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City University Distinguished Lecture Series

Speaker

Dr Alexander Scherbatyuk

*Director of the Institute for Marine Technology Problems
Russian Academy of Sciences*



The Mobile Navigation and Group Operation of Autonomous Marine Vehicles

on

Friday, 15 September 2017 at 10:30 am

at

Connie Fan Multi-media Conference Room
4/F Cheng Yick-chi Building
City University of Hong Kong
Tat Chee Avenue, Kowloon

Abstract

The lecture is devoted for two questions connected with marine robotics. One question is the mobile navigation of an autonomous underwater vehicle (AUV). The accuracy estimation of navigation system operation for AUV based on usage of single hydro acoustic beacon transported by an autonomous surface vehicle (ASV) is discussed. The method for position estimation is described and some results of the marine trials using robotic complex with AUV and ASV are supplemented. Second question is devoted to a centralized mission planner for a group of marine robots. The planner solves a problem similar to the Multiple Traveling Salesman Problem in order to assign a sequence of tasks to each vehicle in the group. Some implementation details of the planner based on a specific mission mathematical model, its field test results and analysis for a group composed from ASV and AUV is discussed.

Biography

Dr Alexander Scherbatyuk is the Director of the Institute for Marine Technology Problems /IMTP/ from Russian Academy of Sciences and the Head of the Scientific Education Centre "Underwater Robotics" in the Far Eastern Federal University /FEFU/. Scientific interest of Dr Scherbatyuk is related with AUV designing and use for ocean research. He developed integrated navigation systems for different types of AUV based on board autonomous navigation system and additional acoustical, visual and bathymetric data. He designed technical vision systems for AUV used information from digital video and scan sonar systems for AUV docking and extended objects inspection. Dr Scherbatyuk was head in semi AUV TSL (2000), AUV MMT (2005) and AUV&ASV MARC (2011) projects. He led experiments with AUV in areas of Arctic, Pacific and Atlantic Oceans. He is the member of associate editors of four scientific journals. Dr Scherbatyuk is the member of IEEE Oceanic Engineering Society.

Online registration:

<http://www.cityu.edu.hk/vprt/cityu-dls/upcoming.htm>

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