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Title: **Representation Theory and Higher Algebraic K-Theory**

Shelving Guide: Mathematics

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Representation Theory and Higher Algebraic K-Theory is the first book to present higher algebraic K -theory of orders and group rings as well as characterize higher algebraic K -theory as Mackey functors that lead to equivariant higher algebraic K -theory and their relative generalizations. This book, thus, makes computations of higher K -theory of group rings more accessible and provides novel techniques for the computations of higher K -theory of finite and some infinite groups.

Authored by a premier authority of the field, the book begins with a careful review of classical K -theory, including clear definitions, examples, and important classical results. Emphasizing the practical value of the usually abstract topological constructions, the author systematically discusses higher algebraic K -theory of orders and group rings and proves numerous results. He also discusses in depth profinite higher K - and G -theory of exact categories, orders, and group rings. Providing new insights into classical results and opening avenues for further applications, the book uses representation-theoretic techniques to examine equivariant higher algebraic K -theory, their relative generalizations, and equivariant homology theories for discrete group actions. The final chapter unifies Farrell-Jones and Baum-Connes isomorphism conjectures through Davis-Lück assembly maps.

Features

- Explores connections between C_G and higher algebraic K -theory of C for suitable categories, such as exact, symmetric monoidal, and Waldhausen
- Collects computational methods of higher K -theory of noncommutative rings, such as orders and group rings
- Describes all higher algebraic K -theory as Mackey functors that lead to equivariant higher algebraic K -theory and their relative generalizations for finite, profinite, and compact Lie group actions
- Obtains explicit results on higher K -theory of orders Λ , and hence group rings, for all $n \geq 0$
- Uses certain computations of higher K -theory of orders to produce results on higher K -theory of some infinite groups

Approved by AE (7/12), AU (8/3), MM (), PE ()