PREFACE

In 2012 journal Publications de l'Institut Mathématique celebrates 80 years of subsistence. The oldest Serbian mathematics journal was established in 1932, thanks to the initiative of academician Anton Bilimović, under the name Publications Mathématiques de l'Université de Belgrade. The journal was not published during the period of World War II. Soon after that, in 1947, the publication of the journal restarted under the new name Publications de l'Institut Mathématique de l'Académie Serbe des Sciences et des Arts. In 1961, the journal gained its contemporary name Publications de l'Institut Mathématique.

The current issue of Publications de l'Institut Mathématique is dedicated to the memory of its founder, academician Anton Bilimović. It contains biographical paper on A. P. Bilimović by Đ. Đukić and twelve original scientific papers of renowned scientists from Austria, Belarus, Bulgaria, Italy, Russia, United Kingdom, USA and Serbia, devoted to recent advances in the classical applied mathematics – academician Bilimović's field of interest. A brief overview of the papers is given below.

The first block of papers is devoted to mechanics. In the work by Aleksandar Bakša the geometrical properties of the reactions of nonholonomic constraints in Voronec's equations of motion are analyzed. The paper by Vladimir Dragović deals with algebro-geometric approach to the Yang–Baxter equation and related topics. In the paper by Đorđe Đukić the Lagrange-d'Alembert principle of virtual work is generalized introducing virtual displacement as vectorial sum of the classical virtual displacement and virtual displacement in the supplementary directions. A very simple proof of Gauss–Bonnet theorem in invariant form is presented in the paper by Jovo Jarić. In the work by Božidar Jovanović derivations of several variants of the Maupertuis principle, both on the exact and the non exact symplectic manifolds, are presented. The exact analytical solution for the compressible two-dimensional gas flow in the microbearing is presented by Nevena Stevanović and Vladan Djordjević.

The second group of papers is devoted to differential equations. The work by John Barrett and Endre Süli deals with the Dubinskiĭ's nonlinear compact embedding theorem: a variant of Dubinskiĭ's theorem is established, and the connections of these results with a nonlinear compact embedding theorem due to E. Maitre are

explored. In the paper by Boško Jovanović and Lubin Vulkov a parabolic transmission problem on disjoint intervals is formulated and its characteristics are investigated and analyzed. The work by Marko Nedeljkov and Michael Oberguggenberger is devoted to nonlinear ordinary differential equations with additive or multiplicative terms consisting of Dirac delta functions or derivatives thereof.

The third part of papers is devoted to numerical mathematics. Piotr Matus and Dmitry Polyakov investigated stability and convergence of the difference schemes for equations of isentropic gas dynamics in Lagrangian coordinates. In the work by Pëtr Vabishchevich domain decomposition schemes are developed to solve numerically initial/boundary value problems for the Stokes system of equations in the primitive variables pressure-velocity. Finally, Giuseppe Mastroianni, Gradimir Milovanović and Incoronata Notarangelo investigated an interpolation process of Lagrange–Hermite type and obtained necessary and sufficient conditions for the uniform boundedness of the related operator in suitable function spaces and the optimal error estimates.

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Guest-Editor
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