



**16th Scientific-Professional Colloquium on
Geometry and Graphics
BAŠKA
September 9–13, 2012**

ORGANIZER:

Croatian Society for Geometry and Graphics

PROGRAM

COMMITTEE:

Maja Andrić, Jelena Beban-Brkić, Sonja Gorjanc (vice-president),
Ema Jurkin (president), Mirela Katić Žlepalo, Nikolina Kovačević,
Vlasta Szivovicza, Nikoleta Sudeta, Marija Šimić Horvath

CO-ORGANIZERS:

Faculty of Civil Engineering, University of Zagreb
Ministry of Science, Education and Sports of the Republic of Croatia

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SUNDAY, SEPTEMBER 9

17.00–19.00 Registration

19.00–21.00 DINNER

MONDAY, SEPTEMBER 10

7.00– 9.00 BREAKFAST

Morning session (Chairperson: E. Jurkin)

9.00– 9.10 OPENING

9.10– 9.55 Plenary lecture
B. Odehnal: *Porisms*

9.55–10.20 COFFEE BREAK

10.20–10.40 N. J. Wildberger: *The rational trigonometry of a tetrahedron*

10.40–11.00 N. Kovačević, A. Sliepčević: *On two families of curves*

11.00–11.20 Z. Kolar-Begović, R. Kolar-Šuper, V. Volenec: *Geometry of ARO-
quasigroups*

11.20–11.30 PAUSE

11.30–11.50 G. Glaeser: *About midsurfaces of space curves*

11.50–12.10 A. Gferrer: *Motion of a line segment
whose endpoint paths have equal arc length*

12.10–12.30 H.-P. Schröcker: *Collision detection with toleranced motions*

12.30–14.00 LUNCH



Afternoon session (Chairperson: J. Beban-Brkić)

- 14.30–14.50 G. Csima: *Isoptic curves of the conic sections in the hyperbolic and elliptic plane*
- 14.50–15.10 M. Katić Žlepalo, A. Sliepčević: *Focal curve of pencil of 2nd class curves in pseudo-Euclidean plane*
- 15.10–15.30 S. Mick: *An analytical approach to Kiepert Conics in regular Cayley-Klein geometries*
- 15.30–15.50 COFFEE BREAK
- 15.50–16.10 J. Pallagi: *Equidistant surfaces in $\mathbf{H}^2 \times \mathbf{R}$ space*
- 16.10–16.30 B. Schultz: *Equidistant surfaces in Nil-space*
- 16.30–16.50 D. Velichová: *Minkowski set operators*
- 17.00–17.10 PAUSE
- 17.10–17.30 D. Kušar, M. Volgemut: *Geometry in the architecture of the acclaimed architects*
- 17.30–17.50 T. F. Farkas: *Paradoxical buildings*
- 17.50–18.20 EXHIBITION
T. F. Farkas: *Paradoxical buildings*
- POSTER SESSION
- S. Gorjanc, E. Jurkin: *Visualization of special circular surfaces*
- B. Hajsig: *Looking at the past and preparing for the future*
- S. Shambina: *Forming of velaroidal surfaces on ring plan with two families of sinusoids*
- R. Tornai: *Defining metric for visual smoothness of skinning algorithms*
- 19.00–21.00 DINNER



TUESDAY, SEPTEMBER 11

- 7.00– 8.00 BREAKFAST
- 8.00–20.00 EXCURSION - the Island of Cres
- 20.00–21.00 DINNER

WEDNESDAY, SEPTEMBER 13

- 7.00– 9.00 BREAKFAST

Morning session (Chairperson: T. Došlić)

- 9.00– 9.45 Plenary lecture
A. Bölcskei: *On students' geometrical knowledge and its measurement*
- 9.45–10.10 COFFEE BREAK
- 10.10–10.30 Cs. Sörös: *Short preview of an educational experiment's plan*
- 10.30–10.50 M. Brumec, P. Žugec: *Problem solving and e-learning: challenge and pitfalls*
- 10.50–11.10 B. Žugec: *Effective use of e-learning in teaching mathematics in higher education environment (2000–2010)*
- 11.10–11.20 PAUSE
- 11.20–11.40 L. Pletenac: *Results overview of GEFFA Summer School*
- 11.40–12.00 T. Vereshchagina: *Engineering problem. Various methods of its decision*
- 12.00–12.20 I. Božić, M. Katić Žlepalo: *Application of elevational projection in defining scope of construction pit excavation*
- 12.30–14.00 LUNCH



Afternoon session (Chairperson: M. Katić Žlepalo)

- 14.30–14.50 J. Tofil: *How to teach the contemporary architect engineer - Catalan surfaces*
- 14.50–15.10 L. Pletenac: *Constructive elaboration of translating surfaces in the virtual 3D space*
- 15.10–15.30 S. Shambina: *Forming of velaroidal surfaces on ring plan with two families of sinusoids*
- 15.30–15.50 COFFEE BREAK
- 15.50–16.10 M. Hoffmann, J. Monterde: *Blending of two spheres by a surface with minimal distortion*
- 16.10–16.30 I. Talata: *New upper bounds on a problem of covering a d -cube by rectangular boxes of smaller diameter*
- 16.30–16.50 G. Nagy: *Leonardo's polyhedrons*
- 16.50–17.10 J. Matotek, I. Stipančić-Klaić: *Mathematical concepts in graphics of M. C. Escher*
- 17.10–17.20 PAUSE
- 17.20–17.50 A. Sliepčević: *Some old and some new geometry stories* (in Croatian)
- 17.50–18.30 S. Gorjanc, H. Halas: *Introducing 3D modeling in teaching of geometry at technical faculties at University of Zagreb* (in Croatian)
- 20.30–.... COLLOQUIUM DINNER



THURSDAY, SEPTEMBER 13

7.00– 9.00 BREAKFAST

Morning session (Chairperson: L. Pletenac)

9.00– 9.45 Plenary lecture

S. Vukmirović: *The role of projective geometry in computer vision*

9.45–10.10 COFFEE BREAK

10.10–10.30 M. Szilvási-Nagy: *Stitching B-spline curves*

10.30–10.50 R. Kunkli, I. Papp, M. Hoffmann: *Isoptics of free-form curves*

10.50–11.10 I. Papp, R. Kunkli, M. Hoffmann: *Optimization of skinning of circles by energy minimization*

11.10–11.20 PAUSE

11.20–11.40 E. Molnár: *On projection of Euclidean regular 4-polytopes onto the computer 2-screen with visibility and shading*

11.40–12.00 L. Vörös: *Projections of projections onto a common planes*

12.00–12.20 T. Došlić: *The Golden Section's heptagonal connections*

12.20–12.30 CLOSING

12.30–14.00 LUNCH

Departure