

cases	doc_1		doc_2		decision	id
	authors	<ul style="list-style-type: none">Toni IkonenDanka LuÄiÄ‡Enrico Pasqualetto	authors	<ul style="list-style-type: none">Toni IkonenDanka Luvci'cEnrico Pasqualetto	DUPLICATES	727
	title	Pullback of a quasiconformal map between arbitrary metric measure spaces	title	Pullback of a quasiconformal map between arbitrary metric measure spaces		
	publication_date	2021-12-14 23:46:34+00:00	publication_date	2021-12-14 00:00:00		
	source	SupportedSources.ARXIV	source	SupportedSources.SEMANTIC_SCHOLAR		
	journal	None	journal			
	volume		volume			
	doi		doi			
	urls	<ul style="list-style-type: none">http://arxiv.org/pdf/2112.07795v1http://arxiv.org/abs/2112.07795v1http://arxiv.org/pdf/2112.07795v1	urls	<ul style="list-style-type: none">https://www.semanticscholar.org/paper/f9b976f663f5b52ee69a9923443d920cbabf328f		
	id	id3404102510734825372	id	id-4832658816744216271		
	abstract	We prove that every (geometrically) quasiconformal homeomorphism between metric measure spaces induces an isomorphism between the cotangent modules constructed by Gigli. We obtain this by first showing that every continuous mapping φ with bounded outer dilatation induces a pullback map φ^* between the cotangent modules of Gigli, and then proving the functorial nature of the resulting pullback operator. Such pullback is consistent with the differential for metric-valued locally Sobolev maps introduced by Gigli-Pasqualetto-Soultanis. Using the consistency between Gigli's and Cheeger's cotangent modules for PI spaces, we prove that quasiconformal homeomorphisms between PI spaces preserve the dimension of Cheeger charts, thereby generalizing earlier work by Heinonen-Koskela-Shanmugalingam-Tyson. Finally, we show that if φ is a given homeomorphism with bounded outer dilatation, then φ^{-1} has bounded outer dilatation if and only if φ^* is invertible and φ^{-1} is Sobolev. In contrast to the setting of Euclidean spaces, Carnot groups, or more generally, Ahlfors regular PI spaces, the Sobolev regularity of φ^{-1} needs to be assumed separately.	abstract	We prove that every (geometrically) quasiconformal homeomorphism between metric measure spaces induces an isomorphism between the cotangent modules constructed by Gigli. We obtain this by first showing that every continuous mapping $\tilde{\tau}$ with bounded outer dilatation induces a pullback map $\tilde{\tau}^\wedge$ between the cotangent modules of Gigli, and then proving the functorial nature of the resulting pullback operator. Such pullback is consistent with the differential for metric-valued locally Sobolev maps introduced by Gigliâ€“Pasqualettoâ€“Soultanis. Using the consistency between Gigliâ€™s and Cheegerâ€™s cotangent modules for PI spaces, we prove that quasiconformal homeomorphisms between PI spaces preserve the dimension of Cheeger charts, thereby generalizing earlier work by Heinonenâ€“Koskelaâ€“Shanmugalingamâ€“Tyson. Finally, we show that if $\tilde{\tau}$ is a given homeomorphism with bounded outer dilatation, then $\tilde{\tau}^\wedge^{-1}$ has bounded outer dilatation if and only if $\tilde{\tau}^\wedge$ is invertible and $\tilde{\tau}$ is Sobolev. In contrast to the setting of Euclidean spaces, Carnot groups, or more generally, Ahlfors regular PI spaces, the Sobolev regularity of $\tilde{\tau}$ needs to be assumed separately.		
	versions		versions			