

GROUPS COMPLEXITY CRYPTOLOGY

EDITORS-IN-CHIEF

Gerhard Rosenberger, *Hamburg*

Vladimir Shpilrain, *New York*

EDITORIAL BOARD

Simon R. Blackburn, *London*

Marston Conder, *Auckland*

Patrick Dehornoy, *Caen*

Bettina Eick, *Braunschweig*

Ben Fine, *Fairfield*

Robert Gilman, *Hoboken*

Dima Grigoriev, *Rennes*

Ki Hyoung Ko, *Daejeon*

Martin Kreuzer, *Passau*

Alexander May, *Bochum*

Alexander V. Mikhalev, *Moscow*

Alexei Myasnikov, *Montreal*

Vitalii Romankov, *Omsk*

Mark Sapir, *Nashville*

Rick Thomas, *Leicester*

Boaz Tsaban, *Ramat Gan*

Enric Ventura Capell, *Barcelona*

Pascal Weil, *Bordeaux*

DE GRUYTER

Contents

Andreas Distler, Bettina Eick

Group extensions with special properties — 1

Benjamin Atchison, Edward C. Turner

Symmetries of finite graphs and homology — 11

Sarah Hart, Ivo Hedtke, Matthias Müller-Hannemann,
Sandeep Murthy

**A fast search algorithm for $\langle m, m, m \rangle$ Triple Product
Property triples and an application for 5×5 matrix
multiplication — 31**

Manik Lal Das

**Key-escrow free multi-signature scheme using bilinear
pairings — 47**

Anthony M. Gaglione, Seymour Lipschutz, Dennis
Spellman

**An application of elementary real analysis to a
metabelian group admitting integral polynomial
exponents — 59**

Jordan Sahattchiev

**On convex hulls and the quasiconvex subgroups of
 $F_m \times \mathbb{Z}^n$ — 69**

Alexei Myasnikov, Vitaliĭ Roman'kov

A linear decomposition attack — 81

