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Angles and quasiconformal mappings on Riemannian manifolds. (English) Zbl 0712.58009
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The author gives a characterization of quasiconformal mappings between infinite dimensional Riemannian manifolds.

Let $1 \leq K < \infty$. Let $f: V \rightarrow \tilde{V}$ be a homeomorphism. Then f is said to be K -quasiconformal provided that for all $x \in V$ and angle α , $(1/K)\alpha \leq f(\alpha) \leq K\alpha$.

The following theorem is proved. Let $f: V \rightarrow \tilde{V}$ be a local diffeomorphism. Then f is K -quasiconformal in V iff $\|Q_x f\|^2 \leq K$ for every $x \in V$. Here $Q_x f = \|(T_x f)^{-1}\|^{1/2} \|T_x f\|^{1/2} T_x f$.

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MSC:

- 58B10 Differentiability questions for infinite-dimensional manifolds
- 30C65 Quasiconformal mappings in \mathbb{R}^n , other generalizations
- 53C20 Global Riemannian geometry, including pinching

Keywords:

angle distortion; quasiconformal mappings; infinite dimensional Riemannian manifolds