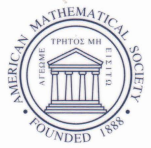
CONTEMPORARY MATHEMATICS

390

Commutative Algebra and Algebraic Geometry

Joint International Meeting of the American Mathematical Society and the Indian Mathematical Society on Commutative Algebra and Algebraic Geometry
Bangalore, India
December 17–20, 2003

Sudhir Ghorpade
Hema Srinivasan
Jugal Verma
Editors



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Preface

This volume commemorates the first Joint AMS-India Mathematics Meeting which was held in Bangalore, India during December 17-20, 2003. This was the first occasion for an International Meeting of the American Mathematical Society to take place in India. We organized a special session on Commutative Algebra and Algebraic Geometry at this meeting. It featured talks by twenty mathematicians from around the world, including some of the leading researchers in Commutative Algebra and Algebraic Geometry. We had eight speakers from India, seven from USA and five from France, Germany, Spain and Switzerland. Although the talks in our special session were by invitation only, we had an overwhelming response from mathematicians across the globe who were interested in participating in the session and presenting their work. As an addition to the meeting and especially to feature younger researchers among them, we organized a one-day conference prior to the AMS meeting. This event "Commutative Algebra and Algebraic Geometry - featuring younger researchers' took place primarily with the help of our local organizer Dilip Patil, a 'at the Indian Institute of Science, Bangalore on December 16, 2003. . This 'Young Session' featured talks by 11 researchers including seven from India, two from USA and one each from Germany and Japan.

The articles in this volume are selected from those which were solicited from the invited speakers at the 'Young Session' as well as the 'Special Session'. Several among these are research articles with new results not published elsewhere, while some are definitive survey articles. Each article has been refereed in accordance with the high scientific standards of the AMS Contemporary Mathematics series. As a quick glance at the table of contents would reveal, the articles represent a wide spectrum of topics of current interest in Commutative Algebra and Algebraic Geometry. Most articles also contain an eclectic mix of Algebra and Geometry. Thus we have not deemed it appropriate to separate the articles under different themes. Indeed, we have simply arranged them in an alphabetical order. Mathematics, after all, is an organic whole, and compartmentalization into distinct subjects is often artifical and inaccurate. The organic unity and the interconnections are especially evident in the twin areas of Commutative Algebra and Algebraic Geometry. We hope that this volume goes some way in reestablishing this fact.

In organizing the two sessions and preparing this volume, we have received excellent cooperation from many individuals and organizations. We are grateful to all of them and would specifically like to mention the following. First and foremost, the American Mathematical Society for organizing a joint conference in India and hope this will be a periodic event. The AMS and its staff have been helpful and cooperative, and we appreciate that. We also thank Ms. Brenda Frazier of the University of Missouri for her generous help in putting together

the manuscripts and formatting them properly. We are also grateful to the Indian organizers, especially Professor Gadadhar Misra, for his help and cooperation. The Department of Mathematics at the Indian Institute of Science, Bangalore offered excellent facilities for conducting the 'Young Session' and we are thankful to them, especially to Professor Dilip Patil of IISc, for giving us splendid support. Professor David Eisenbud, who was to come for the meeting but could not do so at the last minute, agreed to write a Foreword to this volume and we are grateful to him. Many mathematicians across the globe helped us in refereeing the articles in this volume and we can't thank them enough for their time and effort. Hema Srinivasan would also like to gratefully acknowledge a grant from National Science Foundation with which we could support the travel expenses of the participants from United States. Last but not the least, we thank the participants at the two sessions, all the speakers and chairpersons, and the contributors to this volume.

Sudhir Ghorpade
Hema Srinivasan
Jugal Verma

Foreword

I've heard great things about the warmth and excitement of the First Joint AMS-India meeting, combining the great traditions of mathematics in India and the West. I was planning to go myself both to the main meeting and to one of the interesting shoulder conferences, but in the end I was unable because of illness in my family. However, I've had the pleasure of visiting India before (and I hope to go again!) so I have at least a sense of the interesting and lively scene that must have greeted the participants.

Despite the ease of email communication (people say that if your collaborator isn't in the office down the hall, it's best if she (let us say) is on the opposite side of the globe, so that one can use all twenty-four hours!), I think there's no substitute for a personal visit. For me, at least, getting a little sense of the other, and of the world in which she works, greatly deepens my interest and helps me extend my view in new directions. In this way I'm afraid the Indians are well ahead of the Americans: a large proportion of Indian mathematicians have come to visit the West, but rather few American mathematicians have been to India. From what I've heard from returning Americans and from the records, the AMS-India meeting was a good step toward changing that, and helping the two communities, so rich in talented people, realize the potential for collaboration.

David Eisenbud

List of Speakers

Shreeram S. Abhyankar
Purdue University
West Lafayette, Indiana, USA

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University of Osnabrueck
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