Foreword: computer algebra in coding theory and cryptography

Iliya Bouyukliev · Stanislav Bulygin ·
Edgar Martínez-Moro

Received: 25 April 2013 / Accepted: 26 April 2013 / Published online: 20 June 2013
© Springer-Verlag Berlin Heidelberg 2013

This issue of *Applicable Algebra in Engineering, Communication and Computing* is a follow-up to the Special Session “Computer Algebra in Coding Theory and Cryptography 2012”, hosted at *18th International Conference on Applications of Computer Algebra* (ACA 2012) held at the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, June 25–28, 2012, Sofia, Bulgaria. Several of the papers were presented in that session either as a preliminar work or work in progress, either in their final version. Also some other papers were added by the postconference open call among other colleagues who are interested in the combination/application of computer algebra, coding theory and/or cryptography.

We want to dedicate this volume to Professor Stefan Dodunekov who passed away on August 5, 2012. Prof. Dodunekov was a specialist in coding theory and also the president of the Union of Bulgarian mathematicians and the director of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences. He was one of the organizers of that Special Session at ACA 2012 and he was one of the mentors for the starting editorial work for this volume.

This volume includes a selection of research articles applying symbolic and computational techniques from various fields (algebra in a broad sense, algebraic combinatorics, number theory, etc.) to the fields of coding theory and cryptography.

I. Bouyukliev
Institute of Mathematics and Informatics,
Bulgarian Academy of Sciences, Veliko Tarnovo, Bulgaria

S. Bulygin
Center for Advanced Security Research Darmstadt (CASED),
Technischen Universität Darmstadt, Darmstadt, Germany

E. Martínez-Moro (✉)
Institute of Mathematics, Universidad de Valladolid, Castilla, Spain
e-mail: edgar.martinezmoro@gmail.com

They show many examples of applications which are intertwined across several of these fields. In this special issue, we have included contributions to several aspects of the theory as well as direct applications to both coding and cryptography.

We received many more papers than we could include and we thank the authors of all the papers submitted. Due to the high quality of the submissions, the process of deciding which papers to include was not easy and we are very grateful to the referees for their assistance in helping us reach our final selection. Finally we also want to thank Jacques Calmet and Marc Giusti, Founding Editor-in-Chief and Managing Editor-in-Chief respectively of *Applicable Algebra in Engineering, Communication and Computing*, for all the help and support during the preparation of this special issue.