**ExperimentalData.xlsx**

This dataset contains post-processed experimental data measured by the mobile laboratory Sniffer for plotting of Figures 8 and 10-13 in the published article.

Sniffer was driving Mannerheimintie to north and standing around 6 min at sites downwind shown in Fig. 8. All data were averaged over the driving and standing times. More details of the measurements can be found in Pirjola et al., (2012).

**Sheet Ntot**

**Distance (m)** was measured from the sidewalk of Mannerheimintie to south (Fig. 8)

**Location** refers to the points A-E in Fig. 8. Point BG refers to the background measurement site around 300 m north from Mannerheimintie (Fig. 8)

**Ntot**: total particle number concentration in #/cm3 was measured with a nanoSMPS (particle sizes of 3-63.8 nm) and a SMPS (particle sizes of 63.8-414.2 nm) with a time resolution of 2.5 min.

**Sheet dNdlogDp**

Particle number size distribution was measured with a nanoSMPS and SMPS

**Distance and Location** as in Sheet Ntot

**Dg (nm):** geometric mean diameter of particles

**dN/dlogDp** **(#/cm3)** for particles in each size section

**Sheet PM1**

**Distance and Location** as in Sheet Ntot

**PM1** **(g/m3)**: particulate matter of particles smaller than 1 m was estimated from the measurements with an ELPI. The ELPI measured particle number concentration (#/cm3) with a time resolution of 1 s. The data were converted to volume concentrations and further to mass concentrations (g/m3) by assuming particle density of 1000 kg/m3. Additionally, number of data points over which the mean values were calculated are given.

**Sheet PM2.5**

**Distance and Location** as in Sheet Ntot

**PM2.5 (g/m3):** particulate matter of particles smaller than 2.5 m was measured by a DustTrak with a time resolution of 1 s. Additionally, number of data points over which the mean values along with standard deviations were calculated are given.

**Sheet BC**

**Distance and Location** as in Sheet Ntot

**BC (g/m3):** black carbon in PM1 size fraction was measured by a two wavelength Aethalometer AE22 with a time resolution of 5 s. Additionally, number of data points over which the mean values along with standard deviations were calculated are given.