

# Bibliography

This bibliography grew out of our working database of papers related to our research in foundations of arithmetic. Several papers have been added when working on the book, in particular we added references to some papers and books on complexity theory. The choice of items has been considerably biased by our interests and the sources available to us. Still we believe that it can be a valuable source for mathematicians working in this field.

Our sources have been the following: First of all, we used the excellent *Omega-bibliography of mathematical logic*. This is the main source until 1984. It was impossible to copy any section from the bibliography as a whole; each item has been selected (for criteria see below). In particular, section F30 in the Omega bibliography contains many papers not included here. Our further sources were: A bibliography by Smoryński, circulated some years ago, our own works and their lists of references, most important journals and proceeding volumes of relevant conferences, our collections of preprints and reprints and some few information retrieval sessions with mathematical databases. Finally, some colleagues were sent listings of their papers contained in the bibliography and asked to send completions.

Our criteria for inclusion of a work into the bibliography have been, unfortunately, rather vague: we included papers about which we were sure or at least suspected that they were somehow relevant for topics elaborated in the book and for our future research. Since the book is devoted to the metamathematics of first-order arithmetic with special emphasis on fragments of Peano arithmetic, including weak fragments and, on the other hand, to interpretability, partial conservativity and some parts of model theory of fragments, these topics are emphasized also in the bibliography. Little attention is paid to topics as advanced proof theory or second order systems. The fact that some particular paper is not included does not mean that we hold it for irrelevant: the reason may be that the paper has been unknown to us or at least we have not known its content.

- ACKERMANN W.: Zur Widerspruchsfreiheit der Zahlentheorie, *Math. Ann.* Vol. 117, 1940 pp. 162–194
- ACZEL P.: Two notes on the Paris independence result. In: *Model Theory and Arithmetic* (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 21–31
- ADAMOWICZ Z.: Open inductions and the true theory of rationals, Preprint 289, Polish Acad. Sci., 1984
- ADAMOWICZ Z.: Axiomatization of the forcing relation with an application to PA, *Fund. Math.* Vol. 120, 1984 pp. 167–186
- ADAMOWICZ Z.: Algebraic approach to  $\exists_1$ -induction. In: *Proceedings of the third Easter conference on model theory* (Gross Koris, 1985), Humboldt Univ. Berlin, 1985 pp. 5–15
- ADAMOWICZ Z.: Open induction (abstract), *Journ. Symb. Log.* Vol. 50, 1985 pp. 260
- ADAMOWICZ Z.: Some results on open and diophantine induction. In: *Logic Colloquium '84*, North Holland, 1986 pp. 1–20
- ADAMOWICZ Z.: Open induction and true theory of rationals, *Journ. Symb. Log.* Vol. 52, 1987 pp. 793–801
- ADAMOWICZ Z.: End-extending models of  $I\Delta_0 + \exp + B\Sigma_1$ , preprint 431, Inst. Math. Polish Acad. Sci., 1988, p. 38
- ADAMOWICZ Z.: A recursion theoretic characterization of instances of  $B\Sigma_n$  provable in  $\Pi_{n+1}(N)$ , *Fund. Math.* Vol. 129, 1988 pp. 231–236
- ADAMOWICZ Z.: Parameter free induction, the Matiyasevič Theorem and  $B\Sigma_1$ . In: *Logic Colloquium '86*, North Holland, 1988 pp. 1–8
- ADAMOWICZ Z., BIGORAJSKA T.: Functions provably total in  $I\Sigma_1$ , *Fund. Math.*, Vol. 132, 1989, pp. 189–194
- ADAMOWICZ Z., KOSSAK R.: Note on an intermediate induction scheme. In: *Seminarberichte 71, Proceedings of the Fourth Easter Conference on Model Theory*, Gross-Koris, 1986 pp. 1–5
- ADAMOWICZ Z., KOSSAK R.: A note on  $B\Sigma_n$  and an intermediate induction schema, *Zeitschr. Math. Log. Grundl. Math.* Vol. 34, 1988 pp. 261–264
- ADAMOWICZ Z., MORALES-LUNA G.: A recursive model for arithmetic with weak induction, *Journ. Symb. Log.* Vol. 50, 1985 pp. 49–54
- ADDISON J. W.: Separation principles in hierarchies of classical and effective descriptive set theory, *Fund. Math.* Vol. 46, 1958 pp. 123–135
- ADLER A.: Extensions of non-standard models of number theory, *Zeitschr. Math. Log. Grundl. Math.* Vol. 15, 1969 pp. 289–290
- AHO A. V., HOPCROFT J. E., ULLMAN J. I.: *The Design and Analysis of Computer Algorithms*, Addison-Wesley, 1974
- AJTAI M.:  $\Sigma^1_1$ -formulae on finite structures, *Annals Pure Appl. Logic*, Vol. 24, 1983 pp. 1–48
- AJTAI M.: The complexity of the pigeonhole principle, 29-th Symp. on Foundations of Comp. Sci., 1988 pp. 346–355
- AJTAI M.: Parity and the pigeonhole principle. In: *Feasible Mathematics*, Buss, Scott eds., Birkhäuser 1990 pp. 1–24
- ARTEMOV S. N.: Arifmetičeski polnye modal'nye teorii. (Arithmetically complete modal theories) In: *Semiotics and information science*, No. 14, Akad. Nauk SSSR, Vsesojuz. Ins. Nauč. i Tehn. Inf., 1980 pp. 115–133 (translation in Amer. Math. Soc. Transl. (2) Vol. 135, 1987 pp. 39–54)
- ARTEMOV S. N.: Priloženia modal'noj logiki v teorii dokazatelstv. (Applications of modal logic in proof theory) In: *Nekl. logiki i ich priloženia*, Moskva, Akad. Nauk SSSR, 1982
- ARTEMOV S. N.: On modal representations of extensions of Peano arithmetic, *C. R. Math. Acad. Sci. Soc. Roy. Canada* Vol. 6, 1984 pp. 129–132
- ARTEMOV S. N.: Nearifmetičnost' istinostnyh predikatnyh logik dokazatelnosti. (Nonarithmicity of truth predicate logics of provability.) *Doklady Akad. Nauk SSSR* Vol. 284, 1985 pp. 270–271 (translation in Soviet. Math. Dokl. Vol. 32, 1985 pp. 403–405)

- ARTEMOV S. N.: O modal'nyh logikah axiomatizujuših dokazatelnost'. (Modal logics axiomatizing provability.), Izv. Akad. Nauk SSSR, Ser. Math. Vol. 49, 1985 pp. 1123–1154
- BAAZ M., PUDLÁK P.: Kreisel's conjecture for  $L\exists_1$ . In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 30–60
- BAKER T. P., GILL J., SOLOVAY R.: Relativizations of the  $P=NP$  question, SIAM Journ. Comput., Vol. 4, 1975 pp. 431–442
- BALCÁZAR J. Z., DÍAZ J., GABARRÓ J.: Structural Complexity I, Springer-Verlag 1988, EATCS 11, 191 p.
- BALCÁZAR J. Z., DÍAZ J., GABARRÓ J.: Structural Complexity II, Springer-Verlag 1990, EATCS 22, 283 p.
- BARNES D. W., MONRO G. P.: A simple model for a weak system of arithmetic, Bull. Austral. Math. Soc. Vol. 11, 1974 pp. 321–323
- BARWISE J., SCHLIPF J. S.: On recursively saturated models of arithmetic. In: Model Theory and Algebra; A Memorial Tribute to Abraham Robinson, Springer-Verlag, 1975 pp. 42–55
- BELL J. L., MACHOVER M.: A course in mathematical logic. North Holland Publ. Comp. 1977, p. 599
- BELLISIMA F.: On the modal logic corresponding to diagonalizable algebra theory, Boll. Un. Math. Ital. B(5) Vol. 15, 1978 pp. 915–930
- BELTYUKOV A. P.: Decidability of the universal theory of natural numbers with addition and divisibility. In: Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova 60, 1976 pp. 15–27
- BELTYUKOV A. P.: A computer description and a hierarchy of initial Grzegorczyk classes, (Russian), Zap. Nauc. Sem. LOMI Vol. 88, 1979 pp. 30–46, (Translation in Journ. Soviet Math. Vol. 20, 1982)
- BENCIVENGA E.: Finitary consistency of a free arithmetic, Notre Dame Journ. Formal Log. Vol. 25, 1984 pp. 224–226
- BENDA M.: On strong axiom of induction in set theory and arithmetic. In: Mathematical Logic in Latin America, Amsterdam, North-Holland, 1980, pp. 43–56
- BENDA M.: On Harrington's partition relation, Journ. Comb. Theory, Ser. A Vol. 28, 1980 pp. 338–350
- BENDOVÁ K., HÁJEK P.: A logical analysis of the truth-reaction paradox, Comm. Math. Univ. Carol. Vol. 23, 1982 pp. 667–688
- BENNET CH.: On some orderings of extensions of arithmetic. Doctoral dissertation, University of Göteborg (Sweden)-Department of Phil., 1986 pp. 100 pages
- BENNET CH.: Lindenbaum algebras and partial conservativity, Proc. Amer. Math. Soc. Vol. 97, 1986 pp. 323–327
- BENNETT J. H.: Ph. D. dissertation, Princeton Univ. 1962
- BERARDUCCI A.: The interpretability logic of PA, Journ. Symb. Log., Vol. 55, pp. 1059–1089
- BERARDUCCI A., INTRIGILA B.: Combinatorial principles in elementary number theory, 1990 (preprint)
- BERGSTRA J. A., TUCKER J. V.: Hoare's logic and Peano's arithmetic, Theoret. Comput. Sci. Vol. 22, 1983 pp. 265–284
- BERLINE C.: Idéaux des anneaux de Peano (d'après Cherlin). In: Model Theory and Arithmetic, (Lect. Notes Math. 890), Springer-Verlag, 1982 p. 32
- BERLINE C., MCALOON K., RESSAYRE J. P. (Eds): Model theory and arithmetic. Comptes rendus d'une action thématique programmée du C. N. R. S. sur la théorie des modèles et l'arithmétique. In: (Lect. Notes Math. 890), Springer-Verlag, 1981, p. 306
- BERNARDI C.: The fixed point theorem for diagonalizable algebras, Studia Logica Vol. 34, 1975 pp. 239–251

- BERNARDI C.: On the equational class of diagonalizable algebras, *Studia Logica* Vol. 34, 1975 pp. 322–331
- BERNARDI C.: The uniqueness of the fixed-point in every diagonalizable algebra (The algebraization of the theories which express Theor VIII.), *Studia Logica* Vol. 35, 1976 pp. 336–343
- BERNARDI C.: On the relation provable equivalence and on partitions in effectively inseparable sets, *Studia Logica* Vol. 40, 1981 pp. 29–37
- BERNARDI C.: A shorter proof of a recent result by R. Di Paola, *Notre Dame Journ. Formal Log.* Vol. 25, 1984 pp. 390–393
- BERNARDI C., D'AQUINO P.: Topological duality for diagonalizable algebras, *Notre Dame Journ. Formal Log.* Vol. 29, 1988 pp. 345–364
- BERNARDI C., MONTAGNA F.: Equivalence relations induced by extensional formulae: classification by means of a new fixed point property, *Fund. Math.* Vol. 124, 1984 pp. 221–233
- BERNAYS P.: Über das Induktionsschema in der rekursiven Zahlentheorie. In: Kontrolliertes Denken. Untersuchungen zum Logikkalkül und zur Logik der Einzelwissenschaften. Festschrift für Wilhelm Britzelmayr, Verlag Karl Alber, Herder Freiburg, 1951 pp. 10–17
- BERNAYS P.: The original Gentzen consistency proof for number theory. In: Intuitionism and Proof Theory, North Holland: Amsterdam, 1970 pp. 409–417
- BEZBORUAH A., SHEPHERDSON J.: Gödels second incompleteness theorem for Q, *Journ. Symb. Log.* Vol. 41, 1976 pp. 503–512
- BLASS A.: The intersection of nonstandard models of arithmetic, *Journ. Symb. Log.* Vol. 37, 1972 pp. 103–106
- BLASS A.: On certain types and models for arithmetic, *Journ. Symb. Log.* Vol. 39, 1974 pp. 151–162
- BLASS A.: End extensions, conservative extensions, and the Rudin-Frolík ordering, *Trans. Amer. Math. Soc.*, 1977 No. 225 pp. 325–340
- BLASS A.: Amalgamation of nonstandard models of arithmetic, *Journ. Symb. Log.* Vol. 42, 1977 pp. 372–386
- BLASS A. R.: Conservative extensions of models of arithmetic, *Arch. Math. Log.* Vol. 20, 1980 pp. 85–94
- BÖRGER E.: Computability, Complexity, Logic, North-Holland P. C. 1989, xx + 592 pp.
- BOOLOS G.: A note on Beth's theorem, *Bull. Acad. Polon. Sci.* Vol. 21, 1973 pp. 1–2
- BOOLOS G.: On Kalmár's consistency proof and a generalization of the notion of omega-consistency, *Arch. Math. Log.* Vol. 17, 1975 pp. 3–7
- BOOLOS G.: On deciding the truth of certain statements involving the notion of consistency, *Journ. Symb. Log.* Vol. 41, 1976 pp. 779–781
- BOOLOS G.: On deciding the provability of certain fixed point statements, *Journ. Symb. Log.* Vol. 42, 1977 pp. 191–193
- BOOLOS G.: Reflection principles and iterated consistency assertions, *Journ. Symb. Log.* Vol. 44, 1979 pp. 33–35
- BOOLOS G.: The unprovability of consistency. An essay in modal logic, Cambridge Univ Press: Cambridge GB, 1979, p. 184
- BOOLOS G.: Provability in arithmetic and a schema of Grzegorczyk, *Fund. Math.* Vol. 106, 1980 pp. 41–45
- BOOLOS G.:  $\omega$ -consistency and the diamond, *Studia Logica* Vol. 39, 1980 pp. 237–243
- BOOLOS G.: Provability, truth and modal logic, *Journ. Phil. Logic* Vol. 9, 1980 pp. 1–7
- BOOLOS G.: On systems of modal logic with provability interpretations, *Theoria* (Lund) Vol. 46, 1980 pp. 7–18
- BOOLOS G.: Extremely undecidable sentences, *Journ. Symb. Log.* Vol. 47, 1982 p. 191
- BOOLOS G.: On the nonexistence of certain normal forms in the logic of provability, *Journ. Symb. Log.* Vol. 47, 1982 pp. 638–640
- BOOLOS G.: The logic of provability, *Amer. Math. Mon.* Vol. 91, 1984 pp. 470–480

- BOOLOS G.: 1-consistency and the diamond, *Notre Dame Journ. Formal Log.* Vol. 26, 1985 pp. 341–347
- BOOLOS G., JEFFREY R.: Computability and Logic, 2-nd edition, Cambridge Univ. Press, 1980, p. 262
- BOOLOS G., MCGEE V.: The degree of the set of sentences of predicate provability logic that are true under every interpretation, *Journ. Symb. Log.* Vol. 52, 1987 pp. 165–171
- BOUGHATTAS S.: L'arithmétique ouverte et ses modèles non-standards, These de 3<sup>e</sup> cycle, Université Paris VII, Paris, 1987
- BOUGHATTAS S.: L'induction pour les formules ouvertes n'est pas finiment axiomatisable, *Comptes Rendus de l'Académie des Sciences de Paris*, Vol. 308 Série I, 1989 pp. 297–300
- BRANDT U.: Index sets in the arithmetical hierarchy, *Annals Pure Appl. Logic* Vol. 37, 1988 pp. 101–110
- BRITTON J. L.: Integer solutions of systems of quadratic equations. In: *Math. Proc. Cambridge Phil. Soc.* Vol. 86, 1979 pp. 385–389
- BROWN D. K., SIMPSON S. G.: Which set existence axioms are needed to prove the separable Hahn-Banach theorem?, *Annals Pure Appl. Logic* Vol. 31, 1986 pp. 123–144
- BUCHHOLZ W.: An independence results for  $\Pi_1^1\text{-CA} + \text{BI}$ , *Annals Pure Appl. Logic* Vol. 33, 1987 pp. 131–155
- BUCHHOLZ W., FEFERMAN S., POHLERS W., SIEG W.: Iterated Inductive Definitions and Subsystems of Analysis: Recent Proof-Theoretical Studies. (Lect. Notes Math. 897), Springer-Verlag, 1981, p. 383
- BUCHHOLZ W., POHLERS W.: Provable well orderings of formal theories for transfinitely iterated inductive definitions, *Journ. Symb. Log.* Vol. 43, 1978 pp. 118–125
- BUCHHOLZ W., WAINER S.: Provably computable functions and the fast growing hierarchy. In: *Logic and Combinatorics*, Amer. Math. Soc.: Arcata, 1987 pp. 179–198
- BUSS S. R.: The polynomial hierarchy and fragments of bounded arithmetic. In: 17-th Annual ACM Symposium on Theory of Computing, 1985 pp. 285–290
- BUSS S. R.: Bounded arithmetic (revised version of Ph. D. thesis), Bibliopolis, 1986
- BUSS S. R.: The polynomial hierarchy and intuitionistic bounded arithmetic. In: *Structure in Complexity Theory* (Lect. Notes Comp. Sci. 223), Springer-Verlag, 1986 pp. 77–103
- BUSS S. R.: Polynomial size proofs of the propositional pigeonhole principle, *Journ. Symb. Log.* Vol. 52, 1987 pp. 916–927
- BUSS S. R.: A conservation result concerning bounded theories and the collection axiom, *Proc. Amer. Math. Soc.* Vol. 100, 1987 pp. 109–116
- BUSS S. R.: The Boolean formula value problem is in ALOGTIME. In: 19-th Annual ACM Symp. on Theory of Computing, 1987 pp. 123–131
- BUSS S. R.: Axiomatizations and conservation results for fragments of bounded arithmetic, In: *Logic and Computation, Contemporary Mathematics* 106, Amer. Math. Soc., 1990 pp. 57–84
- BUSS S. R.: A note on bootstrapping Intuitionistic Bounded Arithmetic, proc. Proof Theory Conference, Leeds, England, 1990, to appear
- BUSS S. R.: The undecidability of  $k$ -provability, *Annals of Pure and Appl. Logic* 53, 1991 pp. 75–102
- BUSS S. R.: A conservation result concerning bounded theories and the collection axiom, *Proc. Amer. Math. Soc.* Vol. 100, 1987, pp. 916–927
- BUSS S. R.: Propositional consistency proofs, *Annals of Pure and Appl. Logic* 52, 1991 pp. 3–29
- BUSS S. R.: On model theory for intuitionistic bounded arithmetic with applications to independence results. In: *Feasible Mathematics*, Buss, Scott eds., Birkhäuser 1990, pp. 27–48
- BUSS S. R.: The witness function method and provably recursive fragments of Peano arithmetic. In: *Logic Methodology and Philosophy of Science '91*, to appear
- BUSS S. R. ET AL.: Weak formal systems and connections to computational complexity, Student written lecture notes for a course at UC Berkeley, 1988

- BUSS S. R., J. KRAJÍČEK J., TAKEUTI G.: Provably total functions in bounded arithmetic theories  $R_3^i$ ,  $U_2^i$  and  $V_2^i$ . In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 116–161
- CANTINI A.: Majorizing provably recursive functions in fragments of PA, Arch. Math. Log. Vol. 25, 1985 pp. 21–31
- CANTOR A.: Minimal proper elementary extensions of N with respect to definable relations Dissertation, Univ. S. Carolina, 1972
- CARLSON T. J., SIMPSON S. G.: A dual form of Ramsey's theorem, preprint, Penns. Univ., 1983
- CARNAP R.: Logische Syntax der Sprache, Springer-Verlag, 1934
- CARSTENS H. G.: The theorem of Matijasevič is provable in Peano's arithmetic by finitely many axioms, Logique & Anal., N. S. Vol. 20, 1977 pp. 116–121
- CARSTENS H. G.: Über die Kompliziertheit numerischer Modelle, Dissertation, Münster, 1972
- CARSTENS H. G.: Reducing hyperarithmetic sequences, Fund. Math. Vol. 89, 1975 pp. 5–11
- CARSTENS H. G.:  $\Delta_2^0$ -Mengen, Arch. Math. Log. Vol. 18, 1976 pp. 55–65
- CAVINESS B. F.: On canonical forms and simplification, Journ. ACM Vol. 17, 1970 pp. 385–396
- CEGIELSKI P.: La théorie élémentaire de la multiplication, C. R. Acad. Sci. Paris Ser. A-B Vol. 290, 1980 pp. A935–A938
- CEGIELSKI P.: Théorie élémentaire de la multiplication des entiers naturels. In: Model Theory and Arithmetic, (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 44–89
- CEGIELSKI P.: La théorie élémentaire de la divisibilité est finiment axiomatisable, C. R. Acad. Sci. Paris Ser. I Math. Vol. 299, 1984 pp. 367–369
- CEGIELSKI P., MCALOON K., WILMERS G.: Modèles recursivement saturés de l'addition et de la multiplication des entiers naturels. In: Logic Colloquium '80 (Studies in Logic and the Foundations of Mathematics 108), North-Holland, 1982 pp. 57–68
- CELLUCI C.: Proprietà di uniformità e 1-coerenza dell'aritmetica del primo ordine, Matematiche Vol. 32, 1977 pp. 35–49
- CENZER D., CLOTE P., SMITH R. L., SOARE R. I., WAINER S. S.: Members of countable  $\Pi_1^0$  classes, Annals Pure Appl. Logic Vol. 31, 1986 pp. 145–163
- CHAITIN G. J.: Gödel's theorem and information, Int. Journ. Theor. Phys. Vol. 21, 1982 pp. 941–954
- CHATZIDAKIS Z.: La représentation en termes de faisceaux des modèles de la théorie élémentaire de la multiplication des entiers naturels. In: Model theory and arithmetic (Paris, 1979–1980) (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 90–110
- CHURCH A.: An independence question in recursive arithmetic. In: Colloque sur les Fondements des Mathématiques, les Machines Mathématiques, et leurs Applications (Collection de Logique Mathématique), Akad. Kiado: Budapest, 1965 pp. 21–26
- CICHON E. A.: A short proof of two recently discovered independence results using recursion theoretic methods, Proc. Amer. Math. Soc. Vol. 87, 1983 pp. 704–706
- CICHON E. A., WAINER S. S.: Slow growing and Grzegorczyk hierarchies, Journ. Symb. Log. Vol. 48, 1983 p. 399
- CINMAN L. L.: On the complete induction axiom, Doklady Akad. Nauk SSSR, 1967 No. 173 pp. 273–274
- CINMAN L. L.: The role of the principle of induction in a formal arithmetical system, Mat. Sb. (NS), 1968 No. 77 pp. 71–104
- CLEAVE J. P.: A hierarchy of primitive recursive functions. (Russian translation in Problemy matematičeskoy logiki, Mir 1970, 94–113), Zeitschr. Math. Log. Grundl. Math. Vol. 9, 1963 pp. 331–345
- CLEAVE J. P., ROSE H. E.:  $\epsilon^n$ -Arithmetic. In: Sets, Models a Recursion Theory, North-Holland, 1967 pp. 297–308

- CLOTE P.: A recursion theoretic analysis of certain generalizations of Ramsey's theorem and of the Gale-Stewart theorem, Dissertation, Duke Univ, 1979
- CLOTE P.: Weak partition relations, finite games, and independence results in Peano arithmetic. In: Model Theory of Algebra and Arithmetic (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 92–107
- CLOTE P.: Anti-basis theorems and their relation to independence results in Peano arithmetic. In: Model theory and arithmetic, (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 115–133
- CLOTE P.: A note on decidable model theory. In: Model Theory and Arithmetic, (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 134–142
- CLOTE P.: Applications of the low basis theorem in arithmetic. In: Recursion-theory week (Oberwolfach, 1984), (Lect. Notes Math. 1141), Springer-Verlag, 1985 pp. 65–88
- CLOTE P.: Partition relations in arithmetic. In: Proc. 6th Latin American Symp. on Math. Logic, Caracas, (Lect. Notes Math. 1130), Springer-Verlag, 1985 pp. 32–68
- CLOTE P.: Ultrafilters on definable sets of arithmetic. In: Logic Colloquium '84 (Studies in Logic and the Foundations of Mathematics 120), North-Holland, 1986 pp. 37–58
- CLOTE P.: A note on the Mac Dowell-Specker theorem, Fund. Math. Vol. 127, 1987 pp. 163–170
- CLOTE P.: ALOGTIME and a conjecture of S. A. Cook. In: Logic in Computer Science, IEEE 1990, to appear in Annals of Mathematics and Artificial Intelligence
- CLOTE P.: On polynomial size Frege proofs of certain combinatorial principles. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. CLOTE and J. Krajíček, Oxford Univ. Press 1992, pp. 162–184
- CLOTE P.: Bounded arithmetic and computational complexity. In: Structure in Complexity Theory 1990, IEEE, to appear
- CLOTE P., HÁJEK P., PARIS J.: On some formalized conservation results in arithmetic, Arch. Math. Log. 30, 1990, pp. 201–218
- CLOTE P., MCALOON K.: Two further combinatorial theorems equivalent to the 1-consistency of Peano arithmetic, Journ. Symb. Log. Vol. 48, 1983 pp. 1090–1104
- CLOTE P., TAKEUTI G.: Exponential time and bounded arithmetic (extended abstract). In: Structure in Complexity Theory (Lect. Notes Comp. Sci. 223), Springer-Verlag, 1986 pp. 125–143
- CLOTE P., TAKEUTI G.: Bounded arithmetic for NC, ALOGTIME, L and NL, Annals of Pure and Appl. Logic 56, 1992 pp. 73–117
- COOK S. A.: The complexity of theorem proving procedures, 3-rd Symp. on Theory of Computing, 1971 pp. 151–158
- COOK S. A.: Feasibly constructive proofs and the propositional calculus. In: Proc. 7-th A. C. M. STOC, 1975 pp. 73–89
- COOK S. A., RECKHOW R. A.: The relative efficiency of propositional proof systems, Journ. Symb. Log. Vol. 44, 1979 pp. 36–50
- COOK S. A., URQUHART A.: Functional interpretations of feasibly constructive arithmetic. In: Proc. ACM Symp. on Theory of Computing, 1989, pp. 107–112
- CRAIG W.: Bases for first order theories and subtheories, Journ. Symb. Log. vol. 25, 1960, pp. 97–142
- CSIRMAZ L.: On definability in Peano arithmetic, Bull. Acad. Polon. Sci. Vol. 8, 1979 pp. 148–153
- CSIRMAZ L., PARIS J. B.: A property of 2-sorted Peano models and program verification, Zeitschr. Math. Log. Grundl. Math. Vol. 30, 1984 pp. 325–334
- ČUBARJAN A. A.: The lengths of derivations of formulae in extensions of formal arithmetic, Izv. Akad. Nauk. Armjan. SSSR Ser. Mat. 9, 1974 pp. 409–429
- ČUDA K.: An elimination of the predicate "to be a standard member" in nonstandard models of arithmetic, Comm. Math. Univ. Carol. Vol. 23, 1982 pp. 785–803
- ČUDNOVSKY G. V.: Diophantine predicates, Uspekhi Matem. Nauk. Vol. 25, 1970 No. 4 pp. 185–186

- DAGUENET M.: Un modèle non standard de l'arithmétique, Comptes Rendus, 1972 No. 274 pp. 685–688
- VAN DALEN D., GORDON C. E.: Independence problems in subsystems of intuitionistic arithmetic, Indag. Math. Vol. 33, 1971 pp. 448–456
- VAN DALEN D., MULDER H., KRABBE E. C. W., VISSER A.: Finite Kripke models of HA are locally PA, Notre Dame Journ. Formal Log. Vol. 27, 1986 pp. 528–532
- DAVIS M. D.: Arithmetical problems and recursively enumerable predicates, Journ. Symb. Log. Vol. 18, 1953 pp. 33–41
- DAVIS M. D.: One equation to rule them all, Trans. N. Y. Acad. Sci. Vol. 30, 1960 pp. 766–775
- DAVIS M. D.: Application of recursive function theory to number theory. In: Recursive Function Theory, Amer. Math. Soc., Providence, 1962, pp. 135–138
- DAVIS M. D.: Extensions and corollaries of recent work on Hilbert's tenth problem, Ill. Journ. Math. Vol. 7, 1963 pp. 246–250
- DAVIS M. D.: Introduction to Gödel's paper: On formally undecidable propositions of the Principia Mathematica and related systems I. In: The Undecidable. Basic papers on Undecidable Propositions, Unsolvable problems and Computable functions, Raven Press, New York, 1965 pp. 4
- DAVIS M. D.: Diophantine equations and recursively enumerable sets. In: Automata Theory, New York, Academic Press, 1966, pp. 146–152
- DAVIS M. D.: An explicit Diophantine definition of the exponential function, Commun. Pure and Applied Math. Vol. 24, 1971 pp. 137–145
- DAVIS M. D.: On the number of solutions of Diophantine equations. In: Proc. Amer. Math. Soc. Vol. 33, 1972 pp. 552–554
- DAVIS M. D.: Hilbert tenth problem is unsolvable, Amer. Math. Mon. Vol. 80, 1973 pp. 233–269
- DAVIS M. D.: Speed-up theorems and Diophantine equations. In: Courant Computer Science Symposium 7: Computational Complexity, New York, Algorithmics Press, 1973
- DAVIS M. D.: What is a computation? In: Mathematics Today, Heidelberg, Springer-Verlag, 1978
- DAVIS M. D. (ED): The undecidable. Basic papers on undecidable propositions, unsolvable problems and computable functions, Raven Press, New York, 1965, 440 p.
- DAVIS M. D., MATIYASEVIĆ I., ROBINSON J.: Hilbert's tenth problem. Diophantine equations: positive aspects of a negative solution. In: Mathematical Developments Arising From Hilbert's Problems, Amer. Math. Soc. Proc. Symp. Pured Math. 28, 1976, pp. 223–378
- DAVIS M. D., PUTNAM H.: Reduction of Hilbert's tenth problem, Journ. Symb. Log. Vol. 23, 1958 pp. 183–187
- DAVIS M. D., PUTNAM H.: Diophantine sets over polynomial rings, Ill. Journ. Math. Vol. 7, 1963 pp. 251–256
- DAVIS M. D., PUTNAM H., ROBINSON J.: The decision problem for exponential Diophantine equations, Ann. Math. Vol. 74, 1961 pp. 425–436
- DAWES A. M., FLORENCE J. B.: Independent Gödel sentences and independent sets, Journ. Symb. Log. Vol. 40, 1975 pp. 159–166
- DAWES A. M.: First order hierarchies in general models and in models of Peano arithmetic, Dissertation, Toronto, 1972
- DAWES A. M.: End extensions which are models of a given theory, Zeitschr. Math. Log. Grundl. Math. Vol. 23, 1977 pp. 463–467
- DAWSON J.: The Gödel incompleteness theorem from a length-of-proof perspective, Amer. Math. Mon. Vol. 86, 1979 pp. 740–748
- DEDEKIND R.: Was sind und was sollen die Zahlen, Braunschweig, F. Vieweg und Sohn, 1939, 58 pp.
- DENEF J.: Hilbert's tenth problem for quadratic rings, Proc. Amer. Math. Soc. Vol. 48, 1975 pp. 214–220

- DENEF J.: Diophantine sets over  $Z(T)$ . In: Proc. Amer. Math. Soc. Vol. 69, 1978 pp. 148–150
- DENEF J.: The Diophantine problem for polynomial rings and fields of rational functions, Trans. Amer. Math. Soc., 1978 No. 242 pp. 391–399
- DENEF J.: The Diophantine problem for polynomial rings of positive characteristic. In: Logic Colloquium '78, Amsterdam, North-Holland, 1979, pp. 131–145
- DENEF J.: Diophantine sets over algebraic number rings II, Trans. Amer. Math. Soc., 1980 No. 257 pp. 227–236
- DENEF J., LIPSHITZ L.: Diophantine sets over some rings of algebraic integers, Journ. London Math. Soc. Vol. (2) 18, 1978 pp. 385–391
- DENIS R.: The arithmetics as theories of two orders. In: Orders: descriptions and roles (L'Arbresle, 1982), North-Holland, 1984 pp. 287–311
- DENISOV S. D.: Models of noncontradictory formulas and the Ershov hierarchy, Algebra i Logika Vol. 11, 1972 pp. 648–655
- DEREVYANKINA E. A.: Some questions on the completeness of arithmetic, Sibirski Mat. Zh. Vol. 15, 1974 pp. 299–317
- DIACONESCU R., KIRBY L. A. S.: Models of arithmetic and categories with finiteness conditions, Annals Pure Appl. Logic Vol. 35, 1987 pp. 123–148
- DICKMAN M.: Types remarquables et extensions de modèles dans l'arithmétique de Peano I, Astérisque Vol. 73, 1980 pp. 59–117
- DIMITRACOPOULOS C.: Matiyasevič theorem and fragments of arithmetic, Dissertation Manchester, 1980
- DIMITRACOPOULOS C.: A generalization of a theorem of H. Friedman, Zeitschr. Math. Log. Grundl. Math. Vol. 31, 1985 pp. 221–225
- DIMITRACOPOULOS C., GAIFMAN H.: Fragments of Peano's arithmetic and the MRDP theorem. In: Logic and Algorithmic. An International Symposium Held in Honour of Ernst Specker, Enseign. Math. Univ Genève: Genève, 1982 pp. 187–206
- DIMITRACOPOULOS C., PARIS J. B.: Truth definitions for  $\Delta_0$  formulae. In: Logic and Algorithmic. An International Symposium Held in Honour of Ernst Specker, Monogr. Enseign. Math. Univ Geneve, 1982 pp. 317–329
- DIMITRACOPOULOS C., PARIS J. B.: A note on the undefinability of cuts, Journ. Symb. Log. Vol. 48, 1983 pp. 564–569
- DIMITRACOPOULOS C., PARIS J. B.: The pigeon hole principle and fragments of arithmetic, Zeitschr. Math. Log. Grundl. Math. Vol. 32, 1986 pp. 73–80
- DIMITRACOPOULOS C., PARIS J. B.: The pigeonhole principle and fragments of arithmetic. (abstract), Journ. Symb. Log. Vol. 51, 1986 pp. 485
- DIMITRACOPOULOS C., PARIS J. B.: A note on a theorem of H. Friedman, Zeitschr. Math. Log. Grundl. Math. Vol. 34, 1988 pp. 13–17
- DOWD M.: Propositional representation of arithmetic proofs (dissertation), Univ. of Toronto, 1979
- DOWD M.: Model theoretic aspects of PNP (preprint), 1985
- VAN DEN DRIES L.: Some model theory and number theory for models of weak systems of arithmetic. In: Model Theory of Algebra and Arithmetic (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 346–362
- EHRENFEUCHT A.: Polynomial functions with exponentiation are well ordered, Algebra Universalis Vol. 3, 1973 pp. 261–262)
- EHRENFEUCHT A.: Discernible elements in models for Peano arithmetic, Journ. Symb. Log. Vol. 38, 1973 pp. 291–292
- EHRENFEUCHT A., FEFERMAN S.: Representability of recursively enumerable sets in formal theories, Arch. Math. Log. Vol. 5, 1959 pp. 37–41
- EHRENFEUCHT A., JENSEN D. C.: Some problems in elementary arithmetics, Fund. Math. Vol. 92, 1976 pp. 223–245
- EHRENFEUCHT A., KREISEL G.: Strong models for arithmetic, Bull. Acad. Polon. Sci. Vol. 14, 1966 pp. 107–110

- EHRENFEUCHT A., MYCIELSKI J.: Abbreviating proofs by adding new axioms, *Bull. Amer. Math. Soc.* Vol. 77, 1971 pp. 366–367
- ELLENTUCK E.: A model of arithmetic, *Bull. Acad. Polon. Sci. Vol.* 22, 1974 pp. 353–355
- ENDERSON H. B.: On provable recursive functions, *Notre Dame Journ. Formal Log.* Vol. 9, 1968 pp. 86–88
- ERDOS P., MILLS G.: Some bounds for the Ramsey-Paris-Harrington numbers, *Journ. Combin. Theory Ser. A* Vol. 30, 1981 pp. 53–70
- ESENINE-VOLPINE A. S.: Le programme ultra-intuitionniste des fondements des mathématiques. In: *Infinitistic Methods, Proceedings of the Symposium on Foundations of Mathematics*, PWN: Warsaw, 1961 pp. 201–223
- FARKAS E. J., SZABO M. E.: On the programs-as-formulas interpretation of parallel programs in Peano arithmetic, *Annals Pure Appl. Logic* Vol. 37, 1988 pp. 111–127
- FEFERMAN S.: Formal consistency proofs and interpretability of theories. In: *Summaries of Talks Presented at the Summer Institute for Symbolic Logic; 1957 Ithaca, Institute for Defense Analyses, Com. Res. Division*, 1957 pp. 71–77
- FEFERMAN S.: Arithmetization of metamathematics in a general setting, *Fund. Math.* Vol. 49, 1960 pp. 35–92
- FEFERMAN S.: Transfinite recursive progressions of axiomatic theories, *Journ. Symb. Log.* Vol. 27, 1962 pp. 259–316
- FEFERMAN S.: Autonomous transfinite progressions and the extent of predicative mathematics. In: *Proceedings of 3rd International Congress for Logic, Methodology and Philosophy of Science* (Stud. Logic Found. Math.), North Holland: Amsterdam, 1968 pp. 121–135
- FEFERMAN S.: Theories of finite type related to mathematical practice. In: *Handbook of Mathematical Logic*, Amsterdam, North-Holland, 1977, pp. 913–971
- FEFERMAN S.: Inductively presented systems and the formalization of meta-mathematics. In: *Logic Colloquium '80* (Stud. Logic Found. Math. 108), North Holland: Amsterdam, 1982 pp. 95–128
- FEFERMAN S.: Intensionality in mathematics, *Journ. Philosophical Logic* Vol. 14, 1985 pp. 41–56
- FEFERMAN S., KREISEL G., OREY S.: 1-consistency and faithful interpretations, *Arch. Math. Log.* Vol. 6, 1962 pp. 52–63
- FEFERMAN S., SPECTOR C.: Incompleteness along paths in progressions of theories, *Journ. Symb. Log.* Vol. 27, 1962 pp. 383–390
- FEFERMAN S., KREISEL G., OREY S.: 1-consistency and faithful interpretations, *Arch. Math. Log.* Vol. 6, 1962 No. 6 pp. 52–63
- FENSTAD J. E.: On the completeness of some transfinite recursive progressions of axiomatic theories, *Journ. Symb. Log.* Vol. 33, 1968 pp. 69–76
- FENSTAD J. E.: Non-standard models for arithmetic and analysis. In: *Proceedings of the 15th Scandinavian Congress* (Lect. Notes Math. 118), Springer-Verlag, 1970 pp. 30–47
- FISCHER M. J., RABIN M. O.: Super-exponential complexity of Presburger arithmetic. In: *Complexity of computation*, SIAM-Amer. Math. Soc. Proceeding 7, Providence, 1974, pp. 27–44
- FISCHER P. C.: Theory of provably recursive functions. *Trans. Amer. Math. Soc.* Vol. 117, 1965 pp. 494–520
- FLAGG R. C., FRIEDMAN H. M.: Epistemic and intuitionistic formal systems, *Annals Pure Appl. Logic* Vol. 32, 1986 pp. 53–60
- FLANNAGAN, T. B.: A note on a proof of Shepherdson, *Arch. Math. Log.* Vol. 23, 1983 pp. 55–60
- FRIEDMAN H. M.: Iterated inductive definitions and  $\Sigma_2^1$ -AC. In: *Intuitionism and proof theory*, Amsterdam, North-Holland, 1970, pp. 435–442
- FRIEDMAN H. M.: Countable models of set theories. In: *Cambridge Summer School in Mathematical Logic*, (Lect. Notes Math. 337), Springer-Verlag, 1973, pp. 539–573

- FRIEDMAN H. M.: Provable equality in primitive recursive arithmetic with and without induction, *Pac. Journ. Math.* Vol. 57, 1975 pp. 379–392
- FRIEDMAN H. M.: One hundred and two problems in mathematical logic, *Journ. Symb. Log.*, Vol. 40, 1975, pp. 113–129
- FRIEDMAN H. M.: Set theoretic foundations for constructive analysis, *Ann. Math.* Vol. 105, 1977 pp. 1–28
- FRIEDMAN H. M.: Classically and intuitionistically provably recursive functions. In: *Higher Set Theory* (Lect. Notes Math. 669), Springer-Verlag, 1978 pp. 21–27
- FRIEDMAN H. M.: Simpler combinatorial theorem independent of set theory, Preprint, Ohio State Univ., 1979, 6 p.
- FRIEDMAN H. M.: On the consistency, completeness, and correctness problems, Preprint, Ohio State Univ. 1979, 10 p.
- FRIEDMAN H. M.: A strong conservative extension of Peano arithmetic. In: *The Kleene Symposium* (Stud. Logic Found. Math. 101), North Holland: Amsterdam, 1980 pp. 113–122
- FRIEDMAN H. M.: Translatability and relative consistency II. Preprint, Ohio State Univ. 1980, 6 p. (see [SMORYŃSKI 82, Nonstandard models])
- FRIEDMAN H. M., MCALOON K., SIMPSON S.: A finite combinatorial principle which is equivalent to the 1-consistency of predicative analysis. In: *Patras Logic Symp.*, 1982 pp. 197–230
- FRIEDMAN H. M., SHEARD M.: An axiomatic approach to self-referential truth, *Annals Pure Appl. Log.* Vol. 33, 1987 pp. 1–21
- FRIEDMAN H. M., SHEARD M.: The disjunction and existence properties for axiomatic systems of truth, *Annals Pure Appl. Log.* Vol. 40, 1988 pp. 1–10
- FRIEDMAN H. M., SIMPSON S. G., SMITH R. L.: Countable algebra and set existence axioms, *Ann. Pure Appl. Log.* Vol. 25(2), 1983 pp. 141–182
- FRIEDMAN H. M., SIMPSON S. G., SMITH R. L.: Addendum to “Countable algebra and set existence axioms”, *Annals Pure Appl. Log.* Vol. 28, 1985 pp. 319–320
- FRIEDRICHSDORF U.: Einige Bemerkungen zur Peano Arithmetik, *Zeitschr. Mat. Log. Grundl. Math.* Vol. 22, 1976 pp. 431–436
- GAIFMAN H.: Uniform extension operators for models and their applications. In: *Sets, Models and Recursion Theory*, Amsterdam, North-Holland, 1967, pp. 122–155
- GAIFMAN H.: On local arithmetical functions, and their applications for constructing types of Peano's arithmetic. In: *Mathematical Logic and Foundations of Set Theory*, Amsterdam, North-Holland, 1970, pp. 105–121
- GAIFMAN H.: A note on models and submodels of arithmetic. In: *Conference in Mathematical Logic*, London'70, Springer-Verlag, 1972 pp. 128–144
- GAIFMAN H.: Models and types of Peano's arithmetic, *Arch. Math. Log.* Vol. 9, 1976 pp. 223–306
- GAIFMAN H., DIMITRACOPOULOS C.: Fragments of Peano's arithmetic and the MRDP theorem. In: *Logic and algorithmic* (Zurich, 1980) (Monograph. Enseign. Math. 30), Genève, Univ. Genève, 1982 pp. 187–206
- GANDY R. O.: Note on a paper of Kemeny's, *Math. Ann.*, 1958 No. 136 pp. 466
- GAREY M. R., JOHNSON D. S.: Computers and Intractability: A Guide to the theory of NP-completeness, Freeman, San Francisco, 1979, 338 pp.
- GANDY R. O.: Limitations to mathematical knowledge. In: *Logic Colloquium '80* (Studies in Logic and the Foundations of Mathematics 108), North-Holland, 1982 pp. 129–146
- GARRO I.: Independence proofs in arithmetic theories with very weak induction, *Univ Math Inst: Bonn*, 1973, 71 p.
- GARRO I.: Nonstandard models for a fragment of the arithmetic and their decision problem, *Zeitschr. Math. Log. Grundl. Math.* Vol. 33, 1987 pp. 481–483
- GEISER J. R.: A formalization of Esselin-Volpin's proof theoretical studies by means of nonstandard analysis, *Journ. Symb. Log.* Vol. 39, 1974 pp. 81–87

- GENTZEN G.: Untersuchungen über das logische Schliessen I. Math. Zeitschr. 39, 1935 pp. 176–210 (Russian translation in Matematičeskaia teoria logiceskogo vydova, Nauka 1967, 9–76)
- GENTZEN G.: Untersuchungen über das logische Schliessen II. Math. Zeitschr. Vol. 39, 1935 pp. 405–443 (Russian translation in Matematičeskaia teoria logiceskogo vydova, Nauka 1967, 9–76)
- GENTZEN G.: Die Widerspruchsfreiheit der reinen Zahlentheorie. Math. Ann. Vol. 112, 1936 pp. 493–565 (Russian translation in Matematičeskaia teoria logiceskogo vydova, Nauka 1967, 77–153)
- GENTZEN G.: Neue Fassung des Widerspruchsfreiheitsbeweises für die reine Zahlentheorie. Forschungen zur Logik und zur Grundlegung der exakten Wissenschaften Vol. 4, 1938 pp. 19–44 (Russian translation in Matematičeskaia teoria logiceskogo vydova, Nauka 1967, 154–190)
- GENTZEN G.: Zusammenfassung von mehreren vollständigen Induktionen zu einer einzigen, Arch. Math. Log. Vol. 2, 1954 pp. 1–3
- GENTZEN G.: The collected papers of Gerhard Gentzen, North Holland: Amsterdam, 1969, 338 p.
- GENTZEN G.: Der erste Widerspruchsfreiheitsbeweis für die klassische Zahlentheorie, Arch. Math. Log. Vol. 16, 1974 pp. 97–118
- GENTZEN G.: Über das Verhältnis zwischen intuitionistischer und klassischer Arithmetik, Arch. Math. Log. Vol. 16, 1974 pp. 119–132
- GERMANO G.: Incompleteness theorem via weak definability of truth: a short proof, Notre Dame Journ. Formal Log. Vol. 14, 1973 pp. 377–380
- GINSBURG S., SPANIER E.: Semigroups, Presburger formulas and languages, Pac. Journ. Math. Vol. 16, 1966 pp. 285–296
- GÖDEL K.: Die Vollständigkeit der Axiome des logischen Funktionenkalküls, Monatshefte für Math. und Phys. vol 37, 1930, pp. 349–360.
- GÖDEL K.: Einige metamathematische Resultate über Entscheidungsdefinitheit und Widerspruchsfreiheit. In: Math. Naturw. Klasse, Anzeiger, 67, Akad. Wiss. Wien, 1930 pp. 214–215
- GÖDEL K.: Remarks contributed to a "Diskussion zur Grundlegung der Mathematik", Erkenntnis Vol. 2, 1931 pp. 147–148
- GÖDEL K.: Eine Interpretation des intuitionistischen Aussagenkalküls, Ergebnisse eines math. Kolloquiums Vol. 4, 1931 pp. 39–40
- GÖDEL K.: Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme I, Monatshefte Math. Phys. Vol. 38, 1931 pp. 173–198
- GÖDEL K.: Über Vollständigkeit und Widerspruchsfreiheit, Ergebnisse eines Mathematischen Kolloquiums Vol. 3, 1932 pp. 12–13
- GÖDEL K.: Zu intuitionistischen Arithmetik und Zahlentheorie. In: Ergebnisse eines Math. Kolloquiums, 1933 pp. 34–38
- GÖDEL K.: On undecidable propositions of formal mathematical systems (mimeographed lecture notes by S. C. Kleene and J. B. Rosser). Princeton 1934 (reprinted in Davis 1965 and Gödel 1986)
- GÖDEL K.: Über die Länge von Beweisen. In: Ergeb. eines math. Kolloq. Vol. 7, 1936 pp. 23–24
- GÖDEL K.: The consistency of the axiom of choice and of the generalized continuum hypothesis. Proc Nat Acad Sci USA Vol. 24, 1938 pp. 556–557
- GÖDEL K.: Über eine bisher noch nicht benutzte Erweiterung des finiten Standpunktes, Dialectica Vol. 12, 1958 pp. 280–287
- GÖDEL K.: On undecidable propositions of formal mathematical systems. In: The Undecidable, N. Y, Raven Press, Hewlett, 1965, pp. 41–71
- GÖDEL K.: Collected works, vol. I (edited by S. Feferman et al.). Oxford Univ. Press New York and Oxford, 1986, xvi + 474 pp.

- GÖDEL K.: Collected works, vol. II (edited by S. Feferman et al.). Oxford Univ. Press New York and Oxford, 1990, xvi + 407 pp.
- GOLD B.: Relatively diophantine correct models of arithmetic, *Notre Dame Journ. Formal Log.* Vol. 28, 1987 pp. 291–296
- GOLDBLATT R.: Arithmetic necessity, provability and intuitionistic logic, *Theoria* Vol. 44, 1978 pp. 38–46
- GOLDFARB W. D.: On the effective  $\omega$ -rule, *Zeitschr. Math. Log. Grundl. Math.* Vol. 21, 1975 pp. 409–412
- GOLDFARB W. D.: Ordinal bounds for  $k$ -consistency, *Journ. Symb. Log.* Vol. 39, 1978 pp. 693–699
- GOLDFARB W. D., SCANLON T. M.: The  $\omega$ -consistency of number theory via Herbrand's theorem, *Journ. Symb. Log.* Vol. 39, 1974 pp. 678–692
- GOLDFREI D. C., MACINTYRE A., SIMMONS H.: The forcingcompanions of number theories, *Israel Journ. Math.* Vol. 14, 1973 pp. 318–337
- GOODMAN N. D.: Flagg realizability in arithmetic, *Journ. Symb. Log.* Vol. 51, 1986 pp. 387–392
- GOODSTEIN R. L.: On the restricted ordinal theorem, *Journ. Symb. Log.* Vol. 9, 1944 pp. 33–41
- GOODSTEIN R. L.: Transfinite ordinals in recursive number theory, *Journ. Symb. Log.* Vol. 12, 1947 pp. 123–129
- GOODSTEIN R. L.: Logic-free formalism of recursive arithmetic, *Math. Scand.* Vol. 2, 1954, pp. 247–261
- GORDEEV L.: Proof-theoretical analysis: weak systems of functions and classes, *Annals Pure Appl. Logic* Vol. 38, 1988 pp. 1–121
- GORJAČEV S. V.: On interpretability of some extensions of arithmetic, *Matemeticeskie Zametki* Vol. 40, 1986 pp. 561–571
- GRATTAN-GUINNESS I.: In memorium Kurt Gödel: His 1931 correspondence with Zermelo on his incompleteness theorem, *Hist. Mathematica* Vol. 6, 1979 pp. 294–304
- GRILLIOT T. J.: Disturbing arithmetic, *Journ. Symb. Log.* Vol. 50, 1985 pp. 375–379
- GRZEGORCZYK A.: Some classes of recursive functions. In: *Rozprawy Matematyczne*, IV, Warszawa, 1953 (Russian translation in *Problemy matematiskoj logiki*, Mir 1970, 9–49)
- GRZEGORCZYK A.: Some proofs of undecidability of arithmetic, *Fund. Math.* Vol. 43, 1956 pp. 166–177
- GRZEGORCZYK A.: An unfininitizability proof by means of restricted reduced power, *Fund. Math.* Vol. 73, 1971 pp. 37–49
- GRZEGORCZYK A.: Zarys arytmetyki teoretycznej. (Second edition), Panstwowe Wydawnictwo Naukowe, 1983, 315 p.
- GRZEGORCZYK A., MOSTOWSKI A., RYLL-NARDZEWSKI C.: The classical and the  $\omega$ -complete arithmetic, *Journ. Symb. Log.* Vol. 23, 1958 pp. 188–206
- GUASPARI D.: Partially conservative extensions of arithmetic, *Transactions Amer. Math. Soc.* Vol. 254, 1979 pp. 47–68
- GUASPARI D.: Sentences implying their own provability, *Journ. Symb. Log.* Vol. 48, 1983 pp. 777–789
- GUASPARI D., SOLOVAY R. M.: Rosser sentences, *Ann. Math. Log.* Vol. 16, 1979 pp. 81–99
- HÁJEK P.: Syntactic models of axiomatic theories, *Bull. Acad. Polon. Sci.* Vol. 13, 1965 pp. 273–278
- HÁJEK P.: Generalized interpretability in terms of models, *Čas. pěst. mat.* Vol. 91, 1966 pp. 352–357
- HÁJEK P.: On interpretability in set theories, *Comm. Math. Univ. Carol.* Vol. 12, 1971 pp. 73–79
- HÁJEK P.: On interpretability in set theories II, *Comm. Math. Univ. Carol.* Vol. 13, 1972 pp. 445–455

- HÁJEK P.: Experimental logics and  $Pi_3^0$  theories, Journ. Symb. Log. Vol. 42, 1977 pp. 515–522
- HÁJEK P.: Arithmetical complexity of some problems in computer science. In: Math. Foundations of Computer Science (Lect. Notes Comp. Sci. 53), Springer-Verlag, 1977 pp. 282–297
- HÁJEK P.: Arithmetical hierarchy and complexity of Computations, Theor. Comp. Sci. Vol. 8, 1979 pp. 227–237
- HÁJEK P.: On partially conservative extensions of arithmetic. In: Logic Colloquim 78, North-Holland Pub, 1979 pp. 225–234
- HÁJEK P.: Making dynamic logic first order. In: Mathematical foundations of Computer Science, (Lect. Notes Comp. Sci. 118), Springer-Verlag, 1981 pp. 287–295
- HÁJEK P.: On interpretability in theories containing arithmetic II, Comm. Math. Univ. Carol. Vol. 22, 1981 pp. 617–688
- HÁJEK P.: Completion closed algebras and models of Peano arithmetic, Comm. Math. Univ. Carol. Vol. 22, 1981 pp. 585–594
- HÁJEK P.: Arithmetical interpretations of dynamic logic, Journ. Symb. Log. Vol. 48, 1983 pp. 704–713
- HÁJEK P.: On a new notion of partial conservativity. In: Computation and proof theory, Proc. Logic Colloq, Aachen 1983, Part II, (Lect. Notes Math. 1104), Springer-Verlag, 1984 pp. 217–232
- HÁJEK P.: Some conservativeness results for non-standard dynamic logic. In: Demetrovics (ed.), Proc. Conf. on Algebra, Combinatorics and Logic in Comp. Sci, North-Holland, 1986 pp. 443–449
- HÁJEK P.: A simple dynamic logic, Theor. Comp. Sci. Vol. 46, 1986 pp. 239–259
- HÁJEK P.: Partial conservativity revisited, Comm. Math. Univ. Carol. Vol. 28, 1987 pp. 679–690
- HÁJEK P.: Partial conservativity revisited. (abstract) Journ. Symb. Log. Vol. 52, 1987 pp. 1066
- HÁJEK P.: Interpretability and fragments of arithmetic. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 185–196
- HÁJEK P., HÁJKOVÁ M.: On interpretability in theories containing arithmetic, Fund. Math. Vol. 76, 1972 pp. 131–137
- HÁJEK P., KUČERA A.: On recursion theory in  $I\Sigma_1$ , Journ. Symb. Log. Vol. 54, 1989, pp. 576–589
- HÁJEK P., MONTAGNA F.: ILM is the logic of  $\Pi_1$  conservativity, Arch. Math. Log. Vol. 30, 1990, pp. 113–123
- HÁJEK P., MONTAGNA F., PUDLÁK P.: Abbreviating proofs using metamathematical rules. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 197–221
- HÁJEK P., PARIS J. B.: Combinatorial principles concerning approximation of functions, Arch. Math. Log. Vol. 26, 1986 pp. 13–28
- HÁJEK P., PUDLÁK P.: Two orderings of the class of all countable models of arithmetic. In: Model theory of algebra and arithmetic, (Lect. Notes Math. 843), Springer-Verlag, 1980 pp. 174–185
- HÁJKOVÁ M.: The lattice of binumerations of arithmetic, Comm. Math. Univ. Carol. Vol. 12, 1971 pp. 81n, 281n.
- HANDLEY W. G.: Some machine characterizations of classes close to  $\Delta_0^N$ , Ph. D. dissertation, Manchester University, Manchester, 1986 pp. iv+106 pp
- HANDLEY W. G., PARIS J. B., WILKIE A. J.: Characterizing some low arithmetic classes. In: Theory of algorithms (Pecs), Coll. Math. Soc. Janos Bolyai 44, 1984 pp. 353–364
- HARDY G. H., WRIGHT E. M.: An introduction to the theory of numbers, (3. ed.), Oxford Univ. Press, 1954

- HARNIK V.:  $\omega_1$ -like recursively saturated models of Presburger's arithmetic, *Journ. Symb. Log.* Vol. 51, 1986 pp. 421–429
- HARRINGTON L. A., PARIS J. B.: A mathematical incompleteness in Peano arithmetic. In: *Handbook of Mathematical Logic* (Stud Logic Found Math 90), North Holland: Amsterdam, 1977 pp. 1133–1142
- HART J.:  $\epsilon_0$ -arithmetic, *Zeitschr. Math. Log. Grundl. Math.* Vol. 15, 1969 pp. 237
- HARTMANIS J., HOPCROFT J. E.: Independence results in computer science, *SIGACT News* 8, 1976 No. 4 pp. 13–24
- HARTMANIS J., LEWIS P. M., STEARNS R. E.: Hierarchies of memory limited computations, *IEEE Conference Record on Switching Circuit Theory and Logical Design*, Ann. Arbor, 1965 pp. 179–190
- HARTMANIS J., STEARNS R. E. On the computational complexity of algorithms, *Trans. Amer. Math. Soc.*, Vol. 117, 1965 pp. 285–306
- HAUSCHILD K.: Über die Charakterisierbarkeit der Zahlenreihe in gewissen Nichtstandardmodellen der Arithmetik, *Zeitschr. Math. Log. Grundl. Math.* Vol. 9, 1963 pp. 113–116
- HAUSCHILD K.: Nichtaxiomatisierbarkeit von Satzmengen durch Ausdrücke spezieller Gestalt, *Fund. Math.* Vol. 72, 1971 pp. 245–253
- VAN HEIJENOORT J. (ED.): *From Frege to Gödel, A Source Book in Mathematical Logic, 1879–1931*. Harvard Univ. Press 1967, 660 p.
- HENKIN L.: A problem concerning provability, *Journ. Symb. Log.* Vol. 17, 1952 pp. 160
- HENSON C. W., KAUFMANN M., KEISLER H. J.: The strength of nonstandard methods in arithmetic, *Journ. Symb. Log.* Vol. 49, 1984 pp. 1039–1058
- HERBRAND J.: Non-contradiction des axiomes arithmetiques, *C. R. Acad Sci, Paris* Vol. 188, 1929 pp. 303–304
- HERBRAND J.: Recherches sur la théorie de la démonstration (thesis, Paris), *Prace Towarzystwa Naukowego Warszawskiego* vol. III no. 33, 1930. (Chap. 5 see van Heijenoort 1967).
- HERBRAND J.: Sur la non-contradiction de l'arithmétique, *Journal für die Reine und Angewandte Mathematik* Vol. 166, 1931 pp. 1–8
- HERMES H.: Ein mengentheoretisches Modell des Peanoschen Axiomensystem, *Math Unterricht* Vol. 13/3, 1967 pp. 5–31
- HILBERT D., ACKERMANN. W.: *Grundzüge der theoretischen Logik*. Springer-Verlag, 1928, 120 pp.
- HILBERT D., BERNAYS P.: *Grundlagen der Mathematik I*, Springer-Verlag, 1934, 471 p.
- HILBERT D., BERNAYS P.: *Grundlagen der Mathematik II*, Springer-Verlag, 1939, 561 p.
- HIROSE K., IIDA S.: A proof of negative answer to Hilbert's 10th problem, *Proc. Japan Acad. Vol. 49*, 1973 pp. 10–12
- HIRSCHFELD J.: Existentially complete and generic structures in arithmetic. In: *Dissertation*, Yale, 1972
- HIRSCHFELD J.: Models of arithmetic and the semiring of recursive functions. In: *Victoria Symposium on Non-Standard analysis* (Lect. Notes Math. 369), Springer-Verlag, 1974 pp. 99–105
- HIRSCHFELD J.: Models of arithmetic and recursive functions, *Israel J. Math.* Vol. 20, 1975 pp. 111–126
- HIRSCHFELD J.: Finite forcing and generic filters in arithmetic. In: *Model Theory and Algebra, A Memorial Tribute to Abraham Robinson*, Springer-Verlag, 1975, pp. 172–199
- HIRSCHFELD J., WHEELER W. H.: Forcing, arithmetic, division rings. In: *(Lect. Notes Math. 454)*, Springer-Verlag, 1975, 266 p.
- HODGES W.: Interpreting number theory in nilpotent groups, *Arch. Math. Log.* Vol. 20, 1980 pp. 103–111
- HODGES W.: Truth in a structure. In: *Proc. of the Aristotelian Society (New series)* vol. 86, 1985/86, 135–151

- HOPCROFT J. E., PAUL W., VALIANT L.: On time versus space and related problems, 16-th Symp. on Foundations of Comp. Sci., 1975 pp. 57–64
- HÖRING W.: Absolut unentscheidbare Sätze der Mathematik. In: Logik und Logikkalkül, Alber: Freiburg, 1962 pp. 189–194
- HOWARD P. E.: A proof of the theorem of Tennenbaum, Zeitschr. Math. Log. Grundl. Math. Vol. 18, 1972 pp. 111–112
- HUBER-DYSON V., JONES J. P., SHEPERDSON J. C.: Some diophantine forms of Gödel's theorem, Arch. Math. Log. Vol. 22, 1982 pp. 51–60
- IGNJATOVIC A.: An ordering of the set of sentences of Peano arithmetic, Publ. Inst. Math, Nouv. Ser. Vol. 38 (52), 1985 pp. 13–15
- IMMERMAN N.: Nondeterministic space is closed under complement. In: Proc. 3-rd Annual Conf. Structure in Complexity Theory, IEEE, 1988 pp. 112–115
- ISAACSON D.: Arithmetical truth and hidden higher-order concepts. In: Logic Colloquium '85, Amsterdam: North-Holland, 1987 pp. 147–169
- JENSEN D.: On local proof restrictions for strong theories, Diss. Math. Vol. 108, 1973 pp. 1–47
- JENSEN D., EHRENFEUCHT A.: Some problem in elementary arithmetics, Fund. Math. Vol. 92, 1976 pp. 223–245
- JENSEN R. B.: Unabhängigkeitssbeweise in Teilsystemen der elementaren Zahlentheorie, Math. Ann. Vol. 173, 1967 pp. 102–126
- JEROSLOW R. G.: Non-effectiveness in S. Orey's compactness theorem, Zeitschr. Math. Log. Grundl. Math. Vol. 17, 1971 pp. 285–289
- JEROSLOW R. G.: Consistency statements in formal theories, Fund. Math. Vol. 72, 1971 pp. 17–40
- JEROSLOW R. G.: Redundancies in the Hilbert-Bernays derivability conditions for Gödel's second incompleteness theorem, Journ. Symb. Log. Vol. 38, 1973 pp. 359–367
- JEROSLOW R. G.: Experimental logics and  $\Delta_2^0$ -theories, Journ. Phil. Log. Vol. 4, 1975 pp. 253–267
- JERVEL H. R.: Gentzen games. Z Math Logik Vol. 31, pp. 431–439
- JERVEL H. R.: Large finite sets, Z Math Logik Vol. 31, pp. 545–549
- JOCKUSCH C. G.: Ramsey's theorem and recursion theory, Journ. Symb. Log. Vol. 37, 1972 pp. 268–280
- JOCKUSCH C. G.:  $\Pi_1^0$  classes and boolean combinations of recursively enumerable sets, Journ. Symb. Log. Vol. 39, 1974 pp. 95–96
- JOCKUSCH C. G., SOARE R. I.:  $\Pi_1^0$ -classes and degrees of theories, Trans. Amer. Math. Soc. Vol. 173, 1972 pp. 33–56
- JOCKUSCH C. G., SOARE R. I.: Degrees of members of  $\Pi_1^0$  classes, Pac. Journ. Math. Vol. 40, 1972 pp. 605–616
- JONES J. P.: Formula for the  $n$ -th prime number, Can. Math. Bull. Vol. 18, 1975 pp. 433–434
- JONES J. P.: Diophantine representation of the Fibonacci numbers, Fib. Quart. Vol. 13, 1975 pp. 82–88
- JONES J. P.: Diophantine representation of the Lucas numbers, Fib. Quart. Vol. 14, 1976 pp. 134
- JONES J. P.: Three universal representation of recursively enumerable sets, Journ. Symb. Log. Vol. 43, 1978 pp. 335–351
- JONES J. P.: Diophantine representation of Mersenne and Fermat primes, Acta Arithmetica Vol. 35, 1979 pp. 209–221
- JONES J. P.: Undecidable Diophantine equations, Bull. Amer. Math. Soc. (NS) Vol. 3, 1980 pp. 859–862
- JONES J. P.: Universal diophantine equation, Journ. Symb. Log. Vol. 47, 1982 pp. 549–571
- JONES J. P., LEVITZ H., WILKIE A. J.: Classification of quantifier prefixes over exponential diophantine equations, Zeitschr. Math. Log. Grundl. Math. Vol. 32, 1986 pp. 399–406

- JONES J. P., MATIYASEVIČ YU. V.: Register machine proof of the theorem on exponential diophantine representation of enumerable sets, *Journ. Symb. Log.* Vol. 49, 1984 pp. 48–59
- JONES J. P., SATO D., WADA H., WIENS D.: Diophantine representation of the set of prime numbers, *Amer. Math. Monthly* Vol. 83, 1976 pp. 449–464
- JONES J. P., SHEPHERDSON J. C.: Variants of Robinson's essentially undecidable theory R, *Arch. Math. Log.* Vol. 23, 1983 pp. 61–64
- DE JONGH D.: A simplification of a completeness proof of Guaspari and Solovay, *Studia logica* Vol. 46, 1987 pp. 187–192
- DE JONGH D.: Provability logics for relative interpretability (preprint for the Heyting conference Varna), 1988, 19 p.
- DE JONGH D., MONTAGNA F.: Provable fixed points, *Zeitschr. Math. Log. Grundl. Math.* Vol. 34, 1988 pp. 229–250
- DE JONGH D., MONTAGNA F.: Much shorter proofs, *Report 87-13, Dept. Math. Univ. Amsterdam*, 1987, 21 p.
- DE JONGH D., MONTAGNA F.: Generic generalized Rosser fixed points, *Studia logica* Vol. 46, 1987 pp. 193–203
- DE JONGH D., MONTAGNA F.: Rosser orderings and free variables (preprint for Heyting conference Varna), 1988, 10 p.
- DE JONGH D., MONTAGNA F.: Provable fixed points, *Zeitschr. Math. Log. Grundl. Math.* Vol. 34, 1988 pp. 229–250
- JOSEPH D., YOUNG P.: Independence results in computer science, *Journ. Comp. Syst.* Vol. 23, 1981 pp. 205–222
- JOSEPH D., YOUNG P.: A survey of some recent results on computational complexity in weak theories of arithmetic. In: *Mathematical foundations of computer science* (Lect. Notes. Comp. Sci 118), Springer-Verlag, 1981 pp. 46–60
- JUMELET M.: On Solovay's completeness theorem (thesis), Amsterdam, 1988, 28 p.
- KALSBEEK M. B.: An Orey sentence for predicative arithmetic (master's thesis), Amsterdam 1988
- KAMO S.: Nonstandard natural number systems and nonstandard models, *Journ. Symb. Log.* Vol. 46, 1981 pp. 365–376
- KANAMORI A., MCALOON K.: On Gödel incompleteness and finite combinatorics, *Ann. Pure Appl. Logic* Vol. 33, 1987 pp. 23–41
- KANOVIC M. I.: An estimate of complexity of arithmetic incompleteness, *Doklady Akad. Nauk SSSR* Vol. 238, 1978 pp. 1283–1286
- KANOVIC M. I.: Nezavisimost invariantnykh predlozenij, *Doklady Akad. Nauk SSSR*, 1984 No. 276 pp. 27–31
- KARP R. M.: Reducibility among combinatorial problems, in *Complexity of Computer Computations*, Miller and Thatcher eds., Plenum Press, New York 1972 pp. 85–103
- KARP R. M., LIPTON R. J.: Some connections between nonuniform and uniform complexity classes. In: *Proc. 12-th Annual ACM Symp. on Theory of Computing*, 1980, pp. 302–309
- KAUFMANN M.: A rather classless model, *Proc. Amer. Math. Soc.* Vol. 62, 1977 pp. 330–333
- KAUFMANN M.: On existence  $\Sigma_n$ -end extensions. In: *Logic Year 1979–80. The University of Connecticut* (Lect. Notes Math. 859), Springer-Verlag, 1981 pp. 92–103
- KAUFMANN M.: On expandability of models of arithmetic and set theory to models of weak second-order theories, *Fund. Math.* Vol. 122, 1984 pp. 57–60
- KAUFMANN M., SCHMERL J. H.: Saturation and simple extensions of models of Peano arithmetic, *Annals Pure Appl. Logic* Vol. 27, 1984 pp. 109–136
- KAUFMANN M., SCHMERL J. H.: Remarks on weak notions of saturation in models of Peano arithmetic, *Journ. Symb. Log.* Vol. 52, 1987 pp. 129–148
- KAYE R.: Characterizing some low complexity classes using weak theories of arithmetic, *Transfer Report*, Manchester University, 1985

- KAYE R.: Parameter free induction. In: Proc. of the 5th Easter conf. on model theory (Humboldt univ. Berlin), 1987
- KAYE R.: Diophantine and parameter-free induction (thesis), Manchester University, 1987
- KAYE R.: Axiomatizations and quantifier complexity. In: Proc. of the 6th Easter conf. on model theory (Humboldt Univ. Berlin), 1988, pp. 65–84
- KAYE R.: On functions provably  $E_1$  in open induction, 1985 (manuscript)
- KAYE R.: Parameter-free universal induction, Zeitschr. f. Math. Logik 35, 1989, pp. 443–456
- KAYE R.: Diophantine induction, Annals of Pure and Appl. Logic 46, 1990, pp. 1–40
- KAYE R.: Models of Peano arithmetic, Oxford Logic Guides, Oxford Univ. Press 1991, 292 pp.
- KAYE R.: Model-theoretic properties characterizing Peano arithmetic, Journ. Symb. Logic 56, 1991, pp. 949–963
- KAYE R.: On cofinal extensions of models of fragments of arithmetic, Notre Dame J. of Formal Logic 32, 1991, pp. 399–408
- KAYE R.: Open induction, Tennenbaum phenomena, and complexity theory. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 222–237
- KAYE R.: Using Herbrand-type theorems to separate strong fragments of arithmetic. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 238–246
- KAYE R., KOSSAK R., KOTLARSKI H.: Automorphisms of recursively saturated models of arithmetic, Annals of Pure and Appl. Logic 55, 1991, pp. 67–99
- KAYE R., PARIS J. B., DIMITRACOPOULOS C.: On parameter free induction schemas, Journ. of Symb. Logic 53, 1988, pp. 1082–1097
- KELLER J. P., RICHARD D.: Remarques sur les structures additives des modèles de l'arithmétique, Comptes Rendus, Sér. A Vol. 287, 1978 pp. 101–104
- KEMENY J. G.: Undecidable problems of elementary number theory, Math. Ann. Vol. 135, 1958 pp. 160–169
- KENT C. F.: The relation of A to prov 'A' in the Lindenbaum sentence algebra, Journ. Symb. Log. Vol. 38, 1973 pp. 295–298
- KENT C. F.: "Disorder" in lattices of binumerations, Comm. Math. Univ. Carol. Vol. 15, 1974 pp. 221–244
- KENT C. F.: Independence versus logical independence in the countable case. In: Logic Colloquium '73, North Holland: Amsterdam, 1975, pp. 399–408
- KETONEN J., SOLOVAY R. M.: Rapidly growing Ramsey functions, Ann. Math. Vol. 113, 1981 pp. 267–314
- KINO A.: On provably recursive functions and ordinal recursive functions, Journ. Math. Soc. Japan Vol. 20, 1968 pp. 456–476
- KIRBY L. A. S.: Initial segments of models of arithmetic. In: Dissertation, Manchester, 1977
- KIRBY L. A. S.: La méthode des indicatrices et le théorème d'incomplétude. In: Models of arithmetic (Sem, Univ. Paris VII, Paris, 1977) (French), Soc. Math. France, Paris, 1980 pp. 5–18
- KIRBY L. A. S.: Flipping properties in arithmetic, Journ. Symb. Log. Vol. 47, 1982 pp. 416–422
- KIRBY L. A. S.: Ultrafilters and types on models of arithmetic, Annals Pure Appl. Logic Vol. 27, 1984 pp. 215–252
- KIRBY L. A. S., MCALOON K., MURAWSKI R.: Indicators, recursive saturation and expandability, Fund. Math. Vol. 114, 1981 pp. 127–139
- KIRBY L. A. S., PARIS J. B.: Initial segments of models of Peano's axioms. In: Set Theory and Hierarchy Theory V. Proceedings of the 3rd Conference on Set Theory and Hierarchy Theory, Springer-Verlag, 1977 pp. 211–226

- KIRBY L. A. S., PARIS J. B.:  $\Sigma_n$  collection schemas in arithmetic. In: Logic Colloquium 77 (Stud Logic Found Math 96), North Holland: Amsterdam, 1978 pp. 199–209
- KIRBY L. A. S., PARIS J. B.: Accessible independence results for Peano arithmetic, Bull. London Math. Soc. Vol. 14, 1982 pp. 285–293
- KISS P.: Diophantine representation of generalized Fibonacci numbers, Elemente der Math. Vol. 34, 1979 pp. 129–132
- KLEENE S.: Recursive functions and predicates, Trans. Amer. Math. Soc. Vol. 53, 1943 pp. 41–73
- KLEENE S. C.: A symmetric form of Gödel's numbers, Indag. Math. Vol. 12, 1950 pp. 244–246
- KLEENE S. C.: Finite axiomatizability of theories in the predicate calculus using additional predicate symbols. Memoirs of the Amer. Math. Soc., 1951 pp. 27–66 (Russian translation in Matematika i logika v teorii vvedeniya, Nauka 1967, 237–284)
- KLEENE S. C.: On the forms of predicates in the theory of constructive ordinals I, Amer. Journ. of Math. vol. 66, 1944, pp. 41–58
- KLEENE S. C.: Introduction to metamathematics, North Holland, Amsterdam, 1952, 550 p.
- KLEENE S. C.: On the forms of predicates on the theory of constructive ordinals II, Amer. Journ. of Math. vol 77, 1955, pp. 405–428
- KLEENE S. C.: Mathematical logic, Wiley & Sons: New York, 1967, 398 p.
- KLINGEN N.: Zur Idealstruktur in Nichtstandardmodellen von Dedekindringen, Journ. Reine Angew. Math Vol. 274/275, 1975 pp. 38–60
- KNIGHT J. F.: Complete types and the natural numbers, Journ. Symb. Log. Vol. 38, 1973 pp. 413–415
- KNIGHT J. F.: Types omitted in uncountable models of arithmetic, Journ. Symb. Log. Vol. 40, 1975 pp. 317–320
- KNIGHT J. F.: Omitting types in set theory and arithmetic, Journ. Symb. Log. Vol. 41, 1976 pp. 25–32
- KNIGHT J. F.: Hanf numbers for omitting types over particular theories, Journ. Symb. Log. Vol. 41, 1976 pp. 583–588
- KNIGHT J. F.: Models of arithmetic and closed ideals, Journ. Symb. Log. Vol. 47, 1982 pp. 833
- KNIGHT J. F.: Additive structure in uncountable models for a fixed completion of P, Journ. Symb. Log. Vol. 48, 1983 pp. 623–628
- KNIGHT J. F.: Effective construction of models. In: Logic Colloquium '84 (Studies in Logic and the Foundations of Mathematics 120), North-Holland, 1986 pp. 105–119
- KNIGHT J. F., LACHLAN A. H., SOARE R. I.: Two theorems on degrees of models of true arithmetic, Journ. Symb. Log. Vol. 49, 1984 pp. 425–436
- KNIGHT J. F., NADEL M.: Expansions of models and Turing degrees, Journ. Symb. Log. Vol. 47, 1982 pp. 587
- KOCHEN S., Kripke S. A.: Nonstandard models of Peano arithmetic, Enseign. Math., Ser. 2 Vol. 28, 1982 pp. 211–231
- KÖNIG D.: Über eine Schlußweise aus dem Endlichen ins Unendliche, Acta litterarum ac scientiarum Regiae Universitatis Hungaricae Francisco-Josephinae, Sectio scientiarum mathematicarum vol. 3, 1927, pp. 121–130
- KOPPEL M.: Some decidable Diophantine problems: positive solution to a problem of Davis, Matiyasevič and Robinson, Proc. Amer. Math. Soc. Vol. 77, 1979 pp. 319–323
- KOSSAK R.: An application of definable types of Peano's arithmetic, Bull. Acad. Polon. Sci. Vol. 28, 1980 pp. 213–217
- KOSSAK R.: A certain class of models of Peano arithmetic, Journ. Symb. Log. Vol. 48, 1983 pp. 311–320
- KOSSAK R.:  $L_{\infty, \omega_1}$ -elementary equivalence of  $\omega_1$ -like models of PA, Fund. Math. Vol. 123, 1984 pp. 123–131

- KOSSAK R.: A note on satisfaction classes, *Notre Dame Journ. Formal Log.* Vol. 26, 1985 pp. 1–8
- KOSSAK R.: Recursively saturated  $\omega_1$ -like models of arithmetic, *Notre Dame Journ. Formal Log.* Vol. 26, 1985 pp. 413–422
- KOSSAK R.: Remarks on free sets, *Bull. Pol. Acad. Sci. Vol. 34*, 1986 pp. 117–122
- KOSSAK R.: Models with the  $\omega$  property, *Journ. Symb. Log.* Vol. 54, 1989 pp. 177–189
- KOSSAK R., KOTLARSKI H.: Results on automorphisms of recursively saturated models of PA, *Fund. Math.* Vol. 129, 1988 pp. 1–7
- KOSSAK R., PARIS J. B.: Subsets of models of arithmetic. In: *Open Days in Model Th. & Set Th.*; 1981 Jadwisin, 1981 pp. 159–174
- KOSOVSKY N. K.: Diophantine representation of the sequence of solutions to the Pell equation, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 20, 1971 pp. 28–35
- KOTLARSKI H.: On Skolem ultrapowers and their non-standard variant, *Zeitschr. Math. Log. Grundl. Math.* Vol. 26, 1980 pp. 227–236
- KOTLARSKI H.: On elementary cuts in models of arithmetic, *Bull. Acad. Polon. Sci. Vol. 29*, 1981 pp. 419–423
- KOTLARSKI H.: On confinal extensions of models of arithmetic, *Journ. Symb. Log.* Vol. 48, 1983 pp. 253–262
- KOTLARSKI H.: On elementary cuts in models of arithmetic, *Fund. Math.* Vol. 115, 1983 pp. 27–31
- KOTLARSKI H.: On elementary cuts in recursively saturated models of Peano arithmetic, *Fund. Math.* Vol. 120, 1984 pp. 205–222
- KOTLARSKI H.: Some remarks on initial segments in models of Peano arithmetic, *Journ. Symb. Log.* Vol. 49, 1984 pp. 955–960
- KOTLARSKI H.: Bounded induction and satisfaction classes. In: *Proceedings of the 3rd Easter Conference on Model Theory*, Humboldt-Univ. Berlin: Berlin, 1985 pp. 143–167
- KOTLARSKI H.: The recursively saturated part of models of Peano arithmetic, *Zeitschr. Math. Log. Grundl. Math.* Vol. 32, 1986 pp. 365–370
- KOTLARSKI H.: Bounded induction and satisfaction classes, *Zeitschr. Math. Log. Grundl. Math.* Vol. 32, 1986 pp. 531–544
- KOTLARSKI H.: On the end extension problem for  $\Delta_0$ -PA(S), *Zeitschr. f. Math. Logik* 35, 1989, pp. 391–397
- KOTLARSKI H., KRAJEWSKI S., LACHLAN A. H.: Construction of satisfaction classes for nonstandard models, *Canad Math Bull* Vol. 24, 1981 pp. 283–293
- KOTLARSKI H., RATAJCZYK Z.: A weak extension of bounded induction in the language with a satisfaction class, *Journ. Symb. Log.* Vol. 52, 1987 pp. 1070
- KOTLARSKI H., RATAJCZYK Z.: Inductive full satisfaction classes, *Annals Pure Appl. Logic* Vol. 47, 1990, pp. 199–223
- KRAJEWSKI S.: Predicative expansions of axiomatic theories, *Zeitschr. Math. Log. Grundl. Math.* Vol. 20, 1974 pp. 435–452
- KRAJEWSKI S.: Mutually inconsistent satisfaction classes, *Bull. Acad. Polon. Sci. Vol. 22*, 1974 pp. 983–987
- KRAJEWSKI S.: A remark on automorphisms and nonstandard properties, *Bull. Acad. Polon. Sci. Vol. 22*, 1974 pp. 989–991
- KRAJEWSKI S.: Non-standard satisfaction classes. In: *Set Theory and Hierarchy Theory. A Memorial Tribute to Andrzej Mostowski. Proceedings of the 2nd Conference on Set Theory and Hierarchy Theory (Lect. Notes. Math 537)*, Springer-Verlag, 1976 pp. 121–144
- KRAJEWSKI S.: A note on expansion of models of set theories. In: *Set Theory and Hierarchy Theory. Proceedings of the 1st Colloquium in Set Theory and Hierarchy Theory*, Politechnical University Wroclaw, 1977 pp. 63–67
- KRAJÍČEK J.: Generalizations of proofs. In: *Proc. 8-th Easter Conference on Model Theory*, Wendisch-Rietz, 1987 pp. 82–99

- KRAJÍČEK J.: A note on proofs of falsehood, Arch. Math. Log. Vol. 26, 1987 pp. 169–176
- KRAJÍČEK J.: Speed-up for propositional Frege systems via generalizations of proofs, Comm. Math. Univ. Carol. Vol. 30, 1989, pp. 137–140
- KRAJÍČEK J.: On the number of steps in proofs, Ann. Pure Appl. Logic, Vol. 41, 1989, pp. 153–178
- KRAJÍČEK J.: A theorem on uniform provability of schemes. In: Proc. 6-th Easter Conf. on Model Theory, Wendisch-Rietz, 1988 pp. 85–92
- KRAJÍČEK J.: Exponentiation and second order bounded arithmetic, Ann. Pure Appl. Logic, Vol. 48, 1990, pp. 261–276
- KRAJÍČEK J.: No counter-example interpretation and interactive computation. In: Logic from Computer Science, ed. Y. N. Moschovakis, Springer-Verlag 1992, pp. 287–293
- KRAJÍČEK J.: Fragments of Bounded Arithmetic and bounded query classes, Transactions AMS, to appear
- KRAJÍČEK J., PUDLÁK P.: The number of proof lines and the size of proofs in first order logic, Arch. Math. Log. Vol. 27, 1988 pp. 69–84
- KRAJÍČEK J., PUDLÁK P.: On the structure of initial segments of models of arithmetic, Arch. Math. Log. Vol. 28, 1989 pp. 91–98
- KRAJÍČEK J., PUDLÁK P.: Propositional provability and models of weak arithmetic. In: Proc. Computer Science Logic '89, (Lect. Notes Comp. Sci. 440), Springer-Verlag, 1990, pp. 193–210
- KRAJÍČEK J., PUDLÁK P.: Propositional proof systems, the consistency of first order theories and the complexity of computations, Journ. Symb. Log Vol. 54, 1989 pp. 1063–1079
- KRAJÍČEK J., PUDLÁK P.: Quantified propositional calculi and fragments of bounded arithmetic, Zeitschr. Math. Log. Grundl. Math Vol. 36, 1989 pp. 29–46
- KRAJÍČEK J., PUDLÁK P., TAKEUTI G.: Bounded Arithmetic and the Polynomial Hierarchy, Annals of Pure and Appl. Logic 52, pp. 143–154
- KRAJÍČEK J., TAKEUTI G.: On induction-free provability, Annals of Mathematics and Artificial Intelligence, (to appear)
- KRAJÍČEK J., TAKEUTI G.: On bounded  $\Sigma_1^1$  polynomial induction. In: Feasible Mathematics, Buss, Scott eds., Birkhäuser 1990, pp. 259–280
- KREISEL G.: A survey of proof theory II. In: Proceedings of the Second Scandinavian Logic Symposium, North Holland: Amsterdam pp. 109–170
- KREISEL G.: Informal rigour and completeness proofs. In: Proceedings of the International Colloquium in the Philosophy of Science Vol. 1, North-Holland: Amsterdam, 1967, pp. 138–186
- KREISEL G.: Note on arithmetic models for consistent formulae of the predicate calculus I, Fund. Math. Vol. 37, 1950 pp. 265–285
- KREISEL G.: On the interpretation of non-finitist proofs I, Journ. Symb. Logic Vol. 16, 1951 pp. 241–267
- KREISEL G.: On the concepts of completeness and interpretation of formal systems, Fund. Math. Vol. 39, 1952 pp. 103–127
- KREISEL G.: Some concepts concerning formal systems of number theory, Zeitschr. Math. Log. Grundl. Math. Vol. 57, 1952 pp. 1–12
- KREISEL G.: On the interpretation of non-finitist proofs II. Interpretation of number theory. Applications, Journ. Symb. Log. Vol. 17, 1952 pp. 43–58
- KREISEL G.: The diagonal method in formalized arithmetic, Brit. Journ. Phil. Sci. Vol. 3, 1953 pp. 364–373
- KREISEL G.: On a problem of Henkin's, Indag. Math. Vol. 15, 1953 pp. 405–406
- KREISEL G.: Note on arithmetic models for consistent formulae of the predicate calculus II. In: Actes du 11er Congrès International de Philosophie, North Holland: Amsterdam Vol. 14, 1953 pp. 39–49
- KREISEL G.: A variant to Hilbert's theory of the foundations of arithmetic, Br. J. Phil. Sci. Vol. 4, 1953 pp. 107–129

- KREISEL G.: Remark on complete interpretations by models, *Arch. Math. Log.* Vol. 2, 1954 pp. 4–9
- KREISEL G.: Models, translations and interpretations. In: *Mathematical Interpretation of Formal Systems*; 1954 Amsterdam (*Stud Logic Found Math* 10), North Holland, Amsterdam, 1955 pp. 26–50
- KREISEL G.: Gödel's interpretation of Heyting's arithmetic. In: *Summaries of Talks Presented at the Summer Institute for Symbolic Logic, Institute for Defense Analyses, Comm. Res. Division*, 1957 pp. 125–133
- KREISEL G.: On weak completeness of intuitionistic predicate logic, *Journ. Symb. Log.* Vol. 27, 1962 pp. 139–158
- KREISEL G.: Foundations of intuitionistic logic. In: *Logic, Methodology and Philosophy of Science*, Stanford, 1962, pp. 198–210
- KREISEL G.: Mathematical logic. In: *Lect. Modern Math.*, III, Wiley, New York, 1965, pp. 95–195
- KREISEL G.: A survey on proof theory, *Journ. Symb. Log.* Vol. 33, 1968 pp. 321–388
- KREISEL G.: Axiomatizations of nonstandard analysis that are conservative extensions of formal systems for classical standard analysis. In: *Applications of Model Theory to Algebra, Analysis and Probability*, Holt, Rinehart and Winston, 1969 pp. 93–106
- KREISEL G.: Which number theoretic problems can be solved in recursive progressions on  $\Pi_1^1$ -paths through O?, *Journ. Symb. Log.* Vol. 37, 1972 pp. 311–334
- KREISEL G.: Observations on a recent generalization of completeness theorems due to Schütte. In: *Proof Theory Symposium*, Kiel 1974 (Lect. Notes Math. 500), Springer-Verlag, 1975 pp. 164–181
- KREISEL G.: What have we learnt from Hilbert's second problem? In: *Mathematical Developments Arising From Hilbert's Problems*, Amer. Math. Soc.: Providence, 1976, pp. 93–130
- KREISEL G.: Wie die Beweistheorie zu ihren Ordinalzahlen kam und kommt, *Jber. d. Dt. Math.-Verein.* Vol. 78, 1977 pp. 177–223
- KREISEL G.: Finiteness theorems in arithmetic: an application of Herbrand's theorem for  $\Sigma_2$  formulas. In: *Proceedings of the Herbrand Symposium. Logic Colloquium '81* (*Stud Logic Found Math* 107), North Holland: Amsterdam, 1982 pp. 39–55
- KREISEL G., LEVY A.: Reflection principles and their use for establishing the complexity of axiomatic systems, *Zeitschr. Math. Log. Grundl. Math.* Vol. 14, 1968 pp. 97–142
- KREISEL G., MINC G. E. SIMPSON S. G.: The use of abstract languages in elementary mathematics: some pedagogic examples. In: *Logic Colloquium*, Springer-Verlag, 1975 pp. 38–131
- KREISEL G., SHOENFIELD J. R., WANG H.: Number theoretic concepts and recursive well-orderings, *Arch. Math. Log.* Vol. 5, 1959 pp. 42–64
- KREISEL G., TAKEUTI G.: Formally self-referential propositions in cut-free classical analysis and related systems. *Diss. Math.* Vol. 118, 1974 pp. 1–50
- KREISEL G., WANG H.: Some applications of formalized consistency proofs, *Fund. Math.* Vol. 42 (dod. 45), 1955 pp. 101n. (334)
- KRIAUCIUKAS V.: A Diophantine representation of perfect numbers, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 88, 1979 pp. 78–89
- KRIPKE S. A.: "Flexible" predicates of formal number theory, *Proc. Amer. Math. Soc.* Vol. 13, 1962 pp. 647–650
- KRIPKE S. A., POUR-EL M. B.: Deduction preserving recursive isomorphisms of theories, *Fund. Math.* Vol. 61, 1967 pp. 141–147
- KUČERA A.: Measure,  $\Pi_1^0$ -classes and complete extensions of PA. In: *Recursion Theory Week* (Lect. Notes Math. 1141), Springer-Verlag, 1985 pp. 245–259
- KUČERA A.: Alternative, priority-free constructions of some r. e. degrees and other results on degrees, *Journ. Symb. Log.* Vol. 52, 1987 pp. 1071

- KURATA R.: The reflection principle, transfinite induction, and the Paris-Harrington principle. In: Boolean-Algebra-Valued Analysis and Nonstandard Analysis, Kyoto Univ Res Inst Math Sci: Kyoto, 1981 pp. 1-14
- KURATA R.: Paris-Harrington theory and reflection principles, Saitama Math. J. Vol. 2, 1984 pp. 33-45
- KURATA R.: A simple proof for a statement which is equivalent to Harrington's principle. (abstract), Journ. Symb. Log. Vol. 50, 1985 pp. 268
- KURATA R.: Paris-Harrington theory and principles. (abstract), Journ. Symb. Log. Vol. 51, 1986 pp. 489
- KURATA R.: Paris-Harrington principles, reflection principles and transfinite induction up to  $\epsilon_0$ , Annals Pure Appl. Logic Vol. 31, 1986 pp. 237-256
- LACHLAN A. H.: Full satisfaction classes and recursive saturation, Canad. Math. Bull. Vol. 24, 1981 pp. 295-297
- LADNER R. E.: On the structure of polynomial time reducibility, Journ. of ACM Vol. 22, 1975 pp. 155-171
- LASCAR D.: Une indicatrice de type "Ramsey" pour l'arithmétique de Peano et la formule de Paris-Harrington. In: Models of arithmetic (Sem, Univ. Paris VII, Paris, 1977), Soc. Math. France, Paris, 1980 pp. 19-30
- VAN LEEUWEN J. (ED.): Handbook of Theoretical Computer Science, Vol. A - Algorithms and Complexity, North-Holland, 1990
- LEIVANT D.: On the proof theory of the modal logic for arithmetic provability, Journ. Symb. Log. Vol. 46, 1981 pp. 531-538
- LESAN H.: Models of arithmetic. Dissertation, Manchester, 1978
- LEVITZ H.: An ordered set of arithmetic functions representing the least epsilon-number, Zeitschr. Math. Log. Grundl. Math. Vol. 21, 1975 pp. 115-120
- LEVITZ H.: An initial segment of the set of polynomial functions with exponentiation, Alg. Universalis Vol. 7, 1977 pp. 133-136
- LEVITZ H.: An ordinal bound for the set of polynomials with exponentiation, Alg. Universalis Vol. 8, 1978 pp. 233-243
- LINDSTRÖM P.: Some results on relative interpretability, Phil. communications, red series, No. 7, Univ. of Goteborg, 1978
- LINDSTRÖM P.: Some results on interpretability. In: Proc. 5th Scand. Symp. (Jensen et al, ed.), Aalborg, 1979 pp. 329-361
- LINDSTRÖM P.: Notes on partially conservative sentences and interpretability, Phil. communications, red series, No. 13, Univ. of Goteborg, 1980
- LINDSTRÖM P.: More on partially conservative sentences and interpretability, Proc. Amer. Math. Soc. Vol. 91, 1984 pp. 436-443
- LINDSTRÖM P.: On certain lattices of degrees of interpretability, Notre Dame Journ. Formal Log. Vol. 25, 1984 pp. 127-140
- LINDSTRÖM P.: On faithful interpretability. In: Computation and proof theory, Proc. Logic Colloq, Aachen 1983, Part II, (Lect. Notes Math. 1104), Springer-Verlag, 1984 pp. 279-288
- LINDSTRÖM P.: On partially conservative sentences and interpretability, Proc. Amer. Math. Soc. Vol. 91, 1984 pp. 436-444
- LINDSTRÖM P.: Notes on formulas with prescribed properties in arithmetical theories, Philosophical Communications, red series No. 25, Univ. of Goteborg, 1984
- LINDSTRÖM P.: Provability and interpretability in theories containing arithmetic. In: Atti degli incontri di logica matematica, Vol. 2, Siena / Italia 1983/84, 1985 pp. 431-451
- LINDSTRÖM P.: Partially generic formulas in arithmetic, Notre Dame Journ. Formal Log. Vol. 29, 1988 pp. 185-192
- LIPSHITZ L.: Undecidable existential problems for addition and divisibility in algebraic number rings II, Proc. Amer. Math. Soc. Vol. 64, 1977 pp. 122-128
- LIPSHITZ L.: Undecidable existential problems for addition and divisibility in algebraic number rings, Trans. Amer. Math. Soc. Vol. 241, 1978 pp. 121-128

- LIPSHITZ L.: The Diophantine problem for addition and divisibility, *Trans. Amer. Math. Soc.* Vol. 235, 1978 pp. 271–284
- LIPSHITZ L.: Diophantine correct models of arithmetic. *Proc. Amer. Math. Soc.* Vol. 73, 1979 pp. 107–108
- LIPSHITZ L., NADEL M. E.: The additive structure of models of arithmetic, *Proc. Amer. Math. Soc.* Vol. 68, 1978 pp. 331–336
- LIPTON R. J.: On consistency of P=NP and fragments of arithmetic. In: *Fundamentals of Computation Theory – FCT'79*, Akademie Verlag: Berlin, 1979 pp. 269–278
- LOEB M. H.: Solution of a problem by Leon Henkin. In: *Proceedings of the International Congress of Mathematicians 1954*, North Holland, Amsterdam Vol. 2, 1954 pp. 405–406
- LOEB M. H.: Solution of a problem of Leon Henkin, *Journ. Symb. Log.* Vol. 20, 1955 pp. 115–118
- LOEB M. H., WAINER S. S.: Hierarchies of number-theoretic functions I, II, *Arch. Math. Log.* vol. 13, 1970, pp. 39–51, 97–113 (a correction on vol. 14, 1971, 198–199)
- LOEBL M.: Hercules and Hydra, a game on rooted finite trees, *Comm. Math. Univ. Carol.* Vol. 26, 1985 pp. 259–267
- LOPEZ-ESCOBAR E. G. K.: König's lemma, the  $\omega$ -rule and primitive recursive arithmetic, *Arch. Math. Log.* Vol. 25, 1985 pp. 67–74
- ŁOŚ J.: On the extending of models I, *Fund. Math.* vol. 42, 1955, 38–54
- MACDOWELL R., SPECKER E.: Modelle der Arithmetik. In: *Infinitistic Methods. Proceedings of the Symposium on Foundations of Mathematics*, PWN: Warsaw, 1961 pp. 257–263
- MACINTYRE A.: Ramsey quantifiers in arithmetic. In: *Model theory of algebra and arithmetic* (Proc. Conf, Karpacz, 1979) (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 186–210
- MACINTYRE A.: Nonstandard number theory. In: *Proceedings of the International Congress of Mathematicians*, Academia Scientiarum Fennica: Helsinki Vol. 1, 1980 pp. 253–262
- MACINTYRE A.: The laws of exponentiation. In: *Model theory and arithmetic* (Paris, 1979–1980) (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 185–197
- MACINTYRE A.: A theorem of Rabin in a general setting. *Bull. Soc. Math. Belg.*, Ser B Vol. 33, 1981 pp. 53–63
- MACINTYRE A.: Residue fields of models of  $P$ . In: *Proceedings of the 6th International Congres for Logic, Methodology and Philosophy of Science* (Stud Logic Found Math 104), North Holland: Amsterdam, 1982 pp. 193–206
- MACINTYRE A.: The strength of weak systems. In: *Schriftenreihe der Wittgenstein-Gesellschaft*, 13 Logic, Philosophy of Science and Epistemology, Wien, 1987 pp. 43–59
- MACINTYRE A., MARKER D.: Degrees of recursively saturated models, *Trans. Amer. Math. Soc.* Vol. 282, 1984 pp. 539–554
- MACINTYRE A., MARKER D.: Primes and their residue rings in models of open induction, *Annals of Pure and Appl. Log.* Vol. 43, 1989, pp. 57–77
- MACINTYRE A., SIMMONS H.: Gödel's diagonalization technique and related properties of theories. In: *Colloquium Mathematicum*, Academie Polonaise des Sciences, Inst Math: Warsaw Vol. 28, 1973 pp. 165–180, 329
- MACINTYRE A., SIMMONS H.: Algebraic properties of number theories, *Israel Journ. Math.* Vol. 22, 1975 pp. 7–27
- MAGARI R.: Meaning and truth in the Peano arithmetic, *Atti della Accademia Nazionale dei Lincei. Rendiconti. Classe di Science Fisiche, Matematiche e Naturali. Serie VIII* Vol. 54, 1973 pp. 902–903
- MAGARI R.: Significato e verità nell' aritmetica peaniana, *Annali di Mat. pure ed applicate* Vol. 103, 1974 pp. 343–368
- MAGARI R.: Sur certe teorie non enumerabili, *Annali di Mat. pure ed applicate* Vol. 103, 1974 pp. 119–152

- MAGARI R.: The diagonalizable algebras (The algebraization of the theories which express Theor. II), *Boll Unione Mat Ital* (IV Ser.) Vol. 12, 1975 pp. 117–125
- MAGARI R.: Representation and duality theory for diagonalizable algebras (The algebraization of theories which express Theor. IV.), *Studia Logica* Vol. 34, 1975 pp. 305–313
- MAGARI R.: Problemi aperti sulle algebre diagonali, *Rend. Sem. Mat. Fis. Milano* Vol. 44, 1975 pp. 75–90
- MAGARI R.: Metodi algebrici in teoria della dimostrazione, *Boll. Un. Math. Ital.* Vol. 12, 1975 pp. 252–261
- MAGARI R.: On the autological character of diagonalizable algebras, *Studia Logica* Vol. 35, 1976 pp. 327–333
- MAGARI R.: Modal diagonalizable algebras, *Boll. Un. Math. Ital. B* Vol. 15, 1978 pp. 303–320
- MALYAUKE N. K.: A constructive proof of the replaceability of the induction axiom in the free variable multiplicative arithmetic, *Litovsk. Mat. Sb.* Vol. 23, 1983 pp. 78–93
- MALYAUKE N. K.: On the question of the relation between some weak inductions, *Mat. Logika Primen.* Vol. 3, 1983 pp. 34–37
- MANDERS K. L.: Computational complexity of decision problems in elementary number theory. In: *Model Theory of Algebra and Arithmetic* (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 211–227
- MANDERS K. L., ADLEMAN L.: NP-complete decision problems for binary quadratics, *Journ. Comp. Sys. Sci.* Vol. 15, 1978 pp. 168–184
- MANEVITZ L. M.: Internal end-extensions of Peano arithmetic and a problem of Gaifman, *Journ. London Math. Soc.*, Ser 2 Vol. 13, 1976 pp. 80–82
- MANEVITZ L. M., STAVI J.:  $\Delta_2^0$  operators and alternating sentences in arithmetic, *Journ. Symb. Log.* Vol. 45, 1980 pp. 144–154
- MAR'TJANOV V. I.: Universal extended theories of integers, *Algebra i Logika* Vol. 16, 1977 pp. 588–602
- MARGENSTERN M.: Le théorème de Matiyasevitch et résultats connexes. In: *Model Theory and Arithmetic* Comptes Rendus d'une Action Thématique Programmée du C. N. R. S. sur la Théorie des Modèles et l'Arithmétique, Paris, France, 1979/80 (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 198–241
- MARKER D.: Degrees of models of true arithmetic. In: *Proceedings of the Herbrand Symposium Logic Colloquium '81* (Stud Logic Found Math 107), North Holland: Amsterdam, 1982 pp. 233–242
- MATIYASEVIČ YU.: Arithmetic representations of powers. *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 8, 1968 pp. 159–165
- MATIYASEVIČ YU.: Two reductions of Hilbert's tenth problem, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 8, 1968 pp. 144–158
- MATIYASEVIČ YU.: The connection between Hilbert's tenth problem and systems of equations between words and lengths, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 8, 1968 pp. 132–144
- MATIYASEVIČ YU.: The Diophantineness of enumerable sets, *Doklady Akad. Nauk SSSR* Vol. 191, 1970 pp. 279–282
- MATIYASEVIČ YU.: Diophantine representation of enumerable predicates, *Izv. AN SSSR* Vol. 35, 1971 pp. 3–30
- MATIYASEVIČ YU.: Diophantine representation of the set of prime numbers, *Doklady Akad. Nauk SSSR* Vol. 196, 1971 pp. 770–773
- MATIYASEVIČ YU.: Diophantine representation of recursively enumerable predicates. In: *Actes du Congrès International des Mathématiciens 1970*, Gauthier Villars: Paris, 1971, pp. 235–238
- MATIYASEVIČ YU.: Diophantine representation of recursively enumerable predicates. In: *Proceedings of the Second Scandinavian Logic Symposium*, North-Holland: Amsterdam, 1971, pp. 171–177

- MATIYASEVIČ YU.: Arithmetical representations of enumerable sets with a small number of quantifiers, Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova Vol. 32, 1972 pp. 77–84
- MATIYASEVIČ YU.: Diophantine sets, Uspekhi Matem. Nauk. Vol. 27, 1972 pp. 185–222
- MATIYASEVIČ YU.: On recursive unsolvability of Hilbert's tenth problem. In: Logic, Methodology and Philosophy of Science IV, North-Holland: Amsterdam, 1973, pp. 89–110
- MATIYASEVIČ YU.: The existence of non-effectivizable bounds in the theory of exponential Diophantine equations, Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova Vol. 40, 1974 pp. 77–93
- MATIYASEVIČ YU.: A new proof of the theorem on exponential Diophantine representation of recursively enumerable predicates, Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova Vol. 60, 1976 pp. 75–92
- MATIYASEVIČ YU.: Primes are non-negative values of a polynomial in 10 variables, Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova Vol. 68, 1977 pp. 62–82
- MATIYASEVIČ YU.: Algorithmic undecidability of exponential Diophantine equations in three unknowns. In: Studies in the Theory of Algorithms and Mathematical Logic, Moscow, 1979 pp. 69–78, 133
- MATIYASEVIČ YU., ROBINSON J.: Two universal three-quantifier representations of enumerable sets. In: Theory of Algorithms and Mathematical Logic, Comp. Center AN SSSR: Moscow, 1974, pp. 112–123, 216
- MATIYASEVIČ YU., ROBINSON J.: Reduction of an arbitrary Diophantine equation to one in 13 unknowns, Acta Arithmetica Vol. 27, 1975 pp. 521–553
- MCALEOON K.: Applications alternees de theorèmes d'incomplétude et des theorèmes de complétude, C. R. Acad. Sci. Paris (Ser A-B) Vol. 280, 1975 pp. A849–A852
- MCALEOON K.: Formules de Rosser pour ZF, C. R. Acad. Sci. Vol. 281, 1975 pp. A669–A672
- MCALEOON K.: Consistency statements and number theories. In: Colloq. int. de logique, CNRS, Paris, 1977 pp. 199–207
- MCALEOON K.: Completeness theorems, incompleteness theorems and models of arithmetic, Trans. Amer. Math. Soc. Vol. 239, 1978 pp. 253–277
- MCALEOON K.: Diagonal methods and strong cuts in models of arithmetic. In: Logic colloquium '77, Proc. Wroclaw 1977, Stud. Logic Found. Math. Vol. 96, 1978 pp. 171–181
- MCALEOON K.: Formes combinatoires du théorème d'incomplétude (d'après J. Paris et d'autres). In: Séminaire Bourbaki vol. 1977/1978 Exposés 507–524, Springer-Verlag, 1979, pp. 263–276
- MCALEOON K.: Progressions transfinies de théories axiomatiques, formes combinatoires du théorème d'incomplétude et fonctions récursives à croissance rapide. In: Models of arithmetic (Sem. Univ. Paris VII, Paris, 1977), Soc. Math. France, Paris, 1980 pp. 41–58
- MCALEOON K.: Les rapports entre la méthode des indicatrices et la méthode de Gödel pour obtenir des résultats d'indépendance. In: Models of arithmetic (Sem. Univ. Paris VII, Paris, 1977), Soc. Math. France, Paris, 1980 pp. 31–39
- MCALEOON K.: On the complexity of models of arithmetic. Journ. Symb. Log. Vol. 47, 1982 pp. 403–415
- MCALEOON K.: Paris–Harrington incompleteness and progressions of theories. In: Recursion theory (Ithaca, N. Y., 1982), Amer. Math. Soc., Providence, RI, 1985 pp. 447–460
- MCALEOON K.: Models of arithmetic and complexity theory. In: Studies in Complexity Theory, Wiley, 1986 pp. 119–221
- MCALEOON K. (ED): Modèles de l'arithmétique, Soc. Math. France: Paris, 1980, 155 p.
- MCALEOON K., RESSAYRE J. P.: Les méthodes de Kirby-Paris et la théorie des ensembles. In: Model Theory and Arithmetic. Comptes Rendus d'une Action Thématische Programmée du CNRS sur la théorie des Modèles et l'Arithmétique. (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 154–184

- MENDELSON E.: On non-standard models for number theory. In: *Essays on the Foundations of Mathematics: Dedicated to A. A. Fraenkel on His 70th Anniversary*, Magnes Pr: Jerusalem, 1961 pp. 259–268
- MENDELSON E.: Introduction to mathematical logic. D. van Nostrand Comp. Inc., Princeton 1964, 300 pp.
- MESCHKOWSKI H.: Problemgeschichte der Mathematik I–III Bibl. Inst. Mannheim, 1981
- MEYER A. R.: Weak monadic second order theory of successor is not elementary-recursive. In: *Logic Colloquium, Symposium on Logic Held at Boston, 1972–73* (Lect. Notes Math. 453), Springer-Verlag, 1973 pp. 132–154
- MICHEL P.: Borne supérieure de la complexité de  $N$  muni de la relation et divisibilité. In: *Model Theory and Arithmetic* (Lect. Notes Math. 890), Springer-Verlag 1981 pp. 242
- MIJAJLOVIĆ Z.: Submodels and definable points in models of Peano arithmetics, *Notre Dame Journ. Formal Log.* Vol. 24, 1983 pp. 417–425
- MILLER C. F.: Some connections between Hilbert's 10th problem and the theory of groups. In: *Word Problems*, North-Holland: Amsterdam, 1973
- MILLS G.: Extensions of models of Peano arithmetic. Dissertation, Berkeley, 1977
- MILLS G.: A model of Peano arithmetic with no elementary end extension, *Journ. Symb. Log.* Vol. 43, 1978 pp. 563–567
- MILLS G.: Substructure lattices of models of arithmetic, *Ann. Math. Logic* Vol. 16, 1979 pp. 145–180
- MILLS G.: A tree analysis of unprovable combinatorial statements. In: *Model theory of algebra and arithmetic* (Proc. Conf. Karpacz, 1979) (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 248–311
- MILLS G., PARIS J. B.: Closure properties of countable nonstandard integers, *Fund. Math.* Vol. 103, 1979 pp. 205–215
- MILLS G., PARIS J. B.: Regularity in models of arithmetic, *Journ. Symb. Log.* Vol. 49, 1984 pp. 272–280
- MINC G. E.: Príloženie teoremy Herbranda. In: *Matematičeskaja teoria logičeskogo vývoda*, Nauka: Moscow, 1967 pp. 311–350
- MINC G. E.: Exact estimate of the provability of transfinite induction in initial parts of arithmetic, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 20, 1971 pp. 134–144
- MINC G. E.: Quantifier-free and one-quantifier systems, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 20, 1971 pp. 115–133
- MINC G. E.: Finite investigations of infinite derivations, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 49, 1975 pp. 67–122
- MINC G. E.: What can be done in PRA, *Zap. naučn. sem. Leningr. otdel. Mat. in-ta V. A. Steklova* Vol. 60, 1976 pp. 93–102
- MISERCQUE D.: Sur le treillis des  $\forall_1$ -formules fermées de l'arithmétique de Peano, *Compte Rendus, Serie A* Vol. 290, 1980 pp. 571–573
- MISERCQUE D.: Solutions de deux problèmes posés par H. Simmons. In: *Proceedings of the Model Theory Meeting* (Univ. Brussels, Brussels/Univ. Mons, Mons, 1980), *Bull. Soc. Math. Belg. Ser. B* Vol. 33, 1981 pp. 65–72
- MISERCQUE D.: Answer to a problem of D. Guaspari. In: *Proceedings of the International Conference "Open Days in Model Theory and Set Theory"* (Jadwisin), 1981 pp. 181–184
- MISERCQUE D.: The nonhomogeneity of the  $E$ -tree – answer to a problem raised by D. Jensen and A. Ehrenfeucht, *Proc. Amer. Math. Soc.* Vol. 84, 1982 pp. 573–575
- MIYATAKE T.: On the length of proofs in formal systems, *Tsukuba Journ. Math.* Vol. 4, 1980 pp. 115–125
- MIYATAKE T.: On the length of proofs in a formal system of recursive arithmetic. In: *Logic Symposia Hakone 1979, 1980* (Lect. Notes Math. 891), Springer-Verlag, 1981 pp. 81–108
- MLČEK J.: A representation of models of Peano arithmetic, *Comm. Math. Univ. Carol.* Vol. 14, 1973 pp. 553–558

- MLČEK J.: Twin prime problem in an arithmetic without induction, *Comm. Math. Univ. Carol.* Vol. 17, 1976 pp. 543–555
- MLČEK J.: End-extensions of countable structures and the induction schema, *Comm. Math. Univ. Carol.* Vol. 19, 1978 pp. 291–308
- MLČEK J.: A note on confinal extensions and segments, *Comm. Math. Univ. Carol.* Vol. 19, 1978 pp. 727–742
- MONTAGNA F.: For every  $n$ , the  $n$ -freely generated algebra is not functionally free in the equational class of diagonalizable algebras (the algebraization of theories which express Theor. V), *Studia Logica* Vol. 34, 1975 pp. 315–319
- MONTAGNA F.: On the algebraization of Feferman's predicate, *Studia Logica* Vol. 37, 1978 pp. 221–236
- MONTAGNA F.: On the algebraization of Feferman's predicate, *Studia Logica* Vol. 37, 1978 pp. 221–236
- MONTAGNA F.: On the formulas of Peano arithmetic which are provably closed under modus ponens, *Boll Unione Mat Ital* Vol. 16, 1979 pp. 196–211
- MONTAGNA F.: On the diagonalizable algebra of Peano arithmetic, *Boll. Un. Math. Ital.* Vol. 16-B, 1979 pp. 795–812
- MONTAGNA F.: On the diagonalizable algebra of Peano arithmetic, *Bulletino U. M. I.* Vol. 16-B, 1979 pp. 795–812
- MONTAGNA F.: Interpretations of the first-order theory of diagonalizable algebras in Peano arithmetic, *Studia Logica* Vol. 39, 1980 pp. 347–354
- MONTAGNA F.: The predicate modal logic of provability. *Notre Dame Journ. Formal Log.* Vol. 25, 1984 pp. 179–192
- MONTAGNA F.: A completeness result for fixed-point algebras, *Zeitschr. Math. Log. Grundl. Math.* Vol. 30, 1984 pp. 525–532
- MONTAGNA F.: Provability in finite subtheories of PA and relative interpretability: a modal investigation, *Journ. Symb. Log.* Vol. 52, 1987 pp. 494–511
- MONTAGNA F.: Iterated extensional Rosser's points and hyperhyperdiagonalizable algebras, *Zeitschr. Math. Log. Grundl. Math.* Vol. 33, 1987 pp. 293–303
- MONTAGNA F., SOMMARUGE G.: Rosser and Mostowski sentences, *Arch. Math. Log.* Vol. 27, 1988 pp. 115–133
- MONTAGNA F., SORBI A.: Universal recursion theoretic properties of r. e. preordered structures, *Journ. Symb. Log.* Vol. 50, 1985 pp. 397–406
- MONTAGUE R.: Non-finite axiomatizability. In: *Summaries of Talks Presented at the summer Institute for Symbolic Logic, Institute for Defense Analyses, Comm. Res. Division*, 1957 pp. 256–259
- MONTAGUE R.: Two theorems on relative interpretability. In: *Summer Institut of Symbolic Logic, Cornell Univ*, 1957 pp. 263–264
- MONTAGUE R.: Semantical closure and non-finite axiomatizability I. In: *Infinitistic Methods*, Pergamon Press: London, 1961 pp. 45–69
- MONTAGUE R.: Theories incomparable with respect to relative interpretability, *Journ. Symb. Log.* Vol. 27, 1962 pp. 195–211
- MONTAGUE R.: Syntactical treatments of modality, with corollaries on reflexion principles and finite axiomatizability. *Acta Philos Fenn* Vol. 16, 1963 pp. 153–167
- MONTAGUE R.: Interpretability in terms of models, *Indagationes Mathematicae* Vol. 27, 1965 pp. 467–476
- MONTAGUE R., TARSKI A.: Independent recursive axiomatizability. In: *Summer Institut of Symbolic Logic, Cornell Univ*, 1957 pp. 270
- MORGENSEN C.: On generalized quantifiers in arithmetic, *Journ. Symb. Log.* Vol. 47, 1982 pp. 187–190
- MORTENSEN C.: Inconsistent nonstandard arithmetic, *Journ. Symb. Log.* Vol. 52, 1987 pp. 512–518
- MORTENSEN C.: Inconsistent number systems, *Notre Dame Journ. Formal Log.* Vol. 29, 1988 pp. 45–60

- MOSTOWSKI A.: Bemerkungen zum Begriff der inhaltlichen Widerspruchsfreiheit, *Journ. Symb. Log.* Vol. 4, 1939 pp. 113–114
- MOSTOWSKI A.: On definable sets of positive integers, *Fund. Math.* Vol. 34, 1947 pp. 81–112
- MOSTOWSKI A.: An undecidable arithmetical statement, *Fund. Math.* Vol. 36, 1949 pp. 143–164
- MOSTOWSKI A.: On models of axiomatic systems, *Fund. Math.* Vol. 39, 1952 pp. 133–158
- MOSTOWSKI A.: Sentences undecidable in formalized arithmetic. An exposition of the theory of Kurt Gödel, North Holland: Amsterdam, 1952, 117 p.
- MOSTOWSKI A.: On direct products of theories, *Journ. Symb. Log.* Vol. 17, 1952 pp. 1–31
- MOSTOWSKI A.: On a system of axioms which has no recursively enumerable model, *Fund. Math.* Vol. 40, 1953 pp. 56–61
- MOSTOWSKI A.: On recursive models of formalised arithmetic, *Bull. Acad. Polon. Sci.* Vol. 5, 1957 pp. 705–710
- MOSTOWSKI A.: On various degrees of constructivism. In: Heyting (ed.), *Constructivism in mathematics*, North-Holland Publ. Comp. 1959, pp. 178–194
- MOSTOWSKI A.: A generalization of the incompleteness theorem, *Fund. Math.* Vol. 49, 1961 pp. 205–232
- MOSTOWSKI A.: Representability of sets in formal systems. In: *Recursive Function Theory*, Amer. Math. Soc.: Providence, 1962 pp. 29–48
- MOSTOWSKI A., ROBINSON R. M., TARSKI A.: Undecidability and essential undecidability in arithmetic. In: *Undecidable Theories (Stud Logic Found Math)*, North Holland: Amsterdam, 1953 pp. 39–74
- MÜLLER G. H.: Über die unendliche Induktion. In: *Infinitistic Methods. Proceedings of the Symposium on Foundations of Mathematics*, PWN: Warsaw, Pergamon Pr: Oxford, 1961 pp. 75–95
- MÜLLER G. H.: Nicht-Standardmodelle der Zahlentheorie. *Zeitschr. Math. Log. Grundl. Math.* Vol. 77, 1961 pp. 414–438
- MÜLLER G. H. (ED.):  $\Omega$ -bibliography of mathematical logic, vols I–VI, Springer-Verlag, 1987
- MUNDICI D.: Natural limitations of decision procedures for arithmetic with bounded quantifiers, *Arch. Math. Log.* Vol. 23, 1983 pp. 37–54
- MURAWSKI R.: Expandability of models for elementary arithmetic, *Komunikaty i Rozprawy Inst: Poznań*, 1976, 26 p.
- MURAWSKI R.: On expandability of models of Peano arithmetic. I, II, *Studia Logica* Vol. 35, 1976 pp. 409–431
- MURAWSKI R.: On expandability of models of Peano arithmetic. III, *Studia Logica* Vol. 36, 1977 pp. 181–188
- MURAWSKI R.: Indicator, satisfaction classes and expandability, *Komunikaty i Rozprawy Inst: Poznań*, 1978, 17 p.
- MURAWSKI R.: Indicators and the structure of expansions, *Komunikaty i Rozprawy Inst: Poznań*, 1979, 18 p.
- MURAWSKI R.: Some remarks on the structure of expansions, *Zeitschr. Math. Log. Grundl. Math.* Vol. 26, 1980 pp. 537–546
- MURAWSKI R.: Incompleteness of  $\Sigma_n^0$  definable theories via indicators, *Funct. Approx. Comment. Math.* Vol. 11, 1981 pp. 57–63
- MURAWSKI R.: A note on inner interpretations of models of Peano arithmetic, *Rep. Math. Logic* Vol. 13, 1981 pp. 53–57
- MURAWSKI R.: Some more remarks on expandability of initial segments. In: *Proceedings of the International Conference “Open Days in Model Theory and Set Theory”*, 1981 pp. 221–230
- MURAWSKI R.: A simple remark on satisfaction classes, indiscernibles and recursive saturation, *Fct Approximatio, Comment Math.* Poznań Vol. 11, 1981 pp. 149–151

- MURAWSKI R.: A contribution to nonstandard teratology. In: Models and sets, Proc. Logic Colloq, Aachen 1983, Part I, (Lect. Notes Math. 1103), Springer-Verlag, 1984 pp. 379–388
- MURAWSKI R.: Expandibility of models of arithmetic. In: Frege conference, Proc. Int. Conf, Schwerin / Ger. 1984, Math. Res. 20, 1984 pp. 87–93
- MURAWSKI R.: Trace expansions of initial segments, Zeitschr. Math. Log. Grundl. Math. Vol. 30, 1984 pp. 471–476
- MURAWSKI R.: Giuseppe Peano-pioneer and promoter of symbolic logic. In: Komunikaty i Rozprawy, Univ im. A. Mickiewicza, Inst. Matematyki, 1985 pp. 21
- MURAWSKI R.: On expansions of substructures. (abstract), Journ. Symb. Log. Vol. 51, 1986 pp. 493
- MURAWSKI R.: Some more remarks on expandability of initial segments, Zeitschr. Math. Log. Grundl. Math. Vol. 32, 1986 pp. 445–450
- MURAWSKI R.: Pointwise definable substructures of models of Peano arithmetic, Notre Dame Journ. Formal Log. Vol. 29, 1988 pp. 295–308
- MURAWSKI R.: Definable sets and expansions of models of Peano arithmetic, Arch. Math. Log. Vol. 27, 1988 pp. 21–33
- MYCIELSKI J.: The definition of arithmetic operations in the Ackermann model, Algebra i Logika Vol. 3/5–6, 1964 pp. 64–65
- MYCIELSKI J.: A lattice of interpretability types of theories, Journ. Symb. Log. Vol. 42, 1977 pp. 297–305
- MYCIELSKI J.: Locally finite theories, Journ. Symb. Log. Vol. 51, 1986 pp. 59–62
- MYCIELSKI J.: Finitistic consistency proofs, Univ. of Colorado, preprint, 1982
- MYCIELSKI J.: The meaning of pure mathematics, Journ. Phil. Log., Vol. 18, 1989, pp. 315–320
- MYCIELSKI J., PUDLÁK P., STERN A. S.: A lattice of chapters of mathematics, Memoirs Amer. Math. Soc. Vol. 84, 1990, 70 pp.
- MYHILL J. R.: A system which can define its own truth. Fund. Math. Vol. 37, 1950 pp. 190–192
- MYHILL J. R.: An absolutely independent set of  $\Sigma_1^0$  sentences, Zeitschr. Math. Log. Grundl. Math. Vol. 18, 1972 pp. 107–109
- NADEL M. E.: On a problem of MacDowell and Specker, Journ. Symb. Log. Vol. 45, 1980 pp. 612–622
- NADEL M. E.: The completeness of Peano multiplication. Israel Journ. Math. Vol. 39, 1981 pp. 225–233
- NEGRI M.: An application of recursive saturation, Boll. Un. Mat. Ital. A (6) Vol. 3, 1984 pp. 449–451
- NEGRI M.: On the non finite axiomatizability of P. In: Atti degli incontri di logica matematica, Vol. 2, Siena / Italia 1983/84, 1985 pp. 621–626
- NELSON E.: Predicative arithmetic. Mathematical Notes, Princeton Univ. Press, 1986, 189 p.
- NELSON G. C.: A further restricted  $\omega$ -rule, Colloq. Math. Vol. 23, 1971 pp. 1–3
- NEPOMNJAŠČIJ V. A.: Rudimentary predicates and Turing calculations, Dokl. Akad. Nauk SSSR, Tom 195, 1970; Soviet Math. Dokl. Vol. 11, No. 6, 1970 pp. 1462–1465
- O'DONNELL M.: A programming language theorem which is independent of Peano arithmetic. In: A. C. M. Symp, 1979 pp. 176–188
- OKADA M.: A simple relationship between Buchholz's new system of ordinal notations and Takeuti's system of ordinal diagrams, Journ. Symb. Log. Vol. 52, 1987 pp. 577–581
- ONO H.: Reflection principles in fragments of Peano arithmetic, Zeitschr. Math. Log. Grundl. Math. Vol. 33, 1987 pp. 317–333
- ONO H., KADOTA N.: Provably recursive functions in fragments of Peano arithmetic. (abstract), Journ. Symb. Log. Vol. 51, 1986 pp. 494

- OREVKOV V. P.: Lower bounds to derivations in arithmetic via complexity of the terms involved in derivations, Russian, Doklady Akad. Nauk SSSR, Vol. 294, 1987, pp. 784–787
- OREVKOV V. P.: Reconstruction of a proof by its analysis, Russian, Doklady Akad. Nauk SSSR Vol. 293, 1987 pp. 313–316
- OREY S.: On  $\omega$ -consistency and related properties, Journ. Symb. Log. Vol. 21, 1956 pp. 246–252
- OREY S.: Relative interpretations, Journ. Symb. Log. Vol. 24, 1959 pp. 281–282
- OREY S.: Relative interpretations, Zeitschr. Math. Log. Grundl. Math. Vol. 7, 1961 pp. 146–153
- PABION J. F.: L'axiomatisation de la syntaxe et le second théorème de Gödel, Publ. Dep. Math. Lyon Vol. 11, 1974 pp. 27–87
- PABION J. F.: Saturation en arithmétique et en analyse, Bull. Soc. Math. Belg. Ser B Vol. 33, 1981 pp. 73–82
- PABION J. F.: Saturated models of Peano arithmetic, Journ. Symb. Log. Vol. 47, 1982 pp. 625–637
- PABION J. F., RICHARD D.: Synonymy and re-interpretation for some sublanguages of Peano arithmetic. In: Proceedings of the International Conference “Open Days in Model Theory and Set Theory”, 1981 pp. 231–236
- PALÚCH S.: The lattices of numerations of theories containing Peano's arithmetic, Comm. Math. Univ. Carol. Vol. 14, 1973 pp. 339–359
- PAOLA DI R. A.: On sets represented by the same formula in distinct consistent axiomatizable Rosser theories, Pac. Journ. Math. Vol. 18, 1966 pp. 455–456
- PAOLA DI R. A.: Pseudo-complements and ordinal logics based on consistency statements, Journ. Symb. Log. Vol. 31, 1966 pp. 359–364
- PAOLA DI R. A.: Some properties of pseudo-complements of recursively enumerable sets, Trans. Amer. Math. Soc. Vol. 121, 1966 pp. 296–308
- PAOLA DI R. A.: Some theorems on extensions of arithmetic, Journ. Symb. Log. Vol. 32, 1967 pp. 180–189
- PAOLA DI R. A.: A note on diminishing the undecidable region of a recursively enumerable set, Duke Math. Journ. Vol. 35, 1968 pp. 399–406
- PAOLA DI R. A.: A theorem on shortening the length of proof in formal systems of arithmetic, Journ. Symb. Log. Vol. 40, 1975 pp. 398–400
- PAOLA DI R. A.: A uniformly, extremely nonextensional formula of arithmetic with many undecidable fixed points in many theories, Proc. Amer. Math. Soc. Vol. 92, 1984 pp. 291–297
- PAPPINGHAUS P.: A version of the  $\Sigma_1$  principle for CFA provable in PRA, Arch. Math. Log. Vol. 20, 1980 pp. 27–40
- PARIKH R.: Existence and feasibility in arithmetic, Journ. Symb. Log. Vol. 36, 1971 pp. 494–508
- PARIKH R.: Some results on the length of proofs, Trans. Amer. Math. Soc. Vol. 177, 1973 pp. 29–36
- PARIS J. B.: On models of arithmetic. In: Conference on Mathematical Logic – London '70 (Lect. Notes Math. 255), Springer-Verlag, 1972 pp. 251–280
- PARIS J. B.: Models of arithmetic and the 1-3-1 lattice, Fund. Math. Vol. 95, 1977 pp. 195–199
- PARIS J. B.: Note on an induction axiom, Journ. Symb. Log. Vol. 43, 1978 pp. 113–117
- PARIS J. B.: Some independence results for Peano arithmetic, Journ. Symb. Log. Vol. 43, 1978 pp. 725–731
- PARIS J. B.: A hierarchy of cuts in models of arithmetic. In: Model theory of algebra and arithmetic, (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 312–337
- PARIS J. B.: Some conservation results for fragments of arithmetic. In: Model theory of algebra and arithmetic, (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 251–262

- PARIS J. B.: O strukture modelu omezené  $E_1$  indukce (On the structure of models of bounded  $E_1$ -induction), Časopis pěst. mat. Vol. 109, 1984 pp. 372–379
- PARIS J. B., DIMITRACOPOULOS C.: Truth definitions for  $\Delta_0$  formulae. In: Logic and algorithmic, L'enseignement Mathematique No 30, Geneve, 1982 pp. 318–329
- PARIS J. B., DIMITRACOPOULOS C.: A note on the undefinability of cuts, Journ. Symb. Log. Vol. 48, 1983 pp. 564–569
- PARIS J. B., HARRINGTON L.: A mathematical incompleteness in Peano arithmetic, Handbook of Mathematical Logic, North-Holland P. C, 1977 pp. 1133–1142
- PARIS J. B., KIRBY L. A. S.:  $\Sigma_n$ -collection schema in arithmetic. In: Logic Colloquium 1977 (Studies in Logic and the Foundations of Mathematic 96), North-Holland P. C, 1978 pp. 199–209
- PARIS J. B., MILLS G.: Closure properties of countable non-standard integers, Fund. Math. Vol. 103, 1979 pp. 205–215
- PARIS J. B., WILKIE A. J.:  $\Delta_0$  sets and induction. In: Proceedings of the Jadwisin Logic Conference, Poland, Leeds University Press, 1981 pp. 237–248
- PARIS J. B., WILKIE A. J.: Models of arithmetic and the rudimentary sets, Bull Soc Math Belg, Ser B Vol. 33, 1981 pp. 157–169
- PARIS J. B., WILKIE A. J.: Some results on bounded induction. In: Proceedings of the 2nd Easter Conference on Model Theory, Humboldt-Univ. Berlin: Berlin, 1984 pp. 223–228
- PARIS J. B., WILKIE A. J.: Counting problems in bounded arithmetic. In: Methods in mathematical logic, Proc. 6th Latin Amer. Symp, Caracas / Venez. 1983, (Lect. Notes Math. 1130), Springer-Verlag, 1985 pp. 317–340
- PARIS J. B., WILKIE A. J.: Counting  $\Delta_0$  sets, Fund. Math. Vol. 127, 1987 pp. 67–76
- PARIS J. B., WILKIE A. J.:  $\Delta_0$  approximations to the counting functionals, preprint
- PARIS J. B., WILKIE A. J.: On the existence of end extensions of models of bounded induction. In: Logic, Methodology and Philosophy of Science VIII, 1983, North-Holland, to appear
- PARIS J. B., WILKIE A. J., WOODS A. R.: Provability of the  $\Delta_0$ -PHP and the existence of infinitely many primes, Journ. Symb. Log. Vol. 53, 1988 pp. 1235–1244
- PARLAMENTO F.: Binumerability in a sequence of theories, Rend. Sem. Mat. Univ. Padova Vol. 65, 1981 pp. 9–12
- PARLAMENTO F.: PRA provability of Schmerl's fine structure theorem, Rend. Sem. Mat., Torino Vol. 42, 1984 pp. 87–106
- PARSONS C.: On number-theoretic choice schema and its relation to induction. In: Intuitionism and Proof Theory, North Holland: Amsterdam, 1970 pp. 459–473
- PARSONS C.: On  $n$ -quantifier induction, Journ. Symb. Log. Vol. 37, 1972 pp. 466–482
- PEANO G.: Arithmetices principia nuovo methodo exposita (The principles of arithmetic, presented by a new method), Bocca & Clausen, 1889, 20 p.
- PEANO G.: Formulario matematico, Torino, 1908, 463 pp.
- PENZIN Y. G.: The problem of twin primes in formal arithmetic, Mat. Zametki Vol. 26, 1979 pp. 505–511
- PENZIN Y. G.: Twins problem in formal arithmetic, Math. Notes Vol. 26, 1980 pp. 743–746
- PHILLIPS R. G.: On the structure of non-standard models of arithmetic, Proc. Amer. Math. Soc. Vol. 27, 1971 pp. 359–363
- PHILLIPS R. G.: Addition in nonstandard models of arithmetic, Journ. Symb. Log. Vol. 37, 1972 pp. 483–486
- PHILLIPS R. G.: Omitting types in arithmetic and conservative extensions. In: Victoria Symposium on Non-Standard Analysis (Lect. Notes Math. 369), Springer-Verlag, 1974 pp. 195–202
- PHILLIPS R. G.: A minimal extension that is not conservative, Mich. Math. Journ. Vol. 21, 1974 pp. 27–32
- PILLAY A.: Partition properties and definable types in Peano arithmetic. In: Model theory and arithmetic (Paris, 1979–1980) (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 263–269

- PILLAY A.: Models of Peano arithmetic (a survey of basic results). In: Model Theory and Arithmetic. Comptes Rendus d'une Action Thématique Programmée du CNRS sur la Théorie des Modèles et l'Arithmétique (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 1–12
- PILLAY A.: Cuts in models of arithmetic. In: Model theory and Arithmetic. Comptes Rendus d'une Action Thématique Programmée du CNRS sur la Théorie des Modèles et l'Arithmétique (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 13–20
- PLISKO V. E.: The nonarithmeticity of the class of realizable predicate formulas, Math. USSR Vol. Izv. 11, 1977 pp. 453–471
- POHLERS W.: An upper bound for provability of transfinite induction in systems with  $n$ -times iterated inductive definitions. In: Proof Theory Symposium, Kiel 1974 (Lect. Notes. Math. 500), Springer-Verlag, 1975 pp. 271–289
- POHLERS W.: Ordinal notations based on a hierarchy of inaccessible cardinals, Annals Pure Appl. Logic Vol. 33, 1987 pp. 157–180
- POHLERS W.: Proof Theory. An Introduction. Springer-Verlag 1989, Lect. Notes Math. 1407, 213 p.
- POIZAT B.: Cours de théorie des modèles, Nur al-Manteg, wal-Marifah, Villenobanne, 1985 pp. 142–207
- POTTHOFF K.: Untersuchungen über Nichtstandardmodelle. In: Dissertation, Hannover, 1967
- POTTHOFF K.: Über Nichtstandardmodelle der Arithmetik und der rationalen Zahlen, Zeitschr. Math. Log. Grundl. Math. Vol. 15, 1969 pp. 223–236
- POTTHOFF K.: Ideale in Nichtstandardmodellen der ganzen Zahlen, Zeitschr. Math. Log. Grundl. Math. Vol. 16, 1970 pp. 321–326
- POTTHOFF K.: Über Erweiterungen von Nichtstandardmodellen der Arithmetik und anderer Strukturen. In: Diss. Habil. etc, 1972
- POTTHOFF K.: Ordnungseigenschaften von Nichtstandardmodellen. In: Theory of Sets and Topology. In Honour of Felix Hausdorff (1868–1942), Dt. Verlag Wiss.: Berlin, 1972 pp. 403–426
- POTTHOFF K.: A simple tree lemma and its application to a counterexample of Phillips, Arch. Math. Log. Vol. 18, 1976 pp. 67–71
- POTTHOFF K.: Orderings of type of countable arithmetic, Zeitschr. Math. Log. Grundl. Math. Vol. 24, 1978 pp. 97–108
- PRAWITZ D.: Ideas and results in proof theory. In: Proceedings of the Second Scandinavian Logic Symposium, North Holland: Amsterdam pp. 235–307
- PRAWITZ D.: The philosophical position of proof theory. In: Contemporary Philosophy in Scandinavia, The Johns Hopkins Press, 1972 pp. 123–134
- PRESBURGER M.: Über die Vollständigkeit eines gewissen Systems der Arithmetik ganzer Zahlen, in welchem die Addition als einzige Operation hervortritt. In: Sprawozdanie z 1 Kongresu Matematyków Krajow Słowiańskich, Ksiaznica Atlas: Warsaw 1930 pp. 92–101, 395
- PUDLÁK P.: A definition of exponentiation by a bounded arithmetical formula, Comm. Math. Univ. Carol. Vol. 24, 1983 No. 4 pp. 667–671
- PUDLÁK P.: Some prime elements in the lattice of interpretability types, Trans. Amer. Math. Soc. Vol. 280, 1983 No. 1 pp. 255–275
- PUDLÁK P.: Cuts, consistency statements and interpretations, Journ. Symb. Logic Vol. 50, 1985 pp. 423–441
- PUDLÁK P.: On the length of proofs of finitistic consistency statements in first order theories. In: Logic Colloquium 84, North Holland P. C, 1986 pp. 165–196
- PUDLÁK P.: Improved bounds to the length of proofs of finitistic consistency statements, Contemporary mathematics Vol. 65, 1987 pp. 309–331
- PUDLÁK P.: A note on bounded arithmetic, Fundamenta Mathematicae 136, 1990 pp. 85–89

- PUDLÁK P.: Another combinatorial principle independent of Peano's axioms, (unpublished text)
- PUDLÁK P.: Some relations between subsystems of arithmetic and the complexity of computations. In: Logic from Computer Science, ed. Y. N. Moschovakis, Springer-Verlag 1992, pp. 499–519
- PUDLÁK P.: Ramsey's theorem in bounded arithmetic. In: Computer Science Logic, eds. Börger et al., Springer Lecture Notes in Comp. Sci. 553, 1992, pp. 308–317
- PUDLÁK P., SOCHOR A.: Models of the Alternative Set Theory, Journ. Sym. Log. Vol. 49, 1984 No. 2 pp. 570–585
- PURITZ C. W.: Ultrafilters and standard functions in non-standard arithmetic, Proc London Math Soc, Ser 3 Vol. 22, 1971 pp. 705–733
- PUTNAM H.: An unsolvable problem in number theory, Journ. Symb. Log. Vol. 25, 1960 pp. 220–232
- PUTNAM H.: Trial and error predicates and the solution to a problem of Mostowski, Journ. Symb. Log. Vol. 30, 1965 pp. 49–57
- PUTNAM H., SMULLYAN R.: Exact separation of recursively enumerable sets within theories, Proc. Amer. Math. Soc. Vol. 11, 1960 pp. 574–577
- QUINSEY J.: Some problems in logic. Dissertation, Oxford, 1980
- QUINSEY J.: Sets of  $\Sigma_k$ -conservative sentences are  $\Pi_2$ -complete, Journ. Symb. Log. Vol. 46, 1981 pp. 442
- RABIN M. O.: Non-standard models and independence of the induction axiom. In: Essays on the Foundations of Mathematics: Dedicated to A. A. Freankel on his 70th anniversary, North Holland, Amsterdam, 1961 pp. 287–299
- RABIN M. O.: Diophantine equations and non-standard models of arithmetic. In: Proceedings of the 1st International Congress for Logic, Methodology and Philosophy of Science, Stanford Univ Pr: Stanford, 1962 pp. 151–158 (Russian translation in Matematika i ee primenения, Mir 1965, 176–184)
- RACKOFF C.: On the complexity of theories of weak direct powers, Journ. Symb. Log. Vol. 41, 1976 pp. 561–573
- RAISONNIER J.: Ensembles mesurables et consistance de ZF, C. R. Acad. Sci. Paris Ser. I Math. Vol. 297, 1983 pp. 217–219
- RATAJCZYK Z.: Satisfaction classes and combinatorial sentences independent from PA, Zeitschr. Math. Log. Grundl. Math. Vol. 28, 1982 pp. 149–165
- RATAJCZYK Z.: A combinatorial analysis of functions provably recursive in  $I\Sigma_n$ , Fund. Math. vol 130, 1988, 191–213
- RATAJCZYK Z.: Functions provably total in  $I\Sigma_n$ , Fund. Math. Vol. 132, 1989, pp. 81–95
- RAZBOROV A. A.: An equivalence between second order bounded domain bounded arithmetic and first order bounded arithmetic. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 247–277
- REMMEL J. B.: Graph colorings and recursively bounded  $\Pi_1^0$ -classes, Annals Pure Appl. Logic Vol. 32, 1986 pp. 185–193
- RESSAYRE J. P.: Types remarquables et extensions de modèles dans l'arithmétique de Peano II (Avec un appendice de M. A. Dickmann), Astérisque Vol. 73, 1980 pp. 119–155
- RESSAYRE J. P.: Modèles isomorphes à leurs propres segments initiaux en théorie des ensembles, C. R. Acad. Sci. Paris, Ser 1 Vol. 296, 1983 pp. 569–572
- RESSAYRE J. P.: Non standard universes with strong embeddings, and their finite approximations. In: Logic and Combinatorics, Proceedings of the Amer. Math. Soc. – IMS-SIAM Joint Summer Research Conference, Amer. Math. Soc.: Providence, 1987 pp. 333–358
- RESSAYRE J. P.: Integer parts of real closed exponential fields (extended abstract). In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 278–288

- RESSAYRE J. P., WILKIE A. J.: Modèles non-standard en arithmétique et théorie des ensembles, *Publ. Math. Univ. Paris VII*, 1986, 147 p.
- RICHARD D.: On external properties of nonstandard models of arithmetic, *Publ. Dep. Math. Vol. 14*, 1977 pp. 57–75
- RICHARD D.: Saturation des modèles de Peano, *C. R. Acad. Sci. Paris Sér. A-B Vol. 290*, 1980 pp. A351–A353
- RICHARD D.: De la structure additive à la saturation des modèles de Peano et à une classification des sous-langages de l'arithmétique. In: *Model theory and arithmetic (Paris, 1979–1980) (Lect. Notes Math. 890)*, Springer-Verlag, 1981 pp. 270–296
- RICHARD D.: Les relations arithmétiques sur les entiers primaires sont définissables au premier ordre par successeur et comprimarité, *C. R. Acad. Sci. Paris, Ser. I Vol. 299*, 1984 pp. 795–798
- RICHARD D.: The arithmetics as theories of two orders. In: *Orders: description and roles, Proc. Conf. Ordered sets appl, l'Arbresle / France 1982, Ann. Discrete Math. 23*, 1984 pp. 287–311
- RICHARDSON D.: Some undecidable problems involving elementary functions of a real variable, *Journ. Symb. Log. Vol. 33*, 1968 pp. 514–520
- RICHARDSON D.: Solution of the identity problem for integral exponential functions, *Zeitschr. Math. Log. Grundl. Math. Vol. 15*, 1969 pp. 333–340
- RICHARDSON D.: Sets of theorems with short proofs, *Journ. Symb. Log. Vol. 39*, 1974 pp. 235–242
- RIEGER L.: Sur le problème des nombres naturels. In: *Infinitistic Methods. Proceedings of the Symposium on Foundations of Mathematics*, Pergamon Press: Oxford, 1961 pp. 225–233
- RIIS S.: Making infinite structures finite in models of second order bounded arithmetic. In: *Arithmetic, Proof Theory and Computational Complexity*, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 289–319
- RITCHIE R. W., YOUNG P. R.: Strong representability of partial functions in arithmetic theories, *Information Sci. Vol. 1*, 1968 pp. 189–204
- RITTER W. E.: Representability of partial recursive functions in formal theories, *Proc. Amer. Math. Soc. Vol. 18*, 1967 pp. 647–651
- ROBBIN J. W.: Subrecursive hierarchies. Ph. D. thesis, Princeton 1965.
- ROBINSON A.: Model theory and non-standard arithmetic. In: *Infinitistic Methods. Proceedings of the Symposium on Foundations of Mathematics*, PWN: Warsaw, 1961 pp. 265–302
- ROBINSON A.: On languages which are based on nonstandard arithmetic, *Nagoya Math. Journ. Vol. 22*, 1963 pp. 83–117
- ROBINSON A.: Infinite forcing in model theory. In: *Proceedings of the Second Scandinavian Logic Symposium*, North-Holland: Amsterdam, 1971, pp. 317–340
- ROBINSON A.: Nonstandard arithmetic and generic arithmetic. In: *Proceedings of the 4th International Congress for Logic, Methodology and Philosophy of Science (Stud Logic Found Math 74)*, North Holland, Amsterdam, 1973 pp. 137–154
- ROBINSON A.: Standard and nonstandard number systems, *Nieuw Arch Wisk, Ser 3 Vol. 21*, 1973 pp. 115–133
- ROBINSON J.: Definability and decision problems in arithmetic, *Journ. Symb. Log. Vol. 14*, 1949 pp. 98–114
- ROBINSON J.: Existential definability in arithmetic, *Trans Amer. Math. Soc. Vol. 72*, 1952 pp. 437–449
- ROBINSON J.: The undecidability of exponential Diophantine equations. *Notices of the Amer. Math. Soc. Vol. 7*, 1960 pp. 75
- ROBINSON J.: The undecidability of exponential Diophantine equations. In: *Logic, Methodology and Philosophy of Science, Proceedings of the 1960 International Congress*, Stanford University Press, 1962 pp. 12–13 (Russian translation in *Matematičeskaia logika i ee primenenia*, Mir 1965, 7–8)

- ROBINSON J.: Diophantine decision problems. In: *Studies in Number Theory*, MAA, Englewood Cliffs, 1969, pp. 76–116
- ROBINSON J.: Unsolvable Diophantine problems, *Proc. Amer. Math. Soc.* Vol. 22, 1969 pp. 534–538
- ROBINSON J.: Hilbert's tenth problem. In: *Institute on Number Theory*, Amer. Math. Soc.: Providence, 1971, pp. 191–194
- ROBINSON J.: Axioms for number theoretic functions. In: *Izbrannye Voprosy Algebra i Logiki: Sbornik Posvyashchennyi pamyati A. I. Mal'tseva*, Nauka: Novosibirsk, 1973 pp. 253–263
- ROBINSON J.: Solving Diophantine equations. In: *Logic, Methodology and Philosophy of Science IV*, North-Holland: Amsterdam, 1973, pp. 63–67
- ROBINSON R. M.: Arithmetical definitions in the ring of integers, *Proc. Amer. Math. Soc.* Vol. 2, 1951 pp. 279–284
- ROBINSON R. M.: An essentially undecidable axiom system. In: *Int Congr Math (II,6)*; 1950 Cambridge MA, proceedings of the International Congress of Mathematicians, Amer. Math. Soc., 1952 pp. 729–730
- ROBINSON R. M.: Arithmetical representation of recursively enumerable sets, *Journ. Symb. Log.* Vol. 21, 1956 pp. 162–187
- ROBINSON R. M.: Restricted set-theoretical definitions in arithmetic. In: *Summaries of Talks Presented at the Summer Institute for Symbolic Logic*, Institute for Defense Analyses, Comm. Res. Division, 1957 pp. 139–140
- ROBINSON R. M.: Some representations of Diophantine sets, *Journ. Symb. Log.* Vol. 37, 1972 pp. 572–578
- ROGERS H. JR.: *Theory of recursive functions and effective computability*, McGraw-Hill, 1967, 482 pp.
- ROSE H. E.: Subrecursive hierarchies. PhD thesis, Princeton 1965.
- ROSE H. E.: *Subrecursion, Functions and Hierarchies*, Clarendon Press, Oxford, 1984
- ROSSER J. B.: Extensions of some theorems of Gödel and Church, *Journ. Symb. Log.* Vol. 1, 1936 pp. 87–91
- ROSSER J. B.: An informal exposition of proofs of Gödel and Church's theorem, *Journ. Symb. Log.* Vol. 4, 1939 pp. 53–60
- RYLL-NARDZEWSKI C.: The role of the axiom of induction in elementary arithmetic, *Fund. Math.* Vol. 39, 1952 pp. 239–263
- SAMBIN G.: Un'estensione del teorema di Loeb, *Rend Sem. Mat. Univ. Padova* Vol. 52, 1974 pp. 193–199
- SAMBIN G.: An effective fixed-point theorem in intuitionistic diagonalizable algebras (The algebraization of the algebras which express Theor. IX.), *Studia Logica* Vol. 35, 1976 pp. 345–361
- SAMBIN G.: Fixed points through the finite model property, *Studia Logica* Vol. 37, 1978 pp. 287–289
- SAMBIN G., VALENTINI S.: A modal calculus for a fragment of arithmetic, *Studia Logica* Vol. 39, 1980 pp. 245–256
- SAMBIN G., VALENTINI S.: The modal logic of provability. The sequential approach, *Journ. Philos. Log.* Vol. 11, 1982 pp. 311–342
- SAVAGE J. E.: *The Complexity of Computing*, Wiley, London, 1976, 391 pp.
- SAVITCH W. J.: Relationship between nondeterministic and deterministic tape complexities, *Journ. Comput. and System Sci.*, Vol. 4, 1970 pp. 177–192
- ŠAVRUKOV V. YU.: The logic of relative interpretability over Peano arithmetic (preprint), 1988
- SCANLON T. M.: The consistency of number theory via Herbrand's theorem, *Journ. Symb. Log.* Vol. 38, 1973 pp. 29–58
- SCARPELINI B.: *Zwei unentscheidbare Probleme der Analysis*, *Zeitschr. Math. Log. Grundl. Math.* Vol. 9, 1963 pp. 265–289

- SCHMERL J. H.: Peano models with many generic classes. *Pac. Journ. Math.* Vol. 46, 1973 pp. 523–536
- SCHMERL J. H.: Extending models of arithmetic, *Ann. Math. Logic* Vol. 14, 1978 pp. 89–109
- SCHMERL J. H.: Recursively saturated, rather classless models of Peano arithmetic. In: *Logic Year 1979–80. The University of Connecticut (Lect. Notes Math. 859)*, Springer-Verlag, 1981 pp. 268–282
- SCHMERL J. H.: Models of Peano arithmetic and a question of Sikorski on ordered fields, *Israel Journ. Math.* Vol. 50, 1985 pp. 145–159
- SCHMERL J. H.: Substructure lattices of models of Peano arithmetic. (abstract), *Journ. Symb. Log.* Vol. 51, 1986 p. 496
- SCHMERL J. H.: Substructure lattices of models of Peano arithmetic. In: *Logic Colloquium '84 (Studies in Logic and the Foundations of Mathematics 120)*, North-Holland, 1986 pp. 225–243
- SCHMERL J. H., SIMPSON S. G.: On the role of Ramsey quantifiers in first order arithmetic, *Journ. Symb. Log.* Vol. 47 1982 pp. 423–435
- SCHMERL U. R.: Eine von Reflexionsformeln erzeugte Feinstruktur über Erweiterungen der primitiv rekursiven Arithmetik. Dissertation, Heidelberg, 1978
- SCHMERL U. R.: A fine structure generated by reflection formulas over primitive recursive arithmetic. In: *Logic Colloquium '78 (Stud Logic Found Math 97)*, North Holland: Amsterdam, 1979 pp. 335–350
- SCHMERL U. R.: Iterated reflection principles and the  $\omega$ -rule, *Journ. Symb. Log.* Vol. 47, 1982 pp. 721–733
- SCHMERL U. R.: Diophantine equations in a fragment of number theory. In: *Computation and proof theory (Lect. Notes Math. 1104)*, Springer-Verlag, 1984 pp. 389–398
- SCHMERL U. R.: Diophantine equations in a fragment of number theory. (abstract), *Journ. Symb. Log.* Vol. 50, 1985 pp. 275
- SCHMERL U. R.: Diophantine equations in fragments of arithmetic, *Annals Pure Appl. Logic* Vol. 38, 1988 pp. 135–170
- SCHMIDT D.: Associative ordinal functions, well partial orderings and a problem of Skolem, *Zeitschr. Math. Log. Grundl. Math.* Vol. 24, 1978 pp. 297–302
- SCHÜTTE K.: Beweistheoretische Erfassung der unendlichen Induktion in der Zahlentheorie, *Math. Ann.* Vol. 122, 1951 pp. 369–389
- SCHÜTTE K.: Beweistheorie. Springer-Verlag, 1960, 355 pp.
- SCHÜTTE K., SIMPSON S. G.: Ein in der reinen Zahlentheorie unbeweisbarer Satz über endliche Folgen von natürlichen Zahlen, *Arch. Math. Log.* Vol. 25, 1985 pp. 75–89
- SCHWARTZ D. G.: A free-variable theory of primitive recursive arithmetic, *Zeitschr. Math. Log. Grundl. Math.* Vol. 33 1987 pp. 147–157
- SCHWICHTENBERG H.: Eine Klassifikation der  $\epsilon_0$ -rekursiven Funktionen, *Arch. Math. Log.* vol. 13, 1970, pp. 204–236
- SCHWICHTENBERG H.: Proof theory: some applications of cut-elimination. In: *Handbook of Mathematical Logic*, Barwise ed. North-Holland: Amsterdam, 1977, pp. 867–896
- SCHWICHTENBERG H., WAINER S. S.: Infinite terms and recursion in higher types. In: *Proof Theory Symposium*, Kiel 1974 (Lect. Notes Math. 500), Springer-Verlag, 1975 pp. 341–364
- SCOTT D. S.: On constructing models for arithmetic. In: *Infinitistic Methods. Proceedings of the Symposium on Foundations of Mathematics*, PWN: Warsaw, 1961 pp. 235–255
- SCOTT D. S.: Algebras of sets binumerable in complete extensions of arithmetic. In: *Recursive Function Theory*, Amer. Math. Soc.: Providence, 1962 pp. 117–121
- SEMEONOV A. L.: On certain extensions of the arithmetic of addition of naturals numbers, *Izv. Akad. Nauk SSSR, Ser. Mat.* Vol. 43, 1979 pp. 1175–1195, 9
- SEMEONOV A. L.: On the definability of arithmetic in its fragments, *Doklady Akad. Nauk SSSR* Vol. 263, 1982 pp. 44–47

- SEMENOV A. L.: Logical theories of one-place functions on the set of natural numbers, Izv. Akad. Nauk SSSR, Ser. Mat. Vol. 47, 1983 pp. 623–658
- SEREMENT Z.: On automorphisms of resplendent models of arithmetic, Zeitschr. Math. Log. Grundl. Math. Vol. 30, 1984 pp. 349–352
- SHELAH S.: End extensions and numbers of countable models, Journ. Symb. Log. Vol. 43, 1978 pp. 550–562
- SHELAH S.: Models with second order properties II. trees with no undefined branches, AML Vol. 14, 1978 pp. 73–87
- SHELAH S.: On logical sentences in PA. In: Proceedings of the Logic Colloquium '82; Firenze, North Holland, Amsterdam, 1984 pp. 145–160
- SHEPHERDSON J. C.: Representability of recursively enumerable sets in formal theories, Arch. Math. Log. Vol. 5, 1960 pp. 119–127
- SHEPHERDSON J. C.: A non-standard model for a free variable fragment of number theory, Bull. Acad. Polon. Sci. Vol. 12, 1964 pp. 79–86
- SHEPHERDSON J. C.: Non-standard models for fragments of number theory. In: The Theory of Models (Stud. Logic Found. Math.), North Holland, Amsterdam, 1965 pp. 342–358
- SHEPHERDSON J. C.: The rule of induction in the free variable arithmetic based on + and \*, Ann. Fac. Sci. Clermont Vol. 35, 1967 pp. 25–31
- SHEPHERDSON J. C.: Weak and strong induction, Amer. Math. Monthly Vol. 76, 1969 pp. 989–1004
- SHOENFIELD J. R.: A relative consistency proof, Journ. Symb. Log. Vol. 19, 1954 pp. 21
- SHOENFIELD J. R.: Open sentences and the induction axiom, Journ. Symb. Log. Vol. 23, 1958 pp. 7–12
- SHOENFIELD J. R.: On a restricted  $\omega$ -rule, Bull. Acad. Polon. Sci. Vol. 7, 1959 pp. 405–407
- SHOENFIELD J. R.: Degrees of models, Journ. Symb. Log. Vol. 25, 1960 pp. 233–237
- SHOENFIELD J. R.: Undecidable and creative theories, Fund. Math. Vol. 49, 1961 pp. 171–179
- SHOENFIELD J. R.: Mathematical Logic, Addison-Wesley, 1967, 344 pp.
- SHOSTAK R. E.: On the SUP-INF method for proving Presburger Formulas, Journ. A. C. M. Vol. 24, 1977 pp. 529–543
- SIEG W.: Fragments of arithmetic, Annals Pure Appl. Logic Vol. 28, 1985 pp. 33–71
- SIEG W.: A note on König's lemma. (abstract), Journ. Symb. Log. Vol. 50, 1985 pp. 276
- SIERPINSKI W.: 250 problems of elementary number theory, Warszawa, 1970
- SILVER J.: Harrington's version of the Paris's result. (manuscript)
- SIMMONS H.: Topological aspects of suitable theories, Proc. Edinburgh Math. Soc. Vol. 19, 1974 pp. 383–391
- SIMMONS H.: Each regular number structure is biregular, Israel Journ. Math Vol. 23, 1976 pp. 347–352
- SIMMONS H.: Existentially closed models of basic number theory. In: Logic Colloquium '76, North-Holland: Amsterdam 1977, pp. 325–369
- SIMMONS H.: The lattice of universal sentences modulo Peano arithmetic, Rapp. Sem. Math. Pure, Univ. Catol. Louvain, 1980 28 p.
- SIMPSON S. G.: Forcing and models of arithmetic, Proc Amer. Math. Soc. Vol. 43, 1974 pp. 193–194
- SIMPSON S. G.:  $\Sigma_1^1$  and  $\Pi_1^1$  transfinite induction. In: Logic Colloquium '80, North Holland, 1982 pp. 239–253
- SIMPSON S. G.: Set theoretic aspects of  $ATR_0$ . In: Logic Colloquium '80, North Holland, 1982 pp. 255–271
- SIMPSON S. G.: Which set existence axioms are needed to prove Cauchy-Peano theorem for ordinary differential equations?, Journ. Symb. Log. Vol. 49, 1984 pp. 783–802
- SIMPSON S. G.: Nichtbeweisbarkeit von gewissen kombinatorischen Eigenschaften endlicher Bäume, Arch. Math. Log. Vol. 25, 1985 pp. 45–65

- SIMPSON S. G.: Unprovable theorems and fast-growing functions. In: Logic and Combinatorics, Proceedings of the Amer. Math. Soc. – SIAM Joint Summer Research Conference, Amer. Math. Soc.: Providence, 1987 pp. 359–394
- SIMPSON S. G.: Reverse mathematics, Dept. of Math. Research Rep., 1982, Penn State Univ.
- SIMPSON S. G.: Subsystems of second order arithmetic, book in preparation, Chapters II–IX distributed as Dept. of Math. Research Rep., 1986–90, Penn State Univ.
- SIMPSON S. G., SMITH R. L.: Factorization of polynomials and  $\Sigma_1^0$  induction, Annals Pure Appl. logic Vol. 31, 1986 pp. 289–306
- SKOLEM T.: Logisch-kombinatorische Untersuchungen über die Erfüllbarkeit oder Beweisbarkeit mathematischer Sätze nebst einem Theorem über dichte Mengen, Skrifter utgit av videnskasselkapet i Kristiana vol. I no. 4, 1920, pp. 1–36
- SKOLEM T. A.: Begründung der elementaren Arithmetik durch die rekurrende Denkweise ohne Anwendung scheinbarer Veränderlichen mit unendlichem Ausdehnungsbereich, Videnskaps Selskapet i Kristiana. Skrifter Utgit. 1 Matematisk-Naturvidenskapelig Klasse Vol. 6, 1923 pp. 1–38
- SKOLEM T. A.: Über einige Satzfunktionen in der Arithmetik, Skrifter Vitenskapsakademiet i Oslo, I Vol. 7, 1930 pp. 1–28
- SKOLEM T. A.: Über die Unmöglichkeit einer Charakterisierung der Zahlenreihe mittels eines endlichen Axiomensystems, Norsk Matematisk Forenings Skrifter Vol. 10, 1933 pp. 73–82
- SKOLEM T. A.: Über die Nichcharakterisierbarkeit der Zahlenreihe mittels endlich oder abzählbar unendlich vielen Aussagen mit ausschliesslich Zahlvariablen, Fund. Math. Vol. 23, 1934 pp. 150–161
- SKOLEM T. A.: Über die Zurückführbarkeit einiger durch Rekursionen definierter Relationen auf "arithmetische", Acta Litt. scient. Szeged Vol. 8, 1937 pp. 73–88
- SKOLEM T. A.: Peano's axioms and models of arithmetic. In: Mathematical Interpretations of Formal Systems (Stud Logic Found Math 10), North Holland, Amsterdam, 1955 pp. 1–14
- SKOLEM T. A.: A version of the proof of equivalence between complete induction and uniqueness of primitive recursion, Kongelige Norske Videnskabers Selskabs. Forhandlinger. Vol. 29, 1956 pp. 10–15
- SKOLEM T. A.: An ordered set of arithmetic functions representing the least epsilon-number, Kongelige Norske Videnskabers Selskabs. Forhandlinger. Vol. 29, 1956 pp. 54–59
- SKOLEM T.: Selected works in logic (ed. by J. E. Fenstad), Universitetsforlaget Oslo 1970, 732 pp.
- SLATER D.: Non-standard languages and their applications. Dissertation, Rutgers, 1972
- SMITH R., SIMPSON S. G.: Factorization of polynomials and  $\Sigma_1^0$  induction. (abstract), Journ. Symb. Log. Vol. 51, 1986 pp. 497
- SMITH S. T.: Nonstandard syntax and semantics and full satisfaction classes for models of arithmetic. (abstract), Journ. Symb. Log. Vol. 51, 1986 pp. 497
- SMITH S. T.: Nonstandard characterizations of recursive saturation and resplendency, Journ. Symb. Log. Vol. 52 1987 pp. 842–863
- SMORYŃSKI C. A.: Applications of Kripke models. In: Metamathematical Investigation of Intuitionistic Arithmetic and Analysis, Springer-Verlag, 1973 pp. 324–391
- SMORYŃSKI C. A.: Investigations of intuitionistic formal systems by means of Kripke models. Dissertation, Chicago Circle, 1973
- SMORYŃSKI C. A.: The incompleteness theorems. In: Handbook of Math Logic (Stud Logic Found Math 90), North Holland: Amsterdam, 1977 pp. 821–865
- SMORYŃSKI C. A.:  $\omega$ -consistency and reflection. In: Colloque International de Logique (Colloq Int CNRS), CNRS Inst. B. Pascal: Paris, 1977 pp. 167–181
- SMORYŃSKI C. A.: A note on the number of zeros of polynomials and exponential polynomials, Journ. Symb. Log. Vol. 42, 1977 pp. 99–106

- SMORYŃSKI C. A.: Beth's theorem and self-referential sentences. In: Logic Colloquium 77 (Stud Logic Found Math 96), North Holland: Amsterdam, 1978 pp. 253–261
- SMORYŃSKI C. A.: Avoiding self-referential statements. Proceedings of the Amer. Math. Soc. Vol. 70, 1978 pp. 181–184
- SMORYŃSKI C. A.: Calculating self-referential statements. I: Explicit calculations, Studia Logica Vol. 38, 1979 pp. 17–36
- SMORYŃSKI C. A.: Some rapidly growing functions, Math. Intell. Vol. 2, 1979 pp. 149–154
- SMORYŃSKI C. A.: Calculating self-referential statements, Fund. Math. Vol. 109, 1980 pp. 189–210
- SMORYŃSKI C. A.: Recursively saturated non-standard models of arithmetic, Journ. Symb. Log. Vol. 46, 1981 pp. 259–286
- SMORYŃSKI C. A.: Calculating self-referential sentences: Guaspari sentences of the first kind, Journ. Symb. Log. Vol. 46, 1981 pp. 329–344
- SMORYŃSKI C. A.: Fifty years of self-reference, Notre Dame Journ. Formal Log. Vol. 22, 1981 pp. 357–374
- SMORYŃSKI C. A.: Cofinal extensions of nonstandard models of arithmetic, Notre Dame Journ. Formal Log. Vol. 22, 1981 pp. 133–144
- SMORYŃSKI C. A.: Elementary extensions of recursively saturated models of arithmetic, Notre Dame Journ. Formal Log. Vol. 22, 1981 pp. 193–203
- SMORYŃSKI C. A.: Fixed point algebras, Bull. Amer. Math. Soc. Vol. 6, 1982 pp. 317–356
- SMORYŃSKI C. A.: Nonstandard models and constructivity. In: The L. E. J. Brouwer Centenary Symposium (Noordwijkerhout, 1981), North-Holland, Amsterdam-New York, 1982 pp. 459–464
- SMORYŃSKI C. A.: A note on initial segment constructions in recursively saturated models of arithmetic, Notre Dame Journ. Formal Logic Vol. 23, 1982 pp. 393–408
- SMORYŃSKI C. A.: The varieties of arboreal experience. Math. Intell. Vol. 4, 1982 pp. 182–189
- SMORYŃSKI C. A.: The finite inseparability of the first-order theory of diagonalisable algebras, Studia Logica Vol. 41, 1982 pp. 347–349
- SMORYŃSKI C. A.: Commutativity and self reference, Notre Dame Journ. Formal Log. Vol. 23, 1982 pp. 443–452
- SMORYŃSKI C. A.: Back-and-forth inside a recursively saturated model of arithmetic. In: Logic Colloquium '80 (Stud. Logic Found. Math. 108), North Holland: Amsterdam, 1982 pp. 273–278
- SMORYŃSKI C. A.: Recursively saturated models of arithmetic, Addendum, Journ. Symb. Log. Vol. 47, 1982 pp. 493
- SMORYŃSKI C. A.: Modal logic and self-reference. In: Handbook of Philosophical Logic (vol. 2), Reidel: Dordrecht, 1984 pp. 441–496
- SMORYŃSKI C. A.: Lectures on nonstandard models of arithmetic. In: Proceedings of the Logic Colloquium '82 (Stud. Logic Found. Math. 112), North Holland: Amsterdam, 1984 pp. 1–70
- SMORYŃSKI C. A.: Self-reference and Modal logic, Springer-Verlag, 1985, 333 pp.
- SMORYŃSKI C. A.: Nonstandard models and related developments. In: Harvey Friedman's Research on the Foundations of Mathematics, North Holland: Amsterdam, 1985 pp. 179–229
- SMORYŃSKI C. A.: Quantified modal logic and self-reference, Notre Dame Journ. Formal Log. Vol. 28, 1987 pp. 356–370
- SMORYŃSKI C. A.: Logical number theory I – an introduction, Springer-Verlag 1991
- SMORYŃSKI C. A.: An asymptotic formula for a logico-combinatorial problem, preprint
- SMORYŃSKI C. A., STAVI J.: Cofinal extension preserves recursive saturation. In: Model Theory of Algebra and Arithmetic (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 338–345
- SMULLYAN R. M.: Languages in which self reference is possible, Journ. Symb. Log. Vol. 22, 1957 pp. 55–67

- SMULLYAN R. M.**: Theory of Formal Systems, Annals of Math. Stud. No. 47, Princeton Univ. Press, 1961, 142 pp.
- SMULLYAN R. M.**: Modality and self-reference. In: Intensional Mathematics (Stud. Logic Found. Math. 113), North Holland: Amsterdam, 1985 pp. 191–211
- SMULLYAN R. M.**: Some principles related to Loeb's theorem. In: Intensional Mathematics (Stud. Logic Found. Math. 113), North Holland: Amsterdam, 1985 pp. 213–230
- SMULLYAN R. M.**: Fixed points and self-reference, Int Journ. Math. & Math. Sci Vol. 7, 1984 pp. 283–289
- SOARE R. I.**: Recursively enumerable sets and degrees. Springer-Verlag 1987.
- SOLOMON M. K.**: The Gödel speed-up phenomenon. Dissertation, Stevens Inst. of Tech, 1975
- SOLOMON M. K.**: Some results on measure independent Gödel speed-ups, Journ. Symb. Log. Vol. 43, 1978 pp. 667–672
- SOLOVAY R. M.**: Probability interpretations of modal logic, Israel Journ. Math. Vol. 25, 1976 pp. 287–304
- SOLOVAY R. M.**: Explicit Henkin sentences, Journ. Symb. Log. Vol. 50, 1985 pp. 91–93
- SOLOVAY R. M.**: Infinite fixed-point algebras. In: Recursion Theory. Proceedings of the A. M. S. – A. S. L. Summer Institute, Amer. Math. Soc: Providence, 1985 pp. 473–486
- SOLOVAY R. M.**: Injecting inconsistencies into models of *PA*, Annals of Pure and Appl. Log. Vol. 44, 1989, pp. 101–132
- SOMMER R.**: Ordinal arithmetic in  $\Delta_0$ . In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 320–363
- SOPRUNOV S. F.**: Strong nonstandard models of arithmetic, Doklady Akad. Nauk SSSR Vol. 223, 1975 pp. 576–577
- SOPRUNOV S. F.**: Initial segments of nonstandard arithmetics, Doklady Akad. Nauk SSSR Vol. 223, 1975 pp. 576–577
- SOPRUNOV S. F.**: Denumerable non-standard models of arithmetic. In: Issledovaniya po Teorii Množestv i Neklassičeskim Logikam. Sbornik Trudov, Nauka: Moskva, 1976 pp. 157–173
- SOPRUNOV S. F.**: Lattices of non-standard arithmetics. In: Issledovaniya po Neklassičeskim Logikam i Teorii Množestv, Nauka: Moskva, 1979 pp. 146–173
- SORNIKOV YA. A.**: On quantifier-free  $\varepsilon_0$ -recursive arithmetic, Vestnik Mosk. Univ. Matematika Vol. 32, 1977 pp. 19–25
- SPECKER E.**: Eine Verschärfung des Unvollständigkeitssatzes der Zahlentheorie, Bull. Acad. Polon. Sci. Vol. 5, 1957 pp. 1041–1045
- SPENCER J.**: Large numbers and unprovable theorems, Amer. Math. Monthly Vol. 90, 1983 pp. 669–675
- STEIN M.**: Interpretations of Heyting's arithmetic – an analysis by means of a language with set symbols, Ann. Math. Logic Vol. 19, 1980 pp. 1–31
- STEPANOV V. I.**: Self-referential propositions for standard and Rosser provability predicates, Usp. Mat. Nauk Vol. 36 1981 pp. 227–228
- STEPANOV V. I.**: Second-order arithmetic and the consistency of first-order theories, Usp. Mat. Nauk Vol. 37, 1982 pp. 179–180
- STIHI T.**: Forcing and Peano arithmetic. Dissertation, 1976
- STIHI T.**: Induction and complete sequences of conditions in the sense of Cohen, Rev. Roum. Math. Pures et Appl. Vol. 23, 1978 pp. 129–133
- STOCKMEYER L.**: The polynomial time hierarchy, Theor. Computer Science Vol. 3, 1976 pp. 1–22
- SUNDHOLM B. G.**: The  $\omega$ -rule; a survey, Bachelor's thesis, Oxford, 1978
- ŠVEJDAR V.**: Degrees of interpretability, Comm. Math. Univ. Carol. Vol. 19, 1978 pp. 789–813
- ŠVEJDAR V.**: A sentence that is difficult to interpret, Comm. Math. Univ. Carol. Vol. 22, 1981 pp. 661–666

- ŠVEJDAR V.: Modal analysis of generalized Rosser sentences, *Journ. Symb. Log.* Vol. 48, 1983 pp. 986–999
- SZELEPCZÉNYI R.: The method of forcing for nondeterministic automata, *Bull. European Assoc. for Theor. Comp. Sci.*, Vol. 33, 1987 pp. 96–100
- SZMIELEW W., TARSKI A.: Mutual interpretability of some essentially undecidable theories. In: *Int. Congr. Math. (II,6)*; 1950 Cambridge MA, USA [1952] *Proceedings of the International Congress of Mathematicians*, Amer. Math. Soc. 1952 pp. 734
- TAIT W. W.: The substitution method, *Journ. Symb. Log.* Vol. 30, 1965 pp. 175–192
- TAIT W. W.: Functionals defined by transfinite recursion, *Journ. Symb. Log.* Vol. 30, 1965 pp. 155–174
- TAKAHASHI M.: A foundation of finite mathematics, *Publ. Res. Inst. Math. Sci. Kyoto Univ.* Vol. 12, 1977 pp. 577–708
- TAKAHASHI M.: An abstract form of Gödel's theorem on consistency and Löb's, *Sci. Reports Tokyo Kyoiku Daigaku*, Sec. A Vol. 13, 1977 pp. 81–85
- TAKEUTI G.: Proof theory, North-Holland P. C. 1975, 372 pp. (second edition 1980)
- TAKEUTI G.: Consistency proofs and ordinals. In: *Proof Theory Symposium*, Kiel 1974 (Lect. Notes Math. 500), Springer-Verlag, 1975 pp. 365–369
- TAKEUTI G.: Work of Paul Bernays and Kurt Gödel. In: *Logic, Methodology and Phil. of Science VI*, North-Holland P. C. 1982 pp. 77–85
- TAKEUTI G.: Some relations among systems for bounded arithmetic, *Ann. Pure Appl. Logic* Vol. 39, 1988 pp. 75–104
- TAKEUTI G.: Bounded arithmetic and truth definition, *Annals Pure Appl. Log.* Vol. 39, 1988 pp. 75–104
- TAKEUTI G.:  $S_3^i$  and  $V_2^i(BD)$ , *Arch. Math. Log.* Vol. 29, 1990 pp. 149–169
- TAKEUTI G.: Some relations among systems of bounded arithmetic. In: Heyting: Mathematical Logic, P. Petkov ed., Plenum Press, 1990, pp. 139–154
- TAKEUTI G.: Sharply bounded arithmetic and the function  $a^{\ast}1$ . In: *Workshop in Logic and Computation*, Amer. Math. Soc. Contemporary Math. 106, 1990, pp. 281–288
- TAKEUTI G.: A second order version of  $S_2$  and  $U_2^1$ , *Journal of Symb. Logic* 56, 1991, pp. 1038–1063
- TAKEUTI G.: RSVU Isomorphism. In: *Arithmetic, Proof Theory and Computational Complexity*, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 364–386
- TARSKI A.: Pojęcie prawdy w językach nauk dedukcyjnych, *Prace Tow. Naukowego Warszawskiego* vol. III, no. 34, 1933, 116 pp.
- TARSKI A.: Der Wahrheitsbegriff in den formalisierten Sprachen, *Studia Phil.* Vol. 1, 1936 pp. 261–405
- TARSKI A.: Logic, semantics, metamathematics: Papers from 1923 to 1938 (translated by J. H. Woodger). Clarendon Press, Oxford 1956, 471 pp.
- TARSKI A. MOSTOWSKI A. ROBINSON R. M.: Undecidable theories, North Holland: Amsterdam 1953, 98 pp.
- TENNENBAUM S.: Non-archimedean models for arithmetic. In: *Notices Amer. Math. Soc.*, 1959 pp. 270
- TODA S.: On the computational power of PP and  $\oplus$ PP, 30-th Symp. on Foundations of Comp. Sci., 1989 pp. 514–519
- TRAHTENBROT B. A.: The impossibility of an algorithm for decision problem for finite domains, *Doklady Akad. Nauk SSSR* Vol. 70, 1950 pp. 569–572
- TRAHTENBROT B. A.: On recursive separability, *Doklady Akad. Nauk SSSR* Vol. 88, 1953 pp. 953–956
- TSUBOI A.: On  $M$ -recursively saturated models of arithmetic, *Tsukuba Journ. Math.* Vol. 6, 1982 pp. 305–318
- TURING A. M.: Systems of logic based on ordinals, *Proc. London Math. Soc. (2)* Vol. 45, 1939 pp. 161–228
- TVERSKOV A. A.: A sequence of combinatorial judgments which are independent of Peano Arithmetic, *Moscow University Math. Bull.* Vol. 35, 1980 pp. 6–13

- TVERSKOV A. A.: Investigation of recursiveness and arithmeticity of signature functions in nonstandard models of arithmetic, Dokl. Acad. Nauk USSR Vol. 262, 1982, pp. 1325–1328
- VON DER TWER T.: Some remarks on the mathematical incompleteness of Peano's arithmetic found by Paris and Harrington. In: Set theory and model theory (Bonn, 1979) (Lect. Notes Math. 872), Springer-Verlag, 1981 pp. 157–174
- VON DER TWER T.: On the strength of several versions of Dirichlet's ("pigeon-hole"-) principle in the sense of first-order logic, Arch. Math. Log. Vol. 21, 1981 pp. 69–76
- URSINI A.: A sequence of theories for arithmetic whose union is complete, Rend. Semin. Mat. Univ. Padova Vol. 57, 1977 pp. 75–92
- USPENSKIY V. A.: The Gödel theorem and the theory of algorithms, Usp Mat Nauk Vol. 8/4(56), 1953 pp. 176–178
- USPENSKIY V. A.: Theorem of Gödel and theory of algorithms, Doklady Akad. Nauk SSSR Vol. 91, 1953 pp. 737–740
- VAANANEN J.: A new incompleteness in arithmetic, Arkhimedes Vol. 31, 1979 pp. 30–37
- VALENTINI S., SOLITRO U.: The modal logic of consistency assertions of Peano arithmetic, Zeitschr. Math. Log. Grundl. Math. Vol. 29, 1983 pp. 25–32
- VARDANYAN V. A.: Arifmetičeskaya složnost predikatnykh logik dokazuemosti i ich fragmentov, Doklady Akademii Nauk SSSR Vol. 288, 1986 pp. 11–14
- VAUGHT R. L.: Sentences true in all constructive models, Journ. Symb. Log. Vol. 25, 1960 pp. 39–53
- VAUGHT R. L.: On a theorem of Cobham concerning undecidable theories. In: Logic, Methodology and Philosophy of Science, Stanford, 1962, pp. 14–25
- VAUGHT R.: On axiomatizability by a schema, Journ. Symb. Log. vol. 32, 1967, pp. 473–479
- VERBRUGGE L. C.: Does Solovay's completeness theorem extend to bounded arithmetic? (Master's thesis), Amsterdam, 1988
- VERBRUGGE R.: Feasible Interpretability. In: Arithmetic, Proof Theory and Computational Complexity, eds. P. Clote and J. Krajíček, Oxford Univ. Press 1992, pp. 389–400
- VISSE A.: Numerations, lambda-calculus & arithmetic. In: To H. B. Curry: essays on combinatory logic, lambda calculus and formalism, Academic Press, London, 1980 pp. 259–284
- VISSE A.: On the completeness principle: a study of provability in Heyting's arithmetic and extensions, Ann. Math. Logic Vol. 22, 1982 pp. 263–295
- VISSE A.: The provability logics of recursively enumerable theories extending Peano arithmetic at arbitrary theories extending Peano arithmetic, Journ. Philos. Logic, Vol. 13, 1984 pp. 97–113
- VISSE A.: Evaluation, provably deductive equivalence in Heyting's arithmetic of substitution instances of propositional formulas, Logic group preprint series No 4 Univ. Utrecht, 1985, 58 p.
- VISSE A.: Preliminary notes on interpretability logic, Logic group preprint series Univ. Utrecht, 1988, 37 p.
- VISSE A.: Peano's smart children: A provability logical study of systems with builtin consistency, Notre Dame Journ. Formal Logic 30, 1989, pp. 161–196
- VISSE A.: Interpretability logic. In: Mathematicae Logic, Petkov ed., Plenum Press, 1990, pp. 175–208
- VISSE A.: An inside view of EXP, Journ. of Symbolic Logic 57, 1992, pp. 131–165
- VOPĚNKA P.: A new proof of the Gödel's result on non-provability of consistency, Bull. Acad. Polon. Sci. Vol. 14, 1966 pp. 111–116
- WAGNER K., WECHSUNG G.: Computational Complexity, VEB Deutcher Verlag der Wissenschaft, Berlin, 1986, 551 pp.
- WAINER S.: A classification of ordinal recursive functions, Arch. Math. Log. vol. 13, 1970, pp. 136–153
- WAINER S.: Ordinal recursion and a refinement of the extended Grzegorczyk hierarchy, Journ. Symb. Log. vol. 37, 1972, 281–292

- WANG H.: The non-finitizability of impredicative principles, Proc. Nat. Acad. Sci. USA Vol. 36, 1950 pp. 479–484
- WANG H.: Remarks on the comparsion of axiom systems, Proc. Nat. Acad. Sci. USA Vol. 36, 1950 pp. 448–453
- WANG H.: Arithmetic translantion of axiom systems, Trans Amer. Math. Soc Vol. 71, 1951 pp. 283–293
- WANG H.: Arithmetic models for formal systems, Methodos Vol. 3, 1951 pp. 217–232
- WANG H.: Truth definitions and consistency proofs, Trans Amer. Math. Soc Vol. 73, 1952 pp. 243–275
- WANG H.: Undecidable sentences generated by semantic paradoxes, Journ. Symb. Log. Vol. 20, 1955 pp. 31–43
- WANG H.: The axiomatization of arithmetic, Journ. Symb. Log. Vol. 22, 1957 pp. 145–158
- WANG H.: The arithmetization of methamathematics. In: Wang H.: Survey of Mathematical Logic, North Holland: Amsterdam, 1963 pp. 334–361
- WANG P. S.: The undecidability of the existence of zeros of real elementary functions, Journ. A. C. M. Vol. 21, 1974 pp. 586–589
- WEGENER I.: The Complexity of Boolean Functions, Wiley/Teubner, New York and Stuttgart, 1987, 457 pp.
- WILKIE A. J.: On models of arithmetic – answer to two problems raised by H. Gaifman, Journ. Symb. Log. Vol. 40, 1975 pp. 41–47
- WILKIE A. J.: On the theories of end extensions of models of arithmetic. In: Set theory and Hierarchy theory V. Proceedings of the 3rd Conference on Set Theory and Hierarchy theory (Lect. Notes Math. 619), Springer-Verlag, 1977 pp. 305–310
- WILKIE A. J.: On models of arithmetic having non-modular substructure lattices, Fund. Math. Vol. 95, 1977 pp. 223–237
- WILKIE A. J.: Some results and problems on weak systems of arithmetic. In: Logic colloquium '77, Proc, Wroclaw 1977, Stud. Logic Found. Math. Vol. 96, 1978 pp. 285–296
- WILKIE A. J.: Applications of complexity theory to  $\Sigma_0$ -definability problems in arithmetic. In: Model Theory of Algebra and Arithmetic (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 363–369
- WILKIE A. J.: On discretely ordered rings in which every definable ideal is principal. In: Model Theory and Arithmetic Comptes Rendus d'une Action Thématique Programmée du C. N. R. S. sur la Théorie des Modèles et l'Arithmétique, Paris, France, 1979/80 (Lect. Notes Math. 890), Springer-Verlag, 1981 pp. 297–303
- WILKIE A. J.: On core structures for Peano arithmetic. In: Logic colloquium '80, Stud. Logic Found. Math. 108, 1982 pp. 311–314
- WILKIE A. J.: On discretely ordered rings in which every definable ideal is principal. In: Model theory and arithmetic (Lect. Notes Math. 890), Springer-Verlag, 1985 pp. 197–303
- WILKIE A. J.: A model-theoretic proof of Buss's characterization of the polynomial time computable functions, manuscript, 1985
- WILKIE A. J.: On sentences interpretable in systems of arithmetic. In: Logic Colloquium '84 (Studies in Logic and the Foundations of Mathematics 120), North-Holland, 1986 pp. 329–342
- WILKIE A. J.: On schemes axiomatizing arithmetic. In: Proceedings ICM, Berkeley, 1986 pp. 331–337
- WILKIE A. J., PARIS J. B.: Some results on bounded induction. In: Proceedings of the second Easter conference on model theory (Wittenberg, 1984), Humboldt Univ. Berlin, 1984 pp. 223–228
- WILKIE A. J., PARIS J. B.: On the scheme of induction for bounded arithmetic formulas, Annals Pure Appl. Logic Vol. 35, 1987 pp. 261–302
- WILMERS G.: Minimally saturated models. In: Model Theory of Algebra and Arithmetic (Lect. Notes Math. 834), Springer-Verlag, 1980 pp. 370–380

- WILMERS G.: Bounded existential induction, *Journ. Symb. Log.* Vol. 50, 1985 pp. 72–90
- WOODS A.: Some problems in logic and number theory and their connections. Dissertation, Manchester, 1981
- WOODS A.: Bounded arithmetic formulas and Turing machines of constant alternation. In: *Logic Colloquium '84 (Studies in Logic and the Foundations of Mathematics 120)*, North-Holland, 1986 pp. 355–377
- WRATHALL C.: Rudimentary predicates and relative computation, *SIAM Journ. Comput.*, Vol. 7, 1978 pp. 194–209
- YASUGI M.: Gentzen reduction revisited, *Publ. RIMS Kyoto Univ.* Vol. 16, 1980 pp. 1–33
- YOUNG P.: Gödel theorems, exponential difficulty and undecidability of arithmetic theories: an exposition. In: *Recursion Theory. Proceedings of the A. M. S. – A. S. L. Summer Institute (Proc. Symp. Pure Math. 42)*, Amer. Math. Soc: Providence, 1985 pp. 503–522
- YUKAMI T.: A theorem on the formalized arithmetic with function symbols ' and +, *Tsukuba Journ. Math.* Vol. 1, 1977 pp. 195–211
- YUKAMI T.: A note on formalized arithmetic with function symbols ' and +, *Tsukuba Journ. Math.* Vol. 2, 1978 pp. 69–73
- ZAHN G.: On the additive structure of non-standard models of arithmetic. Dissertation, Univ. S. Carolina, 1971
- ŽÁK S.: A Turing machine hierarchy, *Theor. Computer Science* Vol. 26, 1983 pp. 327–333
- ZBIERSKI P.: Indicators and incompleteness of Peano arithmetic, *Acta Cient. Venezolana* Vol. 31, 1980 pp. 487–495
- ZBIERSKI P.: Nonstandard interpretations of higher order theories, *Fund. Math.* Vol. 112, 1981 pp. 175–186

