

Supplement of

Influences of hydroxyl radicals (OH) on top-down estimates of the global and regional methane budgets

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Table S1. Mean \pm SD of the CH₄ reaction weighted tropospheric mean [OH] (8 original and scaled OH fields listed in Table 1 excluding SOCOL3 and MOCAGE) over 4 latitudinal intervals.

	30°N-90°N	0°-30°N	0-30°S	30°S-90°S
Original OH	8.7 \pm 0.9	16.8 \pm 1.5	14.9 \pm 1.0	5.4 \pm 0.6
Scaled OH	8.4 \pm 0.6	16.2 \pm 0.5	14.3 \pm 0.7	5.2 \pm 0.4

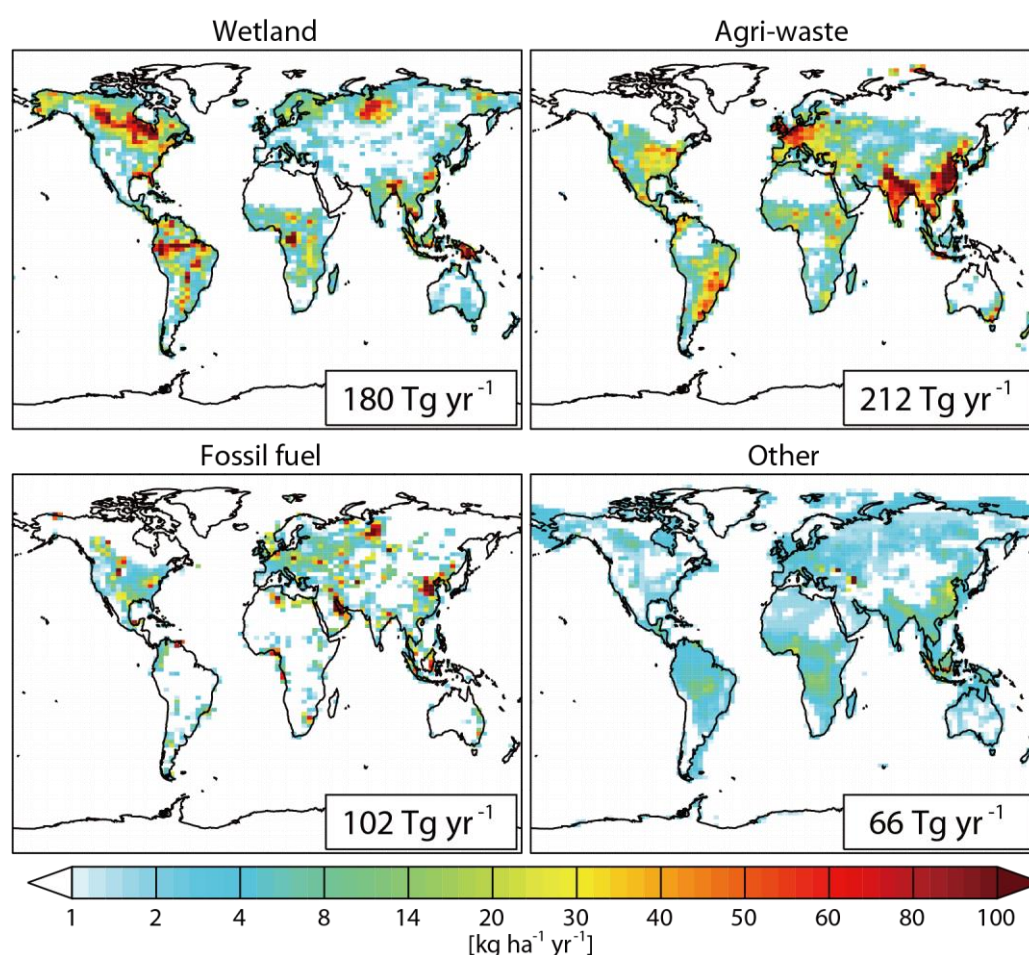


Figure S1. Spatial distribution of CH₄ prior emissions from wetland, agriculture and waste, fossil fuel production and use, and other natural sources averaged over 2000-2016.

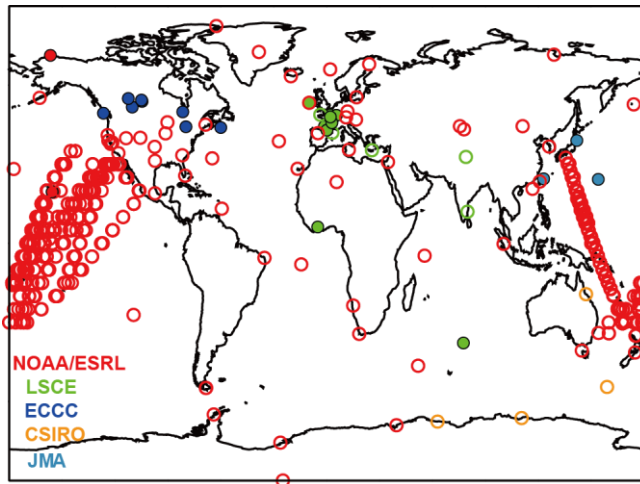


Figure S2. Locations of surface stations of CH_4 observations used in the inversions. The open circles indicate the stations where flask samples are collected, whereas closed circles indicate the stations where continuous in-situ observations are obtained.

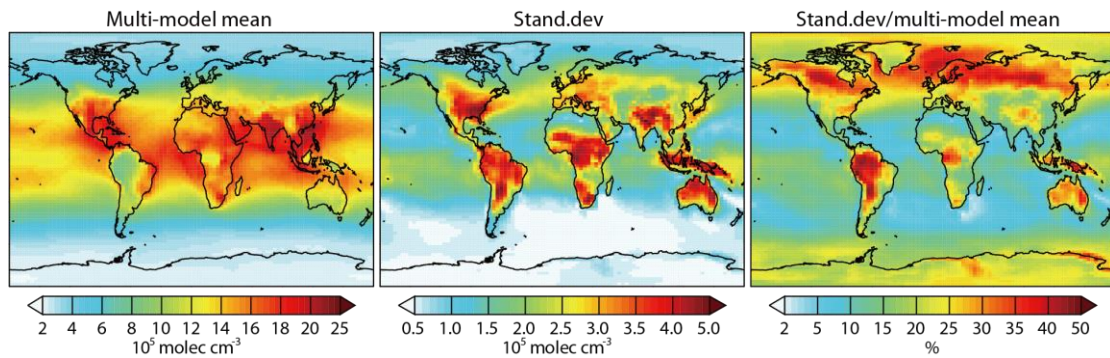


Figure S3. Spatial distribution of the multi-model mean (left), standard deviation (middle), and standard deviation relative to the multi-model mean (right) of CH_4 reaction weighted tropospheric mean $[\text{OH}]$ (8 scaled OH fields listed in Table 1 excluding SOCOL3 and MOCAGE).

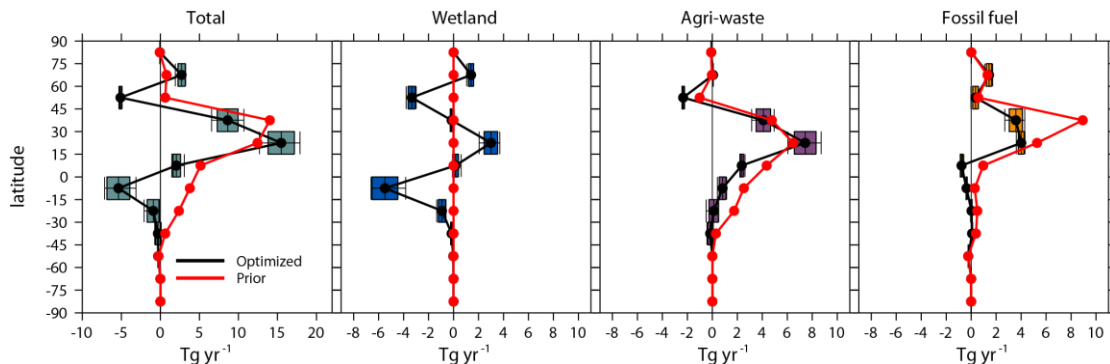


Figure S4. Same as top panels of Figure 6 but for OH fixed to 2000-2002 (E_change_fixoh, Inv4-Inv2).

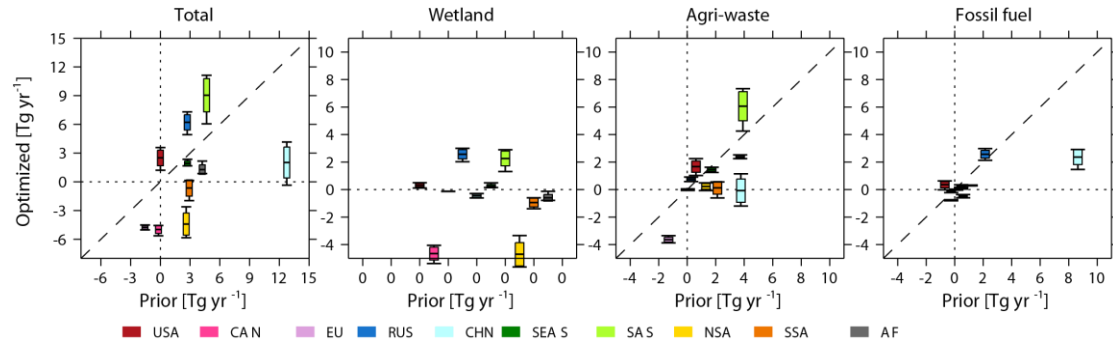


Figure S5. Same as top panels of Figure 7 but for OH fixed to 2000-2002 (E_change_fixoh, Inv4-Inv2).