

Aquatic systems through the lens of organic matter stability and fate – a coordinated distributed experiment

Post graduate course, 4 ECTS

Date and location

1. Introduction, 9-13th May 2022, 1 week, Zoom
2. Field measurements and data analyses, 12 weeks, Students' own work, part time
3. Summary and synthesis, 5-9th Sep 2022, 1 week, Zoom

Course content

Aquatic systems are governed by complex and scale-dependent interactions between abiotic and biotic components. As organic matter links many biogeochemical cycles e.g., carbon, nitrogen, and phosphorus, it is a robust proxy to understand the complex processes in aquatic systems and constitutes an indicator of overall health of aquatic ecosystems. In this course, we will explore the controls of OM stability and fate in a range of aquatic systems. The data on OM properties will be collected through a coordinated distributed experiment (CDE), in which students will first collect samples in their local aquatic ecosystems and then statistically analyse this unique dataset to provide information on spatial patterns of OM stability and fate through simple measurements with cotton strips, litter bags and collecting water samples for characterisation of OM quality, quantity and GHG emissions. Some measurements will be also conducted at the Swedish Infrastructure for Ecosystem Science (SITES). Observed patterns will be interpreted in the context of dominant hydrological, chemical, and biological processes operating in aquatic ecosystems with evaluation of advantages and limitations of the CDE approaches in aquatic sciences.

Teachers:

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