Ann. Acad. Rom. Sci.
Ser. Math. Appl.
ISSN 2066 - 6594 Vol. 4, No. 2 / 2012

ON THE ANISOTROPIC NORM OF DISCRETE TIME STOCHASTIC SYSTEMS WITH STATE DEPENDENT NOISE*

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Abstract

The purpose of this paper is to determine conditions for the boundedness of the anisotropic norm of discrete–time linear stochastic systems with state dependent noise. It is proved that these conditions can be expressed in terms of the feasibility of a specific system of matrix inequalities.

MSC: 93E03, 93E10, 93E25

keywords: anisotropic norm, stochastic systems, state-dependent noise, optimal estimation

1 Introduction

Since the early formulation and developments due to E. Hopf and N. Wiener in the 1940's, the filtering problems received much attention. The famous

*Accepted for publication on September 10, 2012.

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