

1 We thank all the reviewers for their thoughtful comments and suggestions. We will fix all the typos and mechanical
2 errors in the camera-ready and future arXiv version. Reviewer-specific comments follow.

3 **Reviewer #3.** Regarding our equivalence theorem between heavy-tailed and robust mean estimator, we use the word
4 “duality” here only to highlight that the arguments crucially leverage the strong duality of SDP. We will clarify this point
5 explicitly in the full version.

6 **Reviewer #4.** The constants in Proposition 3.1 and 3.2 are immaterial. Indeed, they are set up this way to make the
7 argument in the later sections to go through. For all the applications, the current form suffices. If needed, one could
8 tweak our proof to obtain the same type of results with different constants. We will make a clarification in the full
9 version.