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Large free subgroups of automorphisms groups of ultrahomogeneous spaces

Let A be an ultrahomogeneous countable structure, and $\text{Aut}(A)$ the group of its automorphisms. In the talk we give a necessary condition under which $\text{Aut}(A)$ contains a free subgroup of \mathfrak{c} -many generators. As an application, we show that:

- * S^∞ - the group of bijections of ω ;
- * the group of automorphisms of rationals (\mathbb{Q}, \leq) ;
- * the group of isometries of a rational Urysohn space;
- * the group of automorphisms of a random graph;
- * the group of automorphisms of a countable atomless Boolean algebra

contains a free subgroup of \mathfrak{c} -many generators.

We also show that every countable family of free generators in S^∞ can be extended to a family of \mathfrak{c} -many free generators.

The key tool we use is the Rasiowa-Sikorski Lemma