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EDITORIAL

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It is our pleasure to introduce a special issue of "Theory of Probability and Mathematical Statistics" in honor of Professor Nikolai Leonenko's 65th birthday.

Nikolai Leonenko, who is now a professor at Cardiff University, started his scientific and teaching career at the Mechanics and Mathematics Faculty of Taras Shevchenko National University of Kyiv. Since then he has been a member of the Editorial Board of our journal.

His versatile scientific research activity ranges over many areas of probability and statistics and his scientific links have expanded over different countries and continents.

Professor Leonenko has obtained important and path-breaking results in the following areas of research: statistical analysis of stochastic processes and random fields, limit theorems for functionals of random fields under weak and strong dependence, spectral theory of random fields, limit distributions of the rescaled solutions of partial differential equations with random initial conditions, fractional differential equations and PDE with random data, applications of stochastic analysis to modeling in finance and turbulence, multifractal processes and fields, statistical inference with higher-order information, and statistical estimation of Shannon and Renyi information.

The monograph, written by Professor Nikolai Leonenko in collaboration with Professor Alexander Ivanov (Ivanov, A.V. and Leonenko, N.N. *Statistical Analysis of Random Fields*, 1989), presents the spectral theory of random fields, limit theorems for random fields with weak and strong dependence and their applications to statistical estimation of the unknown mean and the covariance function of random fields, including the confidence intervals for an unknown covariance function. The first edition of this monograph in Russian was published in 1986. In the second monograph (Leonenko, N.N. *Limit Theorems for Random Fields with Singular Spectrum*, 1999) he investigated statistical problems for random processes and fields with long-range dependence. This monograph also presents limit theorems for nonlinear functionals of random fields with singular spectrum and their applications to geometric functionals (such as area of surfaces, excesses over a level of random fields) and to the analysis of random solutions of Burgers' equation. Both monographs are very popular among the specialists in the theory of random fields and their applications. Professor Leonenko's most recent studies are devoted, in particular, to models of fractional and multifractional random fields and their statistical estimation.

We take this opportunity to say congratulations to Nikolai on behalf of the Editorial Board of our journal and to wish him many new brilliant scientific results.

We believe that this issue, a collection of specially invited papers from Nikolai's coauthors and colleagues, former and most recent ones, will present a lot of interest for specialists in our field.

We would like to thank all the authors who contributed to this special issue and the referees for their work during the reviewing process and their valuable comments and suggestions.

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