

Programme & Information

6th European
Congress of Mathematics

Kraków 2012



6ECM Programme Coordinator

Witold Majdak

Editors

Agnieszka Bojanowska

Wojciech Słomczyński

Anna Valette

Typesetting

Leszek Pieniążek

Cover Design

Podpunkt

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WELCOME to the 6ECM!

We feel very proud to host you in Poland's oldest medieval university, in Kraków. It was in this city that the Polish Mathematical Society was established ninety-three years ago. And it was in this country, Poland, that the European Mathematical Society was established in 1991. Thank you very much for coming to Kraków.

The European Congresses of Mathematics are quite different from specialized scientific conferences or workshops. The general character of the programme provides the participants with a broad overview of contemporary mathematics, rather than a snapshot of a single research field. The diversity of the scientific activities – plenary and invited lectures, mini-symposia, poster sessions and satellite thematic sessions – provide an opportunity for mathematicians at different stages of their professional development to learn about the current state of the discipline, and also to communicate their results to a highly qualified audience. Panel discussions offer the possibility of discussing important social issues related to mathematics. Exhibitions of old mathematical books and of art related to mathematics, as well as ‘maths busking’ in the streets of Kraków, help to raise public awareness of mathematics. Moreover, the Congress is a generator of scientific activity, as the list of twenty-nine satellite meetings announced on the 6ECM website illustrates.

A special lecture will be dedicated to the memory of Andrzej Pelczar, the initiator and the first organiser of the 6ECM in Kraków – former Rector of the Jagiellonian University, president of the Polish Mathematical Society and vice-president of the European Mathematical Society.

The highly varied tourist programme will provide an opportunity to learn more about Poland's complex history, and about its contemporary affairs, with the emphasis on its broader European context. This programme, together with the social programme, aims to strengthen bonds of personal contact and even friendship between mathematicians, which may also result in future successful scientific collaboration.

We wish you a rewarding and pleasant stay in Kraków!

Marta Sanz-Solé
President of the EMS

Stefan Jackowski
President of the PTM

Karol Musiał
Rector of the Jagiellonian University

Scientific Programme

The main venue of the 6ECM is the Auditorium Maximum of the Jagiellonian University (AMUJ) at Krupnicza street no. 33 (floor plans of AMUJ pp. 52–53.)

Satellite Thematic Sessions (STS) from Monday to Friday will take place at the AGH University of Science and Technology (AGH, buildings U2 and A3, plan p.51.) AGH is situated 10 min walk from AMUJ, Reymonta street no. 7. A map of the vicinity of AMUJ and AGH is on p. 54.

Below the basic information about the 6ECM scientific programme is given: lists of plenary and invited lectures, special lectures and session, mini-symposia and satellite thematic sessions (STS), panel discussions and schedule of all events. The brochure *Abstracts & Titles* contains more details: abstracts of all plenary, special and invited lectures, titles of talks at mini-symposia and the STS's, details of the panel discussions and titles of posters.

The Opening Ceremony of the 6ECM will take place at 9:30 on Monday, July 2nd at the Large Hall of AMUJ. Information about the prize winners lectures will be distributed right after the Opening Ceremony during which the prizes will be awarded.

Plenary and Invited Lectures

PLENARY LECTURES

(in chronological order)

All plenary lectures take place in the Large Hall.

Monday, July 2nd, 13:30–14:30

Adrian Constantin

Some mathematical aspects of water waves

(Chair: Ari Laptev)

Tuesday, July 3rd, 9:00–10:00

Herbert Edelsbrunner

Persistent homology and applications

(Chair: Günther M. Ziegler)

Tuesday, July 3rd, 10:15–11:15

David Kazhdan

Representations of affine Kac–Moody groups over local and global fields

(Chair: Max Karoubi)

Tuesday, July 3rd, 12:00–13:00

Tomasz Łuczak

Threshold behaviour of random discrete structures

(Chair: Gyula Katona)

Wednesday, July 4th, 9:00–10:00

Michel Talagrand

Geometry of stochastic processes

(Chair: Stanisław Kwapień)

Wednesday, July 4th, 10:15–11:15

Christopher Hacon

Classification of algebraic varieties

(Chair: Frederick Cohen)

Thursday, July 5th, 9:00–10:00

Camillo De Lellis

Dissipative solutions of the Euler equations

(Chair: Maria J. Esteban)

Thursday, July 5th, 10:15–11:15

Sylvia Serfaty

Renormalized energy, Abrikosov lattice, and log gases

(Chair: Nils Dencker)

Friday, July 6th, 9:00–10:00

Saharon Shelah

Classifying classes of structures in model theory

(Chair: Ludomir Newelski)

Friday, July 6th, 17:00–18:00

Mikhail Gromov

In a search for a structure

(Chair: Jean-Pierre Bourguignon)

INVITED LECTURES

(in alphabetical order)

Anton Alekseev, **Bernoulli numbers, Drinfeld associators and the Kashiwara–Vergne problem**, Monday, July 2nd, 15:00, Small Hall

Kari Astala, **Holomorphic deformations, quasiconformal mappings and vector valued calculus of variations**, Friday, July 6th, 10:45, Large Hall A

Jean Bertoin, **Coagulation with limited aggregations**, Friday, July 6th, 12:00, Large Hall B

Serge Cantat, **The Cremona group**, Thursday, July 5th, 15:00, Medium Hall A

- Vicent Caselles, **Exemplar-based image inpainting and applications**,
Wednesday, July 4th, 12:00, Small Hall
- Alessandra Celletti, **KAM theory: a journey from conservative to dissipative systems**, Wednesday, July 4th, 15:45, Large Hall A
- Pierre Colmez, **The p -adic Langlands program**, Monday, July 2nd, 15:00, Medium Hall B
- Alessio Corti, **Mirror symmetry and Fano manifolds**, Friday, July 6th, 14:30,
Large Hall B
- Amadeu Delshams, **Irregular motion and global instability in Hamiltonian systems**,
Wednesday, July 4th, 14:30, Large Hall A
- Hélène Esnault, **On flat bundles in characteristic 0 and $p > 0$** ,
Wednesday, July 4th, 12:00, Large Hall B
- Alexander A. Gaifullin, **Combinatorial realisation of cycles and small covers**,
Friday, July 6th, 15:30, Large Hall B
- Isabelle Gallagher, **Remarks on global regularity for solutions to the incompressible Navier–Stokes equations**, Friday, July 6th, 12:00, Large Hall A
- Olle Häggström, **Why the empirical sciences need statistics so desperately?**,
Wednesday, July 4th, 15:45, Large Hall B
- Martin Hairer, **Solving the KPZ equation**, Tuesday, July 3rd, 14:30, Medium Hall B
- Nicholas J. Higham, **The matrix logarithm: from theory to computation**,
Tuesday, July 3rd, 14:30, Large Hall A
- Arieh Iserles, **Computing the Schrödinger equation with no fear of commutators**,
Friday, July 6th, 15:30, Large Hall A
- Alexander S. Kechris, **Dynamics of non-archimedean Polish groups**,
Friday, July 6th, 14:30, Medium Hall
- Bernhard Keller, **Cluster algebras and cluster monomials**, Thursday, July 5th, 15:00,
Large Hall B
- Stawomir Kołodziej, **Weak solutions to the complex Monge–Ampère equation**,
Tuesday, July 3rd, 14:30, Small Hall
- Gady Kozma, **Phase transitions in self-interacting random walks**,
Monday, July 2nd, 15:00, Medium Hall A
- Frank Merle, **On blow-up curves for semilinear wave equations**, Friday, July 6th, 14:30,
Large Hall A
- Andrey Mironov, **Commuting higher rank ordinary differential operators**,
Thursday, July 5th, 15:00, Small Hall
- David Nualart, **Stochastic calculus with respect to the fractional Brownian motion**,
Wednesday, July 4th, 12:00, Medium Hall B
- Alexander Olevskii, **Sampling, interpolation, translates**, Thursday, July 5th, 15:00,
Medium Hall B
- Leonid Parnowski, **Multidimensional periodic and almost-periodic spectral problems: Bethe–Sommerfeld Conjecture and integrated density of states**,
Thursday, July 5th, 15:00, Large Hall A
- Florian Pop, **About covering spaces and numbers**, Tuesday, July 3rd, 14:30, Large Hall B

- Igor Rodnianski, **Evolution problem in General Relativity**, Friday, July 6th, 14:30,
Small Hall
- Zeév Rudnick, **Quantum chaos and number theory**, Wednesday, July 4th, 12:00,
Medium Hall A
- Benjamin Schlein, **Effective equations for quantum dynamics**, Friday, July 6th, 10:45,
Large Hall B
- Piotr Śniady, **Combinatorics of asymptotic representation theory**,
Wednesday, July 4th, 14:30, Large Hall B
- Andrew Stuart, **Probing probability measures in high dimensions**,
Tuesday, July 3rd, 14:30, Medium Hall A
- Vladimír Šveřák, **On scale-invariant solutions of the Navier–Stokes equations**,
Wednesday, July 4th, 12:00, Large Hall A
- Stevo Todorčević, **Ramsey-theoretic analysis of the conditional structure of weakly-null sequences**, Friday, July 6th, 15:30, Medium Hall

Special Lectures and Session

SPECIAL LECTURES

All special lectures take place in the Large Hall

Tuesday, July 3rd, 18:00–19:15

Special Meeting of the London Mathematical Society

José Francisco Rodrigues

**Mathematics for the Planet Earth
A Challenge and an Opportunity to Mathematicians**

Thursday, July 5th, 12:00–13:30

Maciej P. Wojtkowski

ANDRZEJ PELCZAR MEMORIAL LECTURE

Tilings and Markov Partitions

(Chair: Marta Sanz-Solé)

Thursday, July 5th, 18:30–19:30

Philip Welch

**Mechanising the Mind: Turing and the Computable
A Centenary Lecture**

(Chair: Jouko Väänänen)

FRIEDRICH HIRZEBRUCH MEMORIAL SESSION

Thursday, July 5th, 20:00, Medium Hall

(Chair: Marta Sanz-Solé – President of the EMS)

SPEAKERS:

Sir Michael Atiyah,

University of Edinburgh, UK (a letter will be read)

Christian Bär,

President of the Deutsche Mathematiker Vereinigung

Jean-Pierre Bourguignon,

Director of the Intitute des Hautes Études Scientifiques, France

Gert-Martin Greuel,

Director of the Mathematisches Forschungsinstitut Oberwolfach, Germany

Stanisław Janeczko,

Director of the Banach Centre, Poland

Yuri I. Manin,

Max Planck Institut Bonn, Germany

Mini-symposia *(in alphabetical order)*

25 Years of Quantum Groups: From Definition to Classification

Thursday, July 5th, 16:15–18:15, Medium Hall B

Absolute Arithmetic and \mathbb{F}_1 -geometry

Wednesday, July 4th, 14:30–16:30, Small Hall

Applied and Computational Algebraic Topology

Wednesday, July 4th, 14:30–16:30, Seminar Room

Arithmetic Geometry

Friday, July 6th, 10:45–12:45, Seminar Room

Bachelier Finance Society: Mathematical Finance

Thursday, July 5th, 16:15–18:15, Small Hall

Braids and Configuration Spaces

Thursday, July 5th, 16:15–18:15, Conference Room

Computational Dynamics and Computer Assisted Proofs

Tuesday, July 3rd, 15:45–17:45, Medium Hall A

Continuous Real Rational Functions and Related Topics

Monday, July 2nd, 17:15–19:15, Medium Hall A

Differential Algebra and Galois Theory

Tuesday, July 3rd, 15:45–17:45, Seminar Room

Discrete Structures in Algebra, Geometry, Topology, and Computer Science

Tuesday, July 3rd, 15:45–17:45, Small Hall

Fluid Dynamics

Monday, July 2nd, 17:15–19:15, Large Hall B

Geometric and Quantitative Rigidity

Wednesday, July 4th, 14:30–16:30, Conference Room

How Mathematics Illuminates Biology

Friday, July 6th, 10:45–12:45, Medium Hall B

Hyperbolic Conservation Laws

Wednesday, July 4th, 14:30–16:30, Medium Hall A

Implicitly Constituted Material Models: Modeling and Analysis

Tuesday, July 3rd, 15:45–17:45, Conference Room

Infinite-dimensional Dynamical Systems with Time Delays

Thursday, July 5th, 16:15–18:15, Seminar Room

Knot Theory and its Ramification

Friday, July 6th, 10:45–12:45, Medium Hall A

Matchbox Dynamics

Monday, July 2nd, 17:15–19:15, Small Hall

On Solutions to the Euler Equations of Incompressible Fluids

Thursday, July 5th, 16:15–18:15, Medium Hall A

Optimal Stopping and Applications

Tuesday, July 3rd, 15:45–17:45, Medium Hall B

Probabilistic Methods for Partial Differential Equations

Monday, July 2nd, 17:15–19:15, Large Hall A

Progress in ‘Chemical Reaction Network Theory’

Monday, July 2nd, 17:15–19:15, Medium Hall B

Semigroups of Operators: Theory and Applications

Friday, July 6th, 10:45–12:45, Small Hall

Stochastic Models in Biosciences and Climatology

Wednesday, July 4th, 14:30–16:30, Medium Hall B

Satellite Thematic Sessions *(in alphabetical order)*

Note that several STS consist of more than one meeting. From Monday they all take place at AGH University. For room numbers see the timetables.

Algebraic and Geometric Methods in Nonlinear PDEs, Mechanics and Field Theory

Monday, July 2nd, 16:15–20:15; Friday, July 6th, 9:00–13:00

Anisotropic Parabolic Problems and their Applications

Thursday, July 5th, 16:15–20:15

Combinatorics

Monday, July 2nd, 16:15–20:15; Tuesday, July 3rd, 15:45–19:45

Delay Equations in Biomedical Applications

Tuesday, July 3rd, 15:45–19:45

Geometric Methods in Calculus of Variations

Friday, July 6th, 9:00–13:30, 15:30–16:30

Geometric Topology

Wednesday, July 4th, 14:30–18:30; Thursday, July 5th, 16:15–20:15; Friday, July 6th, 10:30–13:30

Geometry in Dynamics

Sunday, July 1st, 12:30–17:30

Homotopy Theory

Sunday, July 1st, 10:30–17:30; Monday, July 2nd, 16:15–20:15;
Tuesday, July 3rd, 15:45–19:45; Wednesday, July 4th, 14:30–18:30

Infinite Dimensional Dynamical Systems with Time Delays

Wednesday, July 4th, 14:30–18:30; Thursday, July 5th, 18:30–20:30

Integrable Systems

Monday, July 2nd, 16:15–20:15; Tuesday, July 3rd, 15:45–19:45

Knot Theory and its Ramification

Thursday, July 5th, 16:15–20:15

Mathematical Physics and Developments in Algebra

Tuesday, July 3rd, 15:45–17:45; Wednesday, July 4th, 14:30–16:30; Friday, July 6th, 10:45–12:45

Optimal Stopping and Applications

Tuesday, July 3rd, 18:00–20:00; Thursday, July 5th, 16:15–20:15

Quasiconformal Mappings and Complex Dynamical Systems

Tuesday, July 3rd, 15:45–19:45; Wednesday, July 4th, 14:30–18:30

Special Classes of Hilbert Space Operators

Wednesday, July 4th, 14:30–18:30

Panel Discussions *(in alphabetical order)*

EuDML: Accessing Europe's Mathematical Treasures

Monday, July 2nd, 17:15–19:15, Conference Room

Financing of Mathematical Research

Thursday, July 5th, 16:15–18:15, Large Hall A

Redressing the Gender Imbalance in Mathematics: Strategies and Outcomes

Tuesday, July 3rd, 15:45–17:45, Large Hall B

The Role of Mathematics in the Emerging Economies

Thursday, July 5th, 16:15–18:15, Large Hall B

'Solid Findings' in Mathematics Education; Proposals and Discussion

Monday, July 2nd, 17:15–19:15, Seminar Room

What Is Expected From European Learned Societies?

Tuesday, July 3rd, 15:45–17:45, Large Hall A

Poster Sessions

The Poster Committee accepted 180 posters for presentation during the 6ECM. The posters will be displayed from Monday to Friday on Level –1 of the Auditorium Maximum. There will be two poster sessions on Tuesday, July 3rd, and Wednesday, July 4th, from 11:15 to 12:00 when authors will be present at their posters.

The best 10 posters will be honoured by prizes donated by some publishers present at the 6ECM. The Jury, consisting of the selected congress participants will evaluate both the mathematical content and communication quality of the posters. The prizes will be awarded during the closing ceremony.

List of posters is included in the brochure *Abstracts & Titles*.

Schedule

The day-by-day schedule of the 6ECM is presented in the following tables. In each entry, name of the speaker is given together with a broad subject classification of the lecture topic. Definitions of the groups in terms of the AMS MSC 2010, and their abbreviations are given in the following table:

Abbrev.	Sections	AMS Subjects
LOG	Logic, Foundations	03
ALG	Algebra, Number Theory, Algebraic Geometry	11, 14, 15, 16, 17, 20
G&T	Geometry, Topology, Global Analysis	22, 51, 52, 53, 54, 55, 57, 58
AN	Analysis, Functional Analysis & Applications, Control Theory	26, 28, 30, 32, 33, 41, 42, 46, 47, 49, 90, 93
ODE	Dynamical Systems, Ordinary Differential Equations	34, 37, 39
PDE	Partial Differential Equations	35
S&Ph	Mathematics in Science & Technology, Mathematical Physics	70, 74, 76, 82, 85, 92
PCS	Probability, Combinatorics, Statistics	05, 60, 62, 91
NUM	Numerical Analysis, Scientific Computing	65, 68
HIS	History of Mathematics, Mathematics Education, Popularization of Mathematics	01

Numbers in parenthesis, next to the subject abbreviation (or 'p.'), refer to pages of the brochure *Abstracts & Titles*.

Sunday – July 1st

All Sunday activities take place at AMUJ.

Large Hall B; 10:30-17:30 STS 'Homotopy Theory' (G&T.55) – Part 1/4

Medium Hall A; 12:30-17:30 STS 'Geometry in Dynamics' (G&T.54)

Large Hall A; 13:30-19:00 Satellite Meeting – Joint EMS/EWM Survey Lectures

Medium Hall; 18:00-19:00 Film 'Late Style – Yuri I. Manin'

Medium Hall; 19:00-20:00 Film 'Wolfgang Doeblin – a mathematician rediscovered'

Monday – July 2nd

Room	LARGE HALL		MEDIUM HALL		SMALL HALL	SEMINAR ROOM	CONFERENCE ROOM
	A	B	A	B			
9:30–11:30	Opening Ceremony Prize Award						
12:00–13:30	Welcome Lunch, Level –1						
13:30–14:30	Plenary Lecture (PDE.9) Adrian Constantin						
15:00–15:45	O.Neugebauer Prize Winner	Felix Klein Prize Winner	Inv. Lecture (PCS.30) G. Kozma	Inv. Lecture (ALG.24) P. Colmez	Inv. Lecture (GGT.21) A. Alekseev		
	Coffee break						
16:15–17:00	EMS Prize Winner	EMS Prize Winner	EMS Prize Winner	EMS Prize Winner	EMS Prize Winner		
17:15–19:15	Mini-S. (PCS.49) Probabilistic Methods for PDE	Mini-S. (PDE.46) Fluid Dynamics	Mini-S. (ALG.45) Cont. Real Rat. Functions...	Mini-S. (SGPh.50) Progress in Chem. Reac. Network Th.	Mini-S. (ODE.48) Matchbox Dynamics	Panel D. (p.38) 'Solid findings' in Math. Education...	Panel D. (p.37) Accessing Europe's math. treasures
19:30–20:30			Film 'Late Style – Yuri I. Manin'				

Satellite Thematic Sessions – all at the AGH University of Science and Technology (see map on page 51)

Building A3, Room 12; 16:15–20:15 STS 'Algebraic and Geometric Methods in Nonlinear PDEs,

Mechanics and Field Theory' (PDE.51) – Part 1/2

Building U2, Room 205; 16:15–20:15 STS 'Combinatorics' (PCS.52) – Part 1/2

Building U2, Grand Hall; 16:15–20:15 STS 'Homotopy Theory' (GGT.55) – Part 2/4

Building A3, Room 117; 16:15–20:15 STS 'Integrable Systems' (ODE.56) – Part 1/2

Tuesday – July 3rd

Room	LARGE HALL		MEDIUM HALL		SMALL HALL	SEMINAR ROOM	CONFERENCE ROOM
	A	B	A	B			
9:00–10:00	Plenary Lecture (ODE.11) Herbert Edelsbrunner						
10:15–11:15	Plenary Lecture (ALG.14) David Kazhdan						
11:15–12:00			Coffee break				
			Poster Session (Level –1)				
12:00–13:00	Plenary Lecture (PCS.15) Tomasz Łuczak						
14:30–15:15	Inv. Lecture (NUM.28) N. J. Higham	Inv. Lecture (ALG.33) F. Pop	Inv. Lecture (NUM.35) A. Stuart	Inv. Lecture (PCS.27) M. Hatrier	Inv. Lecture (AN.29) S. Kołodziej		
			Coffee break				
15:45–17:45	Panel D. (p.41) What is exp. from Europ. learned soc.?	Panel D. (p.40) Redressing the gender imbal. in math	Mini-S. (ODE.45) Comp. Dyn. and Comp. Assisted Pr.	Mini-S. (PCS.49) Optimal Stopping and Applications	Mini-S. (PCS.46) Disc. Str. in Alg., Geom., Top. and CS	Mini-S. (ALG.45) Diff. Algebra and Galois Theory	Mini-S. (PDE.47) Implicitly Constit. Mat. Models
18:00–19:15	Special Lect. (p.38) J.F. Rodrigues						
19:45–20:45			Film: 'Wolfgang Doeblin – a mathematician rediscovered'				

Satellite Thematic Sessions – all at the AGH University of Science and Technology (see map on page 51)

- Building U2, Room 205; 15:45–19:45 STS 'Combinatorics' (PCS.52) – Part 2/2
- Building U2, Room 204; 15:45–19:45 STS 'Delay Equations in Biomedical Applications' (SGPh.52)
- Building U2, Grand Hall; 15:45–19:45 STS 'Homotopy Theory' (G&T.55) – Part 3/4
- Building A3, Room 117; 15:45–19:45 STS 'Integrable Systems' (ODE.56) – Part 2/2
- Building A3, Room 118; 15:45–17:45 STS 'Mathematical Physics and Developments in Algebra' (ALC.58) – Part 1/3
- Building A3, Room 12; 15:45–19:45 STS 'Quasiconformal Mappings and Complex Dynamical Systems' (AN.59) – Part 1/2
- Building A3, Room 218; 18:00–20:00 STS 'Optimal Stopping and Applications' (PCS.58) – Part 1/2

Wednesday – July 4th

Room	LARGE HALL		MEDIUM HALL		SMALL HALL	SEMINAR ROOM	CONFERENCE ROOM
	A	B	A	B			
9:00–10:00	Plenary Lecture (PCS.19) Michel Talagrand						
10:15–11:15	Plenary Lecture (ALG.13) Christopher Hacon						
11:15–12:00	Coffee break						
	Poster Session (Level –1)						
12:00–12:45	Inv. Lecture (SEPh.35) V. Sveták	Inv. Lecture (ALG.25) H. Esnault	Inv. Lecture (ALG.33) Z. Rudnick	Inv. Lecture (PCS.31) D. Nualart	Inv. Lecture (NUM.23) V. Caselles		
14:30–15:15	Inv. Lecture (ODE.25) A. Delshams	Inv. Lecture (ALG.34) P. Śniady	Mini-S. (PDE.47) Hyperbolic Conservation Laws	Mini-S. (PCS.50) Stoch. Models in Biosc. and Climatology	Mini-S. (ALG.43) Absolute Arithmetic and \mathbb{F}_1 -Geom.	Mini-S. (G&T.43) Applied and Comp. Alg. Topology	Mini-S. (SEPh.46) Geom. and Quantitative Rigidity Top.
15:45–16:30	Inv. Lecture (SEPh.23) A. Celletti	Inv. Lecture (PCS.26) O. Häggström					
	Coffee break						
17:00–17:45	EMS Prize Winner	EMS Prize Winner	EMS Prize Winner	EMS Prize Winner	EMS Prize Winner		
20:30	Conference Banquet						

Satellite Thematic Sessions – all at the AGH University of Science and Technology (see map on page 51)

Building A3, Room 117; 14:30–18:30 STS 'Geometric Topology' (G&T.53) – Part 1/3
 Building U2, Grand Hall; 14:30–18:30 STS 'Homotopy Theory' (G&T.55) – Part 4/4
 Building U2, Room 205; 14:30–18:30 STS 'Infinite Dimensional Dynamical Systems with Time Delays' (ODE.56) – Part 1/2
 Building A3, Room 118; 14:30–16:30 STS 'Mathematical Physics and Developments in Algebra' (ALC.58)– Part 2/3
 Building A3, Room 12; 14:30–18:30 STS 'Quasiconformal Mappings and Complex Dynamical Systems' (AN.59) – Part 2/2
 Building A3, Room 218; 14:30–18:30 STS 'Special Classes of Hilbert Space Operators' (AN.60)

Thursday – July 5th

Room	LARGE HALL		MEDIUM HALL		SMALL HALL	SEMINAR ROOM	CONFERENCE ROOM
	A	B	A	B			
9:00–10:00	Plenary Lecture (PDE.10) Camillo De Lellis						
10:15–11:15	Plenary Lecture (PDE.16) Sylvia Serfaty						
			Coffee break				
12:00–13:30	Special Lecture (PCS.37) Maciej P. Wojtkowski PTM Prize Award						
13:30			Lunch (Level –1)				
15:00–15:45	Inv. Lecture (PDE.32) L. Parnowski	Inv. Lecture (ALG.29) B. Keller	Inv. Lecture (ALG.22) S. Cantat	Inv. Lecture (AN.32) A. Olevskii	Inv. Lecture (ODE.31) A.E. Mironov		
			Coffee break				
16:15–18:15	Panel D. (p.39) Financing of math. research	Panel D. (p.40) The role of math. in the emerging econ.	Mini-S. (SGPh.49) On sol. Euler Eq. of incom. fluids	Mini-S. (SGPh.43) 25 Years of Quantum Groups	Mini-S. (PCS.44) Bachelier Finance Soc.: Math. Fin.	Mini-S. (ODE.48) Infinite-dim. Dyn. Systems...	Mini-S. (G&T.44) Braids and Config. Spaces
18:30–19:30	Special Lecture (HIS.37) Turing Cent. Lect. P. Welch						
20:00			Friedrich Hirzebruch Memorial Session				

Satellite Thematic Sessions – all at the AGH University of Science and Technology (see map on page 51)

- Building A3, Room 12; 16:15–20:15 STS ‘Anisotropic Parabolic Problems and their Applications’ (PDE.51)
- Building A3, Room 117; 16:15–20:15 STS ‘Geometric Topology’ (G&T.53) – Part 2/3
- Building U2, Room GH; 16:15–20:15 STS ‘Knot Theory and its Ramifications’ (G&T.57)
- Building A3, Room 218; 16:15–20:15 STS ‘Optimal Stopping and Applications’ (PCS.58) – Part 2/2
- Building U2, Room 205; 18:30–20:30 STS ‘Infinite dimensional dynamical systems with time delays’ (ODE.56) – Part 2/2

Friday – July 6th

Room	LARGE HALL		MEDIUM HALL		SMALL HALL	SEMINAR ROOM	CONFERENCE ROOM
	A	B	A	B			
9:00–10:00	Plenary Lecture (LOG.17) Saharon Shelah						
	Coffee break						
10:45–11:30	Inv. Lecture (AN.21) K. Astala	Inv. Lecture (S&Ph.34) B. Schleib	Mini-S. (G&T.48) Knot Theory and its Ramifications	Mini-S. (S&Ph.47) How Math. Illuminates Biology	Mini-S. (AN.50) Semigroups of Op.: Theory and App.	Mini-S. (ALG.44) Arithmetic Geometry	
12:00–12:45	Inv. Lecture (PDE.26) I. Gallagher	Inv. Lecture (S&Ph.22) J. Bertoin					
14:30–15:15	Inv. Lecture (PDE.30) F. Merle	Inv. Lecture (ALG.24) A. Corti	Inv. Lecture (LOG.29) A.S. Kechris		Inv. Lecture (PDE.33) I. Rodnianski		
15:30–16:15	Inv. Lecture (NUM.28) A. Iserles	Inv. Lecture (G&T.25) A. Gaifullin	Inv. Lecture (LOG.35) S. Todorčević				
	Coffee break						
17:00–18:00	Plenary Lecture (S&Ph.12) Mikhail Gromov						
18:00–18:30	Closing Ceremony						

Satellite Thematic Sessions – all at the AGH University of Science and Technology (see map on page 51)

- Building A3, Room 12; 9:00–13:00 STS ‘Algebraic and Geometric Methods in Nonlinear PDEs, Mechanics and Field Theory’ (PDE.51) – Part 2/2
- Building U2, Room 205; 9:00–13:00 STS ‘Geometric methods in calculus of variations’ (G&T.53)
- Building A3, Room 117; 10:30–13:30 STS ‘Geometric Topology’ (G&T.53) – Part 3/3
- Building A3, Room 118; 10:45–12:45 STS ‘Mathematical Physics and Developments in Algebra’ (ALG.58) – Part 3/3

Social events

All participants and their accompanying persons are invited to the social events of the 6ECM Congress.

Welcome Lunch

*Monday, July 2nd, 12:00–13:30, after the opening ceremony,
Auditorium Maximum (Level –1)*

Conference Banquet

*Wednesday, July 4th, 20:30
Franciscan Monastery, Plac Wszystkich Świętych 5*

Conference Banquet will be held at the cloister of the Franciscan Monastery in the Old Town. The invitation to the banquet is enclosed with your conference materials. Those who did not get the invitation but would like to take part in the banquet can buy the invitation for 150 PLN (only cash either in PLN or in EU at the exchange rate 1EU = 4PLN) at the Cash Desk **till Tuesday 12:00**. The number of invitations available is limited.

Conference Banquet will be held at the cloister of the Franciscan Monastery – a place full of objects of great value. **Due to security reasons, invitations will be checked at the entrance to the cloister, so please have your invitation to the banquet with you.** The directions how to get there from AMUJ are on the map at the end of the brochure.

The Franciscan Monastery and the adjacent church are of great historical and artistic value. The guided tour of the church is organised before the banquet. The tour starts at 19:45 in the church. Entrance from Franciszkańska street. For description of the monastery see the next section.

Lunch

*Thursday, July 5th, 13:30–15:00 after the Andrzej Pelczar Memorial Lecture
Auditorium Maximum (Level –1)*

*Note that when food will be served,
selected vegetarian dishes will be marked.*

The Conference Banquet venue – The Franciscan Monastery

One of the first places John Paul II visited after becoming the Pope in 1978 was the Basilica of St. Francis in Assisi. Remembering his hometown, he said: 'As Archbishop of Kraków, I lived near a very ancient Franciscan church, and from time to time I went there to pray (...). Unforgettable moments for me!' Today, his portrait hangs among the gallery of portraits of Kraków bishops, comprised of 13 frescoes (XVth c.) and 30 easel paintings (from XVth c. until now) located in the cloister of the monastery.

The Franciscan brothers, called also Friars Minor, came to the city from Prague in 1237. The church, the first brick building in Kraków, based on the Greek cross plan and imitating the Romanesque St. Francis church in the central Italian town of Viterbo, was consecrated in 1269. One of the first benefactors of the church were prince Boleslaus V the Chaste, who granted the foundation charter of Kraków under Magdeburg Law in 1257, and his wife, a Hungarian-Byzantine princess, Saint Kinga. The couple lived together in virginity, and were involved in charitable works such as visiting the poor and helping the lepers. The prince's grave can be found in one of the basilica's chapels, named after his sister, Blessed Salome, Queen of Galicia and Lodomeria, who is also buried there. The tradition of charity in this place is continued by the Archconfraternity of the Lord's Passion founded more than 400 years ago. Its members cultivate old customs, wearing characteristic black habits and hoods covering their faces.

The gothic cloister with its XVth c. polychrome murals, depicting St. George fighting the dragon, the Christ in the mystical wine-press, and the stigmatisation of St. Francis, is the only part of the church and Franciscan monastery that survived the Great Fire of Kraków in 1850 that destroyed large parts of the city. The church was reconstructed in the neo-Gothic style at the end of the XIXth c. A native son of the city, Stanisław Wyspiański, then a young and emerging modernist artist, who just returned from Paris, where he became acquainted with Paul Gauguin, was commissioned to decorate the interior of the church.

The result was the most colourful place of worship in Kraków, with a polychrome composed of Polish flowers, geometric and heraldic motifs, and religious scenes, as well as four monumental stained-glass windows (produced in Innsbruck between 1899 and 1904): *Four Elements*, *Blessed Salomea*, *St. Francis' Stigmata* and *God the Father – Let It Be*. The last one, situated above the Western entrance to the church, showing the God in the act of cosmogony, is arguably the pinnacle of Art Nouveau style in Poland and one of the greatest modern stained-glass windows in the world.

Exhibitions

Books and Software Exhibition

Monday, July 2nd – Friday, July 6th, 8:30 – 18:30.

Auditorium Maximum, Exhibition Hall (2nd floor).

Publishers of mathematical books and journals, software companies, mathematical societies and research councils present their publications in the Exhibition Hall. Some exhibitors will offer a special discount to the 6ECM attendees. The list of exhibitors includes: American Mathematical Society, Cambridge University Press, CRC Press – Taylor & Francis, De Gruyter, Elsevier, European Mathematical Society, European Research Council, Gambit, International Mathematical Union, Ios Press, London Mathematical Society, National Research Councils of Europe, Oxford University Press, Project Euclid, Société Mathématique de France, Springer Verlag, Zentralblatt MATH, Polish Mathematical Society, Jagiellonian University, AGH University of Science and Technology.

Old Mathematical Manuscripts and Books

Tuesday, June 26th – Tuesday, July 10th, 10:00 – 15:00.

Jagiellonian Library, Mickiewicza 22, entrance from Oleandry st., see the map.

The exhibition presents 12 manuscripts used for teaching mathematics in XIVth and XVth c. at the Jagiellonian University. Among the oldest manuscripts displayed there are: Euclid – *Elementa*; Ioannes Blanchinus – *Flores Almagesticum tabulis et figuris geometricis*; Dominicus de Clavasio – *Practica geometrica*; Ioannes Regiomontanus – *Tabula sinuum*.

The most valuable exhibit is the original manuscript of Nicolaus Copernicus' *De revolutionibus orbium coelestium* (Wednesday only, a facsimile will be displayed instead of the original on other days). Other mathematical books written by the great astronomer and his followers are also on display, including *Canon Doctrinae Triangulorum* (1551) by Copernicus' only student, Georg Joachim Rheticus (1514–1574), and *Opus Palatinum de triangulis* (1596), the posthumous work of Rheticus completed by his student, Valentin Otto. The latter work is the first treatise on trigonometry in Europe, containing tables of all six trigonometric functions.

The printed book section presents early mathematical books including the first printed edition of Euclid – *Elementa*, Venice 1482, Thomas Bradwardinus – *Geometria Speculativa*, Paris 1495, Ioannes de Sacrobosco – *Algorismus*, Kraków 1505. The exhibition also shows the first printed mathematical textbooks in Polish from XVIth c. printed in Kraków, the 1st and 2nd printed edition of Nicolaus Copernicus – *De revolutionibus orbium coelestium*. A visit to the exhibition is part of the walking tours No. 1 and No. 5.

Art inspired by mathematics

Especially for the Congress four Kraków galleries prepared special exhibitions presenting works of contemporary artists who look for inspiration in mathematics.

Pryzmat Gallery, ul. Łobzowska 3 (Monday – Friday, 10:00–17:00)

By Form and Number, Mathematical Inspirations in Contemporary Art

The curator of the exhibition, mathematician Robert A. Wolak, writes:

"When I got involved with the preparations of the 6ECM I imagined that it could be of interest to investigate the relations between art and mathematics in the contemporary visual arts. Investigations led me to choose 14 artists, all but one living and working today in Kraków. The exception is Leon Chwistek (1884–1944), a mathematician, logician, who received the doctoral degree in mathematics from the Jagiellonian University in 1906 and who at the same time was a leading member of the avant-garde artistic Polish scene. At the exhibition we present six sheets from his notebooks where mathematical calculations are juxtaposed with drawings. Leon Chwistek was one of the founding members of the Polish Mathematical Society.

The works chosen present various attitudes towards mathematics. There are purely abstract geometrical paintings (Jerzy Katucki, Ryszard Otręba) and objects (Tamara Berdowska), then works where geometrical figures are pictorial elements of the artist's contemplation of the universe (Leszek Oprządek, Krzysztof Tomalski, Adam Wsiotkowski), followed by works created using an algorithm based on a mathematical formula (Jan Pamuła, Marcin Pawłowski). Elsewhere one can discern an artistic rendering of a Sierpiński tetrahedron (Andrzej Bednarczyk). There are also canvases of Marian Warzecha who, fascinated by set theory and topology, was trying for many years to unify art and mathematics creating several Metasets – three works from this series are shown. The works of Jacek Sroka, presenting his very personal (slightly malicious) view on mathematics serve as a counterpoint.

The catalogue itself is a work of mathematical art, designed by Włodzimierz Pluta with photographs by Anna Szwaia who conceived them especially for this catalogue. Both artists present their works at the exhibition."

The exhibition is supplemented by three presentations at private galleries:

Starmach Gallery, ul. Węgierska 5 (Monday – Friday, 11:00–18:00)

Masters of Contemporary Polish Art: Roman Opatka, Henryk Stażewski, Ryszard Winiarski, Jerzy Katucki, Jan Pamuła, Marian Warzecha

Salon Antykwaryczny Nautilus, ul. Pijarska 5 apt. 2a (Monday – Friday, 11:00–18:00)

Tamara Berdowska, Paintings & objects

Galeria Otwarta Pracownia, ul. Dietla 11 (Monday – Friday, 11:00–18:00)

Koji Kamoji, Drawings

Films

Two documentary films will be shown . They were edited as DVD by Springer in the series VideoMath. Both were produced and realised by journalists Agnes Handwerk and Harrie Willems who will be present at the Congress and will introduce their films.

LATE STYLE – YURI I. MANIN

LOOKING BACK ON A LIFE IN MATHEMATICS

Documentary film, 60 min., 2012.

Sunday, July 1st, 18:00 and Monday, July 2nd, 19:30; Medium Hall

This video biography follows Yuri Ivanovich Manin's stellar career in the 'golden years' of Moscow mathematics during the 1960s and 1970s. He was one of the key players in the development of algebraic geometry, at a time when a constellation of brilliant minds in Moscow were conducting outstanding mathematical research. This happened under the strictures of a closed society that put severe restrictions on academics right up to the fall of the Iron Curtain in 1989. Yuri Manin's brilliance and his unswerving integrity helped him evade the pitfalls of Soviet-era academia. His full cooperation with this biographical DVD allows the world a fascinating glimpse into an era of scientific enquiry that is as celebrated as it is underreported.

Note that Yuri I. Manin will be speaking twice at the 6ECM in two mini-symposia.

WOLFGANG DOEBLIN – A MATHEMATICIAN REDISCOVERED

Documentary, 55 min., 2007.

Sunday, July 1st, 19:00 and Tuesday, July 3rd, 19:45; Medium Hall

In May 2000, at the Academy of Sciences in Paris, a sealed letter is opened. The letter, sent 60 years before to the Academy by the soldier Wolfgang Doeblin from the front of World War II, contains a mathematical manuscript called 'On Kolmogorov's equation'. Being deciphered, the manuscript causes a sensation among mathematicians. It proves that as early as 1940, Wolfgang Doeblin has developed a formula to calculate the role of chance in continuous random processes, comparable with the formula the Japanese mathematician Kiyoshi Itô developed some years later. The formula is considered to be the starting point of modern probability.

The film shows the biography of Wolfgang Doeblin, the intriguing history of his sealed letter with the manuscript, and his mathematics. It documents scientific and human aspects of the amazing discovery of the manuscript and throws new light on the startling circumstances of Doeblin's death at the age of 25.

6ECM Specials

Wiadomości Matematyczne and *Delta*

On the occasion of the 6ECM, special English issues of *Wiadomości Matematyczne*, a periodical of the Polish Mathematical Society, and *Delta*, a popular scientific monthly for high-school pupils and students were prepared, published by the University of Warsaw in collaboration with the Polish Mathematical Society and other learned societies. The copies of both are included in the Congress materials.

Maths busking – Mathematics in the streets of Kraków

Monday, Tuesday, 16:00 – 18:00,

the Main Market Square and the Planty Park in front of Collegium Novum.

Maths Busking aims to show the public the surprising and fascinating side of mathematics through the medium of street performance. It is organised by the Raising Public Awareness of Mathematics Committee of the EMS (RPA). Two of the RPA members – Sara Santos and Steve Humble – have been active in this kind of mathematical popularization for many years <http://mathsbusking.com>. There will be three teams of the RPA Committee, supported by students of the Jagiellonian University who will help with translation. All participants of the Congress are invited to come and see how the teams will show to Kraków's citizens and tourists that mathematics is a fascinating science.

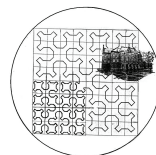
RPA encourages you to look at a popular mathematical webpage under the auspices of the EMS: <http://www.mathematics-in-europe.eu>

6ECM Medal



On the occasion of the 6ECM a special medal was designed by a Kraków artist, Stefan Dousa. The medal is issued in two limited series: one for the Congress invited speakers and another for purchase by the participants. On the obverse of the medal there is the 6ECM logo and a view of Kraków Market square. On the reverse there are approximations of the Sierpiński space-filling curve and a picture of Collegium Novum of the Jagiellonian University.

Those who wanted to buy the medal were asked to order it in advance – they can pick up their medal at the Reception Desk. There is still a limited number of medals that you can purchase at the Reception Desk.



Coins commemorating Stefan Banach



National Bank of Poland issued the special collector coins designed by Robert Kotowicz: 2 PLN, silver 10 PLN and gold 200 PLN to commemorate Stefan Banach (1892–1945). On the reverse of all three coins Banach is portrayed, in each case with a different mathematical context. On the 2 PLN coin there is a graph of linear one-dimensional mapping and the inequality $\|T(x)\| \leq \|T\| \cdot \|x\|$. On the obverse of the silver 10 PLN coin there is a cube with the conclusion of the Hahn–Banach theorem written on its sides, on the reverse the inequality $\|S \circ T\| \leq \|S\| \cdot \|T\|$ of norms of linear operators in Banach spaces. On 200 PLN gold coin the obverse and the reverse are dedicated to the Banach Fixed Point Theorem.

Each participant of the 6ECM receives a 2 PLN coin with their congress materials. 2

PLN coins will be available at a bank booth located in the Exposition Hall, on Monday, July 2nd between 9:00 and 15:00. Silver and gold coins will be available for purchase at the Krakow NBP Regional Branch, Basztowa Street 20 between 8:00 and 13:00, Monday to Friday. Payment in cash or by card. The golden 200 PLN coin costs 2730 PLN, and silver 10 PLN coin costs 96 PLN.

6ECM T-shirt

A 6ECM T-shirt will be for sale at the Reception Desk.

Where to eat

Auditorium Maximum ①

The catering company that will serve lunch Monday and Thursday to all participants offers to serve lunch on Tuesday, Wednesday and Friday too. People interested are asked to buy the lunch the previous day **before 14:00** at the Cash Desk, where lunch menu for the next day will be available.

Kraków is a paradise for gourmets, you will find numerous charming places and great cuisine here. The surroundings of the Main Market Square and Kazimierz district, especially, are brimming with culinary opportunities. Here we list only places in the vicinity of AMUJ. They are marked on the map on the next page.

Cafe Ważka, ul. Krupnicza 26 ②

Charming place situated in the Józef Mehoffer (modernist artist) house, offering lunch menu and great choice of *pierogi*. You can enjoy meals in the beautiful garden.

Vega, ul. Krupnicza 22 ③

Vegetarian bar, famous for salads.

Dynia, ul. Krupnicza 20 ④

Great garden, light lunches and delicious pumpkin soup.

Karma, ul. Krupnicza 12 ⑤

Another vegetarian place, offering also vegan and gluten free dishes. Coffee is fair-trade.

Mięta Restobar, ul. Krupnicza 19 ⑥

Nice garden and cosy atmosphere. Wood-fired pizza, seafood, salads and meat.

Olimp, ul. Krupnicza 7 ⑦

Interesting choice of meat dishes, soups and salads. It is a self service place where you pay by weight (2.98 PLN/100g).

Nostalgia, ul. Karmelicka 10 ⑧

Traditional Polish cuisine, lunch menu for 20 PLN.

Mamma mia, ul. Karmelicka 14 ⑨

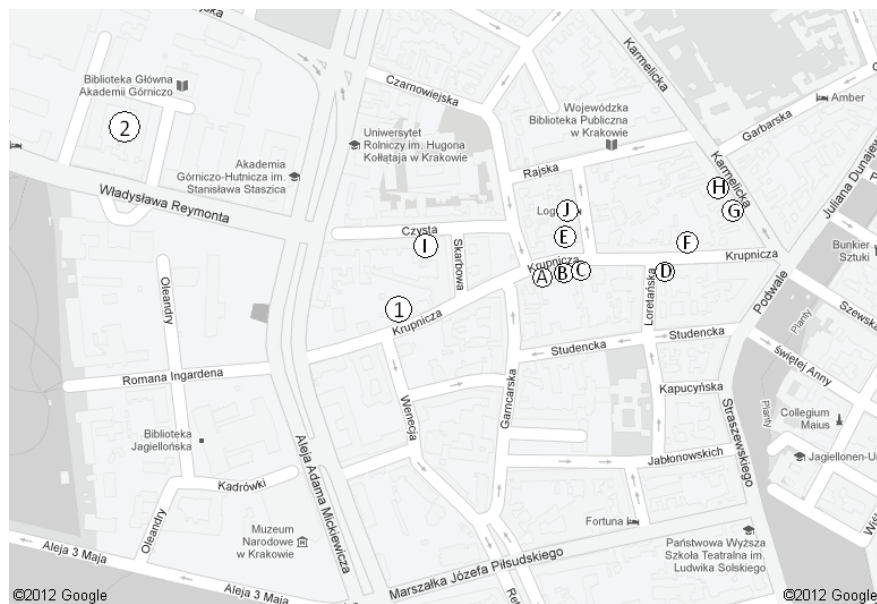
Italian cuisine, great pastas and pizzas.

Korek, ul. Czysa 8 ⑩

Brand new Resto Bar, that serves *pierogi*, meat, fish and vegetarian dishes. Lunch menu for 16 PLN.

Logos Hotel, ul. Szujskiego 5 ⑪

Good cuisine, nice atmosphere and quick service.



Practical Information

Reception Desk

The Reception Desk is located at the entrance lobby of the AMUJ, phone +48 12 663 41 44. The Head of the Reception Desk is Ms. Dagmara Waszkiewicz.

The Reception Desk will be open:

Sunday, July 1st: 10:00 – 21:00

Monday, July 2nd: 7:30 – 18:30

Tuesday, July 3rd – Thursday, July 5th: 8:00 – 18:30

Friday, July 6th: 8:00 – 19:00

Apart from matters of the Congress that are dealt with by the Reception Desk, you can also obtain information about the city of Kraków there, ask any questions, seek assistance, etc.

Internet Access

Wireless internet access is available in the entire AMUJ building. Choose the network 'Maximum'; password is 'becm'.

Wireless internet access is also available in the U2 building at AGH University. Names of the available networks and passwords are posted in the lecture rooms. In the A3 building Internet connection is not available.

Accompanying Persons

The cost of the programme is 600 PLN and can be paid (cash only) at the Cash Desk till Tuesday 12:00.

Emergency

Dial 112 for general emergency (medical, police, fire) and dial 999 to call paramedics – free of charge from any phone. If you need help call the organisers: +48 506 006 555 (any time).

Money Advice

ATM's Practically all ATM's offer services in English, and there are plenty in the city center (look for the sign *Bankomat*). One ATM is located outside AMUJ. The rates are fair, but expect a commission for the transaction. As in any major city, use the normal precautions when taking out money in a public place.

Cash exchange You should be able to change cash in your hotel, though the rates might not be too favourable. Outside hotels, look for the sign *Kantor* – you can change your cash there, and the rates may be better.

Taxis

In Kraków taxis are usually ordered by phone. You can also try to get them directly from a taxi rank (there is one opposite the Auditorium Maximum) or hail a taxi from the street, but in such instances you should be prepared to pay more. There are many taxi companies; below we have listed several of the moderately priced ones (about 2 PLN per kilometer) and which accept credit cards and operators speak English: Radio Taxi (phone 196 33), iCAR Taxi (phone +48 12 653 55 55), Taxi Barbakan (phone 196 61).

Public Transport

Kraków has a dense network of public transport with trams and buses. Tickets can be bought at newspaper kiosk. Ticket machines can also be found in a number of buses and trams and at some stops. A 30 min. ticket is 3.20 PLN. The tickets become valid when punched in an orange box to be found on the bus or the tram.

Recycling of the Congress materials

There will be a clearly marked place in the Auditorium Maximum lobby where you are kindly asked to leave all the Congress materials that you do not want to take home. They will be distributed among students.

Toilets

Please note that Poland adopted its own system of signs for toilets: it's a circle (○) for women (Polish: *Dla kobiet, Dla Pań*) and a triangle (▽) for men (Polish: *Dla mężczyzn, Dla Panów*).

6ECM Tourist Programme

The 6ECM tourist programme consists of tours of Kraków, free for registered participants and accompanying persons, and excursions in Kraków's vicinity at extra charge.

Kraków is a stunning city and we hope that the tourist programme will help you to explore the many legendary attractions this ancient capital of Poland has to offer. There will be guided walks and one bike tour every afternoon from Monday to Friday. Please register at the Reception Desk for tours of your choice at least one day prior to the excursion, so that the organisers know how many guided groups are to be formed. You can join the excursion on the very last moment provided there are free places – many of the excursions visit museums which have restrictions on the number of participants in a group. These restrictions apply in particular to tours no's. 1, 2 and 5 (see next section). The number of tickets is limited available for these tours is limited and in principle – 'first come, first served' rule will apply.

There will also be excursions to the places of interest in the vicinity of Kraków – some of them during the week, the majority will be full day excursions on Saturday, July 7th. These excursions are at extra charge. The tour operator for them is Jordan Congres Bureau <http://www.kongres.jordan.pl/en>. Please book the excursions online at <http://www.kongres.jordan.pl/en/articles-39/6theuropean-congress-of-mathematics> or at the Reception Desk. You can either pay for the excursions on line or at the Reception Desk by cash or card. A schedule of walks and tours in Kraków as well as excursions in Kraków's vicinity is contained at the end of the chapter (p. 41).

Tours in Kraków

Tour No. 1 Three Masterpieces of Kraków

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: 3–4 hours. Walking distance: 4–5 km.

First Stop: Leonardo da Vinci's (1452–1519) painting *Lady with an Ermine* is one of the brightest jewels in his oeuvre. After last year's ongoing tour in leading European museums (Madrid, Berlin and London), one of only four female portraits painted by the Renaissance master is back home in Kraków, on view at the Wawel Royal Castle, so we are fortunate enough to be able to see it.

Second Stop: The Gothic St Mary's Basilica, towering over the largest medieval Market Square in Europe, houses the world's largest and possibly finest Gothic wooden altar carved by the illustrious Nuremberg sculptor Veit Stoss (1447–1533, known in Poland as *Wit Stwosz*). Seeing the ceremony of the opening of the altar's wings will give us a unique opportunity to admire the high altar in its full glory.

Third Stop: It may be the only chance in your life to see in the Jagiellonian University Library the manuscript of the seminal work by Nicolaus Copernicus (1473–1543, known in Poland as *Mikołaj Kopernik*) on the heliocentric theory: *De revolutionibus orbium coelestium*. The original autograph of the book, which started the XVIth c. scientific revolution, is very rarely exhibited to the public (last time in 1975 and 2005). The original manuscript will be on display on Wednesday, July 4th only, and a facsimile will be shown on other days.

Tour No. 2 The Wawel Hill: Poland in microcosm

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: ca. 4 hours. Walking distance: ca. 6 km.

We shall walk up to the Wawel Hill, a Jurassic limestone rock dominant in the landscape of the Royal Capital City of Kraków, which is still the city's full official name. The hill, which served for centuries as the seat for the kings of Poland and archbishops of Kraków, was placed on the UNESCO World Heritage List in 1978. Through the impressive XVIth c. inner courtyard we shall go into the Royal Chambers, which hold a splendid collection of one hundred and thirty four Renaissance tapestries, the largest set ever commissioned by one ruler, the King of Poland and the Grand Duke of Lithuania, Sigismund II Augustus (1520–1572).

We shall also visit the Wawel Cathedral, where Polish kings and queens were crowned. The Cathedral vaults contain tombs of monarchs, saints, national heroes and great poets. Inside the Cathedral, we shall see the Chapel of the Holy Cross constructed as a mausoleum for King Casimir the Jagiellonian (1427–1492) and his wife Elizabeth of Austria, decorated with Byzantine frescoes painted by Russian artists in the late XVth c. and housing the splendid marble sarcophagus of the King by the famous Nuremberg artist Veit Stoss. The most notorious case of the 'curse of the pharaoh' occurred there, when several researchers died after the opening of King Casimir's grave in 1973. The other impressive royal tombs we shall find in Sigismund's Chapel built in the early XVIth c. for the last members of the Jagiellonian dynasty and considered to be 'the purest example of Renaissance architecture outside Italy'.

We shall leave the hill through the Dragon's Den, an almost hundred meters long cave, connecting the courtyard of the castle with the Vistula (*Wisła*) bank, giving us an opportunity to meet the legendary Dragon of Wawel and hear his story.

Tour No. 3 Kazimierz: the Jewish past of Kraków

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: ca. 3 hours. Walking distance: 3–4 km.

Kazimierz, originally established in 1335 as a separate city on an island on the Vistula (*Wisła*) river, was named after its founder, King Casimir the Great (*Kazimierz Wielki*, 1310–1370). In 1495, the Jews who were expelled from Kraków settled here, giving rise to a unique mixture of Christian and

Jewish culture. Destroyed during German occupation in World War II and neglected under communist rule, it has been renovated in the last twenty years, becoming a thriving and stylish place, where one can find many antique shops, art galleries and restaurants.

In the historic Jewish quarter we shall visit a number of synagogues, including the Old Synagogue, in fact the oldest in Poland, and the Remuh Synagogue, one of the only two in Kraków that still serve the local Jewish community as venues for religious ceremonies. Just outside its walls there is an ancient cemetery, where Rabbi Moses Isserles Auerbah (a.k.a. Rema, 1520–1572), a famous XVIth c. talmudist and philosopher, is buried. We shall also walk through Szeroka Street, formerly the main tract of the Jewish district. It is a place where many of the crucial scenes from the Oscar-winning *Schindler's List* by Steven Spielberg were shot.

We shall go by tram to the Kazimierz quarter, getting on at the *Bagatela* stop and getting off at the *Wolnica* stop.

Note that the Jewish Culture Festival is held in Kraków till July 8th. Visit <http://www.jewishfestival.pl/> or ask at the Reception Desk for more information.

Tour No. 4 The Oskar Schindler's Factory: touching history

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: ca. 3 hours. Walking distance: ca. 5 km.

We shall visit a new and modern branch of the Historical Museum of the City of Kraków, which is located within the Zabłocie district in the former administrative building of Oskar Schindler's Enamel Factory. The place was immortalized by Steven Spielberg in his movie *Schindler's List*. The multimedia exhibition 'Kraków under Nazi Occupation 1939–1945' is focused on everyday life of the city.

In the vicinity of the factory we shall see the remains of the walls of the Jewish Ghetto. Its central place, the Ghetto Heroes Square, today is a monument commemorating the dramatic fate of Kraków Jews during World War II. Out of more than 60 000 Jews living in Kraków just before the war, only 15 000 remained in the city, when Germans created the Ghetto in March 1941. The Jews were crowded into an area that had previously housed only 3 000 people. The Ghetto was liquidated between June 1942 and March 1943, with the majority of its inhabitants deported first to the Płaszów concentration camp in a southern suburb of Kraków, and then killed at the Auschwitz–Birkenau extermination camp. Among the few survivors of the Kraków Ghetto was the famous Polish–French movie director Roman Polański, who described his dramatic childhood experiences in his memoirs.

Next to the Historical Museum one can see another effect of the process of revitalization of this post-industrial area, the newly opened Museum of Contemporary Art in Kraków (MOCAK).

We shall go by tram to the Zabłocie district, getting on at the *Bagatela*

stop and getting off at the *Plac Bohaterów Getta (Ghetto Heroes Square)* stop, and return also by tram.

Tour No. 5 The Jagiellonian University: in the footsteps of Copernicus

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: ca. 3 hours. Walking distance: ca. 4 km.

The Jagiellonian University founded in 1364, the oldest university in Poland and one of the oldest in the world, boasts of having among its alumni Nicolaus Copernicus (1473–1543, known in Poland as *Mikotaj Kopernik*), astronomer, mathematician and the founder of the heliocentric theory. Copernicus matriculated as *Nicolaus Nicolai de Thorunia* at the Faculty of Liberal Arts in the Jagiellonian University (then called Kraków Academy) in the autumn of 1491 and studied here mathematics, astronomy and philosophy for four years, till the fall of 1495.

We shall start our walk from the Jagiellonian Library, where we shall visit the exhibition 'Old Mathematical Manuscripts and Books' (see page 23) having a unique opportunity to see the original manuscript of the Copernicus seminal work *De revolutionibus orbium coelestium (On the Revolutions of the Heavenly Spheres)* (Wednesday only, a facsimile will be displayed instead of the original on other days), as well as other mathematical books written by the great astronomer and his followers.

Three university Collegia, where Copernicus attended his lectures: *Maius*, *Minus* and *Iuridicum*, have survived to the present times. In *Collegium Maius*, which houses the university museum, we shall visit the permanent exhibition dedicated to the astronomer, and see a unique set of XVth c. instruments used by Copernicus as a student: a *torquetum*, designed to take and convert measurements made in different coordinates, two *astrolabes*, employed for determining the location of planets and stars, and a *celestial globe*.

The cult of Copernicus in Kraków started from Rheticus, the astronomer's sole disciple and 'the first Copernican', who lived here from 1554 to 1572. Among XIXth c. artefacts that commemorated Copernicus we shall see Jan Matejko's painting *Astronomer Copernicus, or Conversations with God* (1873) in the assembly hall of the main university building *Collegium Novum*, Cyprian Godebski's monument of Copernicus (1900) in a nearby Planty Park, and a statue sculpted by Walerj Gadomski (1872) in the lobby of the Polish Academy of Learning.

Tour No. 6 Pope John Paul II and his city

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: ca. 4 hours. Walking distance: ca. 4 km.

Kraków is known for being the hometown of the blessed Pope John Paul II. Born in Wadowice, 30 miles south-east from Kraków, Karol Wojtyła, the future pontiff, had lived here for four decades, from 1938, when he started to study Polish language and literature at the Jagiellonian University, until his election

as Pope in 1978. In the old capital of Poland he spent his formative years as a student and then as a young priest, and also here, from 1958, he served, first as an auxiliary bishop, and then as Archbishop of Kraków, being at that time one of the most prominent and respected figures in the city. During his years of service as Pope, he visited his native city seven times.

We shall see several places connected with the life of this remarkable man: the Neo-Gothic brick building of the Major Seminary of Kraków Archdiocese at the foot of the Wawel Hill, where he stayed in 1945 as a student; the Romanesque St. Leonard's crypt in the Wawel Cathedral, where he celebrated his first mass in 1946; the St. Florian's Basilica, where he served as vicar and a chaplain to university students from 1949 to 1951; the Bishop's Palace, where he lived until his elevation to Pope and where he conducted the famous evening conversations with young people during his papal visits; and finally Błonia, a huge medieval common in the heart of the city, which gathered thousands of people at the papal masses.

We shall finish our walk in the Divine Mercy Sanctuary in Łagiewniki district, featuring a church and a monastery complex from the turn of the XIXth c., as well as a new basilica consecrated by John Paul II in 2002. The sanctuary, he called 'the capital of the Divine Mercy devotion', houses the relics of a Polish nun and mystic Saint Faustina canonized in 2000 and the Divine Mercy image based on her visions. Among the millions of pilgrims from around the world who visited the sanctuary were two heads of the Catholic Church: John Paul II (twice, in 1997 and 2002) and the present Pope Benedict XVI (in 2006). In front of the basilica, there is a tower, with 315 steps leading to the highest observation point in Kraków, from which the Tatra mountains can be seen on a clear day.

From the City Centre to Łagiewniki we shall go by bus.

Tour No. 7 Nowa Huta: a socialist experiment

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: 3–4 hours. Walking distance: ca. 5 km.

Nowa Huta (New Steel Mill), the easternmost district of Kraków, came into being in the late 1940s. This industrial town built according to a single urban design was planned as a model communist city in opposition to old, traditional and religious Kraków. Paradoxically, absorbed by its elder brother, it became the stronghold of the anticommunist *Solidarity* (*Solidarność*) movement in the 1980s.

This walk features many landmark places, such as apartment buildings in the Central Square (now the Ronald Reagan Central Square), the Steelworks, that bore Lenin's name prior to 1990, and its magnificent administration building, called by local residents 'the Doge's Palace'. The latter is one of the chief examples of Polish 'socialist realism' architecture combining modernism with the Renaissance and Classicist styles. We shall also visit the Lord's Ark – the church that became a symbol of the fight for the Catholic faith in a communist

country, with a tabernacle containing a stone brought back from the Moon by the crew of Apollo 11.

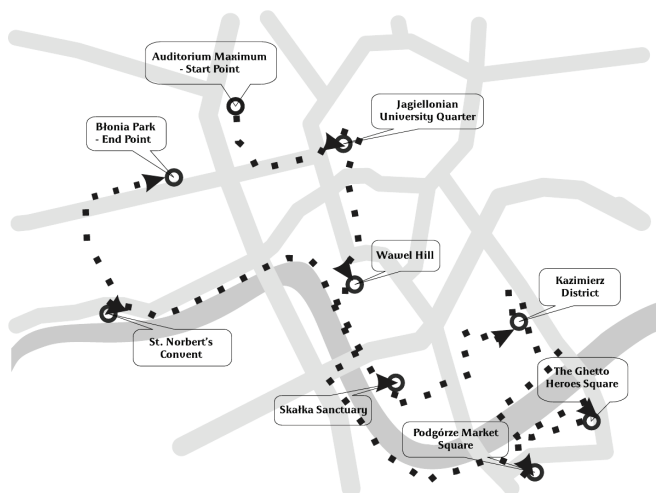
We shall go by tram to the Nowa Huta district, getting on at the *Bagatela* stop and getting off at the *Plac Centralny (The Central Square)* stop, and return also by tram.

Tour No. 8 Kraków by bike

Start point: Auditorium Maximum. End point: Auditorium Maximum.

Duration: 3–4 hours. Distance: ca. 12 km.

If you are fond of cycling, you should explore Kraków by bike. This route is prepared especially (but not only) for those of you who visit the city for the first time. Within a few hours we shall see the majority of interesting places in Kraków.



Route of the biking tour

Tour No. 9 Rynek Underground: an odyssey into the past – self-guided walk

Thursday, July 5th and Friday, July 6th; entrance to the exhibition at 10:45, 15:45, 16:15; tickets to be picked at the Reception Desk.

(Note that prior booking of tickets at online reservation system is normally required – we have booked some tickets for the above dates.)

One can see one of Europe's most modern archeological reserves created two years ago, nearly five meters beneath the surface of the Main Market Square (Rynek Główny). The magic atmosphere of the 2000 sq m area is created by modern technology: holograms, laser projections, plasma screens, 3D visualisations, interactive digital maps, computer animations and reconstructions of non-existent market buildings.

At the time of the Magdeburg rights location of Kraków by the prince Boleslaus the Chaste (1226–1279), this area was, and today still is, the heart

of the city. However, in order to see what it looked like in the late Middle Ages, one needs to go underground and visit the exhibition 'Following the Traces of European Identity of Kraków'.

This fascinating journey through time gives the opportunity to see, among others, a graveyard from the XIth c., the relics of a pre-charter settlement destroyed by the Mongol raid in 1241, cobbled streets from the end of the XIIIth c., as well as the remnants of the oldest XIIIth and XIVth c. trade structures. Among the most important archaeological findings presented at the exhibition, there is an intact giant (693 kg) 'loaf' of lead with the stamps of King Ladislaus the Elbow-high (1260–1333), a symbol of the role of the city, the most southern member of the Hanseatic League, as a major center of trade and commerce in this part of Europe.

Excursions in Kraków's vicinity

All excursions start from the Auditorium Maximum. The buses will leave from the nearby parking bay at Reymonta Street 4 (see the map on p. 51).

Excursion No. 1 A boat trip to Tyniec along the Wisła River

Tuesday, July 3rd, start 18:00, duration c.a. 4 hours, cost 60 PLN including light meal served on board.

Tyniec is one of the most popular destinations near Kraków. During the trip you will see the breathtaking panorama of Kraków from the Wisła river. Great tenement houses, winding narrow streets, river embankments and a unique view of the Royal Castle and Cathedral on the Wawel Hill, the Dragon's Den and the Wawel Dragon itself at the foot of the hill. Further, the waterway of the Wisła river will lead you through the most attractive parts of the upper section of the river. You will have an opportunity to admire, among others, spectacular views of the Bielany Monastery surrounded by the picturesque Wolski Wood and finally, up on high rocks on the right bank of the river, the majestic Benedictine Abbey in Tyniec. This thousand-year-old abbey is located on a beautiful cliff and is surrounded by peaceful, green forests. The Tyniec Abbey, one of the oldest in Poland, is now a mixture of styles – starting from the remains of the original Romanesque monastery through the Gothic chancel to late-Baroque parts of the interior. You will have an opportunity to visit the church and hear Vespers sung by the Benedictine monks.

Excursion No. 2 Memorial and Museum Auschwitz–Birkenau

Full day trip on Saturday, July 7th, start 9:00, cost 160 PLN, meal included. Half day trip on Thursday, July 5th, start 15:00, cost 100 PLN, no meal included.

KL Auschwitz–Birkenau was a complex of concentration and death camps, established by Nazi Germany in Oświęcim and its neighbourhood during the World War II occupation of Poland. With over one million victims – citizens of

many European countries – it was the main place of extermination of European Jews. This, the largest of Nazi Germany's concentration camps is a UNESCO World Heritage Site, visited every year by ca. 1.3 million people. Passing through the iron gate crowned with the infamous motto '*Arbeit macht frei*', visitors enter extensive grounds of the camp with its barracks and guard towers. In the museum devoted to victims of Auschwitz–Birkenau, one can see hundreds of thousands of objects of special character, meaning and symbolism, left by those who lost their lives – killed in gas chambers, died of starvation, forced labour, infectious diseases, in individual executions, and as a result of cruel medical experiments.

In the St. Maximilian Centre in Harmęże near the Auschwitz camp, you will see an extraordinary exhibition 'Images from Memory – Labyrinth' by a Polish artist and scenographer Marian Kotodziej (1921–2009). As prisoner no. 432, he was in Auschwitz from the very first day (in June 1940) to the 'death march' – evacuation of the prisoners to other concentration camps in Germany. At the end of his life, after 50 years of silence, Marian Kotodziej through his dramatic drawings tells about the horrors and tragedy he witnessed.

Excursion No. 3. Tarnowskie Góry – Mine of Silver Ores and Black Trout Adit

Full day trip on Saturday, July 7th, start 8:00, cost 160 PLN, meal included.

Tarnowskie Góry is a town in Silesia in southern Poland, particularly known for its long tradition of mining industry, which lasted hundreds of years and as a result left an extensive underground system of galleries, adits and pit shafts. Some of them have been restored and are open for tourists. In the Black Trout Adit you will travel by boat, led by a guide-storyteller. In the twinkling light of carbide lamps you will be able to see blasting holes, or even bats or trout – if you are lucky! In the Mine of Silver Ores you will be able to visit three shafts: 'Anioł' ('Angel'), 'Żmija' ('Viper') and 'Szczęść Boże' ('God Bless'), connected with 1700 long galleries, 40 meters underground. Part of the route requires travel by boat again. You will have an opportunity to see mining tools and the museum of steam engines.

Excursion No. 4 Wieliczka – Salt Mine

Full day trip on Saturday, July 7th, start 9:00, cost 160 PLN, meal included.

Half day trip on Thursday, July 5th, start 15:00, cost 160 PLN, meal included.

The historic Salt Mine in Wieliczka is the only mining site in the world functioning continuously since the Middle Ages till 1996 – and one of the 12 sites that were registered, 30 years ago, on the UNESCO World List of Natural and Cultural Heritage. The Tourist Route features chambers, corridors, wooden chapels, as well as saline lakes and deposits. A walk along the route resembles not only an expedition into the depths of the Earth, but also a trip into the past. Mining machines, tools and other traces of the ancient miners' labour constitute a thrilling adventure tale about the place and people who

created it during the past centuries. More sacred sites, including the amazing Chapel of St. Kinga, form a unique – the only one in Europe – ‘God Bless’ underground pilgrims’ route.

Excursion No. 5 Zakopane – Tatra Mountains

Full day trip on Saturday, July 7th, start 7:30, cost 160 PLN, meal included.

Zakopane is situated 100 km south of Kraków at the foot of the Tatra Mountains – the highest mountain range in Poland. It is a popular destination for skiing in winter and hiking in summer. The main attraction of the town is the nearness to the Tatra National Park. The visit to the park is the main point of our excursion. We will take a cable car to the summit of Kasprowy Wierch (1987 m.a.s.l.), where we will have 1 hour and 40 minutes to hike around, enjoying beautiful views. The dinner in one of the local restaurants will enable us to taste the regional cuisine.

	Monday, July 2 nd	Tuesday, July 3 rd	Wednesday, July 4 th	Thursday, July 5 th	Friday, July 6 th
Morning		1. Three Masterpieces of Kraków	1. Three Masterpieces of Kraków	1. Three Masterpieces of Kraków	1. Three Masterpieces of Kraków
		4. Oskar Schindler's Factory	5. Jagiellonian University	2. The Wawel Hill	2. The Wawel Hill
		8. Kraków by bike	8. Kraków by bike	4. Oskar Schindler's Factory	8. Kraków by bike
Afternoon	3. Kazimierz: the Jewish past	3. Kazimierz: the Jewish past	3. Kazimierz: the Jewish past	5. Jagiellonian University	
	7. Nowa Huta: socialist experiment	5. Jagiellonian University	6. Pope John Paul II and his city	7. Nowa Huta: socialist experiment	
Out of town		18:00 A boat trip to Tyniec		15:00 Auschwitz-Birkenau Memorial	
				15:00 Wieliczka – Salt Mine	

Schedule of walks and tours in Kraków (white entries) and excursions in Kraków's vicinity from Monday to Friday (gray entries).

More Tourist Attractions

There are many more monuments and attractions worth seeing that are not included in the tourist programme – here we present some of them. If you need help with arranging your individual sightseeing programme, feel free to ask at the Reception Desk. Kraków has a rich cultural heritage and is known as a very vibrant city, all year round there are festivals, special exhibitions and congresses. All events that take place during your stay are described in a small booklet 'Karnet' available at the Reception Desk or on the webpage <http://en.karnet.krakow.pl/>.

Old City

The **Main Market Square** is an interesting and lively place. Here you can taste Kraków city life, and admire the Sukiennice (The Renaissance Cloth Hall), St. Mary's Basilica and the old Town Hall Tower (XIIIth c.). You can climb 239 stairs of the **St. Mary's Basilica Church Tower** to enjoy the view of the city and meet the trumpeter, who plays the Heynal every hour. You will learn about the origins of this very old melody and a legend explaining why it ends so abruptly.

A few minutes walk from the Main Market Square you will reach the old city walls. Part of the fortifications – the gothic Barbican – is one of three Gothic barbicans that have survived to this day. The other two are in Carcassonne (France), and Görlitz (Germany). The one in Kraków is the largest and the one best preserved. Today the Barbican is a branch of the Historical Museum of the City of Kraków and is an arena for tournaments of knights, chivalric revelries, concerts and exhibitions.

Museums

Sukiennice – The Renaissance Cloth Hall, Main Market Square

Great collection of Polish paintings from XIXth c. and beginning of XXth situated on the first floor. The building itself used to be a major centre of international trade. Now, on the ground level it hosts souvenir shops. It is listed as a UNESCO World Heritage Site since 1978.

Opening hours: Tuesday – Saturday 10:00–20:00, Sunday 10:00–18:00.

National Museum in Kraków – The Main Building, al. 3 maja 1

Great place to discover XXth c. Polish Art. During the 6ECM the temporary exhibition is devoted to the work of Russian photographer Alexandr Rodchenko.

Opening hours: Tuesday – Saturday 10:00–18:00, Sunday 10:00–16:00.

Józef Mehoffer's House and Garden, ul. Krupnicza 26

The house where Józef Mehoffer, a Polish artist famous for his paintings and

stained glass windows, used to live. Now a branch of the National Museum in Kraków. A good restaurant within the premises.

Opening hours: Wednesday – Sunday 10:00–16:00.

Jan Matejko's House, *ul. Floriańska 41*

The house in which Jan Matejko, known for paintings of notable political and military events in the history of Poland, was born, lived and died. The house became a museum within a few years from Matejko's death, and has been a branch of the National Museum in Kraków since 1904.

Opening hours: Tuesday – Saturday 10:00–18:00, Sunday 10:00–16:00.

The Bishop Erazm Ciołek Palace, *ul. Kanonicza 17*

This palace, built for Bishop Erazm Ciołek in the beginning of XVIth c., was restored in the 90's and became a gallery with two permanent exhibitions: 'Art of Old Poland. The XIth–XVIIIth c.' and 'Orthodox Art of the Old Polish Republic', where you can find a famous sculpture 'Madonna of Kruźlowa' from circa 1420 and 'Gethsemane' by Veit Stoss of circa 1485.

Opening hours: Tuesday – Saturday 10:00–18:00, Sunday 10:00–16:00.

Manggha – Centre of Japanese Art and Technology, *ul. M. Konopnickiej 26*

A museum with a rich collection of old Japanese art and a centre of Japanese culture, popularising knowledge about Japan and other Far East countries. Founded by Andrzej Wajda – Oscar-winning Polish film and theater director.

Opening hours: Tuesday – Sunday, 10:00–18:00.

MOCAK – Museum of Contemporary Art in Kraków, *ul. Lipowa 4*

A new museum of contemporary art.

Opening hours: Tuesday – Sunday, 11:00–19:00.

Archaeological Museum, *ul. Senacka 3, (entrance from ul. Poselska)*

The oldest archaeological institution in Poland. With ushabti figurines, Egyptian mummies and sarcophagi as well as a legendary pagan statue *Światowid*.

Opening hours: Monday, Wednesday, Friday 9:00–15:00, Tuesday, Thursday 14:00–18:00, Sunday 10:00–15:00.

Polish Aviation Museum, *al. Jana Pawła II 39*

A vast open-air museum, with over 200 aircraft – including over 20 extremely rare airplanes that once were part of the personal collection of Nazi Commander of Luftwaffe Hermann Göring and the PZL P.11c aircraft – the only surviving example of this prewar Polish fighter aircraft.

Opening hours: Tuesday – Sunday 9:00–19:00.

Museum of Municipal Engineering, *ul. Św. Wawrzyńca 15*

A museum located in a former horsecar and tramway depot, with a collection of cars and motorcycles made in Poland since the 30s of the XXth c. and exhibitions presenting Kraków's printing industry between the XVth and XIXth c., as well as the history of Kraków's municipal transport (especially trams).

Opening hours: Wednesday, Friday – Sunday 10:00–16:00, Tuesday, Thursday 10:00–18:00.

Parks and Mounds

Green spaces play an important role in the urban architecture. There are many charming, small, hidden green spaces in the old town, as well as huge parks and even a meadow in the center of this town. Among other curiosities of Kraków, there are 4 mounds raising above the city. Two of them (Wanda's Mound and Krak's Mound) were probably raised around VIth c. to commemorate legendary persons. Another two (Kościuszko Mound and Piłsudski Mound) were built in XIXth and XXth c. respectively to commemorate fights for independence of Poland and their leaders.

Stanisław Lem Garden of Experiences, *al. Pokoju* 67

An open-air education exhibition with many interesting devices. It covers 6 ha within the Polish Pilots Park.

Opening hours: Monday – Friday 8:30–20:00, Saturday – Sunday 10:00–20:00.

Botanic Garden of the Jagiellonian University in Kraków, *ul. Kopernika* 27

Hortus Botanicus Universitatis Jagiellonicae – the oldest botanic garden in Poland, founded in 1783. Apart from the garden, with about 5000 taxa, there is also a museum of botany research. The garden includes an arboretum, with a 500 year old Jagiellonian Oak (*Quercus robur*), rock gardens, greenhouses and other features.

Opening hours: Monday – Sunday 9:00–19:00, Greenhouses: Saturday – Thursday 10:00–18:00 (closed on Fridays), Botanic Museum: Wednesday, Friday 10:00–14:00, Saturday 11:00–15:00.

Henryk Jordan Park, *just behind the Jagiellonian Library*

A large park and public playground, with playing fields and gymnastic devices, located nearby Błonia – the municipal meadow.

The ZOO in the Wolski Woods

A large forest park located in the western part of Kraków, with nature reserves and eight walking trails.

Opening hours: 9:30–19:30.

Helium balloon flights, *near Grunwaldzki Bridge*

A bird's eye view of Kraków from a helium balloon with a viewing platform.

Opening hours: Monday – Sunday 9:00–22:00.

Aquapark, *ul. Dobrego Pasterza* 126

One of the greatest aquaparks in Europe – with sauna, water massage, jacuzzi, climbing walls and 800 meters of slides.

Opening hours: Monday – Sunday 8:00–22:00.

6ECM Organisers

Abbreviations of affiliations

AGH – AGH University of Science and Technology, Kraków
PK – Tadeusz Kościuszko Cracow University of Technology
PTM – Polish Mathematical Society
UAM – Adam Mickiewicz University in Poznań
UJ – Jagiellonian University in Kraków
UŁ – University of Łódź
UP – Pedagogical University of Cracow
UW – University of Warsaw
UWr – University of Wrocław
WAT – Military University of Technology, Warszawa

Chair of the 6ECM pre-organising committee and of the Organising Committee till May 18, 2010

Andrzej Pelczar (UJ, 1937–2010)

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Exhibition & Promotion Coordinator: Anna Kula (UJ)

Programme Coordinator: Witold Majdak (AGH)

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Graphic design

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Stefan Dousa (PK)

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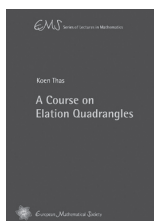
Acknowledgments

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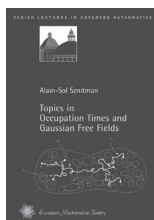
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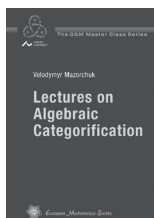
Koen Thas (Ghent University, Belgium)
A Course on Elation Quadrangles (EMS Series of Lectures in Mathematics)
ISBN 978-3-03719-110-1. 2012. 129 pages. Softcover. 17 x 24 cm. 28.00 Euro

The notion of elation generalized quadrangle is a natural generalization to the theory of generalized quadrangles of the important notion of translation planes in the theory of projective planes. Almost any known class of finite generalized quadrangles can be constructed from a suitable class of elation quadrangles. In this book the author considers several aspects of the theory of elation generalized quadrangles. The text starts from scratch and is essentially self-contained. Many alternative proofs are given for known theorems. Containing dozens of exercises at various levels, from very easy to rather difficult, this course will stimulate undergraduate and graduate students to enter the fascinating and rich world of elation quadrangles. The more accomplished mathematician will especially find the final chapters challenging.



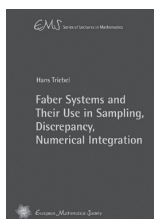
Alain-Sol Sznitman (ETH Zürich, Switzerland)
Topics in Occupation Times and Gaussian Free Fields (Zurich Lectures in Advanced Mathematics)
ISBN 978-3-03719-109-5. 2012. 122 pages. Softcover. 17 x 24 cm. 28.00 Euro

This book grew out of a graduate course at ETH Zurich during the Spring term 2011. It explores various links between such notions as occupation times of Markov chains, Gaussian free fields, Poisson point processes of Markovian loops, and random interlacements, which have been the object of intensive research over the last few years. These notions are developed in the convenient set-up of finite weighted graphs endowed with killing measures.



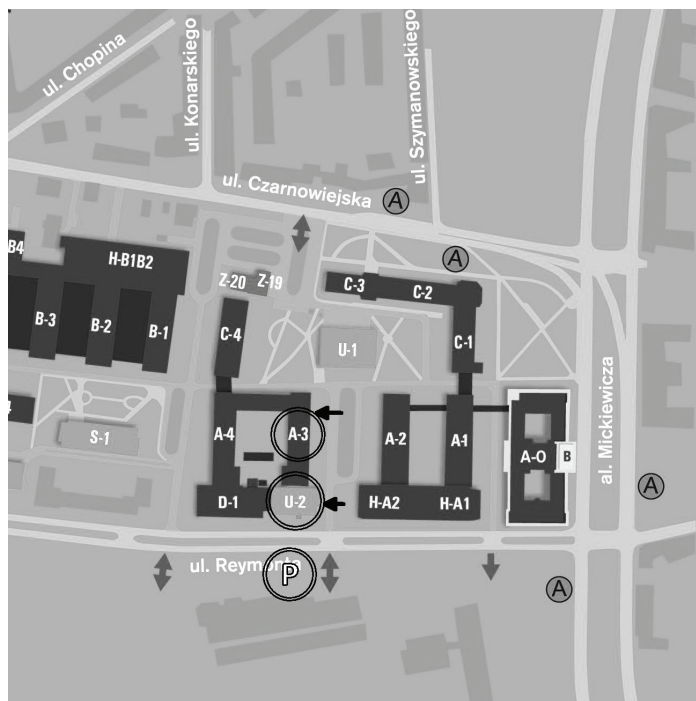
Volodymyr Mazorchuk (Uppsala University, Sweden)
Lectures on Algebraic Categorification (The QGM Master Class Series)
ISBN 978-3-03719-108-8. 2012. 110 pages. Softcover. 17 x 24 cm. 28.00 Euro

The term "categorification" was introduced by Louis Crane in 1995 and refers to the process of replacing set-theoretic notions by the corresponding categorytheoretic analogues. This text mostly concentrates on algebraic aspects of the theory, presented in the historical perspective, but also contains several topological applications. It consists of fifteen sections corresponding to fifteen one-hour lectures given during a Master Class at Aarhus University, Denmark in October 2010. There are some exercises collected at the end of the text and a rather extensive list of references. The book provides an introductory overview of the subject rather than a fully detailed monograph. Emphasis is on definitions, examples and formulations of the results.



Hans Triebel (University of Jena, Germany)
Faber Systems and Their Use in Sampling, Discrepancy, Numerical Integration (EMS Series of Lectures in Mathematics)
ISBN 978-3-03719-107-1. 2012. 115 pages. Softcover. 17 x 24 cm. 28.00 Euro

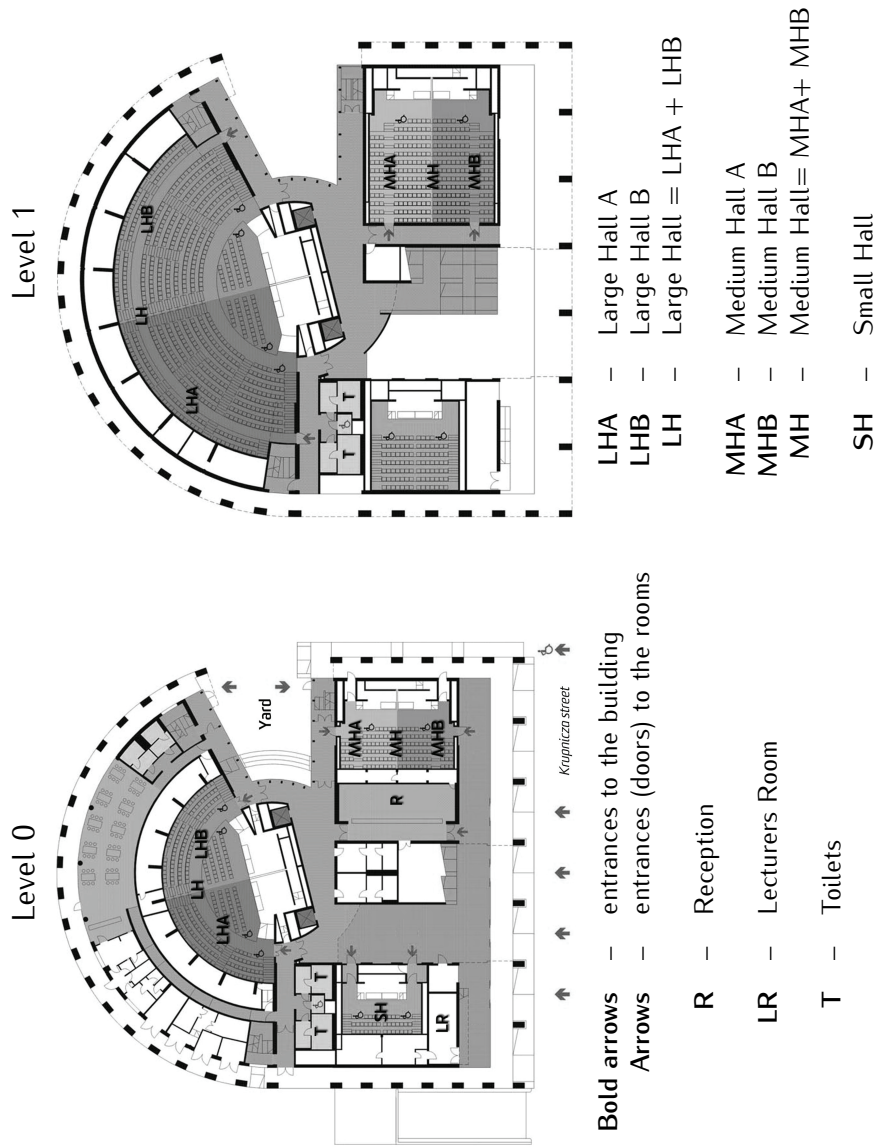
This book deals first with Haar bases, Faber bases and Faber frames for weighted function spaces on the real line and the plane. It extends results in the author's book *Bases in Function Spaces, Sampling, Discrepancy, Numerical Integration* (EMS, 2010) from unweighted spaces (preferably in cubes) to weighted spaces. The obtained assertions are used to study sampling and numerical integration in weighted spaces on the real line and weighted spaces with dominating mixed smoothness in the plane. A short chapter deals with the discrepancy for spaces on intervals. The book is addressed to graduate students and mathematicians having a working knowledge of basic elements of function spaces and approximation theory.



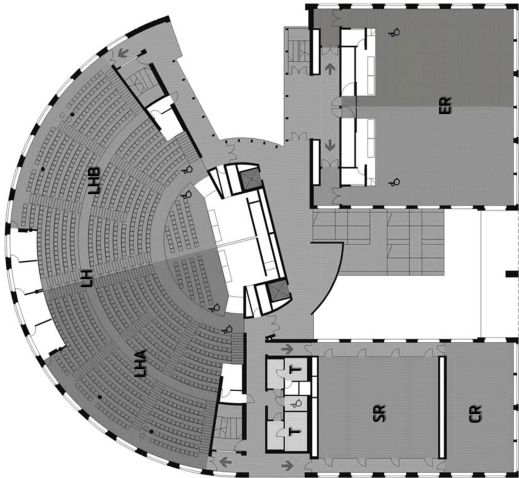
AGH University of Science and Technology

Black Arrows entrances to U2 and A3 Buildings, Reymonta 7

P the parking behind the Banach Monument,
starting point for the bus tours, Reymonta 4

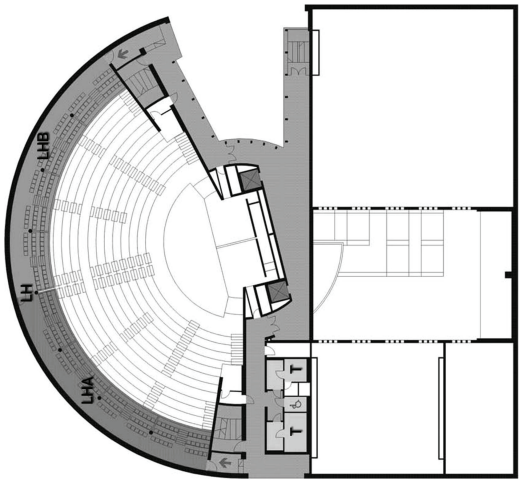


Level 2



- Arrows - entrances (doors) to the rooms
T - Toilets
ER - Exhibition Room
SR - Seminar Room
CR - Conference Room

Level 3



- LHA - Large Hall A
LHB - Large Hall B
LH - Large Hall = LHA + LHB



① Jagiellonian University Auditorium Maximumum
ul. Krupnicza 33

② AGH University of Science and Technology
A3 & U2 Buildings, ul. Reymonta 7

③ The Franciscan Monastery
Plac Wszystkich Świętych 5

④ Ibis Hotel, ul. Syrokomli 2