



Self-consistent retrieval of pressure/temperature and CO₂ densities in the MLT from the SABER/TIMED limb radiances in the 15 and 4.3 μm channels

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The SABER/TIMED broadband infrared limb observations of the mesosphere and lower thermosphere (MLT) are providing important information about the composition and energy budget of this atmospheric region. However, until now the SABER/TIMED pressure and temperature were retrieved using radiances measured in the 15 μm CO₂ band in combination with the WACCM model CO₂ distribution.

The SABER v2.0 operational processing uses a rigorous non-LTE, self-consistent, two-channel, simultaneous retrieval of pressure, temperature and CO₂ density from SABER daytime broadband limb 15 and 4.3 μm radiances. Three years of simultaneous temperature/CO₂ profiles have been produced thus far in a post processing mode. Results from these retrievals for various latitudes and seasons as well as their comparisons with other observations and model results are discussed.