

MARCEL ERNÉ  
Leibniz University Hannover  
Faculty for Mathematics and Physics  
D-30167 Hannover, Germany  
e-mail: erne@math.uni-hannover.de

## List of Publications

July 2007

1. Struktur- und Anzahlformeln für Topologien auf endlichen Mengen. *Manuscripta Math.* **11** (1974) 221–259.
2. Verallgemeinerungen der Verbandstheorie II: m-Ideale in halbgeordneten Mengen und Hüllenräumen. Habilitationsschrift, Universität Hannover, 1979.
3. On the relativization of chain topologies. *Pacific J. Math.* **84** (1979) 43–52.
4. Order-topological lattices. *Glasgow Math. J.* **21** (1980) 57–68.
5. Separation axioms for interval topologies. *Proc. Amer. Math. Soc.* **79** (1980) 185–190.
6. Order convergence in lattices (with S. Weck). *Rocky Mountain J. Math.* **10** (1980) 805–818.
7. Topologies on products of partially ordered sets I: Interval topologies. *Algebra Universalis* **11** (1980), 295–311.
8. Topologies on products of partially ordered sets II: Ideal topologies. *Algebra Universalis* **11** (1980), 312–319.
9. Topologies on products of partially ordered sets III: Order convergence and order topology. *Algebra Universalis* **13** (1981), 1–23.
10. On the cardinalities of finite topologies and the number of antichains in partially ordered sets. *Discrete Math.* **35** (1981), 119–133.
11. A completion-invariant extension of the concept of continuous lattices. In: B. Banaschewski and R.-E. Hoffmann (eds.), *Continuous Lattices, Proc. Bremen 1979*, Lecture Notes in Math. **871**, Springer Verlag, Berlin–Heidelberg–New York 1981, 43–60.

12. Scott convergence and Scott topology in partially ordered sets II. In: B. Banaschewski and R.-E. Hoffmann (eds.), *Continuous Lattices, Proc. Bremen 1979*, Lecture Notes in Math. **871**, Springer Verlag, Berlin–Heidelberg–New York 1981, 61–96.
13. Isomorphismen und Identifikationen in der Ordnungstheorie. *Math. Semesterber.* **28** (1981), 74–91.
14. Distributivgesetze und die Dedekindsche Schnittvervollständigung. *Abh. Braunschweig. Wiss. Ges.* **33** (1982), 117–145.
15. Einführung in die Ordnungstheorie. Bibliographisches Institut, Mannheim, 1982.
16. Convergence and distributivity: a survey. In: R.-E. Hoffmann (ed.), *Continuous Lattices and Related Topics, Mathematik Arbeitspapiere Bremen 27* (1982), 39–50.
17. Adjunctions and standard constructions for partially ordered sets. In: G. Eigenthaler et al. (eds.), *Contributions to General Algebra 2, Proc. Klagenfurt, 1982*, Hölder-Pichler-Tempsky, Wien, 1983, 77–106.
18. Ordnungs- und Verbandstheorie. Fernuniversität Hagen, 1983.
19. Standard completions for quasiordered sets (with G. Wilke). *Semigroup Forum* **27** (1983), 351–376.
20. On the existence of decompositions in lattices. *Algebra Universalis* **16** (1983), 338–343.
21. The category of  $\mathcal{Z}$ -continuous posets (with H.-J. Bandelt). *J. Pure Appl. Algebra* **30** (1983), 219–226.
22. Representations and embeddings of  $\mathcal{M}$ -distributive lattices (with H.-J. Bandelt). *Houston J. Math.* **10** (1984), 315–324.
23. A note on order convergence in complete lattices (with H. Dobbertin and D.C. Kent). *Rocky Mountain J. Math.* **14** (1984), 647–654.
24. Lattice representations for categories of closure spaces. In: L. H. Bentley et al. (eds.), *Categorical Topology, Proc. Toledo, Ohio, 1983*, Heldermann, Berlin, 1984, 197–222.
25. Convergence and continuity in partially ordered sets and semilattices (with H. Gatzke). In: R.-E. Hoffmann and K. H. Hofmann (eds.), *Continuous Lattices and Their Applications*, Lecture Notes in Pure and Appl. Math. **101**, Marcel Dekker, New York, 1985, 9–40.
26. Posets isomorphic to their extensions. *Order* **2** (1985), 199–210.

27. Clique numbers of graphs (with P. Erdős). *Discrete Math.* **59** (1986), 235–242.
28. Order extensions as adjoint functors. *Quaestiones Math.* **9** (1986), 149–206.
29. Compact generation in partially ordered sets. *J. Austral. Math. Soc. (Series A)* **42** (1987), 69–83.
30. Completions of partially ordered semigroups (with J. Reichman). *Semigroup Forum* **34** (1987), 253–285.
31.  $\mathcal{W}$ -completeness and fixpoint properties. *Arch. Math. (Brno)* **24** (1988), 147–256.
32. Weak distributive laws and their role in lattices of congruences and equational theories. *Algebra Universalis* **25** (1988), 290–321.
33. Distributors and Wallmanufacture. *J. Pure and Appl. Algebra* **68** (1990), 109–125.
34. Connectivity in lattice-ordered spaces (with R. Vainio). *Math. Nachr.* **147** (1990), 13–28.
35. Staircases and a congruence-theoretical characterization of vector spaces. In: J. Almeida, G. Bordalo and Ph. Dwinger (eds.), *Lattices, Semigroups and Universal Algebra. Proc. Conf. Lisbon 1988*. Plenum Press, New York - London, 1990, 39–58.
36. Tensor products for bounded posets revisited. *Order* **7** (1990), 295–314.
37. Natural continuity space structures on dual Heyting algebras (with R. Kopperman). *Fund. Math.* **136** (1990), 157–177.
38. Completions of generalized semitopological semigroups. In: M. Yamada and H. Tominaga (eds.), *Proc. Intern. Symp. on Semigroup Theory and its Related Fields*, Kyoto 1990, 63–83.
39. The ABC of order and topology. In: H. Herrlich and H.-E. Porst (eds.), *Category Theory at Work*, with cartoons by M. Ern e, Heldermann, Berlin, 1991, 57–83.
40. The Dedekind-MacNeille completion as a reflector. *Order* **8** (1991), 159–173.
41. Bigeneration in complete lattices and principal separation in partially ordered sets. *Order* **8** (1991), 197–221.

42. Counting finite posets and topologies (with K. Stege). *Order* **8** (1991), 159–173.
43. Ideal completion and Stone representation of ideal-distributive ordered sets (with E. David). *Topology and Appl.* **44** (1992), 95–113.
44. The number of partially ordered sets with more points than incomparable pairs. *Discrete Math.* **105** (1992), 49–60.
45. Semidistributivity, prime ideals, and the subbase lemma. *Rend. Circ. Mat. Palermo (II)* **41** (1992), 241–250.
46. Algebraic ordered sets and their generalizations. In: I. Rosenberg and G. Sabidussi (eds.), *Algebras and Orders, Proc. Montreal 1991*, NATO ASI, Series C, Vol. **389**, Kluwer Acad. Publ., Dordrecht - Boston - London, 1993, 113–192.
47. Distributive laws for concept lattices. *Algebra Universalis* **30** (1993), 538–580.
48. On Krull’s Separation Lemma (with B. Banaschewski). *Order* **10** (1993), 253–260.
49. Tensor products of contexts and complete lattices. *Algebra Universalis* **31** (1994), 36–65.
50. A primer on Galois connections (with J. Kosłowski, A. Melton, G. Strecker). In: S. Andima et al. (eds.), *Papers on General Topology and its Applications. 7th Summer Conf. Wisconsin. Annals New York Acad. Sci.* **704**, New York (1994), 103–125.
51. Complements in lattices of varieties and equational theories (with V. Diercks and J. Reinhold). *Algebra Universalis* **31** (1994), 506–515.
52. Pre-fixed points of polynomial functions in lattices (with D. Schweigert). *Algebra Universalis* **32** (1994), 298–300.
53. Combinatorial applications of ordinal sum decompositions (with K. Stege). *Ars Combinatoria* **40** (1995), 65–88.
54. Order-topological complete orthomodular lattices (with Z. Riečanová). *Topology and Appl.* **61** (1995), 215–227.
55. A primrose path from Krull to Zorn. *Comment. Math. Univ. Carolinae* **36** (1995), 123–126.
56. Intervals in lattices of quasiorders (with J. Reinhold). *Order* **12** (1995), 375–403.

57. Convergence structures induced by scales. *Topology and Appl.* **73** (1996), 267–284.
58. Lattices of closed quasiorders (with J. Reinhold). *JCMCC* **21** (1996), 41–64.
59. Prime ideal theorems and systems of finite character. *Comment. Math. Univ. Carolinae* **38** (1997), 513–536.
60. Negations and contrapositions of complete lattices (with K. Deiters). *Discrete Math.* **181** (1998), 91–111.
61. Uniform ideal completions (with V. Palko). *Math. Slovaca* **48** (1998), 327–335.
62.  $\mathcal{Z}$ -continuous posets and their topological manifestation. *Workshop Domains II (Informatik-Berichte 96-04, TU Braunschweig, 1996, 53–88)*. *Appl. Cat. Structures* **7** (1999), 31–70.
63. Ordered one-point-compactifications, stably continuous frames and tensors (with J. Reinhold). *Quaest. Math.* **22** (1999), 63–81.
64. Prime ideal theory for general algebras. *Appl. Cat. Structures* **8** (2000), 115–144.
65. Categories of T-squares and tantales. *Math. Arbeitspapiere* **54** (2000) 155–168.
66. Closure frames and web spaces (with A. Pultr and J. Sichler). *KAM-DIMATIA 2000-501*, Charles University, Prague, 2000.
67. Free distributive structures over general algebras. In: I. Chajda et al. (eds.), *Contributions to General Algebra 13, Proc. Dresden Conf. 2000*, J. Heyn, Klagenfurt, 2001, 115–128.
68.  $\mathcal{Z}$ -join spectra of  $\mathcal{Z}$ -supercompactly generated lattices (with D. Zhao). *Appl. Cat. Structures* **9** (2001), 41–63.
69. Ideal completions and compactifications. *Appl. Cat. Structures* **9** (2001), 217–243.
70. Constructive order theory. *Math. Logic Quarterly* **47** (2001), 211–222.
71. Embedding structures (with J. Reinhold). *Graphs and Combinatorics* **17** (2001), 637–645.
72. On the number of distributive lattices (with J. Heitzig and J. Reinhold). *Electronic J. Comb.* (2002)

73. Posets generated by irreducible elements (with B. Šešelja and A. Tepavčević). *Order* **20** (2003), 79–89.
74. General Stone Duality. In: M. M. Clementino et al. (eds.), *Proceedings of the IV CITA, 2001, Topology and its Appl.* **137** (2004), 125–158.
75. *Galois Connections and Applications* (with K. Denecke and Sh. Wismath, eds.), Kluwer, Dordrecht 2004.
76. Adjunctions and Galois connections: Origins, history and development. In: K. Denecke, M. Erné, Sh. Wismath (eds.), *Galois Connections and Applications*, Kluwer, Dordrecht 2004, 1–138.
77. The polarity between approximation and distribution. In: K. Denecke, M. Erné, Sh. Wismath (eds.), *Galois Connections and Applications*, Kluwer, Dordrecht 2004, 173–210.
78. Intervals in lattices of  $\kappa$ -meet-closed subsets, *Order* **21** (2004/5), 137–153.
79. Minimal bases, ideal extensions, and basic dualities. *Topology Proceedings* **29** (2005), 445–489.
80. Prime decomposition and pseudocomplementation. In: G. Eigenthaler et al. (Eds.): *Contributions to General Algebra* **17**, *Proceedings Vienna Conf. 2005*, Johannes Heyn, Klagenfurt, 2006, 83–104.
81. Prime and maximal ideals of partially ordered sets. *Math. Slovaca* **56** (2006), 1–22.
82. Complete congruences on topologies and down-set lattices (with M. Gehrke and A. Pultr). In: J. Martinez (Ed.), *Ordered Algebraic Structures 2006, Appl. Cat. Structures* **15** (2007) 163–184.
83. M. Erné, Choiceless, pointless, but not useless: dualities for preframes. *Applied Categorical Structures* (to appear).
84. M. Erné, Distributors and Wallman locales, *Houston J. Math.* (to appear).
85. Sums, products and negations of contexts and complete lattices (with K. Deiters). *Algebra Universalis* (to appear).

# Preprints

## Preprint Series of the Institute for Mathematics, University of Hannover

- 101 (1979) Über die Verwendung von  $n$ -symmetrischen Polynomen und bzyklischen Matrizen bei Fermatschen Kongruenzen.
- 109 (1980) Verallgemeinerungen der Verbandstheorie I: Halbgeordnete Mengen und das Prinzip der Vervollständigungsinvarianz.
- 123 (1981) Intrinsic topologies on lattices (with H. Dobbertin).
- 125 (1981) Homomorphisms of  $\mathcal{M}$ -generated and  $\mathcal{M}$ -distributive posets.
- 175 (1984) Chains, directed sets and continuity.
- 204 (1986) Distributors and Wallmanufacture (extended version).

## Memoirs of the Seminar on Continuity in Semilattices

- 7-23-82 Order generation and distributive laws in complete lattices.
- 7-25-82 Freedom for completely distributive lattices (over continuous posets)?
- 8-1-82 Algebraic posets and compactly generated posets.
- 9-14-82 Meet-continuous lattices in which meet is not continuous (with H. Gatzke).
- 5-1-84 Continuity concepts for partially ordered sets.
- 5-7-84 Compactly generated and continuous closure systems.
- 5-14-84 Products of continuous partially ordered sets.
- 3-10-85 Fixed point constructions for standard completions.
- 3-18-85 Generators and weights of completely distributive lattices.
- 10-5-85  $\mathcal{Z}$ -continuous posets,  $\mathcal{Z}$ -ary closure spaces and generalized soberness.
- 6-4-86  $\mathcal{Z}$ -continuity,  $\mathcal{Z}$ -hypercompactness and complete distributivity.

## Unpublished papers

1. *The Dedekind-MacNeille completion as a reflector* (extended version). Tech. Report No. 1184, TH Darmstadt, 1988.
2. *Categories of contexts*. 1990.
3. *Lattice topologies with interval bases*. 1993.
4. *Ideal theory in groupoids*. 1996.
5.  *$\mathcal{Z}$ -distributive function spaces*. 1998.
6. *Groupoid ideals, quotients and free prequantales*. 1999.
7. **E**-groupoids and **E**-tantaes. 1999.
8. *Free tantaes and ideal monads*. 2000.
9. *Web spaces*. 2001.
10. *Continuity properties and Scott frames*. 2001.
11. *Shellability and anti-exchange properties*. 2002.
12. *Prime decomposition, pseudocomplementation and antichains*. 2002.
13. *Order, distance and quasi-uniformities* (with J. Heitzig). 2002.
14. *Irreducible components, ideal covers, and upper antichains*. 2002.
15. *Continuity properties and Scott frames*. 2003.
16. *Pseudocomplemented lattices and relation quantales* (with J. Picado). 2003.
17. *Spatial frames and weak choice principles*. 2004.
18. *Anti-exchange systems and convex geometries*. 2004.
19. *Closure operators on cm-lattices*. 2004.
20. *Algebraic models for  $T_1$ -spaces*. 2005.
21. *Flat and thin computational models for metric spaces* (with A. Pultr). 2005.
22. *Distributive laws and finiteness conditions for Boolean algebras*. 2006.
23. *Sober spaces, quasicontinuous posets, and locally hypercompact spaces*. 2006.



24. *Infinite distributive laws and choice principles.* 2007.
25. *Choice-free dualities for domains.* 2007.
26. *Characteristic triangles of closure maps with applications in general algebra* (with G. Czedli, B. Šešelja and A. Tepavčević). 2007.

#### **Mathematical Illustrations**

1. H. Herrlich and H.-E. Porst (Eds.), *Category Theory at Work*, Heldermann Verlag, Berlin 1991.
2. J. Adámek, H. Herrlich, G. Strecker, *Abstract and Concrete Categories*, Wiley Interscience, New York, 1990.  
Revised and extended edition, Heldermann Verlag, Berlin 2007.