

Eawag

Eawag is a research institute within the ETH domain and one of the world's leading aquatic research institutions. With its professional diversity, close partnerships with practitioners and an international network, Eawag offers an excellent environment for the study of water as a habitat and resource, for identifying problems at an early stage and for developing widely accepted solutions. In addition, Eawag provides teaching and consulting services and thus fulfils an important bridging function between research and practice. Over 500 employees work at the locations in Dübendorf near Zurich and Kastanienbaum near Lucerne. eawag.ch/en/

PEAK

Eawag offers a continuing education programme to practising professionals, which goes by the name of PEAK (practice oriented Eawag courses). The courses are based on current research and the many years of experience of our scientists. Several courses are run every year, which, alongside PEAK's purpose of knowledge transfer, serve as a forum for dialogue between the participants, and between research and practice. eawag.ch/peak-en

In collaboration with:

The Interreg Alpinespace **project DiMark** aims to develop innovative methods for monitoring lakes and the early detection of cyanobacterial blooms in the Alpine region, based on satellite data. It involves eleven partners, researchers and authorities, from all Alpine countries.

Getting to Dübendorf

Eawag

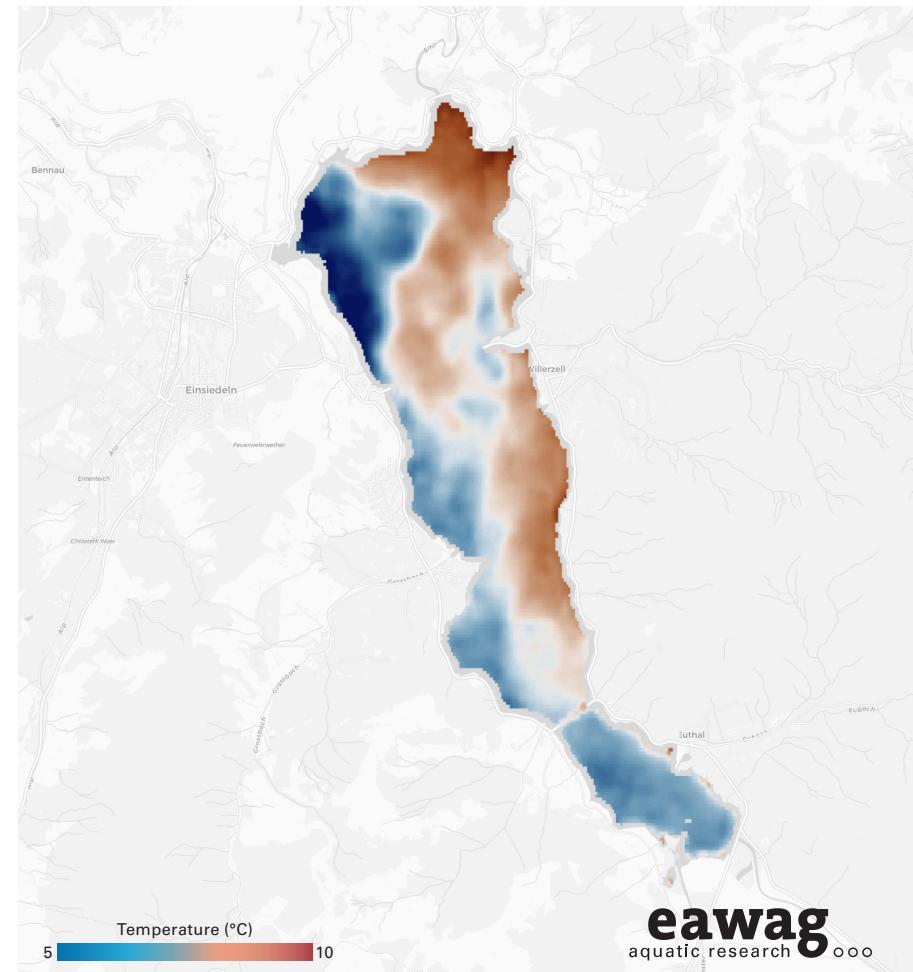
Swiss Federal Institute of
Aquatic Science and Technology

Satellite data as a supplement to lake monitoring

PEAK applied course A52/26

Thursday, 19 March 2026

Dübendorf



Cover photo: Screenshot from www.alplakes.eawag.ch showing lake water surface temperature in Sihlsee on 29 October 2025, based on Landsat-9 data (source: USGS).

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Aims

Since 2015, the Copernicus Earth observation program run by the European Union and the European Space Agency (ESA) has been providing freely available, operational satellite data for lake monitoring. Based on this data, Eawag provides water quality indicators for the 25 largest Swiss lakes, initially on the Datalakes portal and, since 2023, on Alplakes (www.alplakes.eawag.ch). The Interreg project DiMark (www.alpine-space.eu/project/dimark/) is further expanding this offering to include lake surface temperatures and smaller lakes with a surface area of just a few hectares throughout the Alpine region.

The course trains participants in the handling and interpretation of this grid data as a potential supplement for reporting on water quality in lakes and provides an overview of new functions of the Alplakes portal and comparable regional data platforms. We will also discuss application examples and user requirements that will guide the further development of satellite data products in Alplakes.

Target audience

The course is aimed at all users involved in the collection and interpretation of lake water quality data, and in particular at the authorities and institutes participating in the DiMark project. Prior knowledge of Geographic Information Systems (GIS) or image processing programs is helpful but not a prerequisite.

Content

- Introduction to the fundamentals of lake remote sensing, from electromagnetic signals and their measurement with Earth observation satellites to the derivation of lake indicators
- Current technological and scientific developments in the Copernicus Earth observation program, its applications for the hydrosphere, and Europe-wide efforts to integrate these applications into the activities of national and regional authorities
- Practical introduction to various application examples, including the download, validation, analysis, and visualization of raster data using the Alplakes web portal, SNAP, and QGIS
- Exchange between developers and users of Alplakes that helps to guide the portal's further development

Presenters

Daniel Odermatt, Eawag

James Runnalls, Eawag

Course responsible

Daniel Odermatt

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Course organisation

Eawag PEAK

Phone +41 58 765 57 65, peak@eawag.ch

Registration

Online: peak.eawag.ch

Deadline: 26 February 2026

The number of participants is limited.

Equipment

Participants should bring their own laptop with a web browser, version 13 of the European Space Agency's open source toolbox SNAP (<https://step.esa.int/main/download/snap-download/>, 'Sentinel Toolboxes') and a current version of QGIS (3.40 or 3.44) installed.

Documents

The presentations will be made available for download prior to the course.

Course participants will receive a certificate of attendance.

Language

Presentations in English, discussions and documents in German and English

Course fee

CHF 250.–

The course fees include course materials, lunch, and refreshments during breaks.

Accommodation and other meals are not included.

The General Terms and Conditions of Eawag apply: eawag.ch/gtc

Place, date and time

Thursday, 19 March 2026, from 9:00–16:30 pm CET

Eawag, Überlandstr. 133, 8600 Dübendorf

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