Are there non-zero compactly-supported homology classes on mapping class groups of infinite-type surfaces? Part III

Martin Palmer-Anghel // GeMAT seminar, IMAR // 2 August 2024

Abstract.

If S is a surface of infinite type (i.e. its fundamental group is not finitely generated), then the mapping class group $\mathrm{Mod}(S)$ is uncountable and its group homology is typically not countably generated in any degree (although there are exceptions). Two natural questions to ask are whether there are any homology classes on $\mathrm{Mod}(S)$ supported on a (1) compact or (2) finite-type subsurface $\Sigma \subset S$. In the first two talks of this sequence we saw the answers to these questions when S has infinite genus; in this third talk I will discuss the case when S has finite genus. The genus-0 setting is especially difficult, and depends very subtly on the topology of S.

This represents joint work with Xiaolei Wu and is based on arXiv:2405.03512.