

## Foreword

This special issue of *Mathematical Structures in Computer Science* contains the final Proceedings of the Tutorial Workshop on Realizability Semantics and Applications, which was held between June 30 and July 1, 1999 in Trento, Italy, as one of the satellite workshops associated to the Federated Logic Conference.

In the 1980's and 1990's it was observed that realizability, which until then had been just a tool used in some branches of mathematical logic, had unexpected applications in theoretical computer science.

Some of these applications found their way readily into current research, but with others there was a general feeling of uneasiness with the rather abstract concepts involved, and the sometimes tricky technical details that could only be found in journals and books on mathematical logic.

The aim of the Tutorial Workshop was to familiarise a wider audience with the subject. To this end, six speakers were invited to give tutorial lectures, in addition to contributed research papers. The full program of the meeting was:

- Dana Scott: *Opening*  
Andy Pitts: *Tripes theory in retrospect* (tutorial lecture)  
Jaap van Oosten: *History and developments* (tutorial lecture)  
Steve Awodey, Lars Birkedal and Dana Scott: *Local realizability toposes and a modal logic for computability*  
Martin Hyland: *Variations on realizability*  
John Longley: *Matching typed and untyped realizability*  
Aurelio Carboni: *Completions* (tutorial lecture)  
Samson Abramsky: *Process realizability*  
Martín Escardó: *A metric model for PCF*  
Ulrich Berger: *Effectivity and totality* (tutorial lecture)  
Luke Ong: *Applications to normalization* (tutorial lecture)  
Sergei Artemov: *The uniform provability realization of intuitionistic logic, modality and lambda calculus*  
Bernhard Reus: *Realizability semantics for type theories* (tutorial lecture)  
Tristan Crolard: *A type theory which is complete for Kreisel's modified realizability*  
Giuseppe Rosolini and Thomas Streicher: *Comparing models of higher type computation*

The Programme Committee of the Workshop consisted of Dana Scott, Giuseppe Rosolini, Andrew Pitts, Alex Simpson, Jaap van Oosten, Giuseppe Longo, Bernhard Reus, Dag Normann and Lars Birkedal. Preliminary Proceedings appeared as *Electronic Notes in Theoretical Computer Science* **23**, which is available at Elsevier's Web site.

For these final Proceedings, both the invited and the contributed papers were subjected to a rigorous refereeing process, in accordance with the usual standards of MSCS. We wish to thank all referees for their disinterested co-operation.

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- Logic in Computer Science
- Esprit Working Group ‘APPSEM’
- Gruppo Nazionale per le Strutture Algebriche, Geometriche e Applicazioni del Consiglio Nazionale delle Ricerche
- MURST Project ‘Metodi Costruttivi in Topologia, Algebra e Analisi dei Programmi’.

**Guest Editors**

Lars Birkedal  
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