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Title: Generalised Polish Structures

Abstract: A Polish structure is a continuous action of a Polish group G on a topological space X. In this purely topological setting, Krupinski has defined a ternary notion of independence on X called *nm-independence* (nm stands for non-meagre), which shares a number of nice properties with model-theoretic independence relations such as forking independence in stable theories. This allowed to prove several interesting theorems about Polish structures using tools from model theory.

A natural question is whether one can apply nm-independence to actions studied in model theory, such as those of automorphism groups of models. In this talk I will explain why this is hard if we restrict ourselves to considering only actions of Polish groups (e.g. $Aut(M)$ for a countable model), and why the obstacles would be removed if a certain property of Polish groups can be generalised to closed subgroups of $Sym(\kappa)$ for some cardinal κ.