



## CO<sub>2</sub> 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 CO<sub>2</sub> 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 delta<sup>18</sup>O and delta<sup>13</sup>C 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 CO<sub>2</sub> can be identified. We present data acquired in the city of Catania (Italy) while driving toward Mount Etna. CO<sub>2</sub> concentration varied between 380 ppm and 550 ppm and delta<sup>13</sup>C as low as -14 permil