

Linear Iterative Learning Control for Nonlinear Systems

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Iterative learning control can be used to improve the performance of an existing feedback control system executing a specific command. Iterations are made with the real world instead of a mathematical model, adjusting the command to the feedback controller aiming to eliminate deterministic tracking error. This offers the potential to fix errors that are beyond the fidelity of normal mathematical models. For linear systems there is a substantial body of knowledge concerning the difficulties of making well behaved iterations in hardware that converge quickly. The presentation examines how one can take advantage of this body of knowledge to improve the performance of feedback control of nonlinear systems.