

Seminar

When: 01. July 2022; 12:30 h

Where (online): <https://bbb.hrz.tu-freiberg.de/b/jen-01s-r9p>

Keynote Speaker: Dr. Tom Shatwell (UFZ Magdeburg)

Stratified lakes as a habitat for algae

Stratification and mixing drive the biogeochemistry and ecology of lakes. The seasonal shifts of stratification and other environmental conditions in temperate regions give rise to a succession of phytoplankton (algae), creating niches for different species, but there are also feedbacks where these organisms act as ecosystem engineers. In this seminar I will show some important mixing processes and their seasonal cycles, and how some selected phytoplankton groups interact with their environment. I will give both a brief overview of the background, but also highlight some areas of active research in our group. For instance, stratification onset acts like a “light switch” for phytoplankton, releasing phytoplankton from light limitation, which typically initiates blooms of diatoms in spring. However, spring blooms in turn influence stratification by altering the absorption of solar radiation. Some diatom blooms occur in winter when the light switch is still off, and we are still investigating why. The cyanobacterium *Planktothrix rubescens* typically forms thin, dense layers around 10 m depth in lakes in the strongest temperature gradient, and may contribute to local summer hypoxic layers at this depth. These examples demonstrate the interplay between lake physics, ecology and biogeochemistry.

