

Publications

Boris TRAKHTENBROT (Sometimes transcribed as Trahtenbrot, Trachtenbrot, Trajtenbrot)

MONOGRAPHS

1. Algoritmy i mashinnoe reshenie zadach (Russian), Gostekhizdat, Edition 1, Moscow, 95 pages, (Russian: Issue 26 of the Series "Popular Lectures in Mathematics", 1957.

1a. Wieso können Automaten Rechnen, Deutsche Verlag der Wissenschaften, Berlin, (German, translated from Russian), 1959

1b. Los Algorirmos y la Resolucion Automatica de Problemas, Editorial Mir, Moscow, (Spanish, translated from Russian)), 1977

1c. (Japanese, translated from ??) 1959, Tokio-Toshio ???

1d. Algorytmy i automatyczne rozwiazywanie zadan, Panstwowe Wydawnictwo Naukowe, Warszawa, 1961

1e. Algorithmes et Resolution de Problemes par des Machines, Editions Mir, Moscow, (French, translated from Russian), Appears as part 2 of the book: I. Yaglom, B. Trakhtenbrot, H. Ventsel, A.Solodovnikov Nouvelles Orientations des Mathematiques, Editions Mir, Moscou, 1975.

2. Algoritmy i mashinnoe reshenie zadach, Edition 2, Fizmatgiz, Moscow, 120 pages, (Russian), 1960

2a. Algoritmy a strojove reseni ulokh, Nakladatelstvi Ceskoslovenske akademie ved, Praha, (Czech, translated from Russian), 1963.

2b. Algorithmes et machines a calculer, Dunod, Paris, (French, translated from Russian), 1963

2c. Algorytmy i mashinno resavane na zadachi, Dyrzhavno Izdatelstvo "Tekhnika", Sofia (Bulgarian, translated from Russian), 1963.

- 2d. Algorithms and Automatic Computing Machines, in the series "Topics in Mathematics", D.C. Heath and Company, Boston, (Translated from Russian), 1963
- 2e. Japanese translation from ??), Tosho, Tokio, 1964
- 2f. Algoritmi e Macchine Calcolatrici Automatiche, Progresso TecnicoEditoriale, Milano, (Italian, translated from English), 1964.
- 2g. Algoritmalar ve Otomatik Hesap Makinalari, Turk Matematik Dernegi Yaynlari, Istanbul, (Turkish, translated from ?), 1964
- 2h. Introduction a la Teoria Matematica de las Computadoras y de la Programacion, Siglo Veintiuno Editores SA, Mexico (Spanish translation from Russian), 1967.
3. N.E. Kobrinski , B.A. Trakhtenbrot, Vvedenie v Teoriyu Konechnykh Avtomatov, Fizmatgiz, Moscow, (Russian), 404 pages, 1962.
- 3a. Introduction to the Theory of Finite Automata, (Series: Studies in Logic and the Foundations of Mathematics), North-Holland Publishing Company, Amsterdam, 1965.
- 3b. Uvod do Teorie Konecných Automatu, Nakladatelstvi Technicke Literatury, Praha, (Translated from Russian), 1967.
- 3c. Einfuhrung in die Theory Endlicher Automaten, Akademie-Verlag, Berlin, (German, translated from Russian), 1967.
4. Slozhnost' Algoritmov i Vychislenii, Lecture Notes edited by the Novosibirsk University. (Russian), 258 pages, 1967.
5. B.A. Trakhtenbrot, Ya. M. Barzdin': Konechnye Avtomaty (Povedenie i Sintez), Nauka, Moscow, 400 pages, 1970.
- 5a. Finite Automata (Behavior and Synthesis) in Series Fundamental Studies in Computer Science, North-Holland Publishing Company Amsterdam-London, American Elsevier Publishing Company New York, 1973.
6. Algoritmy i Vychislitelnye Avtomaty, Sovetskoe Radio, Moscow, (Russian), 200 pages, 1974
- 6a. Algorithmen und Rechenautomaten, Deutcher Verlag der Wissenschaften, Berlin, (German, translated from Russian), 1977.
- 6b Sto SU Algoritmi: Algoritmi i racunski automati. Skolska Knjiga, Zagreb (Horvat-Serbian, translated from Russian), 1978.
- 6c. Algoritmusok es absztrak Automatak. Muszaki Konivkiado Budapest, Mir Konivkiado Moszkva, (Hungarian, translated from Russian), 1978.

7. Selected Developments in Soviet Mathematical Cybernetics (in Monograph Series, sponsored by Delphic Associated, Washington, xiv + 122 pages, 1985).

ARTICLES

1950

1. B.A. Trakhtenbrot The Impossibility of an Algorithm for the Decidability Problem on Finite Classes Doklady AN SSR 70, No. 4, 569-572 (1950).

2. B.A. Trakhtenbrot Decidability problems for finite classes and definitions of finite sets. Ph.D Thesis, Math. Inst. of the Ukrainian Academy of Sciences, Kiev, 1950

1953

3. B.A. Trakhtenbrot On Recursive Separability Doklady AN SSR 88, No. 6, 953-956 (1953).

1955

4. B.A. Trakhtenbrot Tabular Representation of Recursive Operators Doklady AN SSR 101, No. 4, 417-420 (1955).

5. B.A. Trakhtenbrot Modelling Functions on Finite Sets Uchionnye Zapiski Pennenskogo Pedinstitututa (Transactions of the Pensa Pedagogical Institute) No. 2, 61-78 (1955).

6. B.A. Trakhtenbrot The Synthesis of Non-Repetitive Schemas Doklady AN SSR 103, No. 6, 973-976 (1955).

7. A.V. Kuznetsov and B.A. Trakhtenbrot Investigation of Partial Recursive Operators by Techniques of Bairo Spa Spaces Doklady AN SSR 105, No. 6, 896-900 (1955).

1956

8. B.A. Trakhtenbrot On the Definition of finite Set and the Deductive Incompleteness of Set Theory Izvestia AN SSR 20, 569-582 (1956).

9. B.A. Trakhtenbrot Signalizing Functions and Tabular Operators Uchionnye Zapiski Penzenskogo Pedinstitututa (Transactions of the Penza Pedagogical Institute) No. 4, 75-87 (1956).

10. B.A. Trakhtenbrot On effective operators and their properties connected to continuity Proceedings of the Third All-Union Mathematical Congress, Vol 2, 147-148, Moscow, 1956

11. B.A. Trakhtenbrot Algorithms and automatic solution of problems, Journal "Mathematics in the School", No 4-5, 1956

12. B.A. Trakhtenbrot Descriptive classifications in recursive arithmetics. Proceedings of the Third All-Union Mathematical Congress, Vol 1, p. 185, Moscow, 1956

13. B.A. Trakhtenbrot Applying some topological invariants to the synthesis of two-polar switching schemes. Proceedings of the Third All-Union Mathematical Congress, Vol 1, p.136, Moscow, 1956

1957

14. B.A. Trakhtenbrot On Operators, Realizable by Logical Nets Doklady AN SSR 112, No. 6, 1005-1006 (1957).

1958

15. B.A. Trakhtenbrot The Synthesis of Logical Nets Whose Operators are Described in Terms of Monadic Predicates Doklady AN SSR 118, No. 4, 646-649 (1958).

16. B.A. Trakhtenbrot On the Theory of Non-Repetitive Schemas Trudy Mathem. Instituta im. Steklova (Transactions of the Steklov Mathem. Institute) Vol. 51, 226-269 (1958).

1959

17. B.A. Trakhtenbrot The Asymptotic Estimate of the Logical Nets with Memory Doklady AN SSR 127, No. 2, 281-284 (1959).

18. N.E. Kobrinski, B.A. Trakhtenbrot Fundamentals of the Theory of Logical Nets In the collection of papers "Computing Techniques and Their Application", Moscow 248-268 (1959).

19. B.A. Trakhtenbrot Sketching of a General Theory of Logical Nets In the collection of papers "Logical Investigations" ed. by the Institute of Philosophy of the Academy of Sciences, Moscow 352-378 (1959).

1961

20. B.A. Trakhtenbrot Some Constructions in the Monadic Predicate Calculus Doklady AN SSR 138, No. 2, 320-321 (1961).

21. B.A. Trakhtenbrot Finite Automata and the Monadic Predicate Calculus Doklady AN SSR 140, No. 2, 326-329 (1961).

1962

22. B.A. Trakhtenbrot Finite Automata and the Monadic Predicate Calculus Siberian Mathematical Journal 3, No. 1, 103-131 (1962).

23. B.A. Trakhtenbrot Investigations on the Synthesis of Finite Automata, Soviet Doctoral Thesis, Math. Inst. of the Siberian Branch of the USSR Academy of Sciences, Novosibirsk, 1962

1963

24. B.A. Trakhtenbrot On the Frequency Computation of Recursive Functions Algebra i Logika, Novosibirsk 1, No. 1, 25-32 (1963).

1964

25. B.A. Trakhtenbrot Finite Automata Proceedings of the Fourth All-Union Math. Congress (1961), Nauka, Moscow Vol. 2, 93-101, 1964 .

26. B.A. Trakhtenbrot On an Estimate for the Weight of a Finite Tree Siberian Mathematical Journal 5, No. 1, 186-191 (1964).

27. B.A. Trakhtenbrot On the Complexity of Schemas that Realize Many-Parametric Families of Operators Problemy Kibernetiki, Vol. 12, 99-112 (1964).

28. B.A. Trakhtenbrot Turing Computations with Logarithmic Delay Algebra i Logika, Novosibirsk 3, No. 4, 33-48 (1964).

29. B.A. Trakhtenbrot Automata Theory, Encyclopedia "Automation of Electronic Industries", vol 1, 1964.

1965

30. B.A. Trakhtenbrot Optimal Computations and the Frequency Phenomena of Yablonski Algebra i Logika, Novosibirsk 4, No. 5, 79-93 (1965).
1966

31. B.A. Trakhtenbrot On Normalized Signalizing Functions for Turing Computations Algebra i Logika, Novosibirsk 5, No. 6, 61-70 (1966).

32. B.A. Trakhtenbrot On Complexity of Computations, Abstracts of the International Mathematical Congress, Section 1, Moscow, p.26, 1966.

1968

33. Ya. M. Barzdin, B.A. Trakhtenbrot On the current situation in the Behavioral Theory of Automata. Abstracts of the Conference (Tashkent, 1968) on Automata Theory and Artificial Intelligence, Computing Center of the USSR Academy of Sciences, pp10-11, 1968.

34. B.A. Trakhtenbrot, M. Valiev On the Complexity of the Mutual Reduction of the Identity-Problem for Finite Definable Groups and the Decidability of Enumerable Sets. Abstracts of the IX All-Union Symposium on Algebra, pp.41-42, Gomel, (1968).

1969

35. B.A. Trakhtenbrot On the Complexity of the Mutual-Reduction Algorithms in the Construction of Novikov and Boone Algebra i Logika, Vol. 8, 50-71 (1969).

1970

36. B.A. Trakhtenbrot The Theory of Algorithms in the USSR In the "History of Mathematics in Our Country", Kiev 409-431 (1970).

37. B.A. Trakhtenbrot On Autoreducibility Doklady AN SSR 192, No. 6, 1224-1227 (1970).

38. B.A. Trakhtenbrot Some Applications of the Theory of Complexity of Computations Inform. Bulletin of the Cybernetics Scientific Council, Academy of Sciences, No. 5, 61-74 (1970).

1972

39. B.A. Trakhtenbrot Complexity of Computations on Discrete Automata, Studien zur Algebra und ihre Anwendungen, p.152, Akademie Verlag, Berlin, 1972

1973

40. B.A. Trakhtenbrot On Autoreducible and Nont-Autoreducible Predicates and Sets In "Investigations in the Theory of Algorithms and Mathematical Logic", Computer Center, Academy of Sci., Vol. 1, 211-235 (1973).

41. B.A. Trakhtenbrot Frequency Computations Trudy Matem. Instituta im. Steklova (Transactions of the Steklov Math' Institute) Vol. 133, 221-232 (1973).

42. B.A. Trakhtenbrot Formalization of Some Notions in Terms of Computation Complexity Proceedings of the 1st International Congress for Logic,

Methodology and Philosophy of Science, Studies in Logic and Foundations of Mathematics, Vol. 74, 205-214 (1973).

1974

43. B.A. Trakhtenbrot On Universal Classes of Program-Schemes International Symposium on Theoretical Programming (1972) Novosibirsk, Lecture Notes in Computer Science 5, 144-151 (1974).

44. B.A. Trakhtenbrot Notes on the Complexity of Probabilistic Machine Computations In "Theory of Algorithms and Mathematical Logic", ed. by the Computing Center of the Academy of Sciences 159-176 (1974).

45. B.A. Trakhtenbrot Alexey Andreevich Lyapunov, Mathematics in the School, (Russian), No3, 1974

45a B.A. Trakhtenbrot Alexey Andreevich Lyapunov, in "Essays on the History of Informatics in Russia", Nauchno-Izdatel'skiy Tsentr Sibirskogo Otdeleniya Rossiyskoy Akademii Nauk, Novosibirsk, 1998, pp.470-480

45b. German Translation in Mathematik in der Schule, Jg 13, No 4, 203-209, Berlin, 1975.

46. B.A. Trakhtenbrot Abstraktnaya Teoriya Avtomatov (Abstract Automata Theory), Encyclopedia "Kibernetika", vol. 1, Kiev, 1974

47. B.A. Trakhtenbrot Avtomatov Teorija (Theory of Automata) Encyclopedia of Cybernetics, Vol. 1, Kiev, (1974).

48. B.A. Trakhtenbrot Mery Slozhnosti v Teorii Avtomatov (Complexity Measures in Automata Theory) Encyclopedia of Cybernetics, Vol 1, Kiev (1974).

49. B.A. Trakhtenbrot Povedenie Avtomatov (Behavior of Automata), Encyclopedia of Cybernetics, Vol 2, Kiev, (1974).

50. B.A. Trakhtenbrot Yazyk Logicheskiy dlya Zadaniya Avtomatov (Logical Language for Specifications of Automata, Encyclopedia of Cybernetics, Vol 1, Kiev (1974).

1975

51. B.A. Trakhtenbrot On Problems Solvable by Successive Trial MFCS/75, Marianske Lazne, Lecture Notes in Computer Science, Vol. 32, 125-138 (1975).

1976

52 B.A. Trakhtenbrot Recursive Program Schemas and Computable Functionals MFCS/76, Gdansk, Lecture Notes in Computer Science, Vol. 45, 137-151 (1976).

1977

53. B.A. Trakhtenbrot Frequency Algorithms and Computations MFCS/77, Tatranska Lomnica, Lecture Notes in Computer Science, Vol. 53, 148-161 (1977).

1978

54. B.A. Trakhtenbrot On the Semantics of Algorithmic Languages Proceedings of the Symposium "Development Perspectives in System and Theoretical Programming", Novosibirsk 77-84 (1978).

1979

55 B.A. Trakhtenbrot Semantics and Logic of Algorithm Languages Semiotika i Informatika, Moscow, Vol. 13, 47-85 (1979).

56. B.A. Trakhtenbrot On the Completeness of Algorithmic Logic Kibernetika, Kiev, No. 2 (1979).

57. B.A. Trakhtenbrot Relaxation Rules of Algorithmic Logic MFCS/79, Olomouc, Lecture Notes in Computer Science, Vol. 74, 453-462 (1979).

58. B.A. Trakhtenbrot Vospitanie Matematiko-Logicheskoy Kultury Uchashchikhs'a (On Mathematical-Logical Education) in "Olimpiada, Algebra, Kombinatorika", Nauka, Novosibirsk, 26-52, 1979

1981

59. B.A. Trakhtenbrot Some Reflections on the Connection between Computer Science and the Theory of Algorithms, Proceedings of the Urgench-79 Symposium "Algorithms in modern mathematics and computer science", Lecture Notes in Comp. Sc., ol 122, pp461-462, 1981.

1983

60. B.A. Trakhtenbrot, J. Halpern, A. Meyer From Denotational to Operational and Axiomatic Semantics for Algol-like Languages (an overview) In Logics of Programs, Proceedings 1983, Lecture Notes in Computer Science No. 164, 474-500.

1984

61. J. Halpern, A. Meyer and B.A. Trakhtenbrot The Semantics of Local Storage, Or What Makes the Free List Free (preliminary report) In Conference Record of the XI ACM Symposium on Principles of Programming Languages 245-257 (1984).

62. B.A. Trakhtenbrot A Survey on Russian Approaches to PEREBOR (Brute Force Search) Algorithms Annals of the History of Computing, Vol. 6, No. 4, 384-400 (1984).

1987

63. B.A. Trakhtenbrot On logical relations in program semantics. Proceedings of the Conference on Mathematical Logic and its Applications, dedicated to the 80th Anniversary of Kurt Godel, Druzhba, Bulgaria, Sept. 1986, Plenum Press, NY, 213-229 (1987).

1988

64. B.A. Trakhtenbrot Comparing the Church and Turing Approaches: Two prophetic messages. In the book "The Turing Universal Machine - A Half-Century Survey", Oxford University Press, 1988, also in the book Kammerer and Unverzagt (Berlin), 603-630 (1988).

64a. B.A. Trakhtenbrot Second Edition, Springer Verlag/Wien, pp.557-582, 1994 and 1995

65. B.A. Trakhtenbrot Editor's Foreword to Special Issue on Concurrency, pp. 327-329 in Fundamenta Informaticae, Vol. xi, North Holland - Amsterdam, 357-403 (1988).

66. A. Rabinovich, B.A. Trakhtenbrot Behavior structures and nets of processes. in Fundamenta Informaticae, Vol. xi, North Holland - Amsterdam, 357-403 (1988).

1989

67. Y. Hirshfeld, A. Rabinovich, B.A. Trakhtenbrot Discerning causality in interleaving behavior. in Proceedings of Logic at Botiv 89, Perelavl-Zulesky, USSR, July 1989, LNNCS vol. 363, pp. 146-162.

68. A. Rabinovich, B.A. Trakhtenbrot Nets of processes and data flow. In "Lecture Notes in Computer Science", J.W. de Bakker, W.P. de Roever and G. Rozenberg (eds.), Springer Verlag, 1989, pp. 574-602.

69. A. Rabinovich, B.A. Trakhtenbrot Nets and data flow interpreters. in Proceedigs of LICS (Fourth Annual Symposium, June 1989, Asilomar, California, USA. 1989, pp. 164-174.

1990

70. A.Rabinovich,B.A. Trakhtenbrot Communication among relations in "Automata,Languages and programming",proceedings of the 17th ICALP colloquium, Warwick,England,1990, in LNCS vol. 443 pp. 294-307.

1991

71. A.Mazurkiewicz,A.Rabinovich,B.A.Trakhtenbrot Connectedness and synchronization In Images of Programming Memorial book in honour of acad.Andrei P.Ershov, IFIP Series,North-Holland Pub.1991.

72. A.Rabinovich,B.A.Trakhtenbrot On nets,algebras and modularity In "Theoretical Aspects of Computer Software" Intern.Conf. TACS'91,Sendai Japan 1991,LNCS 526, pp. 176-203.

1994

73. B.A. Trakhtenbrot Compositional Proofs for Networks of Processes. in Fundamenta Informaticae, Vol. ,No 20(1/2/3, 1994, pp. 231-275.

1995

74. B.A.Trakhtenbrot Origins and Metamorphoses of the Trinity: Logic, Nets,Automata, Proc. of the 10-th IEEE Symposium on LICS,San Diego,1995

1997

75. B.A.Trakhtenbrot On the Power of Compositional Proofs in Fundamenta Informaticae,Vol30 ,No,1 1997,pp.83-95

76. B.A.Trakhtenbrot In Memory of S.A.Yanovskaya (Russian) in Researches in History of Mathematics, Series 2, vol 2 (37), 1997, pp.109-127 Russian Academy of Sciences, The Institute for History of Natural Sciences and Technology.

76a B.A.Trakhtenbrot, In Memory of S.A. Yanovskaya (1896-1966), On the Century of Her Birth. Modern Logic, vol 7, No 2, 1997, pp.160-187

77. A.Rabinovich,B.A.Trakhtenbrot From Finite Automata toward Hybrid Systems, Proceedings of FCT 1997 in LNCS No 1279 ,1997, pp. 411-422.

1998

78. B.A. Trakhtenbrot, Automata and Hybrid Systems (A seven-lecture mini-course), Technical Report No. 153, UPMAIL, Uppsala University, 1998, pp. 1-89.

79. B.A.Trakhtenbrot From Logic to Theoretical Computer Science in "People and Ideas in Theoretical Computer Science". Springer Verlag, 1998, pp. 314-342.

1999

80. B.A. Trakhtenbrot Automata and their interaction: Definitional suggestions. In Fundamentals of Computation Theory, 12-th Intern. Symp. FCT99 Iasi, LNCS 1684, pp. 54-89, 1999.

2001

81. B.A. Trakhtenbrot Automata, Circuits and Hybrids: Facets of Continuous Time. In Proceedings of ICALP2001, Crete, Greece, LNCS 2076, pp. 4-23, July, 2001

82. B.A. Trakhtenbrot Automata, Circuits and Hybrids: Facets of Continuous Time, (Extended Abstract), Proceedings of the 33rd Annual ACM Symposium on Theory of Computing, Hersonissos, Crete, Greece. July 2001, pp 754-755

B.A. Trakhtenbrot Automata, Logic, Circuits: the impact of continuous time. Abstracts of the International Conference MATHEMATICAL LOGIC, Algebra and SET THEORY, dedicated to the 100-th anniversary of P.S. Novikov, August 2001, p.48

83. B.A. Trakhtenbrot Remembering Alexey Andreevich, Proceedings of the Conference Dedicated to the 90-anniversary of A. A. Lyapunov, Joint Institute of Informatics, Novosibirsk, Siberian Branch of the Russian Academy of Sciences, 2001

2004

84. B.A. Trakhtenbrot Editor's Preface to Special Issue on Continuous Time Paradigms in Logic and Automata, pp. v-vii, Fundamenta Informaticae, vol. 62, No 1.

85. B.A.Trakhtenbrot Understanding Basic Automata Theory in the Continuous Time Setting Fundamenta Informaticae, vol 62, No 1, 2004, pp. 69-121.

86. D.Pardo, A. Rabinovich, B.A. Trakhtenbrot Synchronous Circuits over Continuous Time: Feedback Reliability and Completeness. *Fundamenta Informaticae*, vol. 62, No 1, 2004, pp123-137