



CO₂ Source Identification from a Laser Based, Mobile Isotope Ratio Infrared Spectrometer

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The potential to perform precise, continuous, measurements of isotope ratios while driving through a city may extend source attribution of CO₂ in a city to smaller scales. We performed preliminary testing of a mid-infrared laser-based Isotope Ratio Infrared Spectrometers (IRIS) that was operated in a moving car. The analyzer is capable of simultaneously determining delta18O and delta13C isotope ratios of carbon dioxide. The goal was to demonstrate that isotope ratios can be measured, and that using Keeling plots, the source of the CO₂ can be identified. We present data acquired in the city of Catania (Italy) while driving toward Mount Etna. CO₂ concentration varied between 380 ppm and 550 ppm and delta13C as low as -14 permil