

定期航空便を用いた都市域の温室効果ガス発生源別観測

Observing urban greenhouse gases emissions from individual source sectors from passenger aircrafts

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To move toward net-zero emissions, we need an observation system to estimate local anthropogenic emissions from individual source sectors such as transportation, power plants, and industry. We have developed imaging spectrometer suites with common fore-optics on a seat window, relay fiber optics, and grating-camera modules mounted on passenger seats of passenger aircrafts. We began the Greenhouse gas Observations of Biospheric and Local Emissions from the Upper sky (GOBLEU) project. We flew our instrumentation over urban areas such as Nagoya and Osaka and industrial zones using Tokyo and Fukuoka-city flights more than 10 times in 2020 and 2021. We will present the analysis status of carbon dioxide (CO₂), nitrogen dioxide (NO₂) of anthropogenic emission proxy, oxygen (O₂), and solar-induced chlorophyll fluorescence (SIF) from plant photosynthesis.

キーワード : GOBLUE、imaging spectrometer、passenger aircrafts、CO₂、NO₂、SIF

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Carrying instruments



Cabin seats



View from cabin



Commercial aircraft