



mna
Budva 2026

Book of Abstracts

Mathematics, Numerics and Applications

MNA 2026

Budva, Montenegro
May 26-29, 2026



Faculty of Mechanical Engineering
University of Belgrade

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Mathematics, Numerics and Applications 2026
Book of Abstracts
– 1st Edition –

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Publisher:

University of Belgrade
Faculty of Mechanical Engineering
Kraljice Marije 16, 11120 Belgrade, Serbia
Tel. +381 11 3370 760
www.mas.bg.ac.rs

For the Publisher:

Dean, Dr. Vladimir Popović, Full Professor

Responsible Editor:

Prof. Dr. Nebojša Manić, Full Professor
Chair of the Publishing Committee
Faculty of Mechanical Engineering, University of Belgrade

Conference venue and date:

Budva, Montenegro, May 26–29, 2026

Print run: 50 copies

Printed by: Planeta Print, Belgrade

Belgrade, 2026

Printing approved by the Dean of the Faculty of Mechanical Engineering,
University of Belgrade, Decision No. 8/2026, dated May 14, 2026.

ISBN 978-86-6060-247-5

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Cover photo: View over the Old Town of Budva from the Citadel. © DinoMNE / Wikimedia Commons, CC BY-SA 3.0.

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About the Conference

The international conference **Mathematics, Numerics and Applications (MNA 2026)** is held in **Budva, Montenegro, from 26 to 29 May 2026**, at the hotel **Slovenska Plaža**. The conference takes place over four days and features presentations by researchers from the international scientific community, including plenary and keynote lectures and contributed talks on the latest advances.

The aim of the conference is to bring together experienced scientists and young researchers from around the world working in the fields of Pure, Computational, and Applied Mathematics, and to encourage collaboration, the exchange of new ideas, and discussion of challenging open problems.

The conference is dedicated to **Professor Miodrag Spalević** on the occasion of his 65th birthday. Professor Spalević, born on 6 June 1961 in Peć, SFR Yugoslavia, is a full-time professor at the **University of Belgrade, Faculty of Mechanical Engineering**. He has achieved significant scientific results in the field of **Numerical Analysis**, particularly in the theory and application of **Gaussian quadrature rules**.

The conference topics include (but are not limited to) all research areas of Numerical Analysis and Computational Mathematics, with special emphasis on Numerical Integration, as well as selected topics in Pure and Applied Mathematics.

Conference topics:

- Numerical Analysis
- Computational Mathematics
- Numerical Integration
- Applied Mathematics
- Pure Mathematics
- Mathematical Modeling

Conference website: <https://mat.mas.bg.ac.rs/mna2026/home>

Committees

Plenary Speakers

- Francisco José Marcellán (Universidad Carlos III de Madrid, Spain)
- Gradimir V. Milovanović (Serbian Academy of Sciences and Arts, Serbia)
- Sotirios E. Notaris (National and Kapodistrian University of Athens, Greece)
- Lothar Reichel (Kent State University, Ohio, USA)

Keynote Speakers

Mathematics:

- Ahmet Ocak Akdemir (Agri Ibrahim Cecen University, Turkey)
- Dušan Đukić (University of Belgrade, Serbia)

Applied Mathematics:

- Maria Carmela De Bonis (University of Basilicata, Italy)
- Aleksandar V. Pejčev (University of Belgrade, Serbia)

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- Ramón Orive (University of La Laguna, Spain)
- Aleksandar V. Pejčev (University of Belgrade, Serbia)
- Miroslav Pranić (University of Banja Luka, Bosnia and Herzegovina)
- Lothar Reichel (Kent State University, Ohio, USA)
- Aleksandar Sedmak (University of Belgrade, Serbia)
- Yilmaz Simsek (Akdeniz University, Antalya, Turkey)

- Miodrag M. Spalević (University of Belgrade, Serbia)
- Marija P. Stanić (University of Kragujevac, Serbia)
- Zorica Stanimirović (University of Belgrade, Serbia)
- Endre Süli (University of Oxford, UK)
- Jelena Tomanović (University of Belgrade, Serbia)
- Aleksandar Tomović (University of Belgrade, Serbia)
- Tatjana Tomović Mladenović (University of Kragujevac, Serbia)
- Đorđije Vujadinović (University of Montenegro, Montenegro)

Organizing Committee

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- Ljubica Mihić (VIŠER, FITI, Belgrade, Serbia)
- Stefan M. Spalević (University of Belgrade, Serbia)
- Jelena Tomanović (University of Belgrade, Serbia)
- Miloš Vučić (University of Belgrade, Serbia)

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Marija P. Stanić	University of Kragujevac, Serbia
Jelena Tomanović	University of Belgrade, Serbia
Jelena Vicanović	University of Belgrade, Serbia
Miloš Vučić	University of Belgrade, Serbia
Đordije Vujadinović	University of Montenegro, Montenegro
Sandra Živanović	University of Belgrade, Faculty of Mathematics

Conference Programme

Tuesday, May 26 — Morning

9:00–9:15	Registration (J. Matović, Lj. Mihić, S. Spalević, J. Tomanović, M. Vučić)
<i>Chair: D. Jandrić Support: V. Čorović</i>	
9:15–9:20	Opening remarks
9:20–9:50	About Professor Spalević (A. Pejčev)
9:50–10:20	M. Spalević — <i>On Some Parts of my Research Work</i>
10:20–11:00	<i>Coffee break</i>
<i>Chair: A. Pejčev Support: S. Spalević</i>	
11:00–11:45	L. Reichel — <i>Gauss-type quadrature rules and their application to the solution of integral equations</i> [K]
11:45–12:30	G. Milovanović — <i>Orthogonal Polynomials Related to a Complex-Valued Linear Moment Functional...</i> [P] (online)

Tuesday, May 26 — Afternoon

<i>Chair: Lj. Mihić Support: S. Spalević</i>	
14:00–14:35	A. O. Akdemir — <i>Keynote lecture</i> [K] (online)
14:35–15:10	D. Đukić — <i>Asymptotics of orthogonal polynomials for the Abel weight</i> [K] (online)
15:10–15:40	R. Orive — <i>The electrostatic partners...</i> (online)
15:40–16:10	A. Sedmak — <i>SMART simulation of fatigue crack growth</i> (online)

Wednesday, May 27 — Morning

<i>Chair: M. Spalević Support: V. Čorović</i>	
9:00–9:45	F. Marcellán — <i>Sobolev orthogonal polynomials...</i> [P]
9:45–10:20	M. C. De Bonis — <i>A global numerical method...</i> [K]
10:20–11:00	<i>Coffee break & Group photo</i>
Chair: L. Reichel Supp: V. Čorović Chair: M. Boričić Joksimović Supp: S. Spalević	
11:00–11:30	M. Pranić
11:30–12:00	D. Jandrić
12:00–12:30	Lj. Mihić
	K. Doroslovački
	S. Milićević
	J. Vicanović (1)

Wednesday, May 27 — Afternoon

	Chair: F. Marcellán	Supp: Lj. Mihić	Chair: K. Doroslovački	Supp: S. Spalević
14:00–14:30	M. Stanić		J. Vicanović (2)	
14:30–15:00	A. Milosavljević		N. Mladenović	
15:00–15:30	A. Jovanović		M. Boričić Joksimović	
15:30–16:00	N. Petrović		M. Vučić	

Thursday, May 28 — Morning

Chair: M. C. De Bonis		Support: V. Čorović		
9:00–9:45	S. Notaris — <i>Product integration rules for Chebyshev...</i>		[P]	
9:45–10:20	A. Pejčev — <i>Error Estimation of Gaussian Quadrature...</i>		[K]	
10:20–11:00	Coffee break			
	Chair: S. Notaris	Supp: V. Čorović	Chair: Y. Simsek	Supp: J. Matović
11:00–11:30	E. Denich		Đ. Vujadinović	
11:30–12:00	S. Spalević		D. Pokaz	
12:00–12:30	J. Tomanović		M. Ribičić Penava	

Thursday, May 28 — Afternoon

	Chair: J. Tomanović	Supp: J. Tomanović	Chair: Đ. Vujadinović	Supp: S. Spalević
14:00–14:30	R. Mutavdžić Đukić		Y. Simsek	
14:30–15:00	V. Čorović		N. Kilar	
15:00–15:30	A. Deliћ		J. Matović	
15:30–16:00	B. Sredojević			
19:00–23:00	Social dinner			

Friday, May 29

10:00–10:15	Closing remarks
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[P] = Plenary lecture [K] = Keynote lecture All other talks are contributed.

Gaussian quadrature rules with multiple nodes with respect to orthogonality on the semicircle

Marija P. Stanić, Tatjana V. Tomović Mladenović, Aleksandra S. Milosavljević

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Weighted orthogonality on the semicircle was introduced in 1987 in [1]. In that paper, orthogonality is considered with respect to a non-Hermitian inner product defined by

$$(f, g) = \int_{\Gamma} f(z)g(z)(iz)^{-1}w(z)dz = \int_0^{\pi} f(e^{i\theta})g(e^{i\theta})w(e^{i\theta})d\theta,$$

where $\Gamma = \{z = e^{i\theta} : 0 \leq \theta \leq \pi\}$. Gaussian quadrature rules associated with orthogonality on the semicircle were introduced in [2]. On the other hand, on the real line, Gaussian quadrature rules with multiple nodes have been studied in [3] and [4]. These are the so-called Gauss-Turán quadrature rules, defined with respect to s -orthogonality, and the Chakalov-Popoviciu rules, defined with respect to σ -orthogonality. We introduce Gaussian quadrature rules with respect to s -orthogonality and σ -orthogonality on the semicircle.

Keywords: Gaussian quadrature rules, Orthogonality on the semicircle, s -orthogonality, σ -orthogonality

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- [1] Gautschi, W., Landau H.J., Milovanović, G.: Polynomials orthogonal on the semicircle, II, *Constr. Approx.* 3 (1987) 389–404.
- [2] Milovanović, G.: On polynomials orthogonal on the semicircle and applications, *J. Comput. Appl. Math.* 49 (1993) 193–199.
- [3] Gautschi, W., Milovanović, G.: S -orthogonality and construction of Gauss-Turán-type quadrature formulae, *J. Comput. Appl. Math.* 86 (1997) 205–218.
- [4] Milovanović, G.: Construction of Chakalov-Popoviciu's type quadrature formulae, *Rendiconti del Circolo Matematico di Palermo* 52 (1998) 625–636.

CIP – Katalogizacija u publikaciji
Narodna biblioteka Srbije, Beograd

51(048)

CONFERENCE Mathematics, Numerics and Applications (2026 ; Budva)

Book of Abstracts / [Conference] Mathematics, Numerics and Applications, MNA 2026, [Budva, Montenegro, May 26–29, 2026] ; editors Davorka Jandrić, Jelena Tomanović. – 1st ed. – Belgrade : University, Faculty of Mechanical Engineering, 2026 (Belgrade : Planeta Print). – 42 str. : ilustr. ; 30 cm

Kor. nasl. – Tiraž 50. – Bibliografija uz sve apstrakte.

ISBN 978-86-6060-247-5

a) Matematika – Apstrakti

COBISS.SR-ID 193892105