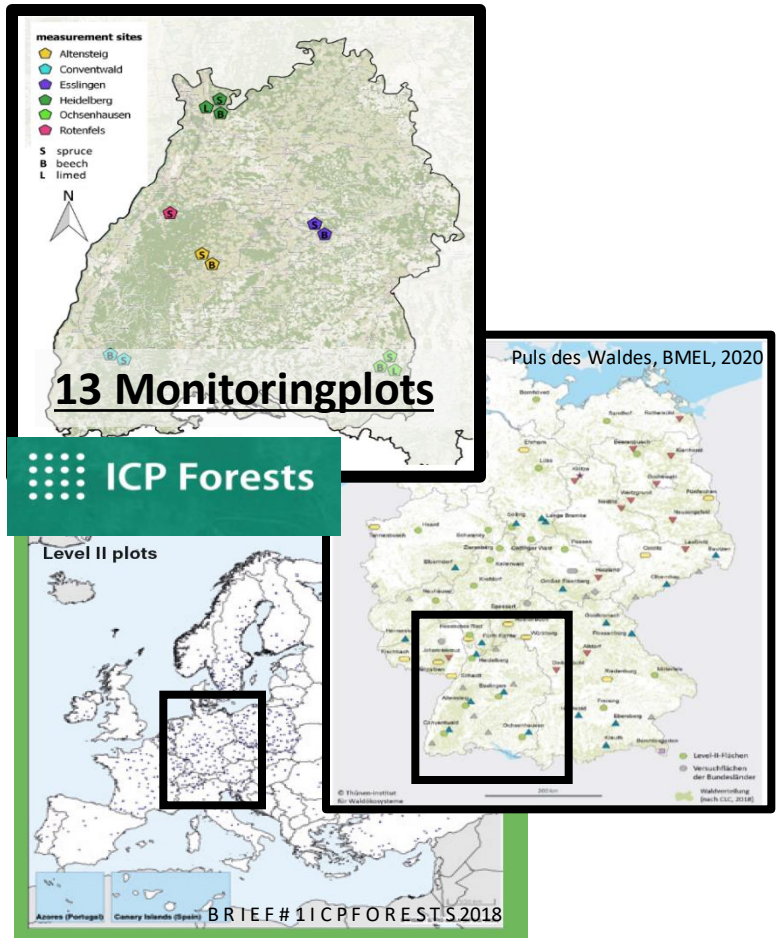
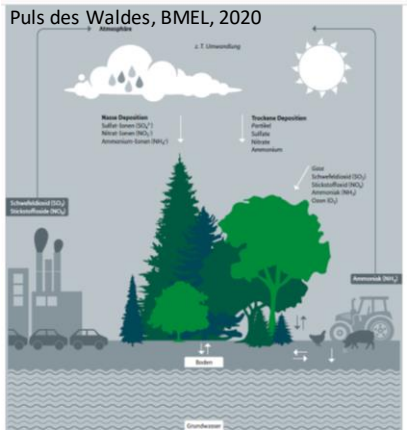
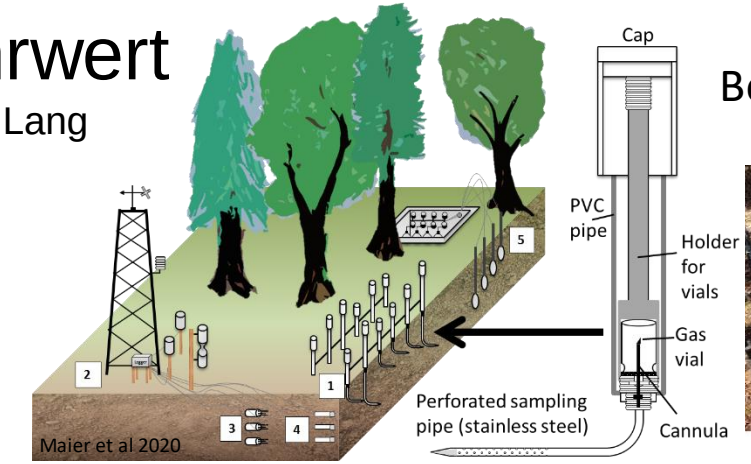
Treibhausgasmessungen auf den ICP Forest Level II Flächen in BW:

Messkonzept, Ziele, Mehrwert

Martin Maier*, V. Gartiser,, A. Schengel, V. Lang







Bodengassampling

Bodengasanalyse via GC: CO_2, CH_4, N_2O, O_2, N_2, Ar,

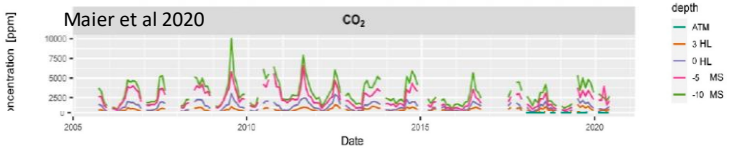
Table 1. Set-up and analytical performance of the GC systems used. Relative precision of measurement is given at ambient concentration unless stated otherwise.

Gas	GC	Column	Detector	Limit of Detection	Precision	Atmospheric Concentration	Typical Soil Air *
CO_2	Perkin Elmer Clarus 680 GC	CP-PoraBond Q	TCD	30 ppm	1.0%	ca. 400 ppm	500–20,000 ppm
O_2		CP-Molsieve 5A		0.5%	0.6%	20.95%	0–20.95%
N_2				1.7%	0.6%	78.08%	ca. 78.08%
Ar				0.02%	0.8%	0.93%	ca. 0.93%
CH_4		CP-SilicaPlot	FID	0.27 ppm	1.6%	1.95 ppm	<0.3 to >100 ppm
C_2H_4				0.04 ppm	2.3% at 0.5 ppm	0 ppm	0 to >5 ppm
N_2O	Varian CP 3800	CP-PoraBond Q	ECD	0.02 ppm	1.1%	0.33 ppm	<0.2–10 ppm

* Typical soil air concentrations from our monitoring plots.

(halb)monatliche Bodengasprofile seit 10-25 Jahren

Bsp CO_2 Esslingen



Gefördert durch:

Bundesministerium für Ernährung und Landwirtschaft

Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit

aufgrund eines Beschlusses des Deutschen Bundestages

Tagung „Stoffflüsse und Vorräte in Waldökosystemen: Messung, Monitoring & Modellierung„ 17.-18. März 2022

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Waldklimafonds FKZ 2218WK58X4

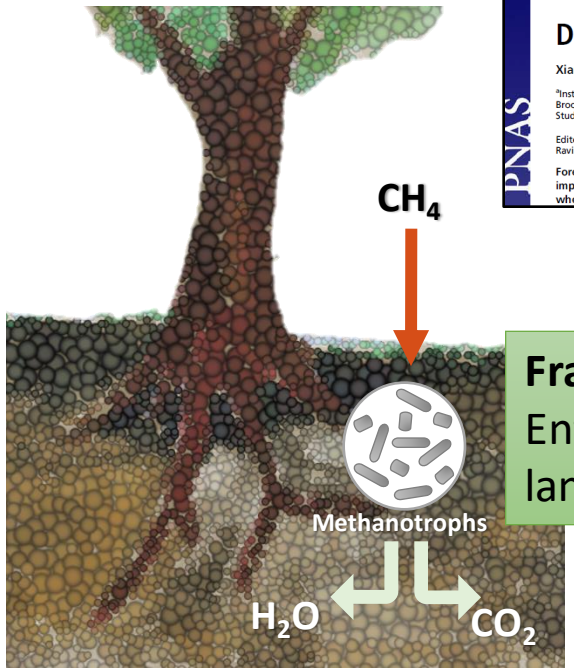
SamS: Soils as Methane Sinks - Waldböden als wichtigste terrestrische Senke für atmosphärisches Methan im Klimawandel

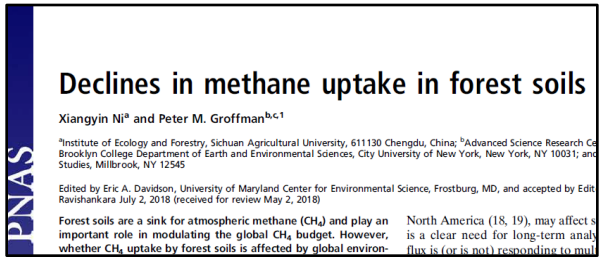
Ziele, Mehrwert & Projekte

Methansenke Waldboden

→ bedeutendste terrestrische CH_4-Senke

→ wichtige Klimaleistung!





Declines in methane uptake in forest soils

Xiangyin Ni[a] and Peter M. Groffman[b,c,1]

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Edited by Eric A. Davidson, University of Maryland Center for Environmental Science, Frostburg, MD, and accepted by Edit Ravishankara July 2, 2018 (received for review May 2, 2018)

Forest soils are a sink for atmospheric methane (CH_4) and play an important role in modulating the global CH_4 budget. However, whether CH_4 uptake by forest soils is affected by global environ-

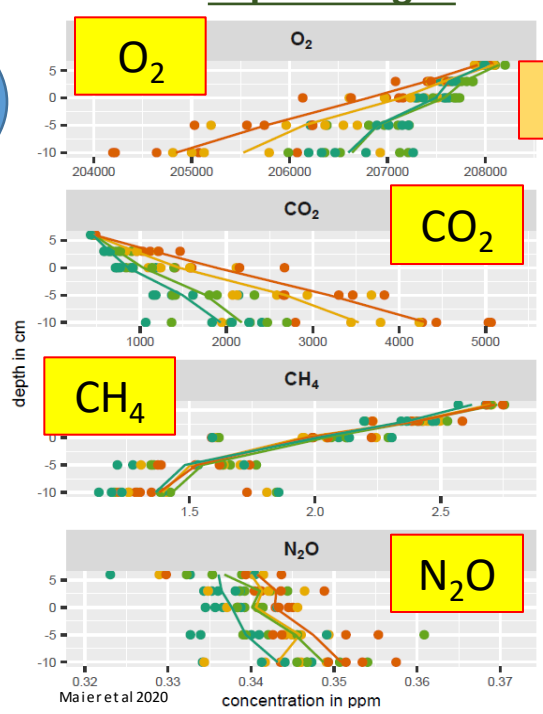
North America (18, 19), may affect s is a clear need for long-term analy flux is (or is not) responding to mul

Fragestellung:

Entwicklung der Methansenke Waldboden?

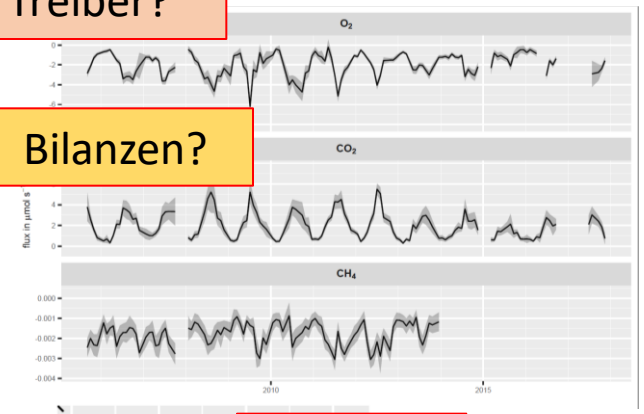
langfristiger / klimawandelbedingter Trend?

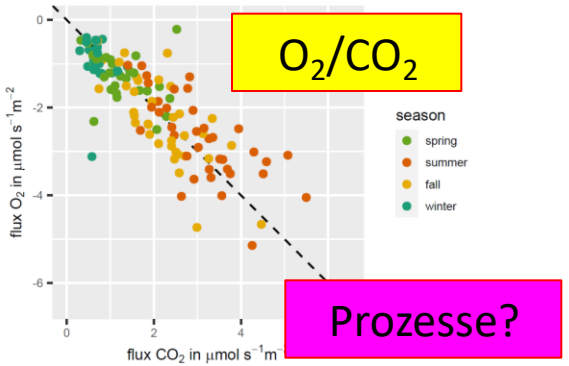
Bsp Esslingen



Treiber?

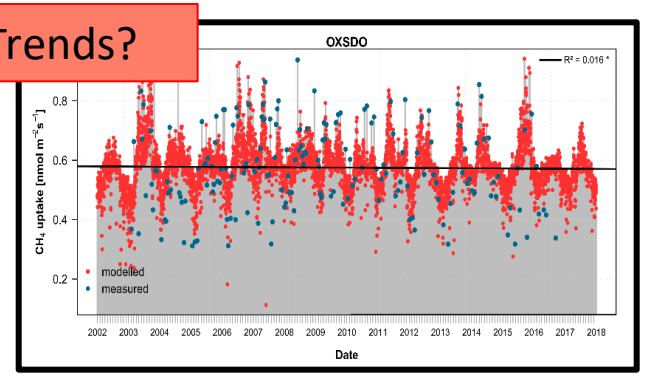
Bilanzen?





Prozesse?

Trends?



Work in Progress:

Untersuchte Standorte (2/13) haben keinen Trend

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17.-18. März 2022