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*Supplement of*

**Evaluation of aerosol and cloud properties in three climate models using MODIS observations and its corresponding COSP simulator, as well as their application in aerosol–cloud interactions**

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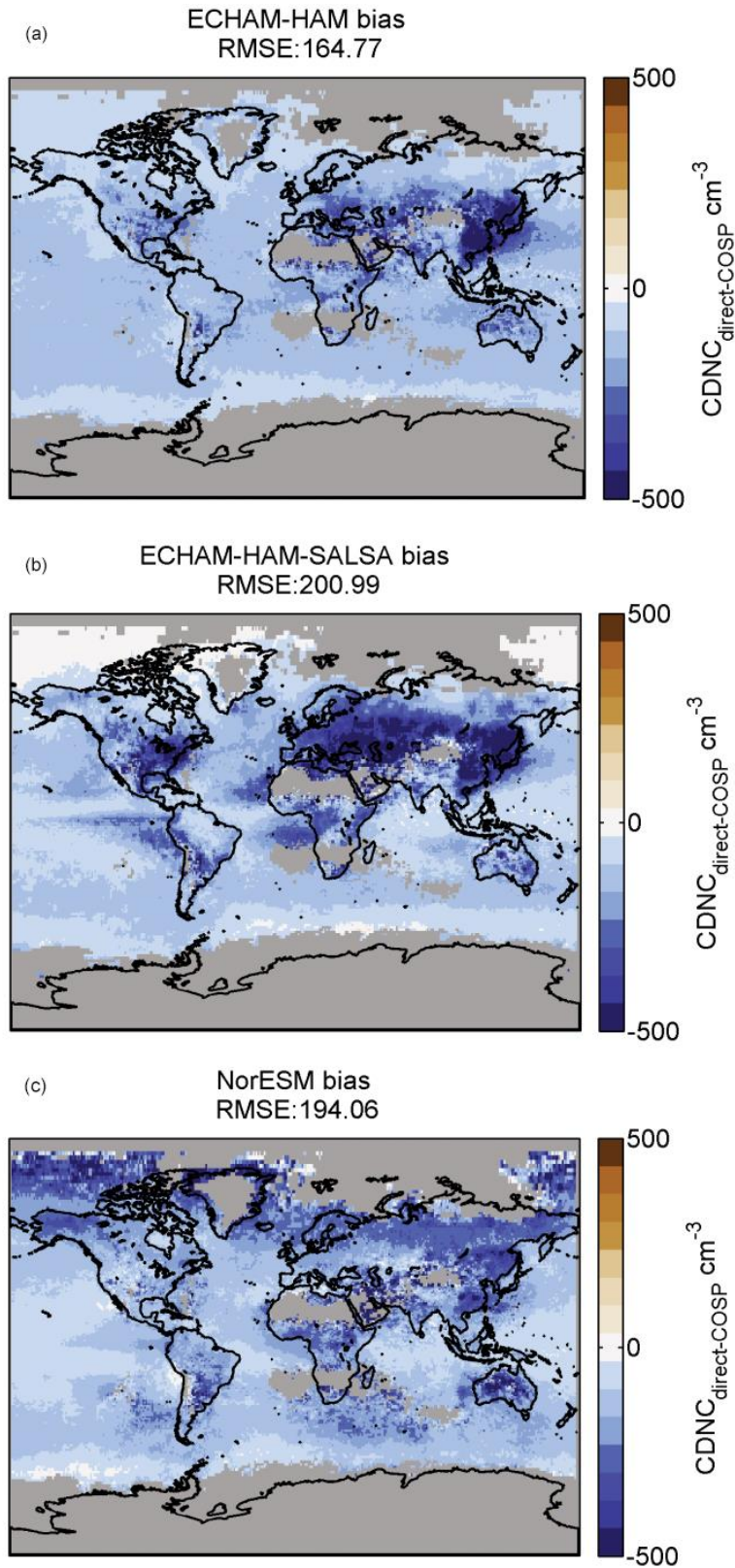


Figure S1. Cloud droplet number concentration (CDNC) annual mean bias. The bias represents the difference between the CDNC model direct output and CDNC derived from CER and COT from MODIS-COSP diagnostics.

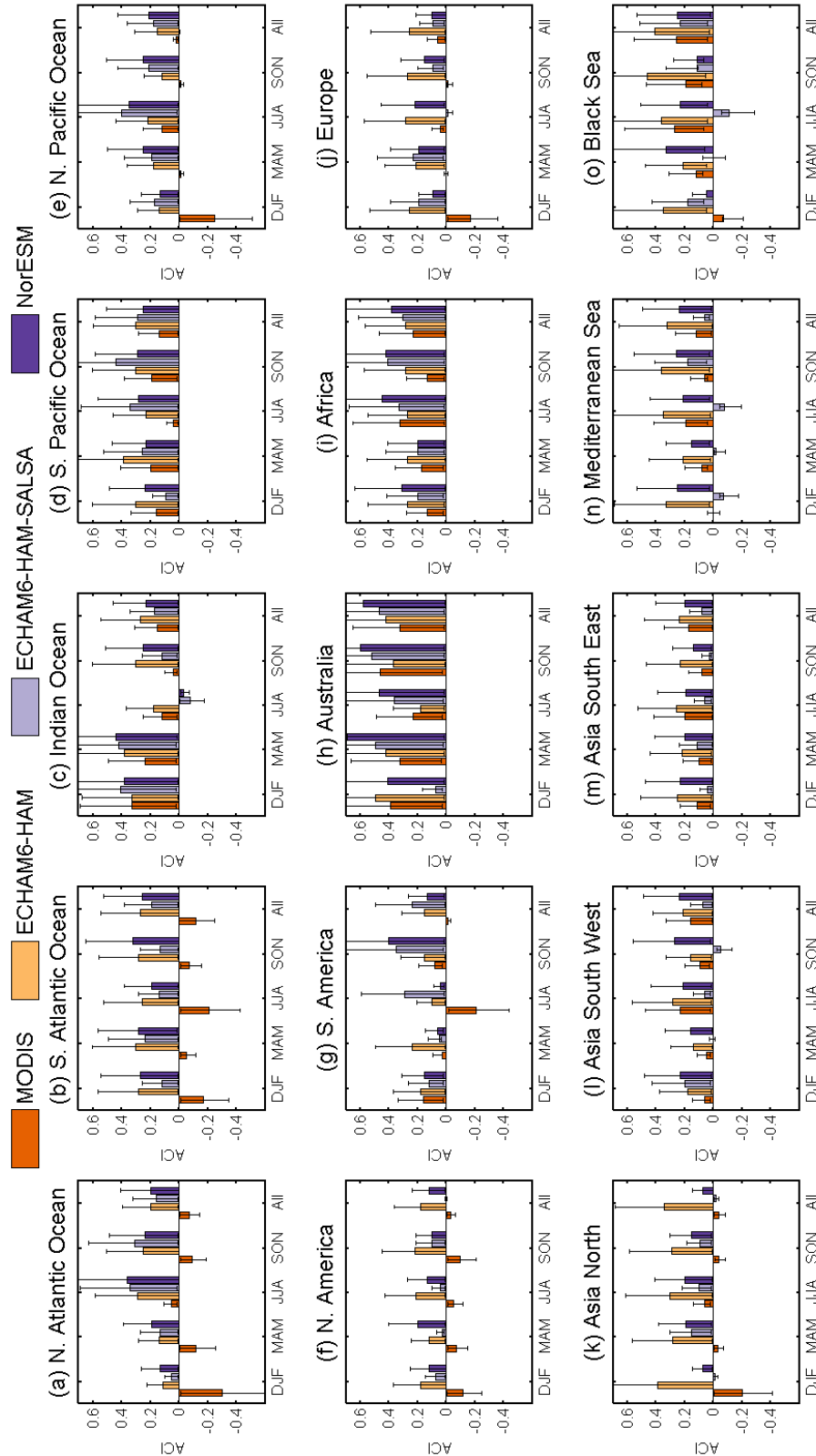


Figure S2. Regional estimates of the aerosol-cloud interaction (ACI) computed as the changes of  $\ln(\text{CDNC})$  to  $\ln(\text{AI})$ . CDNC are derived from corresponding daily grid points of LWP and COT from MODIS observations and COSP-MODIS outputs. ACI values are calculated by season and for the entire period (1 January 2008 – 31 December 2008). Uncertainties estimates are calculated as 95% confidence interval from the daily values. The definition of the subregion was adopted from Myhre et al. (2007).

## References

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