

Alexey N. Pavlov

SUMMARY CURRICULUM VITAE



Personal details

Full name: Alexey Nikolaevich Pavlov
Date of birth: 11 February 1973
Place of birth: Saratov, Russia
Nationality: Russian
Marital status: Married, 1 child (2010)

Affiliation

Saratov State University, Physics Department, Radiophysics and Nonlinear Dynamics Chair,
410012, Astrakhanskaya str., 83, Saratov, Russia.
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Education, degrees, universities

1990–1995 Saratov State University, Physics Department,
MSci equivalent in "Radiophysics" (diploma with excellence)
1995–1998 Saratov State University, Physics Department, Radiophysics and Nonlinear
Dynamics Chair – "Candidate in Physical and Mathematical Sciences" (PhD
equivalent), on the basis of thesis "*Reconstruction of dynamical systems and its
applications*"
2007–2009 Saratov State University, Physics Department, Radiophysics and Nonlinear
Dynamics Chair – "Doctor of Science" degree, on the basis of thesis "*Analysis of
nonstationary, short and noisy signals based on the wavelet-transform*"

Employment

1999–2002 Assistant Professor, Saratov State University,
Physics Department, Radiophysics and Nonlinear Dynamics Chair
2002–2010 Associate Professor, Saratov State University,
Physics Department, Radiophysics and Nonlinear Dynamics Chair
2010–now Professor, Saratov State University,
Physics Department, Radiophysics and Nonlinear Dynamics Chair

Honours, awards, grants

1996–1998 Fellowship from the President of Russia for PhD-students
1998 Fellowship from International Soros Foundation
1997–1999 Named participant in INTAS grant (INTAS 96-0305)
1998–2000 Named participant in Royal Society Joint Project grant
2000 Fellowship from INTAS for young scientists (YSF 99-4050)
2000–2003 Fellowship from the President of Russia and Russian Academy of Sciences
for young scientists
2000–2003 Fellowships for young scientists within the framework of
BRHE Program (REC-006) of CRDF
2002–2005 Named participant in INTAS-project (INTAS 01-2061)
2003–2006 Fellowship Award from CRDF (Y1-P-06-06)
2004–2005 Grant from the President of Russia for young scientists
2004 Fellowship from the Foundation of V. Potanin for young teachers
2005 Grant from the Russian Ministry of Sciences (principal investigator)

- 2006–2007 Named participant in grant from the Russian Ministry of Education
 2006, 2007 Fellowships from the Foundation of V. Potanin for young teachers
 2008 Grant from DAAD and the Russian Ministry of Education and Sciences
 (“Mikhail Lomonosov” program)
 2009–2010 Named participant in CRDF-grant (BP4MO6, REC RUX0-006-SR-06)
 2009–2011 Federal target program of the RF Ministry of Education and Sciences.
 Principal investigator in the contracts 451, 2492 and 633;
 Named participant in the contracts 441, 1257, 1063 and
 14.740.11.0074
 2011 Named participant in RFBR grants 11-02-00560-a, 11-02-11000-ano
 2012 Grant from the Foundation of V. Potanin («Teacher-online»)
 2012 Grant from DAAD
 2012–2013 Federal target program of the RF Ministry of Education and Sciences.
 Named participant in the projects 14.B37.21.0569, 14.B37.21.0059,
 14.B37.21.0751, 14.B37.21.0576, 14.B37.21.1237, 14.B37.21.1207,
 14.B37.21.0216, 14.B37.21.0853
 2012–2013 Federal target program of the RF Ministry of Education and Sciences.
 Named participant in the contract 11.519.11.2035
 2014 Named participant in the projects of Russian Science Foundation
 (agreements 14-12-00224, 14-12-00324, 14-15-00128)
 2014 Named participant in RFBR grant 14-02-00526a
 2014 Named participant in the grant from the RF Ministry of Education and Sciences

Specialization

time-series analysis, theory of oscillations, theory of random processes, nonlinear dynamics and its applications in biology and medicine

Current research interests

analysis of nonstationary data, synchronization, applications of nonlinear dynamics to living systems

Teaching activity

Lecture courses in “Theory of oscillations”, “Theory of random processes”, “Time-series analysis”, “Numerical Recipes”, “Bases of radiophysics”.

Students, received PhD-degree under the supervising of Prof. A.N. Pavlov:

A.R. Ziganshin (2005), D.V. Dumsky (2005), A.N. Tupitsyn (2009), A.A. Anisimov (2011).

Current PhD-students: A.I. Nazimov, Y.K. Mohammad, A.S. Yasin, G.M. Shihalov.

Researches abroad

- 1998 Technical University of Lodz, Poland (1 month)
 1999, 2002, 2004, Technical University of Denmark, Lyngby (1-2 months each visit)
 2005, 2006, 2007,
 2008, 2009, 2010
 1999 Lancaster University, UK (2 weeks)
 2000, 2001 Humboldt University, Berlin, Germany (1 month)
 2005, 2006 Complutense University, Madrid, Spain (1 month)
 2008 Potsdam University, Germany (3 months)
 2012 Warwick University, UK (2 weeks)
 2012 Humboldt University, Berlin, Germany (1 month)
 2013 Huazhong University of Science & Technology, Wuhan, China (1 month)
 2014 Humboldt University, Berlin, Germany (2 weeks)

Publications

Number of papers in refereed journals: >130

Monographs, text-books: 12

Main publications

1. Hramov A.E., Koronovskii A.A., Makarov V.A., Pavlov A.N., Sitnikova E., “Wavelets in Neuroscience”, Springer Series in Synergetics. – Springer, Berlin, Heidelberg, 2015. – 318 p. (published online 2014).
2. Pavlov A.N., Makarov V.A., Mosekilde E., Sosnovtseva O.V., “Application of wavelet-based tools to study the dynamics of biological processes”, *Briefings in Bioinformatics* **7**, pp. 375-389 (2006).
3. Sosnovtseva O.V., Pavlov A.N., Brazhe N.A., Brazhe A.R., Erokhova L.A., Maksimov G.V., Mosekilde E., “Interference microscopy under double-wavelet analysis: A new approach to studying cell dynamics”, *Physical Review Letters* **94**, pp. 218103(4) (2005).
4. Holstein-Rathlou N.-H., Sosnovtseva O.V., Pavlov A.N., Cupples W.A., Sorensen C.M., Marsh D.J., “Nephron blood flow dynamics measured by laser speckle contrast imaging”, *American Journal of Physiology (Renal Physiol.)* **300**, pp. F319-F329 (2011).
5. Sosnovtseva O.V., Pavlov A.N., Mosekilde E., Yip K.-P., Holstein-Rathlou N.-H., Marsh D.J., “Synchronization among mechanisms of renal autoregulation is reduced in hypertensive rats”, *American Journal of Physiology (Renal Physiol.)* **293**, pp. F1545-F1555 (2007).
6. Marsh D.J., Sosnovtseva O.V., Pavlov A.N., Yip K.-P., Holstein-Rathlou N.-H., “Frequency encoding in renal blood flow regulation”, *American Journal of Physiology (Regul. Integr. Comp. Physiol.)* **288**, pp. R1160-R1167 (2005).
7. Pavlov A.N., Hramov A.E., Koronovskii A.A., Sitnikova E.Yu., Makarov V.A., Ovchinnikov A.A., “Wavelet analysis in neurodynamics”, *Physics-Uspekhi* **55**(9), pp.845-875 (2012).
8. Pavlov A.N., Anishchenko V.S., “Multifractal analysis of complex signals”, *Physics-Uspekhi* **50**(8), pp.819-834 (2007).
9. Sosnovtseva O.V., Pavlov A.N., Pavlova O.N., Mosekilde E., Holstein-Rathlou N.-H., “Characterizing the effect of L-name on intra- and inter-nephron synchronization”, *European Journal of Pharmaceutical Sciences* **36**, pp. 39-50 (2009).
10. Sosnovtseva O.V., Pavlov A.N., Mosekilde E., Holstein-Rathlou N.-H., Marsh D.J., “Double-wavelet approach to study frequency and amplitude modulation in renal autoregulation”, *Physical Review E* **70**, pp. 031915(8) (2004).
11. Sosnovtseva O.V., Pavlov A.N., Mosekilde E., Holstein-Rathlou N.-H., “Bimodal oscillations in nephron autoregulation”, *Physical Review E* **66**, pp. 061909(7) (2002).
12. Janson N.B., Pavlov A.N., Neiman A.B., Anishchenko V.S., “Reconstruction of dynamical and geometrical properties of chaotic attractors from threshold-crossing interspike intervals”, *Physical Review E* **58**, pp. R4-R7 (1998).
13. Anishchenko V.S., Pavlov A.N., “Global reconstruction in application to multi-channel communication”, *Physical Review E* **57**, pp. 2455-2457 (1998).
14. Nazimov A.I., Pavlov A.N., Nazimova A.A., Grubov V.V., Koronovskii A.A., Sitnikova E., Hramov A.E., “Serial identification of EEG patterns using adaptive wavelet-based analysis”, *European Physical Journal – Special Topics* **222**(10), pp. 2713-2722 (2013).
15. Pavlov A.N., Semyachkina-Glushkovskaya O.V., Pavlova O.N., Bibikova O.A., Kurths J., “Wavelet-analysis of gastric microcirculation in rats with ulcer bleedings”, *European Physical Journal – Special Topics* **222**(10), pp. 2705-2712 (2013).