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NCAR and COSMIC
Oral
COSMIC-2 data are used to provide novel observations of large- and small-scale thermal variability in the tropical lower stratosphere. Space-time spectral analysis of 6-hourly gridded COSMIC-2 data reveals a rich spectrum of traveling planetary-scale waves, including Kelvin waves, mixed Rossby-gravity waves and inertia gravity waves, in addition to propagating diurnal tides. Characteristics of small-scale temperature variances, calculated as deviations from the gridded fields, reveal systematic spatial patterns consistent with gravity waves. We include comparisons with results from ERA5 reanalysis and a free-running high resolution global model simulation (WACCM).
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