



Spatial profiles of methane at the Swiss Plateau: A confrontation between measurements and emission inventories.

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Methane and carbon dioxide are the two most prominent greenhouse gases in the atmosphere and a detailed knowledge about their sources is essential for climate predictions (Solomon et al., 2007). The knowledge about greenhouse gas fluxes is usually merged, albeit including considerable uncertainties, to emission inventories. To increase the quality of the inventories a comparison with measurements is necessary. We evaluate the values given by a Swiss emission inventory with regard to atmospheric measurements of methane in Switzerland.

Spatial profiles of carbon dioxide and methane were investigated at the Swiss Plateau during two consecutive warm and sunny summer days in July 2012. For the mobile methane and carbon dioxide measurements a LGR methane analyser and a LI-COR closed-path infrared gas analyser (IRGA) were mounted on a car together with an AIRMAR WeatherStation to track geodetic-coordinates and meteorological parameters.

First results of the measurements including aerial profiles of the greenhouse gases and bin-averaged elevation profiles of methane and temperature will be presented and a highly-resolved methane emission inventory will be evaluated in comparison with the spatial profiles of atmospheric methane at the Swiss Plateau.

References:

Solomon, S., Qin D., et al. (Eds.) (2007) Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 996 S. pp., Cambridge University Press, Cambridge.