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-- 3.2 Storage -- 3.3 Interventions for Streams -- 4 Monitoring in Organisations -- 4.1 Why Employee Monitoring? -- 4.2 What Might Be Monitored and How? -- 4.3 Organisational Web Monitoring -- 5 Stream Model of Organisation Monitoring: Context -- 5.1 Organisation: Entities, Identity and Characteristics -- 5.2 Web Examples -- 5.3 Modelling Web Behaviour -- 6 Stream Model of Organisation Monitoring: Observation, Judgement, Monitoring -- 6.1 Web Content Observation -- 6.2 Data Usage Observation -- 6.3 Records -- 6.4 Monitoring -- 7 Stream Model of Organisation Monitoring: Storage -- 7.1 Histories, Thresholds and Queries -- 7.2 Data and Operations for Storage -- 8 Interventions -- 9 Concluding Remarks -- 9.1 The Monitoring Stack -- 9.2 Next Steps -- References -- Survey Papers -- Asymmetric Combination of Logics is Functorial: A Survey -- 1 Introduction -- 1.1 Motivation and Context -- 1.2 Contributions and Roadmap -- 2 Combination of Logics: A Brief Overview -- 3 Asymmetric Combination of Logics (Institutionally) -- 3.1 Institutions -- 3.2 An Institutional Rendering of Asymmetric Combinations of Logics -- 4 Asymmetric Combinations of Logics as Functors -- 4.1 Lifting Comorphisms -- 4.2 Property Preservation (Conservativity and Equivalence) -- 4.3 Natural Transformations -- 5 Conclusions and Future Work. References -- Algebraic Model Management: A Survey -- 1 Introduction -- 2 Model Management -- 2.1 Schema Mapping -- 2.2 Query Generation -- 2.3 Mapping Inversion -- 2.4 Mapping Composition -- 2.5 Schema Matching -- 2.6 Further References -- 3 Algebraic Model Management -- 3.1 Algebraic Databases -- 3.2 Schema Mapping -- 3.3 Query Generation -- 3.4 Mapping Composition -- 3.5 Mapping Inversion -- 3.6 Schema Matching -- 4 Conclusion -- References -- Regular Papers -- Probability Functions in the Context of Signed Involutive Meadows (Extended Abstract) -- 1 Introduction -- 1.1 A Survey of Design Options for the Inverse of 0 -- 1.2 Working with Involutive Ring Based Meadows -- 2 Boolean Algebras and Meadows -- 2.1 Boolean Algebras -- 2.2 Valuated Boolean Algebras and Some Naming Conventions -- 2.3 Events and Signed Meadows -- 3 Signed Meadow Based Probability Calculus -- 3.1 Equational Axioms for a Probability Function -- 3.2 Conditional Probability as a Total Operator: Four Options -- 3.3 Independence of Events -- 4 Logical Aspects of Equations for Probability Functions -- 4.1 Completeness of  $BA+Md+Sign+PFP$  -- 4.2 Using Free Boolean Algebras as Event Spaces -- 5 Multi-dimensional Probability Functions -- 5.1 Equational Axioms for a Probability Function Family -- 5.2 Existence of a Universal Probability Function -- 6 Concluding Remarks -- References -- A Calculus of Virtually Timed Ambients -- 1 Introduction -- 2 Virtually Timed Ambients -- 3 Comparing Virtually Timed Ambients -- 4 Related Work -- 5 Concluding Remarks -- References -- An Institution for Event-B -- 1 Introduction and Motivation -- 1.1 Formal Specification of a Traffic-Lights System in Event-B -- 1.2 Related Work: Institutions and Modularisation -- 2 An Institution for Event-B -- 2.1 Defining EVT -- 3 Relating FOPEQ and EVT -- 3.1 Pushouts and Amalgamation. 4 Modularising Event-B Specifications -- 4.1 Refinement in the EVT Institution -- 4.2 A Modular, Refined Specification -- 5 Conclusion and Future Work -- References -- On the Most Suitable Axiomatization of Signed Integers -- 1 Introduction -- 2 Definitions of  $N$  -- 3 Approach 1: Definition of  $Z$  Using Set Theory -- 4 Formal Definitions -- 4.1 Syntactic Notations -- 4.2 Semantic Denotations -- 5 Definitions of  $Z$  Using Non-free Constructors -- 5.1 Approach 2: NF21 - Two Sorts and One Non-free Constructor -- 5.2 Approach 3: NF13 - One Sort and Three Non-free Constructors -- 5.3 Approach 4: NF31 - Three Sorts

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## Sommario/riassunto

This book constitutes the thoroughly refereed post-conference proceedings of the 23rd IFIP WG 1.3 International Workshop on Algebraic Development Techniques, WADT 2016, held in September 2016 in Gregynog, UK. The 9 revised papers presented together with two invited talks, one invited paper and two survey papers were carefully reviewed and selected from numerous submissions and focus on foundations of algebraic specification; other approaches to formal specification, including process calculi and models of concurrent, distributed and mobile computing; specification languages, methods, and environments; semantics of conceptual modeling methods and techniques; model-driven development; graph transformations, term rewriting and proof systems; integration of formal specification techniques; formal testing and quality assurance, validation, and verification areas, broadly falling into three categories: multimedia content analysis; multimedia signal processing and communications; and multimedia applications and services.

