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**A progress-report about investigating Milnor-Thurston homology theory on wild topological spaces**

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Milnor-Thurston homology-Theory was proposed in W.P. Thurston's famous preprint on "Geometry and topology of three-manifolds", attributing a part of the ideas to Milnor. Its concept is to replace classical finite linear combinations of singular simplices by measures on the set of simplices, therefore allowing a more convenient representation of the fundamental cycle of a hyperbolic manifold than could be achieved with classical chains from singular homology theory. The intuition was also, that it should generate the same homology groups as singular homology theory. For triangulable spaces this was independently verified by S. K. Hansen and the speaker in 1998.

Since then the research on this homology theory was mainly focussing on two aspects: At first, to what extent the via integration defined simplicial volume of Milnor-Thurston homology theory has to coincide with the classically defined one, and secondly on introducing and investigating a topological structure on these homology groups. However, the idea to investigate these homology groups on wild spaces arose independently of this research and was mainly motivated by the fact, that Milnor-Thurston homology groups by its use of measures allow infinite summation, while the often unexpected behaviour of classical algebraical invariants seems to have in its origin in the fact, that classical arithmetic allows only finite sums and products and therefore cannot really reflect how many of the wild spaces are built. The talk will mainly focus on some recent research and partial results which are aimed at understanding the behaviour of Milnor-Thurston homology groups on certain types of wild spaces, and on comparing them with the corresponding singular homology groups.