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Figures

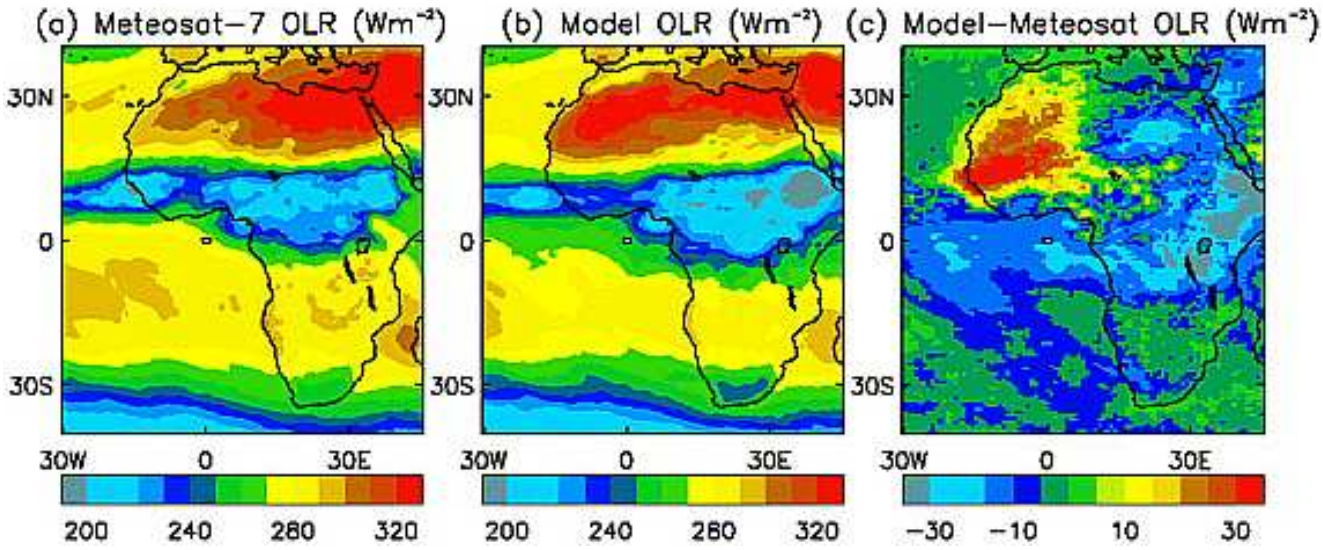

Figure 1. The July 2003 monthly mean for (a) OLR_{Met7}, (b) OLR_{model}, and (c) $OLR_{model} - OLR_{Met7}$. The monthly mean consists of the average of the monthly mean of the OLR diagnosed at 0000 UTC, 6000 UTC, 1200 UTC, and 1800 UTC. Units are Wm^{-2} .

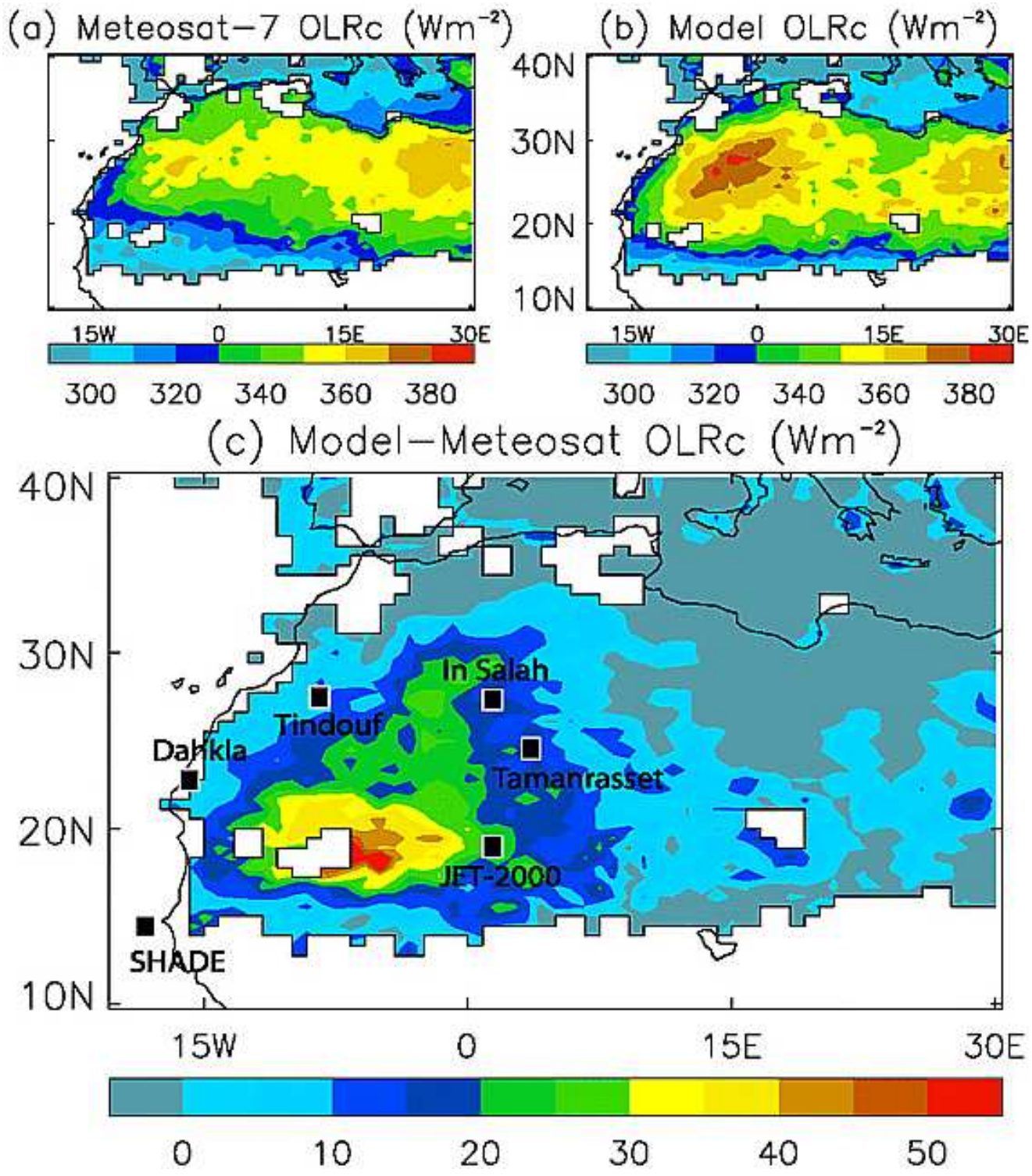

Figure 2. The July 2003 monthly mean of the 1200 UTC clear sky for (a) $OLRc_{Met7}$, (b) $OLRc_{model}$, and (c) $OLRc_{model} - OLRc_{Met7}$. Units are Wm^{-2} . Areas shown in white indicate missing/cloudy data. The approximate positions of the radiosonde stations, measurement campaigns, and AERONET sites referred to in the text are also shown.

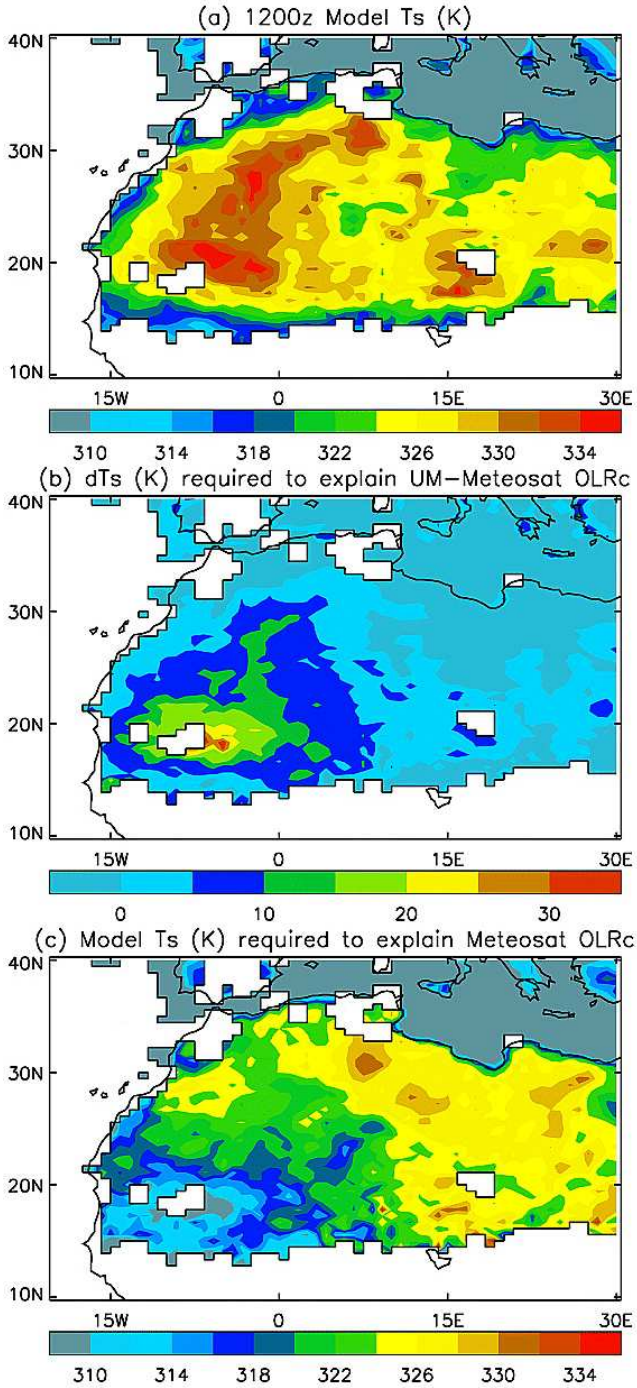

Figure 4. (a) Surface skin temperature, T_s, from the NWP model. (b) The reduction in the model temperature required to explain the difference between $OLRc_{model}$ and $OLRc_{Met7}$. (c) The model T_s required so that $OLRc_{model}$ fits $OLRc_{Met7}$. Units K.

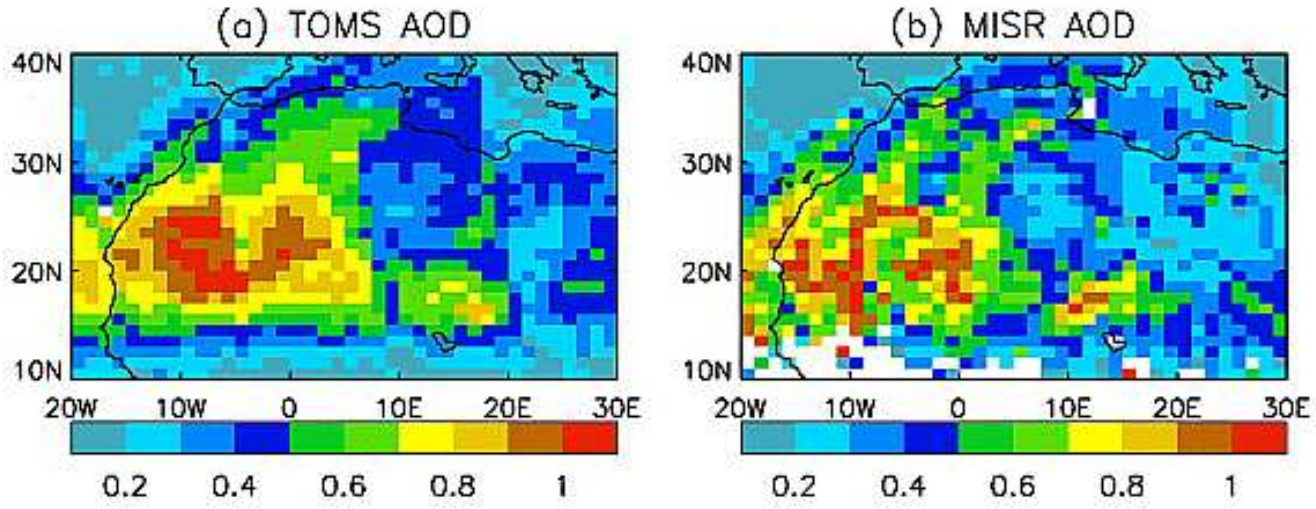

Figure 8. The $_{aer0.55}$ derived for July 2003 for (a) TOMS and (b) MISR. In deriving the $_{aer0.55}$ from TOMS, the TOMS AI is related to $_{aer0.44}$ via equation (3), and the wavelength dependence of k_e shown in Figure 4a is used to derive $_{aer0.55}$ via equation (4). The $_{aer0.55}$ may be related to $_{aer10}$ by equations (5) and (6).

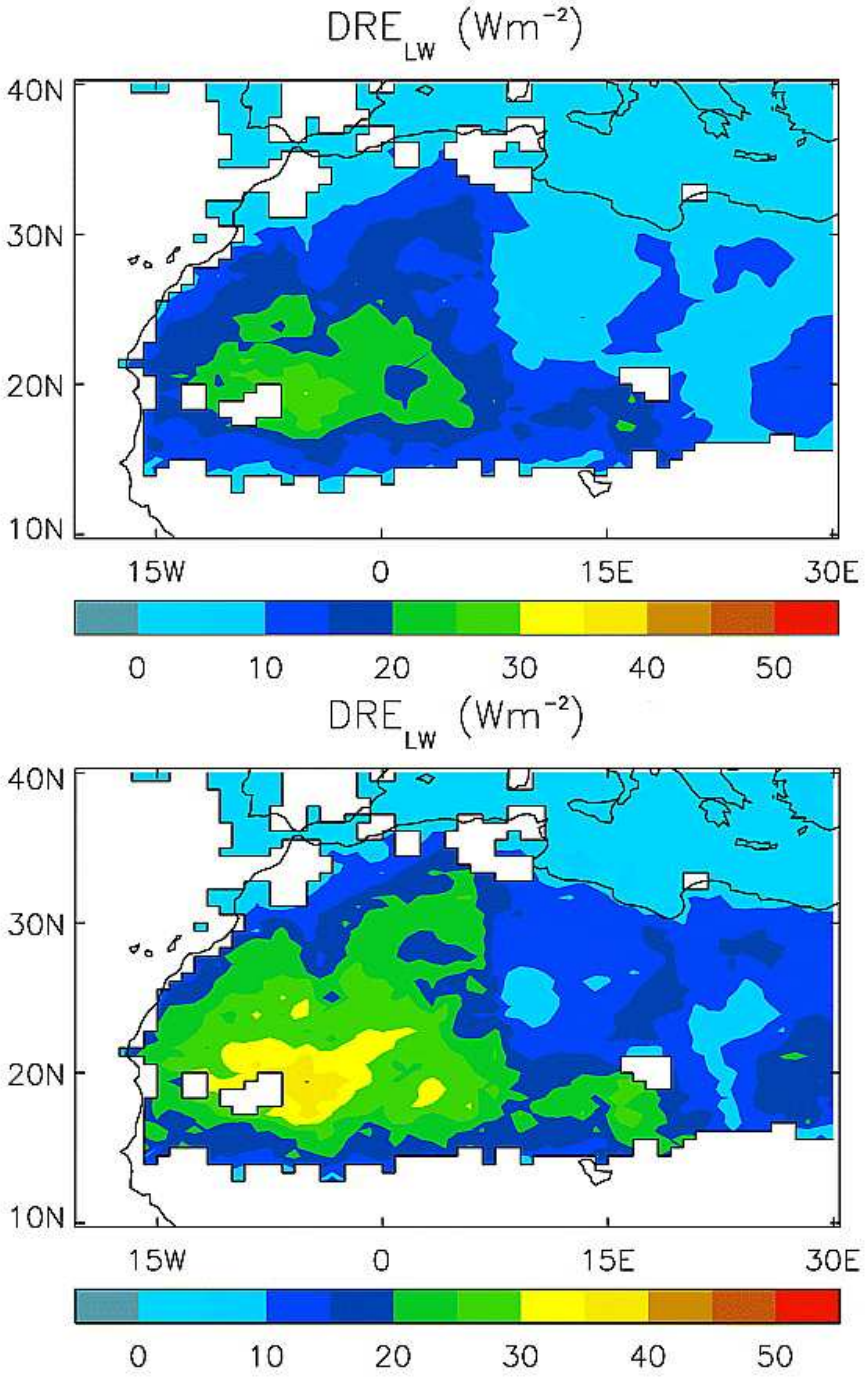

Figure 11. DRE_{LW} due to the radiative effect of mineral dust (Wm^{-2}) for refractive indices from (a) Fouquart et al. [1987] and (b) Volz [1973].

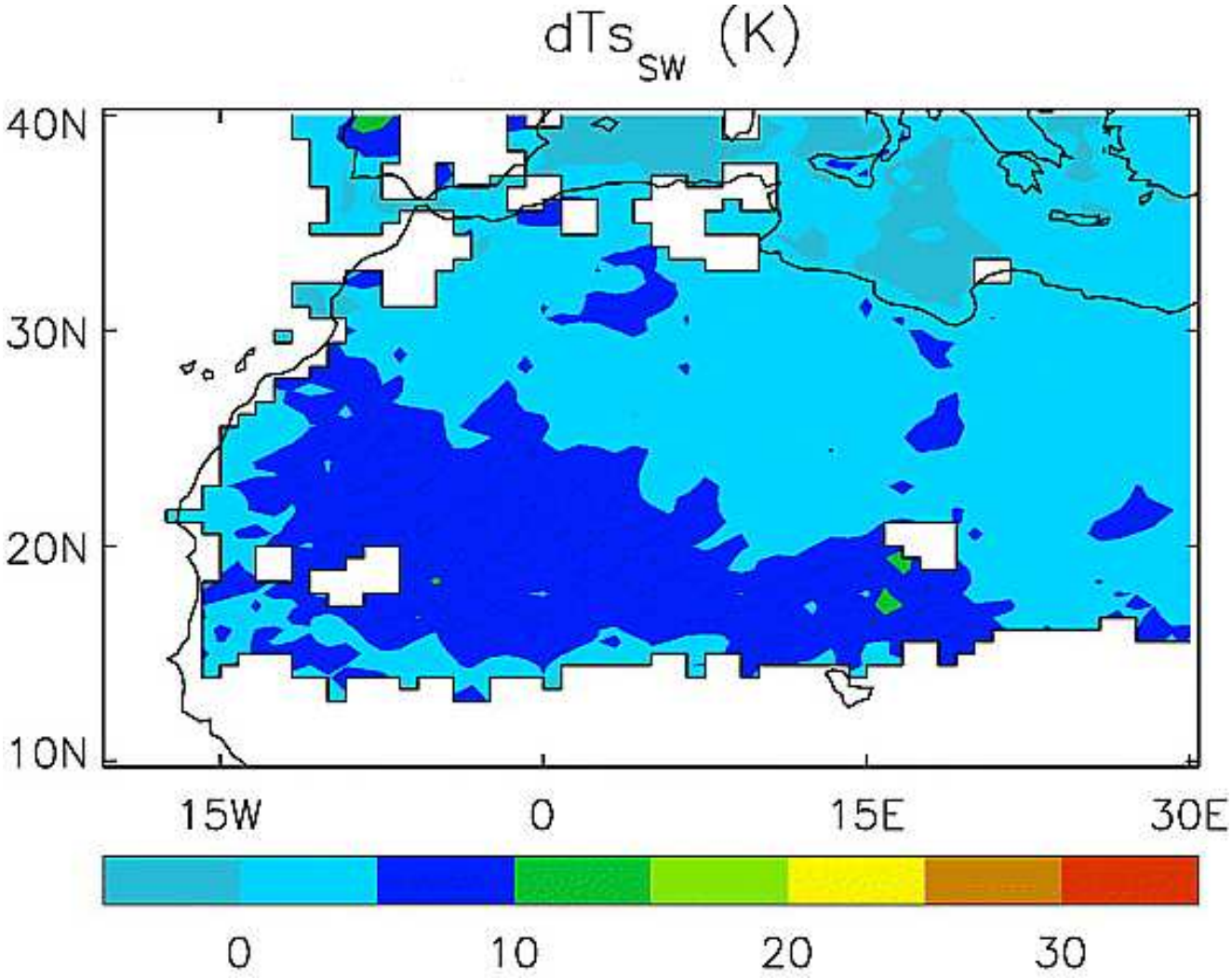

Figure 13. The change in model T_s (K) due to the reduction in SW_{surf}.

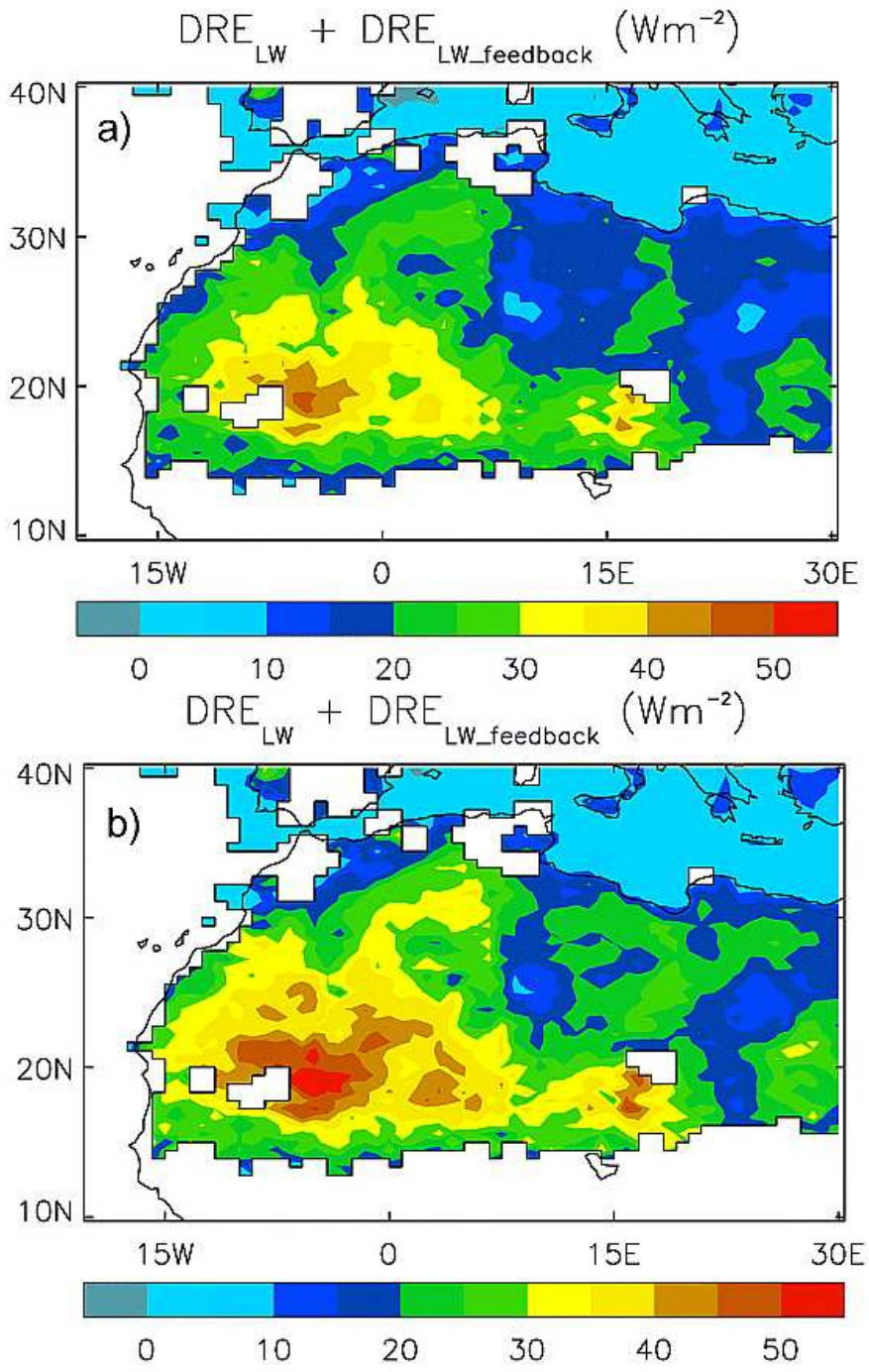

Figure 14. $DRE_{LW} + DRE_{LW\_feedback}$ (Wm^{-2}), which represents our best estimate of the radiative effect of mineral dust in the terrestrial spectrum, (a) using the refractive indices of Fouquart et al. [1987] and (b) using the refractive indices of Volz [1973]. The refractive indices of WCP [1986] are used in the solar spectral range as described in the text.

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