

# Ústav informatiky

## Akademie věd České republiky

*Pod Vodárenskou věží 2, 182 07 Praha 8*

ÚI AV ČR ve spolupráci s Odbornou skupinou aplikované matematické logiky České společnosti pro kybernetiku a informatiku

pořádá

v seminární místnosti ÚI AV ČR - místnost č. 318  
(stanice metra C Ládvi)

### Seminář aplikované matematické logiky

který se schází **ve středu ve 14.00 hod.**

*Program na říjen 2013:*

2. 10. 2013 - **Where we went and what we did there**

16. 10. 2013 - *Rostislav Horčík:*

#### **Density Elimination and the Corresponding Algebraic Construction**

The uninorm logic UL is the semilinear extension of the full Lambek calculus with exchange FLe, i.e., it is a logic complete with respect to the class of all FLe-chains. Moreover, UL is known to be standard complete, i.e., it is complete with respect to the class of all FLe-chains whose universe is the real unit interval  $[0, 1]$ . Nevertheless, there is no algebraic proof of the above fact. The only proofs we have so far are based on a proof-theoretical elimination of the density rule. Interestingly, the idea from the density elimination can be translated via residuated frames into an algebraic construction showing that UL is standard complete. This is possible since the residuated frames are tightly connected with the Gentzen sequent calculus. Nevertheless, the algebraic construction obtained via residuated frames is not very transparent. In this talk we will show how to describe this construction in a more transparent way using machinery of idempotent semirings and formal power series over them.

23. 10. 2013 - *Eunsuk Yang:*

#### **Algebraic Kripke-style semantics for relevance logics**

This paper deals with one kind of Kripke-style semantics, which we shall call algebraic Kripke-style semantics, for relevance logics. We first recall the logic R of relevant implication and some closely related systems, their corresponding algebraic structures, and algebraic completeness results. We provide simpler algebraic completeness proofs. We then introduce various types of algebraic Kripke-style semantics for these systems and connect them with algebraic semantics.