

CONTEMPORARY MATHEMATICS

709



APORTACIONES MATEMÁTICAS
SOCIEDAD MATEMÁTICA MEXICANA

Contributions of Mexican Mathematicians Abroad in Pure and Applied Mathematics

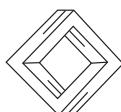
Second Meeting
Matemáticos Mexicanos en el Mundo
December 15–19, 2014
Centro de Investigación en Matemáticas
Guanajuato, Mexico

Fernando Galaz-García
Juan Carlos Pardo Millán
Pedro Solórzano
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Preface

This volume contains the proceedings of the Second Meeting of Mexican Mathematicians Abroad (II Reunión de Matemáticos Mexicanos en el Mundo), which took place at the Centro de Investigación en Matemáticas (CIMAT) in Guanajuato, Mexico, on December 15–19, 2014. This was the second in a series of ongoing biannual meetings aimed at showcasing the research of Mexican mathematicians based outside of Mexico as well as at strengthening academic connections both among the participants and with Mexican institutions. These conferences have been well received by the Mexican mathematical community, and they have had a visible positive impact on many levels. This can be readily measured by different parameters, such as new collaborations, more international grant proposals, organization and participation in specialized events, and, perhaps most importantly, the recruitment of many of the speakers by Mexican academic institutions.

On this occasion, there were 71 attendees from 40 universities in ten different countries, representing a 26% increase in comparison with the first meeting in 2012. Five days of intense activity saw 20 talks by senior and junior researchers, as well as graduate students, working at institutions in the Americas, Europe, and Oceania. A poster session allowed further participants to present their research. The program was rounded off by several roundtable discussions addressing professional opportunities in Mexico and different aspects of working and studying abroad. The organizing committee was composed of four mathematicians based abroad and four based in Mexico: O. Arizmendi (CIMAT, Mexico), N. Bárcenas (Centro de Ciencias Matemáticas, Universidad Nacional Autónoma de México (UNAM), Mexico), F. Galaz-García (Karlsruhe Institute of Technology (KIT), Germany), J. Malagón (University of Toronto, Canada), M. Moreno Rocha (CIMAT, Mexico), J. C. Pardo Millán, (CIMAT, Mexico), R. Ríos-Zertuche (Max Planck Institute for Mathematics, Germany), and P. Solórzano (Universidade Federal de Santa Catarina, Brazil).

On behalf of the organizers, we would like to thank CIMAT, the Sociedad Matemática Mexicana, the Centro de Ciencias Matemáticas at UNAM, and LAISLA Laboratorio Solomon Lefschetz for their financial support. We would also like to thank Norma Cortés and the Departamento de Eventos of CIMAT for their invaluable logistical support. We also thank the speakers and the participants for their commitment to making the meeting a success. Finally, it is a pleasure to thank the authors and referees who contributed to these proceedings as well as the editorial committees and staff of *Aportaciones Matemáticas* and *Contemporary Mathematics* for their support in the preparation of this volume. We hope that its

publication will continue to foster the interaction among Mexican mathematicians and their peers throughout the world.

Fernando Galaz-García
KIT

Juan Carlos Pardo Millán
CIMAT

Pedro Solórzano
UNAM



Speakers at the Second Meeting of Mexican Mathematicians Abroad,
CIMAT, December 15–19, 2014. (Photo by CIMAT, A.C.)



Organizers at the Second Meeting of Mexican Mathematicians Abroad,
CIMAT, December 15–19, 2014. (Photo by CIMAT, A.C.)



Participants at the Second Meeting of Mexican Mathematicians Abroad,
CIMAT, December 15–19, 2014. (Photo by CIMAT, A.C.)

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- Thom spectra from the ∞ -categorical point of view
Omar Antolín Camarena, Harvard University
- Primitive models of social networks: random trees
Laura Eslava, McGill University
- Stochastic modeling of carcinogenic tumors via Moran models
Nicolás Flores Castillo, Rice University
- Equivariant techniques in quantum cohomology
Eduardo González, University of Massachusetts, Boston
- Evolution: At the boundary between biology and mathematics
Adrián González Casanova Soberón, Technische Universität Berlin
- Non-autonomous dynamical systems, multiplicative ergodic theorems, and applications
Cecilia González-Tokman, University of New South Wales
- Methodology for the statistical analysis of data from complex surveys
Dagmar M. Hajduczak, University of Waterloo
- Combinatorial rigidity of the modular Teichmüller group
Jesús Hernández Hernández, Aix-Marseille Université
- Stability phenomena in cohomology
Rita Jiménez Rolland, Northeastern University
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- Kähler geometry in moduli spaces as an extremum in conformal field theory
Claudio Meneses, Max-Planck-Institut für Mathematik, Bonn
- Describing abelian varieties of dimension 6
Ángela Ortega, Humboldt-Universität zu Berlin

- A ramification rule via Littlemann paths
Jacinta Pérez Gavilán, Universität zu Köln
- Travelling waves in a family of degenerate non-linear reaction-diffusion advection equations
Judith Pérez Velázquez, Helmholtz Zentrum München
- Flows in manifolds of dimension three without periodic orbits
Ana Rechtman, Université de Strasbourg
- Haris-Chandra bimodules over Cherednik algebras
José Simental Rodríguez, Northeastern University
- Approximations of homomorphism functions
Pablo Soberón Bravo, University of Michigan
- Characterizations of measures in the dual of BV
Mónica Torres, Purdue University
- Rado's conjecture, reflection and semi-stationary reflection principles
Víctor Torres-Pérez, Technische Universität Wien
- The combinatorics of the circular element
Carlos Vargas, Universität des Saarlandes

List of Participants

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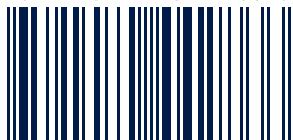
The book features articles drawn from eight broad research areas: algebra, analysis, applied mathematics, combinatorics, dynamical systems, geometry, probability theory, and topology. Their topics range from novel applications of non-commutative probability to graph theory, to interactions between dynamical systems and geophysical flows.

Several articles survey the fields and problems on which the authors work, highlighting research lines currently underrepresented in Mexico. The research-oriented articles provide either alternative approaches to well-known problems or new advances in active research fields. The wide selection of topics makes the book accessible to advanced graduate students and researchers in mathematics from different fields.



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