Intercomparison of Mobility Particle Size Spectrometers

Project No.:	*MPSS-2020-4-4*
Principal Investigator:	Dr. Jan Mulder
Home Institution:	Centre for Isotope Research (CIO) Energy and Sustainability Research Institute Groningen (ESRIG)
Participant:	-
Candidate:	MPSS Groningen
Made by:	TROPOS
Counter (SN):	TSI CPC 3750
Location of the quality assurance:	TROPOS Leipzig, lab 118
Comparison period:	December 01, 2020 – December 02, 2020
Last Intercomparison (with Project No.):	-

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PSL Scan: Latex 203 nm +/- 4 nm

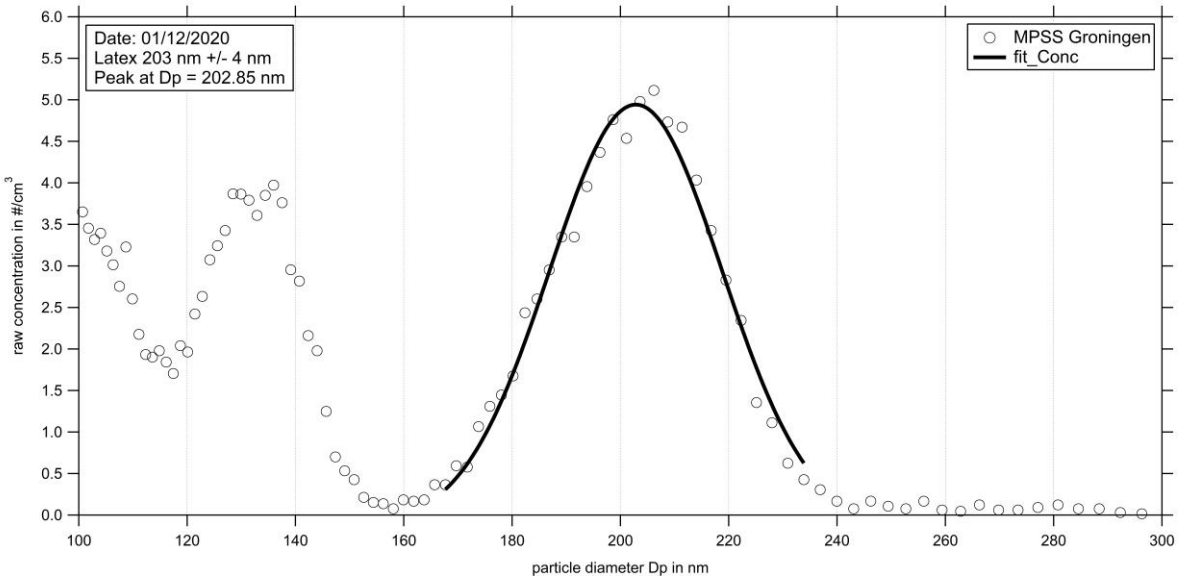

Figure 01: Measurement of latex 203 nm – MPSS Groningen: Particle size distribution of latex 203 nm on December 01th, 2020. The peak shows at 202.85nm.

Intercomparison between TROPOS Reference Instrument No. 1 and MPSS Groningen 01.12.2020 06:00 PM – 02.12.2020 06:00 AM

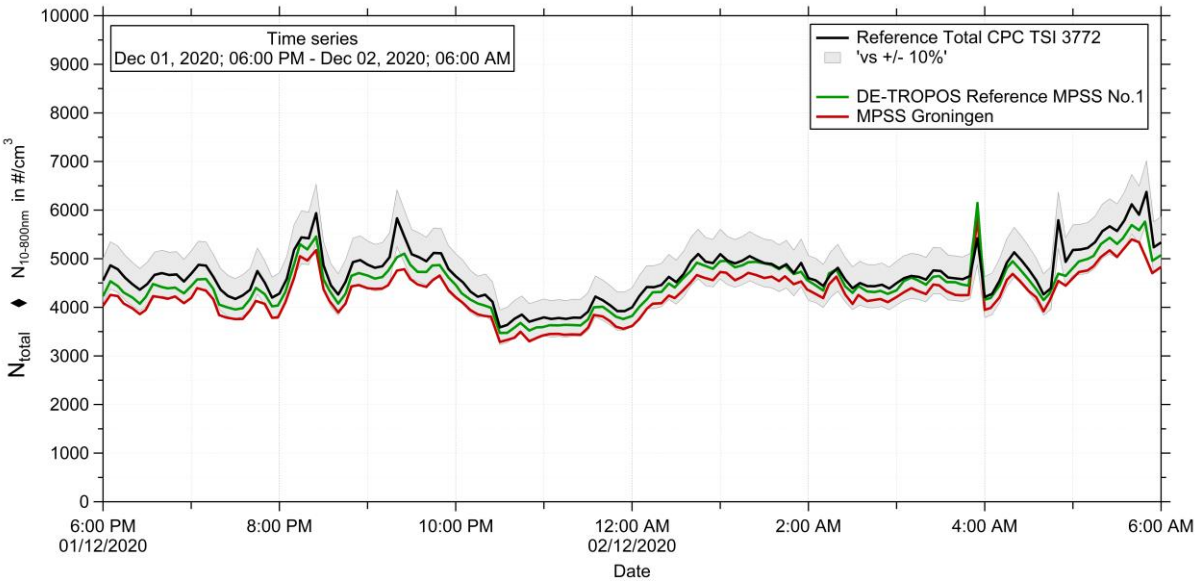

Figure 02: Time series (December 01, 2020 6 PM – December 02, 2020 6 AM) of the integrated particle number concentration ($N_{10\text{-}800nm}$) of the MPSS and total number concentration (N_{total}) of the Reference TSI-CPC Model 3772. Multiple charge correction, internal diffusion losses, CPC flow corrections. The candidate is running with a Ni.63 source.

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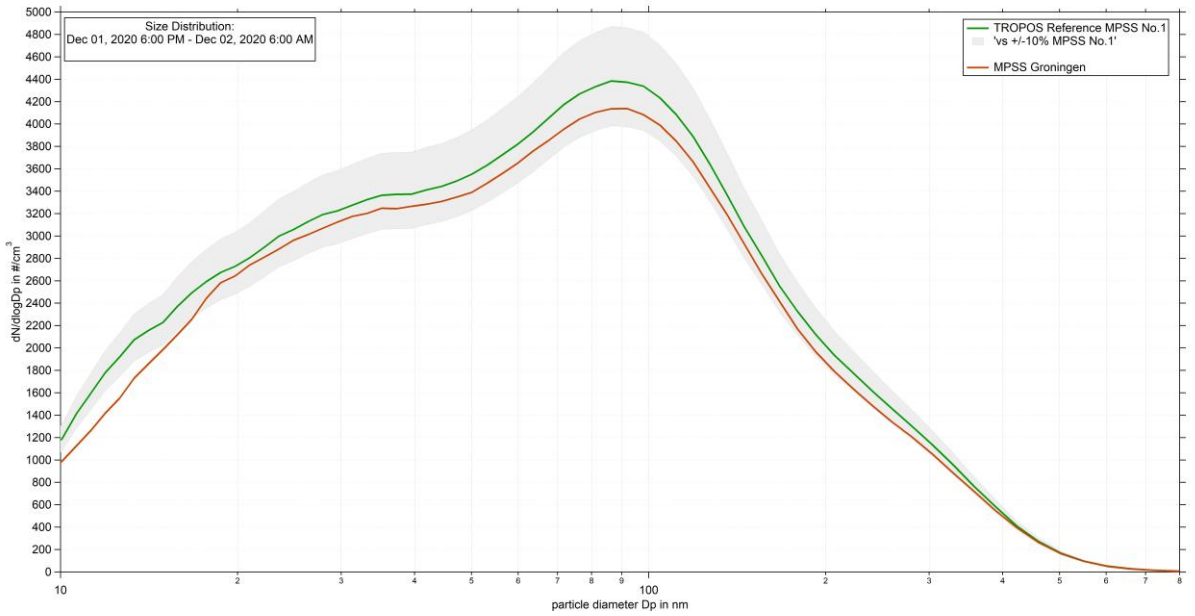

Figure 03: Particle size distribution for TROPOS Reference MPSS No.1 and MPSS Groningen, flow corrections, multiple charge correction and diffusion loss corrections are included.

Intercomparison between TROPOS Reference Instrument No. 1 and MPSS Groningen

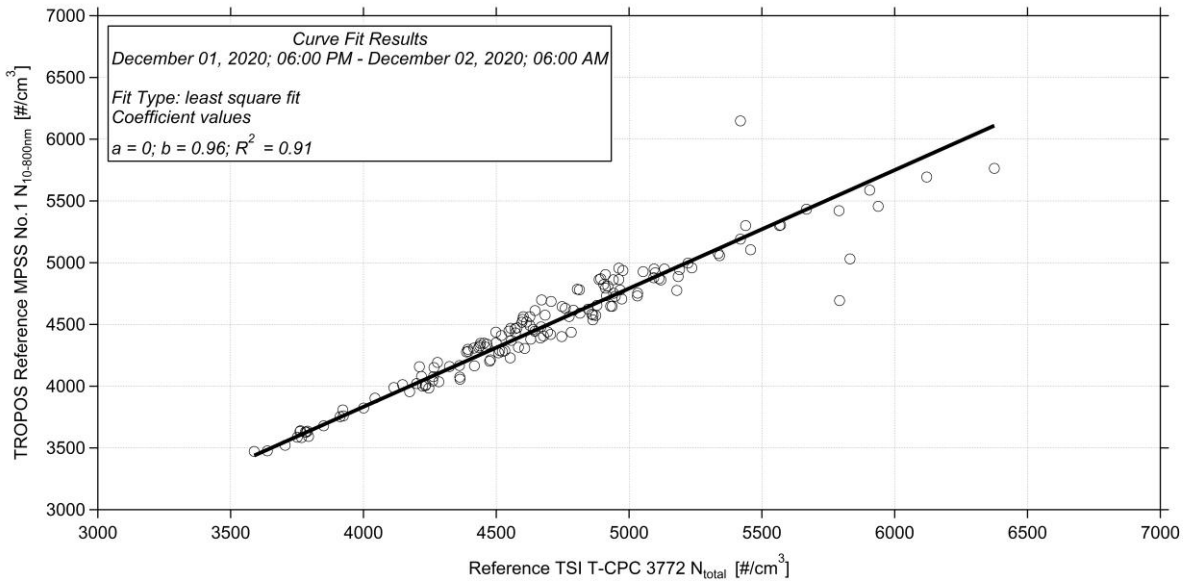

Figure 04: Linear regression between DE-TROPOS Reference T-CPC Model 3772 and DE-TROPOS Reference MPSS No.1.

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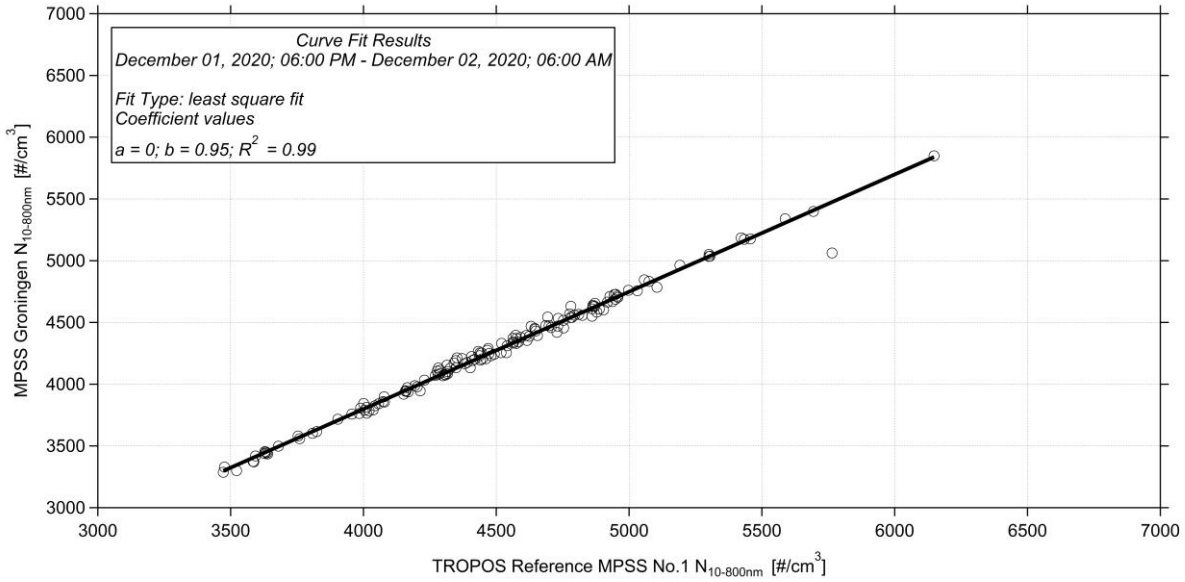

Figure 05: Linear regression between DE-TROPOS Reference MPSS No.1 and MPSS Groningen.

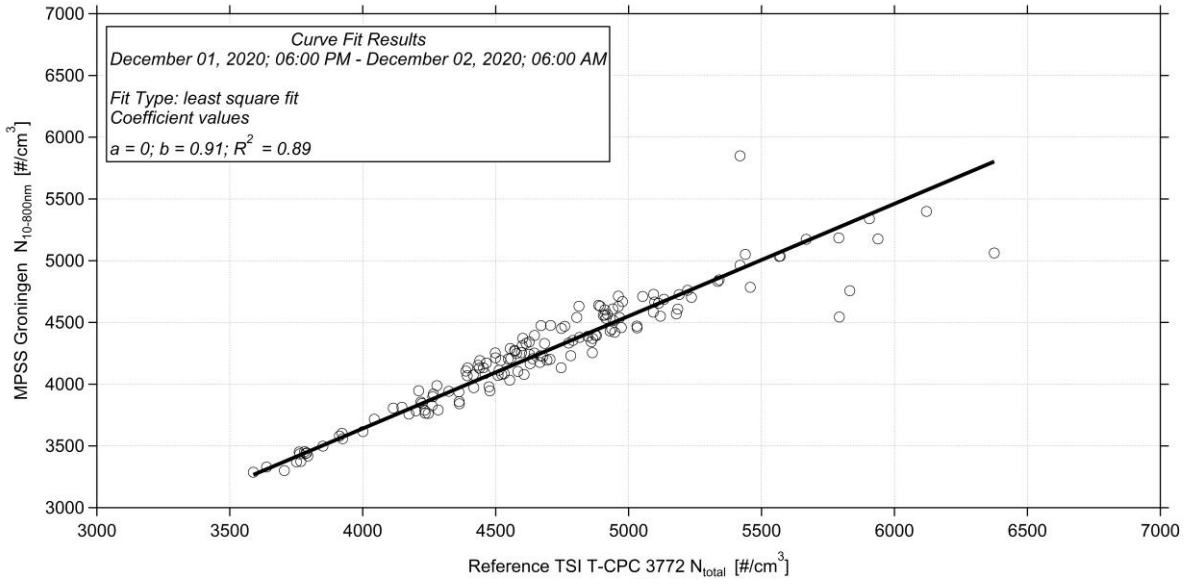

Figure 06: Linear regression between DE-TROPOS Reference T-CPC Model 3772 and MPSS Groningen.

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