We thank reviewers for their effort and support!

Reviewer #1

We appreciate your feedback on Figures 1 and 2. Plots there were meant to emphasize trends as standard deviation of initialization tends to zero. We will consider deferring this information to supplementary material, and replacing the figures with tables that show results only for the minimal standard deviation.

Reviewer #2

Thank you for your feedback on Figures 1 and 3. We will consider replacing Figure 1 with a table (see our response to Reviewer #1). As for Figure 3, we apologize for the rightmost plots not having titles and axis labels — this is a typo that will be corrected.

Text interpreting Figure 3 appears at the opening of Subsection 3.1. We expand on the plots for singular values (first three columns) herein. With depth 1 (first column) singular values show significant movement (as indicated by their slopes) right from the outset, until reaching stationarity. This results in a solution that does not have low rank (many large singular values). With depth 2 (second column) singular values initially (when close to zero) do not move much (flat slope), and then, when one gets far enough from zero, it begins to move fast (steep slope), until reaching stationarity. The resulting solution has low effective rank compared to depth 1 (a few large singular values and many smaller ones). Turning to depth 3 (third column), we see the same effect as with depth 2 but more potently — small singular values move slower (flatter slope) and those that escape the origin move faster (steeper slope). The final solution accordingly has lower effective rank — there are a few large singular values, and the rest are essentially at zero.

The fact that minimum nuclear norm and minimum rank coincide when sufficiently many entries are observed (and certain mild technical assumptions are met) was shown for example in Candès and Recht [2009]. We agree with you that a plot showing reconstruction errors as a function of the number of observed entries would be insightful. This will be added to the final version of the manuscript. Thank you for the suggestion!

Reviewer #3

We deferred content to supplementary material primarily due to lack of space. We will consider replacing Figures 1 and 2 with tables (see our response to Reviewer #1), and using the available room for broadening our proof sketches. Thank you for your positive feedback!

References

Emmanuel J Candès and Benjamin Recht. Exact matrix completion via convex optimization. *Foundations of Computational mathematics*, 9(6):717, 2009.