An Introduction to Ergodic Theory

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Book Condition: New. Publisher/Verlag: Springer, Berlin | The first part of this introduction to ergodic theory addresses measure-preserving transformations of probability spaces and covers such topics as recurrence properties and the Birkhoff ergodic theorem. The second part focuses on the ergodic theory of continuous transformations of compact metrizable spaces. Several examples are detailed, and the final chapter outlines results and applications of ergodic theory to other branches of mathematics. | 0 Preliminaries.-0.1 Introduction.-0.2 Measure Spaces.-0.3 Integration.-0.4 Absolutely Continuous Measures and Conditional Expectations.-0.5 Function Spaces.-0.6 Haar Measure.-0.7 Character Theory.-0.8 Endomorphisms of Tori.-0.9 Perron-Frobenius Theory.-0.10 Topology.- 1 Measure-Preserving Transformations.-1.1 Definition and Examples.-1.2 Problems in Ergodic Theory.-1.3 Associated Isometries.-1.4 Recurrence.-1.5 Ergodicity.-1.6 The Ergodic Theorem.-1.7 Mixing.- 2 Isomorphism, Conjugacy, and Spectral Isomorphism.-2.1 Point Maps and Set Maps.-2.2 Isomorphism of Measure-Preserving Transformations.-2.3 Conjugacy of Measure-Preserving Transformations.-2.4 The Isomorphism Problem.-2.5 Spectral Isomorphism.-2.6 Spectral Invariants.-3 Measure-Preserving Transformations with Discrete Spectrum.-3.1 Eigenvalues and Eigenfunctions.-3.2 Discrete Spectrum.-3.3 Group Rotations.- 4 Entropy.-4.1 Partitions and Subalgebras.-4.2 Entropy of a Partition.-4.3 Conditional Entropy.-4.4 Entropy of a Measure-Preserving Transformation.-4.5 Properties of h (T, A) and h (T).-4.6 Some Methods for Calculating h (T).-4.7 Examples.-4.8 How Good an Invariant is Entropy?.-4.9 Bernoulli Automorphisms and Kolmogorov Automorphisms.-4.10 The Pinsker ?-Algebra of a Measure-Preserving Transformation.-4.11...

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