Denis Volk

Personal	Born 15 March 1983	Citizenship: Russia	
Web	http://www.denisvolk.com/	*E-mail:*	denis.volk@sissa.it
Current Positions and Contact Information	Post-Doc (December 2010 to present) Scuola Internazionale Superiore di Studi Avanzati via Bonomea, 265, 34136 Trieste Italy	*Mobile:* *Voice:* *Fax:*	+39 327 5918 122 +39 040 3787 450 +39 040 3787 528
	Junior Researcher (January 2010 to present) Institute for Information Transmission Problems Russian Academy of Sciences	*Mobile:* *Voice:* *Fax:*	+7 916 707 10 06 +7 495 650 42 25 +7 495 650 05 79

Research Interests: Dynamical systems, partially hyperbolic dynamics, symbolic shifts, attractors. Stochastic processes, Markov chains, random walks. Complex foliations, complex dynamics.

Education

Lomonosov Moscow State University, Moscow, Russia

Ph.D., Dynamical Systems Theory Department, April 2010

- Thesis Topic: Genericity of some properties of attractors in skew products and analytic foliations
- Advisor: Professor Yu. S. Ilyashenko
- Area of Study: Random dynamical systems, partial hyperbolicity

Combined B.S./M.S., Dynamical Systems Theory Department, June 2004, graduated Summa Cum Laude

- Thesis Topic: Density of separatrix connections in $\mathbb{C}P^2$
- Advisor: Professor Yu. S. Ilyashenko
- Area of Study: Complex foliations, complex differential equations

Independent University of Moscow, Moscow Center for Continuous Mathematical Education

20 additional courses on various math topics, September 1999 to November 2010

Publications and Preprints

V. Kleptsyn, D. Volk. Skew products and random walks on intervals. arXiv:1110.2117

D. Volk. Persistent massive attractors of smooth maps. arXiv:1108.5330

Yu. Ilyashenko, D. Volk. Cascades of ε-invisibility. Journal of Fixed Point Theory and Applications, 2010, 7, 161–188 [see also arXiv:0906.3567]

D. Volk. The density of separatrix connections in the space of polynomial foliations in $\mathbb{C}P^2$. Proceedings of the Steklov Institute of Mathematics. Volume 254, Number 1 / September, 2006, 169–179. [Translated from Nonlinear analytic differential equations. Collection of articles. Moscow, "Science" publications, 2006, 181–191. (Trudy Matematicheskogo Instituta imeni V. A. Steklova, Vol. 254) (Russian)]

D. Volk. Theorem on the density of separatrix connections for polynomial foliations in $\mathbb{C}P^2$. Journal of Mathematical Sciences. Volume 150, Number 5 / May, 2008, 2326–2334. Springer New York. [Translated from Fundamentalnaya i Prikladnaya Matematika, 2006, 12:4, 53–64 (Russian)]

Conference Publications

D. Volk. Persistent massive attractors of smooth maps. Proceedings of International Mathematical Conference "50 Years of IITP", 2011, ISBN 978-5-901158-15-9

D. Volk. Skew products with interval fiber. Conference on Geometry and Topology of Foliations, 2010, p. 23

V. Kleptsyn, D. Volk. Thin attractors. Topology, Geometry and Dynamics: Rokhlin Memorial, 2010, pp. 70–72

D. Volk. The density of separatrix connections in $\mathbb{C}^2$. International conference "Differential equations and related topics" dedicated to I. G. Petrovskii, 2004. Book of Abstracts, p. 241 (Russian).

Current Grants

PI, "Young SISSA scientists" [Italy] [12,500€, 1 year]

Co-PI, President's of Russia MK-2790.2011.1 *(with V. Timorin and I. Schurov)* [Russia] [40,000$, 2 years]

PRIN [Italy]
RFBR 10-01-00739-a [Russia]
RFBR/CNRS 10-01-93115 [Russia-France]

Old Grants

RFBR 07-01-00017-a [Russia], RFBR/CNRS 05-01-02801-CNRS-a [Russia-France], CRDF RM1-2358 [USA], RFBR 02-01-22002 [Russia]

Awards

Scholarship from Independent University of Moscow for promising graduate students, 2009

Teaching and Pedagogical Activities

Independent University of Moscow, Moscow, Russia

Lecturer **September 2010 to November 2010**

- Course on partially-hyperbolic dynamics, Pesin theory and thick attractors (joint with D. Ryzhov).

Summer School "Contemporary Mathematics", Dubna, Russia

Lecturer, Member of Organizing Committee **July 2009**

- Course "Electromagnetism, connections in principal bundles and the Yang-Mills theory" (joint with V. Kleptsyn).

Lomonosov Moscow State University, Department of Mathematics and Mechanics, Moscow, Russia.

Lecturer **October 2008 to December 2008**

- Undergraduate topic course "Introduction to Dynamical Systems".

Moscow State School N 57, Moscow, Russia.

Instructor **January 2000 to June 2007**

- Lectures on advanced math: calculus, probability theory, topology etc.
- Seminar work with students, personal mentoring.
- Organization of hikes and mountaineering expeditions for students.

8 Moscow Mathematical Olympiads, Moscow, Russia.

Member of Organizing Committee **1998 to 2005**

Short-Term Positions

University of California, Irvine, USA - 1 month

Visitor **November 2011**

Universite de Rennes 1, IRMAR, Rennes, France - 2 months

Visitor **March 2009 to April 2009**

Laboratoire J.-V. Poncelet (UMI 2615), Moscow, Russia - 16 months

Visiting PhD student **October 2008 to January 2010**

Cornell University, NY, USA - 3 months

Visitor **September 2008, November 2007 to December 2007**

Conference and Invited Talks

Skew products with interval fiber. University of California, Irvine, USA. November 2011

Skew products with interval fiber. University of Maryland, USA. October 2011

Persistent massive attractors of smooth maps. Semi-annual Workshop in Dynamical Systems and Related Topics, Penn State, USA. October 2011

Persistent massive attractors of smooth maps. International Mathematical Conference "50 Years of IITP", Moscow, Russia. July 2011

Skew products with interval fiber. ICTP, Trieste, Italy. March 2011

Density of separatrix connections in the space of polynomial foliations in $\mathbb{C}^2$. ENS-Lyon, France. January 2011

Thin attractors in skew products. CODY Autumn: Low-dimensional dynamics, Warsaw, Poland. November 2010

Thin attractors in skew products. Information Technologies and Systems, Gelendzhik, Russia. September 2010

Thin attractors in skew products. Cornell University, USA. September 2010

Skew products with interval fiber. Conference on Geometry and Topology of Foliations, CRM, Spain. July 2010

Introduction to thin attractors. Summer School in Dynamical Systems, Poprad, Slovakia. June-July 2010

Thin attractors in skew products. Conference "Lomonosov", Moscow, Russia. April 2010

Thin and thick attractors. SUNY Stony Brook, Institute for Mathematical Sciences, USA. February 2010

Thin attractors. Topology, Geometry and Dynamics: Rokhlin Memorial, St. Petersburg, Russia. January 2010

Skew products with an interval fiber. ENS-Lyon, France. December 2009

Thin attractors. Summer School in Dynamical Systems, Poprad, Slovakia. June-July 2009

Invisible attractors. Université de Rennes 1, IRMAR, France. April 2009

Invisible attractors. Summer School in Dynamical Systems, Coimbra, Portugal. July 2008

The density of separatrix connections in $\mathbb{C}^2$. International conference "Differential equations and related topics" dedicated to I. G. Petrovskii. Moscow State University. May 2004

Schools and workshops participation

MWDS 2011, IUPUI, Indianapolis, USA. October 2011

DFDE 2011, Steklov Institute, Moscow, Russia. August 2011

Meeting on Differentiable Dynamics, ICTP, Trieste, Italy. July 2011

School and Conference on Computational Methods in Dynamics, ICTP, Trieste, Italy. June-July 2011

Geometric and Algebraic Structures in Mathematics, Stony Brook, USA. June 2011

Three days in PDEs, Tor Vergata, Rome, Italy. April 2011

Periodic Approximation in Dynamics, Pisa, Italy. February 2010

Recent Trends in Nonlinear Science, Segovia, Spain. January 2010

Progress in dynamics: 65th birthday of Anatole Katok, Paris, France. November 2009

Advances in low dimensional dynamics, Stony Brook, USA. June 2009

Dynamical Systems: Geometric Structures and Rigidity, Bedlewo, Poland. July 2008

Dynamical Systems, Dubna, Russia. June-July 2008, 2006, 2004, 2003, 2002, 2001

Dynamical Systems, Solovki, Russia. June-July 2007

Computer Skills

Professional development of C++/C# applications for 3D machine vision. 2000-2007
Strong background in pattern recognition and machine learning (Artificial Neural Networks, Support Vector Machines, Hidden Markov Models, Boosting methods)

Languages: C, C++, C#, Java. .NET Framework. Matlab, Maple, GNUPlot. JavaScript, Perl, PHP, SQL. HTML, XML, UML. **Version control**: ClearCase, SVN, Git.

Parascript LLC, **Pattern Recognition Laboratory**, Moscow, Russia
Intern **October 2000 to August 2004**

A4Vision, Inc (acquired by L-1 Identity Solutions), Moscow, Russia
Researcher & software engineer **October 2004 to February 2007**

Artec Group, Moscow, Russia
Researcher & software engineer **February 2007 to August 2007**

REVIEWING Mathematical Reviews (MathSciNet) reviewer

LANGUAGES Russian (native), English (fluent), Italian (good), French (beginner)

OTHER Translator and scientific editor of the book "Normal forms and bifurcation of planar vector fields" by Chow, Li, Wang, Cambridge University Press (English to Russian). Published in 2005, Moscow, MCCME.

REFERENCES

Professor Dmitry Anosov
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