



PATRICIA ROESER, ANNA JENTSCH, STIJN ALBERS, NILS KNORNSCHILD, GEORG HEUMANN,
MARC DE BATIST, MAREN BREHME, CHRISTIAN MÄRZ, AND MICHAEL E. BÖTTCHER

SOURCES AND SINKS OF WATER AND ELEMENTS IN THE HIGH-CO₂ VOLCANIC LAACHER SEE, GERMANY

OUTLINE & MOTIVATION

- 1 **Element- & Carbon Cycling in Lakes**
- 2 **Field 2024**
- 3 **Mineral-Fluid interactions**
 - Water Column
 - Porewaters
 - Solid Phases
- 4 **Implications for/from proxy-interpretations**



FIELD 2024

Waters

- Surface & bottom (Jan/Mar/Jun/Aug/Sep)
- Water Column (Jun/Aug)
- Springs & mineral waters

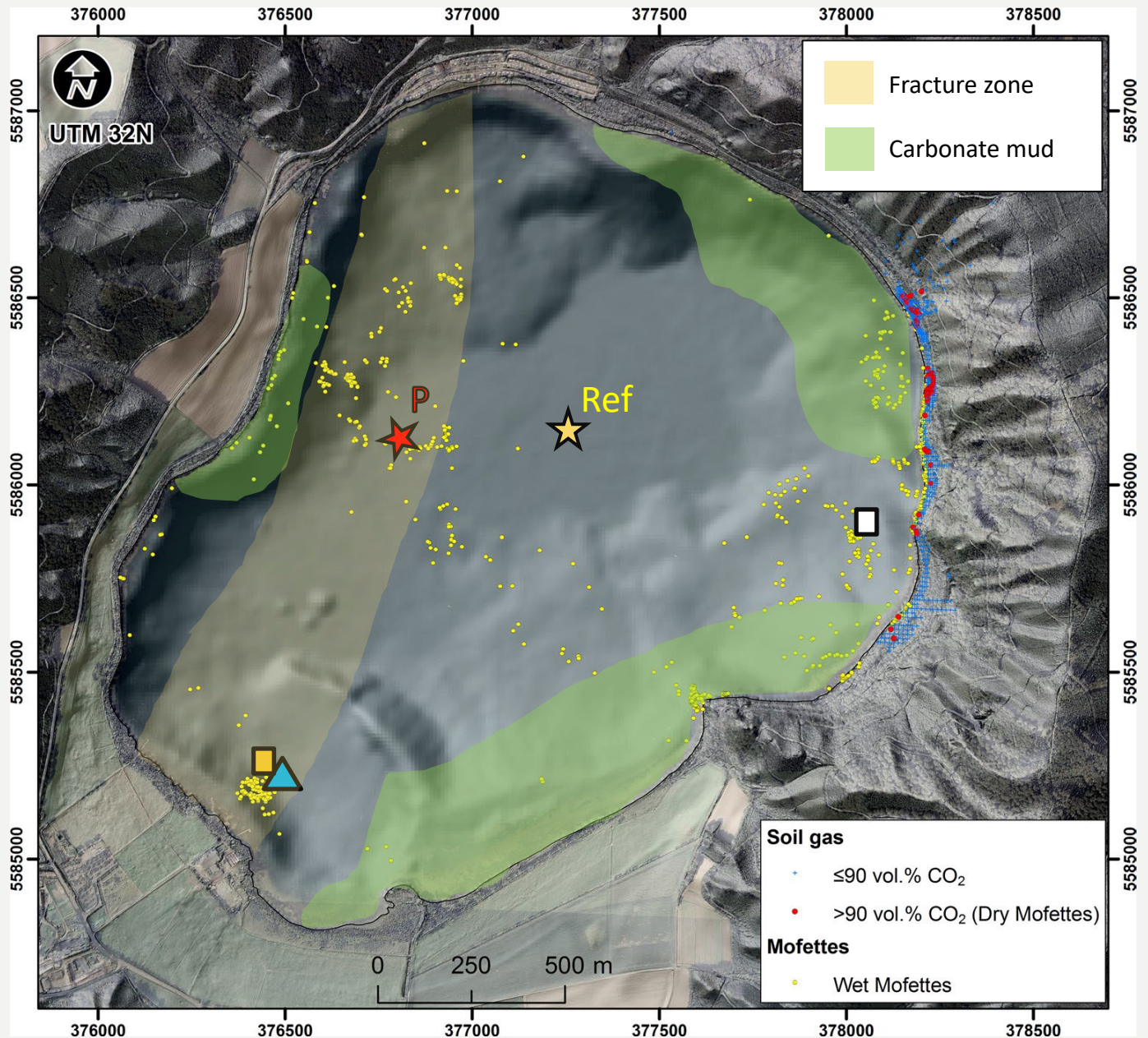
Porewaters + sediments:

Gravity cores:

- ▲ S- Mofette Field (Mar)
- Western- Mofette field (2x) (Jun)
- Southern – Mofette field (2x) (Jun)
- ★ Pockmark (Aug)

Piston & Gravity cores

- ★ Reference Site (Aug)



Bathymetry and CO₂ vents (yellow dots) after Goepel et al. 2013, Lithology fields after Bahrig 1985

CONCLUSIONS, *STATUS QUO*

- **Superimposed fluid flow (often at same locations) of different solutions**
 - CO₂ seepages
 - Groundwaters
- **Mechanistic differentiation of distinct processes in the carbon system**
- **Dynamic changes in the hydrological cycle within the last 40 years**
- **.... and a lot of investigations going on, also at other sites !**

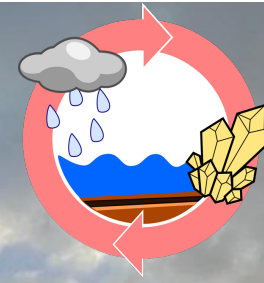
- Interested? Get in Touch
- patricia_roeser@uni-bonn.de





Interested? Get in Touch

patricia_roeser@uni-bonn.de



THANKS TO:

@ Uni Bonn: Olaf Dülfer, Bettina Schulte, Dagmar Wenzel, Manuel Kunze

@ IOW: Iris Schmiedinger

Environmental Geology & Paleobotany Groups of Uni Bonn, Thomas Litt

SGD Nord

Support on site: Ansgar Hehenkamp

Many students who supported the field campaigns:

Mauricio Santos, Leander Kühn, Felix Cremer, Jessika Ecker, Jana Krüger,

Thomas Fey, Jan Militz, Katharina Otto, Eva Gretges, Nadja Richter,

Amanda Roggenthin, Emily Kasch

And to the students participants

of the **Eifel Excursion**

Aquatic Environmental Geochemistry

AEG2023 & AEG2024