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Sommario/riassunto	The state-of-the-art in water-worked bed hydraulics can only be examined through a careful exploration of the experimental (both laboratory and field) results via theoretical development. This book is primarily focused on the research aspects that involve a comprehensive knowledge of sediment dynamics in turbulent flows, as the most up-to-date research findings in the field are presented. It begins with two reviews on bedload transport and water-work bed experimental studies. The sediment dynamics is then analyzed from a classical perspective by applying the mean bed shear approach and additionally incorporating a statistical description for the role of turbulence. The work finally examines the local scour problems at hydraulic structures and results from field studies. It is intended as a course guide for field professionals, keeping up with modern technological developments. Therefore, as a simple prerequisite, readers should have a basic knowledge of hydraulics to an undergraduate level.