CONTEMPORARY MATHEMATICS

579

Theory and Applications of Finite Fields

The 10th International Conference
on Finite Fields and Their Applications
July 11–15, 2011
Ghent, Belgium

Michel Lavrauw
Gary L. Mullen
Svetla Nikova
Daniel Panario
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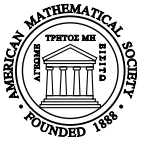

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Preface

This volume of Contemporary Mathematics of the American Mathematical Society contains the proceedings of the 10th International Conference on Finite Fields and Their Applications (Fq 10), held in Ghent, Belgium, July 11–15, 2011. This conference continued the already two-decades long tradition of bringing together researchers working on various topics on finite fields, to present their results, and to discuss problems on finite fields.

The local organizing committee consisted of Jan De Beule, Frank De Clerck (Chair), Yves Edel, Michel Lavrauw, Svetla Nikova, Bart Preneel and Leo Storme. The scientific committee consisted of Simeon Ball, Michel Lavrauw, Gary McGuire, Gary L. Mullen, Harald Niederreiter, Svetla Nikova, Daniel Panario, Bart Preneel, Igor Shparlinski and Leo Storme (Chair).

At the conference, there were 149 participants, five invited presentations given by Joachim von zur Gathen, Tor Helleseth, Tanja Lange, Olga Polverino and Michael Rosen, together with 97 contributed talks. The conference honored the 64th birthday of Gary L. Mullen, who initiated this series of international conferences on finite fields and the international journal *Finite Fields and Their Applications*, and the 200th birthday of Évariste Galois, the founder of finite fields theory.

The present volume contains three invited papers by world experts on diverse topics in finite fields, and 14 contributed papers. All submitted papers, including the invited papers, were strictly refereed according to the high standards required for publication in the Contemporary Mathematics Book Series of the American Mathematical Society. The topics include finite geometry, finite semifields, bent functions, polynomial theory, designs, and function fields.

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(1) BCRYPT: Belgian Fundamental Research on Cryptology and Information Security,
(2) Elsevier,
(3) FWO: Research Foundation - Flanders,
(4) Research Fund of the Faculty of Sciences of Ghent University,
(5) Research Group ESAT/COSIC, Department of Electrical Engineering, KU Leuven,
(6) Research Group Incidence Geometry, Department of Mathematics, Ghent University.

We also wish to thank Samuel Perez and Sonia Surmont, the administrative staff of the Department of Mathematics of Ghent University, and the staff of the conference centre "Het Pand" of Ghent University for their help in organizing Fq 10. A special thank you also goes out to Christine Thivierge (AMS) for her advise and

help in publishing these conference proceedings in the Contemporary Mathematics Book Series of the American Mathematical Society.

The refereeing process of the submitted articles cannot take place without the help of many referees. We thank the referees for their work in helping us to ensure the high quality of the proceedings of this conference.

Scientific research on finite fields and their applications still flourishes. Many problems still need to be solved and many paths still are unexplored. It is our pleasure to report that Prof. Dr. Alexander Pott (Otto-von-Guericke Universität, Magdeburg, Germany) will organize Fq 11 from July 22–26, 2013, in Magdeburg, Germany. In this way, the city of Magdeburg will add its name to the list of Las Vegas (Fq 1 and Fq 2), Glasgow (Fq 3), Waterloo (Fq 4), Augsburg (Fq 5), Oaxaca (Fq 6), Toulouse (Fq 7), Melbourne (Fq 8), Dublin (Fq 9), and Ghent (Fq 10) as venues for an Fq conference. The success of all ten previous Fq conferences already convinces us to be certain that Fq 11 will also be a great success. We are looking forward to this next edition within the Fq conferences series, and, together with Prof. Dr. Alexander Pott and his organizing team, invite you to attend the Fq 11 conference, and hope to see you there!

The editors
Michel Lavrauw, Gary L. Mullen, Svetla Nikova, Daniel Panario, Leo Storme
May 2012

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Research on finite fields and their practical applications continues to flourish. This volume's topics, which include finite geometry, finite semifields, bent functions, polynomial theory, designs, and function fields, show the variety of research in this area and prove the tremendous importance of finite field theory.

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