



Heterogeneity at the oxic-anoxic interface in the water column of Lake Zug, Switzerland.

Mathias K. Kirf, Carsten J. Schubert, and Bernhard Wehrli

Eawag: Swiss Federal Institute of Aquatic Science and Technology, ETH Zürich, Zürich, Switzerland
(mathias.kirf@eawag.ch)

High-resolution oxygen measurements with micro trace-optodes and amperometric microsensors have been performed across the oxic-anoxic interface of the water column of Lake Zug, Switzerland.

For oxygen values down to nanomolar concentrations, the recorded experimental data show a strong heterogeneity of the oxic-anoxic interface in space and time. The exchange of oxygenated and anoxic waters across the interface seems to dominate over local oxygen consumption. The observed heterogeneity leads to a (much) larger surface of the oxic-anoxic interface and steeper gradients with possible implications for the microbial / chemical environment.

Along with the experimental data, approaches and advantages of the different technologies for low-concentration oxygen measurements will be presented.