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Laboratory and field evaluation of the Aerosol Dynamics Inc. concentrator (ADIc) for aerosol mass spectrometry

Sanna Saarikoski et al.

Correspondence to: Sanna Saarikoski (sanna.saarikoski@fmi.fi)

Supplemental Information

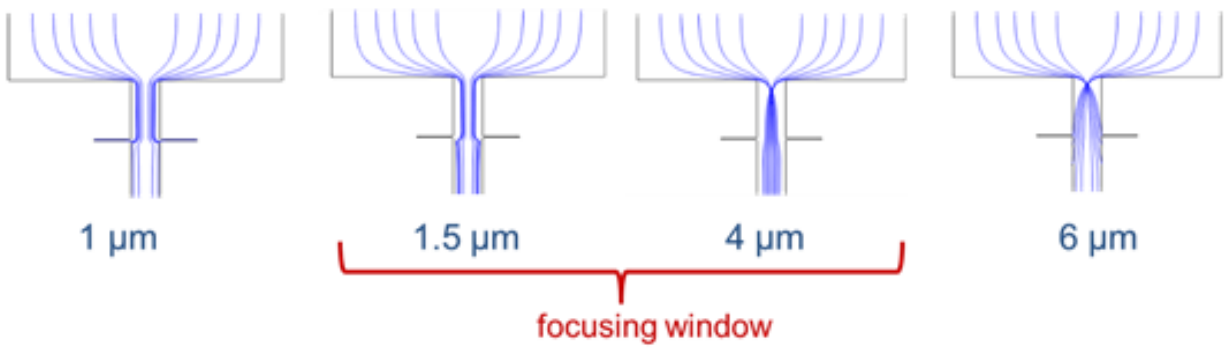

Figure S1. Calculated particle trajectories for different particle sizes entering the focusing nozzle of the ADIc. Scale is expanded radially for better visualization.

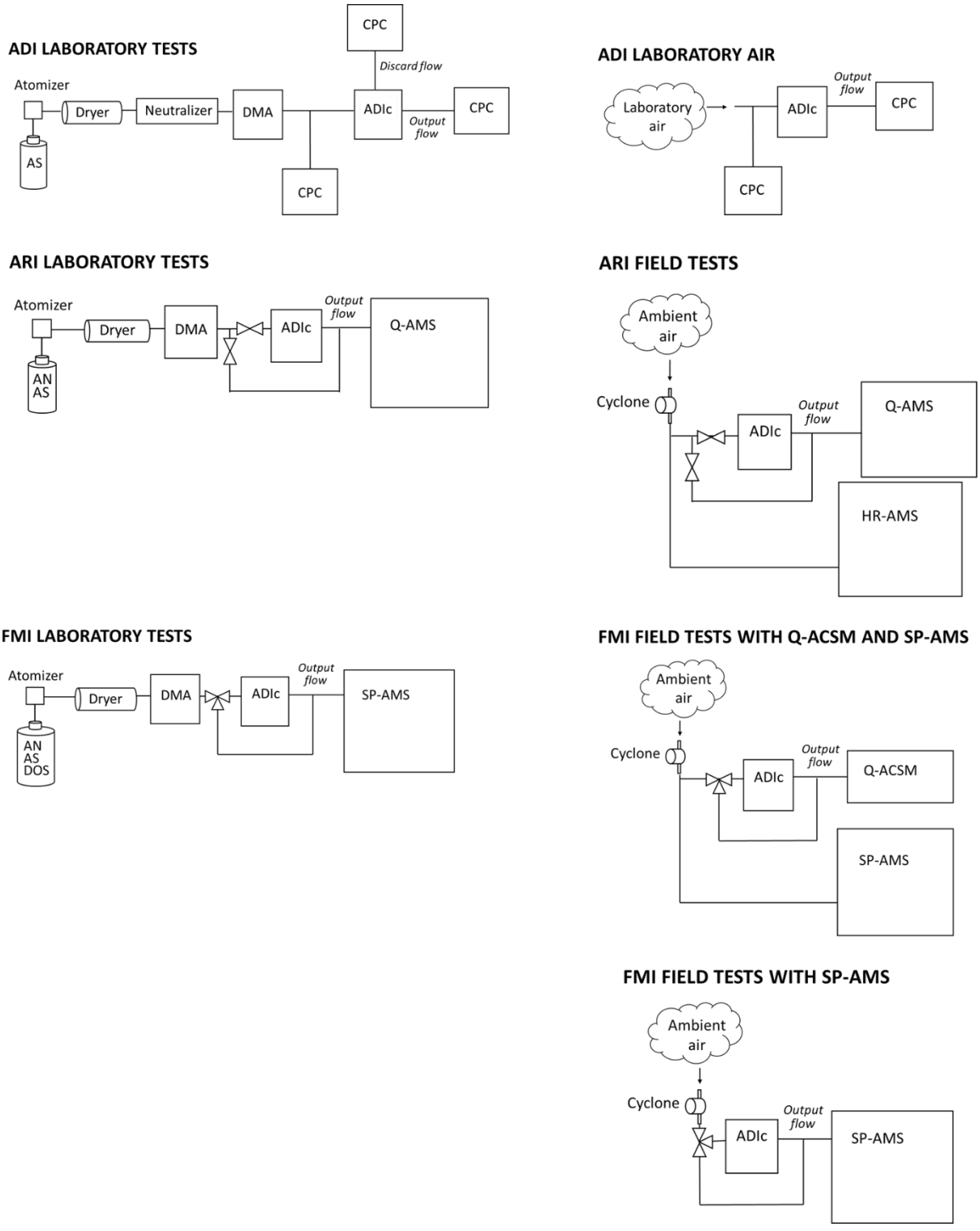

Figure S2. Diagrams for the instrumental set-ups used in the laboratory and field tests at Aerosol Dynamics Inc. (ADI), Aerodyne Research, Inc. (ARI) and Finnish Meteorological Institute (FMI).

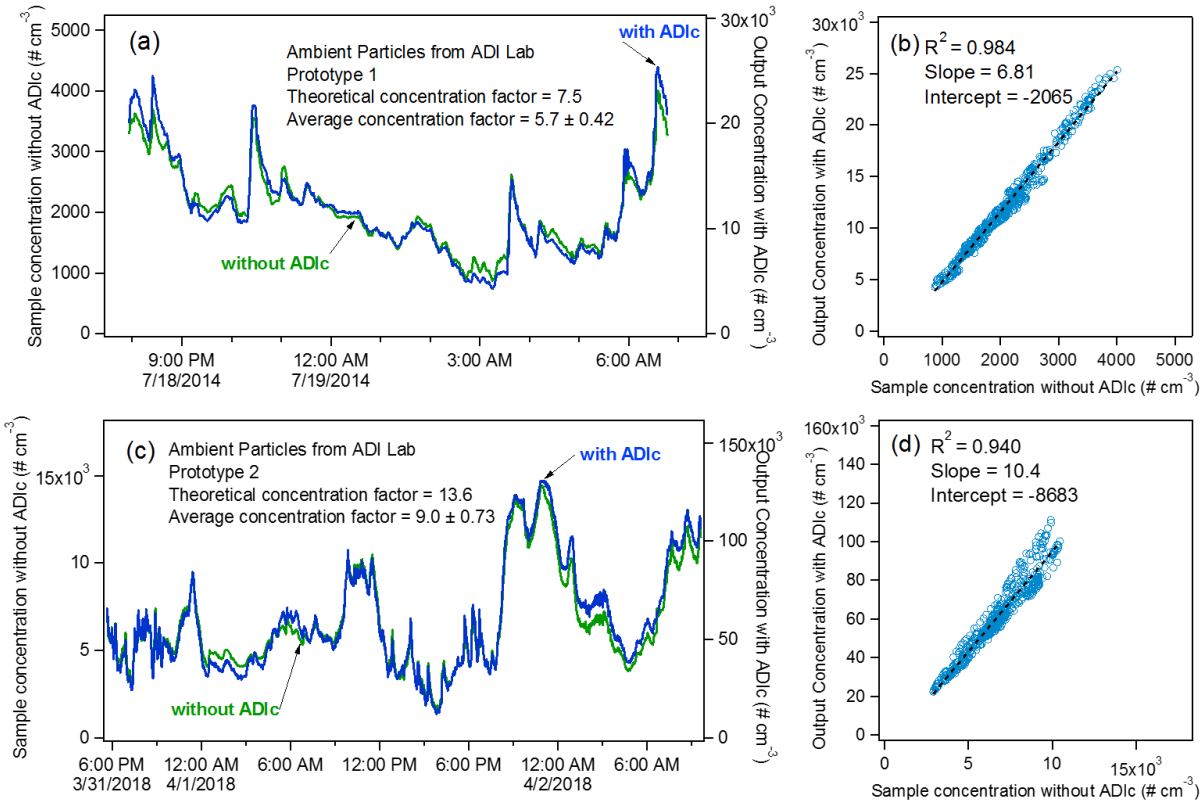

Figure S3. Particle number concentrations in the ADIc sample and output flows while sampling laboratory air shown as time series (a, c) and as correlation plots (b, d). Prototype 1 was operating at low flow (a–b) and prototype 2 at high flow (c–d).

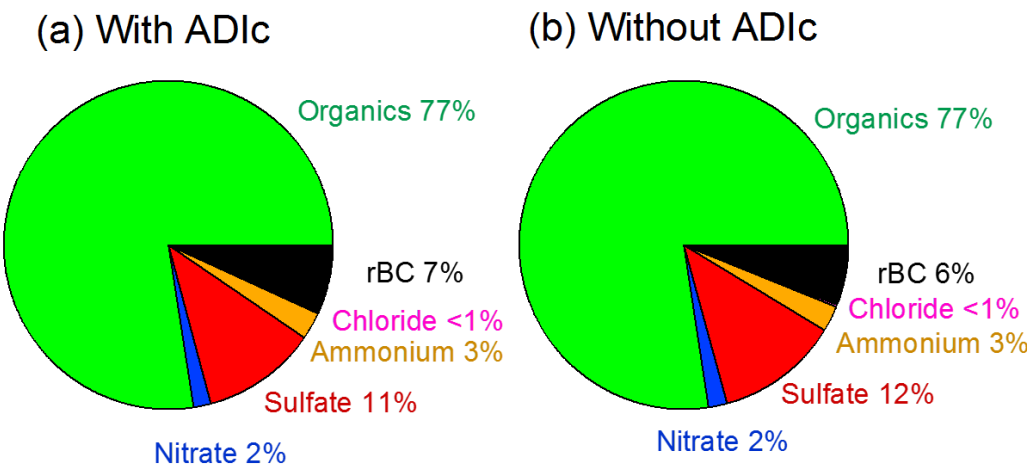

Figure S4. Chemical composition of particles with the ADIc (a) and without the ADIc (b) measured with the SP-AMS at SMEAR III. Sampling time was 70 minutes with the ADIc and 70 minutes without the ADIc. The theoretical concentration factor was 21.3.

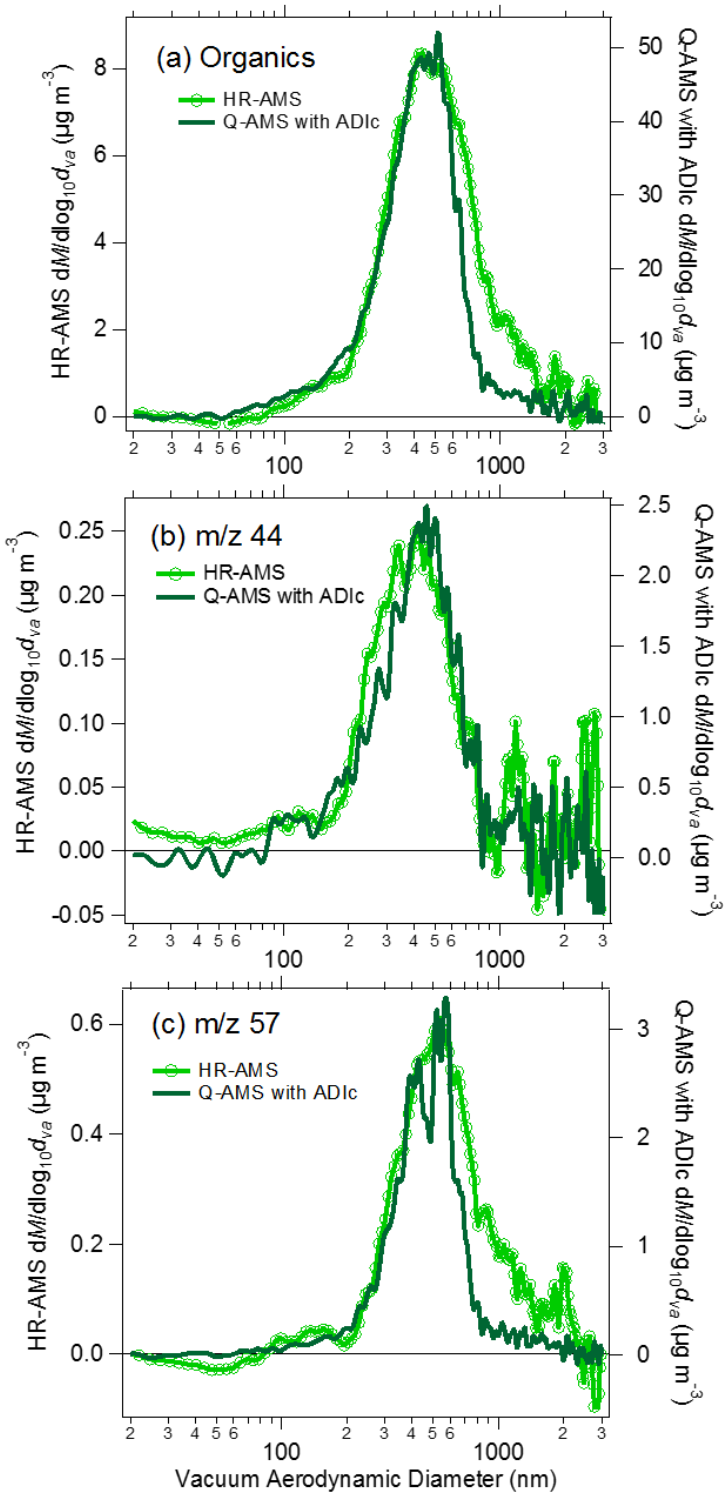

Figure S5. Size distributions for organics (a), m/z 44 (b) and m/z 57 (c) from the HR-AMS in bypass (without the ADIc) and the Q-AMS behind the ADIc demonstrating different size cutoffs in the aerodynamic lenses >700 nm in the two instruments.