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3RD JOINT MATHEMATICAL MEETING
OF SERBIA AND MONTENEGRO

PETROVAC, MONTENEGRO

3rd JOINT MATHEMATICAL MEETING OF SERBIA AND MONTENEGRO

Petrovac, 2 -5 October 2025

Welcome Address

It is our great pleasure to welcome you to the 3rd Joint Mathematical Meeting of Serbia and Montenegro (SMSCG 2025), which will take place in the beautiful coastal town of Petrovac, Montenegro, from October 2 to 5, 2025.

This meeting continues the tradition of bringing together mathematicians from Serbia, Montenegro, and abroad to share their research, strengthen professional ties, and foster new collaborations. The 2025 edition covers a broad spectrum of mathematical topics, ranging from probability and statistics, functional analysis, and differential equations, to algebra and geometry. We are especially pleased that one of the sections will be dedicated to our distinguished researcher Rade Živaljević.

For the first time, the conference will also feature several sessions devoted to mathematics education, which will bring together not only researchers but also a large number of teachers from across the region. We hope that the exchange of ideas will contribute to the advancement of mathematics teaching in the region.

We extend our sincere gratitude to all participants, speakers, and contributors for making this meeting possible. Special thanks go to the local organizing committee, supporting institutions, and sponsors, whose efforts and dedication ensure the success of this event.

We trust that the 3rd Meeting of Mathematicians of Serbia and Montenegro will be both scientifically enriching and personally inspiring, and that your stay in Petrovac will be a memorable experience.

Welcome to Petrovac, and to SMSCG 2025!

<div align="right">The Organizing Committee SMSCG 2025</div>

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Faculty of Science and Mathematics, University of Montenegro	Mathematical Institut of the Serbian Academy of Sciences and Arts	Faculty of Mathematics, University of Belgrade

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Overview of anti-Gaussian quadrature formulas on the space of multiple orthogonal polynomials with nearly diagonal multi-indeces

Nevena Z. Petrović

Faculty of Mechanical and Civil Engineering in Kraljevo, University of Kragujevac

Multiple orthogonal polynomials represent a generalization of orthogonal polynomials in the sense that they satisfy the orthogonality conditions with respect to $r \in \mathbb{N}$ different weight functions simultaneously. In this presentation, we will provide an overview of the set of anti-Gaussian quadrature formulas for the optimal set of quadrature formulas in Borges' sense on the spaces of algebraic and trigonometric polynomials, while limiting ourselves to nearly diagonal multi-indices. The corresponding multiple orthogonal polynomials that arise in the construction of these quadrature formulas satisfy the orthogonality conditions with respect to r bilinear forms that naturally emerge from the mentioned constructions.

Multivariate distributions with proportional hazard rate marginal and its dependence modelling

Božidar Popović

Faculty of Science and Mathematics, University of Montenegro

We introduce a new family of multivariate distributions, so called the multi- variate proportional hazard rate family of distributions and study its properties. We derive multivariate dependence properties based on a survival function and based on a survival copula function. Multivariate dependence properties based on a survival function are given by multivariate total positivity of order 2, right corner set increasing, smaller in lower orthant order and right tail increasing. Multivariate dependence properties based on a survival copula function are some coefficients of concordance. The survival copula function is used to model this family of multivariate distributions.