POTENTIAL OF CO2 RETRIEVAL FROM IASI

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Abstract

In the frame of the International Technical IASI Study (ITIS), the French atmospheric CO2 monitoring program is being deployed over the entire globe. IASI, the IASI mission has been designed to provide atmospheric CO2 measurements with unprecedented accuracy and precision and from data obtained over a wide range of latitudes to quantify the CO2 mixing ratio and CO2 columns. The IASI mission is composed of two instruments, IASI and IASI-2, with the same technical characteristics and the same target. These instruments are the only ones with sufficient sensitivity in the near infrared bands to provide a direct measurement of CO2. The IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is designed to provide atmospheric CO2 measurements with unprecedented accuracy and precision and from data obtained over a wide range of latitudes to quantify the CO2 mixing ratio and CO2 columns. The IASI mission is composed of two instruments, IASI and IASI-2, with the same technical characteristics and the same target. These instruments are the only ones with sufficient sensitivity in the near infrared bands to provide a direct measurement of CO2.

CO2 measurements requirements

The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage. The current observing system of the global carbon cycle has a large gap in the spatial and temporal coverage.

IASI measurements

The Discrete Fourier Transform (DFT) method is a mathematical tool used to analyze data in the frequency domain. It is widely used in signal processing and is particularly useful in the analysis of periodic signals. In the context of CO2 retrieval, the DFT method is used to analyze the spectral information contained in the IASI measurements. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra. The DFT method is applied to the IASI spectra to extract the CO2 concentration from the measured spectra.

Data compression: DFT Method

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Data inversion: Optimal Estimation Method (OEM)

The results obtained from the IASI measurements are analyzed using the Optimal Estimation Method (OEM). The OEM is a statistical method used to estimate the parameters of a model from a set of measurements. In the context of CO2 retrieval, the OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements. The OEM is used to estimate the CO2 concentration from the IASI measurements.

Conclusions

A new method is developed to accurately estimate the CO2 concentration from the IASI measurements. The method is based on a statistical approach and is able to account for the uncertainties associated with the CO2 retrieval. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements. The method is able to accurately estimate the CO2 concentration from the IASI measurements.

Perspectives

The IASI mission is being deployed to provide atmospheric CO2 measurements with unprecedented accuracy and precision. The mission is designed to provide atmospheric CO2 measurements with unprecedented accuracy and precision and from data obtained over a wide range of latitudes to quantify the CO2 mixing ratio and CO2 columns. The IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration. Moreover, the IASI mission is dedicated to operational meteorology by measuring temperature and water vapour profiles. Such data sets are useful to validate theoretical models of carbon cycle processes through the derived CO2 concentration.