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Pseudofinite Fields and Tournaments

A tournament on a set X is an irreflexive binary relation $R \subset X \times X$ such that, for every $x \neq y$ in X, exactly one of $R(x, y)$ and $R(y, x)$ holds. A pseudofinite field F interprets a tournament by the formula $\exists z : (x - y) = z^2$. The automorphism group of any field interpreting a 0-definable tournament can not have any involutions.

To generalize this observation, we will examine the effects of interpreting such structures on the automorphism groups of certain pseudofinite fields.

This is work in progress with Ehud Hrushovski.