THE UNIVERSITY OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

Computational Science Seminar

The classification of finite dimensional estimation algebras

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Abstract

Ever since the technique of Kalman-Bucy filter was popularized, finding new classes finite dimensional recursive filters has attracted intense interest. The idea of using estimation algebra to construct finite-dimensional nonlinear filters was first proposed by Brockett and Mitter independently in the late 1970s. It has been proven to be an invaluable tool in the study of nonlinear filtering (NLF) problems. Once the estimation algebra is finite dimensional, one can construct the finite dimensional filters (FDFs) for NLF problems by Wei-Norman approach. In this lecture we shall show that the complete classification of finite dimensional estimation algebras (FDEAs) with maximal rank along with arbitrary state space dimension, and present the recent results about the classification of FDEAs with non-maximal rank up to state space dimension four.

Date:	December 24, 2018 (Monday)
Time:	5:00 – 6:00pm
Venue:	Room 210, Run Run Shaw Bldg., HKU

All are welcome