

Dr. Yuri Maistrenko

Curriculum Vitae



Personal Information

Date of birth 26.01.1954
Place of birth Kiev region, Ukraine
Nationality Ukrainian
Marital status Married, two children

Current Affiliation

Institute of Mathematics and National Centre for Medical and Biotechnical Research
National Academy of Sciences of Ukraine
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Education

1981 PhD in Physics and Mathematics
Institute of Mathematics, NAS of Ukraine (supervisor Prof. A.N. Sharkovsky)
1976 Diploma in Mathematics, Kiev University, Ukraine

Employment

Research

Jan-Aug 2011 **Mercator Guest Professor** Potsdam University, Department of Physics and Astronomy
since 2007 **Leading Research Scientist** National Centre for Medical and Biotechnical Research,
Laboratory of Mathematical Modelling of Nonlinear Processes, NAS of Ukraine
since 1980 **Senior Research Scientist** Institute of Mathematics, Department of Differential Equations and Theory of Oscillations, NAS of Ukraine

Research Fields:

- *nonlinear dynamical systems, bifurcations, and chaos*
- *synchronization in complex networks of coupled oscillators*
- *multistability, heteroclinic cycles, chimera states, role of time-delay*
- *modelling in life science, physics, and technology*

Teaching

University Lecture Courses

2011 **"Synchronization and Chaos"**, Department of Physics and Astronomy, Potsdam University, Germany

1994-2003 **"Nonlinear Dynamics and Chaos"**, Mechanics-Mathematical Faculty, Kiev University, Ukraine

Advanced Lecture Courses for Master's and PhD-students

2006 **"Nonlinear Dynamics, Chaos, and Applications"** Mathematical School (Crimea, Ukraine)

2002 **"Synchronization: Theory and Application"** NATO Advanced Study Institute (Crimea, Ukraine)

Supervision of postgraduate students

since 1985 12 postgraduate students in Physics and Mathematics

Publications

Books

Chaotic Synchronization: Application to Living Systems

E. Mosekilde, Yu. Maistrenko, and D. Postnov. World Scientific, 2002, 428 pp.

Difference Equations and their Applications

A.N. Sharkovsky, Yu.L. Maistrenko, and E.Yu. Romanenko. Naukova Dumka, Kiev, 1986, Russian; Kluver Acad.Publ.,1993, English, 358 pp.

Synchronization: Theory and Application

Editors: A. Pikovsky and Yu. Maistrenko. Kluver Acad. Publ., 2003, 258 pp.

Papers

128 scientific publications, 77 in peer reviewed journals

Grants and Awards

since 1993 **Head of Research Group** "Mathematical modelling of nonlinear processes in science and technology", National Academy of Sciences of Ukraine.

2010-2011 **Grant DFG** "Collective phenomena and multistability in networks of dynamical systems" (collab. with M. Wolfrum, WIAS, Berlin)

- 2009, 2010 **Guest Professor** Swiss Federal Institute of Technology in Lausanne (EPFL)
 1998, 2003
- 2010 **State Prize of Ukraine** in Science and Technology
- 2004 **Grant NATO** "Fractal structure of high-dimensional chaos" (collab. with A. Politi, ICS, Florence, and S. Yanchuk, Institute of Mathematics, Kiev)
- 2004 **Grant London Mathematical Society** "Nonlinear dynamics of coupled phase oscillators" (collab. with P. Ashwin, Exeter University)
- 2000-2002 **Grant DFG** "Strange nonchaotic attractors and critical states in quasiperiodically forced systems" (collab. with A. Pikovsky and U. Feudel, Potsdam University)
- 1996-1998 **Grant Swiss National Science Foundation** "Nonlinear Dynamics, Information and Engineering" (collab. with M. Hasler, EPFL, Lausanne)
 2000-2002
- 1999, 2001 **Guest Professor** University of Southern Denmark in Odense
- 1998 **Soros Professor** - Grant International Science Foundation
- 1996, 1998 **Guest Professor** Technical University of Denmark in Lyngby

Referee for Journals

Physical Review Letter, Physical Review E, Physica D, Communications in Nonlinear Science and Numerical Simulations

Conference Organization

Scientific Organizer of International School-Conferences (1985, 1988, 1991, 1994, 2002, 2006) and Workshops (2008, 2010), among them in the last decade:

- 4-9 July 10 Workshop **"Nonlinear Dynamics on Networks"** (Kiev, together with A. Pikovsky)
- 17-19 Nov 08 Workshop **"Complex Dynamics in Large Coupled Systems"** (Berlin, together with B. Fiedler, M. Wolfrum, and S. Yanchuk)
- 16-18 Jul 08 Workshop **"Mathematical Modelling in Neuroscience"** (Kiev, together with V. Maistrenko and P. Tass)
- 15-26 May 06 School-Conference **"Nonlinear Dynamics, Chaos, and Applications"** (Crimea, Ukraine, together with A. Pikovsky and P. Tass)
- 20-31 May 02 NATO Advanced Study Institute **"Synchronization: Theory and Application"** (Crimea, Ukraine, together with A. Pikovsky)

Visits and Collaborations

- Jan-Aug 11 Potsdam University (collab. with A. Pikovsky)
- Nov-Dec 10 EPFL Lausanne (collab. with M. Hasler)
- May-Jul 09
- Jan-Feb 03
- Jan-Feb 98
- May-Jun 10 TU Berlin (collab. with E. Schoell)
- Nov-Dec 09
- Sep-Oct 09 WIAS Berlin (collab. with M. Wolfrum)
- Feb-Mar, Aug 09 INM-2 Research Centre Juelich (collab. with D. Feldmeyer)

Mar 05 - Dec 08 INM-7 Research Centre Juelich (collab. with P. Tass)
May-Dec 04
Aug-Dec 03
Aug-Dec 02
Jan-Feb 04 University of Exeter (collab. with P. Ashwin)
Aug -Sep 01 University of Southern Denmark, Odense (collab. with G. Kristinsen)
Nov-Dec 99
May-Jun 00 Technical University of Denmark, Lyngby (collab. with E. Mosekilde)
Nov-Dec 98
Nov 97 Oct 96
Mar-Apr 96 Technical University Lodz (collab. with T. Kapitaniak)
Apr-May 95 University of California, Berkeley (collab. with L. Chua)
Feb-Apr 92