

## ***Interactive comment on “Laboratory and field evaluation of the Aerosol Dynamics Inc. concentrator (ADlc) for aerosol mass spectrometry” by Sanna Saarikoski et al.***

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Received and published: 22 June 2019

Addition to Authors' response to Referee #2 comments Comment (3) Please clarify what a “multiplex chopper” is. Response: In the AMS, the transmission of the beam to the particle detector is modulated with a mechanical chopper that is operated at 100–150 Hz. Time-resolved detection of the particles, coupled with the known flight distance, gives the particle velocity from which the particle aerodynamic diameter is obtained. Typically, the chopper wheel has one or two radial slits giving a sampling duty cycle of 1–4%. The multiplex chopper has multiple slits in a specific sequence, such that particles of many sizes are arriving at the detector at any given time. This

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multiplexed signal is then deconvolved with a Hadamard transform to retrieve the particle size distribution. The advantage is that the particle throughput is close to 50% leading to better signal to noise. We call this the efficient Particle time of Flight (ePToF) chopper. Unfortunately, we don't have a reference for this yet. Author's changes in manuscript: We added to the text: “were equipped with a multiple slit chopper (efficient Particle Time of Flight, ePToF, chopper) with 50% particle throughput”

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-74, 2019.

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