1. Record Nr. UNINA9911004755803321 Autore Bertram Volker Titolo Practical ship hydrodynamics / / Volker Bertram Pubbl/distr/stampa Amsterdam; ; Boston, : Butterworth-Heinemann, 2012 **ISBN** 9786613224811 9781283224819 128322481X 9780080971520 0080971520 Edizione [2nd ed.] Descrizione fisica 1 online resource (391 pages): illustrations Disciplina 623.81 623.812 Soggetti Ships - Hydrodynamics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front Cover; Practical Ship Hydrodynamics; Copyright; Contents; Preface; Chapter 1 - Introduction; 1.1. Overview of Problems and Approaches; 1.2. Model Tests - Similarity Laws; 1.3. Full-Scale Trials; 1.4. Numerical Approaches (Computational Fluid Dynamics); 1.5. Viscous Flow Computations; Chapter 2 - Propellers; 2.1. Introduction; 2.2. Propeller Curves; 2.3. Analysis of Propeller Flows; 2.4. Cavitation; 2.5. Experimental Approach; 2.6. Propeller Design Procedure; 2.7. Propeller-Induced Pressures; 2.8. Unconventional Propellers; Chapter 3 - Resistance and Propulsion 3.1. Resistance and Propulsion Concepts; 3.2. Experimental Approach; 3.3. Additional Resistance Under Service Conditions; 3.4. Fast Ships; 3.5. CFD Approaches for Steady Flow; 3.6. Simple Design Approaches; 3.7. Fuel-Saving Options: Chapter 4 - Ship Seakeeping: 4.1 Introduction; 4.2 Experimental Approaches (Model and Full Scale); 4.3 Waves and Seaway; 4.4 Numerical Prediction of Ship Seakeeping; 4.5. Slamming: 4.6. Roll Motion: Chapter 5 - Vibrations: 5.1. Introduction: 5.2. Theory; 5.3. Global Ship Hull Vibrations; 5.4. Vibrations of Local Structures

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Sommario/riassunto

Practical Ship Hydrodynamics provides a comprehensive overview of hydrodynamic experimental and numerical methods for ship resistance and propulsion, maneuvering, seakeeping and vibration. Beginning with an overview of problems and approaches, including the basics of modeling and full scale testing, expert author Volker Bertram introduces the marine applications of computational fluid dynamics and boundary element methods.