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■ 89 m智利车客渡船

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9 771001 538205

地址：无锡市凤宾路优谷商务园9号楼
电 话：0510-83720318（经营部）
0510-83708456（总机）
传 真：0510-83703627
邮 箱：nwt70@sina.com

网 址：www.wuxiship.com
扬中地址：江苏省镇江（扬中）西来桥镇沿江西6号
扬中电话：0511-88138065（经营部）
扬中传真：0511-88138076

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主 编：戴雪良

副 主 编：韩海林

地 址：镇江市正东路5号

电 话：0511-84422493

传 真：0511-84422493

电子信箱：jscbbjb@163.com

网站地址：<http://jscb.cbpt.cnki.net>

邮政编码：212003

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地址：无锡市新嘉路8号尊和国际B座
网 址：www.wuxiship.com
电 话：0510-83720318（经营部）
0510-83708456（总机）
地 址：江苏省镇江市西津桥镇江江西6号
传 真：0510-83703627
邮 箱：nwtj@163.com
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JS 2020-2-01 Numerical Prediction of Hydrodynamic Characteristics of Shuttle Car-Passenger Ferry ... LYU Quanliang, LIU Wenyu, XU Ben, LIU Pengxin(1)

Aiming at the resistance performance of Zhenyang car-passenger ferry under different loading conditions, based on the viscous fluid theory, the numerical prediction research on the hydrodynamic characteristics of shuttle car-passenger ferry is carried out. First of all, the numerical prediction of resistance performance of car-passenger ferry under six conditions of A and B navigation areas is carried out by using the following dynamic grid technology; then, the effective power of car-passenger ferry under different loading conditions is calculated by using the tridimensional method converted to the real ship resistance; finally, the distribution regulation of surface pressure and wake field of shuttle hull is analyzed. The results show that the numerical prediction method can accurately simulate the resistance and flow field distribution of the car-passenger ferry; the tridimensional method can be used to convert the ship model data into the real ship resistance with higher accuracy; compared with the conventional square bottom, the submersible of shuttle structure has the effect of shunt and drag reduction.

JS 2020-2-02 Application of Big Data Technology in Ship Energy Efficiency Management GE Pei, XU Hongwei, LIU Canbo, LI Linhai(7)

Using the data acquisition device installed on the ship to monitor the operation data, and calculate the energy consumption index based on the monitoring data. According to the analysis and evaluation results, the paper provides guidance and suggestions for ship energy efficiency management, such as speed, trim, and the best time to clean up the sewage bottom. At the same time, the power and fuel consumption can be calculated by establishing the sea state database of the route in the navigation area, which provides a reference for optimizing the hydrodynamic performance of the fixed route ship in the actual sea state. It can be seen from the comparison the prototype line with four optimization schemes for a 80 000 DWT bulk carrier, the effective power of the model line 4 is reduced by 7.16% and the fuel oil is reduced by 7.29% under the loading condition.

JS 2020-2-03 Research on the Key Technology of a 118m Pilot Ship with LNG ZHU Bin, HOU Yinan(10)

According to the requirements of the pilot ship of Shanghai Port pilot station, a 118 m pilot ship is developed, which adopts LNG gas generator and solar photovoltaic power generation technology. First of all, the main technical performance, general arrangement, main equipment and system of the ship are introduced; secondly, the key design technologies of the ship type are analyzed, and the key design points are summarized. The practical application shows that the technical parameters of the ship meet the requirements, and it has good comfort, seakeeping and rapidity, which solves the problems of difficult arrangement of pilot ship equipment, low degree of automation, and insufficient environmental protection and green concept.

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Chief Editor : Dai Xueliang

Deputy Chief Editor : Han Hailin

Address : 5 Zhengdong Road, Zhenjiang, Jiangsu Province, China 212003

Tel : 86 - 511 - 84422493 Fax : 86 - 511 - 84422493

E-mail : jscbjb@163.com

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