

## FOREWORD

The Ninth Congress of Romanian Mathematicians took place in Galați, between June 28<sup>th</sup> and July 3<sup>rd</sup>, 2019. It continued an old tradition of holding congresses of Romanian mathematicians largely open to an international participation.

This edition of the congress was attended by over 330 participants from the following 33 countries: Algeria, Australia, Belgium, Brazil, Bulgaria, Canada, Czech Republic, Denmark, Finland, France, Georgia, Germany, Great Britain, Hungaria, India, Israel, Kuwait, Japan, Jordan, Moldavia, Norway, Pakistan, Portugal, Romania, Russia, Saudi Arabia, South Korea, Spain, Sweden, The Netherlands, Turkey, Ukraine, U.S.A.

The previous eight congresses were organized in Cluj (1929), Turnu Severin (1932), Bucharest (1945, 1956), Pitești (2003), Bucharest (2007), Brașov (2011), and Iași (2015). It is expected that future editions of the congress will continue with a periodicity of four years.

The Ninth Congress of Romanian Mathematicians was organized by the Section of Mathematical Sciences of the Romanian Academy, the Romanian Mathematical Society, the Simion Stoilow Institute of Mathematics of the Romanian Academy, the Faculty of Mathematics and Computer Science of the University of Bucharest, and the “Dunărea de Jos” University of Galați as host institution.

The congress worked in the following eight parallel sections; several special sessions were also included:

1. *Algebra and Number Theory*

Special session: *Number Theory*

2. *Algebraic, Complex and Differential Geometry and Topology*

Special session: *Selected Topics in Complex and Differential Geometry, Topology, and Singularities*

3. *Real and Complex Analysis, Potential Theory*

Special session: *Integral Operators and Layer Potentials*

4. *Ordinary and Partial Differential Equations, Variational Methods, Controlled Differential Systems*

5. *Functional Analysis, Operator Theory and Operator Algebras, Mathematical Physics*  
Special session: *Spectral Analysis and Quantum Transport*
6. *Probability, Stochastic Analysis, and Mathematical Statistics*  
Special session: *Stochastic Analysis and its Applications*  
Special session: *Geometric Structures, Topological Data Analysis and Statistics on Manifolds with Applications*
7. *Mechanics, Astronomy, Numerical Analysis, and Mathematical Models in Sciences*  
Special session: *Modelling in Astronomy*
8. *Theoretical Computer Science, Operations Research and Optimization*  
Special session: *Mathematical Structures in Formal System Development and Analysis*

The volume contains 18 articles written by speakers to the congress, from a wide area of mathematical topics, covered by the meeting.

We express our gratitude to the following institutions, which have generously supported the Congress: *Consiliul Județean Galați, Primăria Municipiului Galați, Tehnopol Galați, Bitdefender, Romanian Academy – Foundation Patrimoniul, Romanian Academy – Menachem H. Elias Family Foundation, Centre Francophone en Mathématiques Bucarest – Agence Universitaire de la Francophonie, WorldQuant, Banca Comercială Română, SCDVV Bujoru, and APAN Grup.*

Guest Editors: Lucian Beznea, Gabriela Marinoschi, and Dan Timotin