Supplementary Material

Measurement report: Number size distribution of sub-40 nm particles in the Amazon rainforest

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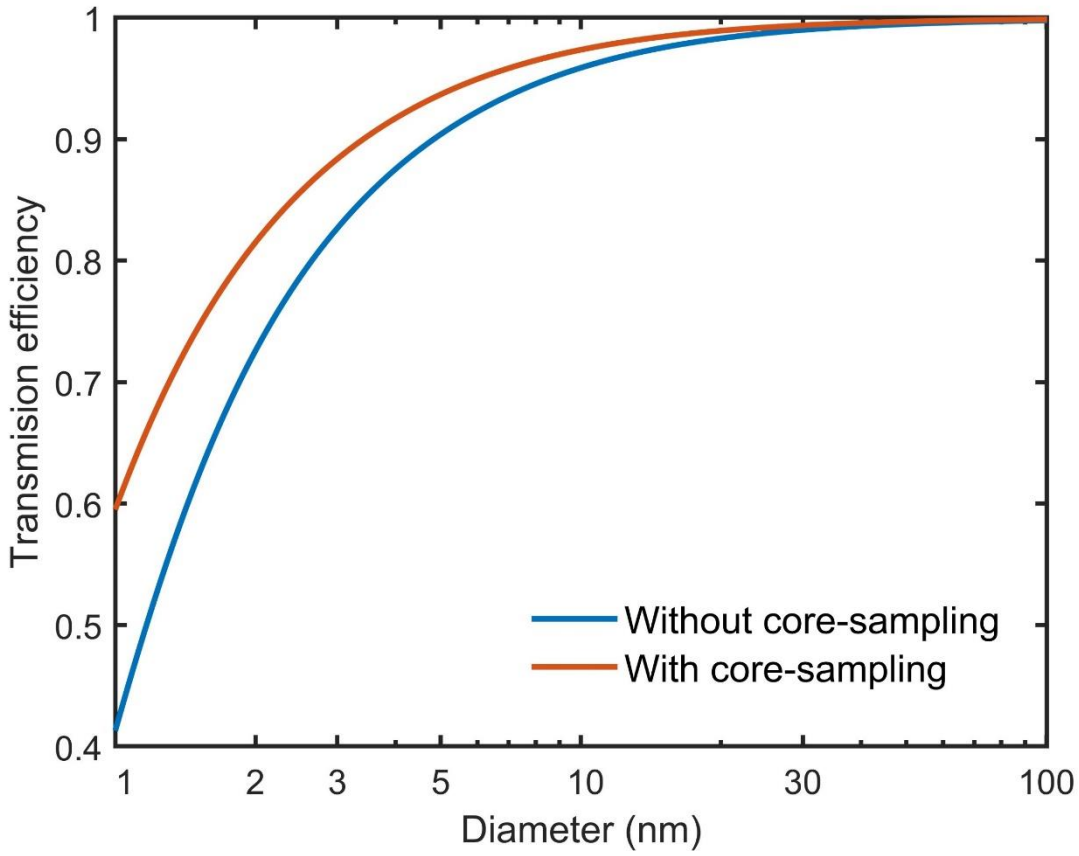

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Figure S1. The transmission efficiency for inlet systems with and without core-sampling.

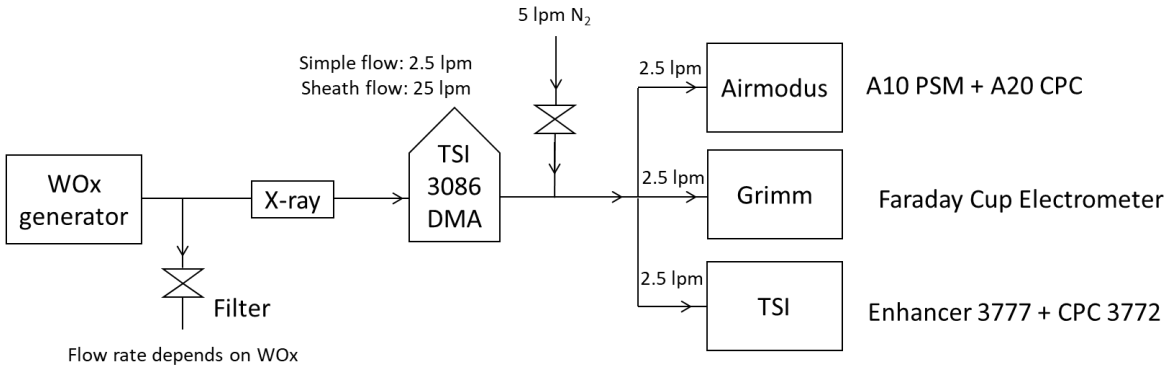

Figure S2. Sketch of the experimental setup for the intercomparison experiments between the Airmodus (A10 PSM + A20 CPC) and the TSI instruments (3777 Enhancer + 3772 CPC).

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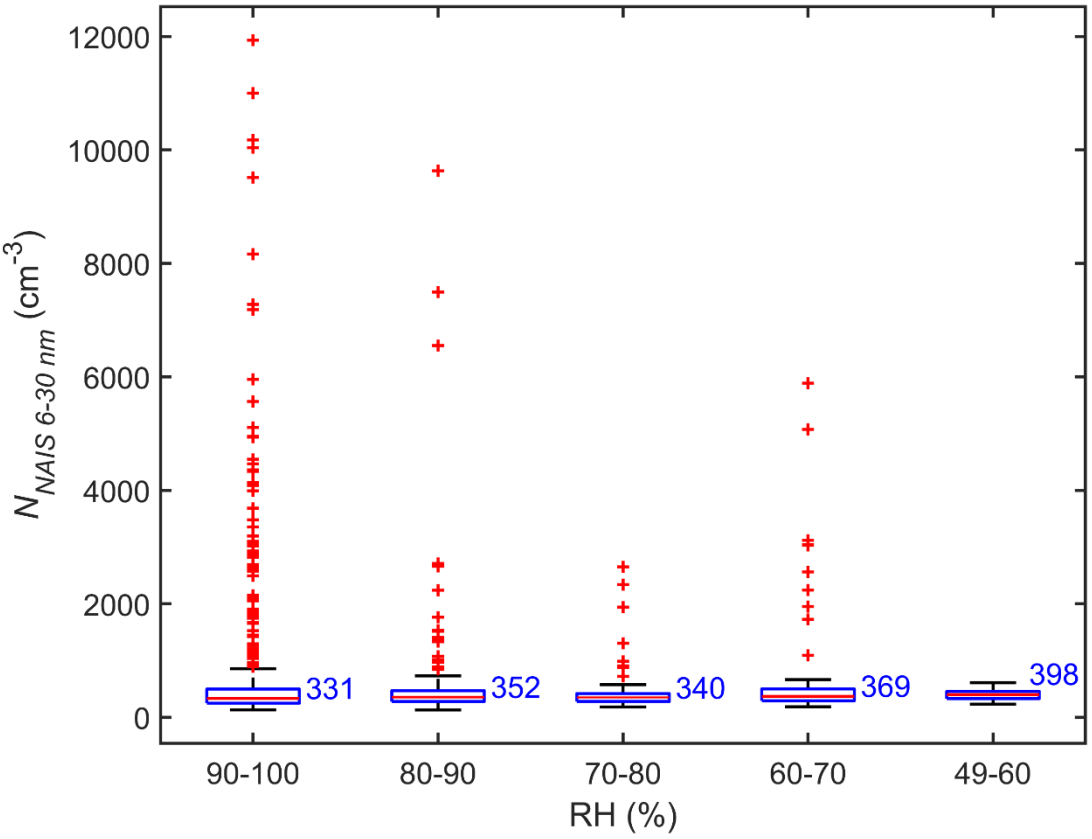

Figure S3. Ambient relative humidity at different range bins versus particle number concentration (size range 6-30 nm) measured by NAIS. The boxes represent the interquartile range (IQR), with the 25th percentile (Q1) at the bottom and the 75th percentile (Q3) at the top. The whiskers extend to the furthest points within Q1 - 1.5 * IQR (lower whisker) and Q3 + 1.5 * IQR (upper whisker). The red points beyond the whiskers are considered outliers and are marked individually. The red lines inside each box represent the median values given next to the boxes (cm^{-3}).

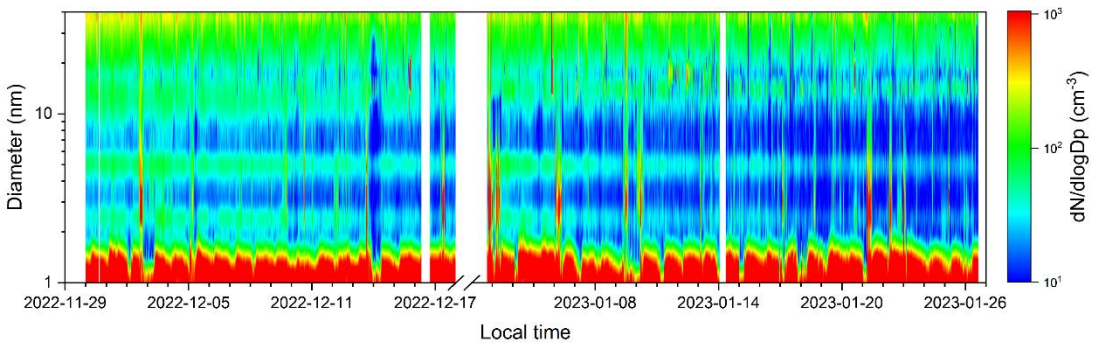

Figure S4. The negative ion number size distribution throughout the measurement period.

Table S1. The summary of the sub-3 nm particle number concentration measurements using PSM across different global environments

Location	Time period	Size range (nm)	Concentration* (cm^{-3})	Environmental type	Literature
Helsinki, Finland	Jan 2015 – Dec 2015	1.1 – 3.0	6.0E+03	Urban, city	(Kontkanen et al., 2017)
Nanjing, China	Dec 2014 –Jan 2015	1.1 – 3.0	1.7E+04	Urban, city	(Qi et al., 2015)
Shanghai, China	Nov 2013 –Jan 2014	1.3 – 3.0	8.5E+03	Urban, city	(Xiao et al., 2015)
San Pietro Capo Fiume, Italy	Jun 2012 –Jul 2012	1.5 – 3.0	8.5E+03	Urban, city	(Kontkanen et al., 2016)
Centreville, US	Jun 2013 – Jul 2013	1.1 – 2.1	5.9E+02	Urban, farm/forest	(Yu et al., 2014)
Kent, US	Dec 2011 – Jan 2012	1.3 – 3.0	4.7E+02	Urban, town	
Brookhaven, US	Jul 2011 – Aug 2011	1.3 – 3.0	8.0E+02	Rural, coast	
Puy de Dôme, France	Jan 2012 – Feb 2012	1.3 – 2.5	5.0E+02	Rural, mountain	(Rose et al., 2015)
Hyytiälä, Finland	Aug 2010; Mar 2011 – Apr 2011; Aug 2011 – Sep 2011; Apr 2012 – May 2012; May 2013 – Jul 2013; May 2015 – Apr 2016	(1.1/1.3) – 3.0	1.6E+03	Rural, forest	(Kontkanen et al., 2017)
	April 2014 – April 2020	1.1 – 2.5	4.1E+02	Rural, forest	(Sulo et al., 2021)
Amazonian, Brazil	Dec 2022	1.5 – 3.5	4.5E+02	Rural, forest	This study
Amazonian, Brazil	Jan 2023	1.5 – 3.5	6.1E+02	Rural, forest	This study

* Median values

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