Introduction

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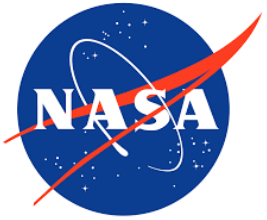


1. Prepare and Diagnose Observations

CLIMCAPS: Community Long-term Infrared Microwave Combined Atmospheric Product System

NASA Continuity Sounder Product

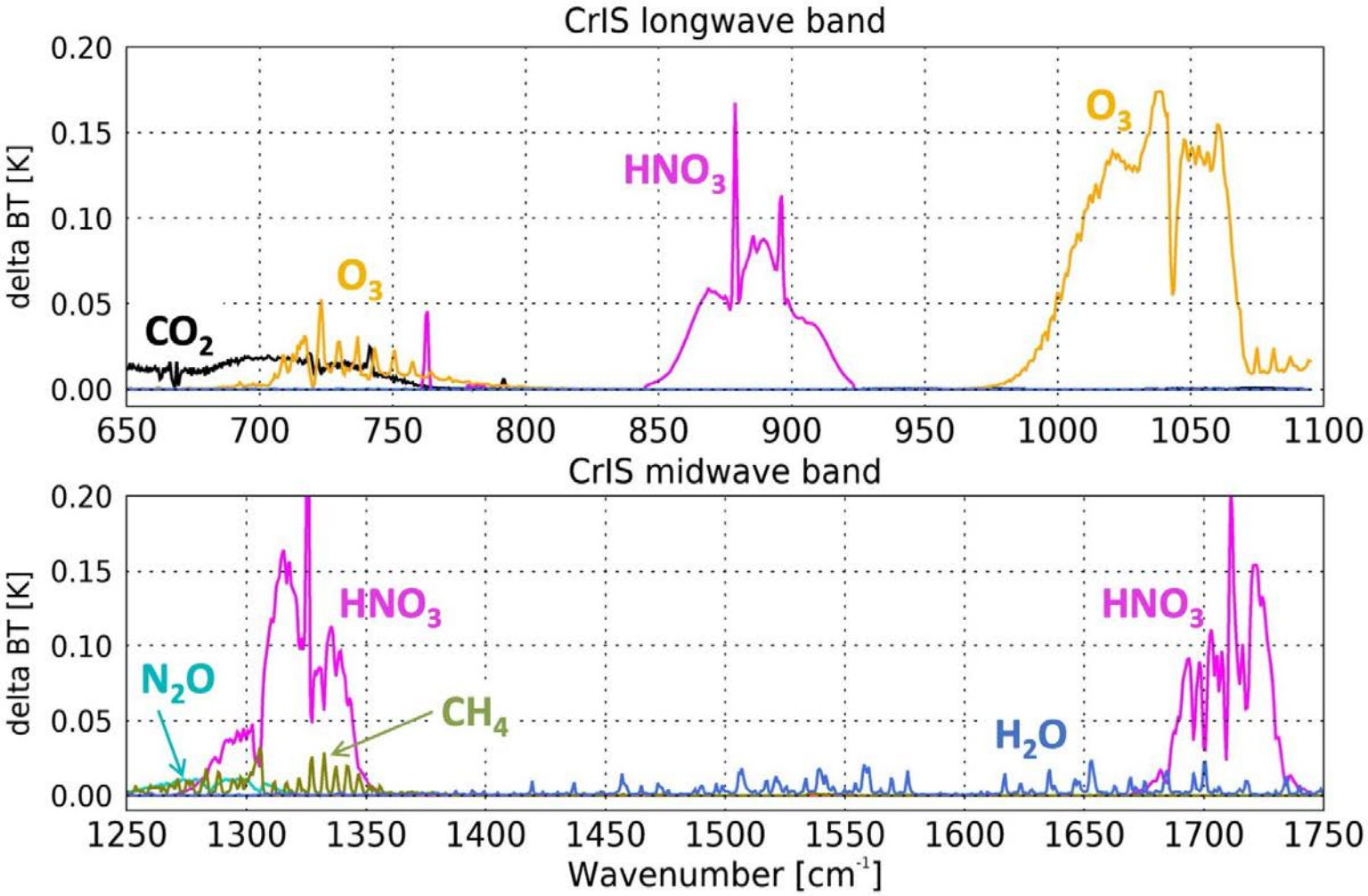
AIRS Science Team Heritage Algorithm for IR + MW sounders

- CrIS/ATMS from SNPP (CrIS nominal spectral resolution)
- **CrIS/ATMS** from **SNPP** and **JPSS-1** (CrIS full spectral resolution)
- **AIRS/AMSU** from **Aqua**
- **SARTA** forward model (Strow et al. 2003) – most robust IR forward model, especially for trace gases.

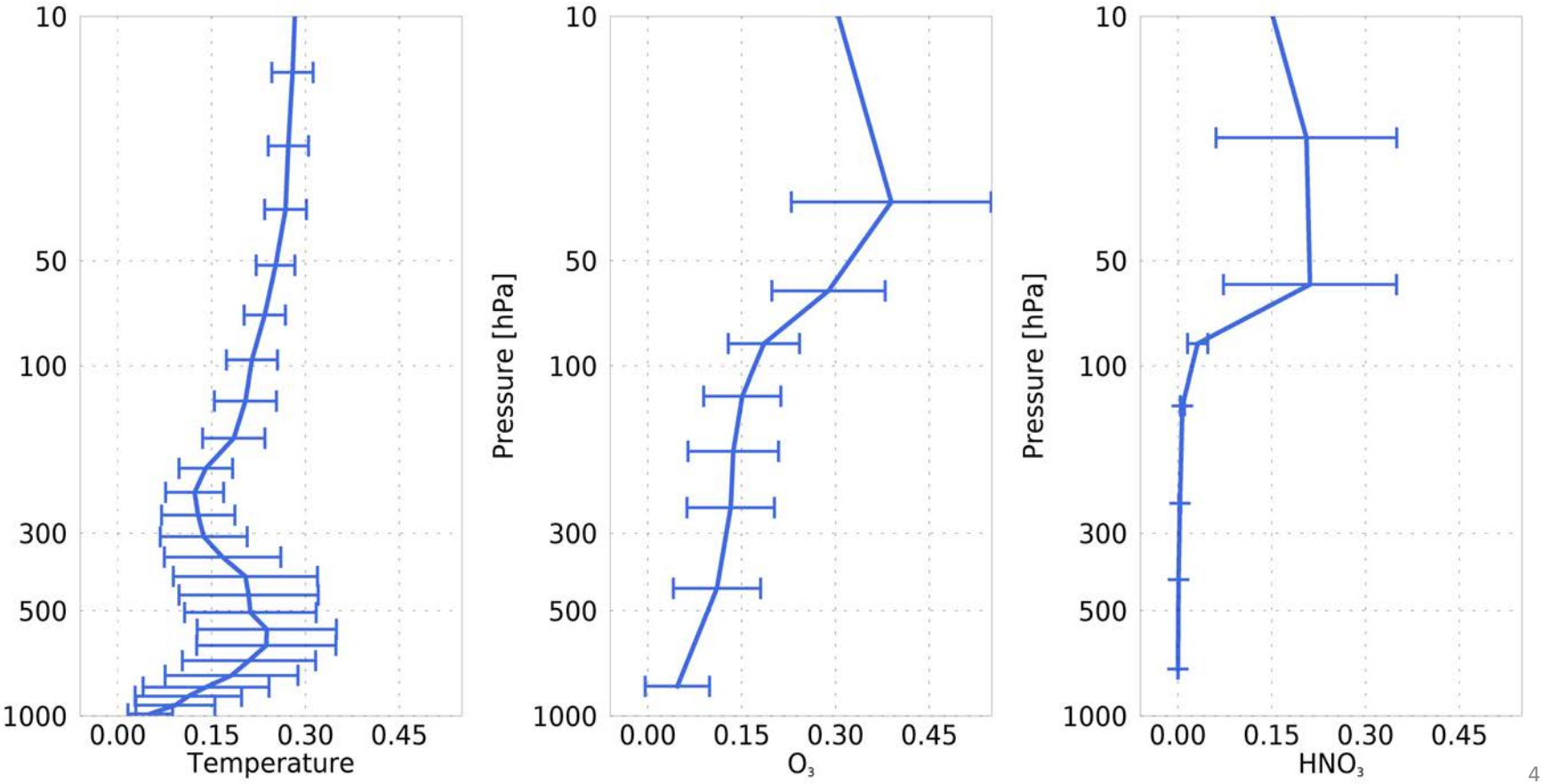
Suite of atmospheric retrievals – profiles of temperature, moisture, trace gases, cloud top pressure, cloud fraction, emissivity – with error estimates and information content metrics

Long-term (2002-present) record of the vertical atmospheric state

Spectral sensitivity of CrIS (passive infrared) radiance measurements to stratospheric atmospheric variables



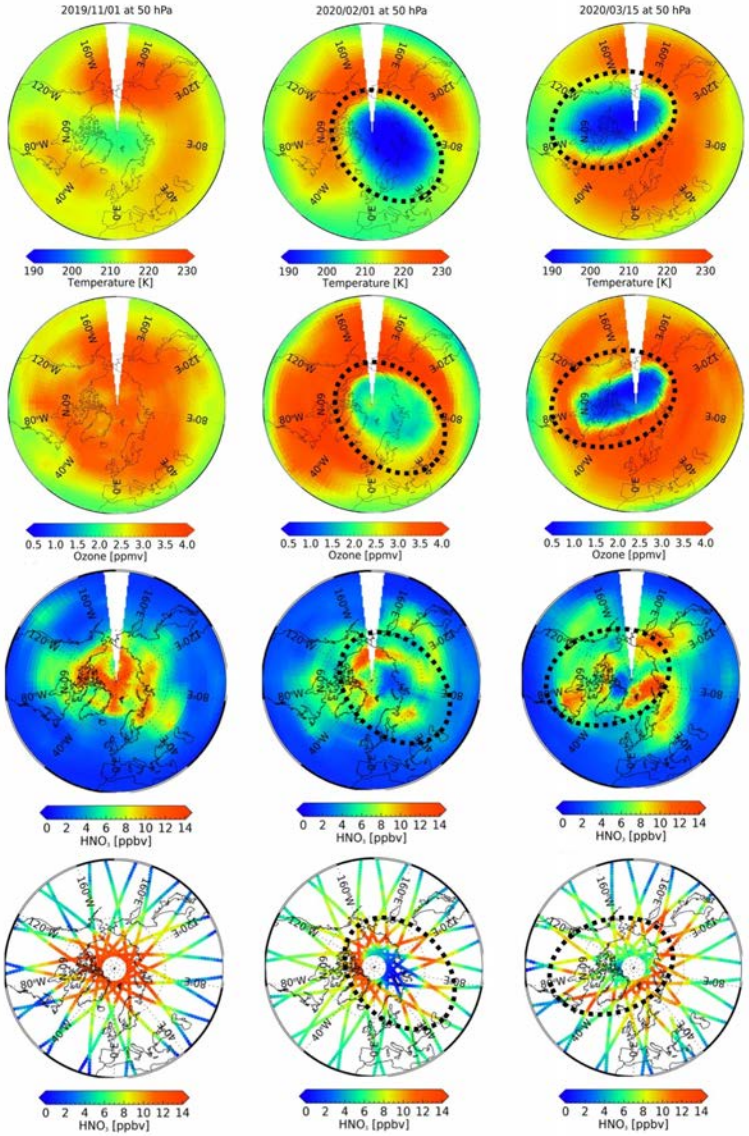
Vertical sensitivity of CrIS (passive infrared) radiance measurements to atmospheric variables



Evolution of Arctic Winter Atmosphere

CLIMCAPS
Nadir Infrared

MLS
Microwave
Limb Sounder



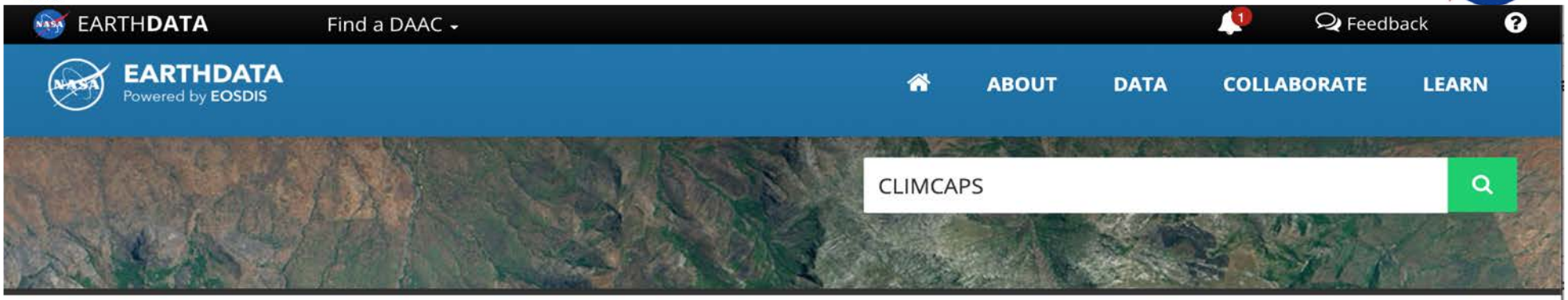
Temperature

Ozone

Nitric Acid

Nitric Acid

2. Observation Availability and Documentation



CLIMCAPS V2 Level 2 products now available for **full** SNPP+JPSS-1 record

16 Matching Datasets — View all results in Earthdata Search

Sounder SIPS: JPSS-1 CrIS Level 2 CLIMCAPS: Cloud Cleared Radiances V2 at GES DISC	Sounder SIPS: JPSS-1 CrIS Level 2 CLIMCAPS: Atmosphere cloud and surface geophysical state V2 at GES DISC	Sounder SIPS: Suomi NPP CrIMSS Level 2 CLIMCAPS Full Spectral Resolution: Cloud Cleared Radiances V2 at GES DISC
SNDRJ1IML2CCPCCR v2	SNDRJ1IML2CCPRET v2	SNDRSNIML2CCPCCR v2
177184 granules	177184 granules	381094 granules

JPSS-1 DOI: 10.5067/LESQUBLWS18H
S-NPP DOI: 10.5067/62SPJFQW5Q9B

https://disc.gsfc.nasa.gov/

Community Long-term Infrared Microwave Combined Atmospheric Product System (CLIMCAPS)

Science Application Guides

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1. How can I access CLIMCAPS CH_4 retrievals?

CLIMCAPS CH_4 retrievals are part of the main Level 2 product file that is generat archived by the NASA Goddard Earth Sciences Data and Information Services Cer DISC; https://disc.gsfc.nasa.gov/).

2. Which retrievals should I avoid?

Generally, avoid using CLIMCAPS CH_4 retrievals in the boundary layer, upper tro stratosphere because CLIMCAPS has very low sensitivity to CH_4 at pressures grea ~700 hPa. The CLIMCAPS product file has a range of quality control indices and c metrics. CLIMCAPS does not have quality control metrics specifically set up for C instead adopts the logic that if retrievals of temperature and H_2O fail (usually due t cloud fields), then CH_4 should also be considered a failed retrieval. CLIMCAPS re after it retrieves temperature, H_2O, O_3, HNO_3 and CO. You can customize the qual filters according to different sources of uncertainty, such as those associated with tl scene, instrumentation, background state or algorithm metrics. The most valuable metric to consider is the CH_4 degrees of freedom discussed below.

3. How do I interpret the spatial variability of daily CH_4 retrievals?

The 1300 cm^{-1} wavenumber range has strong absorption features for both CH_4 and

https://airs-guide.jpl.nasa.gov/

https://docserver.gesdisc.eosdis.nasa.gov/public/project/Sounder/CLIMCAPS_V2_L2_science_guides.pdf

Documentation that bridges the gap between peer review papers and technical documents

New Initiative