Upper Bounds

- With n^2 linear measurements, can read entire matrix
  - 1 round and n^2 linear measurements suffice
- For constant r, $O(\log n)$ iterations of power method suffice
  - $O(\log n)$ rounds and $O(n)$ linear measurements per round suffice
- What is the measurements-vs-rounds tradeoff?

Our Result

Theorem [**K,** Woodruff NeurIPS ’23]: Any algorithm using $n^{2-\beta}$ linear measurements per round must run for $\Omega(\log n/\log\log n)$ rounds to output B satisfying

$$\|A - B\| \leq 2\sigma_{r+1}(A)$$

- Essentially, no intermediate tradeoff