Ice nucleating particles in the Saharan Air Layer
Supplementary Material

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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 μm 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
