Karlsruher Institut für Technologie

Seminar@IWG-WB

Dr. Isabella Schalko

Design of wood retention structures in rivers

22. Juli 2022
11:30-13:00 Uhr
KIT, Geb. 10.81, Room 305
or online:
https://kit-lecture.zoom.us/j/63654980702

Design of wood retention structures in rivers

Abstract

Wood is an integral part of a river ecosystem and can be transported during both small and large floods. To manage wood transport in Alpine rivers, rack structures have been installed to retain wood upstream of endangered settlements or infrastructures. These rack structures are commonly designed to span the channel width and consist of vertical poles. Due to this setup, they effectively retain wood, however, they also inhibit bedload transport and may disrupt bedload continuity. Therefore, novel rack designs need to be investigated that retain wood, while enabling bedload transport. In this talk, I will present how to design state-of-the art wood retention racks and introduce recent findings on novel rack designs, such as inclined racks. Special focus will be put on how the resulting wood accumulation at different rack structures alters the flow conditions and affects local bedload transport processes.

Biography

Isabella Schalko is a Senior Research Assistant and Lecturer at ETH Zurich and a Research Affiliate at MIT studying the interaction of flow, sediment, and wood in rivers. She integrates physical modeling and field observations to analyze transport processes in rivers and their implications regarding river restoration efforts and flood risk assessments. Her previous and present research topics include hydrodynamic and morphologic processes associated with nature-based solutions, wood transport in rivers, and design of river infrastructures in the presence of wood and effects on sediment transport.

Contact Information: schalko@vaw.baug.ethz.ch

Institut für Wasser und Gewässerentwicklung
Fachbereich Wasserbau und Wasserwirtschaft