

Conjecture 4.21 Let $A_1, \dots, A_n \in \mathbb{R}^{d \times d}$ be symmetric matrices and $g_1, \dots, g_n \sim \mathcal{N}(0, 1)$ i.i.d., then:

$$\mathbb{E} \left\| \sum_{k=1}^n g_k A_k \right\| \lesssim \sigma + (\log d)^{\frac{1}{2}} \sigma_*,$$

While it may very well be that this Conjecture 4.21 is false, no counter example is known, up to date.

Open Problem 4.1 (Improvement on Non-Commutative Khintchine Inequality) *Prove or disprove Conjecture 4.21.*

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>.