

## List of Scientific Publications

Christian G. Fermüller

### **Deciding Some Horn Clause Sets by Resolution.**

In: *Yearbook of the Kurt Gödel Society 1989*, pp. 60-73, Vienna, 1990.

with H.M. Müller:

### **More Floating Point Numbers (Abstract).**

In: *Berichte aus Informatik-Forschungs-Institutionen*, Klagenfurt, 1990, pp. 58-59.

### **A Resolution Variant Deciding Some Classes of Clause Sets.**

In: *Computer Science Logic*, ed. E.Börger et al., LNCS 533, pp. 128-144, Springer-Verlag, 1991.

with M. Baaz:

### **Resolution for Many-Valued logics.**

In: *Logic Programming and Automated Reasoning – LPAR'92*, ed. A.Voronkov, LNAI 624, Springer-Verlag, 1992, pp. 107-118.

with A. Leitsch, T. Tammet, N. Zamov:

### **Resolution Methods for the Decision Problem.**

(Monograph). LNAI 679, Springer-Verlag, 1993.

### **A Simple Resolution Based Decision Procedure for the Maslov Class.**

In: *Developments in Theoretical Computer Science, Proceedings of the 7th IMYCS*, (Smolenice, November 1992), Topics in Computer Mathematics, Gordon & Breach, 1994, pp. 197-204.

with A. Leitsch:

### **Model Building by Resolution.**

In: *Computer Science Logic: Selected papers from CSL'92*, (San Miniato, September 1992), eds. E. Börger, G. Jäger, H. Kleine Büning, S. Martini, M.M. Richter, LNCS, Springer-Verlag, 1993, pp. 134-149.

second author to G. Gottlob:

### **Removing Redundancy from a Clause.**

*Artificial Intelligence* 61 (1993), Elsevier Science Publishers, pp. 263-289.

with M. Baaz, R. Zach:

### **Dual Systems of Sequents and Tableaux.**

In: *Bulletin of the European Association for Theoretical Computer Science* 51 (1993), pp. 192-197. (Accepted for the *2nd Workshop on Tableau-based Deduction*, Marseille, April 1993)

with M. Baaz:

### **A Resolution Principle for Quantificational S5 with an Application to Knowledge Representation.**

In: *Proceedings of the 2nd Turkish Artificial Intelligence and Neural Networks Symposium*, eds. S. Kuru et al., Istanbul, June 1993, pp. 32-37.

with M. Baaz, R. Zach:

### **Systematic Construction of Natural Deduction Systems for Many-Valued Logics.**

In: *Proc. 23rd International Symposium on Multiple-Valued Logic*, IEEE Press, Los Gatos, 1993, CA, pp. 208-213.

with M. Baaz, A. Ovrutcki, R. Zach:

**MULTLOG: A System for Axiomatizing Many-Valued Logics.**

In: *Logic Programming and Automated Reasoning LPAR'93*, (St. Petersburg, July 1993), ed. A. Voronkov, LNAI 698, Springer-Verlag, 1993, pp. 345-347.

with G. Salzer:

**Ordered Paramodulation and Resolution as Decision Procedure.**

In: *Logic Programming and Automated Reasoning LPAR'93*, (St. Petersburg, July 1993), ed. A. Voronkov, LNAI 698, Springer-Verlag, 1993, pp. 122-133.

with M. Baaz, G. Quirchmayr, R. Zach:

**A Many-Valued logic for Default Reasoning.**

In: *Proceedings of the 8th International Symposium on Computer and Information Sciences, ISCIS VIII*, (Istanbul, November 1993), ed. L.Gün et al., pp. 476-479.

with M. Baaz, R. Zach:

**Elimination of Cuts in First-Order Finite-Valued Logics.**

*Journal of Information Processing and Cybernetics*, EIK 29 (1993) 6, pp. 333-355.

with M. Baaz, A. Leitsch:

**A Non-Elementary Speed-Up in Proof Length by Structural Clause Form Transformation.**

In: *Proceedings of the 9th Annual IEEE Symposium on Logic in Computer Science, LICS'94*, (Paris, July 1994), IEEE Computer Society Press, pp. 213-219.

with M. Baaz, R. Zach:

**Proof Theory of Finite-Valued Logics (Abstract).**

In: *Bulletin of Symbolic Logic* Vol. 1/2, Juni 1995, pp. 221-222.

Also in: *Logic Colloquium '94 (Abstracts of Contributed Papers)*, (Clermont, July 1994), Université d'Auvergne, p. 18.

second author to M. Baaz:

**Generalization of Proofs and Term Complexity.**

In: *Proceedings of the Logic Colloquium '94*, (Clermont, July 1994), to appear.

with M. Baaz, R. Zach:

**Systematic Construction of Calculi for Finitely-Valued First-Order Logics (Abstract).**

In: *Proceedings of the 10th International Congress of Logic, Methodology and Philosophy of Science*, Florence, Italy, August 1995, p. 44.

with A. Leitsch:

**Automated Modelbuilding by Hyperresolution (Abstract).**

In: *Automated Model Building*, Workshop at the 12th International Conference on Automated Deduction, Nancy, France, June 1994, organized by R. Caferra, C. Fermüller, A. Leitsch, and T. Tammet, pp. 18-21.

with M. Baaz:

**Resolution-Based Theorem Proving for Many-Valued Logics.**

*Journal of Symbolic Computation*, 19 (1995), pp. 353-391.

with M. Baaz:

**Nonelementary Speedups between Different Versions of Tableaux.**

In: *Theorem Proving with Analytic Tableaux and Related Methods*, 4th International Workshop, TABLEAUX'95, (St. Goar, May 1995), eds. P. Baumgartner, R. Hähnle, J. Pasegga, LNAI 918, Springer-Verlag, 1995, pp. 217-230.

with M. Baaz:

**Intuitionistic Counterparts of Finite-Valued Logics (Abstract).**

In: *ASL Logic Colloquium '95*, Haifa, Israel, ed. J. Markovski, August 1995.

with M. Baaz:

**Combining Many-Valued and Intuitionistic Tableaux.**

In: *Theorem Proving with Analytic Tableaux and Related Methods*, 5th International Workshop, TABLEAUX'96, (Palermo, May 1996), eds. P. Mignoli, U. Moscato, D. Mundici, M. Ornaghi, LNAI 1071, Springer-Verlag, 1996, pp. 65-79.

with A. Leitsch:

**Hyperresolution and Automated Model Building.**

*Journal of Logic and Computation*, Vol. 6 No 2 (1996), pp. 173-230.

**Revisiting Semantic Trees – Some New Completeness Results.**

In: *Automated Deduction – CADE-13*, 13th International Conference on Automated Deduction, New Brunswick, NJ, USA, July/August 1996, Proceedings, eds. M.A. McRobbie, J.K. Slaney, LNAI 1104, Springer-Verlag, 1996, pp. 568-582.

with M. Baaz:

**Intuitionistic Counterparts of Finitely-Valued Logics.**

In: *Proc. 26th International Symposium on Multiple-valued Logic*, IEEE Press, Los Alamitos, May 29-31 1996, pp. 136-143

**with M. Baaz, G. Salzer, and R. Zach: MUltlog 1.0: Towards an expert system for many-valued logics.**

In: *Automated Deduction – CADE-13*, 13th International Conference on Automated Deduction, New Brunswick, NJ, USA, July/August 1996, Proceedings, eds. M.A. McRobbie, J.K. Slaney, LNAI 1104, Springer-Verlag, 1996, pp. 226-230.

with A. Leitsch:

**Decision Procedures and Model Building in Equational Clause Logic (Abstract).**

In: *III Workshop on Logic, Language, Information and Computation – WoLLIC'96*, May 8-10, 1996, Salvador, Brazil, Abstracts, pp. 24-25.

**Large Decidable Fragments of Finitely-Valued First-Order Logics and Resolution (Abstract).**

In: *XI Encontro Brasileiro de Logica* 6 a 10 de Maio de 1996, Salvador de Bahia, Universidade Federal da Bahia (UFBA), pp. 41-42.

**Finite-valued Logics and Classical Proof Theory (Abstract).**

In: *Multiple-Valued Logics*, Dagstuhl-Seminar-Report 194, Dagstuhl (Germany), October 1997, eds. D. Mundici, P.H. Schmitt, L. Zadeh, p. 10.

with M. Baaz, U. Egly:

**Lean Induction Principles for Tableaux.**

In: *TABLEAUX'97 - Analytic Tableaux and Related Methods*, Pont-a-Mousson (France), May 1997, LNAI 1227, Springer-Verlag, 1997, pp. 62-75.

with A. Brandl, G. Salzer:

**Testing for Renamability to Classes of Clause Sets.**

In: *Int. Workshop on First-Order Theorem Proving (FTP'97)*, Johannes Kepler Universität, Linz (Austria), RISC-Linz Report Series No. 97-50, pp. 34–39.

with M. Baaz, R. Zach, G. Salzer:

**Labeled Calculi and Finite-Valued Logics.**

*Studia Logica* 61, 1998, pp. 7–33.

with A. Leitsch:

**Decision Procedures and Model Building in Equational Clause Logic.**

*Logic Journal of the Interest Group in Pure and Applied Logics (IGPL)* (ISSN 1367-0751), Vol. 6 No. 1 (1998), pp. 17–41,

with H. Langsteiner:

**Tableaux for finite-valued logics with arbitrary distribution modalities.**

*Automated Reasoning with Analytic Tableaux and Related Methods*, TABLEAUX'98, Oisterwijk (Netherlands), ed. Harrie de Swart, May 1998, LNAI 1397, Springer-Verlag, 1998, pp. 156–171.

with M. Baaz, A. Ciabattoni, H. Veith:

**Proof Theory of Fuzzy Logics: Urquhart's C and Related Logics.**

In: *MFCS '98, 23rd International Symposium on Mathematical Foundations of Computer Science*. August 1998, Brno, Czech Republic, LNCS 1450, Springer-Verlag, 1998, pp. 203–212.

**Many-valued modal logics beyond  $\Box$  and  $\Diamond$  (Abstract).**

In: *Proceedings of the ASL Logic Colloquium '98*, Prague, August 1998.

with M. Baaz:

**Analytic Calculi for Projective Logics.**

In: *Automated Reasoning with Analytic Tableaux and Related Methods*, Neil V. Murray (Ed.), TABLEAUX'99, Saratoga Springs, NY, USA, June 1999, LNAI 1617, Springer-Verlag, 1999, pp. 36–50.

with M. Baaz, A. Ciabattoni, H. Veith:

**On the Undecidability of Some Sub-classical First-order Logics.**

In: *Foundations of Software Technology and Theoretical Computer Science, FST&TCS '99*. Proceedings of the 19th international conference, December 13–15, 1999, Chennai, India, LNCS 1738, Springer-Verlag, 1999, pp. 258–268.

with M. Baaz:

**Synthesizing Analytic Calculi for Projective Logics (Abstract).**

In: *Proceedings of 11th International Congress of Logic, Methodology and Philosophy of Science (LMPS)*, 20-26 August 1999, Krakow, Poland

with A. Leitsch, U. Hustadt, T. Tammet:

**Resolution Decision Procedures.**

In: *Handbook of Automated Reasoning*. Editors: A. Robinson and A. Vorkonov, Elsevier, 2001, pp. 1791–1849.

with M. Baaz, G. Salzer:

**Automated Deduction for Many-Valued Logic.**

In: *Handbook of Automated Reasoning*. Editors: A. Robinson and A. Vorkonov, Elsevier, 2001, pp. 1355–1402.

**Implicational Completeness of Signed Resolution.**

In: *Automated Deduction in Classical and Non-Classical Logics* (Selected Papers), eds. Ricardo Caferra and Gernot Salzer, LNAI 1761, Springer-Verlag, 2000, pp. 167–174.

with M. Baaz, H. Veith:

**An Analytic Calculus for Quantified Propositional Gödel Logic.**

In: *Automated Reasoning with Analytic Tableaux and Related Methods*, Roy Dyckhoff (Ed.), International Conference TABLEAUX 2000, St Andrews, Scotland, UK, July 2000, proceedings. LNAI 1847, Springer-Verlag, 2000, pp. 112–126.

**Reasoning About Dynamic Databases: Tableaux for Single-Step-Update Models.**

In: Ruy de Queiroz (ed.), *WoLLIC'2000*, 7th Workshop on Logic, Language, Information and Computation, Natal, Brasil, August 2000, Proceedings electronically available at <http://www.cin.ufpe.br/wollic/wollic2000/proceedings/>

with P. Baumgartner, N. Peltier, H. Zhang:

**Model Computation - Principles, Algorithms, Applications (Workshop Description)**

In: David A. McAllester (Ed.), *Automated Deduction - CADE-17*, 17th International Conference on Automated Deduction, Pittsburgh, PA, USA, June 17-20, 2000, Proceedings. LNCS 1831, Springer, 2000, p. 513.

with G. Moser:

**Have SPASS with  $OCC1N_g^=$ .**

In: Michel Parigot, Andrei Voronkov (Eds.), *Logic for Programming and Automated Reasoning*, 7th International Conference, LPAR 2000, Reunion Island, France, November 11-12, 2000. LNCS 1955, Springer-Verlag, 2000, pp. 114–130.

with M. Baaz, A. Ciabattoni:

**A Natural Deduction System for Intuitionistic Fuzzy Logic.**

In: Antonio Di Nola, Giangiacomo Gerla (Eds.), *Lectures on Soft Computing and Fuzzy Logic*. Advances in Soft Computing. Physika-Verlag, a Springer-Verlag Company, Heidelberg, New York, 2001, pp. 1–18.

with A. Ciabattoni:

**Hypersequents as a uniform framework for Urquhart's C, MTL and related logics.**

In: *Proc. 31th IEEE International Symposium on Multiple-valued Logic*, Warsaw, Poland, May 22–24 2001; IEEE Press, Los Alamitos, pp. 227–232.

with M. Baaz, A. Ciabattoni:

**Cut-Elimination in a Sequents-of-Relations Calculus for Gödel Logic**

In: *Proc. 31th IEEE International Symposium on Multiple-valued Logic*, Warsaw, Poland, May 22–24 2001, pp. 181–186.

with M. Baaz:

**A note on the proof theoretic strength of a single application of the schema of identity.**

In: R. Kahle P. Schröder-Heister, R. Stärk (Eds.), *Proof Theory in Computer Science*. LNCS 2183, Springer-Verlag, 2001, pp. 38–48.

with M. Baaz, A. Ciabattoni:

**Herbrand's Theorem for Prenex Gödel Logic and its Consequences for Theorem Proving.**

In: *Proc. of 8th International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR 2001)*, LNCS 2250, Springer-Verlag, 2001, pp. 201–215.

with G. Moser, R. Zach:

**Tableaux for Reasoning About Atomic Updates.**

In: *Proc. of 8th International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR 2001)*, LNCS 2250, Springer-Verlag, 2001, pp. 639–653.

with M. Baaz, A. Ciabattoni:

**Sequents of Relations Calculi: A Framework for Analytic Deduction in Many-Valued Logics.**

In: *Beyond Two: Theory and Applications of Multiple-Valued Logic*, eds: Melvin Fitting and Ewa Orłowska. Studies in Fuzziness and Soft Computing, Physica-Verlag, 2002, pp. 157–180.

**Editor** (with Uwe Egly):

**Automated Reasoning with Analytic Tableaux and Related Methods.**

International Conference, TABLEAUX 2002, Copenhagen, Denmark, July 30 - August 1, 2002, Proceedings. Lecture Notes in Computer Science 2381, Springer 2002

with (second author:) A. Ciabattoni:

**From Intuitionistic Logic to Gödel-Dummett Logic via Parallel Dialogue Games.**

In: *ISMVL 2003, Proc. 33rd IEEE International Symposium on Multiple-valued Logic*, May 16–19, 2003 Meiji University, Tokyo, Japan, IEEE Computer Society, Los Alamitos, pp. 188–195.

**Dialogue Games for Modelling Proof Search in Nonclassical Logics.**

In: *FTP'2003, International Workshop on First-Order Theorem Proving*, proceedings, eds: I. Dahn, L. Vigneron, Technical Report DISC-II/10/03, Universidad de Politécnic de Valencia.

with M. Baaz, A. Ciabattoni:

**Hypersequent Calculi for Gödel Logics — a Survey.**

Journal of Logic and Computation, Vol. 13 No.6, Oxford UP, 2003, pp. 835–861.

**Parallel Dialogue Games and Hypersequents for Intermediate Logics.**

In: *Automated Reasoning with Analytic Tableaux and Related Methods*, International Conference, TABLEAUX 2003, Rome, Italy, September 2003, Proceedings, Marta Cialdea Mayer, Fiora Pirri (Eds.), LNAI 2796, Springer-Verlag, pp. 48–64.

with M. Baaz:

**A translation characterizing the constructive content of classical theories.**

In: *Logic for Programming, Artificial Intelligence and Reasoning*, 10th International Conference, LPAR 2003, Almaty, Kazakhstan, September 2003, Proceedings, Moshe Y. Vardi, Andrei Vorokov (Eds.), LNAI 2850, Springer-Verlag, 2003, pp. 107–121.

with M. Baaz, A. Gil, G. Salzer, N. Preining:

**MULTLOG and MULTSEQ Reanimated and Married.**

In: *Proc. of the 4th International Workshop on the Implementation of Logics*, Almaty, Kazakhstan, September 2003, published as technical report ULCS-03-018 of the University of Liverpool, UK.

Available online: <http://www.csc.liv.ac.uk/~Ekonev/wil2003/papers/index.html>

**Theories of Vagueness Versus Fuzzy Logic: Can Logicians Learn from Philosophers?**

*Neural Network World Journal* (International Journal on Non-Standard Computing and Artificial Intelligence), special issue on DATAKON'2003, Workshop on Soft Computing, volume 13(5), 2003, pp. 455–466.

with N. Preining:

**A Dialogue Game for Intuitionistic Fuzzy Logic Based on Comparisons of Degrees of Truth.**

In: Proceedings of *InTech'03* (Fourth International Conference on Intelligent Technologies), December 17-19, 2003, Chiang Mai, Thailand. Institute for Science and Technology Research and Development, Chiang Mai University, ISBN: 974-658-151-1, (also available on CD, 10 pages, no page numbers.)

**Revisiting Giles: Connecting Bets, Dialogue Games, and Fuzzy Logics (Abstract).**

In: Proceedings (abstracts) of *Logic, Games and Philosophy — Foundational Perspectives*, September 28 - October 1, 2004, (Czech Academy of Sciences), Prague, Czech Republic, pp. 16–17.

second author to A. Leitsch:

**The Resolution Principle.**

In: *Handbook of Philosophical Logic*, Volume 12, 2nd edition, edited by D.M. Gabbay, F. Guenther, Springer Verlag, 2004, ISBN: 1-4020-3091-6, pp. 87–173.

with A. Ciabattoni, G. Metcalfe:

**Uniform Rules and Dialogue Games for Fuzzy Logics.**

In: Franz Baader, Andrei Voronkov (Eds.): *Logic for Programming, Artificial Intelligence, and Reasoning, 11th International Conference, LPAR 2004*, Montevideo, Uruguay, March 14-18, 2005, Proceedings. Lecture Notes in Computer Science 3452, Springer 2005, ISBN 3-540-25236-3, pp. 496-510.

with R. Pichler:

**Model Representation via Contexts and Implicit Generalizations.**

Robert Nieuwenhuis (ed.), *Automated Deduction – CADE-20*, 20th International Conference on Automated Deduction, Tallinn, Estonia, 22 July - 27 July, 2005, Proceedings. Lecture Notes in Computer Science 2741, Springer 2005.

**Analytic Systems and Dialogue Games. (Tutorial Description)**

In: Bernhard Beckert (Ed.), *TABLEAUX 2005, Position Papers and Tutorial Descriptions*. Fachberichte Informatik 12/2005, ISSN 1860-4471. Universität Koblenz-Landau, pp. 43–52

with R. Pichler:

**Model Representation over Finite and Infinite Signatures.**

In: Michael Fisher (ed.), *JELIA06: 10th European Conference on Logics in Artificial Intelligence*. Springer-Verlag, LNAI 4160 (2006), pp. 164–176.

with R. Kosik:

**Combining Supervaluation and Degree Based Reasoning Under Vagueness.**

In: Miki Hermann, Andrei Voronkov (Eds.): *Logic for Programming, Artificial Intelligence, and Reasoning, 13th International Conference, LPAR 2006*, Phnom Penh, Cambodia, November 2006, Proceedings. Lecture Notes in Computer Science 4246, Springer 2006, ISBN 978-3-540-48281-9, pp. 212-226.

with R. Pichler:

**Model Representation over Finite and Infinite Signatures.**

Journal of Logic and Computation 17 (2007), 3. pp. 453–477.

with M. Baaz, A. Ciabattoni:

**Monadic Fragments of Gödel Logics: Decidability and Undecidability Results.**

*Logic for Programming, Artificial Intelligence, and Reasoning, 14th International Conference, LPAR 2007*, N. Dershowitz, A. Voronkov (eds.); Springer, LNCS 4790 (2007), pp. 77–91.

**Exploring Dialogue Games as Foundation of Fuzzy Logic.**

In: *New Dimensions in Fuzzy Logic and Related Technologies*, 5th EUSFLAT Conference, Ostrava, Czech Republic, M. Stepnicka, V. Novák and U. Bodenhofer (eds.), 2007, Vol. I, pp. 437–444.

**Fuzzy Logic and Theories of Vagueness.**

Abstract to an invited (keynote) lecture, in: *New Dimensions in Fuzzy Logic and Related Technologies*, 5th EUSFLAT Conference, Ostrava, Czech Republic, M. Stepnicka, V. Novák and U. Bodenhofer (eds.), 2007, Vol. I, p. 17.

with M. Baaz, A. Ciabattoni:

**Cut elimination for first order Gödel logic by hyperclause resolution.**

In: *Logic for Programming, Artificial Intelligence, and Reasoning, 15th International Conference, LPAR 2008, Doha, Qatar, November 22-27, 2008. Proceedings*, Iliano Cervesato, Helmut Veith, Andrei Voronkov (eds.), LNCS 5330, 451-466.

**Dialogue Games for Many-Valued Logics – An Overview.**

*Studia Logica* Volume 90(1), October 2008, pp. 43–68.

**Truth Value Intervals, Bets, and Dialogue Games.**

In: *The Logica Yearbook 2008*. Michal Peliš (ed.), London, College Publications, 2009, pp. 43–55.

**Dialogue Games as Foundation of Fuzzy Logics.**

In: *Views on Fuzzy Sets and Systems from Different Perspectives. Philosophy and Logic, Criticisms and Applications*, Rudolf Seising (ed.), Studies in Fuzziness and Soft Computing, Springer, 2009, pp. 229–245.

with G. Metcalfe:

**Giles's Game and the Proof Theory of Lukasiewicz Logic.**

*Studia Logica*, Volume 92(1), June 2009, pp. 27-61.

**Revisiting Giles — Connecting Bets, Dialogue Games, and Fuzzy Logics.**

In: *Games: Unifying Logic, Language, and Philosophy*, Ondrej Majer, Ahti-Veikko Pietarinen, Tero Tulenheimo (eds.), Vol. 15 of *Logic, Epistemology and the Unity of Science*, Springer, 2009, pp. 209–227.

with C. Roschger:

**Bridges Between Contextual Linguistic Models of Vagueness and T-norm Based Fuzzy Logic.**

In: *Proceedings of the 8th Workshop on Uncertainty Processing*, T. Kroupa, J. Vejnarova (ed.), Prague, 2009, pp. 71-79.

**Some Critical Remarks on Incompatibility Semantics.** In: *The Logica Yearbook 2009*. Michal Peliš (ed.), London, College Publications, 2010, pp. 81–95.

**On Giles style dialogue games and hypersequent systems.**

In: *Probability, Uncertainty and Rationality*, Hykel Hosni, Franc Montagna (eds.), CRM Series Vol. 10, Springer, 2010, pp. 169-195.

**Fuzzy Logic and Vagueness: Can Philosophers Learn from Petr Hájek?**

In: *Witnessed Years. Essays in Honour of Petr Hájek*, P. Cintula, Z. Haniková, V. Švejdar (eds.), College Publications, 2010, pp. 373-385.