

Bibliography

- [1] D. Ahman, N. Ghani, and G. D. Plotkin. *Dependent Types and Fibred Computational Effects*, pages 36–54. Springer Berlin Heidelberg, Berlin, Heidelberg, 2016. URL: http://dx.doi.org/10.1007/978-3-662-49630-5_3. doi:[10.1007/978-3-662-49630-5_3](https://doi.org/10.1007/978-3-662-49630-5_3).
- [2] S. Amini. *Logique classique et calcul*. PhD thesis, Université Paris-Diderot, 2015.
- [3] Z. Ariola and M. Felleisen. The call-by-need lambda calculus. *J. Funct. Program.*, 7(3):265–301, 1993. doi:[10.1017/S0956796897002724](https://doi.org/10.1017/S0956796897002724).
- [4] Z. M. Ariola, P. Downen, H. Herbelin, K. Nakata, and A. Saurin. Classical call-by-need sequent calculi: The unity of semantic artifacts. In T. Schrijvers and P. Thiemann, editors, *Functional and Logic Programming - 11th International Symposium, FLOPS 2012, Kobe, Japan, May 23-25, 2012. Proceedings*, Lecture Notes in Computer Science, pages 32–46. Springer, 2012. doi:[10.1007/978-3-642-29822-6](https://doi.org/10.1007/978-3-642-29822-6).
- [5] Z. M. Ariola, H. Herbelin, and A. Sabry. A type-theoretic foundation of delimited continuations. *Higher-Order and Symbolic Computation*, 22(3):233–273, 2009. URL: <http://dx.doi.org/10.1007/s10990-007-9006-0>. doi:[10.1007/s10990-007-9006-0](https://doi.org/10.1007/s10990-007-9006-0).
- [6] Z. M. Ariola, H. Herbelin, and A. Saurin. Classical call-by-need and duality. In C.-H. L. Ong, editor, *Typed Lambda Calculi and Applications - 10th International Conference, TLCA 2011, Novi Sad, Serbia, June 1-3, 2011. Proceedings*, volume 6690 of *Lecture Notes in Computer Science*, pages 27–44. Springer, 2011. doi:[10.1007/978-3-642-21691-6_6](https://doi.org/10.1007/978-3-642-21691-6_6).
- [7] Z. M. Ariola, J. Maraist, M. Odersky, M. Felleisen, and P. Wadler. A call-by-need lambda calculus. In *Proceedings of the 22Nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, POPL ’95, pages 233–246, New York, NY, USA, 1995. ACM. doi:[10.1145/199448.199507](https://doi.org/10.1145/199448.199507).
- [8] S. Awodey. *Category Theory*. Oxford Logic Guides. OUP Oxford, 2010. doi:[10.1093/acprof:oso/9780198568612.001.0001](https://doi.org/10.1093/acprof:oso/9780198568612.001.0001).
- [9] S. Banach and A. Tarski. Sur la décomposition des ensembles de points en parties respectivement congruentes. *Fundamenta Mathematicae*, 6(1):244–277, 1924.
- [10] H. Barendregt. *The Lambda Calculus: Its Syntax and Semantics*, volume 103 of *Studies in Logic and The Foundations of Mathematics*. North-Holland, 1984.
- [11] H. Barendregt. Introduction to generalized type systems. *Journal of Functional Programming*, 1(2):125–154, 1991. doi:[10.1017/S0956796800020025](https://doi.org/10.1017/S0956796800020025).
- [12] H. P. Barendregt. Lambda calculi with types. In S. Abramsky, D. M. Gabbay, and S. E. Maibaum, editors, *Handbook of Logic in Computer Science (Vol. 2)*, pages 117–309. Oxford University Press, Inc., New York, NY, USA, 1992. URL: <http://dl.acm.org/citation.cfm?id=162552.162561>.

BIBLIOGRAPHY

- [13] G. Barthe, J. Hatcliff, and M. H. B. Sørensen. CPS translations and applications: The cube and beyond. *Higher-Order and Symbolic Computation*, 12(2):125–170, 1999. URL: <http://dx.doi.org/10.1023/A:1010000206149>, doi:10.1023/A:1010000206149.
- [14] J. L. Bell. *Set Theory: Boolean-Valued Models and Independence Proofs*. Oxford: Clarendon Press, 2005.
- [15] S. Berardi, M. Bezem, and T. Coquand. On the computational content of the axiom of choice. *J. Symb. Log.*, 63(2):600–622, 1998. URL: <http://dx.doi.org/10.2307/2586854>, doi:10.2307/2586854.
- [16] U. Berger. A computational interpretation of open induction. In *19th IEEE Symposium on Logic in Computer Science (LICS 2004), 14-17 July 2004, Turku, Finland, Proceedings*, page 326. IEEE Computer Society, 2004.
- [17] V. Blot. Hybrid realizability for intuitionistic and classical choice. In *Proceedings of the 31st Annual ACM/IEEE Symposium on Logic in Computer Science, LICS ’16*, pages 575–584, New York, NY, USA, 2016. ACM. doi:10.1145/2933575.2934511.
- [18] V. Blot. An interpretation of system f through bar recursion. In *LICS 2017, Reykjavik, Iceland*, 2017.
- [19] J. Bolyai. *The Science Absolute of Space: Independent of the Truth Or Falsity of Euclid’s Axiom XI (which Can Never be Decided a Priori)...* Neemonic series. Neomon, 1896. URL: <http://real-eod.mtak.hu/2790/>.
- [20] G. Boole. *Investigation of The Laws of Thought On Which Are Founded the Mathematical Theories of Logic and Probabilities*. 1853. URL: <http://www.gutenberg.org/etext/15114>.
- [21] N. Bourbaki. *Éléments de mathématique. Théorie des ensembles*. Hermann, Paris, 1970. URL: <http://opac.inria.fr/record=b1078957>, doi:10.1007/978-3-540-34035-5.
- [22] L. Cardelli, S. Martini, J. C. Mitchell, and A. Scedrov. *An extension of system F with subtyping*, pages 750–770. Springer Berlin Heidelberg, Berlin, Heidelberg, 1991. URL: http://dx.doi.org/10.1007/3-540-54415-1_73, doi:10.1007/3-540-54415-1_73.
- [23] A. Charguéraud. The locally nameless representation. *Journal of Automated Reasoning*, 49(3):363–408, Oct 2012. doi:10.1007/s10817-011-9225-2.
- [24] A. Church. A set of postulates for the foundation of logic. *Annals of Mathematics*, 33(2):346–366, 1932. doi:10.2307/1968337.
- [25] A. Church. A note on the entscheidungsproblem. *Journal of Symbolic Logic*, 1(1):40–41, 1936. doi:10.2307/2269326.
- [26] A. Church. An unsolvable problem of elementary number theory. *American Journal of Mathematics*, 58(2):345–363, 1936.
- [27] T. Coquand. A semantics of evidence for classical arithmetic. *Journal of Symbolic Logic*, 60(1):325–337, 1995. doi:10.2307/2275524.
- [28] T. Coquand and G. Huet. The calculus of constructions. *Information and Computation*, 76(2):95 – 120, 1988. URL: <http://www.sciencedirect.com/science/article/pii/0890540188900053>, doi:[http://dx.doi.org/10.1016/0890-5401\(88\)90005-3](http://dx.doi.org/10.1016/0890-5401(88)90005-3).

- [29] T. Coquand and C. Paulin. *Inductively defined types*, pages 50–66. Springer Berlin Heidelberg, Berlin, Heidelberg, 1990. URL: http://dx.doi.org/10.1007/3-540-52335-9_47, doi: [10.1007/3-540-52335-9_47](https://doi.org/10.1007/3-540-52335-9_47).
- [30] P. Cousot and R. Cousot. Constructive versions of Tarski’s fixed point theorems. *Pacific Journal of Mathematics*, 81(1):43–57, 1979.
- [31] T. Crolard. A confluent lambda-calculus with a catch/throw mechanism. *J. Funct. Program.*, 9(6):625–647, 1999. doi: [10.1017/S0956796899003512](https://doi.org/10.1017/S0956796899003512).
- [32] P.-L. Curien and H. Herbelin. The duality of computation. In *Proceedings of ICFP 2000*, SIGPLAN Notices 35(9), pages 233–243. ACM, 2000. doi: [10.1145/351240.351262](https://doi.org/10.1145/351240.351262).
- [33] H. B. Curry. Functionality in Combinatory Logic. *Proceedings of the National Academy of Science*, 20:584–590, Nov. 1934. doi: [10.1073/pnas.20.11.584](https://doi.org/10.1073/pnas.20.11.584).
- [34] H. B. Curry and R. Feys. *Combinatory Logic*, volume 1. North-Holland, 1958.
- [35] P.-É. Dagand and G. Scherer. Normalization by realizability also evaluates. In D. Baelde and J. Alglave, editors, *Vingt-sixièmes Journées Francophones des Langages Applicatifs (JFLA 2015)*, Le Val d’Ajol, France, Jan. 2015. URL: <https://hal.inria.fr/hal-01099138>.
- [36] N. Daniels. Thomas reid’s discovery of a non-euclidean geometry. *Philosophy of Science*, 39(2):219–234, 1972. URL: <http://www.jstor.org/stable/186723>.
- [37] O. Danvy, K. Millikin, J. Munk, and I. Zerny. *Defunctionalized Interpreters for Call-by-Need Evaluation*, pages 240–256. Springer Berlin Heidelberg, Berlin, Heidelberg, 2010. URL: http://dx.doi.org/10.1007/978-3-642-12251-4_18, doi: [10.1007/978-3-642-12251-4_18](https://doi.org/10.1007/978-3-642-12251-4_18).
- [38] N. de Bruijn. Lambda calculus notation with nameless dummies, a tool for automatic formula manipulation, with application to the church-rosser theorem. *Indagationes Mathematicae (Proceedings)*, 75(5):381 – 392, 1972. doi: [http://dx.doi.org/10.1016/1385-7258\(72\)90034-0](http://dx.doi.org/10.1016/1385-7258(72)90034-0).
- [39] P. Downen, L. Maurer, Z. M. Ariola, and S. P. Jones. Sequent calculus as a compiler intermediate language. In *ICFP 2016*, 2016. URL: http://research.microsoft.com/en-us/um/people/simonpj/papers/sequent-core/scfp_ext.pdf.
- [40] M. H. Escardó and P. Oliva. Bar recursion and products of selection functions. *CoRR*, abs/1407.7046, 2014. URL: <http://arxiv.org/abs/1407.7046>.
- [41] M. Felleisen, D. P. Friedman, E. E. Kohlbecker, and B. F. Duba. Reasoning with continuations. In *Proceedings of the Symposium on Logic in Computer Science (LICS ’86)*, Cambridge, Massachusetts, USA, June 16–18, 1986, pages 131–141. IEEE Computer Society, 1986.
- [42] G. Ferreira and P. Oliva. On various negative translations. In S. van Bakel, S. Berardi, and U. Berger, editors, *Proceedings Third International Workshop on Classical Logic and Computation, CL&C 2010, Brno, Czech Republic, 21-22 August 2010.*, volume 47 of *EPTCS*, pages 21–33, 2010. URL: <http://dx.doi.org/10.4204/EPTCS.47.4>, doi: [10.4204/EPTCS.47.4](https://doi.org/10.4204/EPTCS.47.4).
- [43] W. Ferrer Santos, J. Frey, M. Guillermo, O. Malherbe, and A. Miquel. Ordered combinatory algebras and realizability. *Mathematical Structures in Computer Science*, 27(3):428–458, 2017. doi: [10.1017/S0960129515000432](https://doi.org/10.1017/S0960129515000432).
- [44] W. Ferrer Santos, M. Guillermo, and O. Malherbe. A Report on Realizability. *ArXiv e-prints*, 2013. arXiv:1309.0706.

BIBLIOGRAPHY

- [45] W. Ferrer Santos, M. Guillermo, and O. Malherbe. Realizability in OCAs and AKSs. *ArXiv e-prints*, 2015. arXiv:1512.07879.
- [46] A. Filinski. Representing monads. In *Proceedings of the Twenty-First Annual ACM Symposium on Principles of Programming Languages*, pages 446–457. ACM Press, 1994.
- [47] M. Fitting. *Intuitionistic Logic, Model Theory and Forcing*. Amsterdam: North-Holland Pub. Co., 1969.
- [48] G. Frege. *Begriffsschrift, eine der arithmetischen nachgebildete Formelsprache des reinen Denkens*. Halle, 1879. URL: <http://gallica.bnf.fr/ark:/12148/bpt6k65658c/>.
- [49] G. Frege. *Posthumous Writings*. Wiley-Blackwell, 1991.
- [50] J. Frey. Realizability Toposes from Specifications. In T. Altenkirch, editor, *13th International Conference on Typed Lambda Calculi and Applications (TLCA 2015)*, volume 38 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 196–210, Dagstuhl, Germany, 2015. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik. URL: <http://drops.dagstuhl.de/opus/volltexte/2015/5164>, doi:10.4230/LIPIcs.TLCA.2015.196.
- [51] J. Frey. Classical realizability in the cps target language. *Electronic Notes in Theoretical Computer Science*, 325(Supplement C):111 – 126, 2016. The Thirty-second Conference on the Mathematical Foundations of Programming Semantics (MFPS XXXII). doi:<https://doi.org/10.1016/j.entcs.2016.09.034>.
- [52] D. Fridlender and M. Pagano. Pure type systems with explicit substitutions. *J. Funct. Program.*, 25, 2015. URL: <http://dx.doi.org/10.1017/S0956796815000210>, doi:10.1017/S0956796815000210.
- [53] H. Friedman. *Classically and intuitionistically provably recursive functions*, pages 21–27. Springer Berlin Heidelberg, Berlin, Heidelberg, 1978. URL: <http://dx.doi.org/10.1007/BFb0103100>, doi:10.1007/BFb0103100.
- [54] C. Führmann. Direct models for the computational lambda calculus. *Electr. Notes Theor. Comput. Sci.*, 20:245–292, 1999. URL: [http://dx.doi.org/10.1016/S1571-0661\(04\)80078-1](http://dx.doi.org/10.1016/S1571-0661(04)80078-1), doi:10.1016/S1571-0661(04)80078-1.
- [55] J. Garrigue. Relaxing the value restriction. In Y. Kameyama and P. J. Stuckey, editors, *Functional and Logic Programming, 7th International Symposium, FLOPS 2004, Nara, Japan, April 7-9, 2004, Proceedings*, volume 2998 of *Lecture Notes in Computer Science*, pages 196–213. Springer, 2004. URL: http://dx.doi.org/10.1007/978-3-540-24754-8_15, doi:10.1007/978-3-540-24754-8_15.
- [56] G. Gentzen. Untersuchungen über das logische schließen. i. *Mathematische Zeitschrift*, 39(1):176–210, 1935. URL: <http://dx.doi.org/10.1007/BF01201353>, doi:10.1007/BF01201353.
- [57] G. Gentzen. Untersuchungen über das logische schließen. ii. *Mathematische Zeitschrift*, 39(1):405–431, 1935. URL: <http://dx.doi.org/10.1007/BF01201363>, doi:10.1007/BF01201363.
- [58] J.-Y. Girard. Linear logic. *Theoretical Computer Science*, 50(1):1 – 101, 1987. doi:10.1016/0304-3975(87)90045-4.
- [59] J.-Y. Girard. A new constructive logic: classic logic. *Mathematical Structures in Computer Science*, 1(3):255–296, 1991. doi:10.1017/S0960129500001328.

- [60] J.-Y. Girard, Y. Lafont, and P. Taylor. *Proofs and Types*. Cambridge University Press, 1989.
- [61] K. Gödel. Über formal unentscheidbare sätze der principia mathematica und verwandter systeme i. *Monatshefte für Mathematik und Physik*, 38(1):173–198, 1931. doi:10.1007/BF01700692.
- [62] T. G. Griffin. A formulae-as-type notion of control. In *Proceedings of the 17th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, POPL ’90, pages 47–58, New York, NY, USA, 1990. ACM. URL: <http://doi.acm.org/10.1145/96709.96714>, doi:10.1145/96709.96714.
- [63] M. Guillermo. *Jeux de réalisabilité en arithmétique classique*. PhD thesis, Université Paris 7, 2008.
- [64] M. Guillermo and A. Miquel. Specifying peirce’s law in classical realizability. *Mathematical Structures in Computer Science*, 26(7):1269–1303, 2016. doi:10.1017/S0960129514000450.
- [65] M. Guillermo and Étienne Miquey. Classical realizability and arithmetical formulæ. *Mathematical Structures in Computer Science*, page 1–40, 2016. doi:10.1017/S0960129515000559.
- [66] K. Gödel. *Consistency of the Continuum Hypothesis*. Princeton University Press, 1940.
- [67] R. Harper and M. Lillibridge. Polymorphic type assignment and CPS conversion. *LISP and Symbolic Computation*, 6(3):361–379, 1993.
- [68] H. Herbelin. *C'est maintenant qu'on calcule: au cœur de la dualité*. Habilitation thesis, University Paris 11, Dec. 2005.
- [69] H. Herbelin. On the degeneracy of sigma-types in presence of computational classical logic. In P. Urzyczyn, editor, *Typed Lambda Calculi and Applications, 7th International Conference, TLCA 2005, Nara, Japan, April 21-23, 2005, Proceedings*, volume 3461 of *Lecture Notes in Computer Science*, pages 209–220. Springer, 2005. URL: http://dx.doi.org/10.1007/11417170_16, doi:10.1007/11417170_16.
- [70] H. Herbelin. A constructive proof of dependent choice, compatible with classical logic. In *Proceedings of the 27th Annual IEEE Symposium on Logic in Computer Science, LICS 2012, Dubrovnik, Croatia, June 25-28, 2012*, pages 365–374. IEEE Computer Society, 2012. URL: <http://dx.doi.org/10.1109/LICS.2012.47>, doi:10.1109/LICS.2012.47.
- [71] H. Herbelin and S. Ghilezan. An approach to call-by-name delimited continuations. In G. C. Necula and P. Wadler, editors, *Proceedings of the 35th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages, POPL 2008, San Francisco, California, USA, January 7-12, 2008*, pages 383–394. ACM, Jan. 2008.
- [72] A. Heyting. *Mathematische Grundlagenforschung. Intuitionismus. Beweistheorie*. Springer-Verlag, Berlin, 1934. doi:10.1007/978-3-642-65617-0.
- [73] D. Hilbert. Mathematical problems. *Bulletin of the American Mathematical Society*, 8(10):437–479, 1902. doi:10.1090/S0002-9904-1902-00923-3.
- [74] D. Hilbert. Königsberg’s radio address, September 1930. URL: <https://www.maa.org/book/export/html/326610>.
- [75] D. Hilbert and W. Ackermann. *Das Entscheidungsproblem*, pages 119–131. Springer, Berlin, Heidelberg, 1928. doi:10.1007/978-3-642-52789-0.

BIBLIOGRAPHY

- [76] P. HOFSTRA and J. VAN OOSTEN. Ordered partial combinatory algebras. *Mathematical Proceedings of the Cambridge Philosophical Society*, 134(3):445–463, 2003. doi:10.1017/S0305004102006424.
- [77] W. A. Howard. The formulae-as-types notion of construction. Privately circulated notes, 1969.
- [78] J. Hyland. The effective topos. *Studies in Logic and the Foundations of Mathematics*, 110:165 – 216, 1982. The L. E. J. Brouwer Centenary Symposium. doi:10.1016/S0049-237X(09)70129-6.
- [79] J. Hyland, P. Johnstone, and A. Pitts. Tripos theory. *Math. Proc. Camb. Phil. Soc.*, 88:205–232, 1980.
- [80] G. Jaber. Krivine Realizability for Compiler Correctness. Master’s thesis, Ecole des Mines de Nantes/LINA/INRIA, June 2010. URL: <https://dumas.ccsd.cnrs.fr/dumas-00530710>.
- [81] G. Jaber, G. Lewertowski, P.-M. Pédrot, M. Sozeau, and N. Tabareau. The definitional side of the forcing. In *Proceedings of the 31st Annual ACM/IEEE Symposium on Logic in Computer Science*, LICS ’16, pages 367–376, New York, NY, USA, 2016. ACM. doi:10.1145/2933575.2935320.
- [82] G. Jaber, N. Tabareau, and M. Sozeau. Extending type theory with forcing. In *Proceedings of the 2012 27th Annual IEEE/ACM Symposium on Logic in Computer Science*, LICS ’12, pages 395–404, Washington, DC, USA, 2012. IEEE Computer Society. doi:10.1109/LICS.2012.49.
- [83] T. J. Jech. *The Axiom of Choice*. Studies in Logic. North-Holland Publishing Company, 1973.
- [84] F. Joachimski and R. Matthes. Short proofs of normalization for the simply-typed λ -calculus, permutative conversions and gödel’s t. *Archive for Mathematical Logic*, 42(1):59–87, 2003. URL: <http://dx.doi.org/10.1007/s00153-002-0156-9>, doi:10.1007/s00153-002-0156-9.
- [85] P. Johnstone. *Sketches of an elephant: a Topos theory compendium*. Oxford logic guides. Oxford Univ. Press, New York, NY, 2002.
- [86] D. Kesner. *Reasoning About Call-by-need by Means of Types*, pages 424–441. Springer Berlin Heidelberg, Berlin, Heidelberg, 2016. doi:10.1007/978-3-662-49630-5_25.
- [87] S. C. Kleene. On the interpretation of intuitionistic number theory. *Journal of Symbolic Logic*, 10:109–124, 1945.
- [88] A. Kolmogoroff. Zur deutung der intuitionistischen logik. *Mathematische Zeitschrift*, 35(1):58–65, Dec 1932. URL: <http://dx.doi.org/10.1007/BF01186549>, doi:10.1007/BF01186549.
- [89] S. A. Kripke. Semantical considerations on modal logic. *Acta Philosophica Fennica*, 16(1963):83–94, 1963.
- [90] S. A. Kripke. Semantical analysis of intuitionistic logic i. *Studies in Logic and the Foundations of Mathematics*, 40:92 – 130, 1965. doi:[http://dx.doi.org/10.1016/S0049-237X\(08\)71685-9](http://dx.doi.org/10.1016/S0049-237X(08)71685-9).
- [91] J.-L. Krivine. Un algorithme non-typable dans le système f. *Comptes rendus de l’Académie des sciences. Série 1, Mathématiques*, 304(5):123–126, February 1987. URL: <http://gallica.bnf.fr/ark:/12148/bpt6k57447206>.
- [92] J.-L. Krivine. *Lambda-calculus, types and models*. Masson, 1993.
- [93] J.-L. Krivine. Typed lambda-calculus in classical Zermelo-Fraenkel set theory. *Arch. Math. Log.*, 40(3):189–205, 2001.

- [94] J.-L. Krivine. Dependent choice, ‘quote’ and the clock. *Th. Comp. Sc.*, 308:259–276, 2003.
- [95] J.-L. Krivine. A call-by-name lambda-calculus machine. In *Higher Order and Symbolic Computation*, 2004.
- [96] J.-L. Krivine. A call-by-name lambda-calculus machine. *Higher-Order and Symbolic Computation*, 20(3):199–207, Sep 2007. URL: <http://dx.doi.org/10.1007/s10990-007-9018-9>, doi:10.1007/s10990-007-9018-9.
- [97] J.-L. Krivine. Realizability in classical logic. In interactive models of computation and program behaviour. *Panoramas et synthèses*, 27, 2009.
- [98] J.-L. Krivine. Realizability algebras: a program to well order r. *Logical Methods in Computer Science*, 7(3), 2011.
- [99] J.-L. Krivine. Realizability algebras II : new models of ZF + DC. *Logical Methods in Computer Science*, 8(1):10, Feb. 2012. 28 p.
- [100] J.-L. Krivine. Quelques propriétés des modèles de réalisabilité de ZF, Feb. 2014. URL: <http://hal.archives-ouvertes.fr/hal-00940254>.
- [101] J.-L. Krivine. On the Structure of Classical Realizability Models of ZF. In H. Herbelin, P. Letouzey, and M. Sozeau, editors, *20th International Conference on Types for Proofs and Programs (TYPES 2014)*, volume 39 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 146–161, Dagstuhl, Germany, 2015. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik. doi:10.4230/LIPIcs.TYPES.2014.146.
- [102] J.-L. Krivine. Bar Recursion in Classical Realisability: Dependent Choice and Continuum Hypothesis. In J.-M. Talbot and L. Regnier, editors, *25th EACSL Annual Conference on Computer Science Logic (CSL 2016)*, volume 62 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 25:1–25:11, Dagstuhl, Germany, 2016. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik. doi:10.4230/LIPIcs.CSL.2016.25.
- [103] Y. Lafont, B. Reus, and T. Streicher. Continuations semantics or expressing implication by negation. Technical Report 9321, Ludwig-Maximilians-Universität, München, 1993.
- [104] F. Lang. Explaining the lazy krivine machine using explicit substitution and addresses. *Higher-Order and Symbolic Computation*, 20(3):257–270, Sep 2007. doi:10.1007/s10990-007-9013-1.
- [105] F. Lawvere. Adjointness in foundations. *Dialectica*, 23:281–296, 1969.
- [106] G. W. Leibniz. *Die philosophischen Schriften*, volume 7. Karl Immanuel Gerhardt, 1890. URL: <https://archive.org/details/diephilosophisc00gerhgoog>.
- [107] G. W. Leibniz. The art of discovery (1685). In P. Wiener, editor, *Leibniz: Selections*, Lyceum editions: Philosophy series. 1951.
- [108] R. Lepigre. A classical realizability model for a semantical value restriction. In P. Thiemann, editor, *Programming Languages and Systems - 25th European Symposium on Programming, ESOP 2016, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2016, Eindhoven, The Netherlands, April 2-8, 2016, Proceedings*, volume 9632 of *Lecture Notes in Computer Science*, pages 476–502. Springer, 2016.
- [109] P. B. Levy. *Call-By-Push-Value: A Functional/Imperative Synthesis*, volume 2 of *Semantics Structures in Computation*. Springer, 2004. doi:10.1007/978-94-007-0954-6.

BIBLIOGRAPHY

- [110] N. Lobatchevsky. Géométrie imaginaire. *Journal für die reine und angewandte Mathematik*, pages 295–320, 1837.
- [111] S. MacLane and I. Moerdijk. *Sheaves in Geometry and Logic*. Springer, 1992. doi:10.1007/978-1-4612-0927-0.
- [112] J. Maraist, M. Odersky, and P. Wadler. The call-by-need lambda calculus. *Journal of Functional Programming*, 8:275–317, 1994.
- [113] J. Maraist, M. Odersky, and P. Wadler. The call-by-need lambda calculus. *J. Funct. Program.*, 8(3):275–317, 1998. doi:10.1017/S0956796898003037.
- [114] P. Martin-Löf. Constructive mathematics and computer programming. In *Proc. Of a Discussion Meeting of the Royal Society of London on Mathematical Logic and Programming Languages*, pages 167–184, Upper Saddle River, NJ, USA, 1985. Prentice-Hall, Inc. URL: <http://dl.acm.org/citation.cfm?id=3721.3731>.
- [115] P. Martin-Löf. An intuitionistic theory of types. In twenty-five years of constructive type theory. *Oxford Logic Guides*, 36:127–172, 1998.
- [116] P.-A. Melliès. *Local States in String Diagrams*, pages 334–348. Springer International Publishing, Cham, 2014. doi:10.1007/978-3-319-08918-8_23.
- [117] A. Miquel. Classical program extraction in the calculus of constructions. In *Computer Science Logic, 21st International Workshop, CSL 2007, 16th Annual Conference of the EACSL, Lausanne, Switzerland, September 11-15, 2007, Proceedings*, volume 4646 of *Lecture Notes in Computer Science*, pages 313–327. Springer, 2007.
- [118] A. Miquel. Existential witness extraction in classical realizability and via a negative translation. *Logical Methods for Computer Science*, 2010.
- [119] A. Miquel. Existential witness extraction in classical realizability and via a negative translation. *Logical Methods in Computer Science*, 7(2):188–202, 2011. URL: [http://dx.doi.org/10.2168/LMCS-7\(2:2\)2011](http://dx.doi.org/10.2168/LMCS-7(2:2)2011). doi:10.2168/LMCS-7(2:2)2011.
- [120] A. Miquel. Forcing as a program transformation. In *LICS*, pages 197–206. IEEE Computer Society, 2011.
- [121] A. Miquel. Implicative algebras: a new foundation for realizability and forcing, 2017. URL: <https://www.p.unhbox\voidb@x\bgroup\let\unhbox\voidb@x\setbox@\tempboxa\hbox{e\global\mathchardef\accent@spacefactor\spacefactor}\accent19e\egroup\spacefactor\accent@spacefactordrot.fr/montevideo2016/miquel-slides.pdf>.
- [122] É. Miquey. Coq development on implicative algebras. URL: <https://www.irif.fr/~emiquey/these/index.html#coqia>.
- [123] I. Moerdijk and J. van Oosten. Topos theory, 2007. URL: <http://www.staff.science.uu.nl/~ooste110/syllabi/toposmoeder.pdf>.
- [124] E. Moggi. Computational lambda-calculus and monads. Technical Report ECS-LFCS-88-66, Edinburgh Univ., 1988. doi:10.1109/LICS.1989.39155.
- [125] G. Muller. The axiom of choice is wrong. URL: <https://cornellmath.wordpress.com/2007/09/13/the-axiom-of-choice-is-wrong/>.

- [126] G. Munch-Maccagnoni. Focalisation and Classical Realisability. In E. Grädel and R. Kahle, editors, *Computer Science Logic '09*, volume 5771 of *Lecture Notes in Computer Science*, pages 409–423. Springer, Heidelberg, 2009.
- [127] G. Munch-Maccagnoni. *Models of a Non-associative Composition*, pages 396–410. Springer Berlin Heidelberg, Berlin, Heidelberg, 2014. URL: http://dx.doi.org/10.1007/978-3-642-54830-7_26. doi:10.1007/978-3-642-54830-7_26.
- [128] C. Okasaki, P. Lee, and D. Tarditi. Call-by-need and continuation-passing style. *Lisp and Symbolic Computation*, 7(1):57–82, 1994. doi:10.1007/BF01019945.
- [129] P. Oliva and T. Streicher. On Krivine’s realizability interpretation of classical second-order arithmetic. *Fundam. Inform.*, 84(2):207–220, 2008.
- [130] M. Parigot. Free deduction: An analysis of “computations” in classical logic. In A. Voronkov, editor, *Proceedings of LPAR*, volume 592 of *LNCS*, pages 361–380. Springer, 1991. URL: http://dx.doi.org/10.1007/3-540-55460-2_27.
- [131] M. Parigot. Proofs of strong normalisation for second order classical natural deduction. *J. Symb. Log.*, 62(4):1461–1479, 1997.
- [132] C. Paulin-Mohring. Extracting F_ω ’s programs from proofs in the calculus of constructions. In *Proceedings of the 16th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, POPL ’89, pages 89–104, New York, NY, USA, 1989. ACM. doi:10.1145/75277.75285.
- [133] P.-M. Pédrot. *A Materialist Dialectica*. Theses, Paris Diderot, Sept. 2015. URL: <https://hal.archives-ouvertes.fr/tel-01247085>.
- [134] P.-M. Pédrot and A. Saurin. *Classical By-Need*, pages 616–643. Springer Berlin Heidelberg, Berlin, Heidelberg, 2016. URL: http://dx.doi.org/10.1007/978-3-662-49498-1_24. doi:10.1007/978-3-662-49498-1_24.
- [135] A. Pitts. *The Theory of Triposes*. PhD thesis, Cambridge University, 1981.
- [136] A. M. Pitts. Tripos theory in retrospect. *Mathematical Structures in Computer Science*, 12(3):265–279, 2002. doi:10.1017/S096012950200364X.
- [137] G. Plotkin. Lcf considered as a programming language. *Theoretical Computer Science*, 5(3):223 – 255, 1977. doi:10.1016/0304-3975(77)90044-5.
- [138] G. Plotkin and J. Power. *Notions of Computation Determine Monads*, pages 342–356. Springer Berlin Heidelberg, Berlin, Heidelberg, 2002. doi:10.1007/3-540-45931-6_24.
- [139] G. D. Plotkin. Call-by-name, call-by-value and the lambda-calculus. *Theor. Comput. Sci.*, 1(2):125–159, 1975. doi:10.1016/0304-3975(75)90017-1.
- [140] E. Polonovski. Strong normalization of lambda-bar-mu-mu-tilde-calculus with explicit substitutions. In *FOSSACS*, volume 2987 of *Lecture Notes in Computer Science*, pages 423–437, Barcelona, Spain, 2004. Springer-Verlag. URL: <https://hal.archives-ouvertes.fr/hal-00004321>.
- [141] P.-M. Pédrot and N. Tabareau. An effectful way to eliminate addiction to dependence. In *Proc. Of LICS2017*, 2017.
- [142] T. Reid. Géométrie des visibles. In *Œuvres complètes*, pages 186–203. Théophile Jouffroy, Pierre Paul Royer-Collard, 1828. URL: https://books.google.fr/books?id=KtOZDb_LB_kC.

BIBLIOGRAPHY

- [143] L. Rieg. Extracting Herbrand trees in classical realizability using forcing. In S. R. D. Rocca, editor, *Computer Science Logic 2013 (CSL 2013)*, volume 23 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 597–614, Dagstuhl, Germany, 2013. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik. URL: <http://drops.dagstuhl.de/opus/volltexte/2013/4221>, doi:10.4230/LIPIcs.CSL.2013.597.
- [144] L. Rieg. *On Forcing and Classical Realizability*. Theses, Ecole normale supérieure de lyon - ENS LYON, June 2014. URL: <https://tel.archives-ouvertes.fr/tel-01061442>.
- [145] B. Riemann. Über die hypothesen, welche der geometrie zu grunde liegen. *Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen*, 1867.
- [146] B. Russell. *Introduction to Mathematical Philosophy*. Dover Publications, 1919.
- [147] F. Ruyer. *Proofs, Types and Subtypes*. PhD thesis, Université de Savoie, Nov. 2006. URL: <https://tel.archives-ouvertes.fr/tel-00140046>.
- [148] A. Sabry and M. Felleisen. Reasoning about programs in continuation-passing style. *Lisp and Symbolic Computation*, 6(3-4):289–360, 1993. doi:10.1007/BF01019462.
- [149] S. G. Simpson. *Subsystems of Second Order Arithmetic*. Perspectives in Logic. Cambridge University Press, 2 edition, 2009. doi:10.1017/CBO9780511581007.
- [150] C. Spector. Provably recursive functionals of analysis: A consistency proof of analysis by an extension of principles in current intuitionistic mathematics. In F. D. E. Dekker, editor, *Recursive function theory: Proceedings of symposia in pure mathematics*, volume 5, page 1–27, Providence, Rhode Island, 1962. American Mathematical Society.
- [151] T. Streicher. Krivine’s classical realisability from a categorical perspective. *Mathematical Structures in Computer Science*, 23(6):1234–1256, 2013. doi:10.1017/S0960129512000989.
- [152] G. J. Sussman and G. L. Steele, Jr. An interpreter for extended lambda calculus. Technical report, Massachusetts Institute of Technology, Cambridge, MA, USA, 1975.
- [153] A. Tarski. *The concept of truth in the languages of the deductive sciences*, pages 152–278. Oxford at the Clarendon Press, 1956, 1953.
- [154] A. M. Turing. On computable numbers, with an application to the entscheidungsproblem. *Proceedings of the London Mathematical Society*, s2-42(1):230–265, 1937. doi:10.1112/plms/s2-42.1.230.
- [155] A. M. Turing. On computable numbers, with an application to the entscheidungsproblem. a correction. *Proceedings of the London Mathematical Society*, s2-43(1):544–546, 1938. URL: <http://dx.doi.org/10.1112/plms/s2-43.6.544>, doi:10.1112/plms/s2-43.6.544.
- [156] M. Vákár. *In Search of Effectful Dependent Types*. PhD thesis, University of Oxford, 2017. URL: <http://arxiv.org/abs/1706.07997>.
- [157] S. van Bakel, L. Liquori, S. R. della Rocca, and P. Urzyczyn. Comparing cubes of typed and type assignment systems. *Annals of Pure and Applied Logic*, 86(3):267 – 303, 1997. doi:10.1016/S0168-0072(96)00036-X.
- [158] D. van Dalen. *Intuitionistic logic*, pages 224–257. Lou Gobble, Blackwell, Oxford, 2001.
- [159] J. Van Oosten. Realizability: a historical essay. *Mathematical Structures in Computer Science*, 12(3):239–263, 2002. doi:10.1017/S0960129502003626.

- [160] J. van Oosten. Studies in logic and the foundations of mathematics. In *Realizability: An Introduction to its Categorical Side*, volume 152 of *Studies in Logic and the Foundations of Mathematics*, pages ii –. Elsevier, 2008. doi:10.1016/S0049-237X(13)72046-9.
- [161] P. Wadler. Call-by-value is dual to call-by-name. In C. Runciman and O. Shivers, editors, *Proceedings of the Eighth ACM SIGPLAN International Conference on Functional Programming, ICFP 2003, Uppsala, Sweden, August 25-29, 2003*, pages 189–201. ACM, 2003. URL: <http://doi.acm.org/10.1145/944705.944723>, doi:10.1145/944705.944723.
- [162] A. Wright. Simple imperative polymorphism. In *LISP and Symbolic Computation*, pages 343–356, 1995.
- [163] E. Zermelo. Beweis, dass jede menge wohlgeordnet werden kann. (aus einem an herrn hilbert gerichteten briefe). *Mathematische Annalen*, 59:514–516, 1904. URL: <http://eudml.org/doc/158167>.