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Sommario/riassunto	This book provides a comprehensive guide for academics and industry professionals on designing and optimizing hydraulic turbines, with a particular focus on Francis turbines. The book covers the main dimensions of Francis turbines, including runners, guide vanes, and distributors. The authors have selected OpenFOAM, a free, open-source CFD software, for readers to perform simulations. While there is some existing literature on the topic, this book distinguishes itself by going into detail on the three phases of CFD methods. The authors also describe, step-by-step, how to create a new solver for hydraulic machines to account for sediment erosion. The content is presented in an easy-to-understand manner to help readers quickly grasp the material. The book is accessible to specialists in relevant fields, as well

as undergraduate and graduate students, researchers, and other professionals interested in designing a suitable Francis turbine or simulating multiphase flow fields for rotating machines.