Proceedings of the
First International Conference

ALGEBRAIC
METHODOLOGY
AND
SOFTWARE
TECHNOLOGY

May 22-24, 1989

The University of Iowa
Iowa City, Iowa

Mathematics well-applied illuminates rather than confuses
Conference Program

Sunday, May 21, 6:30-8:30pm Reception

Monday, May 22, 8:00-8:45 Registration

Monday 22, 8:45-9:00 Welcome, Introduction: Fleck, A., Conference Chair.

Monday 22, 9:00-12:30: Session 1 Process Algebra
(Chair: Nelson, G., The University of Iowa, Iowa, USA)

- 9:00-10:00 Invited talk: *Minimal Finite Transition Systems*, Nivat, M., Université Paris VII, France.
- 10:00-10:30 Baeten, J., *Algebra of Communicating Processes*.

10:30-11:00 Coffee break

- 11:30-12:00 Pigozzi, D., *Equality-Test and If-Then-Else Algebras: Axiomatization and Specification*.

12:30-2:00 Lunch

Monday 22, 2:00-6:00 Session 2 Algebraic Methods for Language Specification
(Chair: Hatcher, W.S., Université Laval, Quebec, Canada)

- 2:00-3:00 Invited talk: *Display of Graphics and their Applications, as Exemplified by 2-Categories and Hegelian “Taco”*, William F. Lawvere, Buffalo University, USA.
- 3:00-3:30: Bidoit, M., *The Stratified Loose Semantics: An Attempt to Provide an Adequate Algebraic Model of Modularity*.

4:00-4:30 Coffee break

- 4:30-5:00 Bradley L., *An Algebraic Approach to the Early Stages of Language Design*.
- 5:00-5:30 Talcott, C. L., *Algebraic Methods in Programming Language Theory*.
- 5:30-6:00 Parpucea, I., *Dynamic Extension of Programming Language Semantics*.
- 7:30 Social hour
Tuesday 23, 8:30-12 Session 3 Parallel and Distributed Processing
(Chair: Cornell, A., Brigham Young University, Utah, USA)

- 8:30-9:30 Invited talk: General Logics, Jose Meseguer, SRI, USA.
- 9:30-10:00 Logrippo, L., LOTOS: An Algebraic Specification Language for Distributed Systems.

10:00-10:30 Coffee break

- 10:30-11:00 Miller, S., Kuhl, J., Modeling Distributed Systems as Distributed Data Types.

12-1:30 Lunch

Tuesday 23, 1:30-5:30 Session 4 Types, Polymorphism and λ-Calculus
(Chair: Main, M., University of Colorado at Boulder, Colorado, USA)

- 1:30-2:30 Invited talk: Implementing Mathematics as an Approach for Formal Reasoning, R. Constable, Cornell University, USA.
- 2:30-3:00 Hatcher, W.S., Tonga, M., Pairings on Lambda Algebras.
- 3:00-3:30 Zhang, H., Constructor Models as Abstract Data Types.

3:30-4:00 Coffee break

- 4:00-4:30 Riecke, J.G., Bloom, B., LCF Should be Lifted.
- 4:30-5:00 Scollo, G., Manca, V., Salibra, A., DELTA: A Deduction System Integrating Equational Logic and Type Assignment.
- 5:00-5:30 Janicki, R., Müldner, T., On Algebraic Transformations of Sequential Specifications.
- 6:30 Banquet (Buses depart)
Wednesday 24, 8:30-12 Session 5 Algebraic Software Development
(Chair: Schmidt, D., Kansas State University, Kansas, USA)

- 8:30-9:30 Invited talk: An Algebraically Specified Language for Data Directed Design, Eric Wagner, IBM Thomas J. Watson Center, USA.
- 9:30-10:00 Rattray, C.I.M., Modeling the Software Process.

10:00-10:30 Coffee break

- 10:30-11:00 Wells, C., Path Grammars.
- 11:00-11:30 Pratt, V., Enriched Categories and Floyd-Warshall Connection.
- 11:30-12 Dauchet, M., Tison, S., Finite Automata, Algorithms and Software Design.

12-1:30 Lunch

Wednesday 24, 1:30-5:00 Session 6 Algebraic Semantics of Programs
(Chair: Rattray, C.I.M., University of Stirling, Stirling, Scotland)

- 1:30-2:00 Schmidt, D., Even, S., Category-Sorted Algebra-Based Action Semantics.
- 2:00-2:30 Vidal, D., The De Bruijn Algebra
- 2:30-3:00 Oguztuzun, H.M., A Game Characterization of the Observational Equivalence of Processes.

3:00-3:30 Coffee break

- 3:30-4:00 Wijland, W.P., Van Glabbeek R.J., Refinement in Branching Time Semantics.
- 4:00-4:30 Kent, R.E., Dialectical Program Semantics.
- 4:30-5:00 Concluding remarks