

## Open PhD position in Geomicrobiology

### ‘Anaerobic methane oxidation during permafrost thaw’

We are seeking a PhD student with experience and interest in geochemistry and microbiology to investigate how anaerobic methane oxidation (coupled to the reduction of natural organic matter (NOM), and ferric iron (Fe(III))) influences methane emission during permafrost thaw. Specifically, this project involves analyzing dissolved and particulate organic matter fractions from different permafrost thaw stages, identifying relevant Fe(III)-species, and determining the effect of these organic C and Fe-species on greenhouse gas emissions (CH<sub>4</sub>, CO<sub>2</sub>) via methanogenesis and anaerobic methane oxidation. Further, we will also discern the underlying microbial mechanisms in terms of microbial community composition, dynamics, and activity.

We will combine field analyses and field sampling (Abisko, Stordalen Mire, Sweden) with laboratory incubation experiments with geochemical, isotopic (<sup>13</sup>C) and molecular analyses (sequencing, qPCR) to follow methanogenesis and methane oxidation and identify the responsible microorganisms.

The candidate will be given many opportunities to be creative and innovative, to apply state-of-the-art geochemical and isotopic analyses, molecular techniques, microbial physiological studies, and spectroscopy, and to work on a challenging, highly relevant topic within a large network of (inter)national collaborators (Sweden, UK, Denmark, US).

**Start date for successful applicants is spring 2024.** Employment (TVL E13, 65%, 3 years) will be arranged by the University of Tübingen. The university seeks to raise the number of

#### Requirements:

- Strong background and/or interest in Geomicrobiology, Microbial Ecology, Environmental (Isotope) Geochemistry, and Climate Change
- Ability to work independently and in a team
- Interest in field work
- Excellent management and communication skills

women in research and teaching and therefore urges qualified women to apply. Disabled persons will be preferred in case of equal qualification.

**For more information and to apply, please send a CV, motivation letter and overview of techniques and methods previously used by email before January 15<sup>th</sup>, 2023 to:**

Prof. Dr. Andreas Kappler (andreas.kappler@uni-tuebingen.de), Geomicrobiology, Department of Geosciences, University of Tübingen, Germany. <https://uni-tuebingen.de/de/104138>