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Research Article

Robust Design of Terminal ILC with H_{∞} Mixed Sensitivity Approach for a Thermoforming Oven

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Abstract

This paper presents a robust design approach for terminal iterative learning control (TILC). This robust design uses the H_{∞} mixed-sensitivity technique. An industrial application is described where TILC is used to control the reheat phase of plastic sheets in a thermoforming oven. The TILC adjusts the heater temperature setpoints such that, at the end of the reheat cycle, the surface temperature map of the plastic sheet will converge to the desired one. Simulation results are included to show the effectiveness of the control law.