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*Supplement of*

## **Ice nucleating particles in the Saharan Air Layer**

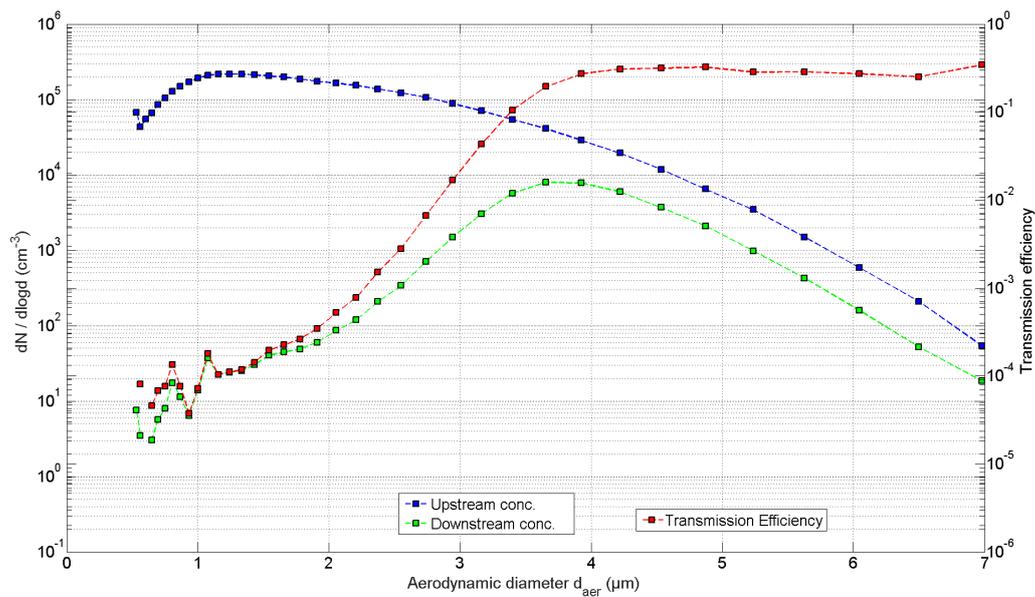
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## 1 PCVI characterization

Characterization of the transmission efficiency of the PCVI was carried out using the method described by Kupiszewski et al. (2015) and was conducted as follows: Arizona Test Dust (ATD) was dispersed using a Solid Aerosol Generator (SAG 410; Topas GmbH, Germany). The ATD-containing sample flow was subsequently transmitted through a mixing chamber in order to reduce fluctuations in the aerosol concentrations resulting from variability in the output rate of the aerosol. A valve was used to direct the flow alternatingly through the PCVI or through a bypass, with each run lasting 30 s. The number size distributions of the particles thus transmitted were measured in the range of 0.5 - 20  $\mu\text{m}$  aerodynamic diameter using an Aerodynamic Particle Sizer (APS; model 3321, TSI, USA). The size distributions measured downstream of the PCVI were corrected for particle enrichment in the PCVI, which is given by a factor approximately equal to the ratio of the inlet flow to the outlet flow of the PCVI (Boulter et al., 2006). Finally, the transmission efficiency as a function of particle size was determined by taking the ratio of the enrichment-corrected size distribution downstream of the PCVI to the size distribution downstream of the bypass (see Fig. 1).



**Figure 1.** Particle concentration and transmission efficiency of the PCVI.

## References

- Boulter, J. E., Cziczo, D. J., Middlebrook, A. M., Thomson, D. S., and Murphy, D. M.: Design and Performance of a Pumped Counterflow Virtual Impactor, *Aerosol Sci. Technol.*, 40, 969–976, doi:10.1080/02786820600840984, 2006.
- 5 Kupiszewski, P., Weingartner, E., Vochezer, P., Schnaiter, M., Bigi, A., Gysel, M., Rosati, B., Toprak, E., Mertes, S., and Baltensperger, U.: The Ice Selective Inlet: a novel technique for exclusive extraction of pristine ice crystals in mixed-phase clouds, *Atmos. Meas. Tech.*, 8, 3087–3106, doi:10.5194/amt-8-3087-2015, 2015.