

1 We sincerely thank the five reviewers for their valuable feedback.

2 **R6:** We thank the reviewer for valuable comments. Our point-to-point response is as follows:

3 **Convergence Bounds:**

4 **R12:** We thank the reviewer for valuable comments. A proofreading is being done we clarify that:

5 **EMPTY REVIEW**

6 **R13:** We thank the reviewer for the thorough analysis. Our remarks are listed below:

7 **Notations:**

8 **Proofs:**

9 **Experiments:**

10 **R14:** We thank the reviewer for valuable comments and typos. Our response is as follows:

11 **Smoothness assumption:**

12 **Experiments:**

13 **R15:** We thank the reviewer for valuable comments. We clarify the following point on OPT-ADAM:

14 **Discussions on the assumptions:**