# Bibliography


[Abr90] Samson Abramsky. The lazy lambda calculus. In D.A. Turner, editor, *Research Topics in Functional Programming*, pages 65–116. Addison-Wesley, 1990.

[Acz80] Peter Aczel. Frege structures and the notions of proposition, truth and set. In J. Barwise et al., editors, *The Kleene Symposium*, pages 31–60. North-Holland, 1980.

[Acz88] Peter Aczel. *Non-well-founded sets.* Number 14 in Lecture Notes. CSLI, 1988.

[Acz94] Peter Aczel. Final universes of processes. In *Mathematical Foundations of Programming Semantics, Proc. 9th Int. Conf., New Orleans, LA, USA, April 1993*, volume 802 of *LNCS*, pages 1–28. Springer-Verlag, 1994.

[AM80] M.A. Arbib and E.G. Manes. The greatest fixpoint approach to data types. In *Proc. of the 3rd workshop meeting on Categorical and Algebraic Methods in Computer Science and System Theory*, 1980. See also [AM82].

[AM82] M.A. Arbib and E.G. Manes. Parametrized data types do not need highly constrained parameters. *Information and Control*, 52:139–158, 1982.

[AM89] P. Aczel and N. Mendler. A final coalgebra theorem. In D.H. Pitt et al., editors, *Proc. category theory and computer science*, volume 389 of *LNCS*, pages 357–365. Springer-Verlag, 1989.

[AR89] P.H.M. America and J.J.M.M. Rutten. Solving reflexive domain equations in a category of complete metric spaces. *Journal of Computer and System Sciences*, 39(3):343–375, 1989.

[Bad87] Eric Badouel. Une construction systématique de modéles à partir de spécifications opérationnelles structurelles. Technical Report INRIA 764, IRISA, Rennes, 1987.

[Bal94] M. Baldamus. A non-well-founded sets semantics for observation congruence over full CCS. Tech. rep. Berlin University of Technology, 1994.

[Bar92] Michael Barr. Algebraically compact functors. *Journal of Pure and Applied Algebra*, 82:211–231, 1992.

[Bar93] Michael Barr. Terminal coalgebras in well-founded set theory. *Theoretical Computer Science*, 144(2):299–315, 1993.

[BB92] G. Berry and G. Boudol. The Chemical Abstract Machine. *Theoretical Computer Science*, 96:217–248, 1992.

[BE87] J. Barwise and J. Etchemendy. *The Liar: An Essay in Truth and Circularity.* Oxford University Press, 1987.

[Bec69] Jon Beck. Distributive laws. In B. Eckmann, editor, *Seminar on Triples and Categorical Homology Theory*, volume 80 of *Lecture Notes in Mathematics*, pages 119–140. Springer-Verlag, 1969.

[BG92] S. Brookes and S. Geva. Computational comonads and intensional semantics. In M.P. Fourman, P.T. Johnstone, and A.M. Pitts, editors, *Applications of categories in computer science*, volume 177 of *London Mathematical Society Lecture Note Series*. Cambridge University Press, 1992.

[BIM88] B. Bloom, S. Istrail, and A.R. Meyer. Bisimulation can't be traced: preliminary report. In *Proc. Third IEEE Symp. on Logic In Computer Science*, pages 229–239, 1988.

[BR92] J.W. de Bakker and J. Rutten, editors. *Ten Years of Concurrency Semantics.* World Scientific, 1992. Selected papers of the Amsterdam Concurrency Group.

[BV96] J.W. de Bakker and E. de Vink. *Control Flow Semantics.* The MIT Press, 1996.

[BW85] M. Barr and C. Wells. *Toposes, Triples and Theories.* Springer-Verlag, 1985.

[BW90] J.C.M. Baeten and W.P. Weijland. *Process Algebra.* Number 18 in Cambridge Tracts in Theoretical Computer science. Cambridge University Press, 1990.

[BZ82] J.W. de Bakker and J.I. Zucker. Processes and the denotational semantics of concurrency. *Information and Control*, 54:70–120, 1982.

[Cro93] R.L. Crole. *Categories for Types.* Cambridge Mathematical Textbooks. Cambridge Univ. Press, 1993.

[DG87] Ph. Darondeau and B. Gamatié. A fully observational model for infinite behaviours of communicating systems. In *Proc. TAPSOFT/CAAP'87*, volume 249 of *LNCS*, pages 153–168. Springer-Verlag, 1987. See also [DG90].

[DG90] Ph. Darondeau and B. Gamatié. Infinitary behaviours and infinitary observations. *Fundamenta Informaticae*, XIII:353–386, 1990.

[dS85] R. de Simone. Higher level synchronising devices in MEIJE-SCCS. *Theoretical Computer Science*, 37:245–267, 1985.

[FH83] M. Forti and F. Honsell. Set theory with free construction principles. *Annali Scuola Normale Superiore, Pisa*, X(3):493–522, 1983.

[Fio93] Marcelo Fiore. A coinduction principle for recursive data types based on bisimulation. In *Proc. Eighth IEEE Symp. on Logic In Computer Science*, 1993. To appear in *Information and Computation.*

[Fio96] Marcelo Fiore. Axiomatic domain theory in categories of partial maps. To be published by Cambridge University Press in the Distinguished Dissertations Series. (Ph.D. thesis, 1994. Technical report ECS-LFCS-94-307, Department of Computer Science, University of Edinburgh), 1996.

[FP92] M.P. Fiore and G.D. Plotkin. On compactness and **Cpo**-enriched categories. In G. Winskel, editor, *Proceedings of the CLICS Workshop (23-27 March 1992)*, volume 397-II of *DAIMI PB*, pages 571–584. Computer Science Department, Aarhus University, May 1992.

[FP94] M.P. Fiore and G.D. Plotkin. An axiomatisation of computationally adequate domain-theoretic models of FPC. In *9*$^{\text{th}}$ *LICS Conf.*, pages 92–102. IEEE, Computer Society Press, 1994.

[Fre90] Peter Freyd. Recursive types reduced to inductive types. In *Proc. Fifth IEEE Symp. on Logic In Computer Science*, pages 498–507. IEEE Computer Society Press, 1990.

[Fre91] Peter Freyd. Algebraically complete categories. In A. Carboni, M.C. Pedicchio, and G. Rosolini, editors, *Category Theory - Proc. of the Int'l Conf. held in Como, Italy, July 1990*, volume 1488 of *Lecture Notes in Mathematics*, pages 95–104. Springer-Verlag, 1991.

[Fre92] Peter Freyd. Remarks on algebraically compact categories. In H.P. Fourman, P.T. Johnstone, and A.M. Pitts, editors, *Applications of Category Theory in computer science*, volume 177 of *London Mathematical Society Lecture Notes Series*, pages 95–106. Cambridge University Press, 1992.

[FS90] Peter Freyd and Andre Scedrov. *Categories, Allegories.* North-Holland, 1990.

[Gro93] J.F. Groote. Transition system specifications with negative premises. *Theoretical Computer Science*, 118(2):263–299, 1993.

[GTW78] J.A. Goguen, J.W. Thatcher, and E.G. Wagner. An initial algebra approach to the specification, correctness and implementation of abstract data types. In R.T. Yeh, editor, *Current Trends in Programming Methodology*, volume IV, pages 80–149. Prentice Hall, 1978.

[GV92] J.F. Groote and F. Vaandrager. Structured operational semantics and bisimulation as a congruence. *Information and Computation*, 100(2):202–260, 1992.

[Har96] Chrysafis Hartonas. Semantics for finite delay. To appear in *Theoretical Computer Science*, 1996.

[Her93] C. Hermida. *Fibrations, Logical Predicates and Indeterminates.* PhD thesis, Univ. Edinburgh, 1993. Techn. rep. LFCS-93-277. Also available as Aarhus Univ. DAIMI Techn. rep. PB-462.

[Hes88] W.H. Hesselink. Deadlock and fairness in morphisms of transition systems. *Theoretical Computer Science*, 59:235–257, 1988.

[HJ95a] C. Hermida and B. Jacobs. An algebraic view of structural induction. In L. Pacholski and J. Tiuryn, editors, *Computer Science Logic 1994*, volume 933 of *LNCS*, pages 412–426. Springer-Verlag, 1995.

[HJ95b] C. Hermida and B. Jacobs. Induction and coinduction via subset types and quotient types. In *Informal Proceedings of the Joint CLICS-TYPES Workshop on Categories and Type Theory.* Prog. Meth. Group, Report 85, Göteborg Univ. and Chalmers Univ. of Techn., 1995.

[HL95] F. Honsell and M. Lenisa. Final semantics for untyped $\lambda$-calculus. In M. Dezani-Ciancaglini and G.D. Plotkin, editors, *Typed Lambda calculi and applications : second international conference*, volume 902 of *LNCS*. Springer-Verlag, 1995.

[HP79] M.C.B. Hennessy and G.D. Plotkin. Full abstraction for a simple parallel programming language. In J. Bečvář, editor, *Proc. 8th Int'l Symp. on Mathematical Foundations of Computer Science*, volume 74 of *LNCS*, pages 108–120. Springer-Verlag, 1979.

[Jac95] Bart Jacobs. Mongruences and cofree coalgebras. In V.S. Alagar and M. Nivat, editors, *Algebraic Methods and Software Technology*, volume 936 of *LNCS*, pages 245–260. Springer-Verlag, 1995.

[JM95] A. Joyal and I. Moerdijk. *Algebraic Set Theory*, volume 220 of *London Mathematical Society Lecture Note Series*. Cambridge University Press, 1995.

[JNW93] A. Joyal, M. Nielsen, and G. Winskel. Bisimulation and open maps. In *Proc. Eighth IEEE Symp. on Logic In Computer Science*, pages 418,427, 1993.

[Joh75] P.T. Johnstone. Adjoint lifting theorems for categories of algebras. *Bull. London Math. Soc.*, 7:294–297, 1975.

[Ken87] R.E. Kent. The metric closure powerspace construction. In M. Main et al., editors, *Mathematical Foundations of Programming Semantics, Proc. 3rd Int. Conf.*, volume 298 of *LNCS*, pages 173–199. Springer-Verlag, 1987.

[Klo80] Jan Willem Klop. *Combinatory Reduction Systems*, volume 127 of *Mathematical Centre Tracts*. CWI, Amsterdam, 1980. PhD Thesis.

[KR90] J.N. Kok and J.J.M.M. Rutten. Contractions in comparing concurrency semantics. *Theoretical Computer Science*, 76:179–122, 1990.

[Law69] F. William Lawvere. Adjointness in foundation. *Dialectica*, 23(3/4):281–296, 1969.

[Law76] F. William Lawvere. Variable quantities and variable structure in topoi. In A. Heller and M. Tierney, editors, *Algebra, Topology, and Category Theory*, pages 101–131. Academic Press, 1976.

[Lev79] Azriel Levy. *Basic Set Theory*. Perspectives in Mathematical Logic. Springer-Verlag, 1979.

[LS86] J. Lambek and P.J. Scott. *Introduction to higher order categorical logic*, volume 7 of *Cambridge studies in advanced mathematics.* Cambridge University Press, 1986.

[Mac71] Saunders Mac Lane. *Categories for the Working Mathematician*, volume 5 of *Graduate Texts in Mathematics.* Springer-Verlag, 1971.

[Mac86] Saunders Mac Lane. *Mathematics: Form and Function.* Springer-Verlag, 1986.

[Man76] E.G. Manes. *Algebraic Theories*, volume 26 of *Graduate Texts in Mathematics.* Springer-Verlag, 1976.

[Mei92] Karl Meinke. Universal algebra in higher types. *Theoretical Computer Science*, 100:385–417, 1992.

[MG85] J. Meseguer and J.A. Goguen. Initiality, induction, and computability. In M. Nivat and J.C. Reynolds, editors, *Algebraic Methods in Semantics*, pages 459–541. Cambridge University Press, 1985.

[Mil80] R. Milner. *A Calculus of Communicating Systems*, volume 92 of *LNCS.* Springer-Verlag, 1980.

[Mil90] R. Milner. Functions as processes. In M.S. Paterson, editor, *Proc. of 17th ICALP*, 1990.

[Mog91] Eugenio Moggi. Notions of computation and monads. *Information and Computation*, 93:55–92, 1991.

[Mos90] Peter D. Mosses. Denotational semantics. In J. van Leeuwen, editor, *Handbook of Theoretical Computer Science*, volume B: Formal Models and Semantics, pages 575–631. Elsevier, Amsterdam and The MIT Press, Cambridge, 1990.

[MT92] K. Meinke and J.V. Tucker. Universal algebra. In S. Abramsky et al., editors, *Handbook of logic in computer science*, volume 1, pages 189–411. Clarendon Press, Oxford, 1992.

[Muk91] Kuniaki Mukai. *Constraint Logic Programming and the Unification of Information.* PhD thesis, Tokio Institute of Technology, April 1991.

[Niv79] M. Nivat. Infinite words, infinite trees, infinite computations. In J.W. de Bakker and J. van Leeuwen, editors, *Foundations of Computer Science III, Part 2*, volume 109 of *Math. Centre Tracts*, pages 3–52, 1979.

[Ole82] Frank J. Oles. *A category-theoretic approach to the semantics of programming languages.* PhD thesis, School of Computer and Information Science, Syracuse University, August 1982.

[Par81] D.M.R. Park. Concurrency and automata on infinite sequences. In P. Deussen, editor, *Proceedings 5th GI Conference*, volume 104 of *LNCS*, pages 167–183. Springer-Verlag, 1981.

[Pau95] Lawrence C. Paulson. A concrete final coalgebra theorem for ZF set theory. In P. Dybjer et al., editors, *Types for Proofs and Programs '94*, volume 996 of *LNCS*, pages 120–139. Springer-Verlag, 1995.

[Pit93] Andrew Pitts. Relational properties of domains. Technical Report 321, Cambridge Univ. Computer Laboratory, December 1993. To appear in *Information and Computation.*

[Pit94a] Andrew Pitts. A co-induction principle for recursively defined domains. *Theoretical Computer Science*, 124:195–219, 1994.

[Pit94b] Andrew Pitts. Computational adequacy via 'mixed' inductive definitions. In *Mathematical Foundations of Programming Semantics, Proc. 9th Int. Conf., New Orleans, LA, USA, April 1993*, volume 802 of *LNCS*, pages 72–82. Springer-Verlag, 1994.

[Pit94c] Andrew Pitts. Some notes on inductive and co-inductive techniques in the semantics of functional programs. Notes Series BRICS-NS-94-5, BRICS, Department of Computer Science, University of Aarhus, December 1994.

[Plo76] Gordon Plotkin. A powerdomain construction. *SIAM J. Comput.*, 5:452–487, 1976.

[Plo81a] Gordon Plotkin. Post-graduate lecture notes in advanced domain theory (incorporating the "Pisa Notes"). Department of Computer Science, Univ. of Edinburgh, 1981.

[Plo81b] Gordon Plotkin. A structured approach to operational semantics. Technical Report DAIMI FN-19, Computer Science Department, Aarhus University, 1981.

[Plo85] Gordon Plotkin. Lectures on predomains and partial functions. CSLI, 1985.

[Plo90] Gordon Plotkin. An illative theory of relations. In R Cooper et al., editors, *Situation Theory and its Applications*, number 22 in CSLI Lecture Notes, pages 133–146. Stanford University, 1990.

[Poi92] Axel Poigné. Basic category theory. In S. Abramsky et al., editors, *Handbook of logic in computer science*, volume 1, pages 413–640. Clarendon Press, Oxford, 1992.

[RT93] J. Rutten and D. Turi. On the foundations of final semantics: non-standard sets, metric spaces, partial orders. In J. de Bakker et al., editors, *Proc. of the REX workshop Semantics – Foundations and Applications*, volume 666 of *LNCS*, pages 477–530. Springer-Verlag, 1993.

[RT94] J. Rutten and D. Turi. Initial algebra and final coalgebra semantics for concurrency. In J. de Bakker et al., editors, *Proc. of the REX workshop A Decade of Concurrency – Reflections and Perspectives*, volume 803 of *LNCS*, pages 530–582. Springer-Verlag, 1994.

[Rut90] J. Rutten. Deriving denotational models for bisimulation from Structured Operational Semantics. In M. Broy and C.B. Jones, editors, *Programming concepts and methods, proceedings of the IFIP Working Group 2.2/2.3 Working Conference*, pages 155–177. North-Holland, 1990.

[Rut92] Jan Rutten. Processes as terms: non-well-founded models for bisimulation. *Mathematical Structures in Computer Science*, 2:257–275, 1992.

[San95] Davide Sangiorgi. On the proof method for bisimulation. In J. Wiedermann and P. Háiek, editors, *Proc. MFCS'95*, volume 969 of *LNCS*, pages 479–488. Springer-Verlag, 1995.

[Sco70] Dana Scott. Outline of a mathematical theory of computation. In *Proc. 4th Annual Princeton Conference on Inf. Sciences and Systems*, pages 169–176, 1970.

[Sco80] Dana Scott. Relating theories of the $\lambda$-calculus. In J.R. Hindley and J.P. Seldin, editors, *To H.B. Curry: Essays on combinatory logic, lambda calculus and formalism*, pages 403–450. Academic Press, 1980.

[Sim95] Alex Simpson. Compositionality via cut-elimination: Hennessy-Milner logic for an arbitrary GSOS. In *Proc. Tenth IEEE Symp. on Logic In Computer Science*, 1995.

[SP82] M. Smyth and G. Plotkin. The category-theoretic solution of recursive domain equations. *SIAM J. Comput.*, 11:761–783, 1982.

[TJ93] D. Turi and B. Jacobs. On final semantics for applicative and non-deterministic languages. Fifth Biennal Meeting on Category Theory and Computer Science, Amsterdam, September 1993.

[Win93] Glynn Winskel. *The Formal Semantics of Programming Languages.* The MIT Press, 1993.

[WN95] G. Winskel and M. Nielsen. Models for concurrency. In S. Abramsky et al., editors, *Handbook of logic in computer science*, volume 4. Clarendon Press, Oxford, 1995.

# Index