Using CFD Software to Calculate Hydrodynamic Coefficients(PDF)

《船舶与海洋工程学报》[ISSN:1002-2848/CN:61-1400/f] 期数: 2010年02 页码: 149--155 栏目: 出版

日期: 2010-06-25

Title: Using CFD Software to Calculate Hydrodynamic Coefficients

作者: 张 赫;徐玉如;蔡昊鹏

Author(s): He Zhang*; Yu-ru Xu and Hao-peng Cai

Key Laboratory of Science and Technology for National Defense of Autonomous

Underwater Vehicle, Harbin Engineering University, Harbin 150001, China

关键词: pure car carrier (PCC); flat-plate sail; oblique sailing; vessel speed

分类号: -

DOI: -

文献标识码: A

摘要: Applications of computational fluid dynamic (CFD) to the maritime industry continue to grow with the increasing development of computers. Numerical approaches have

evolved to a level of accuracy which allows them to be applied for hydrodynamic

computations in industry areas. Hydrodynamic tests, especially planar-motionmechanism (PMM) tests are simulated by CFD software – FLUENT, and all of the corresponding hydrodynamic coefficients are obtained, which satisfy the need of

establishing the simulation system to evaluate maneuverability of vehicles during the autonomous underwater vehicle scheme design stage. The established simulation

system performed well in tests.

导航/NAVIGATE	
本期目录/Table of Contents	
下一篇/Next Article	
上一篇/Previous Article	

工具/TOOLS
引用本文的文章/References
下载 PDF/Download PDF(367KB)
立即打印本文/Print Now
推荐给朋友/Recommend

统计/STATISTICS	
摘要浏览/Viewed	740
全文下载/Downloads	519
评论/Comments	

RSS XML

参考文献/REFERENCES

Ferziger JH, Peric M (2002). Computational method for fluid dynamics, Springer, Berlin, 28-50.

Hu ZQ, Lin Y, Gu HT (2007). On numerical computation of viscous hydrodynamics of unmanned underwater vehicle. Robot, 2(5), 145-150.

Sarkar T, Sayer P G, Fraser S M (1997). A study of autonomous underwater vehicle hull forms using computational fluid dynamics. International Journal for Numerical Methods in Fluids, 25(11), 1301-1313.

Sen D (2000). A study on sensitivity of maneuverability performance on the hydrodynamic coefficients for submerged bodies. Journal of Ship Research, 44(3), 186 – 19

6. Shi S D (1995). Submarine Maneuverability. National Defense Industry Press, Beijing, 50-78.

Tyagi A, Sen D (2006). Calculation of transverse hydrodynamic coefficients using computational fluid dynamic approach. Ocean Engineering, 33(5), 798-809.

Wernli RL (2002). AUVs--A technology whose time has come. Proc. Conf. UT, 02 OES/IEEE, 309 - 314.

Wilson R, Paterson E, Stern F (2006). Unsteady RANS CFD method for naval combatant in waves. Proceedings of the 22nd ONR Symposium on Naval Hydrodynamics, Washington DC, National Academy Press, 532-549.

Xu YR., Su YM, Pang Y J (2006). Expectation of the development in the technology on ocean space intelligent unmanned vehicles. Chinese Journal of Ship Research, 3(1), 1-4.

备注/Memo: -

更新日期/Last Update: 2010-06-01