

عنوان مقاله:

Hybrid sliding mode force/position Control of ۳-DOF Delta Parallel Robot

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خلاصه مقاله:

This paper presents the hybrid sliding mode force/position control of Delta Robot, a control enables robot to perform a task involving both contact force and moving platform position despite uncertainty. The kinematic model is introduced as the prerequisite for the dynamic model. The Euler-Lagrange equations are employed to derive the motion equations. As a result, the dynamic model is formulated and identified, by also considering the kinematic equations as constraint equations. The proposed hybrid controller includes force and position controllers based sliding modes. In this controller, the contact force is derived by impedance relation and position sensor at the moving platform. A simulation is carried out for the hybrid sliding mode force/position controller. The results show that the performance of a hybrid sliding mode force/position controller is prominent when the moving platform tracks a desired position and force despite uncertainty.

کلمات کلیدی:

.Delta Robot, Hybrid force/position controller, sliding mode

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