# Mineral dust modelling with MADE3 in EMAC v2.54

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This Supplement contains additional figures complementing the evaluation of our model results presented in Sect. 3 of the paper. Details about each figure can be found in the corresponding sections of the paper as mentioned in the supplement figure captions.
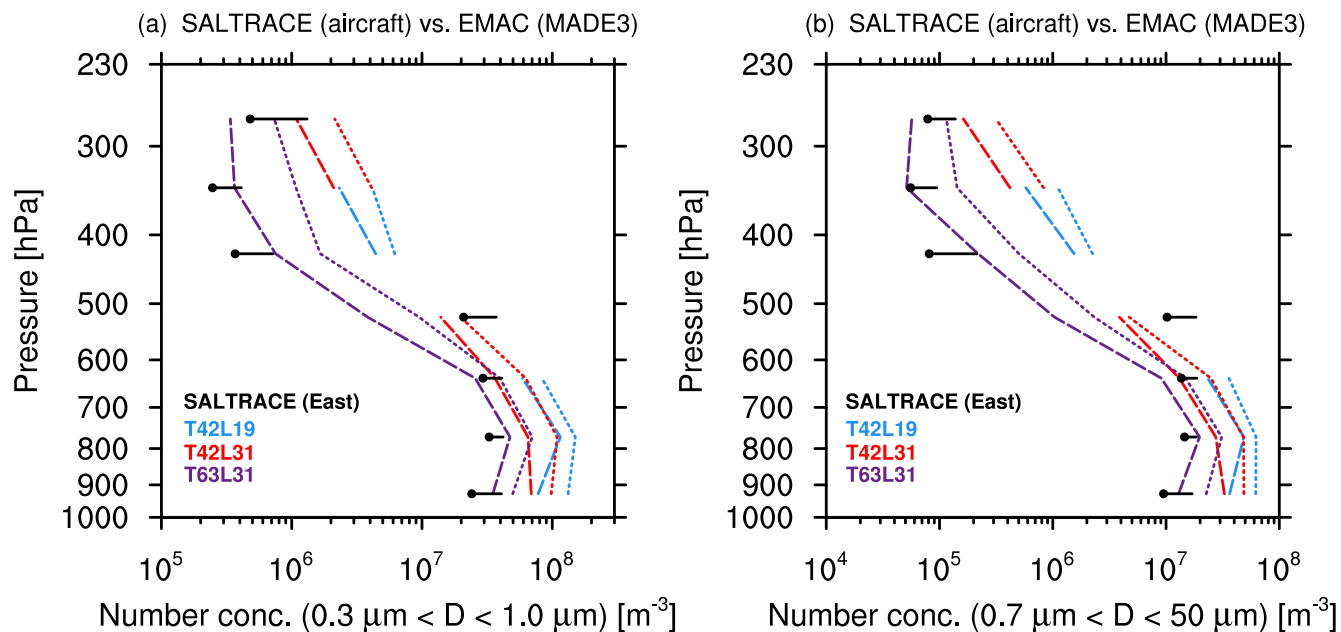
**Figure S1.** As in Fig. 5, but comparing model results with observational data from SALTRACE-East (region around Cabo Verde). A vertical binning of 1.5 km was employed. Missing values for the model curves result from too few data points available for a meaningful calculation of average and standard deviation in that bin. See Sect. 3.2 in the paper for details.
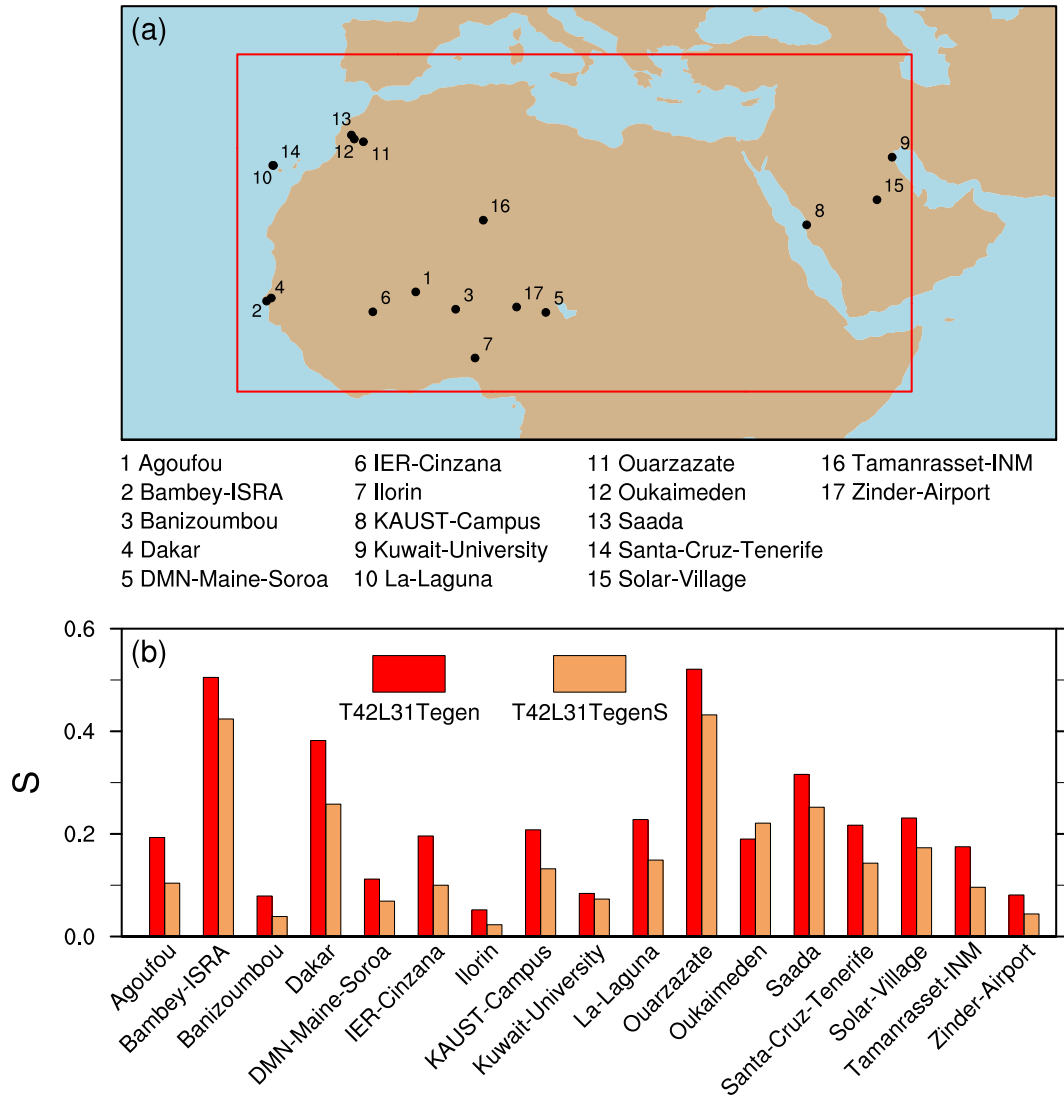
**Figure S2.** As in Fig. 4, but comparing AOD station data with the T42L31Tegen and T42L31TegenS model setups, i.e. varying the size distribution of emitted dust. See Sect. 3.3 in the paper for details.
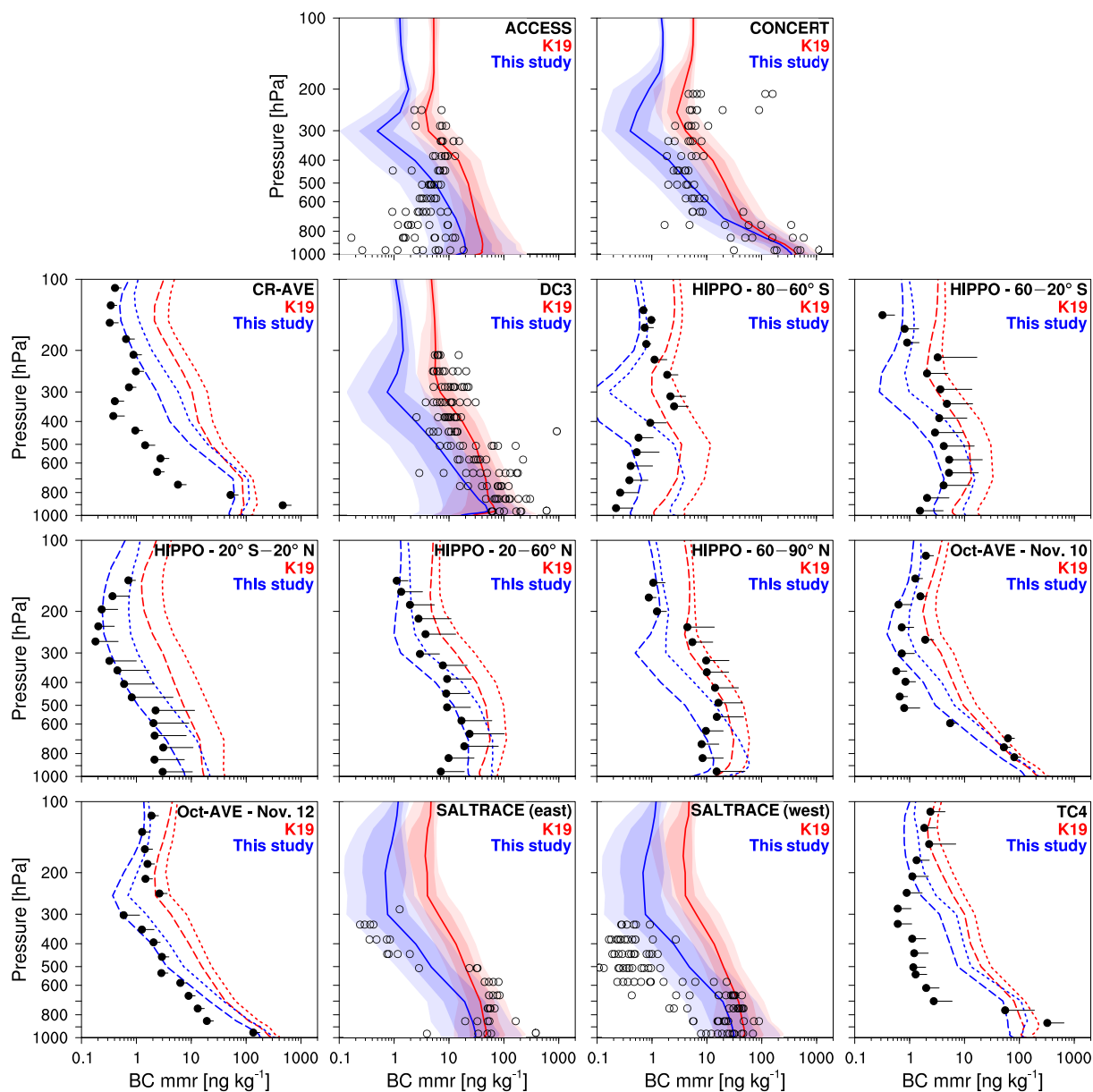
**Figure S3.** As in Kaiser et al. (2019), their Fig. 5, comparing various aircraft measurements of BC (black) with their results (K19, red) and with results from the T63L31Tegen setup presented in this work (blue). Dashed lines and filled circles represent mean values; dotted lines and whiskers represent standard deviations, which are only shown in the direction of larger values for clarity. Solid lines stand for median values. Light and dark shadings indicate the 10th to 90th, and 25th to 75th percentiles, respectively. Hollow circles are the median values of individual flights.
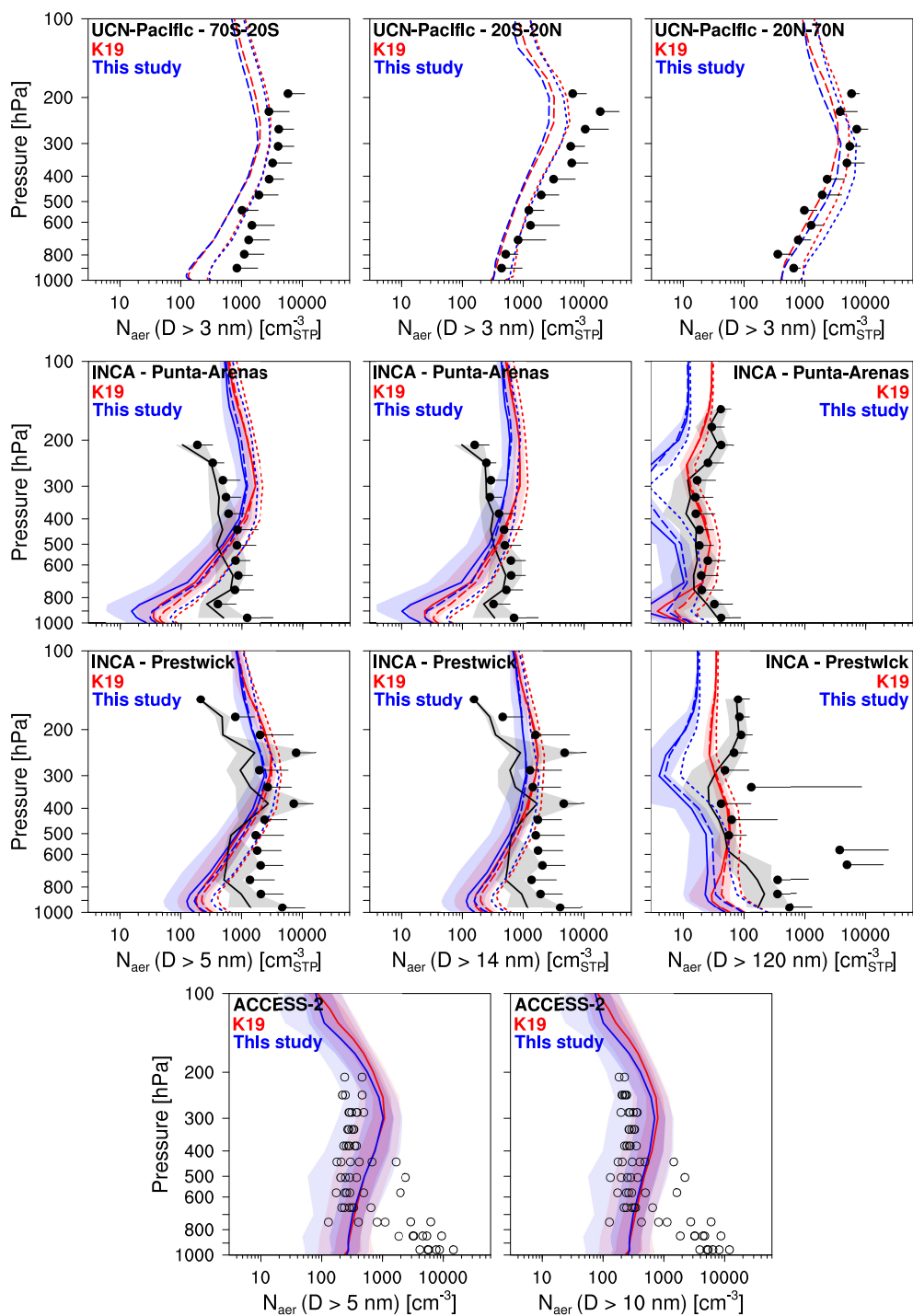
**Figure S4.** Same as Fig. S3, but for particle number concentrations with various cutoff diameters.