عنوان مقاله:

Control of a Flexible Laboratory Manipulator Using a Non-linear Lyapunov-type Controller

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خلاصه مقاله:

Flexibility of robot links inevitably causes the elastic deflection and vibration of the endpoint of the robot during high-speed operations. The deflection and vibration will tend to degrade the positioning performance of the robot. In this paper a non-linear Lyapunov-type controller is applied to control the dynamics of a flexible SCARA robot, The Selective Complaint Articulated/Assembly Robot Arm. A mathematical model governing the dynamics of the flexible manipulator is derived using lumped masses and spring model. Control strategy based on the concept of non-linear Lyapunov-type controller is then proposed to damp the tip oscillations and regulate the end point of the flexible robot.

کلمات کلیدی:

Lyapunov-type controller, Flexible Manipulator, lumped masses and spring model

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