

Methane bubbles in aquatic sediment: subsurface visualization [student campus access required]

Methane is an important greenhouse gas and wetlands are responsible for a large share of the global emissions. Methane is for an important part emitted in the form of bubbles. These bubbles are formed in the sediment and make their way to the surface when their buoyancy is large enough. To quantify the emission of methane via bubble the bubbles are often collected in the water column or at the surface in so called 'bubble traps' or with sonar. Both techniques are hard to use in shallow waters where most of the bubbles are formed. In this project we will test a new way of visualizing and quantifying methane bubble formation and release. You will work in an experimental setup in the unique phytotron facility at the Radboud campus (behind the greenhouse). Using a sub-sediment scanner we aim to detect the bubbles while still in the sediment. In this project you will test how accurately bubble volume can be estimated based on the scanner images. Next you will also investigate how bioturbation by an organism of choice (eg macrofauna or fish) triggers bubble release. In case of a master internship various bioturbators may be compared.

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