

GOTHAAM-NOxyO3_C-130

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Scientist

1.0 Data Set Description:

Introduction

The instrument used for these measurements was the ACOM 4ch chemiluminescence NOxyO3 chemiluminescence. The instrument operated reliably for the entire campaign.

For NO2 we used a large photolysis cell located in the L5 rack. The conversion was achieved by using LED emitting at a wavelength of 395 nm. The conversion efficiency was typically larger than 85%. For NOy we used a gold catalytic converter at 300 deg C.

Data version number and date

R0, 2026/02/02

Data Status

Final

Time period covered by the data

From 2025/07/22 to 2025/08/28

Physical location

C-130 based at the Long Island MacArthur Airport (KISP) in Islip, New York.

Data Frequency

1 Hz

Data source

ACOM 4ch chemiluminescence NOxyO3 chemiluminescence

Web address references

Data set restrictions

Contact the PI before using the data.

2.0 Instrument Description

See above

3.0 Data Collection and Processing

The NO NO₂ and NO_y data are first background subtracted using the zeros made inflight, then a calibration factor is applied to convert from cps to ppt. The calibration factor is determined by calibrations carried out in flight and on the ground during pre-flight. The ozone data are similarly background subtracted and multiplied by calibration factor, however in this case the calibration is carried out on the ground before and after the project.

4.0 Data Format

ICARTT

5.0 Data Remarks

None at this point.

6.0 References

Ridley, B. A., & Grahek, F. E. (1990). A small, lowflow, high sensitivity reaction vessel for NO chemiluminescence detectors. *Journal of Atmospheric and Oceanic Technology*, 7(2), 307–311.