AMERICAN MATHEMATICAL SOCIETY
MathSciNet
Mathematical Reviews

Citations | From References: 0 | From Reviews: 0

MR3669177 18B25
Menni, M. [Menni, Matías] (RA-UNLP-NDM)
Every rig with a one-variable fixed point presentation is the Burnside rig of a prextensive category. (English summary)
Appl. Categ. Structures **25** (2017), *no. 4,* 663–707.

Objective number theory was initiated by S. H. Schanuel [in *Category theory (Como, 1990)*, 379–385, Lecture Notes in Math., 1488, Springer, Berlin, 1991; MR1173024], which was followed by [S. H. Schanuel, Rend. Circ. Mat. Palermo (2) Suppl. No. 64 (2000), 43–48; MR1785812; J. Pure Appl. Algebra **154** (2000), no. 1-3, 295–298; MR1787604].

[F. W. Lawvere, in *Category theory (Como, 1990)*, 1–13, Lecture Notes in Math., 1488, Springer, Berlin, 1991; MR1173000] is concerned with quadratic equations descriptive of lists of words or trees. [A. R. Blass, J. Pure Appl. Algebra **103** (1995), no. 1, 1–21; MR1354064] established that there are no polynomial isomorphisms in the concrete prextensive setting beyond those that are guaranteed by the abstract rig-theoretic setting, which shed light on the classification of the difficulty of certain transformations of data types. R. Gates [J. Pure Appl. Algebra **125** (1998), no. 1-3, 191–212; MR1600021] was able to extend this result not only for the tree equation but also for a vast number of other polynomial fixed point equations.

This paper removes all restrictions on the polynomial involved in these fixed point equations, beginning to point the way towards multi-variable equations.

Hirokazu Nishimura

References

1. Bénabou, J.: Introduction to Bicategories. In: Lecture Notes in Mathematics, Volume 47, pp. 1–77. Springer-Verlag, New York, Berlin (1967) MR0220789
2. Betti, R., Galuzzi, M.: Categorie normate. Boll. Un. Mat. Ital.(4) **11**(1), 66–75 (1975) MR0374227
3. Blass, A.: Seven trees in one. J. Pure Appl. Algebra **103**(1), 1–21 (1995) MR1354064
4. Borceux, F.: Handbook of categorical algebra 1 volume 50 of Encyclopedia of mathematics and its applications. Cambridge University Press (1994) MR1291599
5. Carboni, A., Lack, S., Walters, R.F.C.: Introduction to extensive and distributive categories. Journal of Pure and Applied Algebra **84**, 145–158 (1993) MR1201048
6. Diener, K.-H.: On the predecessor relation in abstract algebras. Math. Logic Quart. **39**(4), 492–514 (1993) MR1270395
7. Gabriel, P., Zisman, M.: Calculus of Fractions and Homotopy Theory. Ergebnisse Der Mathematik Und Ihrer Grenzgebiete Band, vol. 35. Springer-Verlag, Berlin-Heidelberg-New York (1967) MR0210125
8. Gates, R.: On Extensive and Distributive Categories. PhD Thesis, School of Mathematics and Statistics. University of Sydney, Australia (1997)
9. Johnstone, P.T.: Topos theory. Academic Press (1977) MR0470019
10. Johnstone, P.T.: Sketches of an Elephant: a Topos Theory Compendium, Volume 43–44 of Oxford Logic Guides. The Clarendon Press Oxford University Press, New York (2002) MR2063092
11. Lawvere, F.W.: Some Thoughts on the Future of Category Theory. In: Proceedings

of Category Theory 1990, Como, Italy, volume 1488 of Lecture notes in mathematics, pp. 1–13, Springer-Verlag (1991) MR1173000

12. Lawvere, F.W.: Metric spaces, generalized logic, and closed categories[Rend. Sem. Mat. Fis. Milano 43 (1973), 135–166 (1974)]. Repr. Theory Appl. Categ., (1):1–37. With an author commentary: Enriched categories in the logic of geometry and analysis (2002) MR0352214
13. Lawvere, F.W.: Functorial semantics of algebraic theories and some algebraic problems in the context of functorial semantics of algebraic theories. Repr. Theory Appl. Categ. **2004**(5), 1–121 (2004) MR2118935
14. Lawvere, F.W.: Core varieties, extensivity, and rig geometry. Theory Appl. Categ. **20**(14), 497–503 (2008) MR2534206
15. Menni, M.: Bimonadicity and the explicit basis property. Theory Appl. Categ. **26**, 554–581 (2012) MR3065937
16. Schanuel, S.H.: Negative sets have Euler characteristic and dimension. Category theory. Proc. Int. Conf., Como/Italy 1990, Lect. Notes Math. **1488**, 379–385 (1991) MR1173024
17. Schanuel, S.H.: Objective number theory and the retract chain condition. J. Pure Appl. Algebra **154**(1–3), 295–298 (2000). Category theory and its applications (Montreal, QC, 1997) MR1787604
18. Schanuel, S.H.: Transcendence in objective number theory. In Categorical studies in Italy, Perugia, Italy, 1997. Suppl. Rend. Circ. Mat. Palermo, II. Ser. **43–48**, 64 (2000) MR1785812
19. Szawiel, S., Zawadowski, M.: Theories of analytic monads. Math. Structures Comput. Sci. **24**(6) (2014) MR3272791

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

© *Copyright American Mathematical Society 2020*