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Combinatorics of ultrafilters on automorphism groups

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Abstract: For a topological group G , an ambit is a compact pointed space (X, x_0) with a (jointly) continuous action of G on X with the orbit $Gx_0 = \{gx_0 : g \in G\}$ dense in X . The greatest ambit of G , denoted by $S(G)$, is an ambit that has every ambit as its quotient preserving the distinguished points. We will study $S(G)$ for G an automorphism group of a countable first order structure as a space of ultrafilters, describe how the multiplication in G extends to $S(G)$ and show a couple of results about combinatorics and algebra in $S(G)$.

This is partially a joint work with Andrew Zucker (CMU).