1  *Supplement of*

2  **Understanding Processes that Control Dust Spatial Distributions with**

3  **Global Climate Models and Satellite Observations**

4  Mingxuan Wu et al.

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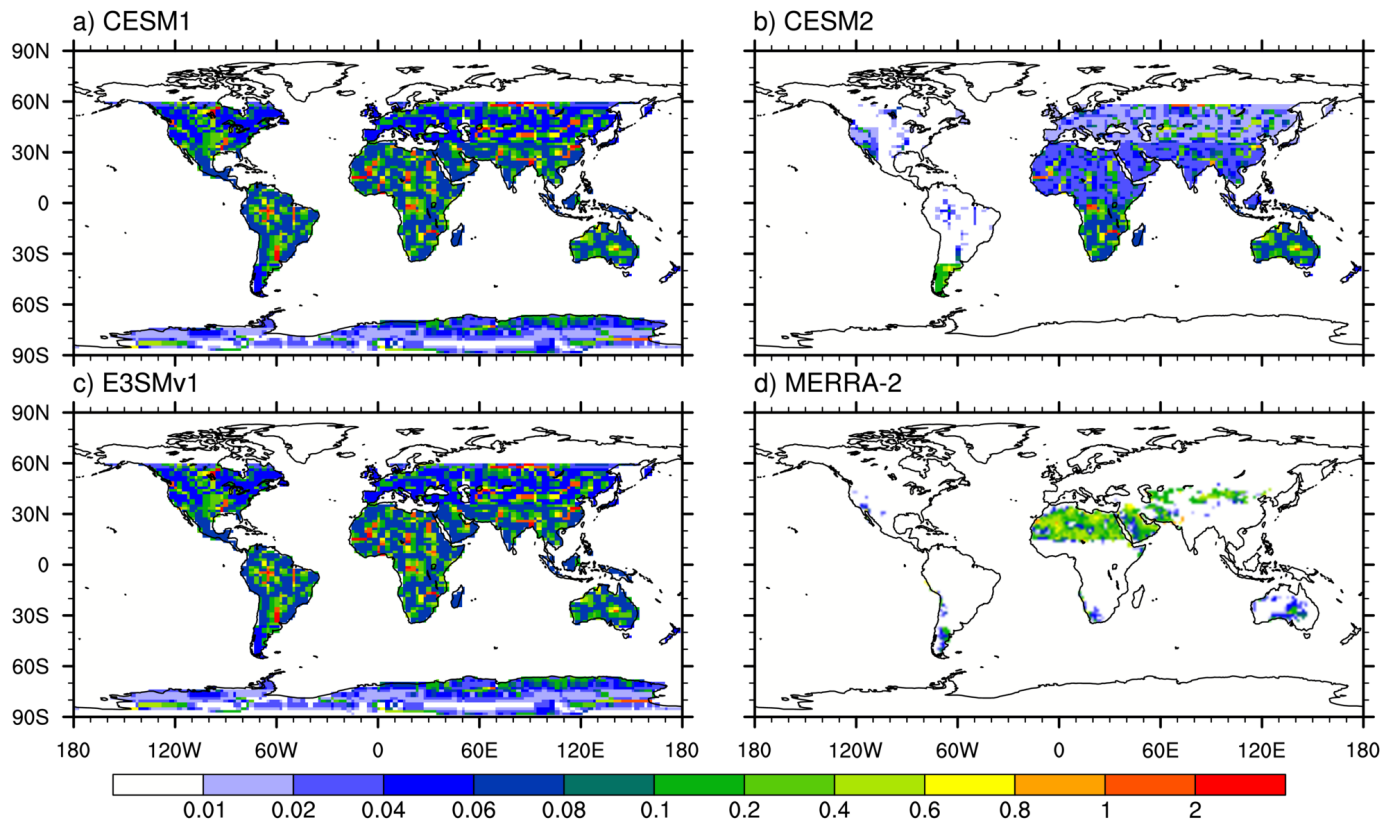
**Figure S1.** Source functions used in the four models.

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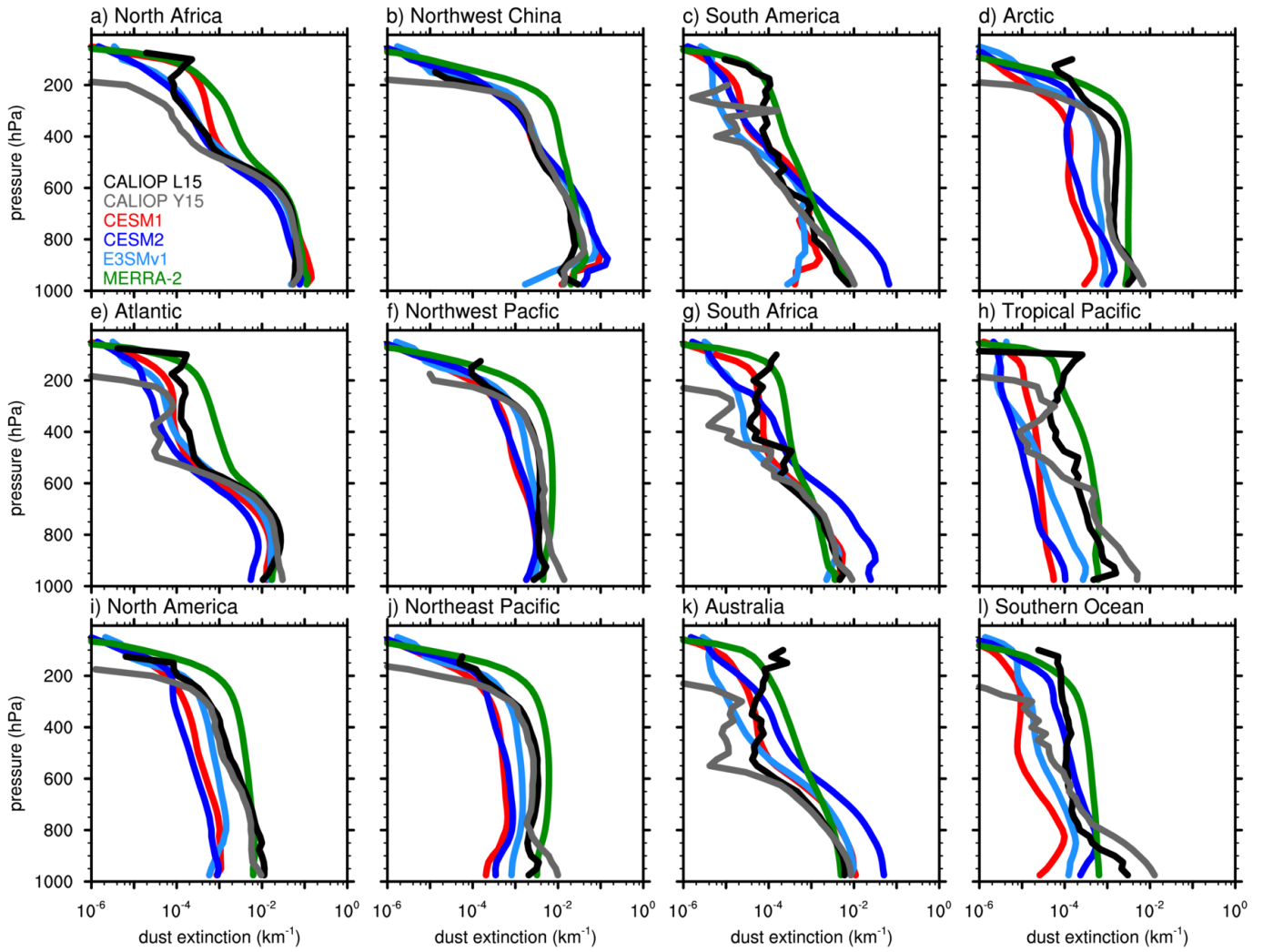
**Figure S2.** Vertical profiles of MAM mean dust extinction (km$^{-1}$) from model simulations and CALIOP over

12 selected regions during 2007-2009.
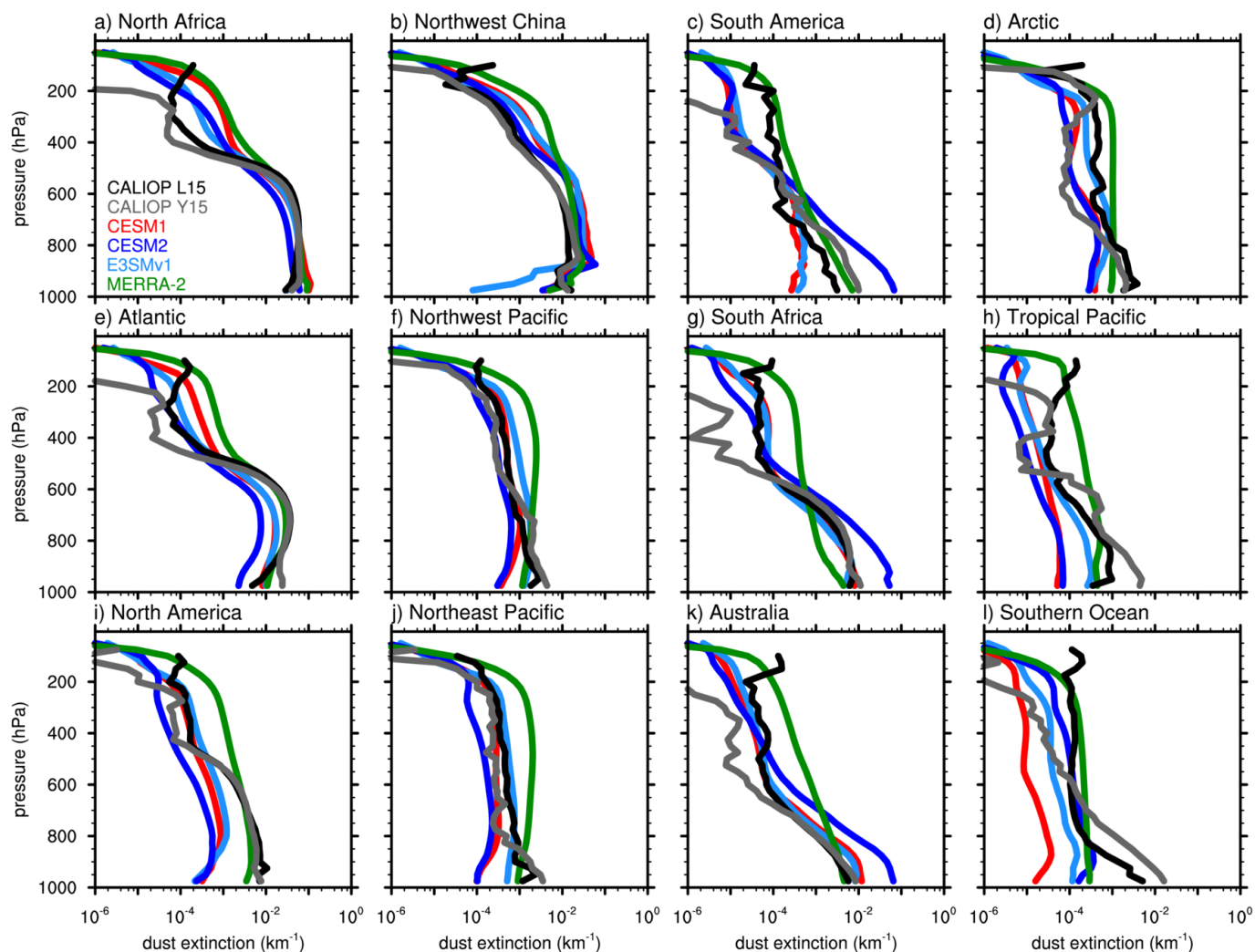
**Figure S3.** Vertical profiles of JJA mean dust extinction ($km^{-1}$) from model simulations and CALIOP over

12 selected regions during 2007-2009.

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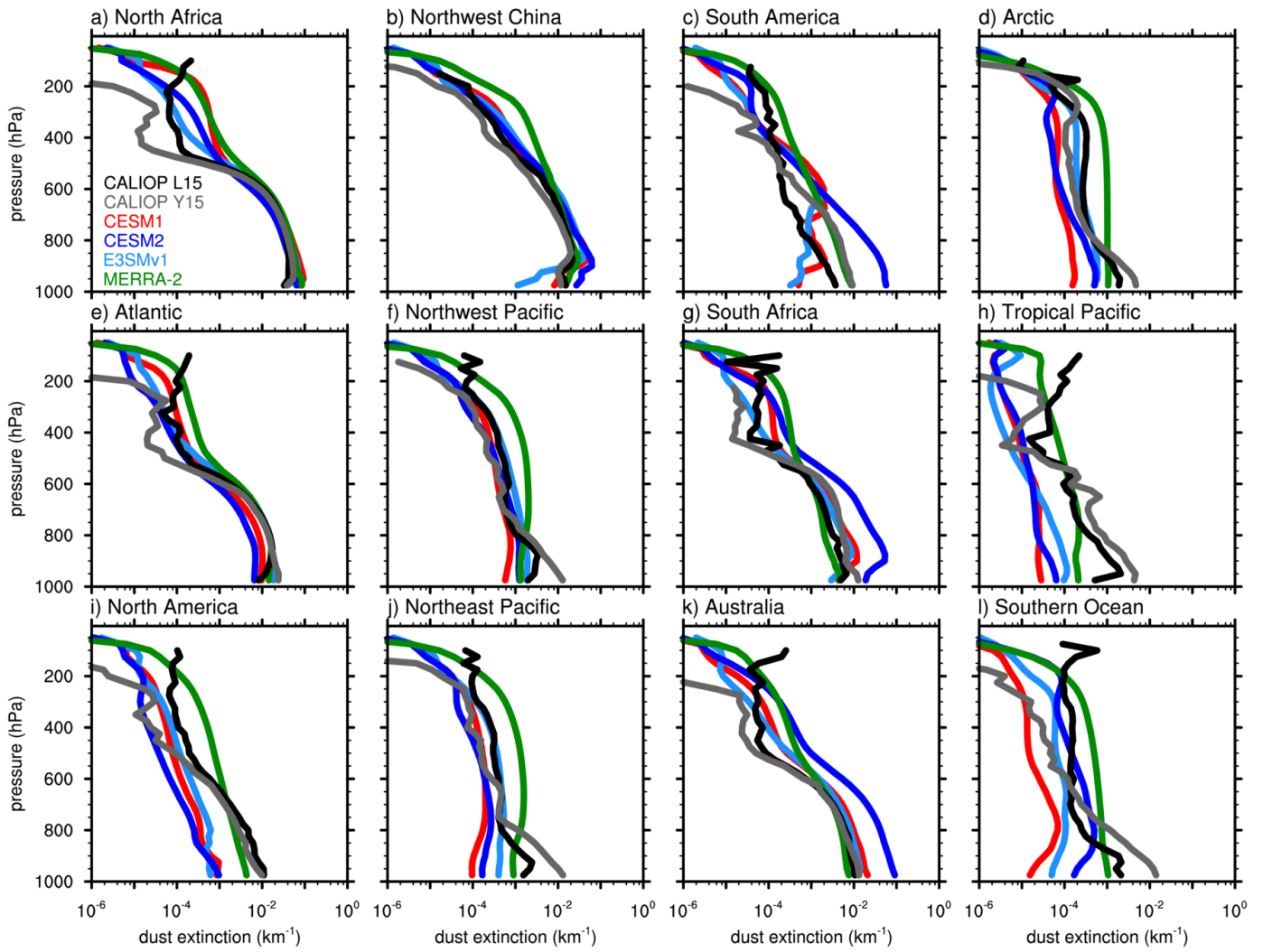
**Figure S4.** Vertical profiles of SON mean dust extinction (km$^{-1}$) from model simulations and CALIOP over

12 selected regions during 2007-2009.

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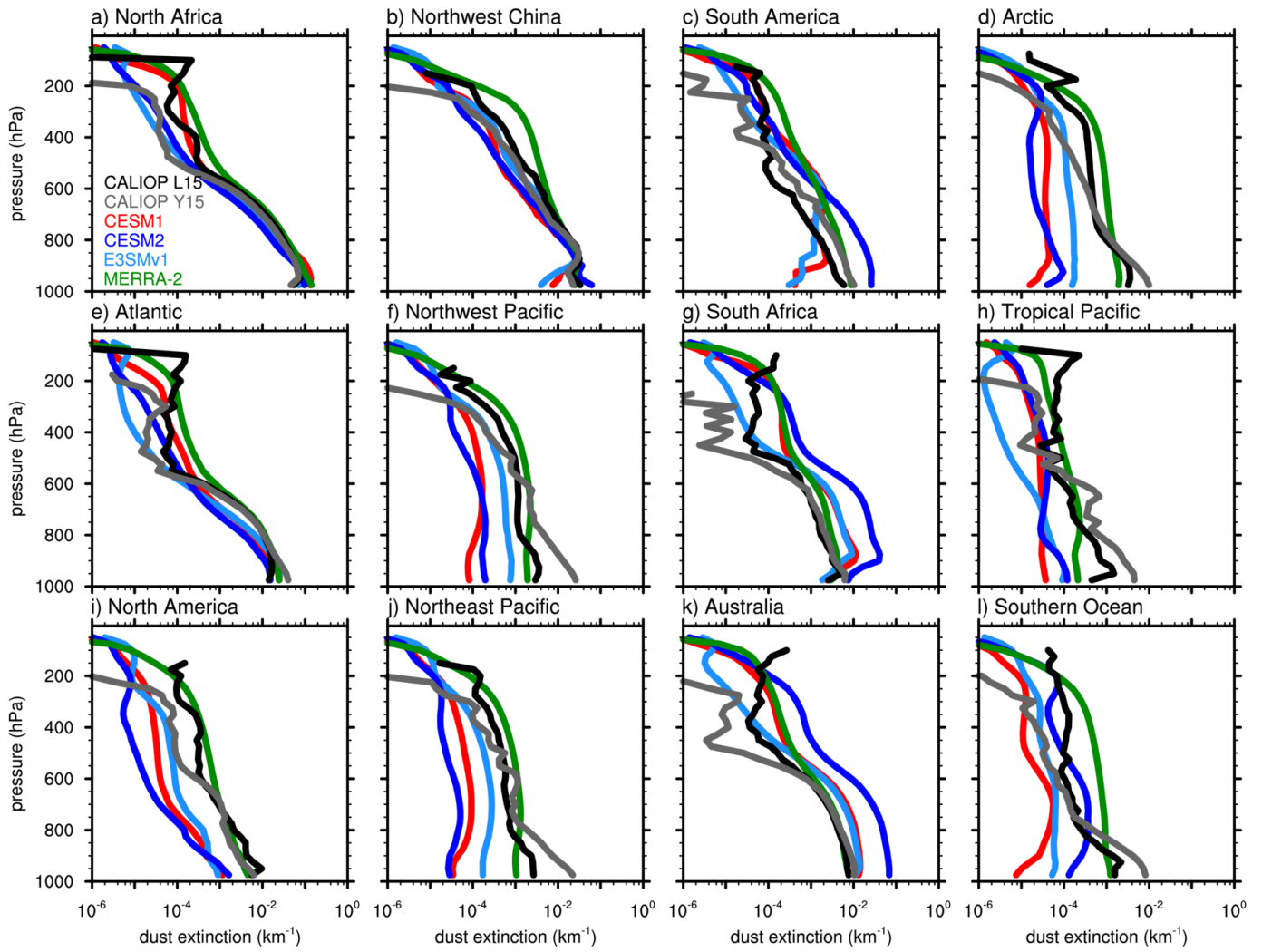
**Figure S5.** Vertical profiles of DJF mean dust extinction (km$^{-1}$) from model simulations and CALIOP over

12 selected regions during 2007-2009.

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