ATMO/CHEE 469a/569a

Homework 2. Spring 07

Due date: Monday, January 29, 2007

All Students

Do:
Q 4.4 (log-probability paper is available on our web site)
Q 4.7
Do also:
Q (A)
Determine the GSD and mean of the distribution shown in Figure 4.12 (see eq. 4.46). Assume that N = 10,000 particles per cm^{-3}. Plot the distribution in three ways (*y*-axis vs. *x*-axis): $dN/d(d_p)$ vs d_p , $dN/d(\ln d_p)$ vs d_p and $dN/d(\ln d_p)$ vs $(\ln d_p)$.

Begin by completing the Table below in a spreadsheet. The following equations will be useful (cf. Hinds eq. 4.41 and 4.42):

$$\frac{dN}{d\ln d_p} = \frac{N}{(2\pi)^{1/2}\ln\sigma_g}\exp\left(-\frac{(\ln d_p - \ln \bar{d}_{pg})^2}{2\ln^2\sigma_g}\right)$$

$$\frac{dN}{dd_p} = \frac{N}{(2\pi)^{1/2} d_p \ln\sigma_g}\exp\left(-\frac{(\ln d_p - \ln \bar{d}_{pg})^2}{2\ln^2\sigma_g}\right)$$

D_p (μm)	$n_N(D_p)$	$n_N^e(\ln D_p)$	$\ln D_p$
2			
4			
6			
8			
10			
12			
14			
16			
18			
20			
22			
24			
26			
28			
30			
32			
34			
36			
38			
40			

Graduate Students

Do Q 4.10