

## Comparative studies of the efficiency of ship wave propulsors of various types

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*The purpose of the work was to examine the influence of pitching motions on the efficiency of a direct-flow wave propulsor. The study shows that in the conditions of pitching, the propulsor effectiveness is reduced. The dependence of the efficiency of the wave propulsor on its placement on the ship's hull is studied. Under the same conditions, a comparative analysis of the efficiency of wave propulsors of various types is carried out. In addition to the direct-flow propulsor, a flexible plate (fin), a swinging plate with elastic coupling, a propulsor of the type of underwater sail are considered. Results suggest that the use of a stabilizer plate at the stern of the vessel increases the efficiency of wave propulsion, as well as a bow swinging plate in the whole investigated wave range. However, in the case of the sail, the presence of the stabilizer leads to low frequencies of the waves. Comparison of different wave propulsors of the waving type has shown a noticeable advantage of the submersible sail propulsor.*

**Keywords:** sea waves, wave propulsor, vessel, direct-flow wave propulsor, underwater sail, experiment

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