Quantifying global terrestrial methanol emissions using observations from the TES satellite sensor

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Supplemental information

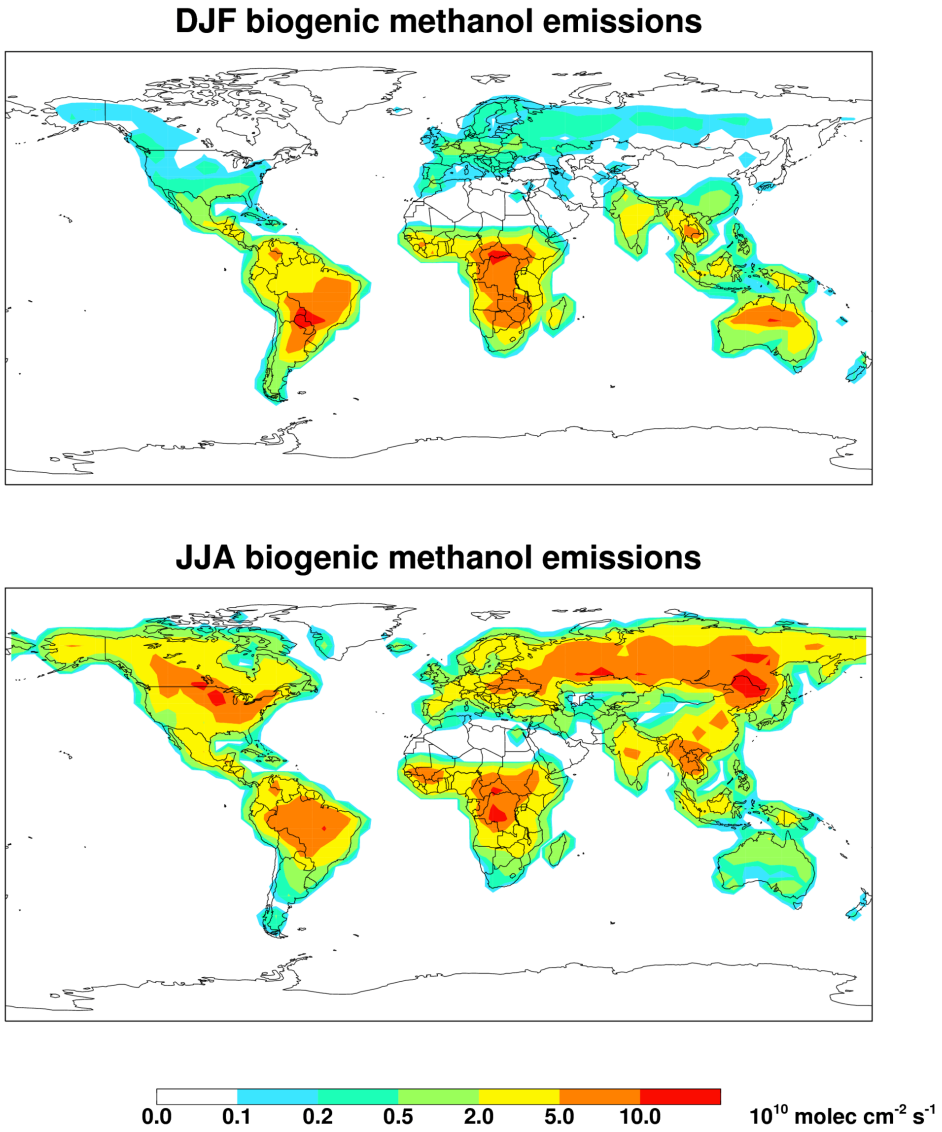

Figure S1. December-January-Febuary (DJF, top) and June-July-August (JJA, bottom) biogenic methanol emissions in the GEOS-Chem a priori simulation (year-2008).

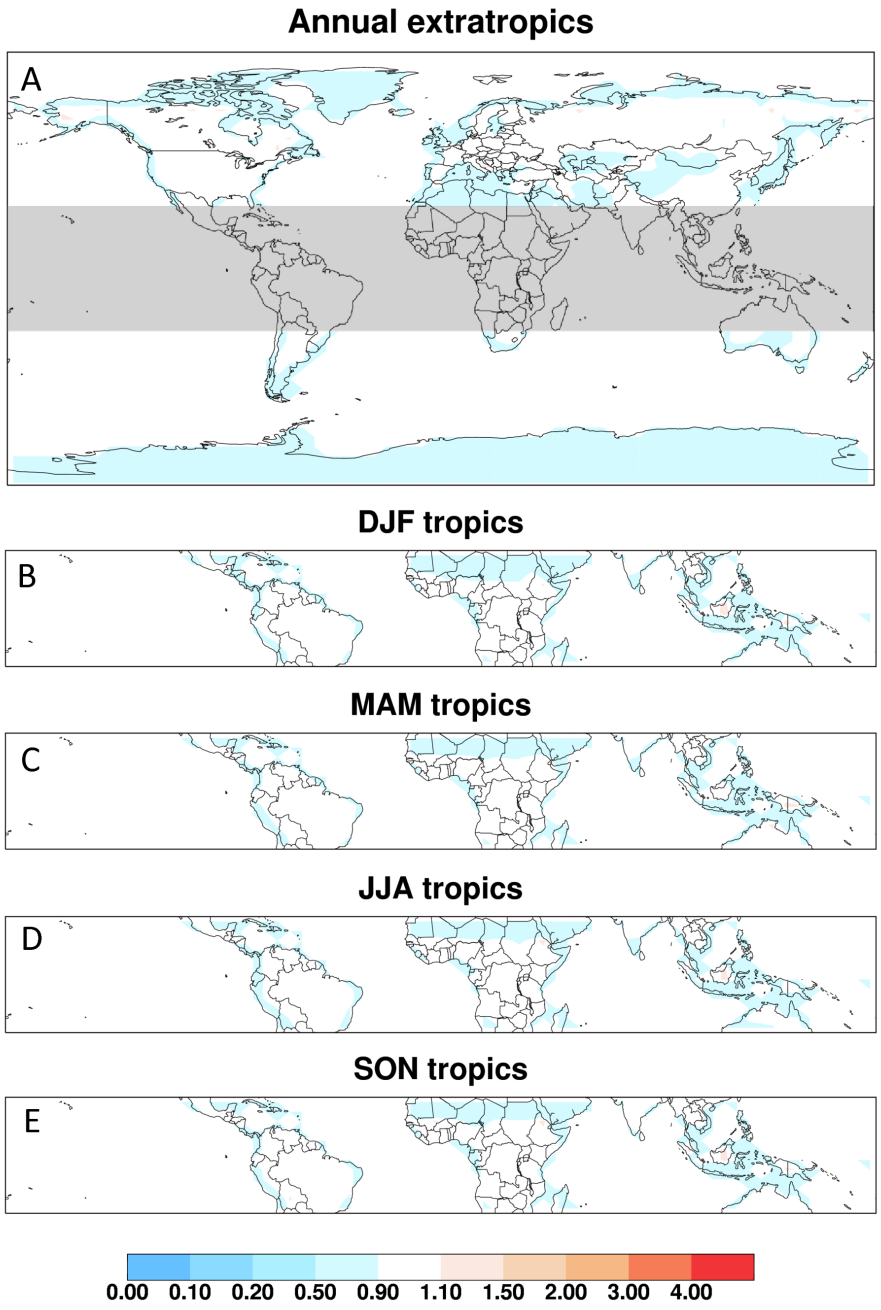

Figure S2. Test inversion using pseudo observations, in which the a priori emissions are scaled to 0.5× their actual values. Shown are the a posteriori emission scale factors (the true value is 1.0 in each case) resulting from the test inversion. The optimization is performed (A) annually in the extratropics and (B)-(E) seasonally in the tropics. The color bar scale is selected to match that in Fig. 5.

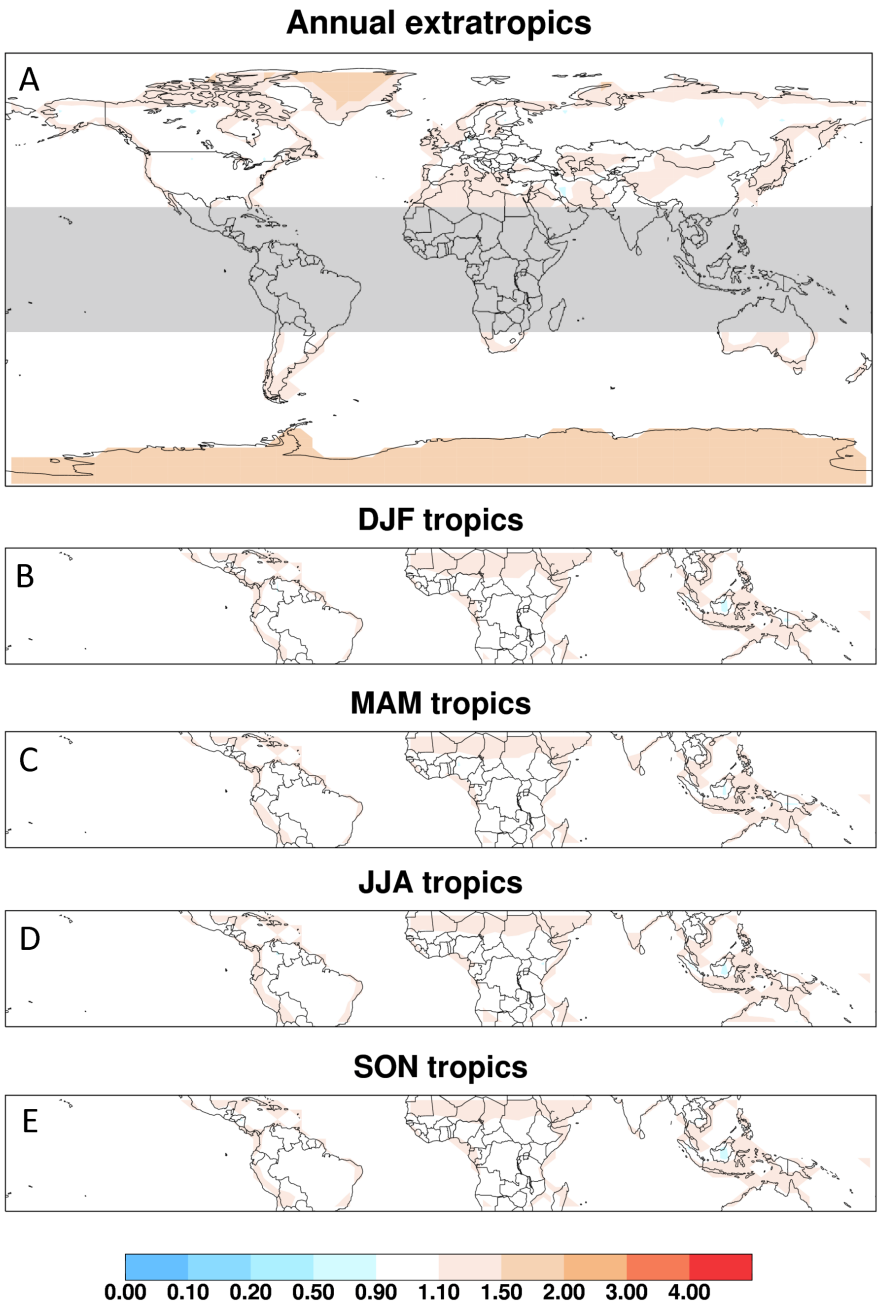

Figure S3. Test inversion using pseudo observations, in which the a priori emissions are scaled to 1.5× their actual values. Shown are the a posteriori emission scale factors (the true value is 1.0 in each case) resulting from the test inversion. The optimization is performed (A) annually in the extratropics and (B)-(E) seasonally in the tropics. The color bar scale is selected to match that in Fig. 5.

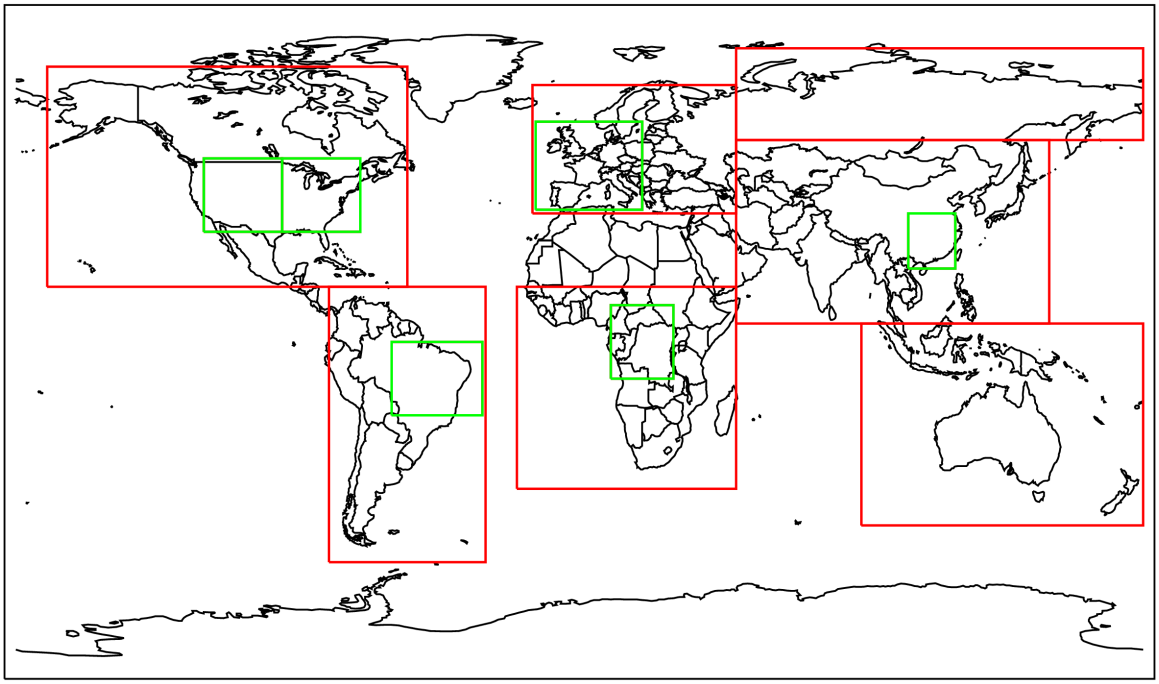

Figure S4. Regions employed for quantifying terrestrial methanol fluxes (red) and for investigating TES methanol:CO correlations and the seasonality of tropical emissions (green).