▸ ILYA SHAPIROVSKY, *On the finite model property of subframe pretransitive logics.*
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A binary relation R on a set X is said to be *m-transitive*, if $R^{m+1} \subseteq \bigcup_{i \leq m} R^i$, where R^0 is the diagonal on X, $R^{i+1} = R \circ R^i$, and $\circ$ is the composition. A class of structures (X, R) is *pretransitive*, if these structures are m-transitive for some fixed m.

While, for $m > 1$, the finite model property (FMP) of the logic of all m-transitive relations is a long-standing open problem, some positive results are known for pretransitive classes which are closed under taking substructures; logics of such classes are said to be *pretransitive subframe*. Examples of such logics are given by the conditions $R^{m+1} \subseteq R$; their FMP in known since 1970s [1]. The FMP of the logic wK4 of the class of 1-transitive ($R^2 \subseteq R \cup R^0$) relations is shown in [2]. In [4], it is shown that all subframe transitive logics have the FMP; this result is generalized for subframe extensions of wK4 in [3].

I will present a recent result obtained jointly with A. Kudinov in [5]: for each $m > 1$, the logic given by the condition $R^{m+1} \subseteq R \cup R^0$, as well as its canonical subframe extensions, have the FMP.

[1] Dov Gabbay, *A general filtration method for modal logics*, ***Journal of Philosophical Logic***, vol. 1 (1972), no. 1, pp. 29–34.

[2] Guram Bezhanishvili, Leo Esakia, and David Gabelaia, *Spectral and T_0-spaces in d-semantics*, ***Logic, language, and computation*** (Berlin, Heidelberg) Springer Berlin Heidelberg, 2011, pp. 16–29.

[3] Guram Bezhanishvili, Silvio Ghilardi, and Mamuka Jibladze, *An Algebraic Approach to Subframe Logics. Modal Case*, ***Notre Dame Journal of Formal Logic***, vol. 52 (2011), no. 2, pp. 187 – 202.

[4] Kit Fine, *Logics containing K4. Part II*, ***The Journal of Symbolic Logic***, vol. 50 (1985), no. 3, pp. 619–651.

[5] Andrey Kudinov and Ilya Shapirovsky, *Filtrations for wK4 and its relatives*, 2023, https://arxiv.org/pdf/2401.00457.pdf.