

Phillis, Yannis A.

Controller design of systems with multiplicative noise. (English) Zbl 0569.93070
IEEE Trans. Autom. Control 30, 1017-1019 (1985).

Continuous stochastic systems acted upon by scalar multiplicative and vector additive noises are considered. First examined is the problem of finite-horizon control of such a stochastic system with time-varying parameters under the additional constraint of incomplete state information. The necessary conditions for optimality of the solution are expressed in terms of nonlinear matrix differential equations. Next, taken up is the infinite-horizon case with constant parameters, and the result is given in terms of nonlinear algebraic equations to be solved.

Reviewer: [E. Yaz](#)

MSC:

[93E20](#) Optimal stochastic control
[49K45](#) Optimality conditions for problems involving randomness
[93C05](#) Linear systems in control theory
[93C99](#) Model systems in control theory
[93E11](#) Filtering in stochastic control theory

Cited in **12** Documents

Keywords:

Continuous stochastic systems; scalar multiplicative and vector additive noises; finite-horizon control; incomplete state information; infinite- horizon

Full Text: [DOI](#)