论文与报告

智能海洋机器人技术进展

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摘要
智能海洋机器人是可以在复杂海洋环境中执行各种任务的智能化无人平台, 包括智能水下机器人和智能水面机器人. 基于实践和在相关技术难题上的经验, 提出了一些关键技术问题的解决方案. 在智能水下机器人方面, 探讨了体系结构、运动控制、智能规划与决策和系统仿真等关键技术. 在智能水面机器人方面, 探讨了快速性和智能化问题. 我国在智能海洋机器人技术研究方面已经取得了较大的进步, 但距离全面应用还有很大差距.

关键词　海洋机器人　人工智能　体系结构　智能控制

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Technology Development of Autonomous Ocean Vehicle

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Abstract

Autonomous ocean vehicles, which consist of autonomous underwater vehicle and autonomous surface vehicle, are intelligent unmanned platforms that can carry out various missions in sophisticated ocean environment. Several schemes for several key technology problems are proposed based on experience and practice of related technology problems. The key techniques about system architecture, motion control, intelligent planning and decision making and system simulation are discussed in respect of autonomous underwater vehicles, while speed performance and intelligence problems are discussed in respect of autonomous surface vehicles. The technology of autonomous ocean vehicles in our country has made great headway, but it still has a long way to go before reaching maturity.

Key words　Ocean vehicle　artificial intelligence　system architecture　intelligent control

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