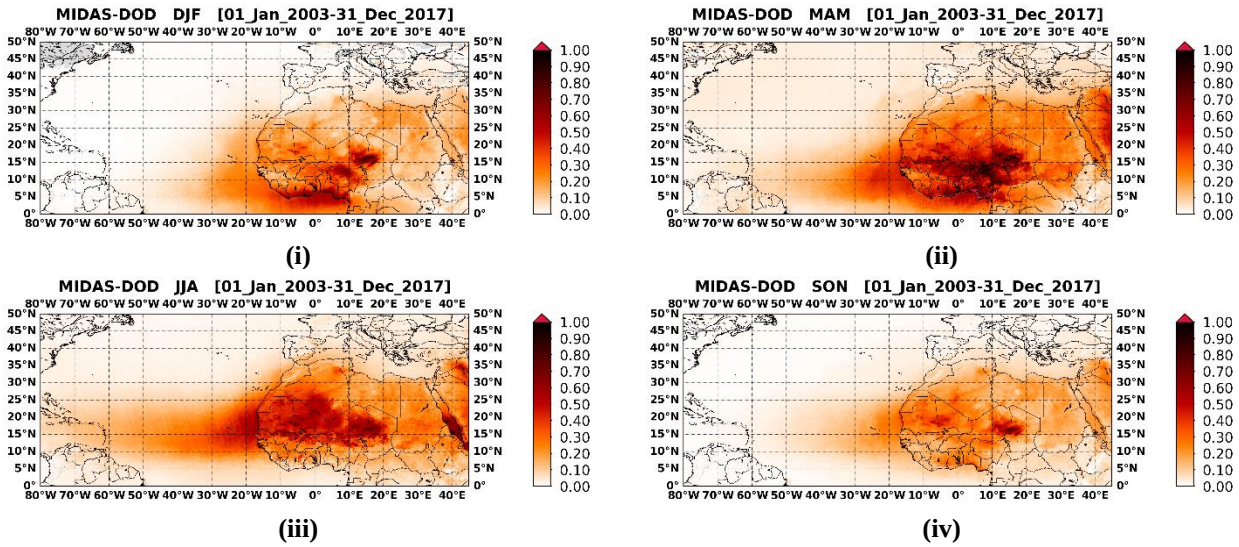


(i) **(ii)**

(iii) **(iv)**

Figure S1: Seasonal geographical distributions of the MIDAS fine spatial resolution (0.1° x 0.1°) DOD, across North Africa, the Tropical Atlantic Ocean and the broader Mediterranean basin, corresponding to: **(i)** December-January-February (DJF), **(ii)** March-April-May (MAM), **(iii)** June-July-August (JJA) and **(iv)** September-October-November (SON), averaged over the period 2003-2017. Grey color represents areas with absence of data.

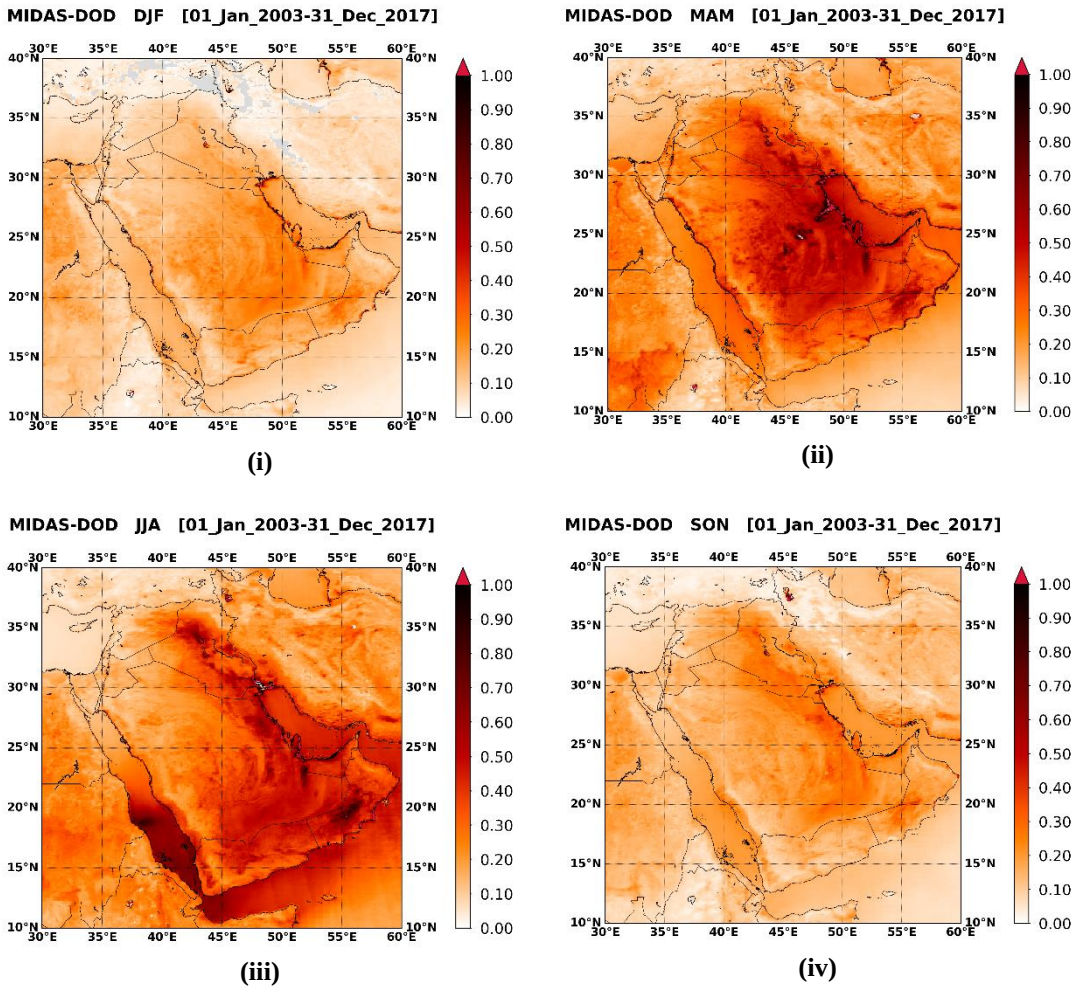


Figure S2: As in Figure S1 but for the Middle East.

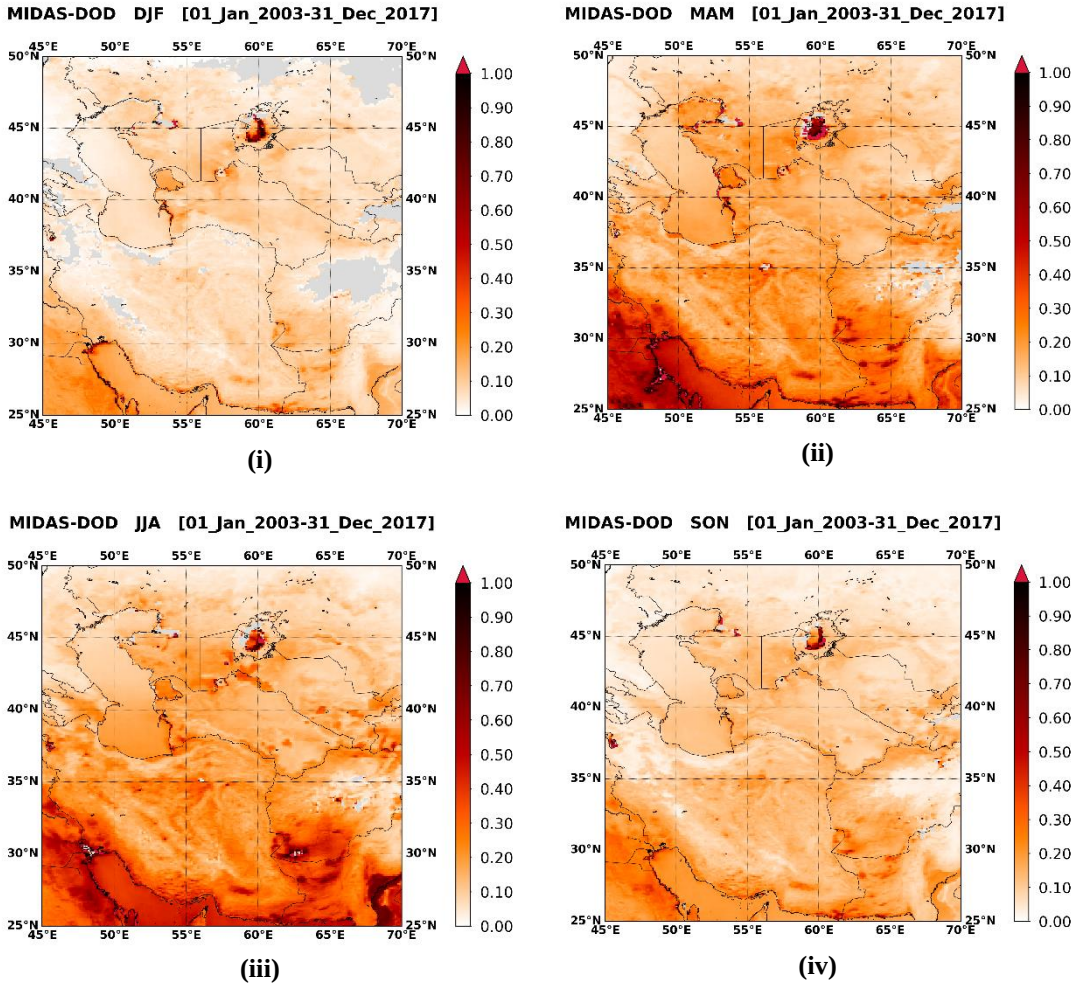


Figure S3: As in Figure S1 but for the central and southwest Asia.

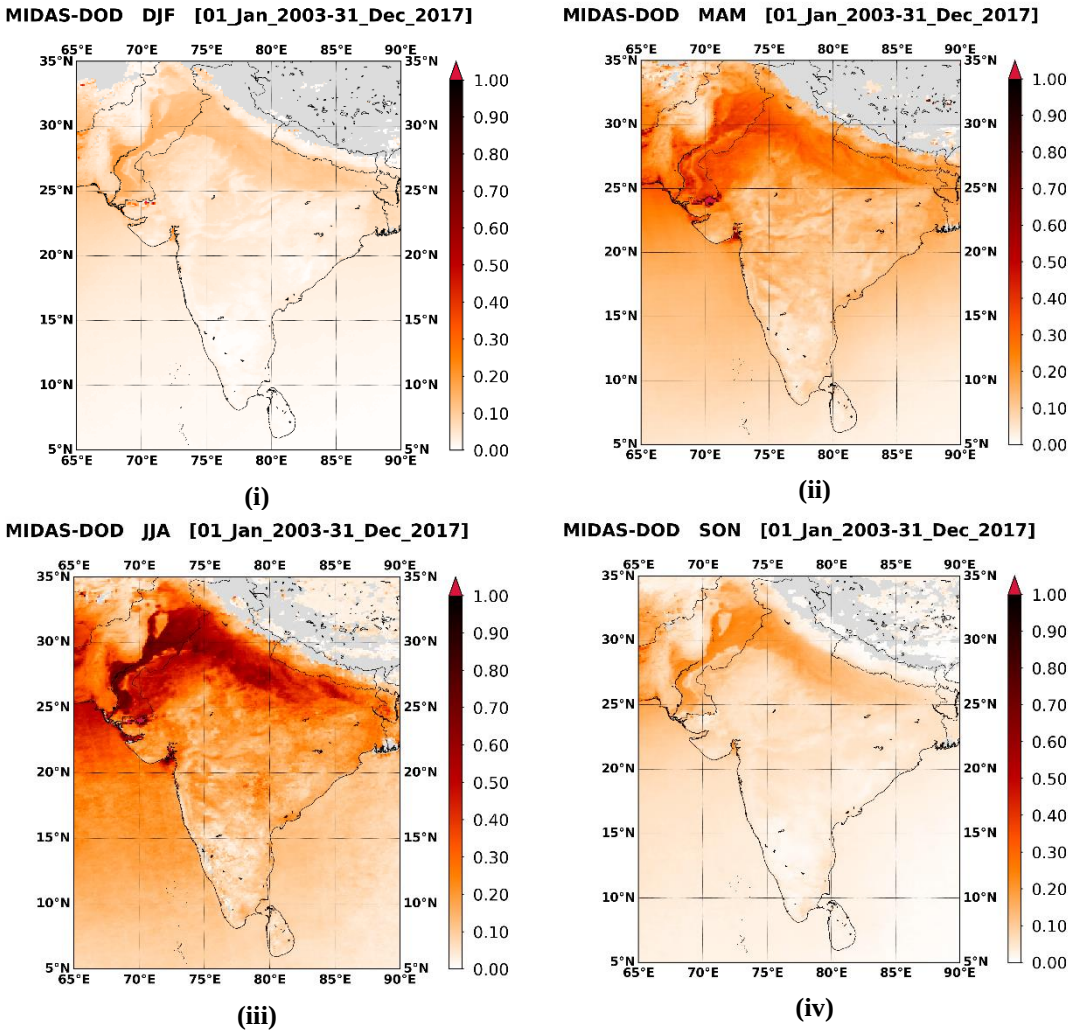


Figure S4: As in Figure S1 but for the Indian subcontinent.

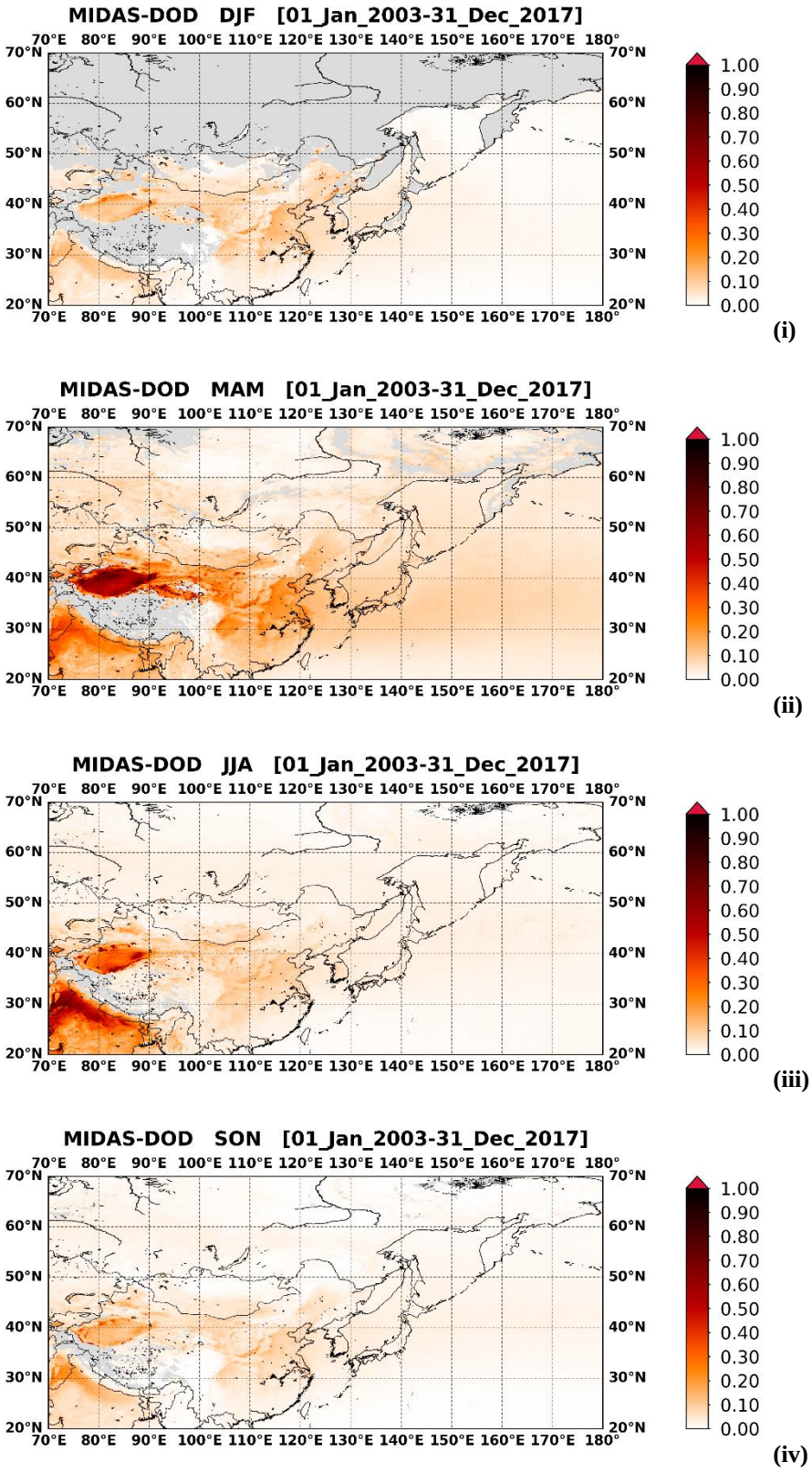


Figure S5: As in Figure S1 but for the East Asia and the Northern Pacific Ocean.

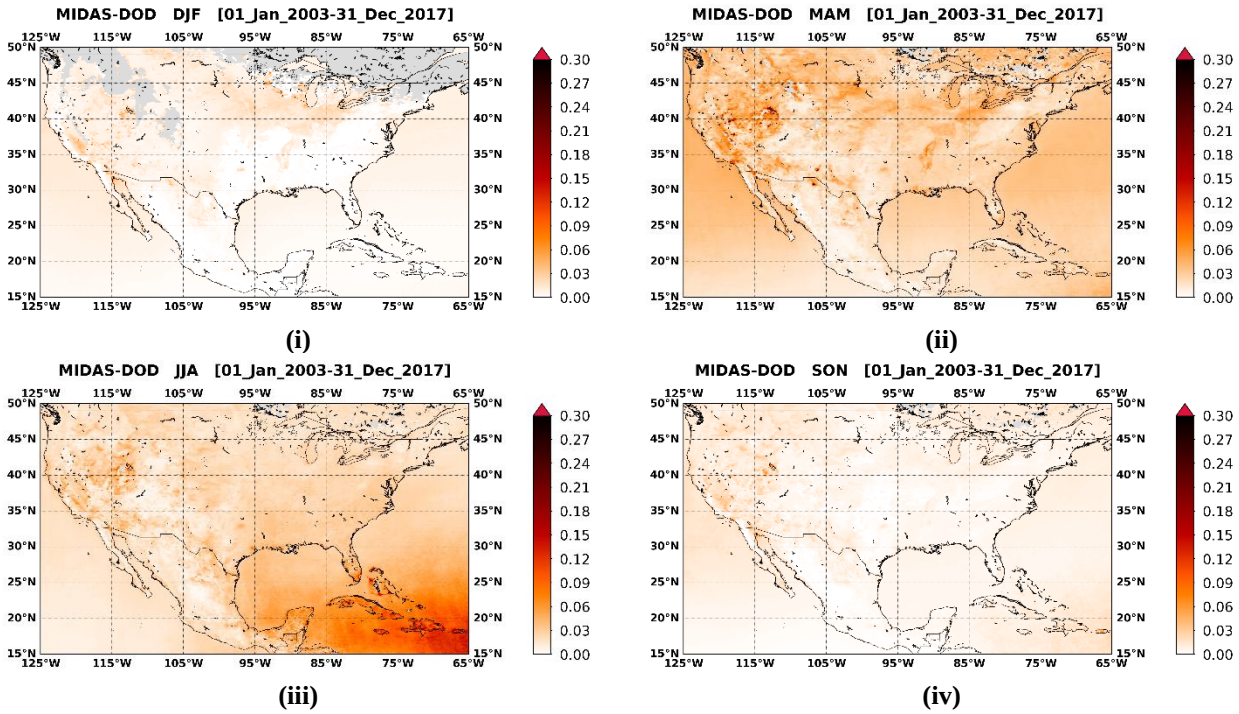


Figure S6: As in Figure S1 but for the North America.

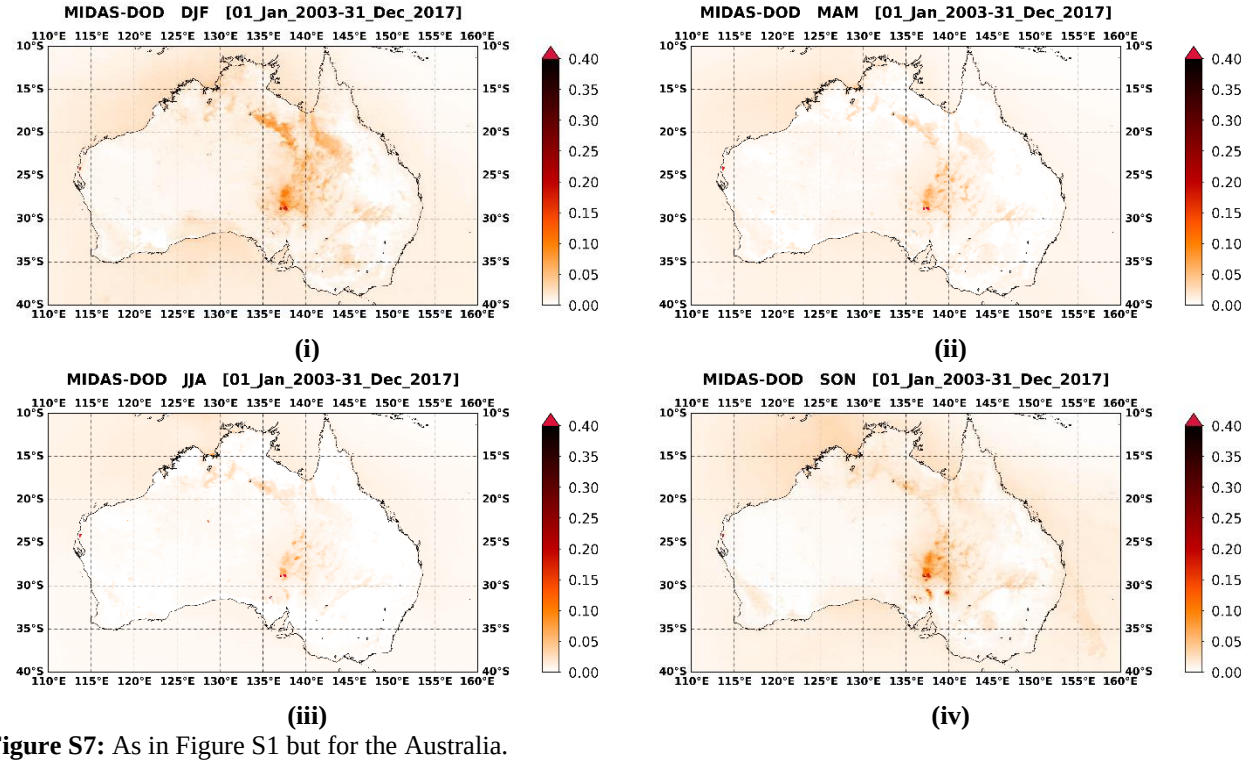
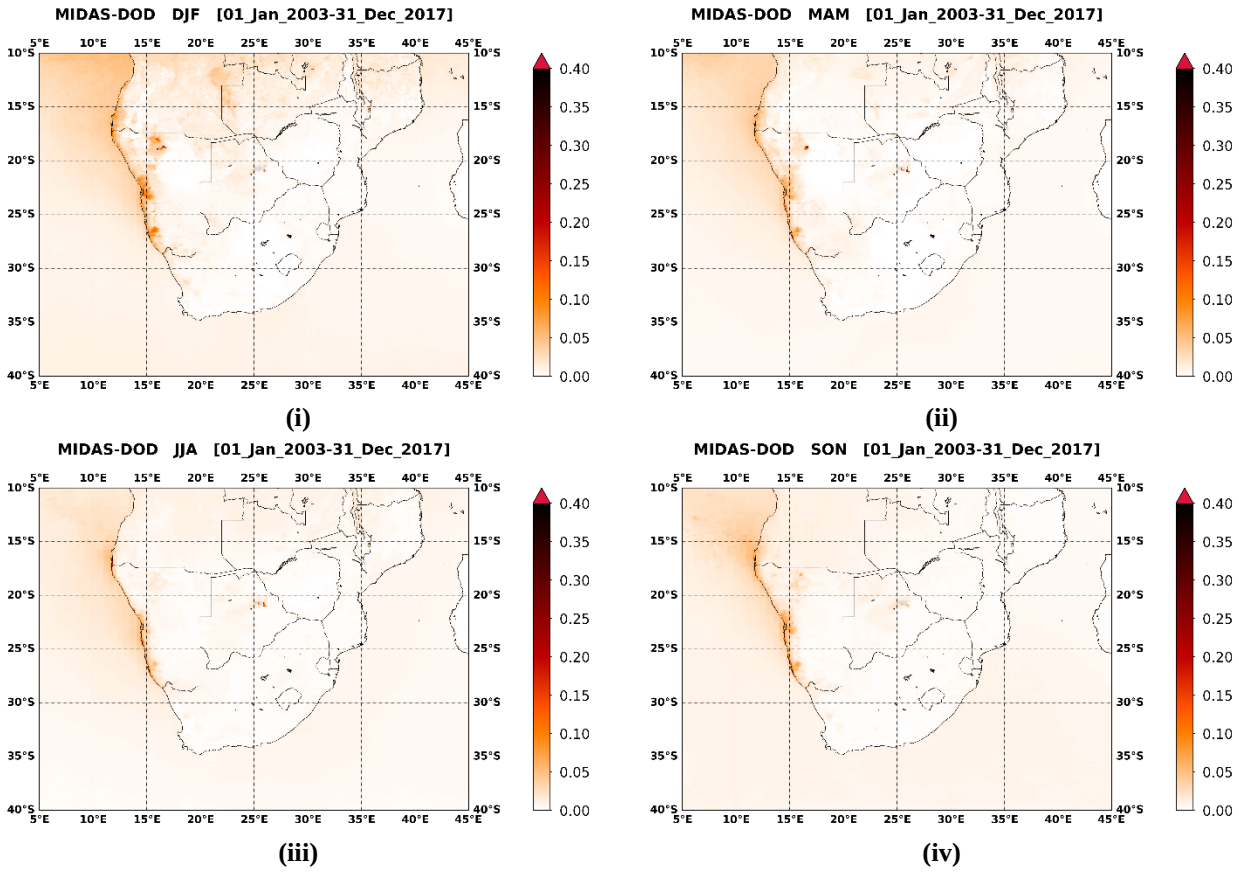


Figure S7: As in Figure S1 but for the Australia.



(i) **(ii)**

(iii) **(iv)**

Figure S8: As in Figure S1 but for the South Africa.

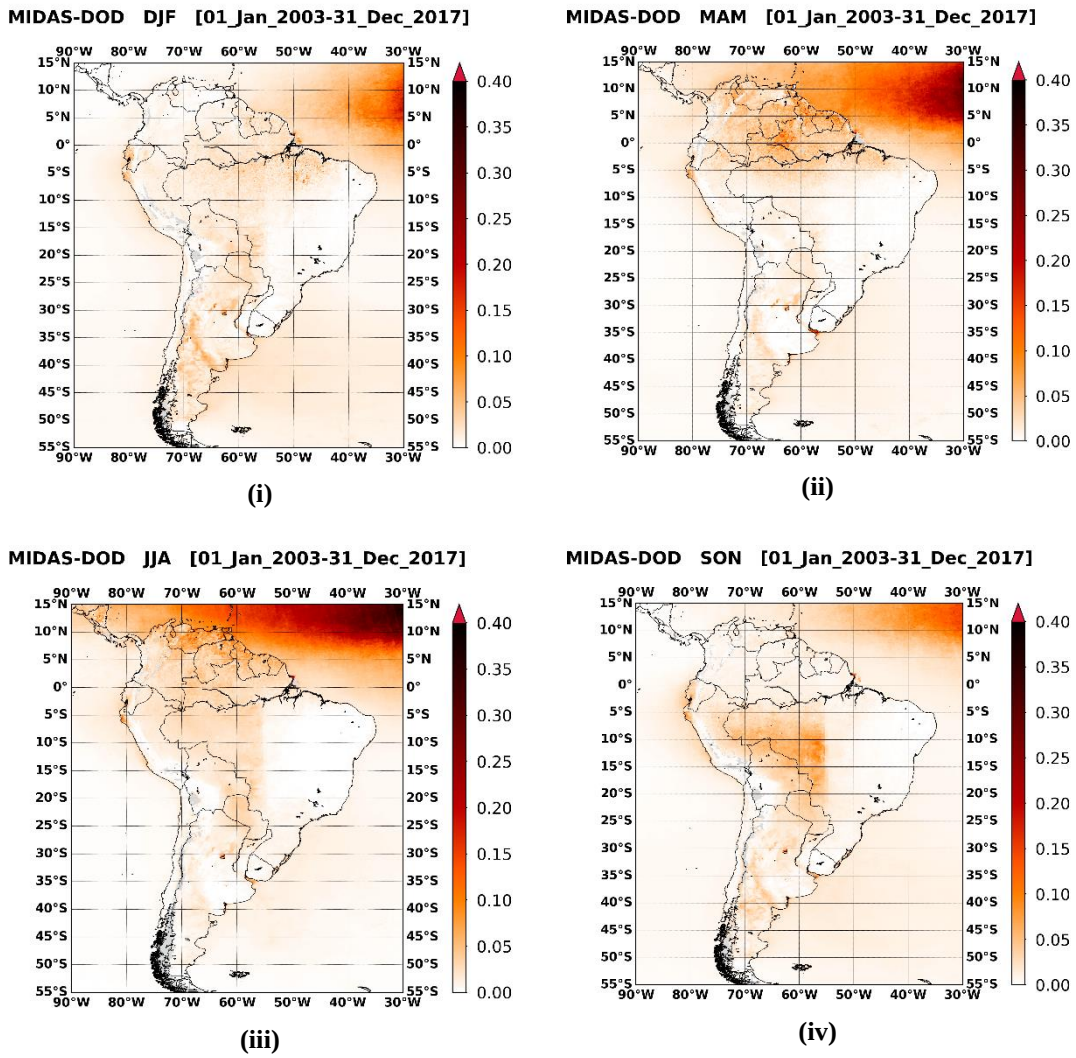


Figure S9: As in Figure S1 but for the South America.