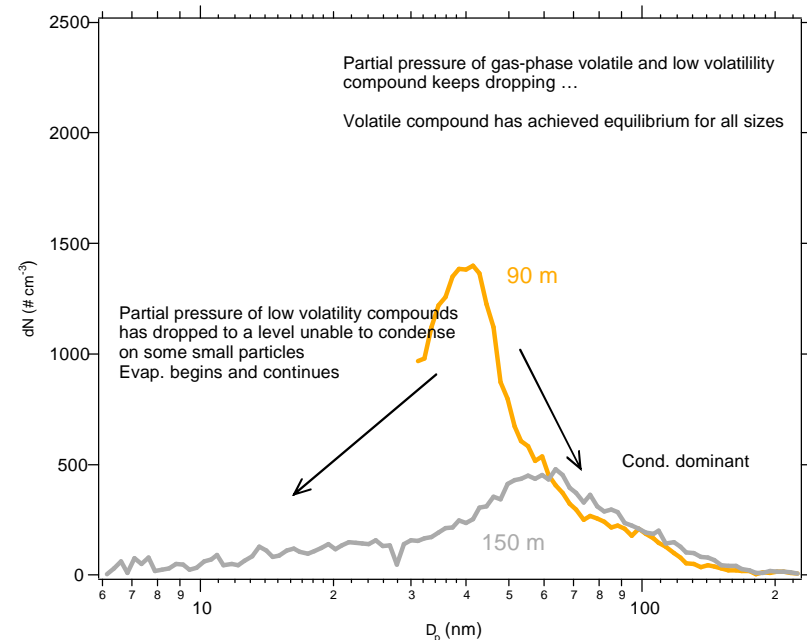
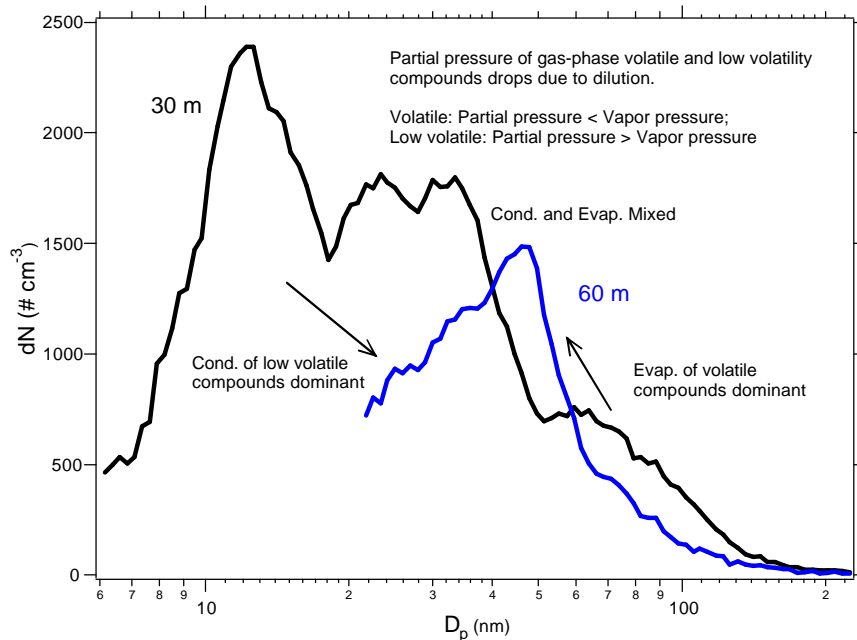


Fundamental Studies of Nanoparticle Formation in Air Pollution. CHE-0410045: Evolution of Particle Number Distribution Near Roadways. M. Zhang and A. S. Wexler, University of California, Davis



The aerosol size distribution near roadways evolves rapidly as a function of distance from the source. Between 30 – 90 m downwind, particles grew into the > 10 nm range. Beyond 90 m, some continued growing to >100 nm but many shrank to <10 nm as result of competition between the partial pressure and the vapor pressure of the condensing species. Thus, we believe that particle composition also changes dramatically as gas-phase concentrations change due to dilution. People who living within ~90 m of roadways are, therefore, exposed to aerosols whose particle size and compositions are different than the typical urban aerosol.

[Zhang, K.M., A.S. Wexler, Y.F. Zhu, W.C. Hinds, and C. Sioutas. Evolution of Particle Number Distribution near Roadways. Part II. The 'Road-to-Ambient' Process. *Atmos. Environ.* 38:6655-6665, 2004]