

# ON LOW-DISTORTION EMBEDDINGS OF METRIC SPACES INTO REFLEXIVE SPACES

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ABSTRACT. We say that a metric space  $M$  Lipschitz-embeds with distortion  $D \geq 1$  into a Banach space  $X$ , and we use the symbol  $M \overset{D}{\hookrightarrow} X$ , if there is  $f : M \rightarrow X$  such that  $d(x, y) \leq \|f(x) - f(y)\| \leq Dd(x, y)$ . We will discuss the following and similar theorems.

**Theorem 1.** *There exists a countable metric graph  $M$  such that for every Banach space  $X$  with an unconditional basis the following is equivalent.*

- (1)  $X$  is not reflexive,
- (2) there is an equivalent norm  $|\cdot|$  on  $X$  such that  $M \overset{1}{\hookrightarrow} (X, |\cdot|)$ ,
- (3) there is an equivalent norm  $|\cdot|$  on  $X$  and  $D < 2$  such that  $M \overset{D}{\hookrightarrow} (X, |\cdot|)$ .