

Compressed words in Gromov hyperbolic groups.

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Markus Lohrey defined the compressed word problem for groups and gave a polynomial-time solution in the case of free groups. I'll explain how this leads to a polynomial-time algorithm to the usual word problem for automorphism groups of free groups. Time permitting, I will sketch a few of the ideas needed to go from the free group to Gromov hyperbolic groups in general. As a nice application, this gives a polynomial-time solution to the word problem for the mapping class group; this new solution is very different from the usual one!