

Contents

Invited Papers

| | |
|--|----|
| A Quest for Kleene Algebra in 2 Dimensions | 3 |
| <i>Gheorghe Stefanescu</i> | |
| Connections between Relation Algebras and Cylindric Algebras | 27 |
| <i>Ian Hodkinson</i> | |
| Towards a Probabilistic Interpretation of Game Logic | 43 |
| <i>Ernst-Erich Doberkat</i> | |

Theoretical Foundations

| | |
|---|-----|
| Completeness and Incompleteness in Nominal Kleene Algebra | 51 |
| <i>Dexter Kozen, Konstantinos Mamouras, and Alexandra Silva</i> | |
| Closure, Properties and Closure Properties of Multirelations | 67 |
| <i>Rudolf Berghammer and Walter Guttman</i> | |
| Relational Formalisations of Compositions and Liftings of Multirelations | 84 |
| <i>Hitoshi Furusawa, Yasuo Kawahara, Georg Struth, and Norihiro Tsumagari</i> | |
| Relations among Matrices over a Semiring | 101 |
| <i>Dylan Killingbeck, Milene Santos Teixeira, and Michael Winter</i> | |
| Completeness via Canonicity for Distributive Substructural Logics: A Coalgebraic Perspective | 119 |
| <i>Fredrik Dahlqvist and David Pym</i> | |
| Generalised N -ary Relations and Allegories | 136 |
| <i>Bartosz Zieliński</i> | |
| Mechanised Relation-Algebraic Order Theory in Ordered Categories without Meets | 151 |
| <i>Musa Al-hassy and Wolfram Kahl</i> | |

Reasoning about Computations and Programs

| | |
|-----------------------------------|-----|
| Metaphorisms in Programming | 171 |
| <i>José N. Oliveira</i> | |

| | |
|--|-----|
| Relational Mathematics for Relative Correctness | 191 |
| <i>Jules Desharnais, Nafi Diallo, Wided Ghardallou, Marcelo F. Frias, Ali Jaoua, and Ali Mili</i> | |
| Encoding and Decoding in Refinement Algebra | 209 |
| <i>Kim Solin</i> | |
| Type Checking by Domain Analysis in Ampersand | 225 |
| <i>Stef Joosten and Sebastiaan J.C. Joosten</i> | |
| Towards Interactive Verification of Programmable Logic Controllers Using Modal Kleene Algebra and KIV | 241 |
| <i>Roland Glück and Florian Benedikt Krebs</i> | |
| Investigating and Computing Bipartitions with Algebraic Means | 257 |
| <i>Rudolf Berghammer, Insa Stucke, and Michael Winter</i> | |
| Tool-Based Verification of a Relational Vertex Coloring Program | 275 |
| <i>Rudolf Berghammer, Peter Höfner, and Insa Stucke</i> | |
| Applications of Relational and Algebraic Methods | |
| <i>L</i> -Fuzzy Databases in Arrow Categories | 295 |
| <i>Evans Adjei, Wazed Chowdhury, and Michael Winter</i> | |
| Text Categorization Using Hyper Rectangular Keyword Extraction: Application to News Articles Classification | 312 |
| <i>Abdelaali Hassaine, Souad Mechter, and Ali Jaoua</i> | |
| Solving a Tropical Optimization Problem via Matrix Sparsification | 326 |
| <i>Nikolai Krivulin</i> | |
| Towards Antichain Algebra | 344 |
| <i>Bernhard Möller</i> | |
| Decomposition of Database Preferences on the Power Set of the Domain | 362 |
| <i>Patrick Roocks</i> | |
| Roughness by Residuals: Algebraic Description of Rough Sets and an Algorithm for Finding Core Relations | 380 |
| <i>Martin E. Müller</i> | |
| Author Index | 395 |

Relational and Algebraic Methods in Computer Science
15th International Conference, RAMiCS 2015, Braga,
Portugal, September 28 - October 1, 2015, Proceedings
Kahl, W.; Winter, M.; Oliveira, J.N. (Eds.)
2015, X, 395 p. 51 illus., Softcover
ISBN: 978-3-319-24703-8