

Prague Gathering of Logicians

Friday, 10 May 2019

Aleš Pultr (MFF CUNI): Notes about point-free topology (10:00–11:00)

The abstract of Prof. Pultr’s talk is available in a separate file on the workshop webpage.

(11:30–12:30)

Zuzana Haniková (ICS CAS): Algorithmic problems in Łukasiewicz logic

Abstract: This is an expository talk about a range of algorithmic problems in propositional Łukasiewicz logic. Some of them, such as derivability from finite theories or rule admissibility, become particularly prominent in a non-classical setting. The computational study of a logic usually goes from obtaining decidability results to complexity upper bounds to algorithms and implementations. I will provide a brief introduction to Łukasiewicz logic and the class of MV-algebras that forms its equivalent algebraic semantics. Then I will highlight the semantic methods that led to the algorithmic results and discuss some computational milestones, as well as problems that are peculiar to the logic.

Libor Barto (MFF CUNI): Algebraic theory of promise constraint satisfaction problems (14:30–15:30)

Abstract: What kind of mathematical structure in computational problems allows for efficient algorithms? This fundamental question now has a satisfactory answer for a rather broad class of computational problems, so called fixed-language Constraint Satisfaction Problems (CSPs) – it has turned out that their complexity is captured by a certain specific form of symmetry. I will talk about an extension of this theory to a broader class of computational problems, the promise CSPs, which include problems such as finding a 137-coloring of a 3-colorable graph.

Ansten Klev (FLU CAS): Definitional identity (15:30–16:30)

Abstract: Definitional identity is the relation that holds between expressions that are identical by definition. Such a relation seems to be presupposed by mathematical practice, and—as I have argued in recent work—it is needed in order to make good sense of the logic of identity. In this talk I shall be concerned with both formal and philosophical aspects of this relation.

Jonathan Verner (FF CUNI): What you (never) wanted to know about ultrafilters (17:00–18:00)

Abstract: I will give a survey of the state of ultrafilter research with a very biased selection of recent “exciting” developments and some not so recent “exciting” developments, mostly dealing with the Rudin-Keisler and Tukey structure of ultrafilters on omega, perhaps hinting on the problems one encounters when looking at uncountable cardinals.