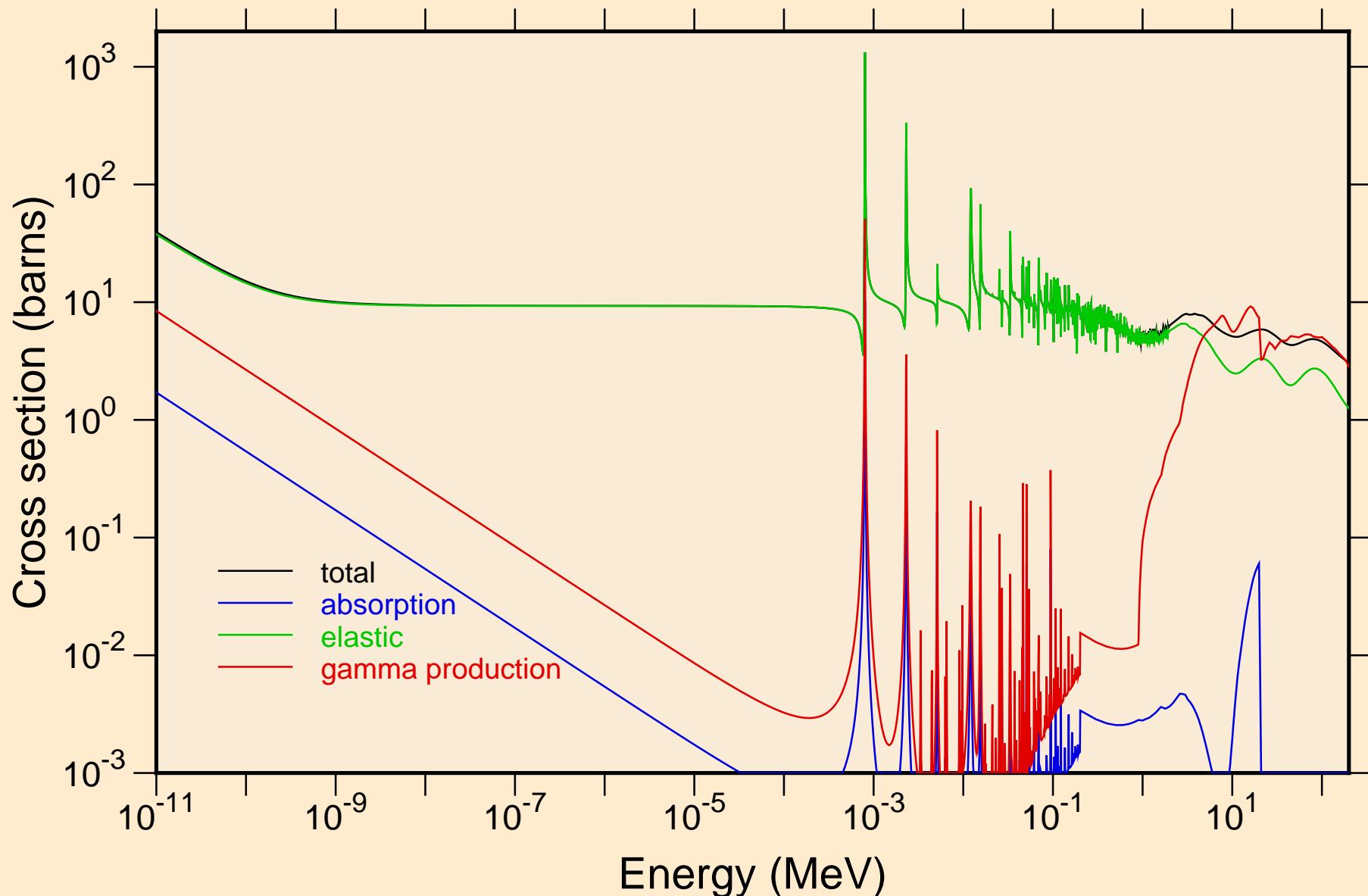
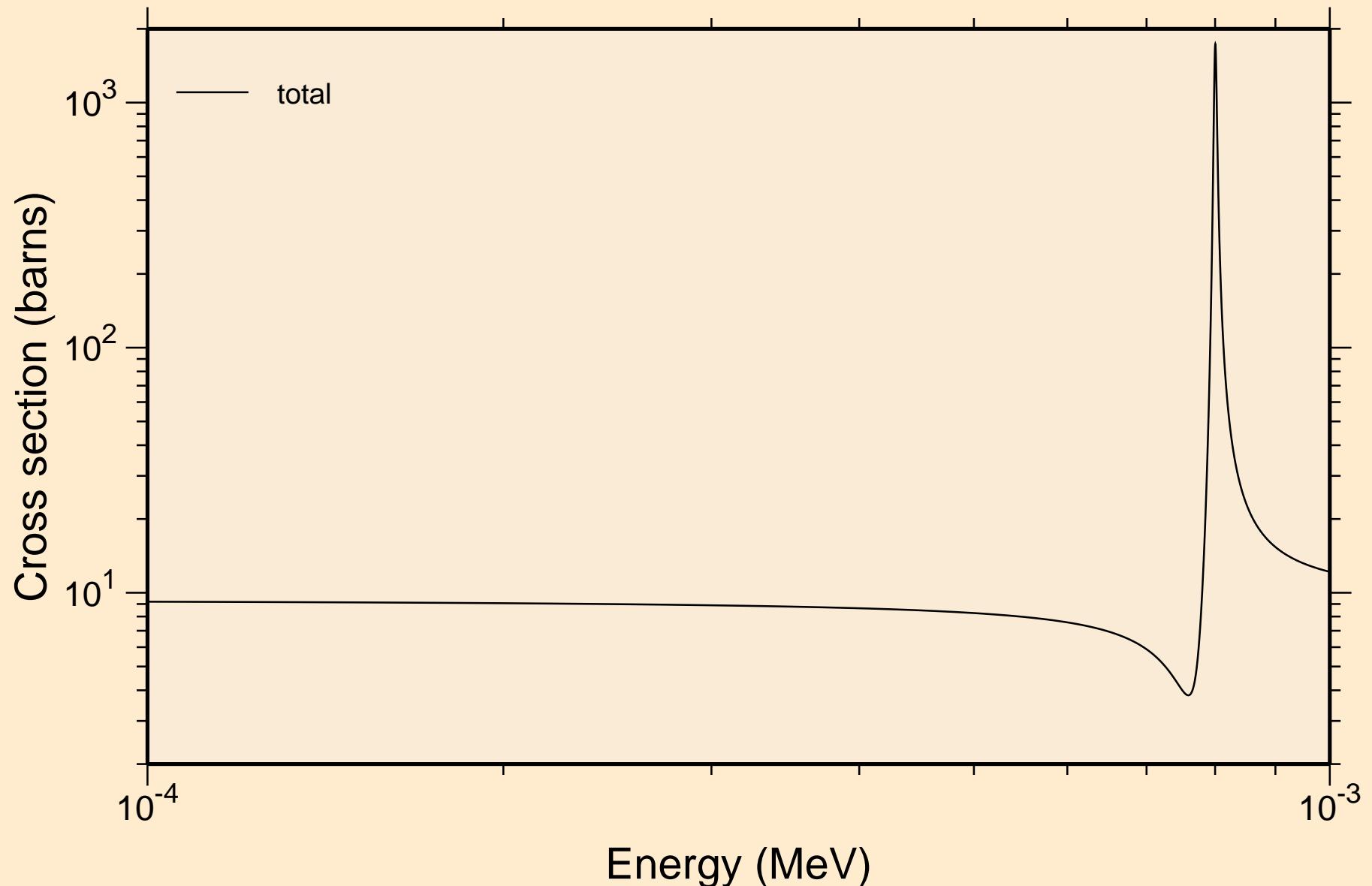


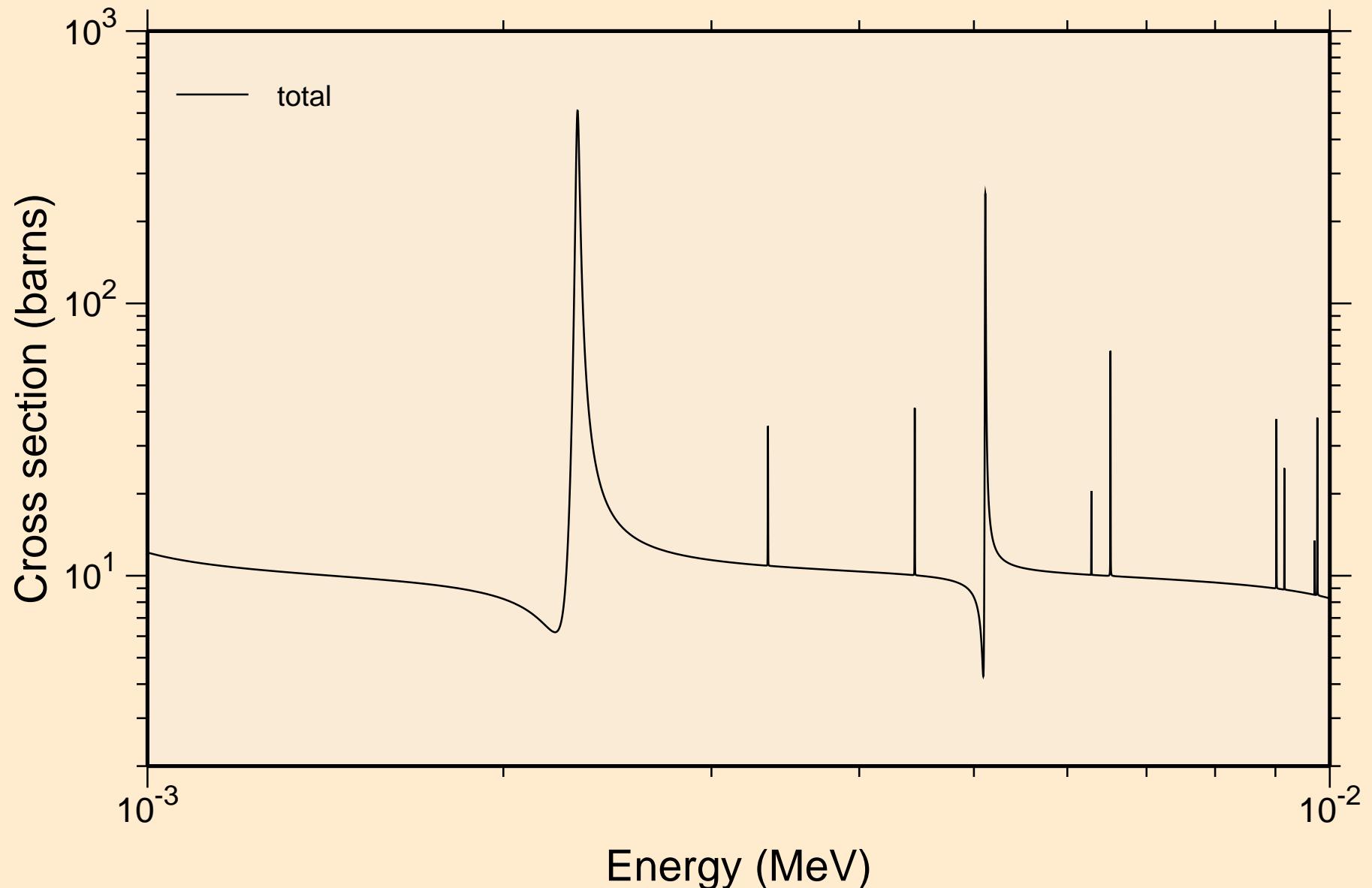
JEFF-3.1 Bi-209  
Principal cross sections



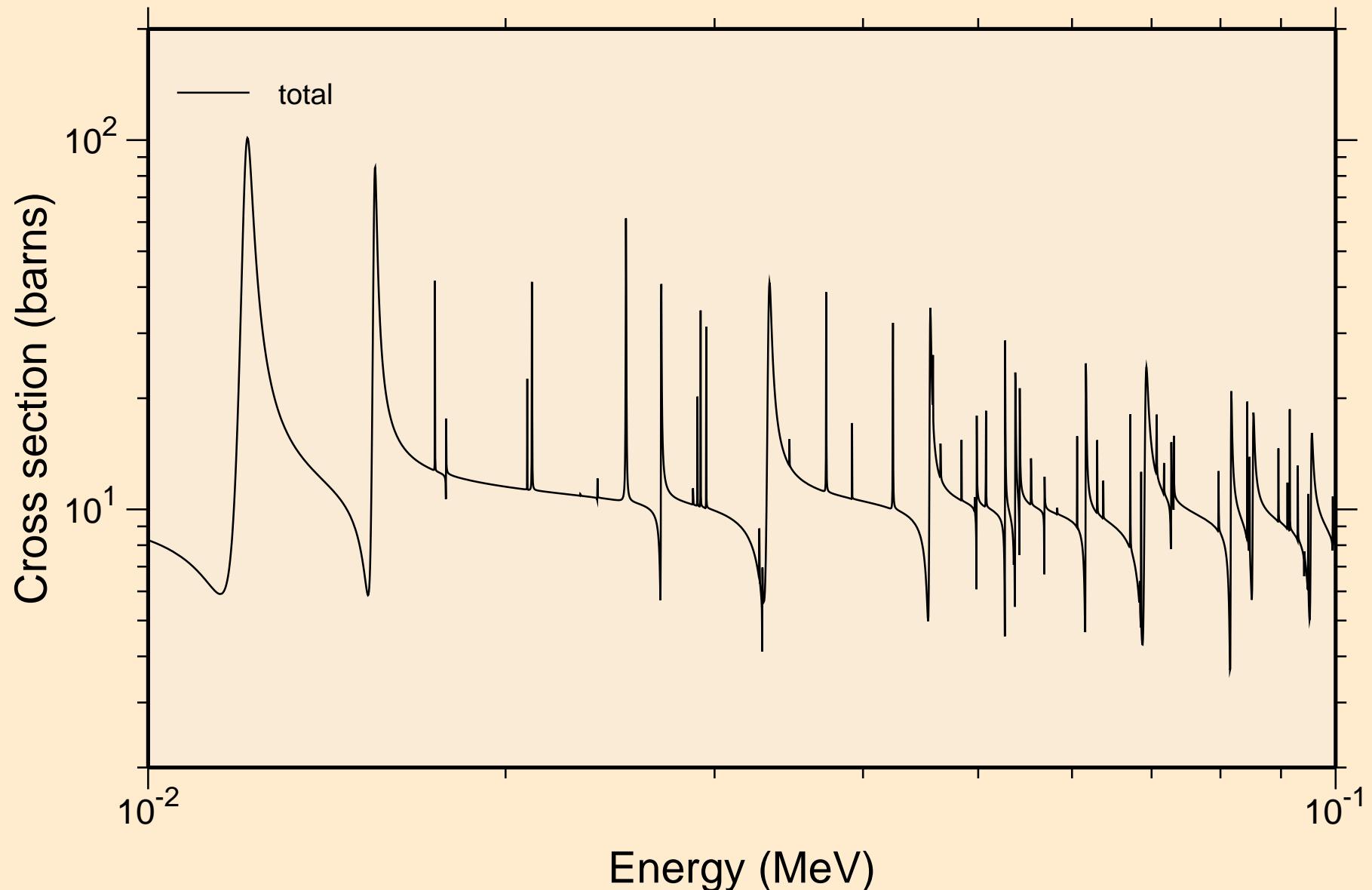
JEFF-3.1 Bi-209  
resonance total cross section



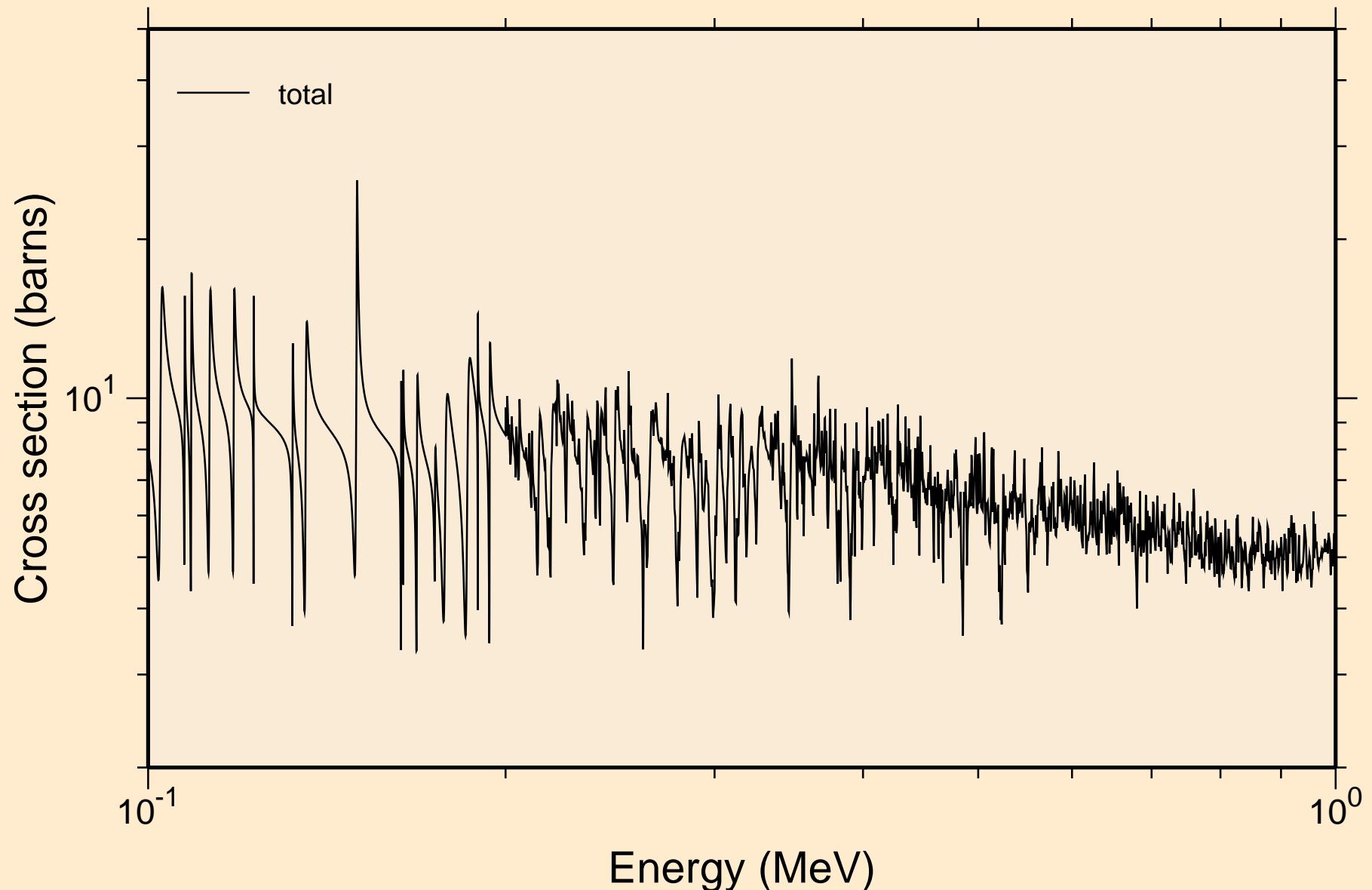
JEFF-3.1 Bi-209  
resonance total cross section



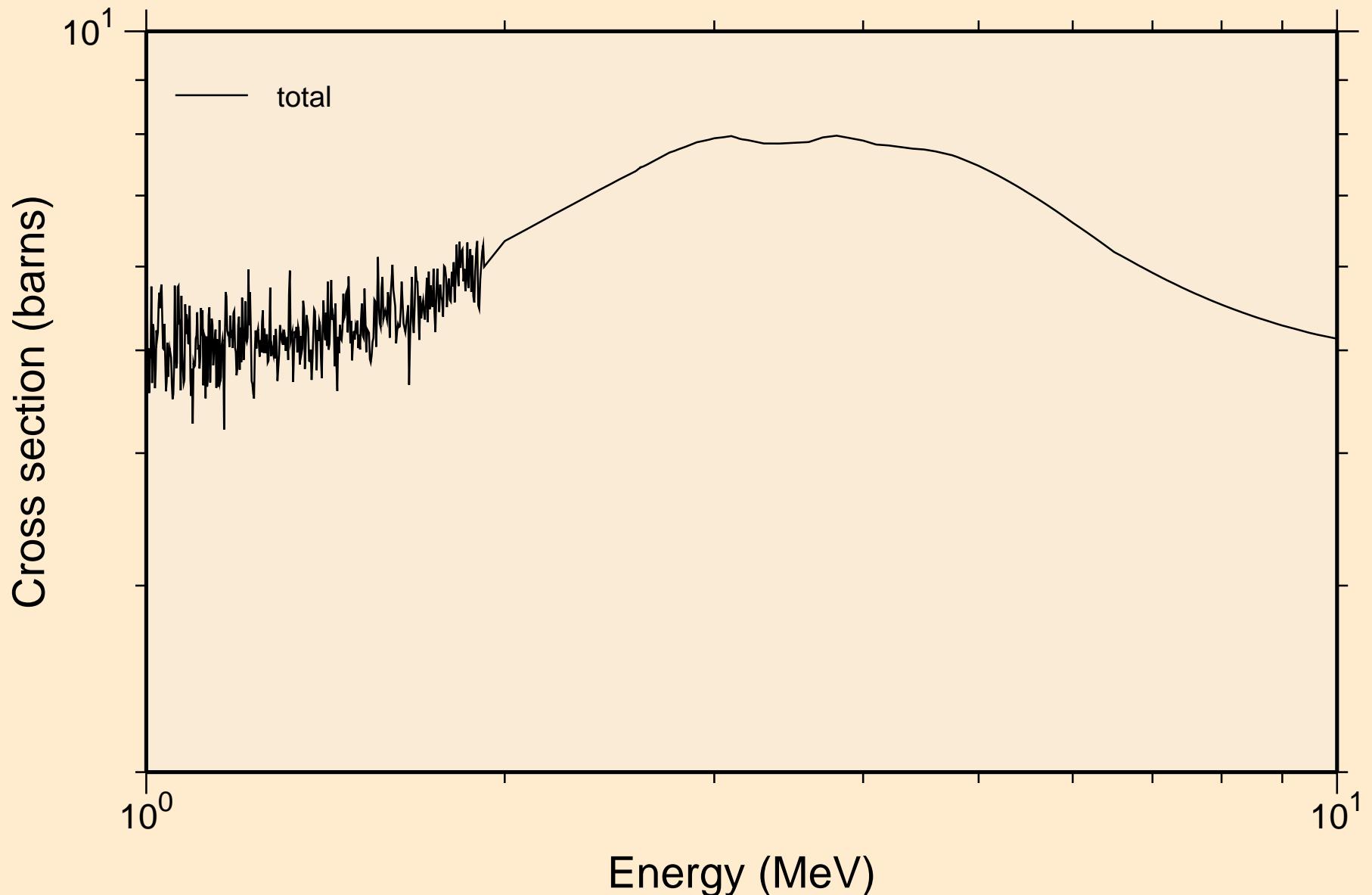
JEFF-3.1 Bi-209  
resonance total cross section



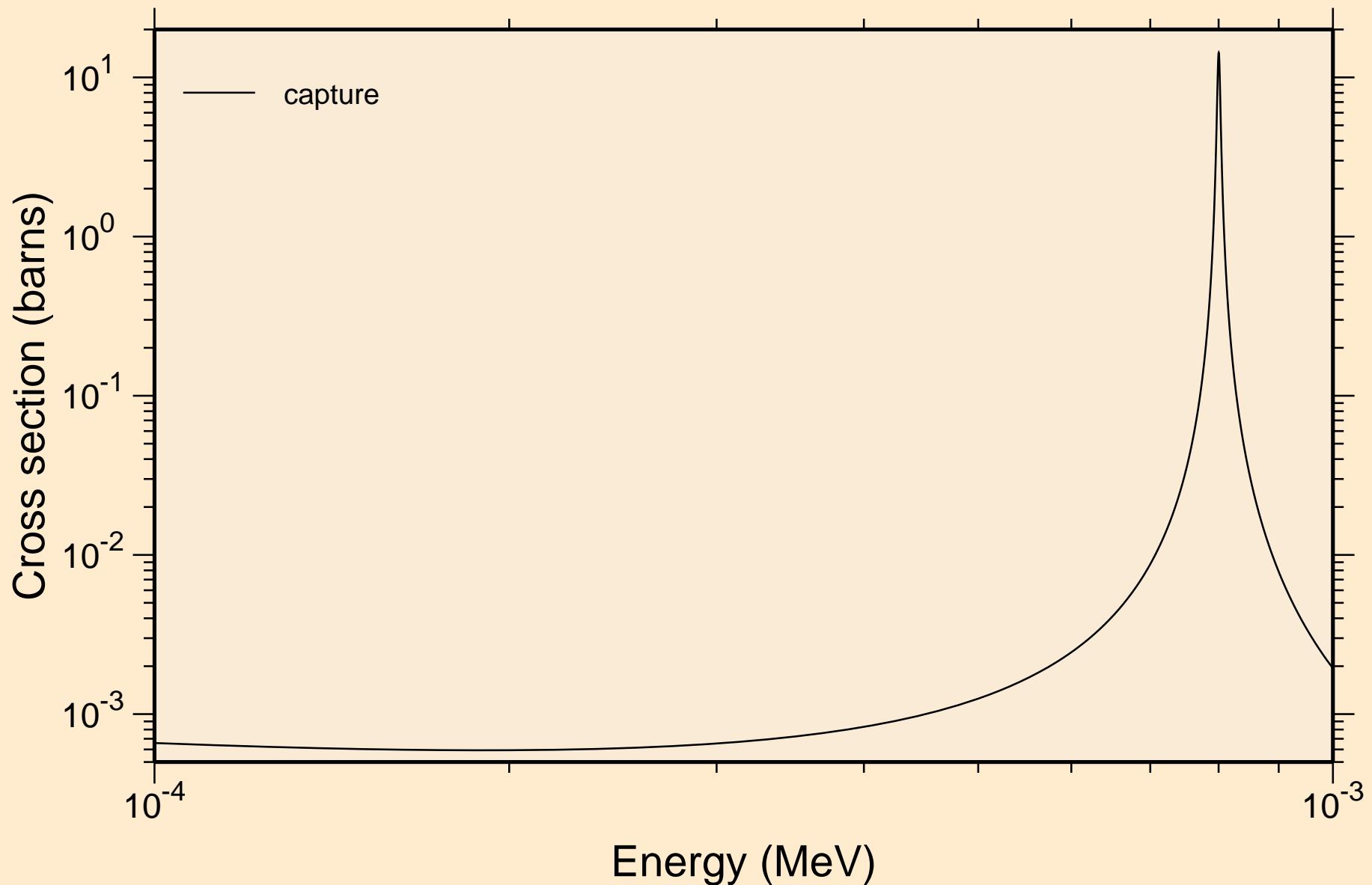
JEFF-3.1 Bi-209  
resonance total cross section



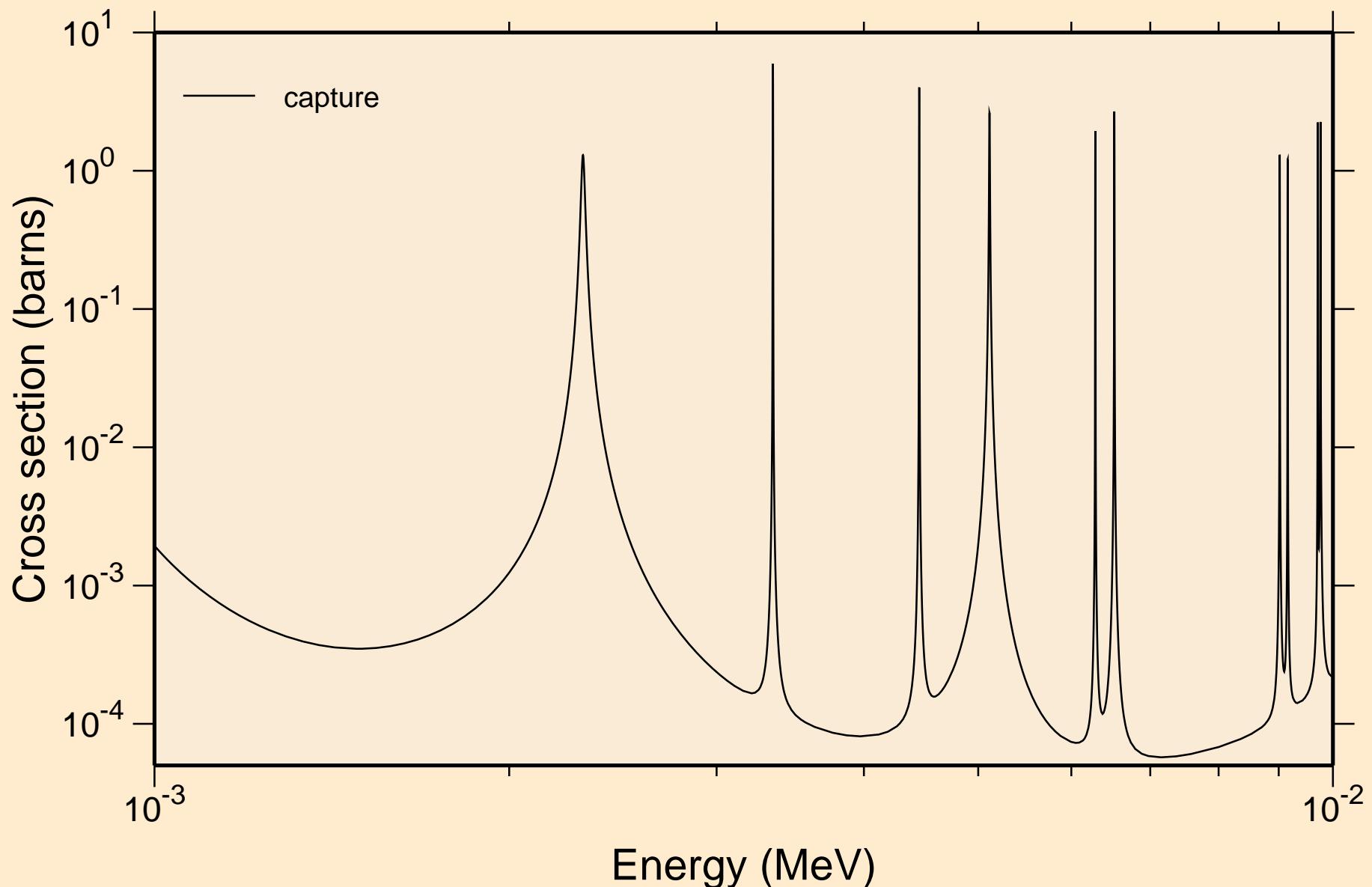
JEFF-3.1 Bi-209  
resonance total cross section



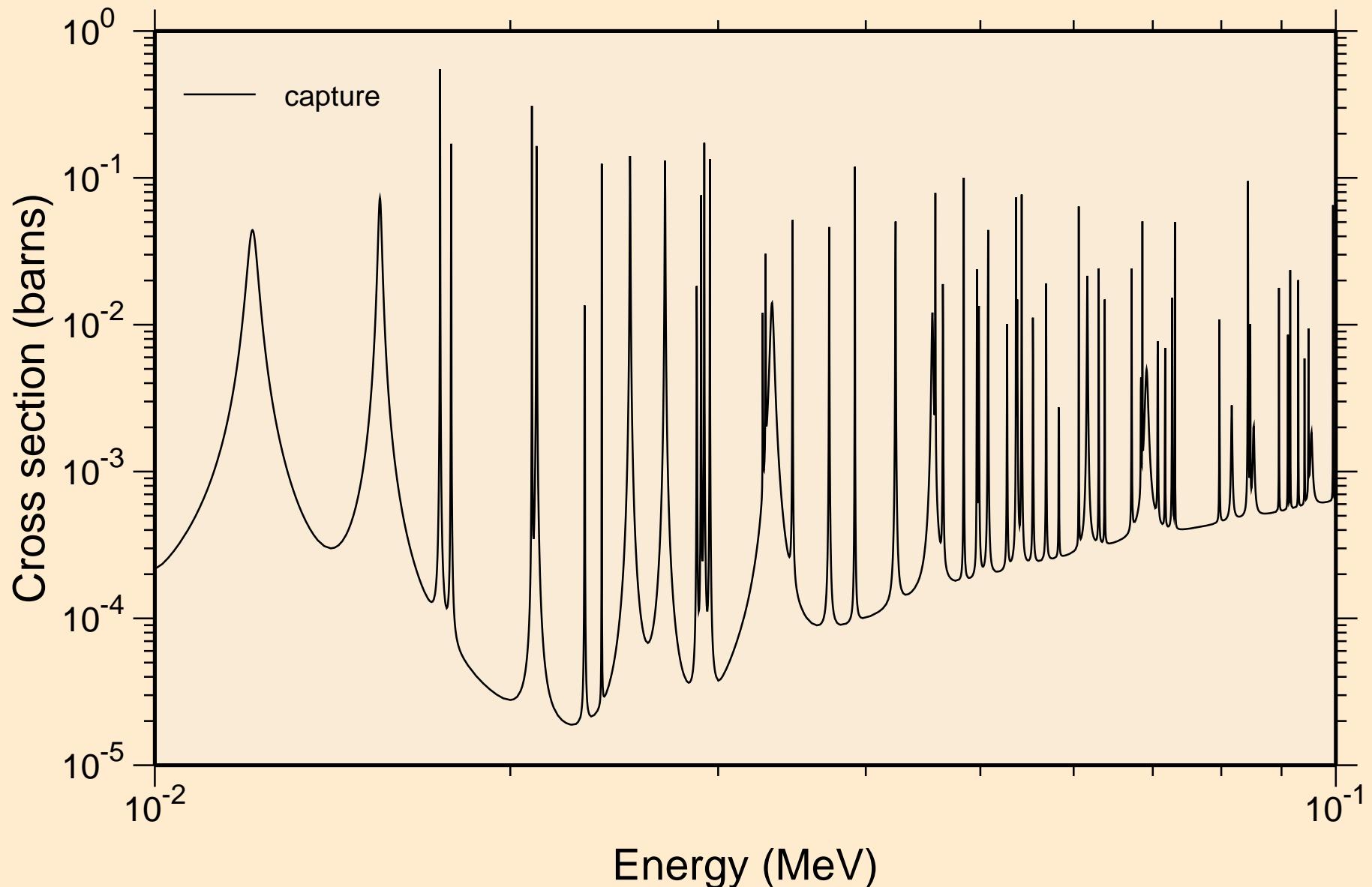
JEFF-3.1 Bi-209  
resonance absorption cross sections



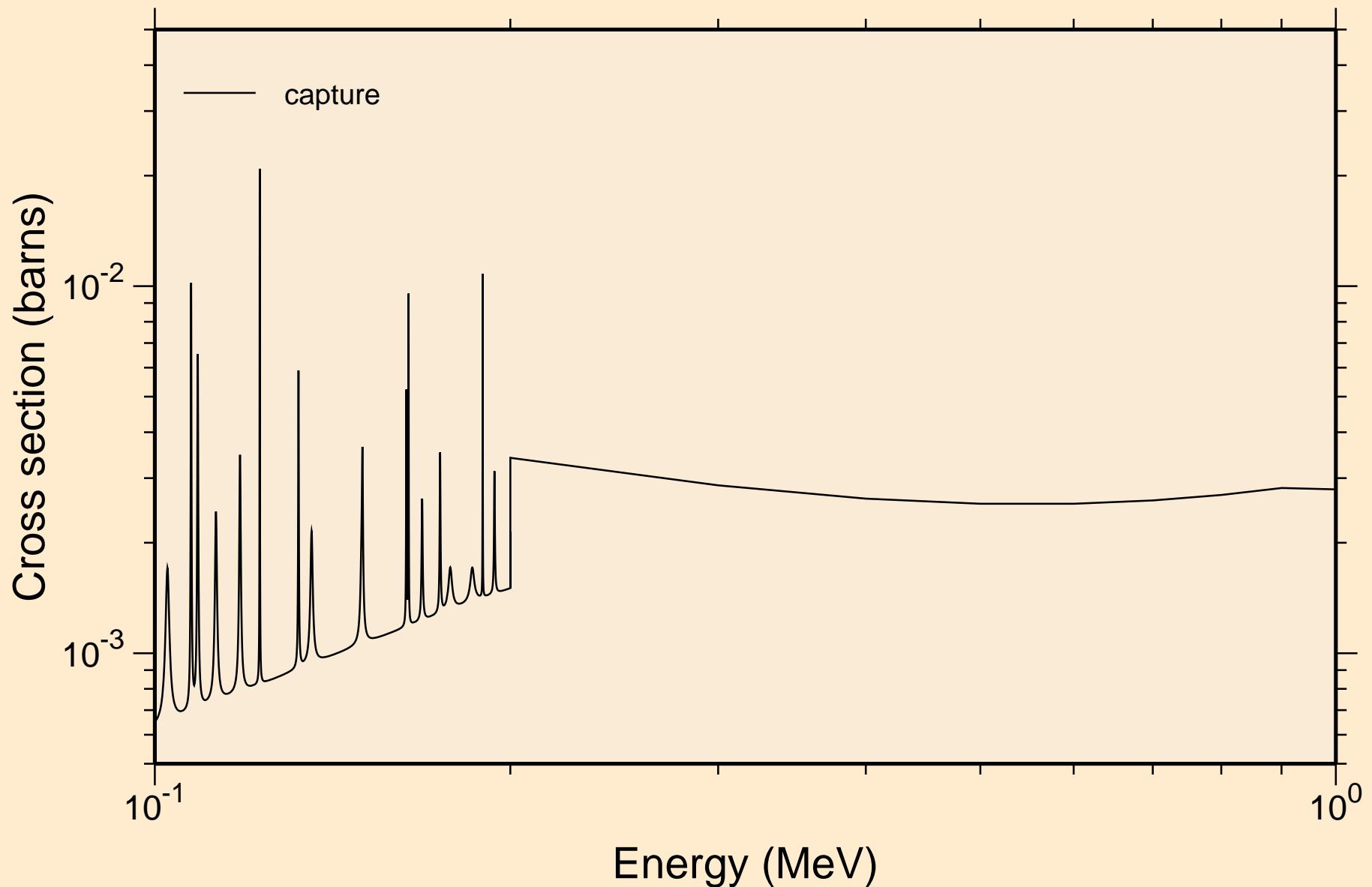
JEFF-3.1 Bi-209  
resonance absorption cross sections



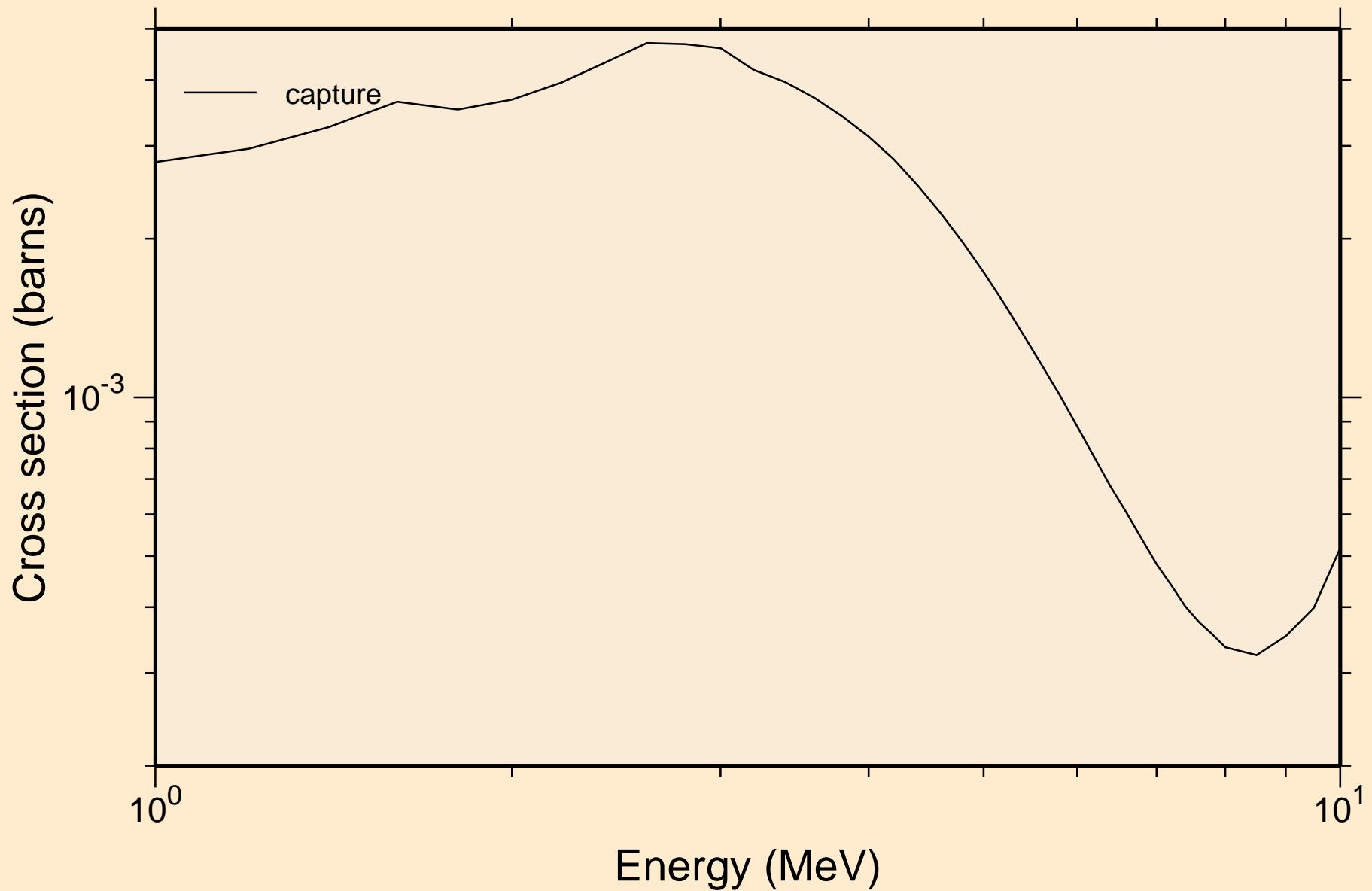
JEFF-3.1 Bi-209  
resonance absorption cross sections



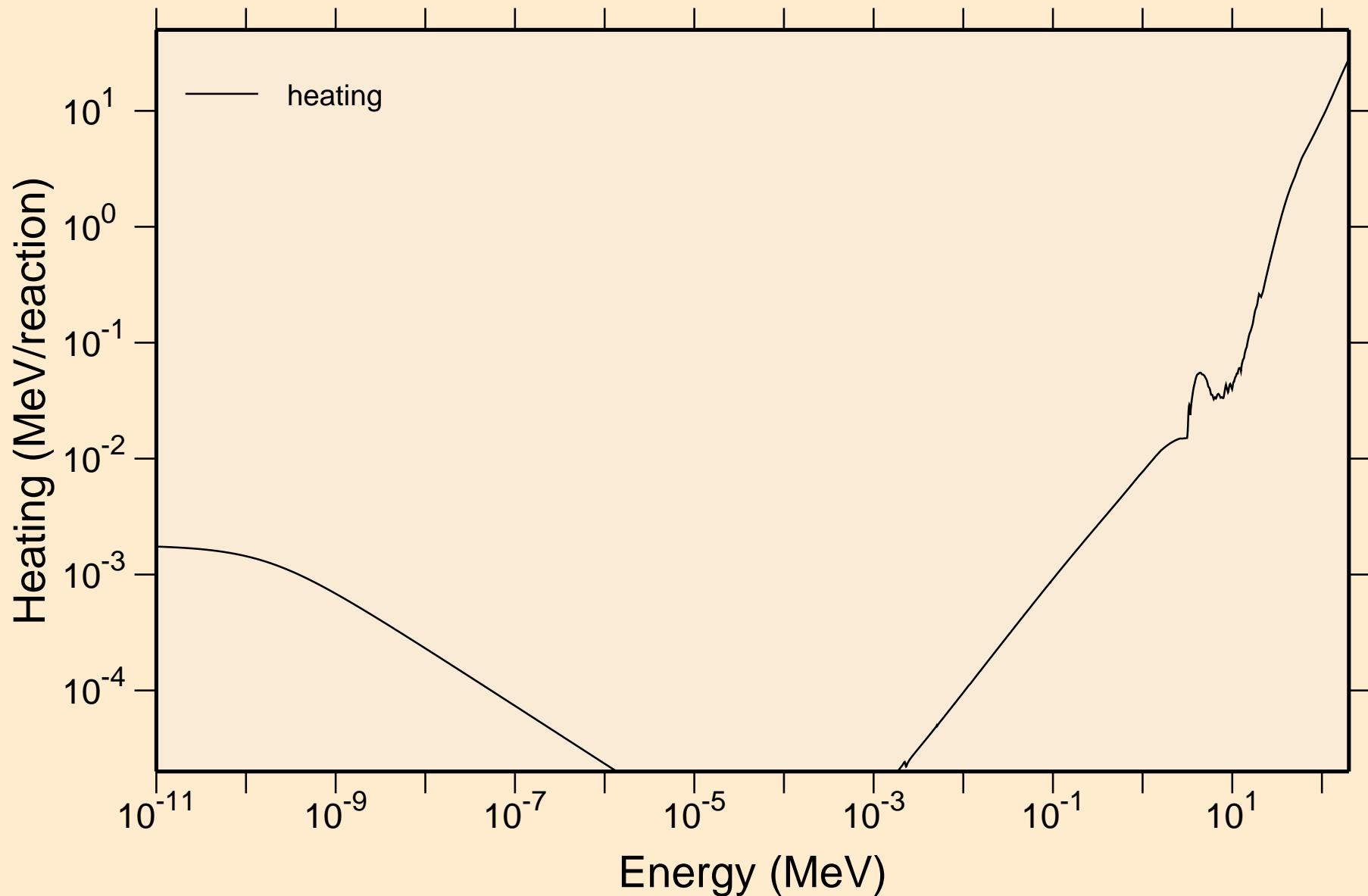
JEFF-3.1 Bi-209  
resonance absorption cross sections



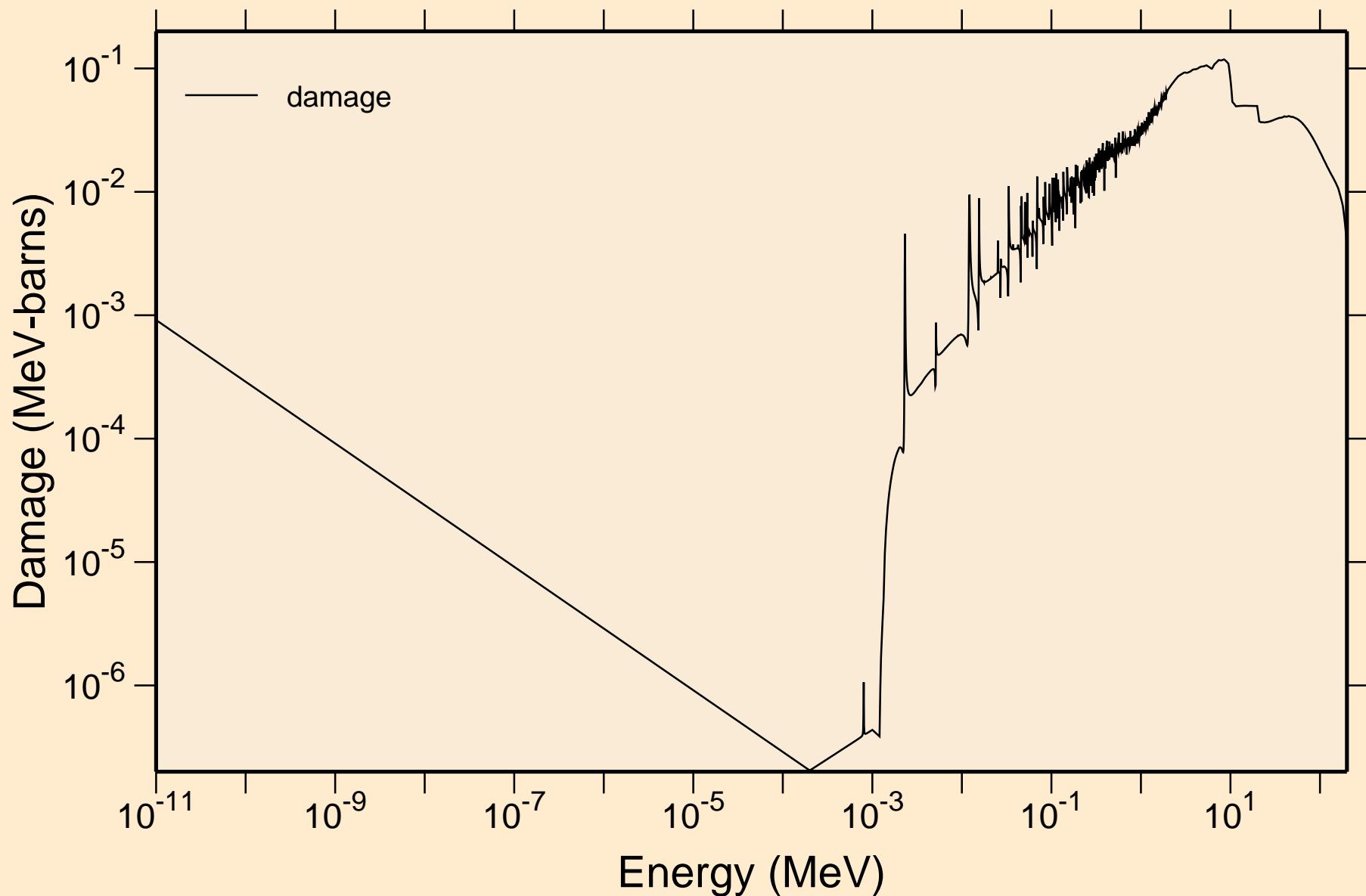
JEFF-3.1 Bi-209  
resonance absorption cross sections



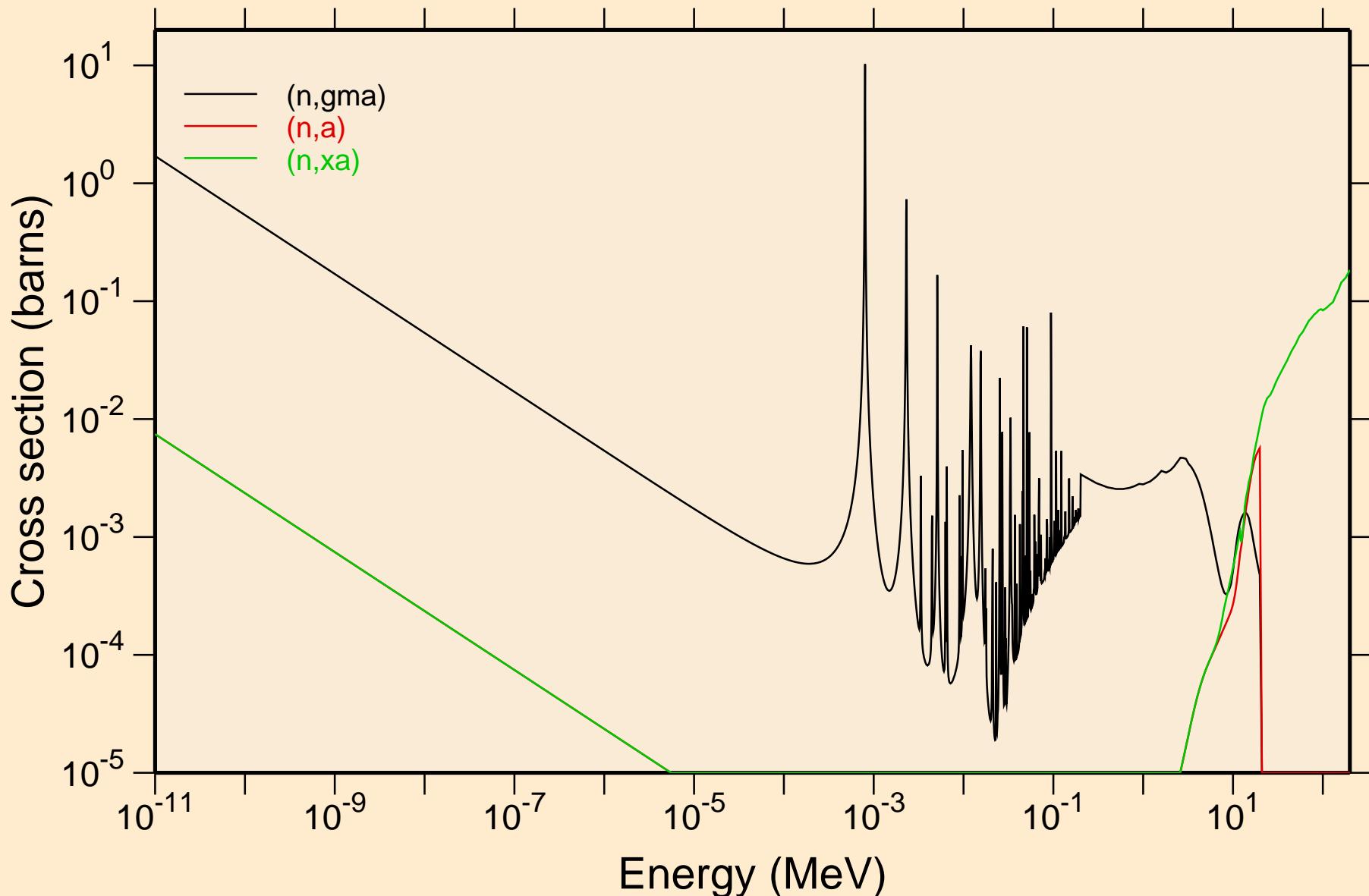
JEFF-3.1 Bi-209  
Heating



JEFF-3.1 Bi-209  
Damage

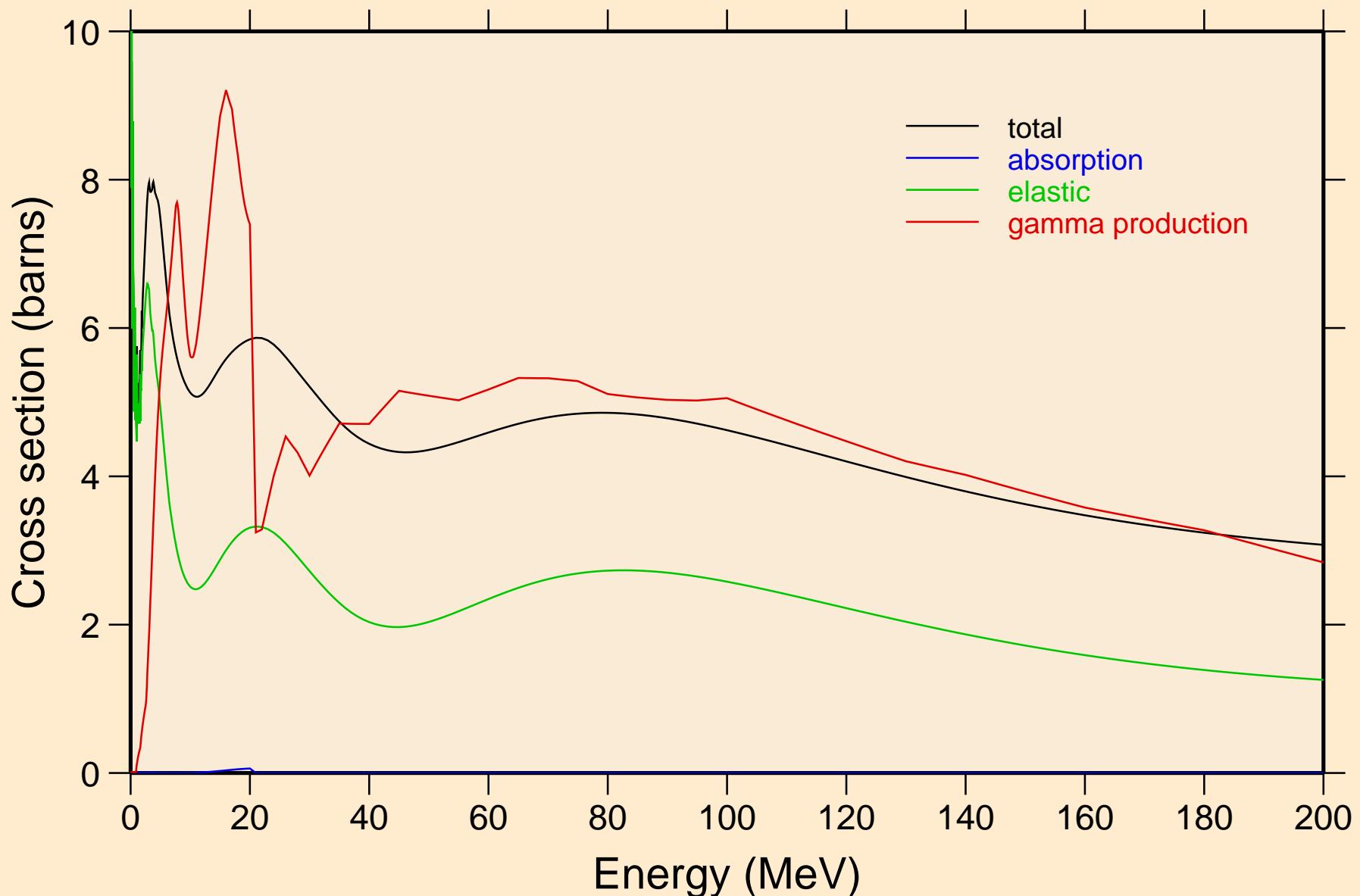


JEFF-3.1 Bi-209  
Non-threshold reactions

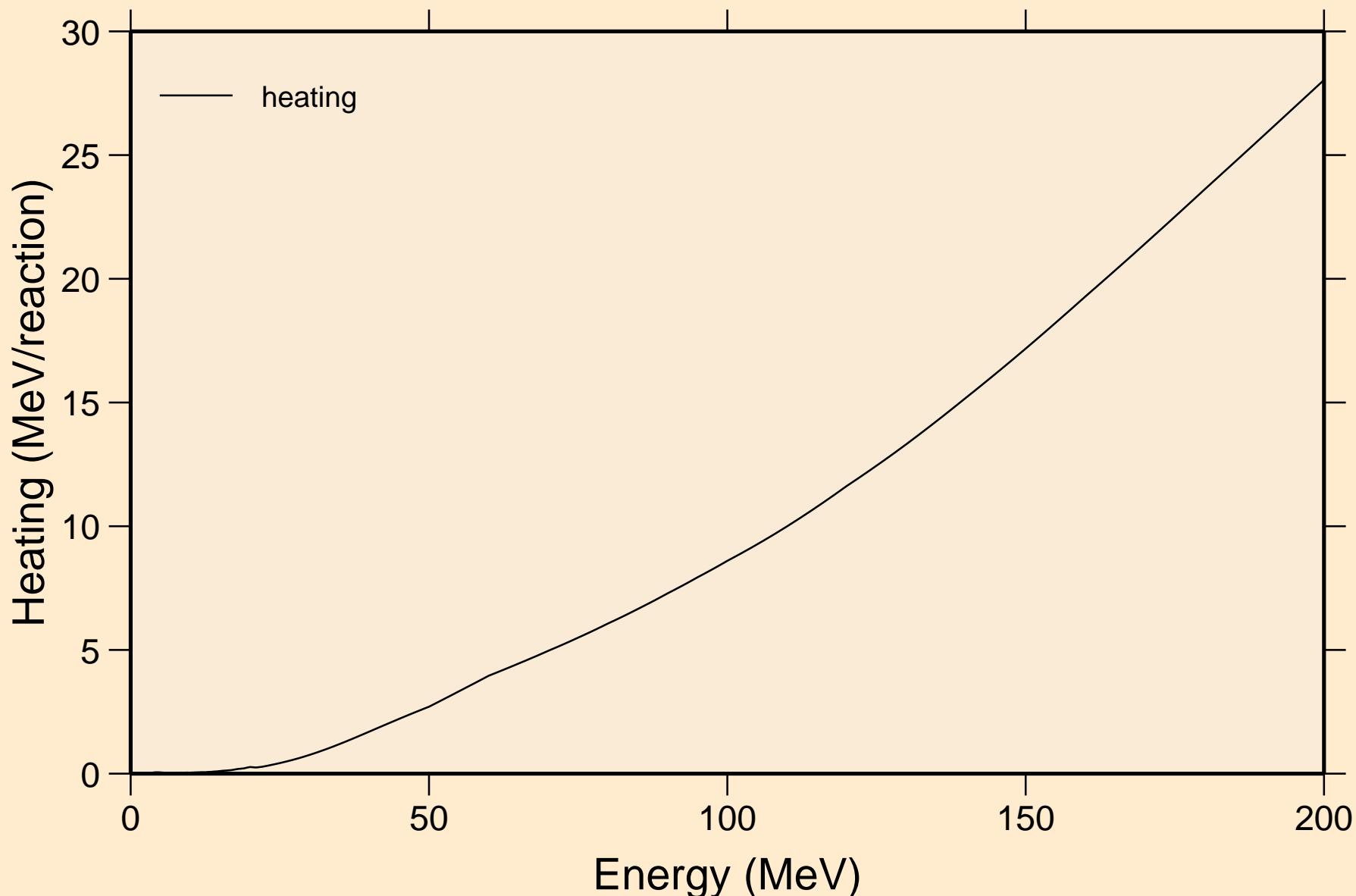


# JEFF-3.1 Bi-209

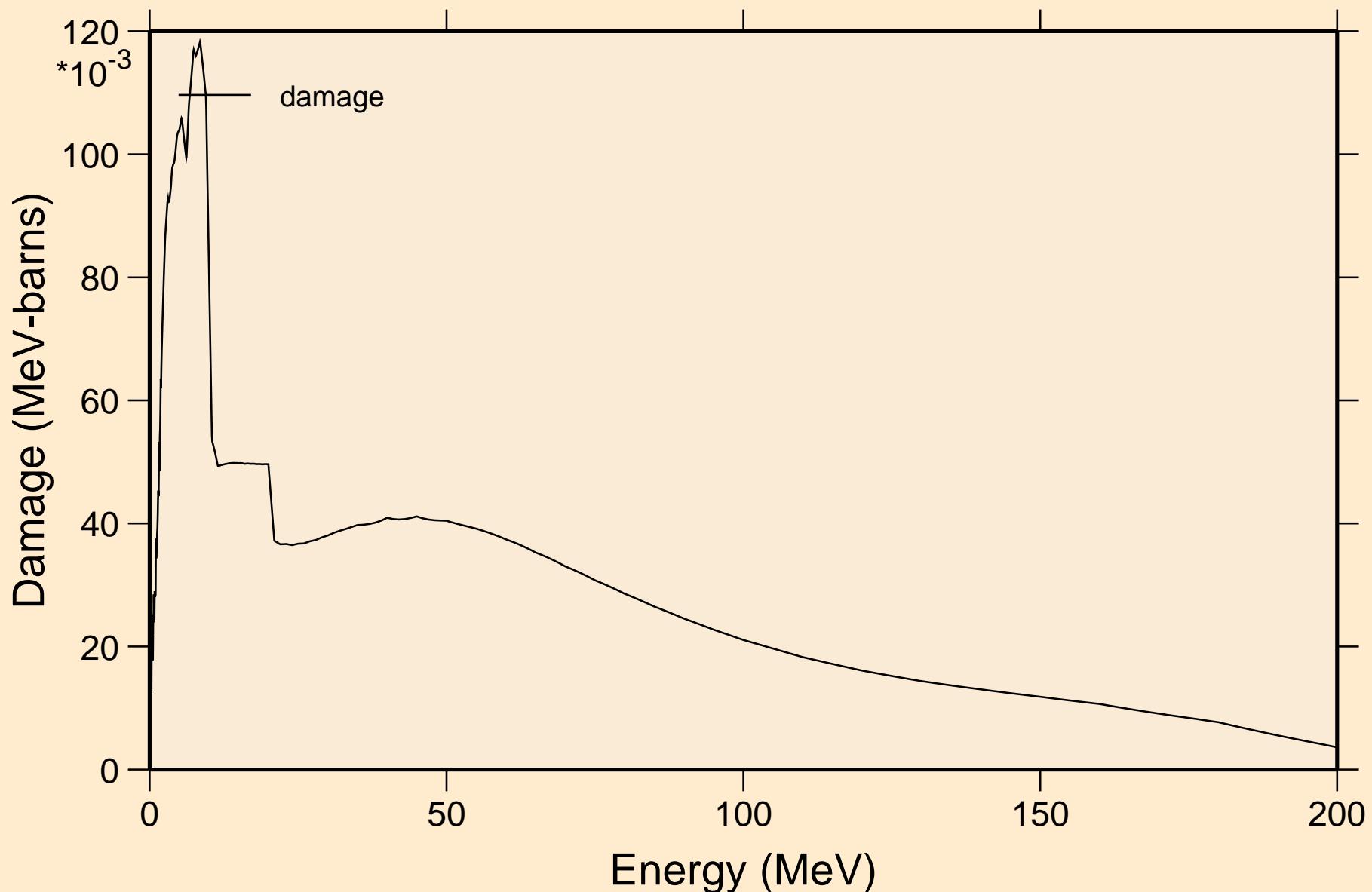
## Principal cross sections



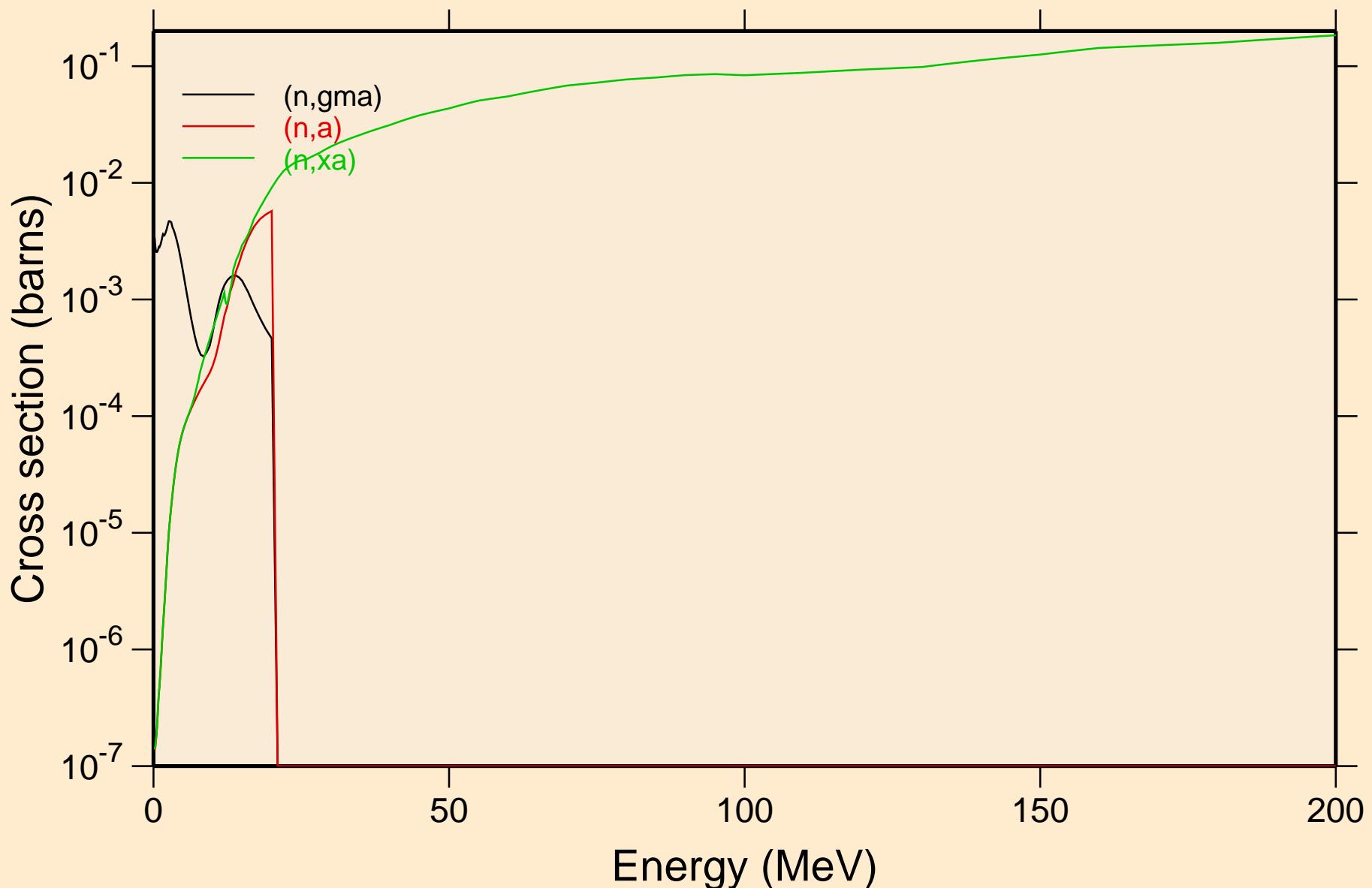
JEFF-3.1 Bi-209  
Heating



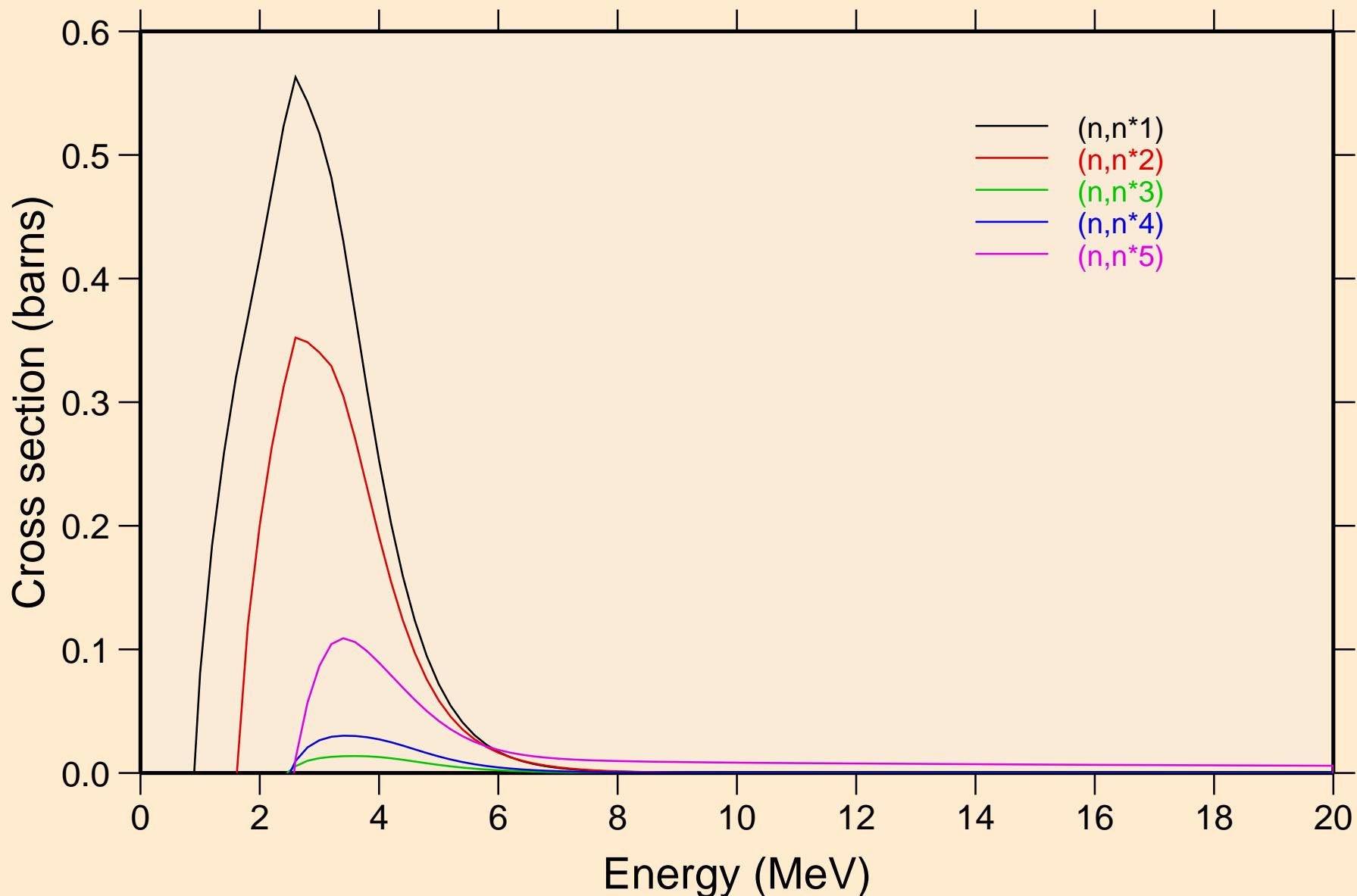
JEFF-3.1 Bi-209  
Damage



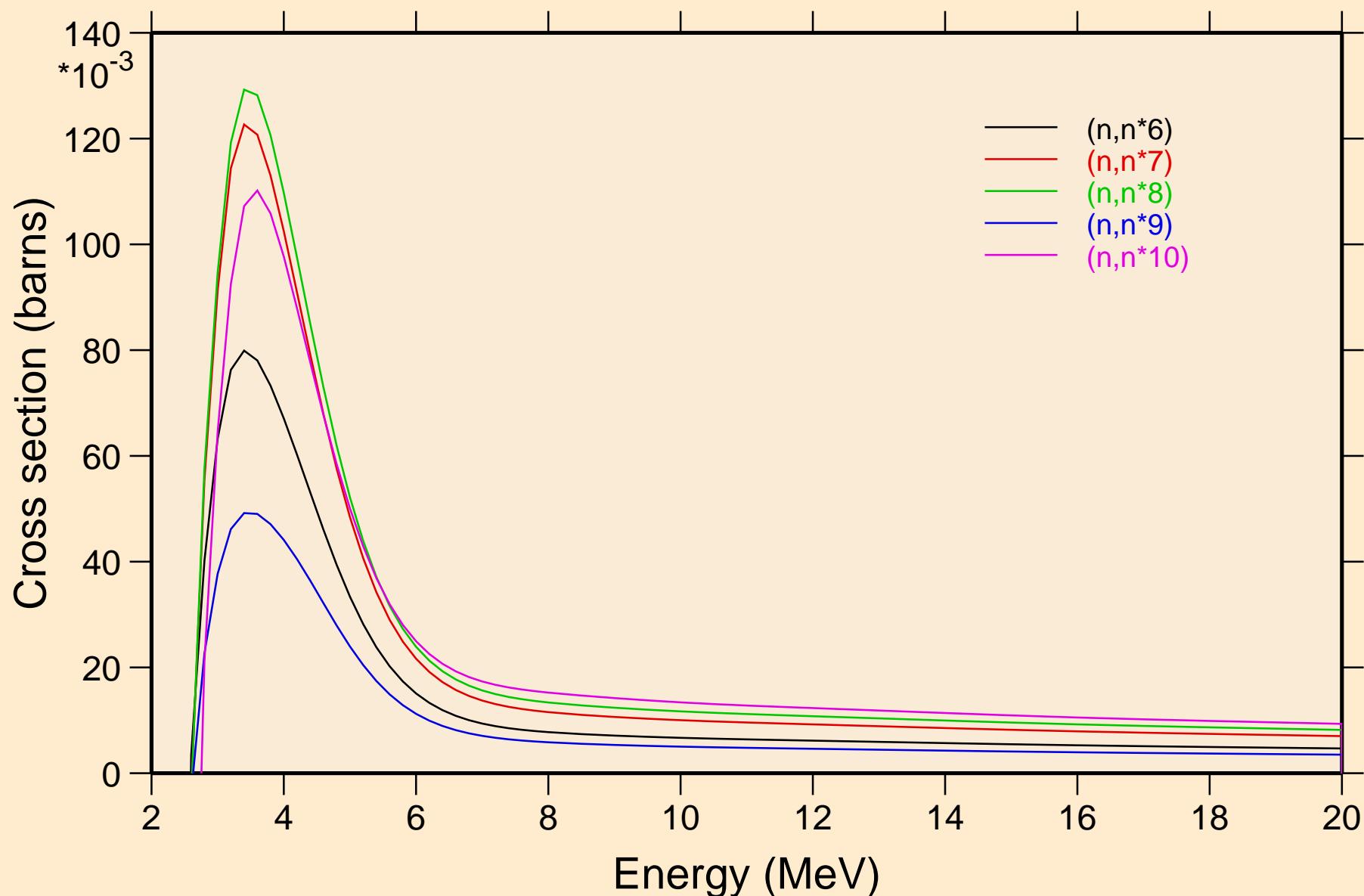
JEFF-3.1 Bi-209  
Non-threshold reactions



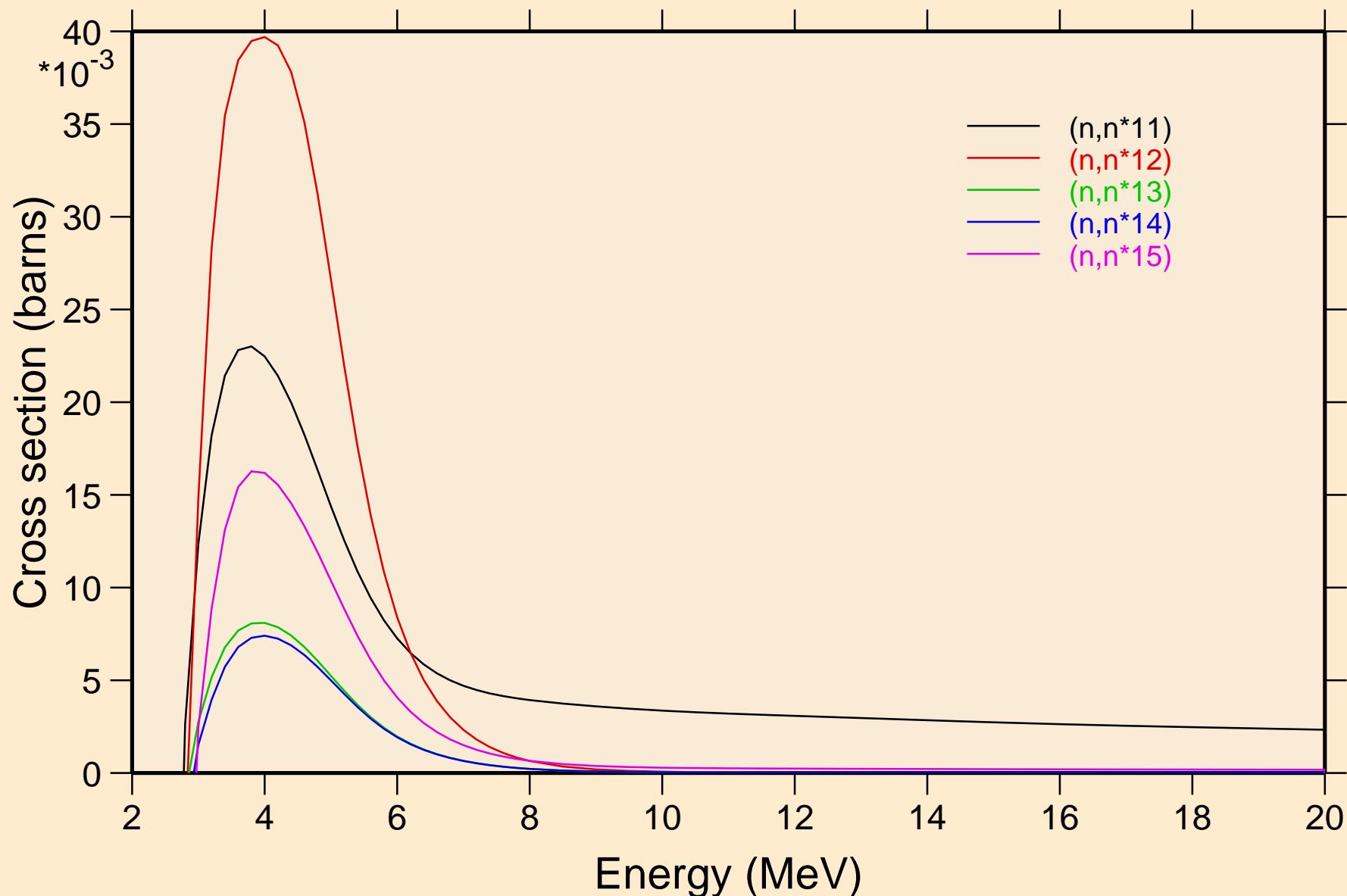
JEFF-3.1 Bi-209  
Inelastic levels



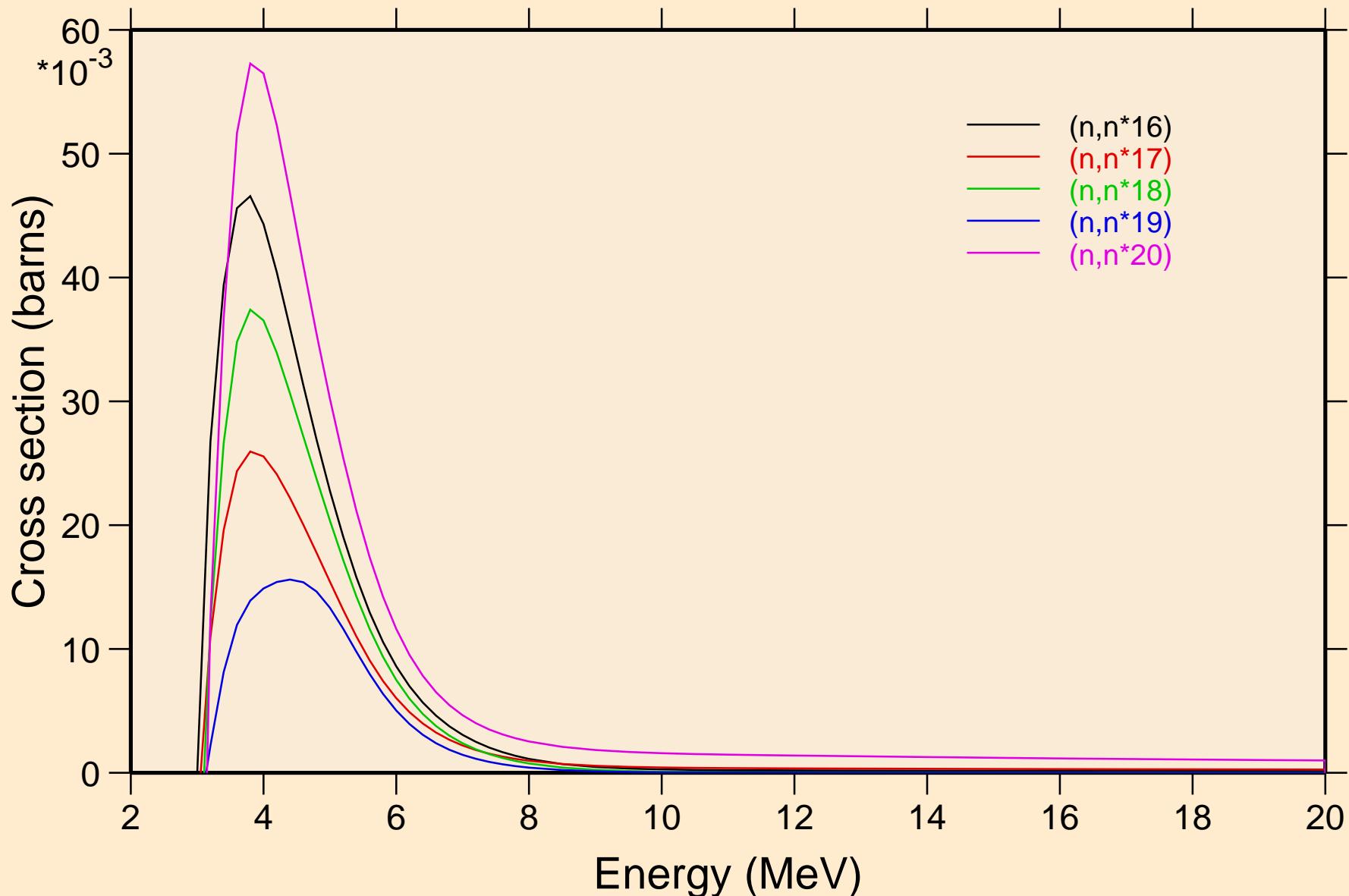
JEFF-3.1 Bi-209  
Inelastic levels



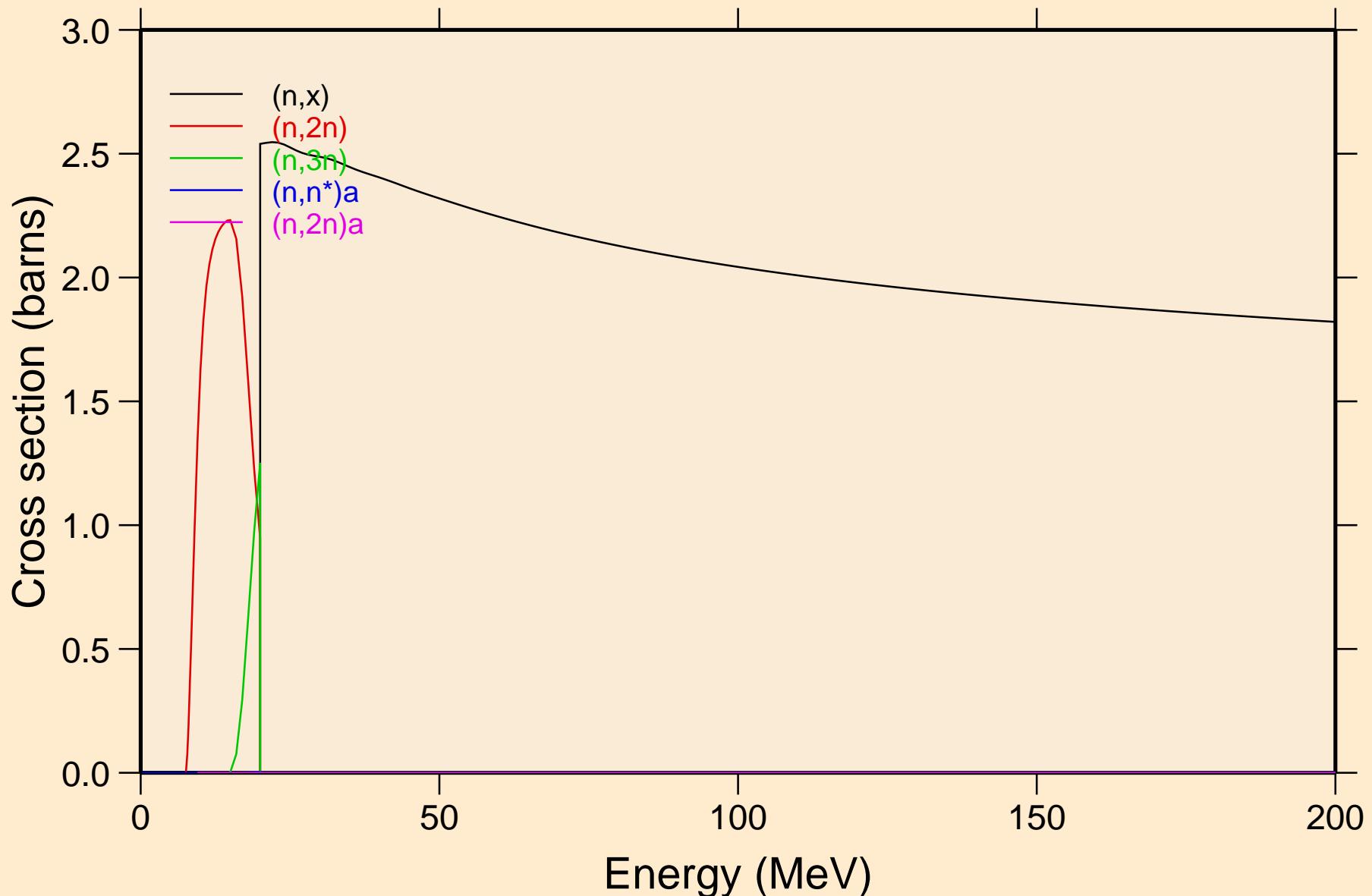
JEFF-3.1 Bi-209  
Inelastic levels



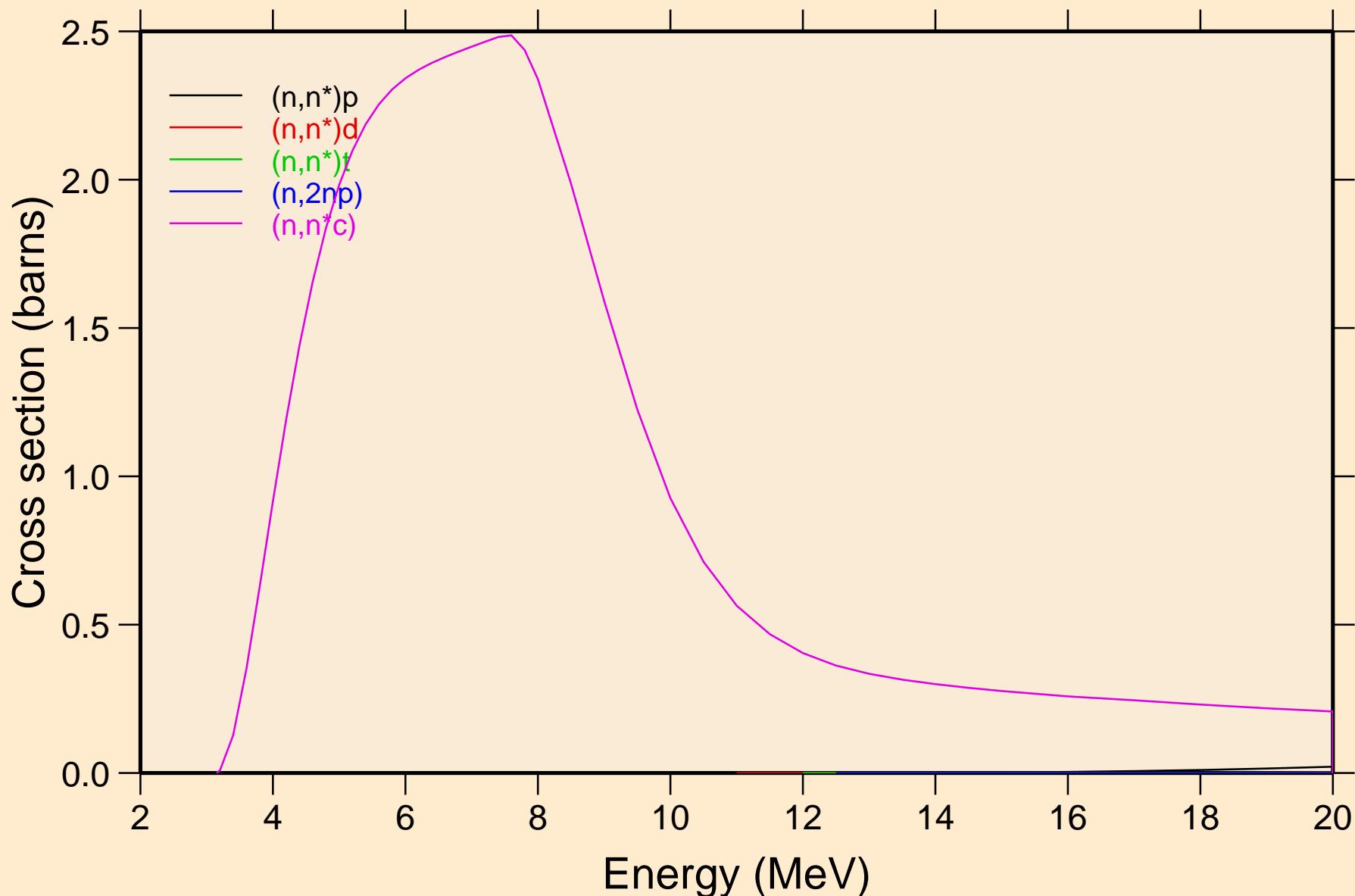
JEFF-3.1 Bi-209  
Inelastic levels



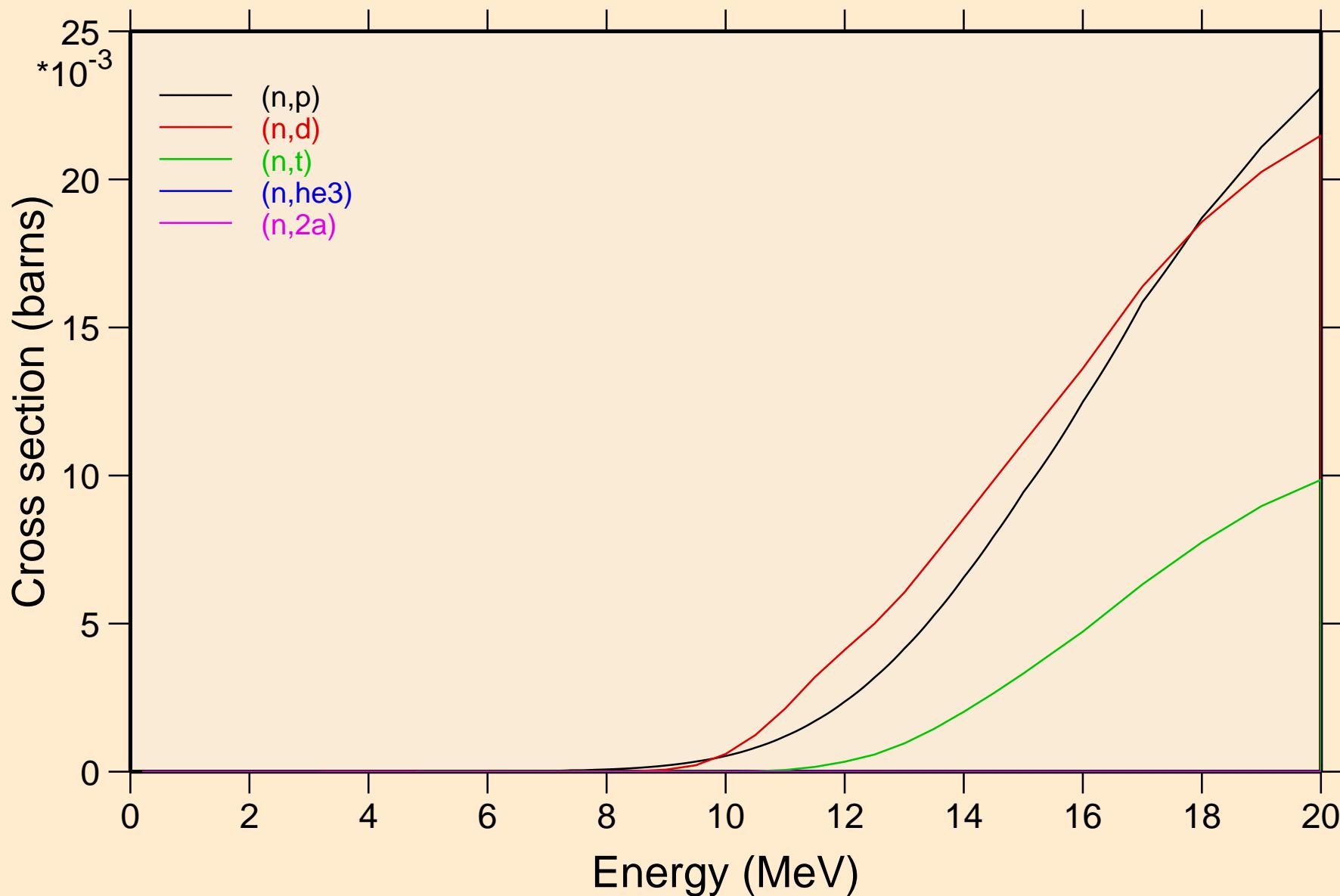
JEFF-3.1 Bi-209  
Threshold reactions



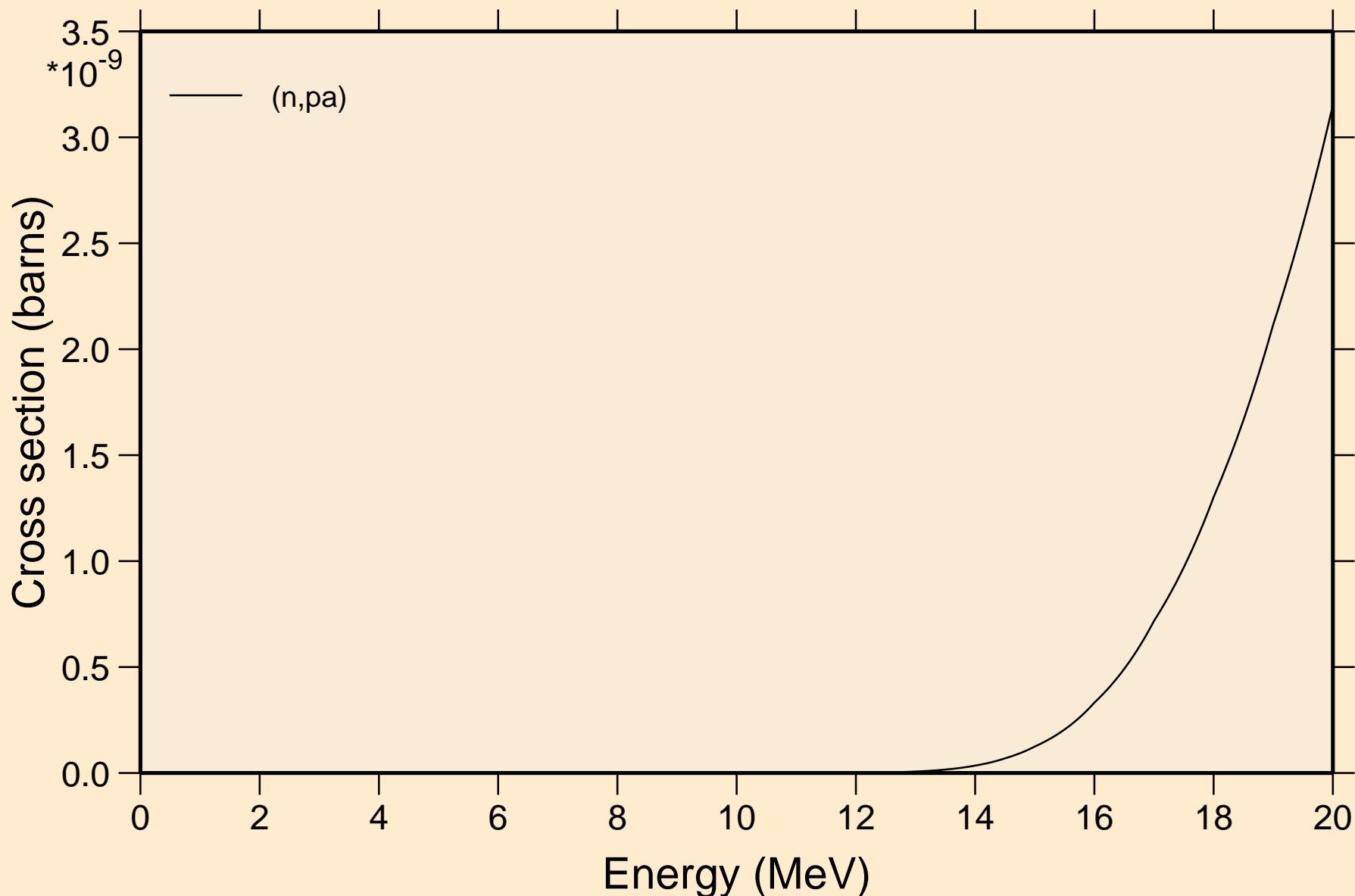
JEFF-3.1 Bi-209  
Threshold reactions



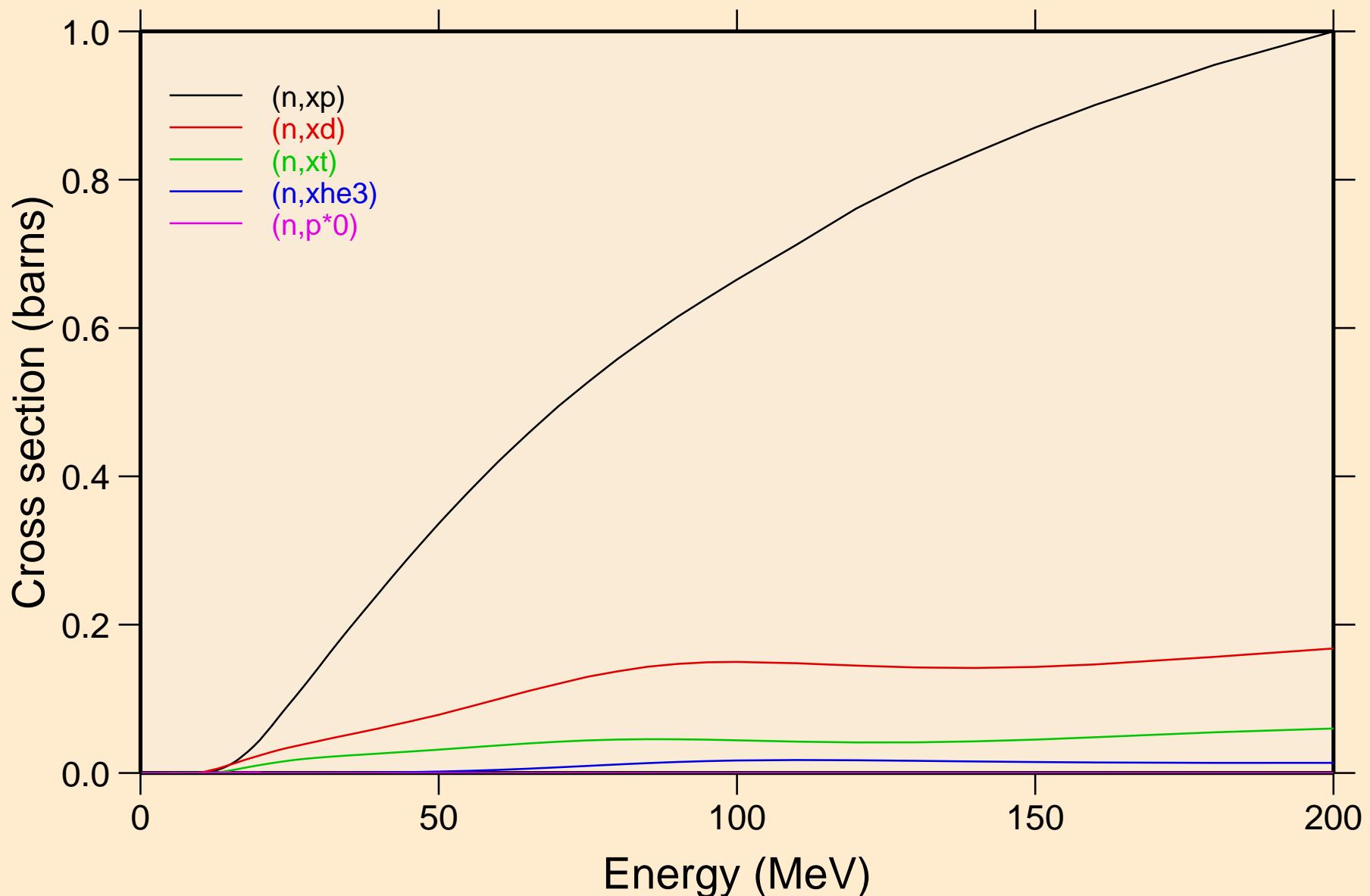
JEFF-3.1 Bi-209  
Threshold reactions



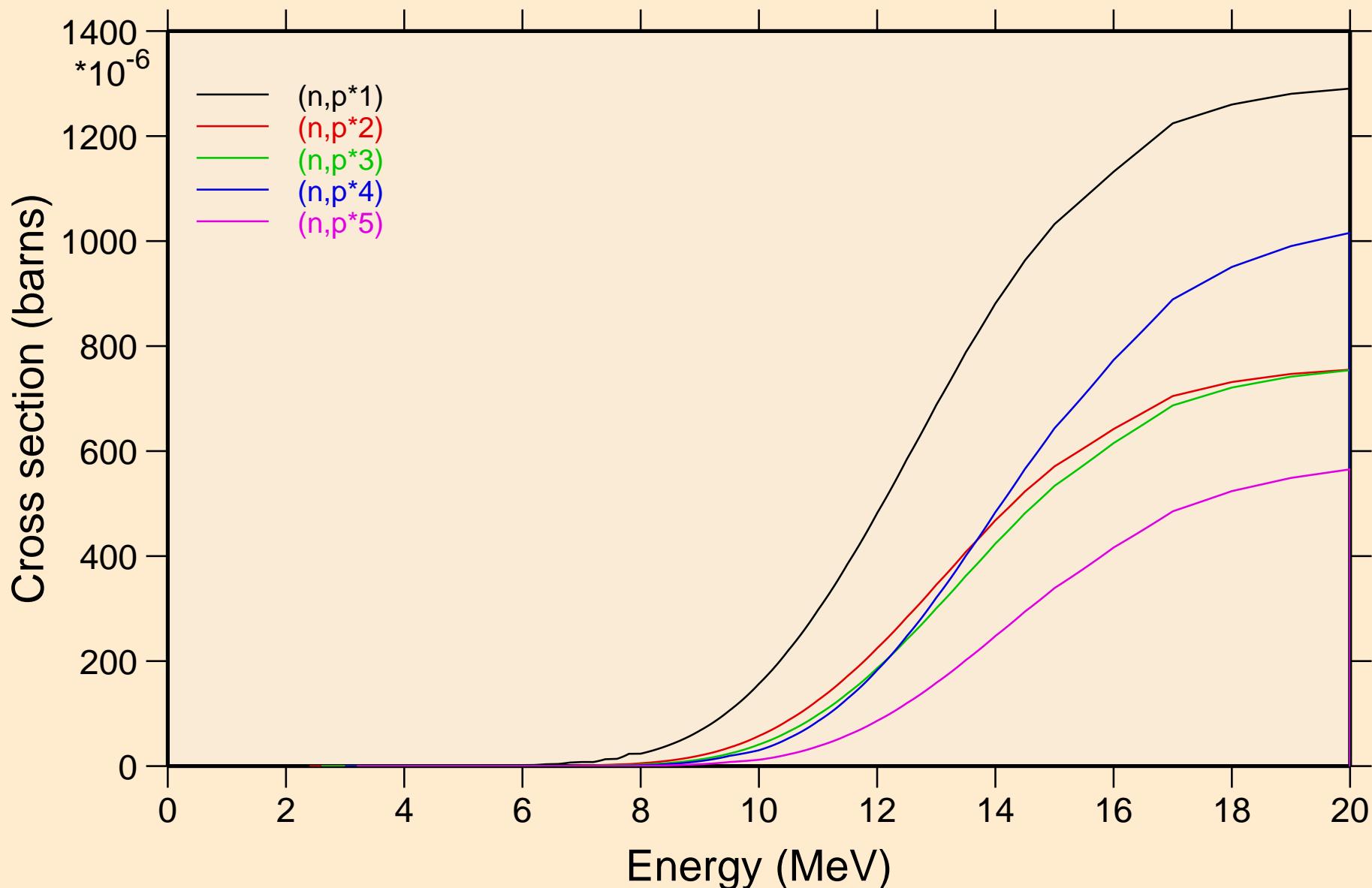
JEFF-3.1 Bi-209  
Threshold reactions



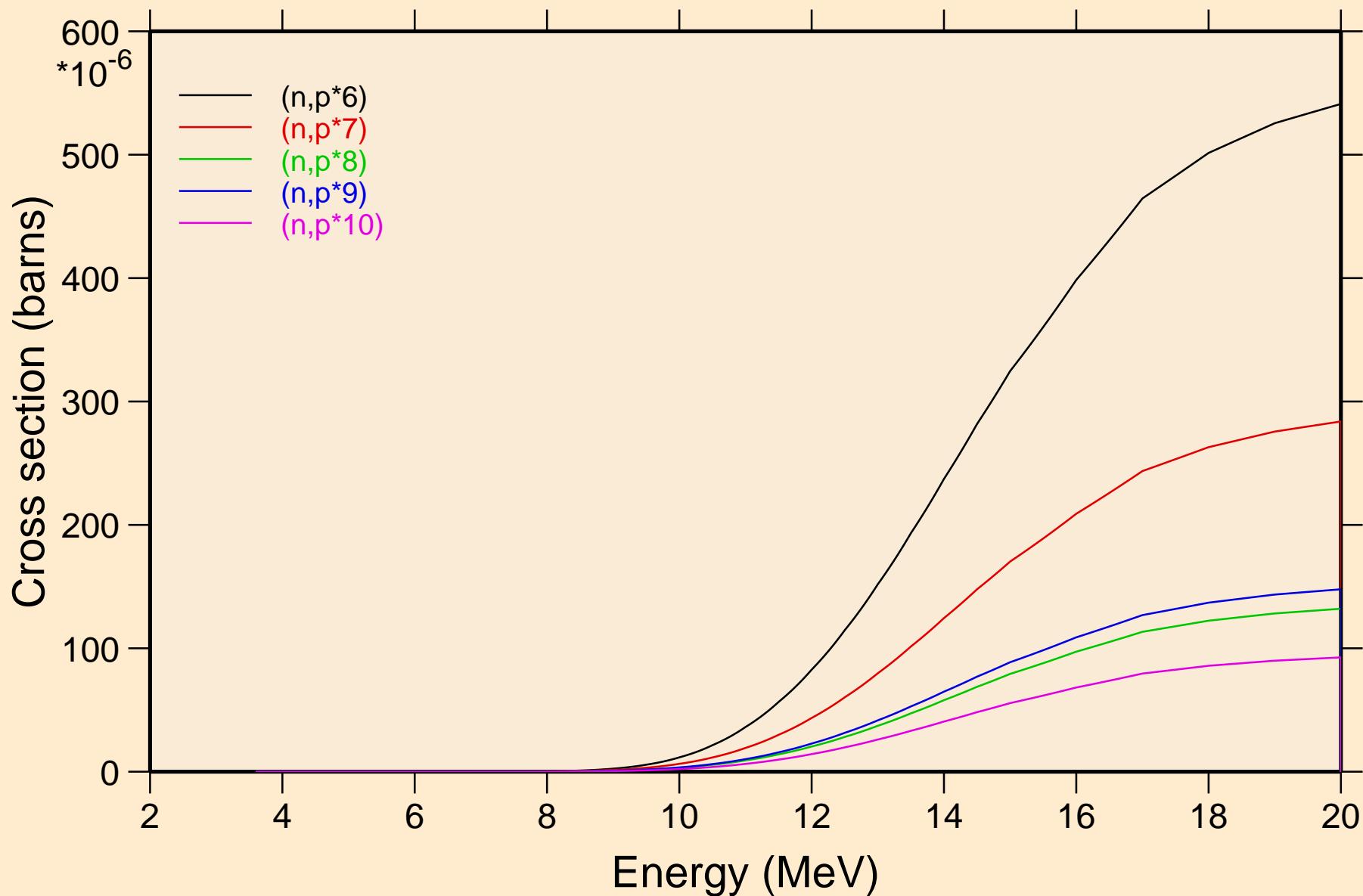
JEFF-3.1 Bi-209  
Threshold reactions



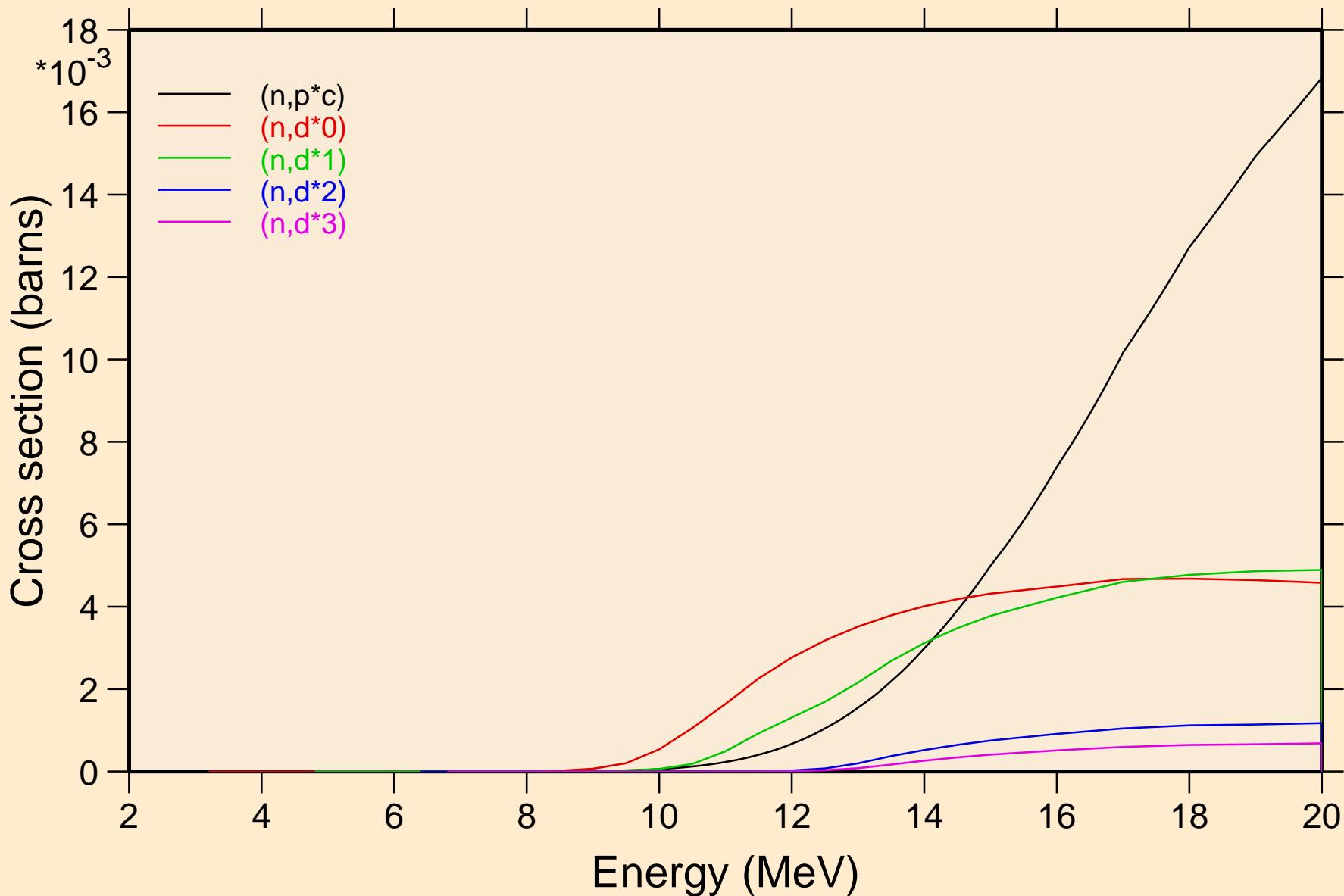
JEFF-3.1 Bi-209  
Threshold reactions



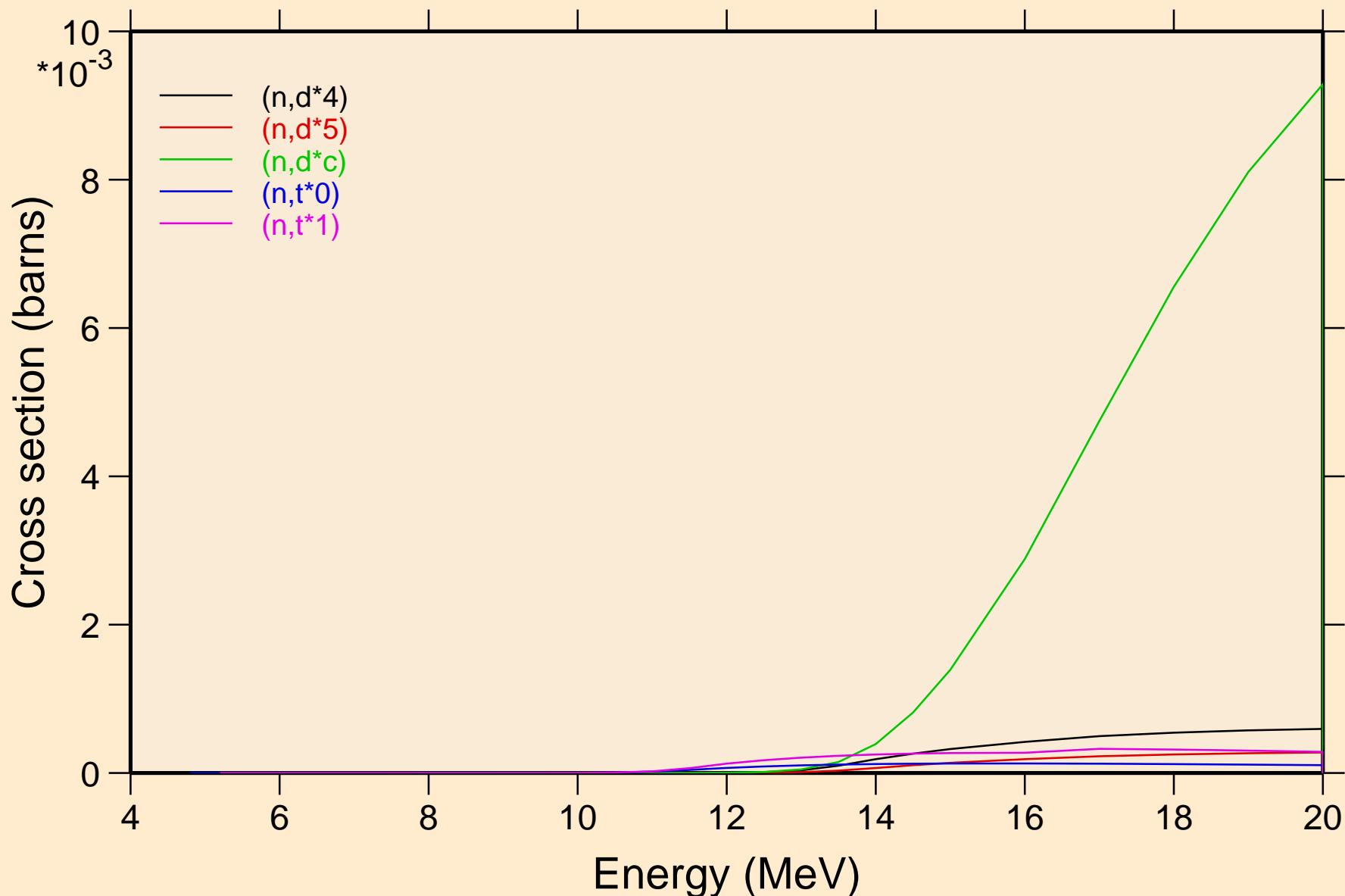
JEFF-3.1 Bi-209  
Threshold reactions



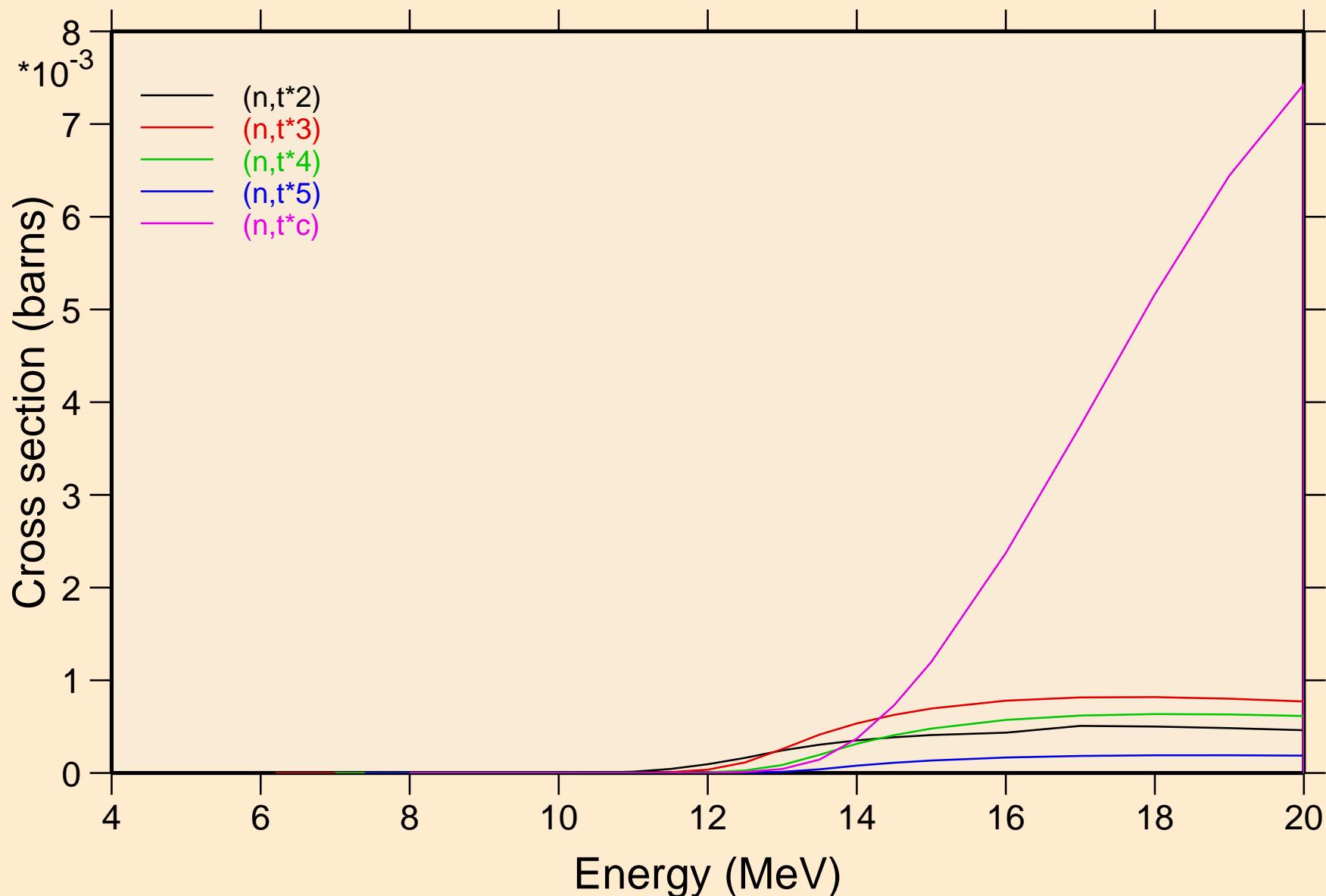
JEFF-3.1 Bi-209  
Threshold reactions



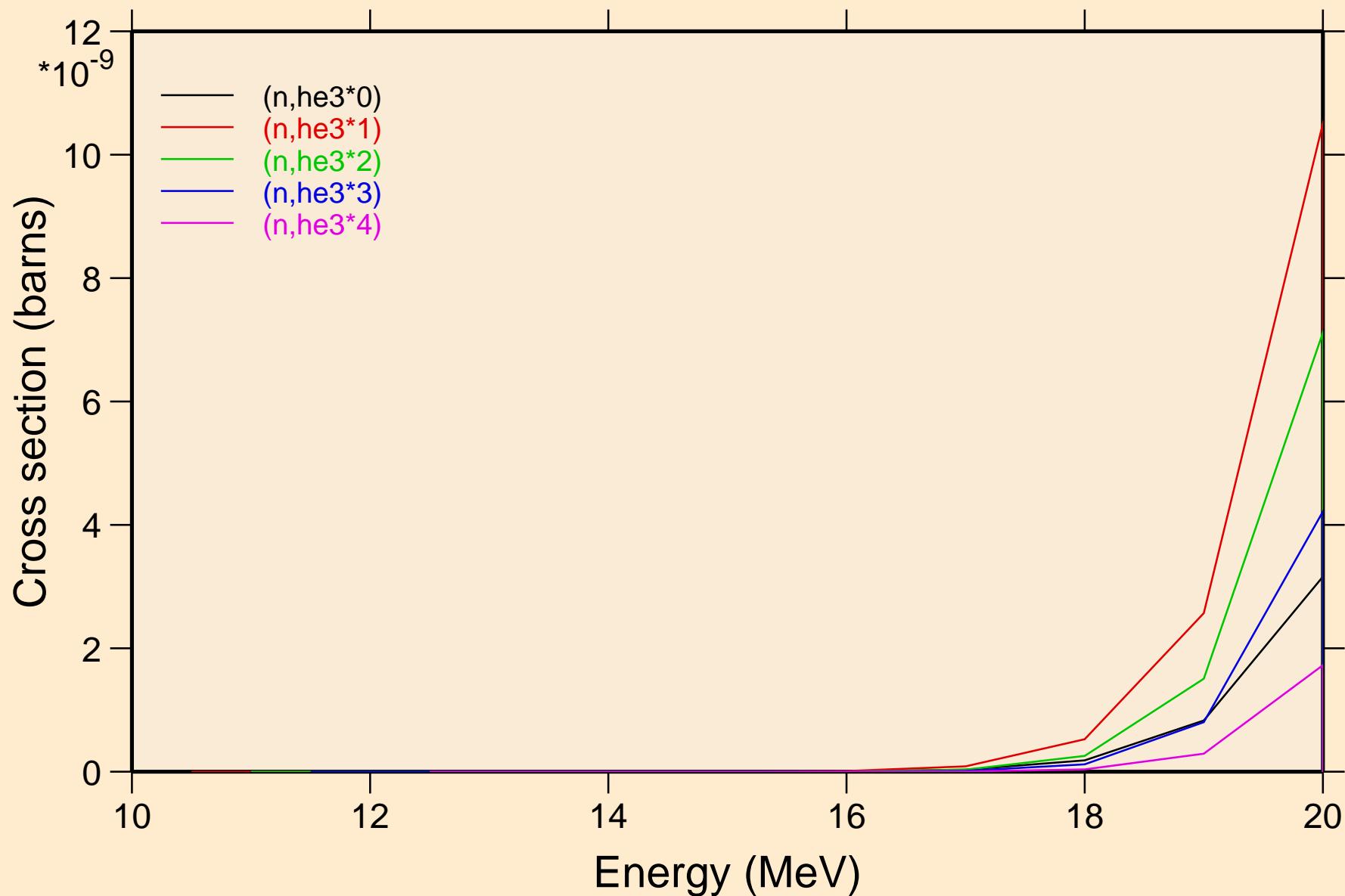
JEFF-3.1 Bi-209  
Threshold reactions



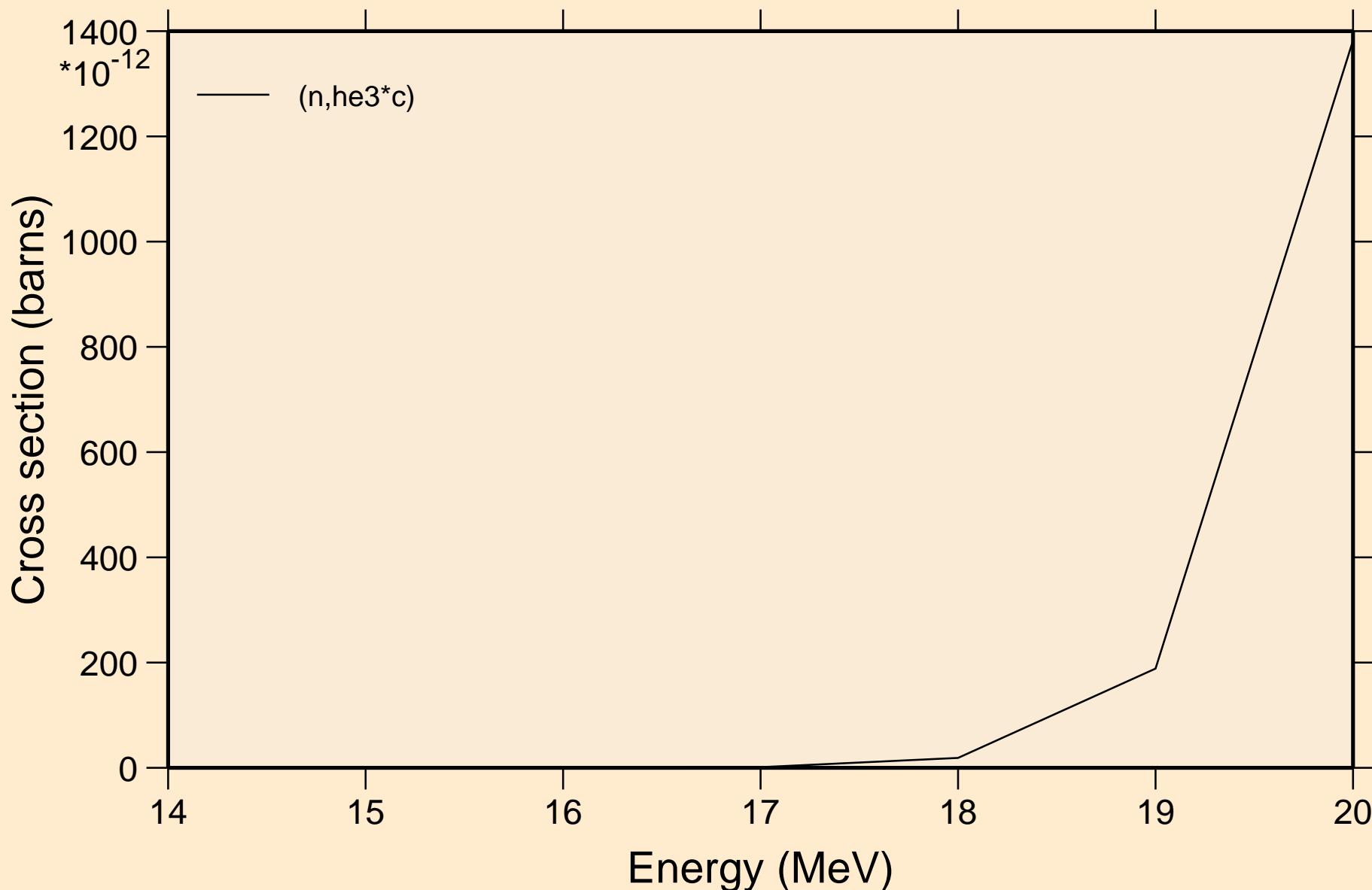
JEFF-3.1 Bi-209  
Threshold reactions



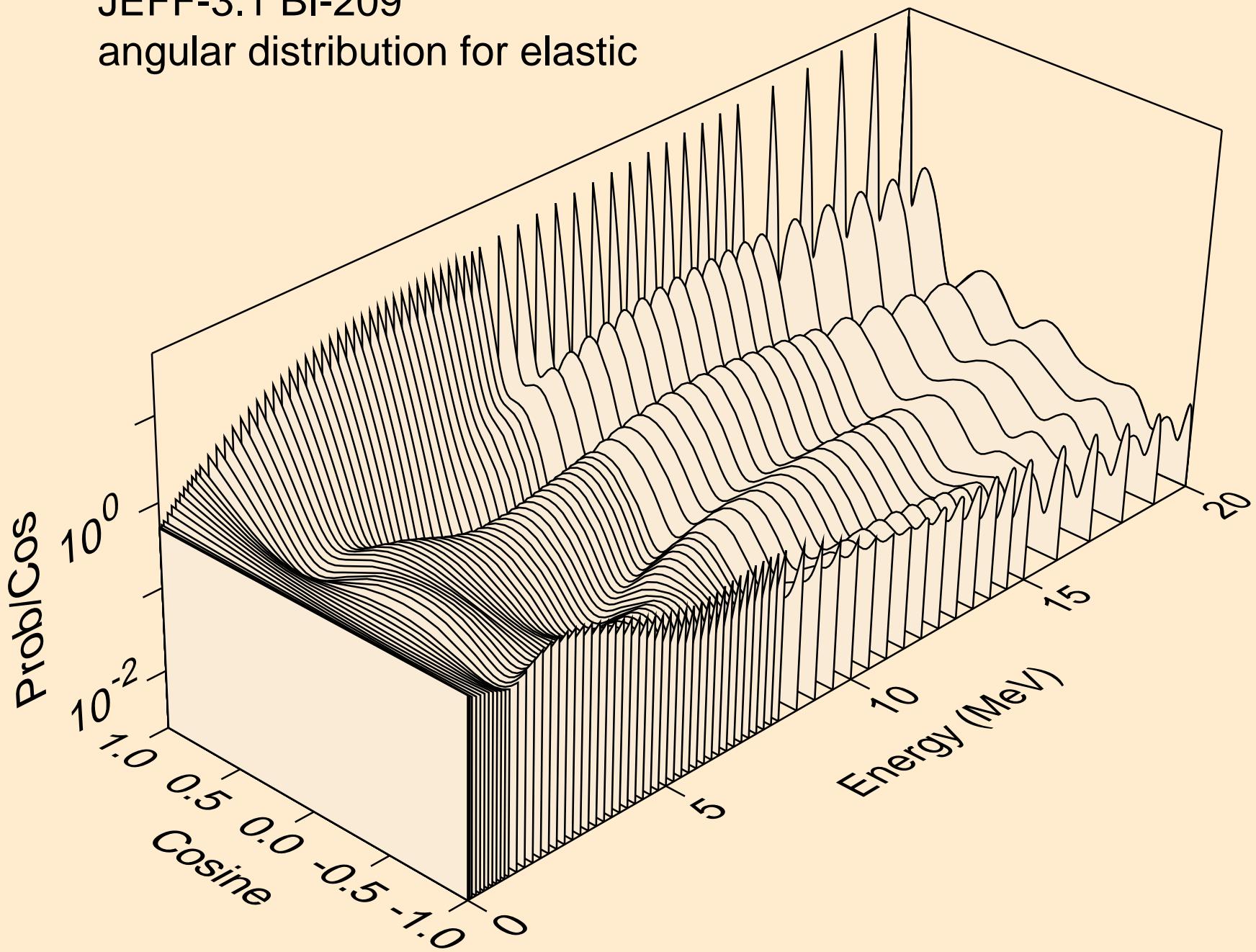
JEFF-3.1 Bi-209  
Threshold reactions



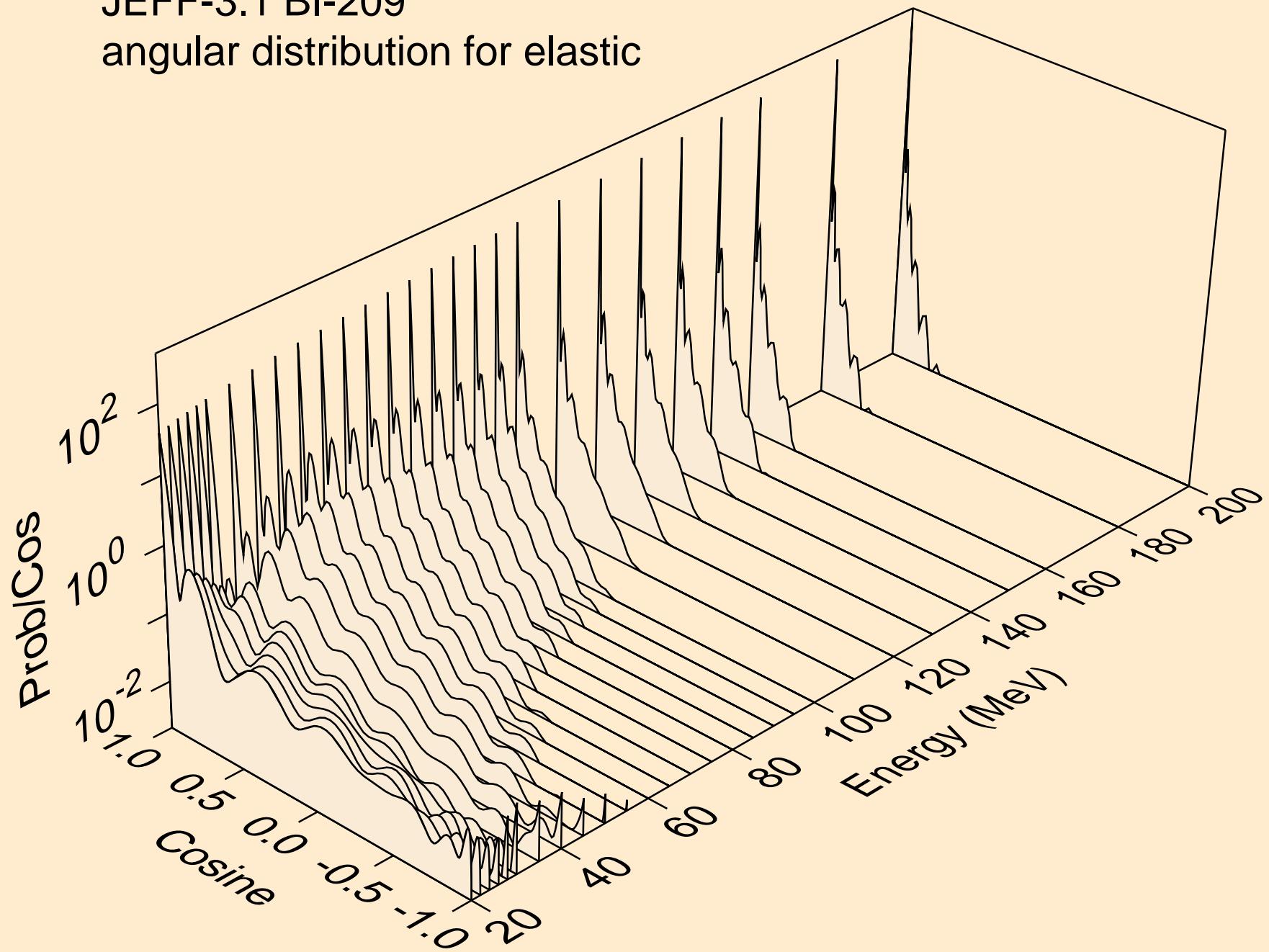
JEFF-3.1 Bi-209  
Threshold reactions



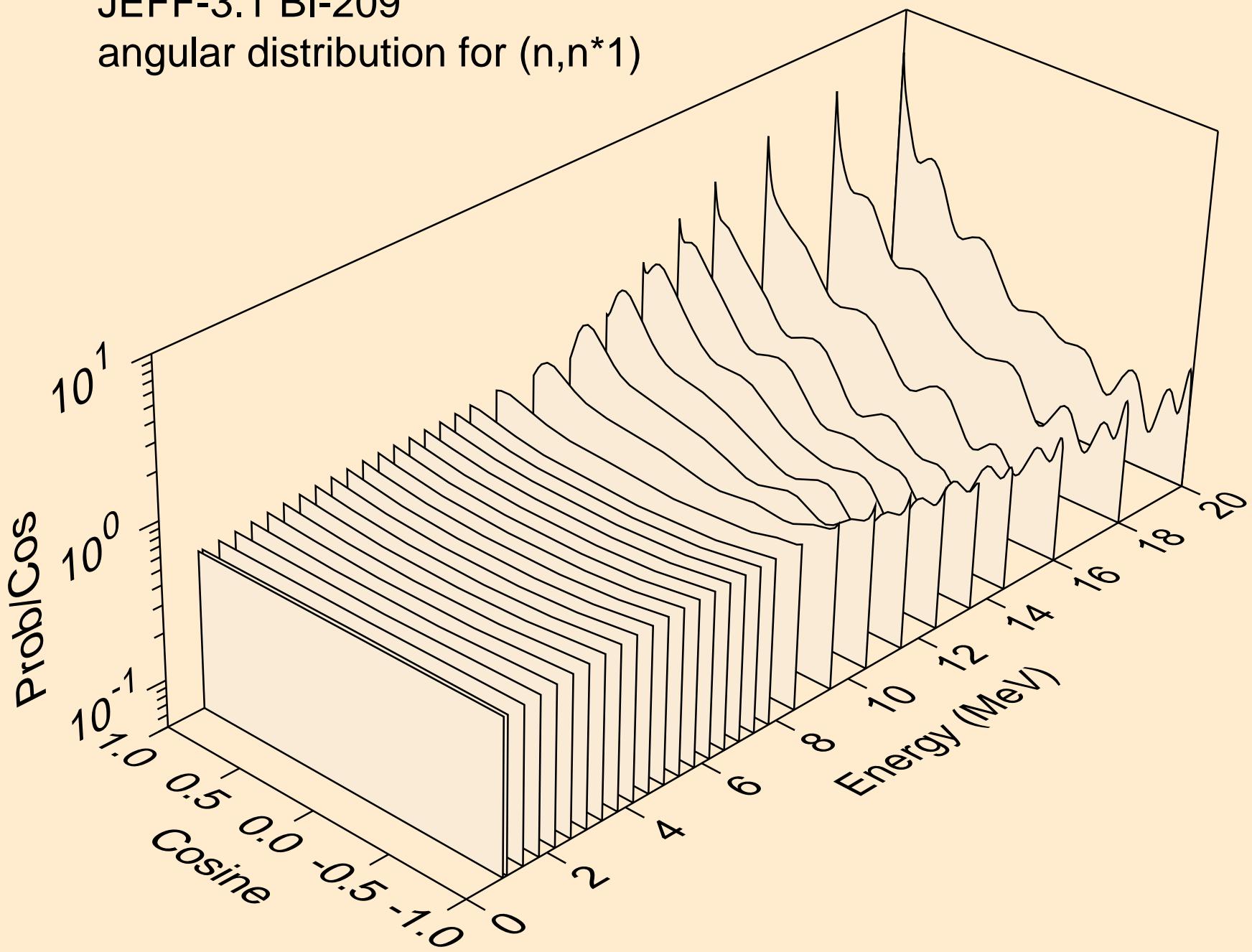
JEFF-3.1 Bi-209  
angular distribution for elastic



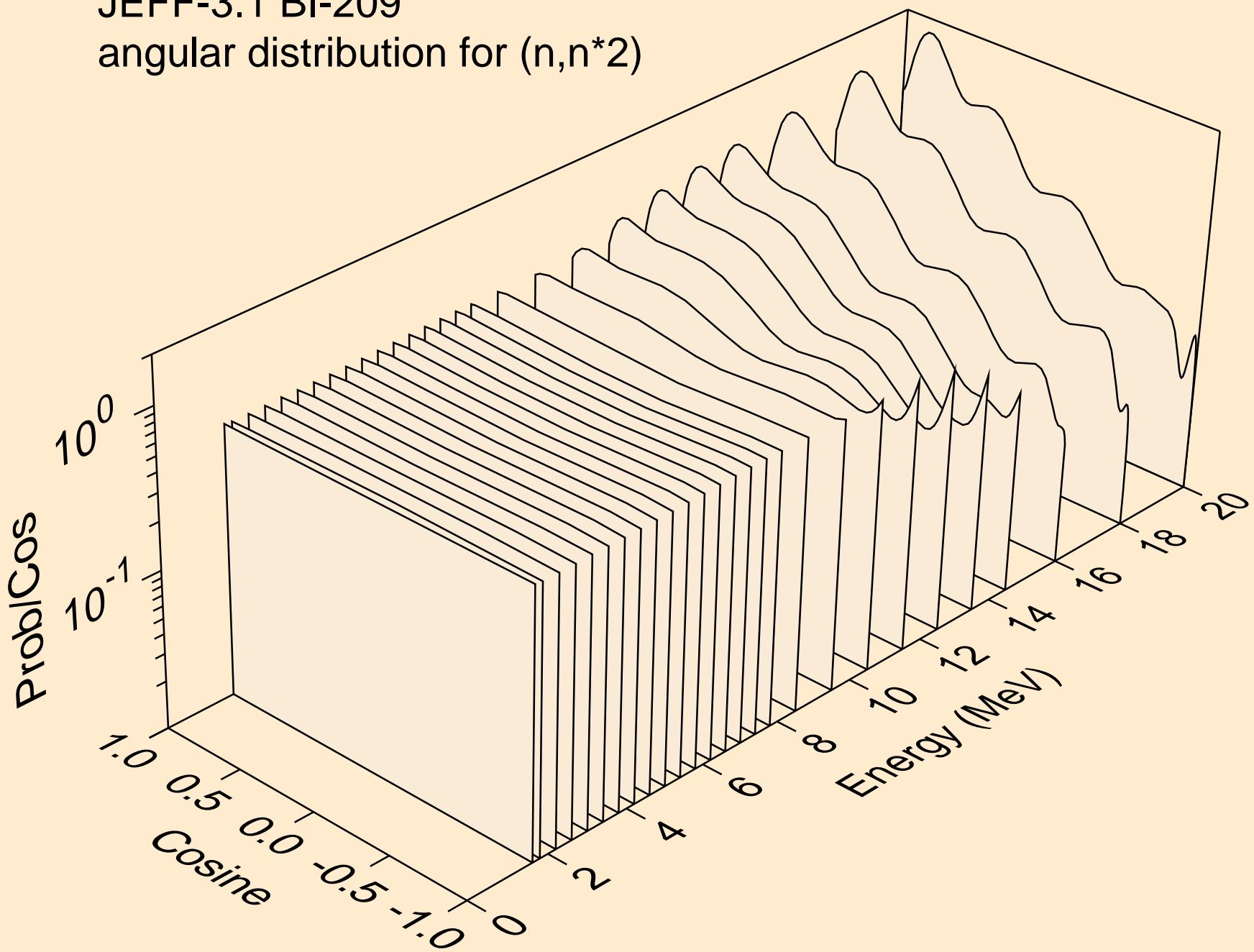
JEFF-3.1 Bi-209  
angular distribution for elastic



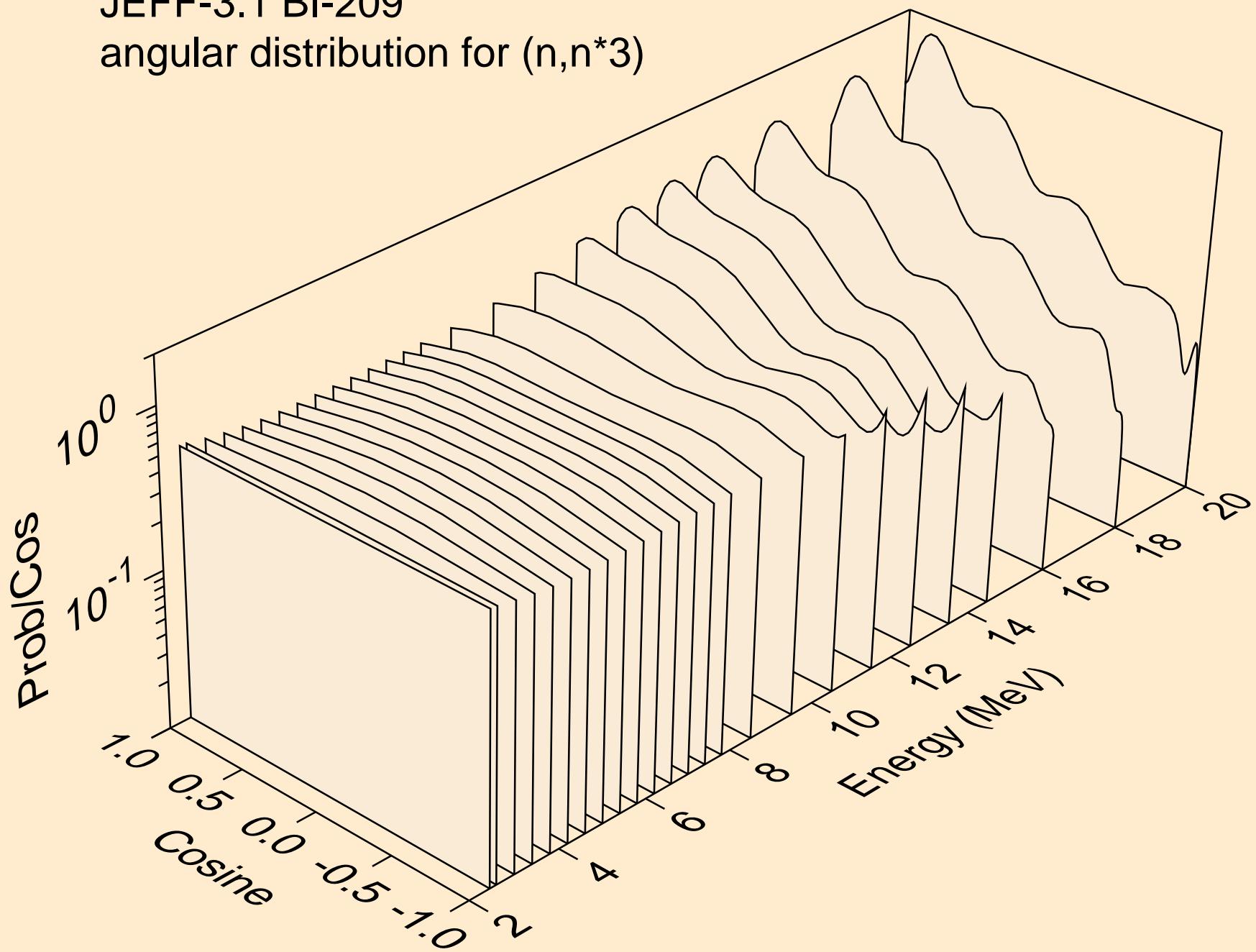
JEFF-3.1 Bi-209  
angular distribution for (n,n\*1)



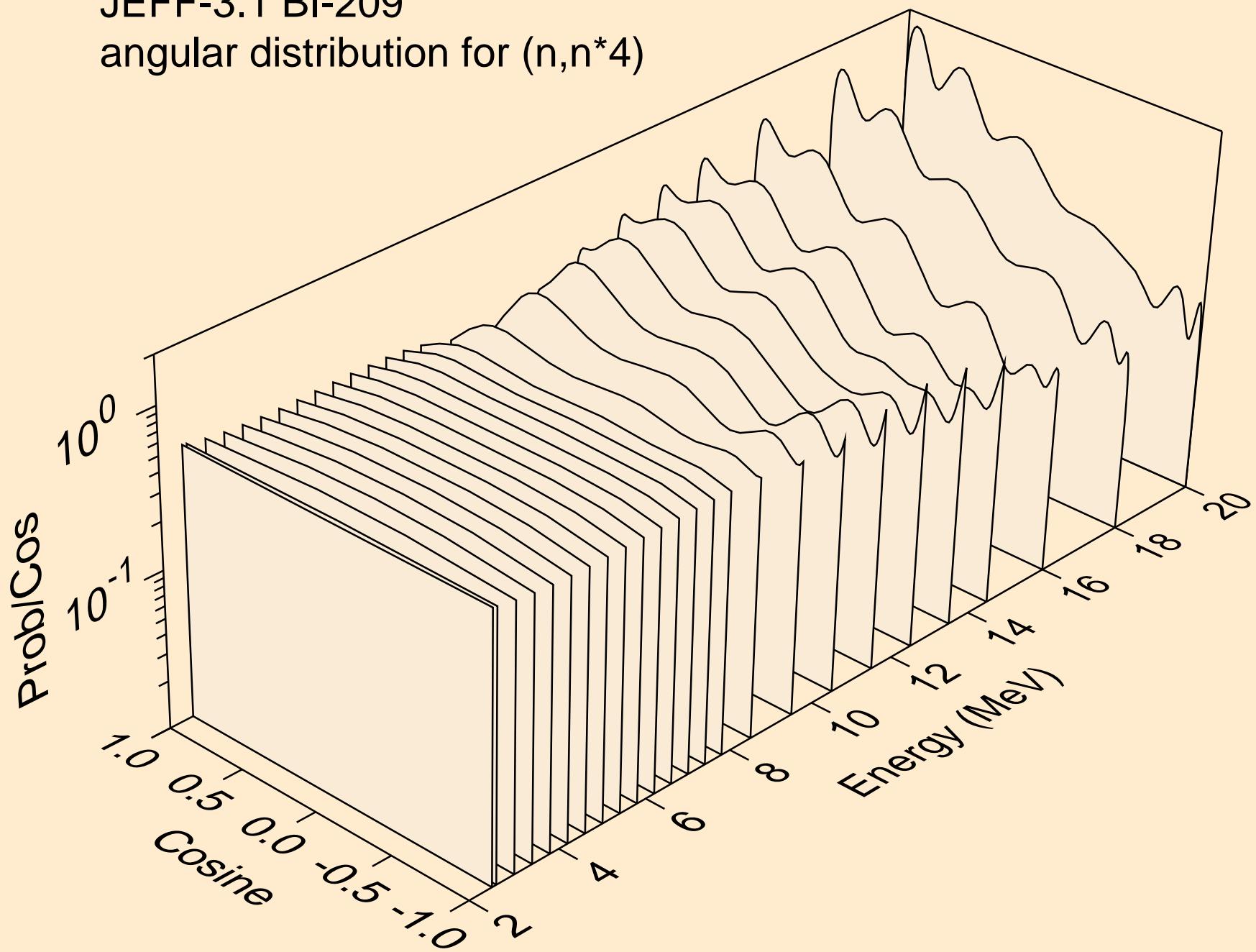
JEFF-3.1 Bi-209  
angular distribution for  $(n,n^*)$



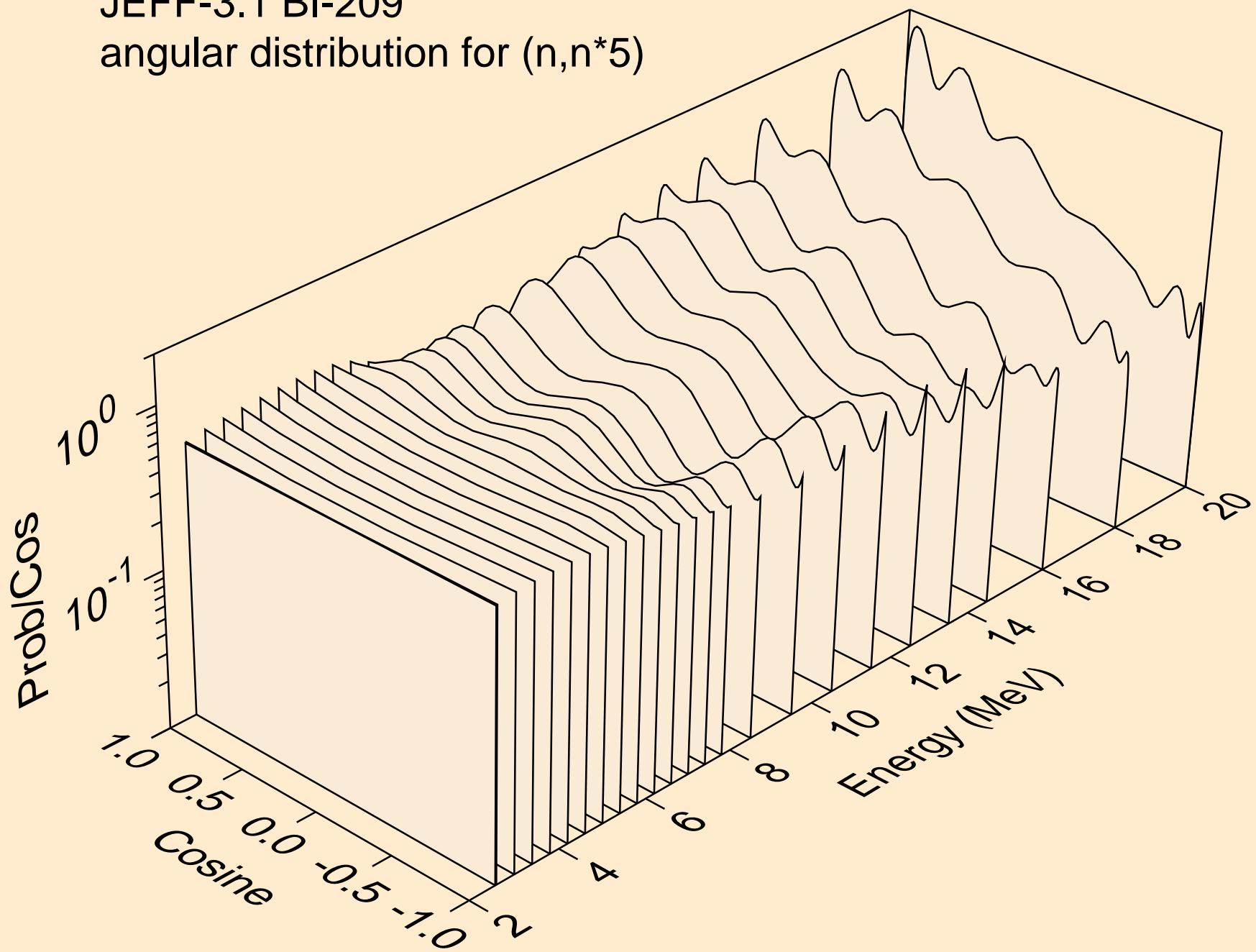
JEFF-3.1 Bi-209  
angular distribution for (n,n\*3)



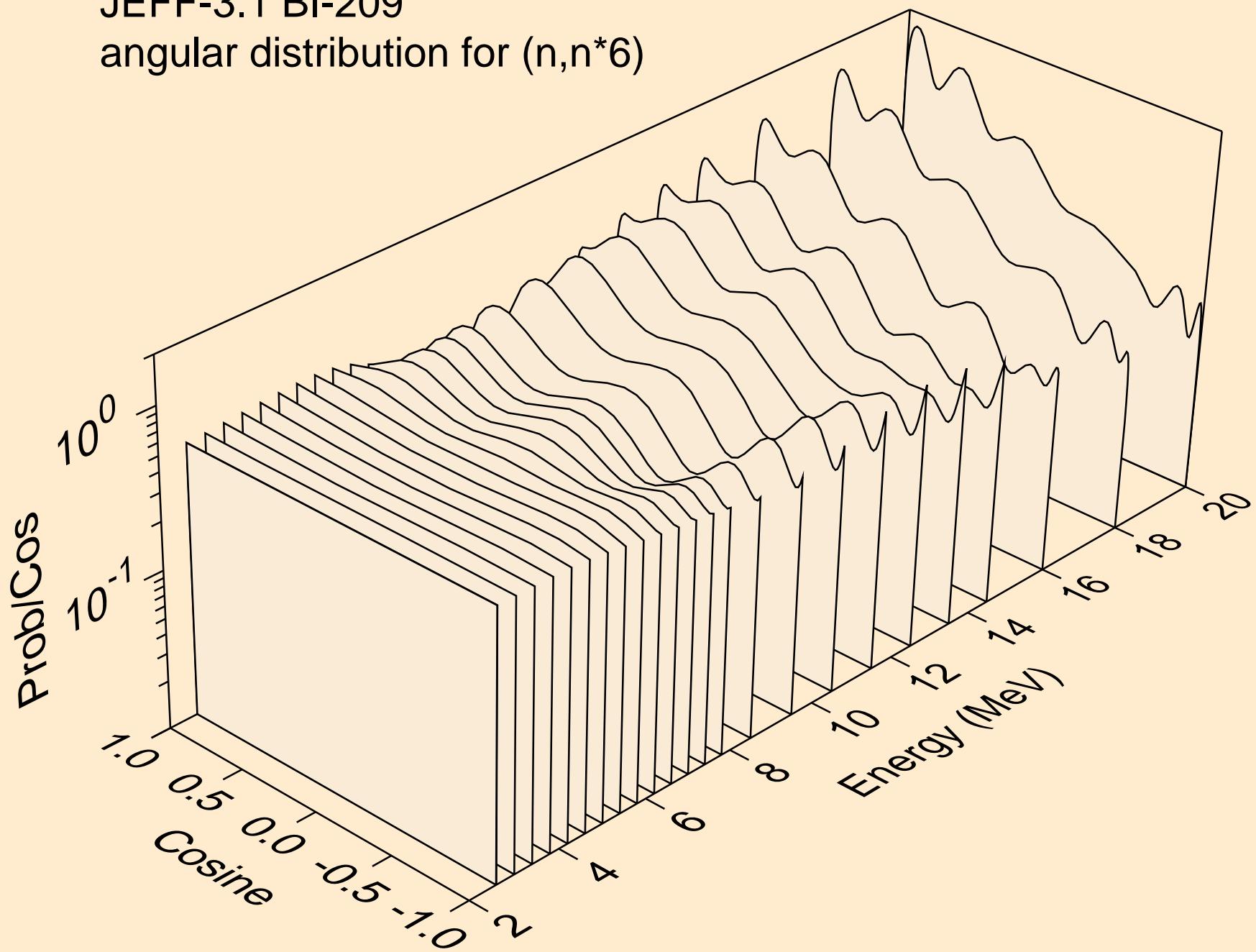
JEFF-3.1 Bi-209  
angular distribution for (n,n\*4)



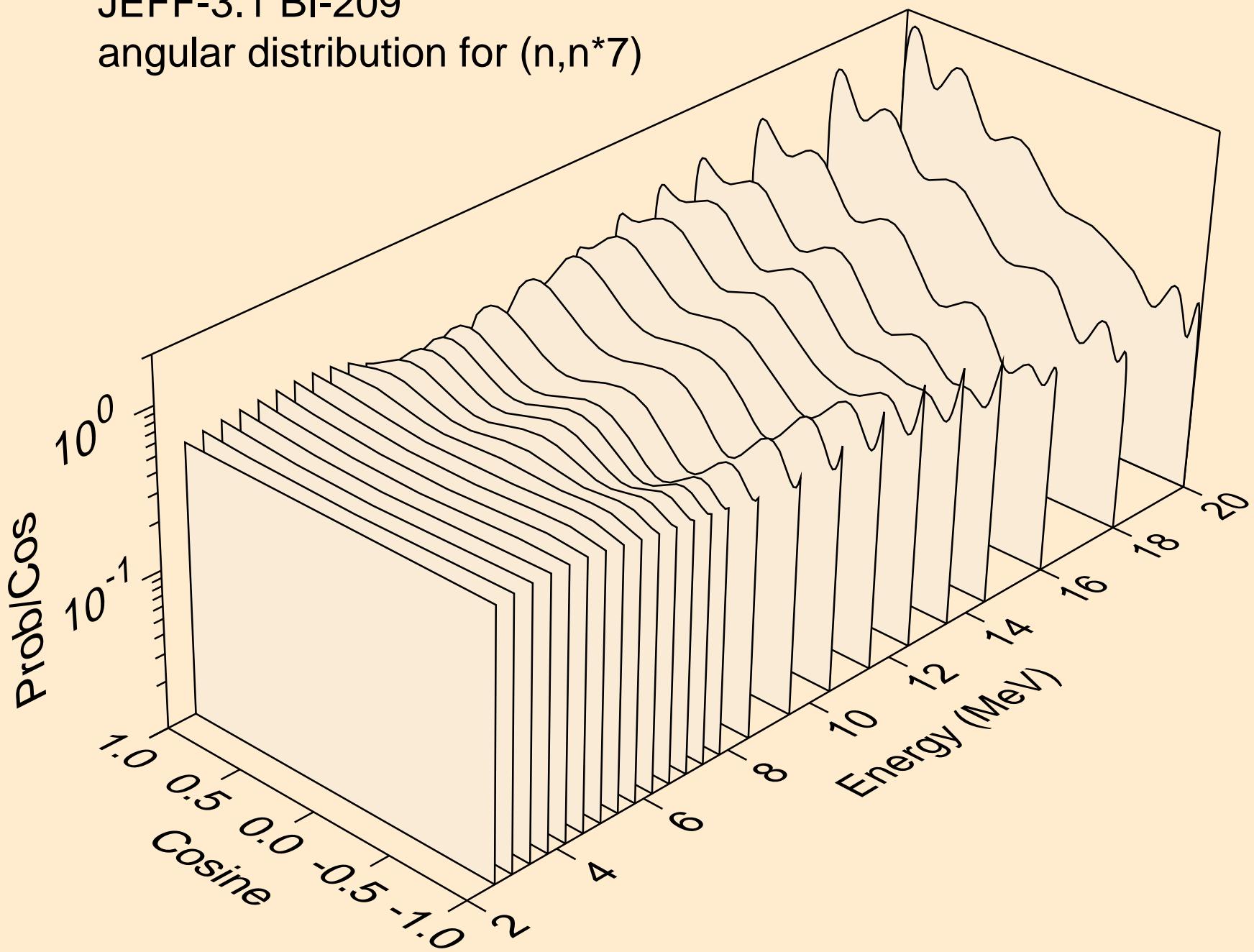
JEFF-3.1 Bi-209  
angular distribution for (n,n\*5)



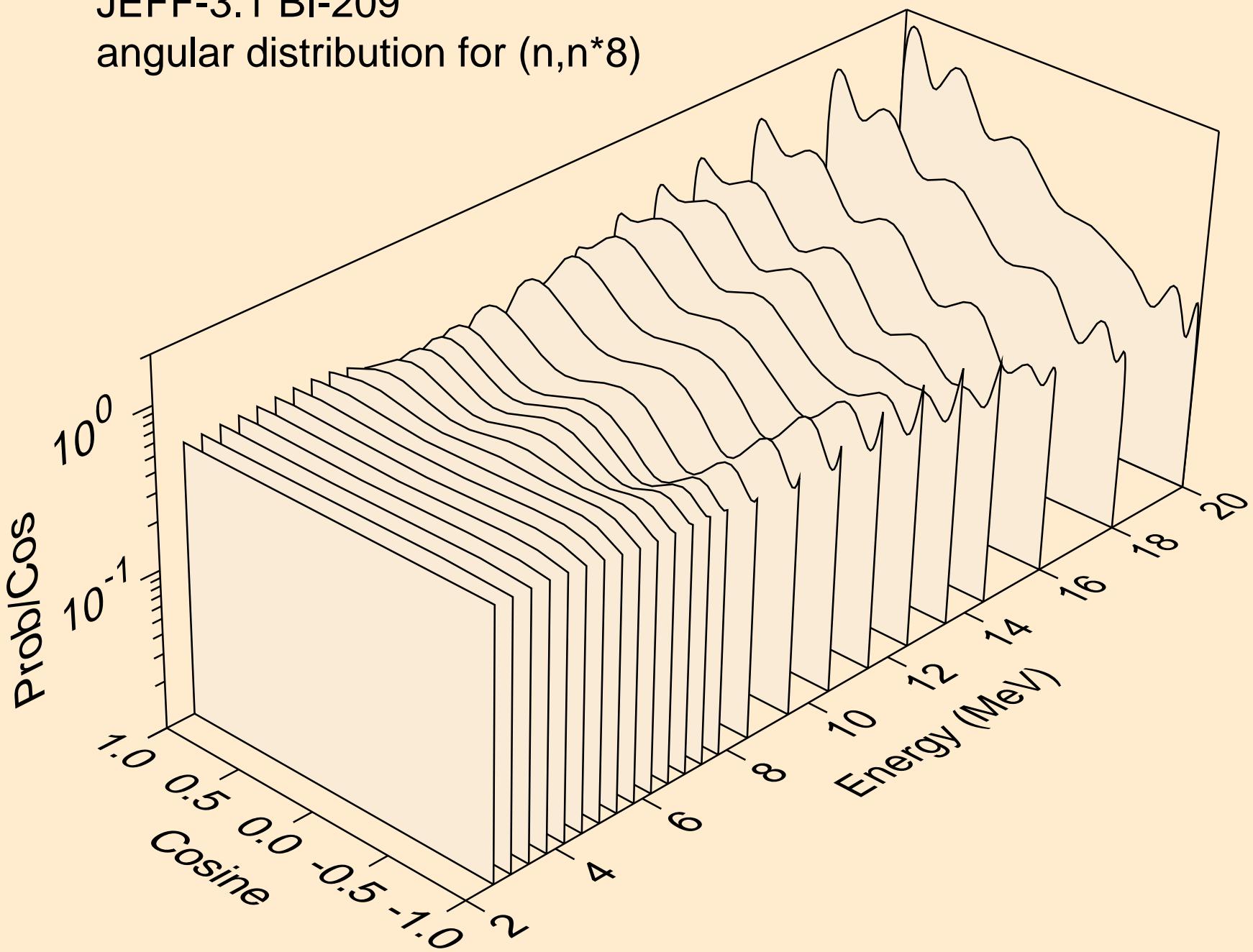
JEFF-3.1 Bi-209  
angular distribution for (n,n\*6)



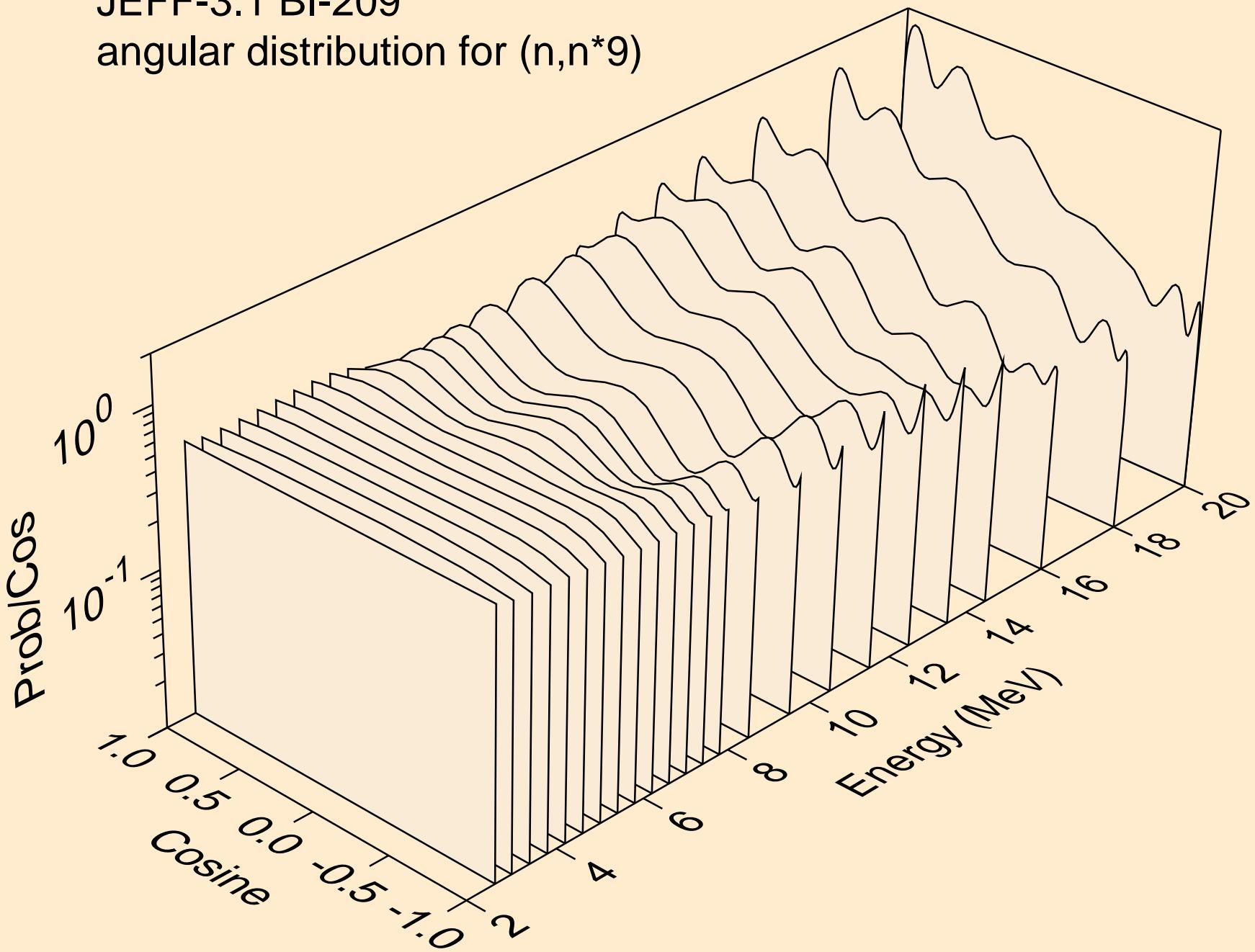
JEFF-3.1 Bi-209  
angular distribution for (n,n\*7)



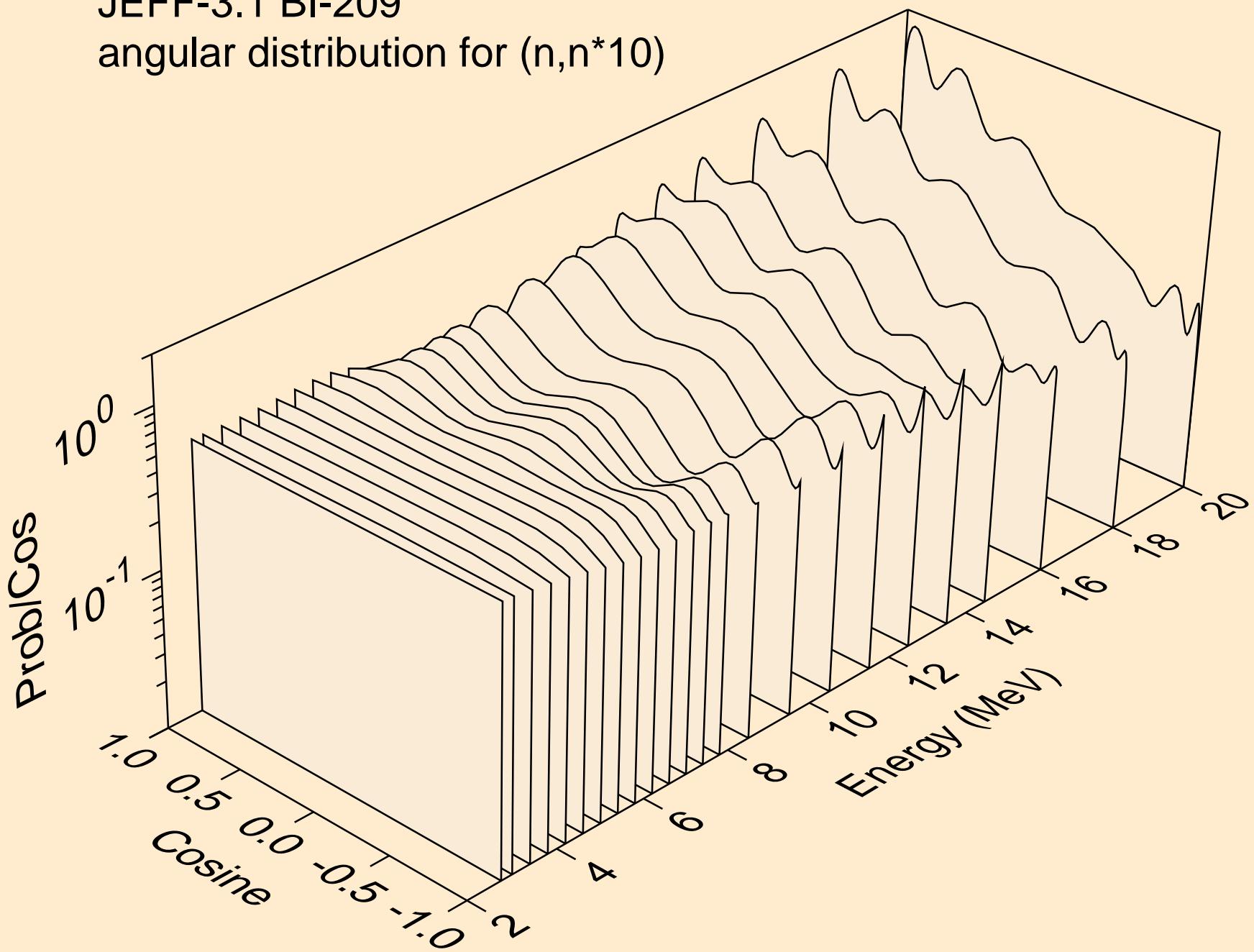
JEFF-3.1 Bi-209  
angular distribution for (n,n\*8)



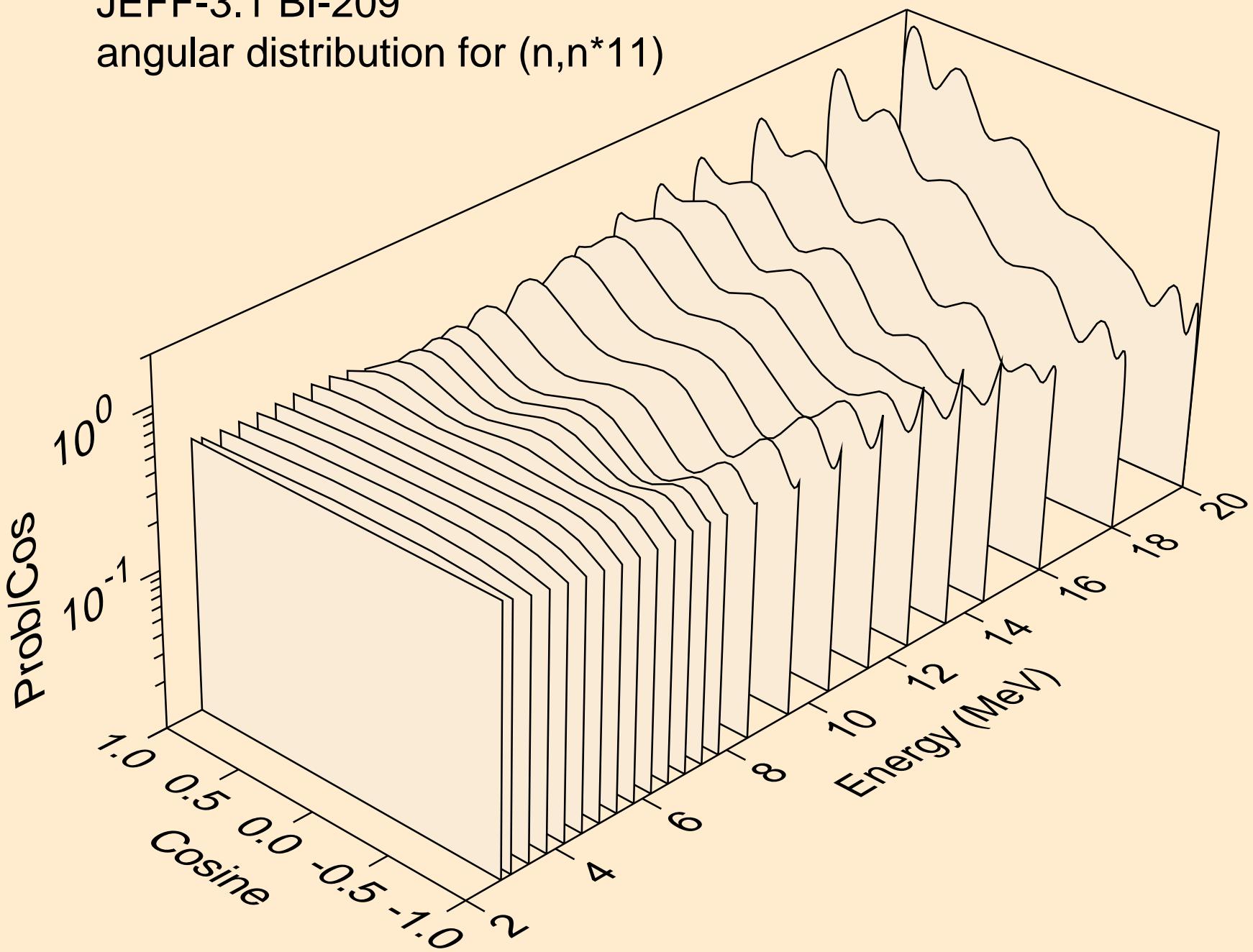
JEFF-3.1 Bi-209  
angular distribution for (n,n\*9)



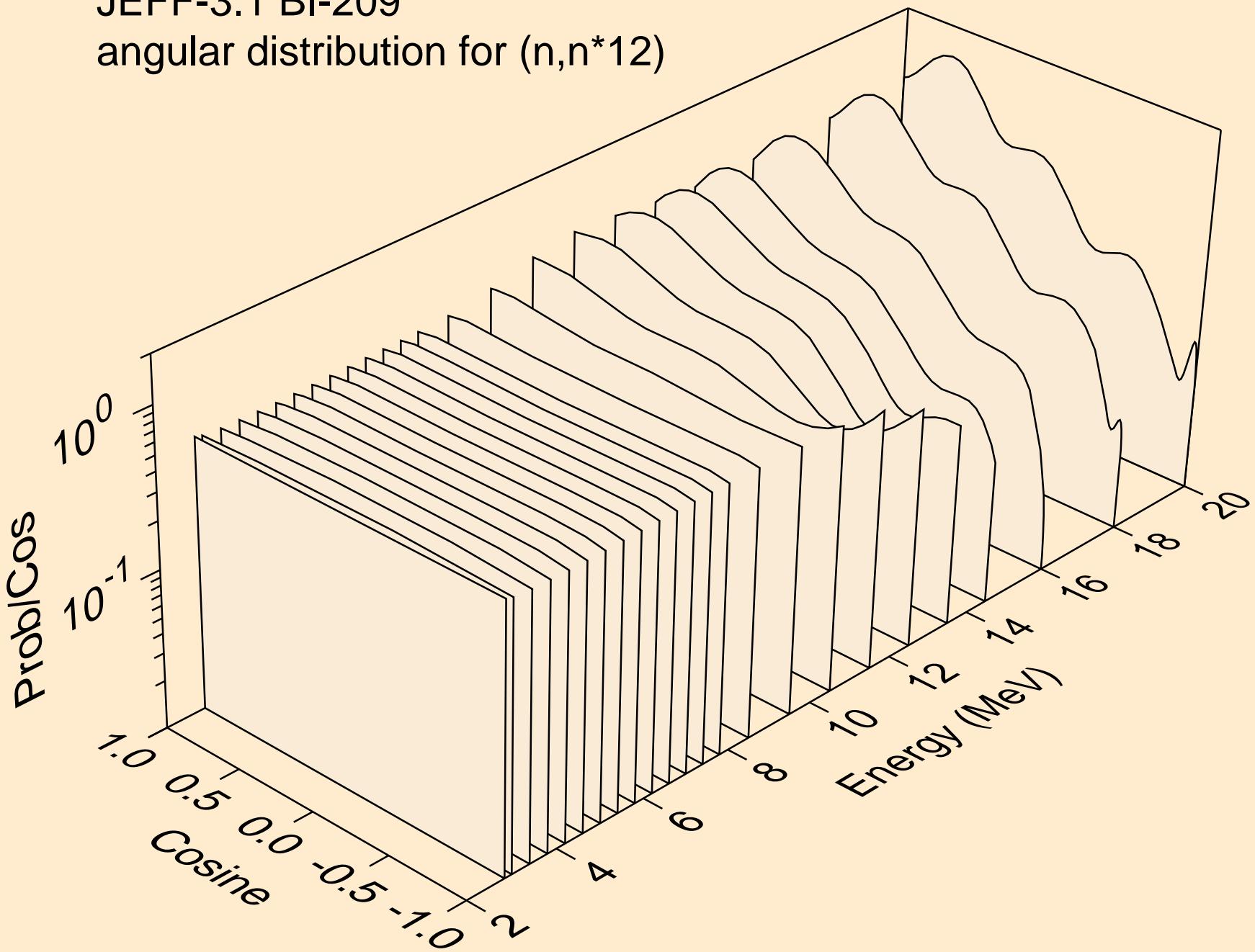
JEFF-3.1 Bi-209  
angular distribution for (n,n\*10)



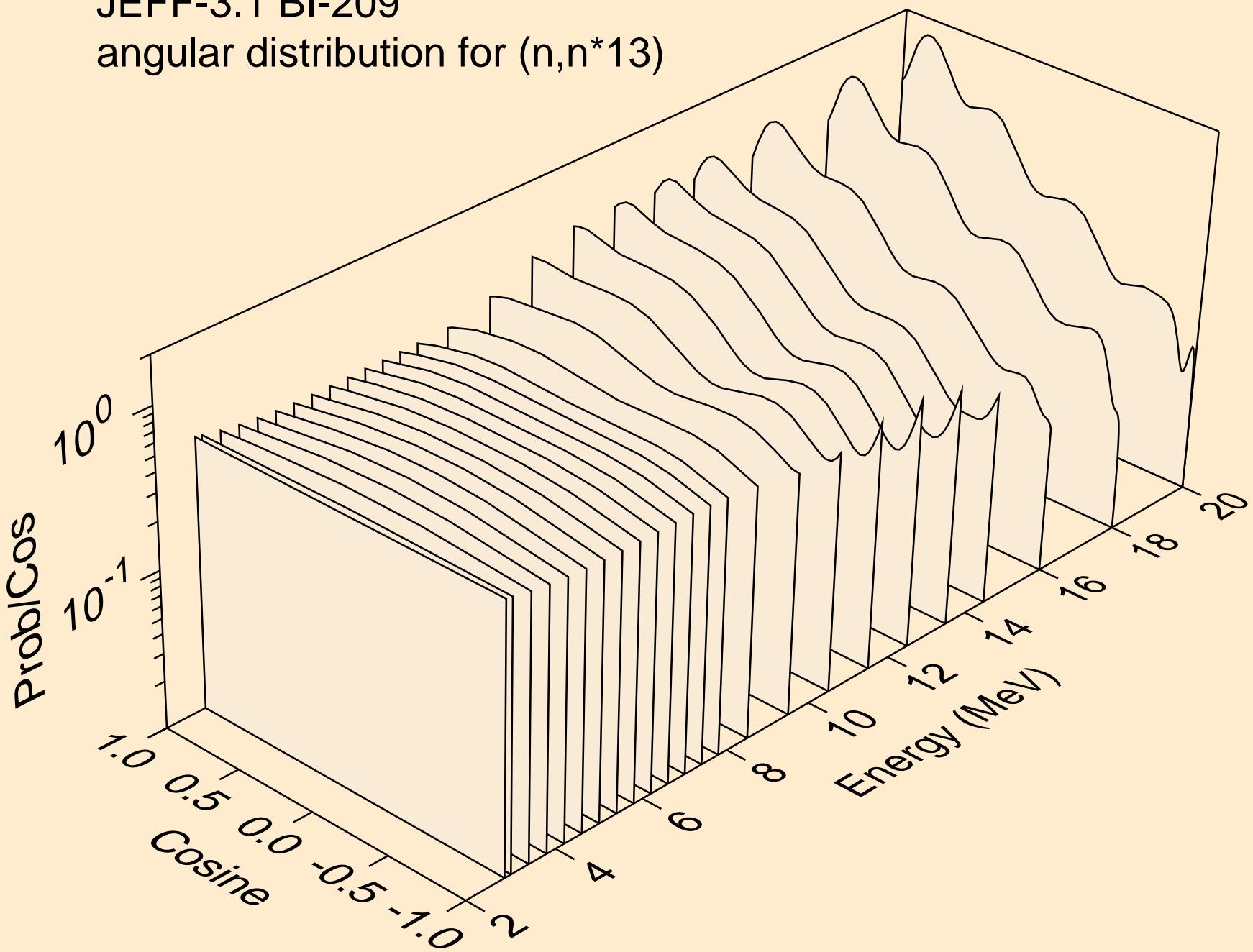
JEFF-3.1 Bi-209  
angular distribution for (n,n\*11)



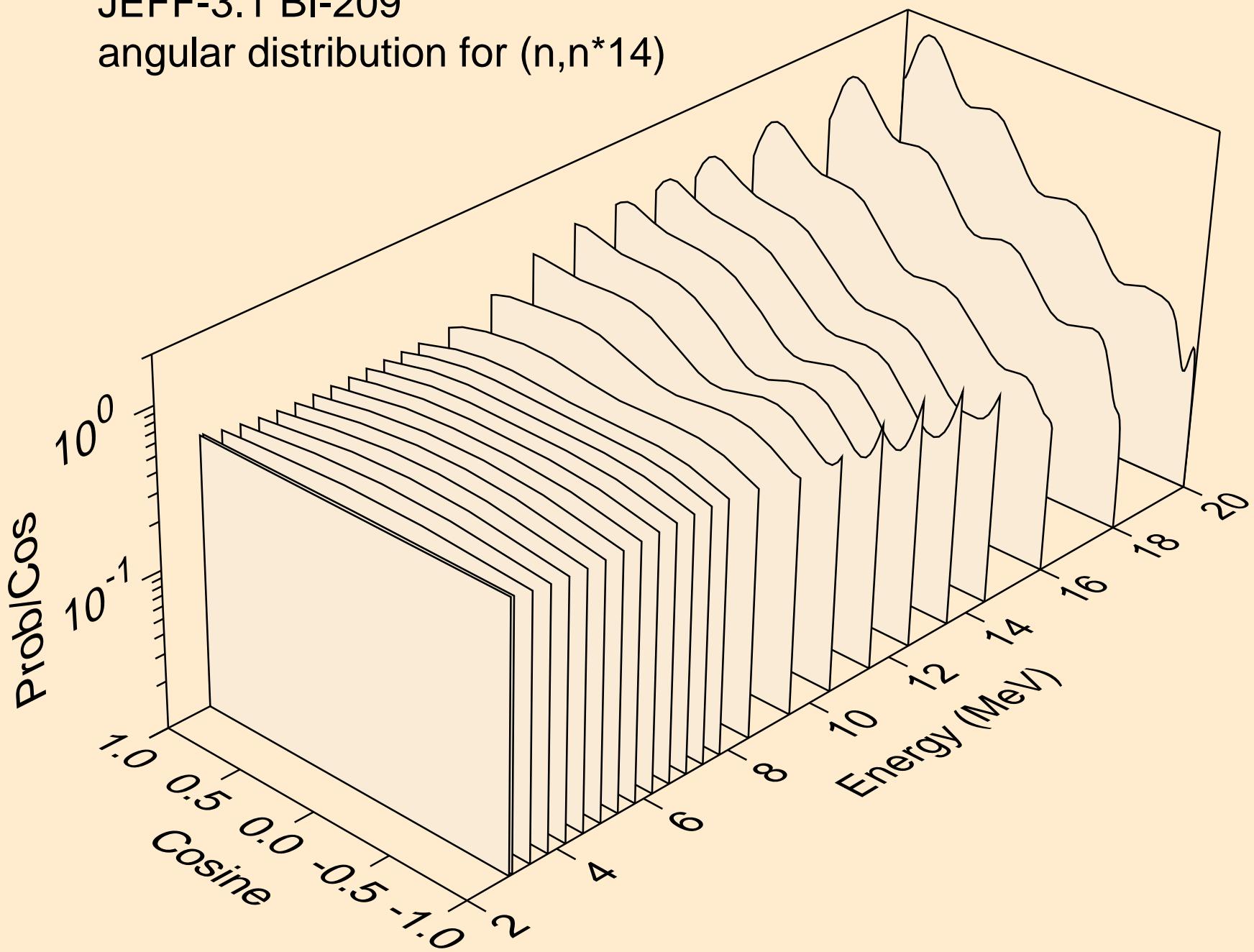
JEFF-3.1 Bi-209  
angular distribution for (n,n\*12)



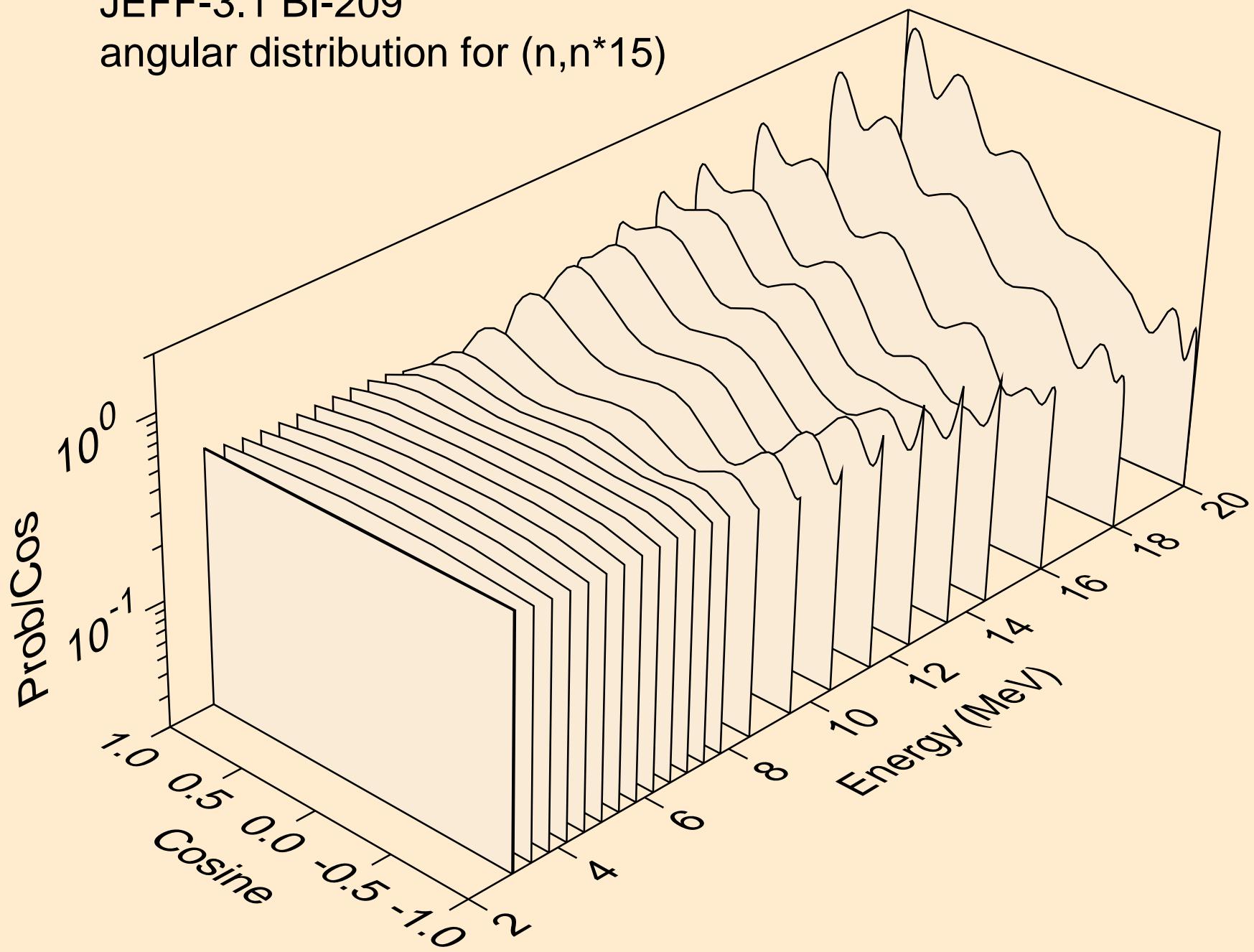
JEFF-3.1 Bi-209  
angular distribution for (n,n\*13)



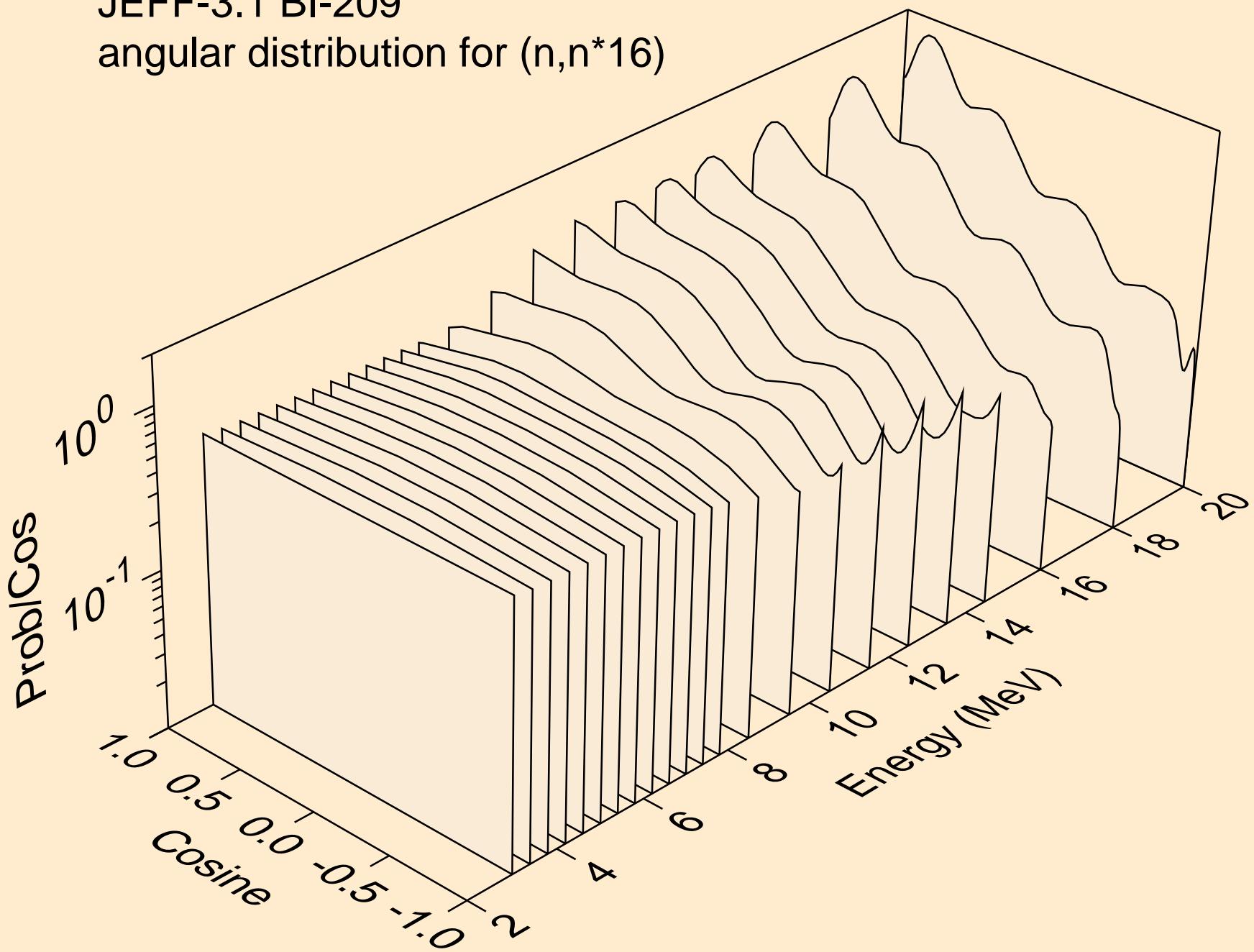
JEFF-3.1 Bi-209  
angular distribution for (n,n\*14)



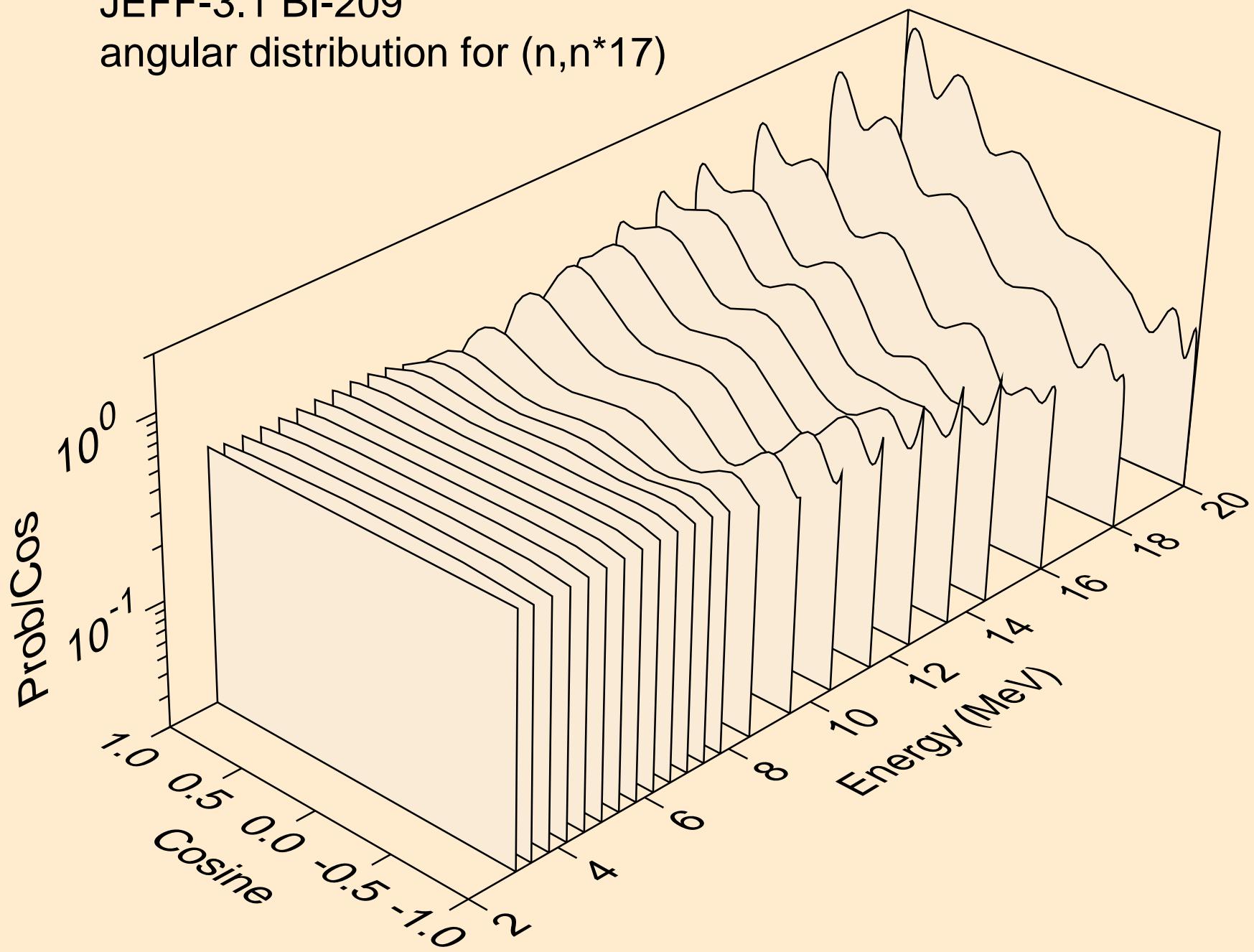
JEFF-3.1 Bi-209  
angular distribution for (n,n\*15)



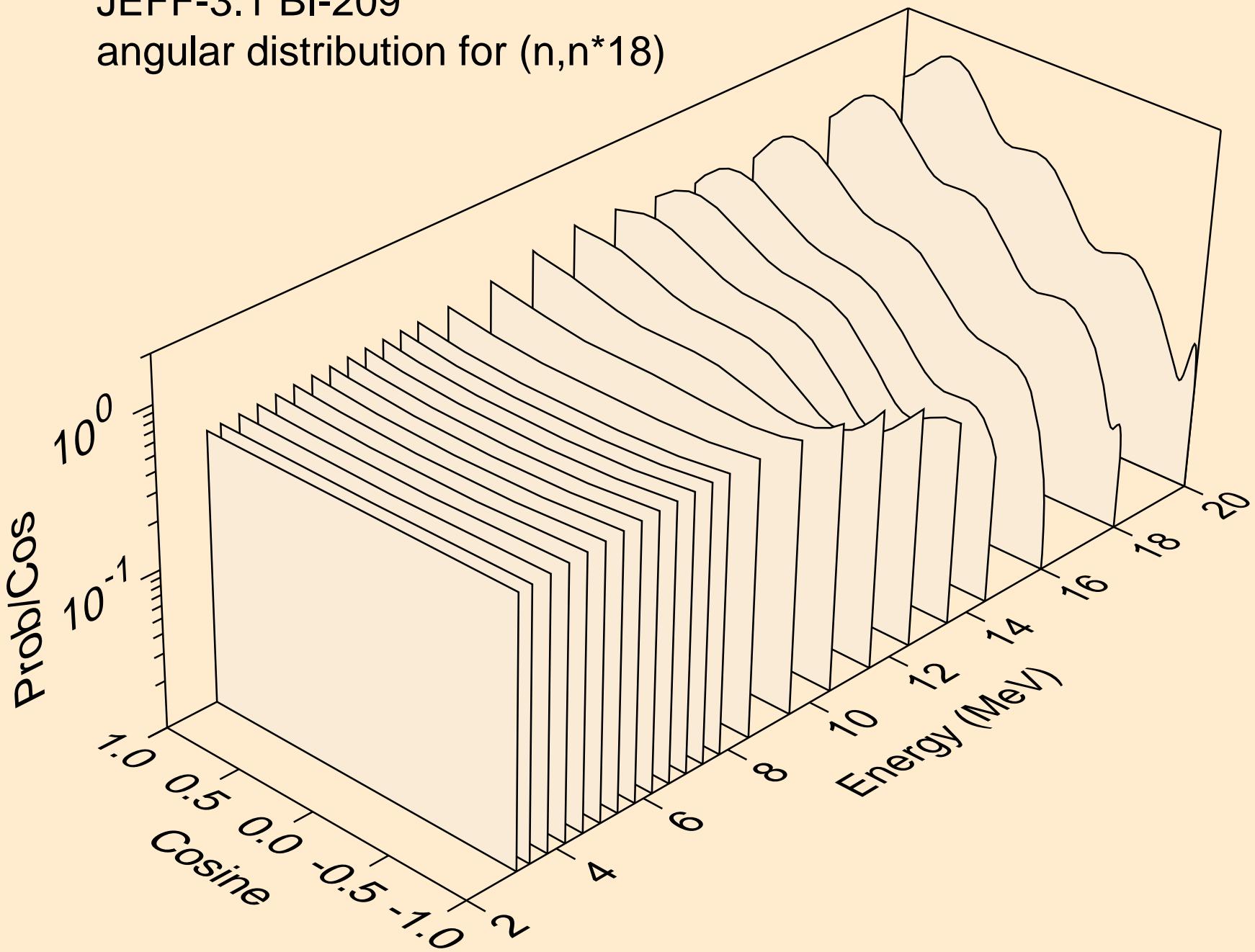
JEFF-3.1 Bi-209  
angular distribution for (n,n\*16)



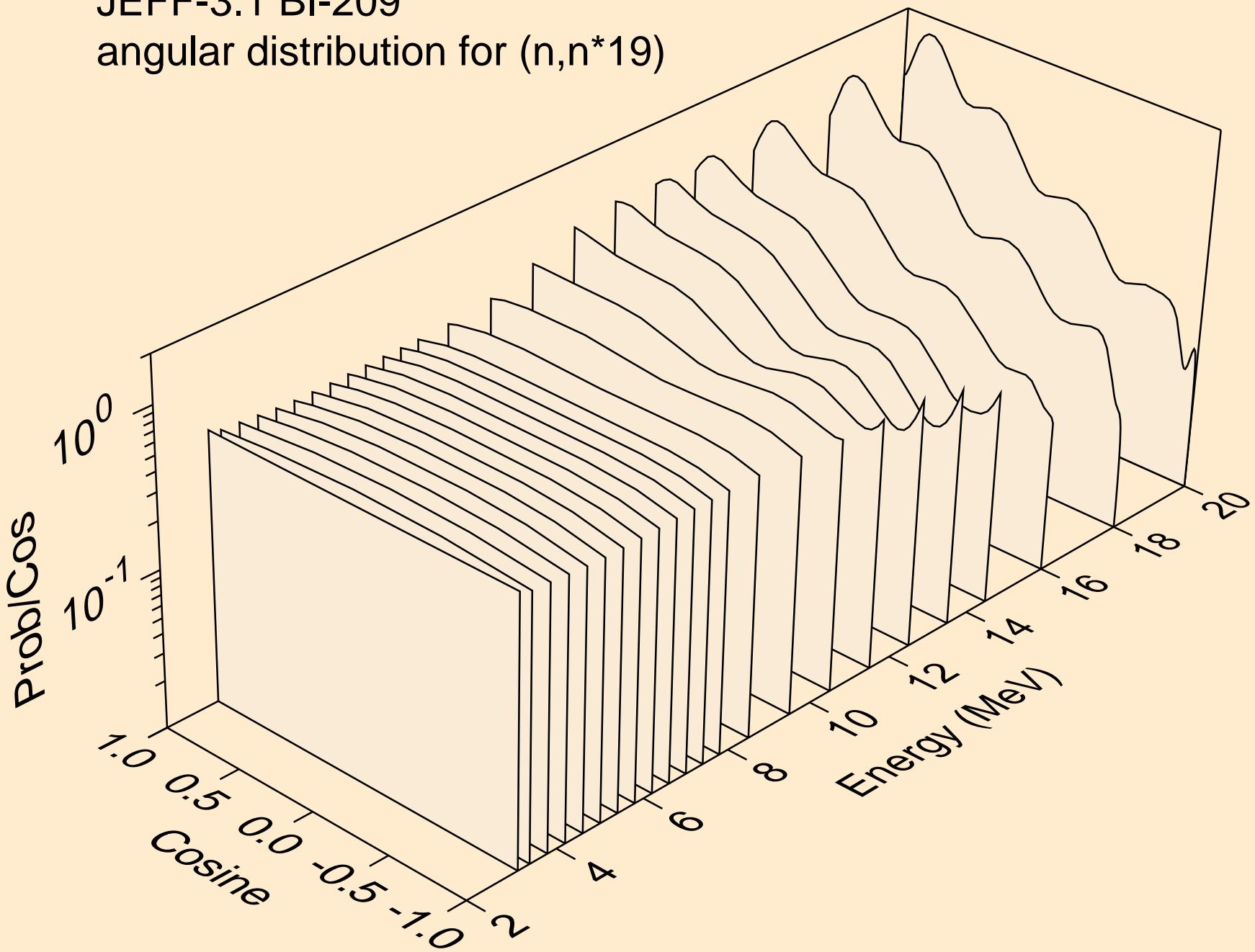
JEFF-3.1 Bi-209  
angular distribution for (n,n\*17)



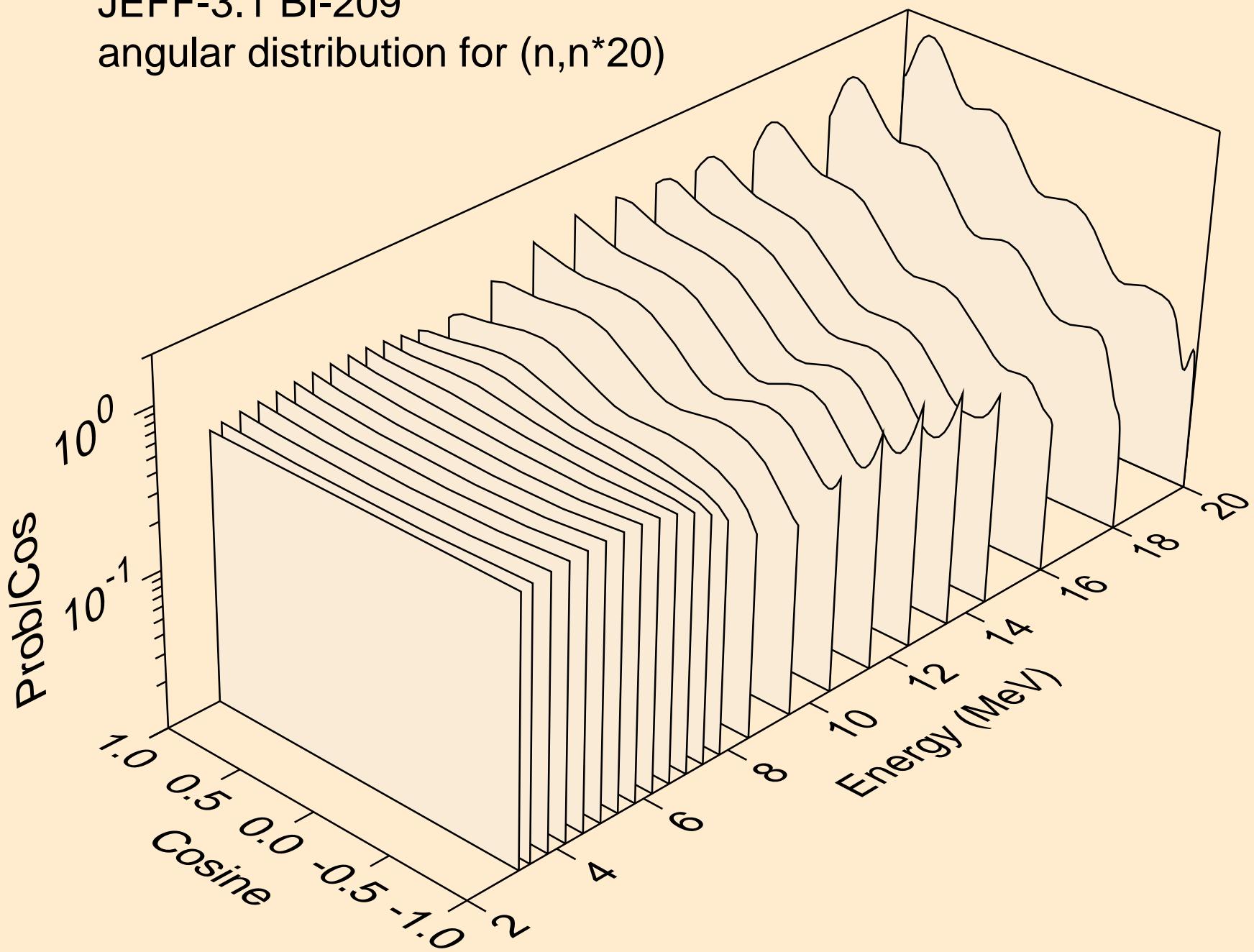
JEFF-3.1 Bi-209  
angular distribution for (n,n\*18)



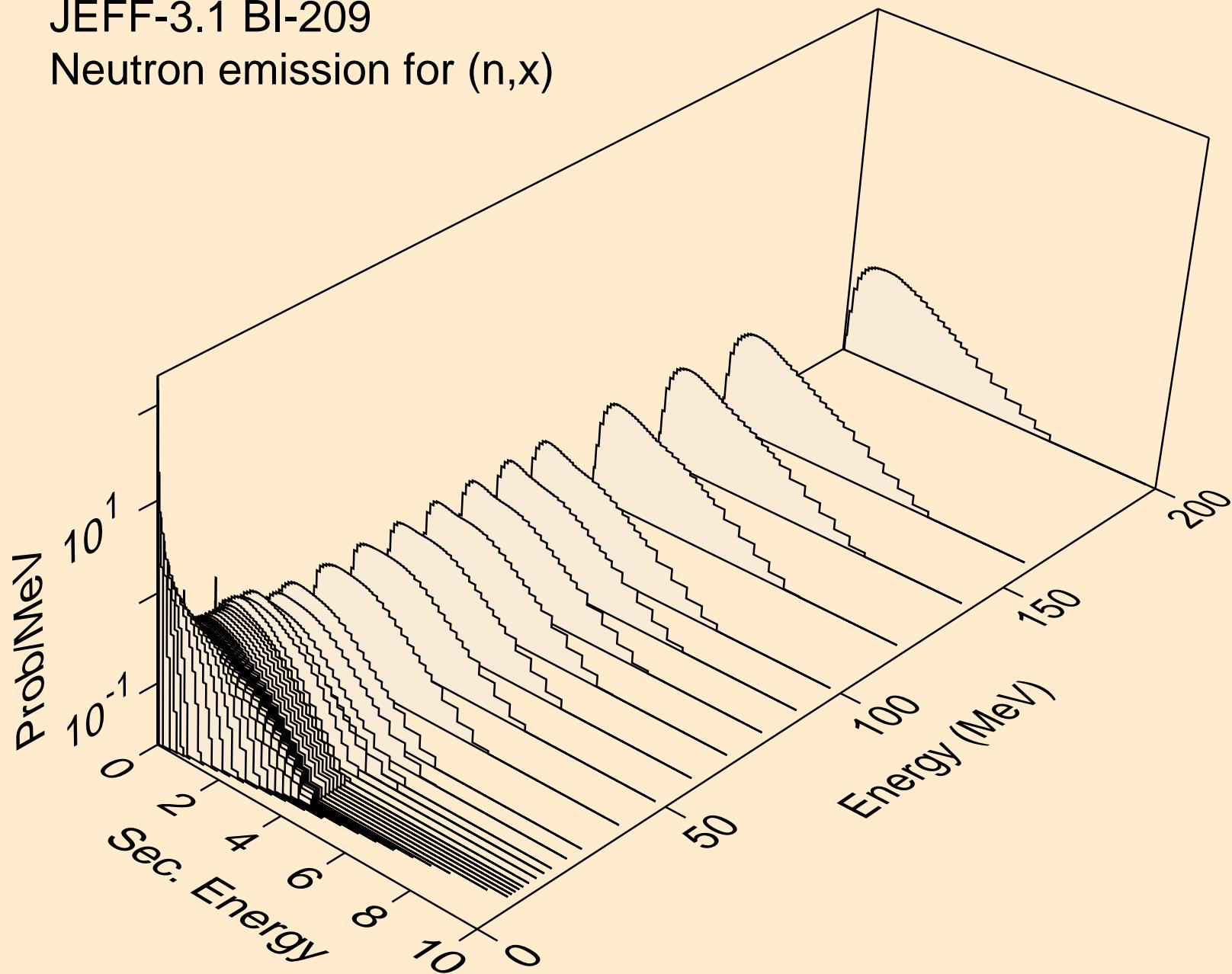
JEFF-3.1 Bi-209  
angular distribution for (n,n\*19)



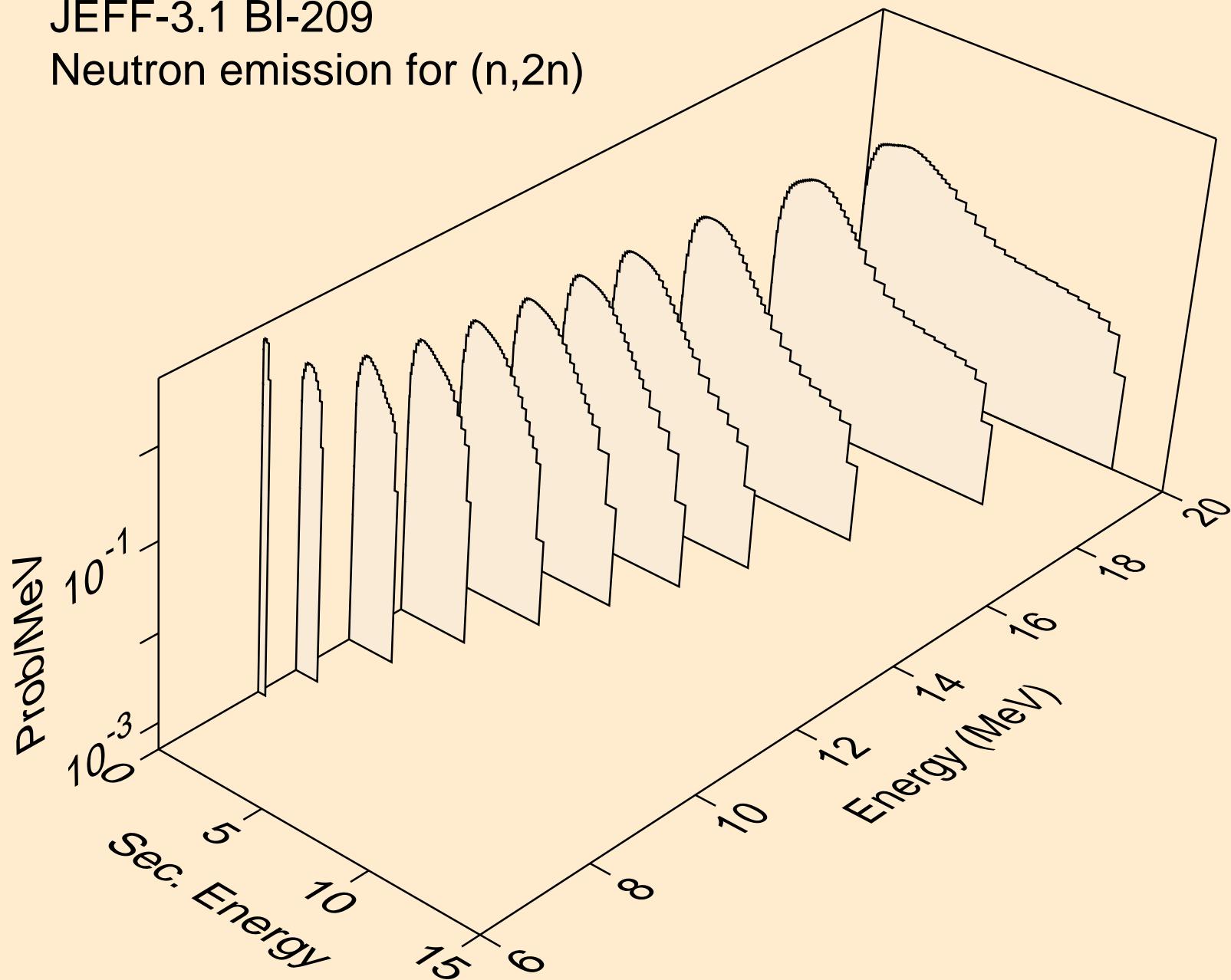
JEFF-3.1 Bi-209  
angular distribution for (n,n\*20)



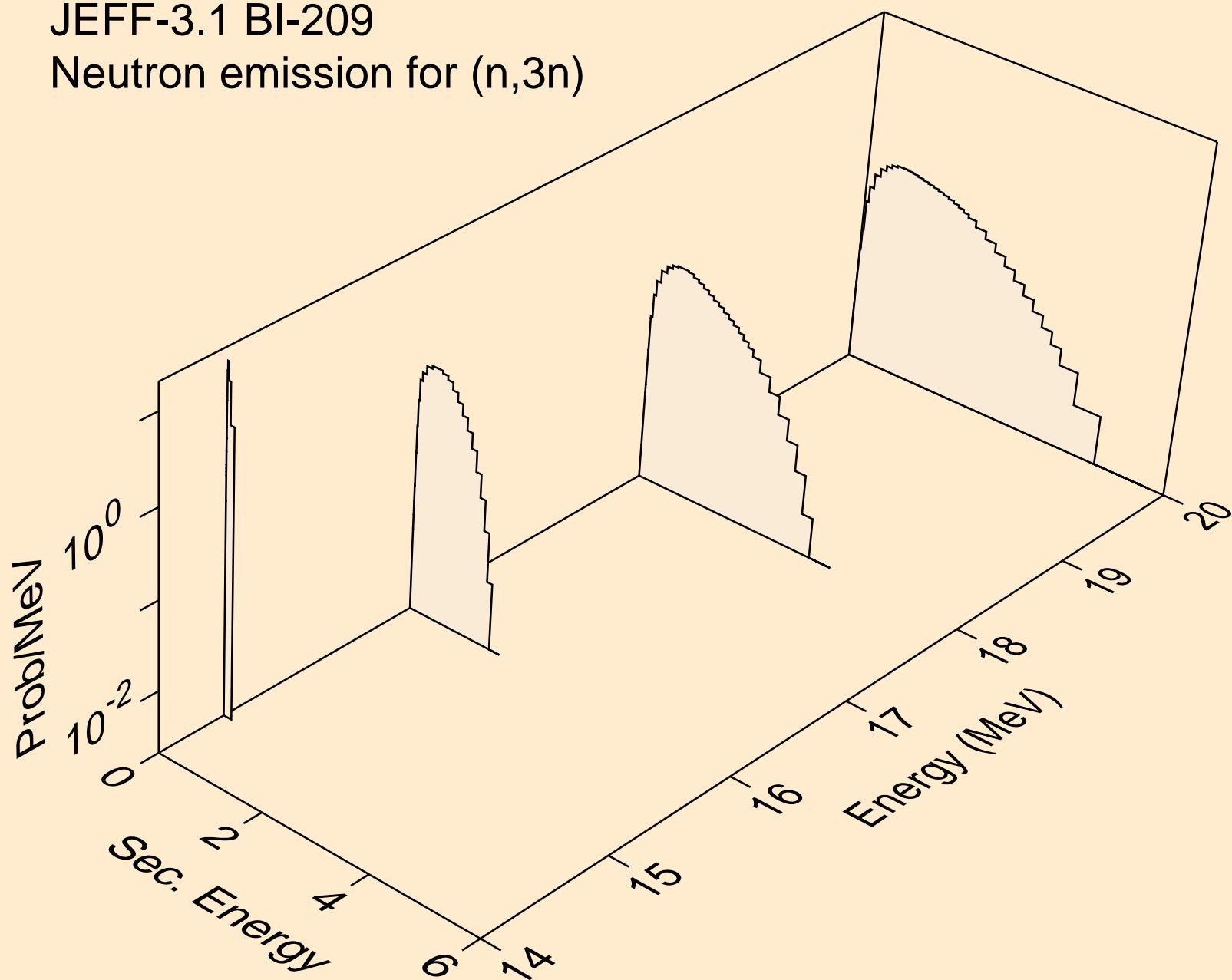
JEFF-3.1 Bi-209  
Neutron emission for (n,x)



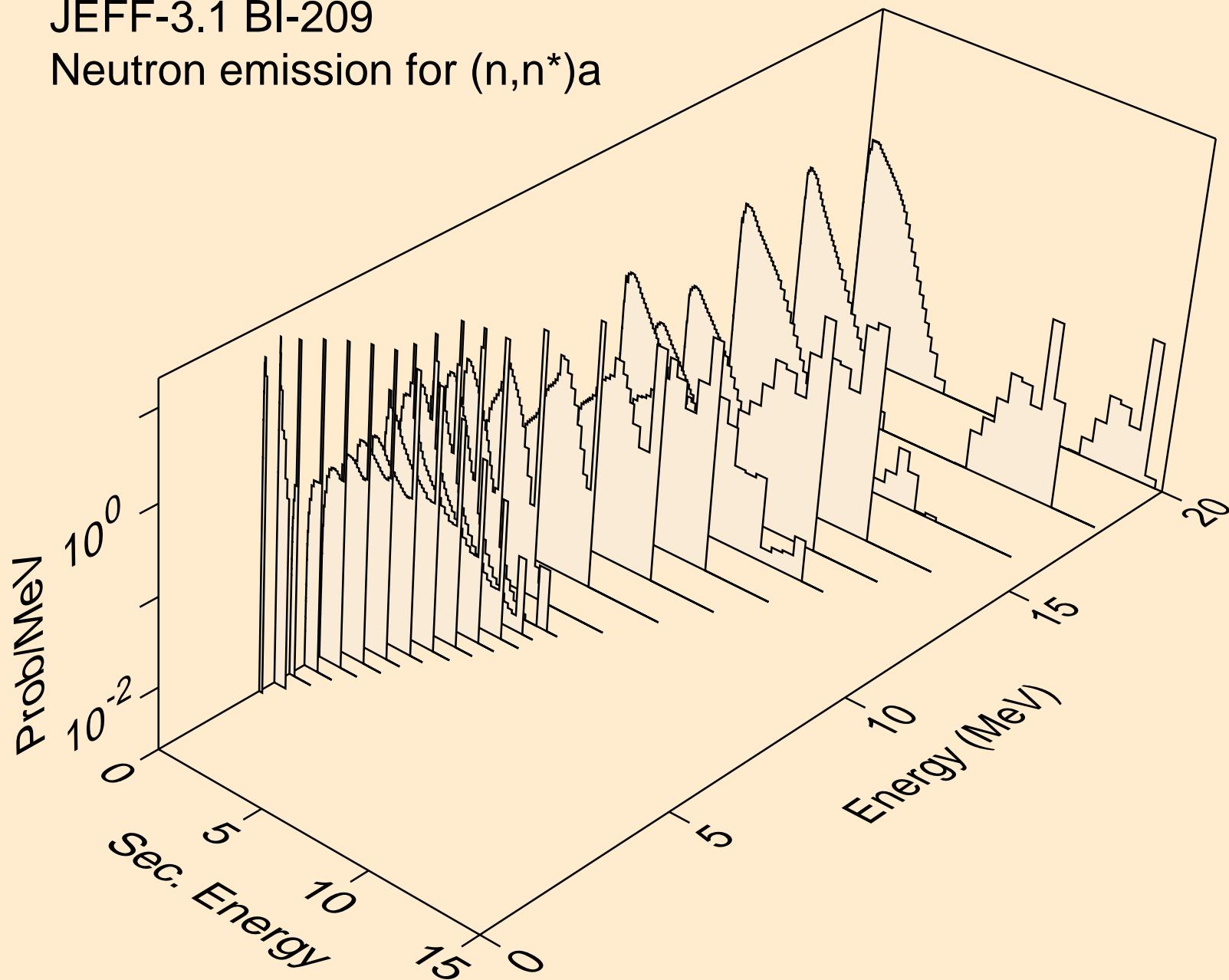
JEFF-3.1 Bi-209  
Neutron emission for (n,2n)



JEFF-3.1 Bi-209  
Neutron emission for (n,3n)

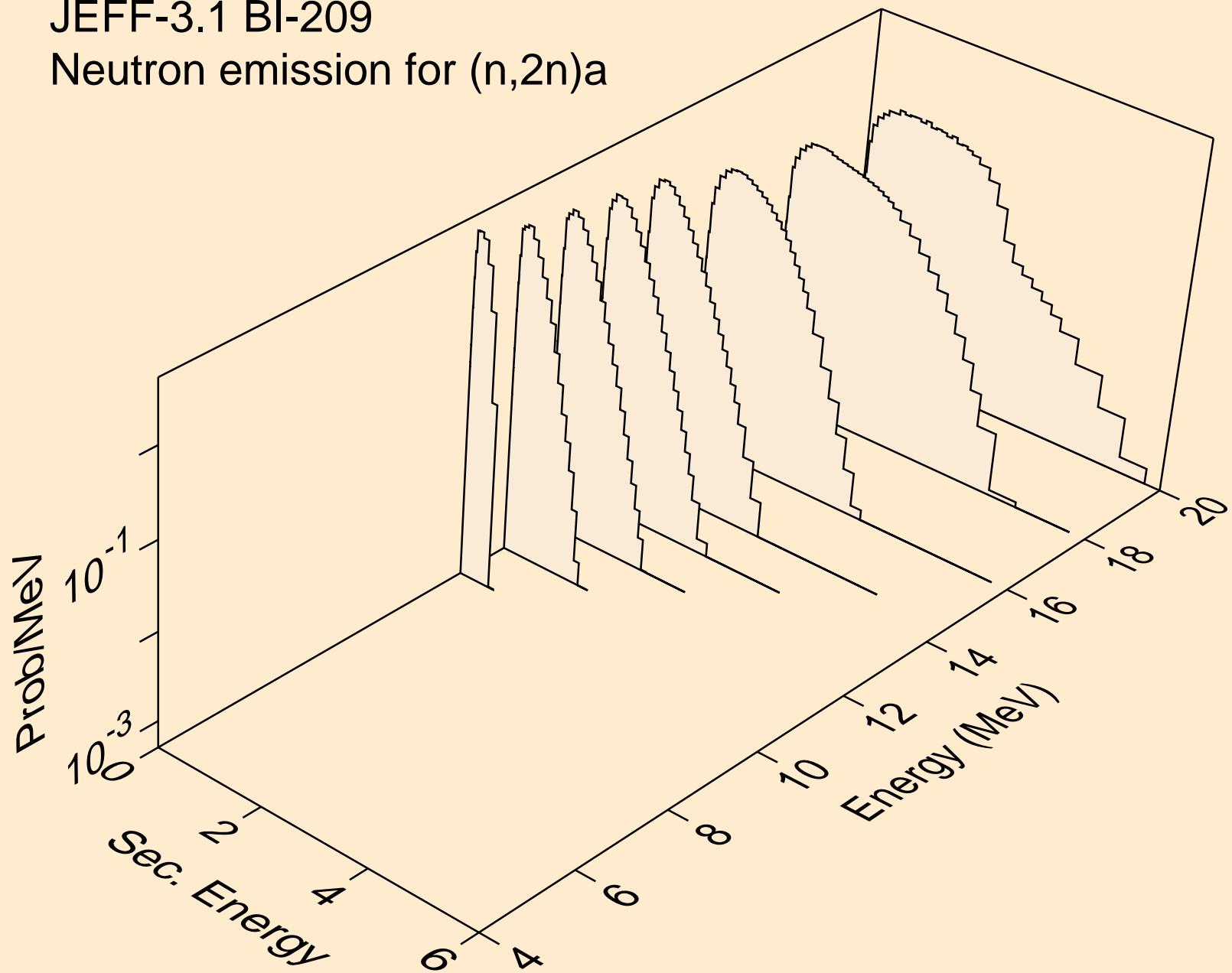


JEFF-3.1 Bi-209  
Neutron emission for  $(n,n^*)a$

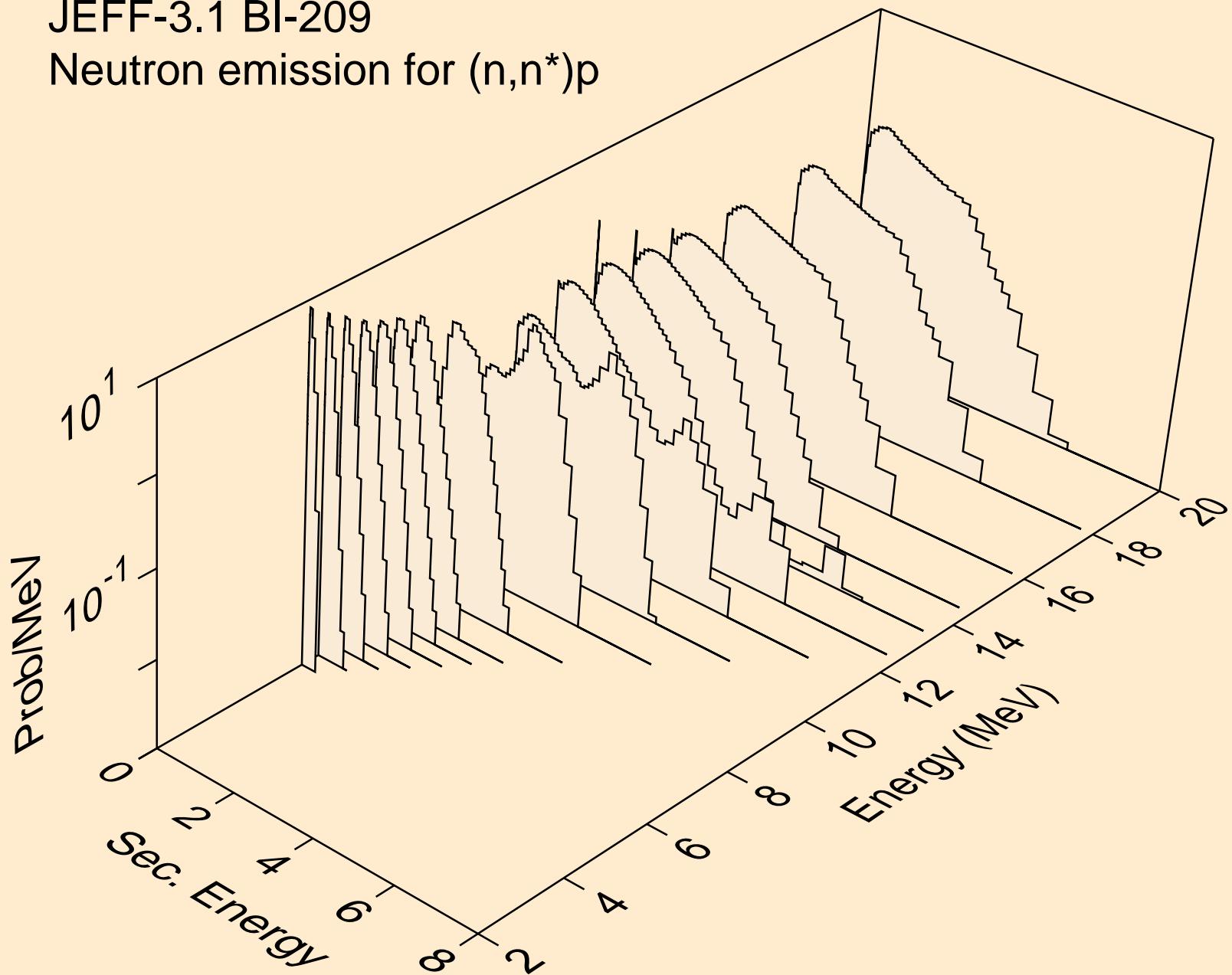


JEFF-3.1 Bi-209

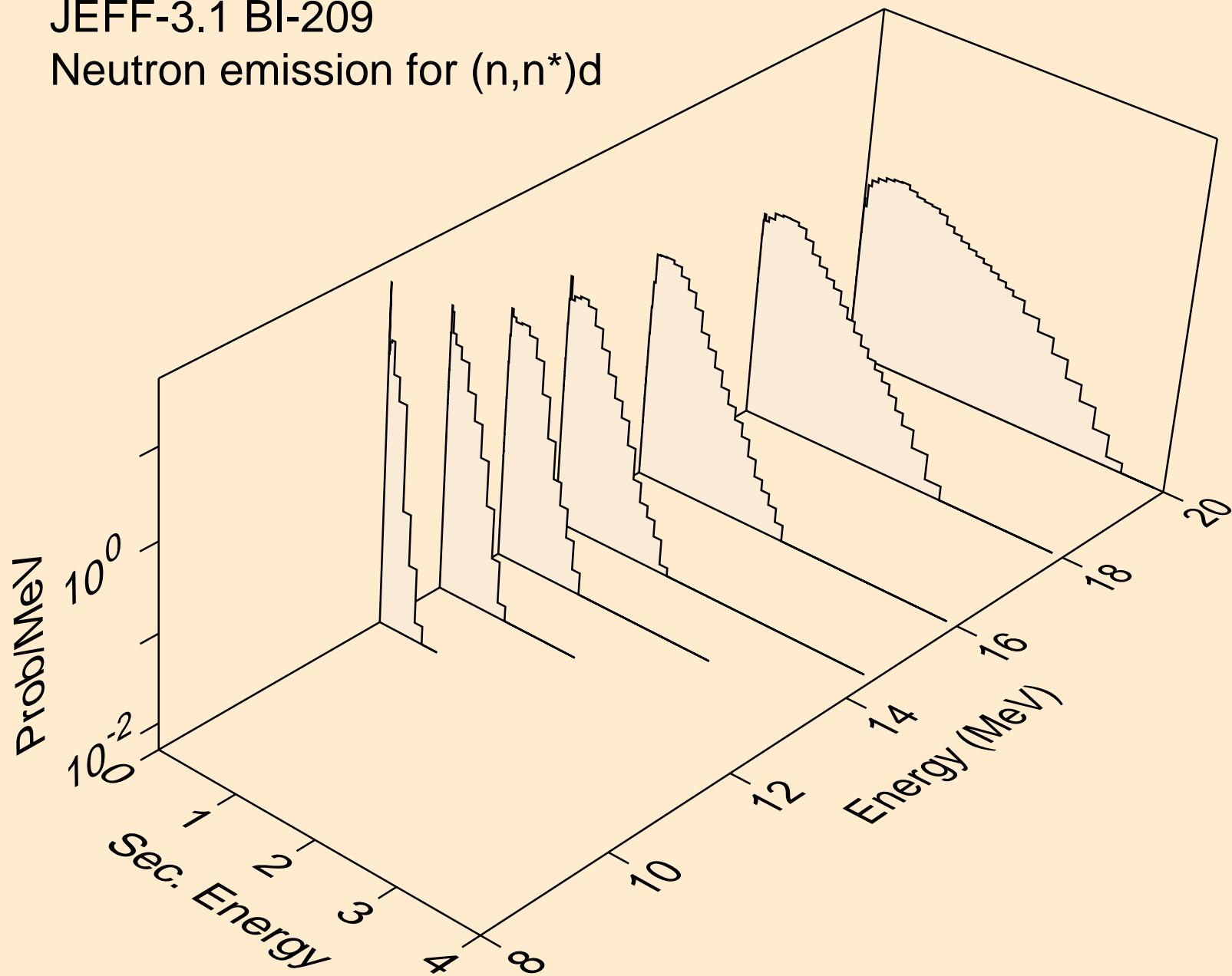
Neutron emission for  $(n,2n)a$



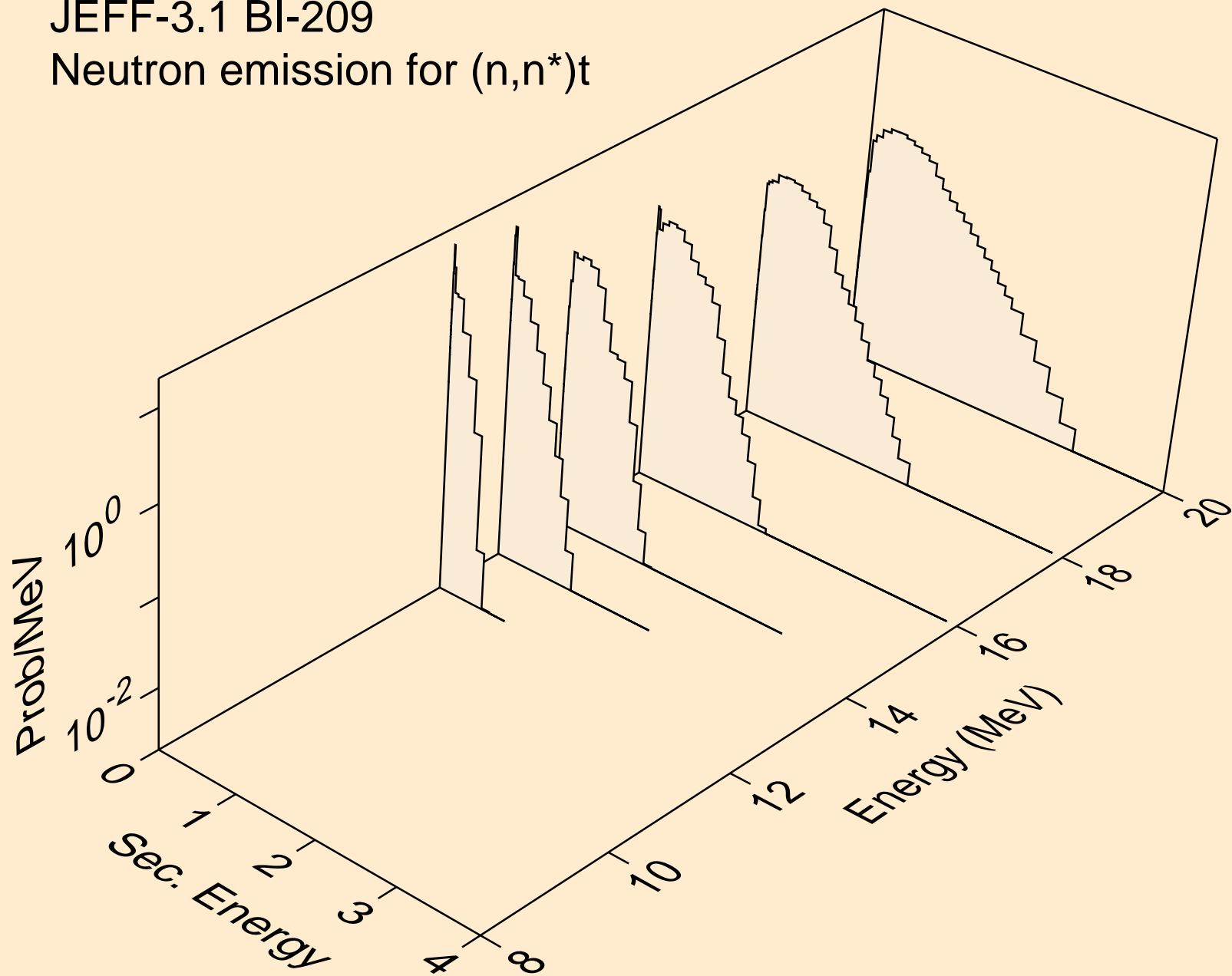
JEFF-3.1 Bi-209  
Neutron emission for  $(n,n^*)p$



JEFF-3.1 Bi-209  
Neutron emission for  $(n,n^*)d$

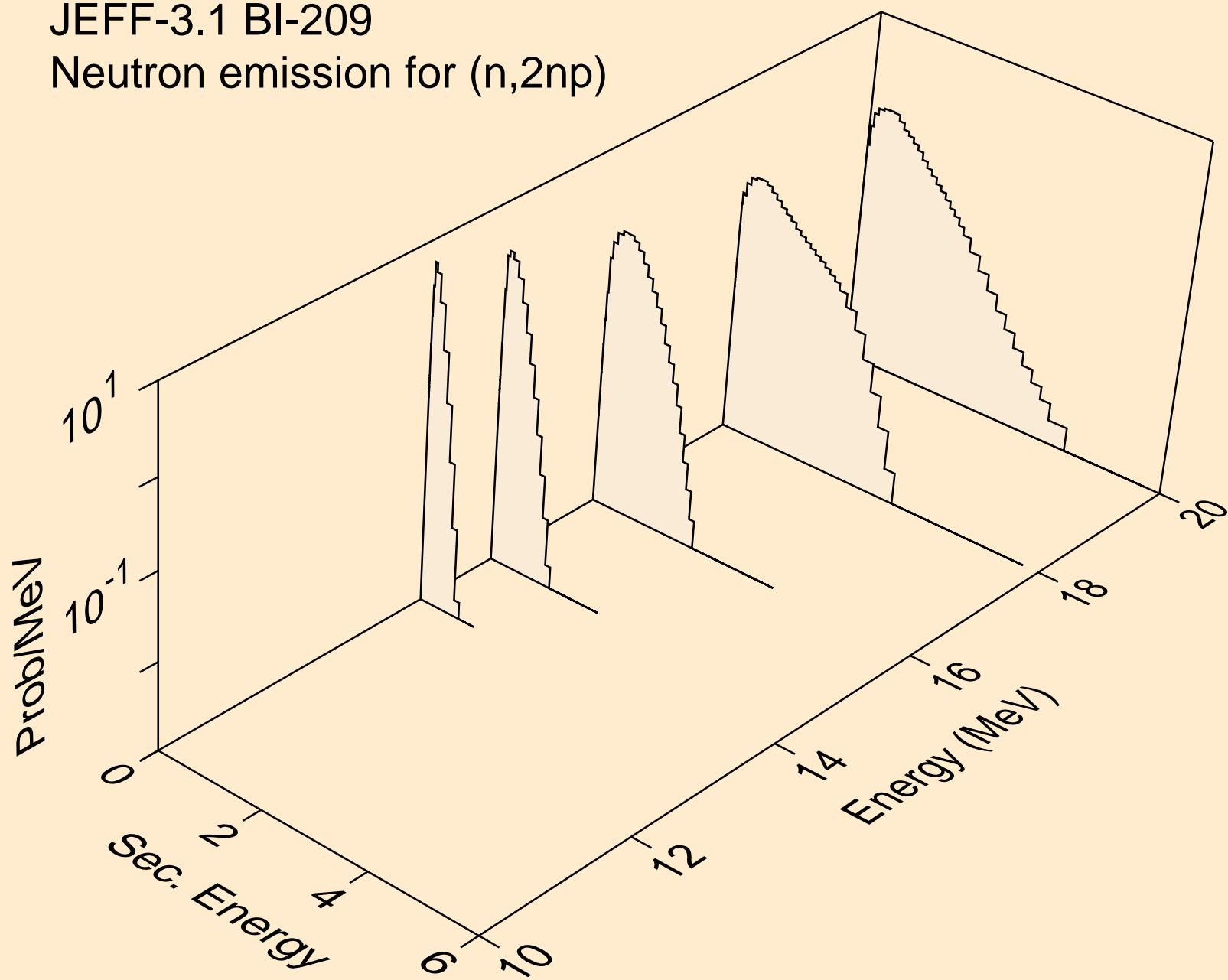


JEFF-3.1 Bi-209  
Neutron emission for  $(n,n^*)t$



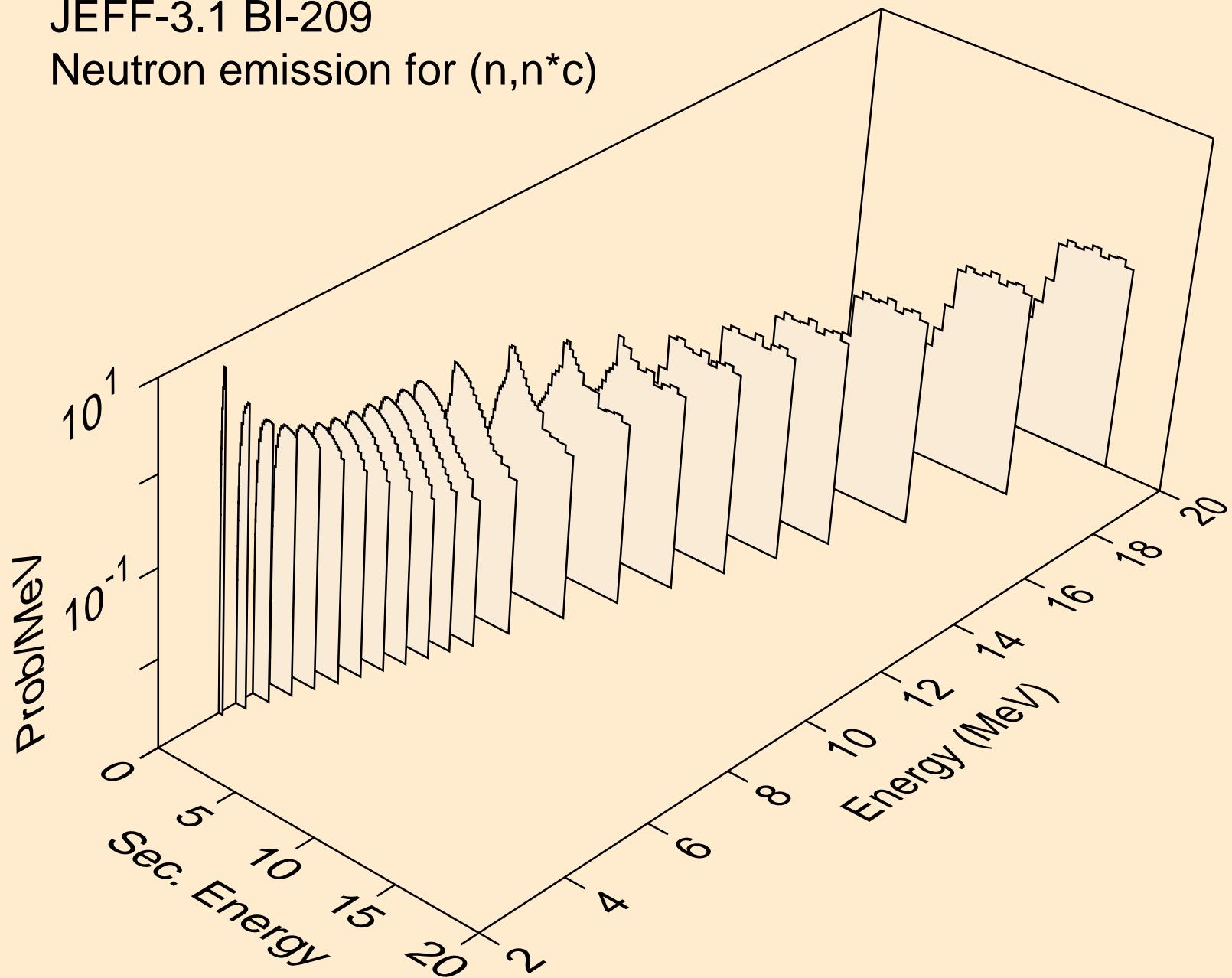
JEFF-3.1 Bi-209

Neutron emission for (n,2np)

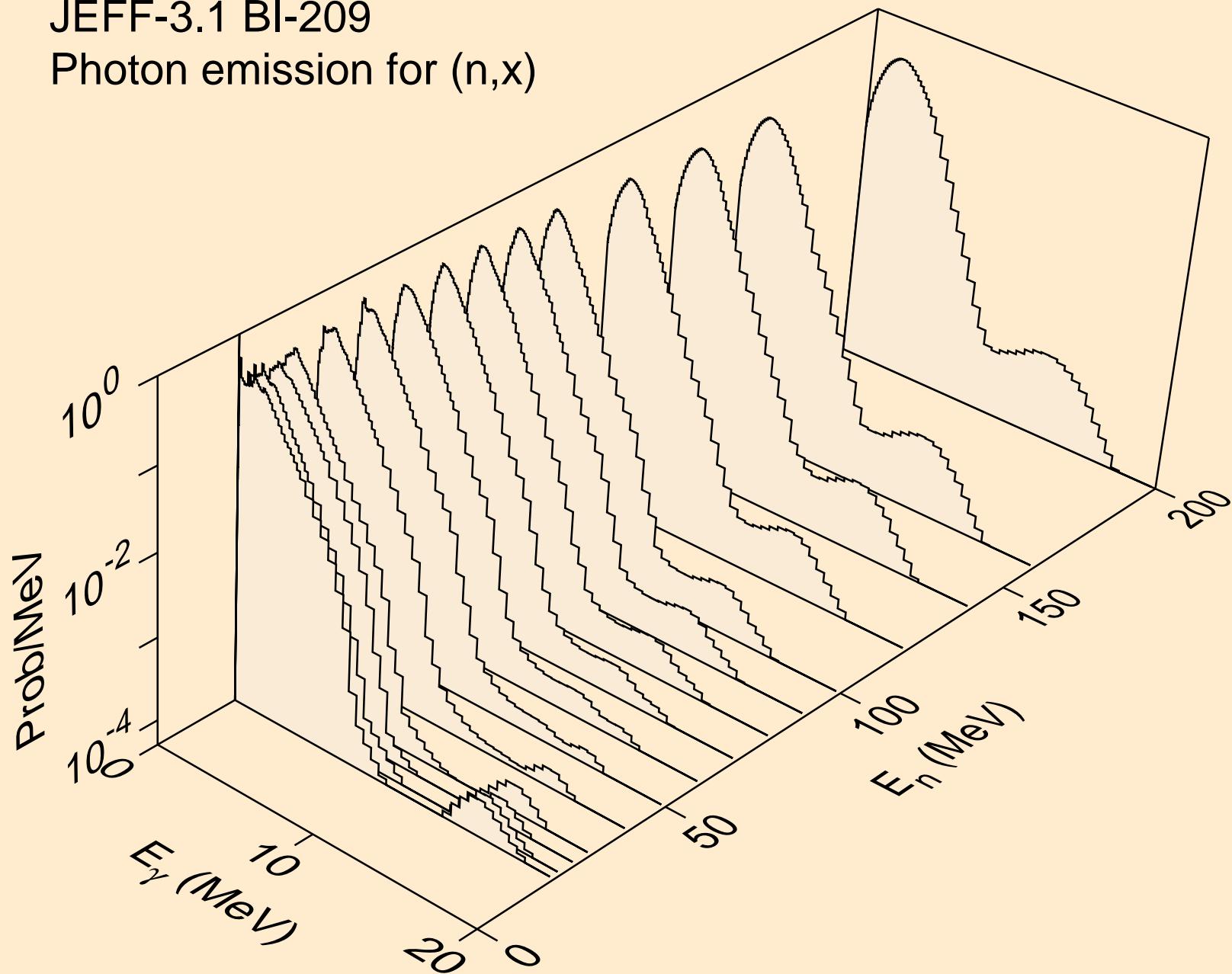


JEFF-3.1 Bi-209

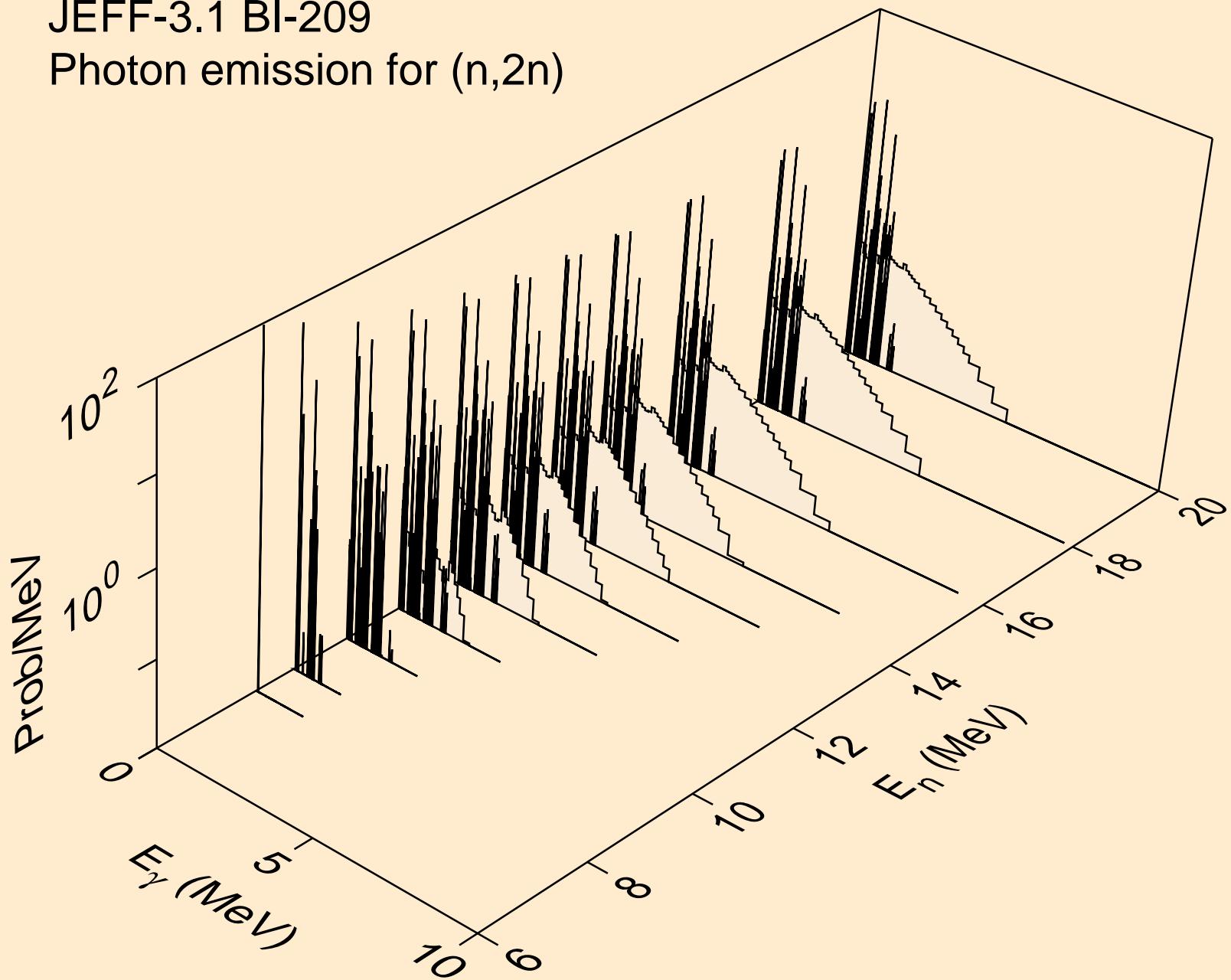
Neutron emission for  $(n, n^* c)$



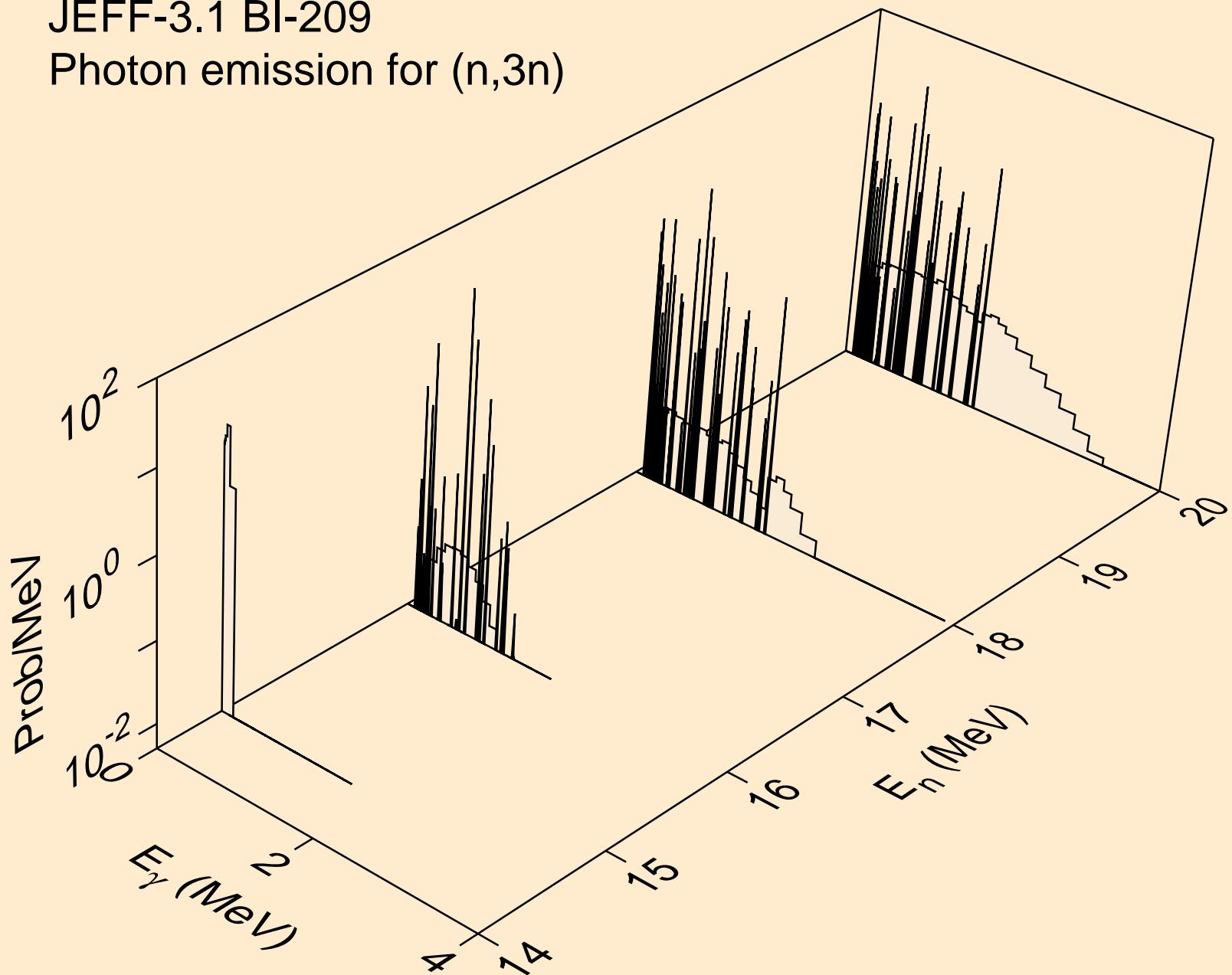
JEFF-3.1 Bi-209  
Photon emission for (n,x)



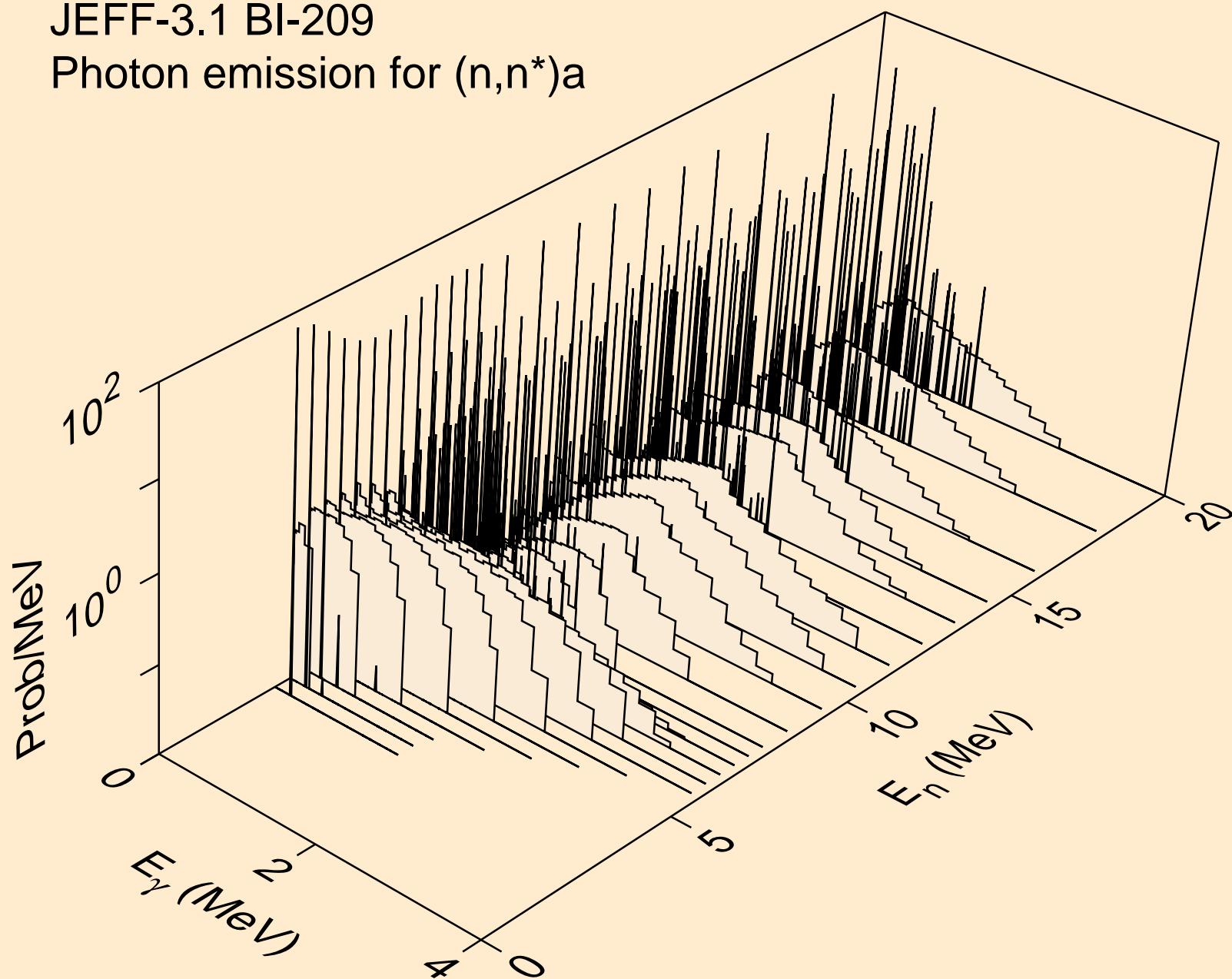
JEFF-3.1 Bi-209  
Photon emission for (n,2n)



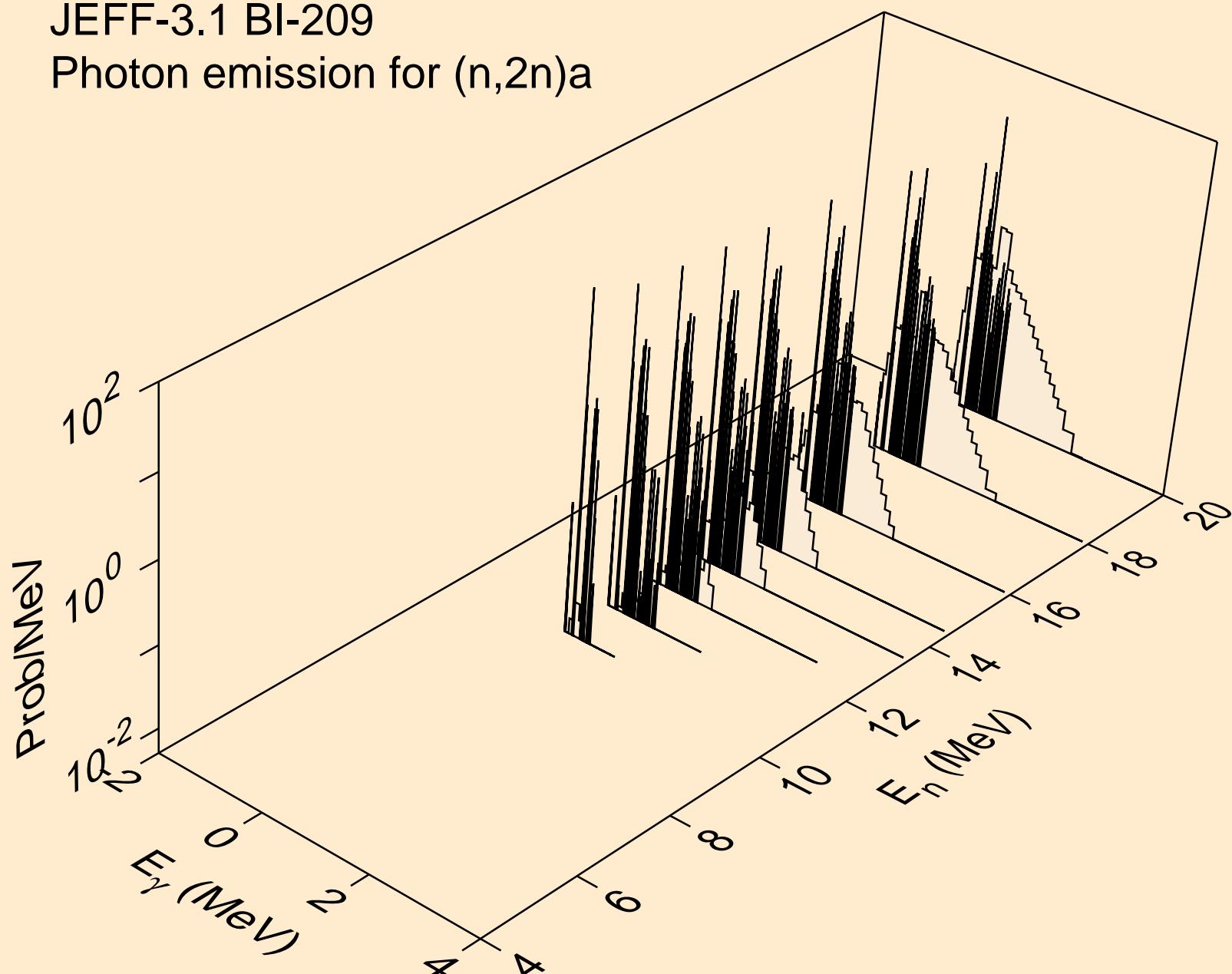
JEFF-3.1 Bi-209  
Photon emission for (n,3n)



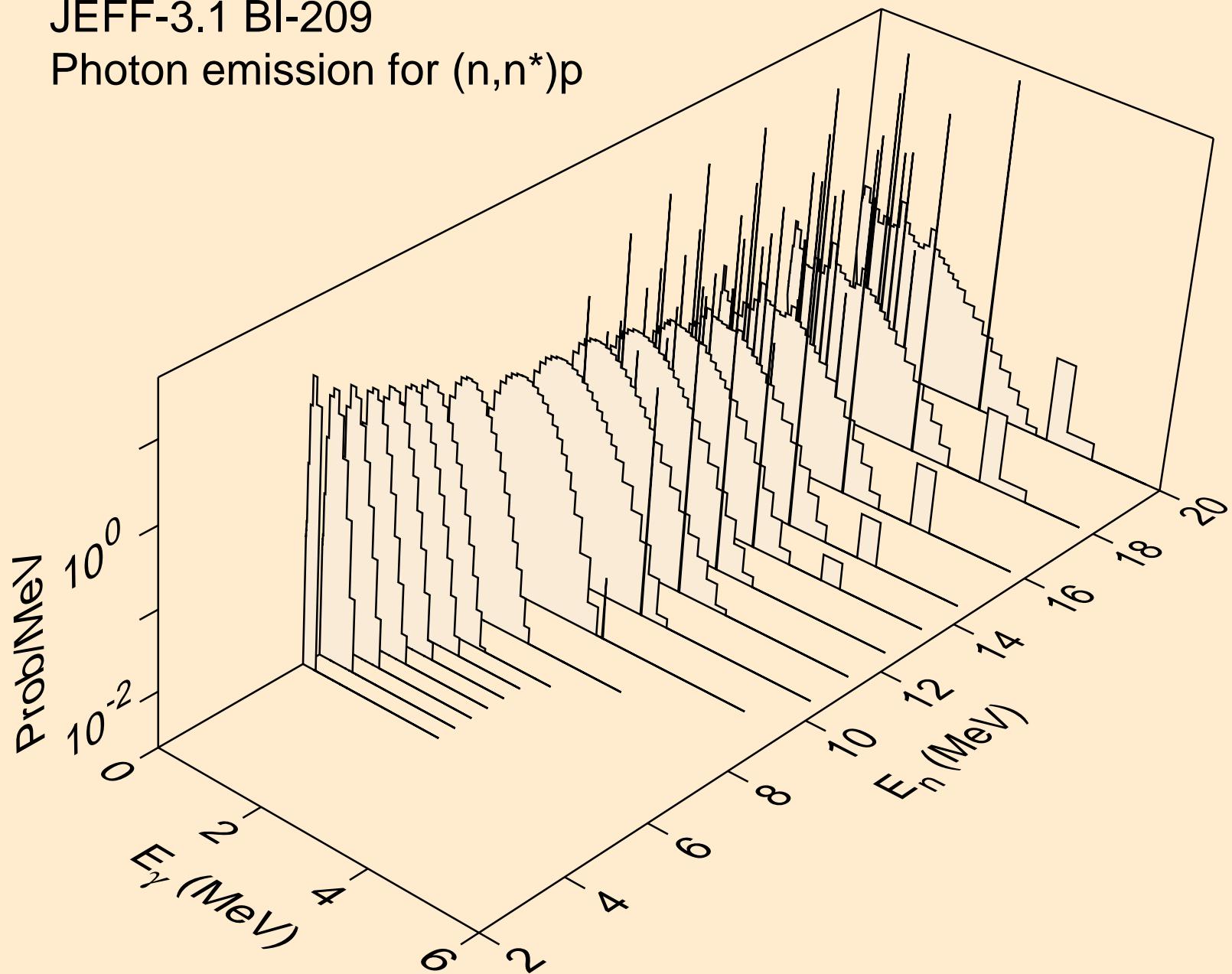
JEFF-3.1 Bi-209  
Photon emission for  $(n,n^*)a$



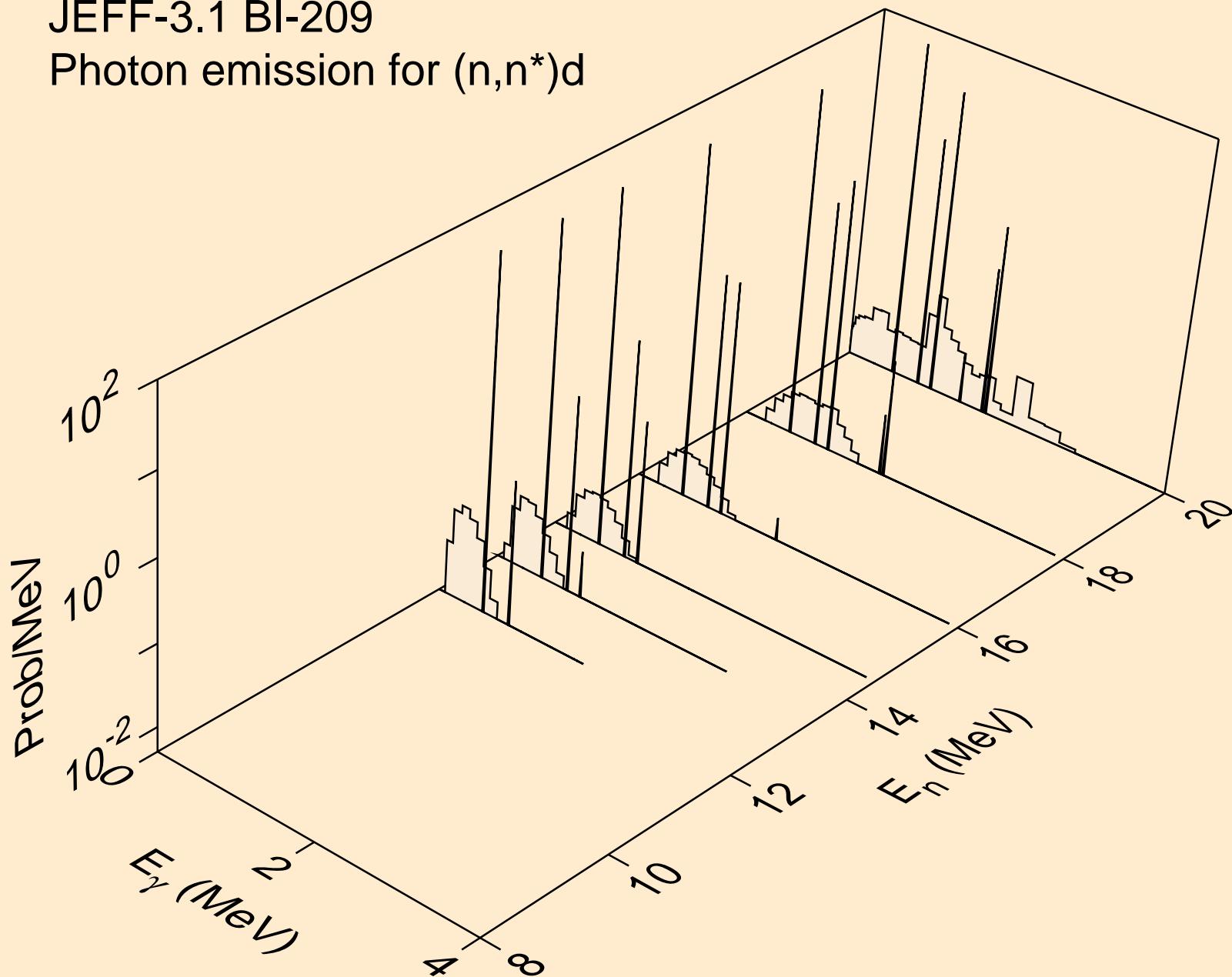
JEFF-3.1 Bi-209  
Photon emission for (n,2n)a



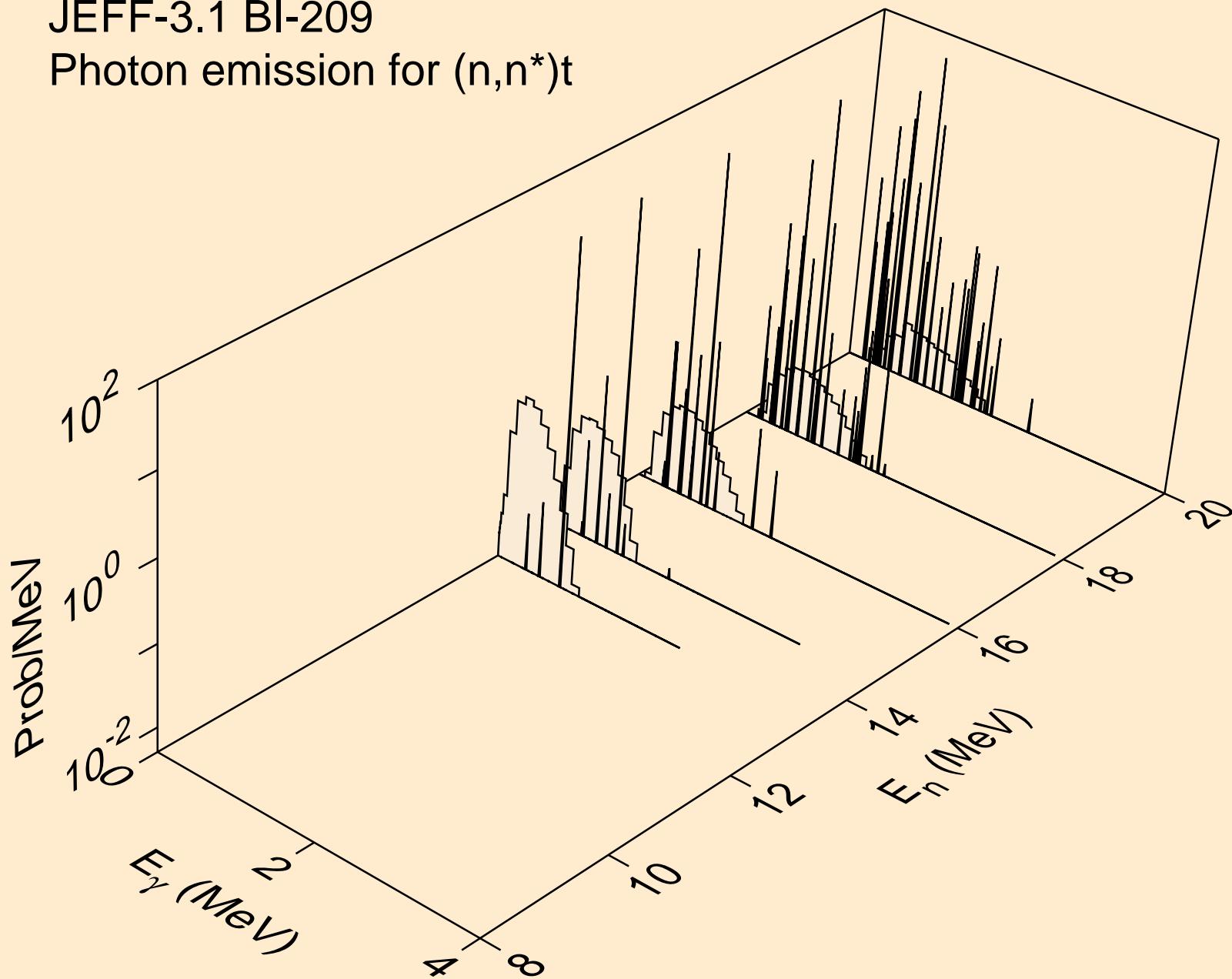
JEFF-3.1 Bi-209  
Photon emission for  $(n,n^*)p$



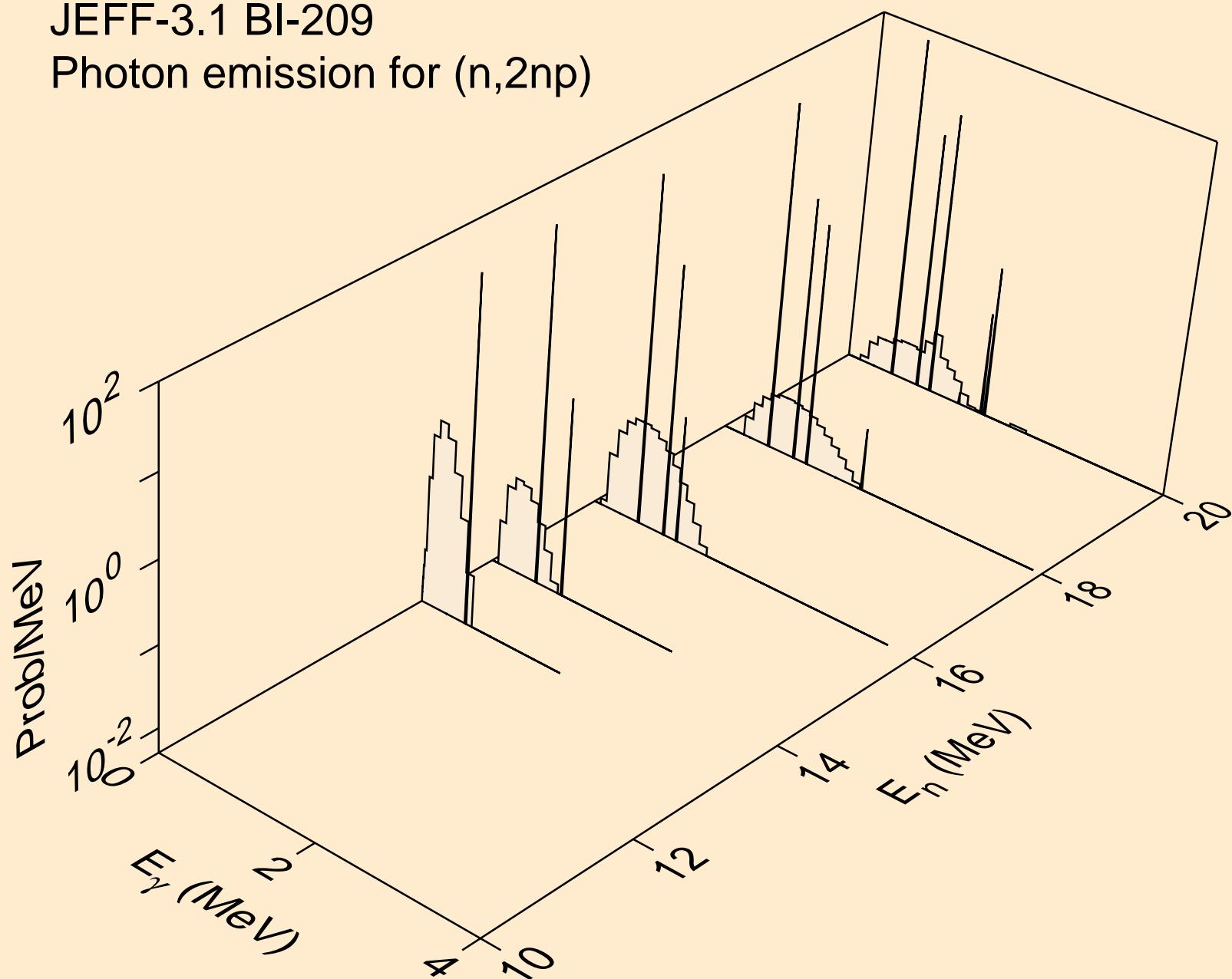
JEFF-3.1 Bi-209  
Photon emission for  $(n,n^*)d$



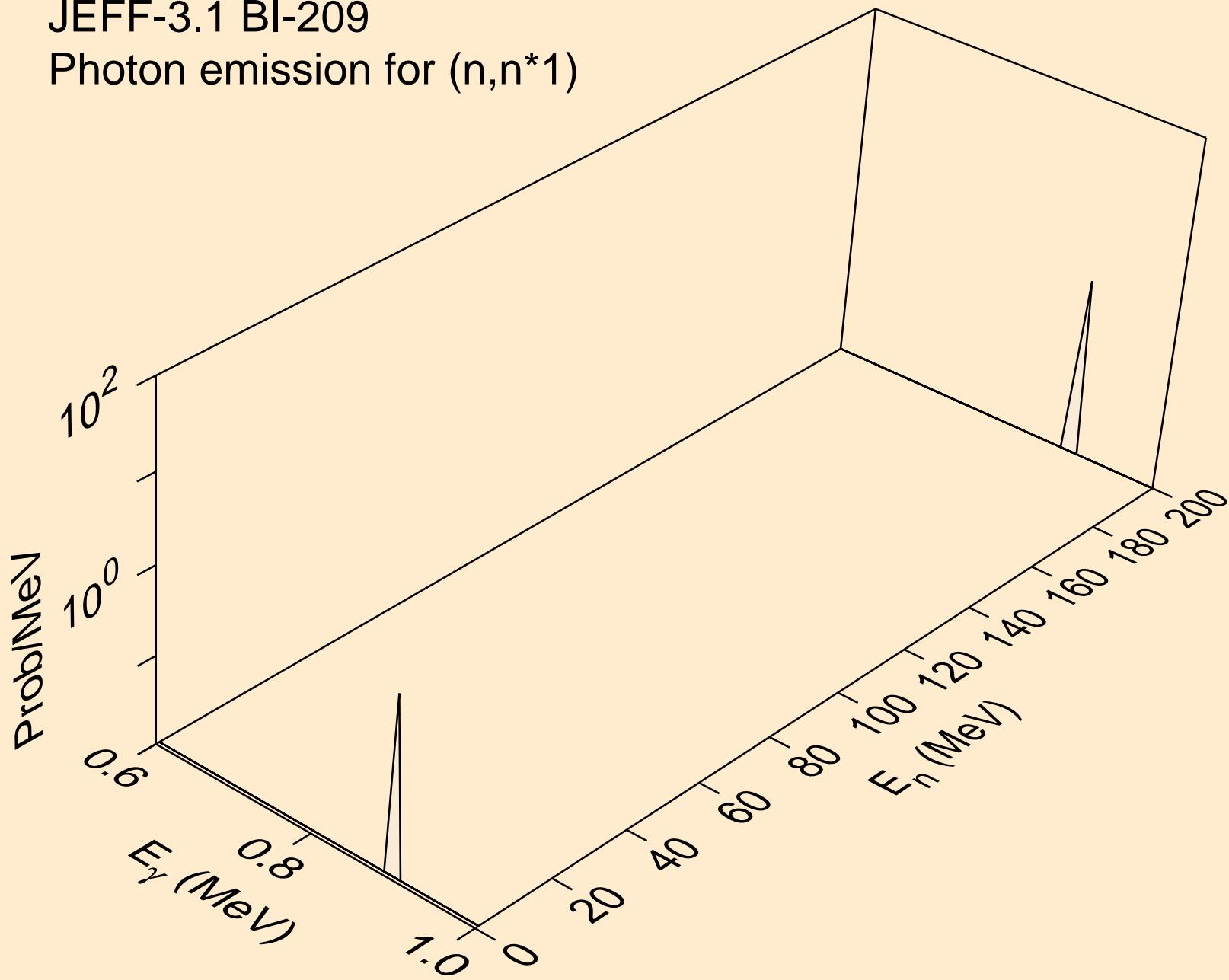
JEFF-3.1 Bi-209  
Photon emission for  $(n,n^*)t$



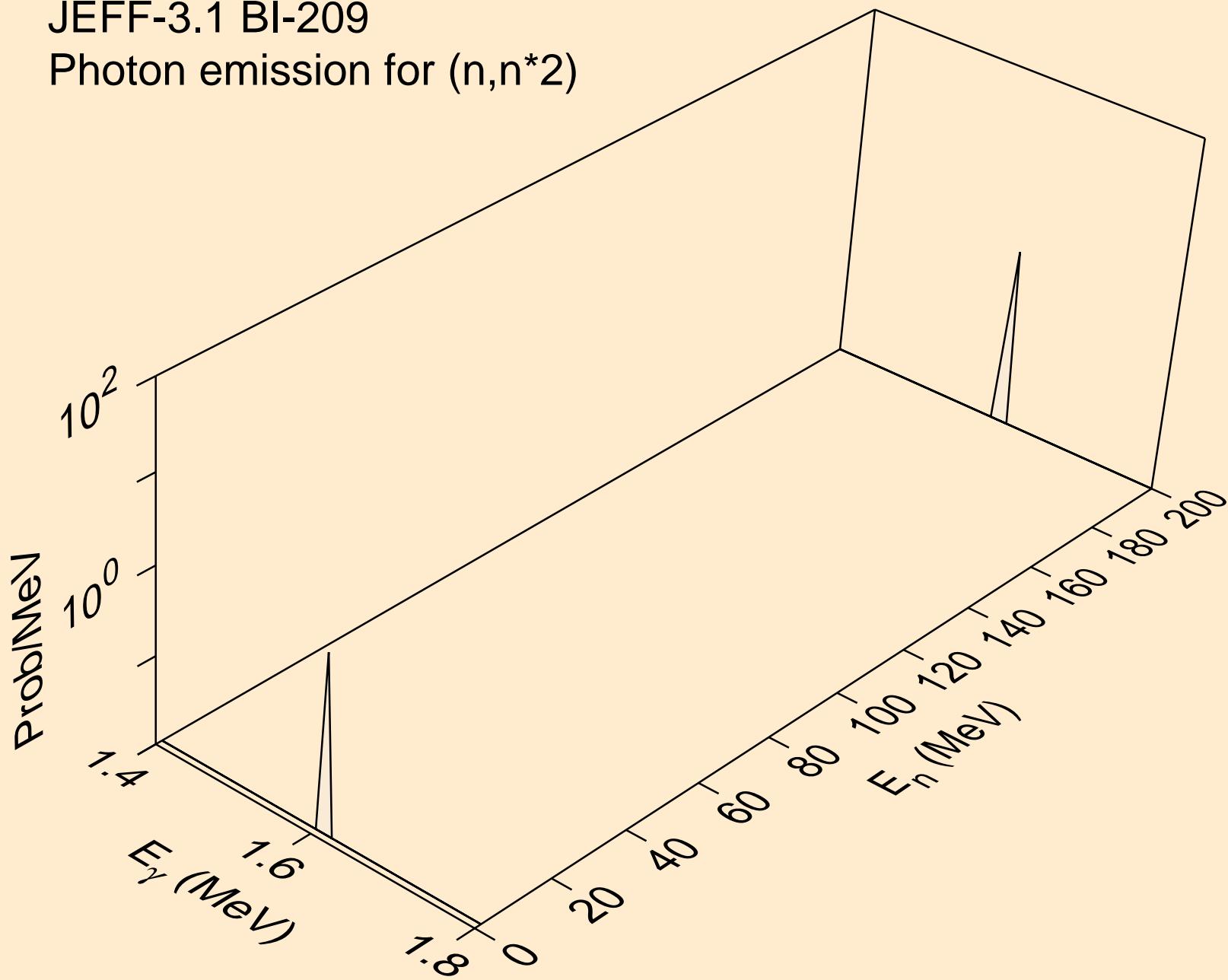
JEFF-3.1 Bi-209  
Photon emission for (n,2np)



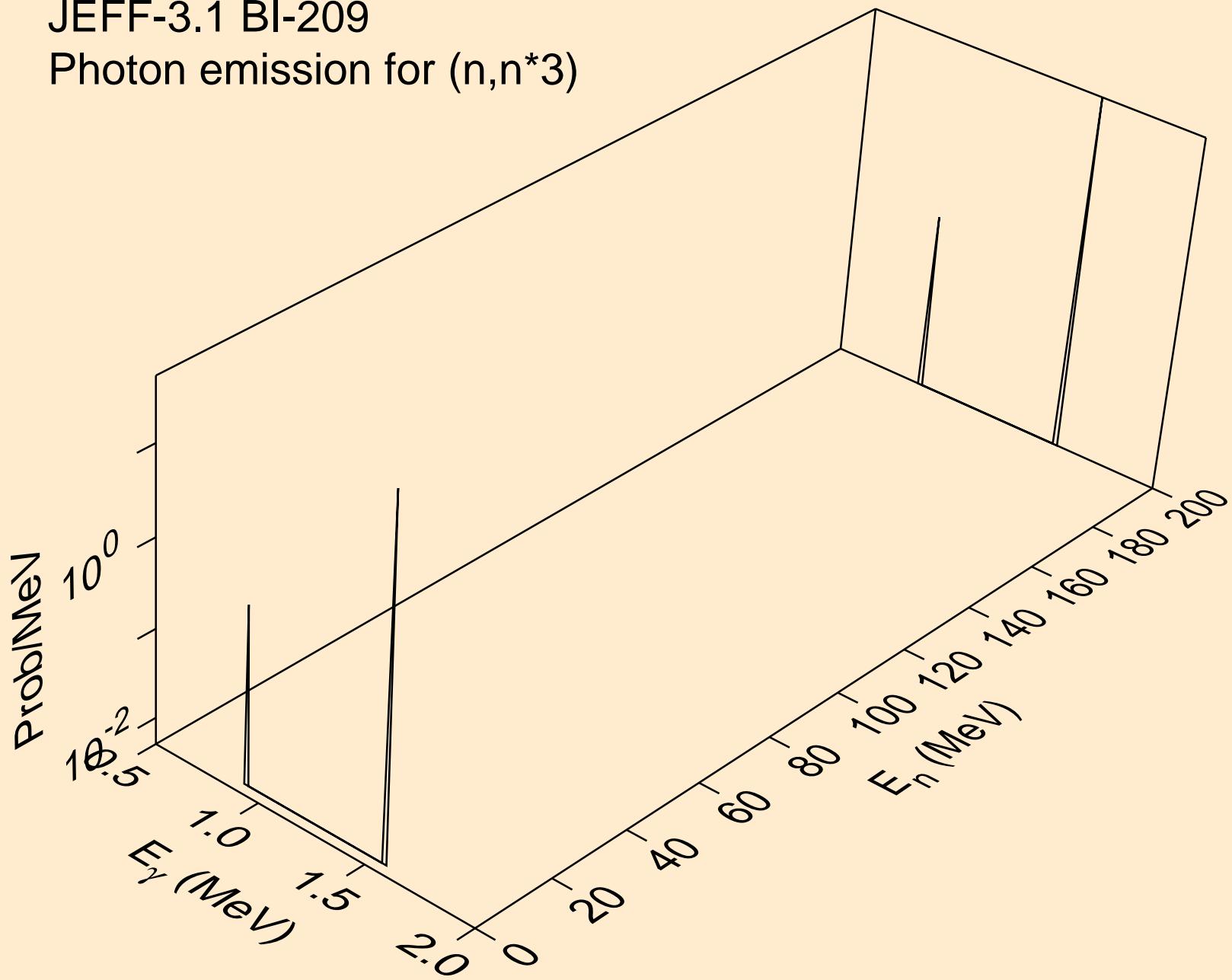
JEFF-3.1 Bi-209  
Photon emission for (n,n\*1)



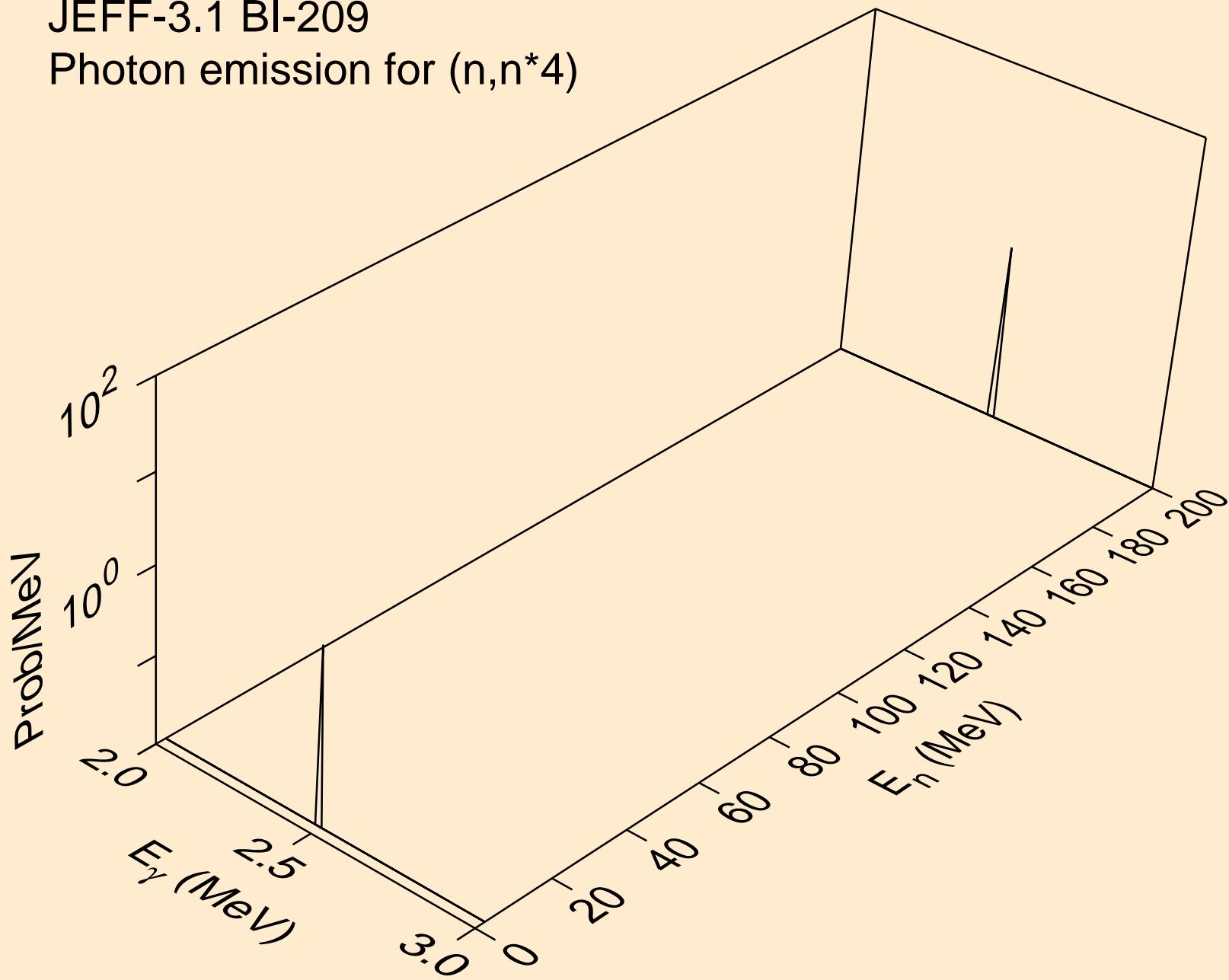
JEFF-3.1 Bi-209  
Photon emission for (n,n\*2)



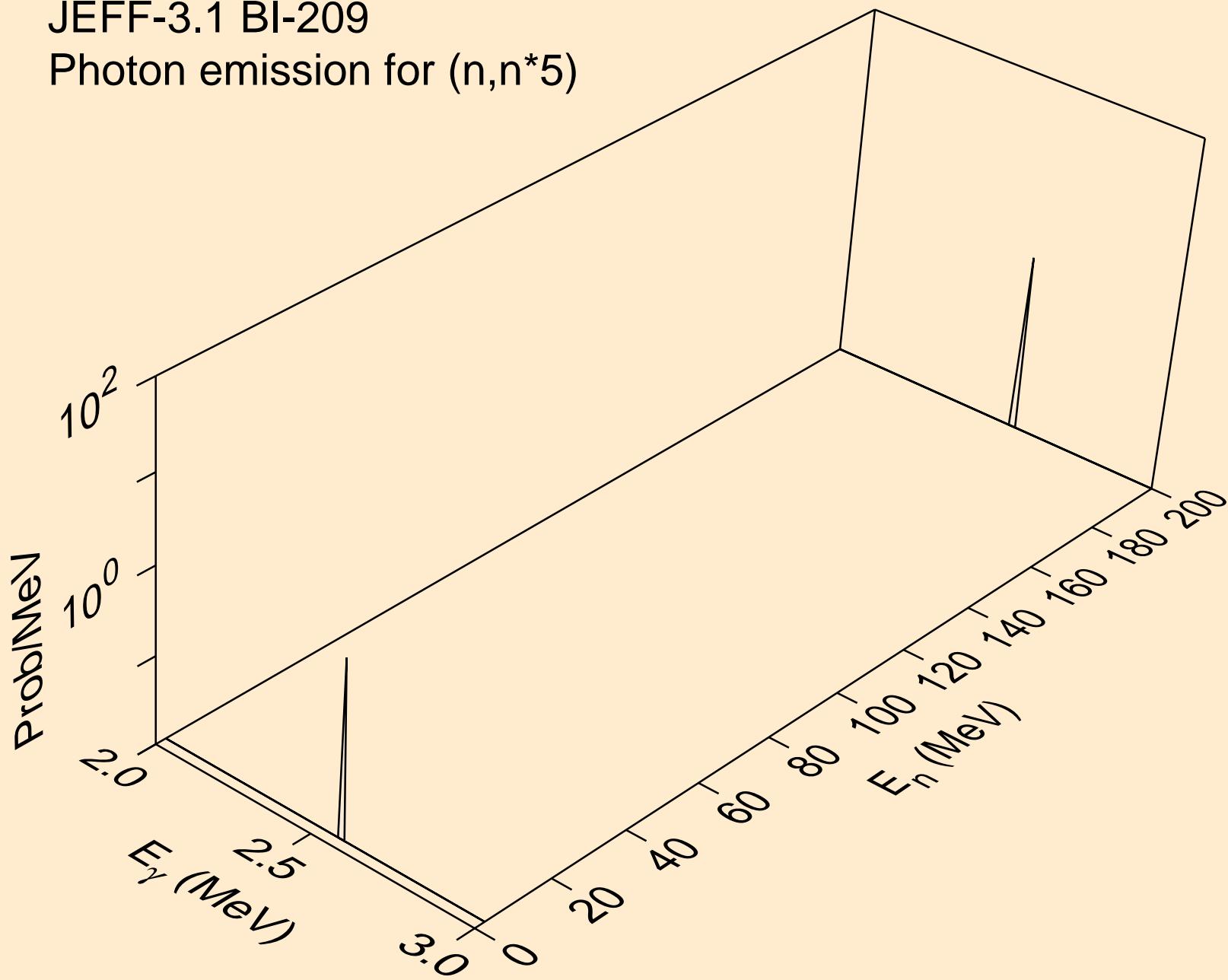
JEFF-3.1 Bi-209  
Photon emission for (n,n\*3)



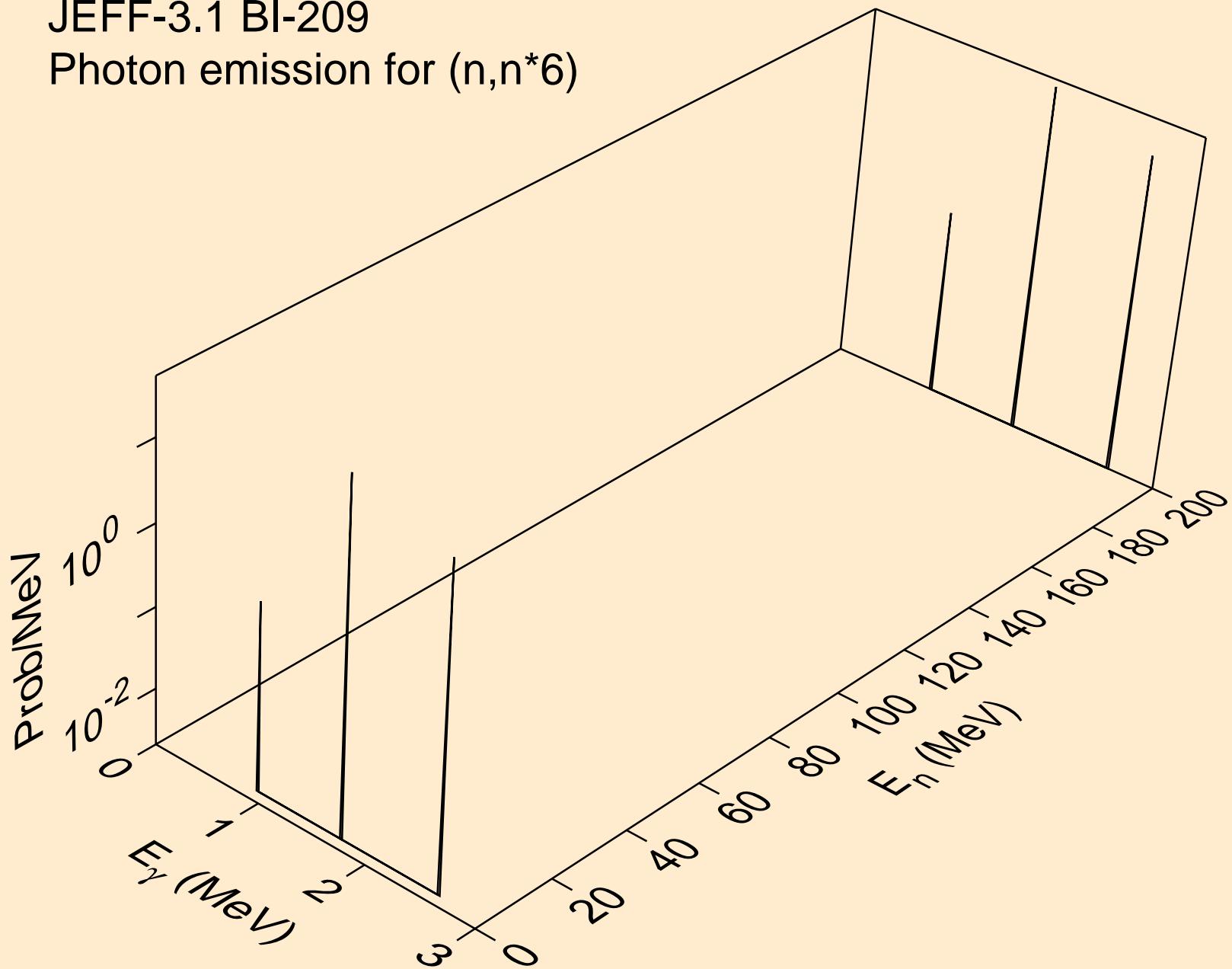
JEFF-3.1 Bi-209  
Photon emission for (n,n\*4)



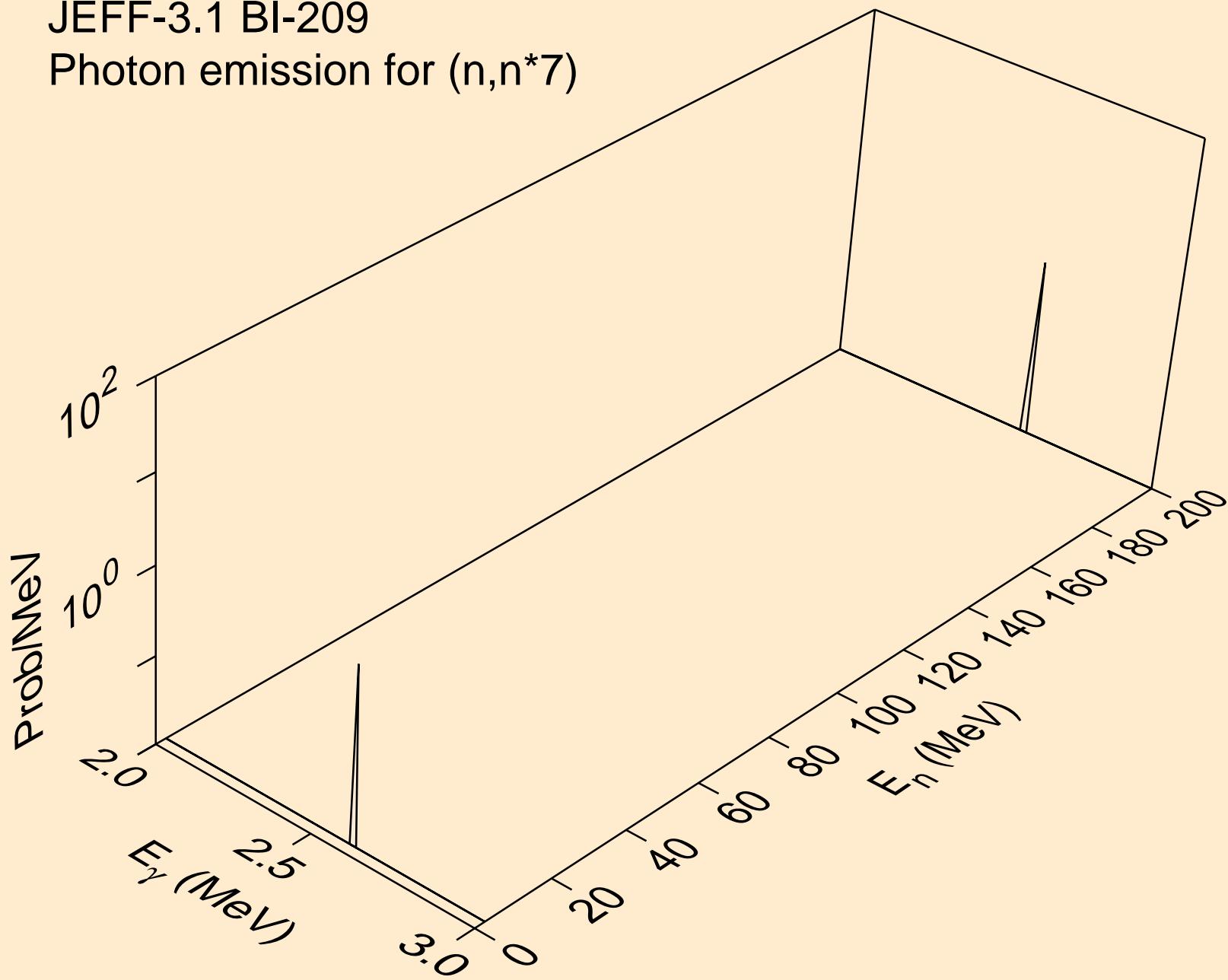
JEFF-3.1 Bi-209  
Photon emission for (n,n\*5)



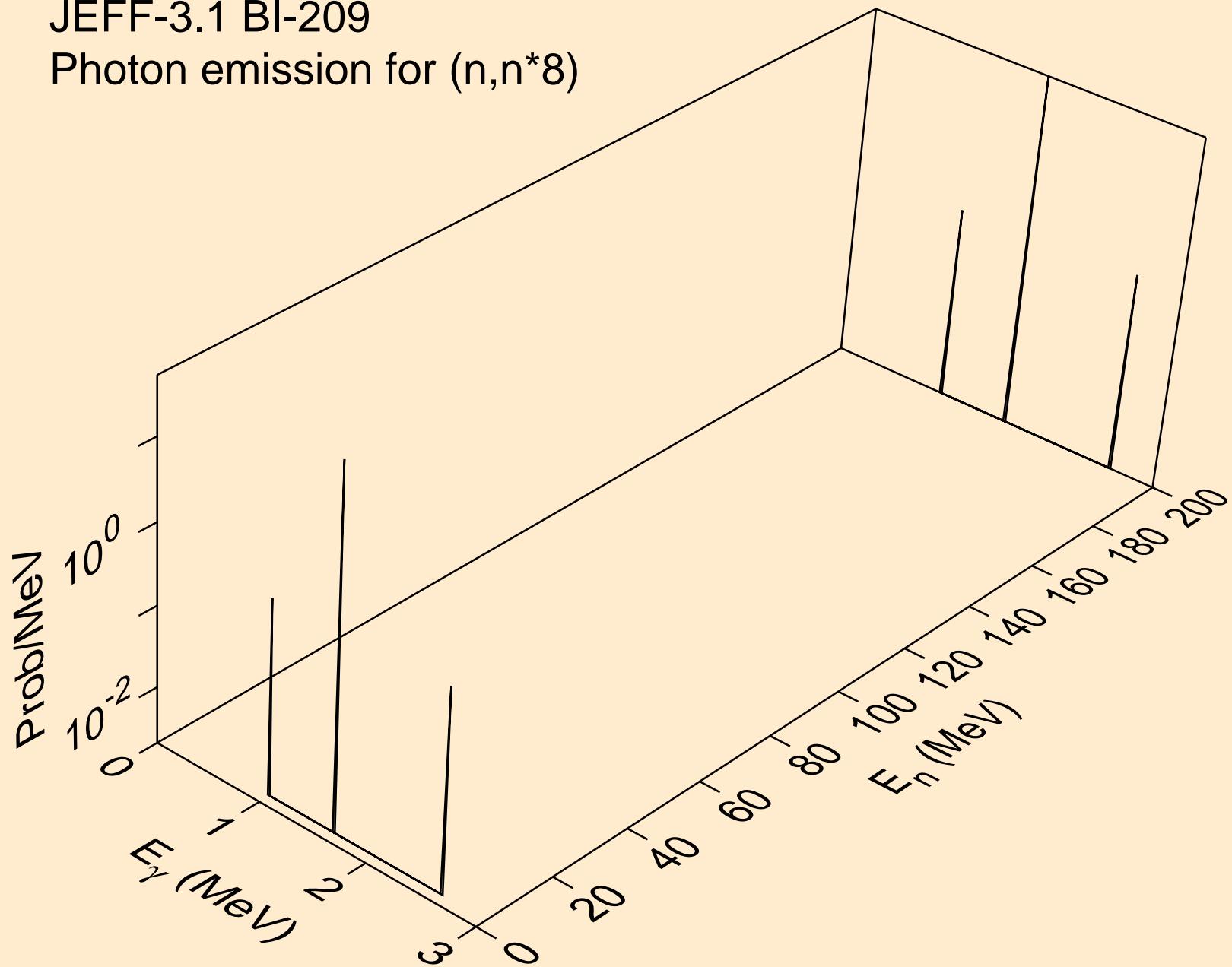
JEFF-3.1 Bi-209  
Photon emission for (n,n\*6)



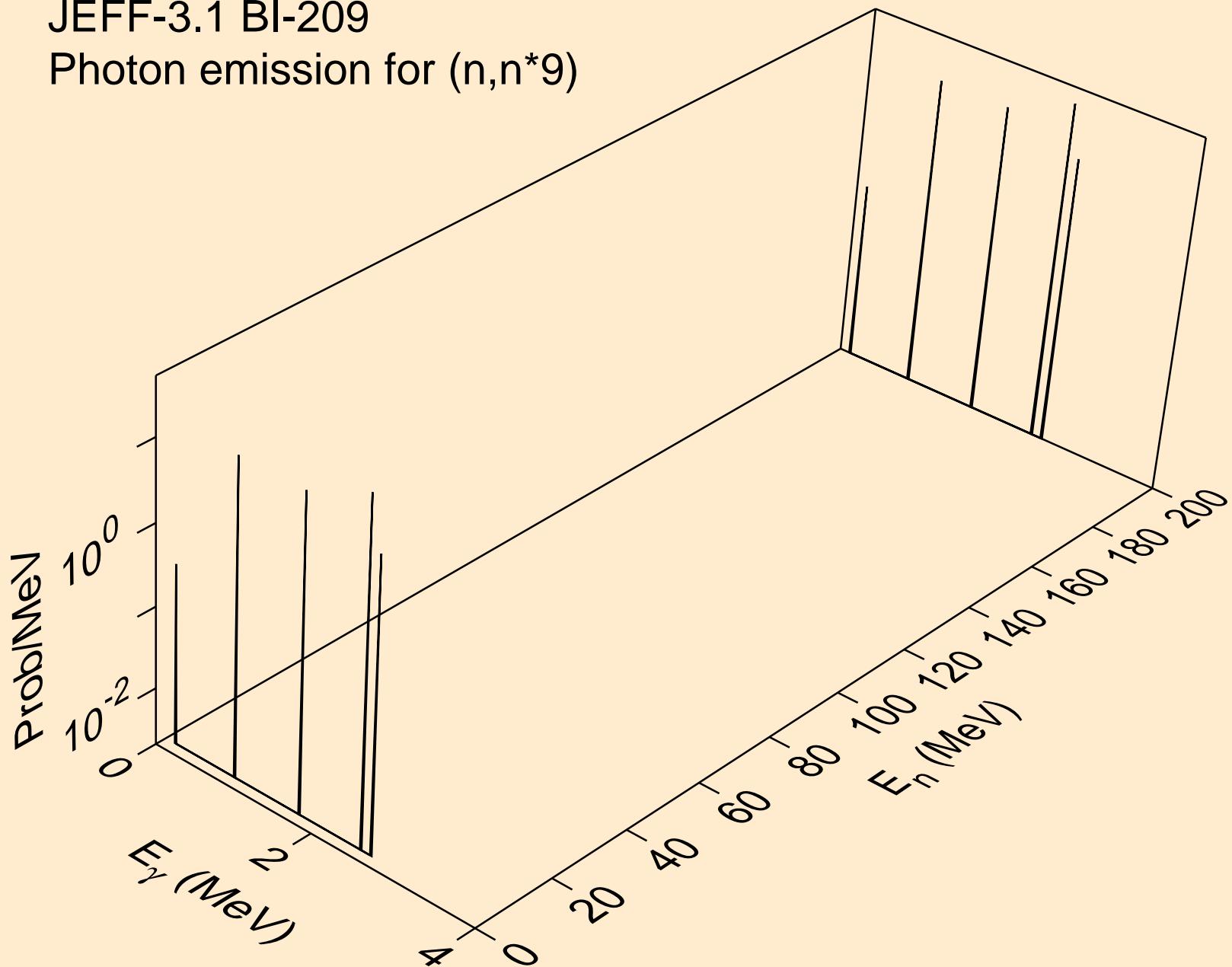
JEFF-3.1 Bi-209  
Photon emission for (n,n\*7)



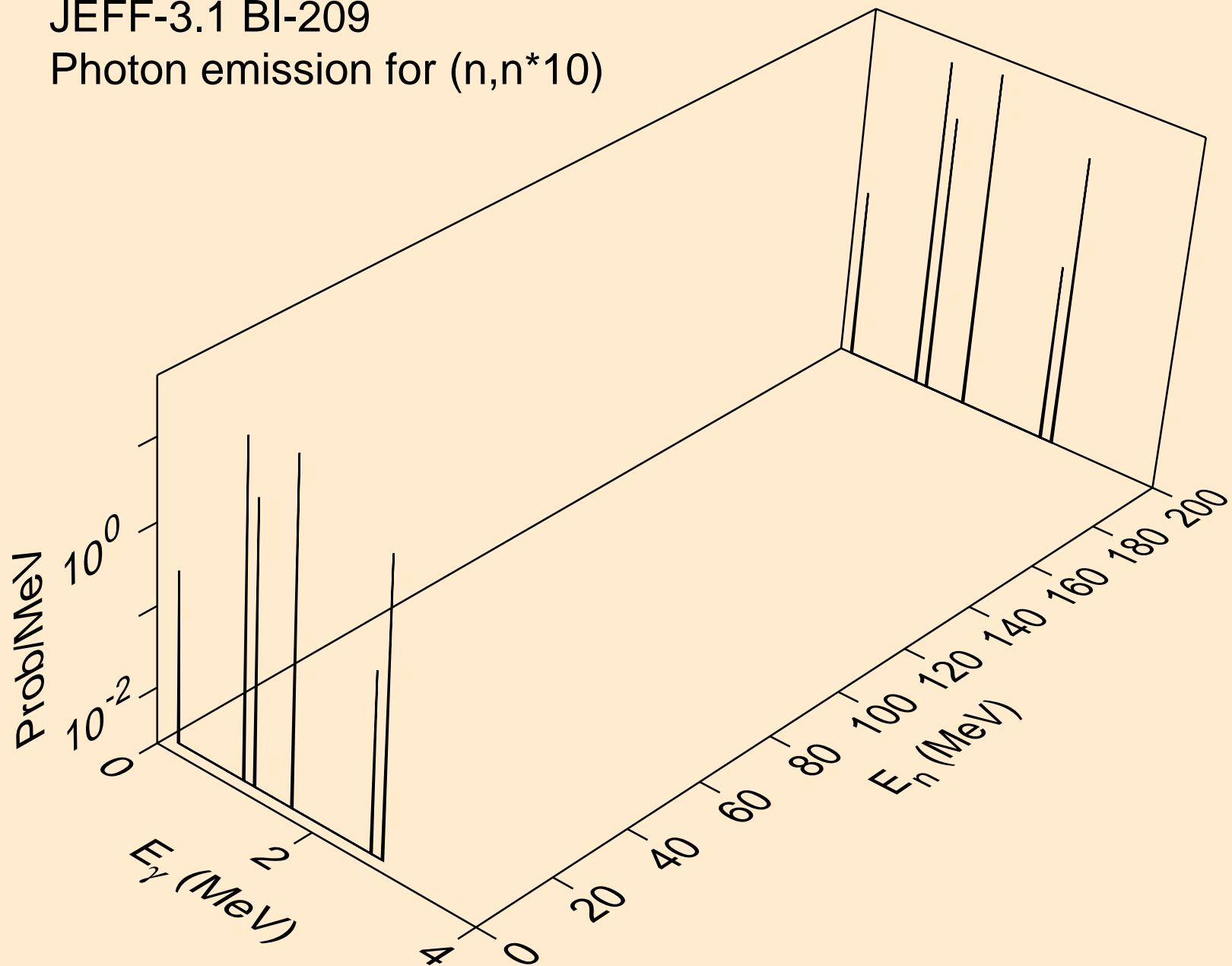
JEFF-3.1 Bi-209  
Photon emission for (n,n\*8)



JEFF-3.1 Bi-209  
Photon emission for (n,n\*9)

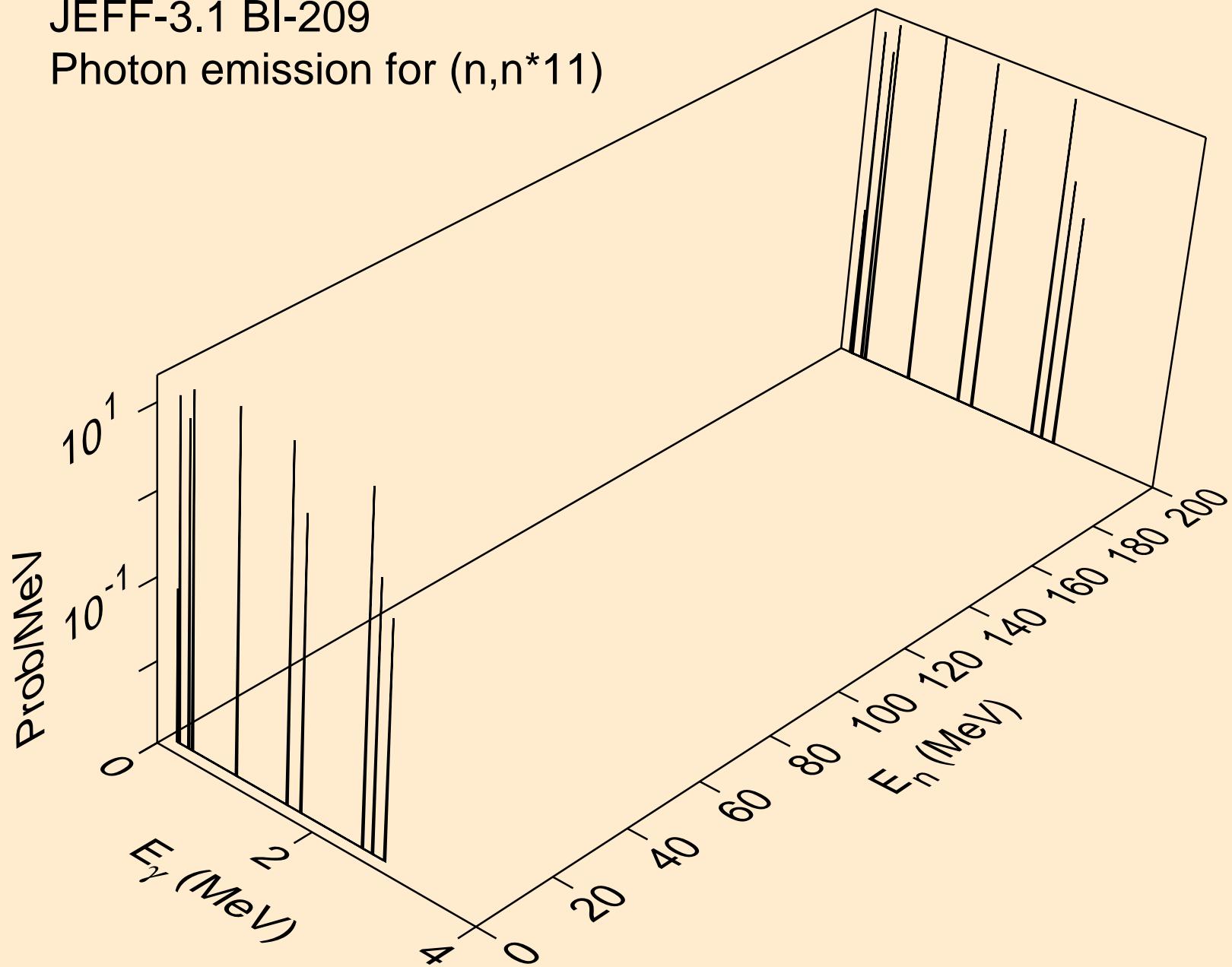


JEFF-3.1 Bi-209  
Photon emission for (n,n\*10)



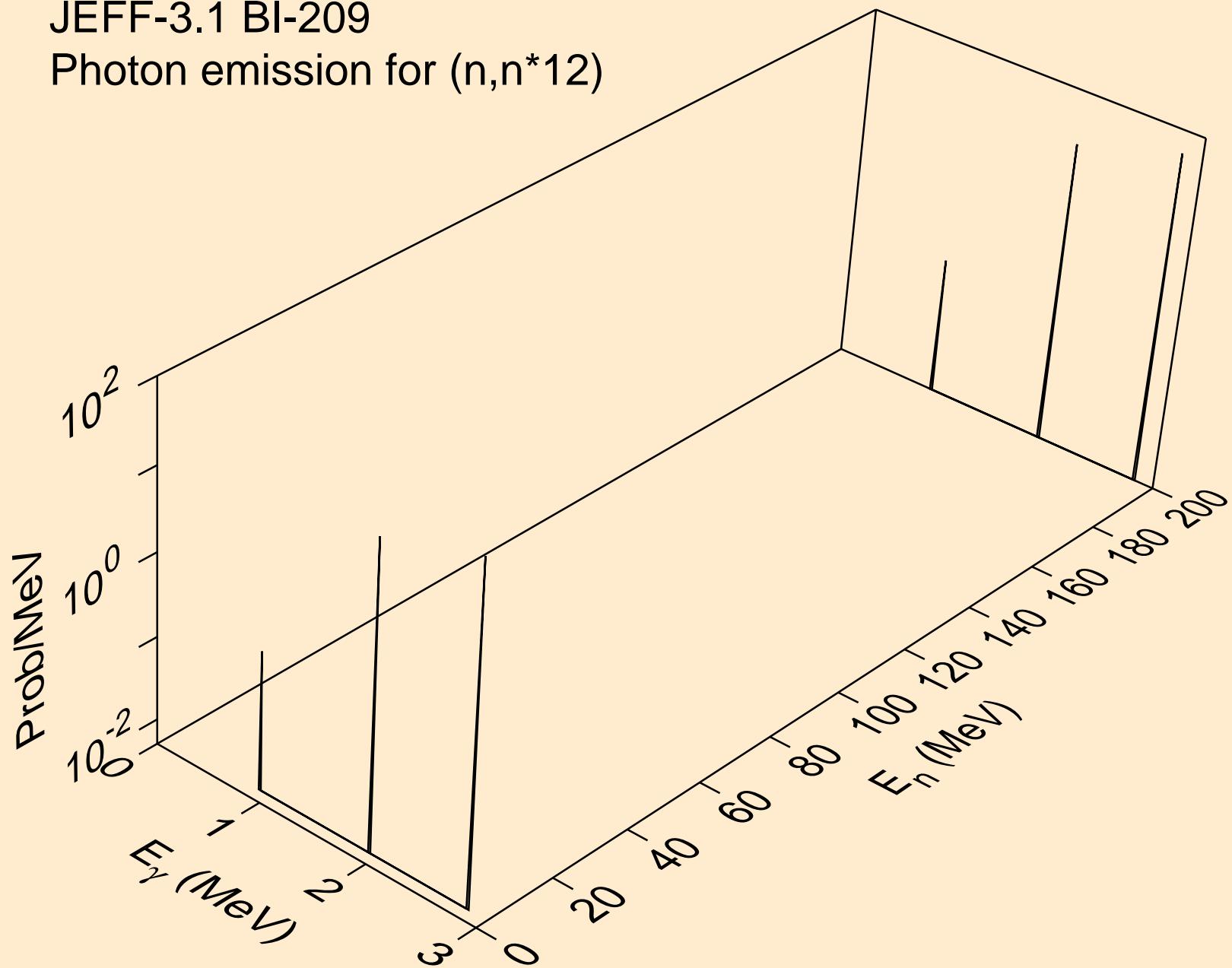
JEFF-3.1 Bi-209

Photon emission for (n,n\*11)



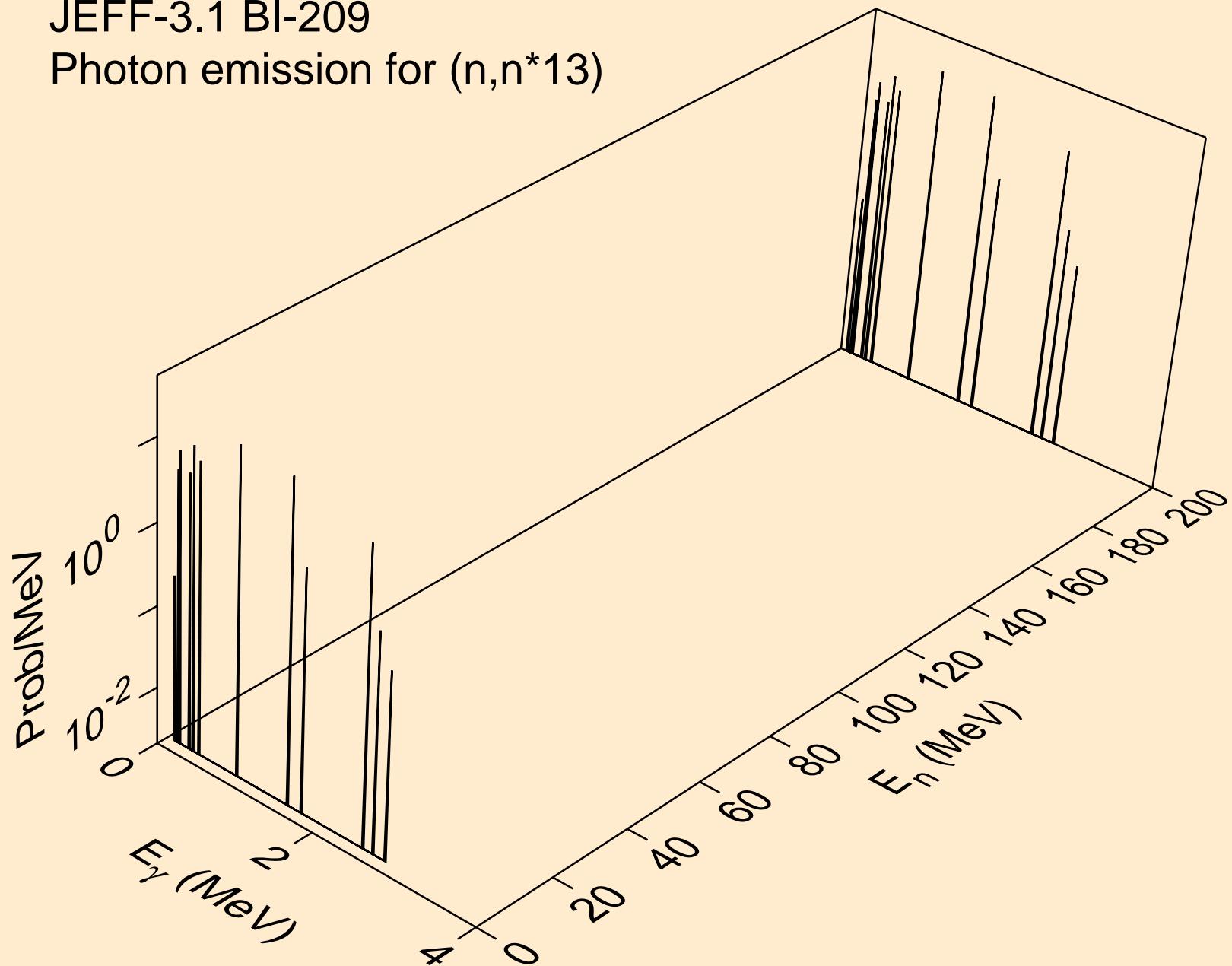
JEFF-3.1 Bi-209

Photon emission for (n,n\*12)



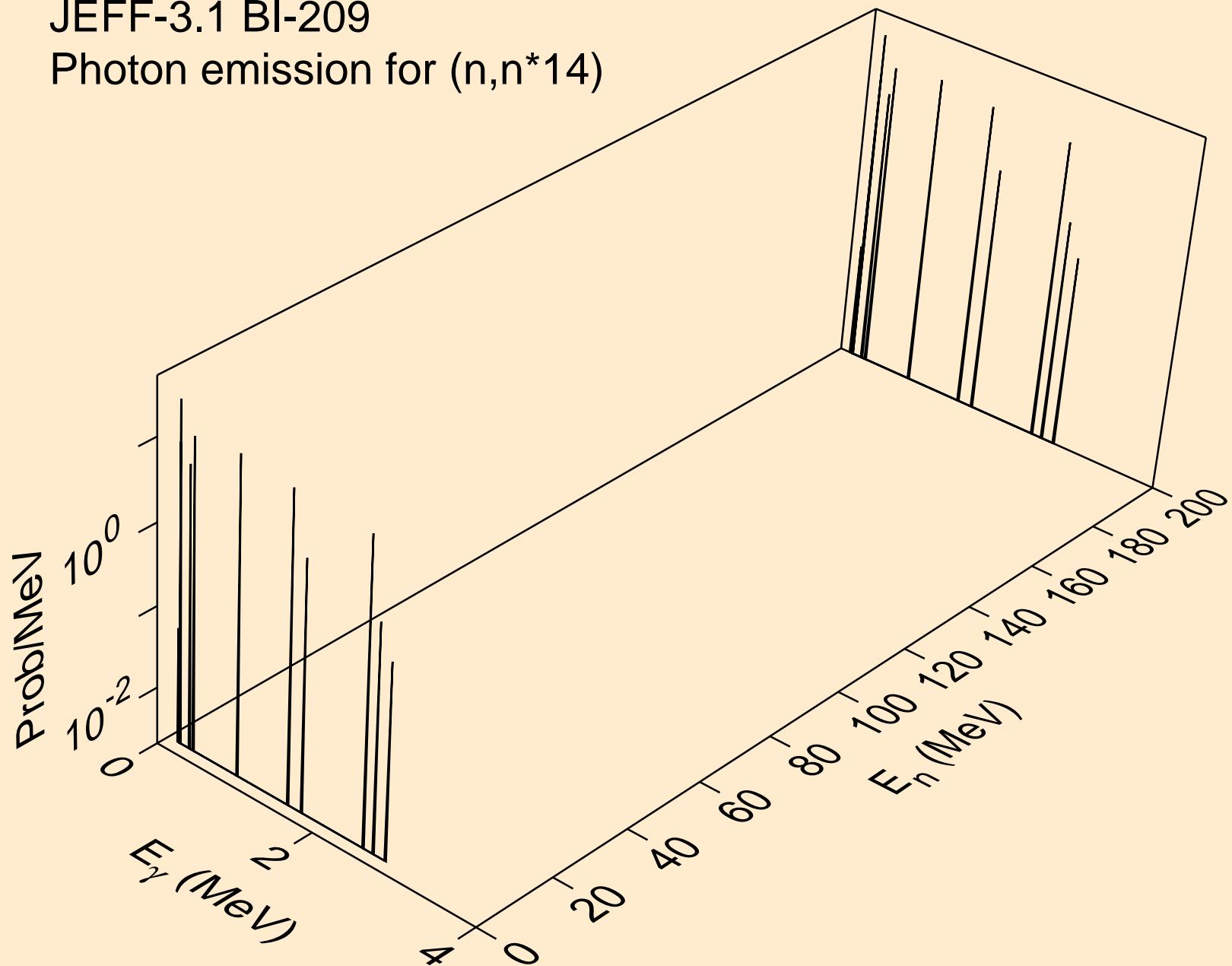
JEFF-3.1 Bi-209

Photon emission for (n,n\*13)



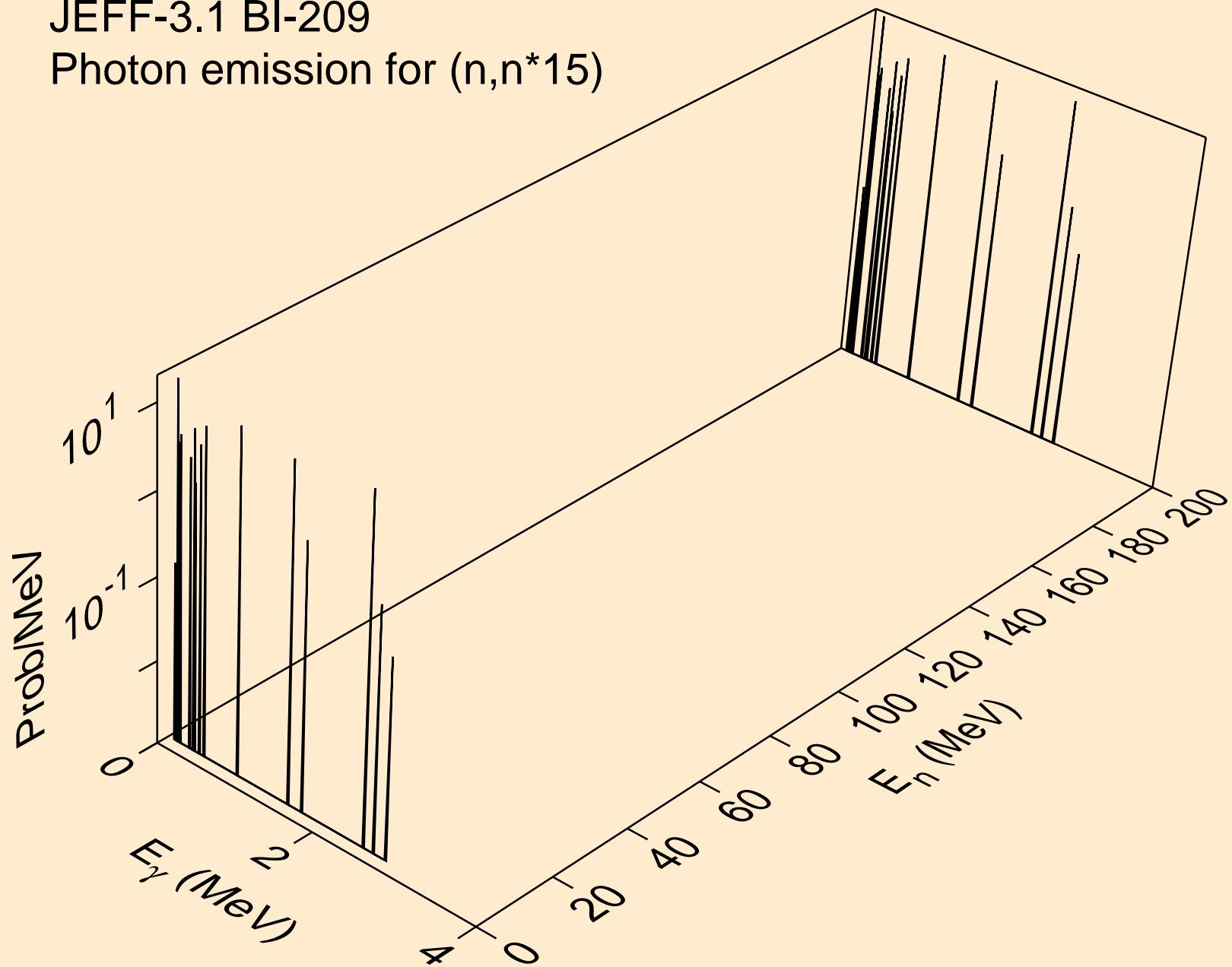
JEFF-3.1 Bi-209

Photon emission for (n,n\*14)

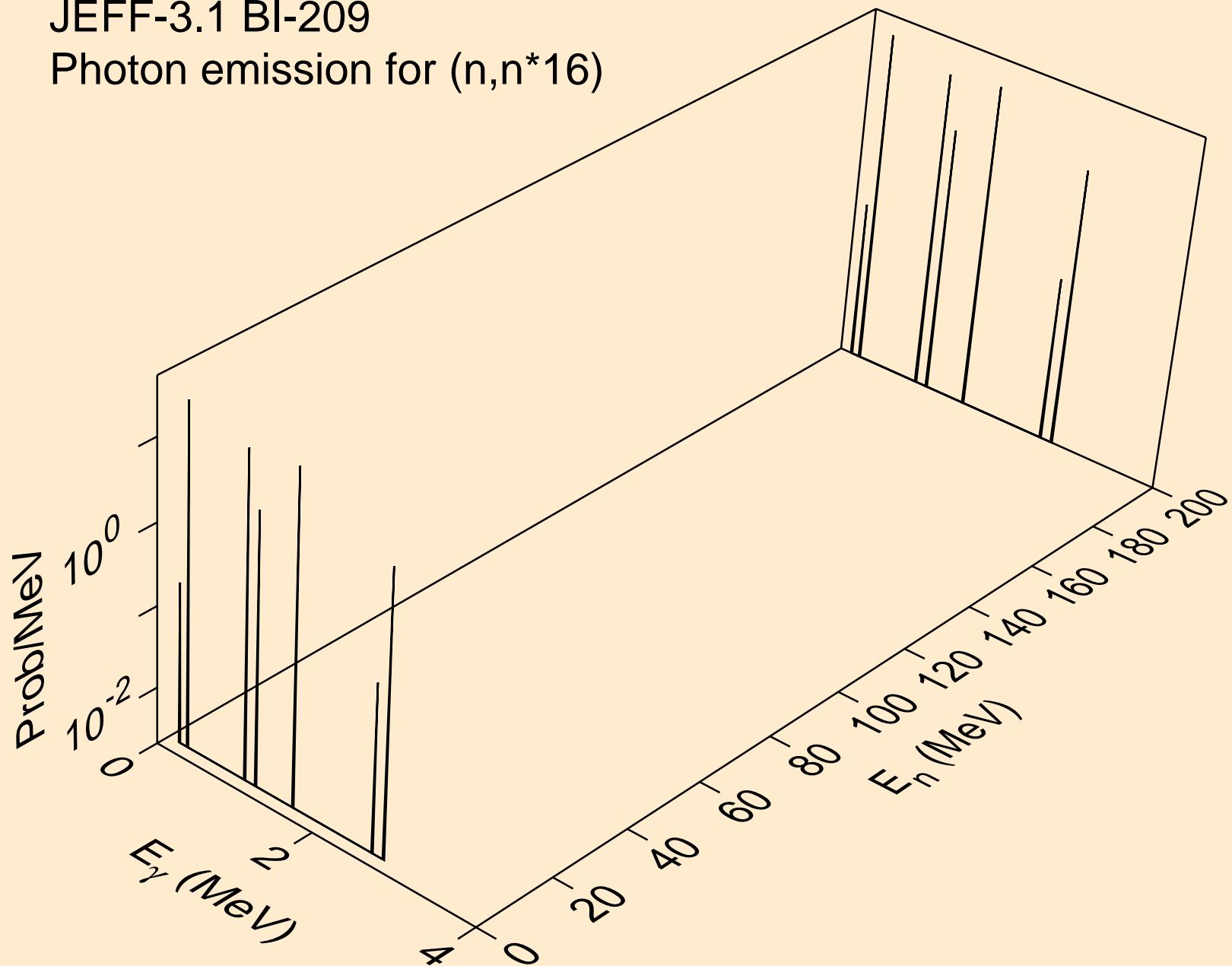


JEFF-3.1 Bi-209

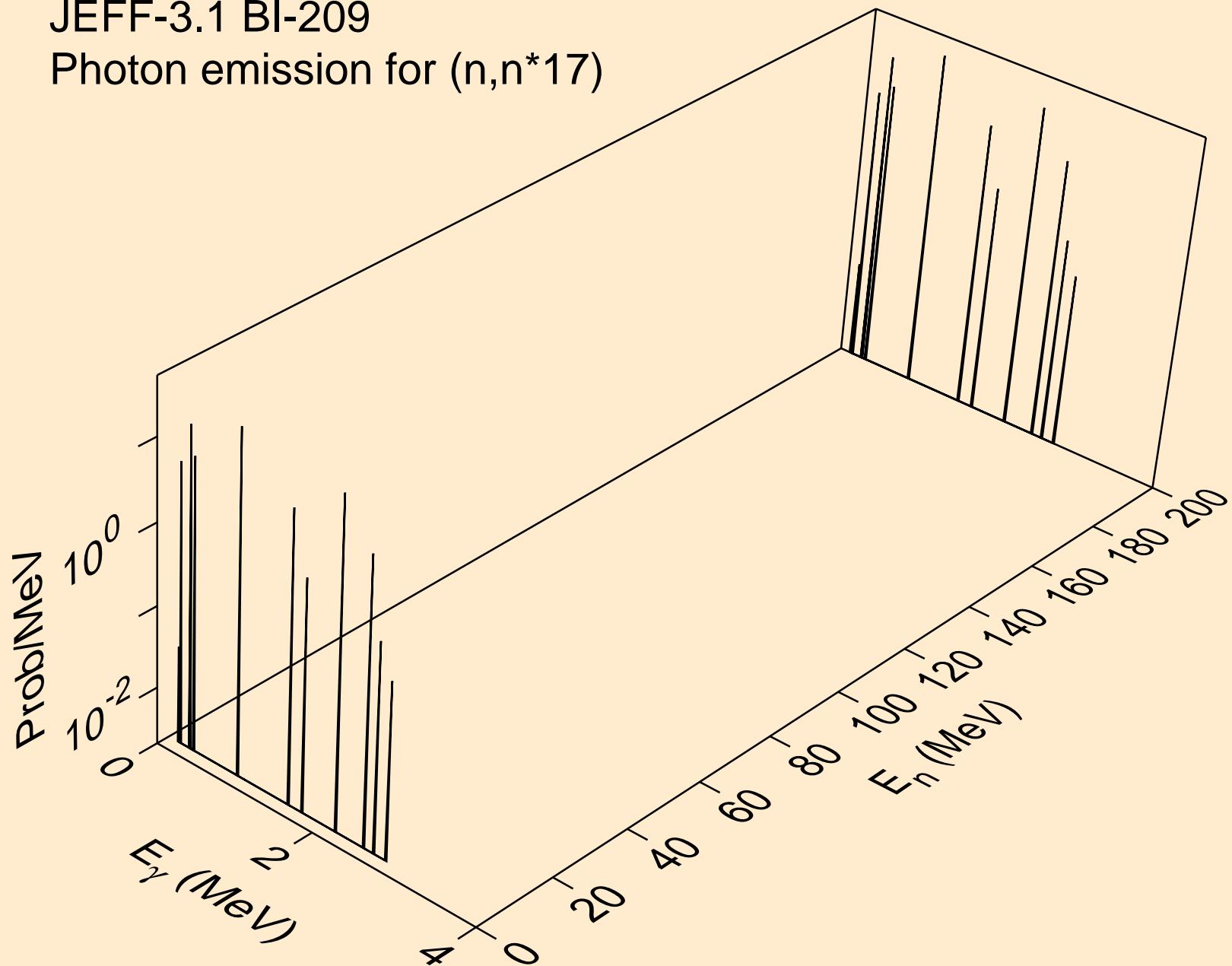
Photon emission for ( $n, n^* 15$ )



JEFF-3.1 Bi-209  
Photon emission for (n,n\*16)

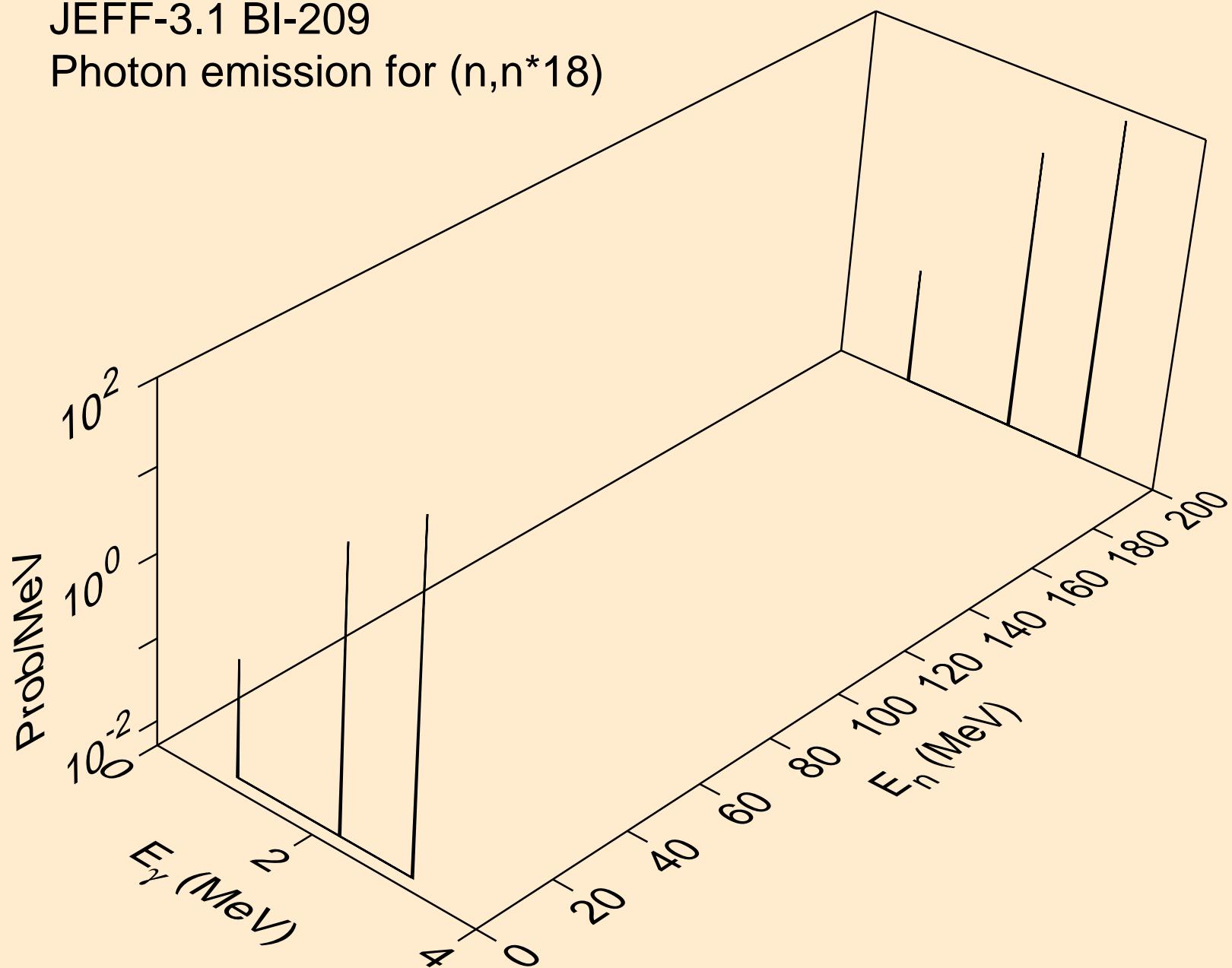


JEFF-3.1 Bi-209  
Photon emission for (n,n\*17)



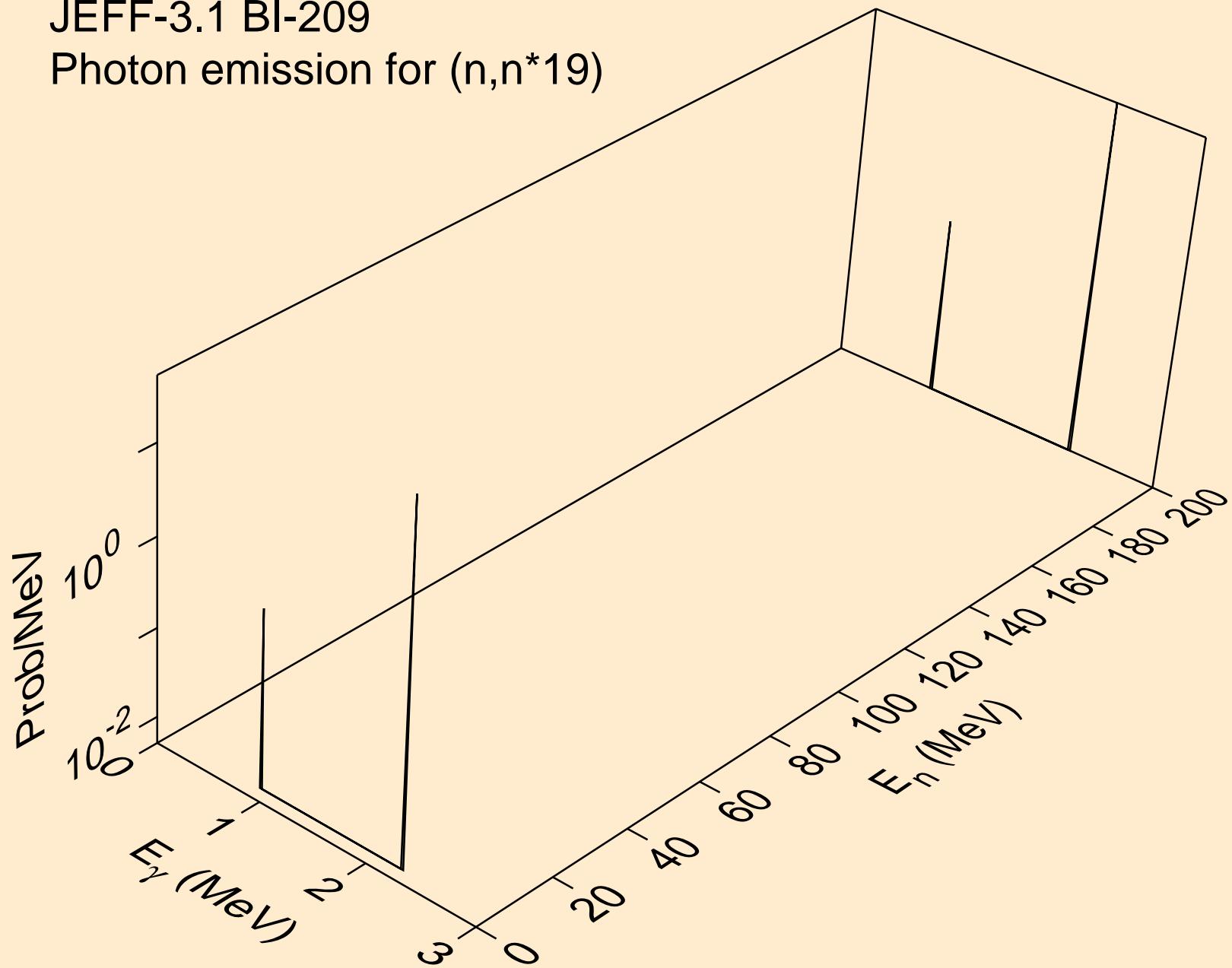
JEFF-3.1 Bi-209

Photon emission for  $(n,n^*18)$

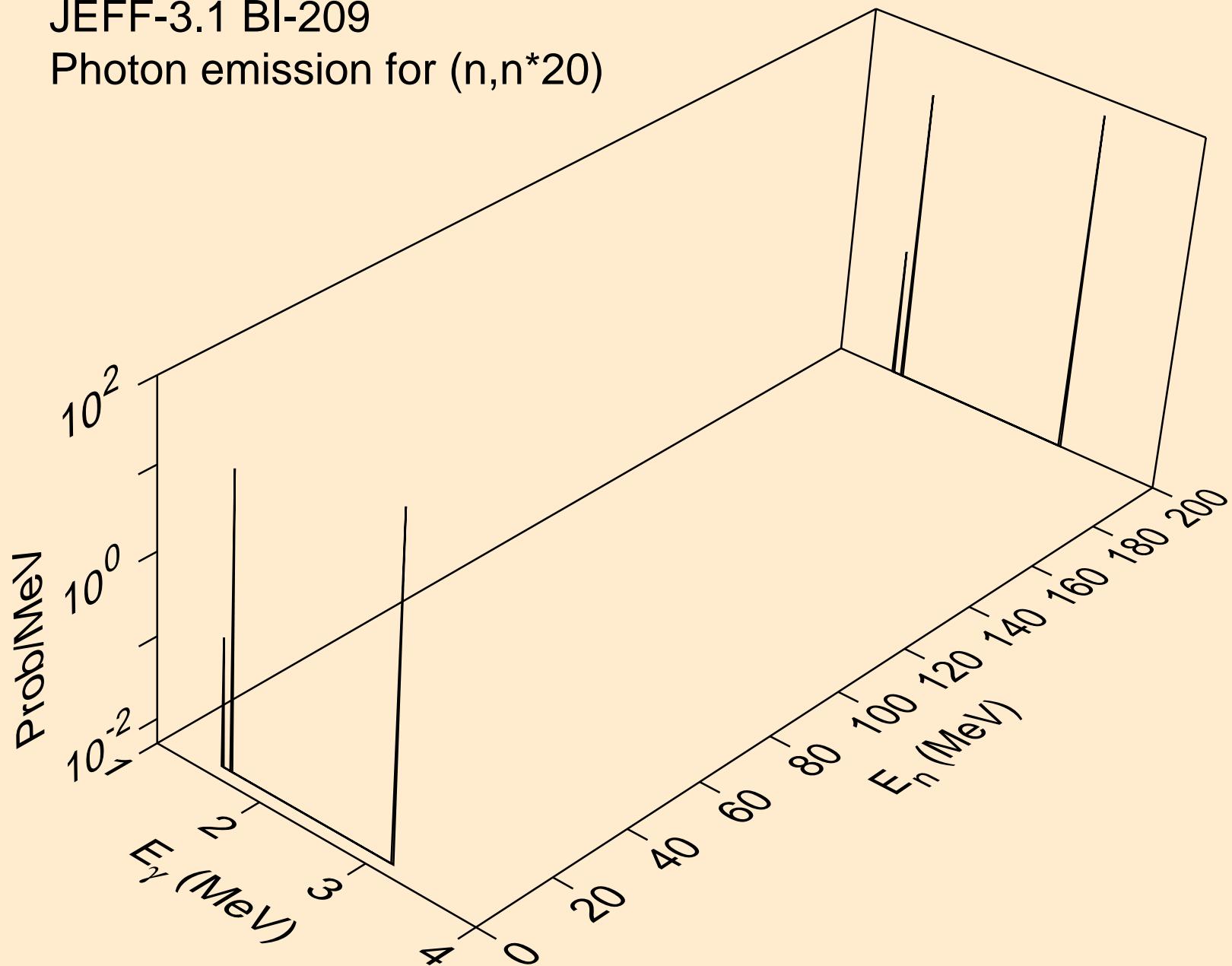


JEFF-3.1 Bi-209

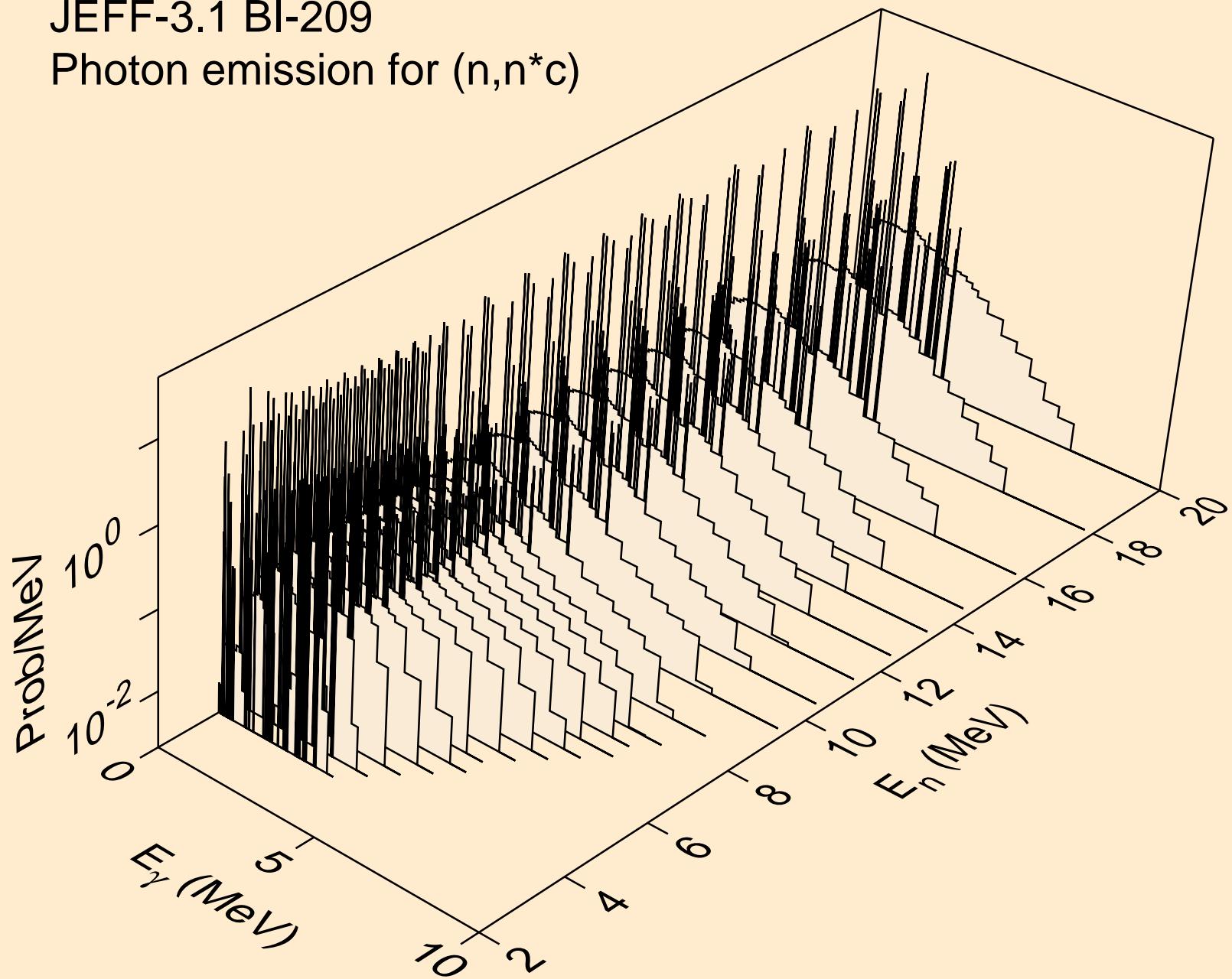
Photon emission for (n,n\*19)



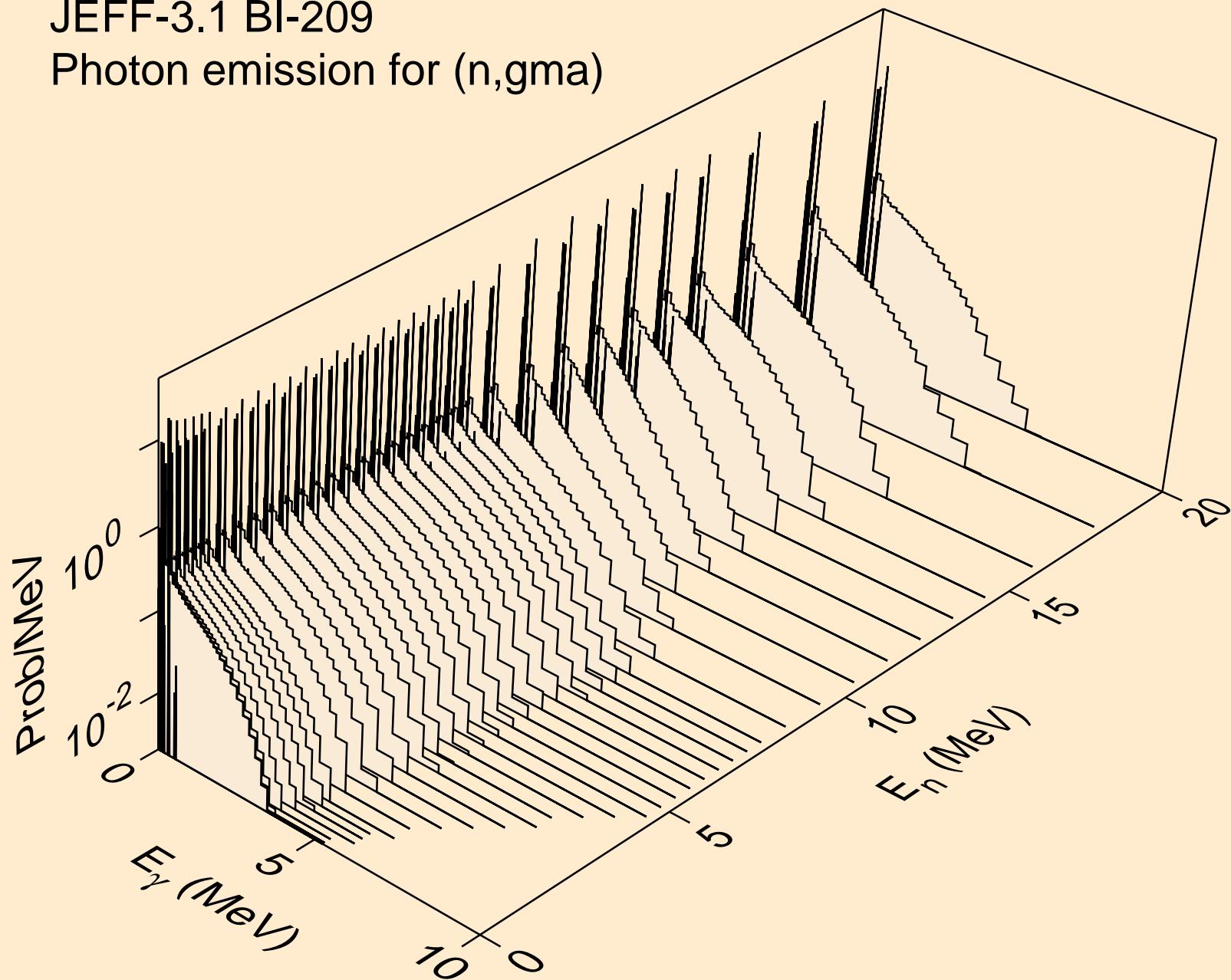
JEFF-3.1 Bi-209  
Photon emission for (n,n\*20)



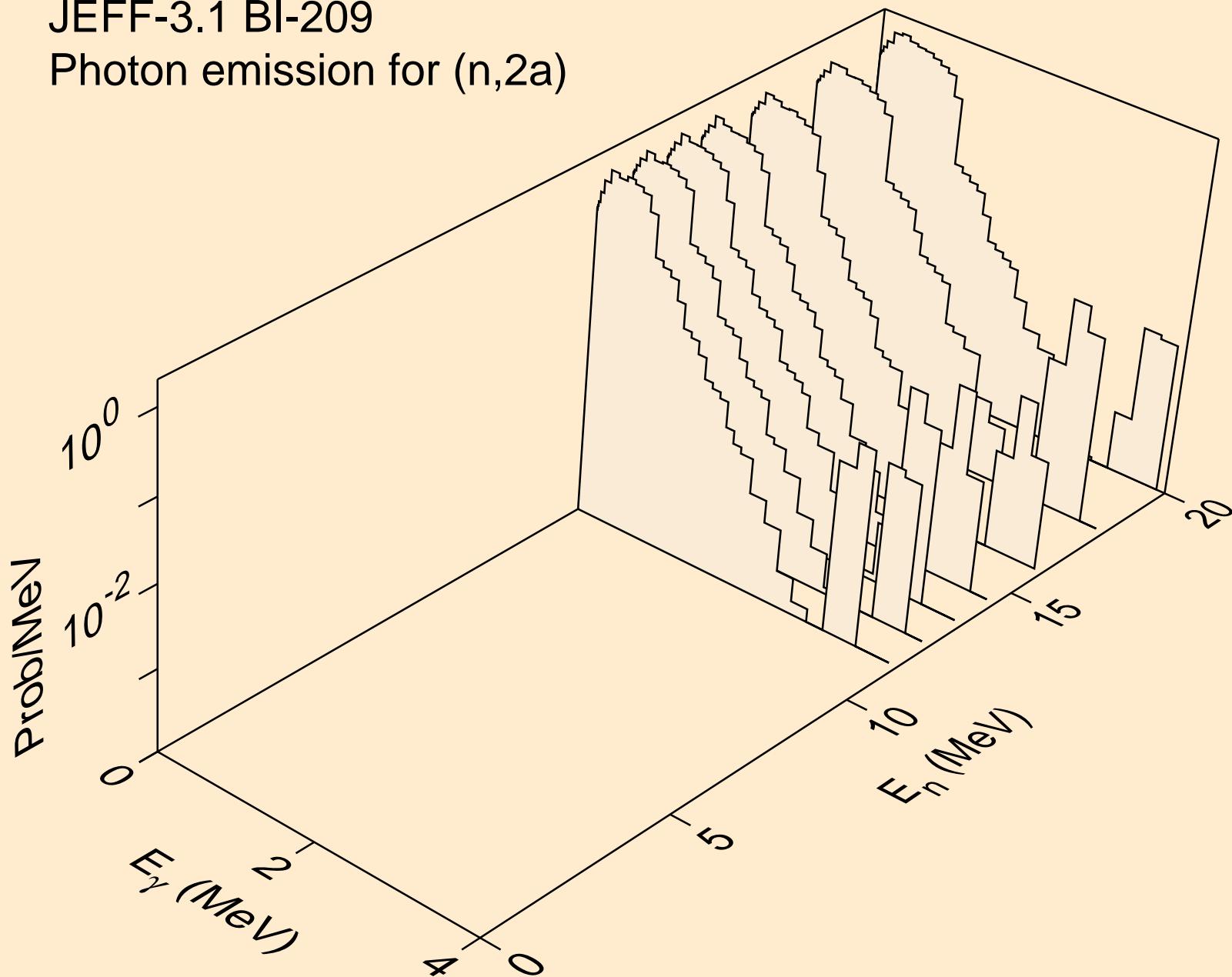
JEFF-3.1 Bi-209  
Photon emission for ( $n, n^* c$ )



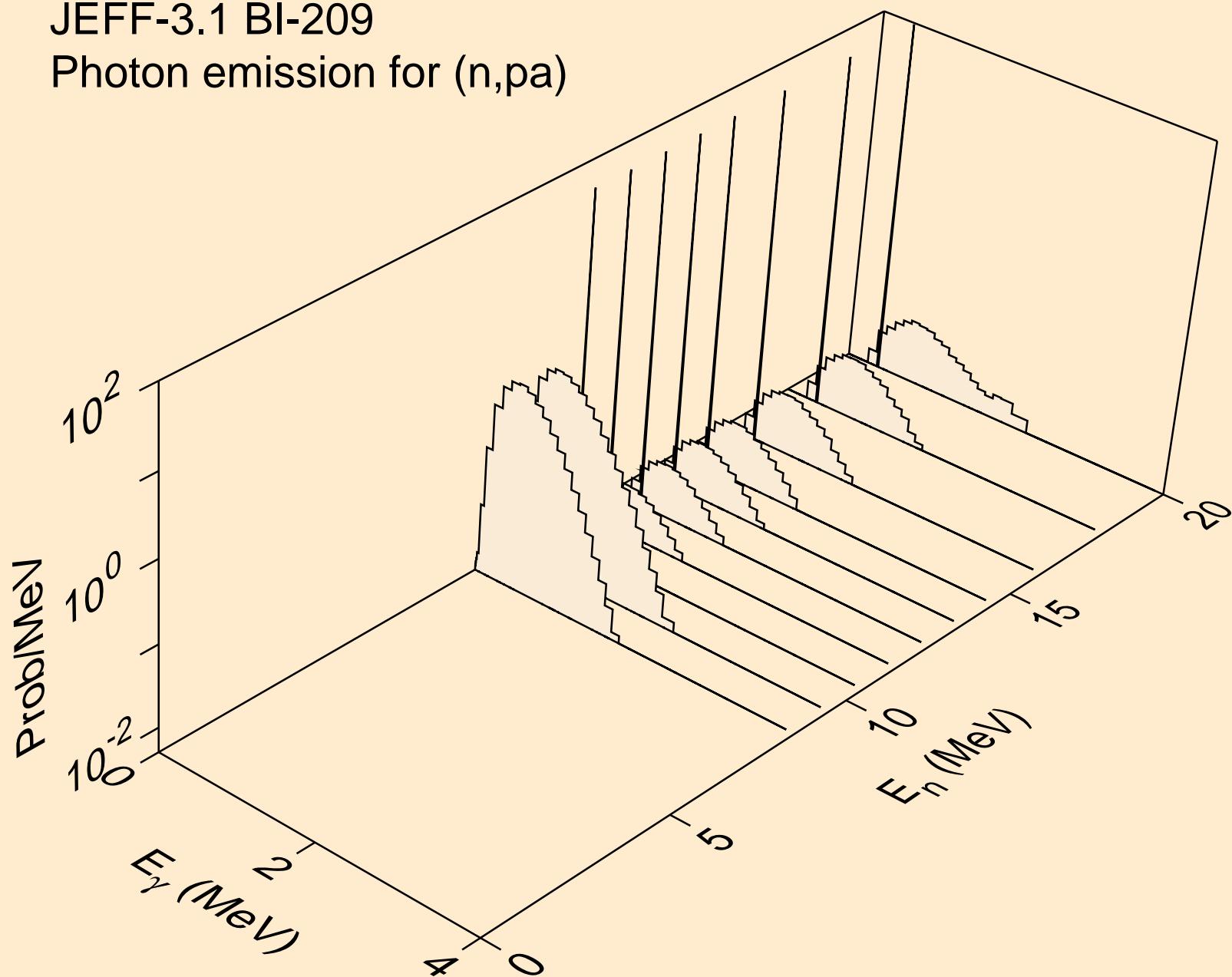
JEFF-3.1 Bi-209  
Photon emission for (n,gma)



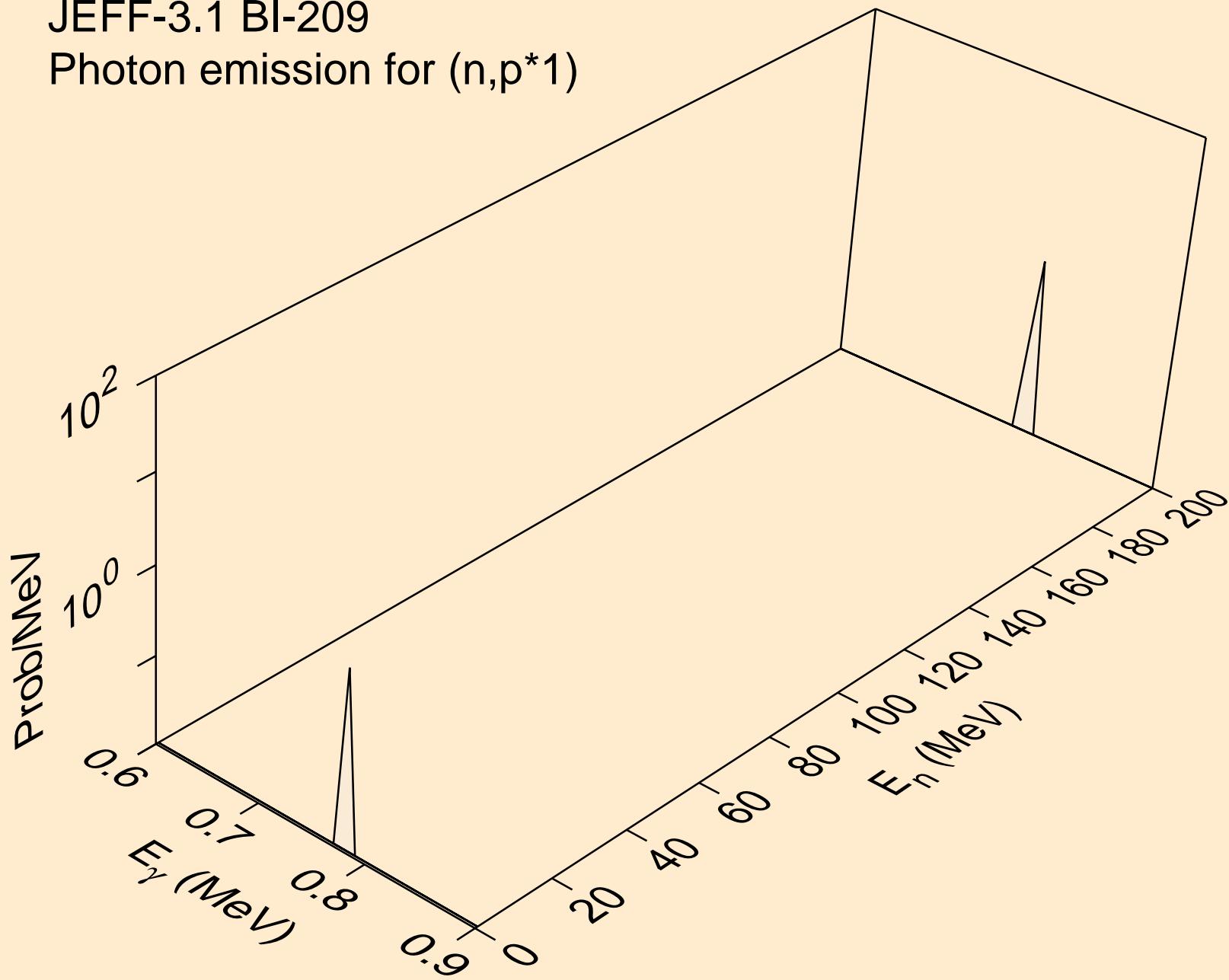
JEFF-3.1 Bi-209  
Photon emission for (n,2a)



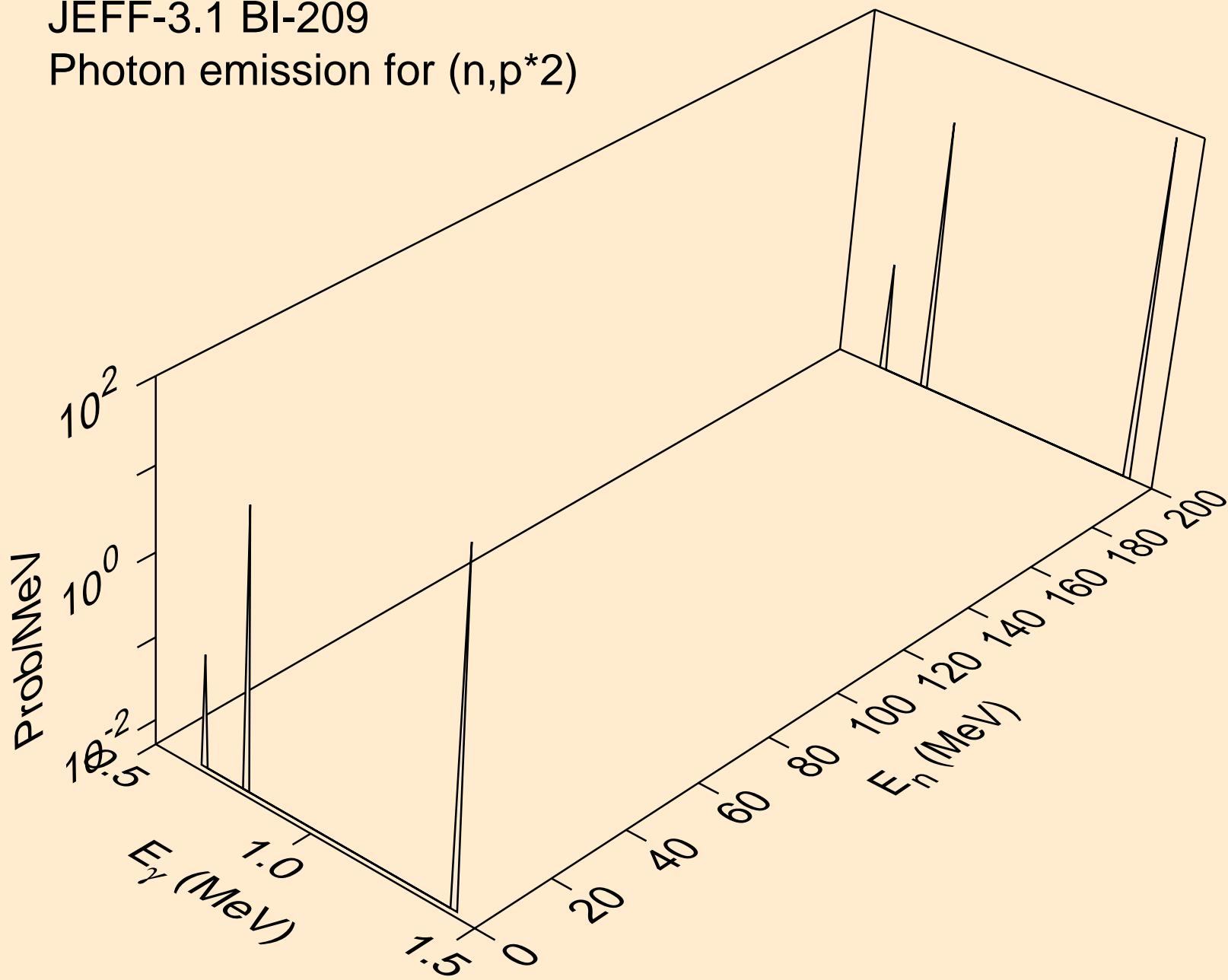
JEFF-3.1 Bi-209  
Photon emission for (n,pa)



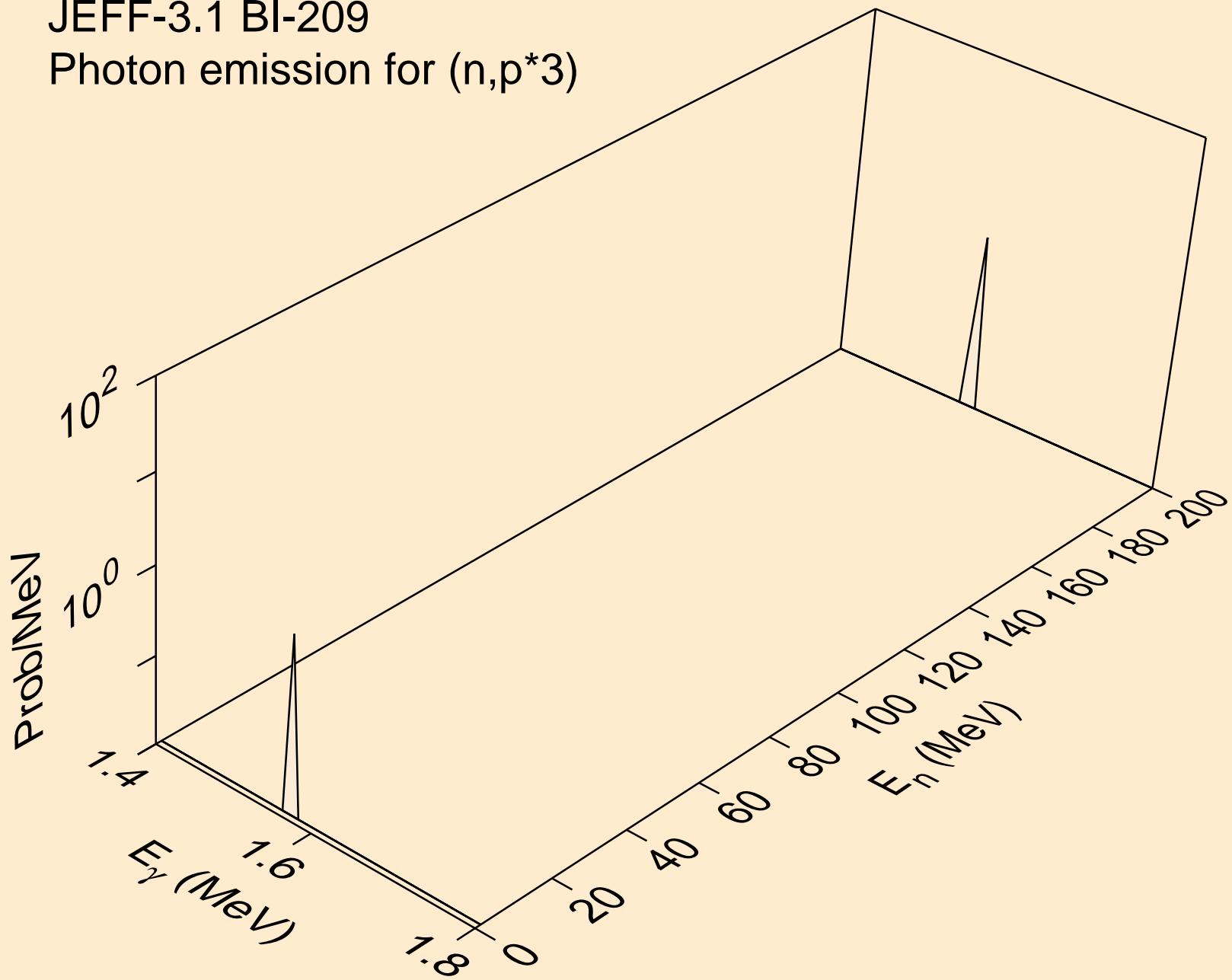
JEFF-3.1 Bi-209  
Photon emission for (n,p\*1)



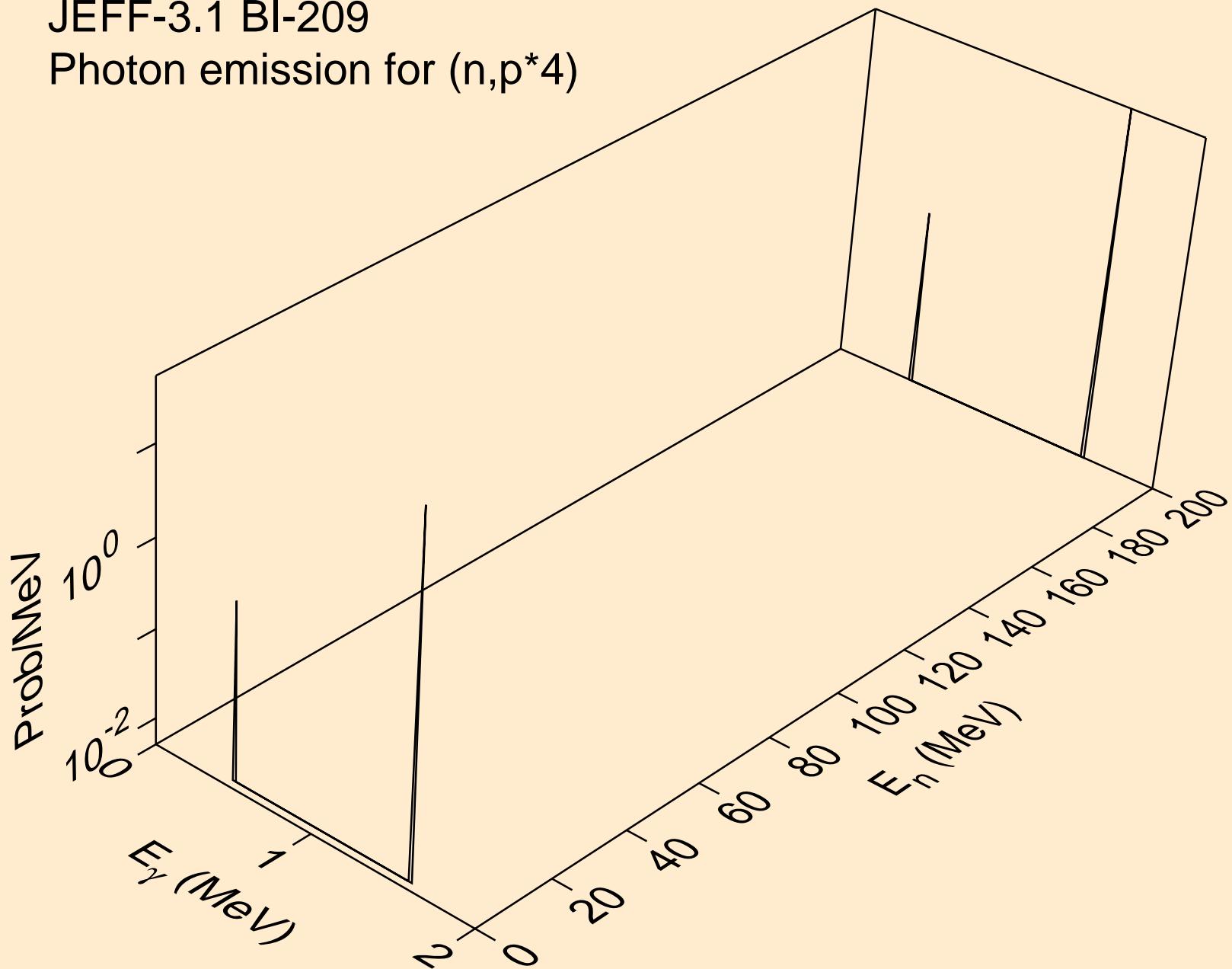
JEFF-3.1 Bi-209  
Photon emission for (n,p\*2)



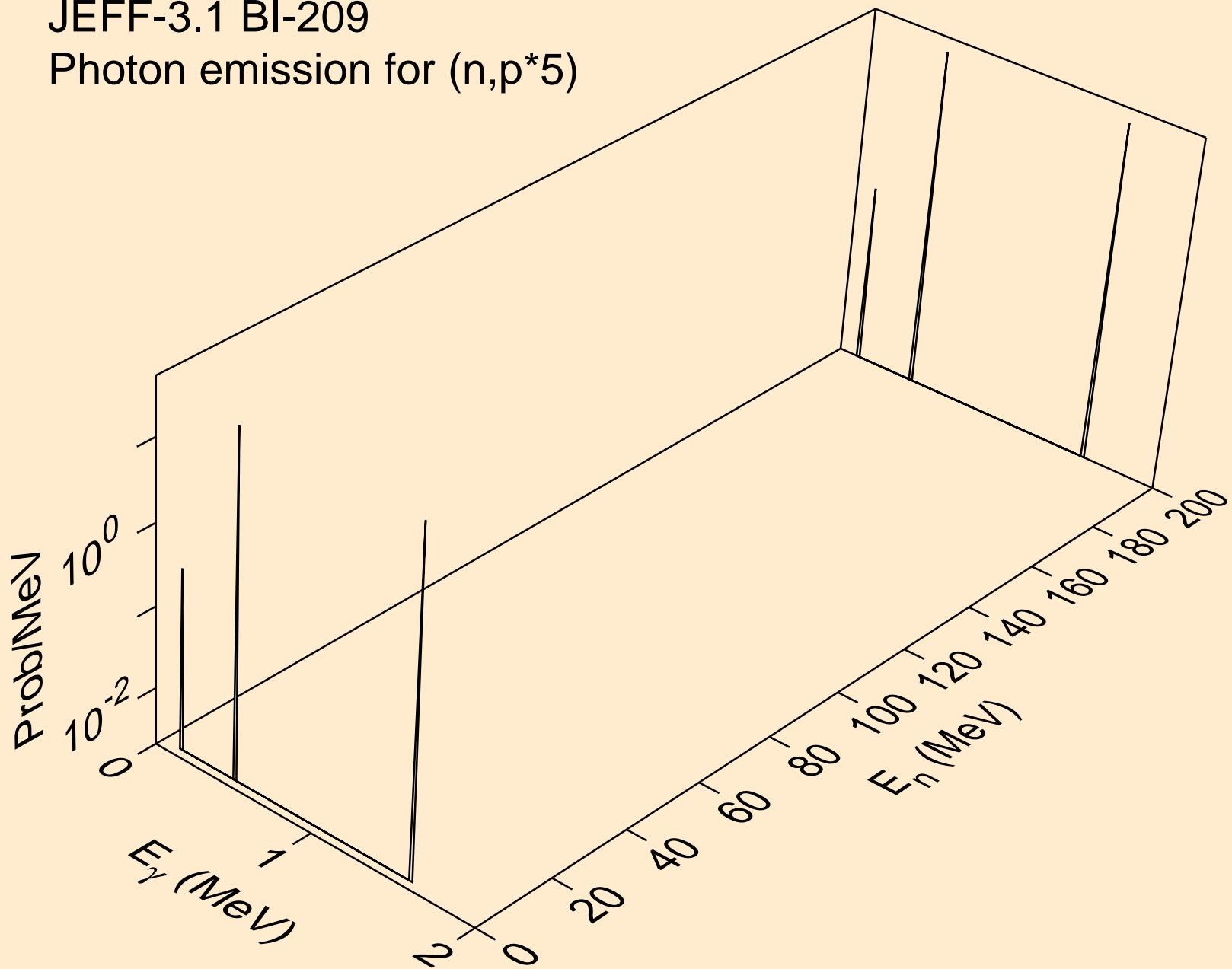
JEFF-3.1 Bi-209  
Photon emission for (n,p\*3)



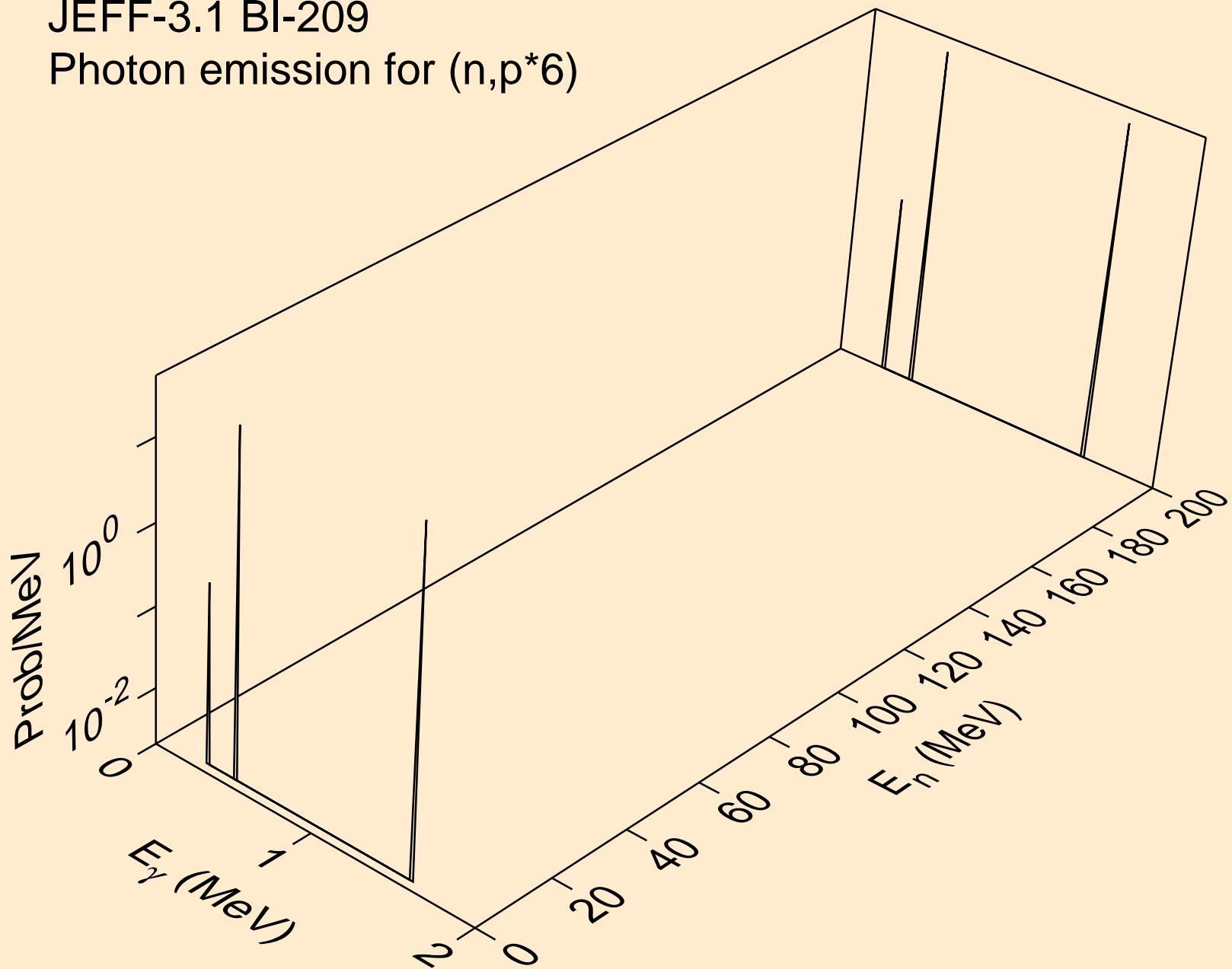
JEFF-3.1 Bi-209  
Photon emission for (n,p\*4)



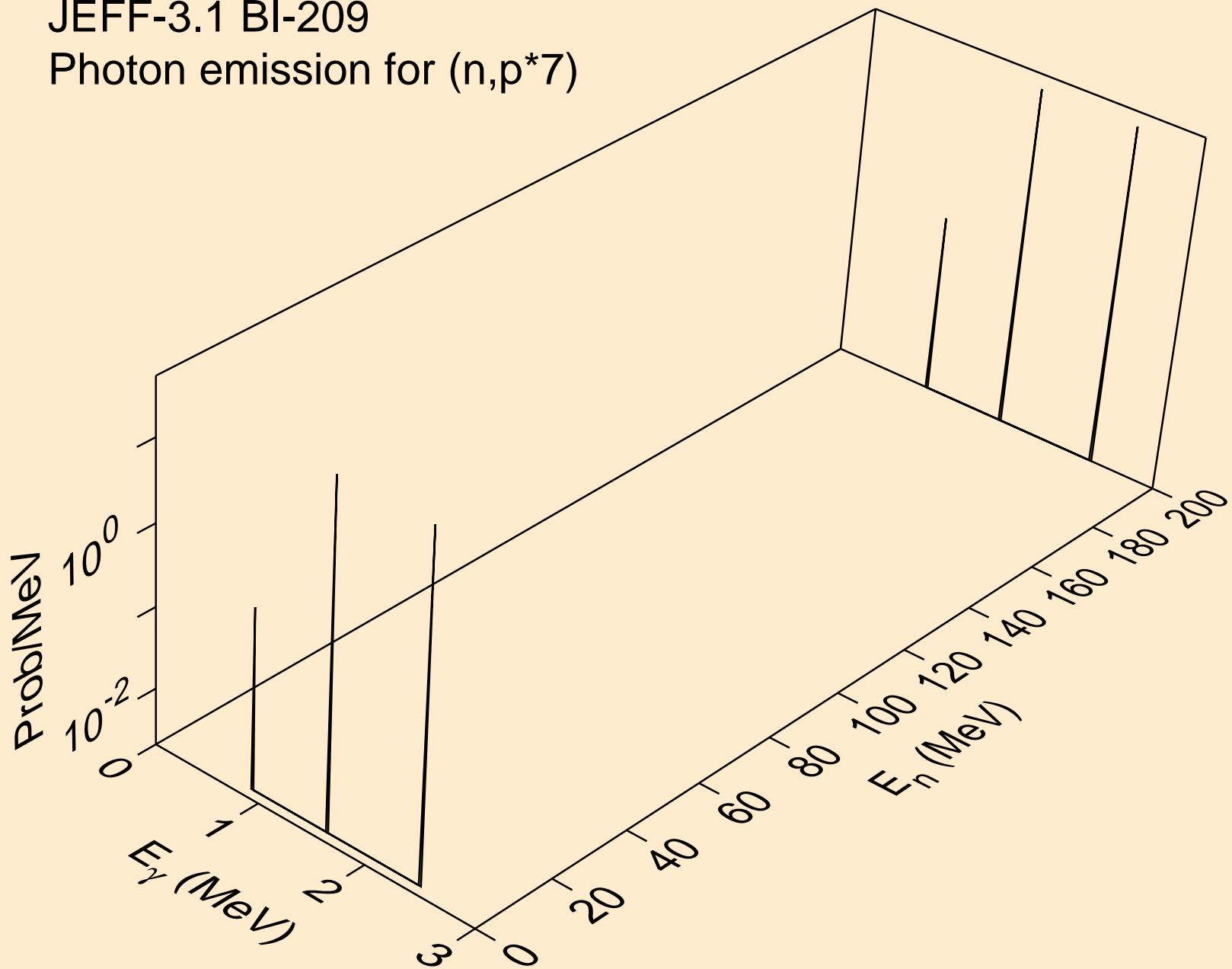
JEFF-3.1 Bi-209  
Photon emission for (n,p\*5)



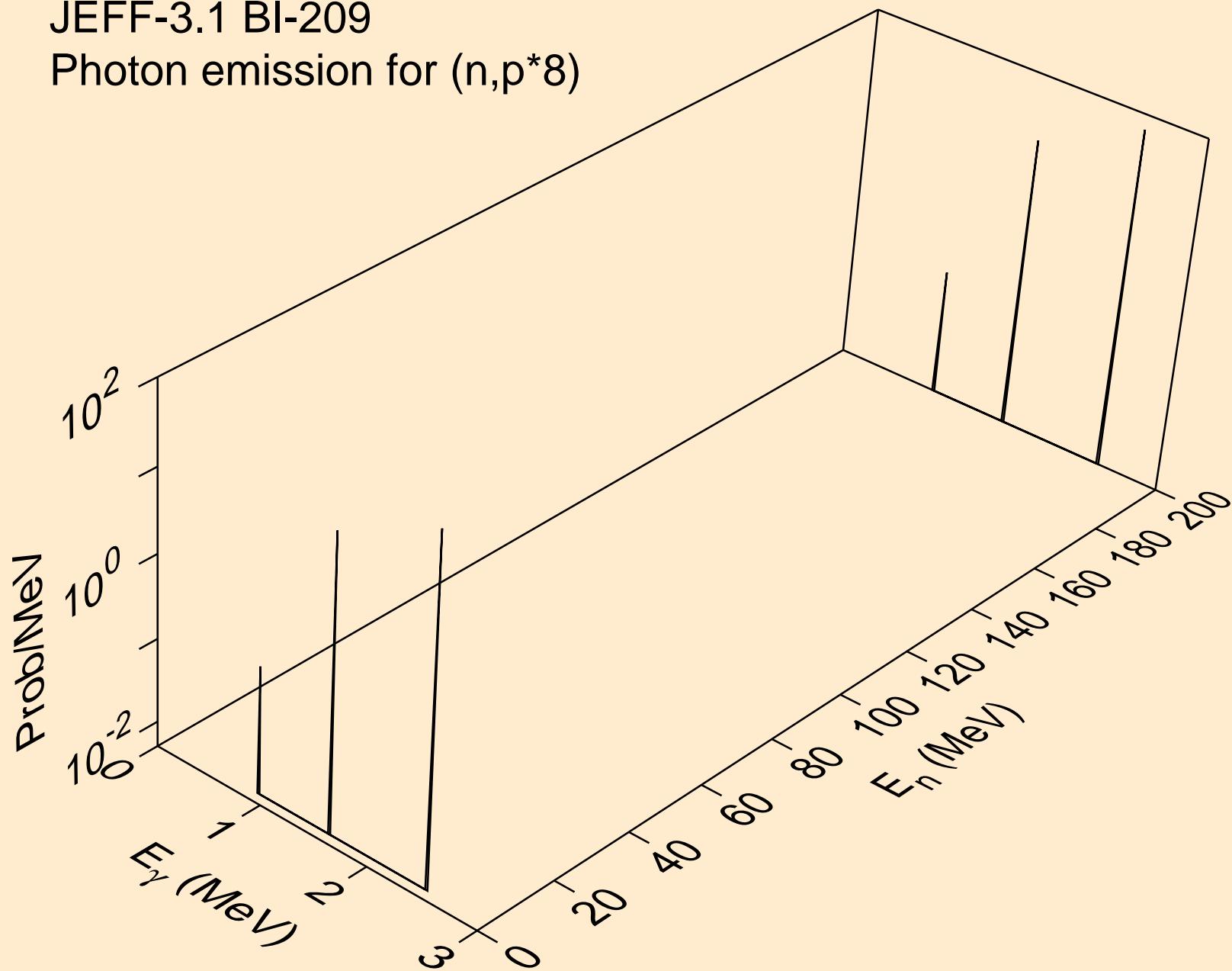
JEFF-3.1 Bi-209  
Photon emission for (n,p\*6)



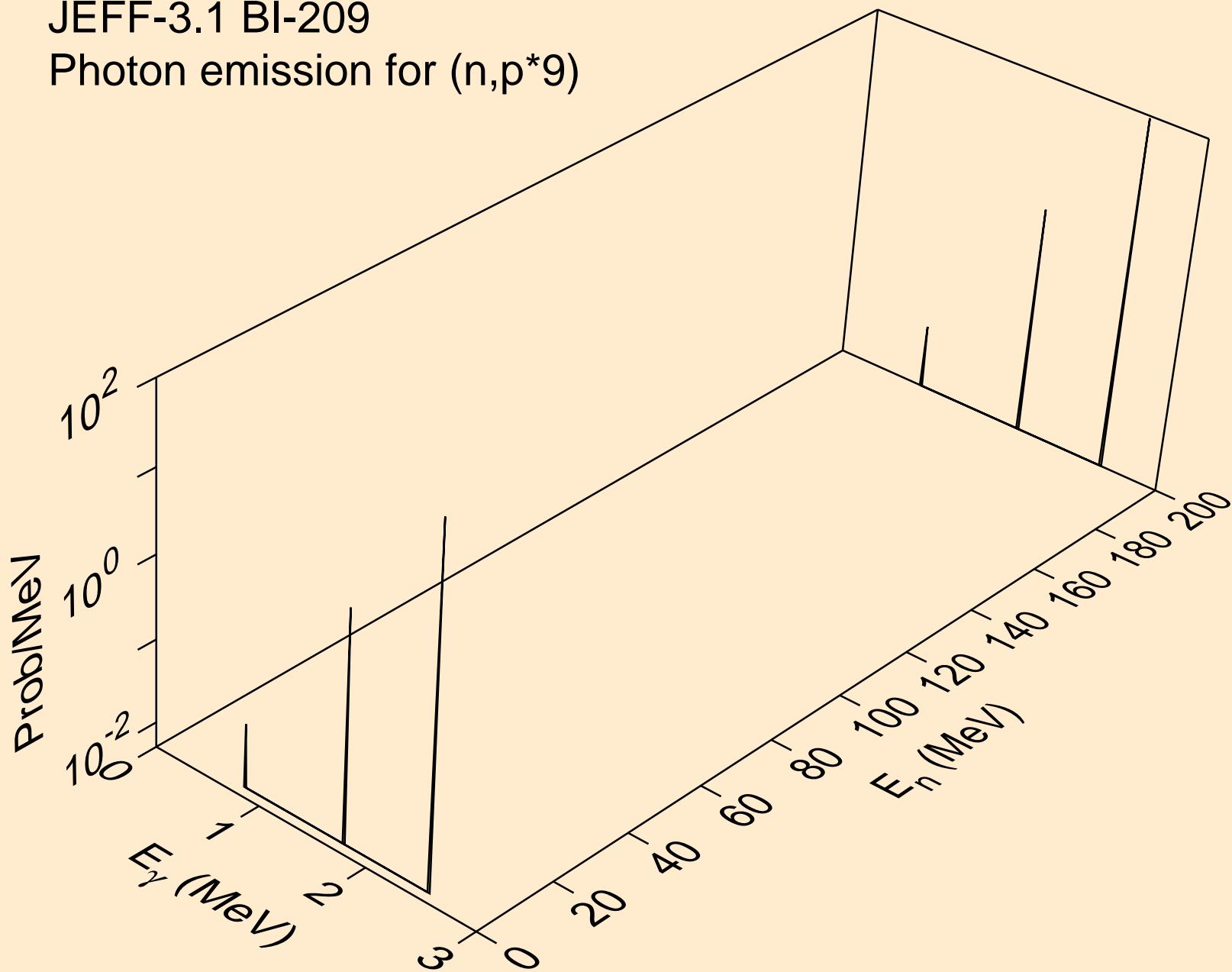
JEFF-3.1 Bi-209  
Photon emission for (n,p\*7)



JEFF-3.1 Bi-209  
Photon emission for (n,p\*8)

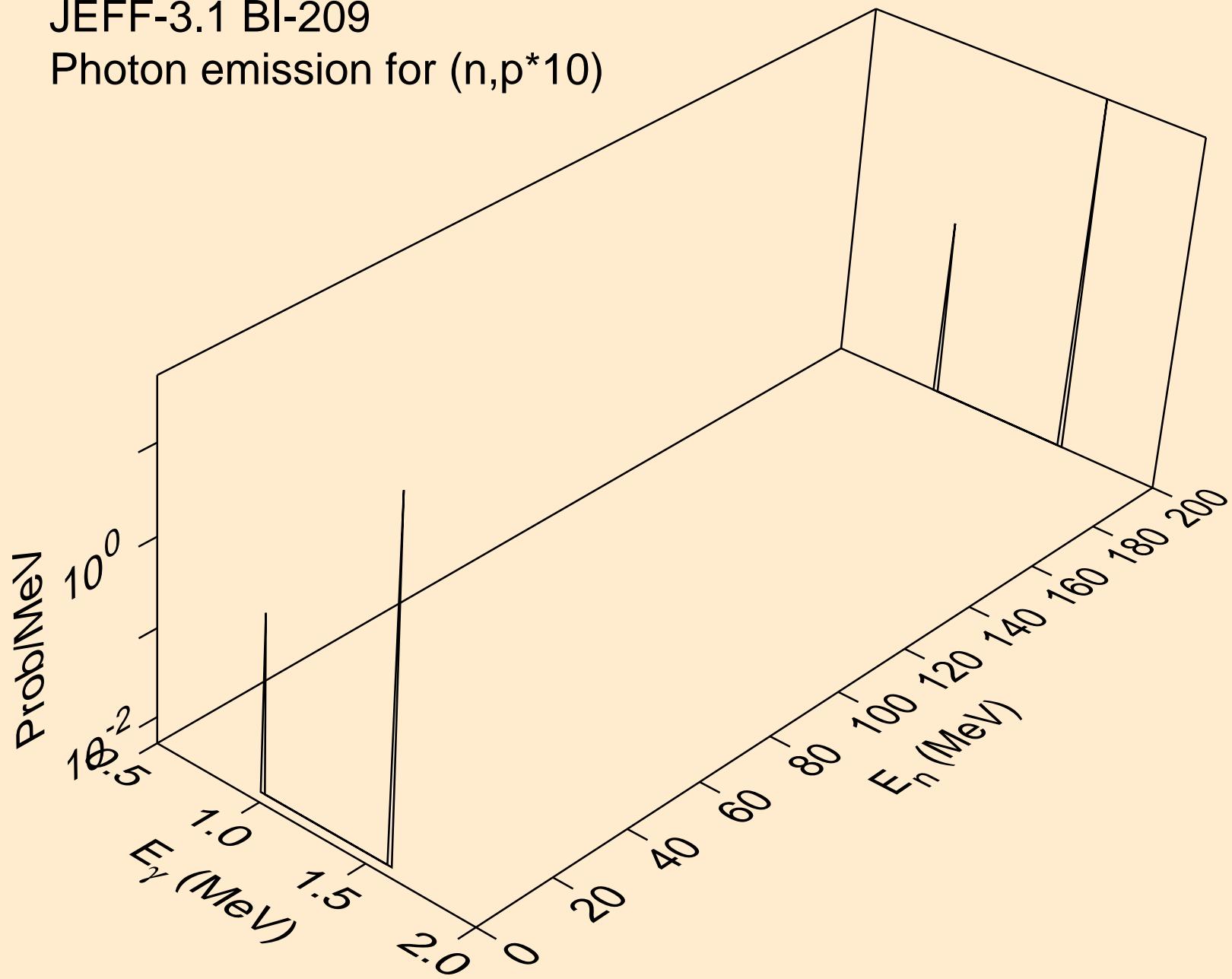


JEFF-3.1 Bi-209  
Photon emission for (n,p\*9)

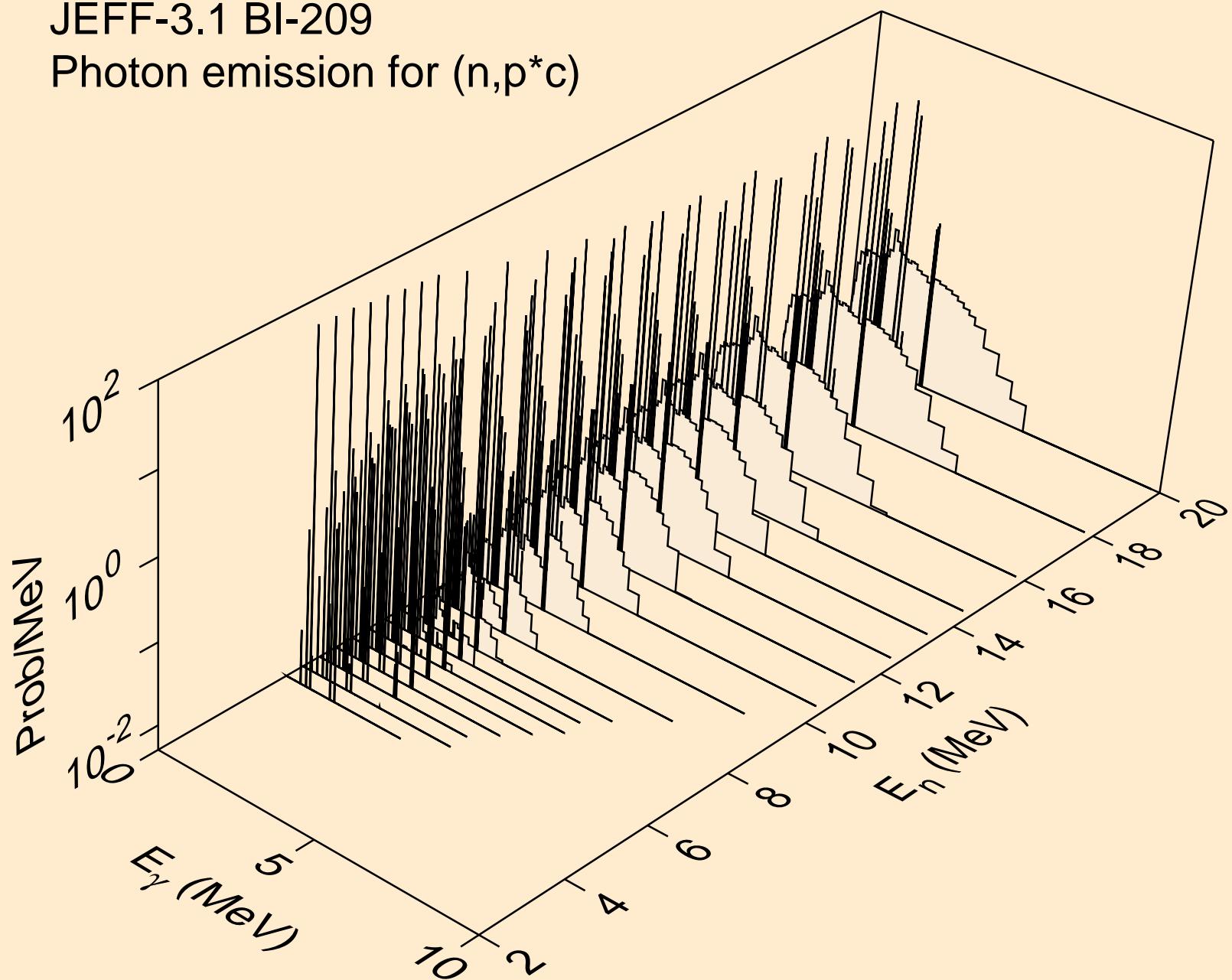


JEFF-3.1 Bi-209

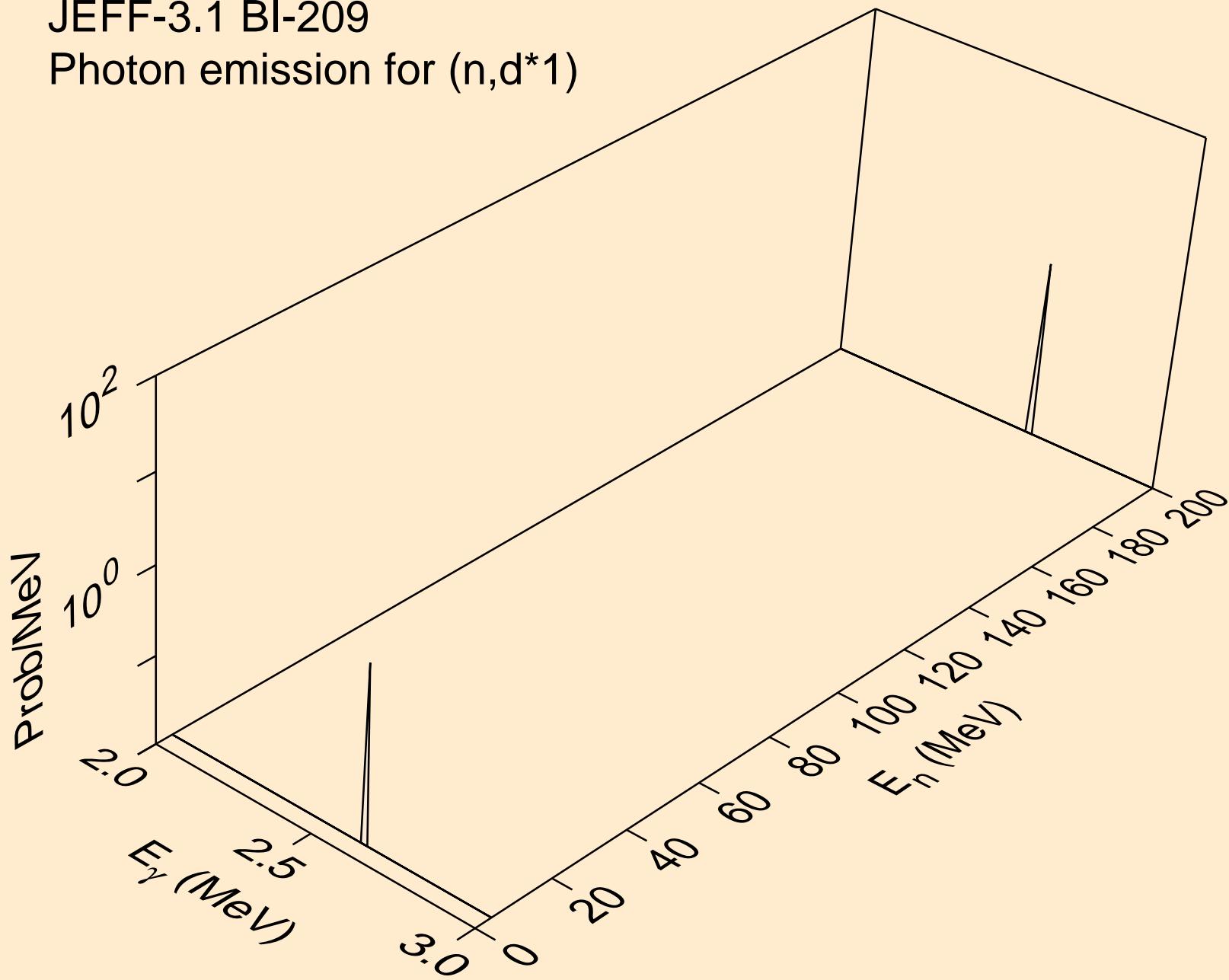
Photon emission for (n,p\*10)



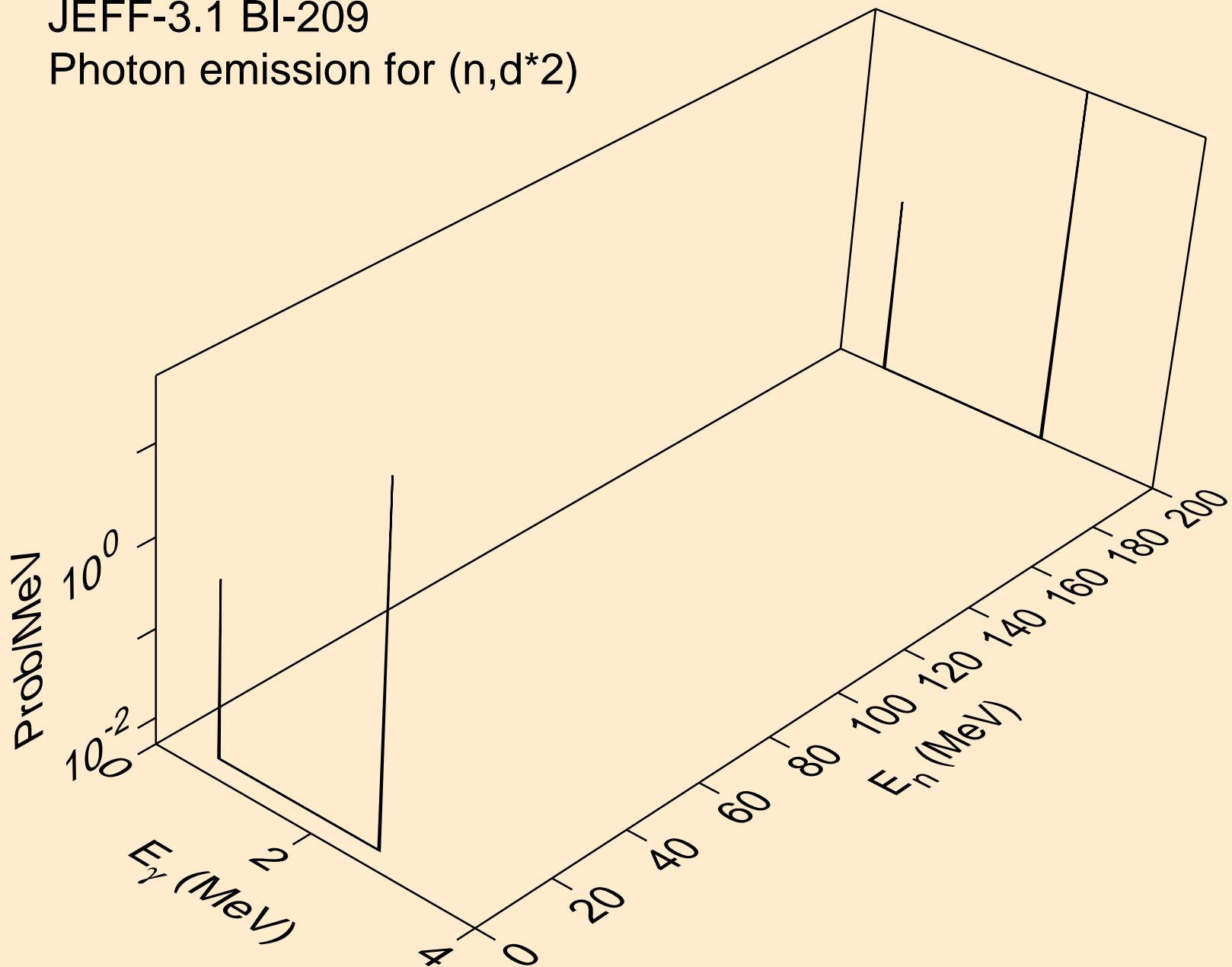
JEFF-3.1 Bi-209  
Photon emission for  $(n, p^* c)$



JEFF-3.1 Bi-209  
Photon emission for (n,d\*1)

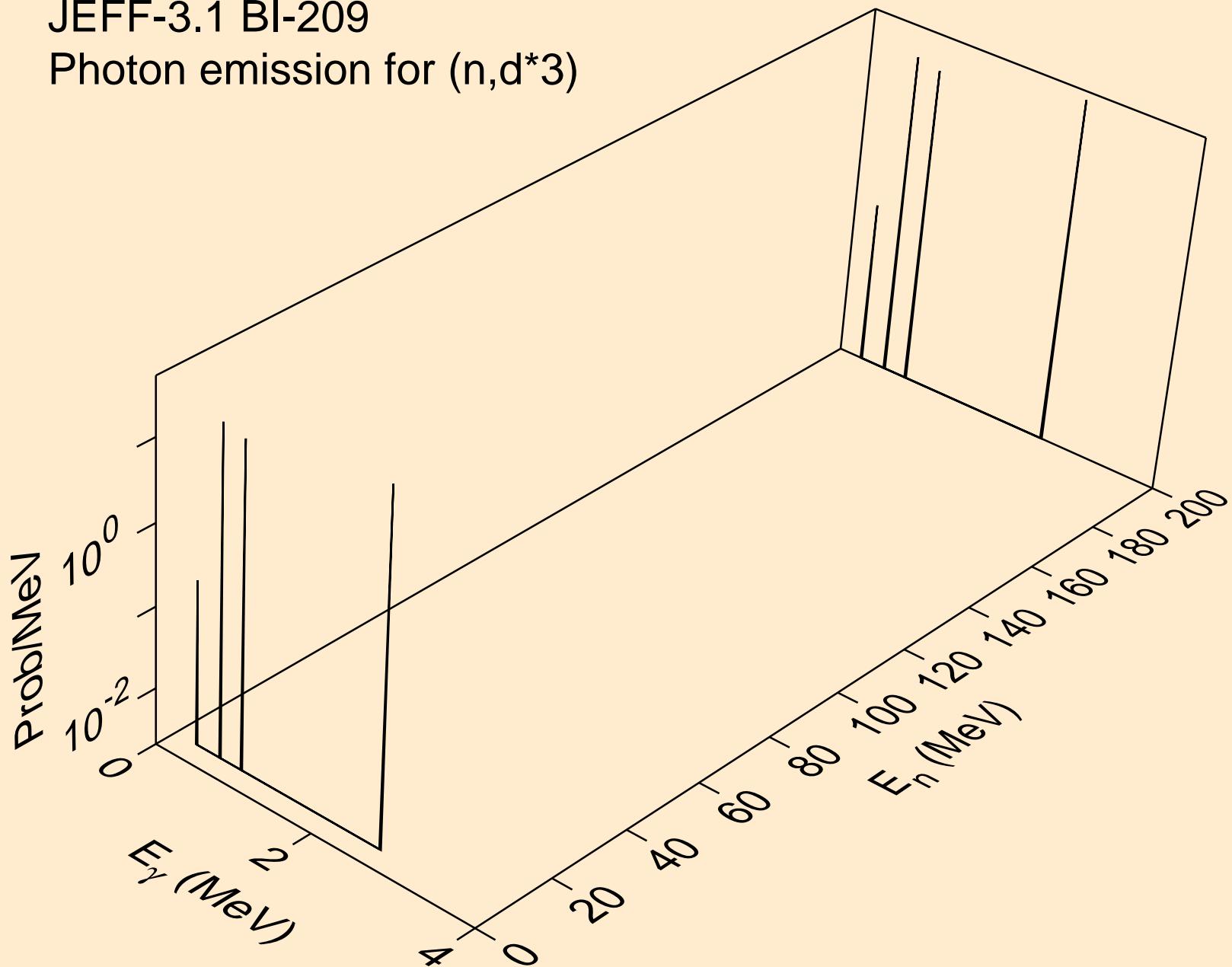


JEFF-3.1 Bi-209  
Photon emission for (n,d\*2)

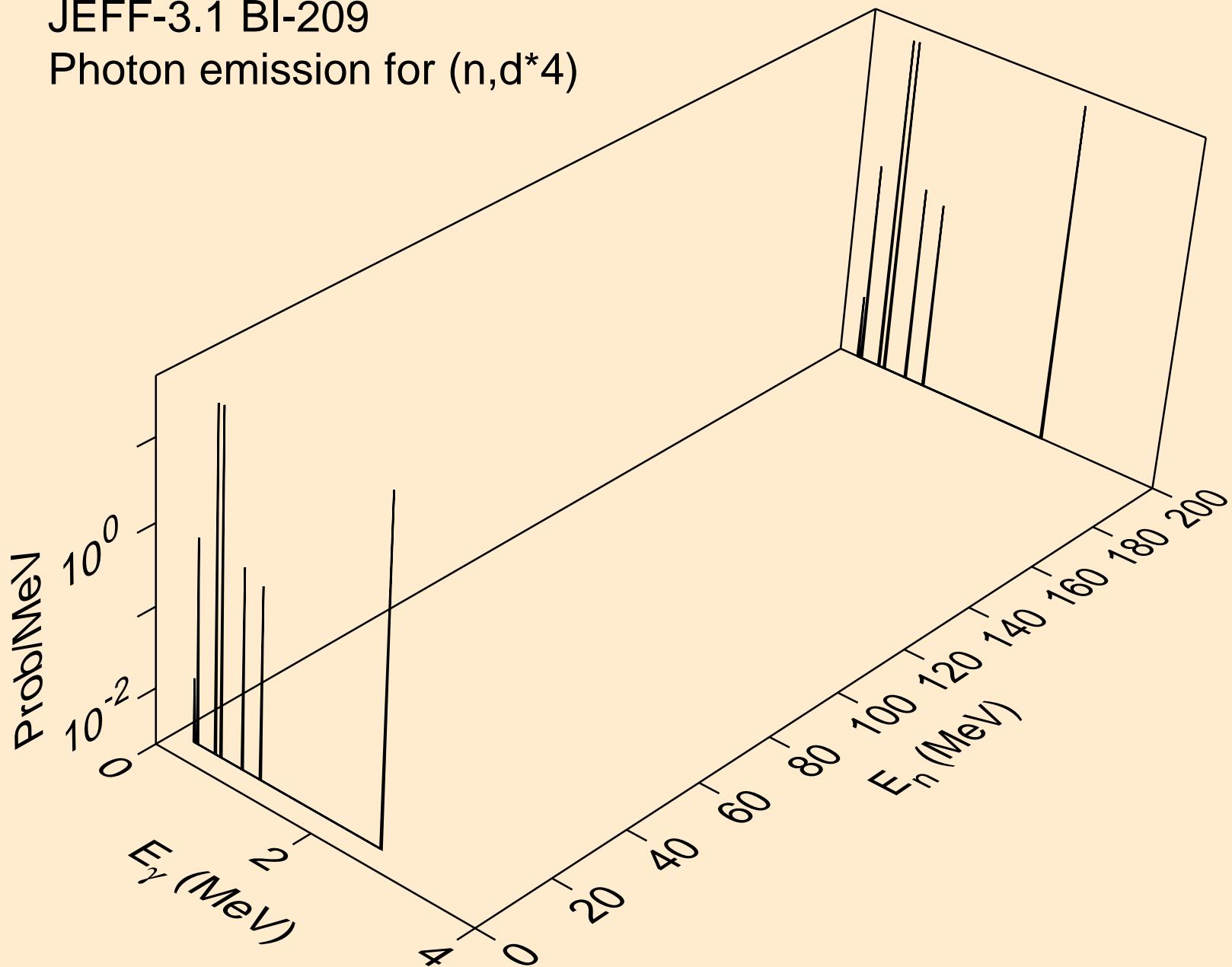


# JEFF-3.1 BI-209

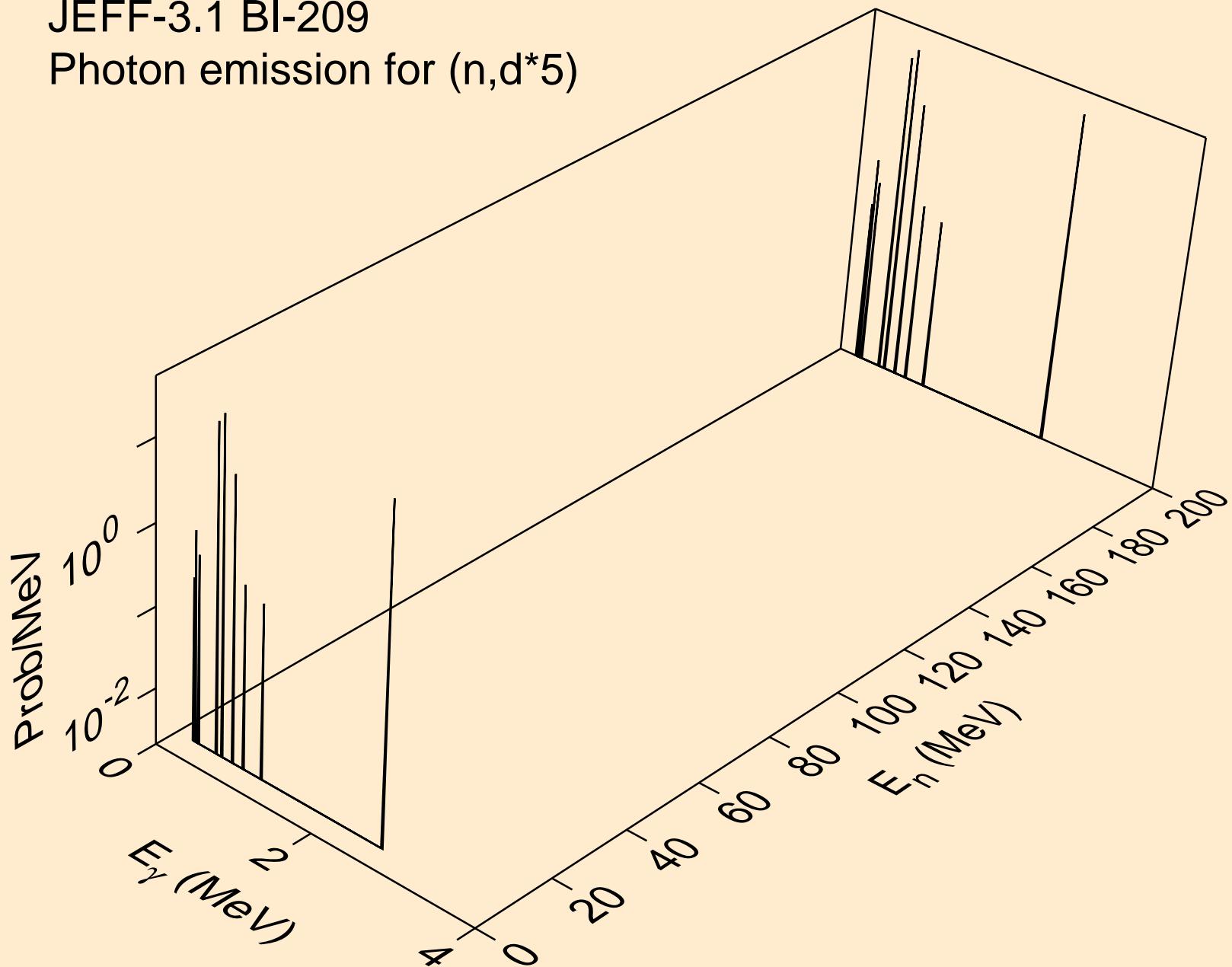
## Photon emission for (n,d\*3)



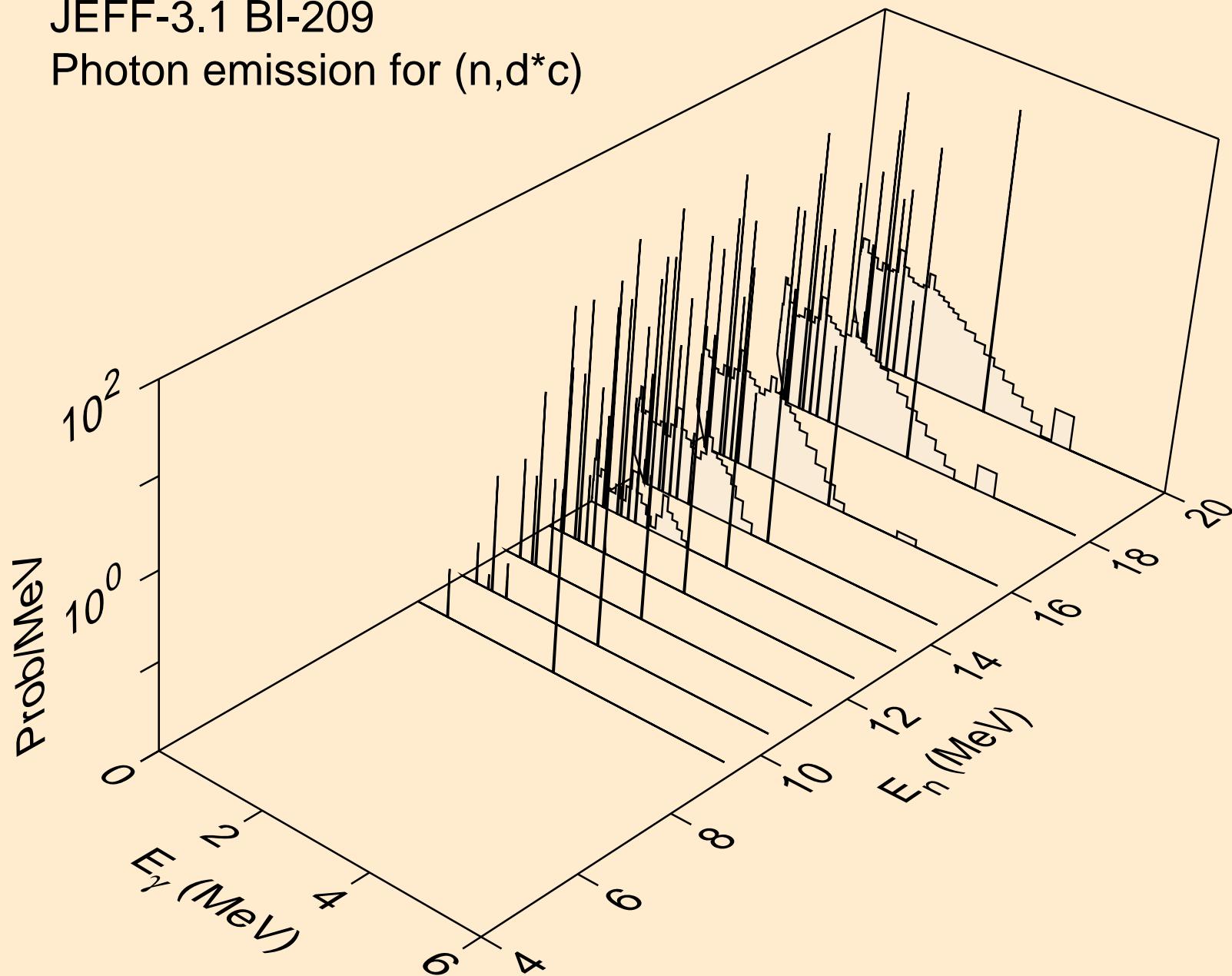
JEFF-3.1 Bi-209  
Photon emission for (n,d\*4)



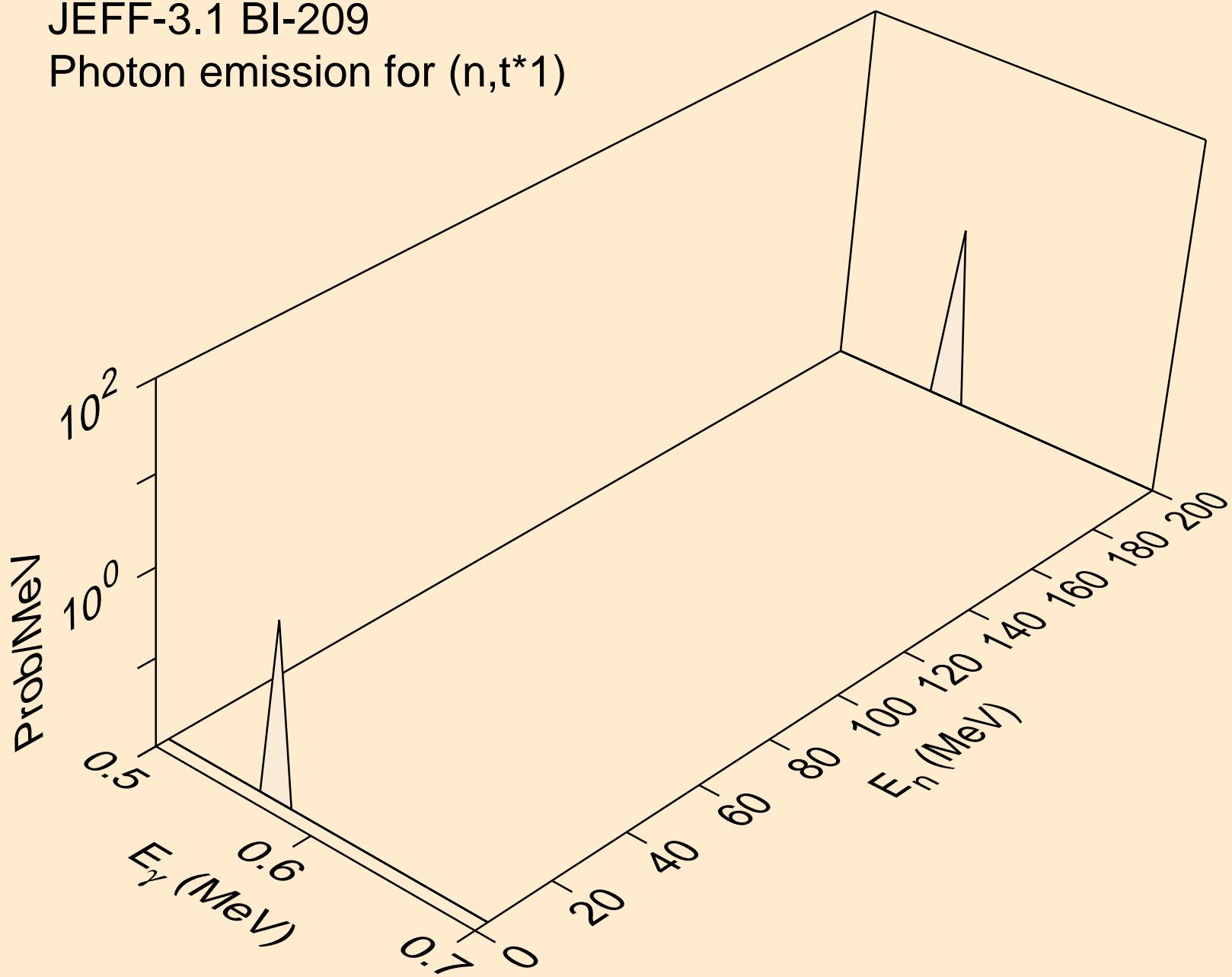
JEFF-3.1 Bi-209  
Photon emission for (n,d\*5)



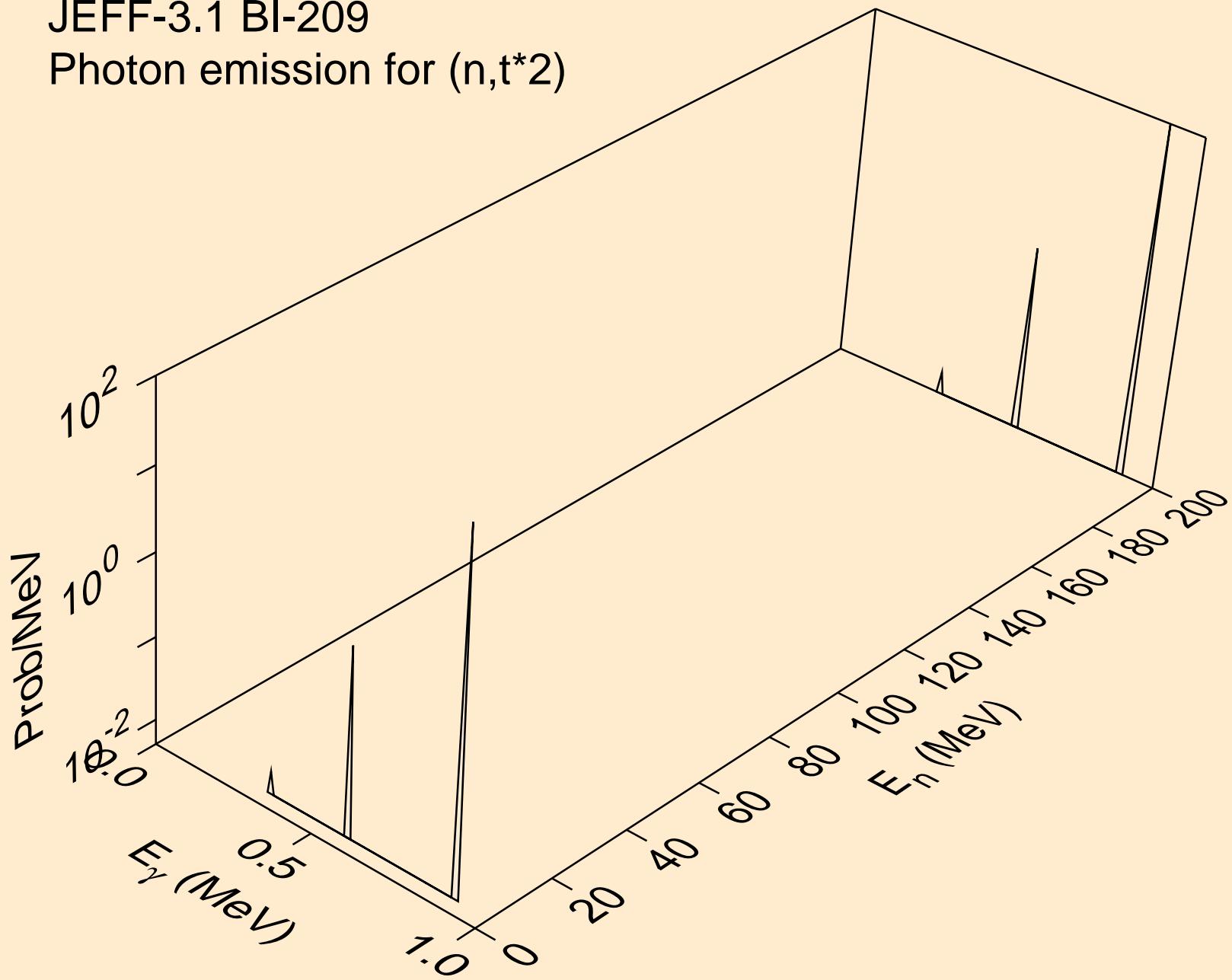
JEFF-3.1 Bi-209  
Photon emission for  $(n, d^* c)$



JEFF-3.1 Bi-209  
Photon emission for (n,t\*1)

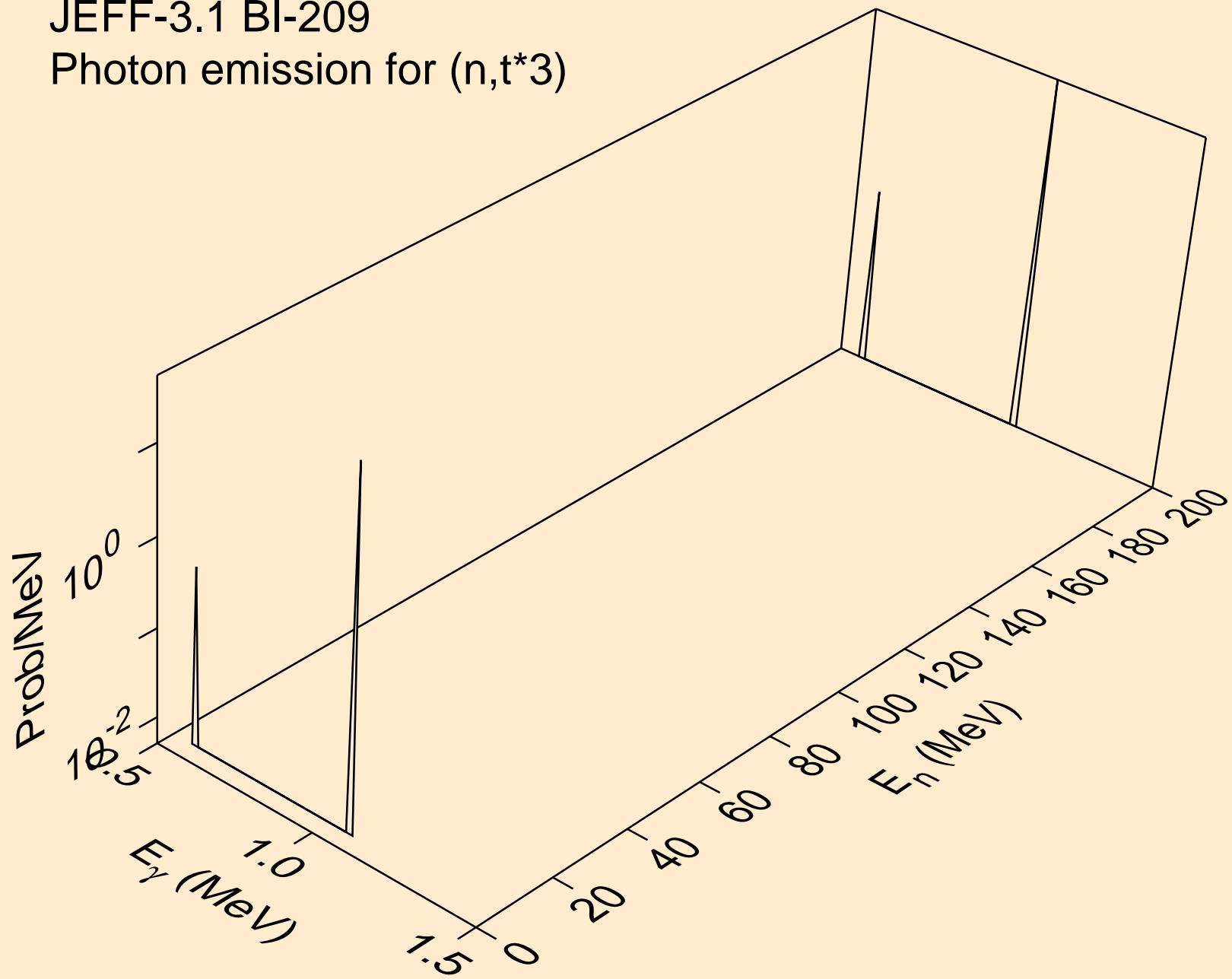


JEFF-3.1 Bi-209  
Photon emission for (n,t\*2)

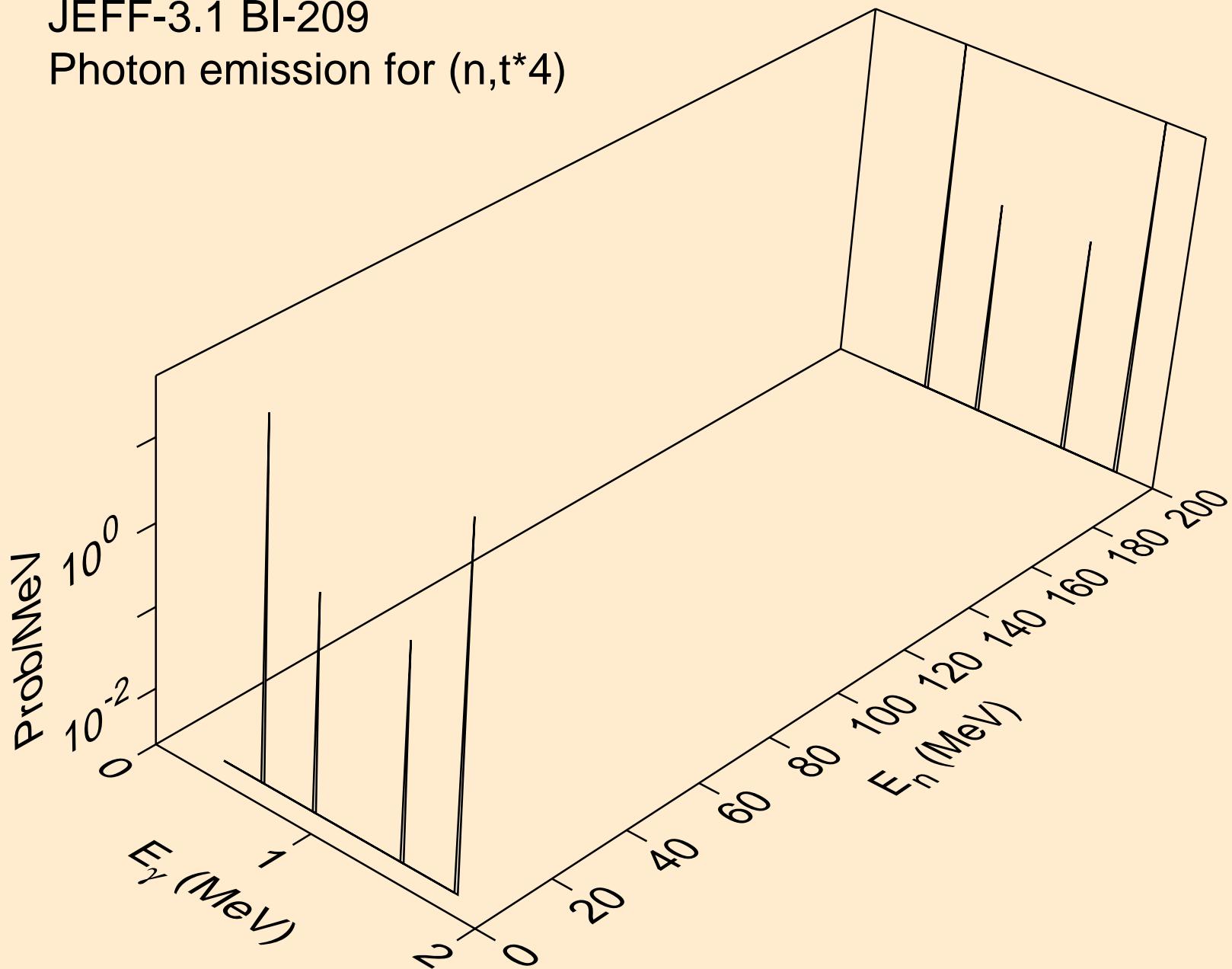


JEFF-3.1 Bi-209

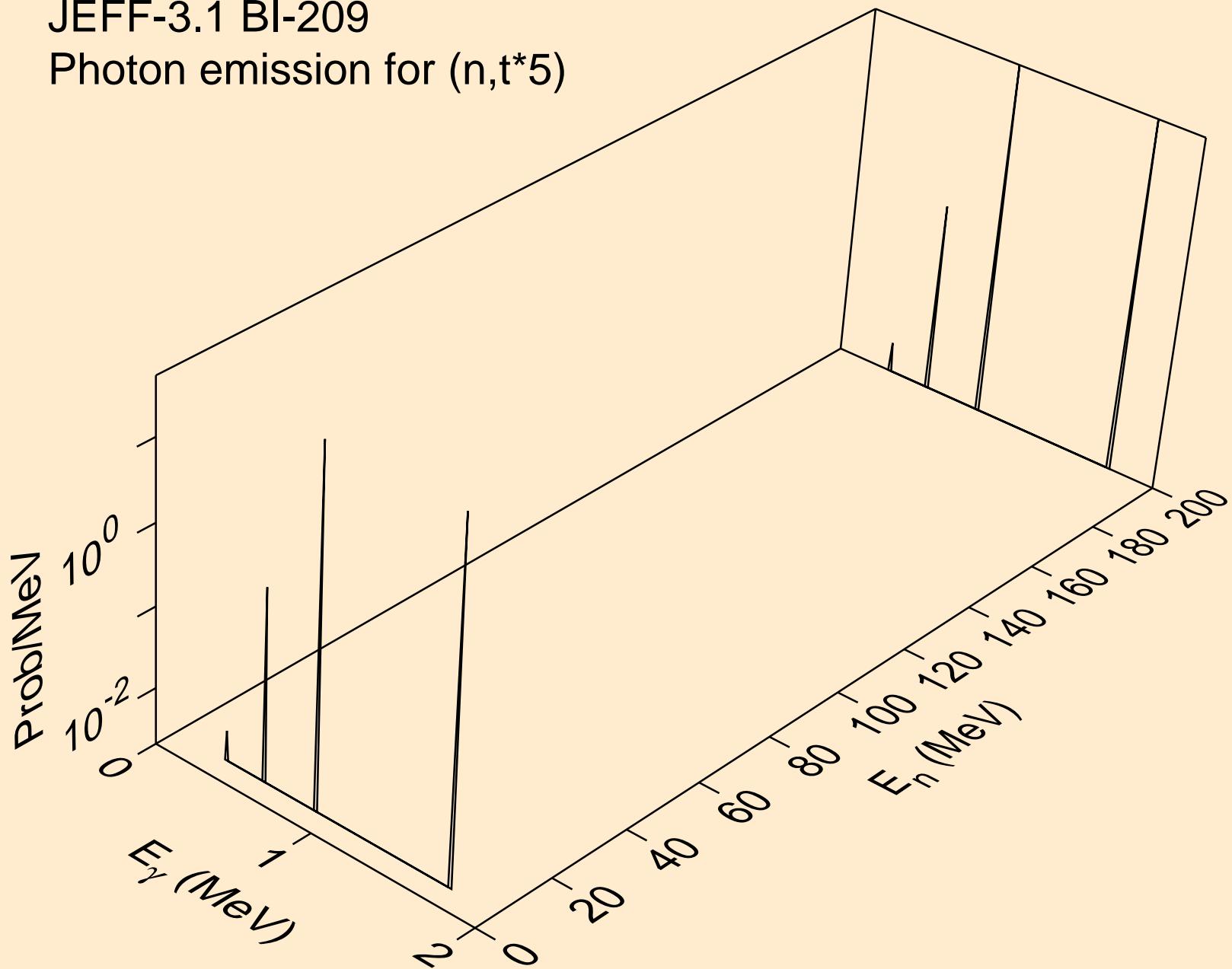
Photon emission for  $(n, t^*3)$



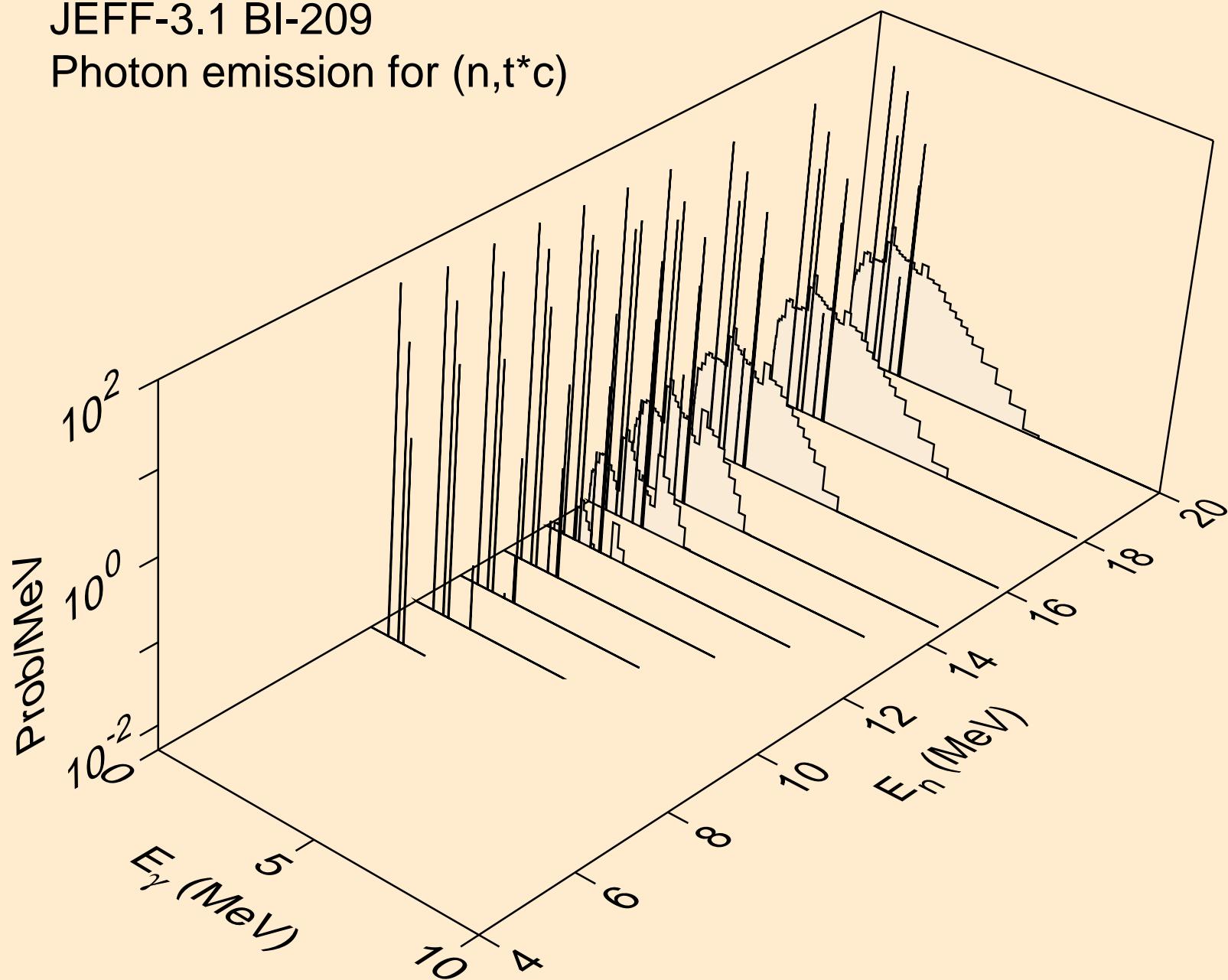
JEFF-3.1 Bi-209  
Photon emission for (n,t\*4)



JEFF-3.1 Bi-209  
Photon emission for (n,t\*5)

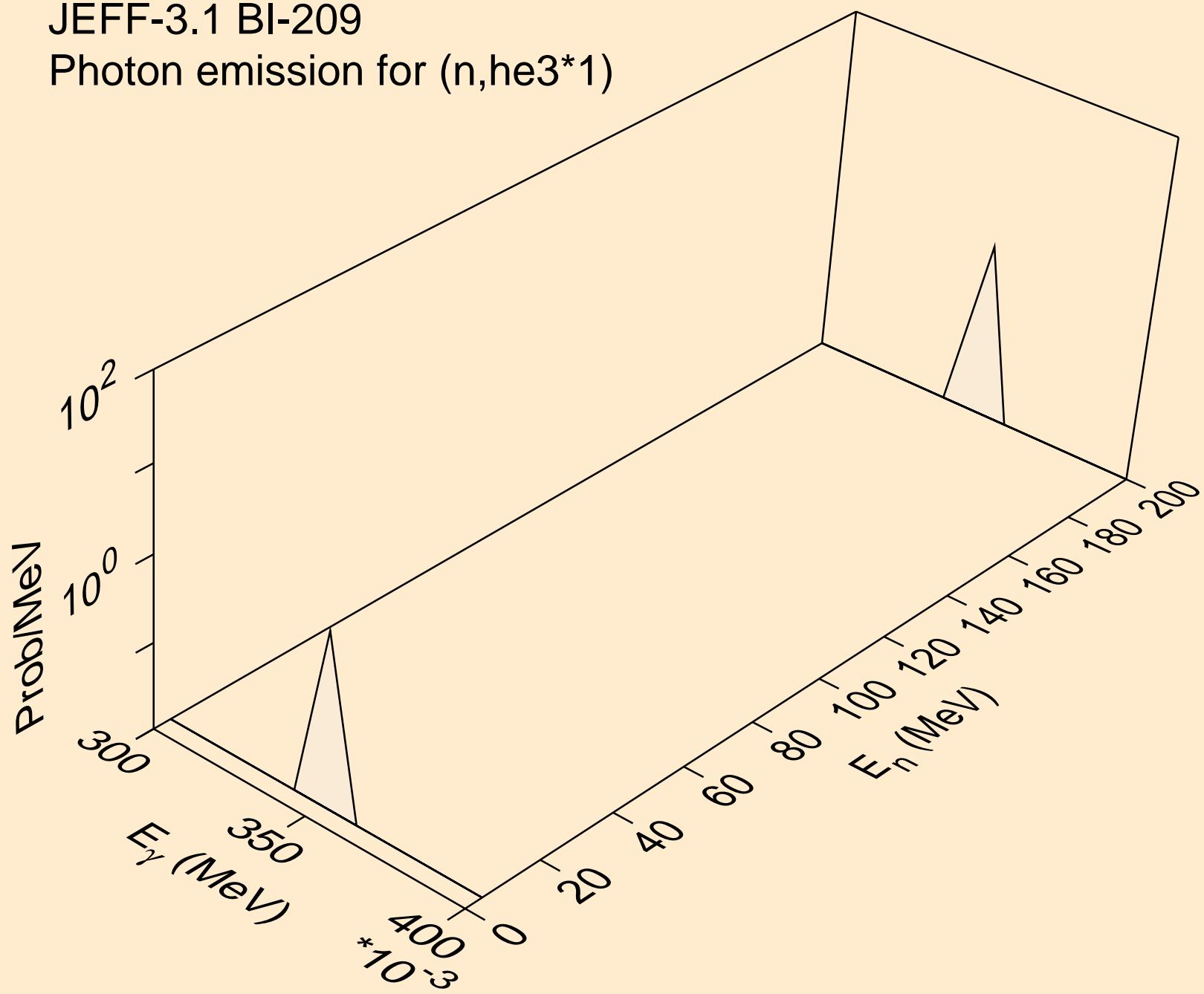


JEFF-3.1 Bi-209  
Photon emission for  $(n, t^*c)$



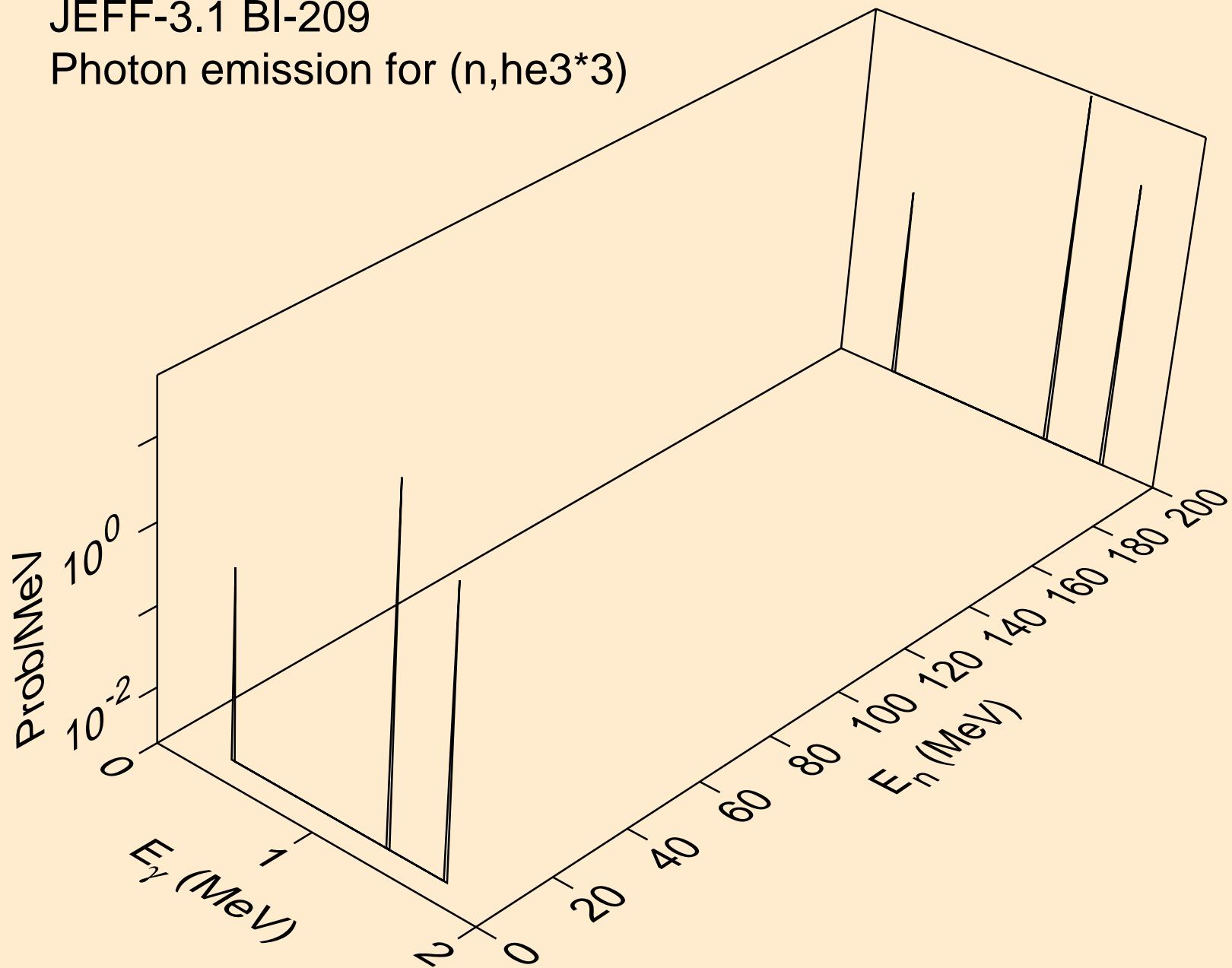
JEFF-3.1 Bi-209

Photon emission for (n,he3\*1)



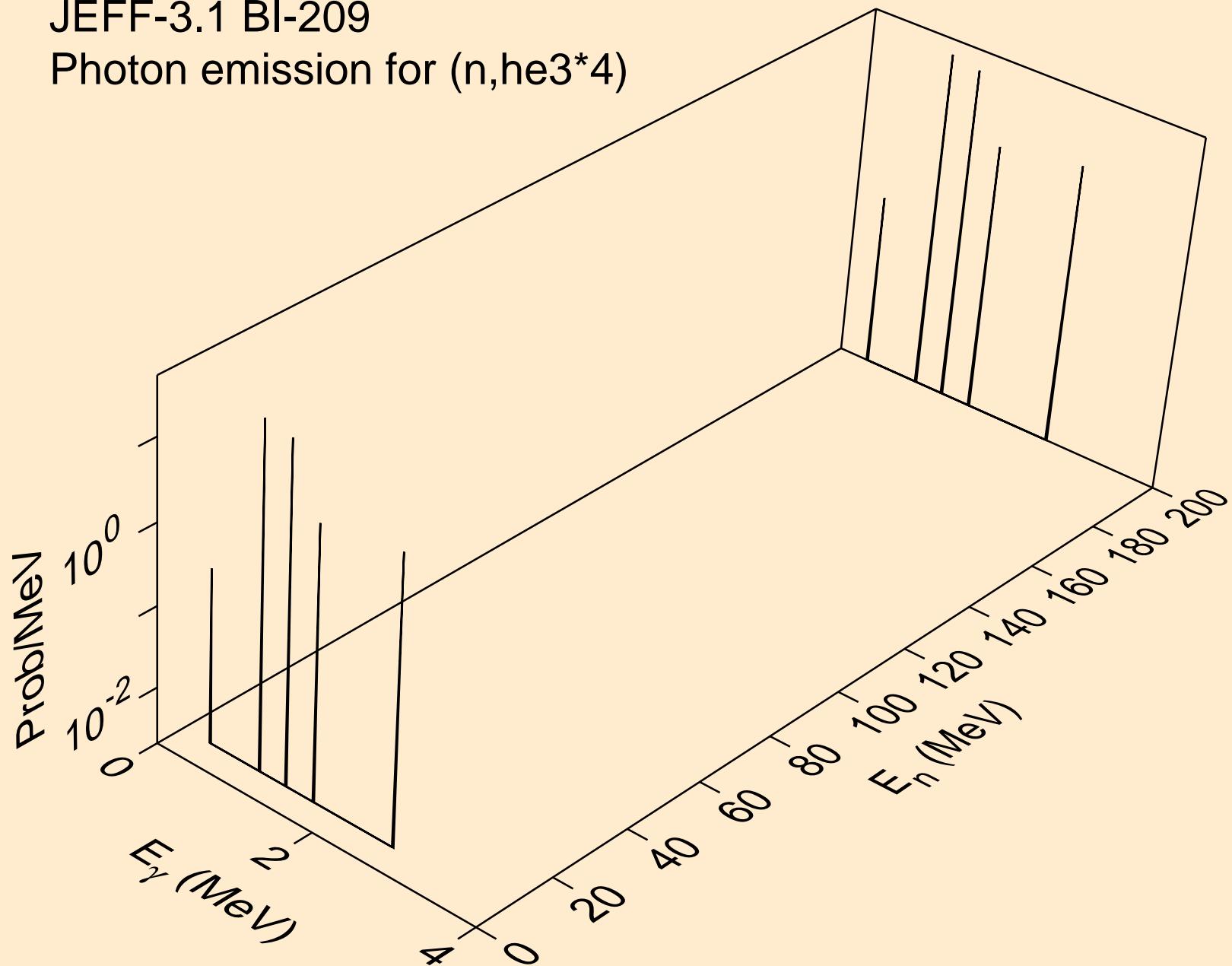
JEFF-3.1 Bi-209

Photon emission for (n,he3\*3)



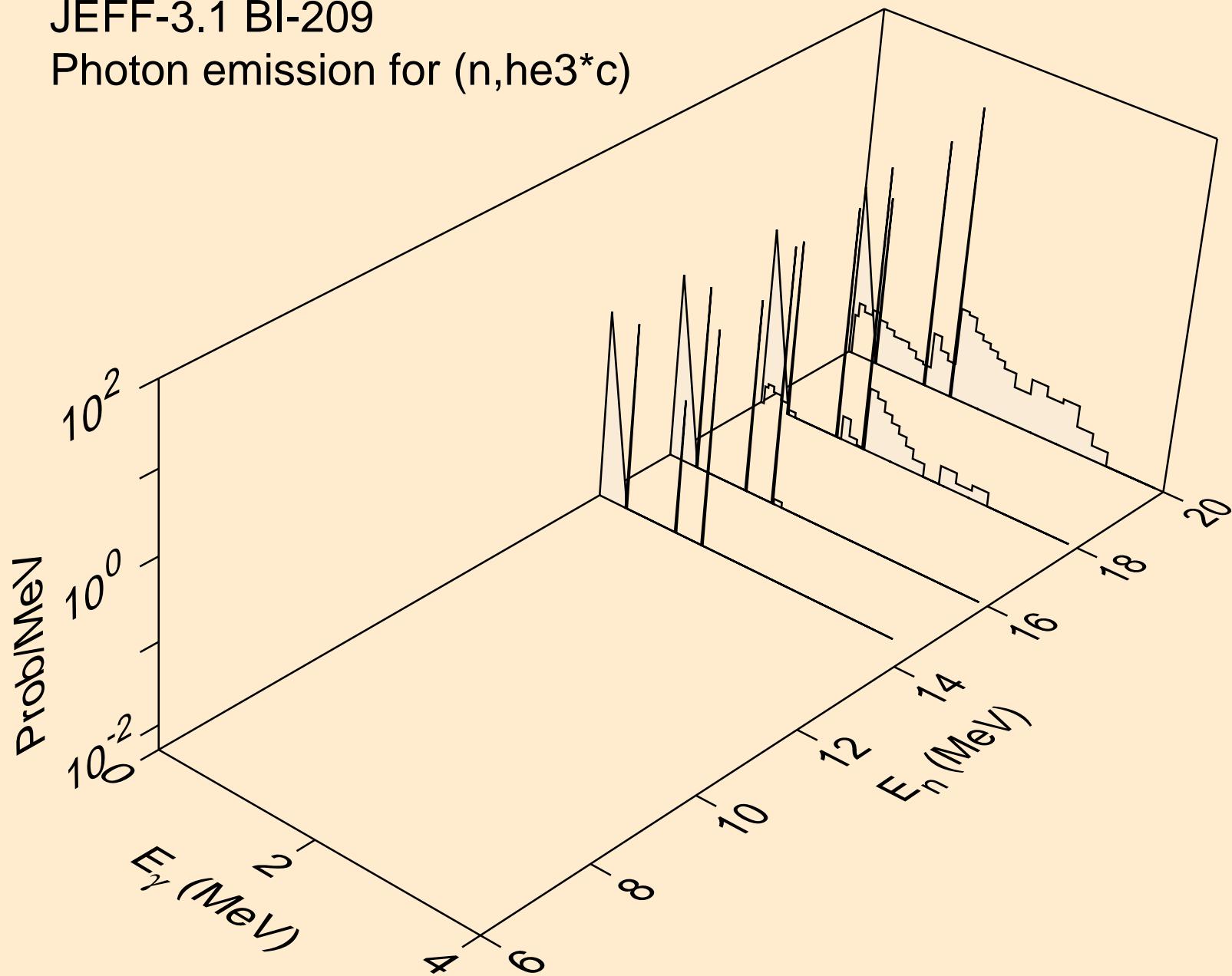
JEFF-3.1 Bi-209

Photon emission for (n,he3\*4)

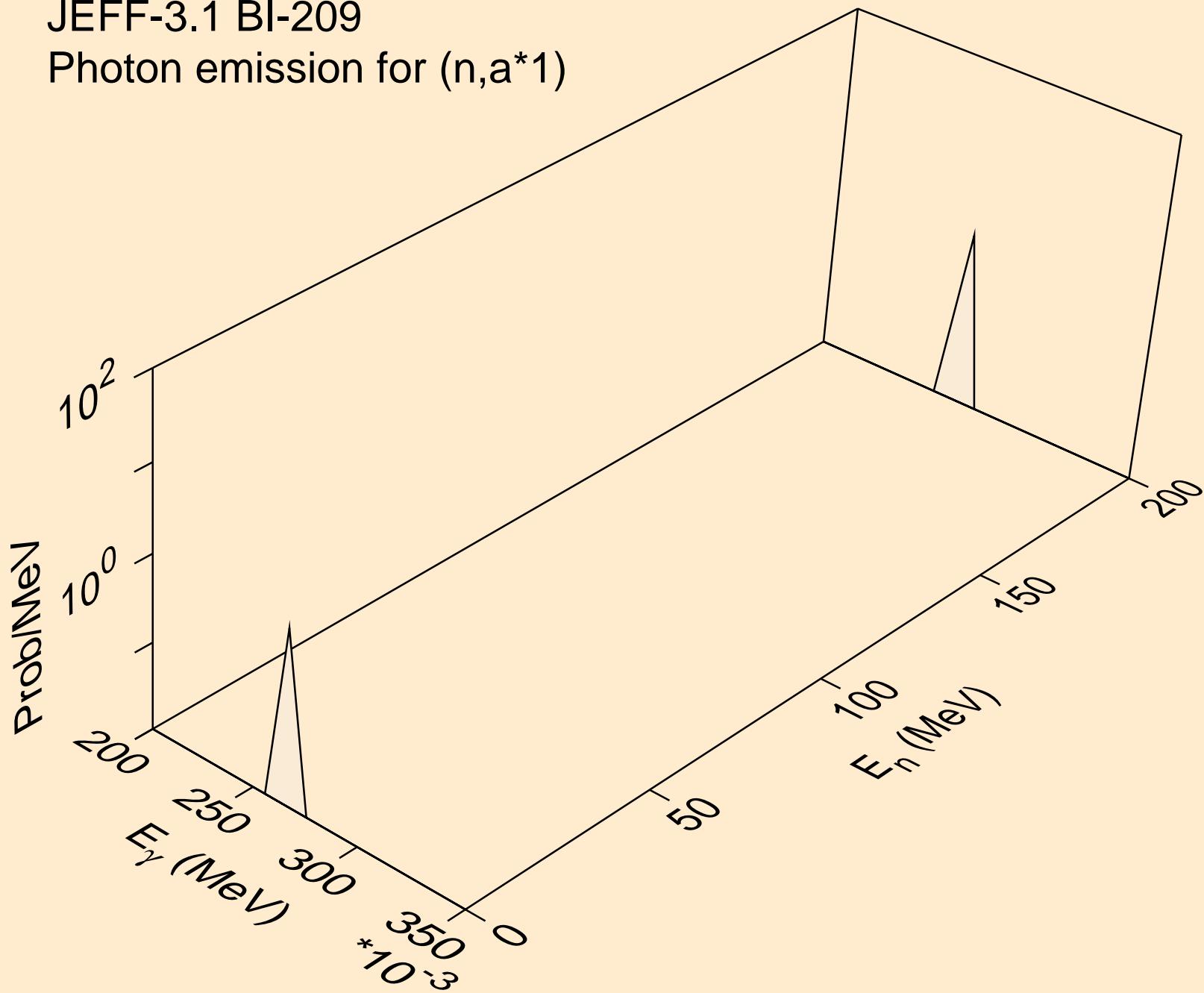


JEFF-3.1 Bi-209

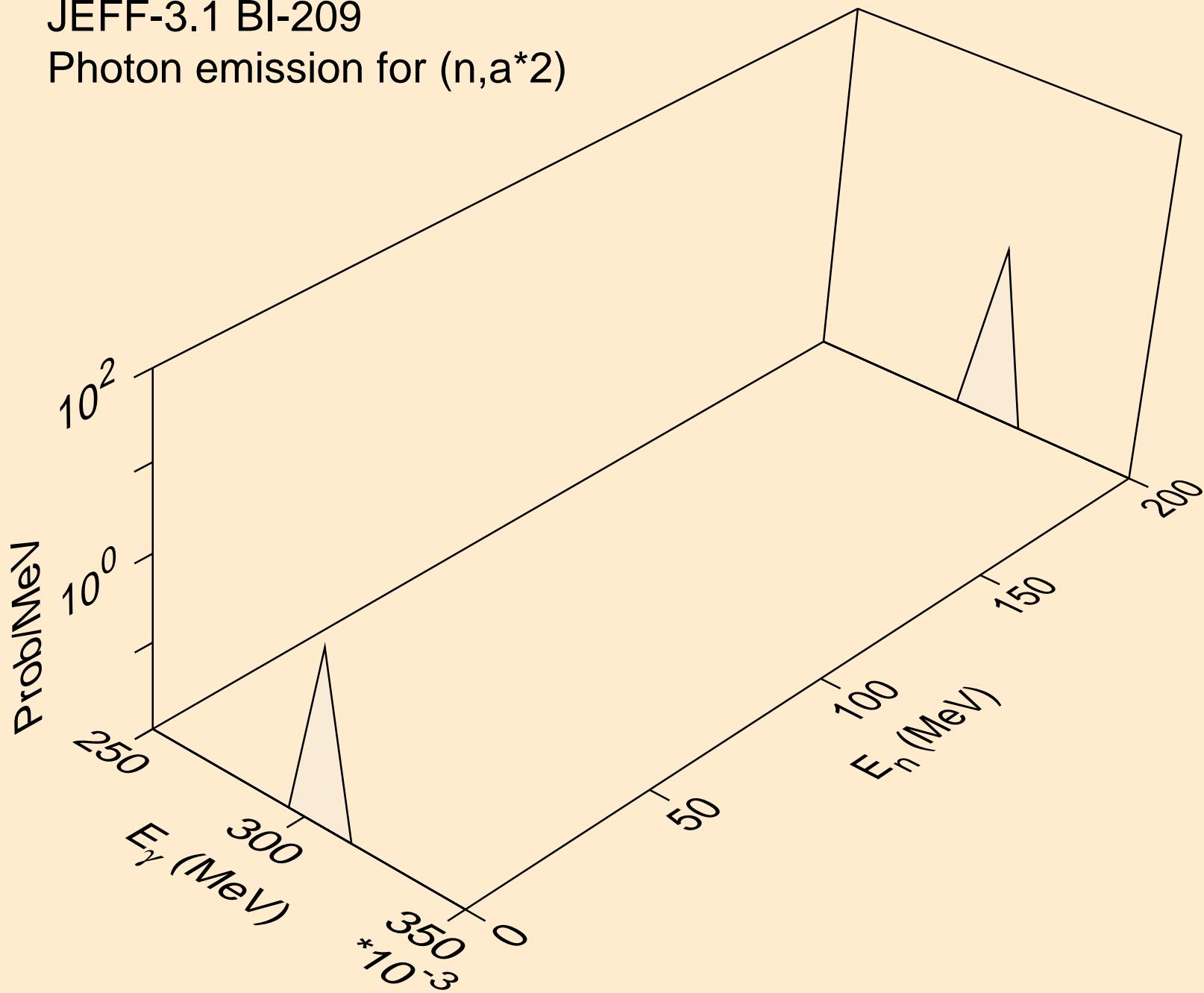
Photon emission for (n,he3\*c)



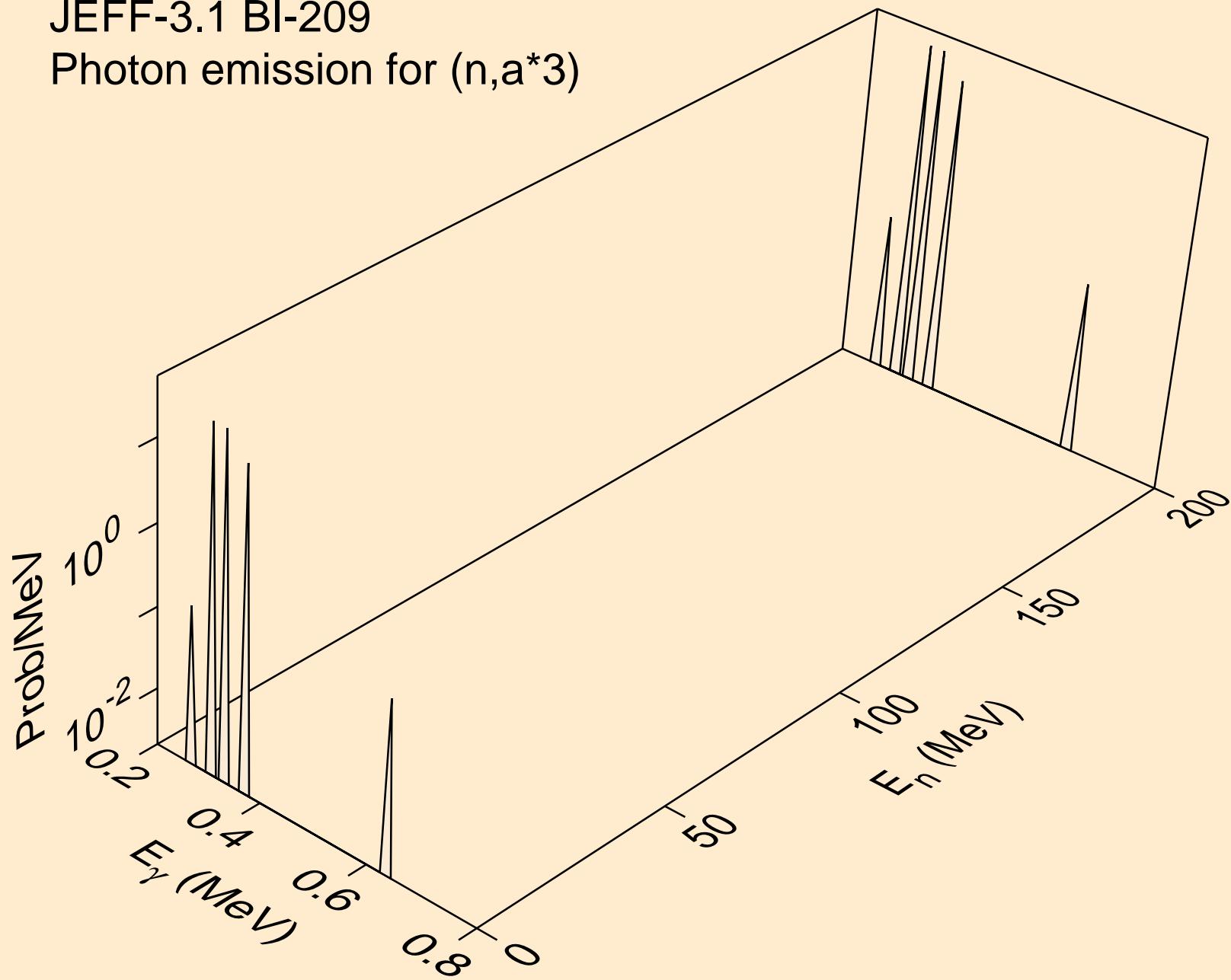
JEFF-3.1 Bi-209  
Photon emission for (n,a\*1)



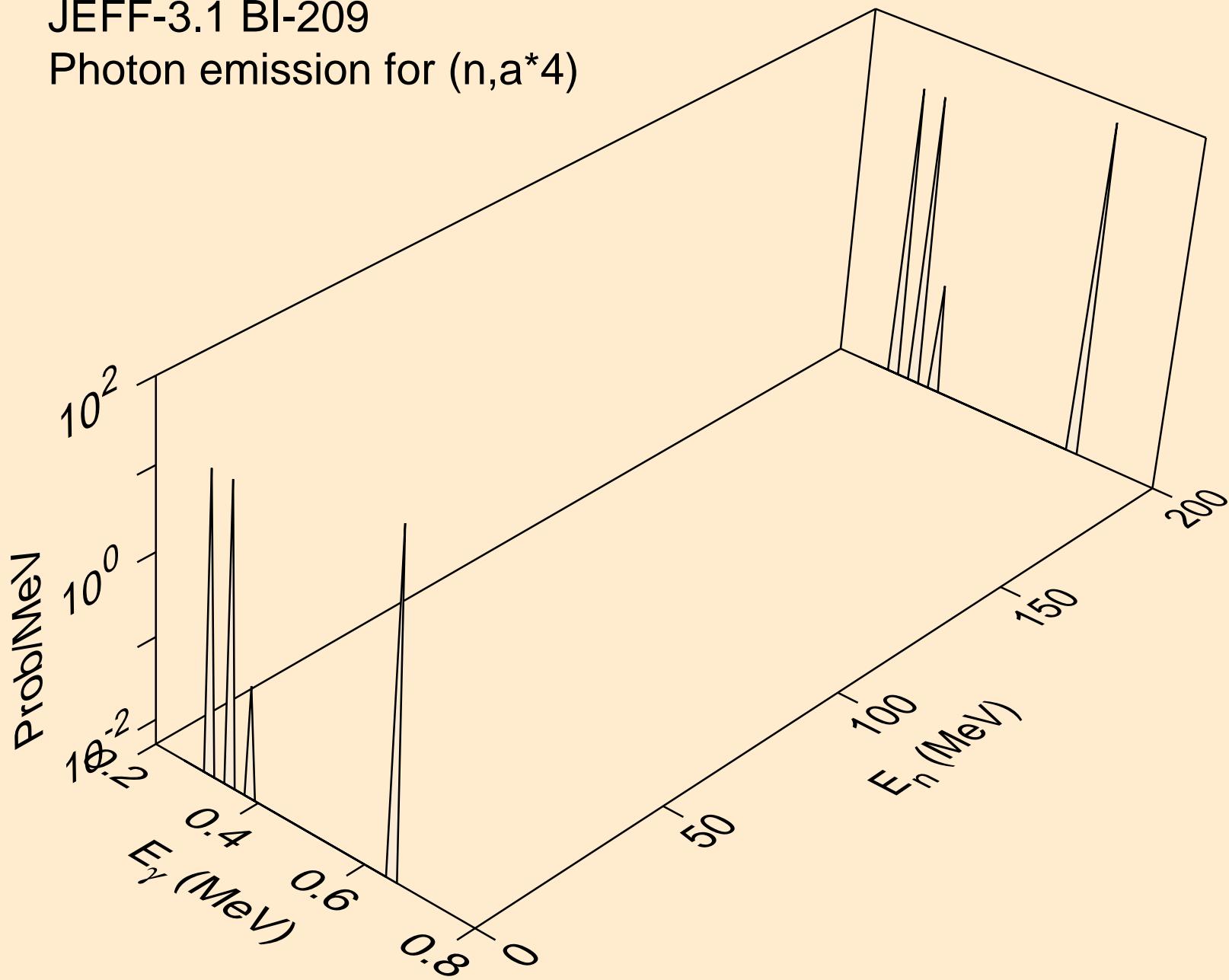
JEFF-3.1 Bi-209  
Photon emission for (n,a\*2)



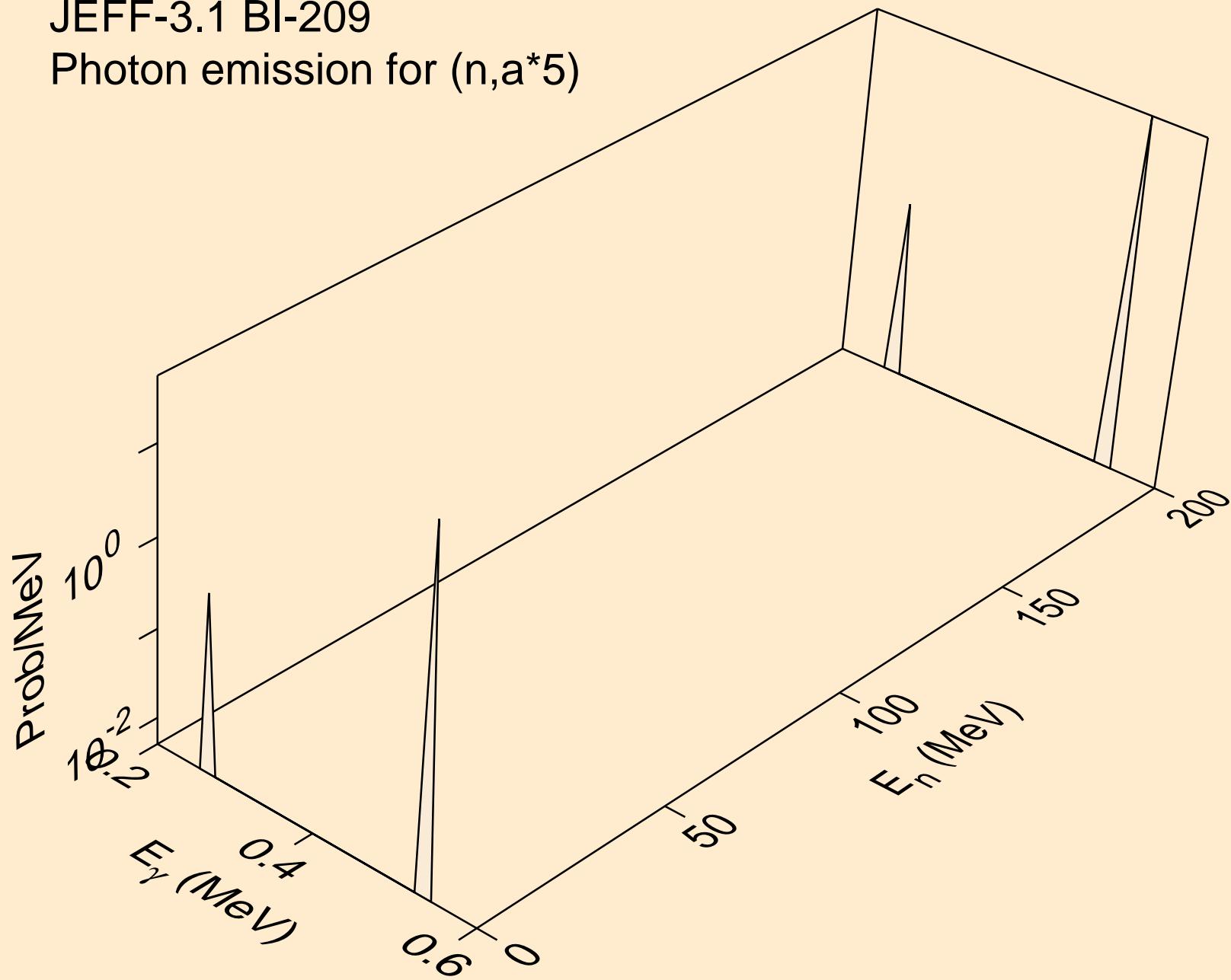
JEFF-3.1 Bi-209  
Photon emission for  $(n, a^* 3)$



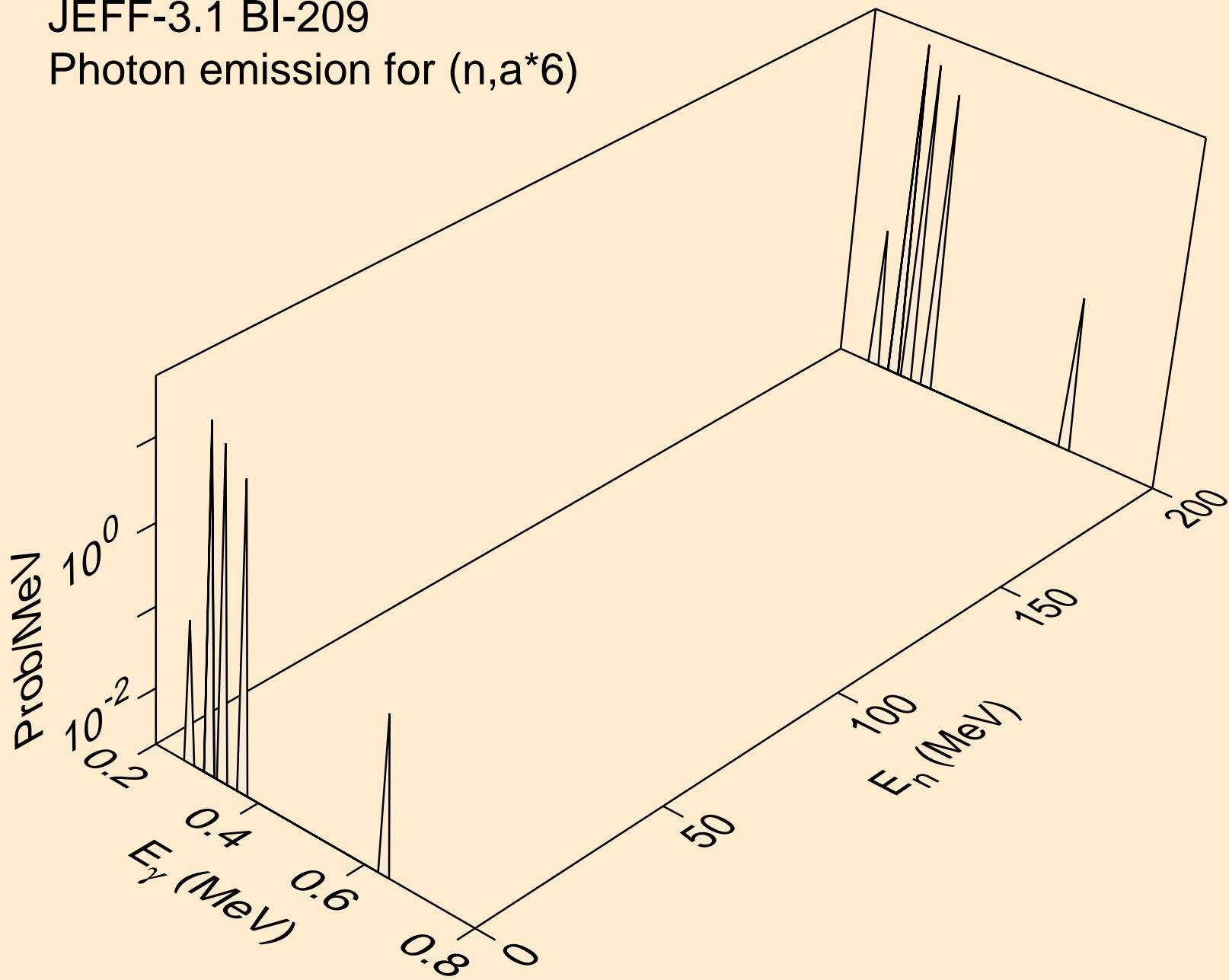
JEFF-3.1 Bi-209  
Photon emission for (n,a\*4)



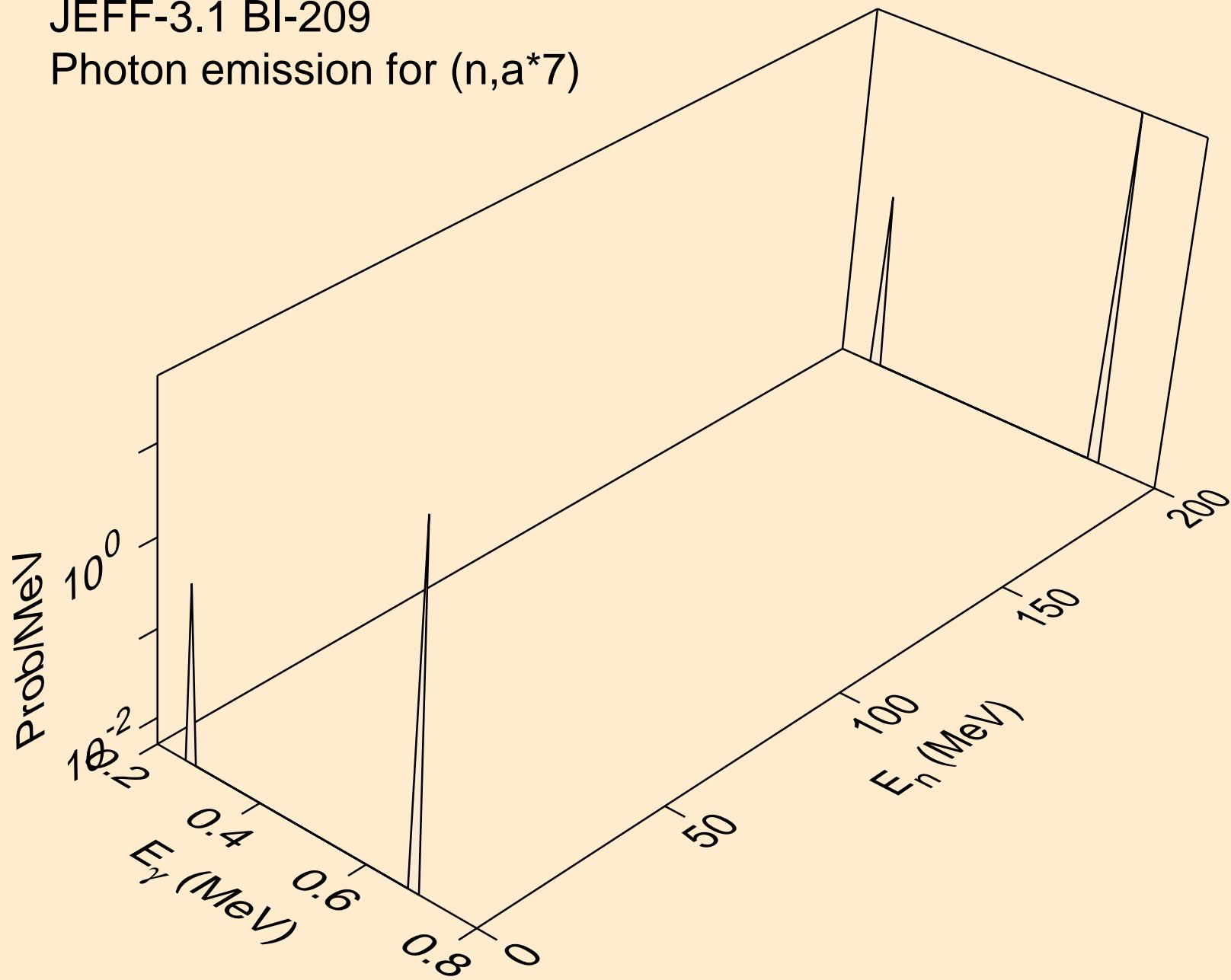
JEFF-3.1 Bi-209  
Photon emission for (n,a\*5)



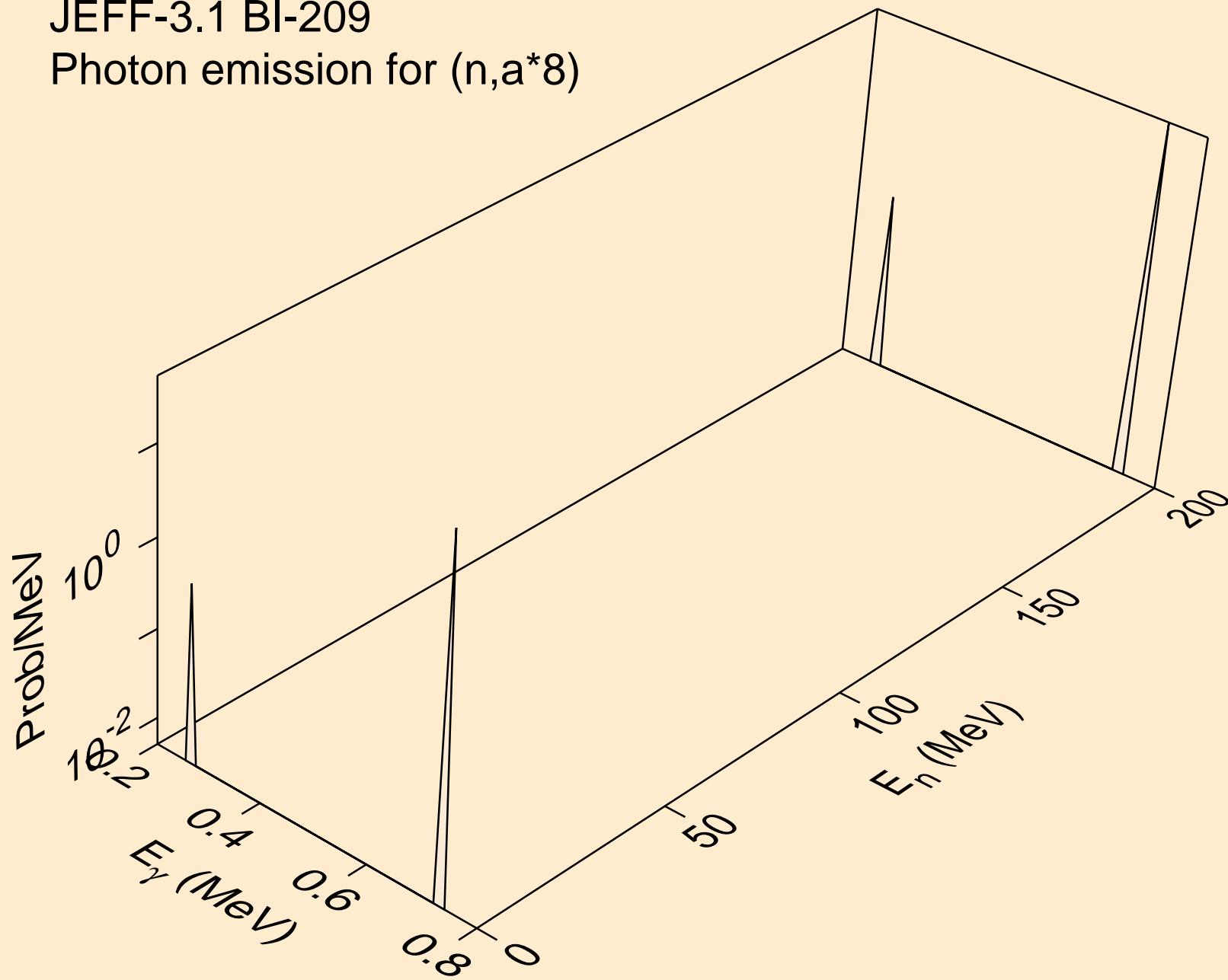
JEFF-3.1 Bi-209  
Photon emission for (n,a\*6)



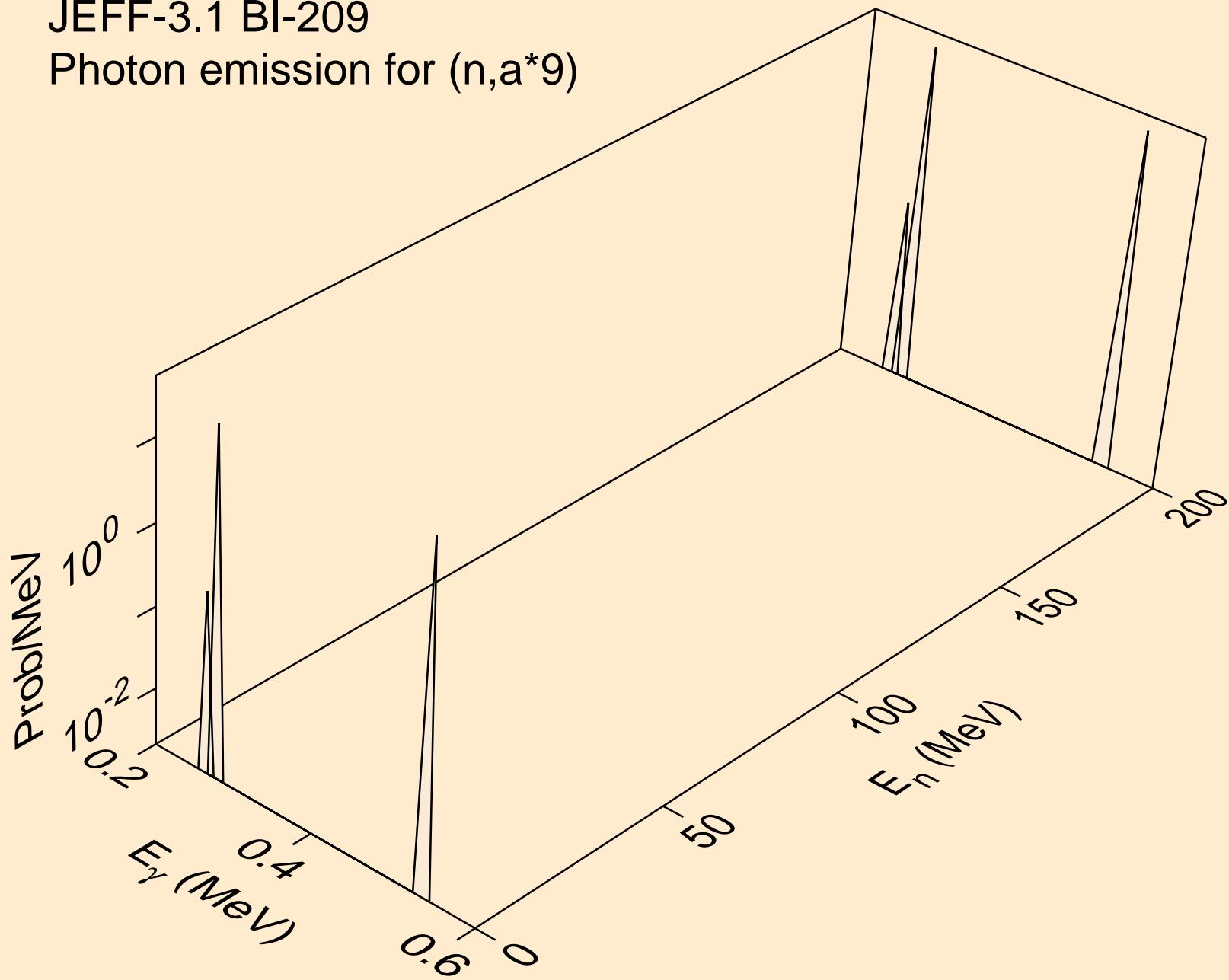
JEFF-3.1 Bi-209  
Photon emission for (n,a\*7)



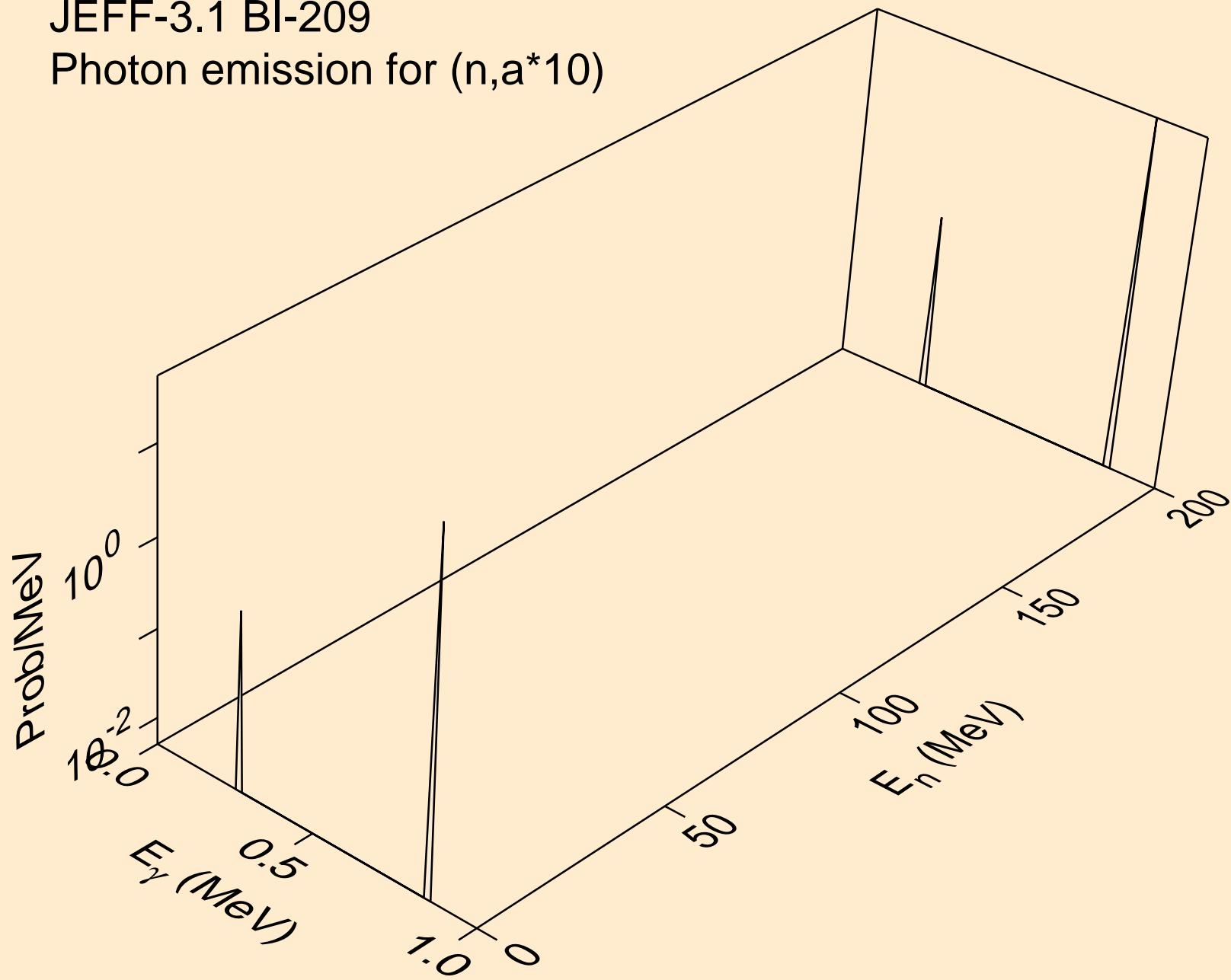
JEFF-3.1 Bi-209  
Photon emission for (n,a\*8)



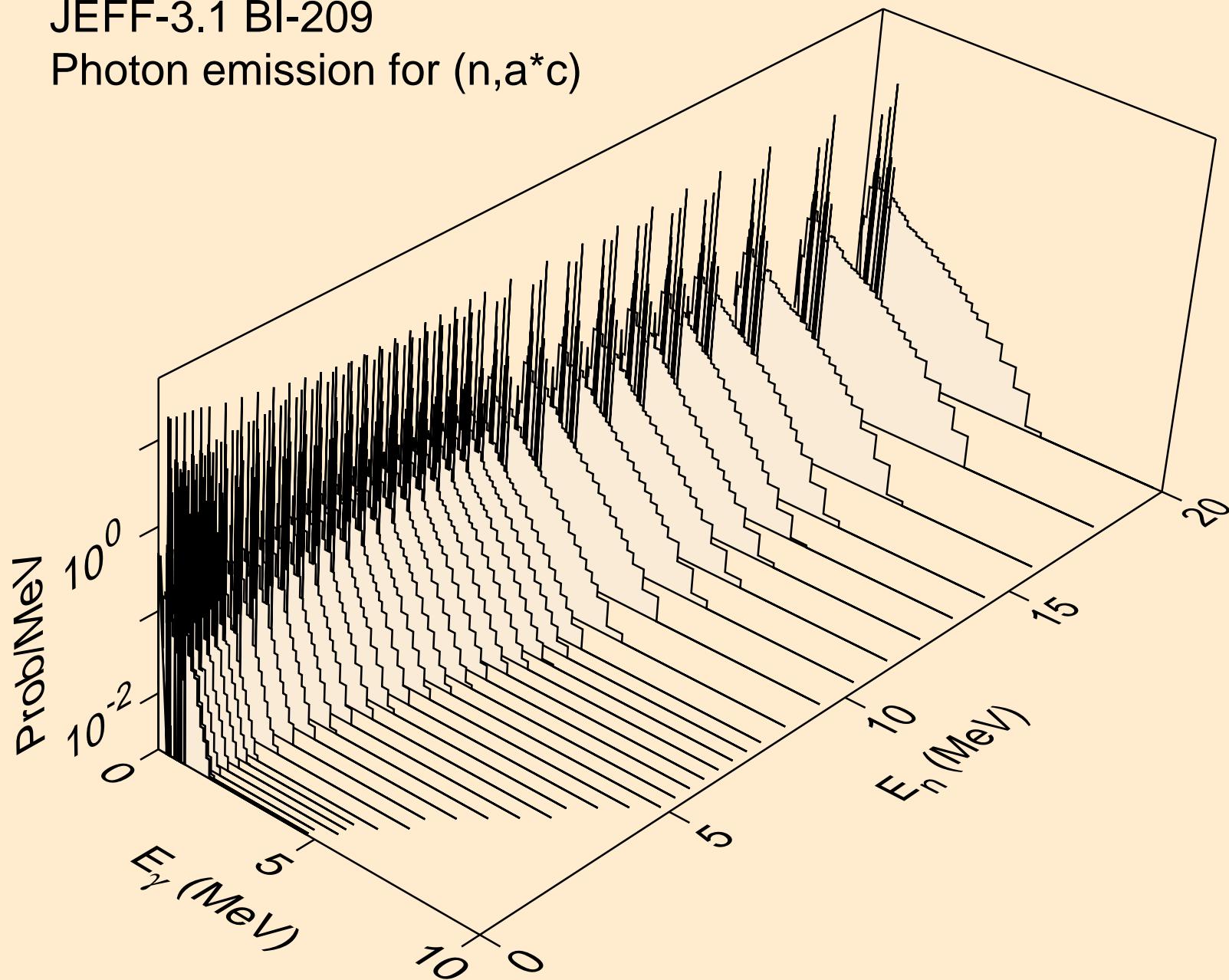
JEFF-3.1 Bi-209  
Photon emission for  $(n,a^*9)$



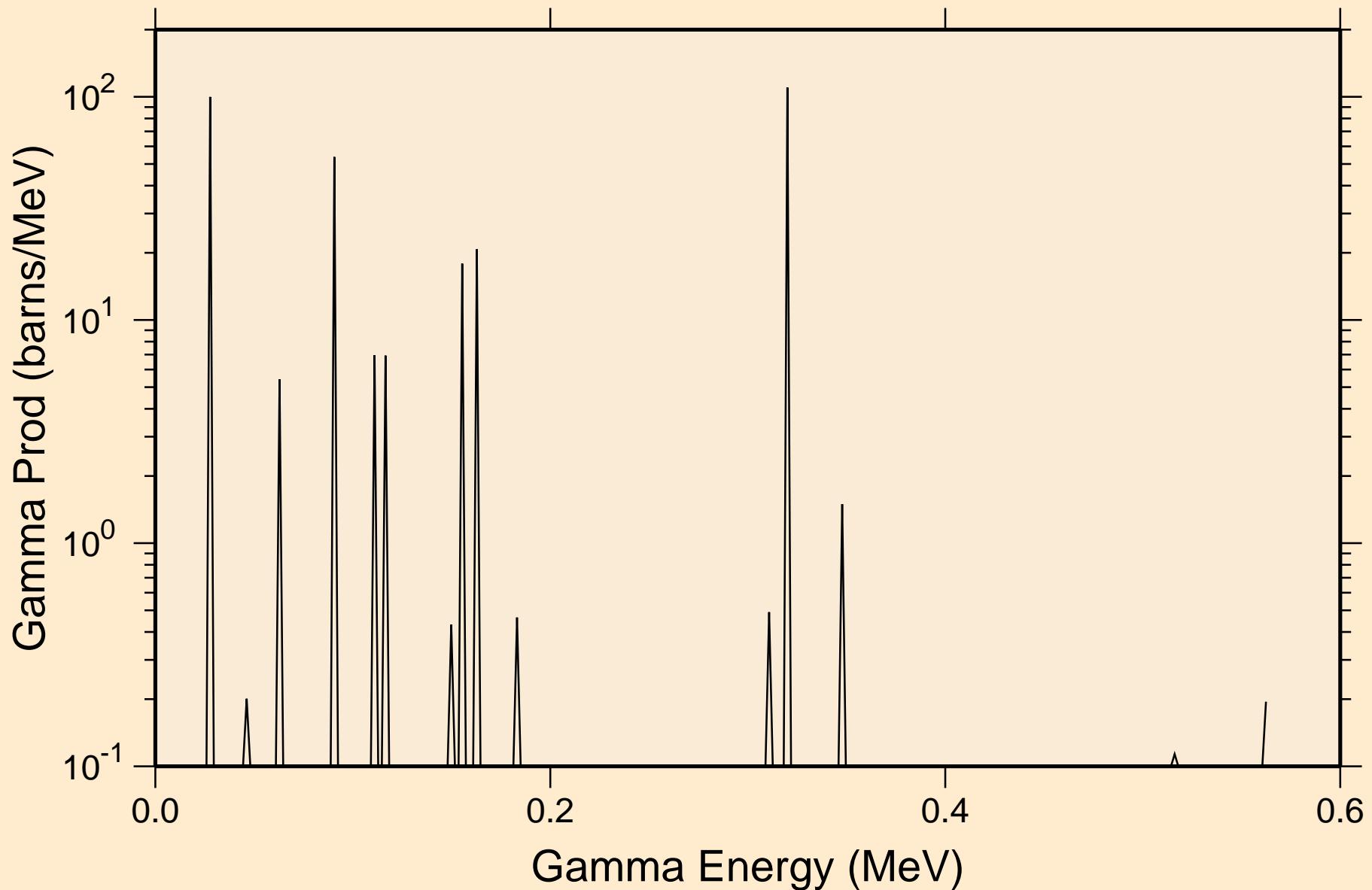
JEFF-3.1 Bi-209  
Photon emission for (n,a\*10)



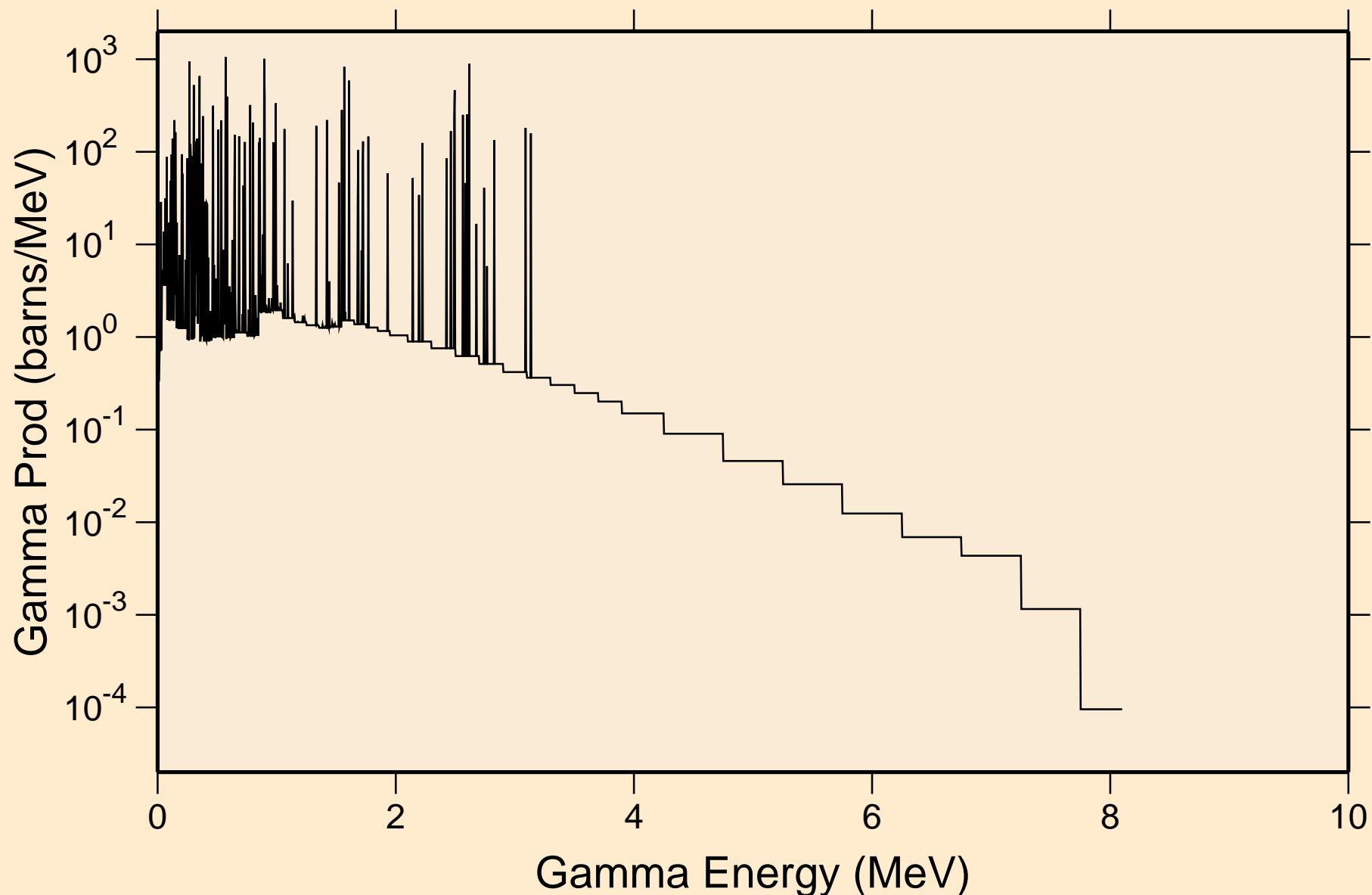
JEFF-3.1 Bi-209  
Photon emission for  $(n, a^* c)$



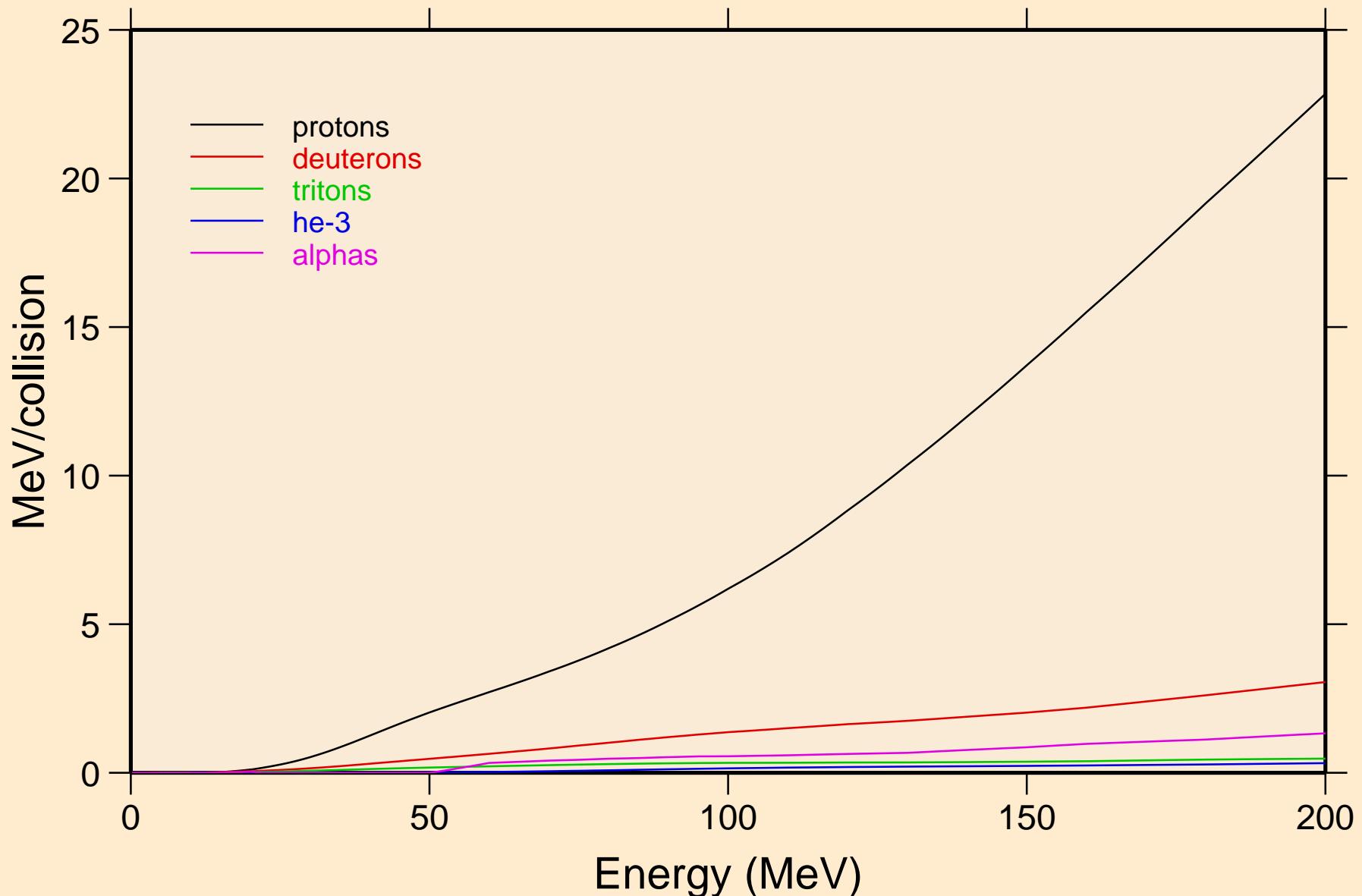
JEFF-3.1 Bi-209  
thermal capture photon spectrum



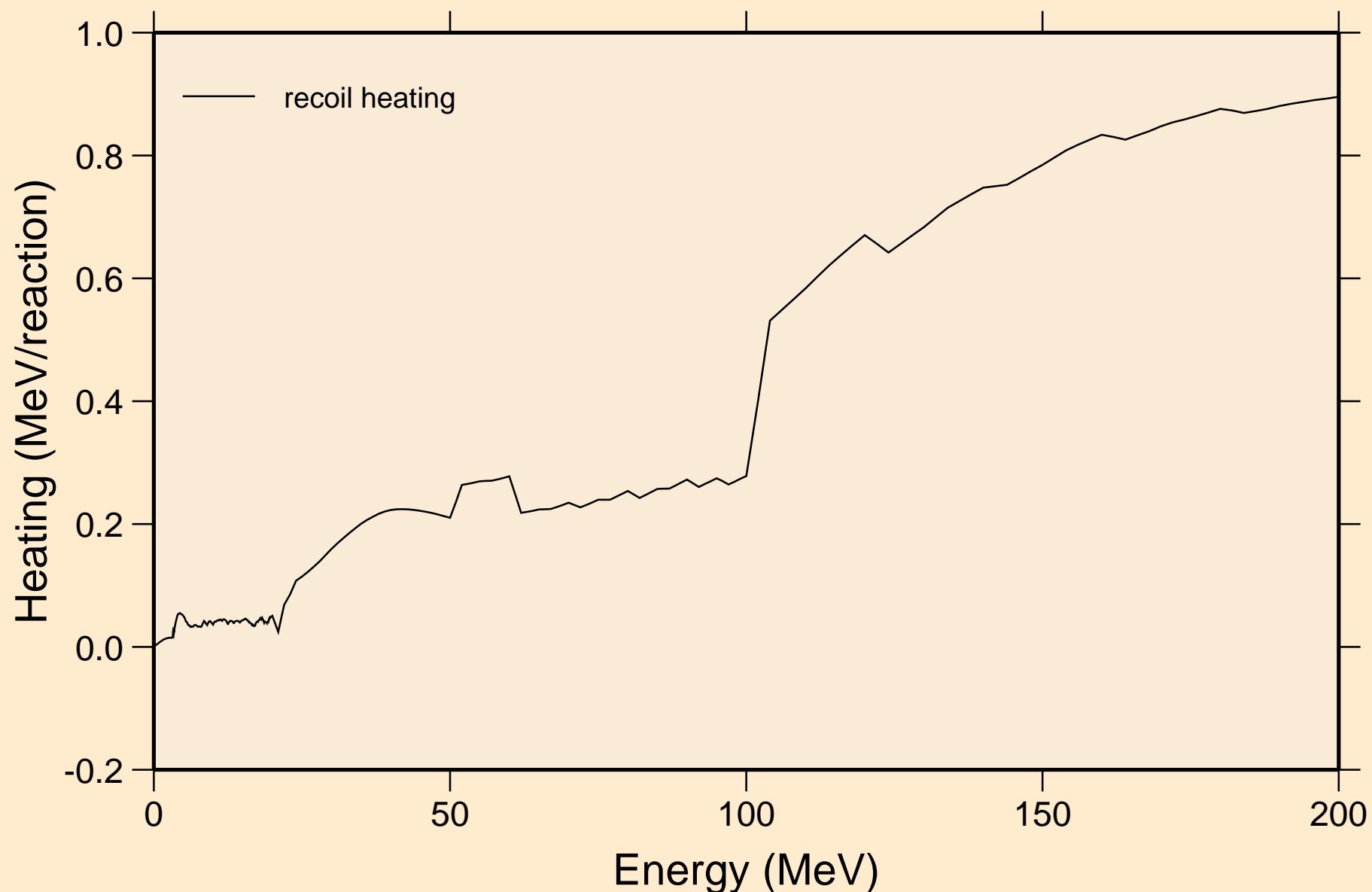
JEFF-3.1 Bi-209  
14 MeV photon spectrum



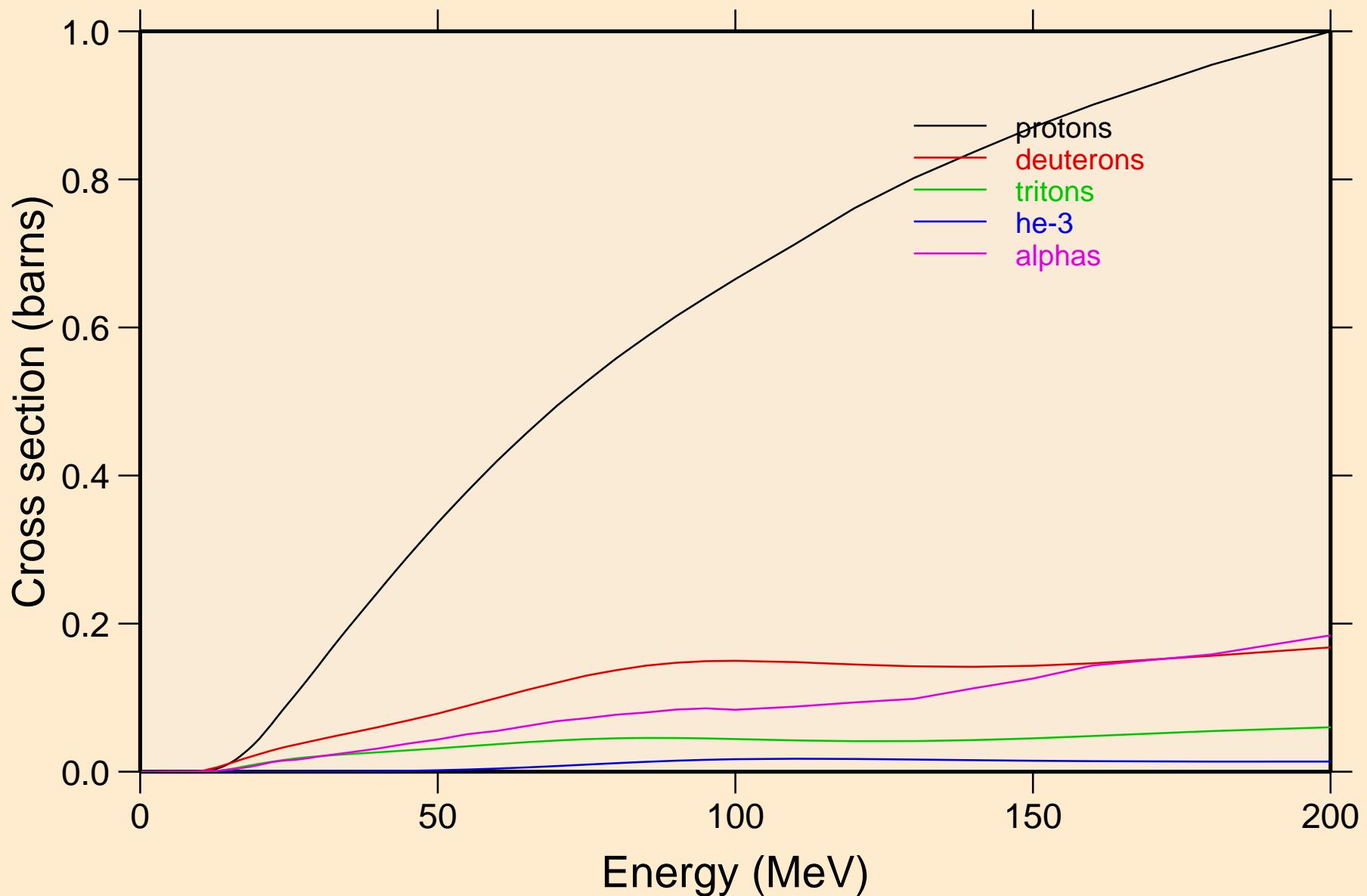
JEFF-3.1 Bi-209  
Particle heating contributions



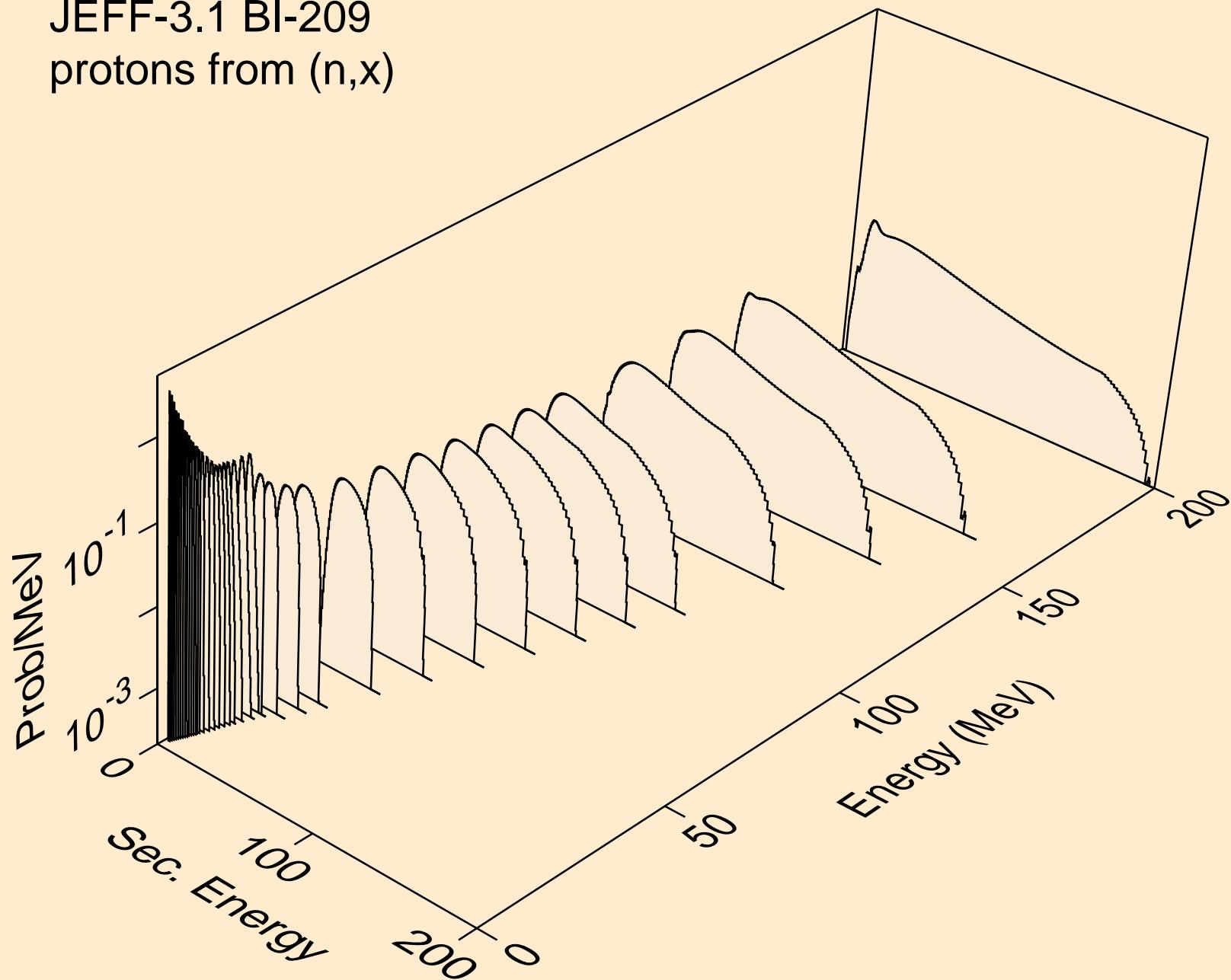
JEFF-3.1 Bi-209  
Recoil Heating



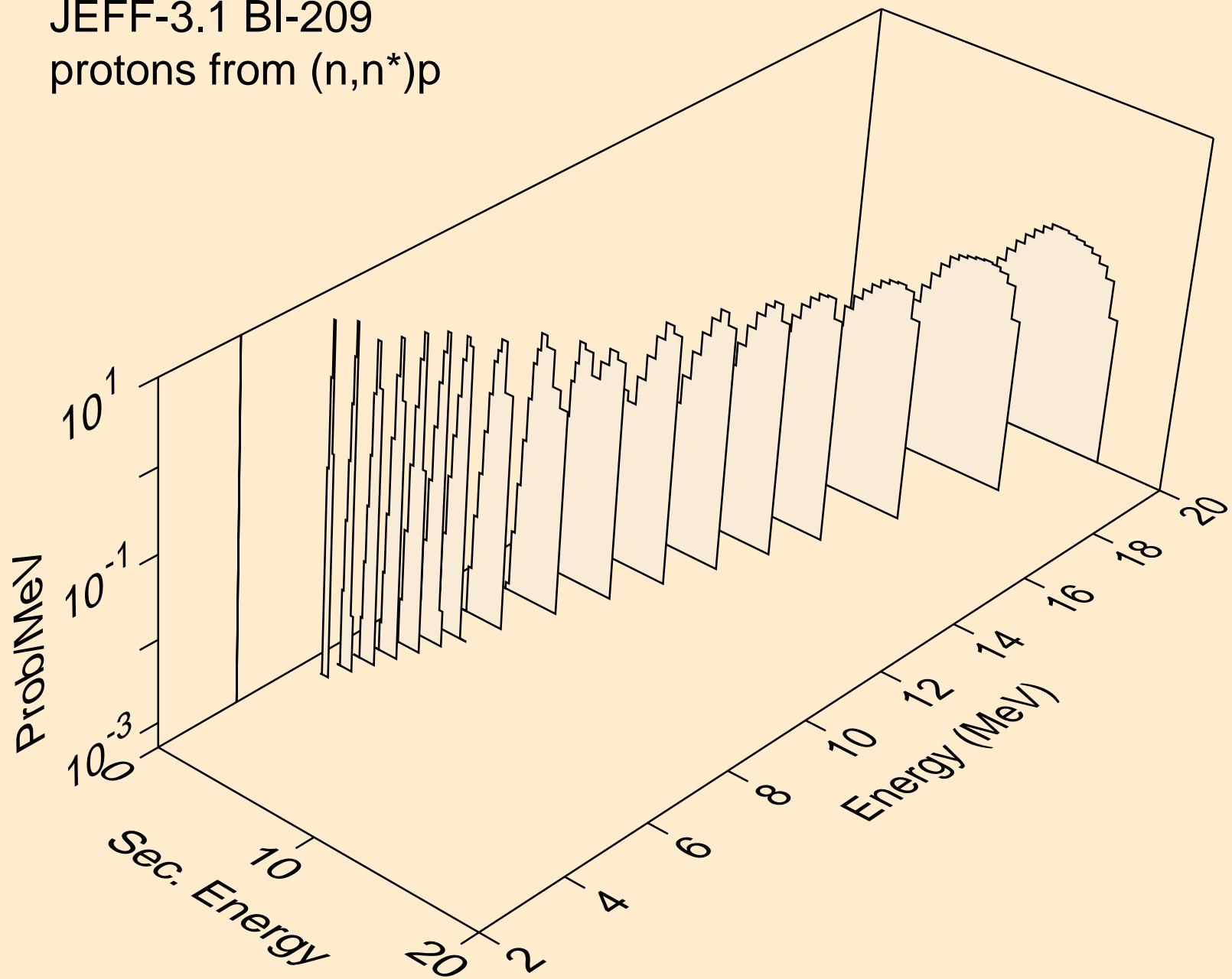
JEFF-3.1 Bi-209  
Particle production cross sections



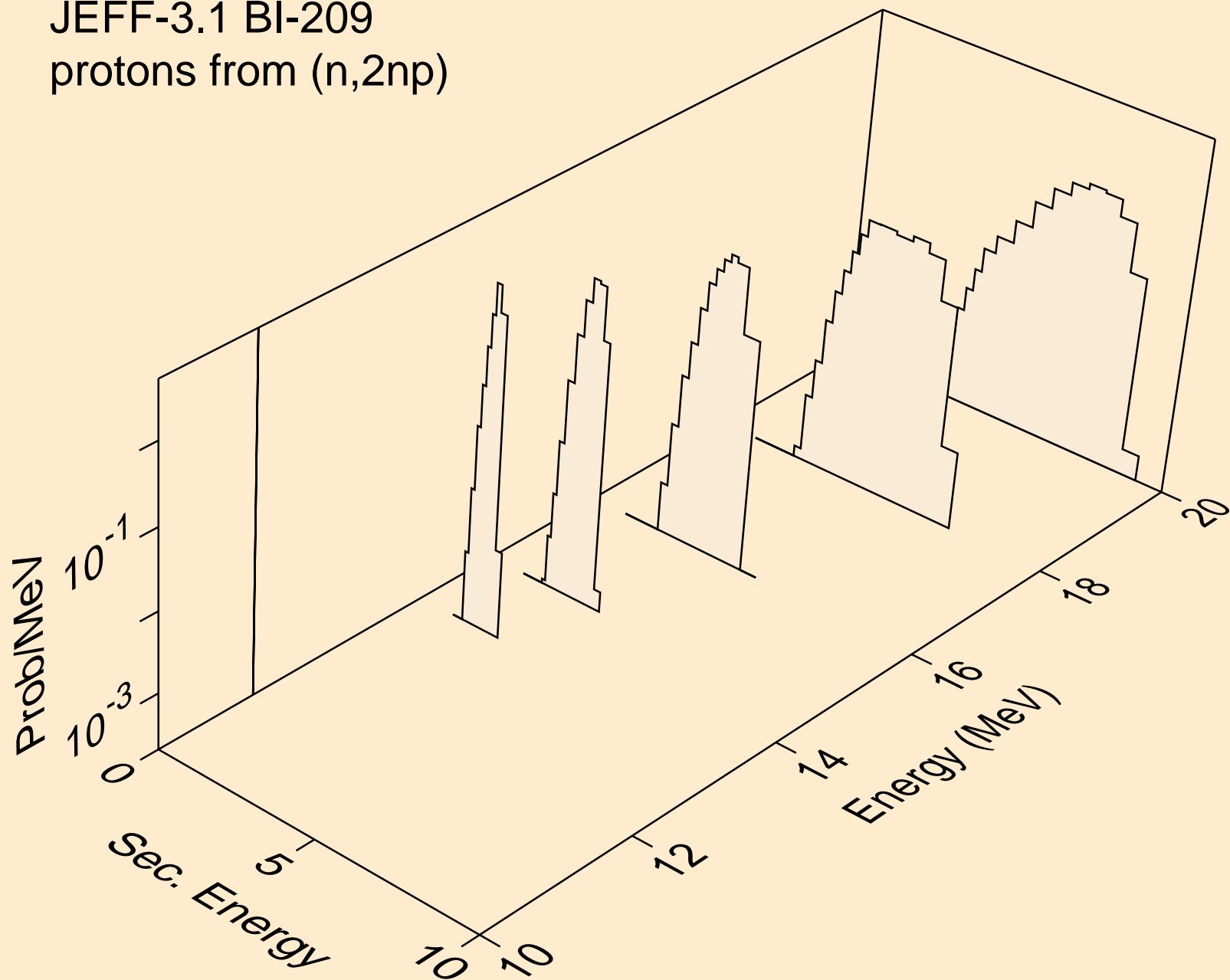
JEFF-3.1 Bi-209  
protons from ( $n, x$ )



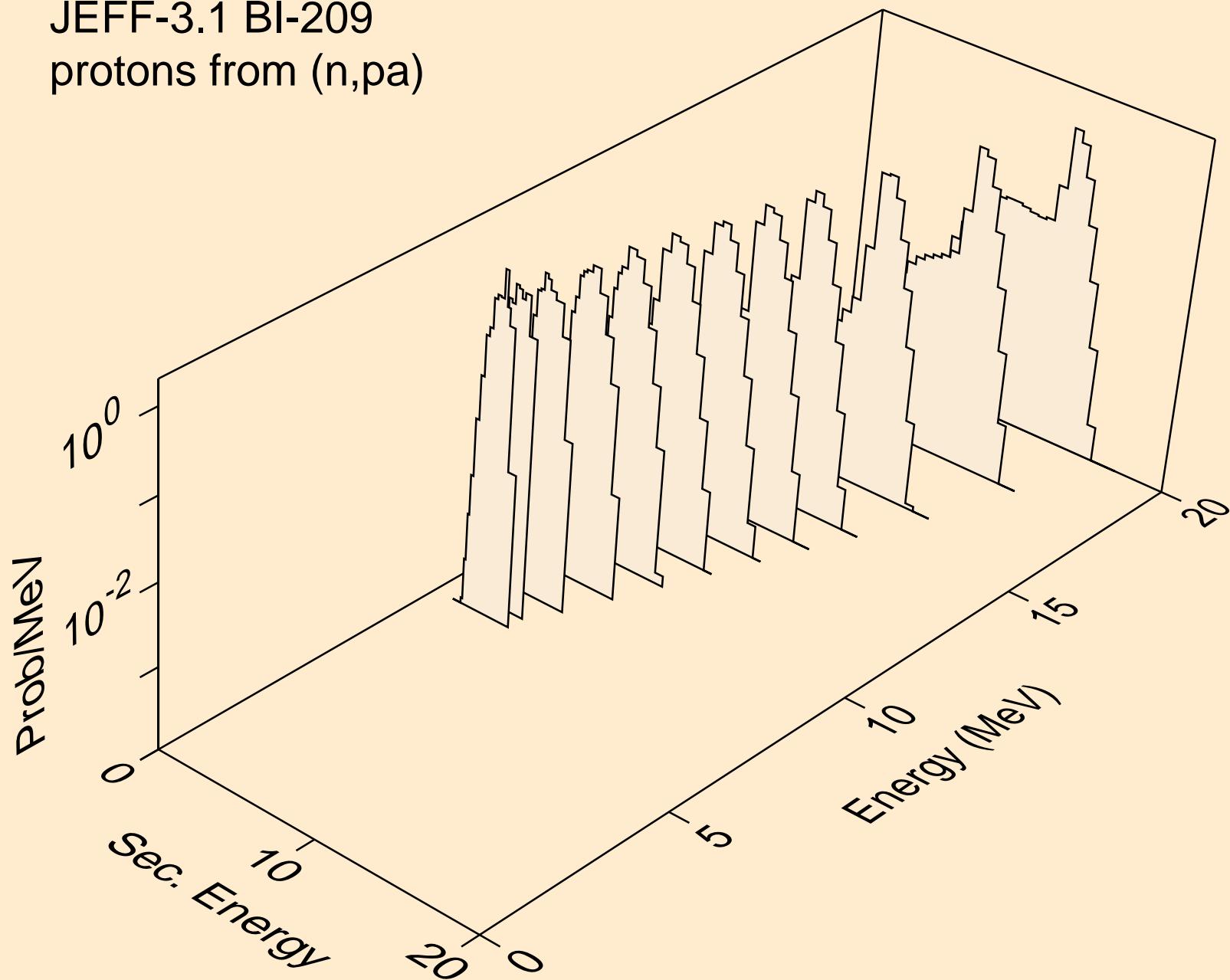
JEFF-3.1 Bi-209  
protons from  $(n,n^*)p$



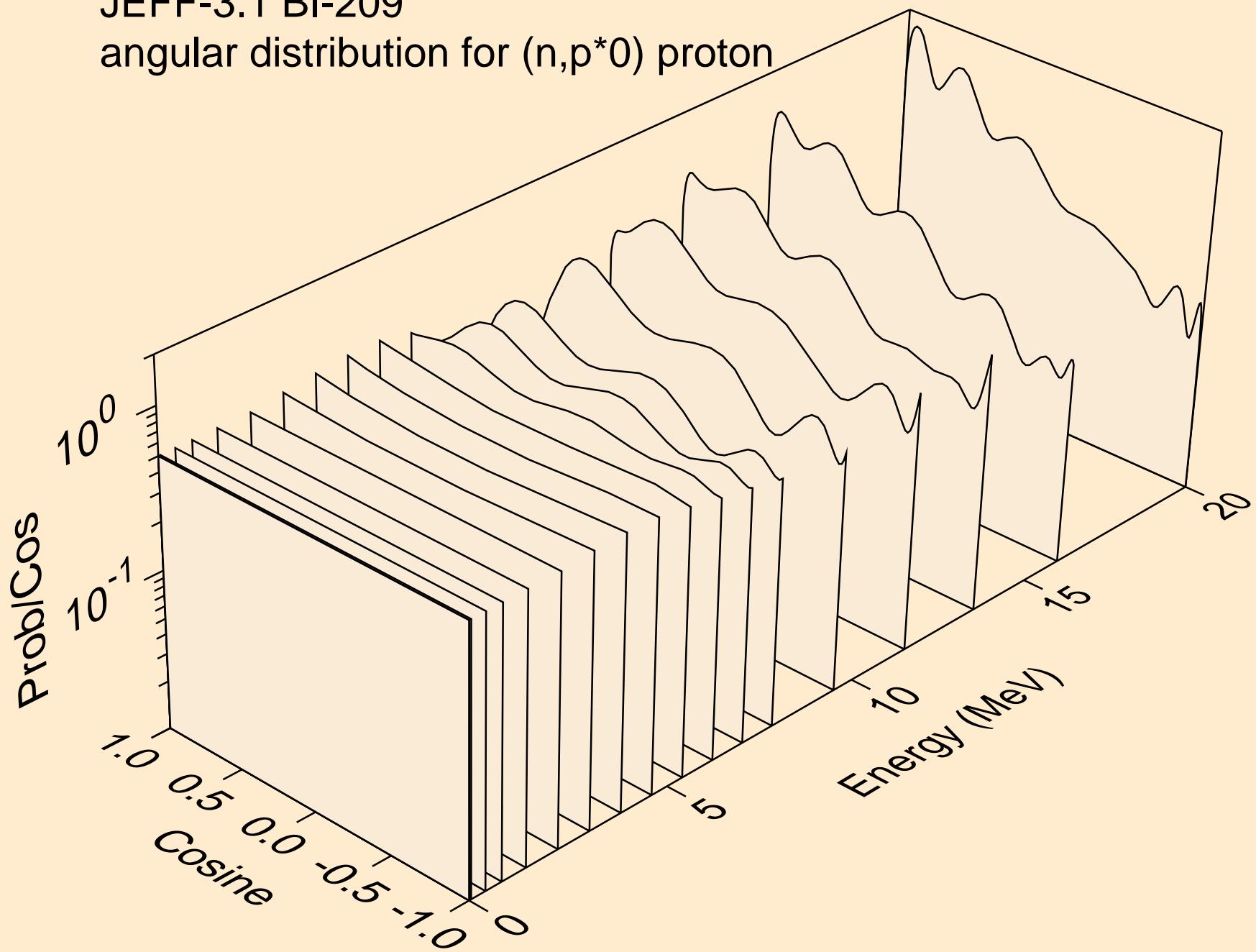
JEFF-3.1 Bi-209  
protons from ( $n,2np$ )



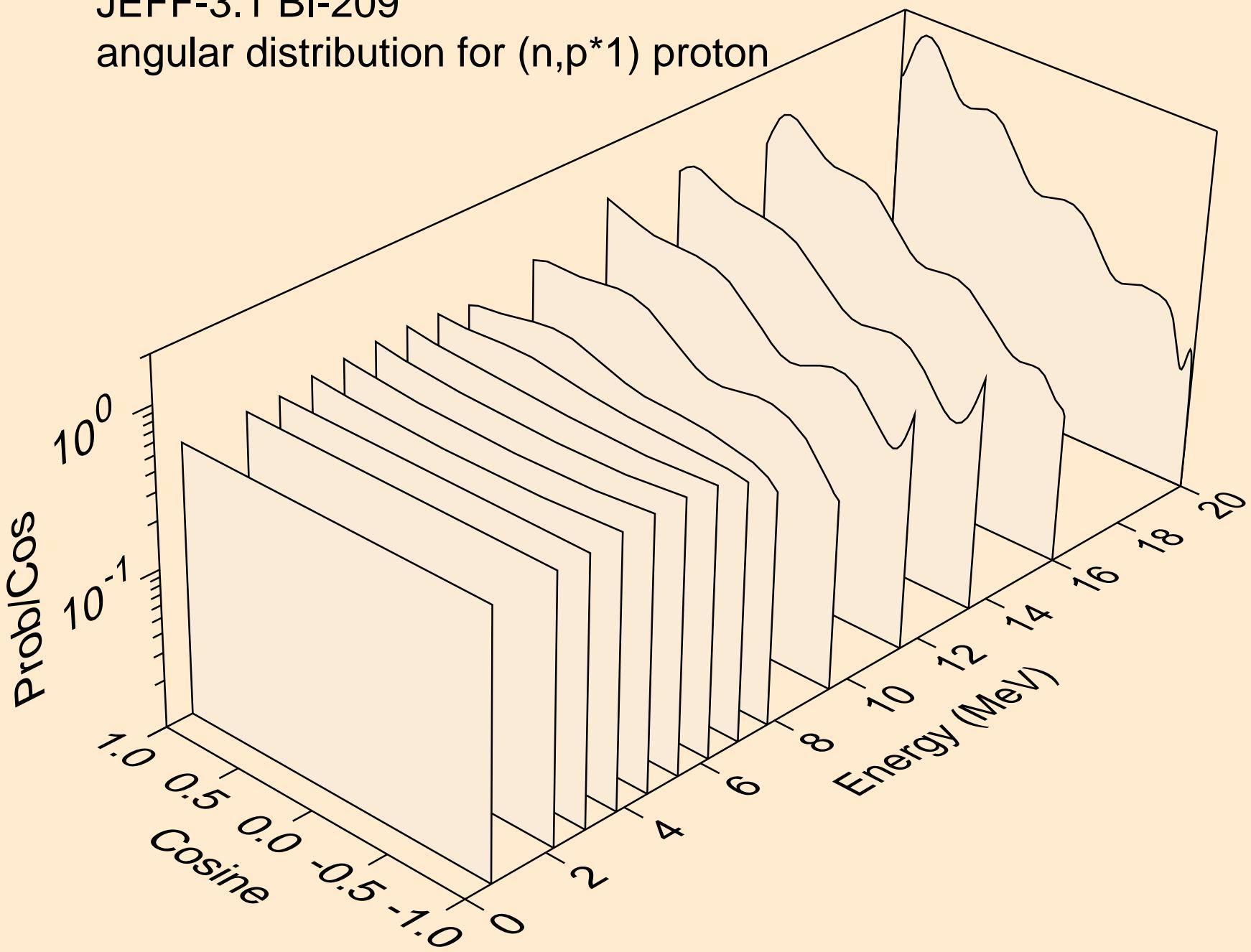
JEFF-3.1 Bi-209  
protons from (n,pa)



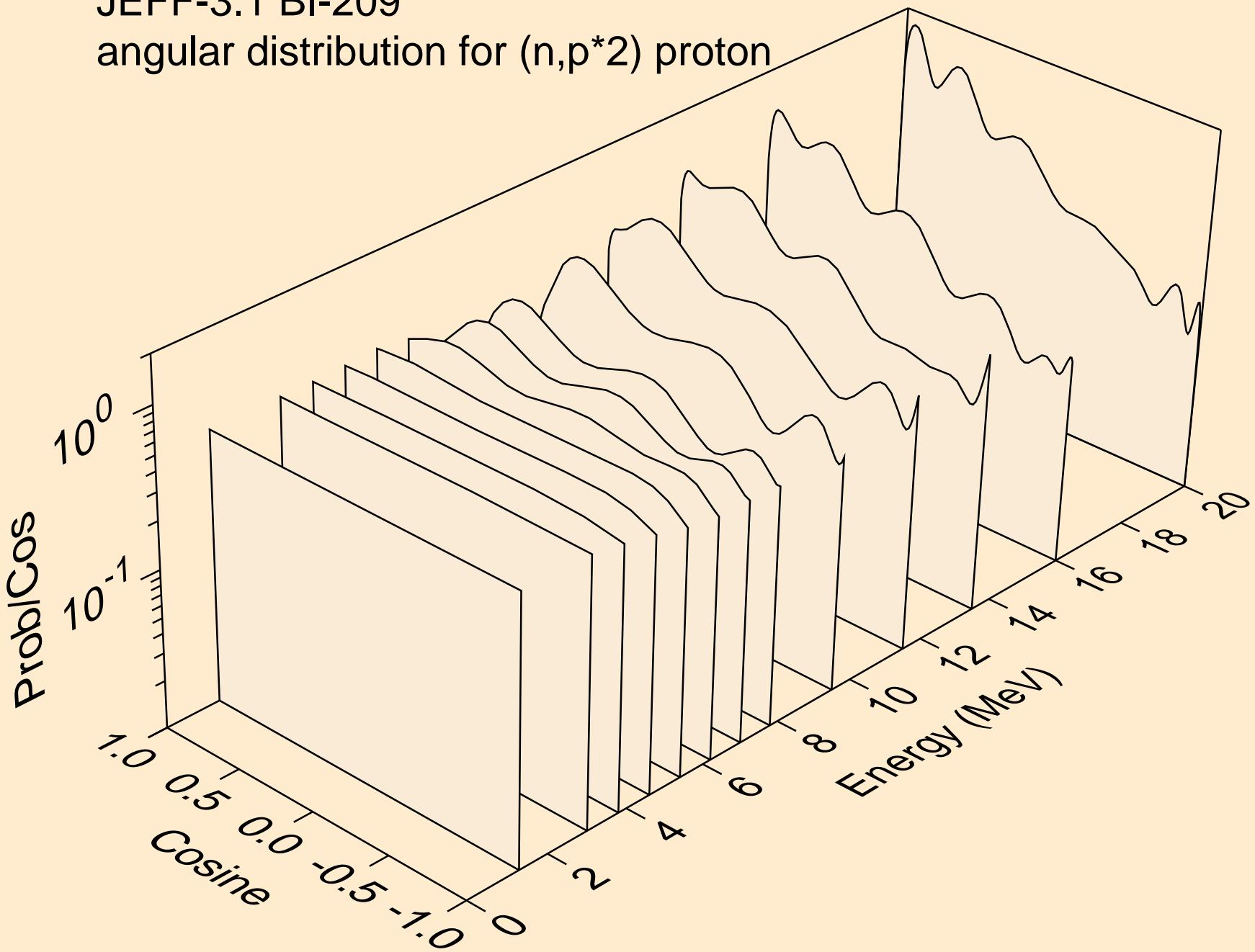
JEFF-3.1 Bi-209  
angular distribution for  $(n,p^*0)$  proton



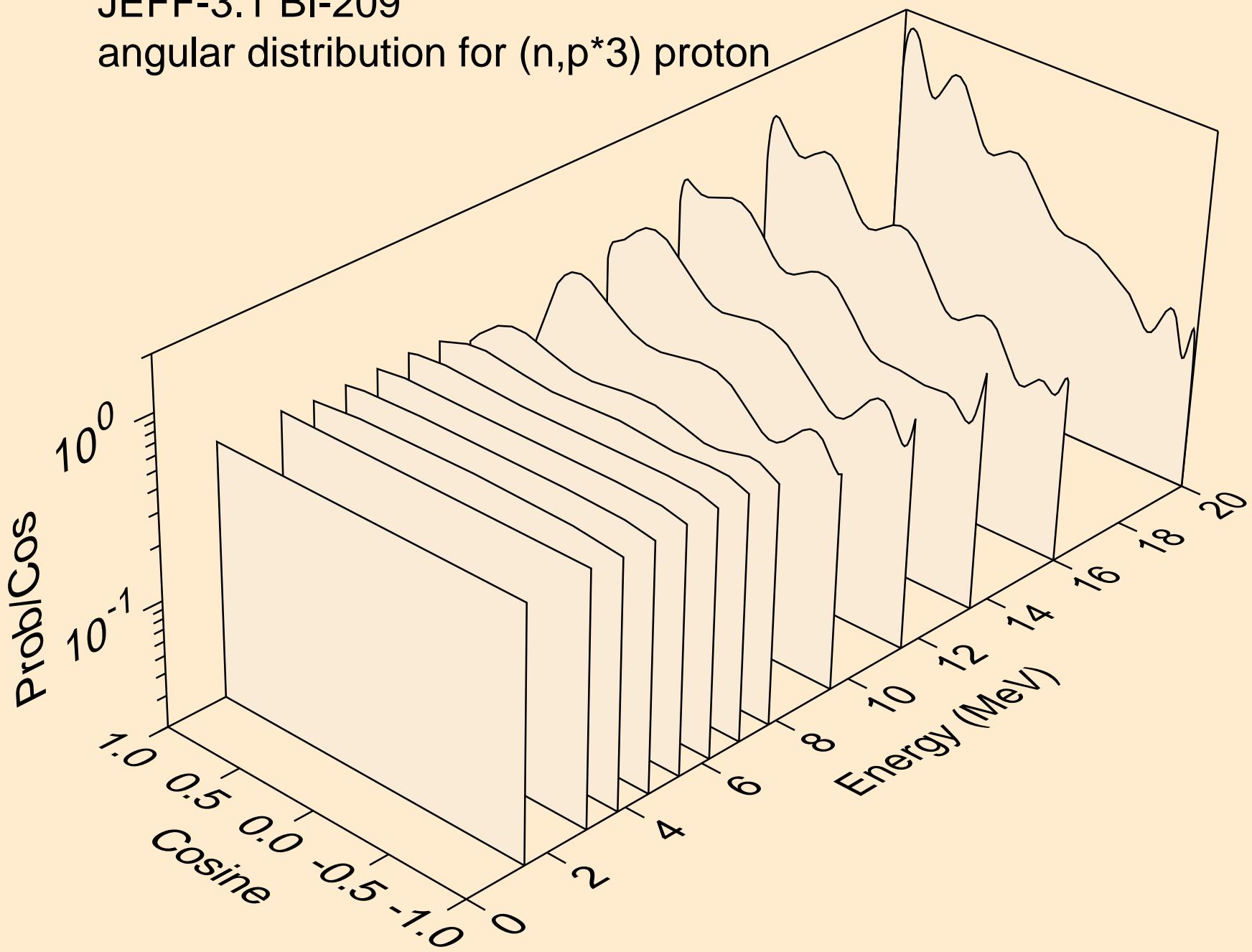
JEFF-3.1 Bi-209  
angular distribution for ( $n,p^*1$ ) proton



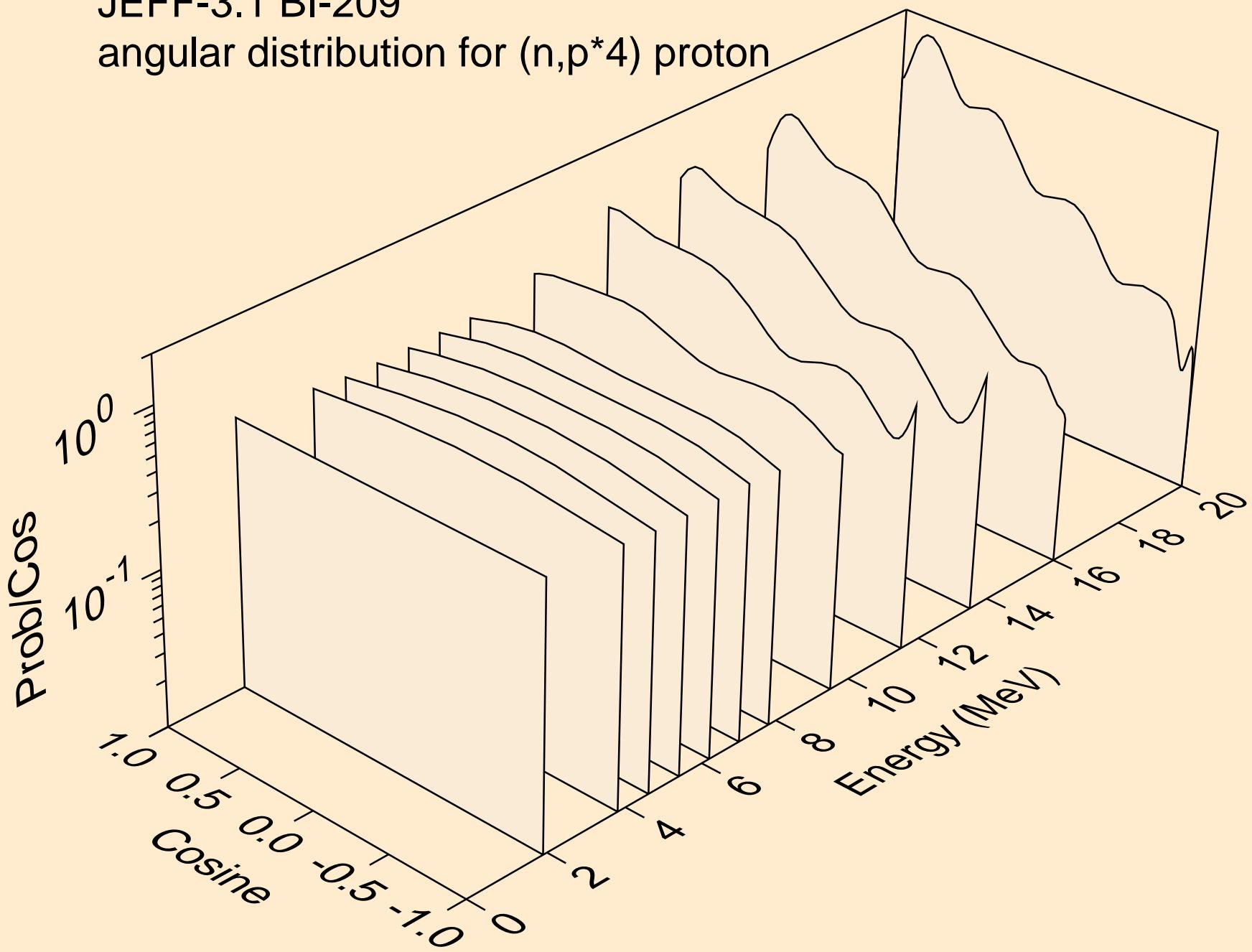
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angular distribution for  $(n,p^*2)$  proton



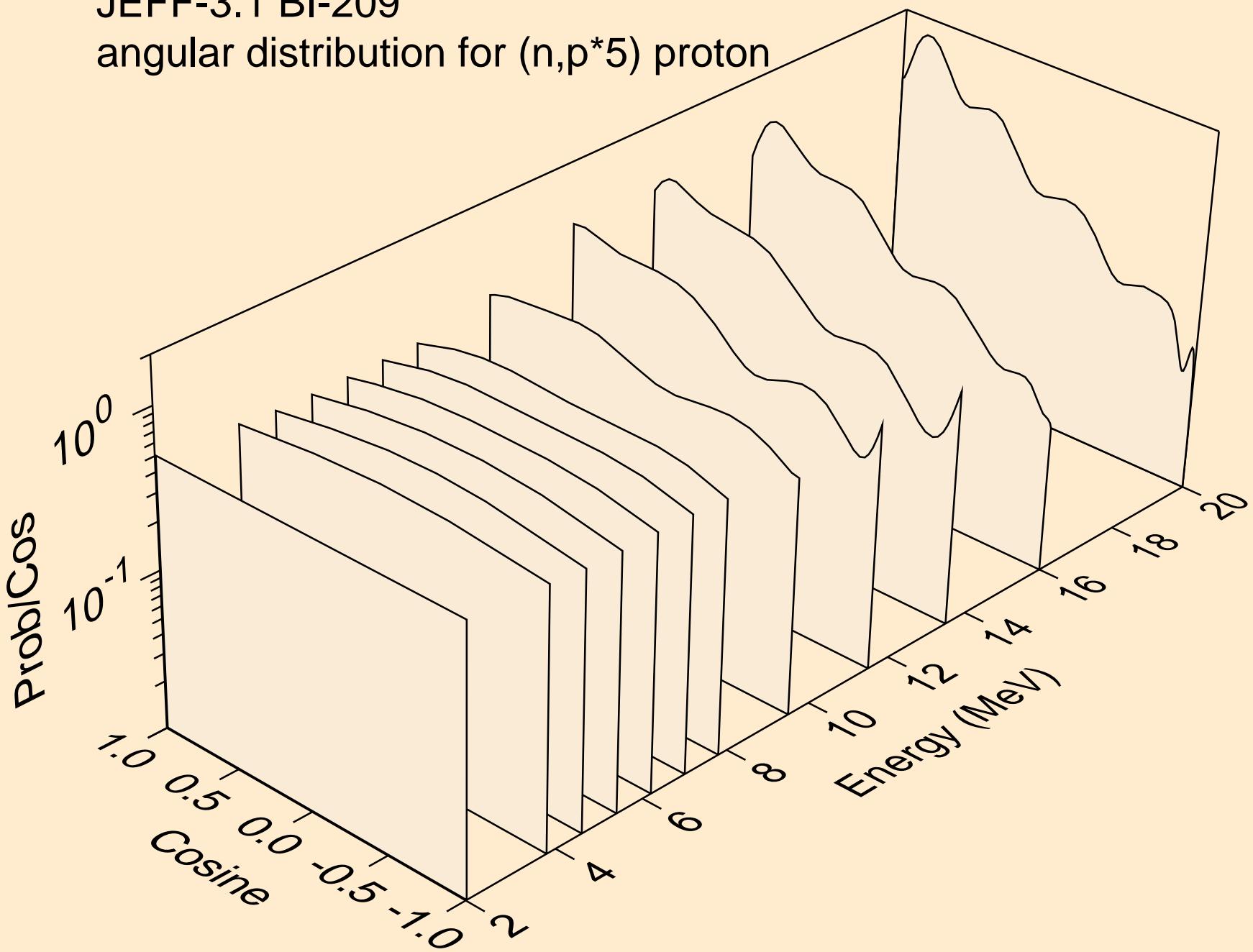
JEFF-3.1 Bi-209  
angular distribution for ( $n,p^*3$ ) proton



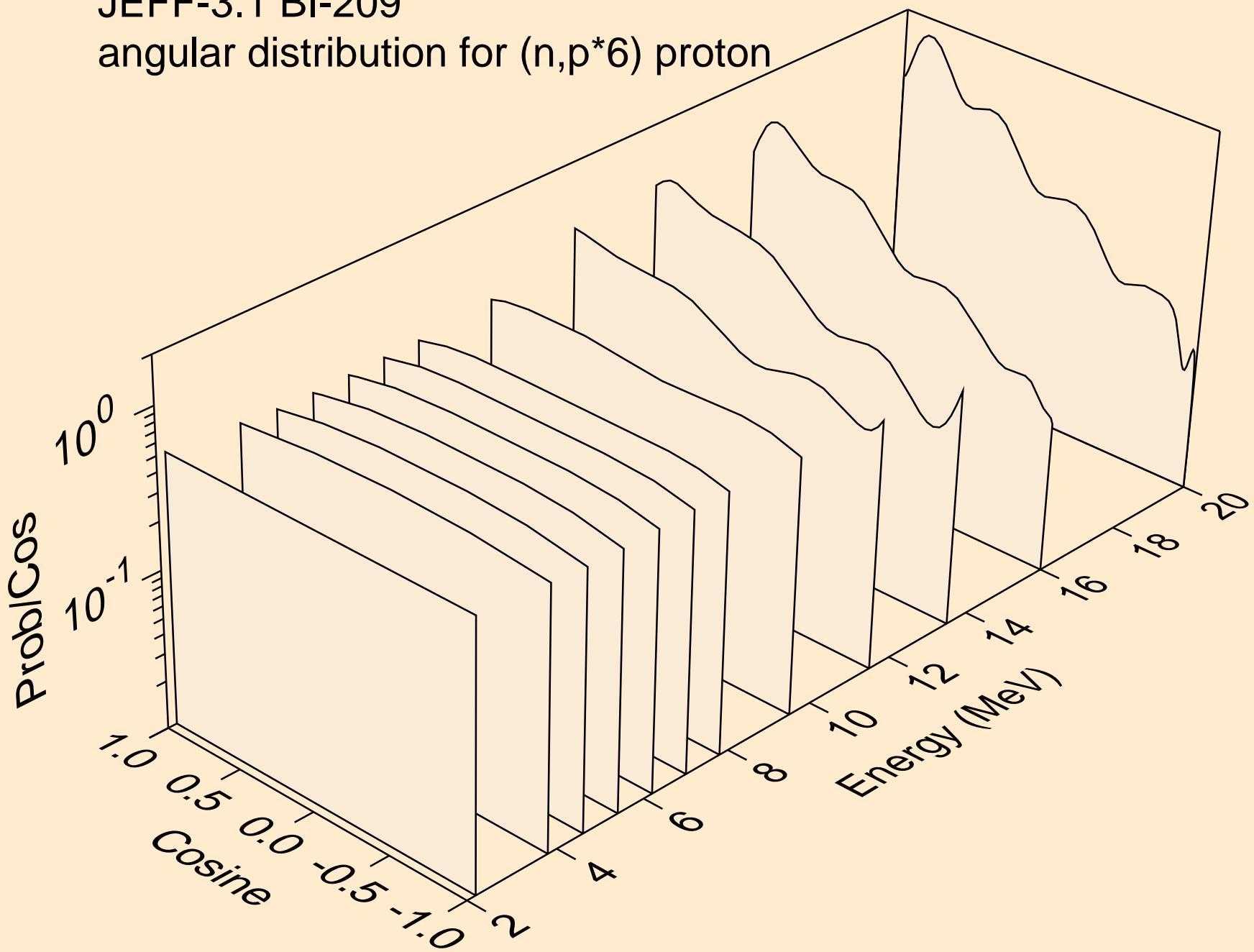
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angular distribution for ( $n,p^*4$ ) proton



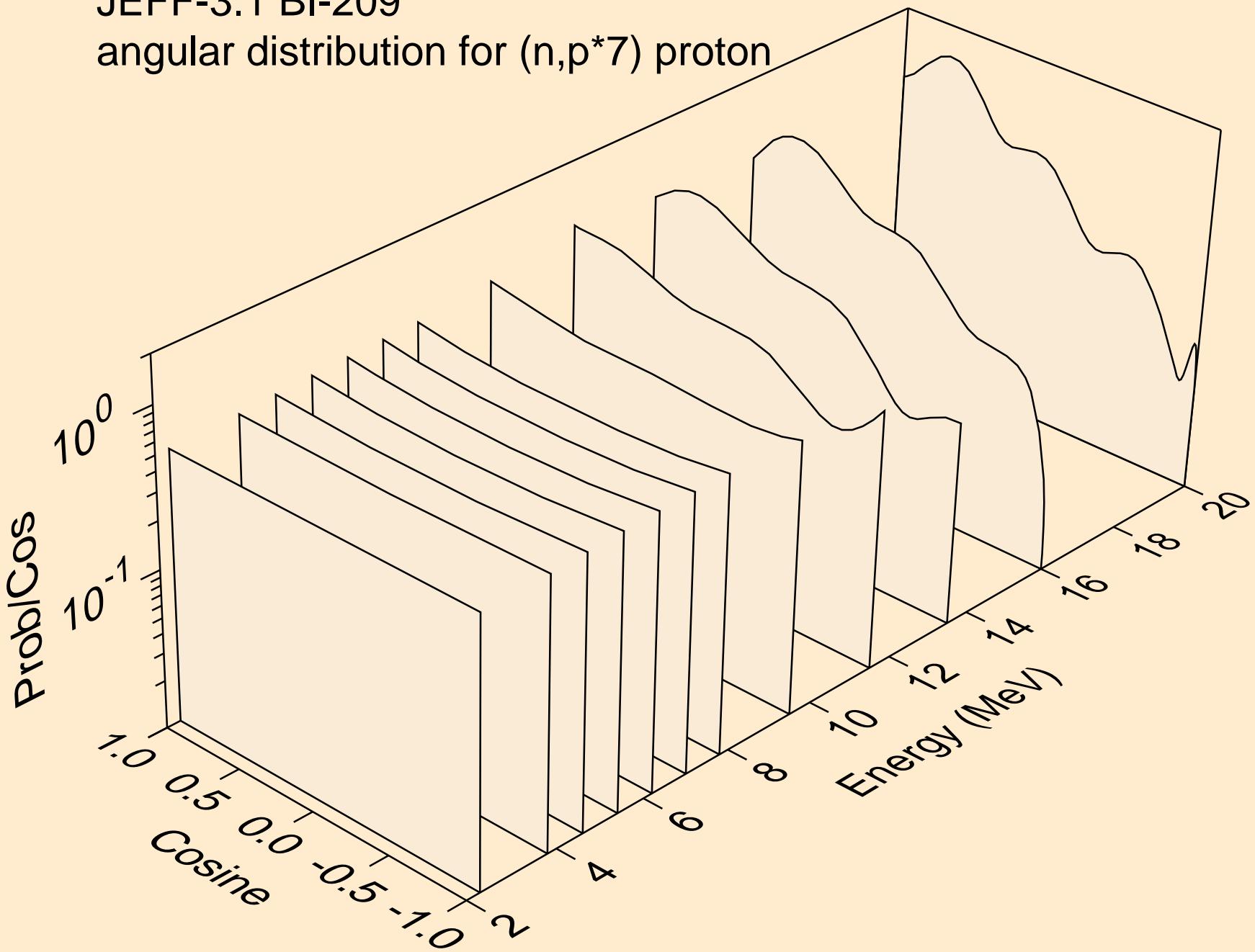
JEFF-3.1 Bi-209  
angular distribution for ( $n,p^*5$ ) proton



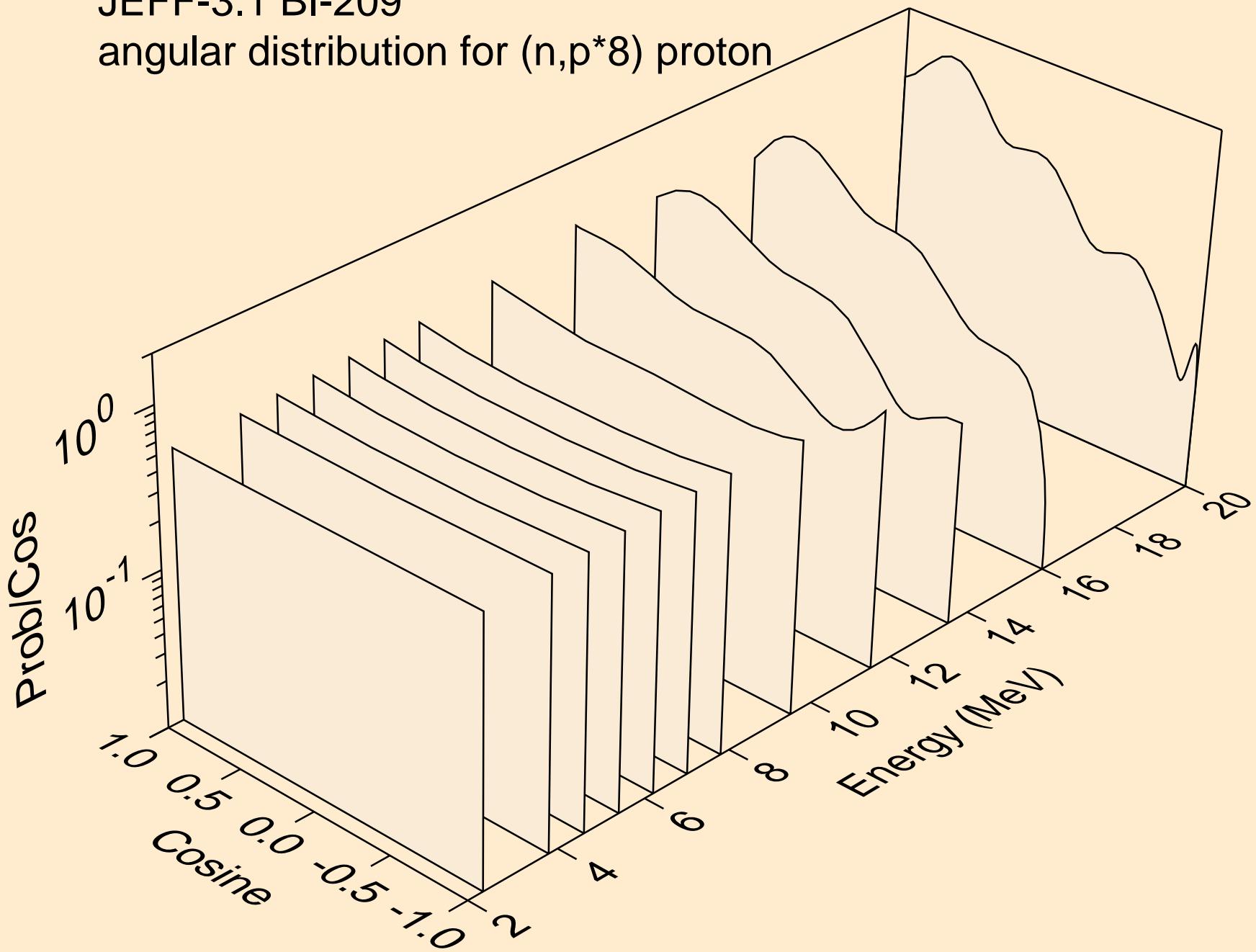
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angular distribution for  $(n,p^*6)$  proton



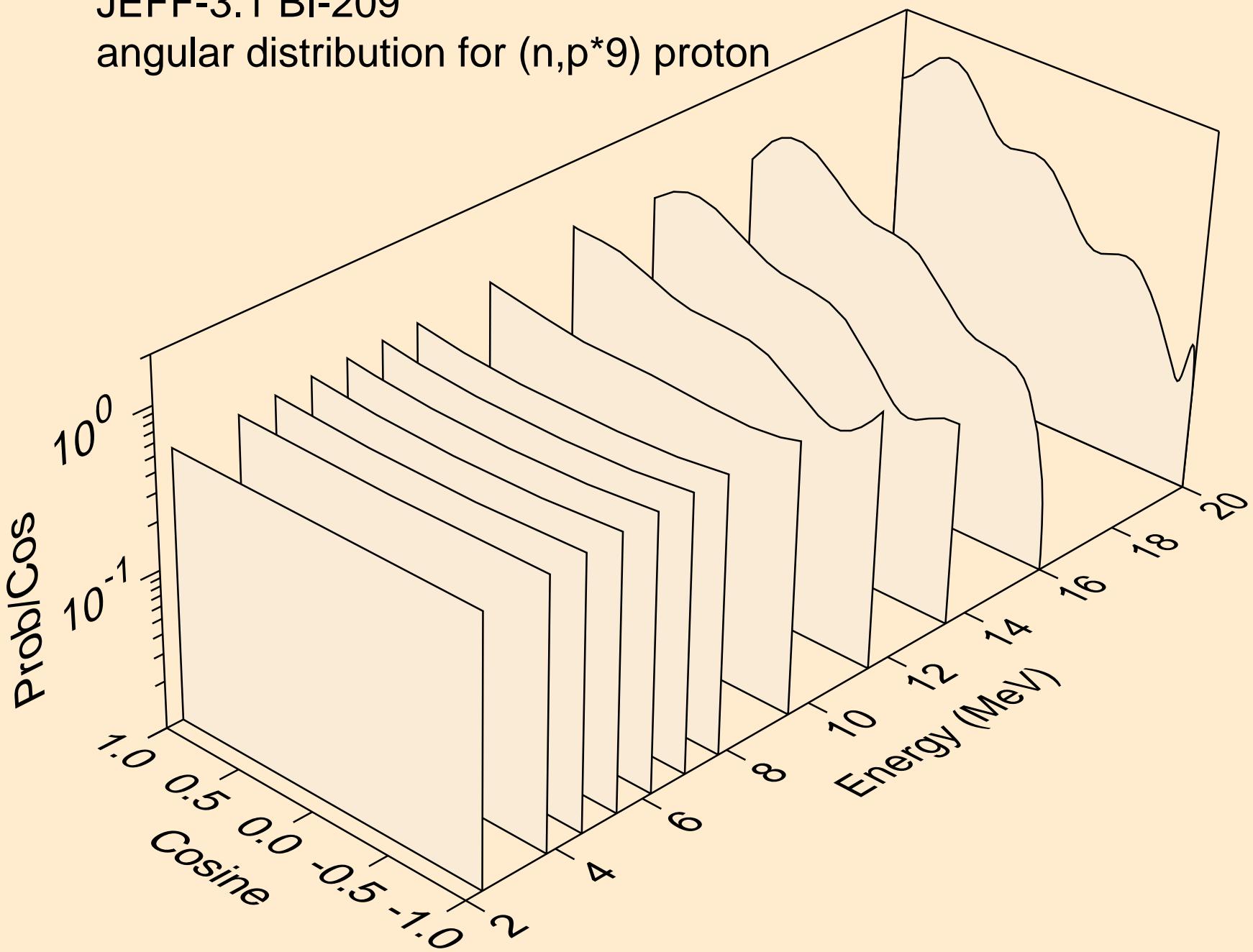
JEFF-3.1 Bi-209  
angular distribution for ( $n,p^*7$ ) proton



JEFF-3.1 Bi-209  
angular distribution for ( $n,p^*8$ ) proton

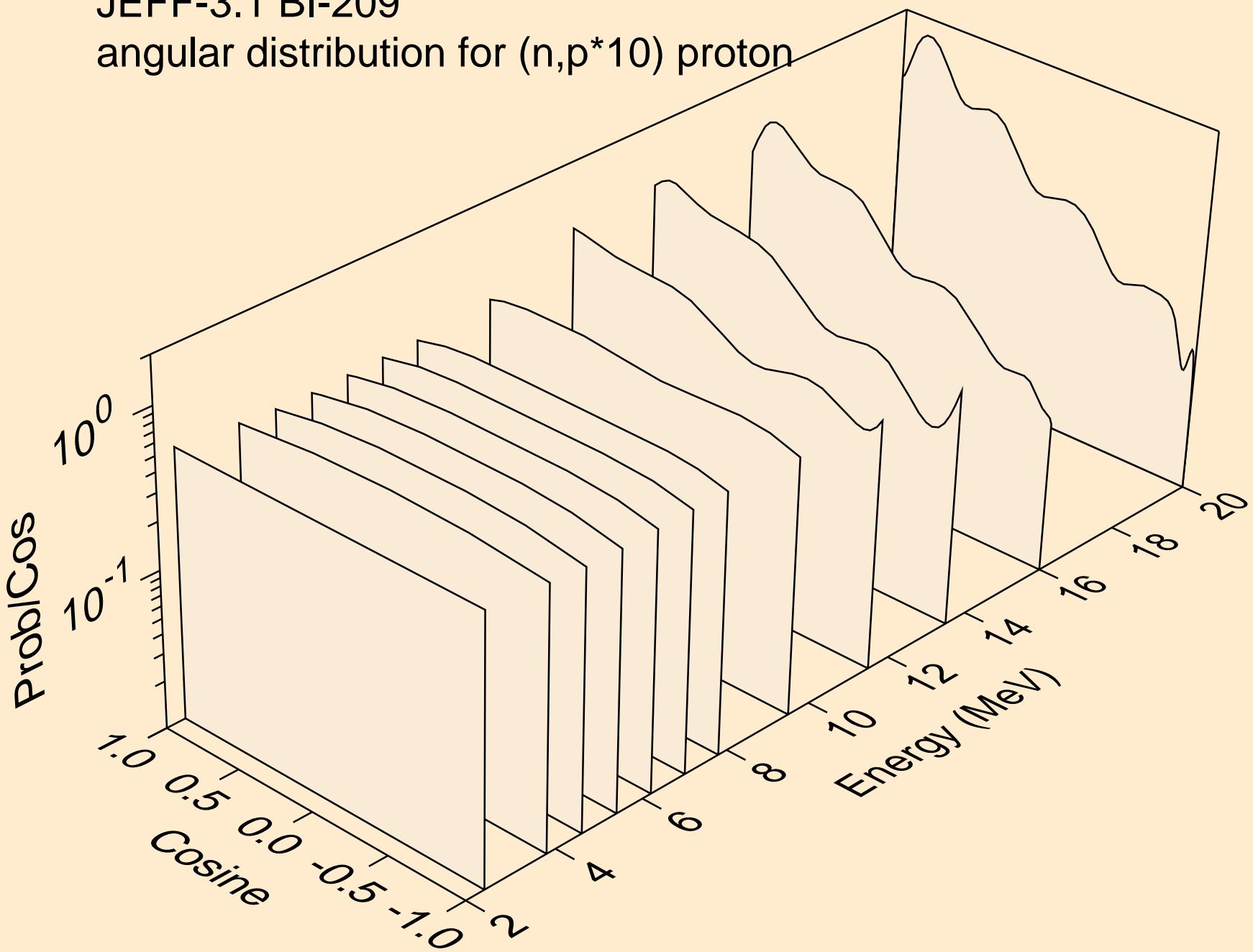


JEFF-3.1 Bi-209  
angular distribution for ( $n,p^*9$ ) proton

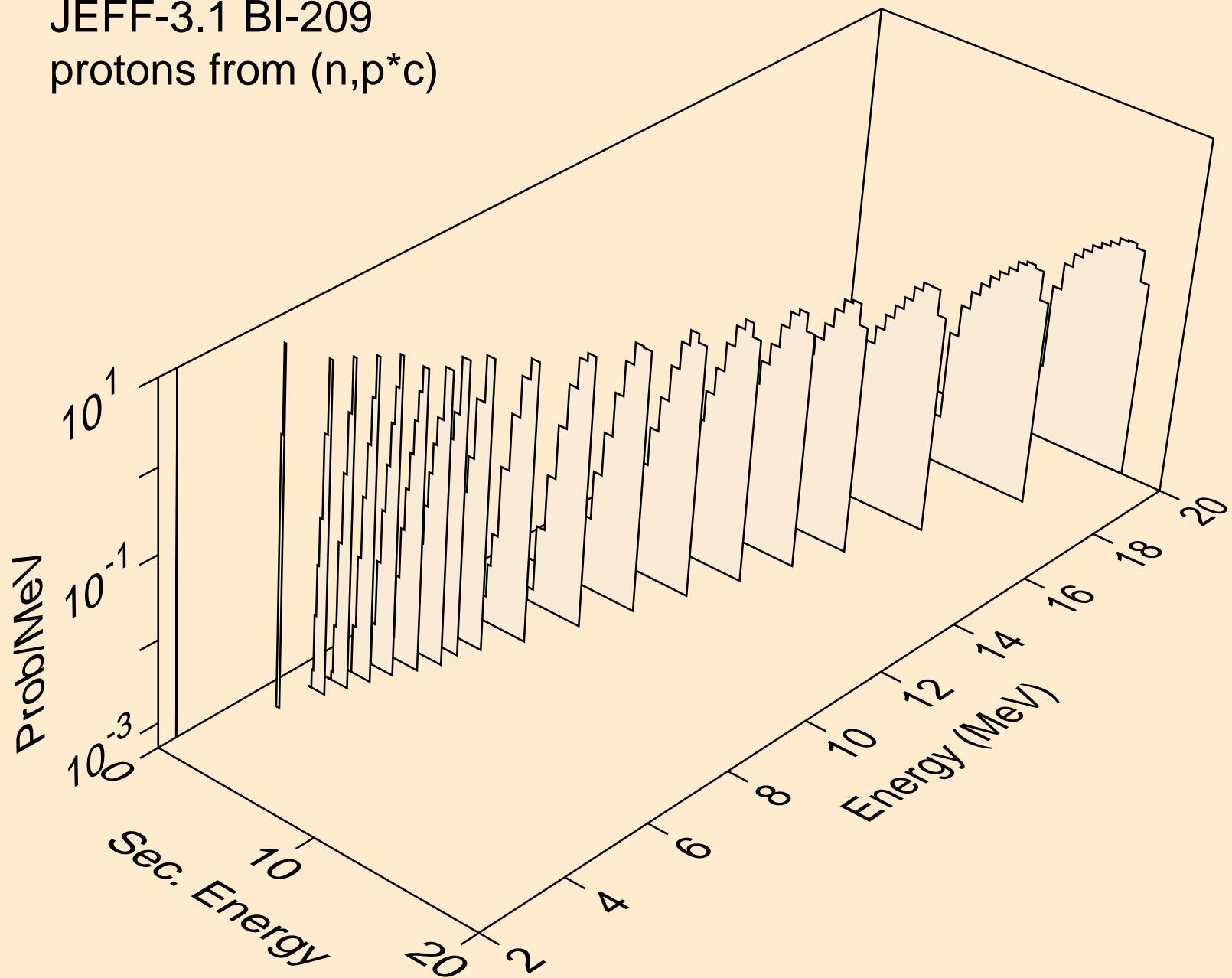


JEFF-3.1 Bi-209

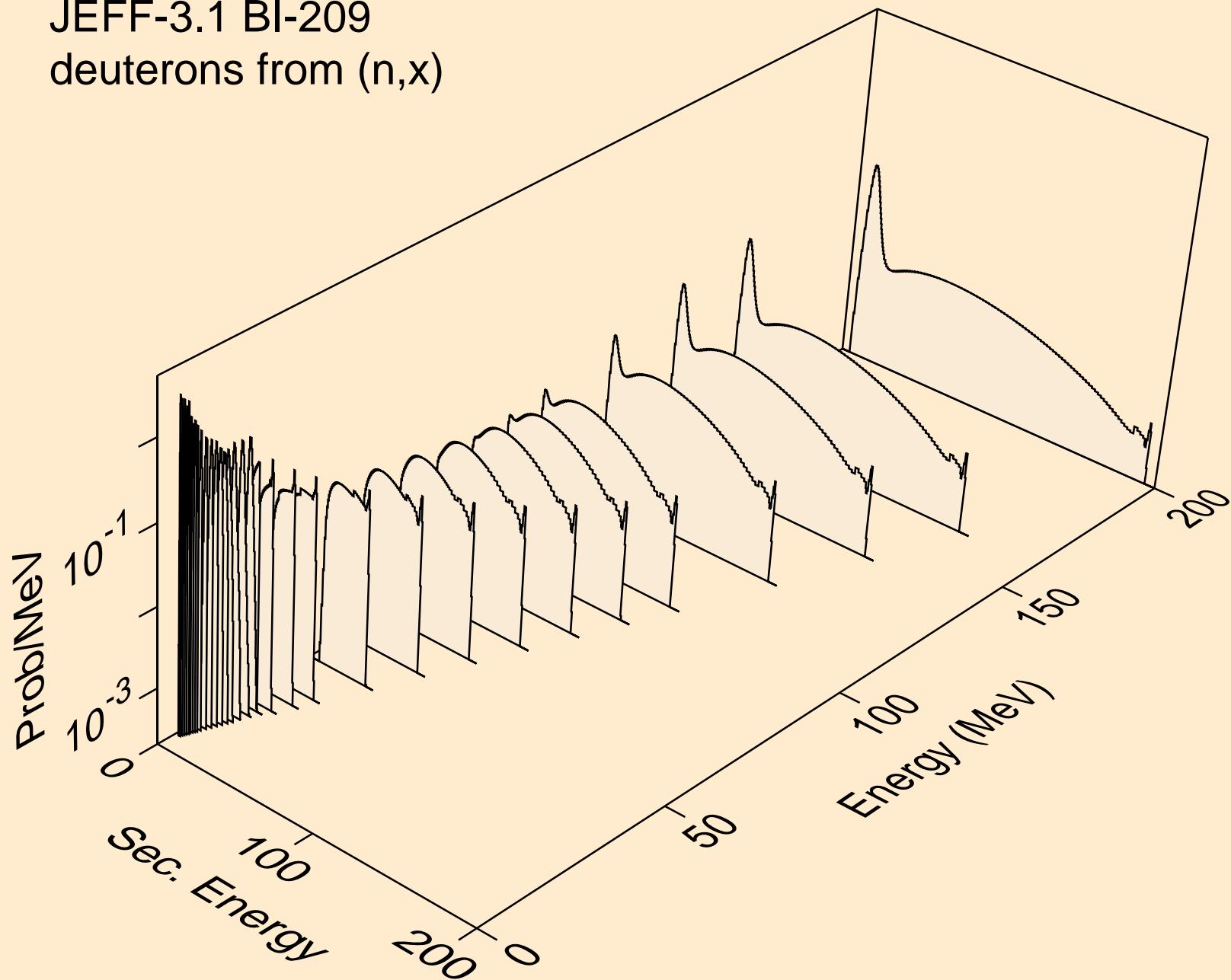
angular distribution for ( $n,p^*10$ ) proton



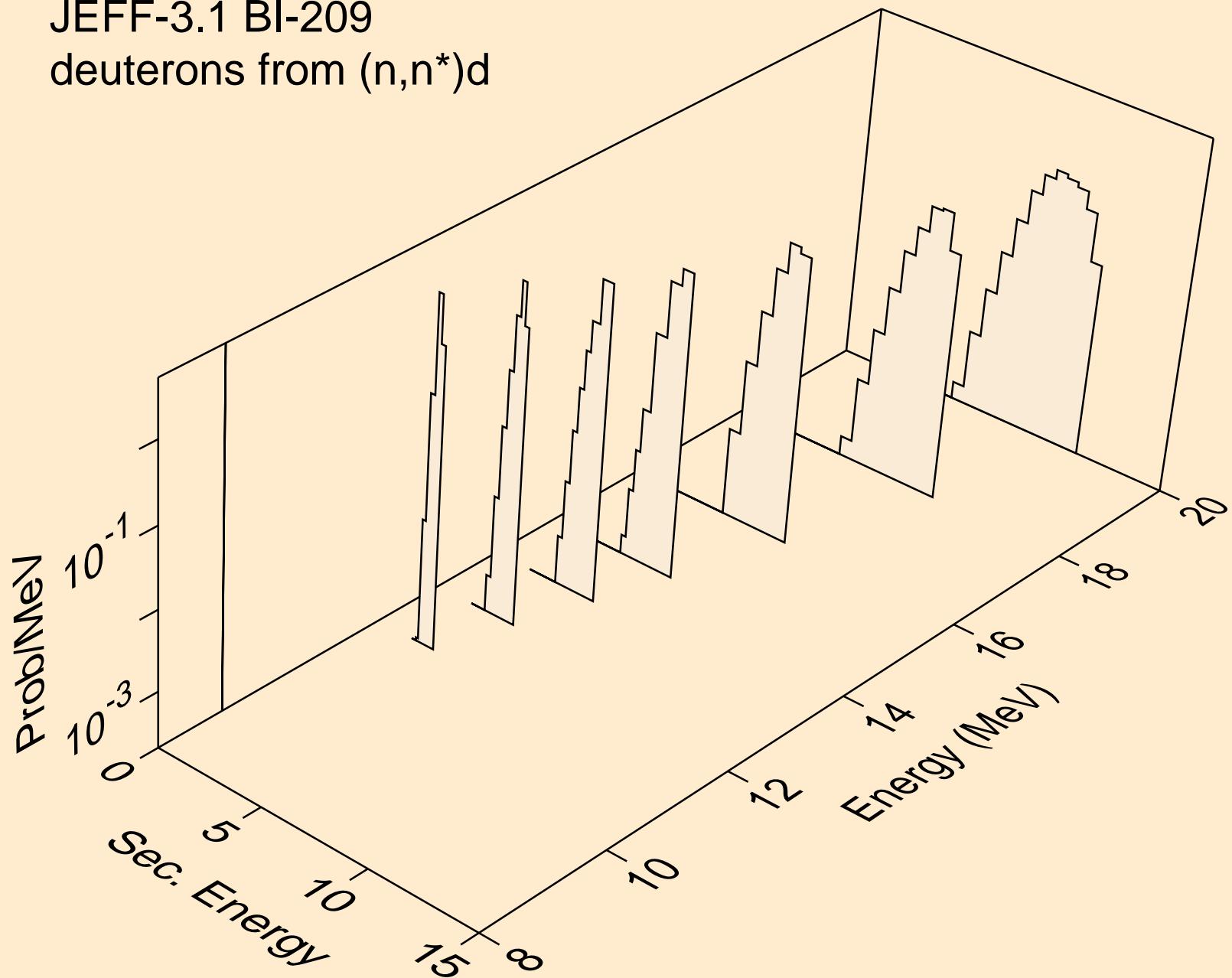
JEFF-3.1 Bi-209  
protons from  $(n, p^*c)$



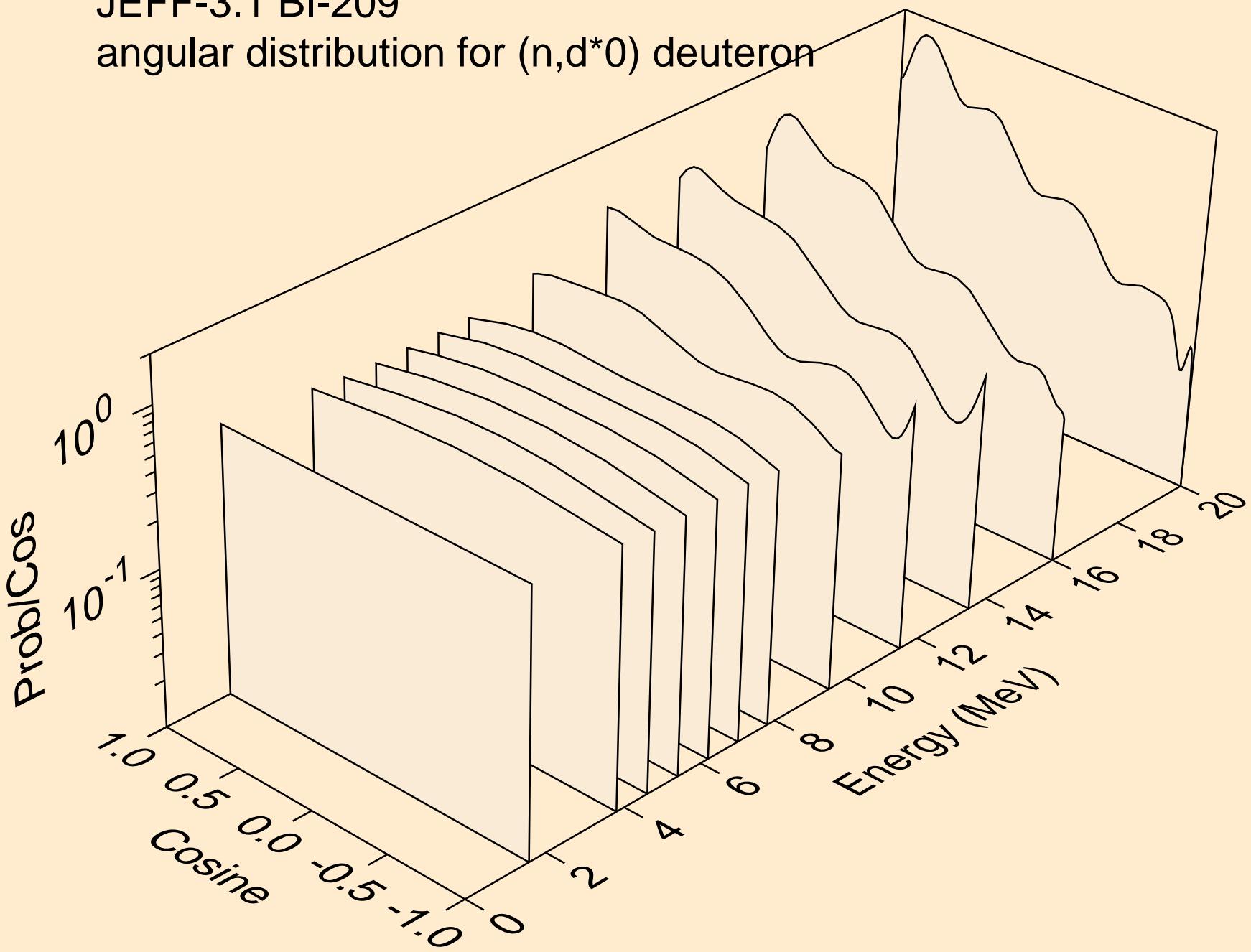
JEFF-3.1 Bi-209  
deuterons from ( $n,x$ )



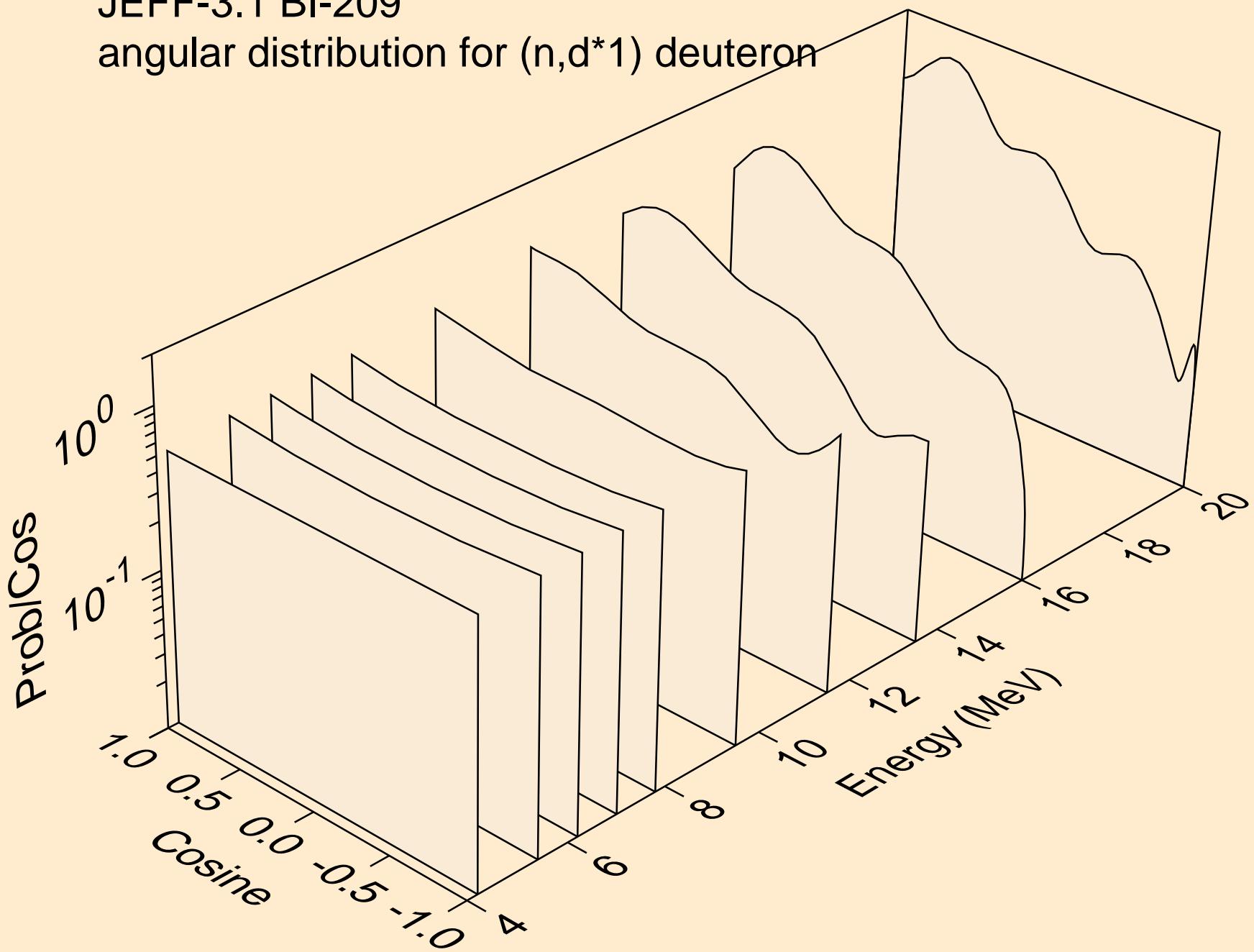
JEFF-3.1 Bi-209  
deuterons from  $(n,n^*)d$



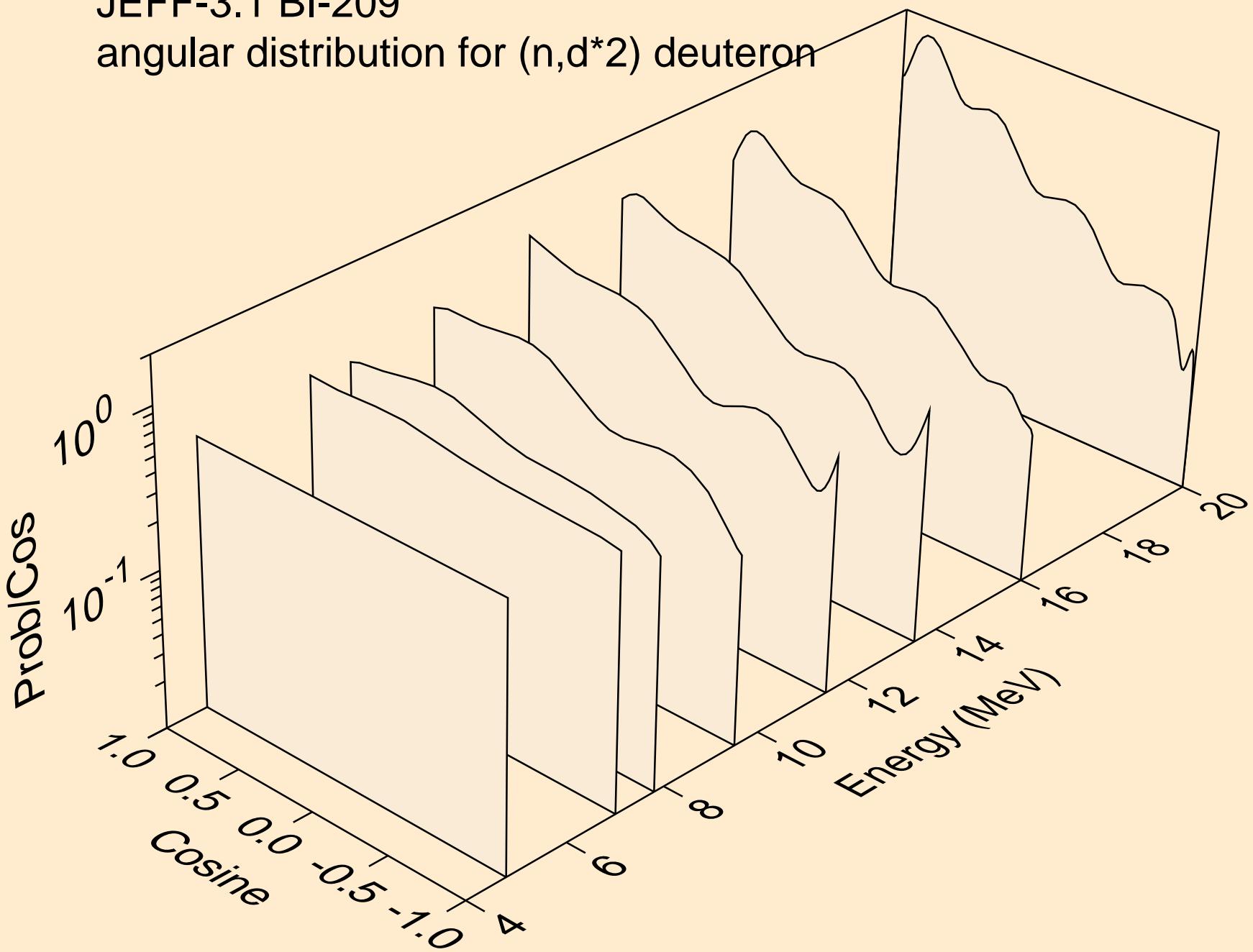
JEFF-3.1 Bi-209  
angular distribution for ( $n, d^* 0$ ) deuteron



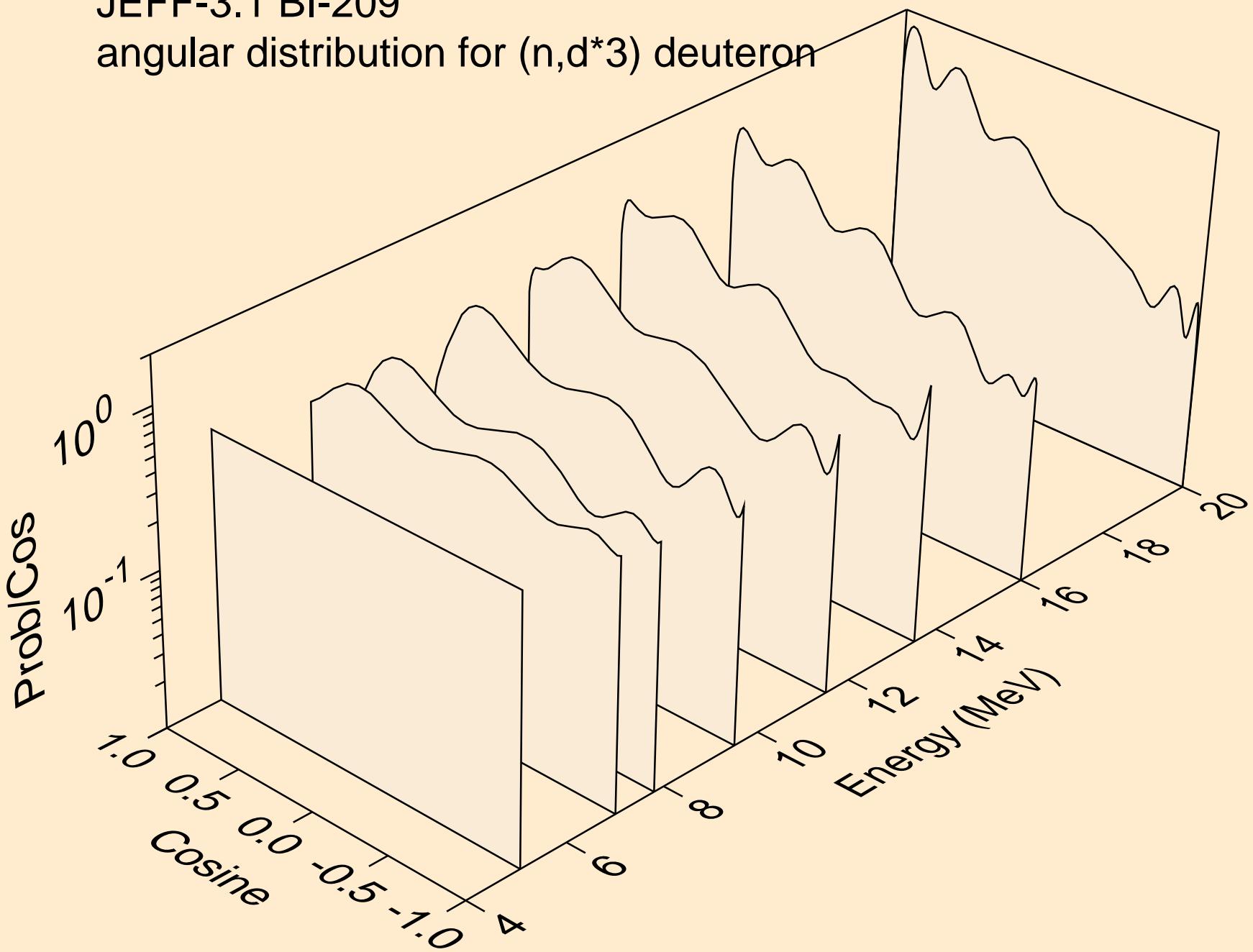
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angular distribution for ( $n, d^* 1$ ) deuteron



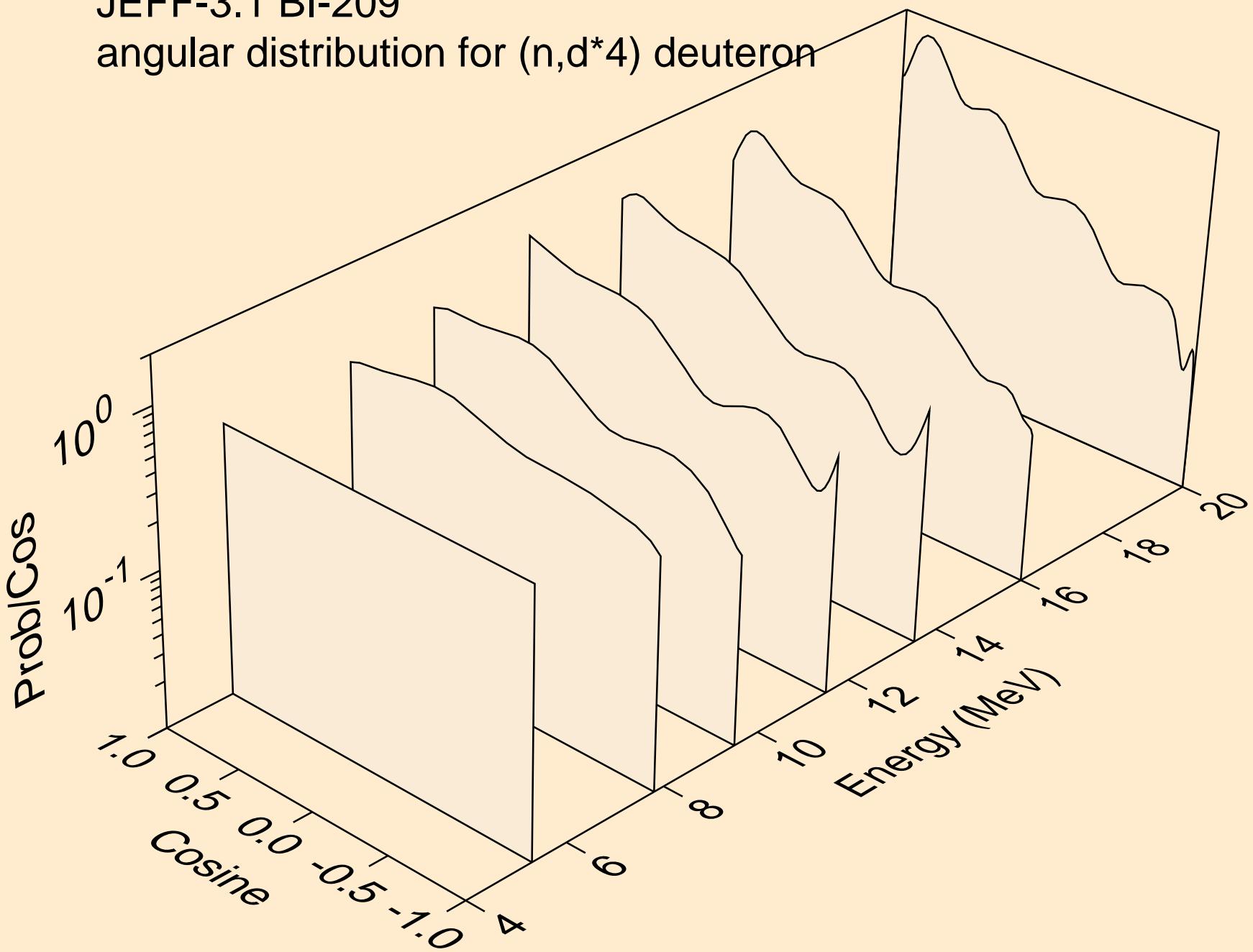
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angular distribution for ( $n, d^* 2$ ) deuteron



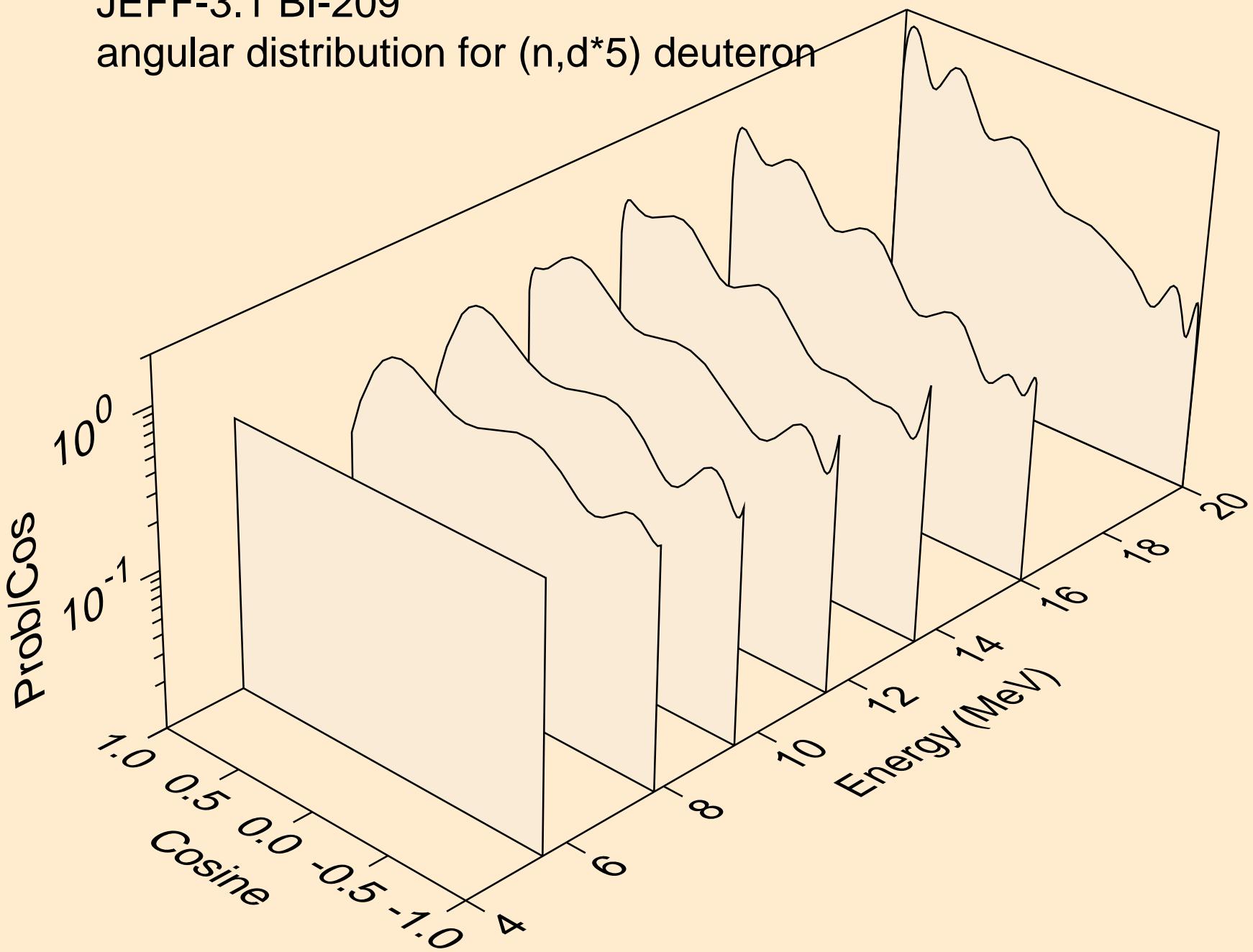
JEFF-3.1 Bi-209  
angular distribution for ( $n, d^* 3$ ) deuteron



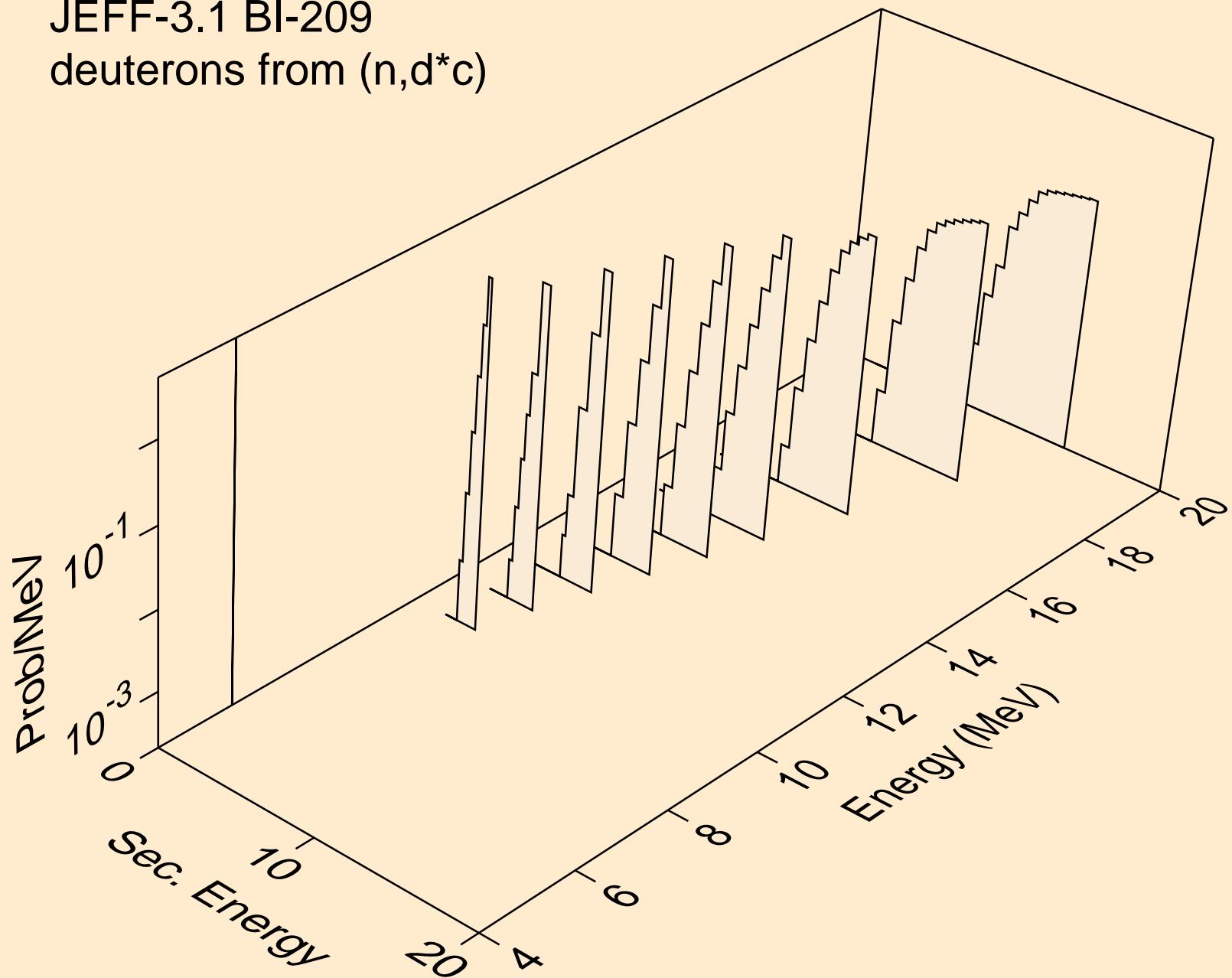
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angular distribution for ( $n, d^* 4$ ) deuteron



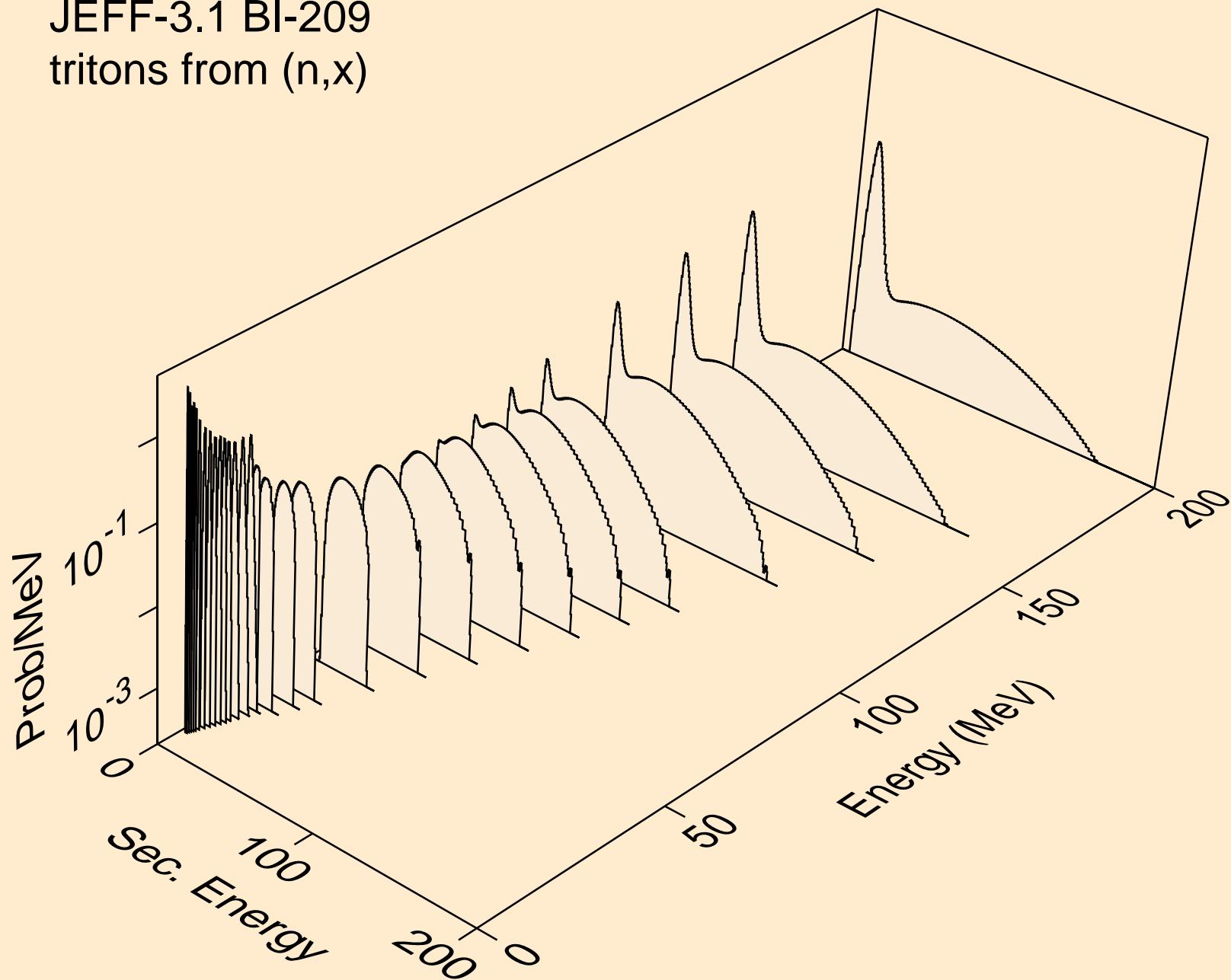
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angular distribution for ( $n, d^* 5$ ) deuteron



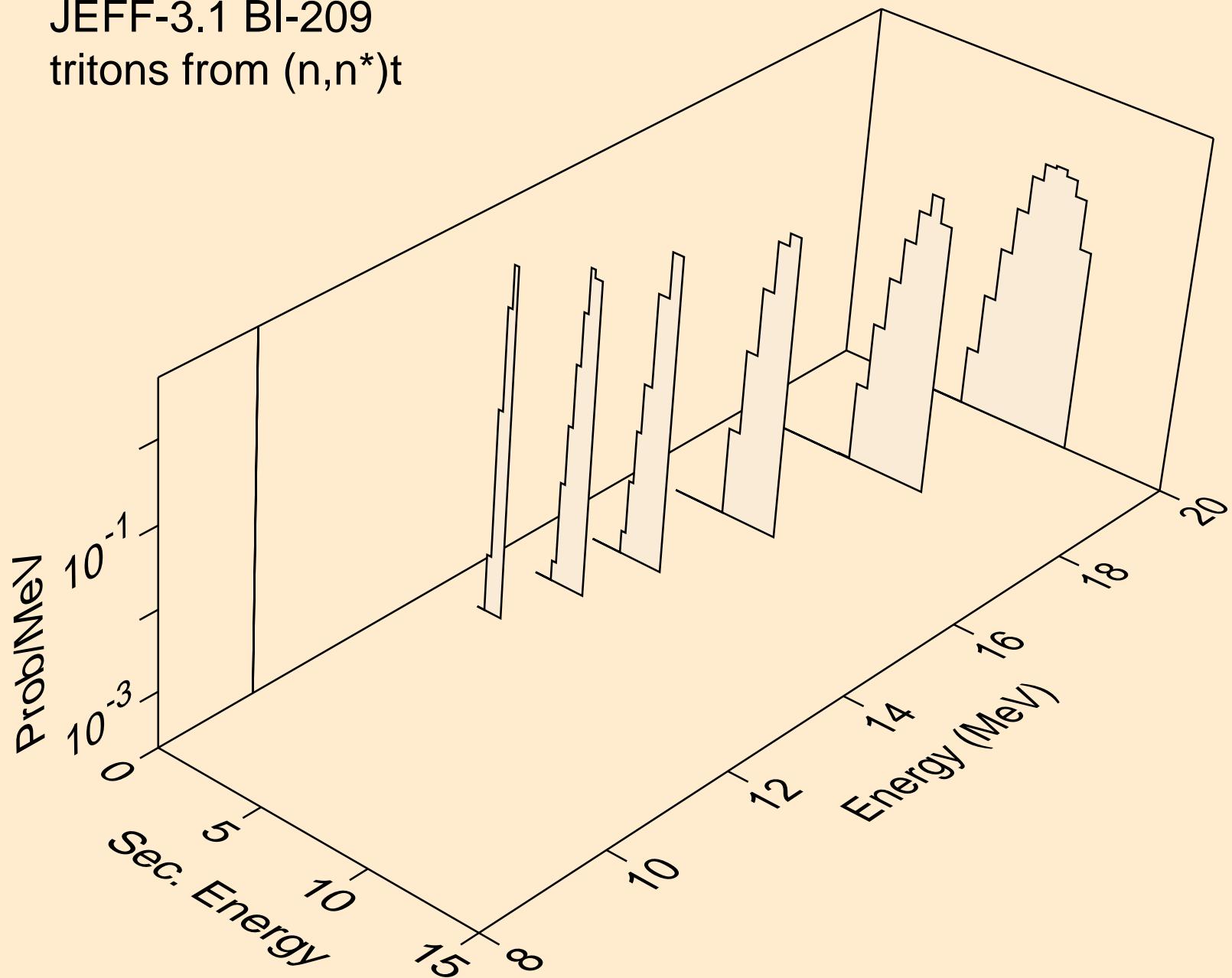
JEFF-3.1 Bi-209  
deuterons from  $(n, d^* c)$



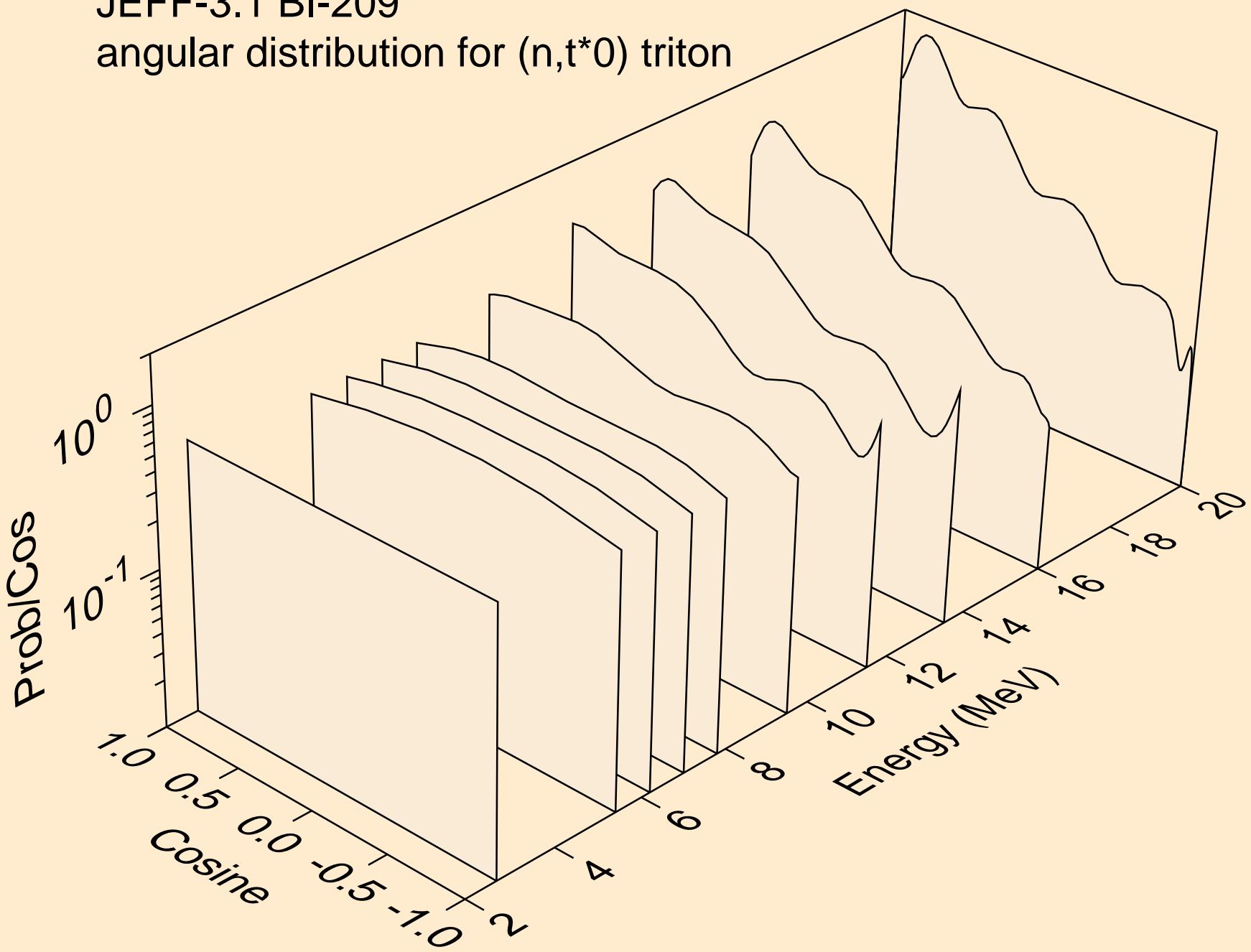
JEFF-3.1 Bi-209  
tritons from (n,x)



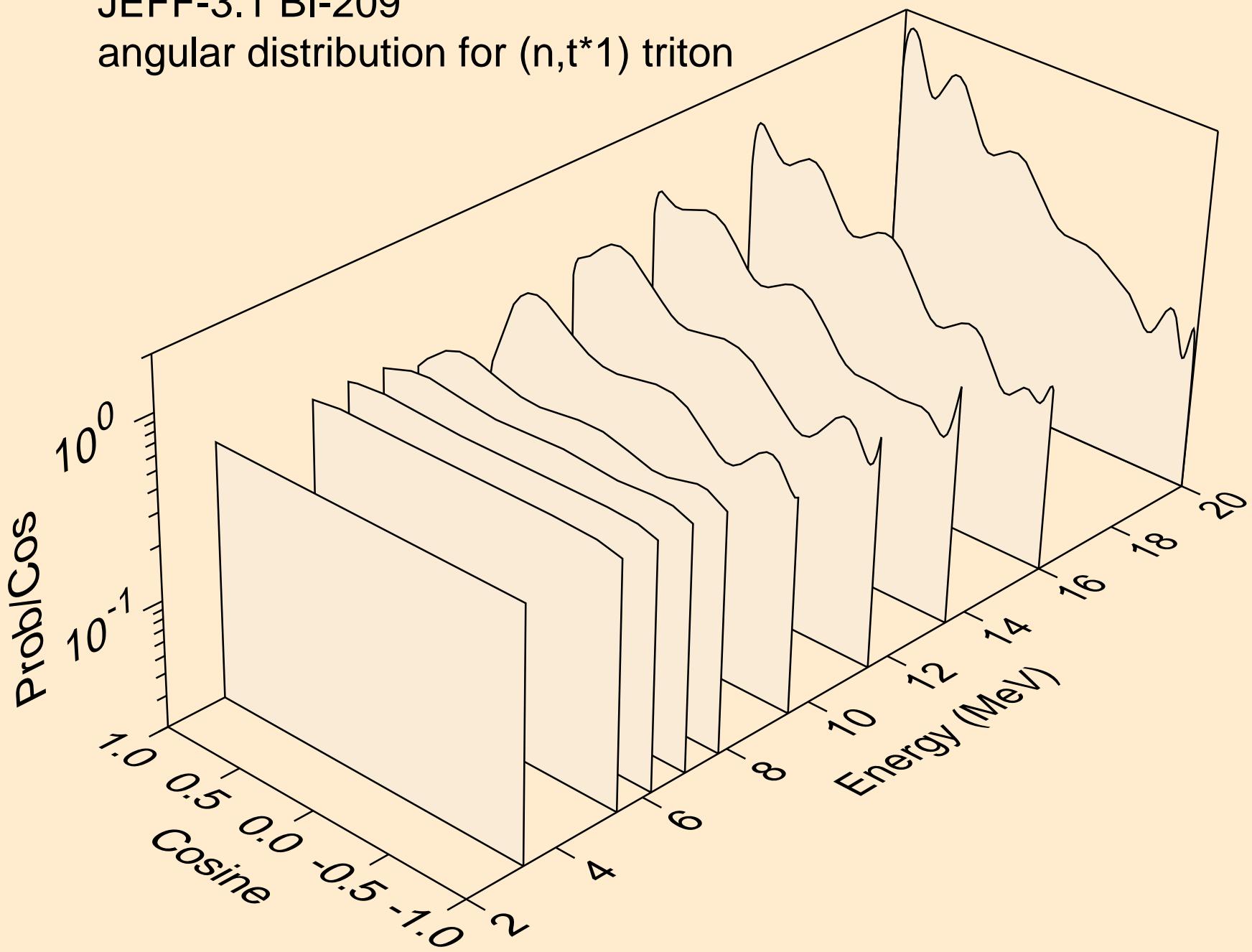
JEFF-3.1 Bi-209  
tritons from  $(n,n^*)t$



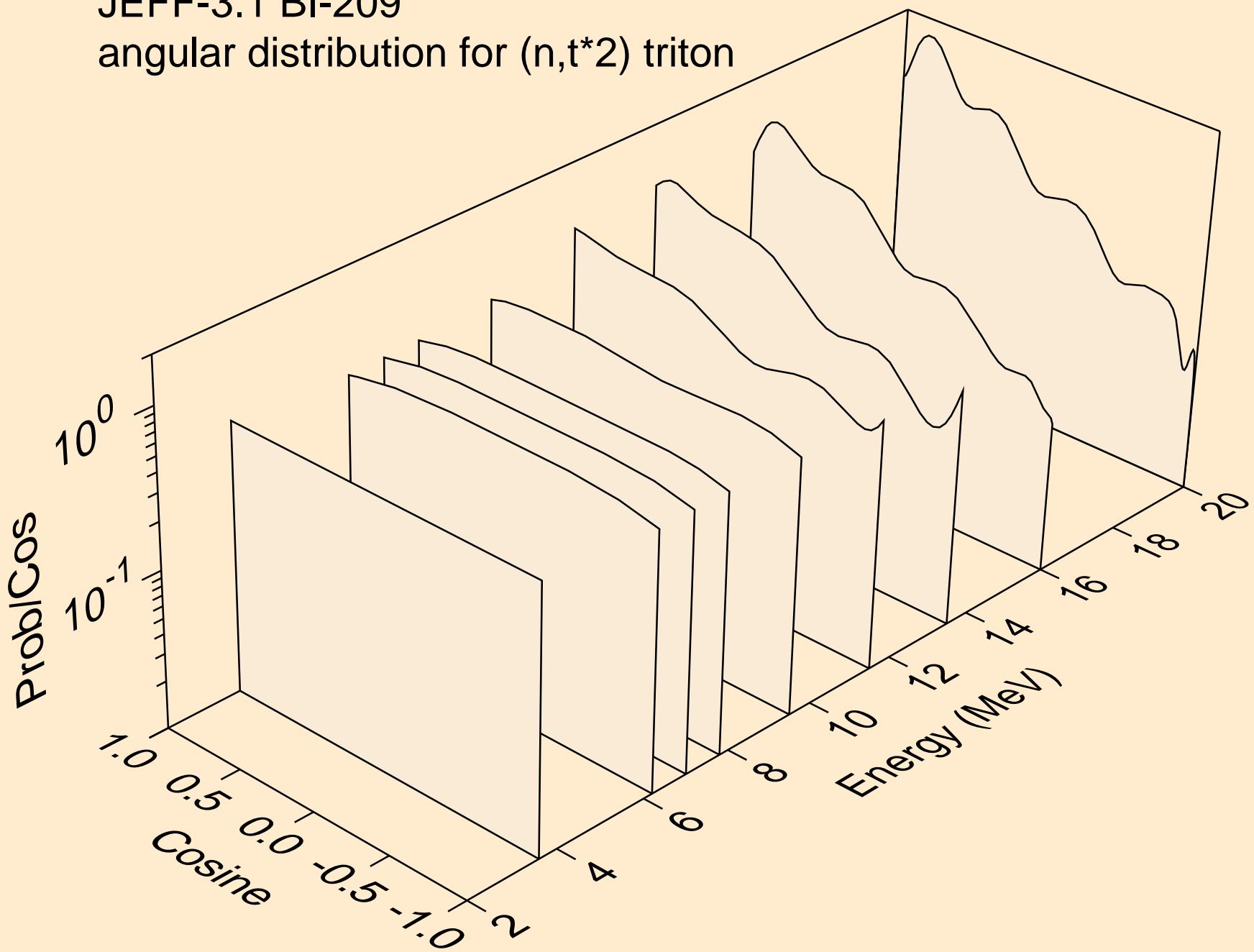
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angular distribution for ( $n, t^* 0$ ) triton



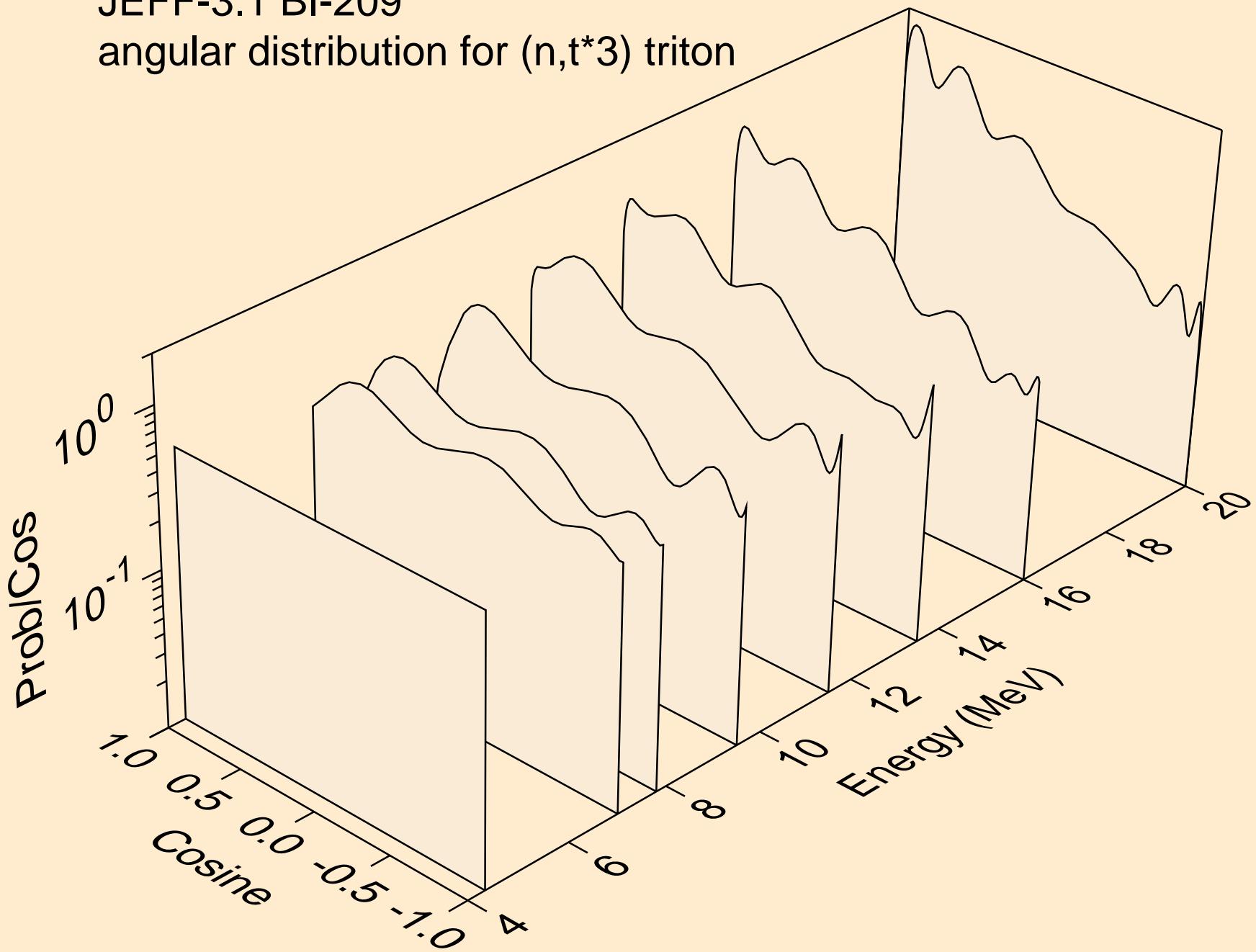
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angular distribution for ( $n, t^* 1$ ) triton



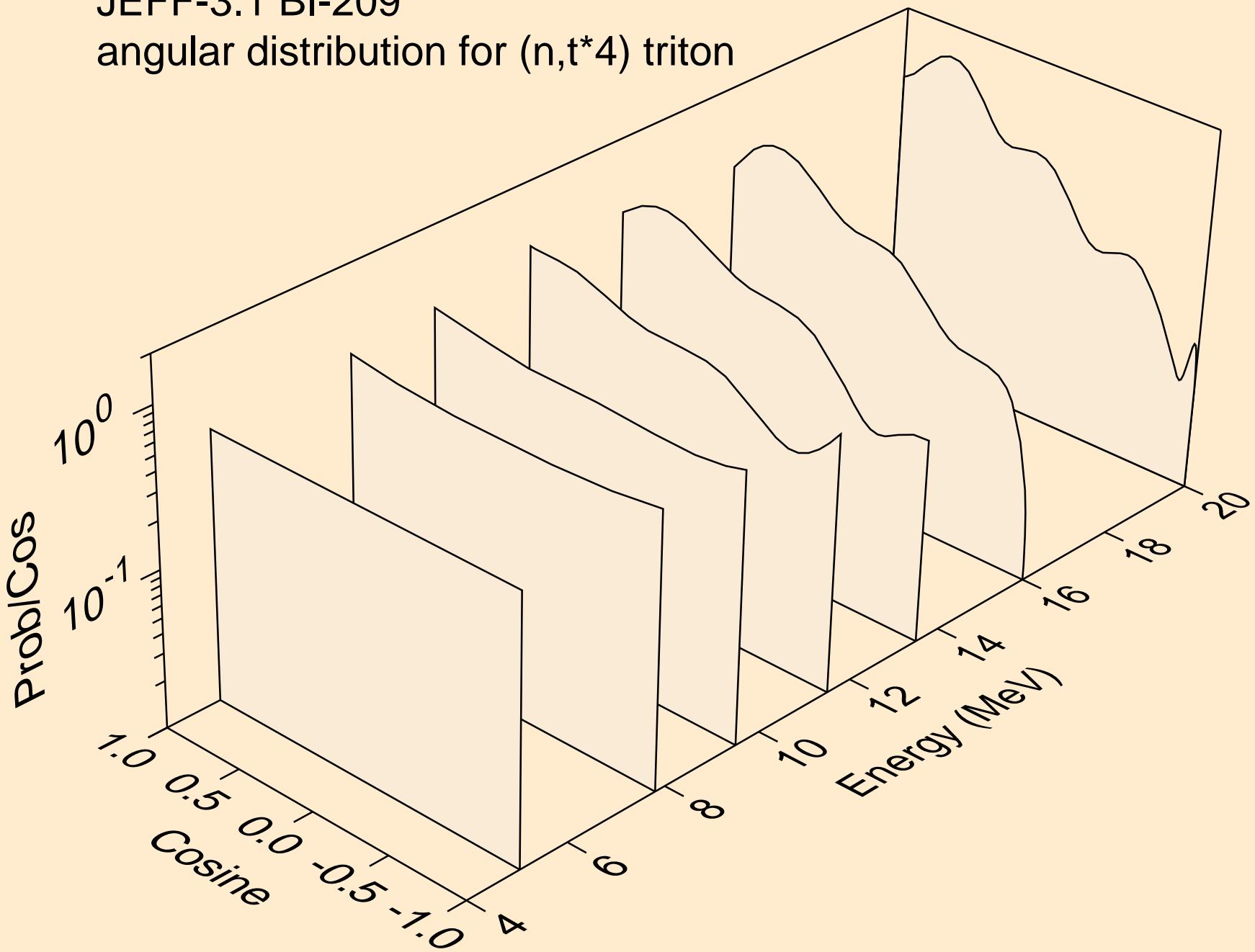
JEFF-3.1 Bi-209  
angular distribution for ( $n, t^*2$ ) triton



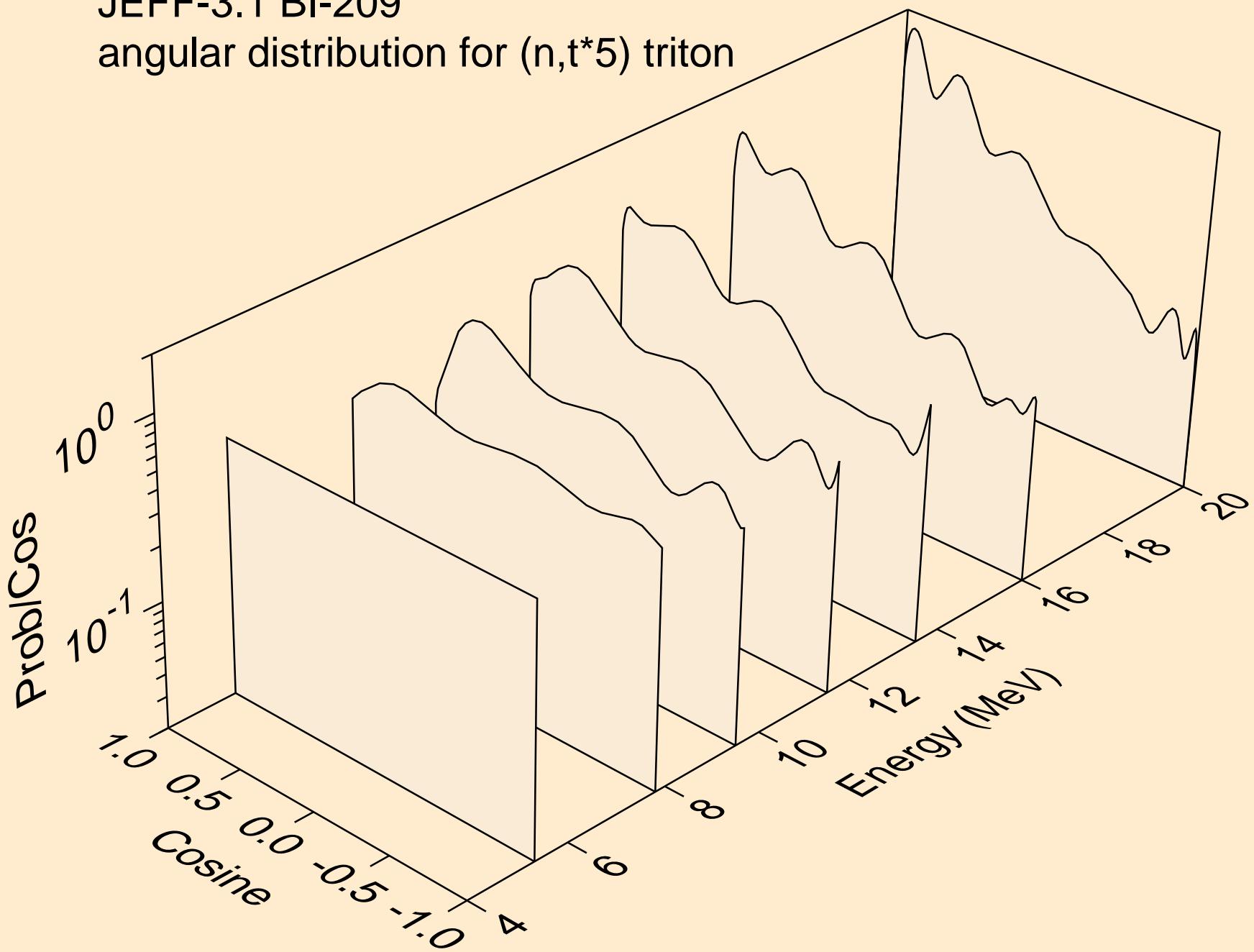
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angular distribution for ( $n, t^*3$ ) triton



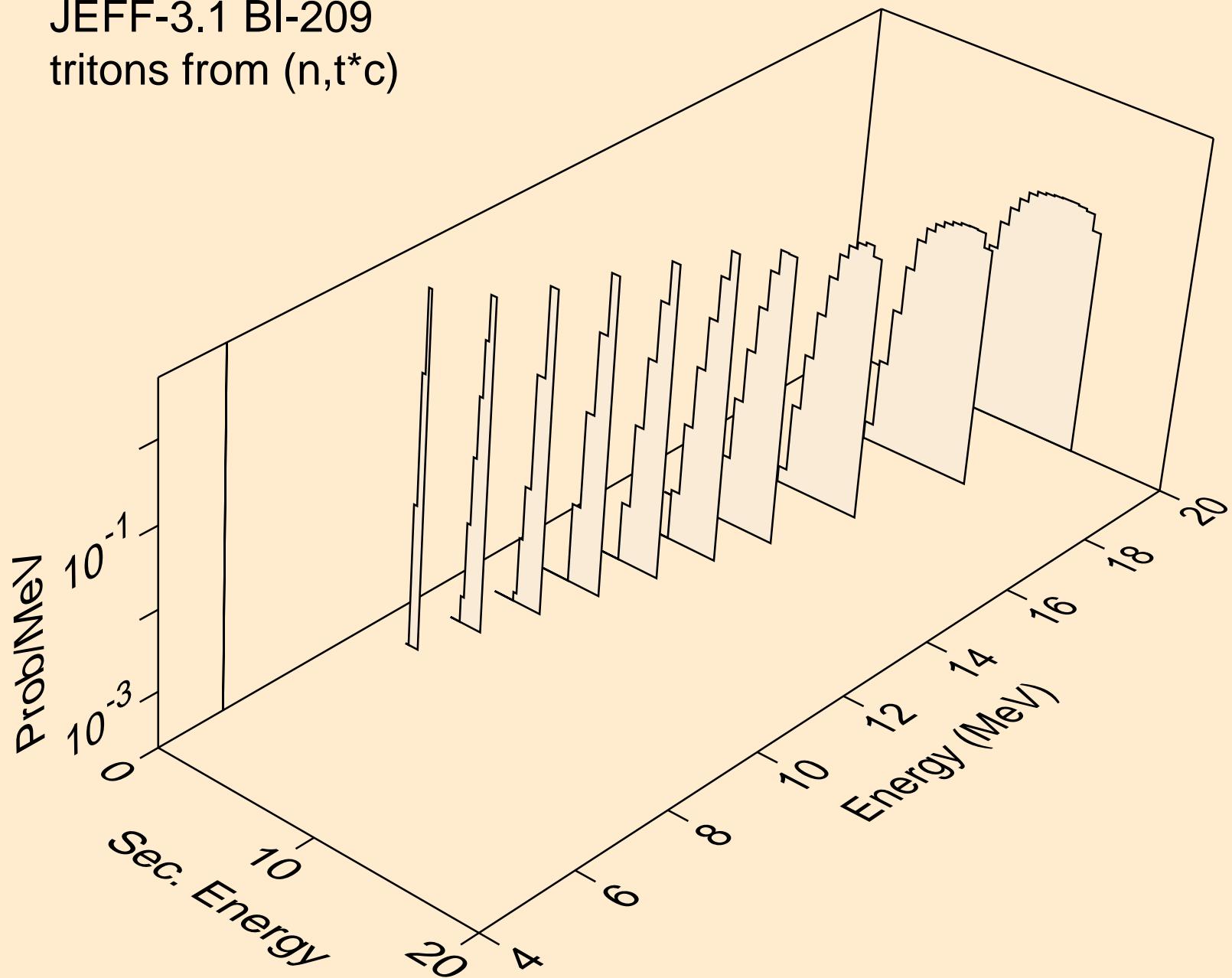
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angular distribution for ( $n, t^*4$ ) triton



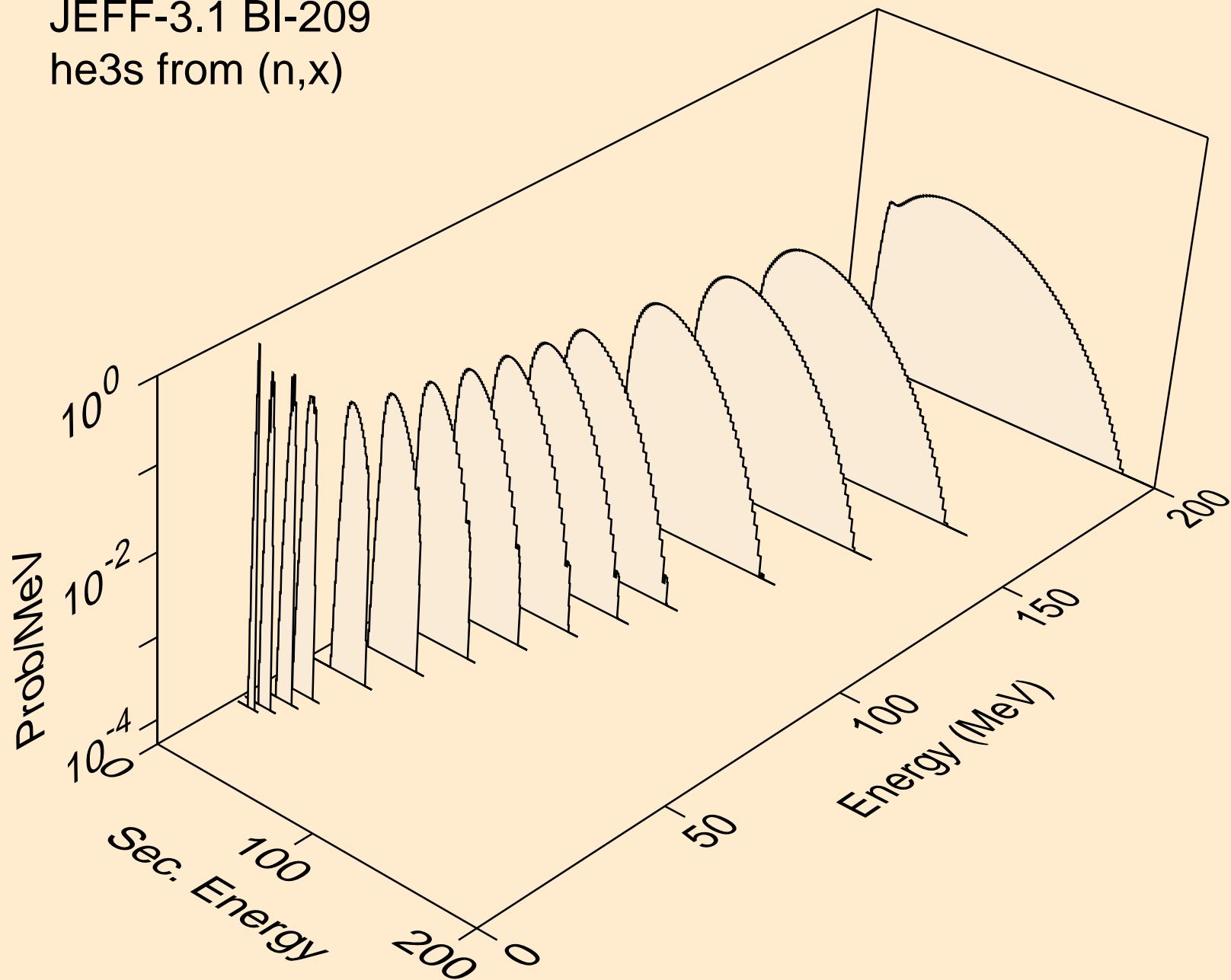
JEFF-3.1 Bi-209  
angular distribution for ( $n, t^*5$ ) triton



JEFF-3.1 Bi-209  
tritons from ( $n, t^*c$ )

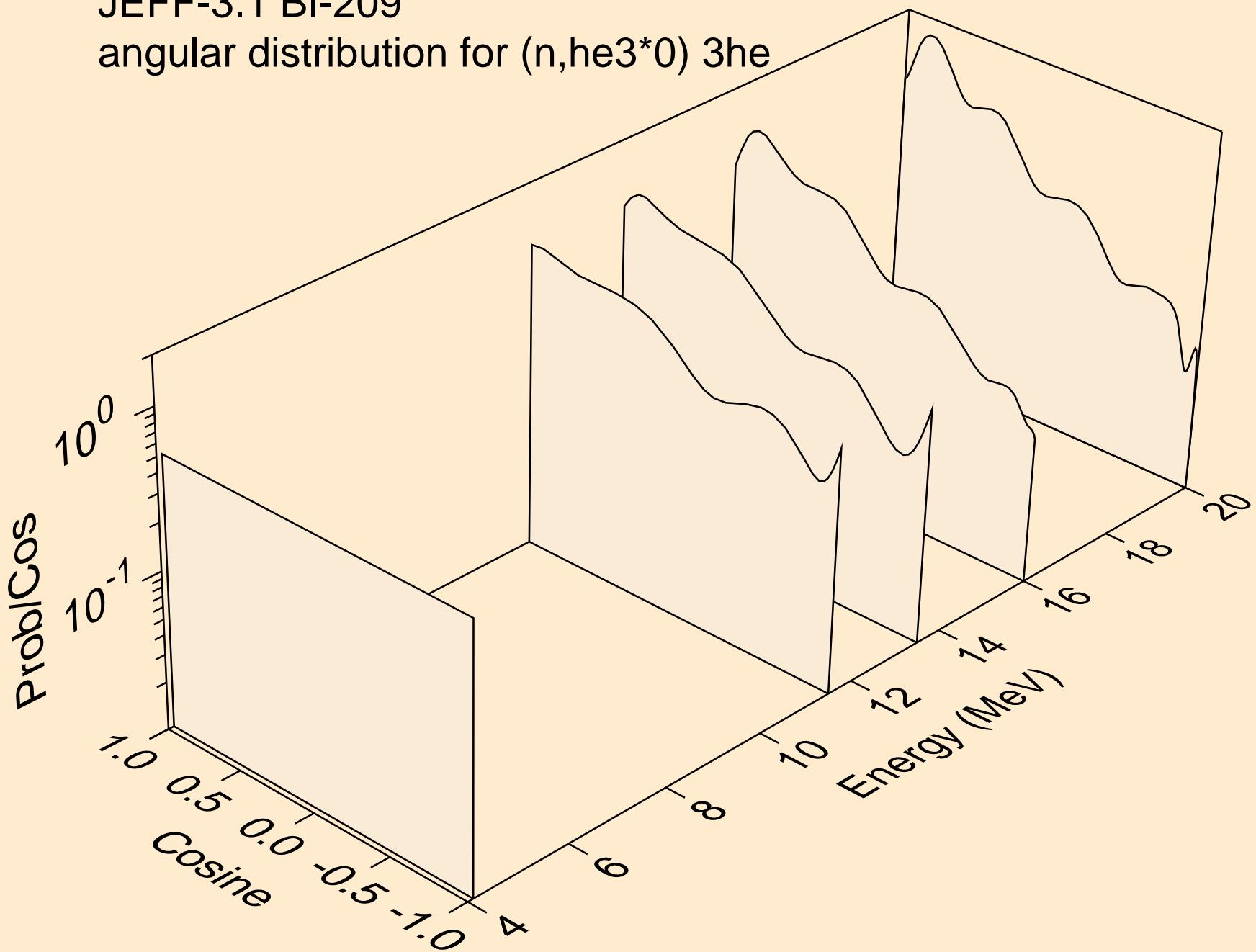


JEFF-3.1 Bi-209  
he3s from (n,x)



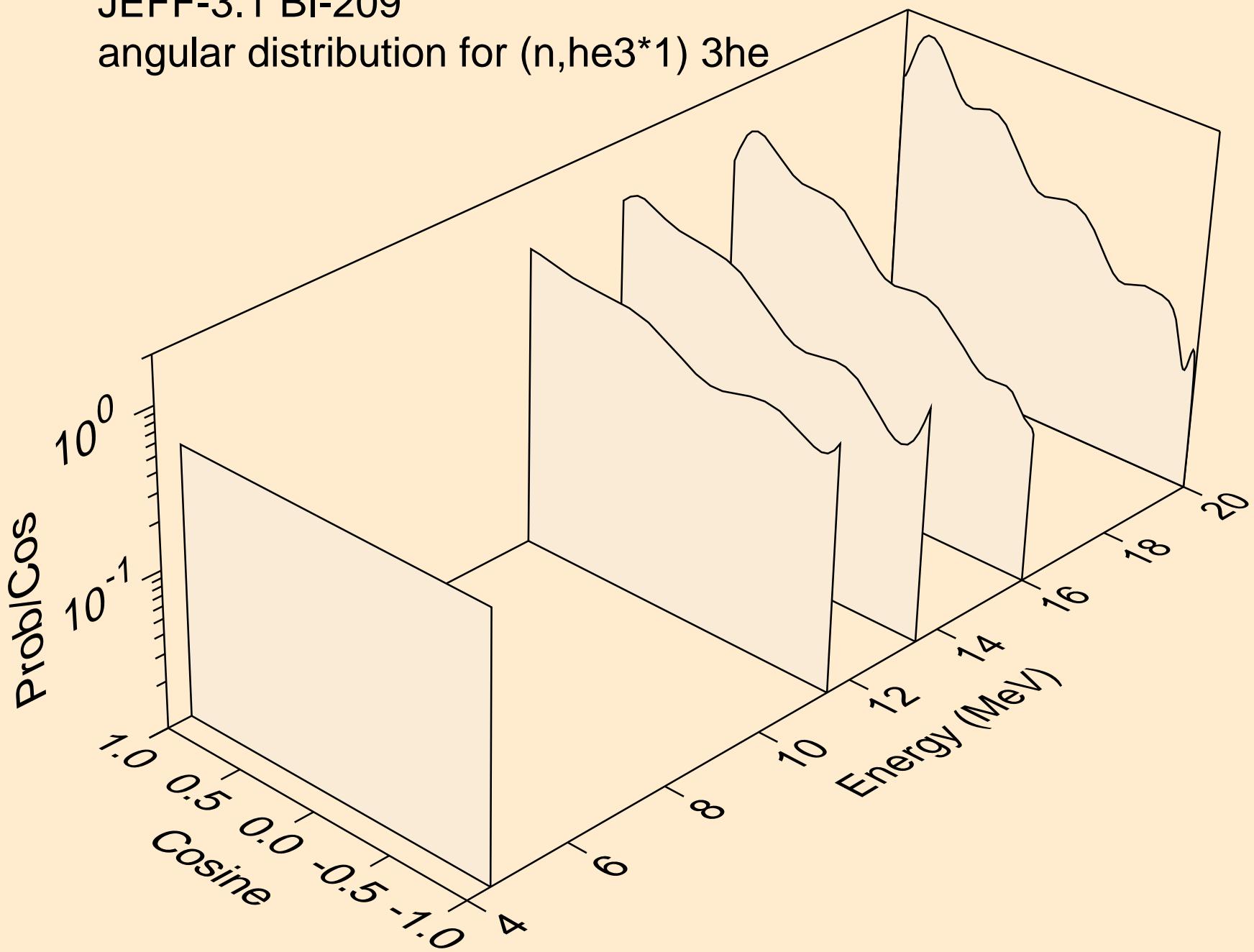
JEFF-3.1 Bi-209

angular distribution for ( $n, \text{he}^3*0$ )  ${}^3\text{He}$



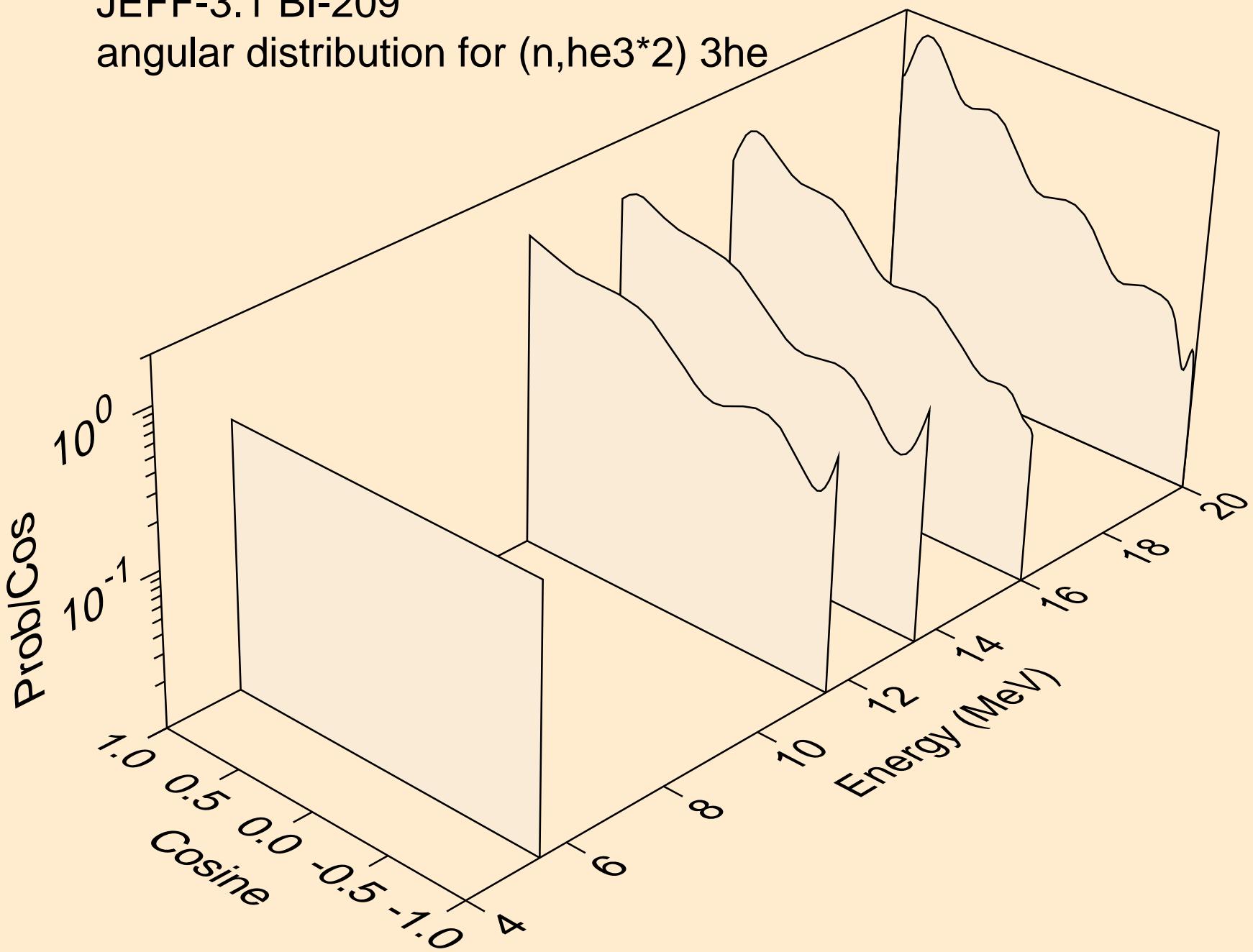
JEFF-3.1 Bi-209

angular distribution for (n,he3\*1) 3he



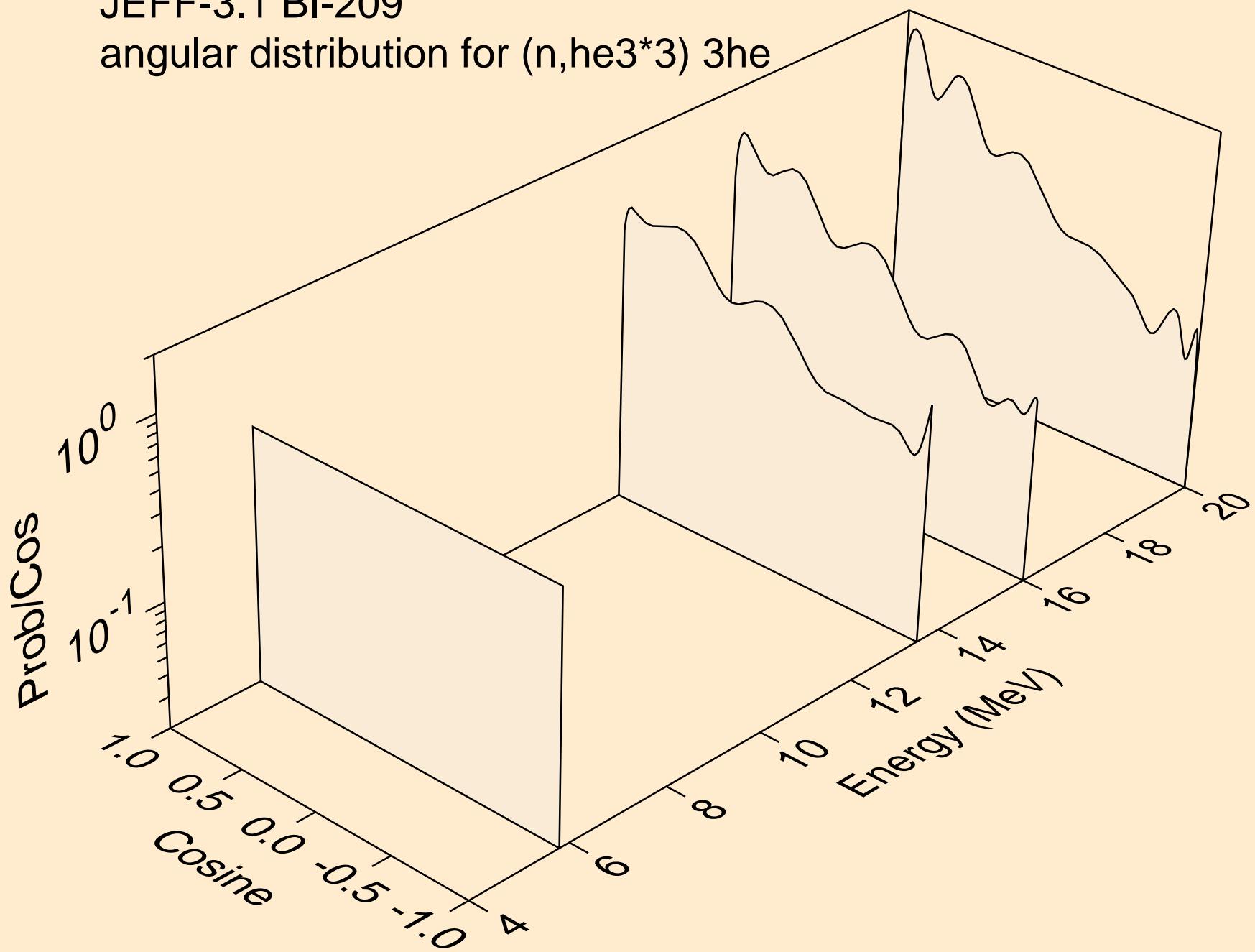
JEFF-3.1 Bi-209

angular distribution for (n,he3\*2) 3he



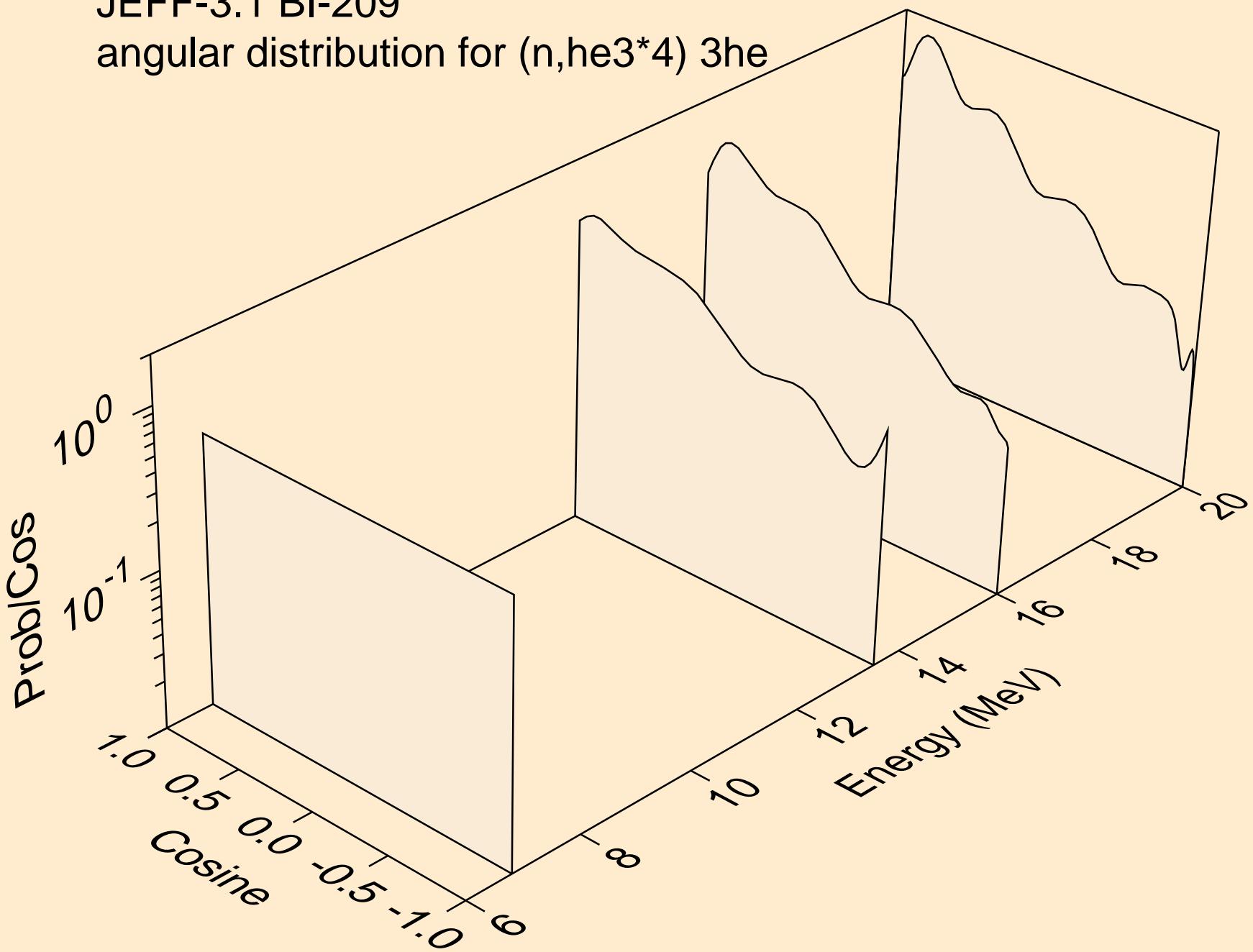
JEFF-3.1 Bi-209

angular distribution for (n,he3\*3) 3he

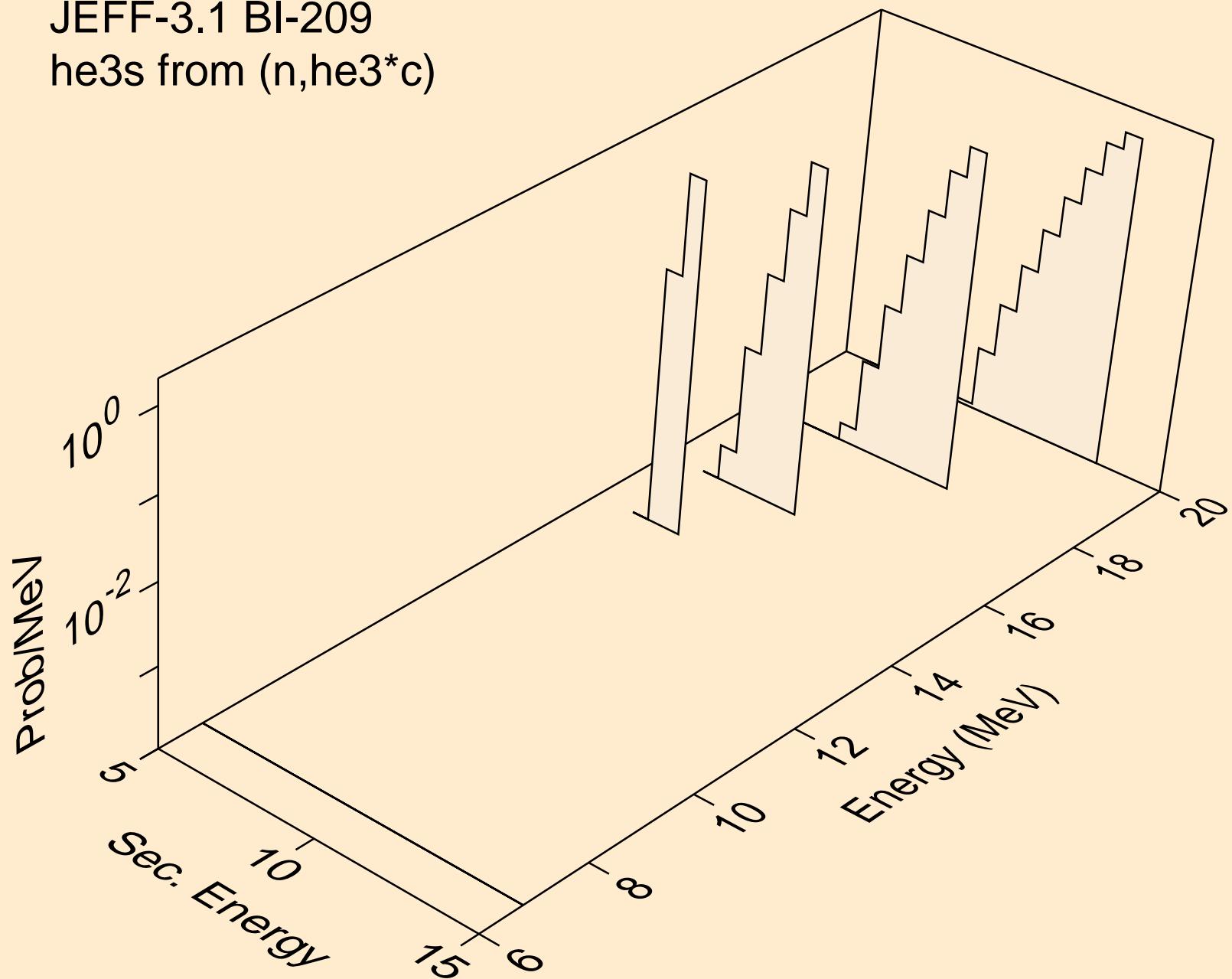


JEFF-3.1 Bi-209

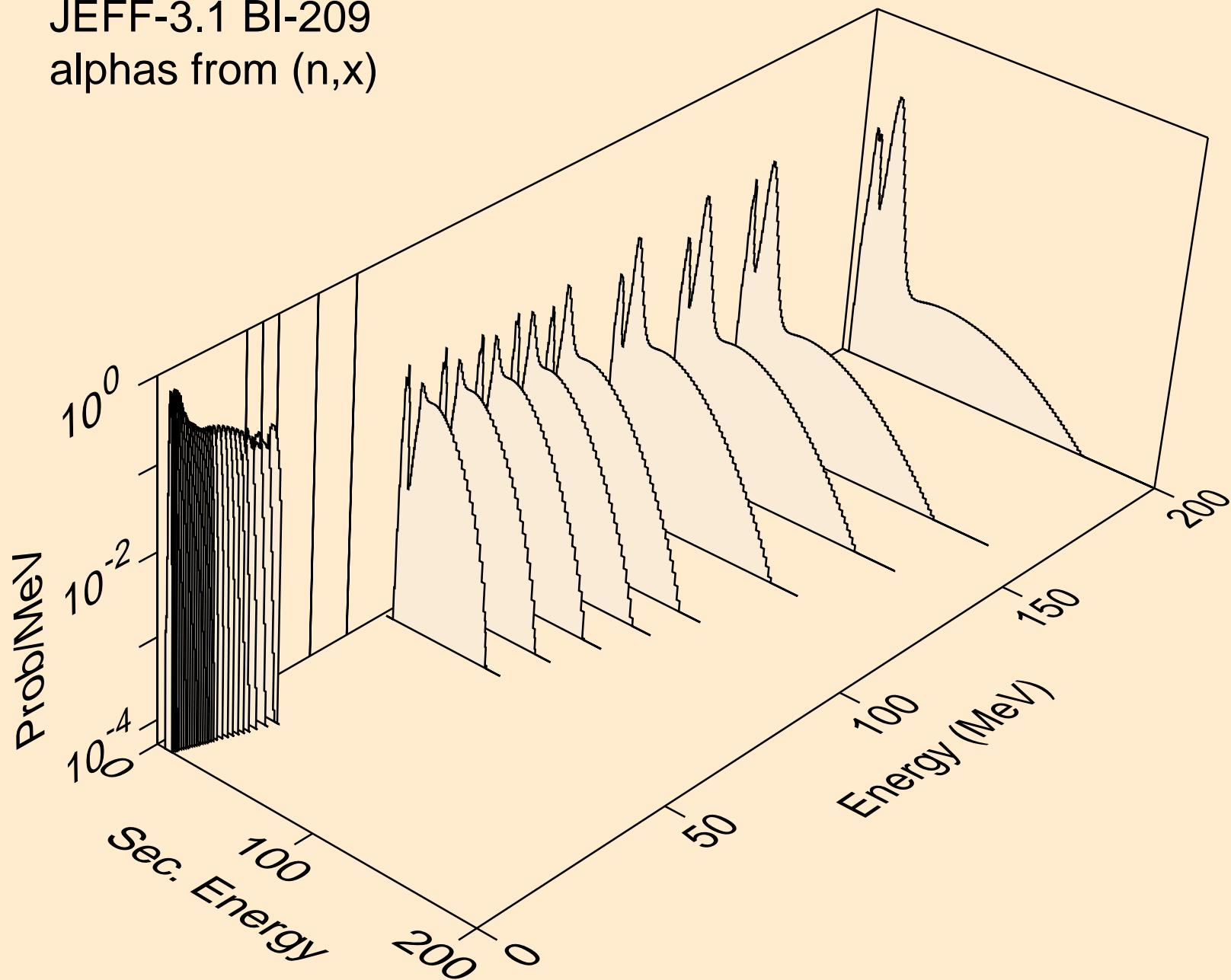
angular distribution for (n,he3\*4) 3he



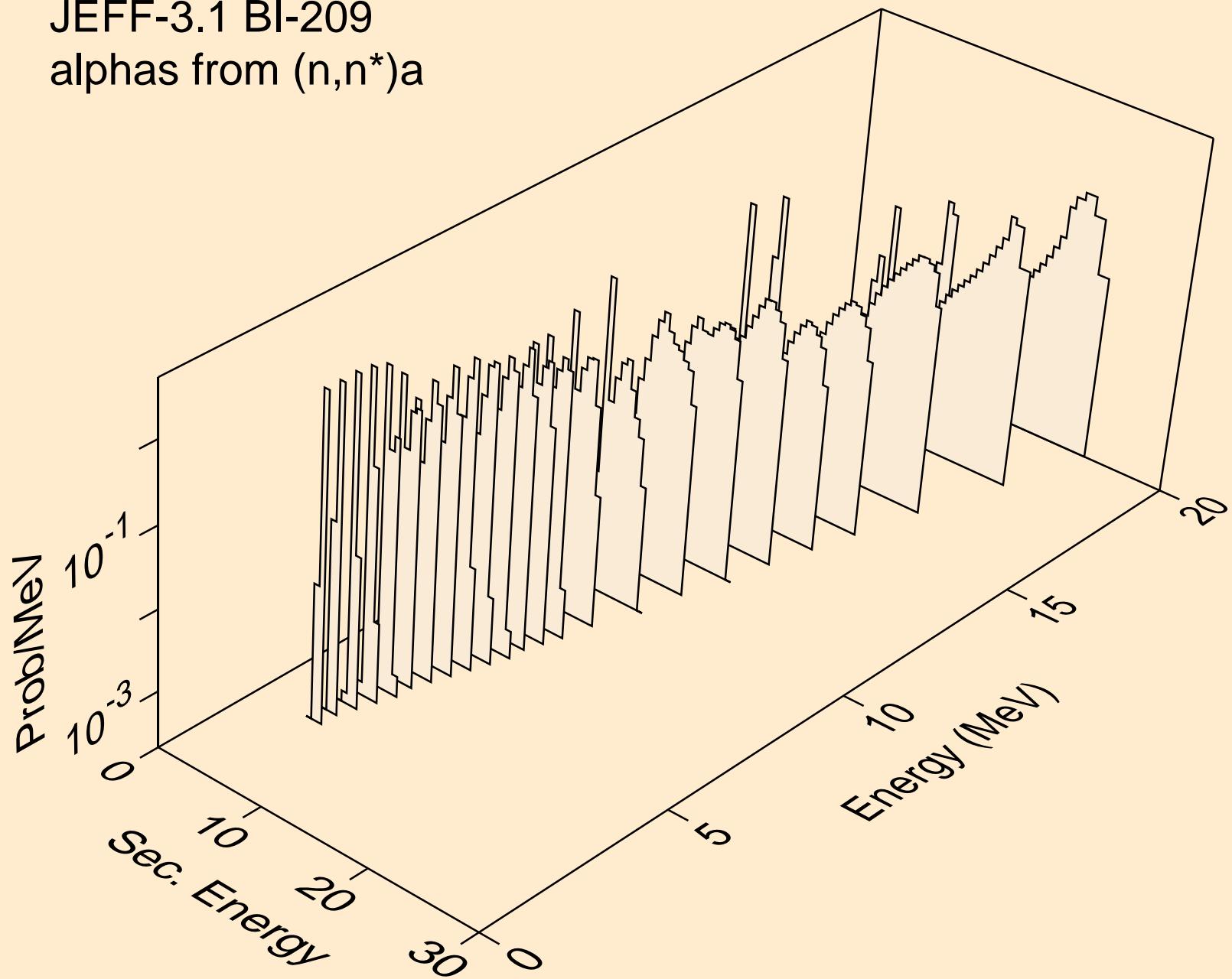
JEFF-3.1 Bi-209  
he3s from ( $n$ , $^{3}\text{He}$ \*c)



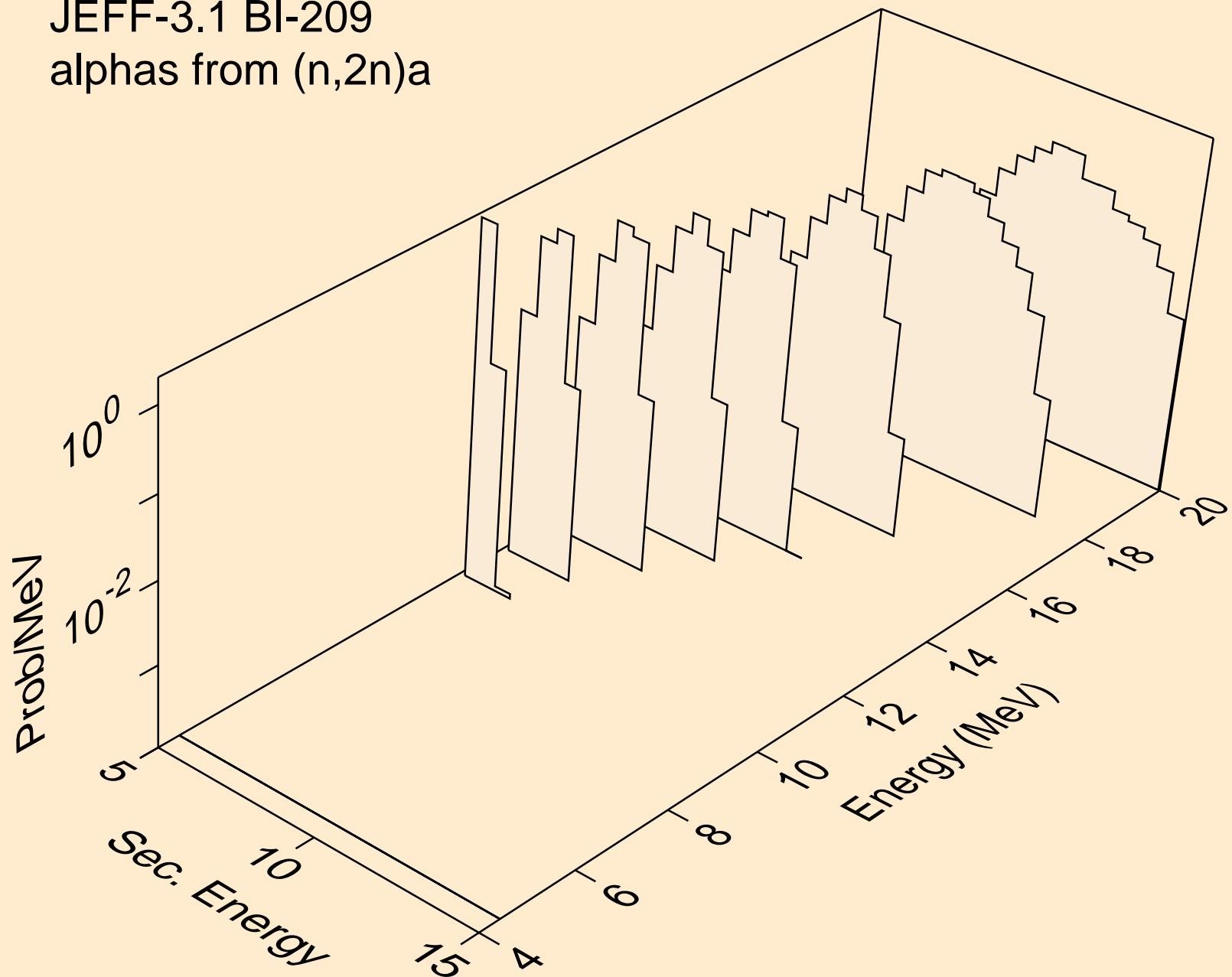
JEFF-3.1 Bi-209  
alphas from (n,x)



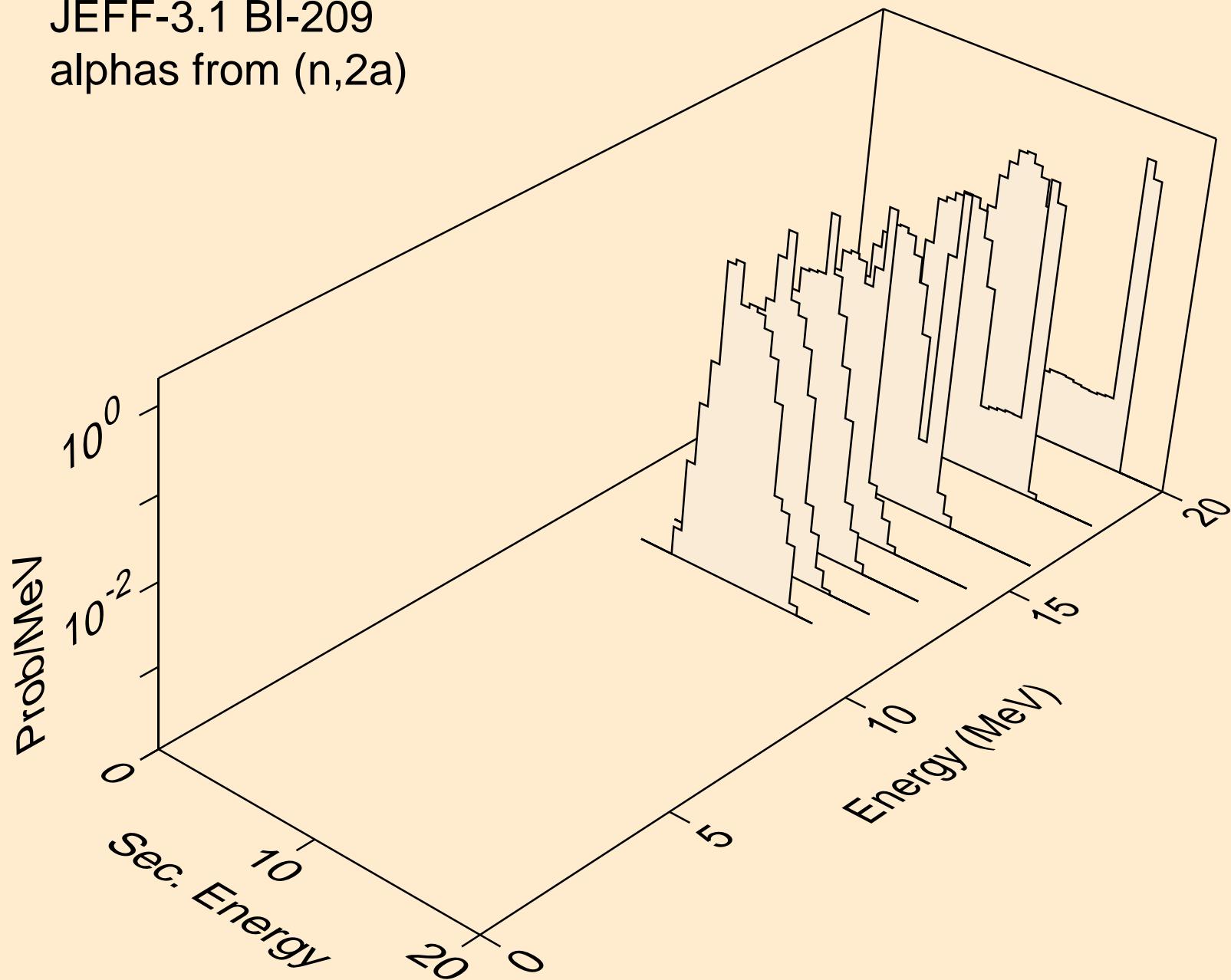
JEFF-3.1 Bi-209  
alphas from  $(n,n^*)a$



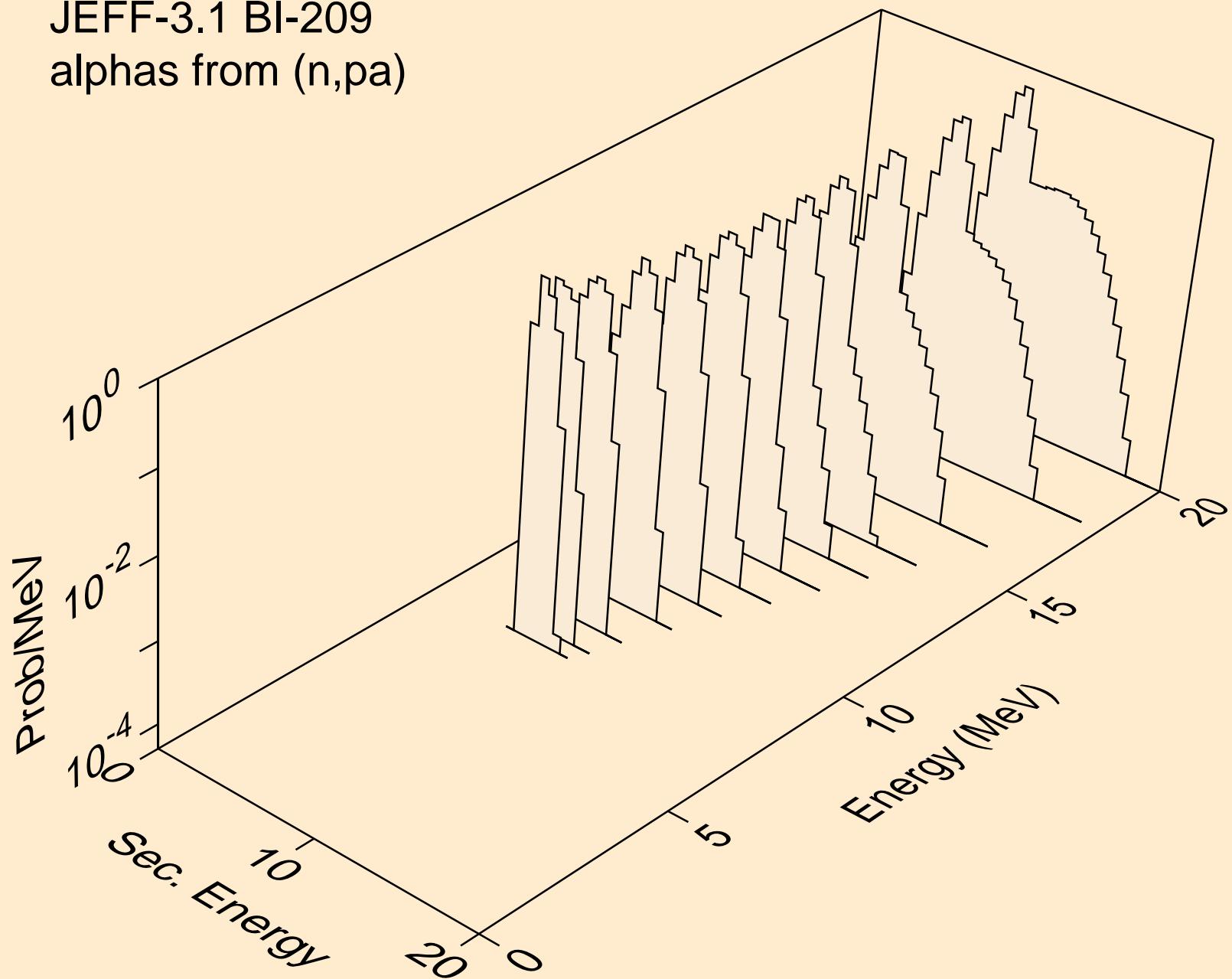
JEFF-3.1 Bi-209  
alphas from  $(n,2n)a$



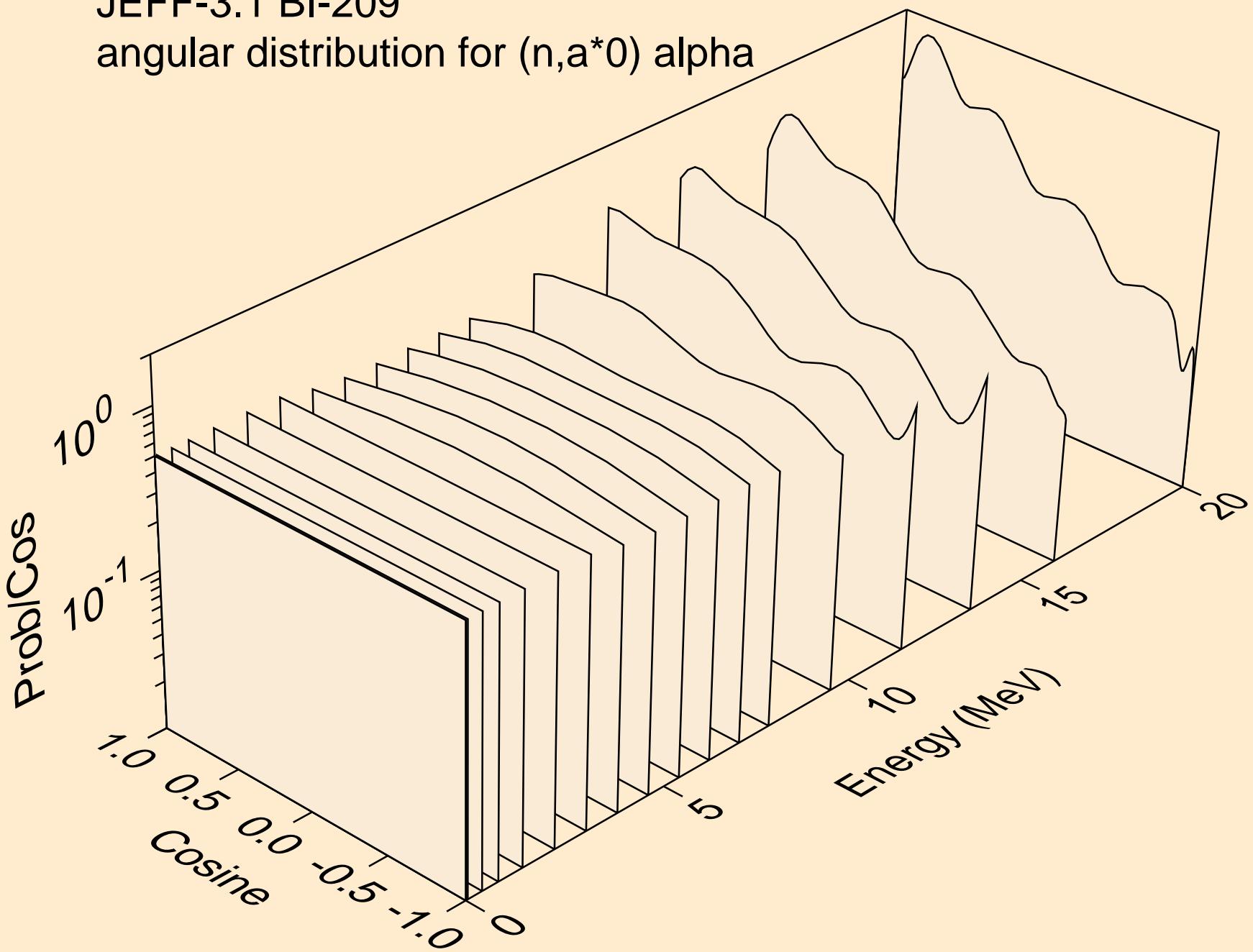
JEFF-3.1 Bi-209  
alphas from (n,2a)



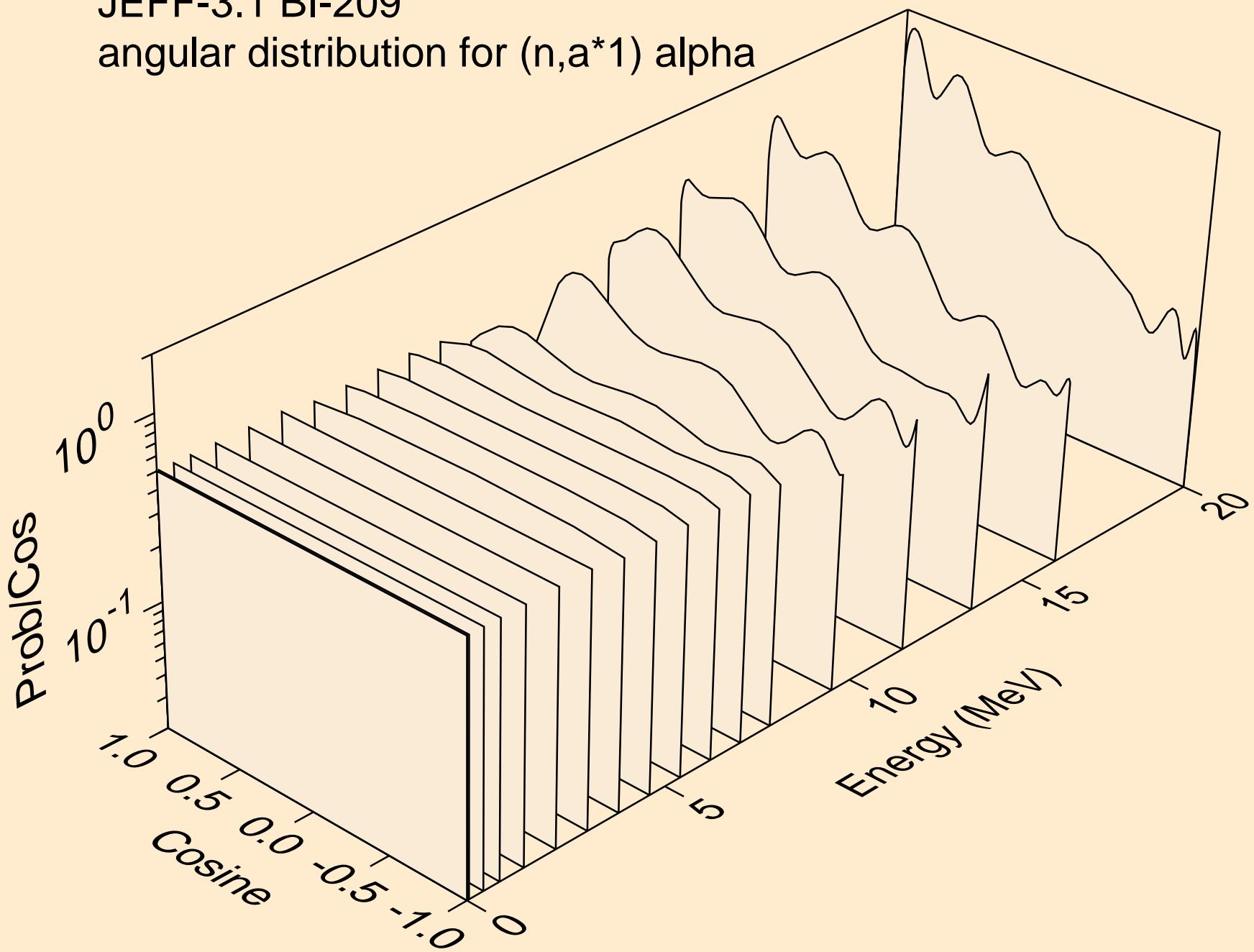
JEFF-3.1 Bi-209  
alphas from (n,pa)



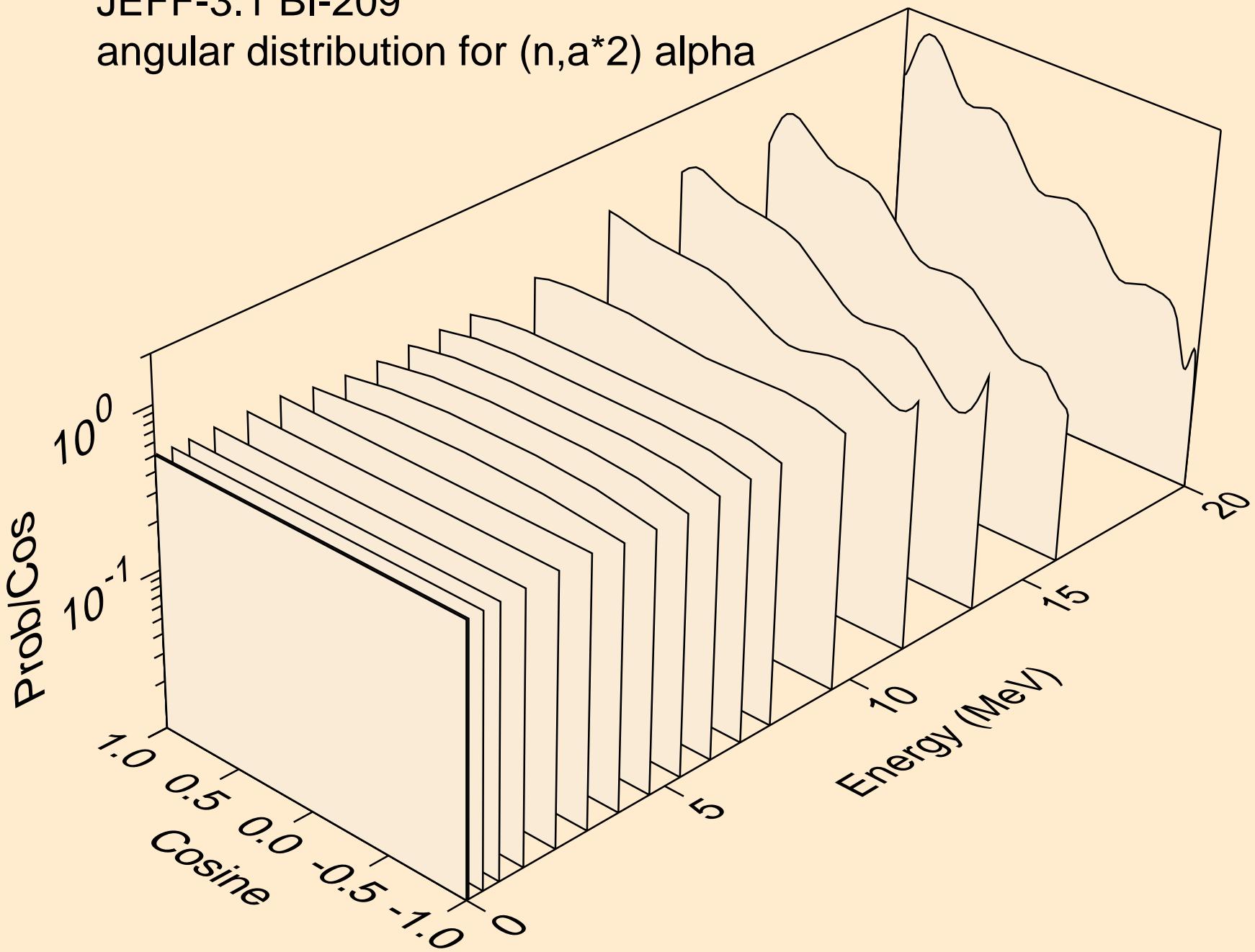
JEFF-3.1 Bi-209  
angular distribution for ( $n, a^* 0$ ) alpha



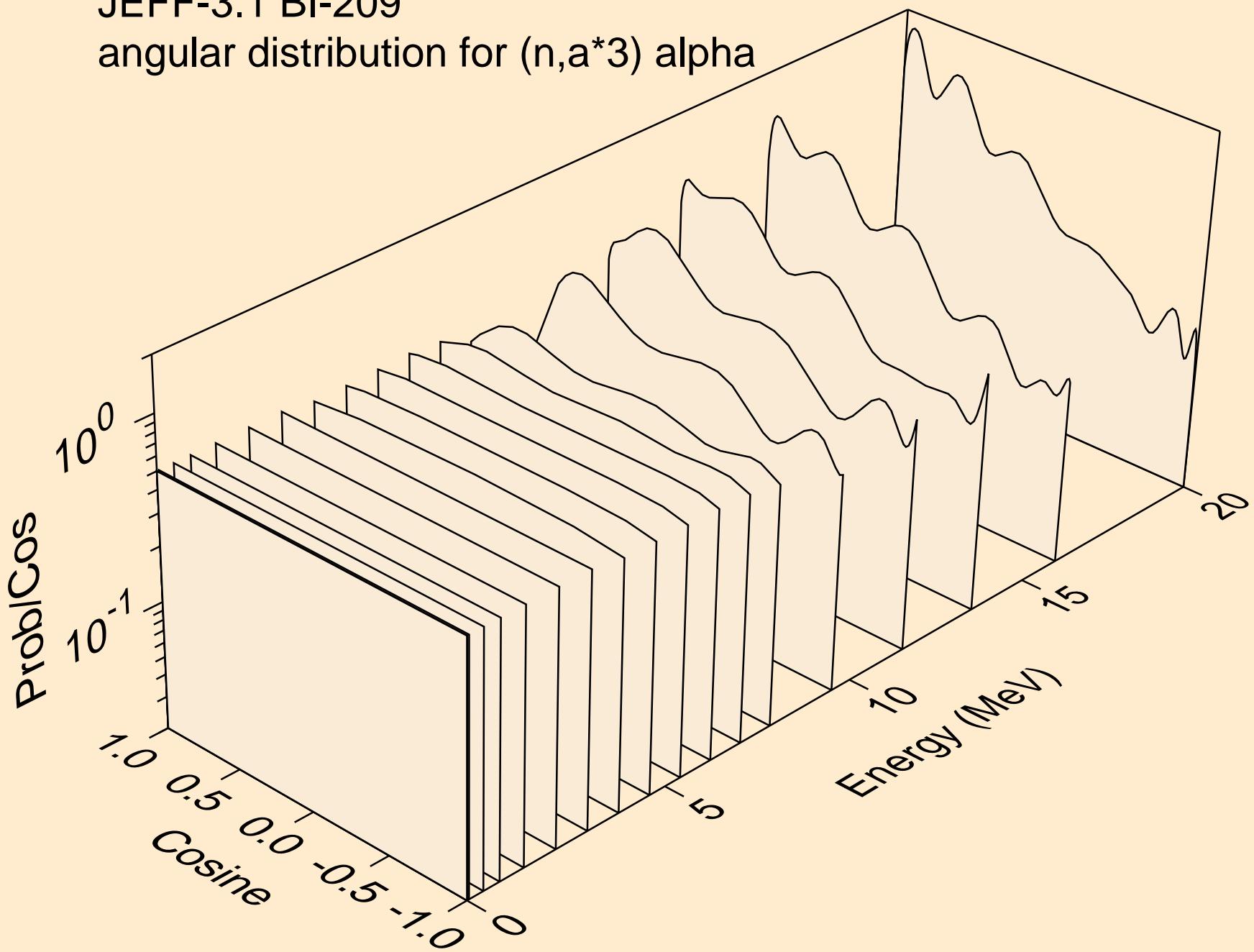
JEFF-3.1 Bi-209  
angular distribution for (n,a\*1) alpha



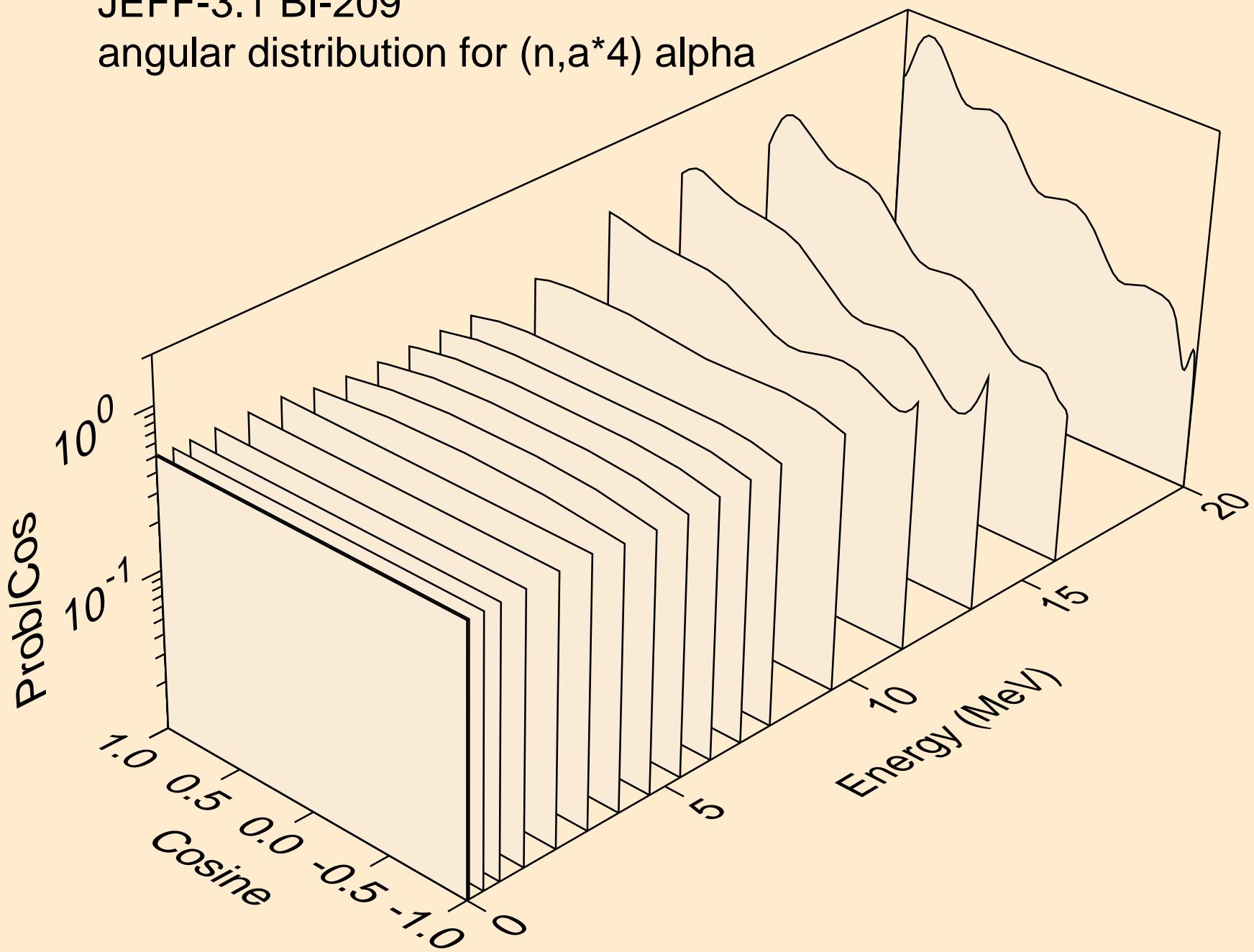
JEFF-3.1 Bi-209  
angular distribution for ( $n, a^* 2$ ) alpha



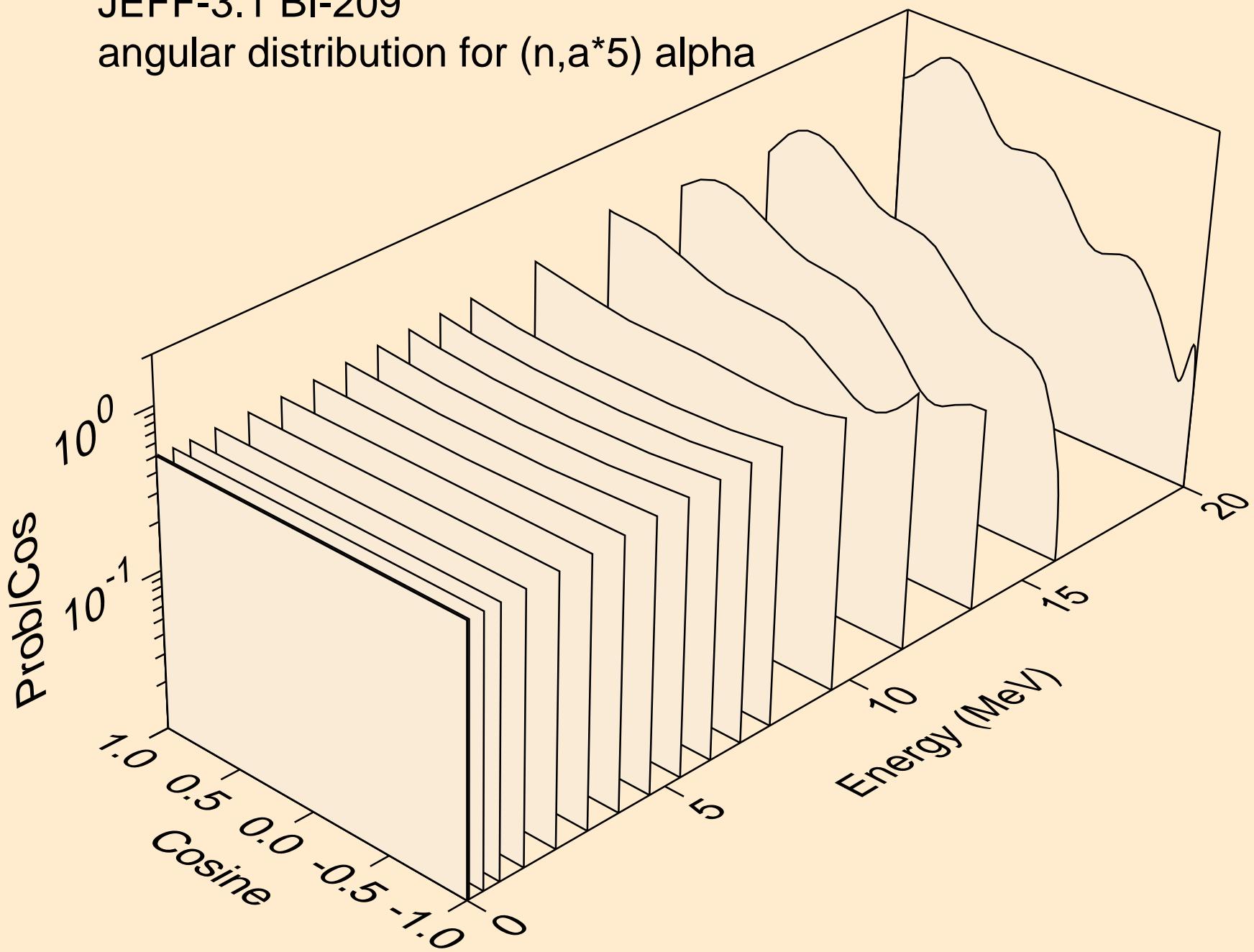
JEFF-3.1 Bi-209  
angular distribution for (n,a\*3) alpha



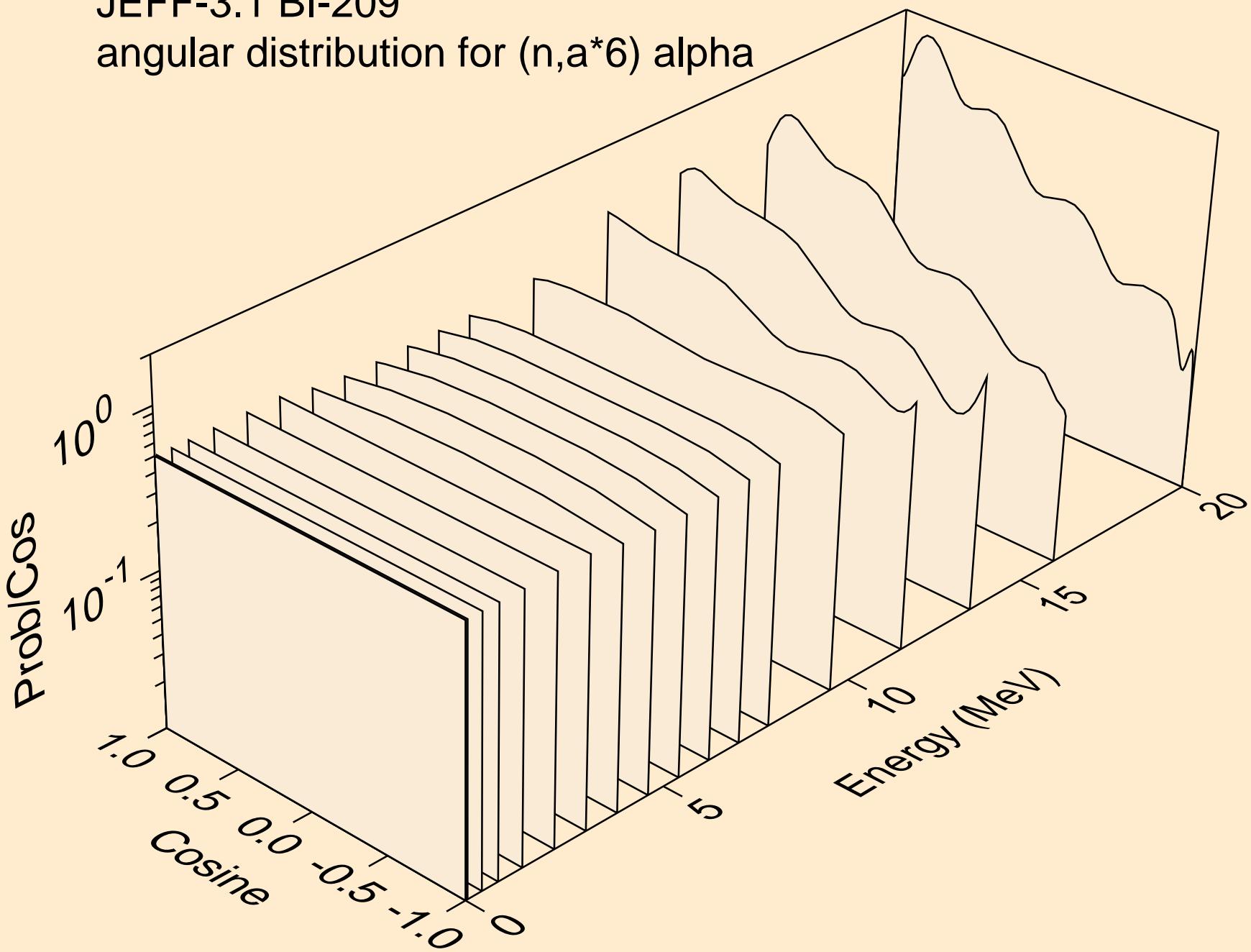
JEFF-3.1 Bi-209  
angular distribution for ( $n, a^* 4$ ) alpha



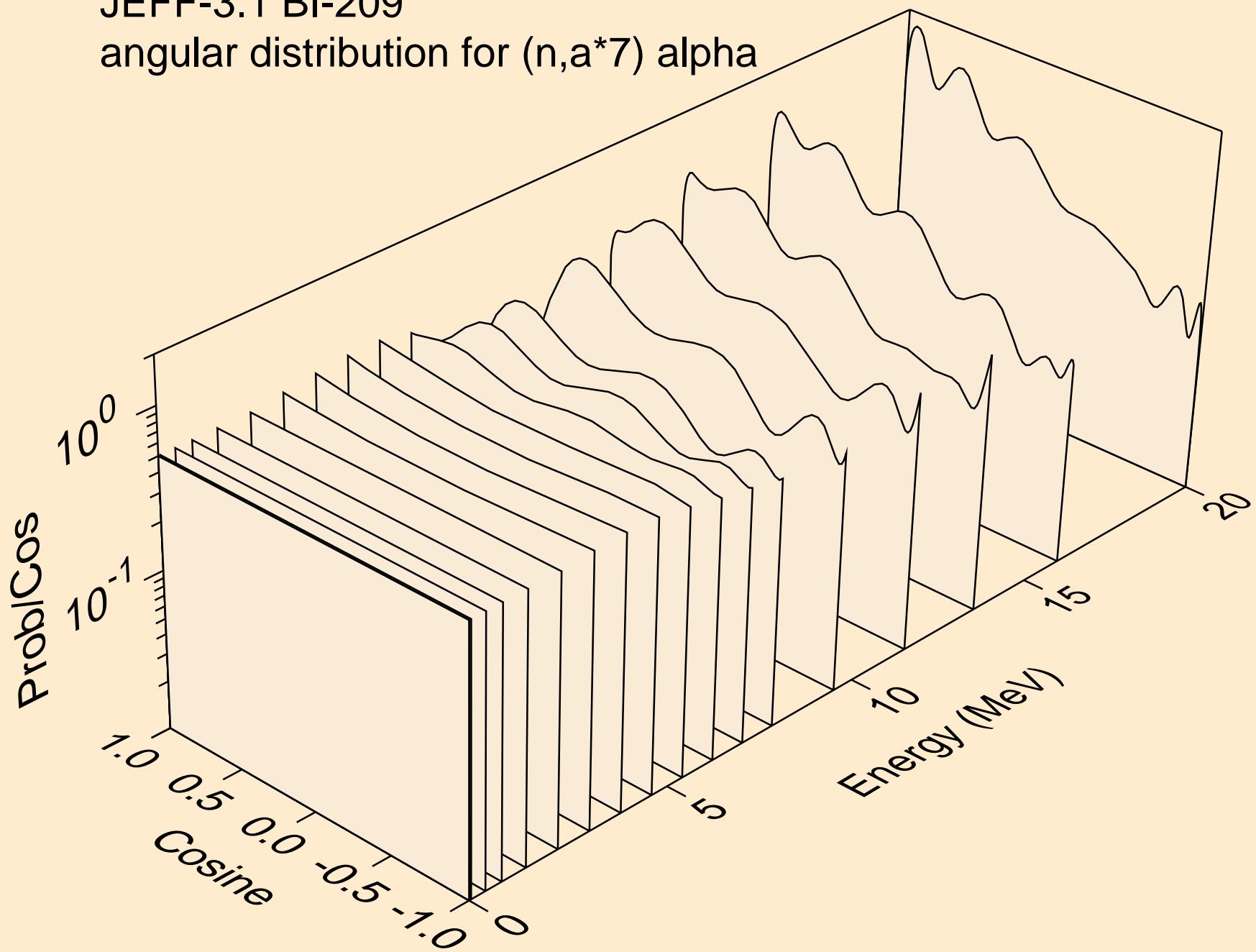
JEFF-3.1 Bi-209  
angular distribution for (n,a\*5) alpha



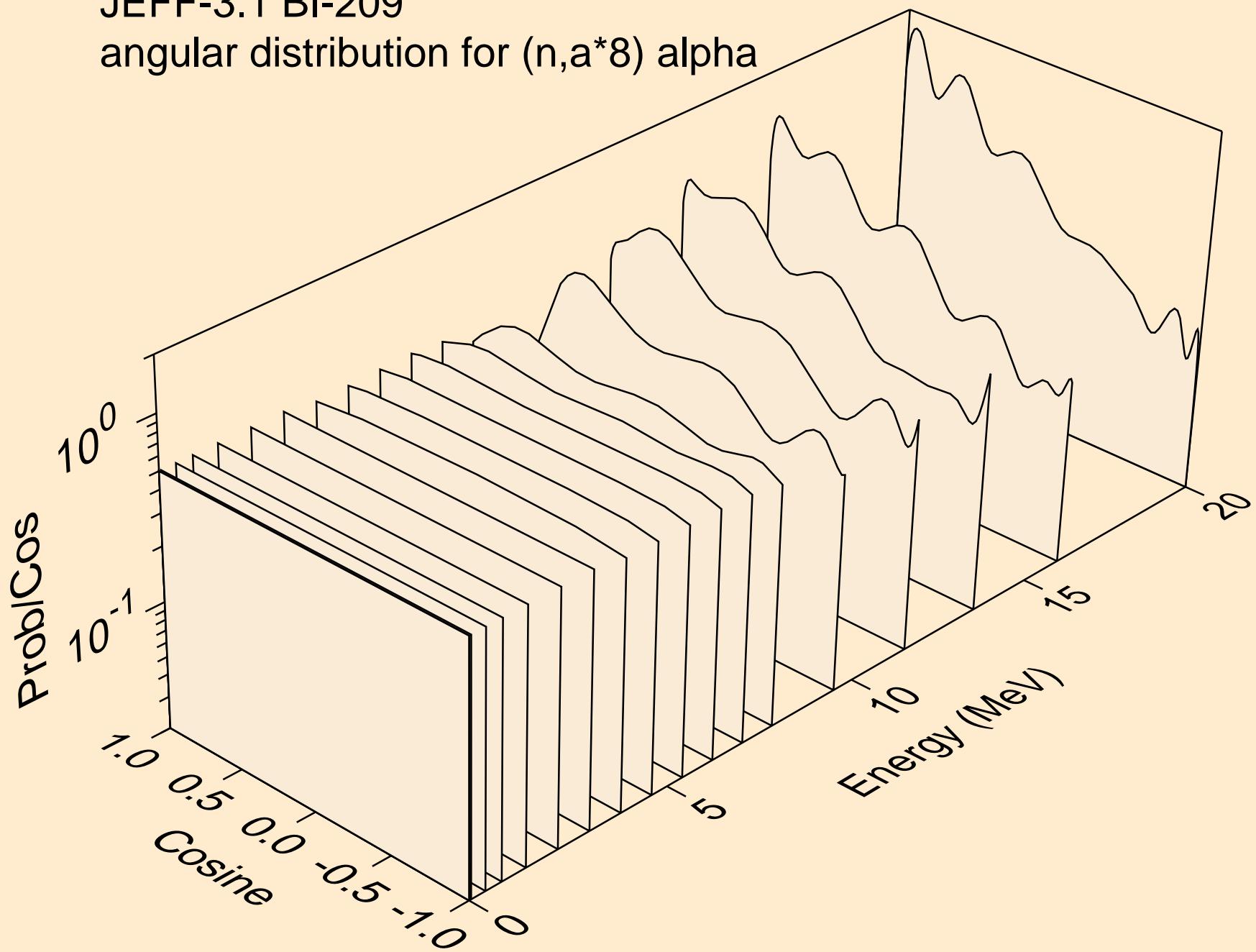
JEFF-3.1 Bi-209  
angular distribution for (n,a\*6) alpha



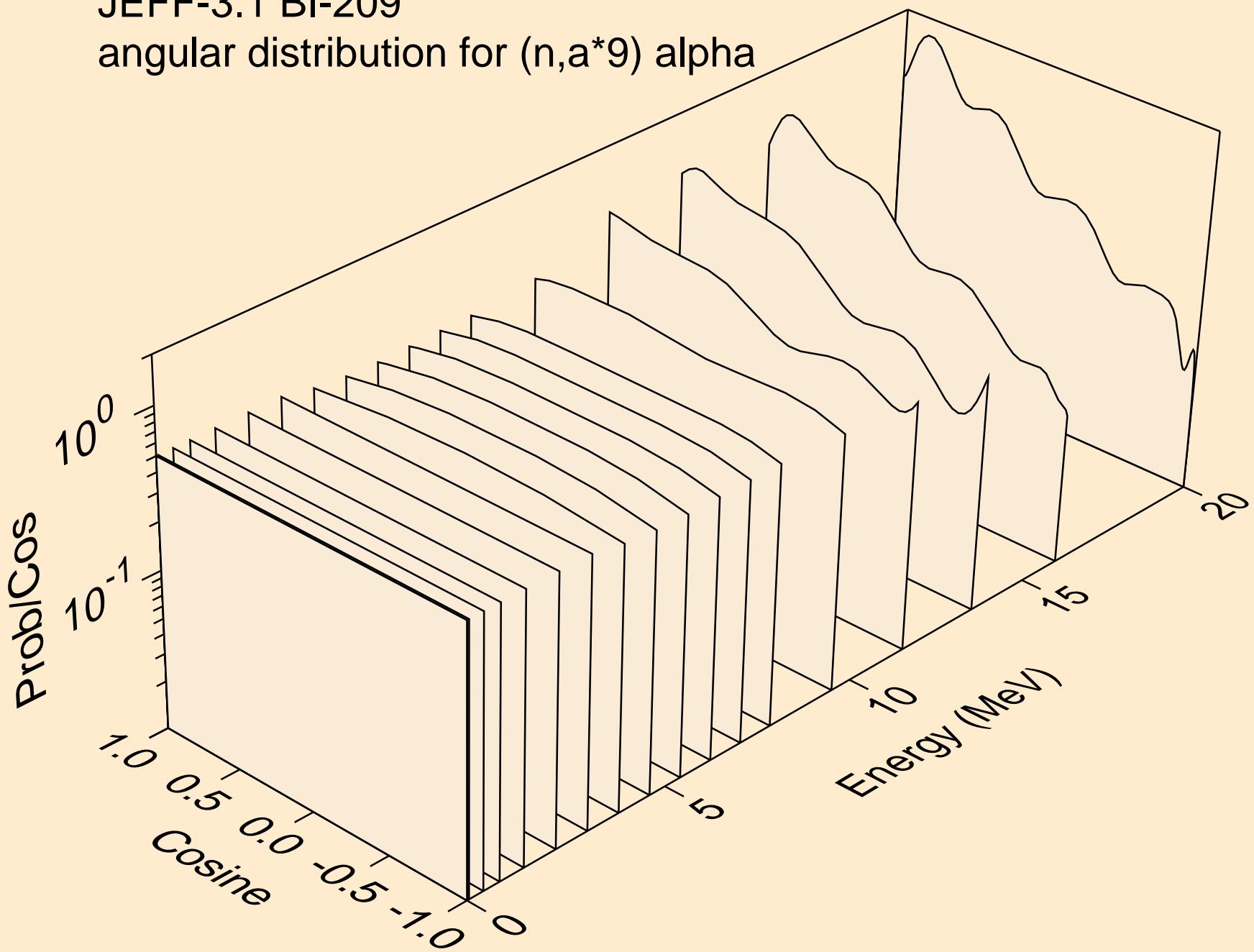
JEFF-3.1 Bi-209  
angular distribution for ( $n, a^* 7$ ) alpha



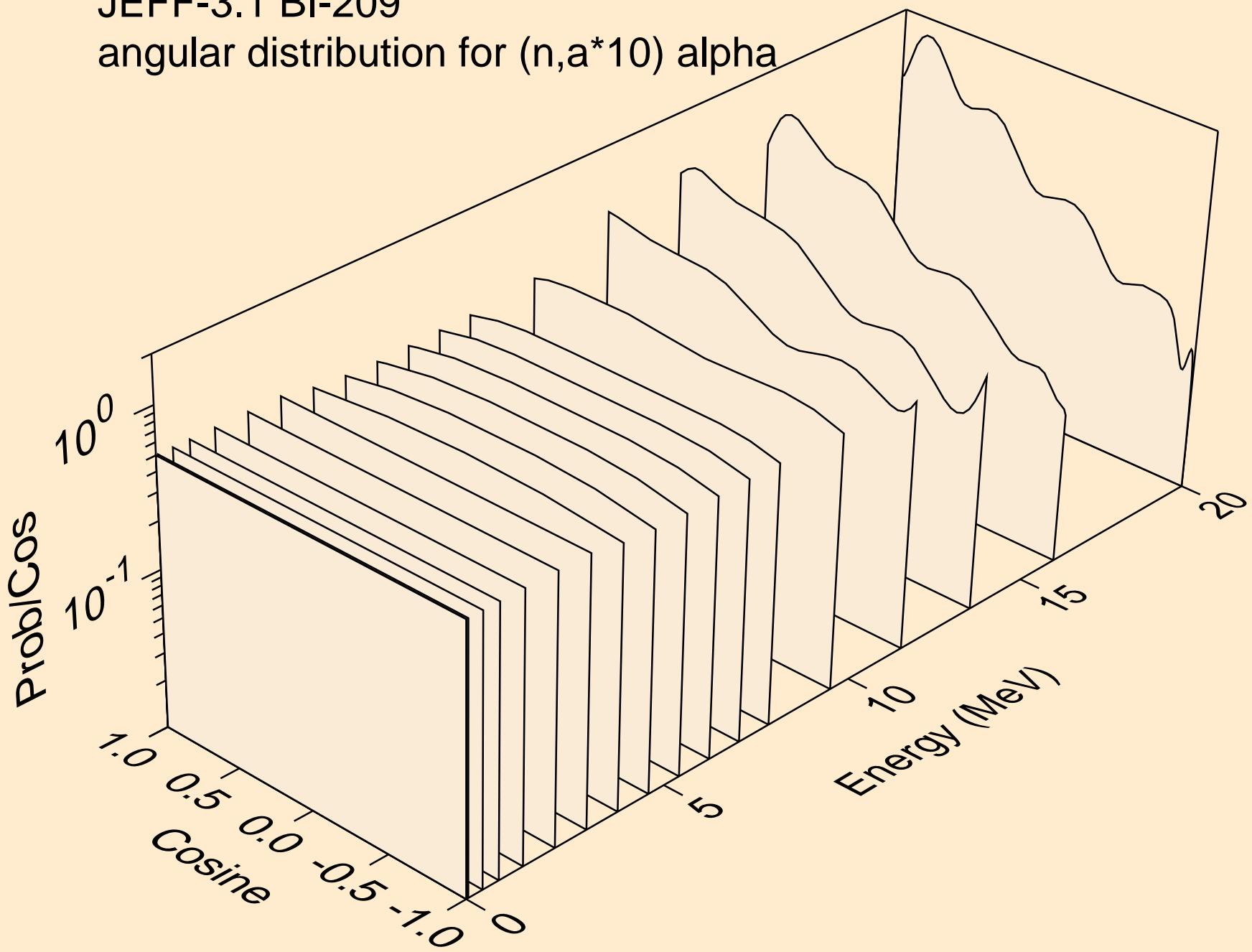
JEFF-3.1 Bi-209  
angular distribution for (n,a\*8) alpha



JEFF-3.1 Bi-209  
angular distribution for (n,a\*9) alpha



JEFF-3.1 Bi-209  
angular distribution for (n,a\*10) alpha



JEFF-3.1 Bi-209  
alphas from  $(n, a^* c)$

