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Approximate parallel controllers for discrete stochastic weakly coupled linear systems. (English) Zbl 0745.93082

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From the authors summary: "The global Kalman filter of linear weakly coupled discrete systems is exactly decomposed into separate reduced- order local filters, via the use of a decoupling transformation. The approximate parallel controllers, up to an arbitrary degree of accuracy, are derived by approximating coefficients of the optimal control law. The proposed method allows parallel processing of information and reduces both off-line and on-line computational requirements. A real-world example demonstrates the efficiency of the proposed method.".

Reviewer: M.C.Cranston

MSC:

93E20 Optimal stochastic control
93A15 Large-scale systems
93C05 Linear systems in control theory

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