From the Editor

To cite this article: 1995 Russ. Math. Surv. 50 235

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From the Editor

This issue of Uspekhi Matematicheskikh Nauk is connected with the work of the great Russian mathematician Andrei Nikolaevich Kolmogorov. 25 April 1993 was the 90th anniversary of his birth. In connection with this the Euler International Mathematical Institute organized an international conference 'Kolmogorov and modern mathematics' and (in the framework of the traditional semester programmes) a semester on probability theory and mathematical statistics.

The conference 'Kolmogorov and modern mathematics' was held from 1–8 June 1993. The chairman of the organizing committee of the conference was L. D. Faddeev, the chairman of the programming committee was V. I. Arnol'd, and the members of the organizing committee were Ya. G. Sinai, V. M. Tikhomirov, and V. A. Uspenskii.

The aim of the conference was to cover as far as possible all topics in which fundamental results are due to Kolmogorov and to show their influence on the modern development of mathematics. Many well-known Russian and foreign mathematicians took part in the conference. The following lectures were given:

D. V. Anosov (Russia), Random walks on manifolds.
B. A. Vasil’ev (Russia), Braids in permutations and interpolations, and the theory of computational complexity.
A. M. Vershik (Russia), The future in the theory of the past.
E. Dynkin (USA), Kolmogorov and the theory of Markov processes.
A. A. Gonchar (Russia), Potentials and rational approximations.
R. L. Dobrushin (Russia), Large deviations and the form of the boundary of phases in Gibbs random fields.
I. A. Ibragimov (Russia), Some extremal problems arising in statistics.
Yu. S. Il'yashenko (Russia), Limit cycles and their bifurcations.
L. Carleson (Sweden), The problem of convergence almost everywhere for Fourier series.
A. Kitaev (Russia), Semiclassical quantification of a map of a torus of special form.
L. Levin (USA), Randomness and indeterminism.
P. Martin-Löf (Sweden), What happened to Kolmogorov’s early works on intuitionist logic?
A. I. Neishtadt (Russia), Computation of the time of loss of stability for dynamical bifurcations.
S. M. Nikolskii (Russia), Approximations on manifolds by functions of exponential type and algebraic polynomials.
D. Ornstein (USA), Some general results of twist functions.
J. Palis (Brazil), Kolmogorov’s contribution to bifurcation dynamics.
A. A. Razborov (Russia), Lower bounds of Boolean complexity.
D. Ruelle (France), A functional equation for a dynamical $\zeta$-function of Milnor–Thurston type.
M. B. Sevryuk (Russia), Some problems of the KAM-theory of typical quasi-periodic random walks.
Ya. G. Sinai (Russia), Beltrami–Laplace operators on Liouville surfaces.
S. Smale (USA), Bézout’s theorem and the theory of computational complexity.
V. M. Tikhomorov (Russia), Non-linear analysis and approximation theory.
L. D. Faddeev (Russia), Examples of integrable symplectic mappings.
U. Frisch (France), Kolmogorov, Landau and turbulence.
A. Kh. Shen’ (Russia), Kolmogorov and computer science.
A. N. Shiryaev (Russia), The problem of optimal stopping in mathematical economics.

On the last day of the conference (8 June) a meeting of the St. Petersburg Mathematical Society, devoted to the work of Kolmogorov, was held. The following were at the meeting: S. M. Nikol’skii, A. D. Aleksandrov, A. N. Shiryaev, R. L. Dobrushin, L. Levin, A. Kh. Shen’, I. A. Ibragimov, N. A. Shanin, A. M. Vershik.

The programming committee approached a number of mathematicians whose work was connected with that of Kolmogorov with a request to send articles for the issue of Uspekhi devoted to him. Here we are publishing some lectures given at the conference and articles specially written for this edition.