

Reviewer 1 writes:

A minor comment is that I found the kernel validation shown in the author response file very useful information and necessary documentation of the performance of the new kernels. I would recommend the comparison of kernels with monthly and sub-sampled profiles against the reference kernel (Huang and Huang 2023) (Fig 1), as well as the closure residual (Fig 2) be included in the paper.

We thank the reviewer for this suggestion. Figure 1 and 2 has been included in the Appendix and reference is made within the text when the spectral radiative kernels are presented (lines 124-129). Figure 3 has been added as well to improve the description of the results (lines 210-214 and lines 253-254).

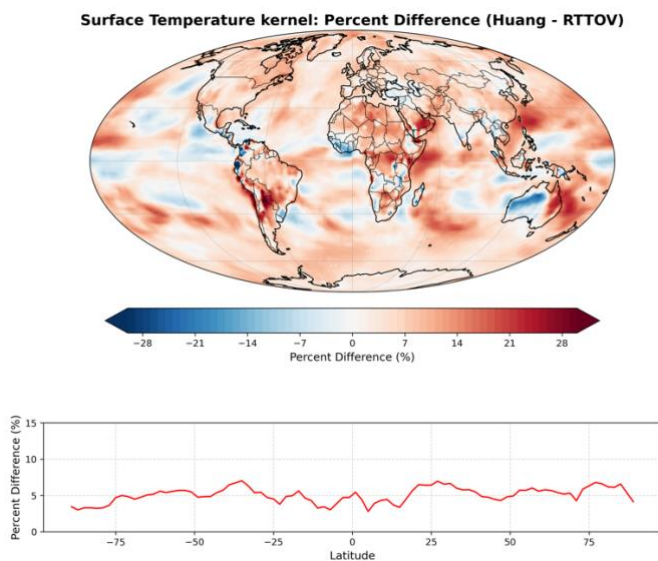


Figure 1. Differences between clear-sky surface temperature radiative kernels used for this work (RTTOV) (Della Fera et al., 2025) respect to radiative kernels computed by Huang and Huang (2023) (Huang). Spatial distribution of the percentage differences (upper map) and over the longitudinal mean (lower panel).

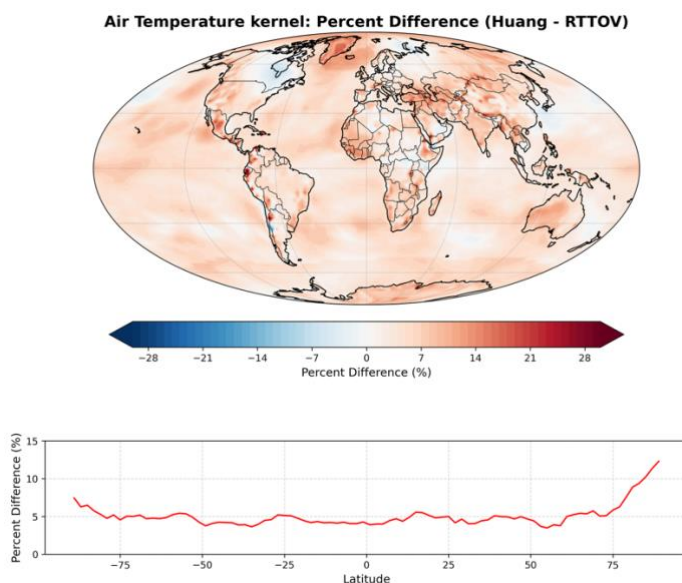


Figure 2. Same as Figure 2 but for air temperature radiative kernel.

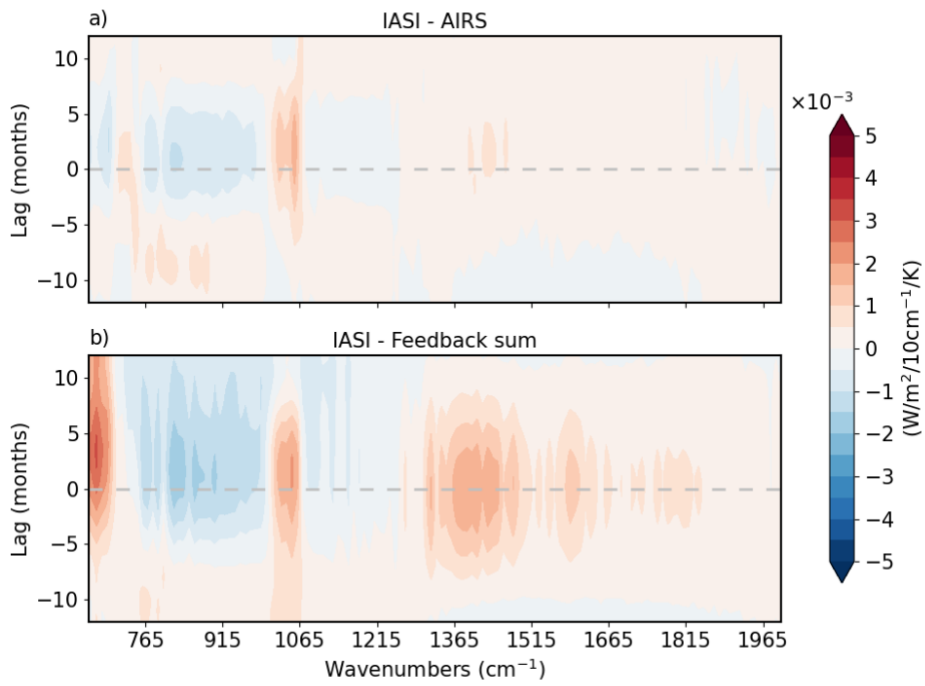


Figure 3. Differences in the tropical mean lagged regressions between the OLR and the Niño 3.4 index, obtained using IASI and AIRS observations (panel a) and IASI and the reconstructed signal (Feedback sum) (panel b).