

PROF. DR. ILLIA HORENKO

(Applied Mathematics, Stochastics and High-Performance Computing)

Affiliation

Institute of Computational Science, Faculty of Informatics,
Universita della Svizzera Italiana (USI)
Via Giuseppe Buffi 13
6900 Lugano Switzerland

Research Topics

- time series and high-dimensional data analysis, inverse stochastic modelling
- non-stationary time series analysis, data-based methods of trend identification
- development of high-performance methods for applications in fluid mechanics, meteorology, climate research, biophysics and finance

Academic training and professional experience

08.1977 born in Kiev (Ukraine)
1994-1998 bachelor degrees in mathematics and chemistry (degrees with honors, Kiev State University, Ukraine)
1998-1999 master degree in mathematics (degree with honors Kiev State University, Ukraine)
1999-2000 research assistant at the Konrad-Zuse-Zentrum Berlin (ZIB)
2000-2003 PhD in mathematics (FU Berlin, supervisor Ch. Schütte)
2003-2008 post-doc (Faculty of Mathematics, FU Berlin)
2008-2009 assistant professor (W1 Juniorprofessor, Faculty of Mathematics, FU Berlin)
03.2010- fellowship at the Institute of Pure and Applied Mathematics (IPAM) of UCLA
06.2010 (Los Angeles, USA)
since 2010 associate professor (tenure, Faculty of Informatics, Universita della Svizzera Italiana, Lugano, Switzerland)

5 selected peer-reviewed publications

Total of 27 peer-reviewed papers, 5 in review

1. I. Horenko, [On Simultaneous Data-Based Dimension Reduction and Hidden Phase Identification](#), J. Atm. Sci **65** (6), pp. 1941-1954 (2008)
2. I. Horenko, R. Klein, S. Dolaptchiv and Ch. Schütte, [Automated Generation of Reduced Stochastic Weather Models I: Simultaneous Dimension and Model reduction for Time Series Analysis](#) SIAM Mult. Mod. Sim. **6** (4), pp. 1125-1145 (2008)
3. I. Horenko, [On robust estimation of low-frequency variability trends in discrete Markovian sequences of atmospheric circulation patterns](#), J. Atm. Sci. **66** (7), pp. 2059-2072 (2009)
4. I. Horenko, [On Clustering of Non-stationary Meteorological Time Series](#), Dynamics of Atmosphere and Ocean **49**, pp. 164-187 (2010),
5. I. Horenko, [Finite Element Approach to Clustering of Multidimensional Time Series](#) SIAM J. on Sci. Comp. **32**(1), pp. 62-83 (2010)