

CAHIERS DE TOPOLOGIE ET GÉOMÉTRIE DIFFÉRENTIELLE CATÉGORIQUES

JIŘI ADÁMEK

A farewell to Jan Reiterman

Cahiers de topologie et géométrie différentielle catégoriques, tome 34, n° 3 (1993), p. 162-166

http://www.numdam.org/item?id=CTGDC_1993__34_3_162_0

© Andrée C. Ehresmann et les auteurs, 1993, tous droits réservés.

L'accès aux archives de la revue « Cahiers de topologie et géométrie différentielle catégoriques » implique l'accord avec les conditions générales d'utilisation (<http://www.numdam.org/conditions>). Toute utilisation commerciale ou impression systématique est constitutive d'une infraction pénale. Toute copie ou impression de ce fichier doit contenir la présente mention de copyright.

NUMDAM

Article numérisé dans le cadre du programme
Numérisation de documents anciens mathématiques
<http://www.numdam.org/>

A FAREWELL TO JAN REITERMAN

by Jiří ADÁMEK

On September 14 of 1992 we lost an outstanding mathematician, an excellent teacher, and a dear friend Jan Reiterman. He died of lung cancer after eight months of struggle. Jan Reiterman was born on October 8, 1948 in Prague. He finished elementary school in 1963, and after graduating with honours from highschool in 1966, he continued at the Faculty of Mathematics and Physics of Charles University Prague in the years 1966-1971. He was a brilliant student, and his first three research papers [1], [2], [6] were written during his studies. He was an active member of the Seminar of General Mathematical Structures led by Prof. Věra Trnková from 1969 until his death, and he contributed very much to (and benefited from) the creative atmosphere of this seminar. He graduated from Charles University with honours in 1971, and he continued as a PhD student of Prof. Trnková, after a one-year military service, in 1972. During his PhD studies he went on with his research of properties of functors and their applications in algebra within the seminar of Prof. Trnková, and he was an active member of the Seminar on Uniform Spaces of Dr. Zdeněk Frolík. He finished his PhD studies in 1974 by submitting a highly original thesis devoted to iterative constructions of functor structures in algebra. This thesis later became the basis of a very substantial joint paper of Jan Reiterman and Václav Koubek [19] whose importance was fully realized e. g. by Max Kelly in his survey article on iterative constructions.

In 1974 Jan Reiterman took the position of Assistant Professor at the Department of Mathematics of the Faculty for Nuclear and Physical Engineering of the Czech Technical University in Prague. Here he first held tutorials in calculus, later he held lectures on Mathematical Analysis, Theory of Games, and Analysis of Algorithms. He was considered as an exceptionally good teacher, and his personality made a major impact on the development of his department. In spite of this, and in spite of his recognition as an excellent mathematician by the international community, he was not raised to the position of Associated Professor until 1990. In 1991, Jan Reiterman and myself obtained a research grant of the rector of the Czech Technical University on the topic "Categorical and Algebraic Methods of Computer Science" (which was later prolonged to 1992), and a TEMPUS JEP grant on the same topic.

Reprinted with the permission of *Mathematica Bohemica*

Jan Reiterman published 60 research articles in international mathematical journals, he was a co-author of a textbook on general topology (in Czech) and an author of lecture notes on analysis of algorithms. Since his research results were becoming recognized worldwide, he was invited to a number of conferences and lecture visits to a numerous countries, and thus he was able to travel in spite of all the restrictions: he participated at conferences in Germany, Italy and in Belgium, and he made 1-month lecture visit at the University of L'Aquila (Italy), the University of Bremen and Hagen (Germany), the York University (Toronto, Canada) and the McMaster University (Hamilton, Canada). He was a regular participant of Winter Schools of Dr. Frolík, and he took part on the conferences TOPOSYM and TOPCAT in Prague.

The main research interest of Jan Reiterman was application of categorical methods in algebra. I have mentioned his paper [19] already, another very substantial paper is [29] where the Birkhoff Variety Theorem is generalized to varieties of finite algebras: here Jan Reiterman proved that a characterization can be obtained for finite algebras if we consider equations not between pairs of terms, but rather pairs of implicit operations. In a series of papers [28], [33], [38], [42], [47], [56] we investigated, in joint research with Evelyn Nelson and other co-authors, continuous algebras. These are ordered algebras which have specified types of joins and whose operations preserves those types of joins. The topic originates from computer science, and we developed a systematic theory of constructions, varieties, and logics of continuous algebras. (I realize with a shock that of the four authors of [47] of about the same age, I am the only survivor: cancer has deprived us of the other three!). Somewhat related is the topic of dynamic algebras to which Jan Reiterman and Věra Trnková devoted several papers [24], [27], [39].

Another important theme of interest of Jan Reiterman was general (and categorical) topology. In a series of papers with several co-authors he characterized uniform atoms, i. e., uniform spaces with the property that the only strictly finer uniformity is the discrete one, see [10], [14], [17], [25], [43]. He achieved basic development in the theory of topological categories, in particular, in descriptions of cartesian closed topological hulls of a number of interesting categories [22], [31], [37], [40], [51], [52], [58].

We have by far not exhausted the list of topics on which Jan Reiterman published original articles - these include also graph theory, embedding theorems for categories, theory of descent maps, and others. Jan Reiterman was a very active and original mathematician, and his work was virtually interrupted by his death - his last papers were completed this September, and he was then also preparing a new lecture he hoped to hold.

Besides his qualities as a teacher and a scientist, Jan Reiterman was widely known as a pleasant and helpful person, someone whom you wished to meet and to be with - and someone whom we will truly miss.

PUBLICATIONS OF JAN REITERMAN

Articles

- [1] *Václav Koubek, Jan Reiterman*: On the category of filters, *CMUC (Comment. Math. Univ. Carolinae) 11* (1970), 19–29.
- [2] *Jan Reiterman*: An example concerning set-functors, *CMUC 12* (1971), 227–233.
- [3] *Václav Koubek, Jan Reiterman*: Set functors III—monomorphisms, epimorphisms, isomorphisms, *CMUC 14* (1973), 441–455.
- [4] *Jiří Adámek, Jan Reiterman*: Pevné body ve varietách unárních algeber a v reprezentacích monoidů, *Acta Polytechnica IV* (1973), 1, 5–8.
- [5] *Jiří Adámek, Jan Reiterman*: Fixed point property of unary algebras, *Algebra Universalis 4* (1974), 163–165.
- [6] *Jiří Adámek, Václav Koubek, Jan Reiterman*: On the existence of special homogenous monoids, *Semigroup Forum 9* (1974), 95–101.
- [7] *Václav Koubek, Jan Reiterman*: Factor categories of the category of sets: description and concreteness, *J. Pure Appl. Algebra 4* (1974), 71–77.
- [8] *Jiří Adámek, Jan Reiterman*: Fixed points in representations of categories, *Transactions of the American Math. Soc. 211* (1975), 239–247.
- [9] *Věra Trnková, Jan Reiterman*: The categories of presheaves containing any category of algebras, *Disertationes Mathematicae CXXIV*, Warszawa, 1975.
- [10] *Jan Pelant, Jan Reiterman*: Atoms in uniformities, *Seminar Uniform Spaces, MÚ ČSAV* (1975), 73–81.
- [11] *Věra Trnková, Jiří Adámek, Václav Koubek, Jan Reiterman*: Free algebras, input processes and free monads, *CMUC 16* (1975), 339–351.
- [12] *Jiří Adámek, Jan Reiterman*: Exactness of the set-valued colim, *CMUC 17* (1976), 97–103.
- [13] *Václav Koubek, Jan Reiterman*: A set functor which commutes with all homfunctors is a homfunctor, *Czech. Math. J. 26 (101)* (1976), 183–191.
- [14] *Jan Pelant, Jan Reiterman*: Atoms and proximal fineness, *Seminar Uniform Spaces, MÚ ČSAV* (1976), 37–41.
- [15] *Jan Reiterman*: A left adjoint construction related to free triples, *J. Pure Appl. Algebra 10 (1)* (1977), 57–72.
- [16] *Věra Trnková, Jan Reiterman*: Topological categories containing any category of algebras, *Czech. Math. J. 27* (1977), 626–643.
- [17] *Jan Reiterman, Vojtěch Rödl*: A non-zero dimensional atom, *Seminar Uniform Spaces, MÚ ČSAV* (1978).
- [18] *Jan Reiterman*: One more categorical model of universal algebra, *Math. Z. 161* (1978), 137–146.
- [19] *Václav Koubek, Jan Reiterman*: Categorical constructions of free algebras, colimits and completions of partial algebras, *J. Pure Appl. Algebra 14* (1979), 195–231.

- [20] *Jan Reiterman*: Large algebraic theories with small algebras, *Bull. Austral. Math. Soc.* **19** (1978), 371–380.
- [21] *Jan Reiterman*: A note to the ADJ's subset system, *Fundam. of Comput. Theory*, Akademie Verlag Berlin, 1979, pp. 387–390.
- [22] *Jan Reiterman*: Small-fibred semitopological functors without small-fibred initial completions, *CMUC* **20** (3) (1979), 539–546.
- [23] *Jan Reiterman*: Structure-semantics relation for non-varietal equational theories, *Algebra Universalis* **10** (1980), 399–401.
- [24] *Jan Reiterman, Věra Trnková*: Dynamic algebras which are not Kripke structures, *MFCS'80*, Springer-Verlag Berlin, pp. 529–538.
- [25] *Jan Pelant, Jan Reiterman*: Complements in the lattice of uniformities, *CMUC* **22** (1981), 399–412.
- [26] *Jiří Adámek, Václav Koubek, Jan Reiterman*: Embeddings into categories with fixed points in representations, *Czech. Math. J.* **31** (1981), 368–389.
- [27] *Jan Reiterman, Věra Trnková*: Representation of dynamic algebras with reversion, *MFCS'81*, Springer-Verlag Berlin, Heidelberg, New York, pp. 463–472.
- [28] *Jiří Adámek, Evelyn Nelson, Jan Reiterman*: Tree constructions of free continuous algebras, *Journal of Comp. and System Sci.* **24** (1982), 114–146.
- [29] *Jan Reiterman*: The Birkhoff theorem for finite algebras, *Algebra Universalis* **14** (1982), 1–10.
- [30] *Jan Reiterman*: Algebraic theories and varieties of functor algebras, *Fund. Math.*, CXVIII (1983), 59–68.
- [31] *Jiří Adámek, Jan Reiterman*: Cartesian closed hull of the category of uniform spaces, *Topology & its applications* **19** (1985), 261–276.
- [32] *Jiří Adámek, Jan Reiterman, George Strecker*: Realization of cartesian closed topological hulls, *Manusc. Math.* **53** (1985), 1–33.
- [33] *Jiří Adámek, Evelyn Nelson, Jan Reiterman*: Arbitrary large continuous algebras on one generator, *Trans. American Math. Soc.* **291** (2) (1985), 681–699.
- [34] *Jiří Adámek, Evelyn Nelson, Jan Reiterman*: The Birkhoff theorem for continuous algebras, *Algebra Universalis* **20** (1985), 328–350.
- [35] *Jan Reiterman, Vojtěch Rödl, Edita Šinajová, Miroslav Tůma*: On threshold graphs and hypergraphs, *Discrete Math.* **54** (1985), 193–200.
- [36] *Jan Reiterman*: On locally small based algebraic theories, *CMUC* **27** (2) (1986), 325–340.
- [37] *Jiří Adámek, Jan Reiterman*: Topological categories presented by small sets of axioms, *J. Pure Appl. Algebra* **42** (1986), 1–14.
- [38] *Jiří Adámek, Evelyn Nelson, Jan Reiterman*: Continuous semilattices, *Theoret. Comp. Sci.* **43** (1986), 293–313.
- [39] *Jan Reiterman, Věra Trnková*: Dynamic algebras with test, *Comp. System Sci.* **35** (1987), 229–242.
- [40] *Jiří Adámek, Jan Reiterman*: The quasitopos hull of the category of uniform spaces, *Topology & its Applications* **27** (1987), 97–104.
- [41] *Hiroshi Maehara, Jan Reiterman, Vojtěch Rödl, Edita Šinajová*: Embeddings of trees into euclidean spaces, *Graphs & Combinatorics* **4** (1988), 43–47.
- [42] *J. Adámek, A. Jung, E. Nelson, J. Reiterman, A. Tarlecki*: On comparison of subset systems, *CMUC* **29** (1988), 169–177.
- [43] *Jan Pelant, Jan Reiterman, Vojtěch Rödl, Petr Simon*: Ultrafilters on ω and atoms in the lattice of uniformities I, *Topology and its Applications* **30** (1988), 1–17.
- [44] *Jan Pelant, Jan Reiterman, Vojtěch Rödl, Petr Simon*: Ultrafilters on ω and atoms in the lattice of uniformities II, *Topology and its Applications* **30** (1988), 107–125.

- [45] *Jan Reiterman, Vojtěch Rödl, Edita Šiňajová*: Geometrical embeddings of graphs, *Disc. Math.* 74 (1989), 291–319.
- [46] *Jan Reiterman, Vojtěch Rödl, Edita Šiňajová*: Embeddings of graphs into euclidean spaces, *Discrete Comput. Geometry* 4 (1989), 349–364.
- [47] *Jiří Adámek, A. Mekler, Evelyn Nelson, Jan Reiterman*: On the logic of continuous algebras, *Notre Dame J. of Formal Logic* 29 (1988), 365–380.
- [48] *Jan Reiterman*: The category of complete lattices as a category of algebras, *Algebra Univ.* 26 (1989), 367–379.
- [49] *Jan Reiterman*: A note on monotone paths in labeled graphs, *Combinatorica* 9 (2) (1989), 231–232.
- [50] *Jiří Adámek, Horst Herrlich, Jan Reiterman*: Cocompleteness almost implies completeness, *Categorical Topology & its Relation to Analysis, Algebra and Combinatorics*, World Scientific, Singapore, London, Hongkong, 1989, pp. 246–256.
- [51] *Jiří Adámek, Jan Reiterman*: Cartesian closed hull for metric spaces, *CMUC* 31 (1990), 1–6.
- [52] *Jiří Adámek, Jan Reiterman, Friedhelm Schwarz*: On universally topological hulls and quasitopos hulls, *Houston J. Math.* 17 (1991), 375–383.
- [53] *A. Fedelli, Jan Reiterman, Anna Tozzi*: On w_α -compactness, *J. Comb. Theory*, to appear.
- [54] *Jan Reiterman*: Concrete full embeddings into categories of algebras and coalgebras, *J. Pure Appl. Algebra*, to appear.
- [55] *Jan Reiterman, Walter Tholen*: Effective descent maps of topological spaces, submitted.
- [56] *Evelyn Nelson, Jiří Adámek, Jan Reiterman*: Continuous algebras revisited, submitted.
- [57] *Jiří Adámek, Jan Reiterman*: Banach fixpoint theorem as a base for data-type equations, *Seminarberichte* 44, Fernuniversität Hagen, 1992, pp. 1–18.
- [58] *Jiří Adámek, Jan Reiterman*: The category of uniform spaces as a completion of the category of metric spaces, *CMUC*, to appear.
- [59] *Jan Reiterman, Manuela Sobral, Walter Tholen*: Fascets of descent II, in preparation.

Books

- [1] *Foundations of General Topology* (in Czech), with J. Adámek and V. Koubek, Technical Publishing House (SNTL) Praha, 1977.
- [2] *Analysis of Algorithms* (in Czech), Lecture Notes of the Czech Technical University Prague, 1983.