

Title: ON A CONTROL PROBLEM FOR A HEAVY CHAIN WITH LOADS

Alexey A. Polosin

M.V. Lomonosov Moscow State University

Date: October 3, 2014 (Friday)

Time: 5:00 pm

Venue: School of Science and Technology, Room 7.105



Abstract: A control problem for a heavy chain system is addressed in the PDE framework. The relationship between the control and the solution is given explicitly. This is the joint work with Nikolay Kapustin.

Keywords: boundary value problems; elliptic and mixed-type PDEs; spectral problems; integral equations.

Speaker: Dr. Alexey Polosin, Associated Professor at Faculty of Applied Mathematics and Cybernetics of M.V. Lomonosov Moscow State University and Chair of Department of Functional Analysis and its Applications .

Host: Department of Mathematics, Nazarbayev University

Departments of Mathematics,
School of Science and Technology,
Nazarbayev University.

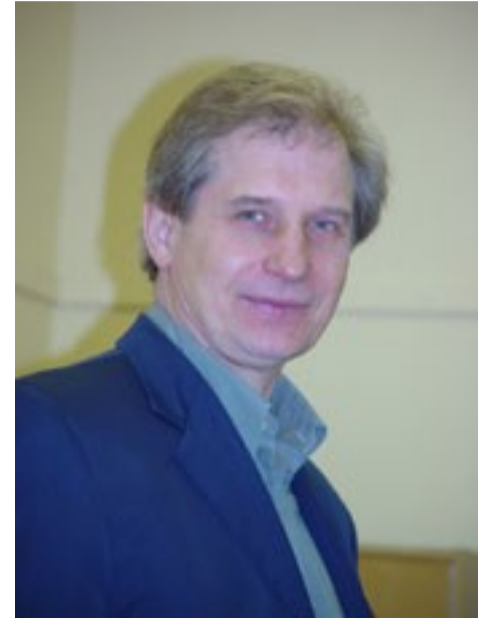
Title: STOCHASTIC QUASI GAS DYNAMICS EQUATIONS AS A BASE FOR PARTICLE METHODS

Sergey V. Bogomolov,
M.V. Lomonosov Moscow State University

Date: September 19, 2014 (Friday)

Time: 5:00 pm

Venue: School of Science and Technology, Room 7.105



Abstract: Based on a system of stochastic differential equations, describing a gas at small Knudsen numbers, explicit equations of gas dynamics with additional small terms for the Fokker-Planck model of Boltzmann collision integral are obtained.

Keywords: Boltzmann Equation, Stochastic Differential Equations, Quasi Gas Dynamic Equations, Particle Methods.

Speaker: Professor S.V Bogomolov received PhD from M.V. Lomonosov Moscow State University in 1980. He is currently an associate professor of MSU Faculty of Computational Mathematics and Cybernetics and first deputy director of branch of MSU in Astana.

Host: Department of Mathematics, Nazarbayev University

Title: MATHEMATICAL MODELING OF ELECTROCHEMICAL PROCESSES IN THE DIFFUSIVE LAYER

Andrey V. Shobukhov

M.V. Lomonosov Moscow State University

Date: September 26, 2014 (Friday)

Time: 5:00 pm

Venue: School of Science and Technology, Room 7.105



Abstract: We study a mathematical model of electrochemical processes in the thin diffusive layer of polymer electrolyte between the electrode and the bulk. We consider diffusion, migration, dissociation and recombination of positive and negative ions in the electric field that occur in the layer under various boundary conditions. We demonstrate that the unique stable steady state of the electro-chemical system is determined by the ratio of dissociation to recombination. This state attracts time-dependent solutions of the model, but their convergence strongly depends on the electro-neutrality of the bulk .

Keywords: Electrochemical processes , diffusion, electro-chemical system.

Speaker: Dr.Andrey V. Shobukhov was born in Moscow, USSR, on May 18, 1963. Graduated from the Lomonosov Moscow State University, Faculty of Computational Mathematics and Cybernetics in 1985.

Got his Ph.D. degree in Mathematics and Physics in 1991 from the same university and currently occupies there the Research Fellow position at the Laboratory for Mathematical Modeling in Physics. Research interests include mathematical modeling in electrochemistry and computational fluid dynamics. In 1996-1998 and 2000-2002 taught at the Independent University, Bangladesh, Dhaka. Currently reads lectures in Calculus and Computer Science at the Astana Branch of the Lomonosov Moscow State University.

Host: Department of Mathematics, Nazarbayev University