Supplement of

A novel study of the morphology and effective density of externally mixed black carbon aerosols in ambient air using a size-resolved single-particle soot photometer (SP2)

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Contents

Fig. S1: Frequency distribution of the lag times between the incandescence and scattering peak locations determined using the SP2.

Fig. S2: Temporal variation of the total number concentration of the scattering and incandescence particles detected by SP2 during a size selection comprising of one short cycle with duration of 18 s for each size and one long cycle with duration of 36 s. Local peak at the beginning of each circle was previously identified to correct the time difference between the DMA size selection and SP2 measurement.

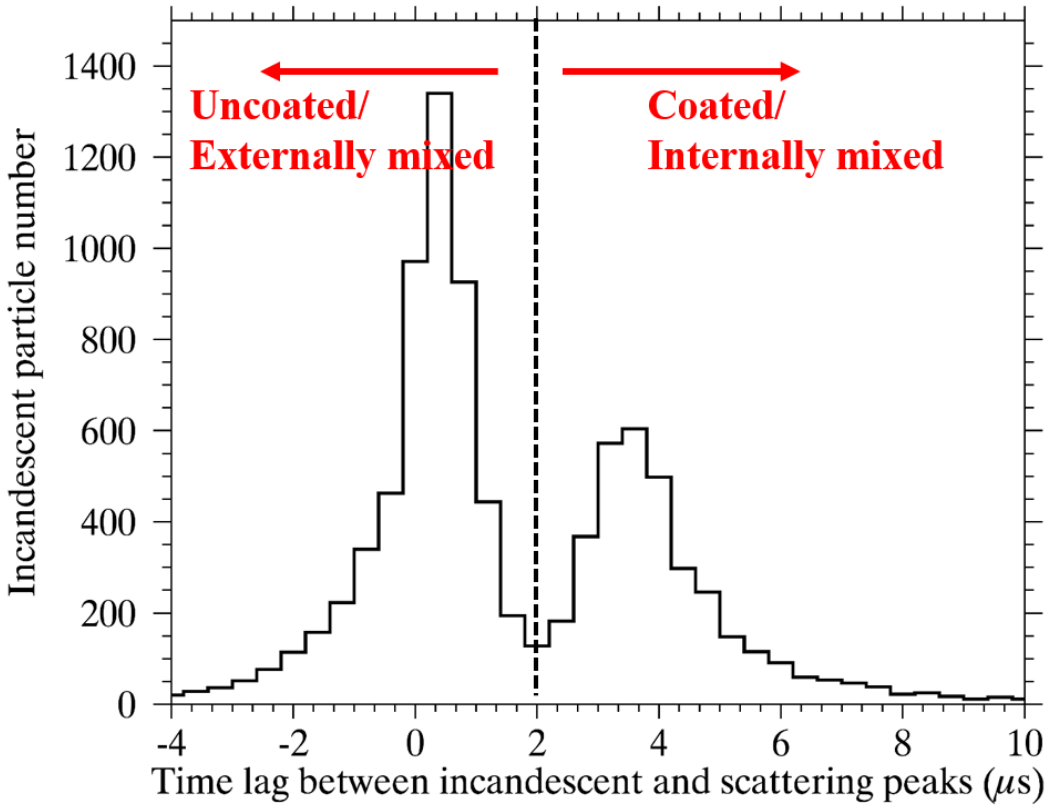

Fig. S1. Frequency distribution of the lag times between the incandescence and scattering peak locations determined using the SP2. A bimodal distribution is found with the minimum at ~2 μs. The BC-containing particles with the lag time greater than 2 μs were considered to be thickly coated. Otherwise, the BC-containing particles were non/thinly coated.

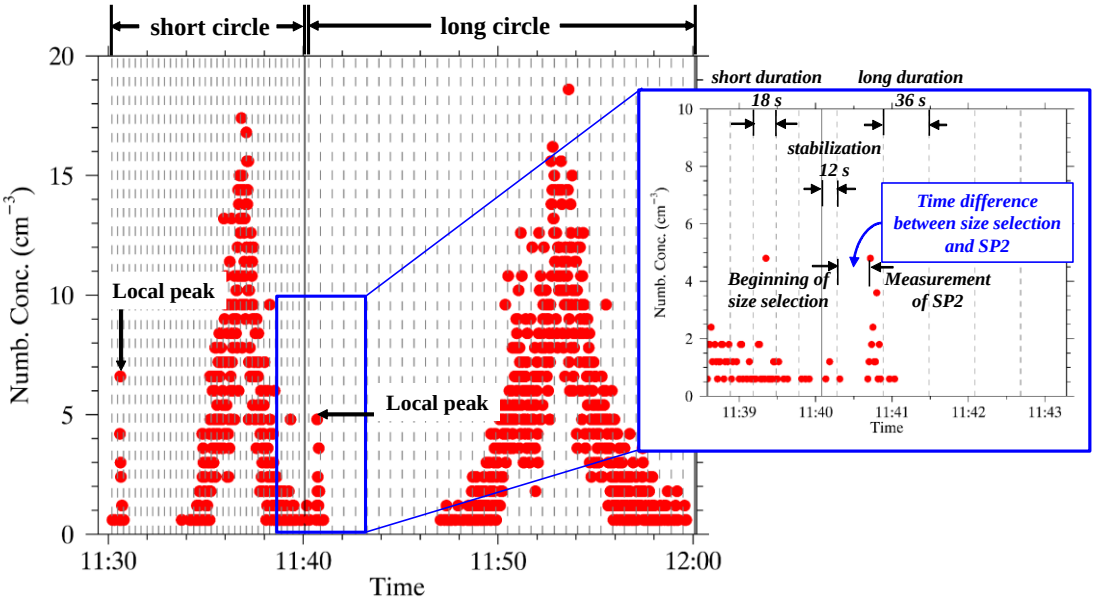

Fig. S2. Temporal variation of the total number concentration of the scattering and incandescence particles detected by SP2 during a size selection comprising of one short cycle with duration of 18 s for each size and one long cycle with duration of 36 s. Local peak at the beginning of each cycle was previously identified to correct the time difference between the DMA size selection and SP2 measurement.