

Determination of the vessel propulsion, propeller characteristics and hull shape

1. Determination of water resistance of the vessel

- 1.1. Features of the streamline in the motion of the ship and the components of the hydrodynamic resistance
- 1.2. Methods for determining the hydrodynamic resistance on the results of experimental tests in the towing tanks. Classification of a systematic series of ships models
- 1.3. Resistance of high-speed and medium speed ships
- 1.4. Resistance of vessels with limited completeness shape contours
- 1.5. Resistance of vessels of the full shape of contours

2. General properties and classification of propulsion

- 2.1. Concepts of marine propellers
- 2.2. Types of marine propulsion, their characteristics

3. Geometry and construction of propellers

- 3.1. The main geometrical characteristics of the propeller
- 3.2. The approaches of the drawing of propeller surface, blade surface mathematical representation
- 3.3. Drawing of theoretical form of the propeller
- 3.4. Structures of propellers

4. Determination of hydrodynamic characteristics of propellers

- 4.1. Brief information about the geometry of propellers; kinematic characteristics of the propeller
- 4.2. Foundations of the theory of propeller, the determination of induced propeller speeds in the jet
- 4.3. Concepts of ideal propeller and propulsion ideal
- 4.4. Lightly loaded ideal propeller
- 4.5. Propulsion ideal
- 4.6. Preliminary observations of the wing vortex system and the propeller
- 4.7. The main theorems of the vortex theory of the propeller
- 4.8. Properties of the induced velocities
- 4.9. The theory of the lifting line
- 4.10. Accounting of the propeller blades width
- 4.11. Generalized concept of the optimum width and shape of the blade
- 4.12. The method of induction factors, test and design calculations
- 4.13. The theory of lifting surface
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