Hyporheic network
(Hyporheisches Netzwerk)

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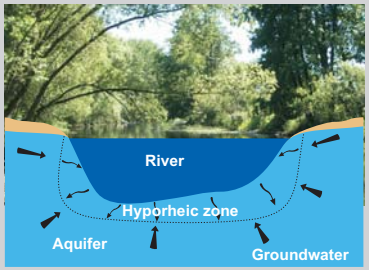


Bed forms inducing hyporheic exchange in the stream Schlaube, Photo: L. Angermann, IGB


Woody debris increasing hyporheic exchange in the stream Schlaube, Photo: J. Lewandowski, IGB


Redox zones in the bed sediments of the River Spree, Photo: J. Lewandowski, IGB

Introduction

The hyporheic zone – defined as the transition zone between streams or rivers and the adjacent aquifers – is a zone of paramount ecological importance. This ecotone is characterized by complex exchange processes of water and solutes, their temporal variability, and a pronounced spatial heterogeneity on various scales. To date, our understanding and ability to model the hydrodynamic, biogeochemical, and (micro-)biological processes and their interactions is still limited. Therefore, a network of scientists and practitioners involved in research and management of hyporheic zones (HZ) in German-speaking countries (Germany, Switzerland, and Austria) has been initiated in analogy to the hyporheic network (www.hyporheic.net) in the UK. The network is based on three major pillars: regular workshops, key study sites and a web-based platform.

Motivation

We, the initiators of the network, anticipate that an intense scientific exchange of methods and knowledge will improve our understanding of processes in the HZ and in turn our ability to manage them. The network will facilitate the formation of research groups to identify and understand key processes and their interactions. To enable fast knowledge transfer between scientists and practitioners is another aim of the hyporheic network to shorten the time-lag between scientific findings and their implementation into management practice. Furthermore the network should provide a platform to communicate urgent problems in the management of HZ and direct science towards those. For instance, qualitative improvements are required by the EU water framework directive. Changes in geomorphology, water and temperature regimes as well as other anthropogenic impacts might increase the need for cold water refugia or for altered flow regimes to maintain biodiversity.

Why in German?

A major goal of the hyporheic network is to intensify discussion among water management authorities, water engineers and scientists involved in HZ research with a primary focus on German-speaking countries. To best facilitate this exchange without any linguistic barriers the primary language of the “Hyporheisches Netzwerk” will be German. German-speaking experts from all over the world are invited to participate in the network. However scientific exchange with the international community and similar networks in other countries (e.g. www.hyporheic.net, UK) will be an important component. It is also envisioned that in the future the network will serve as a platform for international cooperation.

Workshops

Workshops for scientists and practitioners involved in understanding and managing hyporheic zones are an important pillar in the concept for this network. Besides oral and poster presentations there will be plenty of time for discussion. Work on specific topics within individual key disciplines (e.g. hydrodynamics, biogeochemistry etc.) will be organized in additional working groups. They will focus on specific disciplinary problems and will provide a synopsis of the state of art in their individual discipline for the network. The first workshop of the “Hyporheisches Netzwerk” will be held on 14th and 15th December 2009 in Berlin with a focus on the latest state of science, a presentation of key study sites and an identification of major research questions and management problems. To receive more information about the workshop or to participate you can leave your name and email address on the list to the right or check our website for further updates.

Key study sites

Another important aspect of the network is to focus research activities on a few key study sites representing different geographical, geological and hydrological conditions. Due to the complexity of the processes in the HZ it is believed that bringing together different expertise at only a few key sites will allow more detailed and efficient interdisciplinary investigations and interpretation. Furthermore, those sites may serve as focal points for new research projects.

Web-based platform

The exchange within the network will be organized via an internet platform. The website provides information about study sites, projects, people, dates and literature focussing on the HZ. You are welcome to visit our website, add information about yourself and your projects and participate in the network.

Contact

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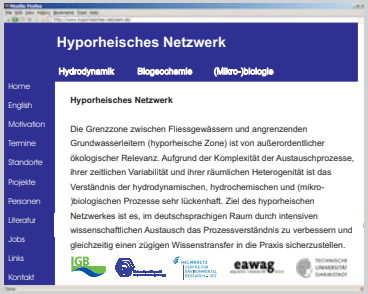
Measuring vertical temperature profiles to invert exchange rates at the River Eger, Photo: J. Fleckenstein, UBT


Dredging of the River Spree increasing hyporheic exchange, Photo: J. Lewandowski, IGB




Revitalisation of the River Thur, Photo: EAWAG