Gasnikov Alexander (Moscow, Russia)

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phone: +7-905-780-69-74 (mobile)
h-index (google scholar): 10
Birth: September 2nd, 1983
Graduate: Department of Applied Mathematics and Control of Moscow Institute of Physics and Technology (MIPT) (2006)

PhD: in Partial Differential Equations (Supervisor prof A.A. Shananin) (2007)
"Asymptotic in time behavior of solution of Cauchy problem for conservation law with nonlinear divergent viscosity"
Doctoral Thesis: in Mathematical Modelling and Numerical methods of Convex Optimization (2016)
"Searching equilibriums in large transport networks"
https://arxiv.org/ftp/arxiv/papers/1607/1607.03142.pdf
Main places of work:
Associate professor of Department Mathematical Foundation of Control MIPT, from 2011;
Lead researcher of Institute for Information Transmission Problems (Moscow), from 2015
Member of Editorial Board: Siberian journal of Computational Mathematics (WoS, Scopus)

Experience:
Invited Professor, Innopolis University, 2016 –
Invited Lecturer, SkolTech, 2016
Invited Professor, Immanuel Kant Baltic Federal University, 2015
Lead Researcher, High School of Economics (Moscow), 2015 – 2016,
Associate professor, Computers Science department of High School of Economics, 2017 –
Researchers group head, Keldysh Institute of Applied Mathematics (Moscow), 2014 – 2015
Deputy Dean on Science, Department of Applied Mathematics and Control MIPT (Moscow) 2014
Lead Researcher, Laboratory of structural Methods of Data Analysis in Predictive Modeling (PreMoLab) MIPT (Moscow), 2014 –
Executive of PreMoLab MIPT (Moscow) 2011 – 2014
Associate professor, MIPT (Moscow) 2011 –
Teacher, Independent State University (Moscow) 2011 –
Assistant professor, MIPT (Moscow) 2009 – 2011
Deputy Dean, Department of Applied Mathematics and Control MIPT (Moscow) 2009 – 2013
Teacher of MIPT (Moscow) 2005 – 2009
Engineer, Computational Center of Russian Academy of Science (Moscow) 2005 – 2007

Area of scientific interests:
1. Mathematical modeling of traffic flows
2. Stochastic optimization
3. Huge-scale optimization
4. Online optimization
5. Probabilistic methods in Computer Science
6. Macrosystems theory (ergodicity, concentration of measure)
7. Numerical methods in Statistics

Industrial Consulting:
Yandex (Leading Russia search engine) 2014 – 2015 // work in the group of prof. Yu. Nesterov
Huawei 2014 – 2015 // work in the group of prof. V. Spokoiny
Genplan Institute of Moscow 2014 – 2015 // head of the group of researchers

Grants (head of the grant): Russian Found of Basic Research 10-01-00454 A (Mathematical modeling of traffic flows), 12-01-33007, 15-31-20571 mol-a-ved (Conception of equilibrium of Macrosystem; Algebra on numerical methods of Convex optimization), 14-01-00722 A (Huge-scale optimization); grant of President of Russian Federation № МК-5285.2013.9; 15-31-7001 mol-a-mos (Searching of traffic assignment)

Scientific traineeships:
December 2012, CORE UCL (Belgium) prof. Yu. Nesterov
May 2013, 2015 WIAS (Berlin) prof. V. Spokoiny
November 2014, CORE UCL (Belgium) prof. Yu. Nesterov

Scientific management: At the moment I've 7 Bachelor/Master students and 2 PhD students. Most of them are from MIPT.

The main works (for 2013):

A. V. Gasnikov, "Time-asymptotic behaviour of a solution of the Cauchy initial-value problem for a conservation law with non-linear divergent viscosity", *Izv. RAN. Ser. Mat.*, **73**:6 (2009), 39–76
In the work we solve Gel'fand's problem (1959) about evolution of shock according to Burgers' type equation.
A. V. Gasnikov, E. V. Gasnikova, "On Entropy-Type Functionals Arising in Stochastic Chemical Kinetics Related to the Concentration of the Invariant Measure and Playing the Role of Lyapunov Functions in the Dynamics of Quasiaverages", *Mat. Zametki*, **94**:6 (2013), 819–827
In the work we try to describe a fundamental universality of entropy. We explain why the same function arises in high-probability bounds (Sanov's type theorems) and as Lyapunov function of proper kinetic dynamic (Boltzman's type theorems).
Introduction to mathematical modeling of traffic flow [Book in Russian]. With Appendices M. Blank, A. Raigorodskii, V. Malyshev and A. Zamyatin, Yu. Nesterov and S. Shpirko, A. Kolesnikov, et al. Eds. A.V. Gasnikov. Moscow Center of Continuity Mathematical Education, 2013. http://www.mou.mipt.ru/gasnikov1129.pdf

Recent works (2016):

P. Dvurechensky, A. Gasnikov Stochastic Intermediate Gradient Method for Convex Problems with Inexact Stochastic Oracle // J. Optim. Theory Appl. 2016. V. 171. no. 1. P. 121–145.
L. Bogolubsky, P. Dvurechensky, A. Gasnikov, G. Gusev, Yu. Nesterov, A. Raigorodskii, A. Tikhonov, M. Zhukovskii Learning Supervised PageRank with Gradient-Based and Gradient-Free Optimization Methods // NIPS, 2016.

Publications (more than 50 papers):

https://www.researchgate.net/profile/Alexander_Gasnikov
https://arxiv.org/find/all/1/all:+gasnikov/0/1/0/all/0/1 (from 2014)

Scientific seminars (Moscow):

Mathematical Seminar (from 2011 in MIPT)
http://www.mathnet.ru/php/conference.phtml?option_lang=eng&eventID=31&confid=395
Problems in Stochastic analysis (from 2012 in Independent State University)
http://www.mathnet.ru/php/conference.phtml?option_lang=eng&eventID=25&confid=394
Mathematical modeling of traffic flows (from 2012 in Independent State University)
http://www.mathnet.ru/php/conference.phtml?option_lang=eng&eventID=24&confid=424
Mathematical Seminar of Applied Mathematics School (from 2016 in MIPT)
http://www.mathnet.ru/php/conference.phtml?option_lang=rus&eventID=31&confid=965