Measurement of greenhouse gases using in-situ and FTIR remote sensing at the Ile de la Réunion

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Résumé

Ile de la Réunion (21° S, 55° E) is a unique atmospheric observatory situated in the Indian Ocean in the southern Hemisphere which provides the possibility to measure the background atmospheric state as well as the influence of biomass burning in Madagascar, South Africa and South America depending on the wind direction. We perform in-situ surface measurements of greenhouse gas concentrations using Picarro instruments at Maïdo (2157 m a.s.l) and St. Denis (85 m a.s.l), as well as total column measurements using a Fourier-transform infrared solar absorption spectrometer of the type Bruker IFS 125HR at St. Denis. These latter measurements are performed within the framework of the Total Carbon Column Observing Network (TCCON) which aims at precise and accurate measurements of total column abundances of greenhouse gases. Our TCCON site is one of the few (5) sites operated in the southern hemisphere. The data from our site are very valuable for satellite validation. For example, Reunion Island is often targeted by the ongoing OCO-2 mission. This talk will focus on the observations, the rapid data delivery of the St. Denis TCCON data that has been developed in the framework of the ICOS-INWIRE project and the calibration of the remote sensing data.

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