The volume contains the first comprehensive explorations of misère games. It includes a tutorial for the very successful approach to analyzing misère impartial games and the first attempt at using it for misère partisan games. It also includes an updated version of Unsolved Problems in Combinatorial Game Theory and the Combinatorial Games Bibliography. The well-known normal-play games of Hex and Go are featured as well as new games: Toppling Dominoes has already spawned several papers and graduate theses; Maze extends the analysis of option-closed games; the question of Nim-dimension is introduced and new regularities are seen in take-and-break games.

Mathematical Sciences Research Institute Publications

63

Games of No Chance 4

Mathematical Sciences Research Institute Publications

For a complete list, see http://library.msri.org/books

- 5 Blackadar: K-Theory for Operator Algebras, second edition
- 9 Moore/Schochet: Global Analysis on Foliated Spaces, second edition
- 27 Carlsson/Cohen/Hsiang/Jones (eds.): Algebraic Topology and Its Applications
- 28 Clemens/Kollár (eds.): Current Topics in Complex Algebraic Geometry
- 29 Nowakowski (ed.): Games of No Chance
- 30 Grove/Petersen (eds.): Comparison Geometry
- 31 Levy (ed.): Flavors of Geometry
- 32 Cecil/Chern (eds.): *Tight and Taut Submanifolds*
- 33 Axler/McCarthy/Sarason (eds.): Holomorphic Spaces
- 34 Ball/Milman (eds.): Convex Geometric Analysis
- 35 Levy (ed.): The Eightfold Way
- 36 Gavosto/Krantz/McCallum (eds.): Contemporary Issues in Mathematics Education
- 37 Schneider/Siu (eds.): Several Complex Variables
- 38 Billera/Björner/Green/Simion/Stanley (eds.): New Perspectives in Geometric Combinatorics
- 39 Haskell/Pillay/Steinhorn (eds.): Model Theory, Algebra, and Geometry
- 40 Bleher/Its (eds.): Random Matrix Models and Their Applications
- 41 Schneps (ed.): Galois Groups and Fundamental Groups
- 42 Nowakowski (ed.): More Games of No Chance
- 43 Montgomery/Schneider (eds.): New Directions in Hopf Algebras
- 44 Buhler/Stevenhagen (eds.): Algorithmic Number Theory: Lattices, Number Fields, Curves and Cryptography
- 45 Jensen/Ledet/Yui: Generic Polynomials: Constructive Aspects of the Inverse Galois Problem
- 46 Rockmore/Healy (eds.): Modern Signal Processing
- 47 Uhlmann (ed.): Inside Out: Inverse Problems and Applications
- 48 Gross/Kotiuga: Electromagnetic Theory and Computation: A Topological Approach
- 49 Darmon/Zhang (eds.): Heegner Points and Rankin L-Series
- 50 Bao/Bryant/Chern/Shen (eds.): A Sampler of Riemann-Finsler Geometry
- 51 Avramov/Green/Huneke/Smith/Sturmfels (eds.): Trends in Commutative Algebra
- 52 Goodman/Pach/Welzl (eds.): Combinatorial and Computational Geometry
- 53 Schoenfeld (ed.): Assessing Mathematical Proficiency
- 54 Hasselblatt (ed.): Dynamics, Ergodic Theory, and Geometry
- 55 Pinsky/Birnir (eds.): Probability, Geometry and Integrable Systems
- 56 Albert/Nowakowski (eds.): Games of No Chance 3
- 57 Kirsten/Williams (eds.): A Window into Zeta and Modular Physics
- 58 Friedman/Hunsicker/Libgober/Maxim (eds.): Topology of Stratified Spaces
- 59 Caporaso/M^cKernan/Mustață/Popa (eds.): Current Developments in Algebraic Geometry
- 60 Uhlmann (ed.): Inverse Problems and Applications: Inside Out II
- 61 Breuillard/Oh (eds.): Thin Groups and Superstrong Approximation
- 62 Eguchi/Eliashberg/Maeda (eds.): Symplectic, Poisson, and Noncommutative Geometry
- 63 Nowakowski (ed.): Games of No Chance 4
- 64 Bellamy/Rogalski/Schedler/Stafford/Wemyss: Noncommutative Algebraic Geometry
- 65 Deift/Forrester (eds.): Random Matrix Theory, Interacting Particle Systems and Integrable Systems

Games of No Chance 4

Edited by

Richard J. Nowakowski

Dalhousie University



Richard J. Nowakowski Department of Mathematics and Statistics Dalhousie University Halifax, NS, Canada rjn@mathstat.dal.ca

Silvio Levy (*Series Editor*) Mathematical Sciences Research Institute levy@msri.org

The Mathematical Sciences Research Institute wishes to acknowledge support by the National Science Foundation and the *Pacific Journal of Mathematics* for the publication of this series.

CAMBRIDGE UNIVERSITY PRESS

32 Avenue of the Americas, New York, NY 10013-2473, USA

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781107011038

© Mathematical Sciences Research Institute 2015

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2015

Printed in the United States of America

A catalog record for this publication is available from the British Library.

ISBN 978-1-107-01103-8 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party Internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.