

1. Record Nr.	UNISALENTO991003635169707536
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Titolo	Transfer operators, endomorphisms, and measurable partitions [e-book] / Sergey Bezuglyi, Palle E. T. Jorgensen
ISBN	9783319924175 3319924176 9783319924168 3319924168
Descrizione fisica	1 online resource (x, 162 pages) : illustrations
Collana	Lecture notes in mathematics, 0075-8434 ; 2217
Classificazione	AMS 47-02
Altri autori (Persone)	Jørgensen, Palle E. T.
Disciplina	515.724
Soggetti	Transfer operators Functional analysis Measure theory Operator theory Probabilities Thermodynamics Endomorphisms (Group theory)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index
Nota di contenuto	1. Introduction and Examples ; 2. Endomorphisms and Measurable Partitions ; 3. Positive, and Transfer, Operators on Measurable Spaces: general properties ; 4. Transfer Operators on Measure Spaces ; 5. Transfer operators on L1 and L2 ; 6. Actions of Transfer Operators on the set of Borel Probability Measures ; 7. Wold's Theorem and Automorphic Factors of Endomorphisms ; 8. Operators on the Universal Hilbert Space Generated by Transfer Operators ; 9. Transfer Operators with a Riesz Property ; 10. Transfer Operators on the Space of Densities ; 11. Piecewise Monotone Maps and the Gauss Endomorphism ; 12. Iterated Function Systems and Transfer Operators ; 13. Examples
Sommario/riassunto	The subject of this book stands at the crossroads of ergodic theory and measurable dynamics. With an emphasis on irreversible systems, the text presents a framework of multi-resolutions tailored for the study of

endomorphisms, beginning with a systematic look at the latter. This entails a whole new set of tools, often quite different from those used for the zeasiery and well-documented case of automorphisms. Among them is the construction of a family of positive operators (transfer operators), arising naturally as a dual picture to that of endomorphisms. The setting (close to one initiated by S. Karlin in the context of stochastic processes) is motivated by a number of recent applications, including wavelets, multi-resolution analyses, dissipative dynamical systems, and quantum theory. The automorphism-endomorphism relationship has parallels in operator theory, where the distinction is between unitary operators in Hilbert space and more general classes of operators such as contractions. There is also a non-commutative version: While the study of automorphisms of von Neumann algebras dates back to von Neumann, the systematic study of their endomorphisms is more recent; together with the results in the main text, the book includes a review of recent related research papers, some by the co-authors and their collaborators
