

Preface

The 11th Annual Meeting of the Bulgarian Section of the Society for Industrial and Applied Mathematics (BGSIAM) was held in Sofia, December 20–22, 2016. The Section was formed in 2007 with the purpose to promote and support the application of mathematics to science, engineering, and technology in Bulgaria.

The goals of BGSIAM follow and creatively develop the general goals of SIAM:

- To advance the application of mathematics and computational science to engineering, industry, science, and society;
- To promote research that will lead to effective new mathematical and computational methods and techniques for science, engineering, industry, and society;
- To provide media for the exchange of information and ideas among mathematicians, engineers, and scientists.

During the BGSIAM'16 conference, a wide range of problems concerning recent achievements in the field of industrial and applied mathematics were presented and discussed. The meeting provided a forum for exchange of ideas between scientists, who develop and study mathematical methods and algorithms, and researchers, who apply them for solving real-life problems.

The topics of interest include: industrial mathematics; scientific computing; numerical methods and algorithms; hierarchical and multilevel methods; high-performance computing; partial differential equations and their applications; control and uncertain systems; Monte Carlo and quasi-Monte Carlo methods; neural networks, metaheuristics, and genetic algorithms.

The list of invited speakers include:

- Vassil Alexandrov (Barcelona Supercomputing Center, Spain), *Data and Computational Science Methods Applied to Social Media*
- Krassimir Danov (Sofia University, Bulgaria), *Modeling of Membranes with Complex Rheology: Computational Aspects*
- Oleg Iliev (Fraunhofer ITWM, Germany), *Toward MLMC Based Exascale Computations for Uncertainty Quantification for Flow in Porous Media*

- Ivan Markovsky (Vrije Universiteit Brussel, Belgium), *A Low-rank Matrix Completion Approach to Data-driven Signal Processing*

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