

Extremal models in affine logic

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We call affine logic the fragment of continuous logic in which the connectives are limited to linear combinations and the constants (but quantification is allowed, in the usual continuous form). This fragment has been introduced and studied by S.M. Bagheri, the first to observe that this is the appropriate framework to consider convex combinations of metric structures and, more generally, ultrameans, i.e., ultraproducts in which the ultrafilter is replaced by a finitely additive probability measure. Bagheri has shown that many fundamental results of continuous logic hold in affine logic in an appropriate form, including Łoś's theorem, the compactness theorem, and the Keisler–Shelah isomorphism theorem. In affine logic, type spaces are compact convex sets. In this talk I will report on an ongoing work with I. Ben Yaacov and T. Tsankov, in which we initiate the study of extremal models in affine logic, i.e., those that only realize extreme types.