

AT 621 F 12  
**Homework #6**  
Due Wednesday, 7 November

Problem 1.

Problem 8.1 in Seinfeld and Pandis (plotting aerosol size distributions).

Problem 2.

For the aerosol considered in Problem 1, compute and plot also the volume distributions,  $n_v^\circ(\log Dp)$ .

Problem 3.

For this problem, use the following relationship:

$$b_{\text{scat}} = E_s M$$

where  $E_s$  is obtained from Figure 15.7 in Seinfeld and Pandis, and  $M$  is the mass concentration of the scattering species in the atmosphere.

(a) For the aerosol considered in the previous 2 problems, assume it is ammonium sulfate with a density of  $1.8 \text{ g cm}^{-3}$ . Calculate the visual range that would exist when this aerosol was present in the atmosphere.

(b) BREIFLY comment on how your answer to (a) would change if the aerosol were not dry, but in equilibrium with an environmental relative humidity of 80%. (make rough estimates using the figures in the text and notes)