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Nota di contenuto	Contents; Preface; 1. Introduction; Perspective; 1.1 A Recent Referee Speaks; 1.2 The Original Motivation; 1.3 The Essential Entities; 1.4 Simple Examples and a Picture; 1.5 Applications to-Date; 1.6 Organization of this Book; Commentary; 1.7 Exercises; 2. The Original Motivation: Operator Semigroups; Perspective; 2.1 Abstract Initial Value Problems; 2.2 The Hille-Yosida-Phillips-Lumer Theorem; 2.3 The Rellich-Kato-Nelson-Gustafson Theorem; 2.4 The Multiplicative Perturbation Theorem; 2.5 When are Positive Operator Products Positive?; 2.6 Nonnegative Contraction Semigroups; Commentary 2.7 Exercises3. The Essentials of Antieigenvalue Theory; Perspective; 3.1 Convexity Properties of Norm Geometry; 3.2 The Min-Max Theorem; 3.3 The Euler Equation; 3.4 Higher Antieigenvalues and Antieigenvectors; 3.5 The Triangle Inequality; 3.6 Extended Operator Trigonometry; Commentary; 3.7 Exercises; 4. Applications in Numerical Analysis; Perspective; 4.1 Gradient Descent: Kantorovich Bound is

Trigonometric; 4.2 Minimum Residual $Ax = b$ Solvers; 4.3 Richardson Relaxation Schemes (e.g. SOR); 4.4 Very Rich Trigonometry Underlies ADI; 4.5 Domain Decomposition Multilevel Schemes
 4.6 Preconditioning and Condition Numbers; Commentary; 4.7 Exercises;
 5. Applications in Wavelets, Control, Scattering; Perspective; 5.1 The Time Operator of Wavelets; 5.2 Frame Operator Trigonometry; 5.3 Wavelet Reconstruction is Trigonometric; 5.4 New Basis Trigonometry; 5.5 Trigonometry of Lyapunov Stability; 5.6 Multiplicative Perturbation and Irreversibility; Commentary; 5.7 Exercises;
 6. The Trigonometry of Matrix Statistics; Perspective; 6.1 Statistical Efficiency; 6.2 The Euler Equation versus the Inefficiency Equation; 6.3 Canonical Correlations and Rayleigh Quotients
 6.4 Other Statistics Inequalities; 6.5 Prediction Theory: Association Measures; 6.6 Antieigenmatrices; Commentary; 6.7 Exercises;
 7. Quantum Trigonometry; Perspective; 7.1 Bell-Wigner-CHSH Inequalities; 7.2 Trigonometric Quantum Spin Identities; 7.3 Quantum Computing: Phase Issues; 7.4 Penrose Twistors; 7.5 Elementary Particles; 7.6 Trigonometry of Quantum States; Commentary; 7.7 Exercises;
 8. Financial Instruments; Perspective; 8.1 Some Remarks on Mathematical Finance; 8.2 Quantos: Currency Options; 8.3 Multi-Asset Pricing: Spread Options; 8.4 Portfolio Rebalancing
 8.5 American Options with Random Volatility; 8.6 Risk Measures for Incomplete Markets; Commentary; 8.7 Exercises;
 9. Other Directions; Perspective; 9.1 Operators; 9.2 Angles; 9.3 Optimization; 9.4 Equalities; 9.5 Geometry; 9.6 Applications; Commentary; 9.7 Exercises;
 Appendix A Linear Algebra; A.1 Matrix Analysis; A.2 Operator Theory; Appendix B Hints and Answers to Exercises; Chapter 1.; Chapter 2.; Chapter 3.; Chapter 4.; Chapter 5.; Chapter 6.; Chapter 7.; Chapter 8.; Chapter 9.; Bibliography; Index

Sommario/riassunto

Karl Gustafson is the creator of the theory of antieigenvalue analysis. Its applications spread through fields as diverse as numerical analysis, wavelets, statistics, quantum mechanics, and finance. Antieigenvalue analysis, with its operator trigonometry, is a unifying language which enables new and deeper geometrical understanding of essentially every result in operator theory and matrix theory, together with their applications. This book will open up its methods to a wide range of specialists.

2. Record Nr.	UNINA9910689563303321
Titolo	Proposed change of Utah-Nevada state boundary; amendments to the New Hampshire-Vermont Interstate School Compact; and tax treatment of bonds issued by the government of American Samoa : hearing before the Subcommittee on Commercial and Administrative Law of the Committee on the Judiciary, House of Representatives, One Hundred Seventh Congress, second session, on H.R. 2054, H.R. 3180, and H.R. 1448, March 6, 2002
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Descrizione fisica	1 online resource (iii, 10 p.)
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