

Intercomparison of Mobility Particle Size Spectrometers

Project No.: MPSS-2020-3-14

Principal Investigator: Dr. Noemí Pérez

Home Institution: Institute of Environmental Assessment and Water Research (IDAEA), Barcelona, Spain

Participant: -

Candidate: MPSS IDAEA

Made by: TROPOS

Counter (SN): TSI CPC 3772

Location of the quality assurance: TROPOS Leipzig, lab 118

Comparison period: September 11, 2020 – September 14, 2020

Last Intercomparison (with Project No.): -

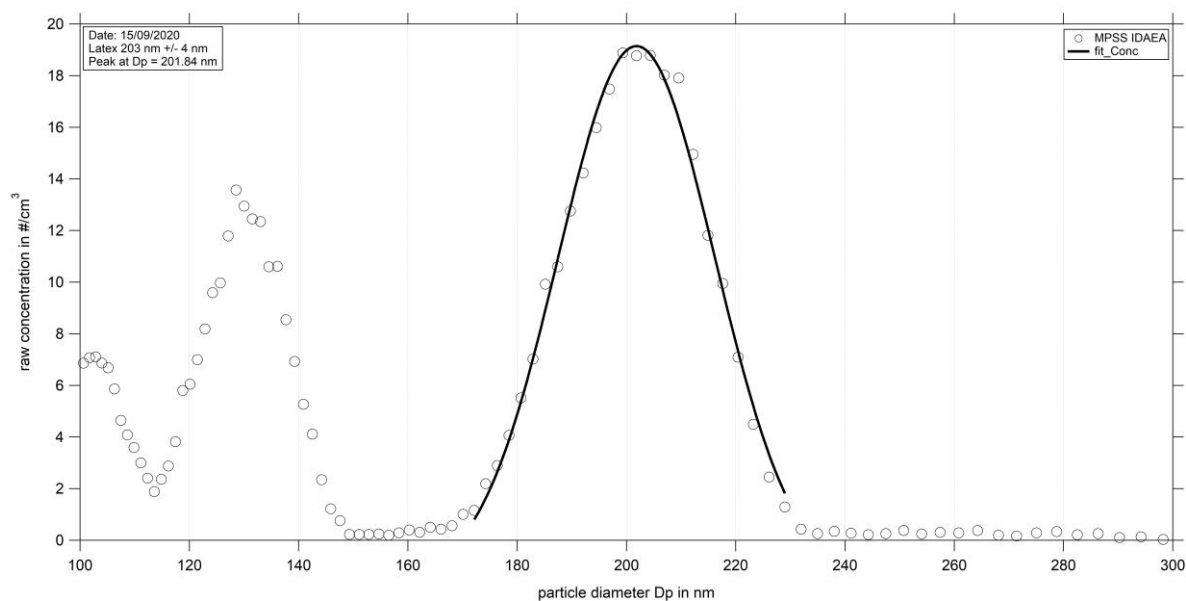
PSL Scan: Latex 203 nm +/- 4 nm

Figure 01: Measurement of latex 203 nm – MPSS IDAEA: Particle size distribution of latex 203 nm on September 15th, 2020. The peak shows at 201.84nm.

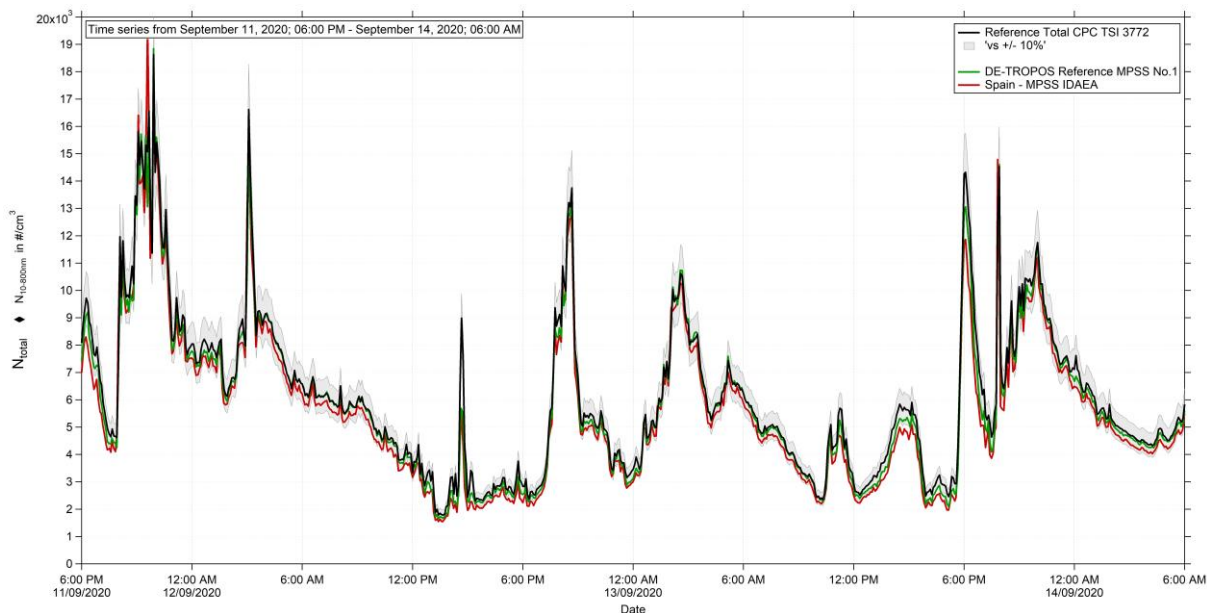
Intercomparison between TROPOS Reference Instrument No. 1 and MPSS IDAEA**11.09.2020 18:00PM – 14.09.2020 06:00AM**

Figure 02: Time series (September 11, 2020 6 PM – September 14, 2020 6 AM) of the integrated particle number concentration ($N_{10-800nm}$) 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 Kr.85 source.

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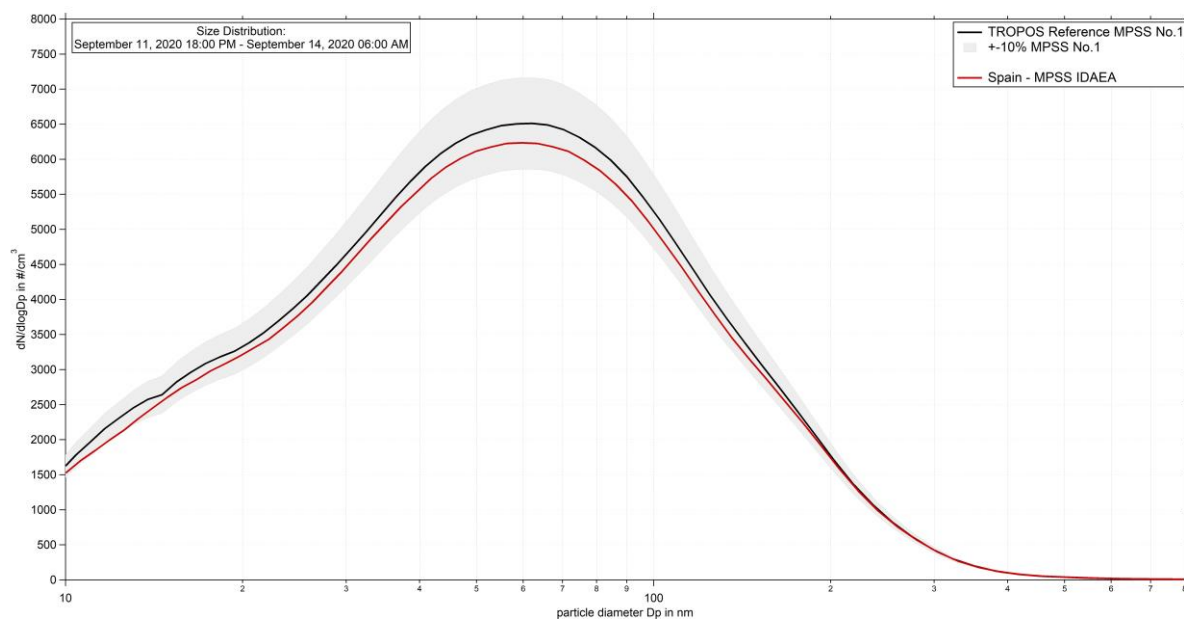


Figure 03: Particle size distribution for TROPOS Reference MPSS No.1 and MPSS IDAEA, flow corrections, multiple charge correction and diffusion loss corrections are included.

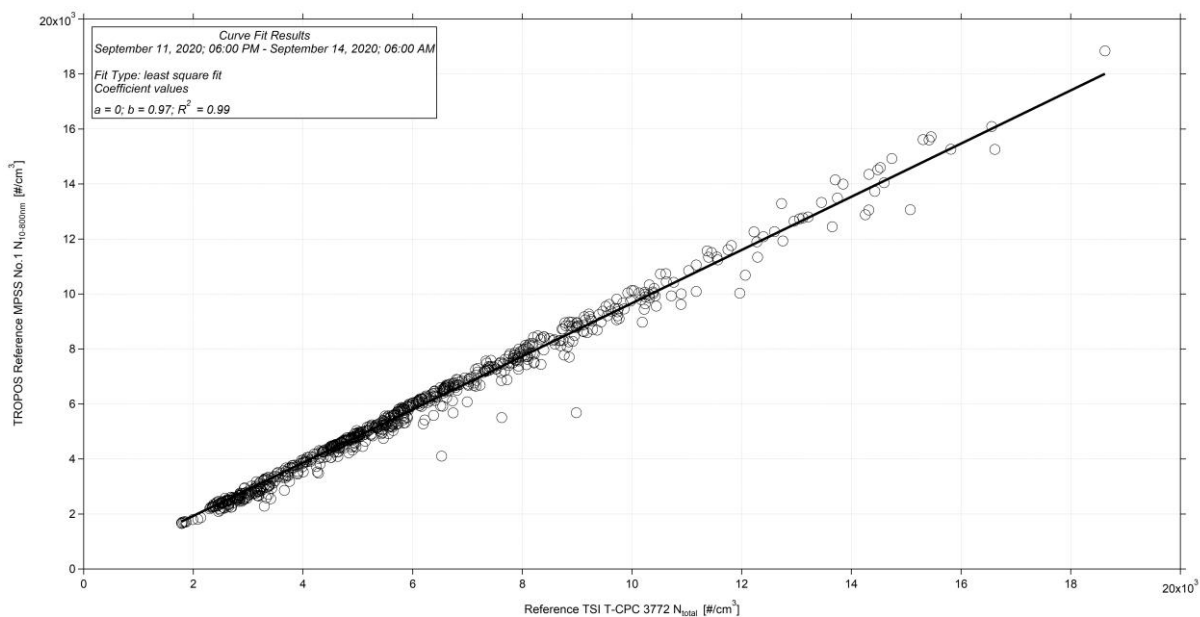


Figure 04: Linear regression between DE-TROPOS Reference T-CPC Model 3772 and DE-TROPOS Reference MPSS No.1.

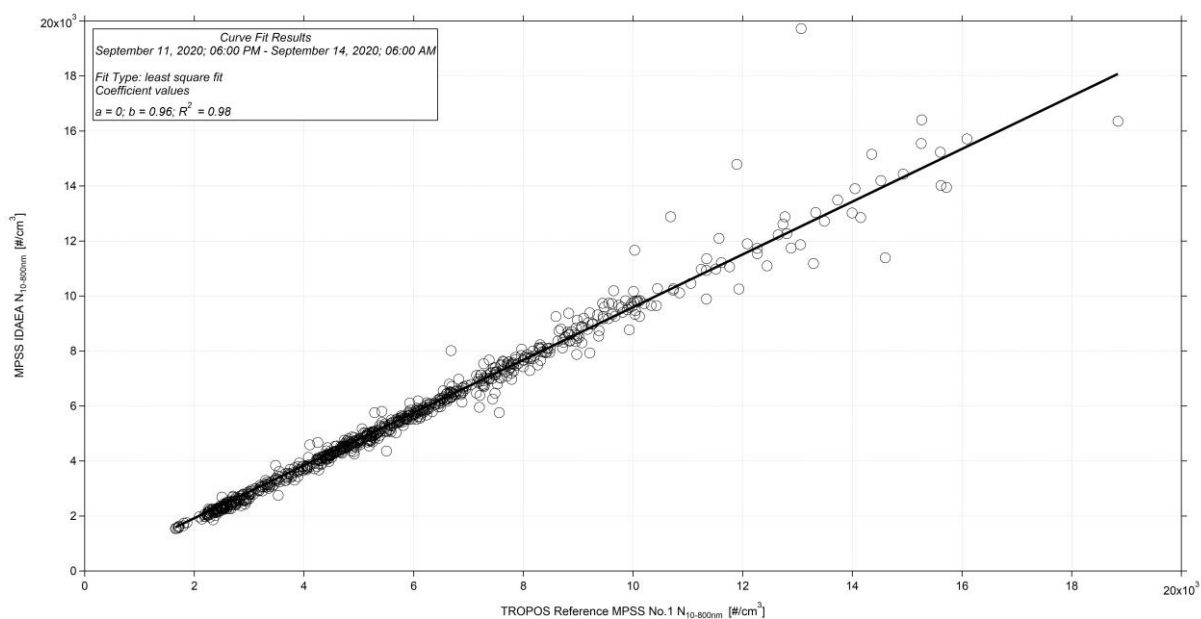


Figure 05: Linear regression between DE-TROPOS Reference MPSS No.1 and MPSS IDAEA.

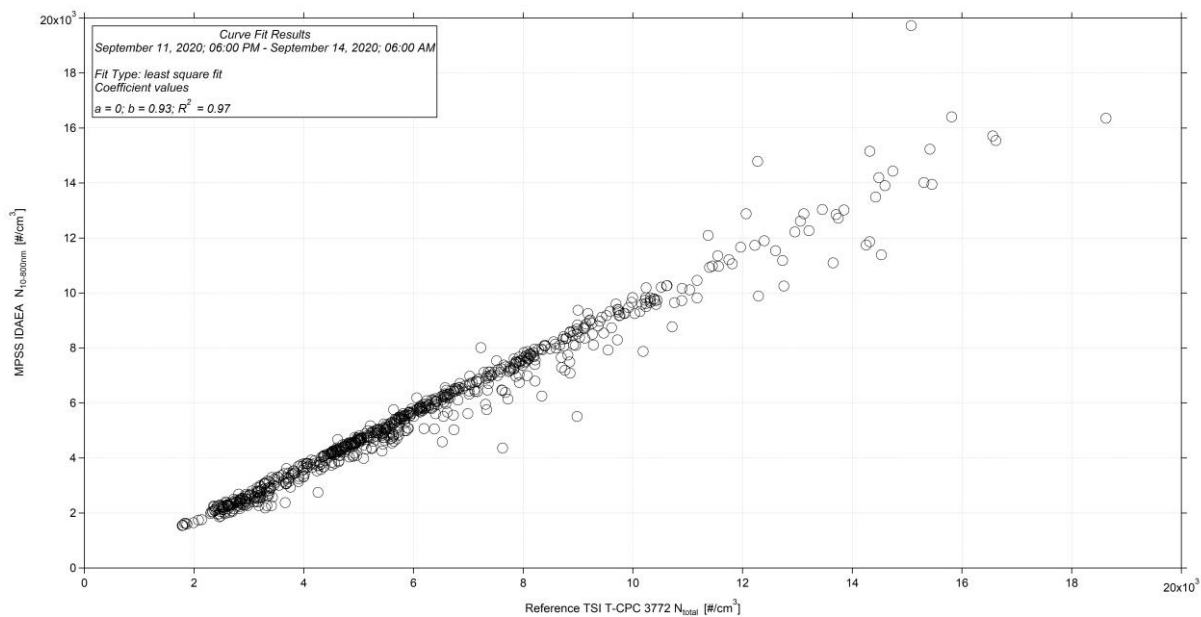


Figure 06: Linear regression between DE-TROPOS Reference T-CPC Model 3772 and MPSS IDAEA.