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CURRICULUM VITAE

of Andre Broido

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EDUCATION

1990-93	Ph.D. studies, Stockholm University.
1993	**Ph.L.** (Licentiate of Philosophy), Stockholm University, Sweden. Ph.L. thesis: *Permutations of Tensor Products.*
1992	European School of Group Theory, University of Twente, Netherlands.
1991	Ph.D. studies, Uppsala University, Sweden
1975-79	M.S. studies, Moscow State (Lomonosov) University. Major: Mathematics.
1979	**M.S.**, Moscow State University. M.S. thesis: *Theorems in Linear Superalgebra.*
1972-75	B.S. stidies, Moscow Institute for Transport Engineering (MIIT). Major: Applied Mathematics and Computer Science.

RESEARCH EMPLOYMENT

1999-	Senior Researcher, Cooperative Association for Internet Data Analysis (San Diego Supercomputing Center, UCSD).
1993-97	Visiting Scholar, Department of Mathematics, University of California, San Diego, USA.
1993	Visiting Scholar, Department of Mathematics, Ohio State University, Columbus, Ohio, USA.
1991	Researcher, Department of Geophysics, Uppsala University (Sweden).
1983-90	Institute for Mineralogy and Geochemistry of Rare Elements (Moscow, Russia):
1987-90	research scientist, seismic tomography project leader.
1983-87	software engineer, CAD project leader.
1979-83	Institute for Control Sciences (Moscow, Russia), scientist in the Laboratory of Parallel Computing.

TEACHING EMPLOYMENT

1995 Lecturer in Calculus, University of California, San Diego.

1994-95 Organizing committee member, San Diego High School Honors Mathematics Contest.

1992 Assistant Professor (Theory of Algorithms and Complexity; Linear Algebra), Uppsala University (Sweden).

1991 Organizing committee member, 32nd International Mathematical Olympiad (Uppsala and Sigtuna, Sweden).

1980-83 Associate Professor, Mathematics High School No. 57, Moscow.

1980 Assistant Professor, Summer School for Physics and Mathematics, Karelian Pedagogic Institute, Petrozavodsk, Russia.

1978 Organizing committee member, Lomonosov High School Tournament in Natural Sciences and Humanities, Moscow.

1978-79 Senior teaching assistant, head of consulting group, Moscow State (Lomonosov) University.

1972-80 Coordinator, Moscow High School Mathematical Olympiad.

1972-75 Instructor, High School for Physics and Mathematics at the Moscow Institure for Transport Engineering

BOOKS AND PAPERS

In English:

1. *Complexity of preprocessing of recursive filters for running in parallel.* Applied Mathematics Letters **5**, #1, 47-50, 1992.

2. *Summing up function values in parallel: a complexity analysis,* 6 pp. Applied Mathematics Letters **6**, #1, 57-62, 1993.

3. *Permutations of tensor products, Part I: Arithmetics of in-place transposing of an array and complexity of sorting by block transpositions,* 15 pp., *Part II: Permuting tensors in a triangle,* 12 pp. Reports, Department of Mathematics, Stockholm University, #5, 1993.

4. *An exterior product identity for Schur functions,* 10 pp., Journal of Pure and Applied Algebra, vol.**111**, p.21-29, 1995.

5. *Quadratic reciprocity and matrix transposing,* ms, 4 pp., 1993.

6. *Harmonic analysis in representation rings, deformations of L-functions and Artin's conjecture,* ms, 45 pp., 1994.

7. *Triangle equations and the arithmetic of stride permutations,* ms, 24 pp., 1994.

8. *Games in elementary math: levels and implementation,* ms, 24 pp, 1994.

In Russian:

9. Algorithms for multiprocessor computers and their implementation. (with V.Lebedev, V.Trachtenhertz, Yu.Shuraits.) Questions of Cybernetics, **30**, 1982.

10. *Dynamic programming and spline approximation techniques for reconstruction of seismic interfaces.* In: O. G. Kutina, *Design of statistical algorithms for processing and interpretation of seismic data.* Moscow, Nedra, 1982, Ch. 7.

11. *Optimal iterated multiplication of polynomials.* ICS technical reports, 5 pp., Moscow, 1982.

12. *Complexity of the multiprocessor summation of function values.* ICS technical reports, 50 pp., Moscow, 1983.

13. *Map design with software package JOIN* (with E. I. Poletaeva). In: Automation of analysis and processing of geochemical exploration data, IMGRE, Moscow, 1987, 58-73.

14. *Computational complexity and implementation of the integral geometry algorithms of seismic inversion* (with M. R. Soloveychik). In: E. K. Burenkov, B. S. Kogan, eds. *Geomathematical models of exploration geochemistry,* IMGRE, 1990, 74-98.

15. *Tracing of seismic interfaces* (with O. G. Kutina). Monograph, 268 pp. Moscow, Nedra, 1993.

CONGRESSES AND CONFERENCES

1. *Optimal algorithms for parallel function summation.* School of Parallel Information Processing, Lvov, Ukraine, 1980.

2. *JOIN - computer graphics system for geological map design.* Conference of society of natural philosophers, Moscow, 1986.

3. *Fast calculations in seismic migration.* Conference on actual problems of seismic exploration, St. Peterburg, 1988.

4. *On the complexity of seismic tomography problems.* Colloquium on geotomography, Novosibirsk, 1989.

5. *Construction of seismic images using the fast slant stack.* Seminar on ore geophysics of Kazakhstan, Alma-Ata, 1989. 6. Computer implementation of seismic integral transforms. All-Union geophysical seminar of "Znanie" society, 1990.

7. Sophus Lie Memorial Week, Oslo, Norway, August 1992 (participation).

8. *Necklace L-functions and Artin's conjecture.* Western number theory conference, San Diego, Dec. 1994.

SELECTED TALKS AND PRESENTATIONS

9. *Lie algebras of Estabrook and Wahlquist for nonlinear evolution equations.* Institute for Theoretical and Experimental Physics (ITEP), Moscow, 1978.

10. *Computational complexity of some numerical problems,* Department of Numerical Analysis and Computer Science, Royal School of Technology (KTH), Stockholm, Sweden, 1990.

11. *Advanced algorithms for seismic data processing.* Department of Geophysics, Uppsala University, Sweden, Dec. 1990.

12. *Algebraic complexity of parallel function summation and recursive filtering.* Department of Mathematics, Uppsala University, May 1991.

13. *Algebraic problems arising in algorithms of matrix transposing.* Department of Mathematics, Uppsala University, Jan. 1992 (in Swedish).

14. *Hecke algebras.* Seminar for Ph.D. students, Department of Mathematics, Stockholm University, Oct. 1992.

15. *The mystery of the equation of fifth degree.* Ceremony of the opening of Mathematics and Informatics Center, Uppsala University, Oct. 1992 (in Swedish).

16. *The metaphysics of commutativity.* Department of Theoretical Physics, Uppsala University, May 1993.

17. *Hecke algebras and quantum groups: an overview.* Department of Mathematics, Ohio State University, June 1993.

18. *Natural commutativity and permutations.* Department of Mathematics, Ohio State University, June 1993.

19. *Representations of quantum function algebras at roots of unity.* Department of Mathematics, Ohio State University, July 1993.

20. *An algebraist's toolkit for matrix transposing.* Combinatorics seminar, UCSD, Oct. 1993.

21. *Necklace-valued zeta-functions.* Number theory seminar, UCSD, Oct. 1993.

22. *In-place matrix transposing and quadratic reciprocity.* Combinatorics seminar, UCSD, Nov. 1993.

23. *Nonlinear filtering and deformations of L-functions.* Number theory seminar, UCSD, Jan. 1994.

24. *As simple as modular forms.* Undergraduate colloquium, UCSD, Jan. 1994.

25. *"Exchange and arrange": a puzzle of gods and giants.* Undergraduate colloquium, UCSD, Apr. 1994.

26. *Playing "Exchange and arrange" with arithmetic and algebra.* Gomperz secondary school, San Diego, May 1994.

27. *Games and mathematics.* Closing ceremony for San Diego High School Math Honors Contest, May 1997.

PERSONAL DATA

Foreign languages: Russian (native), German, Swedish (fluent); French, Hebrew, Spanish, Japanese (limited).

Immigration Status: Permanent resident (green card)