

STATIONARY LINEAR MEAN SQUARE FILTER FOR THE OPERATION MODE OF CONTINUOUS-TIME MARKOVIAN JUMP LINEAR SYSTEMS*

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DOI <https://doi.org/10.56082/annalsarscimath.2020.1-2.501>

Dedicated to Dr. Vasile Drăgan on the occasion of his 70th anniversary

Abstract

This paper makes a further foray on the study of the filtering problem for the class of Markov jump linear systems (MJLSs) with partial observations of the Markov parameter (the operation mode). We derive a *stationary filter* for the best linear mean square filter (BLMSF) devised in a recent paper by the authors. It amounts here to obtain the convergence of the error covariance matrix of the best linear mean square filter to a stationary value under some suitable assumptions which includes ergodicity of the Markov chain. The advantage of this scheme is that it is easier to implement since the filter gain computation can be performed offline, leading to a linear time-invariant filter.
MSC: 93E11, 93C05, 93C30, 60J74, 60J27

keywords: Stationary Linear filter, Markov Jump Linear Systems

*Accepted for publication in revised form on July 28, 2020

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