عنوان مقاله:

MODEL REFERENCE ADAPTIVE PLANE CONTROL OF AUTONOMOUS UNDERWATER VEHICLE

محل انتشار:

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خلاصه مقاله:

Autonomous Underwater Vehicles (AUV) has a variety of applications in marine science, surveying, military, commercial, and inspection tasks. Control issue of these devices is very challenging due to nonlinearity, time variant, unpredictable external disturbances such as the environmental force generated by the sea current fluctuation and the difficulty in accurately modeling the hydrodynamic effect. In this paper, the heading trajectory tracking control of the AUV in x-y plane using Model Reference Adaptive Control (MRAC) is investigated. The inverse dynamic technique is employed to transform the controlled plant's model into the linearized form. To illustrate the performance of the proposed MRAC algorithm, a comparative study with conventional PID controller is conducted. Simulation results show the superior performance of MRAC achieving the control objectives

کلمات کلیدی:

Model Reference Adaptive Control, Lyapunov stability theory, Autonomous Underwater Vehicle

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