

## PREFACE

Integral geometry, known as geometric probability in the past, originated from Buffon's needle experiment. Crofton, Poincare, Blaschke, Chern, Santalo and others made significant contributions in the past centuries. The applications of this field vary from the medical sciences to other mathematic branches including algebra, geometric inequalities, differential equations, topology, and geometric convexity. Remarkable advances have also been made in several areas that involve the theory of convex bodies. In 2002, a select group of mathematicians believed it was the time to convene the first conference on these important fields in China.

The result was the First International Conference on Integral Geometry and Convexity Related Topics in China, which was held at Wuhan University of Science and Technology from October 18 to 23, 2004 and sponsored by the Mathematical Associations of Hubei Province and Wuhan City. The organizers carefully selected international researchers who are leaders in their specialties to discuss their recent results and their ideas on the trends of future research. The only regret is that some known mathematicians could not present due to their own schedule.

The program consisted of talks on integral geometry, convex geometry, complex geometry, probability, statistics and other convexity-related branches. The principal speakers were Rolf Schneider, Eric Grinberg, and Ralph Howard; they were joined by ten other leading international mathematicians and eight domestic Chinese researchers. The conference was purposely designed to facilitate the discussion and exchange of ideas among researchers with various specialties and we believe that objective was achieved.

It is especially gratifying to have the talks, which were presented at the Conference collected together in these Proceedings (World Scientific Publishers, Singapore). The major themes include probabilistic and analytic methods in the study of convex bodies, especially in high dimensions, applications of integral geometry and convex-geometric methods to other branches of mathematics, isoperimetric-type inequalities, radon transforms, and applications to medical, economic and information sciences. The ed-

itors of the Proceedings are Jiazou Zhou, Gaoyong Zhang, Eric Grinberg and Shougui Li, all of whom should also be recognized for their hard work and diligence in the planning and execution of all aspects of this international conference. Since I was unable to attend the conference due to physical mobility difficulties, I am looking forward to the publication of the Proceedings.

On behalf of the organizing committee, we would also like to express our sincere gratitude to the invited speakers and audience of over 50 research mathematicians whose participation made this conference a great success. We hope that this conference is the start of many more such gatherings.

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