

Preface

Indian Statistical Institute, a premier research institute founded by Professor Prasanta Chandra Mahalanobis in Calcutta in 1931, celebrated its platinum jubilee during the year 2006-07. On this occasion, the institute organized several conferences and symposia in various scientific disciplines in which the institute has been active.

From the beginning, research and training in probability, statistics and related mathematical areas including mathematical computing have been some of the main activities of the institute. Over the years, the contributions from the scientists of the institute have had a major impact on these areas.

As a part of these celebrations, the Division of Theoretical Statistics and Mathematics of the institute decided to invite distinguished mathematical scientists to contribute articles, giving “a perspective of their discipline, emphasizing the current major issues”. A conference entitled “Perspectives in Mathematical Sciences” was also organized at the Bangalore Centre of the institute during February 4-8, 2008.

The articles submitted by the speakers at the conference, along with the invited articles, are brought together here in two volumes (Part I and Part II).

Part I consists of articles in Probability and Statistics. Articles in Statistics are mainly on statistical inference, both frequentist and Bayesian, for problems of current interest. These articles also contain applications illustrating the methodologies discussed. The articles on probability are based on different “probability models” arising in various contexts (machine learning, quantum probability, probability measures on Lie groups, economic phenomena modelled on iterated random systems, “measure free martingales”, and interacting particle systems) and represent active areas of research in probability and related fields.

Part II consists of articles in Algebraic Geometry, Algebraic Number Theory, Functional Analysis and Operator Theory, Scattering Theory,

von Neumann Algebras, Discrete Mathematics, Permutation Groups, Lie Theory and Super Symmetry.

All the authors have taken care to make their exposition fairly self-contained. It is our hope that these articles will be valuable to researchers at various levels.

The editorial committee thanks all the authors for writing the articles and sending them in time, the speakers at the conference for their talks and various scientists who have kindly refereed these articles. Thanks are also due to the National Board for Higher Mathematics, India, for providing partial support to the conference. Finally, we thank Ms. Asha Lata for her help in compiling these volumes.

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