Theory of Probability and Its Applications:

P.L. CHEBYSHEV - 200

VI International Conference on Stochastic Methods

17-22 May 2021 • ONLINE

Conference Program

All talks will be performed online, time is Moscow Standard Time (GMT +3)

Monday, 17 May 2021

10:30 – 11:00 **Kozlov V. V., Treschev D. V., Shiryaev A. N.** *Opening*

11:00 – 11:50 **Demidov S. S. (Russia)** P. L. Chebyshev – a researcher, a teacher and a scholar (*in Russian*)

12:00 – 12:30 **Andreev N. (Russia)** Mechanisms by Pafnuty Chebyshev: from Watt's problem to the approximation theory

12:40 – 13:30 **Borovkov A. A., Logachov A. V., Mogulskii A. A. (Russia)** Chebyshev-type inequalities and large deviation principles

13:30 – 15:00 *Break*

15:00 – 15:50 **Le Gall J.-F. (France)** Geodesics in random geometry

16:00 – 16:50 **Karatzas I. (USA)** Trajectorial approach to gradient flows for conservative diffusions

17:00 – 17:50 **Schachermayer W. (Austria)** Trajectorial dissipation and gradient flow for the relative entropy in Markov chains

Tuesday, 18 May 2021

10:00 – 10:50 **Peng Sh. (China)** Distributional uncertainty of time series measured by nonlinear expectations

11:00 – 11:50 **Nourdin I. (Luxembourg)** The fourth moment theorem, in classical and free probabilities

12:00 – 12:50 **Øksendal B. (Norway)** SPDEs with space interactions – a model for optimal control of epidemics

13:00 – 15:00 *Break*

15:00 – 15:50 **Bingham N. H. (UK)** The life, work and legacy of P. L. Chebyshev

16:00 – 16:50 **Nualart D. (USA)** Gaussian fluctuations for spatial averages of the stochastic heat equation

17:00 – 17:50 **Bobkov S. (USA)** On refined forms of the central limit theorem

18:00 – 18:50 **Zaitsev A. Yu. (Russia)** Infinite-dimensional version of Kolmogorov's second uniform limit theorem

Wednesday, 19 May 2021

10:00 – 10:50 **Chen L. H. Y. (Singapore)** A probabilistic approach to the Erdös–Kac theorem for additive functions

11:00 – 11:50 **Götze F. (Germany)** Approximation by infinitely divisible distributions in free probability

12:00 – 12:50 **Touzi N. (France)** Optimal mutual holding and systemic risk

13:00 – 15:00 *Break*

15:00 – 15:50 **Bouchard-Denize B. (France)** Ito's formula for concave or C1 path-dependent functions and applications in mathematical finance

16:00 – 16:50 **Bogachev V. I. (Russia)** Chebyshev–Hermite polynomials and distributions of polynomials in Gaussian random variables

17:00 – 17:50 **Veretennikov A. Yu. (Russia)** On ergodic Bellman equation for a class of multidimensional SDEs with full dependence on control

18:00 – 18:30 **Palmowski Z. (Poland), Foss S., Korshunov D. (UK)** Branching processes with immigration in atypical random environment

Thursday, 20 May 2021

10:00 – 10:50 **Ulyanov V. (Russia), Christoph G. (Germany)** Short Chebyshev–Edgeworth expansions in probability and statistics

11:00 – 11:50 **Schweizer M. (Switzerland)** Arbitrage theory without asymmetry

12:00 – 12:50 **Jacod J. (France), Aït-Sahalia Y. (USA)** Testing for the Markov property in a high-frequency setting

13:00 – 15:00 *Break*

15:00 – 15:50 **Mörters P. (UK)** Competing growth processes with random birth times and random growth rates

16:00 – 16:50 **Feinberg E. (USA), Shiryaev A. N. (Russia)** Kolmogorov's equations for jump Markov processes and their applications to control

17:00 – 17:50 **Moulines É. (France)** Exponential stability of random matrix product with Markovian noise

18:00 – 18:30 **Gushchin A. (Russia)** Martingales with respect to special filtration

18:30 – 19:00 **Afanasyev V. I. (Russia)** Local times of conditional random walks and Galton–Watson branching processes

Friday, 21 May 2021

10:00 – 10:50 **Piterbarg V. I. (Russia)** High excursion probabilities for Gaussian fields given on smooth manifolds

11:00 – 11:50 **Malyshev V. A., Lykov A. A., Melikian M. V., Zamyatin A. A. (Russia)** Stochastic fluctuations and flows in large particle systems

12:00 – 12:30 **Esquivel M. L. (Portugal), Krasii N. P. (Russia)** Large dimension Gaussian models for knowledge representation; a wavelet neural network scheme for supervised and unsupervised learning

12:30 – 13:00 **Illarionov E. A., Sokoloff D. D. (Russia)** Finite memory time and anisotropy effects for initial magnetic energy growth in the turbulent flow

13:00 – 15:00 *Break*

15:00 – 15:50 **Koralov L. (USA)** Large time behavior of diffusion processes and a class of non-standard boundary value problems

16:00 – 16:30 **Yarovaya E. B. (Russia)** Moment analysis for the limit field structure of stochastic evolutionary systems

16:30 – 17:00 **Bashtova E., Lenena E. (Russia)** Strong approximation for unreliable generalized Jackson network and statistical applications

17:00 – 17:30 **Zhitlukhin M. (Russia)** A Brownian approximation of a repeated prediction game

17:30 – 18:00 **Gliklikh Yu. (Russia)** Stochastic analysis on the groups of diffeomorphisms and viscous hydrodynamics

18:00 – 18:30 **Agram N. (Algeria)** Deep learning and stochastic mean-field control for a neural network model

Saturday, 22 May 2021

10:00 – 10:30 **Novikov A., Kordzakhia N. (Australia)** On maximal inequalities for stopped generalised Ornstein-Uhlenbeck processes

10:30 – 11:00 **Manita A. D., Ignatovskaya V. A. (Russia)** Asymptotic behavior of an infinite system of interacting particles

11:00 – 11:30 **Borisov I. S., Shefer E. I. (Russia)** Asymptotic analysis of the distribution of the sojourn time for a random walk above a receding boundary

11:30 – 12:00 **Shabanov D., Tiapkin D., Zakharov P. (Russia)** Problems for colorings of sparse random hypergraphs

12:00 – 12:30 **Nasyrov F. S. (Russia)** Maximum principle with pathwise cost functional for stochastic differential equations

12:30 – 13:00 **Razumchik R. V. (Russia)** Recursive computation of joint stationary distributions of two-dimensional Markov chains with discrete finite state space

13:00 – 15:00 *Break*

15:00 – 15:30 **Puhalskii A. (Russia)** Large deviation limits of invariant measures

15:30 – 16:00 **Blank M. (Russia)** Recurrence properties of Markov chains and semigroups of measurable maps

16:00 – 16:30 **Butkovsky O. (Germany)** Regularization by noise for SPDEs and SDEs: a stochastic sewing approach

16:30 – 17:00 *Closing*