Oleksii Rudenko

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Education

2003 **Master degree in applied mathematics**, *National Technical University of Ukraine "Kyiv Politechnical Institute", Institute of Physics and Technology*, Kyiv, Ukraine

2009 **PhD degree in probability theory and mathematical statistics**, *Institute of mathematics of National Academy of Sciences of Ukraine*, Kyiv, Ukraine

PhD thesis

title *Local times of self-intersection for Gaussian random fields and renormalization*

supervisor Prof. A.A.Dorogovtsev

Experience

2003–2005 **Software engineer**, Kyiv, Ukraine
Implementation of numerical computations

2003–2007 **PhD student**, *Institute of mathematics*, Kyiv, Ukraine
Preparing PhD thesis in the Department of Theory of Stochastic Processes

2007–now **junior researcher, researcher**, *Institute of mathematics*, Kyiv, Ukraine
Working in the Department of Theory of Stochastic Processes

Languages

Fluent: Russian,Ukrainian,English

Scientific Interests

The construction of local times for stochastic processes, the renormalization of local times

The construction of Markov processes, transition density estimates for Markov processes

Potential theory for Markov processes, properties of trajectories of Markov processes

Participation

2003-2021 Member of the jury of written mathematical contest for 8-10 grade students at Kyiv International Mathematical Festival

2009- Member of the Editorial board of the journal Theory of Stochastic Processes

Conferences

2005 Modern problems and new trends in probability theory, Chernivtsi, Ukraine

2006 9th Vilnius conference on probability theory and mathematical statistics, Vilnius, Lithuania

2007 Skorokhod space. 50 years on, Kyiv, Ukraine

2009 Stochastic Analysis and Random Dynamical Systems, Kyiv, Ukraine

2010 10-th International Vilnius Conference on Probability and Mathematical Statistics, Vilnius, Lithuania

2012 Modern Stochastics: Theory and Applications III, Kyiv, Ukraine

2014 11-th International Vilnius Conference on Probability and Mathematical Statistics, Vilnius, Lithuania

2018 12-th International Vilnius Conference on Probability and Mathematical Statistics, Vilnius, Lithuania

2021 Scientific conference: "Relevant problems in stochastic analysis" dedicated to 80 years anniversary of academician Sh.K.Formanov, February 20-21, 2021, Tashkent (online talk)

2023 INTERNATIONAL UZBEK-UKRAINIAN CONFERENCE, Modern problems of the theory of stochastic processes and their applications, October 10-11, 2023 (online talk)

2024 International conference "Stochastic analysis", Tashkent, October 21-23, 2024 (online talk)

2025 International conference dedicated to the 90th anniversary of Professor A. Ya. Dorogovtsev, FUNCTIONAL METHODS IN OPERATOR THEORY, STATISTICS AND STOCHASTIC ANALYSIS. Novenber 17-21, 2025 (online talk)

Publications

A. V. Rudenko. On a property of singular measures. In *Mathematics today '01 (Russian)*, volume 12 of *Mat. Segodnya*, pages 118–123. Nauk.-Metod. Tsentr Vishch. Osv., Kiev, 2001.

A. V. Rudenko. Approximation of densities of absolutely continuous components of measures in a Hilbert space by the Ornstein-Uhlenbeck semigroup. *Ukraïn. Mat. Zh.*, 56(12):1654–1664, 2004.

Alexey Rudenko. Existence of generalized local times for Gaussian random fields. *Theory Stoch. Process.*, 12(28)(1-2):142–153, 2006.

Alexey V. Rudenko. Local time as an element of the Sobolev space. *Theory Stoch. Process.*, 13(29)(3):65–79, 2007.

Oleksiy Rudenko. Ito-Wiener expansion and properties of local time for Gaussian random field (in Ukrainian). *Mathematical Bulletin of the Shevchenko Scientific Society*, 5:183–201, 2008.

Alexey Rudenko. Local time for Gaussian processes as an element of Sobolev space. *Commun. Stoch. Anal.*, 3(2):223–247, 2009.

Alexey Rudenko. Some properties of the Ito-Wiener expansion of the solution of a stochastic differential equation and local times. *Stochastic Processes and their Applications*, 122(6):2454 – 2479, 2012.

A. Rudenko. Some uniform estimates for the transition density of a Brownian motion on a Carnot group and their application to local times. *Theory of Stoch. Proc.*, 19(35)(1):62–90, 2014.

A. Rudenko. Intersection local times in L2 for Markov processes. *Theory of Stoch. Proc.*, 24(40)(1):64–95, 2019.

A. Rudenko. An estimate for surface measure of small balls in Carnot groups. *Osaka J. Math.*, 57(2):425–450, 2020.

Oleksii Rudenko. The set of intersections of several independent Brownian motions on Carnot group. *Stochastics*, 96(7):1928–1947, 2024.