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## Iterative Data-Driven Controller Tuning with Actuator Constraints and Reduced Sensitivity

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### Abstract

This paper proposes a novel iterative data-driven algorithm for tuning controllers of nonlinear systems. The iterative data-driven algorithm solves optimization problems for nonlinear processes, with the aim of minimizing the error in terms of a quadratic penalty function approach. A gradient information used in the search algorithm for the controller parameters with respect to the controller parameters. A case study is presented for the angular position control of a nonlinear aerodynamic system using a data-driven algorithm.

### Keywords

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