

# Controller Coefficient Truncation Using Lyapunov Performance Certificate

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We describe a method for truncating the coefficients of a linear controller while guaranteeing that a given set of relaxed performance constraints is met. Our method sequentially and greedily truncates individual coefficients, using a Lyapunov certificate, typically in linear matrix inequality (LMI) form, to guarantee performance. Numerical examples show that the method is surprisingly effective at finding controllers with aggressively truncated coefficients, that meet typical performance constraints. We give an example showing how the basic method can be extended to handle nonlinear plants and controllers.

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