Cumhuriyet University

24th International Conference on Mathematics and Mathematics Education

ICMME 2026

10–12 September 2026

Sivas, Türkiye

On the Trail of Science from the Seljuks to the Republic: Mathematics in Sivas

PROGRAMME

Practical Information

Halls

Keykavus – opening ceremony. Mavi – plenary lectures, parallel sessions and closing and evaluation. Turkuaz and Kırmızı – parallel sessions. 4 Eylül Cultural Center – departure.

Talk lengths

Plenary lectures 45 minutes; contributed talks 15 minutes including questions.

Speakers

Please arrive at your hall 10 minutes before the session begins and load your presentation during the preceding break.

Session chairs

Kindly keep to the published timetable so that delegates can move between parallel halls.

At a Glance

Thursday, 10 September 2026

09:00–10:00	**Registration**
10:00–11:00	**Opening Ceremony** (Keykavus)
11:00–11:15	**Coffee Break**
11:15–12:45	**Plenary lectures 1–2** (Mavi)
13:00–13:45	**Lunch**
14:00–15:30	**Plenary lectures 3–4** (Mavi)
15:30–15:45	**Coffee Break**
15:45–17:00	**Parallel Sessions A** (3 halls)
17:00–17:15	**Coffee Break**
17:15–18:30	**Parallel Sessions B** (3 halls)
19:30–20:30	**Dinner**

Friday, 11 September 2026

09:00–10:30	**Plenary lectures 5–6** (Mavi)
10:30–10:45	**Coffee Break**
10:45–11:45	**Parallel Sessions C** (3 halls)
11:45–12:00	**Coffee Break**
12:00–12:45	**Parallel Sessions D** (3 halls)
12:45–13:00	**Coffee Break**
13:00–13:45	**Lunch**
14:00–15:30	**Plenary lectures 7–8** (Mavi)
15:30–15:45	**Coffee Break**
15:45–17:15	**Parallel Sessions E** (3 halls)
17:15–18:00	**Closing and Evaluation** (Mavi)
19:30–20:30	**Dinner**

Saturday, 12 September 2026

08:00–17:00	**Departure** (4 Eylül Cultural Center) – Social Tour to Divriği Great Mosque

Plenary Speakers

Prof. Dr. Ömer Akın
[TOBB ETÜ, Türkiye]
Success in Education and Why is Mathematics?

Prof. Dr. Sare Şengül
[Marmara University, Atatürk Faculty of Education, Department of Mathematics and Science Education]
Tracing Mathematical Meaning: A Journey to the Integrated Dynamic Mathematical Meaning Model (BDSM)

Prof. Dr. Yusuf Yaylı
[Ankara University, Türkiye]
Geometry of Umbrella Matrices

Prof. Dr. Carlo Cattani
[University of Tuscia, Italy]
A Delayed Generalized Lotka–Volterra Model for Threshold Instability and Structural Recognition

Prof. Dr. Maria Alessandra Ragusa
[University of Catania, Italy]
Recent Progresses on Real Analysis and Applications

Prof. Dr. Juan Luis García Guirao
[Technical University of Cartagena Department of Applied Mathematics and Statistic, Spain]
Shannon-Whittaker-Kotel'nikov's Theorem Generalized

Prof. Dr. Vincenzo Ciancio
[Messina University, Italy]
Evolution of Internal Variables in the Hybrid Heat Equation for Anisotropic Viscoelastic Media

Prof. Dr. Zakia Hammouch
[ENS Moulay Ismaïl University, Morocco]
On Some Stability Results of power-law Fractal-Fractional Systems

Thursday, 10 September 2026

Day 1

Registration 09:00–10:00

Opening Ceremony Hall: Keykavus 10:00–11:00

Coffee Break 11:00–11:15

Plenary Session I Hall: Mavi Chair: Necdet Bildik

Plenary 1 11:15–12:00

Ömer Akın

Success in Education and Why is Mathematics?

Plenary 2 12:00–12:45

Sare Şengül

Tracing Mathematical Meaning: A Journey to the Integrated Dynamic Mathematical Meaning Model (BDSM)

Break 12:45–13:00

Lunch 13:00–13:45

Break 13:45–14:00

Plenary Session II Hall: Mavi Chair: Ömer Akın

Plenary 3 14:00–14:45

Yusuf Yaylı

Geometry of Umbrella Matrices

Plenary 4 14:45–15:30

Carlo Cattani

A Delayed Generalized Lotka–Volterra Model for Threshold Instability and Structural Recognition

Coffee Break 15:30–15:45

Parallel Sessions A 15:45–17:00

Session A1 Hall: Turkuaz Chair: Hüseyin Yıldırım

15:45–16:00	**O-01**	Quantum Calderon-Zygmund Singular Integral Operators in the Quantum Lebesgue Spaces *Abdulhamit Küçükaslan*
16:00–16:15	**O-02**	Hybrid Orbit Design in Earth-Moon Missions: Patched Conics and CR3BP Manifolds Combined with Differential Correctors *Beliz Özcan, Abdulhamit Küçükaslan*
16:15–16:30	**O-03**	Estimates of the First Eigenvalue of the Schrödinger Equation with a Singularity at Zero *İlyas Haşimoğlu*
16:30–16:45	**O-04**	A Grand Variable Exponent Morrey Space Framework for Sobolev-Type Embeddings, Compactness, and Hölder Regularity in Anisotropic Fractional Variational Problems *Merve Esra Türkay*
16:45–17:00	**O-05**	What is a Complex Partial Differential Equation? *Pelin Ayşe Gökgöz*

Session A2 Hall: Mavi Chair: Figen Kangalgil

15:45–16:00	**O-06**	On Rich Dynamical Behaviours of a Commensal-Type Symbiosis Model Incorporating Memory Effects *Seval Işık*

16:00–16:15	**O-07**	Computation of the Largest Hurwitz Stability Intervals with Guaranteed Accuracy Using Practical Threshold Values in Parameterized Lotka–Volterra Models *Reyyan Nur Göktaş, Güner Topcu, Kemal Aydın*
16:15–16:30	**O-08**	Effect of İmmigration on the Stability of Leslie-Type Prey-Predator Systems *Deniz Elmaci, Figen Kangalgil*
16:30–16:45	**O-09**	Stability Analysis of a Discrete-Time Predator–Prey Population Model under the Effects of Immigration and Harvesting *Emre Baklacı, Nilüfer Topsakal, Figen Kangalgil*
16:45–17:00	**O-10**	Complex Dynamics and Bifurcation Analysis of a Two-Species Model with Harvesting and Allee Effects *Deniz Elmaci, Figen Kangalgil, Seval Işık*

Session A3 Hall: Kırmızı — Chair: Öznur Gölbaşı

15:45–16:00	**O-11**	Padovan-Sum Graph *Ece Güneş Güngör, Elif Özcan, Şerife Büyükköse*
16:00–16:15	**O-12**	Specific Classes of Directed Graph Groups and Their Structural Properties *Fatih Polat, Mehmet Sefa Cihan*
16:15–16:30	**O-13**	Generalized Riordan Structures and Sequence Characterizations *Fatma Yeşil Baran*
16:30–16:45	**O-14**	Basic Properties of Central Günaltılı Graphs *İbrahim Günaltılı*
16:45–17:00	**O-15**	On the Generalized Tangent-Fibonacci Polynomials and Related Identities *Semra Kuş*

Coffee Break 17:00–17:15

Parallel Sessions B 17:15–18:30

Session B1 Hall: Turkuaz — Chair: İbrahim Günaltılı

17:15–17:30	**O-16**	Intrinsic Characterization of Persistent Lorentzian Frame Motions in Minkowski Space *Derya Kahveci, Yusuf Yaylı*
17:30–17:45	**O-17**	Axode Geometry of Persistent Lorentzian Frame Motions *Derya Kahveci, Yusuf Yaylı*
17:45–18:00	**O-18**	Spiral Curves and Their Counterparts in Euclidean Three Space *Fouzi Hathout*
18:00–18:15	**O-19**	Information Geometry of Orthogonal Generalized Doubly Stochastic Matrices *Mert Çarboğa, Yusuf Yaylı*
18:15–18:30	**O-20**	Semi-Orthogonal Matrix Representations of Quaternions in Dual Spaces *Gülsüm Yüca, Yusuf Yayli*

Session B2 Hall: Mavi — Chair: Ahmet Sinan Özkan

17:15–17:30	**O-21**	Oscillation of Second-Order Damped Differential Equations With a Mixed Neutral Term *Ümmügülsüm Dal, Orhan Özdemir*
17:30–17:45	**O-22**	An Encryption–Decryption Algorithm Using the Fractional Laplace Transform for Composite Special Functions *Hüseyin Demir, Hatice Muti, Hünkar Acar*
17:45–18:00	**O-23**	Thermal Analysis of a Moving Longitudinally Porous Fin Immersed in a Nanofluid and Exposed to a Magnetic Field: The Pseudo-Spectral Chebyshev Method *Hüseyin Demir, İnci Çilingir Süngü, İbrahim Keleş*

18:00–18:15	**O-24**	Asymptotic Behavior and Oscillation of Third-Order Semi-Canonical Neutral Differential Equations *Orhan Özdemir, Ercan Tunç*
18:15–18:30	**O-25**	Proofs of Certain Irrationalities Using Differential Equations *İbrahim Adalar*

Session B3 Hall: Kırmızı — Chair: Mehmet Atçeken

17:15–17:30	**O-26**	Figures Placed Among Geometric Patterns in Sivas Structures of the Medieval Anatolian Turkish-Islamic Architectural Period *Fatmagül Saklavcı*
17:30–17:45	**O-27**	Explicit Free Resolutions of Tangent Cones in Affine 4-Space *Özgür İnce*
17:45–18:00	**O-28**	On the Prolongation of Almost Hsu-Golden Structures to the Second-Order Tangent Bundle *Neslihan Yildirim, Mustafa Özkan*
18:00–18:15	**O-29**	r-Near Topological Spaces Generated by Means of Minimal Open Sets *Berrin Nur Abbasoğlu, Serkan Atmaca*
18:15–18:30	**O-30**	q-Leonardo Chebyshev Polynomials *Naim Tuglu, Gizem Şimşek*

Dinner 19:30–20:30

Friday, 11 September 2026 Day 2

Plenary Session III Hall: Mavi Chair: Abdulhamit Küçükaslan

Plenary 5 09:00–09:45

Maria Alessandra Ragusa

Recent Progresses on Real Analysis and Applications

Plenary 6 09:45–10:30

Juan Luis García Guirao

Shannon-Whittaker-Kotel'nikov's Theorem Generalized

Coffee Break 10:30–10:45

Parallel Sessions C 10:45–11:45

Session C1 Hall: Turkuaz Chair: Hüseyin Yıldırım

10:45–11:00	**O-31**	Continuous Dependence on the Viscosity Parameter for the Velocity-Vorticity Model of the g-Navier-Stokes Equations *Özge Kazar*
11:00–11:15	**O-32**	Associated Functions of Sturm-Liouville Operator with Cubic Eigenparameter in Boundary Condition *Nihal Yokuş*
11:15–11:30	**O-33**	The Spectrum of a Generalization of the Cesàro Matrix in Convergent Sequences Space *Rabia Kılıç*
11:30–11:45	**O-34**	Conformable Fractional Integrals with Respect to a Function and Chebyshev-Type Inequalities *Sümeyye Ermeydan Çiriş, Hüseyin Yıldırım*

Session C2 Hall: Mavi Chair: Nilüfer Topsakal

10:45–11:00	**O-35**	Surface Data Visualization Using Rational Bi-Cubic Ball Functions *Ayser Tahat, Jafar Ahmed*
11:00–11:15	**O-36**	On the Numerical Solution of the Diabetes Model with Conformable Derivative *Şüheda Nerse, İnci Çilingir Süngü*
11:15–11:30	**O-37**	Solving Fully FIVP by Using Granular Differentiability Concept *Tahir Ceylan, Ömer Akın*
11:30–11:45	**O-38**	A Seasonal Jump-Diffusion Model for Extreme Rainfall in the Eastern Black Sea Region: Numerical Schemes and Exceedance Risk *Tuğçem Partal, Gülşen Orucova Büyüköz*

Session C3 Hall: Kırmızı Chair: Gülay Koru Yücekaya

10:45–11:00	**O-39**	An Explainable Deep Learning Approach Based on EfficientNetB3 and Grad-CAM for Enamel Caries Classification in Intraoral Images *Bilal İnan, Nurettin Doğan, Türkay Kölüş*
11:00–11:15	**O-40**	Effects of Surface Charge on DNA Sensing in Biological Nanopores *Durdane Yilmaz, Kaan Kececi, Ali Dinler*
11:15–11:30	**O-41**	Exponential Type Baskakov Operators via Summability Methods *Şeyma Çelik, Dilek Söylemez Özden*
11:30–11:45	**O-42**	If Nature Remembers the Past, Why Should Our Mathematical Models Be Forgetful? *Nilay Akgönüllü Pirim*

Coffee Break 11:45–12:00

Parallel Sessions D 12:00–12:45

Session D1 Hall: Turkuaz — Chair: Gülsüm Yüca

12:00–12:15	**O-43**	A New Approach to Hermite-Hadamard Inequalities Using Multiplicative Fractional Integrals	*Umut Baş, Hüseyin Budak, Hüseyin Yıldırım*
12:15–12:30	**O-44**	Atomic Structure and State Extensions in Jordan Operator Algebras	*Haifa Bin Jebreen*
12:30–12:45	**O-45**	Algebraic Structure and Hamilton Matrix Representations of Quaternions over the Gaussian Rational Field	*Gülay Koru Yücekaya*

Session D2 Hall: Mavi — Chair: Ömer Akın

12:00–12:15	**O-46**	Curvature-Dependent Boundary Conditions at Fluid–Solid Interfaces: An Analysis of Velocity Slip and Heat Transfer	*Semran Ipek, Kiril St. Shterev, Stefan K. Stefanov, Ali Dinler*
12:15–12:30	**O-47**	Neural Network-Based Numerical Analysis of Fractional-Order Glucose-Insulin Dynamics	*Hasan Bulut, Şeyma Firdevs Hızal, Funda Türk*
12:30–12:45	**O-48**	Certified Fuzzy Output Strips for Information-Diffusion Models	*Hazm Talab, Ömer Akın*

Session D3 Hall: Kırmızı — Chair: Seval Işık

12:00–12:15	**O-49**	Disentangling Persistent Excitation and Near-Critical Amplification in Cyber-Threat Indicator Streams: A Mittag-Leffler Hawkes Framework	*Mehmet Sevri, Kevser Nur Çoğalmış, Tuğçem Partal*
12:15–12:30	**O-50**	Inverse Analysis of IoT Malware Spread under Partial Observation: A Physics-Informed Neural Network Approach	*Mehmet Sevri, Tugçem Partal, Kevser Nur Çoğalmış*
12:30–12:45	**O-51**	Solving the 0-1 Knapsack Problem Using Binary Dhole Optimization Algorithm	*Gülşen Orucova Büyüköz, Tuğçem Partal*

Coffee Break 12:45–13:00

Lunch 13:00–13:45

Break 13:45–14:00

Plenary Session IV Hall: Mavi Chair: Hasan Bulut

Plenary 7 14:00–14:45

Vincenzo Ciancio

Evolution of Internal Variables in the Hybrid Heat Equation for Anisotropic Viscoelastic Media

Plenary 8 14:45–15:30

Zakia Hammouch

On Some Stability Results of power-law Fractal-Fractional Systems

Coffee Break 15:30–15:45

Parallel Sessions E 15:45–17:15

Session E1 Hall: Turkuaz — Chair: Nuh Durna

15:45–16:00	**O-52**	On The Coefficient of Certain Analiytic Functions	*Osman Altıntaş, Aslan Bahtiyar*

16:00–16:15	**O-53**	On Homomorphisms of Nearness Γ-Near Rings *Mustafa Uçkun, Nida Nur Geneş*
16:15–16:30	**O-54**	Crossed Modules over 2-Groups *Sedat Temel*
16:30–16:45	**O-55**	On Characterizations of Gamma Nearness Ideals in Ordered Gamma Nearness Semigroups *Mehmet Ali Öztürk, Hasret Yazarlı*
16:45–17:00	**O-56**	A Review on the Spectral Analysis of Weighted Mean Matrices *Zeynep Adıgüzel, Nuh Durna*
17:00–17:15	**O-57**	Lyapunov-Based Global Stability Analysis of the Endemic Equilibrium in a Reduced SIRD Model for Crimean–Congo Hemorrhagic Fever *Yusuf Gursoy, Nilüfer Topsakal, Figen Kangalgil*

Session E2 Hall: Mavi — Chair: Mehmet Sefa Cihan

15:45–16:00	**O-58**	A Systematic Review of Studies Focusing on Teacher Roles in Mathematics Education *Betül Alanoğlu, Seyfettin Alan*
16:00–16:15	**O-59**	Mateverse.net: Interactive Educational Web Page Containing Calculus Topics Using MathJax *Cenk Alp Arslan, Onur Alp Bahadır, Cüneyt Çevik*
16:15–16:30	**O-60**	Bridging Mathematics and Chemistry Through an Interdisciplinary Workshop The “Think, Discover, Produce” Model *Canan Sümbül, Zeliha Yılmaz*
16:30–16:45	**O-61**	Mateverse.net: A Comprehensive, Visualization-Driven Interactive Ecosystem for Calculus Education *Erkan Oğuzcan, Ceyda Şükufe Karahan, Cüneyt Çevik*
16:45–17:00	**O-62**	A Unified Composite-Weight Framework for Generalized Convexity *Ali Harun Daldalli, Abdullah Akkurt, Hüseyin Yıldırım*
17:00–17:15	**O-63**	Reflections on Preservice Mathematics Teacher’ Interactions with Artificial Intelligence in Problem-Solving *Yasemin Kiymaz*

Session E3 Hall: Kırmızı — Chair: Hasan Hüseyin Sayan

15:45–16:00	**O-64**	Hermite–Hadamard Proportional Fractional Integrals Inequalities for Trigonometrically Co-Ordinated Convex Functions *Sümeyye Ermeydan Çiriş, Abdullah Akkurt, Hüseyin Yıldırım*
16:00–16:15	**O-65**	Preserving the Completeness of Blockchain-Anchored Digital Evidence under Ledger Failures *Mehmet Meral, Hasan Hüseyin Sayan*
16:15–16:30	**O-66**	Route and Resource Optimization in UAV-RIS Assisted 6G Wireless Networks: A Comparative Study on Population-Based Metaheuristic Algorithms *Furkan Üstünsoy, Sadık Yıldız, Hasan Hüseyin Sayan*
16:30–16:45	**O-67**	Improving Feature Representation in Underwater Acoustic Target Recognition via Nonlinear PSD Quantization and Custom Colormap Encoding *Gülsevin Kodaloğlu, Hasan Hüseyin Sayan, Hamdi Tolga Kahraman, Yusuf Sönmez*
16:45–17:00	**O-68**	Methodological Foundations for Selecting and Systematizing Problem-Solving Strategies for Word Problems *Mehdixan Ashurov*
17:00–17:15	**O-69**	Ricci Pseudosymmetry Conditions on Trans Para-Sasakian Manifolds and Ricci Solitons *Mehmet Atçeken, Tuğba Mert*

Closing and Evaluation Hall: Mavi 17:15–18:00

Dinner	19:30–20:30

Saturday, 12 September 2026

Day 3

Departure Hall: 4 Eylül Cultural Center 08:00–17:00

Social Tour to Divriği Great Mosque