

Provided for non-commercial research and educational use.
Not for reproduction, distribution or commercial use.

Serdica

Mathematical Journal

Сердика

Математическо списание

The attached copy is furnished for non-commercial research and education use only.
Authors are permitted to post this version of the article to their personal websites or institutional repositories and to share with other researchers in the form of electronic reprints.
Other uses, including reproduction and distribution, or selling or licensing copies, or posting to third party websites are prohibited.

For further information on
Serdica Mathematical Journal
which is the new series of
Serdica Bulgaricae Mathematicae Publicationes
visit the website of the journal <http://www.math.bas.bg/~serdica>
or contact: Editorial Office
Serdica Mathematical Journal
Institute of Mathematics and Informatics
Bulgarian Academy of Sciences
Telephone: (+359-2)9792818, FAX:(+359-2)971-36-49
e-mail: serdica@math.bas.bg

PREFACE

The Second International Conference “Mathematics Days in Sofia” was held from 10th to 14th of July, 2017. It was organized by the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences in collaboration with the Union of the Bulgarian Mathematicians and the Faculty of Mathematics and Informatics of the University of Sofia.

The purpose of this event was to present the current state of the art in all areas of mathematics, mathematical informatics and their applications. As the first edition of “Mathematics Days in Sofia” held in 2014, one of the main goals of the Conference was to bring together Bulgarian mathematicians and computer scientists working all over the world. In this way, it helped in the enrichment of the relations between the mathematicians working in Bulgaria and the Bulgarian mathematical diaspora. We are proud to say that “Mathematics Days in Sofia” becomes a traditional meeting of Bulgarian mathematicians working in the country and abroad, with colleagues from established research centers in the world to share the latest scientific advances in mathematics and informatics. In the next year, from 13th to 17th of July, 2020, we plan to organize the third edition of the Conference, see <http://math.bas.bg/2019/10/07/mathematics-days-in-sofia-mds-2020/>. In the past 30 years a number of prominent Bulgarian mathematicians and computer scientists left the country to continue their work in prestigious research centers in the world. In the same period a large number of young people from Bulgaria completed their education in mathematics and informatics in some of the largest university centers in North America and Europe. A whole new generation of young Bulgarians work successfully abroad. The Conference was attended by 60 such compatriots. As a confirmation of their interest in this prestigious international event for the Conference in Sofia registered more than 250 scientists and there were presented over 180 reports. The program was attended by about 120 mathematicians from Bulgaria and more than 60 well-known international scholars from a number of leading research centers in over 30 countries such as Australia, Austria, Belgium, Brazil, Canada, France, Germany, Hong Kong, Italy, Japan, Korea, Poland, Romania, Russia, South Africa, Spain, Sweden, Ukraine, USA and other. The conference included invited 50 minutes plenary talks, 45 minutes invited talks in sections, and 30 minutes research contributions. For plenary speakers were invited 13 world-renowned mathematicians. Three of them were foreigners: Professor Efim Zelmanov from USA, winner of the Fields Medal for 1994, Professor Jean Jacod from France, and Professor Yuri Tschinkel from USA. The other 10 plenary

speakers were Bulgarians (8 working in Austria, Canada, France, and USA, and two working in Bulgarian scientific institutions). The talks at the Conference were grouped in 7 sections:

- Algebra, Logic, and Combinatorics;
- Geometry, and Topology;
- Analysis (dedicated to the 75th anniversary of Prof. Vassil Popov);
- Differential Equations and Mathematical Physics;
- Applied Mathematics (incl. Approximation Theory, Financial Mathematics, Numerical Mathematics, Operations Research, Probability and Statistics);
- Mathematical Aspects of Computer Science;
- Mathematics Education and History of the Mathematics

and four mini-symposia:

- Mathematical Modelling and Scientific Computing
- Nonlinear Waves and Integrability
- Optimal Codes and Related Topics
- Topology.

The event was under the patronage of the President of the Republic of Bulgaria, Mr. Rumen Radev and was officially opened by the Vice President of the Republic of Bulgaria Mrs. Iliana Iotova on July 10, 2017 at “Sofia Hotel Balkan”. During the opening ceremony the Mathematics Prize of the Institute of Mathematics and Informatics for 2017 was awarded to Dr Kiril Datchev from the Purdue University in USA who presented the first plenary talk. The present issue of *Serdica Mathematical Journal* contains several research papers based on talks presented at the Conference, and following the standard procedure for publishing in the journal. Detailed information for the Conference can be found in its web site <http://mds2017.math.bas.bg/>.