## Contents

### Cryptography

Heterogeneous Hash Families and Covering Arrays  
**Charles J. Colbourn** and **Jose Torres-Jimenez** 3

Resilient Functions: Just How Resilient Are They?  
**William J. Martin** and **Berk Sunar** 17

Quantum Coins  
**Michele Mosca** and **Douglas Stebila** 35

Optimal Block Lengths for Secret Key Distillation  
**Joseph R. Oldford** and **David L. Wehlau** 49

### Finite Geometries

Hyperconics and Multiple Weight Codes for OCDMA  
**T. L. Alderson** 67

Blocking Sets and Large Transversal-Free Systems of Mutually Orthogonal Latin Squares  
**Aiden A. Bruen** 77

Incidence Matrices with Forbidden Configurations  
**Aiden A. Bruen**, **Trevor C. Bruen**, and **Robert Silverman** 83

A New Method to Construct Maximal Partial Spreads of Smallest Size in $PG(3, q)$  
**Maurizio Iurlo** and **Sandro Rajola** 89

A Representation of the Projective Space $P(r, k)$ on the Affine Plane $A(2, k)$ and the Geometric Equivalence between the Veblen Configuration in $P(3, k)$ and the Desargues Configuration in $A(2, k)$  
**Maria Scafati Tallini** 109

André Embeddings of Affine Planes  
**J. A Thas** and **H. Van Maldeghem** 123

### Codes

Near MDS Poset Codes and Distributions  
**Alexander Barg** and **Punarbasu Purkayastha** 135
Geometric Constructions of Quantum Codes
Jürgen Bierbrauer, D. Bartoli, S. Marcugini, and F. Pambianco

149

An Exact Analytical-Expression for the Read Sensor Signal in Magnetic Data Storage Channels
A. Bogatyrev, M. Hassner, and D. Yarmolich

155

Blocking Sets and Low-Weight Codewords in the Generalized Reed-Muller Codes
Aiden A. Bruen

161

Low-Power LDPC Decoding by Exploiting the Fault-Tolerance of the Sum-Product Algorithm
Vincent C. Gaudet

165

On Perfect Codes over Non Prime Power Alphabets
Olof Heden

173

Linear Codes from Projective Spaces
Michel Lavrauw, Leo Storme, and Geertrui Van de Voorde

185

The Dimension of the Code of a Strongly Resolvable Design
T. P. McDonough and V. C. Mavron

203

Codes of Nets and Projective Planes
G. Eric Moorhouse

207

Minimum Output Symbol Error Variance of Forward Error Control Codes
Christian Schlegel

217

Multi-Stream Information Transmission in Random Power Attenuation Environments
Dmitri Truhachev and Mandana Rahbari

227