POROSITY OF CONTRACTIONS IN SPACES OF NON-EXPANSIVE MAPPINGS.

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Abstract. We consider a large class of geodesic metric spaces, including Banach spaces, hyperbolic spaces and geodesic CAT(κ)-spaces, and investigate the space of nonexpansive mappings on either a convex or a star-shaped subset in these settings. We prove that the strict contractions form a negligible subset of this space in the sense that they form a σ-porous subset. For separable metric spaces we show that a generic nonexpansive mapping has Lipschitz constant one at typical points of its domain. These results contain the case of nonexpansive self-mappings and the case of nonexpansive set-valued mappings as particular cases.