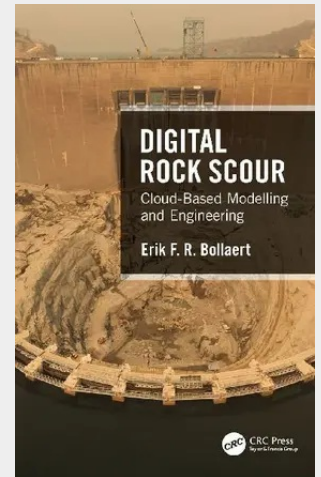


Digital Rock Scour

Cloud-Based Modelling and Engineering

This book examines the digitalization of rock scour engineering at dams and hydraulic structures. It outlines the current digitalization (technologies, applications, issues) in rock engineering, as well as the digital evolution that has strongly characterized the development of computational methods in state-of-the-art rock scour over recent years. The challenges of rock scour digitalization are also discussed, such as parametric standardization, real-time data acquisition, data analysis and interpretation, quantitative rock mass indices, new ways of thinking and digital twin implementation. Further, it presents the major components and characteristics that are needed to develop an environment that implements rock scour digitally into dam safety procedures and dam risk analyses, such as IT platforms, database availability, topology, physics, computational methods, phase coupling, accessibility, portability, reliability, real-time and ahead-of-time implementations and more. Features: - Provides an overview of physics-based computational methods that have been developed by the engineering community over the last 20 years, which can easily be implemented digitally into cloud-based platforms. - Offers examples of the next-generation computational environment, combining both real-time computational power and an up-to-date scour database allowing new parametric refinements. - Includes several case studies of real-life rock scour. - Presents the latest Digital Twin developments, which are novel and new to dam operations.

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**208,90 €**

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