Water

an Open Access Journal by MDPI

CiteScore: 6.0
Impact Factor: 3.0

Special Issue Reprint

Fluvial Hydraulics Affected by River Ice and Hydraulic Structures

Edited by: Jueyi Sui

Fluvial hydraulics deals with the flow of water, the motion of sediment, and the erosion of channel beds in rivers. Fluvial hydraulics is complex because velocity, slope, depth, and channel roughness are all subject to changes resulting from erodible beds and sediment transport due to the presence of in-stream infrastructure, vegetation in channel beds/banks, and ice cover on water surfaces.
The aim of this reprint is to present research that improves our knowledge of sediment transport, local scour around in-stream infrastructures, and fluvial processes in the presence of either vegetation in channel beds or ice cover on water surfaces. It aims to include not only the latest advancements in the mechanics of sediment transport and local scour around in-stream infrastructures but also the impacts of vegetation in channel beds on bed deformation and flow structures. Research regarding the interaction between river ice, riverbed deformation, and in-stream infrastructures.
In total, twelve original contributions are presented in this reprint. Among the topics of interest for this Special Issue are: 1) turbulent flow structure, Reynolds stress, and local scour around in-stream infrastructures under an ice-covered flow condition; 2) interactions among ice jam accumulation, channel bed deformation, and in-stream infrastructures; and 3) turbulent flow structures in the presence of vegetation in a channel bed or under a shallow flow condition.
We hope that the results of the presented research will benefit river engineers and hydrologists.

mdpi.com/books/reprint/7213