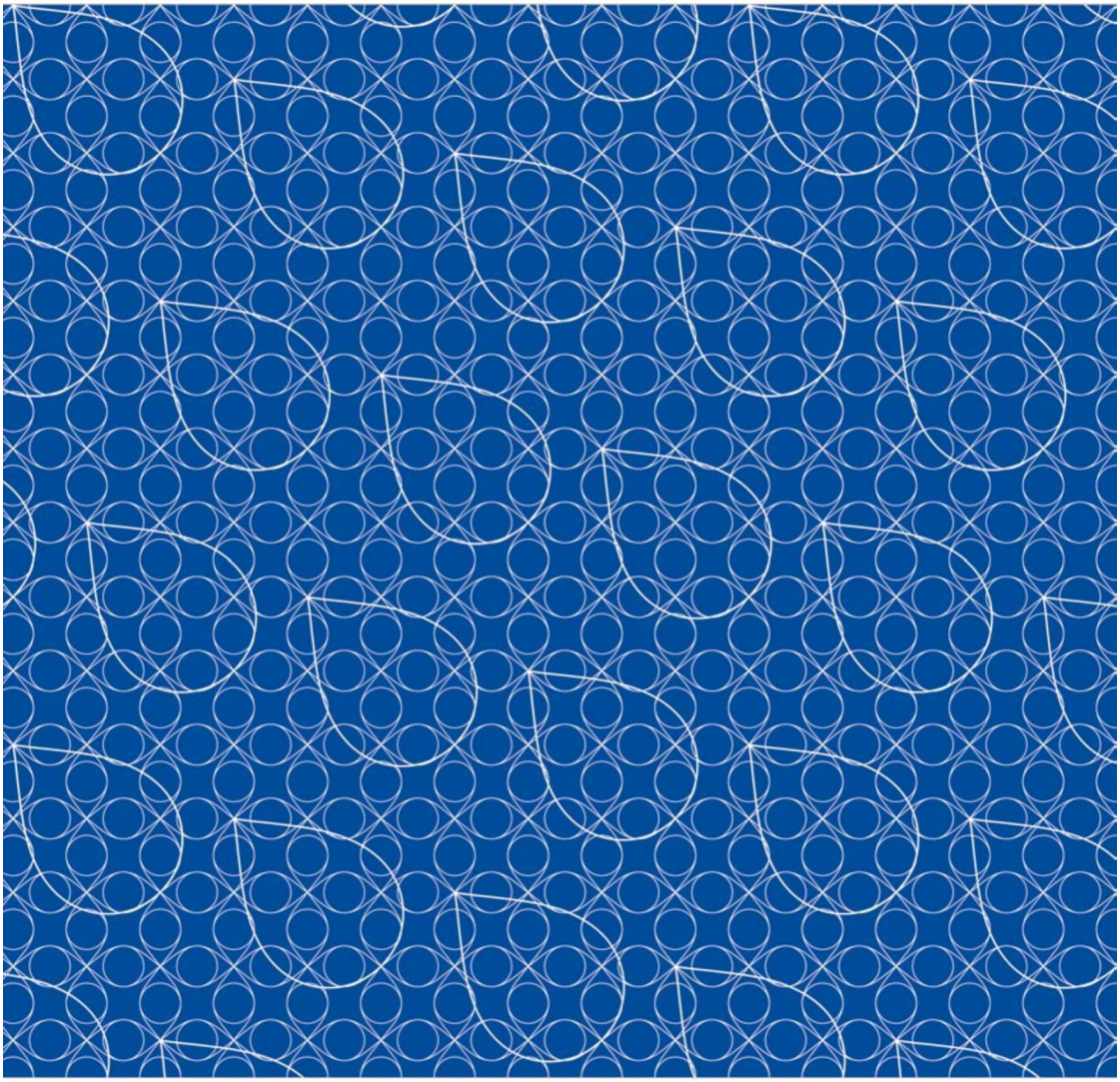
2.7.–7.7. 2017 / Olomouc, CZ



10 SYMPOSIUM FOR EUROPEAN FRESHWATER SCIENCES 2017

ABSTRACT BOOK

THE NETLAKE METADATABASE – A TOOL FOR ASSESSING AUTOMATIC MONITORING ON LAKES IN EUROPE AND BEYOND.

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Sharing data is a keystone of collaborative science. A fundamental barrier, however, can be a lack of knowledge on what is being collected, at what sites, and by whom. The main aim of the NETLAKE (COST Action ES1201 - 2012-2016) was to build a network of sites and individuals to support development and deployment of automatic sensor-based systems in lakes and reservoirs within Europe. Working Group 1 developed a metadatabase of lakes and reservoirs which included data on where lakes were being monitored, together with details on the frequency and duration of monitoring, contact details, and the sensors being used. In total, metadata for stations on 67 European lakes has been captured to date. Twenty nine of these are Swiss lakes, many at higher altitudes, where only water temperature was measured. All other sites have stations measuring multiple parameters. Ten sites have data archives that span over a decade, seven of which are stations that had originally been deployed in the EU-funded REFLECT and CLIME projects in the late 1990s and early 2000s. In general, these stations in this database are being used for research purposes: only seven lakes were drinking water sources, while one was a very large Czech fish pond. GLEON, the Global Lake Ecological Observatory Network, and the pan-American SAFER project have also now agreed to add their sites to this metadatabase, and we hope that this metadatabase can be a tool for the wider community to promote high frequency monitoring in lakes and facilitate data sharing and collaborative science.

USING HIGH FREQUENCY MEASUREMENTS TO UNDERSTAND MIXED LAYER DYNAMICS IN EUROPEAN LAKES

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Mixing and stratification are fundamental drivers of many aspects of lake ecosystem function. Furthermore, the relative ease in which automated temperature sensors can be deployed means temperature profiles are one of the most common measurements taken from high resolution, in situ monitoring platforms in lakes. The recent proliferation of such lake monitoring platforms now provides a wealth of detailed data to investigate some of the most basic, but important, aspects of vertical temperature structure. We have, therefore, collected together several years' data from disparate European lakes to examine how well the concept of a mixed layer in a lake stands up to high frequency measurements. Similarly, we have tested the robustness of a variety of commonly-used definitions of mixed depth. The data have also enabled investigation of the diel, seasonal and inter-annual changes in mixed depths across European lakes. Further, combining these temperature measurements with high frequency meteorological data for the sites has allowed analysis of the influence of key atmospheric drivers on temperature dynamics in different lakes.