Curriculum Vitae

E.A. Vassilieva

1 Administrative informations

- *Name :* Vassilieva
- *Given name :* Ekaterina
- *Nationality :* French/Russian
- *Office :* Ecole Polytechnique – LIX – Route de Saclay – 91128 Palaiseau Cedex
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- *Present situation :* researcher at the French National Research Foundation (CNRS) – LIX – Ecole Polytechnique

2 Education:

1. *M.S. - Mathematics, Applied Mathematics* (5 years), Moscow State University, Moscow, Russia, June 1997
2. *Ph.D.Thesis*
   - `Site name` : Department of Mechanics and Mathematics, Chair of Higher Algebra, Moscow State University, Russia
   - `Subject` : Standard Bases of Free Superalgebras
   - `Ph.D.supervisors` : A.A. Mikhalev – A.V. Mikhalev
   - `Ph.D.defence` : the 3rd of March 2000

3 Conference communications

3.1 National conferences

1. *Standard bases of ideals of universal enveloping algebras of Lie superalgerbras*, (with A.A. Mikhalev and A.V. Sereguin), International Kurosh Algebraic Conference, Abstracts of Talks, Moscow (1998), p. 86, Moscow State University Press, 1998 (in Russian)

2. *Involutive approach to associative algebras*, International Kurosh Algebraic Conference, Abstracts of Talks, Moscow (1998), p. 150, Moscow State University Press, 1998 (in Russian)

3. *Properties of different involutive divisions in free associative algebras*, Lyapin International Conference "Semigroups and Applications", Abstracts of Talks, Saint-Petersburg (1999), p. 11, Saint-Petersburg State University Press, 1999 (in Russian)

4. *Involutive bases and composition techniques in colour Lie superalgebras*, International Algebraic Seminar on 70 years of Department of Higher Algebra, Abstracts of Talks, Moscow (1999), p. 74, Moscow State University Press, 1999 (in Russian)

5. *Performance analysis of PSK protocols with diversity*, (with D. Krob), Services liés à la mobilité et aux réseaux mobiles de troisième génération (MS3G'01), C. Gagnon, G. Pujolle, A. Girard, S. Ubéda, Eds., 53–58, **C-213**, Editions de l'INRIA, 2001

6. *Constantes de structure et hypercartes localement orientables*, Journées de combinatoire de Bordeaux, 2014

3.2 International conferences

1. *Involutive Bases of Free Algebras*, International Congress of Mathematicians (ICM'98), Abstracts of Short Communications, Berlin (1998), p. 31, Documenta Mathematica, 1998

2. *Standard bases of ideals of super commutative polynomial algebras*, (with A.A. Mikhalev), in Proceedings of "Second International Tainan-Moscow Algebra Workshop", A.V. Mikhalev, E. Zelmanov, Y. Fond, Eds., Hong Kong, 108–126, Springer Verlag, 1999

3. *On the center of the quantum plactic algebra*, (with J.C. Novelli), Formal Power Series and Algebraic Combinatorics (FPSAC'00), 709–718, Springer Verlag, 2000

4. *Performance Analysis of Modulation Protocols: a Combinatorial Approach*, (with D. Krob), Discrete Models – Combinatorics, Computation and Geometry (DM-CCG'01), R. Cori, M. Morvan, Eds., Discrete Mathematics and Theoretical Computer Science, Conference Edition, 203–214, 2001

5. *A bijection for Unicellular Partitioned Bicolored Maps*, (with G. Schaeffer), Formal Power Series and Algebraic Combinatorics (FPSAC'06),San Diego, USA, 326 – 336, 2006

6. *Partitioned Cacti: A Bijective Approach to the Cycle Factorization Problem*, (with G. Schaeffer), Formal Power Series and Algebraic Combinatorics (FPSAC'08), Valparaiso, Chile, 2008

7. *A Combinatorial Way of Counting Unicellular Maps and Constellations*,(with G. Schaeffer), International Algebraic Conference on Occasion of 100th Anniversary of Professor A.G. Kurosh, Moscow, Russia, 2008

8. *Bijective Enumeration of Bicolored Maps of Given Vertex Degree Distribution*, (with A. Morales), Formal Power Series and Algebraic Combinatorics (FPSAC'09), Hagenberg, Austria, 2009

9. *Linear coefficients of Kerov's polynomials: bijective proof and refinement of Zagier's result*, (avec V. Féray), Formal Power Series and Algebraic Combinatorics (FPSAC'10), San Francisco, USA, 2010

10. *Bijective evaluation of the connection coefficients of the double coset algebra*, (avec A. Morales), Formal Power Series and Algebraic Combinatorics (FPSAC'11), Reykjavik, Iceland, 2011

11. *Explicit monomial expansions of the generating series for connection coefficients*, Formal Power Series and Algebraic Combinatorics (FPSAC'12), Nagoya, Japan, 2012

12. *Long cycle factorizations : bijective computation in the general case*, Formal Power Series and Algebraic Combinatorics (FPSAC'13), Paris, France, 2013

13. *On Jack's connection coefficients and their computation*, XII International Conference Algebra and Number Theory: Modern Problems and Applications, Tula, Russia, 2014

4 Publications in journals

1. *Free left symmetric algebras*, (avec A.A. Mikhalev), Fundamental and Applied Mathematics, **2**, 611–613, 1996 (in Russian)

2. *Involutive bases of free algebras*, Fundemental and Applied Mathematics, (5), **4**, 993–1002, 1999 (in Russian)

3. *Endomorphisms of free supercommutative algebras*, Uspekhi Mat. Nauk, (55), **1**, 139–141, 2000 (in Russian); translation in Russian Math. Surveys 55 (2000), no. 1, 190–191

4. *Zassenhauss Lie idempotents, q-bracketing and a new q-exponential/logarithm correspondance*, (with G. Duchamp et D. Krob), J. of Algebraic Combinatorics, **12**, 251–277, 2000

5. *Performance evaluation of demodulation with diversity – A combinatorial approach I: Symmetric function theoretical methods*, (with J.L. Dornstetter, D. Krob, J.Y. Thibon), Discrete Mathematics and Theoretical Computer Science, **5**(1), 191 – 204, 2002

6. *Performance evaluation of demodulation with diversity – A combinatorial approach II: Bijective methods*, (with D. Krob), Discrete Applied Mathematics, **145**(3), 403 – 421, 2005

7. *Using Geometrical Properties for Fast Indexation of Gaussian Vector Quantizers*, (with D. Krob, J. M. Steyaert), EURASIP Journal on Applied Signal Processing (EURASIP JASP),Volume 2007 (2007), Article ID 63192, 11 pages

8. *A Bijective Proof of Jackson's Formula for the Number of Factorizations of a Cycle*, (with G. Schaeffer), J. Comb. Theory, Ser. A 115(6): 903-924, 2008

9. *Learning Pattern Recognition Through Quasi-Synchronization of Phase Oscillators.*, (with G. Pinto, J. Acacio de Barros et P. Suppes), IEEE transactions on Neural Networks, ISSN: 1045-9227, volume 22-1, pp 84 - 95 , 2011

10. *Bijective Enumeration of Some Colored Permutations Given by the Product of Two Long Cycles*, (with V. Féray), Discrete Mathematics, ISSN: 0012-365X, Volume 312, Issue 2, pp 279-292, 2012

11. *Bijective Enumeration of 3-Factorizations of an N-Cycle*, Annals of Combinatorics Volume 16, Issue 2, pp 367-387, 2012

12. *Direct bijective computation of the generating series for 2 and 3-connection coefficients of the symmetric group* (with A. Morals), Electronic Journal of Combinatorics, Volume 20, Issue 2, p6,

13. *On Jack's connection coefficients and their computation*, Chebyshevsky sbornik, Volume 15, Issue 1, pp 6576, 2014

14. *Polynomial properties of Jack connection coefficients and generalization of a result by Denes*, Journal of Algebraic Combinatorics, to appear.

5 Teaching experience

5.1 Tutorials

1. *Linear Algebra*, Tutorial (36 h.), 1st and 2nd year of university, Moscow State University, 1998/1999 and 1999/2000

2. *Mobile Networks*, Tutorial (12 h.), 4th year of the university cycle, Pôle Universitaire Léonard de Vinci, 2000/2001

3. *Mobile Networks*, Tutorial (12 h.), Third cycle, Pôle Universitaire Léonard de Vinci, 2000/2001

4. *Algorithmics and langage C*, Tutorial (24 h.), Licence of Bio-Informatics, Université Paris 7, 2001/2002

5. *Informatics and modelisation*, Tutorial (24 h.), 3rd year, Institut Universitaire Professionalisé (IUP) d'Informatique, Université Paris 7, 2001/2002

6. *Computation theory and complexity*, Tutorial (24 h.), Maîtrise d'Informatique, Université Paris 7, 2001/2002

7. *Mathematics for Informatics*, Tutorial (24 h.), Licence d'Informatique, Université Paris 7, 2001/2002

5.2 Programming tutorials

1. *Programming in Java*, Tutorial (20 h.), 1st year, Ecole Polytechnique, 2001/2002

2. *Programming in Java*, Tutorial (20 h.), 1st year, Ecole Polytechnique, 2002/2003

3. *Scilab*, Tutorial (8 h.), 1st year, Ecole Polytechnique, 2002/2003

6 Postdocs

1. *NATO grant* – April-December 2000 – Université Paris 7 – LIAFA (Laboratoire d'Informatique Algorithmique : Fondements et Applications) – Subject : Combinatorial Methods in Mobile Communications

2. *Grant of Ecole Polytechnique* – January-December 2001 – Ecole Polytechnique – LIX (Laboratoire d'Informatique de l'Ecole Polytechnique) – Subject : Algorithmical and Combinatorial Problems in Mobile Telecommunications

7 Other

1. *Informatics* :
    - Systems : Unix (Linux) and Windows
    - Languages : C/C++, Java, Maple, HTML, LaTeX
2. *Languages* :
    - English : fluent
    - French : fluent
    - Japanese : advanced
    - Russian and Byelorussian : native

References : available upon request