



Stable Carbon Isotope Ratios of Methanol in the Atmosphere

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Methanol is among the most abundant oxygenated volatile organic compounds (OVOC) in the atmosphere with an estimated atmospheric input of 122 Tg/yr . Thus methanol constitutes also a significant fraction of the total nonmethane hydrocarbon burden of the atmosphere. Further methanol plays an important role in atmospheric chemistry. Its occurrence affects the spatial and temporal distribution of oxidants, trace gases and aerosols in the troposphere. Despite its importance our quantitative knowledge of its sources, sinks and chemical processes is still limited.

The analysis of stable carbon isotope ratios in methanol is a useful tool for identifying sources of methanol and to observe and to quantify its chemical aging in the atmosphere.

Here we present results obtained from two airborne campaigns in southern Germany and Spain. In the course of these campaigns whole air samples were collected in deactivated stainless steel canisters and later analysed at two different laboratories in Germany. In these studies $\delta^{13}\text{C}$ Values were found within domains around $(-39.8 \pm 1.7)\text{‰}$ and $(-26.1 \pm 4.0)\text{‰}$.