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Wouter Van Limbeek* (wouter@uic.edu), Department of Mathematics, 851 S. Morgan Street, 322 Science and Engineering Offices, M/C 249, Chicago, IL 60607, and **Mikolaj Fraczyk**. *Heat kernels are not uniform expanders.*

A family of finite graphs is expander if it is uniformly sparse and robust. Does there exist a single infinite graph with these properties? We study a version of this question that uses random walks to formulate robustness, and we prove that an infinite expander in this sense does not exist. This proves the analogue for random walks of Benjamini's conjecture that there is no infinite graph whose metric balls are uniformly expander. (Received August 19, 2019)