Quasiconformal flows, bi-Lipschitz embeddings, and Q-curvature

Eero Saksman

Abstract

The Jacobian problem for quasiconformal maps asks for a characterization of weights on $\mathbb{R}^n$ that are comparable to Jacobian determinants of quasiconformal homeomorphisms. The talk describes a joint work with M. Bonk and J. Heinonen in this area that uses the technique of quasiconformal flows. We also discuss the relation of these questions to bi-Lipschitz embeddings of metric spaces to $\mathbb{R}^n$. As an application of our results it follows that a (normal) conformal deformation of $\mathbb{R}^{2n}$ is bi-Lipschitz equivalent to $\mathbb{R}^{2n}$ if it has sufficiently small total Q-curvature. This yields a natural generalization of a result by J. Fu in dimension 2.