1. Record Nr. UNINA9910789305003321

    Autore Ostrovskii Mikhail I

    Titolo Metric Eembeddings : Bilipschitz and coarse embeddings into Banach Spaces / / Mikhail I. Ostrovskii

    Pubbl/distr/stampa Berlin : , : De Gruyter, , 2013
    ©2013

    ISBN 3-11-026340-8

    Descrizione fisica 1 online resource (384 p.)

    Collana De Gruyter Studies in Mathematics ; ; 49

    Disciplina 515.732
    515/.732

    Soggetti Banach spaces
    Lipschitz spaces
    Stochastic partial differential equations

    Lingua di pubblicazione Inglese

    Formato Materiale a stampa

    Livello bibliografico Monografia

    Note generali Description based upon print version of record.

    Nota di bibliografia Includes bibliographical references and index.

    Nota di contenuto Front matter -- Preface -- Contents -- Chapter 1. Introduction: examples of metrics, embeddings, and applications -- Chapter 2. Embeddability of locally finite metric spaces into Banach spaces is finitely determined. Related Banach space theory -- Chapter 3. Constructions of embeddings -- Chapter 4. Obstacles for embeddability: Poincaré inequalities -- Chapter 5. Families of expanders and of graphs with large girth -- Chapter 6. Banach spaces which do not admit uniformly coarse embeddings of expanders -- Chapter 7. Structure properties of spaces which are not coarsely embeddable into a Hilbert space -- Chapter 8. Applications of Markov chains to embeddability problems -- Chapter 9. Metric characterizations of classes of Banach spaces -- Chapter 10. Lipschitz free spaces -- Chapter 11. Open problems -- Bibliography -- Author index -- Subject index

    Sommario/riassunto Embeddings of discrete metric spaces into Banach spaces recently became an important tool in computer science and topology. The purpose of the book is to present some of the most important techniques and results, mostly on bilipschitz and coarse embeddings. The topics include: (1) Embeddability of locally finite metric spaces into

Banach spaces is finitely determined; (2) Constructions of embeddings; (3) Distortion in terms of Poincaré inequalities; (4) Constructions of families of expanders and of families of graphs with unbounded girth and lower bounds on average degrees; (5) Banach spaces which do not admit coarse embeddings of expanders; (6) Structure of metric spaces which are not coarsely embeddable into a Hilbert space; (7) Applications of Markov chains to embeddability problems; (8) Metric characterizations of properties of Banach spaces; (9) Lipschitz free spaces. Substantial part of the book is devoted to a detailed presentation of relevant results of Banach space theory and graph theory. The final chapter contains a list of open problems. Extensive bibliography is also included. Each chapter, except the open problems chapter, contains exercises and a notes and remarks section containing references, discussion of related results, and suggestions for further reading. The book will help readers to enter and to work in a very rapidly developing area having many important connections with different parts of mathematics and computer science.