

# OPTIMAL GUARANTEED COST CONTROL OF LINEAR SYSTEMS WITH MIXED INTERVAL TIME-VARYING DELAYED STATE AND CONTROL

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## TÓM TẮT:

This paper deals with the problem of optimal guaranteed cost control for linear systems with interval time-varying delayed state and control. The time delay is assumed to be a continuous function belonging to a given interval, but not necessary to be differentiable. A linear-quadratic cost function is considered as a performance measure for the closed-loop system. By constructing a set of augmented Lyapunov-Krasovskii functional combined with Newton-Leibniz formula, a guaranteed cost controller design is presented and sufficient conditions for the existence of a guaranteed cost state-feedback for the system are given in terms of linear matrix inequalities (LMIs). Numerical examples are given to illustrate the effectiveness of the obtained result.