cases	doc_1		doc_2		decision	id
	authors	• Juha Kinnunen • Juha LehrbÃ¤ck • Antti V. VÃ¤hÃ¤kangas • Xiao Zhong	**authors**	• Juha Kinnunen • Juha LehrbÃ¤ck • Antti V. VÃ¤hÃ¤kangas • Xiao Zhong	DUPLICATES	127
	title	Maximal function estimates and self-improvement results for PoincarÃ© inequalities	**title**	Maximal function estimates and self-improvement results for PoincarÃ© inequalities		
	publication_date	2017-05-15 05:27:25+00:00	**publication_date**	2017-05-15 00:00:00		
	source	SupportedSources.ARXIV	**source**	SupportedSources.INTERNET_ARCHIVE		
	journal	None	**journal**			
	volume		**volume**			
	doi		**doi**			
	urls	• http://arxiv.org/pdf/1705.05072v1 • http://arxiv.org/abs/1705.05072v1 • http://arxiv.org/pdf/1705.05072v1	**urls**	• https://web.archive.org/web/20191014014347/https://arxiv.org/pdf/1705.05072v1.pdf		
	id	id-6952704462563496296	**id**	id-8272040570286414727		
	abstract	Our main result is an estimate for a sharp maximal function, which implies a Keith-Zhong type self-improvement property of Poincar\'e inequalities related to differentiable structures on metric measure spaces. As an application, we give structure independent representation for Sobolev norms and universality results for Sobolev spaces.	**abstract**	Our main result is an estimate for a sharp maximal function, which implies a Keith-Zhong type self-improvement property of Poincar\'e inequalities related to differentiable structures on metric measure spaces. As an application, we give structure independent representation for Sobolev norms and universality results for Sobolev spaces.		
	versions		**versions**			