

عنوان مقاله:

Dynamic Positioning of an ROV with Unknown Dynamics and in the Presence of External Dis-turbances Using Extended-State Observer

محل انتشار:

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خلاصه مقاله:

This paper is concerned with designing the dynamic positioning control system for a remotely operated vehicle (ROV) with unknown dynamics and in the presence of external disturbances. In order to estimate the dynamics of the ROV, external disturbances and ROV velocities, an extended state observer is introduced. The controller is composed of a nonlinear Pro-portional-Derivative (PD) controller together with feedforward of estimated ROV dynamics. The performance of the pro-posed observer and controller is evaluated via simulation studies. Results show that the observer has estimated the ROV dynamics, including external disturbances, with great accuracy. Besides, the proposed controller has maintained the position and attitude of the ROV at desired values accurately.

کلمات کلیدی:

Dynamic Positioning, Extended-State Observer, Nonlinear PD Controller, ROV, Unknown Dynamics, Envi-ronmental Disturbances

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