



THEORY AND APPLICATIONS OF CATEGORIES

Volume 33, 2018

Spans of cospans in a topos

Daniel Cicala and Kenny Courser, 1-22

Actor of a crossed module of Leibniz algebras

José Manuel Casas, Rafael Fernández-Casado, Xabier Garca-Martnez, Emzar Khmaladze, 23-42

On fibrant objects in model categories

Valery Isaev, 43-66

Dualizing cartesian and cocartesian fibrations

Clark Barwick, Saul Glasman and Denis Nardin, 67-94

Contravariance through enrichment

Michael Shulman, 95-130

Spans of cospans

Daniel Cicala, 131-147

Regular patterns, substitutes, Feynman categories and operads

Michael Batanin, Joachim Kock, and Mark Weber, 148-192

A construction of certain weak colimits and an exactness property
of the 2-category of categories

Descotte M.E., Dubuc E.J., Szyld M., 193-215

A Brauer-Clifford-Long group for the category of dyslectic Hopf Yetter-Drinfel'd
(S,H)-module algebras

Thomas Guedenon and Allen Herman, 216-252

Nearly locally presentable categories

L. Positselski and J. Rosicky, 253-264

A characterization of final functors between internal groupoids in exact categories
Alan S. Cigoli, 265-275

Generating the algebraic theory of $C(X)$: the case of partially ordered compact spaces
Dirk Hofmann, Renato Neves, and Pedro Nora, 276-295

On the normally ordered tensor product and duality for Tate objects
O. Braunling, M. Groechenig, A. Heleodoro, J. Wolfson, 296-349

Revisiting the canonicity of canonical triangulations
Moritz Groth, 350-389

Pseudo-Kan extensions and descent theory
Fernando Lucatelli Nunes, 390-444

Lax pullback complements and pullbacks of spans
Seyed Naser Hosseini, Walter Tholen, and Leila Yeganeh, 445-475

Double power monad preserving adjunctions are Frobenius
Christopher Townsend, 476-491

Regularity vs. constructive complete (co)distributivity
Hongliang Lai and Lili Shen, 492-522

Stability for inner fibrations revisited
Danny Stevenson, 523-536

Higher isotropy
J. Funk, P. Hofstra, and S. Khan, 537-582

Theory of interleavings on categories with a flow
V. de Silva, E. Munch, A. Stefanou, 583-607

Decorated corelations
Brendan Fong, 608-643

A parallel section functor for 2-vector bundles
Christoph Schweigert and Lukas Woike, 644-690

Spheres as Frobenius objects
Djordje Baralic, Zoran Petric and Sonja Telebakovic, 691-726

Props in network theory
John C. Baez, Brandon Coya, Franciscus Rebro, 727-783

Spark complexes on good effective orbifold atlases categorically
Cheng-Yong Du, Lili Shen and Xiaojuan Zhao, 784-812

The Ehresmann-Schein-Nambooripad Theorem for inverse categories
Darien DeWolf and Dorette Pronk, 813-831

- On the geometric notion of connection and its expression in tangent categories
Rory B. B. Lucyshyn-Wright, 832-866
- Crossed products of crossed modules of Hopf monoids
J.N. Alonso Alvarez, J.M. Fernandez Vilaboa, and R. Gonzalez Rodriguez, 868-897
- Coalgebroids in monoidal bicategories and their comodules
Ramon Abud Alcalá, 898-963
- Tube representations and twisting of graded categories
J. Bhowmick, S. Ghosh, N. Rakshit, and M. Yamashita, 964-987
- On a higher structure on operadic deformation complexes
Boris Shoikhet, 988-1030
- New exactness conditions involving split cubes in protomodular categories
J. R. A. Gray and N. Martins-Ferreira, 1030-1058
- T_0 topological spaces and T_0 posets in the topos of M -sets
M.M. Ebrahimi, M. Mahmoudi, and A.H. Nejah, 1059-1071
- A tangent category alternative to the Faa di Bruno construction
Jean-Simon P. Lemay, 1072-1110
- Polynomials, fibrations and distributive laws
Tamara von Glehn, 1111-1144
- Linear distributivity with negation, star-autonomy, and Hopf monads
Masahito Hasegawa and Jean-Simon P. Lemay, 1145-1157
- A compositional framework for passive linear networks
John C. Baez and Brendan Fong, 1158-1222
- Coarse-graining open Markov processes
John C. Baez and Kenny Courser, 1223-1268
- Category theory for genetics I: mutations and sequence alignments
Remy Tuyeras, 1269-1317
- The localic isotropy group of a topos
Simon Henry, 1318-1345
- On finitely aligned left cancellative small categories, Zappa-Szep products
and Exel-Pardo algebras
Erik Bedos, S. Kaliszewski, John Quigg, and Jack Spielberg, 1346-1406

THEORY AND APPLICATIONS OF CATEGORIES 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.

SUBSCRIPTION INFORMATION. Individual subscribers receive abstracts of articles by e-mail as they are published. To subscribe, send e-mail to tac@mta.ca including a full name and postal address. Full text of the journal is freely available at <http://www.tac.mta.ca/tac/>.

INFORMATION FOR AUTHORS. \LaTeX 2 ϵ is required. Articles may be submitted in PDF by email directly to a Transmitting Editor following the author instructions at <http://www.tac.mta.ca/tac/authinfo.html>.

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

\TeX nical editor. Michael Barr, McGill University: barr@math.mcgill.ca

Assistant \TeX editor. Gavin Seal, Ecole Polytechnique Fédérale de Lausanne: gavin.seal@fastmail.fm

Transmitting editors.

Clemens Berger, Université de Nice-Sophia Antipolis: cberger@math.unice.fr

Julie Bergner, University of Virginia: jeb2md@virginia.edu

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

Gabriella Böhm, Wigner Research Centre for Physics: bohmgabriella@wigner.mta.hu

Valeria de Paiva, Nuance Communications Inc: valeria.depaiva@gmail.com

Richard Garner, Macquarie University: richard.garner@mq.edu.au

Ezra Getzler, Northwestern University: getzler@northwestern.edu

Kathryn Hess, Ecole Polytechnique Fédérale de Lausanne: kathryn.hess@epfl.ch

Dirk Hoffman, Universidade de Aveiro: dirk@ua.pt

Pieter Hofstra, Université d' Ottawa: phofstra@uottawa.ca

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

Joachim Kock, Universitat Autònoma de Barcelona: kock@mat.uab.cat

Stephen Lack, Macquarie University: steve.lack@mq.edu.au

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

Tom Leinster, University of Edinburgh: Tom.Leinster@ed.ac.uk

Matias Menni, Conicet and Universidad Nacional de La Plata, Argentina: matias.menni@gmail.com

Ieke Moerdijk, Utrecht University: i.moerdijk@uu.nl

Susan Niefield, Union College: niefiels@union.edu

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

Kate Ponto, University of Kentucky: kate.ponto@uky.edu

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

Giuseppe Rosolini, Università di Genova: rosolini@disi.unige.it

Alex Simpson, University of Ljubljana: Alex.Simpson@fmf.uni-lj.si

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

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

Tim Van der Linden, Université catholique de Louvain: tim.vanderlinden@uclouvain.be

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