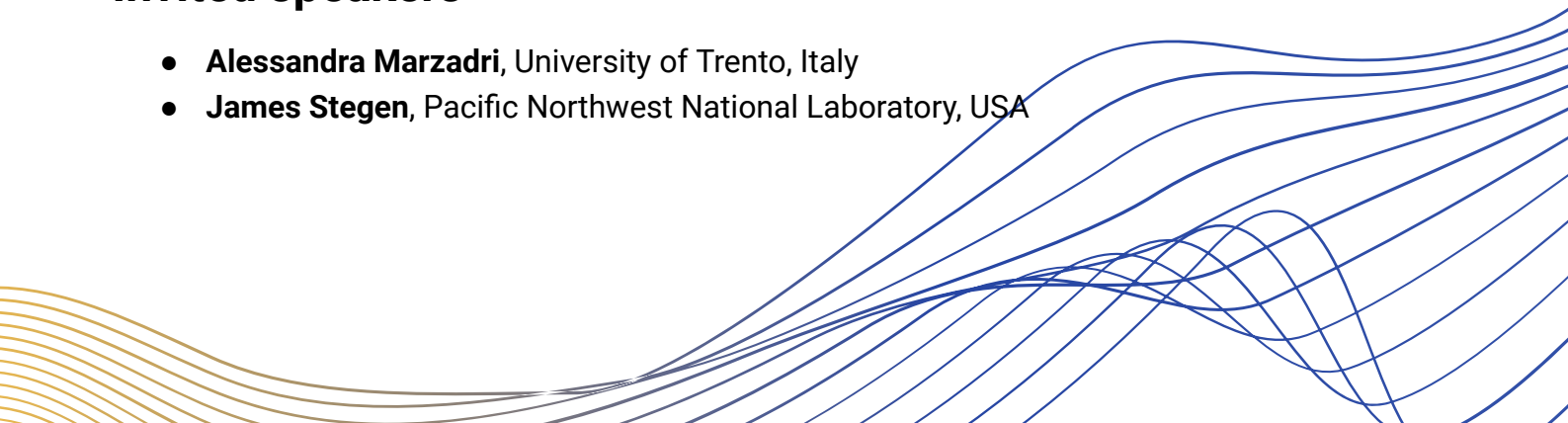


Ecohydraulics of hyporheic zone in river, estuarine and coastal sediments

Description

Hyporheic exchange is the main mechanism mixing surface and shallow subsurface water through the porous sediment that surrounds a stream, river lakes and along shorelines. This exchange causes biogeochemical and physical gradients that support a rich ecotone. Its significance in linking surface water hydromorphology, groundwater, nutrient cycles, and riverine habitat for aquatic and terrestrial organisms and vegetation has emerged in recent decades as an important component of conserving, managing, and restoring aquatic ecosystems especially riverine one. However, the relative importance of the different mechanisms that drive the hyporheic exchange and their roles in different stream types and at multiple tempo-spatial scales have not been fully investigated. Questions are still open on linking hyporheic exchange to nutrient cycles, and riverine habitat for aquatic and terrestrial organisms at small and large spatial scales. The goal of this vibrant session is to bring together investigators studying GW-SW interactions and their impacts on aquatic and sediment ecosystems. We seek contributions that address these questions, incorporating recent developments in quantifying the influences of river morphology, stream restoration practices, hydrology, groundwater, and geology on hyporheic exchange and in linking hyporheic exchange to nutrient cycles, organism dynamics and communities including vegetation. Therefore, we encourage interdisciplinary contributions that advance understanding the complex interactions between surface and subsurface water systems.

Invited speakers

- **Alessandra Marzadri**, University of Trento, Italy
 - **James Stegen**, Pacific Northwest National Laboratory, USA
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Conveners

- **Xiaobing Chen**, Hohai University, China
- **Daniele Tonina**, University of Idaho, USA

