Intercomparison of Condensation Particle Counter

Project No.: CPC-2016-2-8

Basic information:

Location of the quality assurance: TROPOS, lab: 130

Delivery date: -

Setup in the laboratory: April 05, 2016 and May 23, 2016

Comparison period: April 05, 2016 and May 23, 2016

Principal Investigator	Home Institution	Participant	Instrument
Radovan Krejci	SE-ACES Svante Arrhenius väg 8 S 10691 Stockholm SWEDEN	Hans Karlsson, Zahra Hamzavi	SE-ACES TSI CPC Model 3772 # 3772153701

TROPOS Reference Instrument: Electrometer: TSI model 3068B # 70838596

Additional Equipment:

- Bubble flow meter 'Gilibrator', Gilian (Sensidyne)

Summary of Intercomparison:

Pre-status:
The TSI CPC Model 3772 was not in good condition. The TSI CPC Model 3772 did not pass the quality standards of ACTRIS and GAW. The efficiency at 40nm is only 94%. The CPC will be sent back to TSI for repair, because of warranty.

Final status:
The TSI CPC Model 3772 passed the quality standards of ACTRIS and GAW.

Pre-status: 05.04.2016

1. Status of the wick: The wick was clean.
2. Status of the CPC: The CPC was working properly.
3. Final CPC-Workshop: The TSI CPC Model 3772 reached 94% efficiency at 40 nm. The Dp50 is at 9.3 nm. The CPC efficiency curve corresponds not to the standard.

Dp in nm	counting efficiency
40	0.955
30	0.940
20	0.884
15	0.799
13	0.734
11	0.626
10	0.546
9	0.446
8	0.319
7	0.163
6	0.013

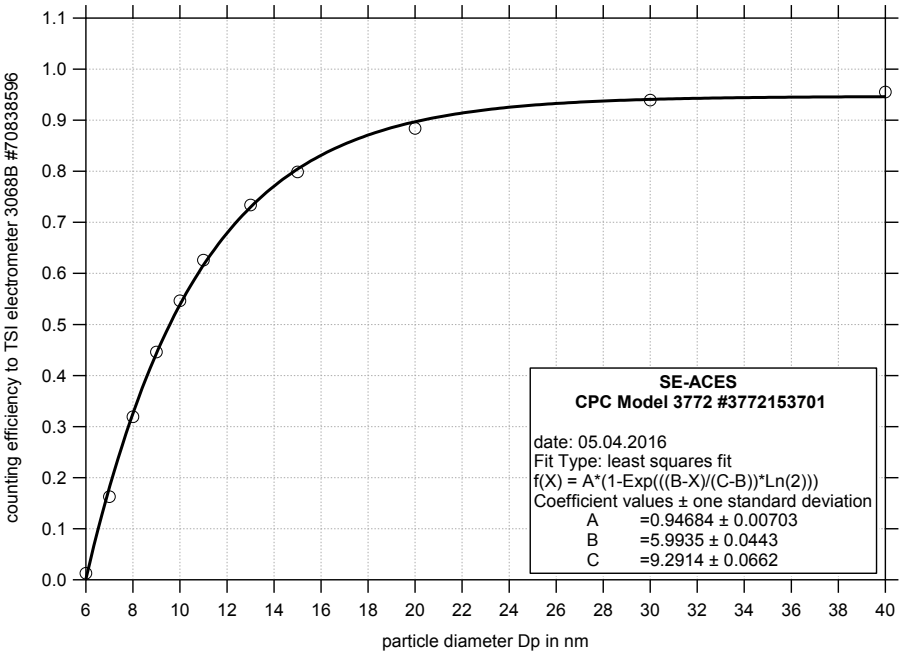

Figure 01: CPC efficiency curve. Based on Electrometer TSI 3068B. Serial number: 70838596

Final status: 23.05.2016

1. Status of the wick: The wick was clean.
2. Status of the CPC: The CPC was working properly.
3. Final CPC-Workshop: The TSI CPC Model 3772 reached 100% efficiency at 40 nm. The Dp50 is at 9.2 nm. The CPC efficiency curve corresponds to the standard.

Dp in nm	counting efficiency
40	1.00
30	0.98
20	0.92
15	0.84
13	0.78
11	0.67
10	0.59
9	0.48
8	0.35
7	0.19
6	0.02
5	0.00

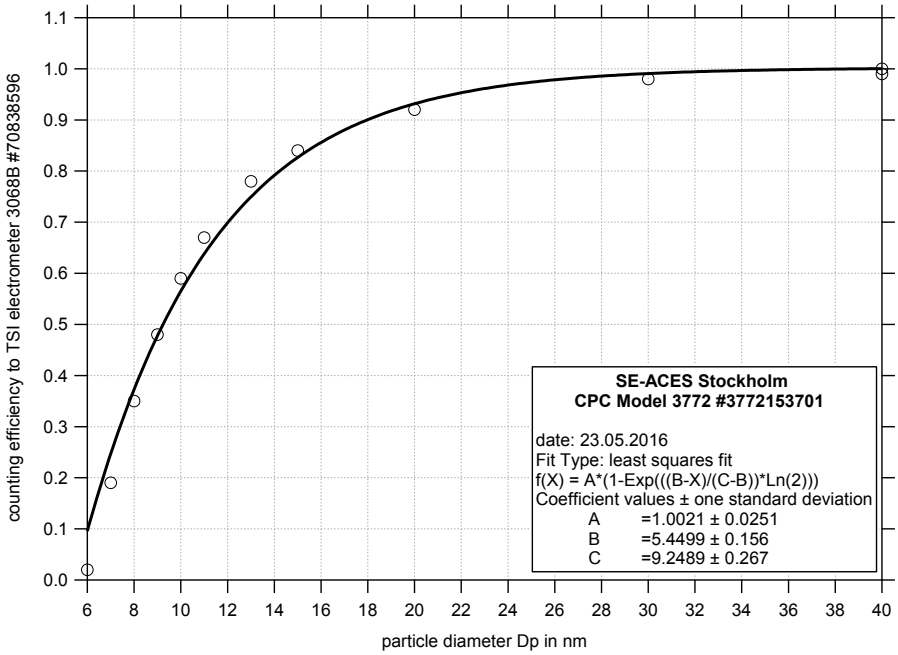

Figure 02: CPC efficiency curve. Based on Electrometer TSI 3068B. Serial number: 70838596

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

Kalibrierschein
Calibration Certificate

Gegenstand: *Object:*	Aerosol Elektrometer ID-Nummer: TSI_3068B_70838596
Hersteller: *Manufacturer:*	TSI Incorporated
Typ: *Type:*	3068B
Kennnummer: *Serial No.:*	70838596
Auftraggeber: *Applicant:*	AG 3.23 - Herr Nowak, Tel.: 3228
Anzahl der Seiten: *Number of pages:*	4
Geschäftszeichen: *Reference No.:*	PTB AG 2.11-1461323527-0327
Kalibrierzeichen: *Calibration mark:*	20790 PTB 16
Datum der Kalibrierung: *Date of calibration:*	22.04.2016

Im Auftrag:
On behalf of PTB:

Dr. B. Schumacher

Braunschweig, 04. Mai. 2016

Siegel
Seal

Im Auftrag:
On behalf of PTB:

C. Rohrig

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