*Supplementary* *data*

# Comparison of the DiSCmini aerosol monitor to a

# handheld condensation particle counter and a scanning mobility particle sizer for

# submicrometer sodium chloride and metal aerosols

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Table S1. Linear equations and R2 values for each test for each instrument used in particle number counting

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test Particle** | **Instrument** | **Particle Size (nm)** | **\*Equation** | **R2** |
| Mono-dispersed | NaCl | DM | 30 | y = 1.21x - 175 | 1 |
| 100 | y = 0.89x + 110 | 0.9996 |
| 300 | y = 2.29x - 340  | 0.9999 |
| CPC | 30 | y = 1.20x - 10.5 | 1 |
| 100 | y = 0.78x + 650 | 0.9965 |
| 300 | y = 1.48x - 530 | 1 |
| Metal | DM | 30 | y = 1.58x + 190 | 1 |
| 100 | y = 1.01x + 21 | 1 |
| CPC | 30 | y = 1.17x + 468 | 1 |
| 100 | y = 0.87x + 137 | 1 |
| Poly-dispersed | NaCl | DM | y = x | 1 |
| CPC | y = 0.94x + 460 | 0.9997 |
| Metal | DM | y = 0.82x + 5.7 | 1 |
| CPC | y = 0.87x + 260 | 0.9999 |

\*y: CDM or CCPC, x: CSMPS (where CDM, CCPC and CSMPS are the total number concentration of DM, CPC and SMPS, respectively.)

 Information from the SMPS measurements for polydispersed test particles is shown in Table S2. The average total number concentration, average geometric mean diameter and average geometric standard deviations for both, NaCl and metal particles, are listed. The standard deviation of the average total number concentration was lower for the metal particles when compared to the NaCl particles. Similarly, the average geometric standard deviation was lower for the metal particles.

Table S2. Information for polydispersed test particles measured by the SMPS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test particle** | **\*Conc.****Range** | **Avg. Total number conc.****(Std. Dev.)****particles/cm3** | **Avg. Geo. Mean dia.****(Std. Dev.)****nm** | **Avg.****Geo. Std. Dev.** |
| NaCl | L | 560(61) | 157(8.5) | 1.9 |
| M | 4880(213) | 192(2.1) | 1.6 |
| H | 47900(3020) | 153(7.9) | 1.8 |
| Metal | L | 550(47) | 107(2.6) | 1.6 |
| M | 5870(194) | 194(4.2) | 1.5 |
| H | 50900(630) | 150(2.3) | 1.5 |

\*Concentration ranges are: low (L, <103 particles/cm3), medium (M, 103-104 particles/cm3), and high (H, >104 particles/cm3)