

Open Problem 3.3 *Let $G = (V, E, W)$ be a graph and k a positive integer, is the following true?*

$$\rho_G(k) \leq \text{polylog}(k) \sqrt{\lambda_k}. \tag{30}$$

We note that (30) is known not to hold if we ask that the subsets form a partition (meaning that every vertex belongs to at least one of the sets) [LRTV12]. Note also that no dependency on k would contradict the Small-Set Expansion Hypothesis above.

Tghgtgpeg

[LRTV12] A. Louis, P. Raghavendra, P. Tetali, and S. Vempala. Many sparse cuts via higher eigenvalues. *STOC*, 2012.

MIT OpenCourseWare
<http://ocw.mit.edu>

18.S096 Topics in Mathematics of Data Science
Fall 2015

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.