

# Activities for SFB-Project MI 4 (OMEGA) Ressourcenadaptive Beweisplanung

Siekmann / Benzmüller / Melis

## 4.1 SFB-Workshops

**Theorema-Omega'03 Workshop, RISC, Hagenberg Castle, Austria, May 24-27 2003**

<http://www.ags.uni-sb.de/~omega/workshops/TheoremaOmega03/>

- Speaker. *Title of Talk*

**Sag-Was-Seminar of the AG Siekmann in Dagstuhl, 2002**

**Meeting in camera of the Special Research Centre SFB 378,  
Wallerfangen, June 26, 2002**

## 4.2 SFB-Presentations

- November 2003: (Invited Presentation, Project OMEGA) OMEGA: From Proof Planning towards Mathematical Knowledge Management, MKM Symposium 2003, Edinburgh, Scotland.
- July 5, 2003: OMEGA - Ein Assistenzsystem für die Mathematik, Open day, Saarland University, Saarbrücken, Germany.
- June 26, 2003: OMEGA, meeting in camera of the Special Research Centre SFB 378, Dagstuhl.
- June 26, 2002: Ressource-Adaptive Proof Planning with OMEGA, meeting in camera of the Special Research Centre SFB 378, Wallerfangen.

### 4.3 Talks of SFB Staff Members

Christoph Benzmüller

- (Invited) *OMEGA: From Proof Planning towards Mathematical Knowledge Management*. MKM Symposium 2003, Edinburgh, Scotland, November 2003 .
- *Bemerkungen zur Semantik und Mechanisierung von Logik hoeherer Stufe*. German 'Deduktionstreffen 2003', Augsburg, October 8th, 2003.
- *The CALCULEMUS Research Training Network – A short Overview*. Calculemus Symposium 2003, Rome, Italy, September 10th 2003.
- *A New Framework for Reasoning Agents*. IJCAI-03 Workshop on Agents and Automated Reasoning, Acapulco, Mexico, August 11th 2003.
- *The CALCULEMUS Research Training Network – A short Overview*. First QPQ Workshop on Deductive Software (QPQ'03), CADE-19, Miami, Florida, USA, July 27th 2003.
- *OMEGA - Ein Assistenzsystem fr die Mathematik*. Open day, Saarland University, Saarbrücken, Germany, July 5th 2003.
- *OMEGA*. Meeting in camera of the Special Research Centre SFB 378, Dagstuhl, June 26th 2003.
- *Proof Development with OMEGA – Square root of 2 is Irrational*. Theorema-Omega '03 Workshop, Schloss Hagenberg, Austria, May 15th 2003.
- *CALCULEMUS - Systems for Integrated Deduction and Computation*. Mathematics on the Semantic Web, Eindhoven, The Netherlands, May 13th 2003.
- *Saarland University Node Report*. Midterm Review of the European Union Research Training Network CALCULEMUS, Saarbrücken, Germany, March 31st 2003.
- *CALCULEMUS Midterm Review Report*. Midterm Review of the European Union Research Training Network CALCULEMUS, Saarbrücken, Germany, March 31st 2003.
- *Proof Development with OMEGA: Sqrt(2) is irrational*. LPAR 2002, Tbilisi, Georgia, Oct 14th 2002.
- (Invited) *From Natural Deduction to Sequent Calculus and back*. Calculemus Autumn School 2002, Pisa, Italy, Sep 27th 2002.
- *Proof Development with OMEGA*. 18th Int. Conf. on Automated Deduction, København,

Denmark, July 27th 2002.

- *Reasoning Services in the MathWeb-SB for Symbolic Verification of Hybrid Systems*. VERIFY'02 Workshop at FLOC 2002, København, Denmark, July 25th 2002.
- *Agent based proof search with Indexed Formulas*. Calculemus 2002, Marseille, France, July 3rd 2002.
- *Ressource-Adaptive Proof Planning with OMEGA*. Meeting in camera of the Special Research Centre SFB 378, Wallerfangen, June 26th 2002.

Martin Pollet

- *On the Representation of Mathematical Objects*. Calculemus Task Force Meeting, University of Genova, Italy, February 2002.
- *Frame Representation of Mathematical Concepts for Proof Planning*. CIAO Workshop, University of Edinburgh, Scotland, April 2002.
- *On Frames and Methods*. Omega Talks, Saarland University, Germany, May 2002.
- *Automatic Learning in Proof Planning*. Calculemus 2002, Marseille, France, July 2002.
- *Cooperation Between the Mathematical Knowledge Base MBase and the Theorem Prover Omega*. Calculemus 2002, Marseille, France, July 2002.
- *LearnOmatic: System Description*. 18th Int. Conf. on Automated Deduction, København, Denmark, July 2002.
- *On the Design of Mathematical Concepts*. CADE-18 Workshop RADM, København, Denmark, July 2002.
- *Automatic Learning of Proof Methods in Proof Planning*. Midterm Review Meeting of the Research Training Network CALCULEMUS, Saarbrücken, Germany, March 2003.
- *Proof Planning in Omega*. Theorema - Omega 2003 Workshop, RISC, Hagenberg Castle, Austria, May 2003.

Claus-Peter Wirth

- *How to Prove Inductive Theorems? QUODLIBET!*. 19th Int. Conf. on Automated Deduction, Miami Beach, 2003.
- *What you [n]ever wanted to know about Inductive Theorem Proving*. Theorema - Omega 2003 Workshop, RISC, Hagenberg Castle (Austria), 2003.

- *History of Descente Infinie*. 12th CLAM - INKA - OMRS Workshop, Dagstuhl Castle (Germany), 2003.
- *A New Indefinite Semantics for Hilbert's epsilon and maybe something on the KI Profs Web Site*. Jahrestreffen der GI-Fachgruppen "Deduktionssysteme" und "Logik in der Informatik", Freiburg, 2002.
- *A New Indefinite Semantics for Hilbert's epsilon*. 11th Int. Conference on Tableaus and Related Methods, København, 2002.
- *Ascent to Descente Infinie in three parts*. Series of 3 Omega Talks, Saarland University, 2002.

Jürgen Zimmer

- *Towards Mathematical Agents – Combining MathWeb-SB and LBA* CALCULEMUS Symposium, Siena, Italy, June 2001.
- *Combining MathWeb-SB and LBA*. MRG-SRA Symposium, Levanto, Italy, June 2001.
- *Inductive Theorem Proving and Computer Algebra in the MathWeb Software Bus*. CALCULEMUS Symposium, Marseille, France, July 2002.
- *Integrating HR and tptp2X into MathWeb to Compare Automated Theorem Provers*. PaPS'02, København, Denmark, July 2002.
- *The MathWeb Software Bus for Distributed Mathematical Reasoning*. 18th Int. Conf. on Automated Deduction, København, Denmark, July 2002.
- *The MathWeb Software Bus in the CALCULEMUS Network*. CALCULEMUS Midterm Review, Saarbrücken, Germany, March 2003.
- *The MathWeb Software Bus in the CALCULEMUS Network*. Mathematics on the Semantic Web Workshop, Eindhoven, Netherlands, May 2003.
- *Brokering of Theorem Proving Services described in MSDL*. The OpenMath Thematic Network Meeting, Bremen, Germany, November 2003.

## 4.4 External System Demos

- August 1, 2003: QUODLIBET, a human-oriented tactic-based inductive theorem proving system. 19th Int. Conf. on Automated Deduction, Miami Beach.

- July 27, 2002: Proof Development with OMEGA, 18th Int. Conf. on Automated Deduction, København, Denmark.
- Sep 27, 2002: The OMEGA System, Calculemus Autumn School 2002, Pisa, Italy.

## 4.5 Committee, Congress, and Editing Activities by SFB Staff Members

Christoph Benzmüller

- Coordination of funding proposal for the European Union Research Training Network CALCULEMUS-II Computer-supported Mathematical Knowledge Evolution in the EU 6th Framework.
- Coordination of the European Union Research Training Network CALCULEMUS Systems for integrated Computation and Deduction funded in the EU 5th Framework.
- Editor for Higher-Order Systems in the newly founded QPQ project aiming at a large repository of deductive software components (see [www.qpq.org](http://www.qpq.org)); this repository of refereed software components is currently being set up at SRI International Computer Science Laboratory, USA.
- Editor of several documents related to the EU Calculemus Research Training Network; it is planned to publish an overview of the networks scientific contributions in a book.
- Editor of the proceedings of the Calculemus Autumn School 2002 (3 reports with Course Notes, 1 report with student contributions)
- Member of IJCAR 2004 Steering Committees (representing the CALCULEMUS community).
- Chair of Annual Meeting of the German Interest Group on Deduction Systems in 2004 in Saarbrücken, Germany.
- Chair of CALCULEMUS Autumn School 2002 in Pisa, Italy.
- Chair of Annual Meeting of the German Interest Group on Deduction Systems in 2000 in Saarbrücken, Germany.
- Member of Program Committee of International Joint Conference on Automated Reasoning (IJCAR) 2004, Cork, Ireland, 2004.

- Member of Program Committee of IJCAI 2003 Workshop on Agents and Automated Reasoning, Acapulco, Mexico, 2003.
- Member of Program Committee of 11th Symposium on the Integration of Symbolic Computation and Mechanized Reasoning (CALCULEMUS), Rome, Italy, 2003.
- Member of Program Committee of Calculemus Autumn School in Pisa, Italy, 2002.
- Member of Program Committee of 2002 Conference on Automated Deduction (CADE) in København, Denmark, 2002.
- Member of Program Committee of 10th Symposium on the Integration of Symbolic Computation and Mechanized Reasoning (CALCULEMUS), Marseilles, France, 2002.
- Organizer of Calculemus Session at the Workshop: Mathematics on the Semantic Web, Eindhoven, Netherlands, 2003.
- Organizer of European Union Midterm Review Meeting of the Calculemus Research Training Network, Saarbrücken, Germany, 2003.
- External Reviewing of Journal of Automated Reasoning (JAR), Journal of Symbolic Computation (JSC), Conference on Automated Deduction (CADE), European Conference on Artificial Intelligence (ECAI), German Conference on Artificial Intelligence (KI), Symposium on the Integration of Symbolic Computation and Mechanized Reasoning (CALCULEMUS), International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR)

## 4.6 Research Visits of SFB Staff Members

Christoph Benzmüller

- 2002: Visiting researcher at Carnegie Mellon University, Pittsburgh, USA (1 month)
- 2002: Visiting researcher at University of Pisa, Italy (1,5 months)

Martin Pollet

- 2002: Visiting researcher at University of Birmingham, UK, (5 months)

## 4.7 Guest Talks at SFB

- Joris van der Hoeven (Universite Paris-Sud, France). *TexMacs*. July 2003 and November 2003.
- Chad Brown (Carnegie Mellon University, Pittsburgh, USA). *Set-variables in Higher-Order Reasoning*. August 2002.
- Mateja Jamnik (University of Birmingham, UK). *Learning New Methods in Proof Planning*. 2002.

## 4.8 Guest Researchers and Scholarship Holders

- Jessi Berkelhammer (Visiting Student), Carnegie Mellon University, Pittsburgh, USA, January-July, 2004.
- Joris van der Hoeven, Universite Paris-Sud, France, July 2003 and October-November 2003.
- Chad Brown, Carnegie Mellon University, Pittsburgh, USA, August 2002.
- Mateja Jamnik, University of Birmingham (now Cambridge), UK, August 2002.

## 4.9 External Cooperations

With joint publications

- Yale University, USA (Schürmann)
- Department of Mathematics, Carnegie Mellon University, Pittsburgh, USA (Andrews, Brown)
- Department of Informatics, The University of Edinburgh, UK (Bundy)
- RIACA, Eindhoven Technical University, Eindhoven, Netherlands (Cohen)
- Department of Computer Science, The University of Birmingham, UK (Kerber/Sorge)
- Computer Laboratory of the University of Cambridge, Cambridge, UK (Jamnik)
- International University of Bremen, Germany (Kohlhase)
- Dept. of Informatics, University of Kaiserslautern (Avenhaus, Madlener)

Without joint publications

- Institut für Informatik, Universität Potsdam, Germany (Kreitz)
- Uniwersytet w Białymstoku, Białystok, Poland (Trybulec)
- Università degli Studi di Genova, Genova, Italy (Armando)
- Department of Computer Science, University of Karlsruhe, Germany (Calmet)
- Research Institute for Symbolic Computation, Linz, Austria (Buchberger)
- Istituto per la Ricerca Scientifica e Tecnologica, Trento, Italy (Giunchiglia)

## 4.10 Others

Welche Form von Aktivitäten haben wir vergessen?