



**23rd Scientific-Professional Colloquium on
Geometry and Graphics
VINKOVCI
3–7 September 2023**

ORGANIZER:
Croatian Society for Geometry and Graphics

PROGRAM

PROGRAM COMMITTEE:
Ema Jurkin, Domen Kušar, Boris Odehnal, Jenő Szirmai

DONOR:
SAND d.o.o.

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SUNDAY, SEPTEMBER 3

17.00–19.00 Registration

19.00–21.00 DINNER

MONDAY, SEPTEMBER 4

7.00– 9.00 BREAKFAST

Morning session (Chair: H. Koncul)

9.00– 9.10 OPENING

9.10– 9.50 Plenary lecture
Hans-Peter Schröcker: *Conformal kinematics at infinity*

9.55–10.20 COFFEE BREAK

10.20–10.35 Walther Jank, Georg Glaeser, Boris Odehnal: *On the geometry of spherical trochoids*

10.40–10.55 Hellmuth Stachel: *Ivory's theorem and self-adjoint mappings*

11.00–11.15 Gunter Weiss, Boris Odehnal: *Brocard seen with Miquel's eyes*

11.20–11.30 PAUSE

11.30–11.45 Paul Zsombor-Murray, Anton Gferrer: *Stationary distances between spatial circles*

11.50–12.05 Daniela Velichová: *Symmetry*

12.30–14.00 LUNCH



Afternoon session (Chair: Ž. Milin Šipuš)

- 15.00–15.15 Goran Muić: *On embeddings of projective algebraic curves in projective spaces*
- 15.20–15.35 Damir Mikoč: *Explicit methods with modular curves and Weierstrass points*
- 15.40–15.55 Iva Kodrnja: *Hilbert’s irreducibility, modular forms, and computation of certain Galois groups*
- 16.00–16.30 COFFEE BREAK
- 16.30–16.45 Dijana Ilišević: *Isometries and their square roots – from the Euclidean plane to various normed spaces and back*
- 16.50–17.05 Bojan Pažek, Kristijan Dragičević: *Constrained topological networks for advanced 3D scanning analysis*
- 17.10–17.25 Ivica Martinjak, Ana Mimica: *Alternating sign matrices and Dyck paths*
- 19.00–21.00 DINNER

TUESDAY, SEPTEMBER 5

- 7.00– 9.00 BREAKFAST
- 9.00–19.00 EXCURSION - Vinkovci and Vukovar
- 19.00–21.00 DINNER



WEDNESDAY, SEPTEMBER 6

7.00– 9.00 BREAKFAST

Morning session (Chair: E. Jurkin)

9.00– 9.40 Plenary lecture

Blaženka Divjak: *Advancing mathematics education: Integrating learning analytics and AI for effective learning design and assessment*

9.45–10.10 COFFEE BREAK

10.10–10.25 Blaženka Divjak, Marija Jakuš, Petra Žugec: *AI supported innovative math assessment*

10.30–10.45 Milena Stavrić, Kilian Hoffmann, Felix Dokonal, Albert Wiltsche: *Computed Cake 4.0*

10.50–11.05 Albert Wiltsche, Milena Stavrić: *Geometry in the “Digital Twin” concept*

11.10–11.20 PAUSE

11.20–11.35 Ivana Filipan, Željka Milin Šipuš, Ljiljana Primorac Gajčić: *Involute and evolute of partially null curve in 4-dimensional Lorentz-Minkowski space*

11.40–11.55 Davor Devald, Željka Milin Šipuš: *Weierstrass representation of lightlike surfaces in Lorentz-Minkowski 4-space*

12.30–14.00 LUNCH



Afternoon session (Chair: I. Kodrnja)

- 15.00–15.15 Emil Molnár, István Prok, Jenő Szirmai: *Hyperbolic crystal geometry, on the 200th anniversary of János Bolyai's absolute geometry*
- 15.20–15.35 Zlatko Erjavec, Marcel Maretić: *On translation curves and geodesics in Sol_1^4 space*
- 15.40–15.55 Géza Csima: *Isoptic surfaces of segments in $\mathbf{S}^2 \times \mathbb{R}$ and $\mathbf{H}^2 \times \mathbb{R}$ geometries*
- 16.00–16.30 COFFEE BREAK
- 16.30–16.45 Luigi Cocchiarella: *Back to Incunabula. Reconsidering orthographic projections in De Prospective Pingendi*
- 16.50–17.05 Helena Koncul, Saša Ahac: *Geometry of the roundabouts*
- 17.10–17.20 PAUSE
- 17.20–17.40 POSTER SESSION
- Davor Andrić, Morana Pap: *Geometry and graphics in architecture through the eye of AI*
- Gorana Aras-Gazić, Ana Laštre, Neda Lovričević: *When 5, 7, 9, 10 and π meet descriptive geometry*
- Davor Devald: *Associated surfaces of a maximal/minimal surface in Lorentz-Minkowski 3-space and their exponential map*
- Tomislav Došlić, Luka Podrug: *Sweet division problems: Chocolate bars and honeycomb strips*
- Ema Jurkin, Marija Šimić Horvath: *Orthopoles related to a complete quadrangle*
- 19.30–24.00 COLLOQUIUM DINNER



THURSDAY, SEPTEMBER 7

7.00– 9.00 BREAKFAST

Morning session (Chair: M. Šimić Horvath)

9.00– 9.40 Plenary lecture

László Németh: *Integer sequences connecting to some geometric constructions*

9.45–10.10 COFFEE BREAK

10.10–10.25 Boris Odehnal: *A Miquel-Steiner transformation*

10.30–10.45 Ivana Božić Dragun: *Curve of centers of the special conic section pencil*

10.50–11.05 Ružica Kolar-Šuper, Vladimir Volenec, Zdenka Kolar-Begović: *Feuerbach point and Feuerbach line of a triangle in the isotropic plane*

11.10–11.25 Ema Jurkin: *Bisectors of conics in the isotropic plane*

11.30–11.40 CLOSING

12.30–14.00 LUNCH

Departure