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Omitting Types and the Baire Category Theorem

For separable metrizable X , the omitting types behaviour of the abstract logic defined from X has a close connection with Baire Category properties of X . In joint work with Christopher J. Eagle, we discuss the question of whether the game version of the Omitting Types Theorem for the logic defined from X is strictly stronger than the usual Omitting Types Theorem for this logic. If X is complete, the game version is not stronger, but there is an example distinguishing the two if there is a non-meagre P -filter on the natural numbers. Although such filters exist in many models of set theory, it is a longstanding open problem whether they exist in all models. For projective X , it follows from a theorem of Medini and Zdomsky that the Axiom of Projective Determinacy implies the game version is not stronger.