DISCRETE MATHEMATICS AND APPLICATIONS

EDITOR-IN-CHIEF

Andrei M. Zubkov, Moscow

EDITORIAL BOARD

Valery B. Alekseev, Moscow Vladimir N. Chubarikov, Moscow Yuri L. Ershov, Novosibirsk Grigory I. Ivchenko, Moscow Yurii S. Kharin, Minsk Vadim V. Kochergin, Moscow Yuri I. Medvedev, Moscow Vladimir G. Mikhailov, Moscow Yuri L. Pavlov, Petrozavodsk Boris A. Pogorelov, Moscow Eduard A. Primenko, Moscow Vladimir N. Sachkov, Moscow Dmitry A. Shabanov, Moscow Vladimir A. Vatutin, Moscow

ADVISORY BOARD

Vladimir A. Emelichev, Minsk Yuri L. Ershov, Novosibirsk Yuri I. Matiyasevich, St. Petersburg Lev Ya. Savelyev, Novosibirsk Sergei A. Stepanov, Moscow

DE GRUYTER

DISCRETE MATHEMATICS AND APPLICATIONS provides the latest information on the development of discrete mathematics in Russia to a world-wide readership. The journal contains papers from the Russian-language journal *Diskretnaya Matematika*, the only journal of the Russian Academy of Sciences devoted to this field of mathematics. *Discrete Mathematics and Applications* covers various subjects in the fields such as combinatorial analysis, graph theory, functional systems theory, cryptology, coding, probabilistic problems of discrete mathematics, algorithms and their complexity, combinatorial and computational problems of number theory and of algebra. The journal is published bimonthly, simultaneously with the Russian edition as a cover-to-cover translation. Issues contain, in addition to original articles and reviews in the above-mentioned subject areas, reviews of books published in and outside Russia and information notes.

Please see the journal's homepage for Abstracting & Indexing Services information.

ISSN 0924-9265 · e-ISSN 1569-3929 · CODEN DMAPEW

All information regarding subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/dma.

RESPONSIBLE EDITOR Alexander A. Serov, Steklov Mathematical Institute, Russian Academy of Sciences, Gubkina str. 8, 119991, Moscow, Russia, e-mail: seroy@mi.ras.ru

PUBLISHER Walter de Gruyter GmbH, Berlin/Boston, Genthiner Straße 13, 10785 Berlin, Germany

JOURNAL COORDINATOR Natalia Białka, e-mail: natalia.bialka@degruyterbrill.com

RESPONSIBLE FOR ADVERTISEMENTS e-mail: anzeigen@degruyter.com

© 2025 Walter de Gruyter GmbH, Berlin/Boston, Germany

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim

Questions about General Product Safety Regulation: productsafety@degruyterbrill.com



Contents

Dmitry A. Burov

On cosets in the direct product of groups whose images by bijective mappings from factors to groups are cosets —— 63

Aleksandr V. Cheremushkin

On the linear disjunctive decomposition of a *p*-logic function into a sum of functions —— 85

Ivan V. Chizhov

Hadamard square of series connected linear codes —— 93

Vladimir G. Ryabov

New bounds for the nonlinearity of PN functions and APN functions over finite fields —— 113

Svetlana N. Selezneva

Describing the closed class of polynomial functions modulo a power of a prime number by a relation —— 125