

## Supplementary Material

**Figure S1.** SMPS and AMS mass-size distributions for experiments conducted on (A) 2/5/2007, (B) 1/8/2007, and (C) 1/24/2007. The corresponding reacted  $\alpha$ -pinene concentrations are 1.90, 2.85, and 6.64 ppbv (Table 1). The AMS data show the total mass, including both sulfate and organic. The SMPS mass-size distributions are presented under the assumption of a density of  $1.0 \text{ g cm}^{-3}$  (i.e., y-axis scaling), although the electric-mobility-equivalent mode diameter of the SMPS size distribution (i.e., position along the x-axis) is independent of the particle density. The vacuum-aerodynamic mode diameter of the AMS size distribution is shifted to larger particle sizes because the particle density is greater than 1.0. The particle density was determined from the electric-mobility and vacuum-aerodynamic mode diameters assuming spherical particles, as described in the literature (DeCarlo *et al.*, 2004; Katrib *et al.*, 2005). The organic density ( $\rho_{\text{SOA}}$ ) was calculated from the particle density by making a correction for the ammonium sulfate seed.

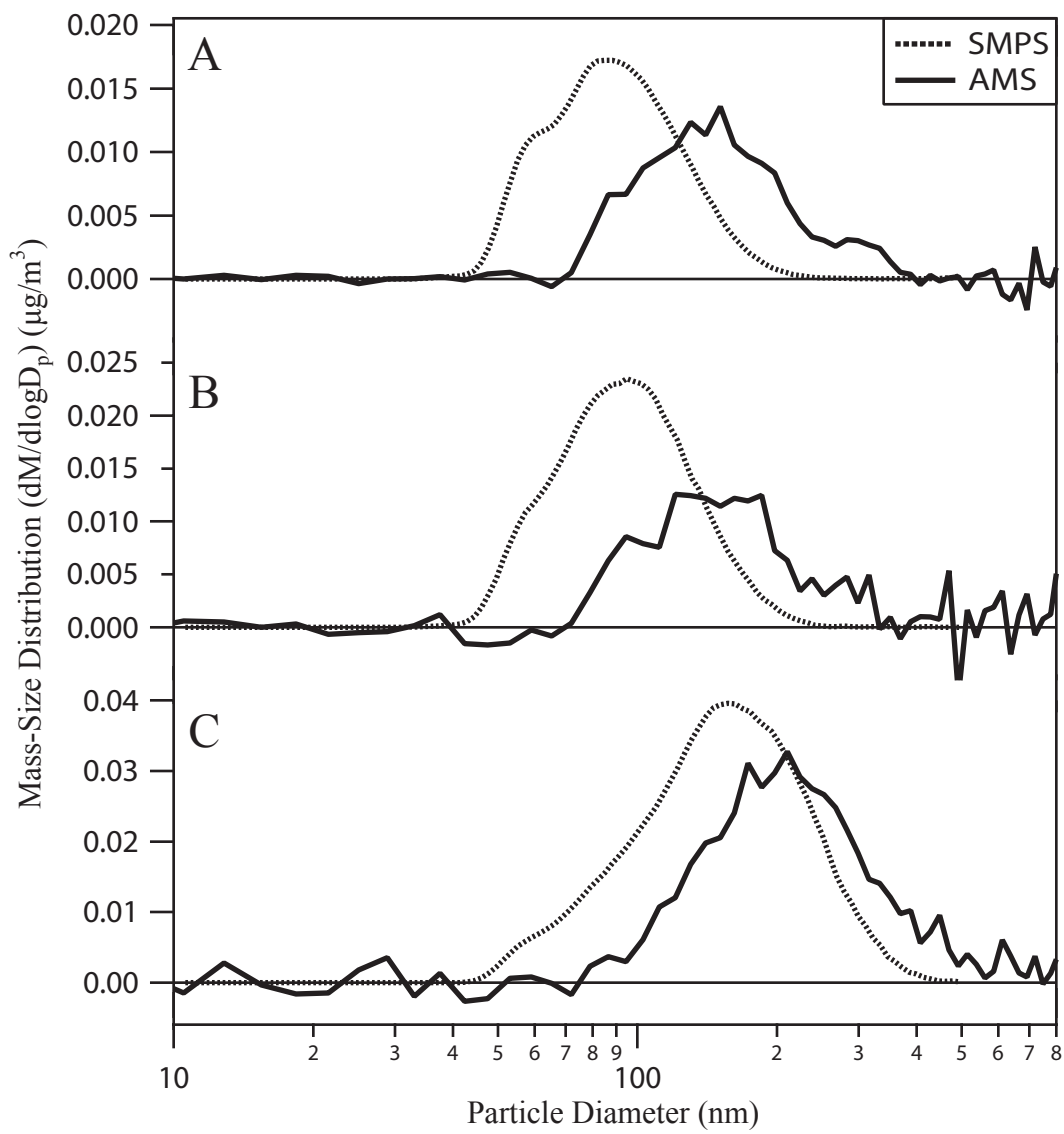


Figure S1