

**7th International Seminar on  
Relational Methods in Computer Science (RelMiCS 7)**

in combination with the 2nd International Workshop on  
**Applications of Kleene Algebra**

May 12–17, 2003  
Malente (near Kiel), Germany

**Programme (Final version)**

**Monday, May 12, 2003**

8.45 – 9.00 Welcome

**Kleene algebras with applications I** (Session chair: R. Berghammer)

9.00 – 9.45 Eerke Boiten (Univ. of Kent), Willem-Paul de Roeper (Kiel Univ.)  
Getting to the bottom of relational refinement: Relations and correctness,  
partial and total

9.45 – 10.30 Ernie Cohen (Microsoft)  
Annihilating the annihilation axioms

10.30 – 11.00 Coffee break

**Kleene algebras with applications II** (R. Berghammer)

11.00 – 11.45 Hans Bherer, Jules Desharnais (Laval Univ.) et al.  
Kleene algebra control

11.45 – 12.30 Thorsten Ehm, Bernhard Möller, Georg Struth (Augsburg Univ.)  
Kleene modules

12.30 – 14.30 Lunch

**Relational categories I** (M. Roubens)

14.30 – 15.15 Peter Jipsen (Chapman Univ.)  
An online database of relation algebras, Kleene algebras, and related structures

15.15 – 16.00 Eric Offermann (Univ. of German Forces Munich)  
On the construction of relational categories

16.00 – 16.30 Coffee break

**Relational categories II** (M. Roubens)

16.30 – 17.15 Peter Kempf, Michael Winter (Univ. of German Forces Munich)  
Relational unsharpness and processes

17.15 – 18.00 Hitoshi Furusawa (AIST)  
The categories of Kleene algebras, action algebras and action lattices are related  
by adjunctions

18.30 Dinner

**Tuesday, May 13, 2003**

**Artificial intelligence and knowledge representation I** (G. Schmidt)

- 9.00 – 9.45 Marc Roubens (Univ. of Liege, *invited talk*)  
Choice procedures in pairwise comparison multiple-attribute decision making methods
- 9.45 – 10.30 Philippe Balbiani (Univ. Paul Sabatier)  
Reasoning about vague concepts in the theory of property systems
- 10.30 – 11.00 Coffee break

**Artificial intelligence and knowledge representation II** (G. Schmidt)

- 11.00 – 11.45 Thomas Mormann (Univ. of the Basque Country)  
A necessary and sufficient representation theorem for the region connection calculus
- 11.45 – 12.30 Philippe Balbiani, Khalil Challita (Univ. Paul Sabatier) et al.  
Spatial regions changing over time
- 12.30 – 14.30 Lunch

**Software technology and programming I** (H. de Swart)

- 14.30 – 15.45 Dexter Kozen (Cornell Univ.)  
Kleene algebra and dataflow analysis
- 15.15 – 16.00 Rudolf Berghammer (Kiel Univ.), Alexander Fronk (Dortmund Univ.)  
Applying relational algebra in 3D graphical software design
- 16.00 – 16.30 Coffee break

**Software technology and programming II** (H. de Swart)

- 16.30 – 17.15 Ridha Khedri, Ling Wang, Lei Situ (McMaster Univ.)  
Requirements specification decomposition: A system testing driven approach
- 17.15 – 18.00 Marcelo Frias, Carlos Lopez Pombo (Univ. of Buenos Aires)  
Time is on my side
- 18.30 Dinner
- Possible: System demonstrations

**Wednesday, May 14, 2003**

**Databases and data mining I** (W. Kahl)

- 9.00 – 9.45 Wendy MacCaull (St. Francis X. Univ.), Ewa Orłowska (Inst. of Telecom. Warsaw)  
A calculus of typed relations
- 9.45 – 10.30 Carlos Gonzalía (Göteborg Univ.)  
Relational database theory in constructive type theory
- 10.30 – 11.00 Coffee break

### **Relations and probability** (W. Kahl)

- 11.00 – 11.45 Ernst-Erich Doberkat (Dortmund Univ.)  
Tracing relations probabilistically
- 11.45 – 12.30 Miklos Ferenczi (Hungarian Academy of Sciences)  
Probabilities defined on relations interpreting first order formulas
- 12.30 – 14.30 Lunch

### **Pointer structures** (R. Backhouse)

- 14.30 – 15.15 Thorsten Ehm (Augsburg Univ.)  
Pointer Kleene algebra
- 15.15 – 16.00 Adam Bakewell, Detlef Plump, Colin Runciman (Univ. of York)  
Checking the shape safety of pointer manipulations
- 16.00 – 16.30 Coffee break

### **Games and fixed points** (E. Orłowska)

- 16.30 – 17.15 Roland Backhouse (Univ. of Nottingham), Diethard Michaelis (Zirndorf)  
Win, lose and stalemate in impartial games
- 18.30 Social event: *Five lakes shipping tour with dinner on board*

## **Thursday, May 15, 2003**

### **Kleene algebras with applications III** (D. Kozen)

- 9.00 – 9.45 Jules Desharnais (Laval Univ., *invited talk*)  
Kleene algebra with relations
- 9.45 – 10.30 Bernhard Möller, Georg Struth (Augsburg Univ.)  
Greedy-like algorithms in Kleene algebra
- 10.30 – 11.00 Coffee break

### **Decomposition of relations** (D. Kozen)

- 11.00 – 11.45 Gunther Schmidt (Univ. of the German Forces Munich)  
Relational data analysis
- 11.45 – 12.30 Michael Winter (Univ. of the German Forces Munich)  
Decomposing relations into orderings
- 12.30 – 14.30 Lunch

### **Relational reasoning and tools I** (P. Jipsen)

- 14.30 – 15.15 Renate Schmidt (Univ. of Manchester), Ewa Orłowska (Inst. of Telecom. Warsaw) et al.  
Two proof systems for Peirce algebras
- 15.15 – 16.00 Konstantine Arkoudas, Safraz Khurshid, Darko Marinov, Martin Rinad (MIT)  
Integrating model checking and theorem proving for relational reasoning
- 16.00 – 16.30 Coffee break

## **Relational reasoning and tools II** (P. Jipsen)

- 16.30 – 17.15 Wolfram Kahl (McMaster Univ.)  
Calculational relation-algebraic proofs in Isabelle/Isar
- 17.15 – 18.00 Ulf Milanese (Kiel Univ.)  
Random relations: Algorithms and applications
- 18.30 Dinner
- Possible: System demonstrations

## **Friday, May 16, 2003**

### **Relations and modal logic** (J. Desharnais)

- 9.00 – 9.45 Valentin Goranko (Rand Afrikaans Univ.), Ullrich Hustadt (Univ. of Liverpool) et al.  
SCAN is complete for all Sahlqvist formulae
- 9.45 – 10.30 Eugenio Omodeo (Univ. of L'Aquila), Ewa Orłowska (Inst. of Telecom. Warsaw) et al.  
Simulation and semantic analysis of modal logics by means of an elementary set theory treated *à la* Rasiowa-Sikorski
- 10.30 – 11.00 Coffee break

### **Databases and data mining II** (J. Desharnais)

- 11.00 – 11.45 Petr Hájek (Academy of Science of Czech Republic)  
Relations and GUHA-style data mining II
- 11.45 – 12.30 Hui Wang (Univ. of Ulster), Ivo Düntsch, Günther Gediga (Brock Univ.)  
Nearest neighbours without  $k$ : A classification formalism based on probability
- 12.30 – 14.30 Lunch

### **Relational categories III** (B. Möller)

- 14.30 – 15.15 Marcelo Frias (Univ. of Buenos Aires)  
Translating with sense
- 15.15 – 16.00 Patrik Eklund (Umeå Univ.)  
Monads and powerset algebras
- 16.00 – 16.30 Coffee break

### **Miscellaneous** (B. Möller)

- 16.30 – 17.15 László Aszalós, Philippe Balbiani (Univ. Paul Sabatier)  
Logical aspects of user authentication protocols
- 17.15 – 18.00 Giuseppe Scollo (Univ. of Verona)  
Morphism-driven design of graph colouring institutions
- 18.00 Closing
- 18.30 Dinner
- 20.00 TARSKI MC meeting