



THEORY AND APPLICATIONS OF CATEGORIES

Volume 17, 2006-07

*A special volume: Chu spaces: theory and applications**

| | |
|---|-----|
| Preface | |
| The guest editors | 1 |
| | |
| The Chu construction: history of an idea | |
| Michael Barr | 10 |
| | |
| Coherence of the double involution on *-autonomous categories | |
| J.R.B. Cockett, M. Hasegawa and R.A.G. Seely | 17 |
| | |
| A Parigot-style linear λ -calculus for full intuitionistic linear | |
| Valeria de Paiva and Eike Ritter | 30 |
| | |
| The Dialectica interpretation of first-order classical affine logic | |
| Masaru Shirahata | 49 |
| | |
| Approximable Concepts, Chu spaces, and information systems | |
| Guo-Qiang Zhang and Gongqin Shen | 79 |
| | |
| An extended view of the Chu-construction | |
| Jurgen Koslowski | 103 |
| | |
| Dialectica and Chu Constructions: Cousins? | |
| Valeria de Paiva | 127 |

* The Editors of TAC wish to thank Valeria de Paiva and Vaughan Pratt who acted as guest editors for this special volume.

© The Editors of Theory and Applications of Categories 2007. Permission to copy for private use granted.

THEORY AND APPLICATIONS OF CATEGORIES (ISSN 1201-561X) will disseminate articles that significantly advance the study of categorical algebra or methods, or that make significant new contributions to mathematical science using categorical methods. The scope of the journal includes: all areas of pure category theory, including higher dimensional categories; applications of category theory to algebra, geometry and topology and other areas of mathematics; applications of category theory to computer science, physics and other mathematical sciences; contributions to scientific knowledge that make use of categorical methods. Articles appearing in the journal have been carefully and critically refereed under the responsibility of members of the Editorial Board. Only papers judged to be both significant and excellent are accepted for publication. The method of distribution of the journal is via the Internet tools WWW/ftp. The journal is archived electronically and in printed paper format.

SUBSCRIPTION INFORMATION. Individual subscribers receive (by e-mail) abstracts of articles as they are published. Full text of published articles is available in .dvi, Postscript and PDF. Details will be e-mailed to new subscribers. To subscribe, send e-mail to tac@mta.ca including a full name and postal address. For institutional subscription, send enquiries to the Managing Editor.

INFORMATION FOR AUTHORS. The typesetting language of the journal is $\text{T}_{\text{E}}\text{X}$, and $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X} 2_{\epsilon}$ is the preferred flavour. $\text{T}_{\text{E}}\text{X}$ source of articles for publication should be submitted by e-mail directly to an appropriate Editor. They are listed below. Please obtain detailed information on submission format and style files from the journal's WWW server at <http://www.tac.mta.ca/tac/>. You may also write to tac@mta.ca to receive details by e-mail.

EDITORIAL BOARD.

Managing editor. Robert Rosebrugh, Mount Allison University: rrosebrugh@mta.ca

$\text{T}_{\text{E}}\text{X}$ nical editor. Michael Barr, McGill University: mbarr@barrs.org

Transmitting editors.

Richard Blute, Université d' Ottawa: rblute@uottawa.ca

Lawrence Breen, Université de Paris 13: breen@math.univ-paris13.fr

Ronald Brown, University of North Wales: r.brown@bangor.ac.uk

Aurelio Carboni, Università dell Insubria: aurelio.carboni@uninsubria.it

Valeria de Paiva, Xerox Palo Alto Research Center: paiva@parc.xerox.com

Ezra Getzler, Northwestern University: [getzler\(at\)math\(dot\)northwestern\(dot\)edu](mailto:getzler(at)math(dot)northwestern(dot)edu)

Martin Hyland, University of Cambridge: M.Hyland@dpmms.cam.ac.uk

P. T. Johnstone, University of Cambridge: ptj@dpmms.cam.ac.uk

G. Max Kelly, University of Sydney: maxk@maths.usyd.edu.au

Anders Kock, University of Aarhus: kock@imf.au.dk

Stephen Lack, University of Western Sydney: s.lack@uws.edu.au

F. William Lawvere, State University of New York at Buffalo: wlawvere@acsu.buffalo.edu

Jean-Louis Loday, Université de Strasbourg: loday@math.u-strasbg.fr

Ieke Moerdijk, University of Utrecht: moerdijk@math.uu.nl

Susan Niefield, Union College: niefiels@union.edu

Robert Paré, Dalhousie University: pare@mathstat.dal.ca

Jiri Rosicky, Masaryk University: rosicky@math.muni.cz

Brooke Shipley, University of Illinois at Chicago: bshipley@math.uic.edu

James Stasheff, University of North Carolina: jds@math.unc.edu

Ross Street, Macquarie University: street@math.mq.edu.au

Walter Tholen, York University: tholen@mathstat.yorku.ca

Myles Tierney, Rutgers University: tierney@math.rutgers.edu

Robert F. C. Walters, University of Insubria: robert.walters@uninsubria.it

R. J. Wood, Dalhousie University: rjwood@mathstat.dal.ca