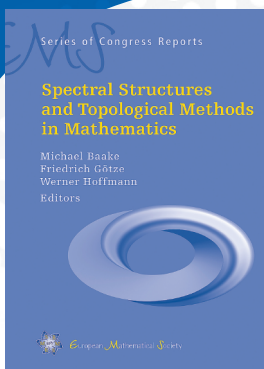


FEATURED TITLE FROM THE EUROPEAN MATHEMATICAL SOCIETY



Spectral Structures and Topological Methods in Mathematics

Michael Baake, *Universität Bielefeld, Germany*, Friedrich Götze, *Universität Bielefeld, Germany*, and Werner Hoffmann, *Universität Bielefeld, Germany*, Editors

This book is a collection of survey articles about spectral structures and the application of topological methods bridging different mathematical disciplines, from pure to applied. The topics are based on work done in the Collaborative Research Centre (SFB) 701.

Notable examples are non-crossing partitions, which connect representation theory, braid groups, non-commutative probability, as well as spectral distributions of random matrices. The local distributions of such spectra are universal and also represent the local distribution of zeros of L -functions in number theory.

An overarching method is the use of zeta functions in the asymptotic counting of sublattices, group representations, etc. Further examples connecting probability, analysis, dynamical systems, and geometry are generating operators of deterministic or stochastic processes, stochastic differential equations, and fractals, relating them to the local geometry of such spaces and the convergence to stable and semi-stable states.

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