

Seminar@IWG-WB

Dr. Victor Chavarrias

Morphodynamic modelling with mixed-size sediment

20. Mai 2022

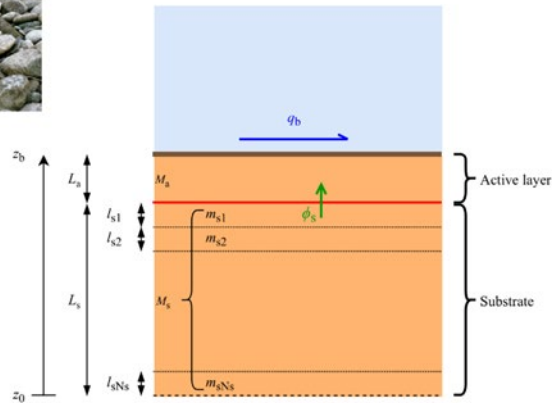
11:30-13:00 Uhr

KIT, Geb. 10.81, Room 305

or [online via Teams](#)



Morphodynamic modelling with mixed-size sediment



Abstract

Alluvial rivers respond to environmental changes and human interventions by changing their geometry or their bed sediment composition, or both. Numerical models to simulate these processes are well established. Nevertheless, there are two important limitations as they may: (1) become ill-posed due to the simplified representation of nature yielding unstable solutions and (2) give physically unrealistic results when part of the sediment becomes immobile as shear stresses exerted on larger grains fall below the corresponding threshold of motion. In this seminar we will explain the state-of-the-art approach to model mixed-size sediment as well as the problems with the current approach and the latest research to overcome it.



Biography

Victor Chavarrias is a river engineer and researcher. A trained Civil Engineer, he obtained his PhD on mathematical modelling of morphodynamic processes. His work focuses on river and estuarine modelling for the assessment of the impact of interventions, river restoration, salinity intrusion prediction, and sediment management. Analysis of hydrodynamic and morphodynamic data is a key component of the usual tasks within projects. He has worked in several projects for rivers and estuaries in the Netherlands, Colombia, and Japan. He is involved in the development of the software package Delft3D and forms part of its support team. He lectures Delft3D modelling courses to clients and river modelling guest lectures in TU Delft and IHE Delft

Contact Information: victor.chavarrias@deltares.nl