▶ TOMÁŠ JAKL, *On connections between logic on words and limits of graphs.*
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Trying to adapt decidability tools from regular languages to more general complexity classes, has naturally led to the study of applications of duality-theoretic methods in the logic on words. In order to recognise a non-regular language one has to construct a syntactic object by the so-called codensity construction [1].

In a completely different discipline, in the limit theory of graphs, it is an ongoing open problem to find a suitable limit object for sequences of finite graphs. This has important applications, for example, when modelling computer networks or biological systems. Taking limits of graphs in the space of finitely additive measures generalises many previous approaches [2].

In this talk I will explain how those two seemingly different theories, in fact, are a special case of one general construction. I will also mention how employing duality-theoretic techniques helps us understand the situation better. By doing so the space of measures is understood simply as a spectrum of the Lindenbaum-Tarski algebra for the First-Order logic extended with new quantifiers.

Note that this theory generalises to arbitrary classes of finite structures.

(This is a joint work with Mai Gehrke and Luca Reggio.)

[1] Mai Gehrke, Daniela Petrian, Luca Reggio, *Quantifiers on languages and codensity monads*, 32nd Annual ACM/IEEE Symposium on Logic in Computer Science (LICS), IEEE, 2017, pp. 1–12.

[2] Jaroslav Nešetřil, Patrice Ossona de Mendez, *A model theory approach to structural limits*, Commentationes Mathematicae Universitatis Carolinae, vol. 53 (2012), no. 4, pp. 581–603.