

Trajectory Tracking of a 2-Link Mobile Manipulator Using Sliding Mode Control Method

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Abstract : In this paper, we are investigating the sliding mode control approach for trajectory tracking of a two-link-manipulator with a wheeled mobile robot in its base. The main challenge of this work is the dynamic interaction between mobile base and manipulator, which makes trajectory tracking more difficult than n-link manipulators with a fixed base. Another challenging part of this work is to avoid from chattering phenomenon of sliding mode control that makes lots of damages for actuators in real industrial cases. The results show the effectiveness of the sliding mode control approach for the desired trajectory.

Keywords : mobile manipulator, sliding mode control, dynamic interaction, mobile robotics

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