BORIŠA KUZELJEVIĆ. Antichains of copies of ultrahomogeneous structures.
University of Novi Sad, Serbia.
E-mail: borisha@dmi.uns.ac.rs.

We analyze possible cardinalities of maximal antichains of isomorphic copies of countable ultrahomogeneous structures. For a countable ultrahomogeneous relational structure $X$, $P(X)$ denotes the set of all substructures of $X$ isomorphic to it. A copy $Y \in P(X)$ is called large if it intersects each orbit of $X$. We say that a collection $A$ of copies of $X$ is an antichain in $P(X)$ if $X$ cannot be embedded into the intersection of any two elements of $A$. We show that if the age of $X$ satisfies the strong amalgamation property, then the structure $X$ can be partitioned into countably many large copies and there is an almost disjoint family of large copies of size continuum. We also show that for a countable ultrahomogeneous poset $P$, there is a maximal antichain of size continuum in $P(P)$, while there is a countable maximal antichain in $P(P)$ if and only if $P$ is not isomorphic to a countable antichain or a disjoint union of infinitely many rational lines. This is joint work with Miloš Kurilić.