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Tropical functions on skeletons

Skeletons are subsets of non-archimedean spaces (in the sense of Berkovich) that inherit from the ambiant space a natural PL (piecewise-linear) structure, and if S is such a skeleton, for every invertible holomorphic function f defined in a neighborhood of S, the restriction of $\log|f|$ to S is PL.
In this talk, I will present a joint work with E. Hrushovski, F. Loeser and J. Ye in which we consider an irreducible algebraic variety X over an algebraically closed, non-trivially valued and complete non-archimedean field k, and a skeleton S of the analytification of X defined using only algebraic functions, and consisting of Zariski-generic points. If f is a non-zero rational function on X then $\log|f|$ indices a PL function on S, and if we denote by E the group of all PL functions on S that are of this form, we prove the following finiteness result on the group E: it is stable under min and max, and there exist finitely many non-zero rational functions $f_1, \ldots, f_m$ on X such that E is generated, as a group equipped with min and max operators, by the $\log|f_i|$ and the constants $|a|$ for a in k^*. Our proof makes a crucial use of Hrushovski-Loesers theory of stable completions, which are model-theoretic avatars of Berkovich spaces.