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Supplement of

Size distribution and optical properties of mineral dust aerosols transported in the western Mediterranean

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Figure S1. Scattering cross section for the GRIMM 1.129 (red) and the FSSP-300 (blue) calculated from Mie theory as a function of nominal diameter. Calculations are shown for the refractive index of the standard spheres used for calibration ($\tilde{n} = 1.60-0.000i$, dashed line) and typical dust refractive index ($\tilde{n} = 1.53-0.002i$, line). The shadings indicate the nominal size ranges that were not considered for data analyses in this study due to flattering in the scattering cross section.
Figure S2. Mean sea level pressure (white labelled lines) and 500-hPa geopotential height (shaded contours) from the NCEP CFS Reanalysis at 12 UTC of 16 June 2013 (representative of the conditions encountered during F29 and F30), 17 June (F31 and F32), 19 June (F33), and 20 June (F34). Courtesy of www.wetterzentrale.de.
Figure S3 Mean sea level pressure (white labelled lines) and 500-hPa geopotential height (shaded contours) from the NCEP CFS Reanalysis at 12 UTC of 22 June 2013 (representative of the conditions encountered during F35 and F36), 28 June (F38 and F39), 02 July (F41), and 03 July (F42). Courtesy of www.wetterzentrale.de.
Figure S4. 700-hPa relative humidity (shaded contours) and wind maps from the 10-km resolution WRF model simulations. Valid times are 12 UTC of 17 June 2013, (flights F31-F32, top panel), 20 June (F34, middle) and 22 June (F35-F36, bottom).
Figure S5. 700-hPa relative humidity (shaded contours) and wind maps from the 10-km resolution WRF model simulations. Valid times are 12 UTC of 28 June 2013, (flights F38-F39, top panel), 02 July (F41, middle) and 03 July (F42, bottom).
Figure S6. Vertical profiles of the potential temperature (light blue), water mixing ratio (dark blue), wind direction (dark red) and wind speed (light red). Data were corrected for STP using $T= 20^\circ$C and $P= 1013.25$ hPa. The water mixing ratio and wind speed are plotted using the upper horizontal axis. The top of the boundary layer $Z_b$ and the wind shear level $Z_s$ are indicated in line and in dashed line respectively. The heights of $Z_b$ and $Z_s$ were situated below the minimum flight level in F42.