

## Measure homology and singular homology

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Measure homology was originally introduced by Thurston as a device to express the fundamental cycle of a hyperbolic manifold as a uniform measure on the set of regular simplices, which was used in the proof that the volume of a hyperbolic manifold is a topological invariant.

Measure homology can be defined for any topological space, its general definition involves measures on the set of singular simplices rather than just finite linear combinations as in the definition of singular homology. There is a canonical homomorphism from singular to measure homology and it was shown by Zastrow, Hansen and Löh that this homomorphism is an isometric isomorphism in the category of CW-complexes. However, such a result can not hold for arbitrary topological spaces.

In our talk, we will on the one hand discuss (under suitable assumptions) injectivity of the canonical homomorphism for some wild spaces and on the other hand discuss applications of measure homology to the Gromov norm on singular homology.