Supplementary of

How well do the CMIP6 models simulate dust aerosols?

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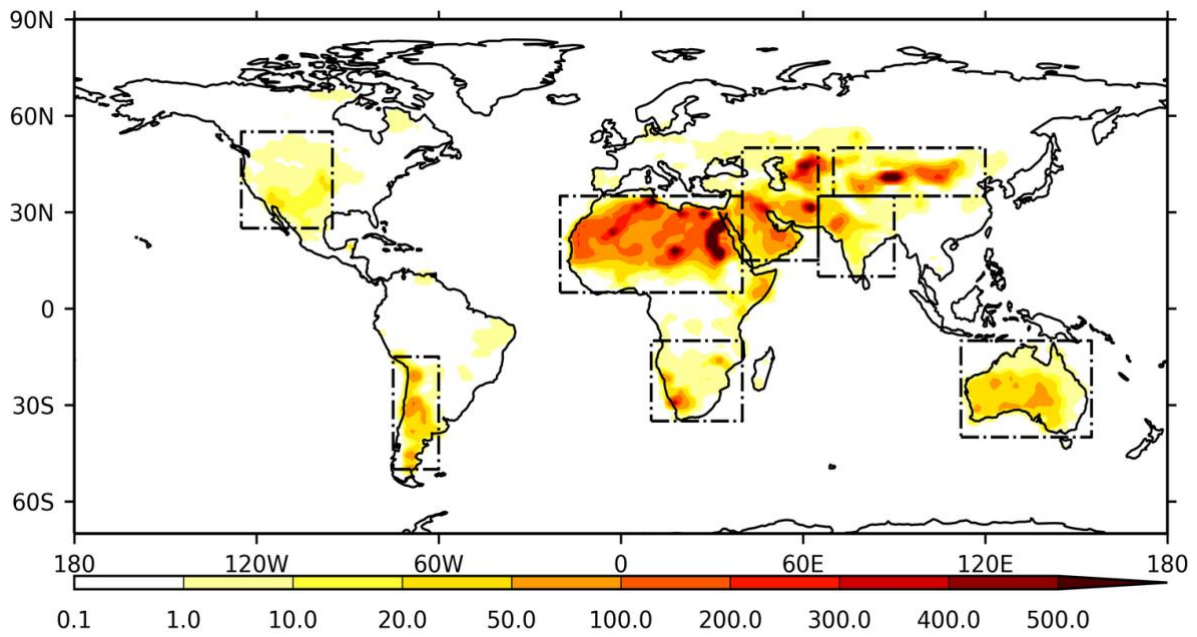
Figure S1: The CMIP6 AMIP MEM-simulated 2005-2014 annual mean dust emission (g m^{-2} yr^{-1}) climatology overlaid by boxes used to define major dust emission source regions.
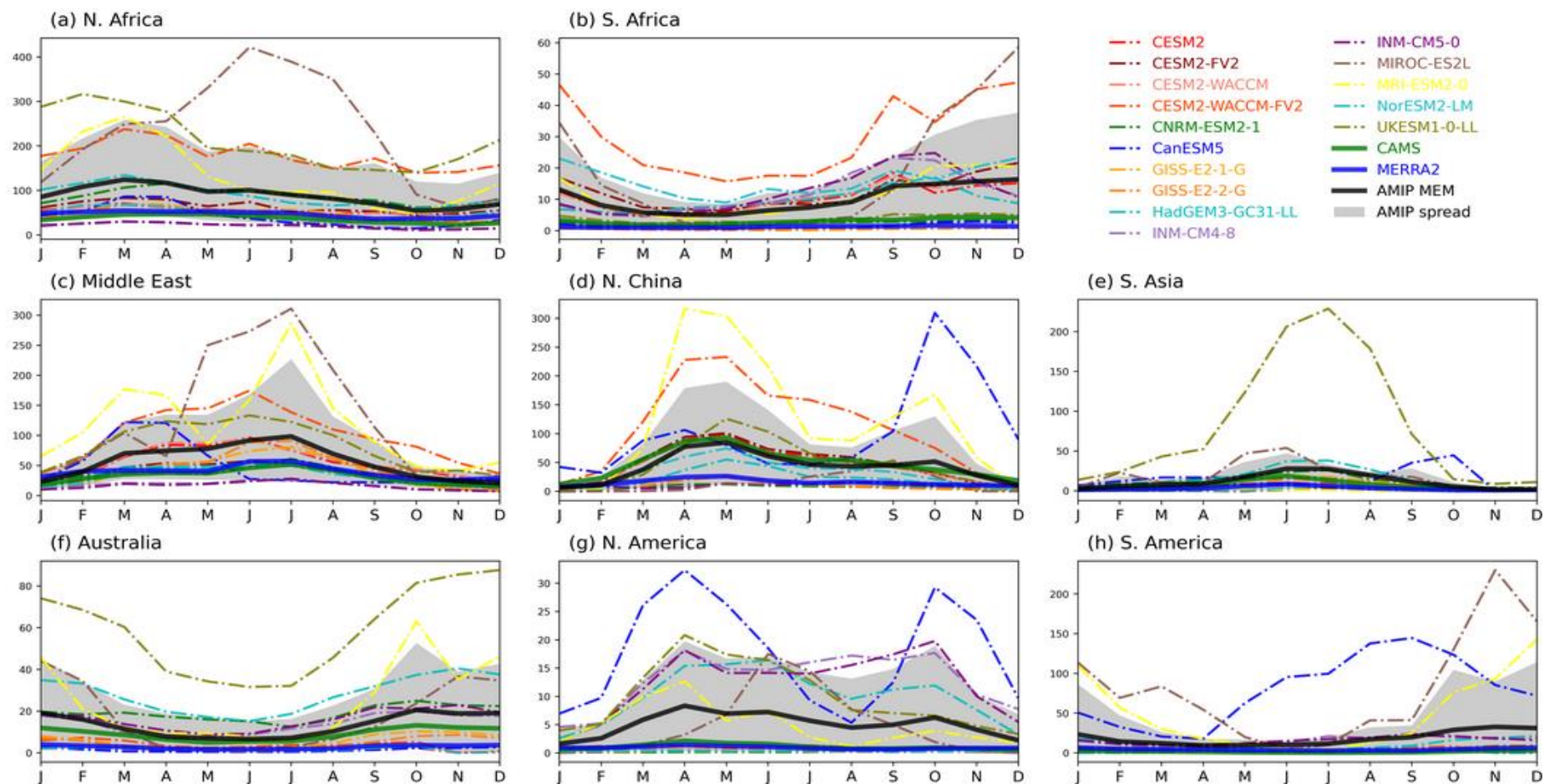
Figure S2: Seasonal cycles of the 2005-2014 mean dust emissions (g m^{-2} yr^{-1}) over the eight major source regions. Dashed curves are for each individual model, while the AMIP MEM is shown in black solid, and the 10th- 90th percentiles of the multi-model spreads is shown in grey shadings. also shown are those for CAMS (green) and MERRA2 (blue) reanalysis.
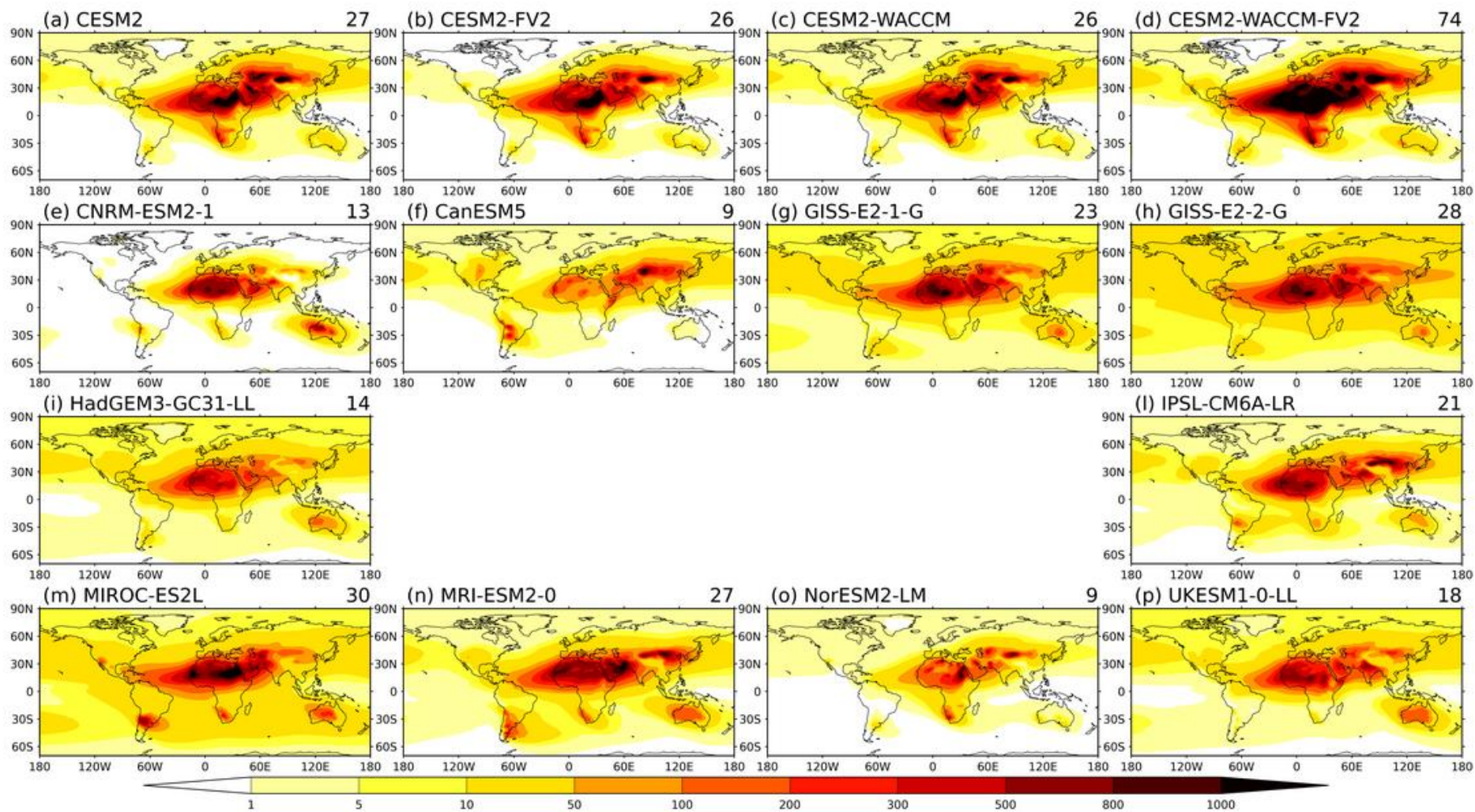
Figure S3: The CMIP6 AMIP model-simulated global annual mean (2005-2014) dust mass loading (mg m^{-2}) climatology. The numbers on the top right of each panel denote the global total dust mass burdens (Tg).
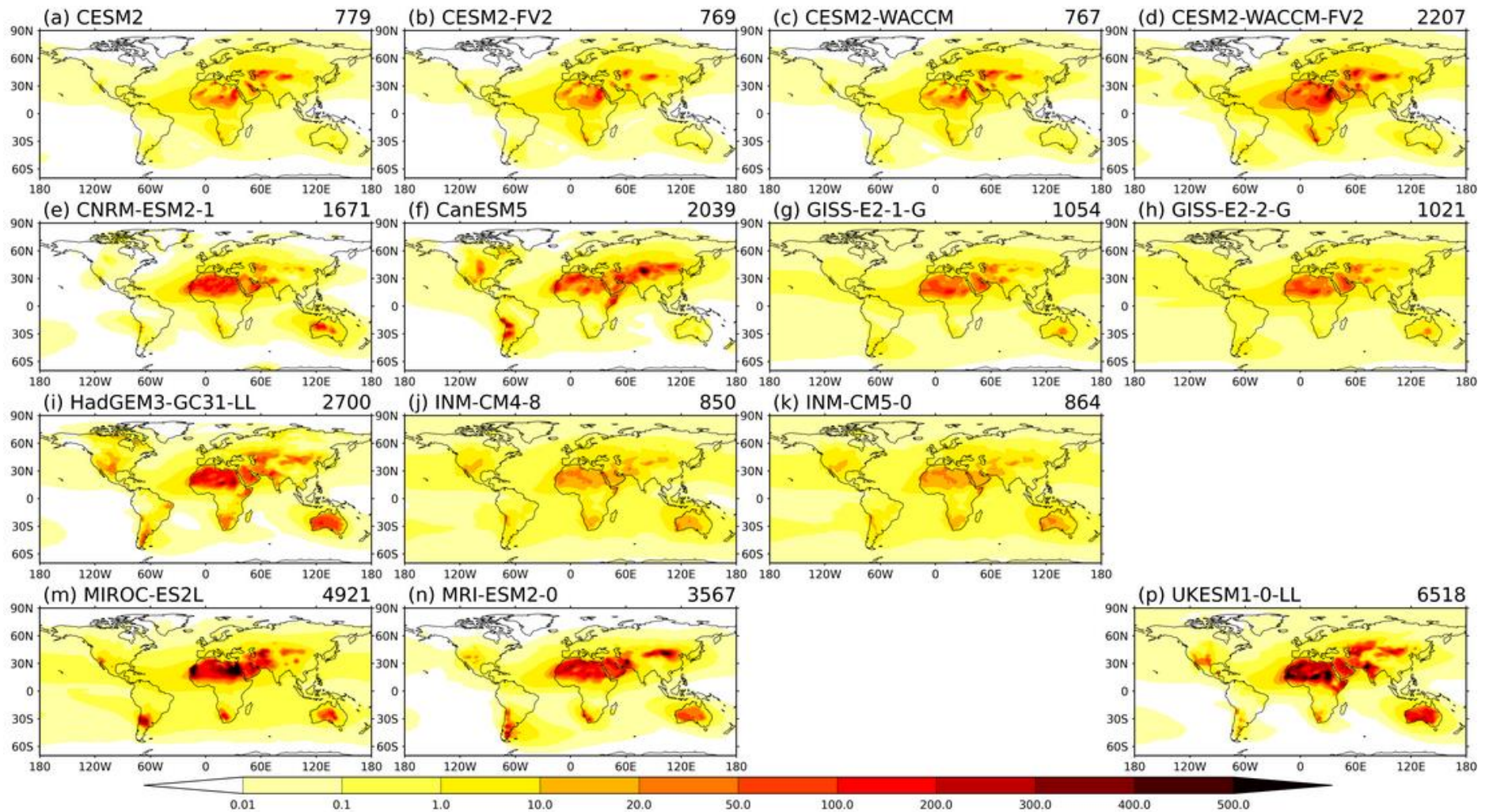
Figure S4: The CMIP6 AMIP model-simulated global annual mean (2005-2014) dry dust deposition fluxes (g m^{-2} yr^{-1}). The numbers on the top right of each panel denote the global total dry dust deposition (Tg y^{r-1}).
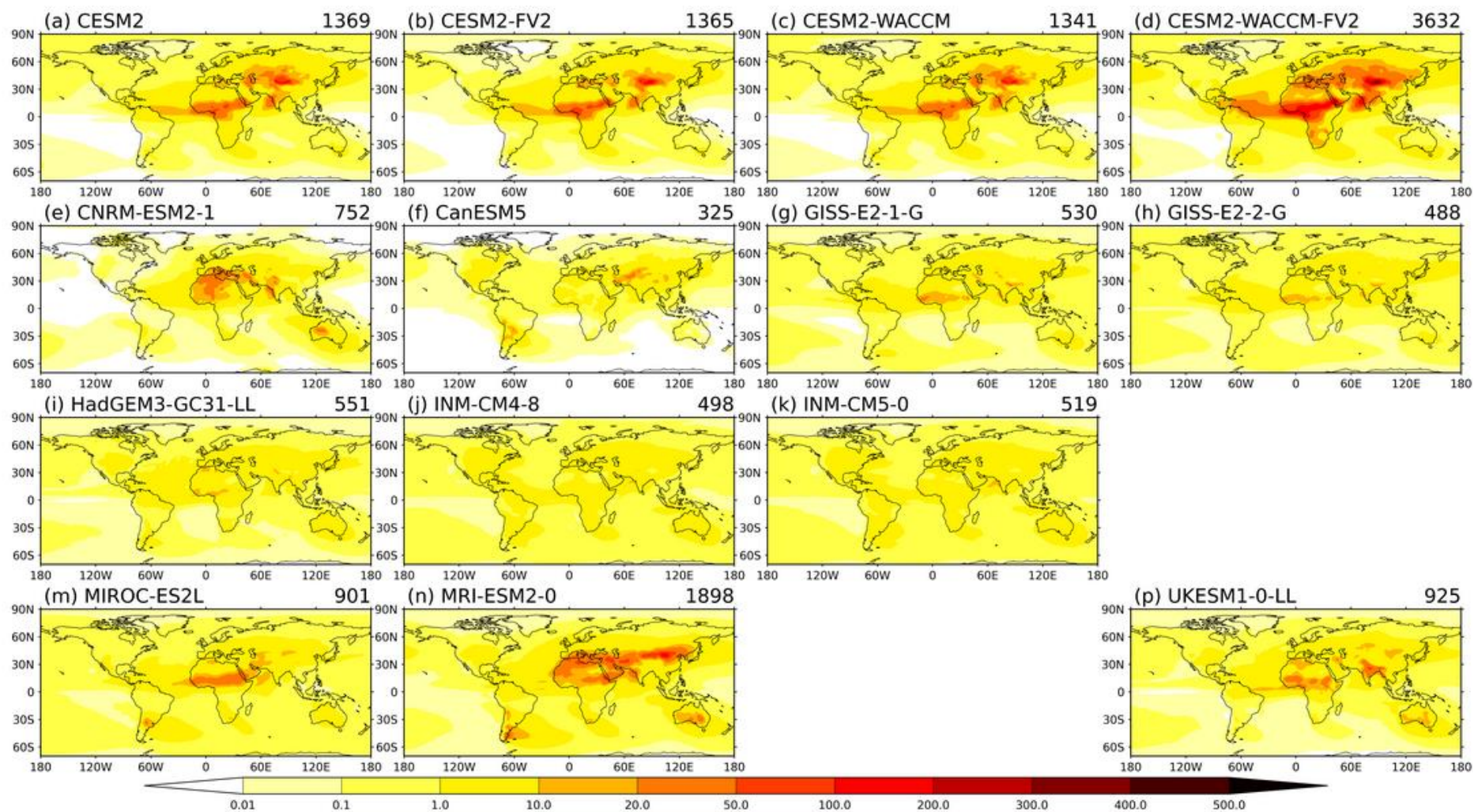
Figure S5: The CMIP6 AMIP model-simulated global annual mean (2005-2014) wet dust deposition fluxes (g m^{-2} yr^{-1}). The numbers on the top right of each panel denote the global total wet dust deposition fluxes (Tg yr^{-1}).
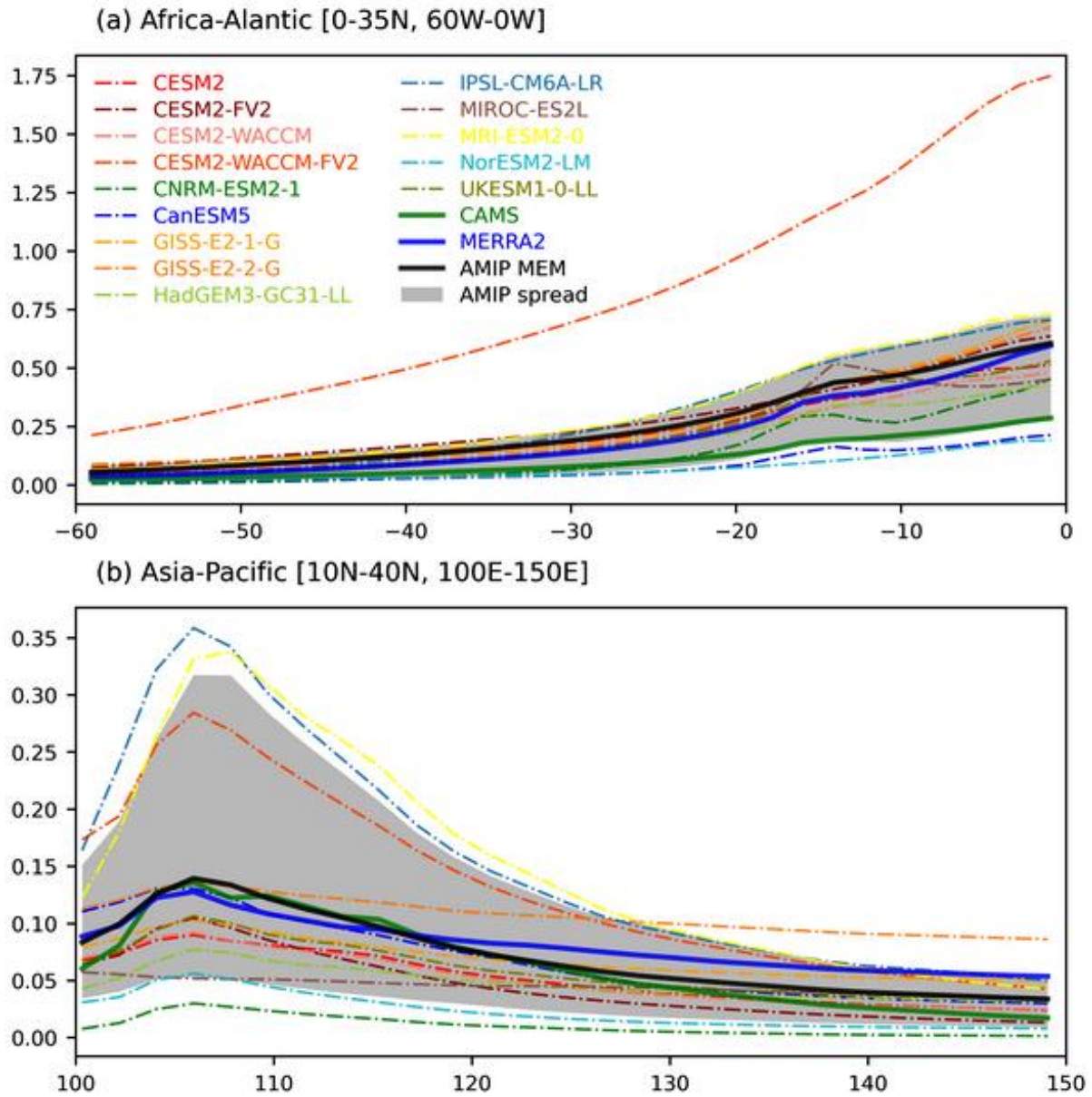
Figure S6: Meridionally averaged annual-mean dust mass loading (kg m^{-2}) over (a) the Africa-Atlantic region and (b) the Asia-Pacific region.
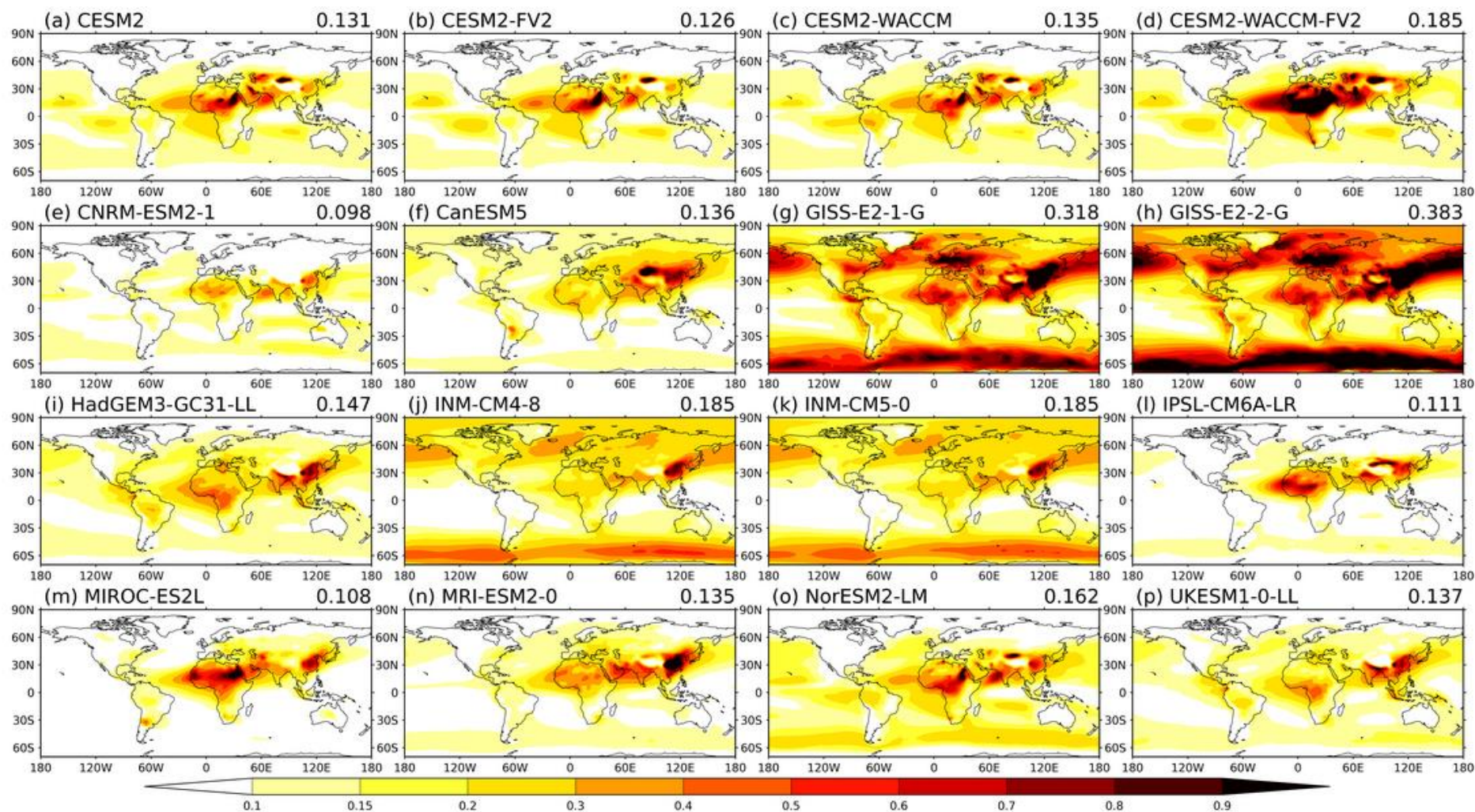
Figure S7: The CMIP6 AMIP models' simulated global annual mean (2005-2014) AOD climatology. The numbers on the top right of each panel denote the global means.
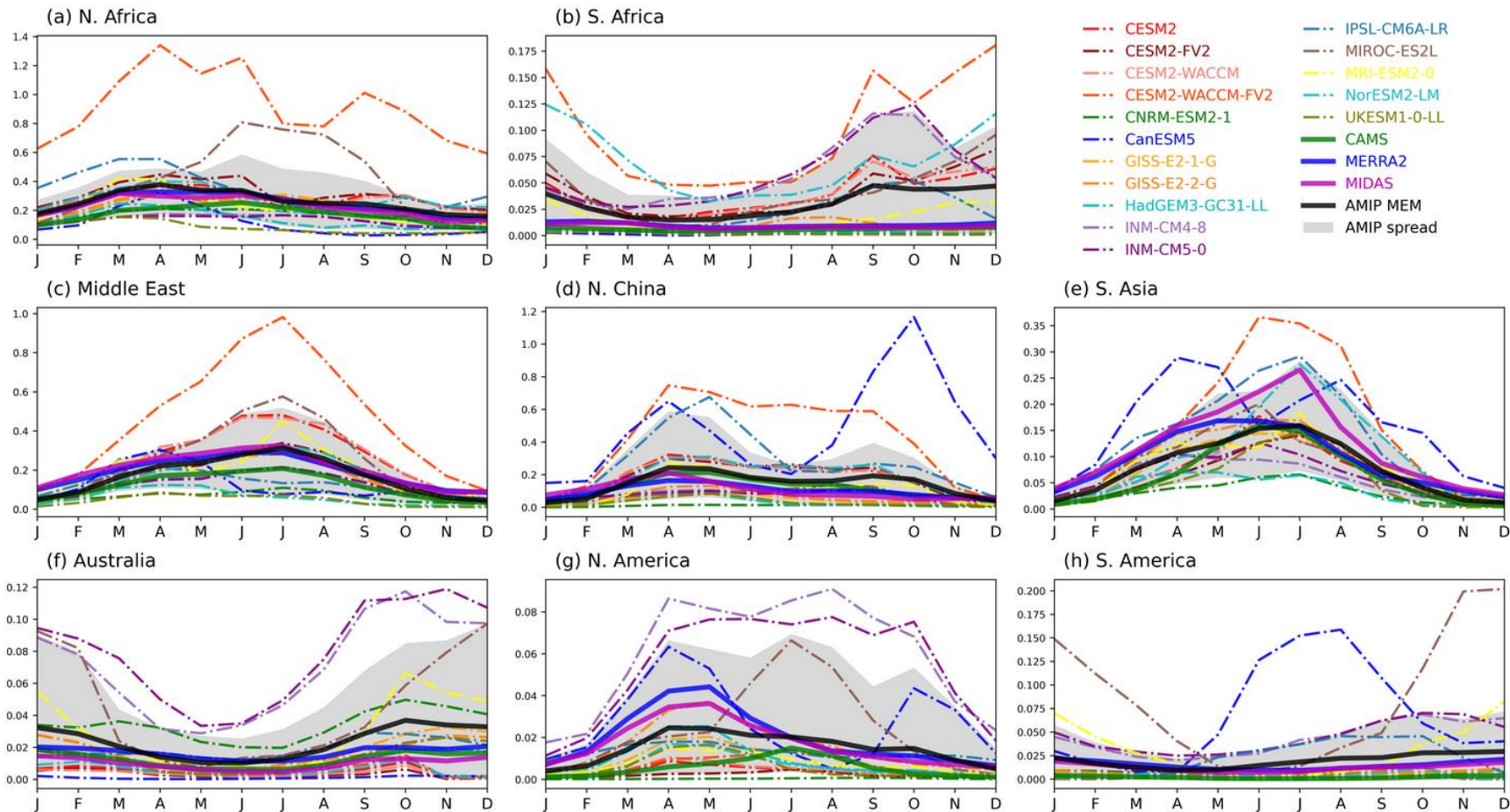
Figure S8: Seasonal cycles of the 2005-2014 mean DOD over the eight major dust source regions. Dashed curves are for each individual model, while the AMIP MEM is shown in black solid, and the 10th- 90th percentiles of the multi-model spreads is shown in grey shadings. Also shown are those for MIDAS (solid purple), CAMS (solid green) and MERRA2 (solid blue) reanalysis.