▸ ILYA SHAPIROVSKY, *Locally finite polymodal logics and Segerberg – Maksimova criterion.*
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A logic L is locally finite (in another terminology, *locally tabular*), if each of its finite-variable fragments contains only a finite number of pairwise nonequivalent formulas. In algebraic terms, it means that the variety of L-algebras is locally finite, that is every finitely generated L-algebra is finite.

An important characterization of local finiteness was obtained by K. Segerberg [2] and L. Maksimova [1] in 1970s for unimodal transitive logics: in this case, a logic is locally finite if and only if it contains a modal formula B_n of finite height. This is a nice theorem in many respects. Besides the fact that it gives a natural semantic criterion of local finiteness, it also provides an axiomatic characterization: local finiteness is expressed by a formula from an explicitly described set $\{B_n \mid n < \omega\}$. No axiomatic criterion of local finiteness is known for polymodal, and even for all (including non-transitive) unimodal logics. In [4], Segerberg – Maksimova criterion was extended for some families of unimodal non-transitive logics.

In this talk I will discuss generalizations of this criterion in the polymodal context. Some of the results are based on the recent work [3].

[1] L. Maksimova, *Modal logics of finite slices*, ***Algebra and Logic***, vol. 14 (1975), no. 3, pp. 304–319.

[2] K. Segerberg, ***An essay in classical modal logic***, Filosofska Studier, vol.13, Uppsala Universitet, 1971.

[3] I. Shapirovsky, *Sufficient conditions for local tabularity of a polymodal logic*, Preprint, 2022. arxiv.2212.07213

[4] I. Shapirovsky and V. Shehtman, *Local tabularity without transitivity*, ***Advances in Modal Logic,*** volume 8, College Publications, 2016, pp. 520–534.