

<<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.

<<自动控制中的线性代数>>

书籍目录

Chapter 1 Linear Space and Mapping

1.1 Some Basic Concepts of Abstract Algebra

1.1.1 Algebraic Systems

1.1.2 Groups

1.1.3 Rings

1.1.4 Fields

1.2 Linear Spaces

1.2.1 The Basic Concepts

1.2.2 Linear Dependency

1.3 Basis of a Linear Space

1.3.1 The Notion of a Basis

1.3.2 Change of Basis and Transition Matrices

1.4 Linear Subspaces

1.4.1 The Notion of Linear Subspace

1.4.2 Sum and Intersect of Subspaces

1.4.3 Direct Sum and Complementary Subspace

1.5 Linear Transformations

1.5.1 Notion of a Linear Transformation

1.5.2 The Matrix Representation of a Linear Transformation

1.5.3 Isomorphism on Finite Dimensional Linear Spaces

1.5.4 Range and Kernel of a Linear Transformation

1.5.5 Composite Transformation

1.6 Quotient Space

1.6.1 Quotient Space

1.6.2 Regular Projection and Induced Transformation

1.7 Notes and References

1.8 Exercises and Problems

Chapter 2 Polynomials and Matrix Polynomials

2.1 Linear Algebras

2.2 Ring and Euclidean Division

2.3 Ideals of Polynomials

2.4 Factorization of a Polynomial

2.5 Matrix Polynomials

2.6 Unimodular $n \times n$ -Matrix and the Smith Canonical Form

2.7 Elementary Divisors and Equivalence of Matrix Polynomials

2.8 Ideal of Matrix Polynomials and Coprimeness

2.9 Notes and References

2.10 Problems and Exercises

Chapter 3 Linear Transformations

3.1 The Eigenvalues of a Linear Transformation

3.2 Similarity Reduction, Conditions on Similarity and the Natural Normal Form

3.2.1 Conditions on Similarity

3.2.2 Similarity Reduction and the Natural Normal Form

3.3 The Jordan Canonical Forms in $C^{n \times n}$ and $R^{n \times n}$

<<自动控制中的线性代数>>

- 3.3.1 The Jordan Canonical Forms in $C^{n \times n}$
- 3.3.2 The Jordan Canonical Forms in $R^{n \times n}$
- 3.3.3 The Transition Matrix X
- 3.3.4 Decomposing V into the Direct Sum of Jordan Subspaces
- 3.4 Minimal Polynomials and the First Decomposition of a Linear Space
- 3.4.1 Annihilating and Minimal Polynomials
- 3.4.2 The First Decomposition of a Linear Space
- 3.4.3 Decomposition of a Linear Space V over the Field C
- 3.5 The Cyclic Invariant Subspaces and the Second Decomposition of a Linear Space
- 3.5.1 The Notion of a Cyclic Invariant Subspace
- 3.5.2 The Second Decomposition of a Linear Space
- 3.5.3 Illustrating Examples
- 3.6 Notes and Reference
- 3.7 Problems and Exercises
- Chapter 4 Linear Transformations in Unitary Spaces
- 4.1 Euclidean and Unitary Spaces
- 4.1.1 The Notions of Euclidean and Unitary Spaces
- 4.1.2 The Characteristics of a Unitary Space
- 4.1.3 The Metric in Unitary Spaces
- 4.2 Orthonormal Basis and the Gram-Schmidt Process
- 4.3 Unitary Transformations
- 4.4 Projectors and Idempotent Matrices
- 4.4.1 Projectors and Idempotent Matrices
- 4.4.2 Orthogonal Complement and Orthogonal Projectors
- 4.5 Adjoint Transformation
- 4.6 Normal Transformations and Normal Matrices
- 4.7 Hermitian Matrices and Hermitian Forms
- 4.7.1 Hermitian Matrices
- 4.7.2 Hermitian Forms
- 4.8 Positive Definite Hermitian Forms
- 4.9 Canonical Forms of a Hermitian Matrix Pair
- 4.10 Rayleigh Quotient
- 4.11 Problems and Exercises
- Chapter 5 Decomposition of Linear Transformations and Matrices
- 5.1 Spectral Decomposition for Simple Linear Transformations and Matrices
- 5.1.1 Spectral Decomposition of Simple Transformations
- 5.1.2 Spectral Decomposition of Normal Transformations
- 5.2 Singular Value Decomposition for Linear Transformations and Matrices
- 5.3 Full Rank Factorization of Linear Transformations and Matrices
- 5.4 UR and QR Factorizations of Matrices
- 5.5 Polar Factorization of Linear Transformations and

<<自动控制中的线性代数>>

Matrices

5.6 Problems and Exercises

Chapter 6 Norms for Vectors and Matrices

6.1 Norms for Vectors

6.2 Norms of Matrices

6.3 Induced Norms of Matrices

6.4 Sequences of Matrices and the Convergency

6.5 Power Series of Matrices

6.6 Problems and Exercises

Chapter 7 Functions of Matrices

7.1 Power Series Representation of a Function of Matrices

7.2 Jordan Representation of Functions of Matrices

7.3 Polynomial Representation of a Function of Matrices

7.4 The Lagrange-Sylvester Interpolation Formula

7.5 Exponential and Trigonometric Functions of Matrices

7.5.1 Complex Functions of Matrices

7.5.2 Real Functions of Matrices

7.6 Problems and Exercises

Chapter 8 Matrix-valued Functions and Applications to Differential Equations

8.1 Matrix-valued Functions

8.2 Derivative and Integration of Matrix-valued Functions

8.3 Linear Dependency of Vector-valued Functions

8.4 Norms on the Space of Matrix-valued Functions

8.5 The Differential Equation $\dot{X}(t) = A(t)X(t)$

8.6 Solution to the State Equation $\dot{x}(t) = Ax(t) + Bu(t)$

8.7 Application of the Matrix Exponential : The Stability Theory

8.8 Application of the Matrix Exponential : Controllability and Observability

8.8.1 Notion on Controllability

8.8.2 Tests for Controllability

8.8.3 Observability and the Tests

8.8.4 Tests for Observability

8.8.5 Essentials of Controllability and Observability

8.8.6 State-Feedback and Stabilization

8.8.7 Observer Design and Output Injection

8.8.8 Co-prime Factorization of a Transfer Function Matrix over H

8.8.9 Controllability and Observability Gramian

8.8.10 Balanced Realization

8.9 Application of the Matrix Exponential : The Hankel Operator

8.9.1 The Notion of a Hankel Operator

8.9.2 The Singular Values of a Hankel Operator

8.9.3 Schmidt Decomposition of a Hankel Operator

8.10 Notes and References

<<自动控制中的线性代数>>

8.11 Problems and Exercises

Chapter 9 Generalized Inverses of Linear Transformations and Matrices

9.1 The Generalized Inverse of Linear Transformations and Matrices

9.1.1 The Generalized Inverse of Linear Transformations

9.1.2 Generalized Inverses of Matrices

9.2 The Reflexive Generalized Inverse of Linear Transformations and Matrices

9.2.1 The Reflexive Generalized Inverse of Linear Transformations

9.2.2 The Reflexive Generalized Inverse of Matrices

9.3 The Pseudo Inverse of Linear Transformations and Matrices

9.4 Generalized Inverse and Applications to Linear Equations

9.4.1 Consistent Inhomogeneous Linear Equation

9.4.2 Minimum Norm Solution to a Consistent Inhomogeneous Linear Equation

9.5 Best Approximation to an Inconsistent Inhomogeneous Linear Equation

9.6 Notes and References

9.7 Problems and Exercises

Chapter 10 Solution to Matrix Equations

10.1 The Notion of Kronecker Product and the Properties

10.2 Eigenvalues and Eigenvectors of Kronecker Product

10.3 Column and Row Expansions of Matrices

10.4 Solution to Linear Matrix Equations

10.5 Solution to Continuous-time Algebraic Riccati Equations

10.6 Solution to Discrete-time Algebraic Riccati Equations

10.7 Discussions and Problems

Bibliography

Notation and Symbols

List of Acronyms

<<自动控制中的线性代数>>

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