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Titolo	Expander families and Cayley graphs [[electronic resource]] : a beginner's guide // Mike Krebs and Anthony Shaheen
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Altri autori (Persone)	ShaheenAnthony
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Nota di contenuto	Cover; Contents; Preface; Notations and conventions; Introduction; 1. What is an expander family?; 2. What is a Cayley graph?; 3. A tale of four invariants; 4. Applications of expander families; PART ONE: Basics; 1. Graph eigenvalues and the isoperimetric constant; 1. Basic definitions from graph theory; 2. Cayley graphs; 3. The adjacency operator; 4. Eigenvalues of regular graphs; 5. The Laplacian; 6. The isoperimetric constant; 7. The Rayleigh-Ritz theorem; 8. Powers and products of adjacency matrices; 9. An upper bound on the isoperimetric constant; Notes; Exercises 2. Subgroups and quotients1. Coverings and quotients; 2. Subgroups and Schreier generators; Notes; Exercises; Student research project ideas; 3. The Alon-Boppana theorem; 1. Statement and consequences; 2. First proof: The Rayleigh-Ritz method; 3. Second proof: The trace method; Notes; Exercises; Student research project ideas; PART TWO: Combinatorial Techniques; 4. Diameters of Cayley graphs and expander families; 1. Expander families have logarithmic diameter; 2. Diameters of Cayley graphs; 3. Abelian groups never yield expander families: A combinatorial proof 4. Diameters of subgroups and quotients5. Solvable groups with

bounded derived length; 6. Semidirect products and wreath products; 7. Cube-connected cycle graphs; Notes; Exercises; Student research project ideas; 5. Zig-zag products; 1. Definition of the zig-zag product; 2. Adjacency matrices and zig-zag products; 3. Eigenvalues of zig-zag products; 4. An actual expander family; 5. Zig-zag products and semidirect products; Notes; Exercises; Student research project ideas; PART THREE: Representation-Theoretic Techniques; 6. Representations of finite groups; 1. Representations of finite groups 2. Decomposing representations into irreducible representations 3. Schur's lemma and characters of representations; 4. Decomposition of the right regular representation; 5. Uniqueness of invariant inner products; 6. Induced representations; Note; Exercises; 7. Representation theory and eigenvalues of Cayley graphs; 1. Decomposing the adjacency operator into irreps; 2. Unions of conjugacy classes; 3. An upper bound on $\lambda_1(X)$; 4. Eigenvalues of Cayley graphs on abelian groups; 5. Eigenvalues of Cayley graphs on dihedral groups; 6. Paley graphs; Notes; Exercises; 8. Kazhdan constants 1. Kazhdan constant basics 2. The Kazhdan constant, the isoperimetric constant, and the spectral gap; 3. Abelian groups never yield expander families: A representation-theoretic proof; 4. Kazhdan constants, subgroups, and quotients; Notes; Exercises; Student research project ideas; Appendix A: Linear algebra; 1. Dimension of a vector space; 2. Inner product spaces, direct sum of subspaces; 3. The matrix of a linear transformation; 4. Eigenvalues of linear transformations; 5. Eigenvalues of circulant matrices; Appendix B: Asymptotic analysis of functions; 1. Big oh 2. Limit inferior of a function

Sommario/riassunto

The theory of expander graphs is a rapidly developing topic in mathematics and computer science, with applications to communication networks, error-correcting codes, cryptography, complexity theory, and much more. *Expander Families and Cayley Graphs: A Beginner's Guide* is a comprehensive introduction to expander graphs, designed to act as a bridge between classroom study and active research in the field of expanders. It equips those with little or no prior knowledge with the skills necessary to both comprehend current research articles and begin their own research. Central to this book are fou

2. Record Nr.	UNINA9910969846403321
Autore	Stavrev Emil
Titolo	Euro Area Monetary Policy in Uncharted Waters // Emil Stavrev, Thomas Harjes, Martin Cihak
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ISBN	9786612843952 9781462315406 1462315402 9781451873320 1451873328 9781452752082 1452752087 9781282843950 1282843958
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Altri autori (Persone)	CihakMartin HarjesThomas
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Soggetti	Monetary policy - European Union countries - Econometric models Global Financial Crisis, 2008-2009 Financial crises - European Union countries - Econometric models Banks and banking, Central - European Union countries - Econometric models Banking Banks and Banking Banks and banking Banks Bond yields Bonds Central bank policy rate Depository Institutions Economic & financial crises & disasters Finance Financial Crises Financial crises Financial Risk Management General Financial Markets: General (includes Measurement and Data) Interest rates Interest Rates: Determination, Term Structure, and Effects

Investment & securities
Investments: Bonds
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Nota di contenuto	Intro -- Contents -- I. Introduction -- II. ECB's Policy Response to the Crisis -- III. Has the Transmission Been Impaired? -- A. Transmission Channels -- B. Methodology -- C. Results -- IV. Monetary Policy and The Return of The Liquidity Trap -- A. Overview -- B. Empirical Assessment -- V. Conclusions -- References -- Tables -- 1. VAR Parameter Estimates -- 2. Risk Factor Loadings -- Figures -- 1. Euro Area: Recent Developments of the ECB's Liquidity Operations -- 2. Euro Area: Cost of Borrowing by Businesses and Households -- 3. Euro Area: Pass-through of The ECB Policy Rate Changes to Market Rates -- 4. Euro Area: The Impact of Crisis on Policy Rate Pass-through -- 5. Euro Area: VAR Residuals of Market Rates -- 6. Euro Area: Effectiveness of Monetary Policy -- 7. Euro Area Macro-Financial Model: Government Bond Yields and Model -- Appendix -- I. Small Theory-based Model for the Euro Area.
Sommario/riassunto	We analyze the European Central Bank's (ECB's) response to the global financial crisis. Our results suggest that even during the crisis, the core part of ECB's monetary policy transmission-from policy rates to market rates-has continued to operate, but at a decreased efficiency. We also find some evidence that the ECB's non-standard measures, namely the lengthening of the maturity of monetary policy operations and the provision of funds at the fixed rate, reduced money market term spreads, facilitating the pass-through from policy to market rates. Furthermore, the results imply that the substantial increase in the ECB's balance sheet may have contributed to a reduction in government bond term spreads.