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Corrigendum to "Composition and mixing state of atmospheric aerosols determined by electron microscopy: method development and application to aged Saharan dust deposition in the Caribbean boundary layer" published in Atmos. Chem. Phys., 18, 13429–13455, 2018

Konrad Kandler[1], Kilian Schneiders[1], Martin Ebert[1], Markus Hartmann[1,a], Stephan Weinbruch[1], Maria Prass[2], and Christopher Pöhlker[2]

[1]Institute for Applied Geosciences, Technical University Darmstadt, 64287 Darmstadt, Germany
[2]Max Planck Institute for Chemistry, Multiphase Chemistry Department, 55128 Mainz, Germany
[a]now at: Experimental Aerosol and Cloud Microphysics Department, Tropos Leibniz-Institute für Tropospheric Research (TROPOS), 04318 Leipzig, Germany

Correspondence: Konrad Kandler (kandler@geo.tu-darmstadt.de)

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In the paper "Composition and mixing state of atmospheric aerosols determined by electron microscopy: method development and application to aged Saharan dust deposition in the Caribbean boundary layer" by K. Kandler et al. (2018) an incorrect version of Fig. 9 was published.

The published version was based on particle data partly uncorrected for particle shape, which is relevant in particular for the FWI data and the ratio of dust to total aerosol. A corrected version of Fig. 9 is found below. Because the overlapping region between FWI and DSDS is barely visible in the corrected version, a magnification is shown in addition.

The corrected data processing also affects the discussion in the first paragraph of Sect. 3.2.1. While in the previously published version a considerable discrepancy between FWI as DSDS size distributions was visible, in the corrected version both curves agree rather well. Therefore, the discussion and potential explanations given in the first paragraph of Sect. 3.2.1 can be mostly disregarded. Instead, the FWI data confirm the general suitability of the Piskunov model as an estimator for atmospheric dust concentrations (dashed lines), whereas the hypothesis still persists that a major uncertainty of the total aerosol concentration (continuous lines) is related to the particle hygroscopicity. The maximum at 10 µm particle diameter found in the airborne data remains undetected in the ground-based data.

Also, the conclusion at the end of the second paragraph of Sect. 4 (p. 13449 left) – i.e. that a clear discrepancy between the size distributions obtained by active and passive sampling exists – is of course not valid any longer. Instead, a consistent picture is drawn by the different techniques. Therefore, the first conclusion (p. 13449 right) – i.e. that size distribution measurements are crucial when comparing different techniques – is not based any longer directly on the shown experimental data. Nevertheless, the authors think that size distribution measurements are highly useful in this context and should be recommended.

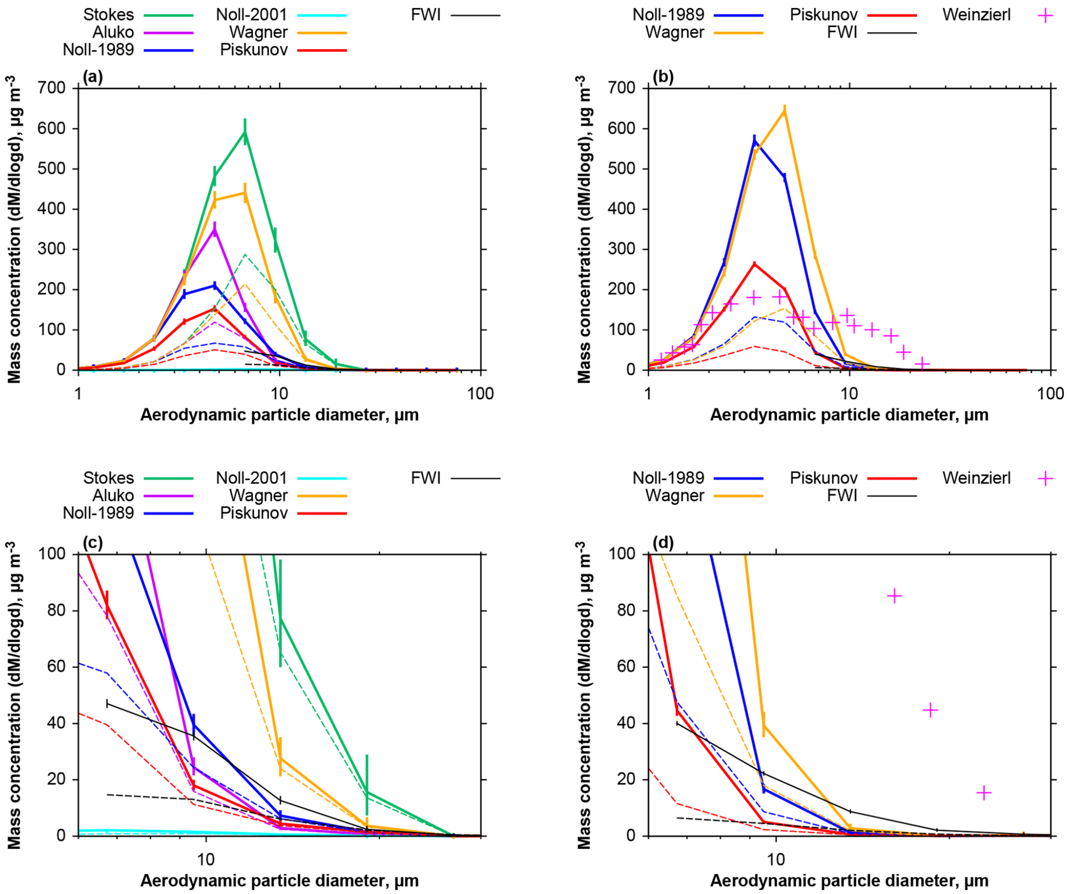

Figure 9. Average atmospheric mass size distribution densities derived from DPDS and FWI measurements. **(a)** The period from 10 to 15 July 2013; **(b)** and the period from 14 June to 8 July 2013; panels **(c)** and **(d)** are the same as **(a)** and **(b)**, respectively, but only the diameter interval 6–30 µm is shown. Different colors refer to different deposition velocity estimates as shown in Fig. 4. Solid lines refer to total mass concentrations, dashed ones to the dust mass estimated from the chemical composition (upper limit estimate). Error bars show the central 95 % confidence interval. Pink crosses show a size distribution measured in the Saharan Air Layer on 22 June 2013 (Weinzierl et al., 2017). Note that for particles smaller than 10 µm the FWI data may contain a considerable bias in calculation.