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**Gregory R. Chambers\*** ([chambers@math.uchicago.edu](mailto:chambers@math.uchicago.edu)). *Existence of homotopies with prescribed Lipschitz constants.*

Given Riemannian manifolds  $M$  and  $N$ , consider maps  $f : M \rightarrow N$  and  $g : M \rightarrow N$  which are homotopic and  $L$ -Lipschitz. Gromov asked the following question: Does there exist a homotopy from  $f$  to  $g$  which is itself  $L$ -Lipschitz? In this talk, I will describe recent work with D. Dotterer, F. Manin, and S. Weinberger which partially answers this question. I will also outline some interesting applications of our results. (Received August 07, 2015)