Operator Algebras, Quantization, and Noncommutative Geometry

A Centennial Celebration Honoring John von Neumann and Marshall H. Stone

AMS Special Session on Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration Honoring John von Neumann and Marshall H. Stone

January 15–16, 2003
Baltimore, Maryland

Robert S. Doran
Richard V. Kadison
Editors

American Mathematical Society
Dedicated to the memory of
John von Neumann
and Marshall H. Stone
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This volume contains the proceedings of an AMS Special Session entitled "Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration Honoring John von Neumann and Marshall H. Stone" marking the 100th anniversary of the birth of both von Neumann and Stone. It was held January 15–16, 2003, in Baltimore, Maryland.

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Preface

John von Neumann and Marshall H. Stone were mathematicians of great power, vision, and remarkable ingenuity. Their profound contributions to mathematics and the broader scientific enterprise have left a rich legacy for researchers that continues today.

The present volume contains the proceedings of an AMS Special Session entitled Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration in Honor of John von Neumann and Marshall H. Stone. This session, held in Baltimore, Maryland, January 15–16, 2003, marked the 100th anniversary of the birth of both von Neumann and Stone. The Table of Contents reveals papers that range from expository and historical surveys to original research articles. The influence of von Neumann’s and Stone’s fundamental ideas forms a backdrop throughout these papers. All of these articles, which span a rather broad range of mathematics, have been carefully refereed and will not appear elsewhere. The article, The Legend of John von Neumann by Paul Halmos, has been reprinted in this collection with permission of the author and the American Mathematical Monthly.

Many of the papers that appear herein are expanded versions of the authors’ talks in Baltimore and were written especially for this volume. The article, Marshall H. Stone: Mathematician, Statesman, Advisor and Friend by G. W. Mackey was written at the request of the editors. Professor Mackey graciously agreed to prepare the article even though he has had some difficulties with his health. Nigel Higson was unable to accept our invitation to speak at Baltimore but at the editors’ request agreed to contribute the article Meromorphic continuation of zeta functions associated to elliptic operators.

The editors wish to express their sincere gratitude and thanks to all who made this volume possible. In particular, they wish to thank the other speakers for their beautiful talks and their willingness to spend many hours writing them up so the results would be available to the larger mathematical community. We also acknowledge the hard work and help of the referees. We are indebted to David Addis, our technical associate, for a thoroughly professional job of getting the manuscript ready for publication. His care for detail is reflected throughout the volume. Finally, we wish to thank Sergei Gelfand, Christine Thivierge, and the dedicated staff at the American Mathematical Society for their efforts in publishing these proceedings.

Robert S. Doran

Richard V. Kadison
John von Neumann
(1903–1957)
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John von Neumann and Marshall Stone were two giants of Twentieth Century mathematics. In honor of the 100th anniversary of their births, a mathematical celebration was organized featuring developments in fields where both men were major influences.

This volume contains articles from the AMS Special Session, Operator Algebras, Quantization and Noncommutative Geometry: A Centennial Celebration in Honor of John von Neumann and Marshall H. Stone. Papers range from expository and historical surveys to original research articles. All articles were carefully refereed and cover a broad range of mathematical topics reflecting the fundamental ideas of von Neumann and Stone.

Most contributions are expanded versions of the talks and were written exclusively for this volume. Included, among others, are articles by George W. Mackey, Nigel Higson, and Marc Rieffel. Also featured is a reprint of P.R. Halmos's *The Legend of John von Neumann*.

The book is suitable for graduate students and researchers interested in operator algebras and applications, including noncommutative geometry.