

# Metric properties of quasiconformal mappings

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This talk gives an overview of my research interests, connected with the theory of quasiconformal (qc) and quasiregular (qr) mappings in the Euclidean space  $R^n$ ,  $n \geq 2$ . Mostly the results are recent but also old results of current interest may be discussed. The talk will discuss the distortion theory of these mappings, i.e. how qc and qr maps transform distances between points. When the important parameter  $K$ , the maximal dilatation of a mapping, tends to unity, we get conformal maps and analytic functions as a particular case. Our goal is to get sharp results in the limiting case  $K \rightarrow 1$ . Some novel metrics are mentioned. The talk is based on joint work with several coauthors, mostly with my former students. In particular, the three latest coauthors are G. Wang, X. Zhang, and P. Hariri. Some open problems will be pointed out.

- P. HARIRI: Hyperbolic type metrics in geometric function theory, PhD thesis, University of Turku, 2018, <http://www.utupub.fi/handle/10024/144625>.
  - P. HARIRI, M. VUORINEN, AND X. ZHANG: *Inequalities and bilipschitz conditions for triangular ratio metric*. Rocky Mountain Math. J. 47, Number 3, 1121–1148, 2017 arXiv: 1411.2747 [math.MG]
  - R. KLÉN, M. VUORINEN AND X. ZHANG: *On isometries of conformally invariant metric*. J Geom Anal (2016) 26:914–923, arXiv:1411.4381 [math.CV].
  - G. WANG AND M. VUORINEN: *The visual angle metric and quasiregular maps*. Proc. Amer. Math. Soc. 144, 11, (2016), 4899–4912, arXiv:1505.00607 [math.CA].
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