

<<自动控制中的线性代数>>

图书基本信息

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内容概要

This book is assembled to cover basic matrix theory and linear algebra and their applications in a one-semester first level graduate class. The first four chapters include a complete treatment of topics on matrices and linear algebra. Chapter 5 to chapter 9 cover the materials such as spectral, singular value decompositions and polar factorizations of linear transformations and matrices, norms on a linear space, functions of matrices, especially the matrix exponential obtained in solving constant-coefficient systems of differential equations, generalized inverse of linear transformations and matrices. Applications of the matrix exponential are also developed in the areas such as the Lyapunov stability theory, controllability and observability analysis, stabilization and observer design, coprime factorizations of transfer function matrices, Hankel operator and its singular value decomposition in chapter 8. In chapter 10 solutions to linear matrix equations and algebraic Riccati equations for continuous-time as well as discrete-time systems are discussed.

This book is aimed at graduate students in Electrical, and Aerospace Engineering and Applied Mathematics. It can also be used by professional scientists and engineers working in a variety of industries and research institutions.

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