

LIST OF PUBLICATIONS

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IN PREPARATION

- *Lattices in Logic: A Study of Duality, Correspondence, and Canonicity* (provisional title), book on distributive lattice ordered algebras paying due regard to their applications, and seeking to make the subject accessible to readers from a variety of disciplines, under contract for Oxford Logic Guides Series at Oxford University Press, expected 500-600 pages, targeted for completion August 2007.
- *Distributive lattice structured ontologies* This is a joint project with Fischer Nilsson and Bruun. Bruun and I are planning two papers for the journal Theoretical Computer Science (Distributive lattice structured ontologies: a theoretical account parts I and II) to describe the bulk of the methodology. The first paper is essentially finished with 35 pages, the second part we are finishing now and should be of similar length or a little shorter. One novel and key concept in this work is that of a terminal solution. Existence of these (in a more general setting) we plan to write up in a separate paper, probably for submission to Journal of Pure and Applied Algebra. Finally a paper, co-authored with Fischer Nilsson as well, explaining the features and placement of this work relative to existing work is in preparation. We intend to finish this project by the end of this year.
- *Monoids, recognisable languages, and Duality* This is a joint project with Jean-Eric Pin and Serge Grigorieff. We plan to write up the work we did this summer in two papers, one for the community familiar with duality and modal logic, and one for the semi-group and automata community.

ACCEPTED

1. Complete congruences and topologies and down-set lattices. With Marcel Ern  and Aleš Pultr, accepted for the proceedings of the conference 'The Frames and Spaces of Ordered Algebraic Structures' in honour of Bernhard Banaschewski's 80th birthday, 20 pages.
2. Duality for certain algebras with binary operations via their canonical extensions. With H. A. Priestley, accepted for publication in *Studia Logica*, 39 pages.
3. Canonical extensions of certain algebras with binary operations: an algebraic perspective on duality. with H. A. Priestley, 30 pages, accepted for publication in *Journal of Pure and Applied Algebra*, online since December 2006. See <http://dx.doi.org/10.1016/j.jpaa.2006.06.001>

4. Profinite and canonical completions of Heyting algebras, with Guram Bezhanishvili, Ray Mines, and Patrick Morandi, 19 pages, in press *Order*, online since November 2006. See <http://www.springerlink.com/content/x353tt17652k58pw>
5. Generalised Kripke semantics, 35 pages, to appear in the special issue '40 years of possible world semantics', part II, *Studia Logica*, online since November 2006. See <http://www.springerlink.com/content/t3003161v1003542>
6. Special section on Concept oriented knowledge representation under uncertainty, co-editor with H.L. Larsen, *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, **14**, no. 1, February 2006.
7. Canonical extensions and relational completeness of some substructural logics, with Michael Dunn and Alessandra Palmigiano, *J. Symb. Logic* **70** no.3, 713 – 740, 2005.
8. A Sahlqvist Theorem for distributive modal logics, with Hideo Nagahashi and Yde Venema, *Annals of Pure and Applied Logic* **131**, Issues 1-3, 65 – 102, January 2005.
9. MacNeille completions and canonical extensions, with John Harding and Yde Venema, *Trans. of Amer. Math. Soc.* **358** no.2, 573 – 590, 2005.
10. Completeness of S4 with respect to the real line: revisited, with Guram Bezhanishvili, *Annals of Pure and Applied Logic* **131**, Issues 1-3, 287-301, January 2005.
11. Bounded Distributive Lattice Expansions, with Bjarni Jónsson, *Math. Scand.* **94** (2004), 13-45.
12. Varieties of algebras in fuzzy set theory, with G. Bezhanishvili, J. Harding, C. Walker, and E. Walker, to appear as a chapter in *Triangular norms and related operations: Theory and Applications*, Physica Verlag (2004).
13. Varieties generated by t-norms, with C. Walker and E. Walker, *Soft Computing* **8**, no. 4 (2004), 264-267.
14. Euclidean hierarchy in modal logic, with Guram Bezhanishvili and Johan van Benthem, *Studia Logica* **75**, 327–344, 2003.
15. Fuzzy Logics Arising from Strict De Morgan Systems, with C. Walker and E. Walker, *Topological and Algebraic Structures in Fuzzy Sets*, A Handbook of Recent Developments in the Mathematics of Fuzzy Sets, S. Rodabaugh and E. P. Klement, Eds., Kluwer, Dordrecht, (2003) Chapter 9, 257-276.
16. Normal forms and truth tables for fuzzy logics, with C. Walker and E. Walker, *Fuzzy Sets and Systems: Special Focus Issue*, volume 138, number 1 (2003), pp 25-51.
17. Non-canonicity of MV-algebras, with H. A. Priestley, *Houston Journal* **28**, No. 3, 449-455, 2002.
18. Logik som anvendt matematik, *Matilde* (Magazine of the Danish Mathematical Association), nr. 13, June 2002.
19. Varieties generated by t-norms, with G. Bezhanishvili, J. Harding, C. Walker, and E. Walker, *Proceedings of the Third International Conference on Intelligent Technologies and Third Vietnam-Japan Symposium on Fuzzy Systems and Applications*, Hanoi, Vietnam, December 3-5 (2002) 22-24.

20. Some Basic Theory of Interval-valued Fuzzy Sets, with C. Walker and E. Walker, *Transactions of the Joint IFSA World Congress and 20-th NAFIPS International Conference*, Vancouver, British Columbia, July 25-28 (2001) 1332-1336.
21. Normal Forms and Truth Tables for Interval-valued Fuzzy Logic, with C. Walker and E. Walker, *2001 Transactions of the Joint IFSA World Congress and 20-th NAFIPS International Conference*, July 25-28, Vancouver, British Columbia, 1327-1331.
22. Bounded Lattice Expansions, with John Harding, *J. of Algebra* **238**, 345-371 (2001).
23. Monotone Distributive Lattice Expansions, with B. Jónsson, *Math. Japonica* **52**, No.2 (2000), 197-213.
24. Fuzzy normal forms and truth tables, with C. Walker and E. Walker, *Proceedings of the JCIS 2000*, 4 pp., Atlantic City, New Jersey, February 17-March 2, 2000.
25. Some algebraic aspects of fuzzy sets and fuzzy logic (condensed version of invited address by E. Walker), with C. Walker and E. Walker, Intech 2000, Assumption University, Bangkok, Thailand.
26. Algebraic aspects of fuzzy connectives, with C. Walker and E. Walker, *Proceedings of International symposium on Medical Informatics and fuzzy Technology: MIF'99*, Hanoi, Vietnam, August 26-29 (1999), 306-314.
27. Algebraic aspects of Fuzzy sets and Fuzzy logic, with C. Walker and E. Walker, *Proceedings of the First International Workshop on Current Trends and Developments in Fuzzy Logic*, B. K. Papadopoulos and A. Syropoulos, Eds., Thessaloniki, Greece 1999, pp. 101-170.
28. Averaging Operators on the Unit Interval, with C. Walker and E. Walker, *International Journal of Intelligent Systems*, **14**, no. 9 (1999), pp. 883-898.
29. A Note on Negations and Nilpotent t-Norms, with C. Walker and E. Walker, *International Journal of Approximate Reasoning*, **21** (1999), pp. 137-155.
30. Propositional Fuzzy Logics: Decidable for Some (Algebraic) Operators, Undecidable for More Complicated Ones, with B. Bouchon-Meunier, and V. Kreinovich, *Journal of Intelligent Systems*, **14**, no. 9 (1999), pp. 935-947.
31. A Mathematical Setting for Fuzzy Propositional Logic, with C. Walker, and E. Walker, *International Journal of Uncertainty, Fuzziness, and Knowledge-based Systems*, **5**, no. 3 (1997), pp 223-238.
32. deMorgan Systems on the Unit Interval, with C. Walker and E. Walker, *International Journal of Intelligent Systems*, **11** (1996), pp. 733-750.
33. Some Comments on Interval Valued Fuzzy Sets, with C. Walker and E. Walker, *International Journal of Intelligent Systems*, **11**(1996), pp. 751-759.
34. Stone Algebra Extensions with Bounded Dense Sets, with C. Walker and E. Walker, *Algebra Universalis*, **37** (1997), p.1-23.
35. Iterated Conditionals and Symmetric Stone Algebras, with E. Walker, *Discrete Mathematics*, **48** (1996), 49-63.

36. Legitimissering af Infinitesimalerne på den Reele Linie, expository article on Non-Standard Analysis in *Famøs*, Student magazine of the Mathematics Institute at the University of Copenhagen, December 1996.
37. Towards Active Processes for Teaching and Learning, with D. Pengelley, polemic on calculus reform requested by the editors of the national committee on Calculus Reform And the First Two Years(CRAFTY), in *Calculus; The Dynamics of Change*, A. W. Roberts ed., MAA **39**, 20-24, 1996.
38. Bounded Distributive Lattices with Operators, with B. Jónsson, *Math. Jap.* **40**, no. 2 (1994), 207-215.
39. G_a Actions on \mathbb{C}^n , with J. K. Deveney, and D. R. Finston, *Comm. in Algebra*, **22** (12), 4977-4988 (1994).
40. Uniquely Representable posets, *Ann. N.Y. Acad. Sci. Vol. 728*, 32-40 (1994).
41. Robinson Lattices and their Spectra, *Algebra Universalis*, **32** (1994), 204-223.
42. Calculus Instruction at New Mexico State through Weekly Themes and Cooperative Learning, with J. Alvarez, D. R. Finston, and P. Morandi, *PRIMUS*, **1** vol. III (1993), 83-98.
43. The Structure of Rough Sets, with E. Walker, *Bull. Pol. Acad. Sci. Math.* **40** (1992), 235-245.
44. The Order Structure of Stone Spaces and the T_D -Separation Axiom, *Zeitschr. f. math. Logik und Grundl. d. Math.*, **37** (1991), 5-15.
45. Some Non-Standard Methods Applied to Distributive Lattice, with K. Kaiser, and M. Insall, *Zeitschr. f. math. Logik und Grundl. d. Math.*, **36** (1990), 123-131.
46. La Dualité de Stone d'un Point de Vue Non Standard, *Série du Séminaire Non Standard de Paris VII*, **87/4** (1987), 1-8.
47. On the Maximality of Some Conormal Extensions of a Lattice, with K. Kaiser, *Zeitschr. f. math. Logik und Grund. d. Math.*, **33** (1987), 13-18.