



# Applications of Algebra in Logic and Computer Science XXIII, Zakopane, March 11–17, 2019

## Zastosowania Algebry w Logice i Informatyce, XXIII edycja, Zakopane, 11–17 marca 2019 r.

Organizator: Zakład Logiki, Metodologii i Epistemologii; Instytut Filozofii; Wydział Filologiczno-Historyczny; Uniwersytet im. J. Długosza w Częstochowie

### TUESDAY, MARCH 12<sup>TH</sup>

#### Morning session

- 9:50 Opening  
10:00 Anna Romanowska (Warsaw University of Technology, Poland), *Convex Sets and Barycentric Algebras*  
10:45 Wojciech Dzik (University of Silesia in Katowice, Poland), *Applications of Unification in Intuitionistic Predicate Logic and its extensions*  
11:30 Coffee break  
12:00 Janusz Czelakowski (University of Opole, Poland), *The Lattice of Equational Theories of Two-Element Algebras*  
12:30 Janusz Kaczmarek (University of Łódź, Poland), *Theory of Situations in Hybrid Topological Lattices*

#### Afternoon session

- 16:00 Katarzyna Matczak (Warsaw University of Technology, Poland), *Finitely Generated Dyadic Convex Sets*  
16:30 Anna Mucka (Warsaw University of Technology, Poland), *Duality for Convex Polytopes*  
17:00 Coffee break  
17:30 Adam Komorowski (Warsaw University of Technology, Poland), *Beyond Barycentric Algebras*  
18:00 Adam Morawiec (University of Wrocław, Poland), *Constructive approach to  $\text{Polp} = \text{Polc}$*   
18:30 Tomasz Witczak (University of Silesia in Katowice, Poland), *Intuitionistic Neighborhood Frames and Topological Spaces*

### WEDNESDAY, MARCH 13<sup>TH</sup>

#### Morning session

- 9:30 David Miller (The University of Warwick, England), *Autonomous Axioms for Metrics and Measures*  
10:15 Wiesław Kubis (Czech Academy of Sciences, Czech Republic), *Automorphism Groups of Homogeneous Structures*  
11:00 Coffee break  
11:30 Jan Paseka (Masaryk University, Brno, Czech Republic), *Categoric Simulation of Production Flows*  
12:15 Edouard Wagneur (GERAD, Montreal, Canada), *Embedding Idempotent Semimodules*  
20:00 Conference dinner

### THURSDAY, MARCH 14<sup>TH</sup>

#### Afternoon session

- 15:15 Raja Natarajan (Tata Institute of Fundamental Research, India), *Solving Boolean Equations on Set-valued Variables*  
16:00 Zofia Kostrzycka (Opole University of Technology, Poland) and Marek Zaionc (Jagiellonian University in Kraków, Poland), *Quantitative study of Fuzzy Logics*  
16:30 Coffee break  
17:00 Emília Halušková (Slovak Academy of Sciences in Košice, Slovakia), *On one Discrete Property of Monotone Functions*  
17:30 Ângela Mestre (University of Lisbon, Portugal), *Square Matrices related to Sequences of Riordan Arrays*  
18:15 Special session: Mirosław Kurkowski (Cardinal Stefan Wyszyński University, Poland), *Polish academic memorabilia 1839–1948*

### FRIDAY, MARCH 15<sup>TH</sup>

#### Morning session

- 9:30 Jan Wolenski (University of Information Technology and Management in Rzeszów, Poland), *Models and States of Affairs*  
10:15 Jerzy Pogonowski (Adam Mickiewicz University in Poznań, Poland), *Mathematical Intuitions*  
11:00 Coffee break  
11:30 Ján Haluška (Slovak Academy of Sciences in Košice, Slovakia), *On a generalization of the Gaussian plane to three dimensions*  
12:00 Krzysztof Krawczyk (Nicolaus Copernicus University in Toruń, Poland) and Tomasz Jarmuzek (Nicolaus Copernicus University in Toruń, Poland), *Relating epistemic logic. An alternative approach to reasoning about propositional attitudes*  
12:30 Tomasz Połacik (University of Silesia in Katowice, Poland), *TBA*

#### Afternoon session

- 15:00 Michał Mazur (Cardinal Stefan Wyszyński University, Poland) and Mirosław Kurkowski (Cardinal Stefan Wyszyński University, Poland), *Some complexity properties of security protocols verification tools structures and algorithms*  
15:30 Michał Chowaniec (Cardinal Stefan Wyszyński University, Poland) and Mirosław Kurkowski (Cardinal Stefan Wyszyński University, Poland), *Using SAT based approach for cryptanalysis of symmetric ciphers*  
16:00 Coffee break  
16:30 Małgorzata Łazarska (Cardinal Stefan Wyszyński University, Poland) and Mirosław Kurkowski (Cardinal Stefan Wyszyński University, Poland), *New searching ways in graph databases*  
17:00 Dorota Leszczynska-Jasion (Adam Mickiewicz University in Poznań, Poland) and Szymon Chlebowski (Adam Mickiewicz University in Poznań, Poland), *Synthetic Tableaux for Propositional Intuitionistic Logic*  
18:00 Special session: Kazimierz Czarnota (University of Warsaw, Poland), *The first machine controlled by a programme. Jacquard and Szczepanik*

### SATURDAY, MARCH 16<sup>TH</sup>

#### Morning session

- 10:00 Ryszard Miszczynski (Jan Długosz University in Częstochowa, Poland), *Protothetics vs. Classical Propositional Calculus*  
10:30 Monika Pisniak (University of Opole, Poland), *Uncertainty of information and measurement of information*  
11:00 Coffee break  
11:30 Grzegorz Sitek (Jan Długosz University in Częstochowa, Poland), *Construction of the primitive notions of Hilbert's Geometry in Tarski's Geometry of Solids*  
12:00 Yuriy Povstenko (Jan Długosz University in Częstochowa, Poland) and Tamara Kyrlych (Jan Długosz University in Częstochowa, Poland), *Generalized boundary conditions for equations with fractional derivatives*  
12:30 Yutaka Miyazaki (Osaka University of Economics and Law, Japan), *On Modal Logics with Cyclic Axioms*