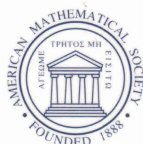# Infinite-Dimensional Aspects of Representation Theory and Applications

International Conference on Infinite-Dimensional Aspects of
Representation Theory and Applications
May 18–22, 2004
University of Virginia
Charlottesville, Virginia

Stephen Berman
Brian Parshall
Leonard Scott
Weiqiang Wang
Editors

Infinite-Dimensional Aspects of Representation Theory and Applications

CONTEMPORARY
MATHEMATICS

392

Infinite-Dimensional Aspects
of Representation Theory
and Applications

International Conference on Infinite-Dimensional
Aspects of Representation Theory and Applications
May 18–22, 2004
University of Virginia
Charlottesville, Virginia

Stephen Berman
Brian Parshall
Leonard Scott
Weiqiang Wang
Editors

Contents

Preface

In May 2004, the Department of Mathematics at the University of Virginia (UVA) hosted an international conference on Infinite-dimensional Aspects of Representation Theory and Applications. About 80 mathematicians participated in the meeting, including senior researchers, postdocs, and graduate students, who worked in diverse fields including representation theory (of Hecke algebras, quivers, quantum groups, infinite-dimensional Lie algebras, etc.) and algebraic geometry (of Gromov-Witten theory, moduli spaces, Hilbert schemes, etc.).

The conference offered a mixture of mini-courses and regular talks. The three mini-courses were given by S. Ariki, W. Crawley-Boevey, and A. Okounkov. The speakers included: David Ben-Zvi, Vyjayanthi Chari, William Haboush, Shrawan Kumar, Haisheng Li, Tetsuji Miwa, Evgeny Mukhin, Zhenbo Qin, Raphaël Rouquier, Ravi Vakil, Michela Varagnolo, and Kari Vilonen.

This volume contains 10 papers from that conference. We thank the speakers and participants who made the conference successful, all the authors for their fine contributions to this volume, and all the referees for their careful reviews. We are grateful to the National Science Foundation, the Institute of Mathematical Science, and the Department of Mathematics at UVA for their generous financial support. We also thank Karen Klintworth for her help in organizing the conference.

The Editors

Titles in This Series

For a complete list of titles in this series, visit the
AMS Bookstore at **www.ams.org/bookstore/**.

The University of Virginia (Charlottesville) hosted an international conference on Infinite-dimensional Aspects of Representation Theory and Applications. This volume contains papers resulting from the mini-courses and talks given at the meeting.

Beyond the techniques and ideas related to representation theory, the book demonstrates connections to number theory, algebraic geometry, and mathematical physics. Specific topics covered include Hecke algebras, quantum groups, infinite-dimensional Lie algebras, quivers, modular representations, and Gromov-Witten invariants.

The book is suitable for graduate students and researchers interested in representation theory.