Supplementary material for

What can we learn about tropospheric OH from satellite observations of methane?

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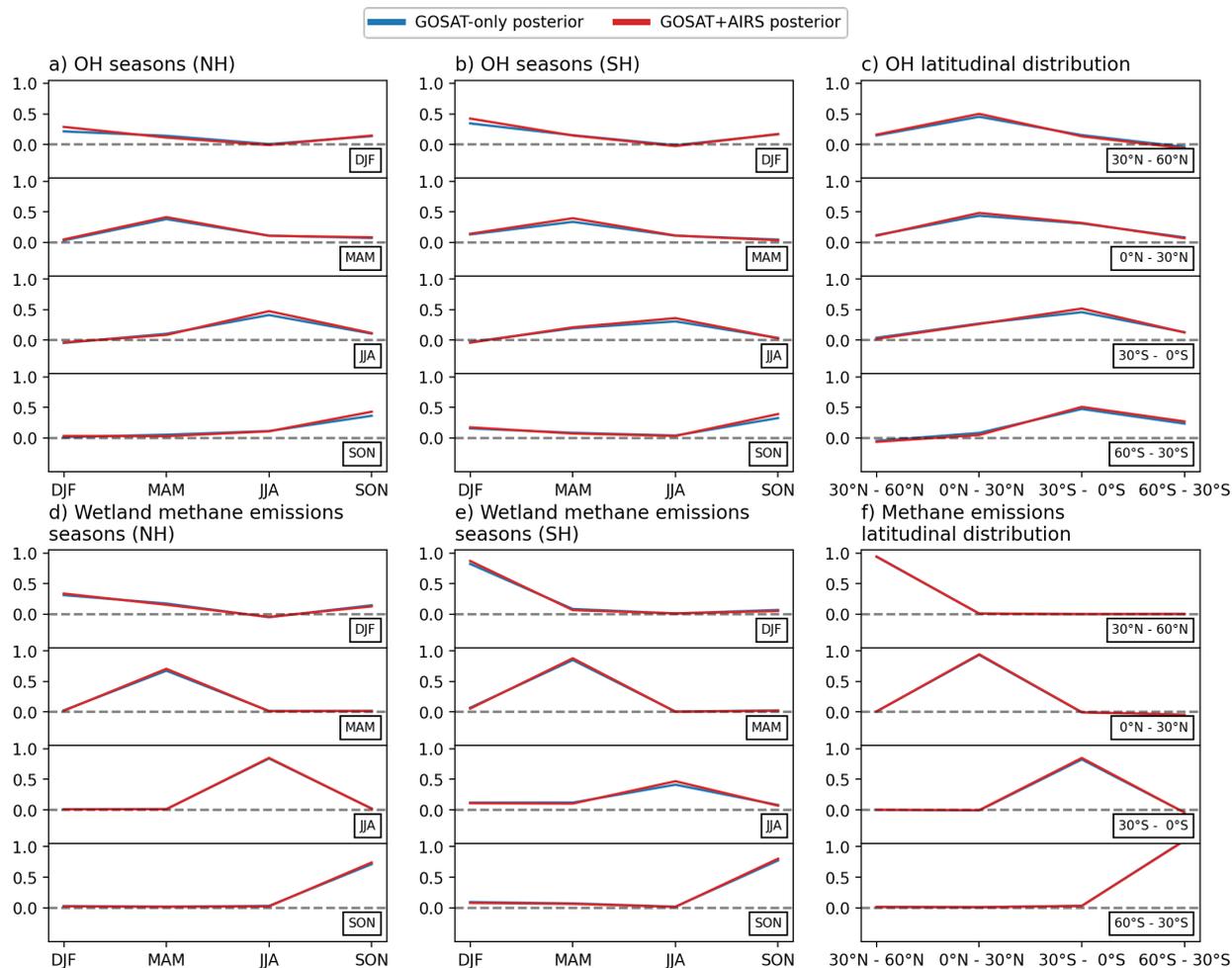
Figure S1: Ability of inversions using GOSAT and GOSAT+AIRS methane column retrievals to quantify seasonal and latitudinal variabilities of both methane emissions and [OH]. All plots show rows of the reduced averaging kernel matrix, which describe the ability of the observing system to separately quantify [OH] in different latitudinal bands. A perfect observing system would have an averaging kernel sensitivity of 1 for the reduced state vector element of interest (perfect characterization) and 0 for other elements (no error correlation). Because we find posterior emissions and [OH] in terms of relative correction to the prior, all averaging kernel elements are unitless, including off-diagonals.