

## **Methods for Ecohydraulics: Remote Sensing**

### **PREFACE**

Habitat modeling has become a necessary tool in evaluating the status of water environments and to support the development of strategies and plans for improving their ecological status, guaranteeing ecological benefits and reducing anthropogenic effects. Despite the rapid growth of numerical models, in both hydraulic (hydraulic and morphological models) and biological (e.g., bio-energetic and individual based models) modeling, their application to fluvial systems remains hindered by a lack of supporting data at spatial scales larger than a single reach or at temporal scale beyond steady state or single event, as well as data necessary for model performance evaluation.

Recent advances – especially in remote sensing – may help to address this data need. These advances may include – but not limited to – technique using satellite and airborne devices (e.g., topo-bathymetric surveys, discharge, water surface elevation, water temperature and surface velocity, organisms' distribution including vegetation, fish and macro-invertebrate) and or telemetry.

The present work aims to summarize the outcomes of the webinar on Remote Sensing in Ecohydraulics, co-organized by the Institute of Geophysics of the Polish Academy of Sciences, the IAHR Committee on Ecohydraulics, the IAHR Poland Young Professional Network and ECoENet.

During the webinar, four keynote lectures and twelve technical notes, mainly coming from young researchers, provided the framework of the state-of-the-art of new tools, methods, equipment and methodologies for monitoring water habitats, and they aimed to share knowledge and address data survey needs.

In terms of the geographical distribution of the abstracts, more than 10 countries were represented, showing the worldwide importance of the topic, and the willingness for developing international and transdisciplinary connections.

We would like to acknowledge the contribution of the Scientific Committee and the Advisory Committee, which helped in assessing the abstracts, suggesting changes and future directions that, hopefully, can contribute to new outcomes and to filling gaps in using non-contact methods and techniques to address current issues in ecohydraulics.

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