Sec. Energy
10
20
16
18
20
22
24
26
28
30
Energy (MeV)

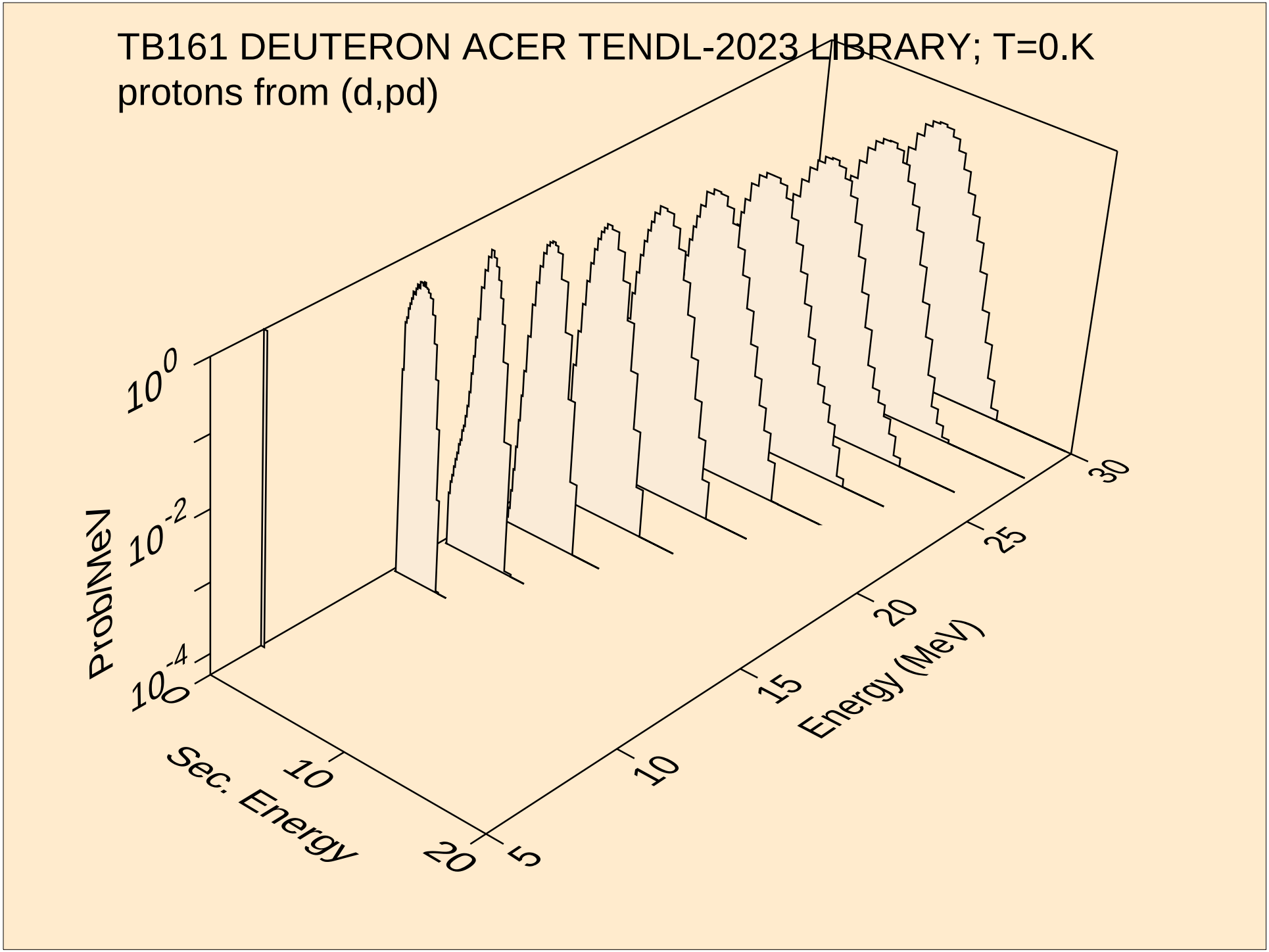

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,n2p)
Prob/MeV
10-2
10-4
0
Sec. Energy
10
20
5
10
15
20
25
30
Energy (MeV)

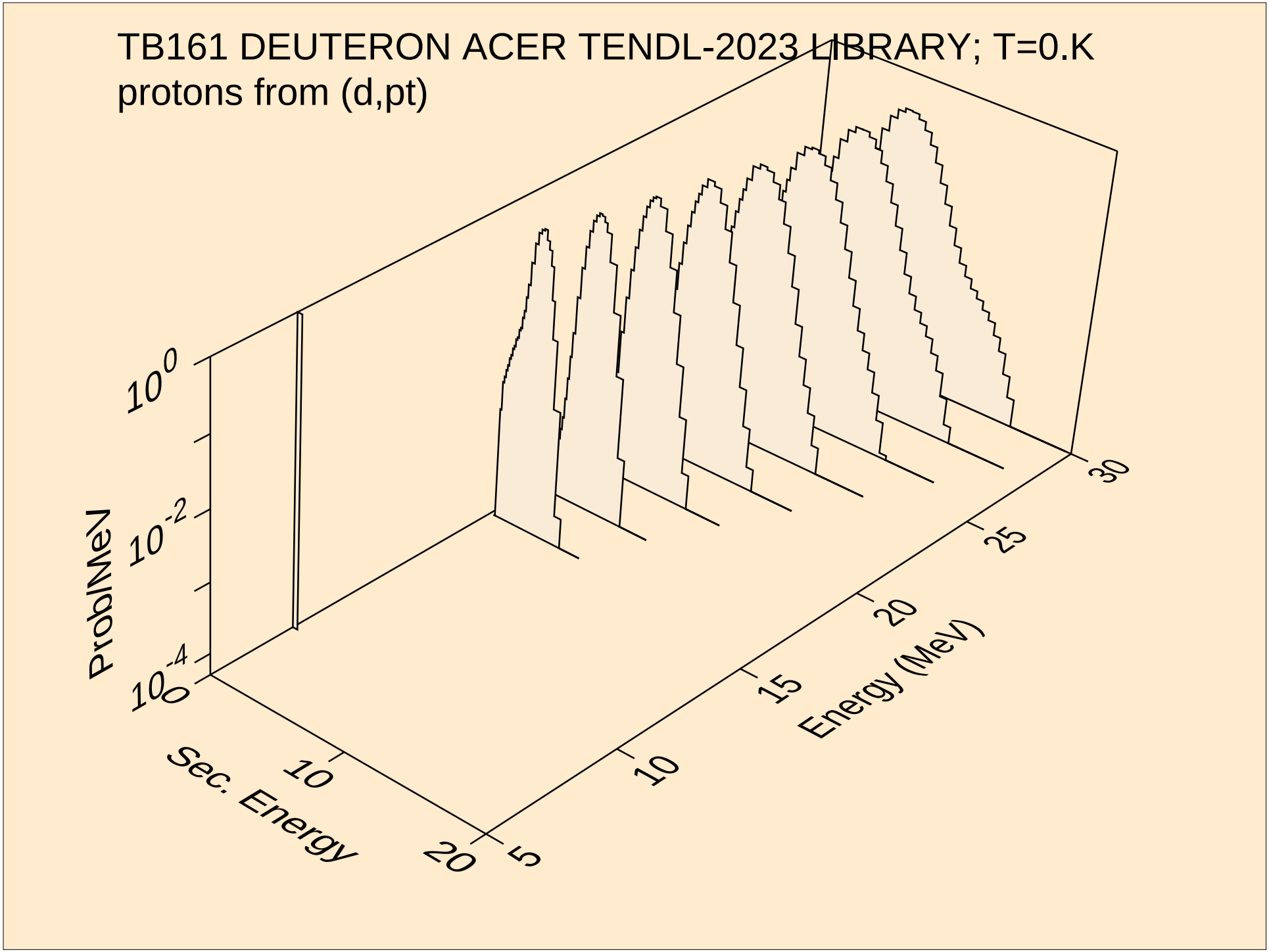

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,npa)
Prob/MeV
10^0
10^-2
10^-4
0
10
20
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

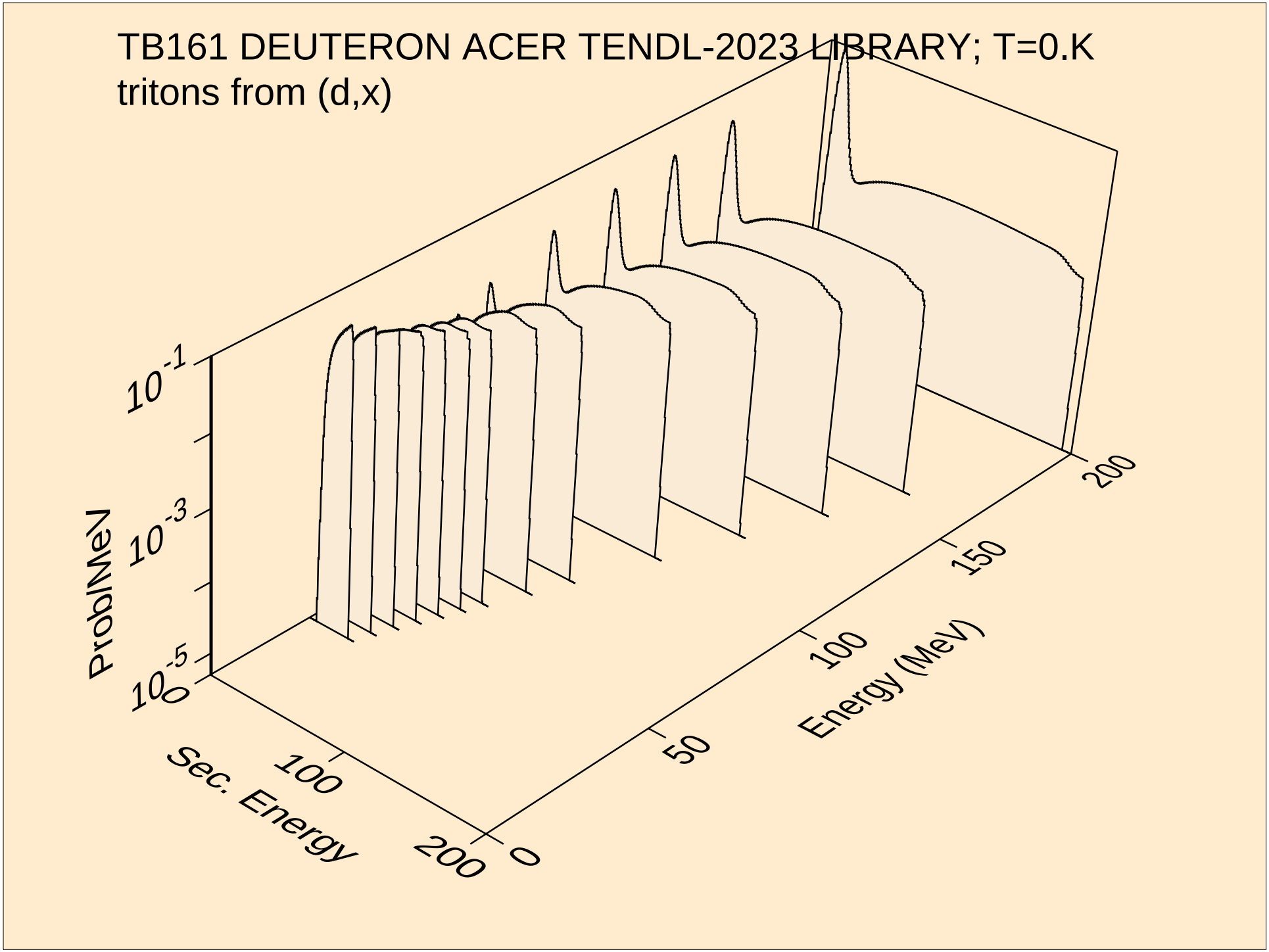

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,p)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

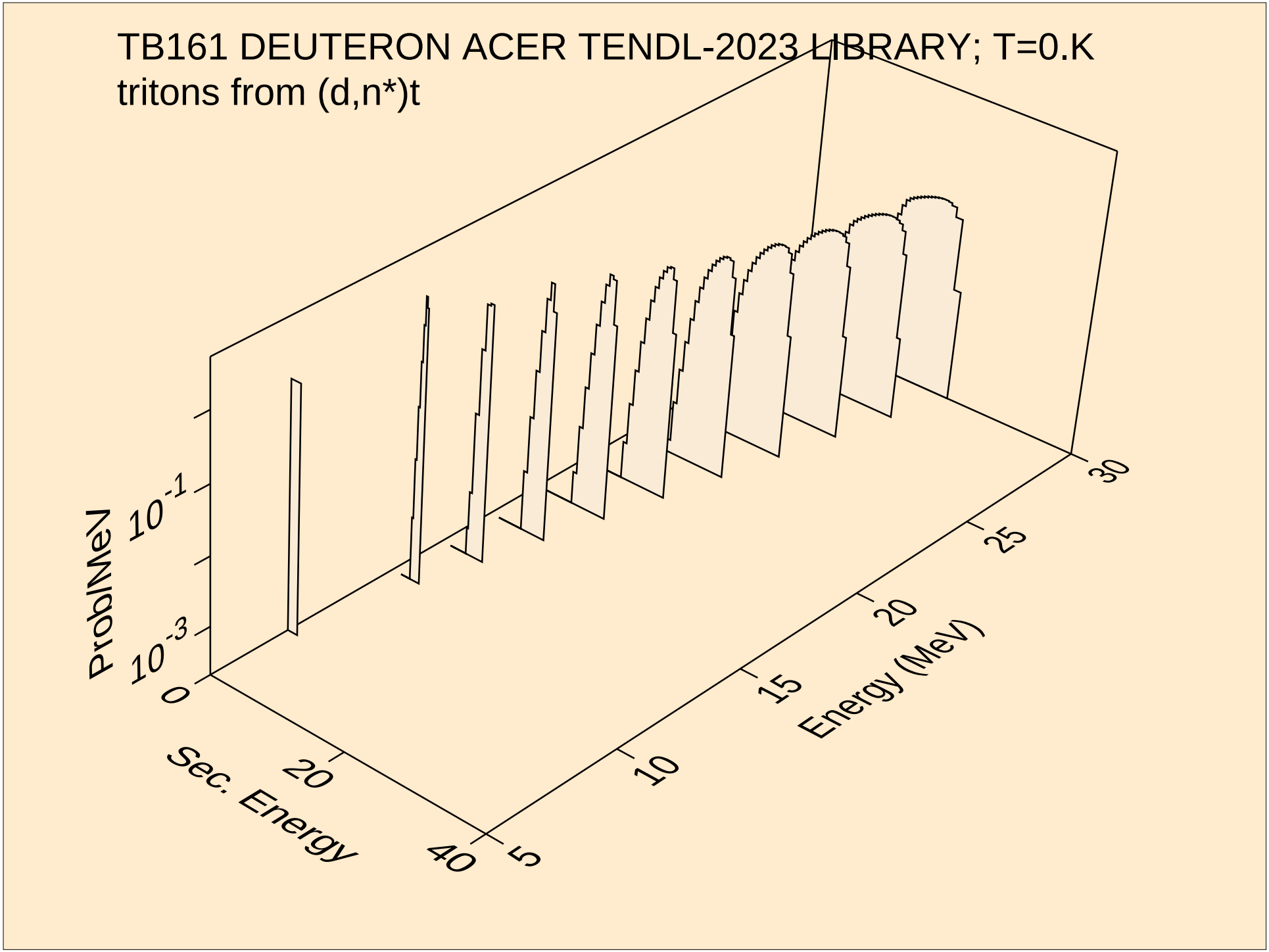

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,2p)
Prob/MeV
10^0
10^-2
10^-4
0
10
20
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)

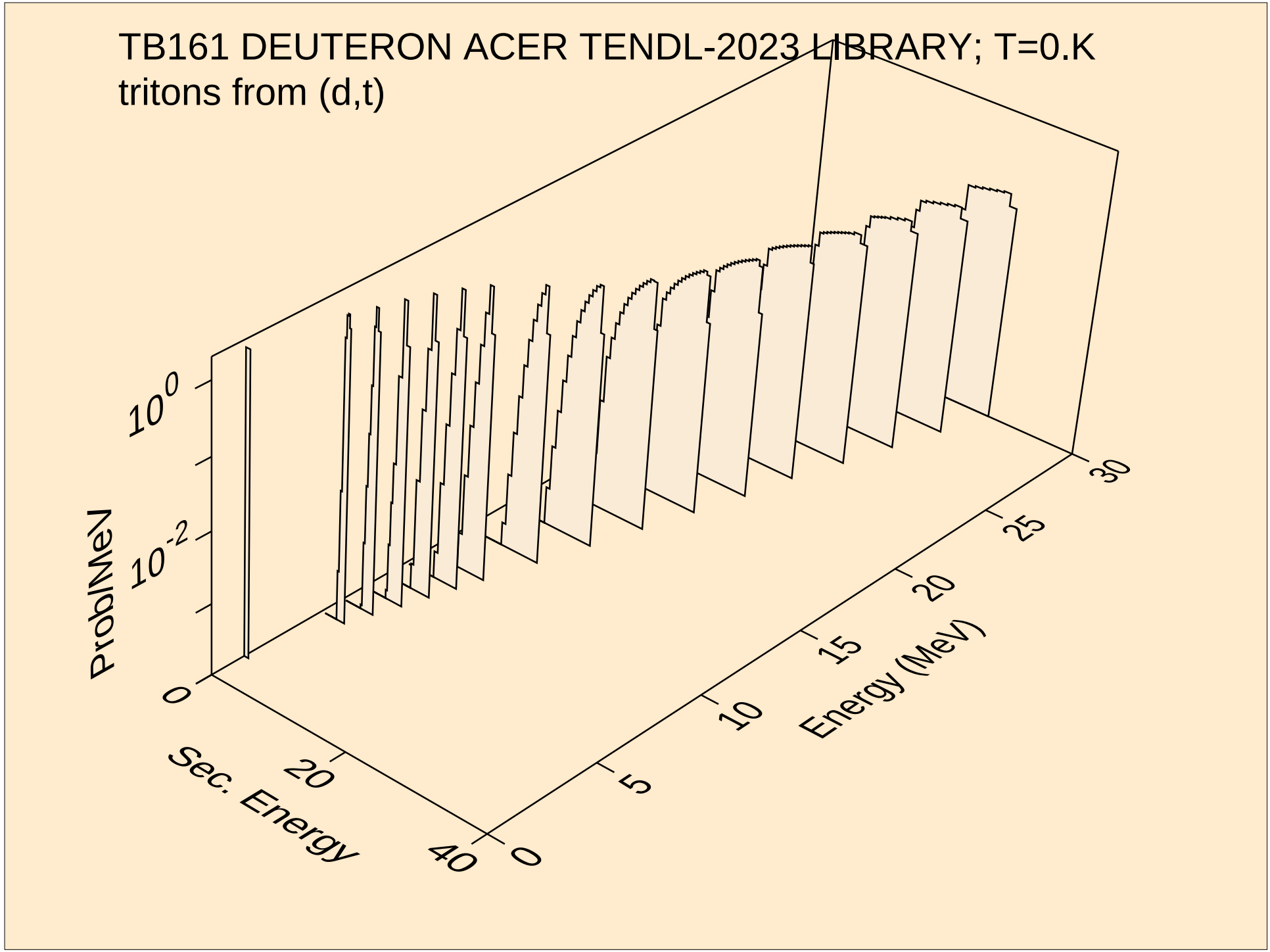

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,pa)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
Energy (MeV)
20
25
30

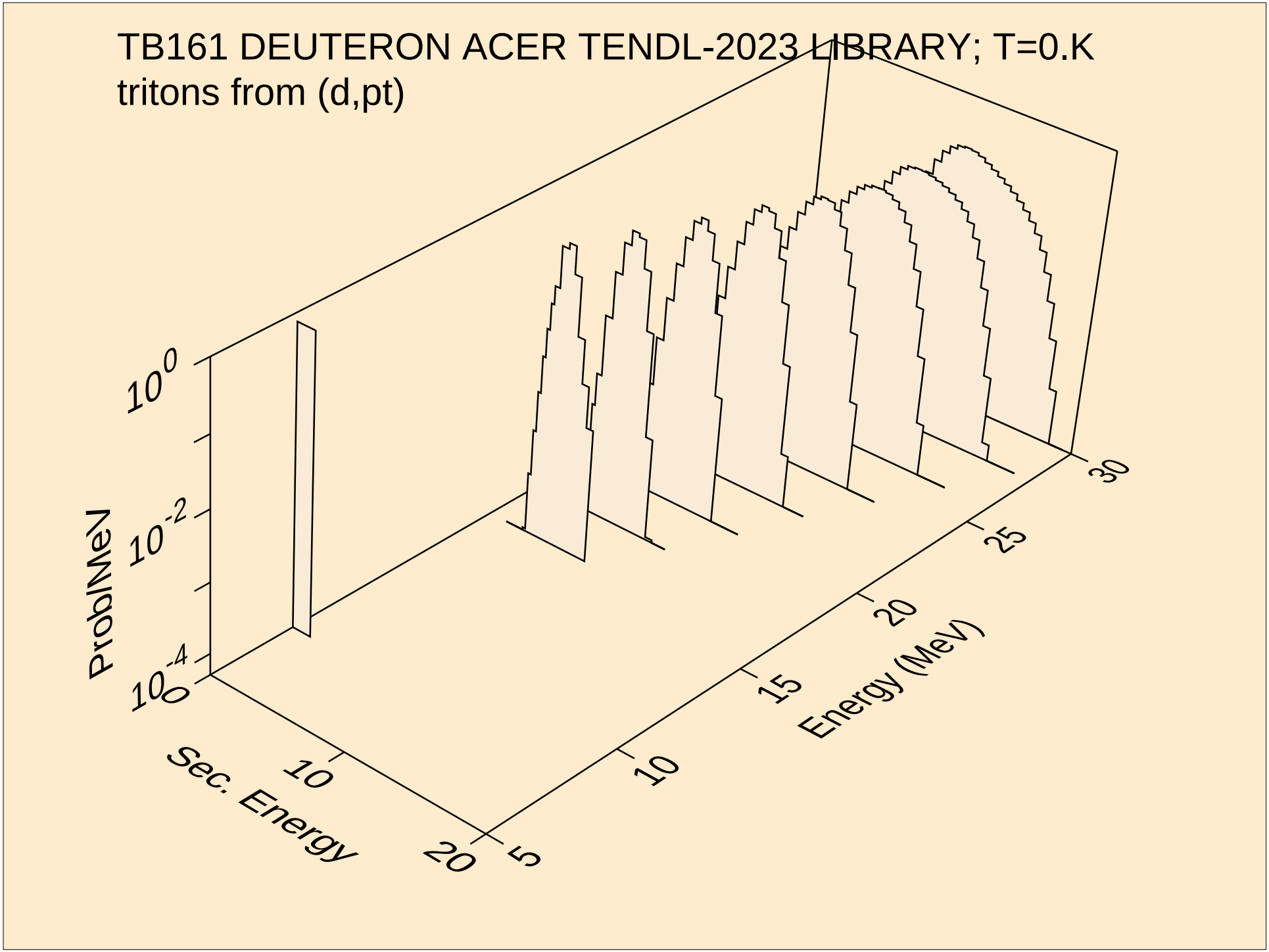

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,pd)
Prob/MeV
10^0
10^-2
10^-4
0
Sec. Energy
10
20
5
10
15
20
25
30
Energy (MeV)

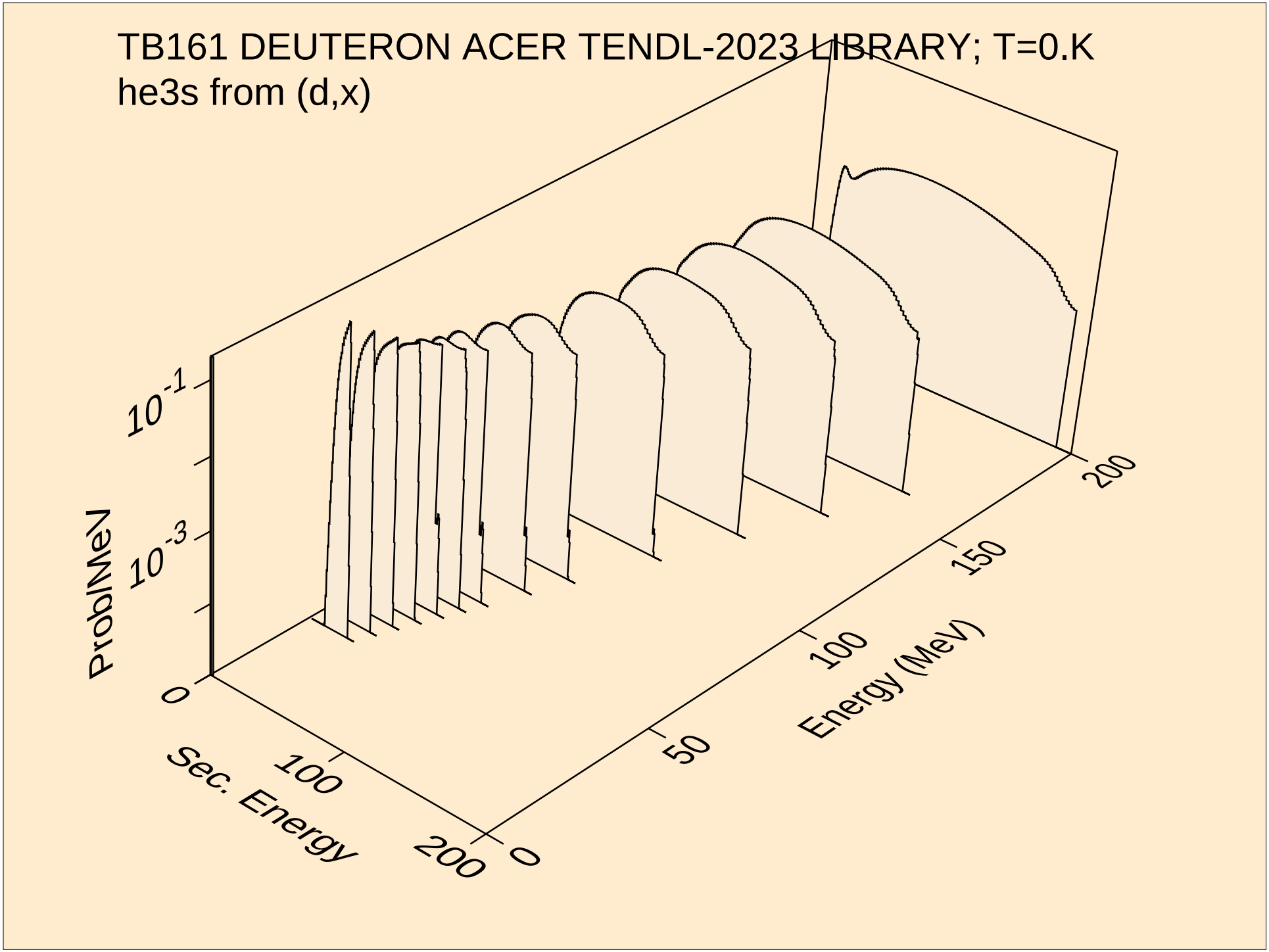

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
protons from (d,pt)
Prob/MeV
10^0
10^-2
10^-4
0
10
20
Sec. Energy
5
10
15
20
25
30
Energy (MeV)

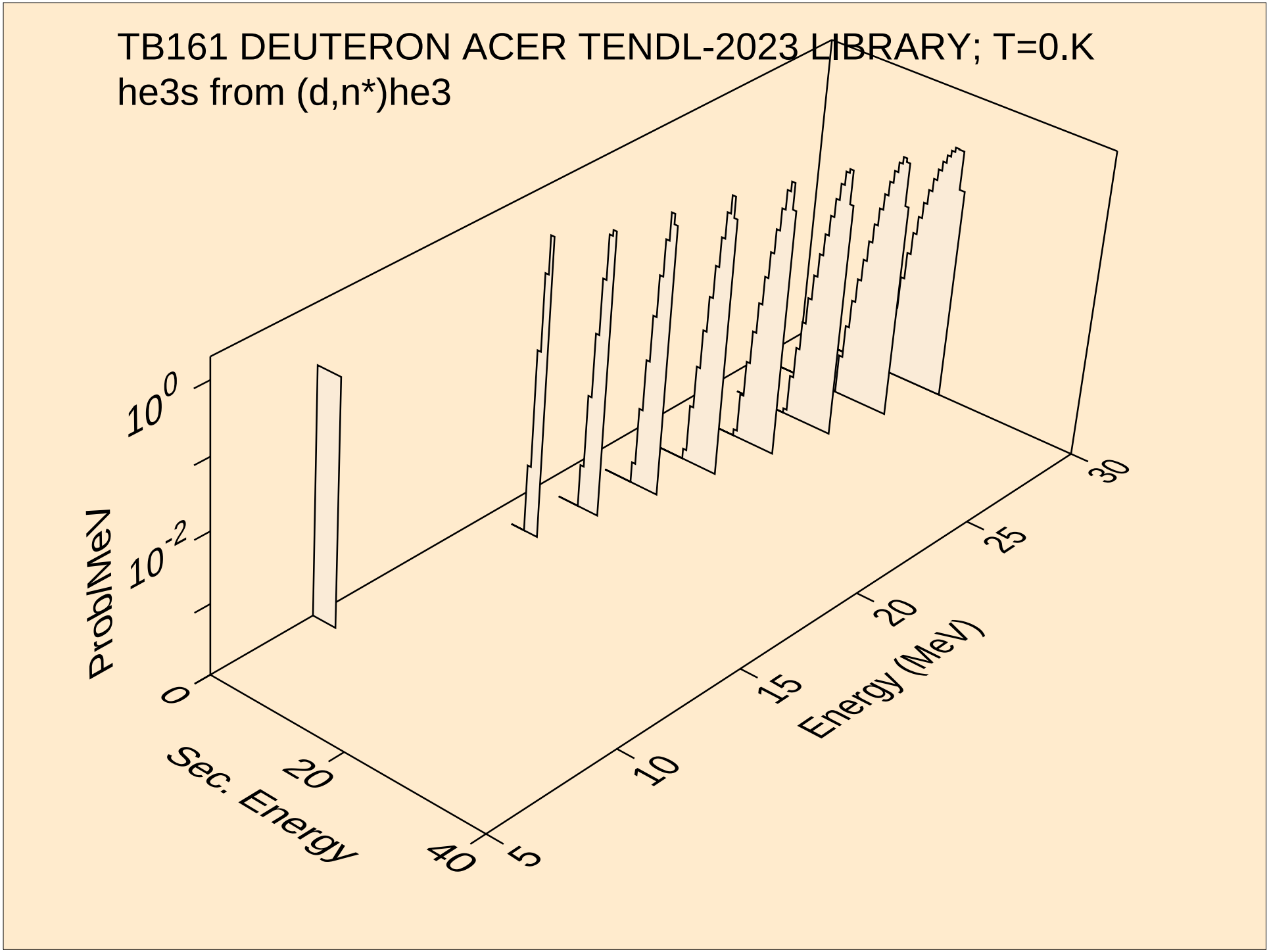

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
tritons from (d,x)
Prob/MeV
10-1
10-3
10-5
0
100
200
Sec. Energy
0
50
100
150
200
Energy (MeV)

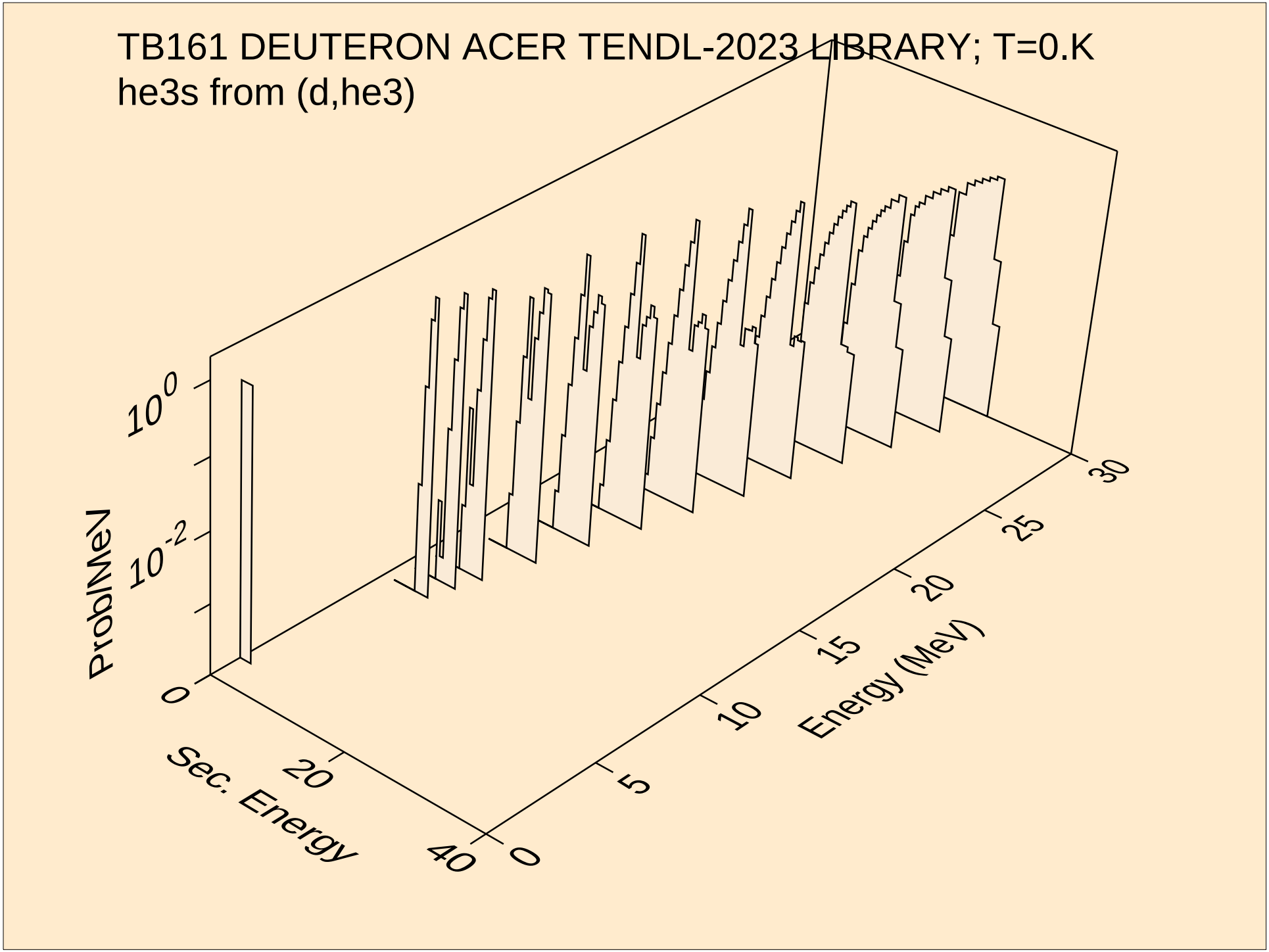

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
tritons from (d,n*)t
Prob/MeV
10-1
10-3
0
Sec. Energy
20
40
5
10
15
Energy (MeV)
20
25
30

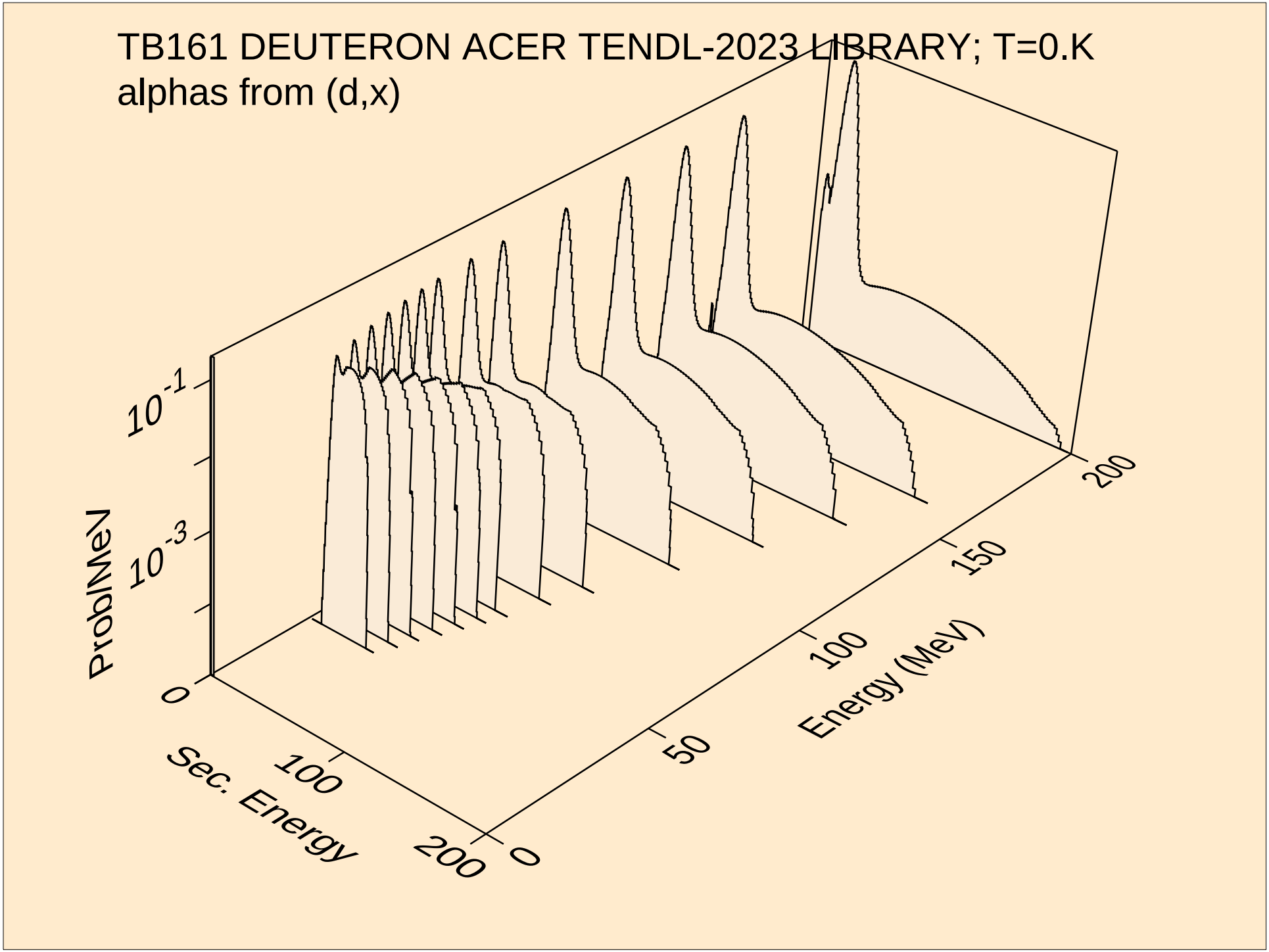

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
tritons from (d,t)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

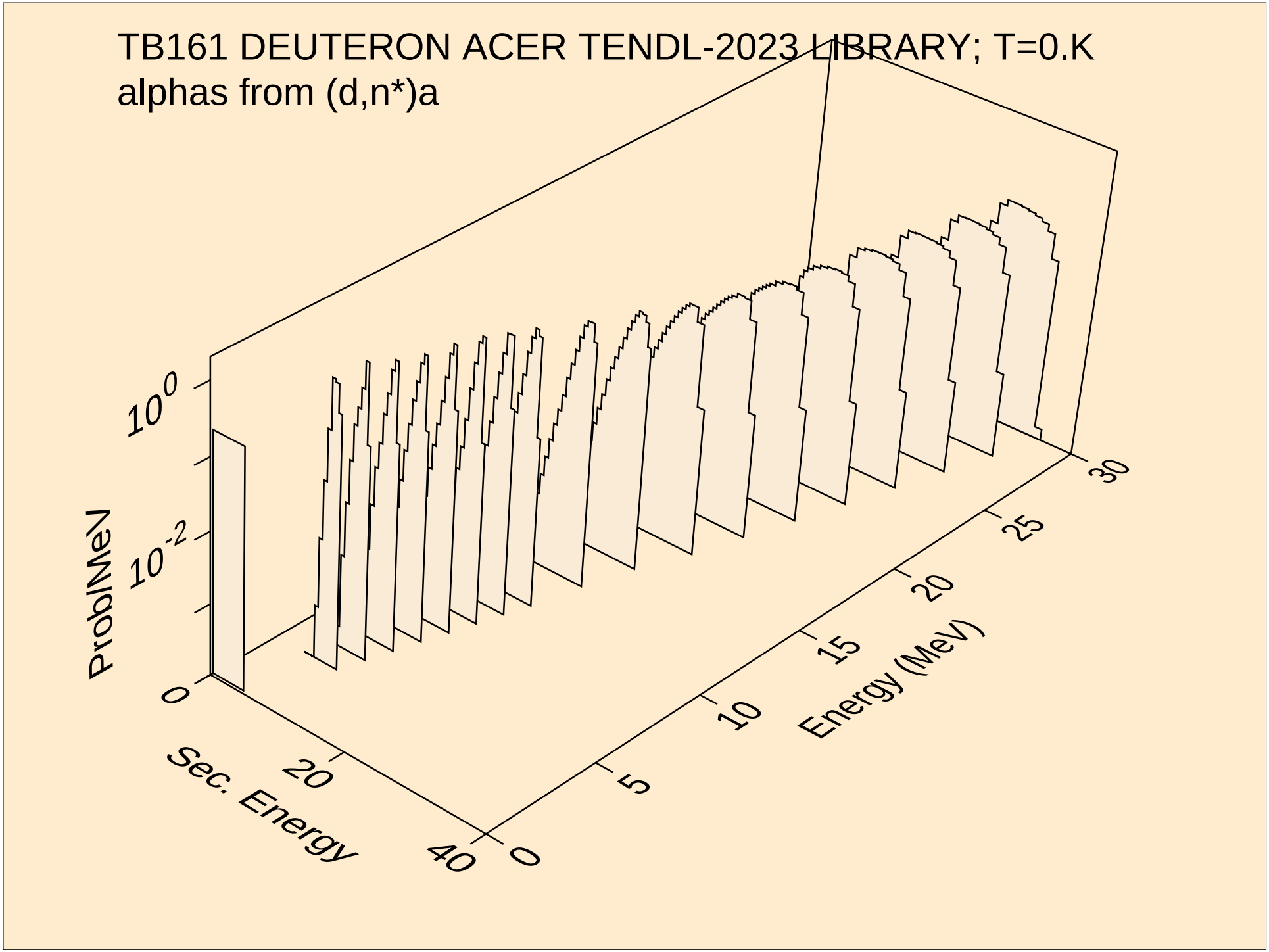

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
tritons from (d,pt)
Prob/MeV
10^0
10^-2
10^-4
Sec. Energy
10
20
5
10
15
20
25
30
Energy (MeV)

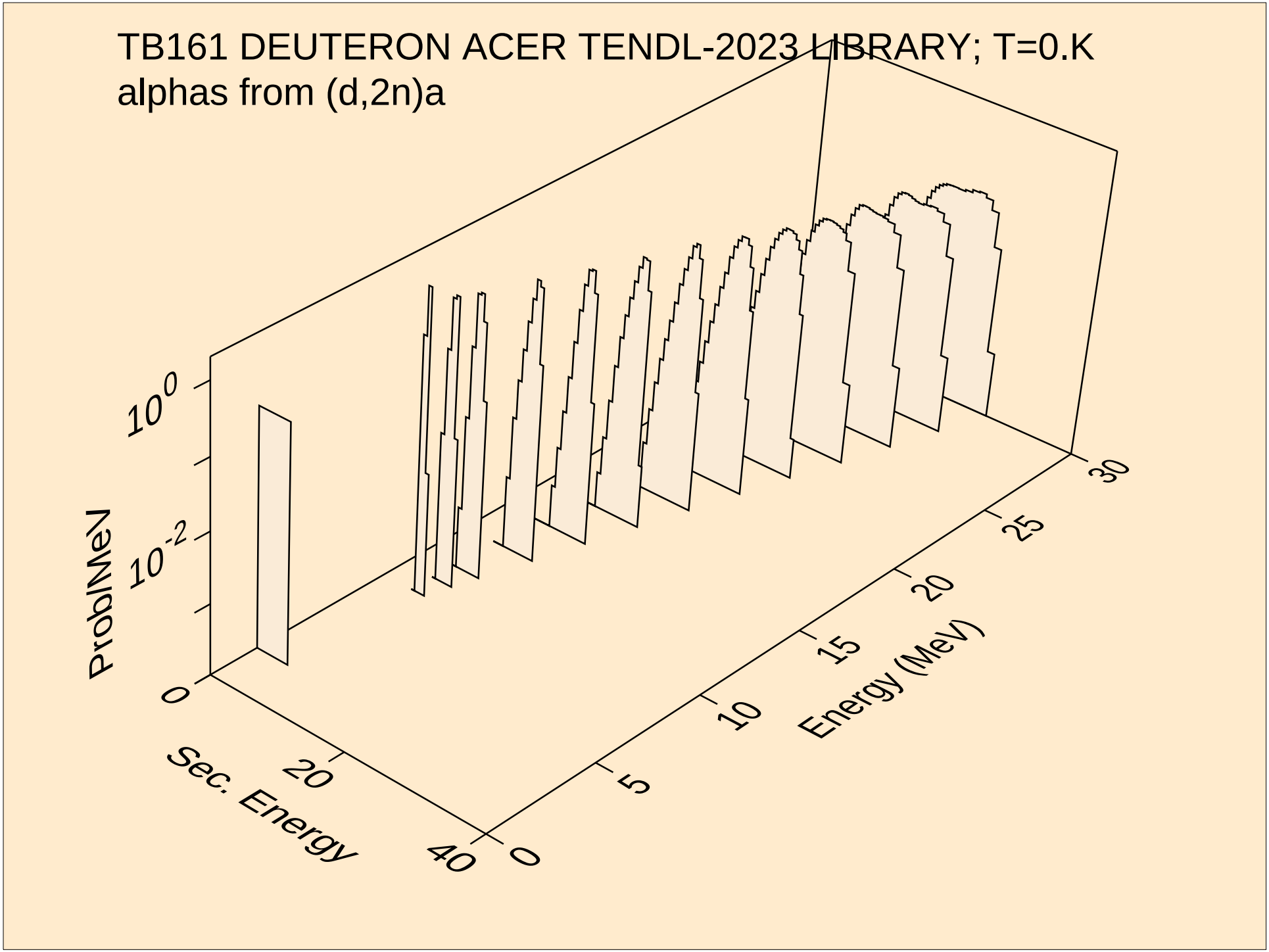

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
he3s from (d,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

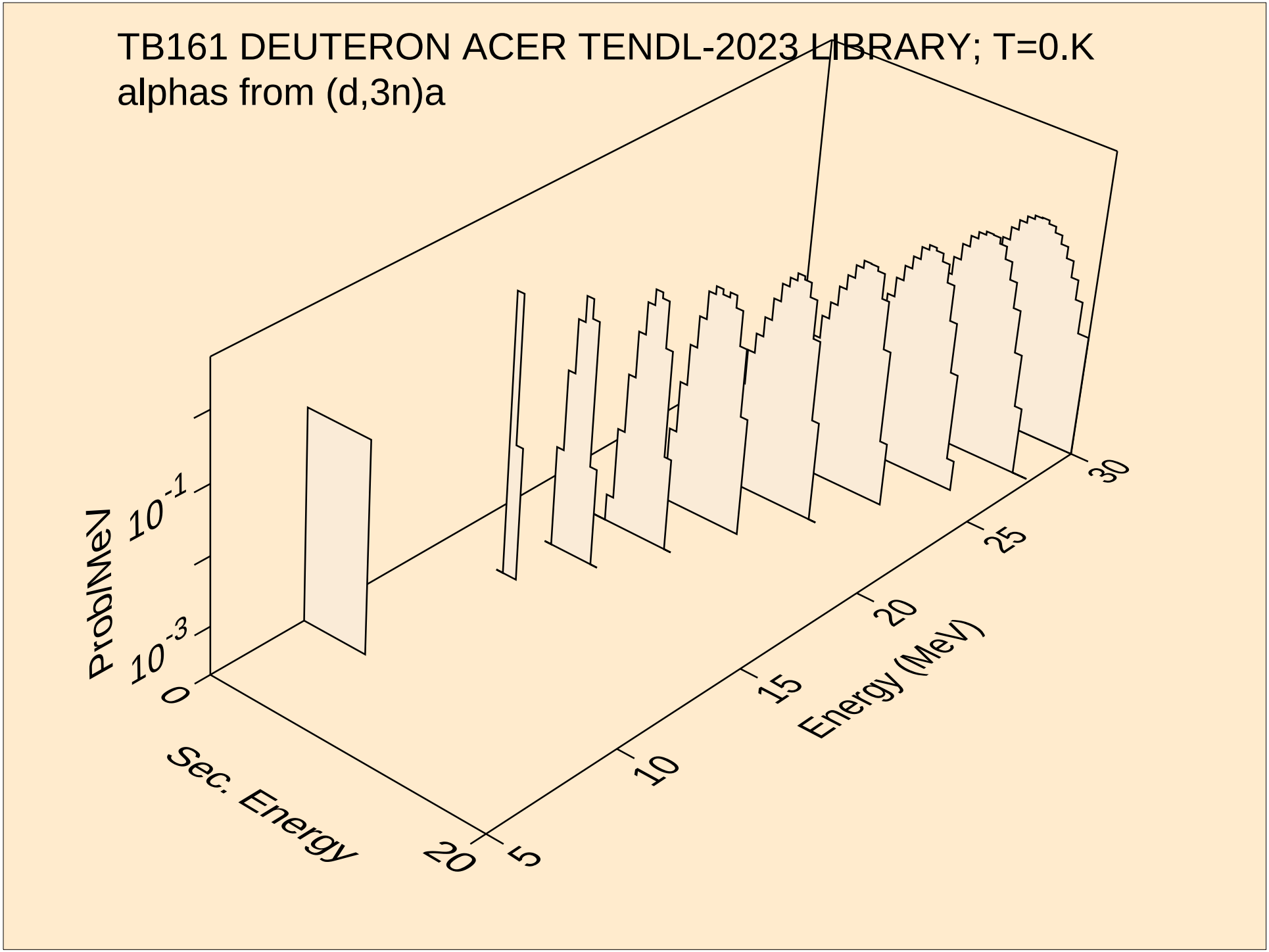

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
he3s from (d,n*)he3
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
5
10
15
20
25
30
Energy (MeV)

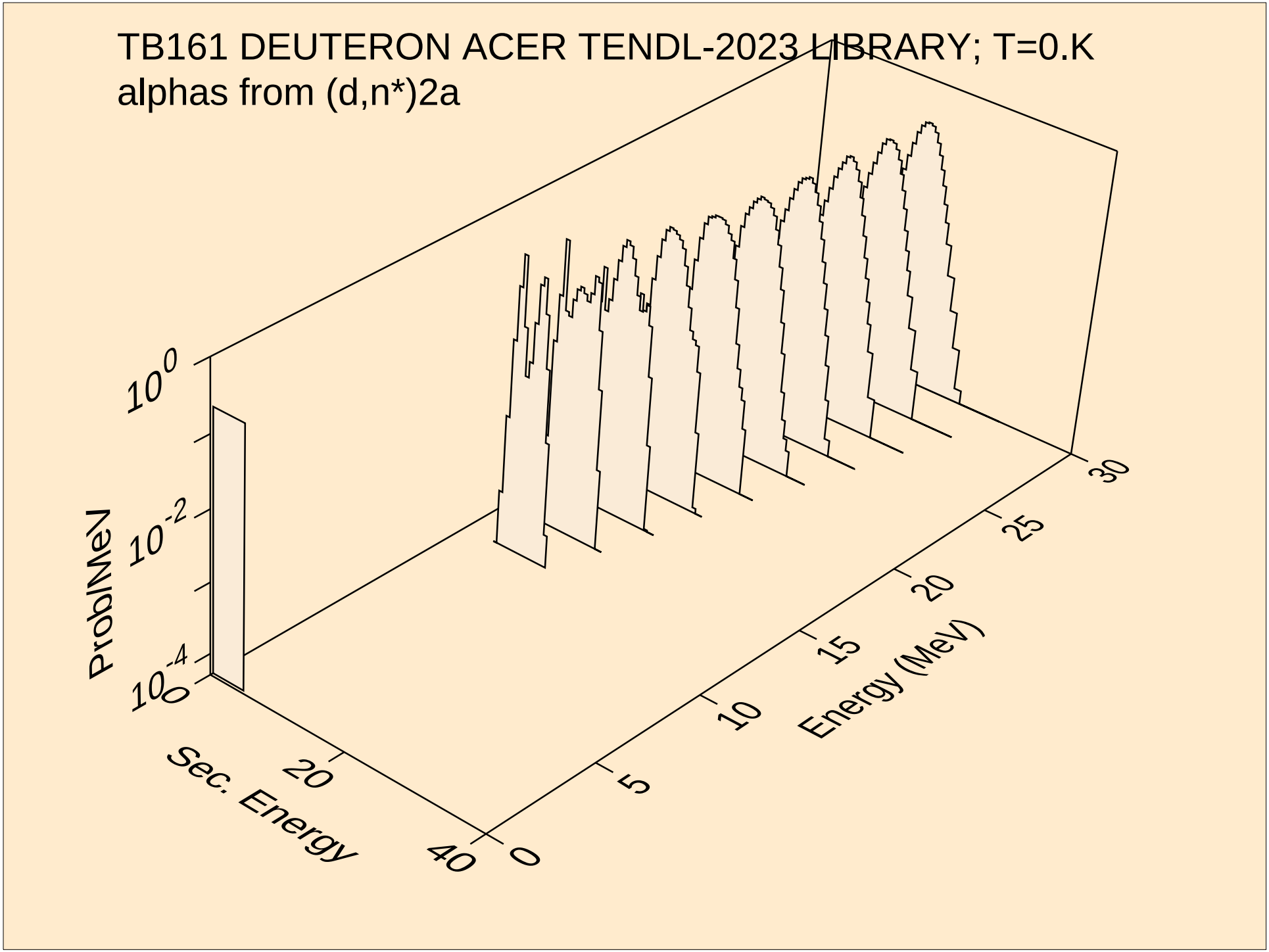

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
he3s from (d,he3)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

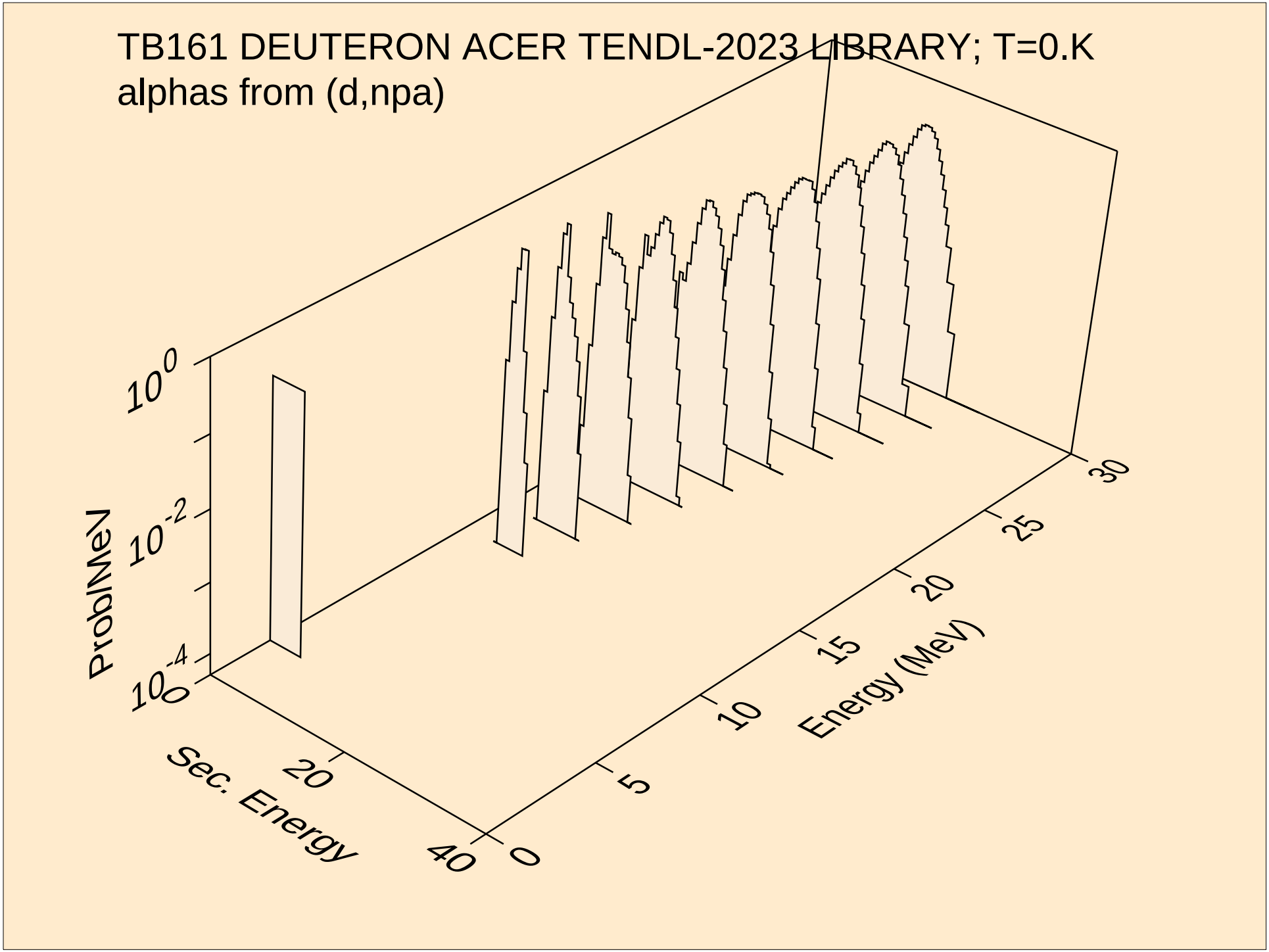

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,x)
Prob/MeV
10-1
10-3
0
Sec. Energy
100
200
0
50
100
150
200
Energy (MeV)

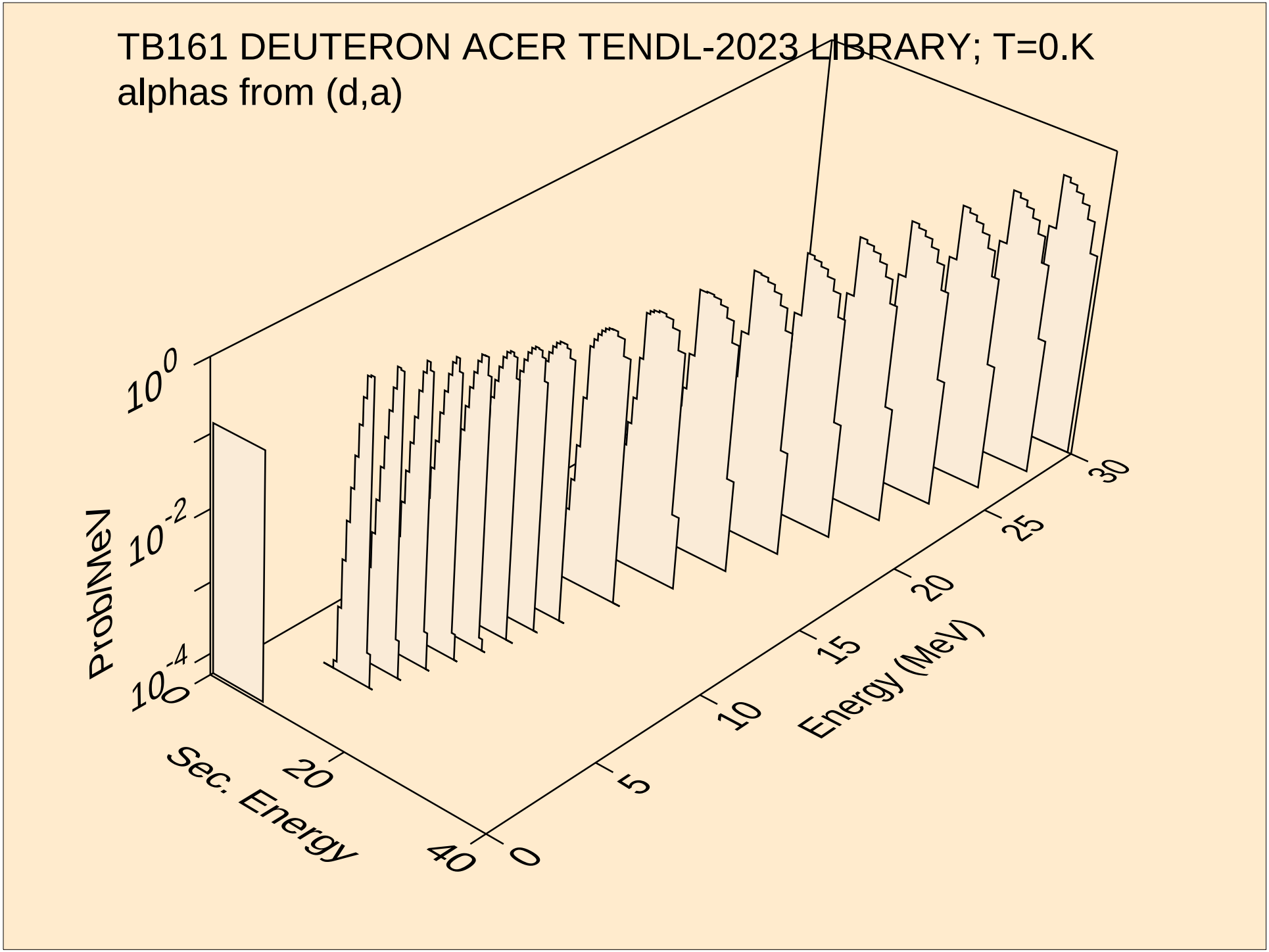

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,n*)a
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
20
25
30
Energy (MeV)

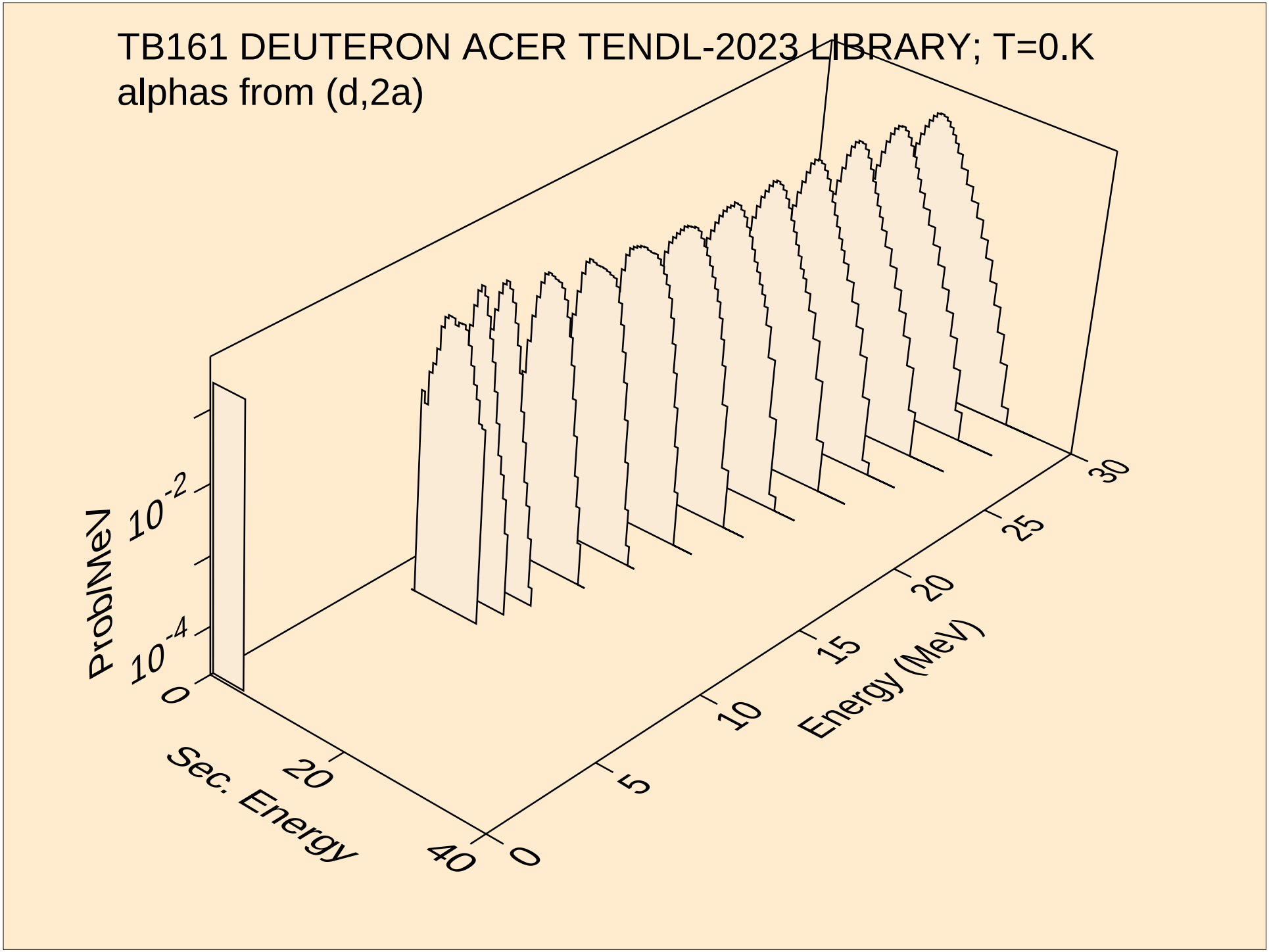

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,2n)a
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
Energy (MeV)
20
25
30

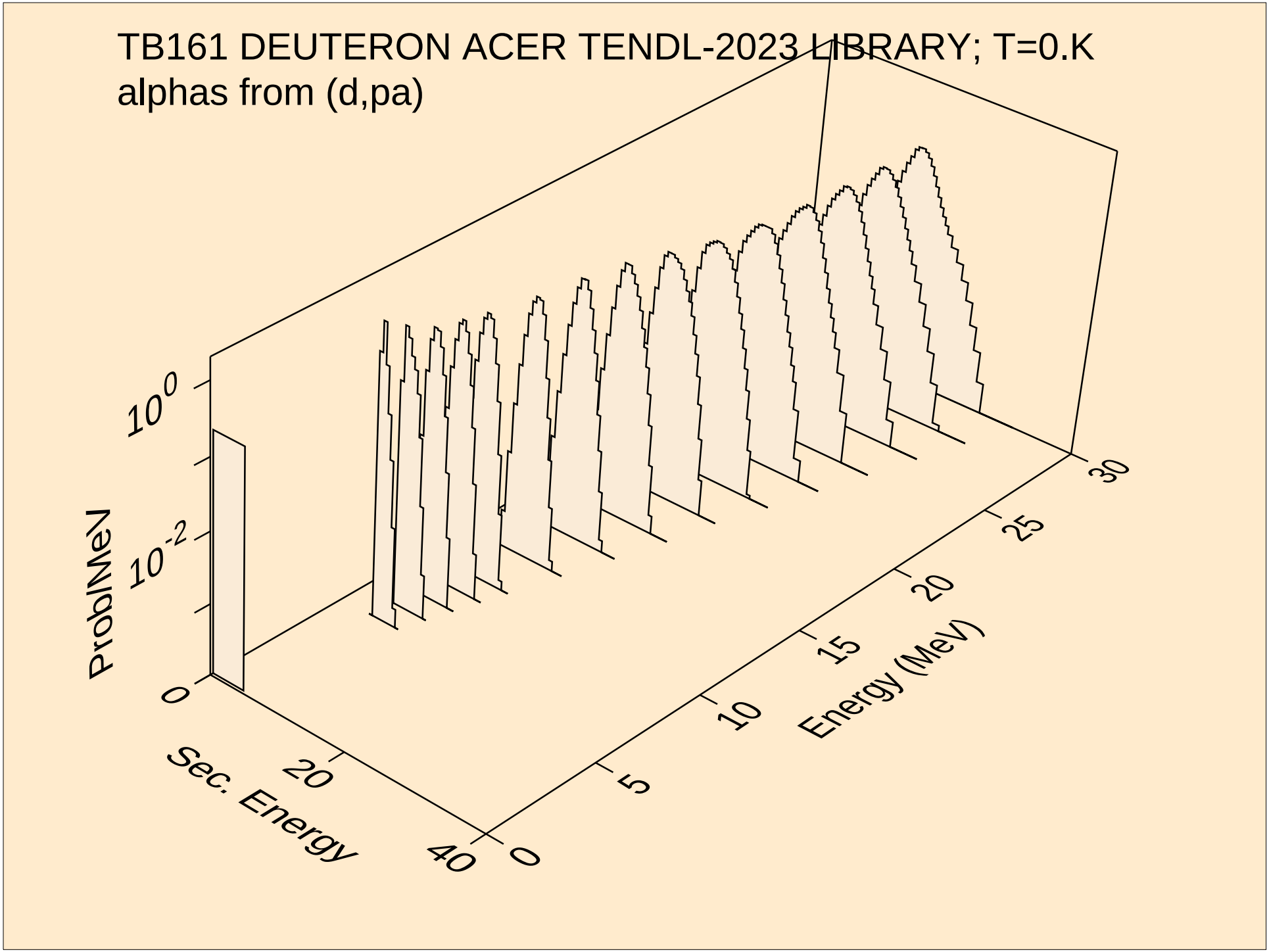

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,3n)a
Prob/MeV
10-1
10-3
0
Sec. Energy
20
5
10
15
20
25
30
Energy (MeV)

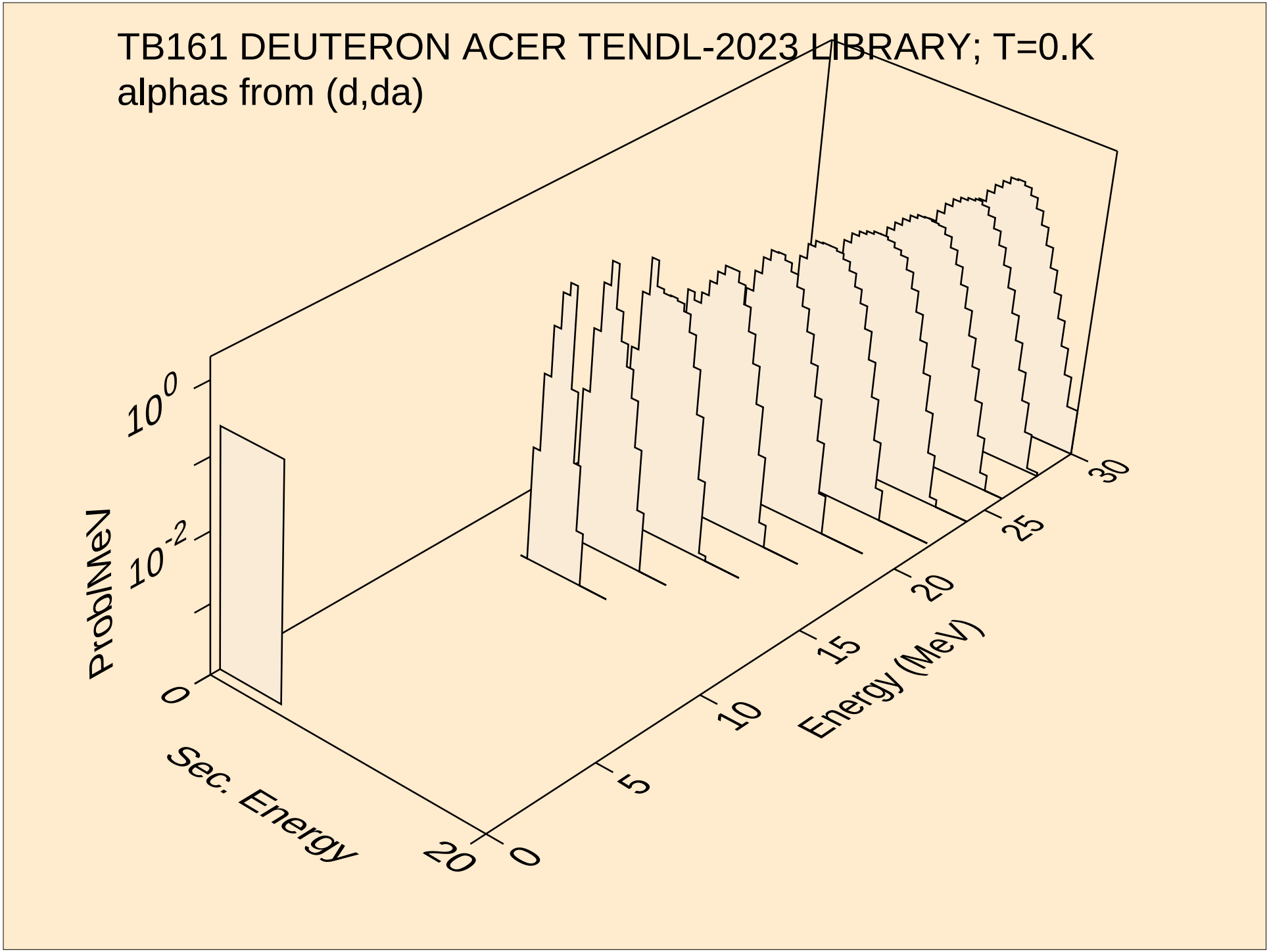

TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,n*)2a
Prob/MeV
10^0
10^-2
10^-4
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)


TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,npa)
Prob/MeV
10^0
10^-2
10^-4
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)


TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,a)
Prob/MeV
10^{0}
10^{-2}
10^{-4}
0
20
40
Sec. Energy
0
5
10
15
20
25
30
Energy (MeV)


TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,2a)
Prob/MeV
10-2
10-4
0
Sec. Energy
20
40
0
5
10
15
Energy (MeV)
20
25
30


TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,pa)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
40
0
5
10
15
Energy (MeV)
20
25
30


TB161 DEUTERON ACER TENDL-2023 LIBRARY; T=0.K
alphas from (d,da)
Prob/MeV
10^0
10^-2
0
Sec. Energy
20
0
5
10
15
20
25
30
Energy (MeV)