Additional (way–post–publication) corrigenda for

[**DS**] K. R. Davidson and S. J. Szarek, *Local operator theory, random matrices and Banach spaces.* In "Handbook on the Geometry of Banach spaces," Volume 1, W. B. Johnson, J. Lindenstrauss eds., Elsevier Science 2001, pp. 317-366. Addenda and Corrigenda, in Volume 2, 2003, pp. 1819-1820.

• Here is the correct statement of Problem 1.17 from [**DS**] (p. 333).

PROBLEM 1.17. *Given $\varepsilon > 0$, is there a constant $C(\varepsilon)$ independent of n such that, for every $n \times n$ matrix T with $\|T\| \le 1$, there exists a diagonal operator D and an invertible operator W such that*

$$\|T - WDW^{-1}\| \le \varepsilon \quad \textit{and} \quad \|W\|\,\|W^{-1}\| \le C(\varepsilon)?$$

A compactness argument shows that, for each fixed dimension n, there is a constant $C(\varepsilon, n)$ which works. The reader who would like to get a feel for this question may consider the case when T is a Jordan cell.

• Here is the correct statement of Theorem 2.4. from [**DS**] (p. 345).

THEOREM 2.4. *Let $G = G^{(n)}$ be an $n \times n$ random matrix whose entries are independent identically distributed Gaussian random variables following the $N(0, 1/n)$ law. and let $s_1 \ge s_2 \ge \ldots \ge s_n$ be the singular values of G. Then*

$$\mathcal{P}\Big(s_{n-d+1} \ge \beta\frac{d}{n}\Big) \le \exp\left(-c\beta^2 dd'\right), \quad \mathcal{P}\Big(s_{n-d+1} \le \alpha\frac{d}{n}\Big) \le (C\alpha)^{d^2}$$

for $1 \le d \le n$, $\beta \ge \beta_0$, and $\alpha \ge 0$, where $d' = \min\{d, n-d\}$. Above, c, C and β_0 are universal positive constants. Apart from the precise values of these constants, the estimates are optimal.

The references for the above are Theorem 1.2 and Lemma 3.1 in Ref. [**S**] below, the latter covering the first bound in the range $d > n/2$. (As originally stated, the first bound was valid only in the $d \le n/2$ range; we thank Martin Kroll for bringing this issue to our attention.) Also, the caveat "except possibly (..) when $n - d = o(n)$" is not really needed: while the fluctuations of the largest singular values are more precisely described by the Tracy-Widom phenomenon exemplified in Theorem 2.8 of [**DS**], this phenomenon belongs to the "small deviation" regime: it shows up only for $\beta < \beta_0$ and not in the "large deviation" setting of Theorem 2.4. For a selection of related ready-to-use bounds with reasonable constants the reader is referred to Chapter 6 of the recent book [**AS**].

[**AS**] G. Aubrun and S. J. Szarek, *Alice and Bob Meet Banach. The Interface of Asymptotic Geometric Analysis and Quantum Information Theory.* Mathematical Surveys and Monographs, Vol. 223, Amer. Math. Soc. 2017, 414 + xxi pp.

[**S**] S. J. Szarek, *Condition numbers of random matrices*, J. Complexity **7** (1991), 131-149.

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