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Tracking problem for linear discrete-time stochastic systems in Hilbert spaces and the uniform observability. (English) [Zbl 1164.93013](#)

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The tracking problem for linear discrete-time systems with independent random perturbations in Hilbert spaces is studied for both periodic and unperiodic cases. Here, a certain quadratic cost criterion is minimized under stabilizability and uniform observability (or detectability) conditions. Introducing a certain Riccati difference equation, the optimal costs and an optimal control is determined.

Reviewer: [Kurt Marti \(Neubiberg\)](#)

MSC:

[93E20](#) Optimal stochastic control

[93C55](#) Discrete-time control/observation systems

Keywords:

discrete-time systems; stochastic optimal control; tracking problem; uniform observability; Riccati equation