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| Descrizione fisica      | 1 online resource (544 p.)  |
| Collana                 | De Gruyter Proceedings in Mathematics   |
| Classificazione         | SK 820  |
| Altri autori (Persone)  | KaimanovichVadim A<br>SchmidtKlaus <1943-><br>WoessWolfgang <1954->   |
| Disciplina              | 519.2/82  |
| Soggetti                | Random walks (Mathematics)<br>Geometry  |
| Lingua di pubblicazione | Inglese   |
| Formato                 | Materiale a stampa  |
| Livello bibliografico   | Monografia  |
| Note generali           | Description based upon print version of record.   |
| Nota di bibliografia    | Includes bibilographical references.  |
| Nota di contenuto       | Front matter -- Table of contents -- Surveys and longer articles -- Some Markov chains on abelian groups with applications -- Random walks and physical models on infinite graphs: an introduction -- The Garden of Eden Theorem for cellular automata and for symbolic dynamical systems -- Expander graphs, random matrices and quantum chaos -- The Ihara zeta function of infinite graphs, the KNS spectral measure and integrable maps -- Simplicit  de spectres de Lyapounov et propri t  d'isolation spectrale pour une famille d'op rateurs de transfert sur l'espace projectif -- An introduction to the Stochastic Loewner Evolution -- A canonical form for automorphisms of totally disconnected locally compact groups -- Research communications -- On the classification of invariant measures for horosphere foliations on nilpotent covers of negatively curved manifolds -- Markov processes on vermiculated spaces -- Cactus trees and lower bounds on the spectral radius of vertex-transitive graphs -- Equilibrium measure, Poisson kernel and effective resistance on networks -- Internal |

diffusion limited aggregation on discrete groups of polynomial growth -- On the physical relevance of random walks: an example of random walks on a randomly oriented lattice -- Random walks, entropy and hopfianity of free groups -- Growth rates of small cancellation groups -- Recurrence properties of random walks on finite volume homogeneous manifolds -- On the cohomology of foliations with amenable groupoid -- Linear rate of escape and convergence in direction -- Remarks on harmonic functions on affine buildings -- Random walks, spectral radii, and Ramanujan graphs -- Cogrowth of arbitrary graphs -- Total variation lower bounds for finite Markov chains: Wilson's lemma -- Back matter

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## Sommario/riassunto

Die jüngsten Entwicklungen zeigen, dass sich Wahrscheinlichkeitsverfahren zu einem sehr wirkungsvollen Werkzeug entwickelt haben, und das auf so unterschiedlichen Gebieten wie statistische Physik, dynamische Systeme, Riemann'sche Geometrie, Gruppentheorie, harmonische Analyse, Graphentheorie und Informatik. Recent developments show that probability methods have become a very powerful tool in such different areas as statistical physics, dynamical systems, Riemannian geometry, group theory, harmonic analysis, graph theory and computer science. This volume is an outcome of the special semester 2001 - Random Walks held at the Schrödinger Institute in Vienna, Austria. It contains original research articles with non-trivial new approaches based on applications of random walks and similar processes to Lie groups, geometric flows, physical models on infinite graphs, random number generators, Lyapunov exponents, geometric group theory, spectral theory of graphs and potential theory. Highlights are the first survey of the theory of the stochastic Loewner evolution and its applications to percolation theory (a new rapidly developing and very promising subject at the crossroads of probability, statistical physics and harmonic analysis), surveys on expander graphs, random matrices and quantum chaos, cellular automata and symbolic dynamical systems, and others. The contributors to the volume are the leading experts in the area. The book will provide a valuable source both for active researchers and graduate students in the respective fields.

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