Subgroups of big mapping class groups that are not extremely amenable

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A topological group is **extremely amenable** if it admits a common fixed point for all its elements in every Hausdorff compact space on which it acts with a jointly continuous action.

In this talk we prove that several subgroups of mapping class groups of infinite-type surfaces are not extremely amenable. In order to do so, we view their closures as automorphism groups of ultrahomogeneous countable structures as in [HHHM$^+$22], and then we prove that the corresponding classes of finite substructures do not have the Ramsey Property. By the seminal work of Kechris, Pestov and Todorčević [KPT05], such Ramsey property is necessary for extreme amenability.

By the hereditary properties of extreme amenability, we get several subgroups of homeomorphism groups of such infinite-type surfaces that are not extremely amenable as well.

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