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Yuval Peres*, Microsoft Research, 1 Microsoft Way, Redmond, WA 98052. *Markov type and threshold embeddings.*

A metric space X has Markov Type 2 if the mean square displacement of stationary reversible finite Markov chains in X grows at most linearly. This notion, invented by Keith Ball (1992) for the purpose of Lipschitz extension, became later a key tool for proving distortion and compression lower bounds. We showed (with Assaf Naor, Oded Schramm and Scott Sheffield; Duke (2006)) that L^p spaces for $p > 2$ (and more generally, 2-smooth Banach spaces as well as hyperbolic metric spaces) have Markov type 2, and this yielded a proof of a conjecture of Johnson and Lindenstrauss (1982) that for $1 < q < 2 < p < \infty$, any Lipschitz mapping from a subset of L^p to L^q has a Lipschitz extension defined on all of L^p . Recently we proved (with Jian Ding and James Lee; GAFA (2013)) that spaces with a threshold embedding to Hilbert space have Markov type 2; this covers doubling metric spaces and planar graphs. The proofs are based on Martingale decompositions. (Received September 17, 2013)