



## **The isotopic composition of CO in vehicle exhaust**

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The isotopic composition of atmospheric carbon monoxide (CO) and its sources can be a powerful tool to help constrain the CO budget, but data on the isotopic composition of CO sources is sparse. We investigated the isotopic composition ( $^{13}\text{C}^{16}\text{O}$  and  $^{12}\text{C}^{18}\text{O}$ ) of one of the main sources of CO in urban areas: traffic emissions. Samples from individual passenger cars and atmospheric samples from polluted areas were measured. The results show strong indications that CO emissions from traffic are dominated by a small subset of cars or driving conditions, which, in this study, were cold petrol cars. The spread in isotopic composition of the full dataset was large, but this dominant subset showed a relatively stable isotopic composition. Therefore, the individual car samples result in a well-defined overall traffic signature, which was in agreement with the atmospheric isotopic signature derived from the atmospheric samples.