Today, we will:
- Discuss drag coefficient and use it in the equations of motion for particle trajectories
- Discuss the **Cunningham correction factor** (small particles; free molecular flow effects)

Example: Variation of Cunningham correction factor with particle diameter

Given: Air at STP has mean free path $\lambda = 0.06704$ microns. Knudsen number is defined as $Kn = \lambda / D_p$. Cunningham correction factor is $C = 1 + Kn\left[2.514 + 0.80\exp\left(-0.55 / Kn\right)\right]$.

To do:

Calculate C for various values of particle diameter D_p. [Give your answer to 4 significant digits, and be careful with units.]

Solution:

Table to be filled in during class:

D_p (μm)	Kn	C
0.001		
0.0025		
0.006		
0.01		
0.025		
0.06		
0.1		
0.25		

D_p (μm)	Kn	C
0.6		
1		
2.5		
6		
10		
25		
60		