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! =====nejpravděpodobnější rychlost N2 =====
T=300
300
M=M(N2)/1000 ! [kg mol-1]
0.0280134
vmax= $\sqrt{(2*R*T/M)}$  ! [m s-1]
421.99767

! ===== sodík + Doppler =====
MNa=M(Na)*1e-3 ! [kg mol-1]
0.02298977
T=3000
3000
v=sqrt(R*T/MNa)
1041.6232
lambda1=588.9950e-9
5.88995 · 10-07
lambda2=589.5924e-9
5.895924 · 10-07
dlambda=v/c*lambda1 ! [m]
2.046452 · 10-12
T=MNa/R*((lambda1-lambda2)/lambda1*c)**2
2.5565164 · 10+08

! ===== Unik H2 ze Zeme =====
T=300
300
sig= $\sqrt{(R*T/M(H2)/1e-3)}$ 
1112.3607
integ v=11.2e3,20e3  $\sqrt{(2/pi)*v^2/sig^3*exp(-v^2/2/sig$ 
 $\uparrow^2)}$ 
7.8546592 · 10-22

! asymp:
v=11.2e3
11200
 $\sqrt{(2/pi)/sig^3*sig^2*v*exp(-v^2/2/sig^2)}$ 
7.7786656 · 10-22

T=1000
1000
sig= $\sqrt{(R*T/M(H)/1e-3)}$ 
2872.1029
integ v=11.2e3,20e3  $\sqrt{(2/pi)*v^2/sig^3*exp(-v^2/2/sig$ 
 $\uparrow^2)}$ 
0.0016482347

! asymp:
v=11.2e3
11200
 $\sqrt{(2/pi)/sig^3*sig^2*v*exp(-v^2/2/sig^2)}$ 
0.0015518759

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