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Linear quadratic suboptimal control for time delays systems

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Abstract

In this contribution we propose to extend the well-known iterative procedure for the synthesis of suboptimal control laws for linear delay free control system introduced in Vaisbord (1963) to the case of control systems with pointwise and distributed delays. The iterative procedure is based on the idea of the approximate construction of the Bellman functional in the form of quadratic Lyapunov-Krasovskii functionals. The procedure at each step generates a new stabilising suboptimal control law that reduces the value of the quadratic performance index. We present in this contribution formulas for the computation of control laws.



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