

Supplementary material of Mallet et al.

- Simulation of the transport, vertical distribution, optical properties and radiative/climatic effect of smoke aerosols with the ALADIN regional climate model during the ORACLES-1 and LASIC experiments. -

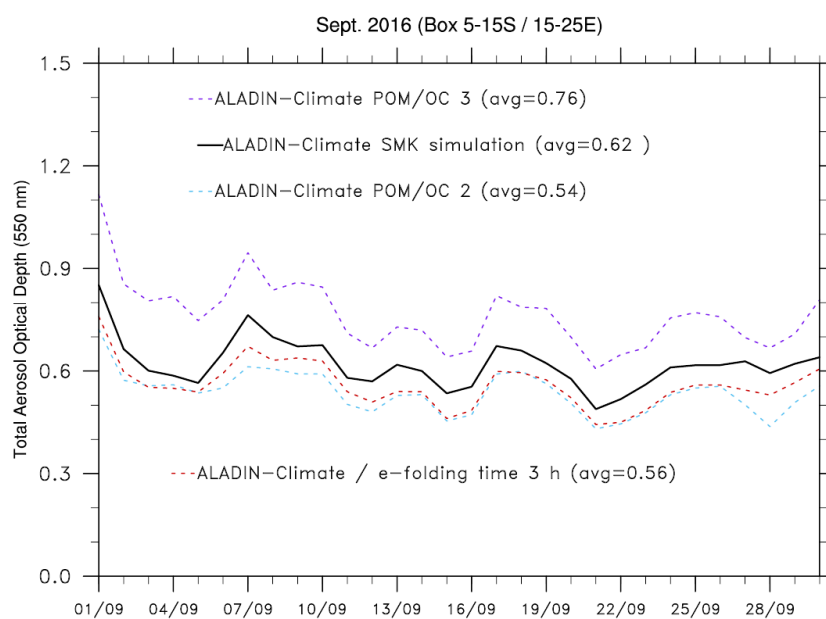


Figure S1. Sensitivity tests on the POM to OC ratio and e-folding time used in the ALADIN-Climate model. Three additional simulations have been performed using a ratio of 2 and 3 and an e-folding time of 3h (Vakkari et al., 2018). The SMK simulation used a ratio of 2.3 (Formenti et al., 2003) and an e-folding time of 6h (Abel et al., 2003).

Mean CER (microm.) - corrected from smoke - September 2016

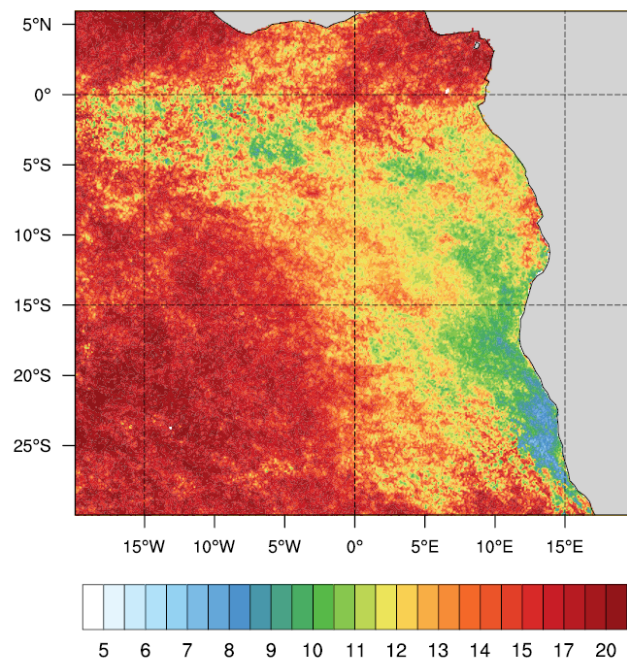


Figure S2. Monthly-mean CER (in μm) derived from the MODIS instrument for September 2016.

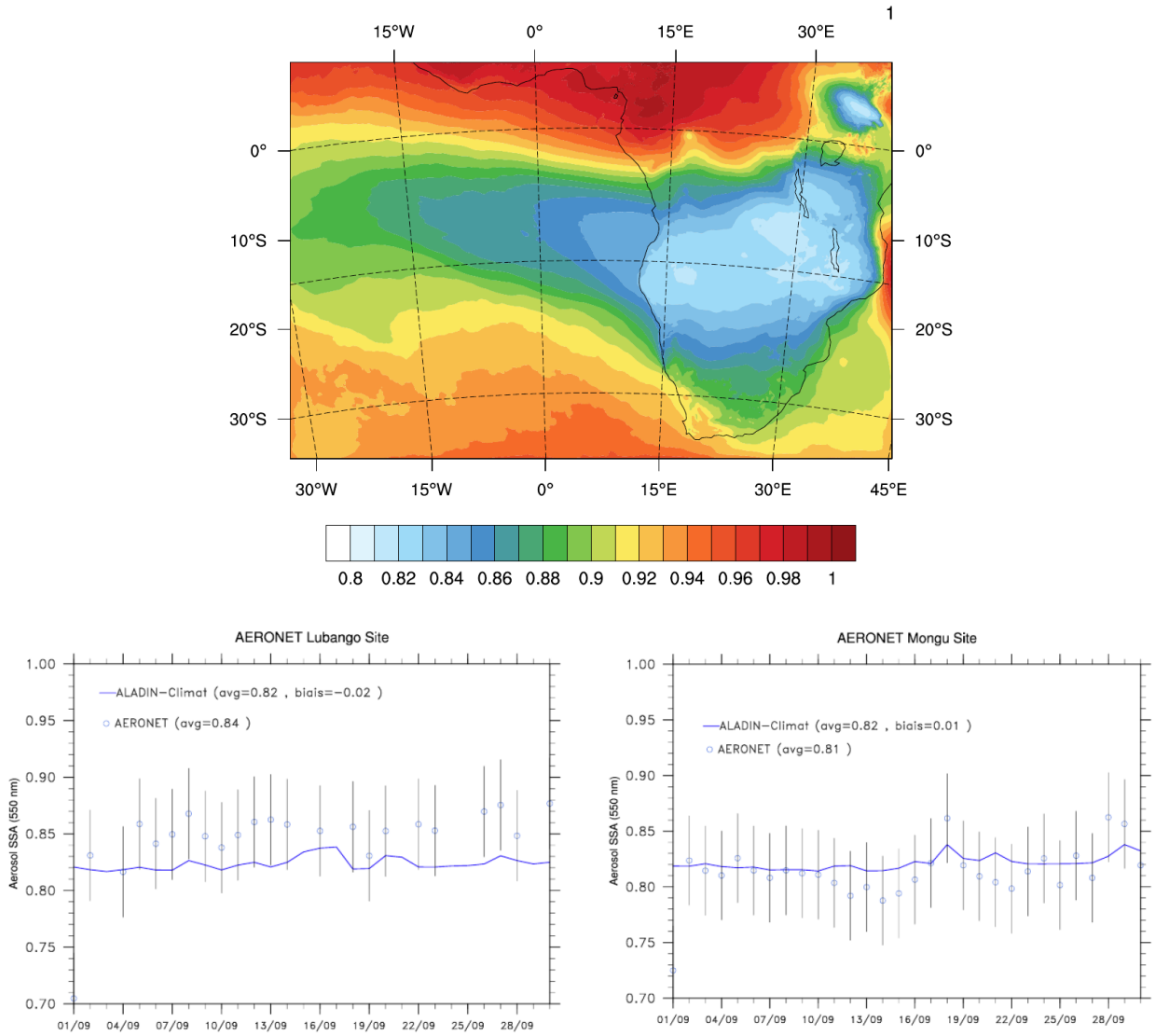


Figure S3. Monthly-mean SSA simulated by the ALADIN-Climate model (at 550 nm) for September 2016, integrated for the whole atmospheric column. AERONET and ALADIN-Climate daily-mean variability of the column-integrated SSA (550 nm) at two stations (Lubango (left bottom) and Mongu (right bottom)).

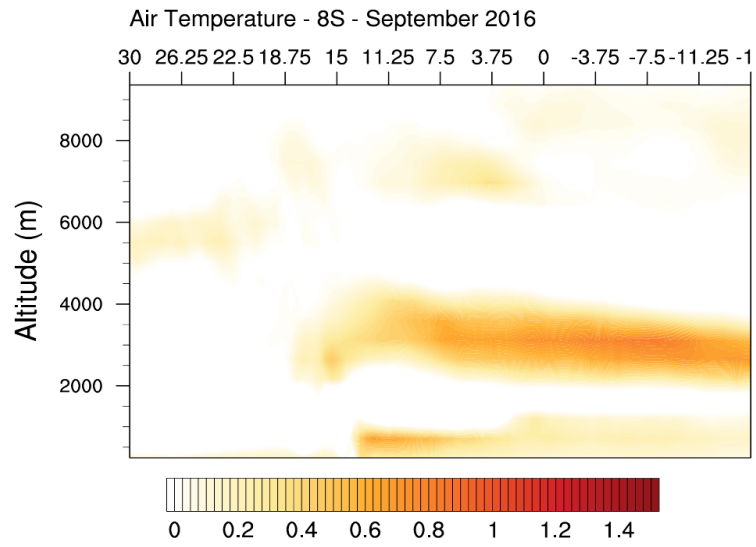


Figure S4. Difference in the air temperature ($^{\circ}\text{C}$) between the SMK and CTL simulations and for the transect defined at a latitude of 8°S .

ALADIN-Climat LCF (%) for August-September 2016

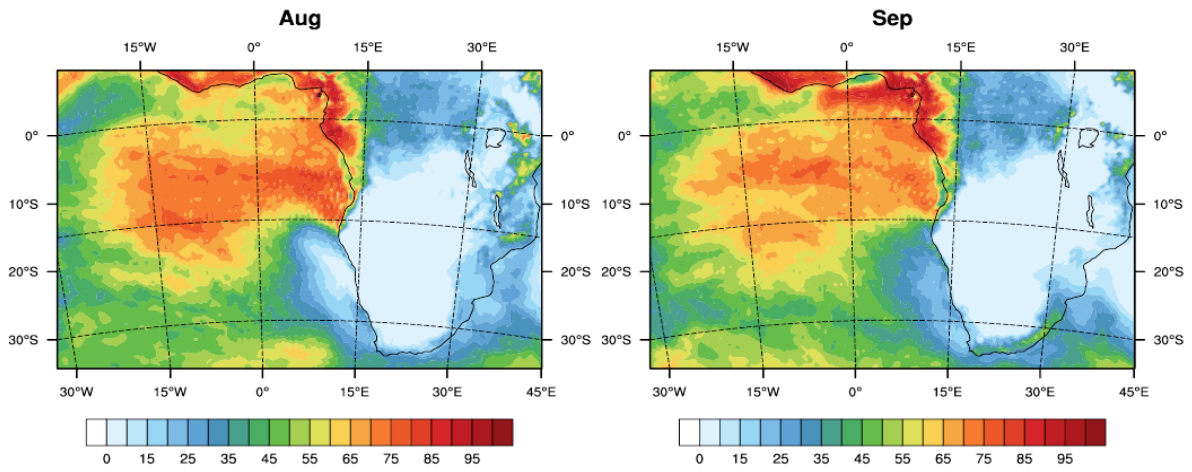


Figure S5. Monthly-mean Low Cloud Fraction (LCF) estimated by the ALADIN-Climate model for August and September 2016.

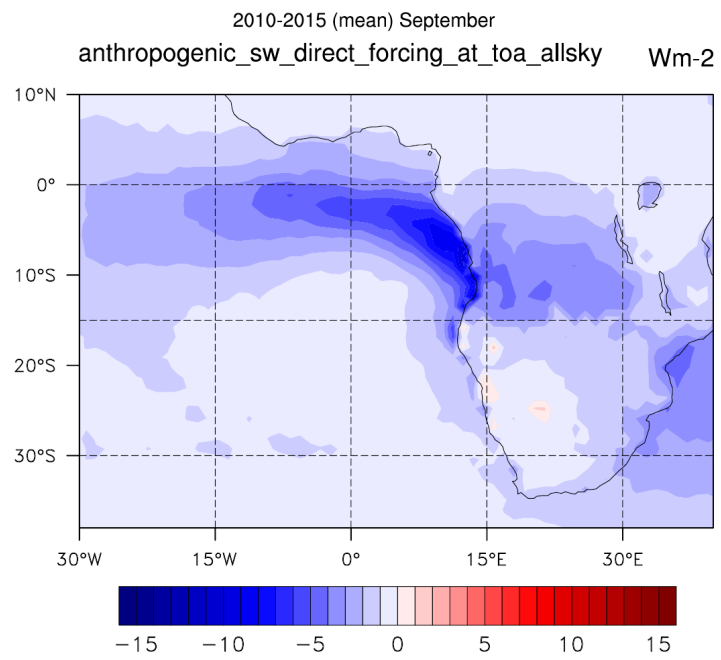


Figure S6. Monthly-mean (September) SW DRF (in all-sky conditions) estimated from the MACC NRT data, for the period 2000-2015.